STANDARD
AC GEARED MOTOR

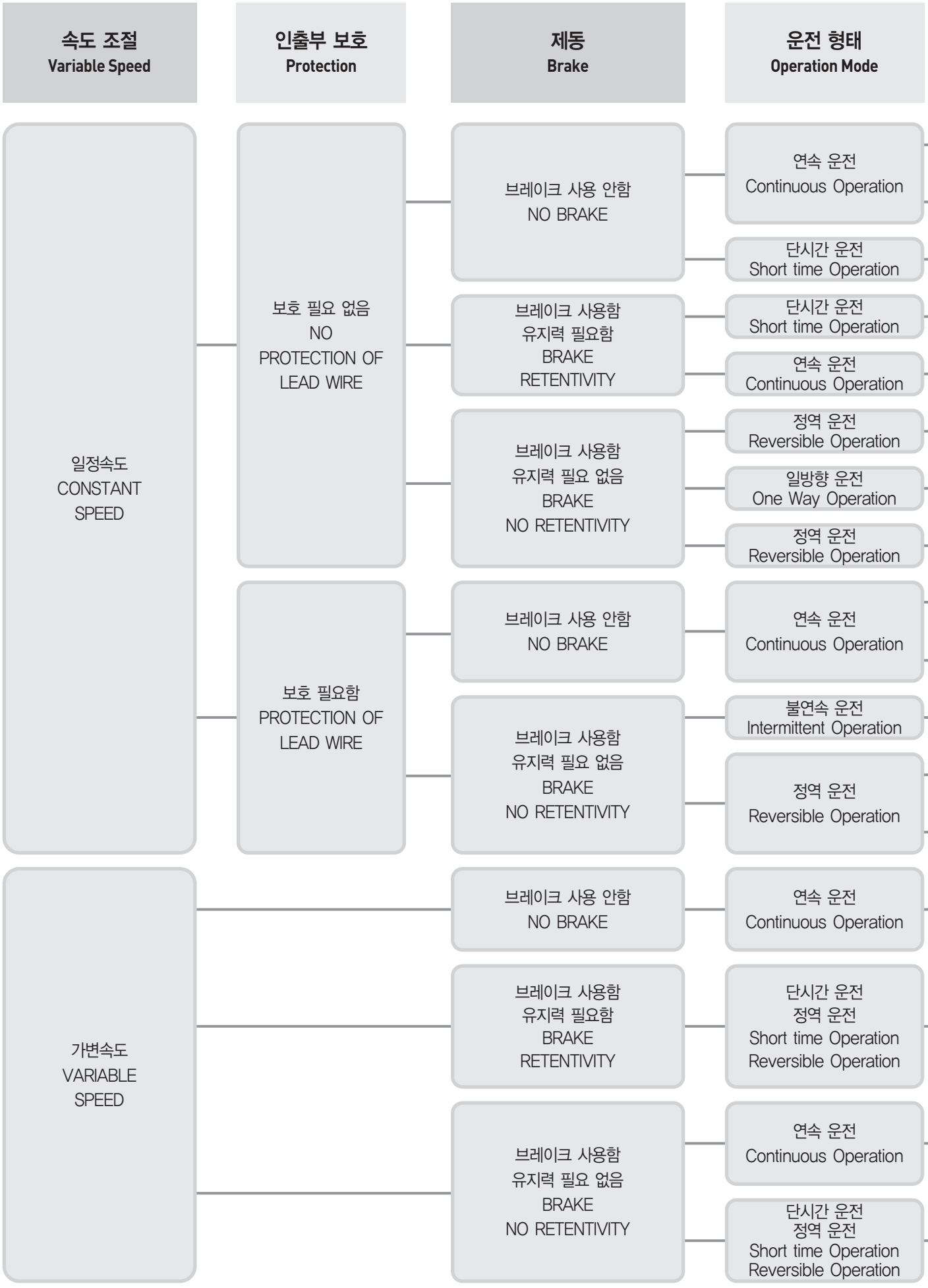


SPG Co., Ltd.

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MOTOR 선정 방법 (Selection of Motor)



전원 상수 Phase	제품 종류 Type	출력 Output	페이지 Page
단상 Single	INDUCTION	3W ~ 200W	42~68 300~303
삼상 Three	INDUCTION	25W ~ 200W	50~68
단상 Single	REVERSIBLE	6W ~ 90W	76~91
단상 Single	ELECTROMAGNETIC BRAKE REVERSIBLE	6W ~ 200W	98~119
삼상 Three	ELECTROMAGNETIC BRAKE INDUCTION	25W ~ 200W	104~119
단상 Single	REVERSIBLE	6W ~ 90W	76~91
단상 Single	INDUCTION + BRAKE PACK	6W ~ 90W	44~59 346~352 357~361
삼상 Three	INDUCTION + BRAKE PACK	25W ~ 90W	50~59 353~356
단상 Single	TERMINAL BOX INDUCTION	6W ~ 90W	124~153
삼상 Three	TERMINAL BOX INDUCTION	25W ~ 150W	134~157
단상 Single	TERMINAL BOX REVERSIBLE	6W ~ 90W	124~153
단상 Single	TERMINAL BOX REVERSIBLE	6W ~ 90W	124~153
삼상 Three	TERMINAL BOX INDUCTION + BRAKE PACK	25W ~ 90W	134~153 353~356
단상 Single	SPEED CONTROL INDUCTION	6W ~ 180W	165~176 178~194
단상 Single	ELECTROMAGENETIC BRAKE SPEED CONTROL REVERSIBLE	6W ~ 90W	196~235 278~297
단상 Single	SPEED CONTROL INDUCTION	6W ~ 90W	196~235 278~297
단상 Single	SPEED CONTROL REVERSIBLE	6W ~ 40W	196~235 262~275

GEAR HEAD 선정 방법 (Selection of Gearhead)

SIZE	출력 OUT-PUT	GEAR HEAD 분류 CLASSIFICATION OF GEAR HEAD	GEAR HEAD 외관 EXTERNAL SHAPE OF GEAR HEAD	BEARING TYPE	열처리 HEAT TREATMENT (YES/NO)	GEAR RATIO	기종명 CODING
□60	6W	일반부하(GENERAL LOAD) GEAR		BALL BEARING TYPE		1/3~1/250	S6①A②B1
				혼합(COMBINED) TYPE		1/3~1/250	S6①A②B
				METAL TYPE		1/3~1/250	S6①A②M
		중간(MIDDLE) GEAR		BALL BEARING TYPE		1/10	S6GX10B
□70	15W	일반부하(GENERAL LOAD) GEAR		BALL BEARING TYPE		1/3~1/200	S7①A②B1
				혼합(COMBINED) TYPE		1/3~1/200	S7①A②B
				METAL TYPE		1/3~1/200	S7①A②M
□80	15~25W	일반부하(GENERAL LOAD) GEAR		BALL BEARING TYPE		1/3~1/200	S8①A②B1
				혼합(COMBINED) TYPE		1/3~1/200	S8①A②B
				METAL TYPE		1/3~1/200	S8①A②M
		중간(MIDDLE) GEAR		BALL BEARING TYPE		1/10	S8GX10B
□90	40W	일반부하(GENERAL LOAD) GEAR		BALL BEARING TYPE	열처리 (Heat Treatment)	1/3~1/200	S9①B②B1H
						1/3~1/200	S9①B②B1L
				혼합(COMBINED) TYPE	열처리 (Heat Treatment)	1/3~1/200	S9①B②BH
						1/3~1/200	S9①B②BL
				METAL TYPE	열처리 (Heat Treatment)	1/3~1/200	S9①B②MH
						1/3~1/200	S9①B②ML
		중간(MIDDLE) GEAR		BALL BEARING TYPE	열처리 (Heat Treatment)	1/10	S9GX10BH
						1/10	S9GX10BL
□90	60~90W	일반부하(GENERAL LOAD) GEAR		BALL BEARING TYPE	열처리 (Heat Treatment)	1/3~1/200	S9①C②BH
						1/3~1/200	S9①C②BL
			취부홀 (HOLE FOR MOUNTING)	BALL BEARING TYPE	열처리 (Heat Treatment)	1/3~1/200	S9①C②BH-S
						1/3~1/200	S9①C②BL-S
					열처리 (Heat Treatment)	1/3~1/200	S9①D②B
		중간(MIDDLE) GEAR		BALL BEARING TYPE	열처리 (Heat Treatment)	1/10	S9GX10BH-S
						1/10	S9GX10BL-S
□90	120W	일반부하(GENERAL LOAD) GEAR		BALL BEARING TYPE	열처리 (Heat Treatment)	1/3~1/200	S9①C②BH
			취부홀 (HOLE FOR MOUNTING)	BALL BEARING TYPE	열처리 (Heat Treatment)	1/3~1/200	S9①C②BH-S
						1/3~1/200	S9①D②B
		중간(MIDDLE) GEAR		BALL BEARING TYPE	열처리 (Heat Treatment)	1/10	S9GX10BH-S
□90	150~200W	일반부하(GENERAL LOAD) GEAR	취부홀 (HOLE FOR MOUNTING)	BALL BEARING TYPE	열처리 (Heat Treatment)	1/3~1/200	S9①H②B

주) 1. ①의 표시는 출력축 SHAFT (SPINDLE)의 형상을 나타냅니다. 예) K : KEY TYPE, S : STRAIGHT TYPE D : D-CUT TYPE
2. ②의 표시는 감속비 (GEAR RATIO)를 나타냅니다. 3. 취부홀은 MOTOR와 GEAR HEAD를 체결하는 BOLT HOLE 이외의, 별도로 체결하는 BOLT HOLE을 말합니다.

Note) 1. ① stands for a shape of an output shaft(spindle). Example) K : Key Type; S : Straight Type; D : D-Cut Type Example) K : KEY TYPE, S : STRAIGHT TYPE D : D-CUT TYPE
2. ② stands for a reduction ratio(gear Ratio). 3. NO SUBJECT - What indicates a volt hole?

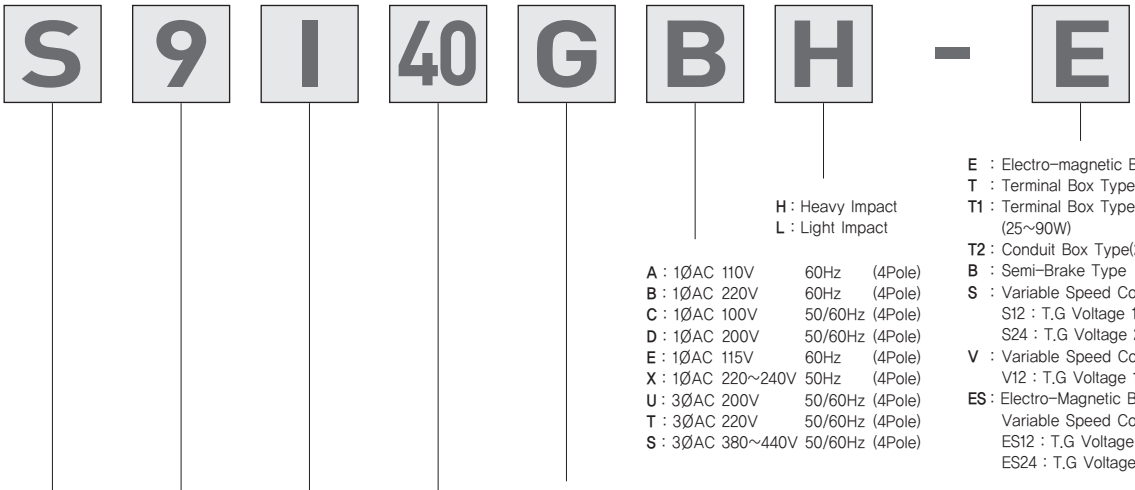
CONTROLLER 및 BRAKE PACK 선정 방법 (Selection of Controller & Brake pack)

* : SPEED CONTROL INDUCTION MOTOR
** : SPEED CONTROL REVERSIBLE MOTOR
*** : E.S MOTOR

SYSTEM	구분 Division	전원 Power Source	TYPE		전압, 주파수 Voltage, Frequency	품명 Product Name	적용 MOTOR APPLICABLE MOTOR *	**	***
VARIABLE SPEED AND BRAKE	SPEED CONTROLLER	단상 (SINGLE PHASE)	PACK TYPE	SR TYPE	110V, 60Hz	SRA□	6~90W	6~40W	6~90W
					220V, 60Hz	SRB□	6~90W	6~40W	6~90W
					100V, 50/60Hz	SRC□	6~90W	6~40W	6~90W
					200V, 50/60Hz	SRD□	6~90W	6~40W	6~90W
					115V, 60Hz	SRE□	6~90W	6~40W	6~90W
					220~240V, 50Hz	SRX□	6~90W	6~40W	6~90W
				SS(표준형(STANDARD)) TYPE	110V, 60Hz	SSA□-SRSS	6~40W	6~40W	6~40W
					220V, 60Hz	SSB□-SRSS	6~40W	6~40W	6~40W
					100V, 50/60Hz	SSC□-SRSS	6~40W	6~40W	6~40W
					200V, 50/60Hz	SSD□-SRSS	6~40W	6~40W	6~40W
					115V, 60Hz	SSE□-SRSS	6~40W	6~40W	6~40W
					220~240V, 50Hz	SSX□-SRSS	6~40W	6~40W	6~40W
				SS(고출력(HIGH OUTPUT)) TYPE	110V, 60Hz	SSA03-SRSS	6~90W	6~40W	6~40W
					220V, 60Hz	SSB03-SRSS	6~90W	6~40W	6~40W
					100V, 50/60Hz	SSC03-SRSS	6~90W	6~40W	6~40W
					200V, 50/60Hz	SSD03-SRSS	6~90W	6~40W	6~40W
					115V, 60Hz	SSE03-SRSS	6~90W	6~40W	6~40W
					220~240V, 50Hz	SSX03-SRSS	6~90W	6~40W	6~40W
			UNIT TYPE	SUA TYPE	110V, 60Hz	SUA□IA-V12	6~90W	–	–
					220V, 60Hz	SUA□IB-V12	6~180W	–	–
					100V, 50/60Hz	SUA□IC-V12	6~90W	–	–
					200V, 50/60Hz	SUA□ID-V12	6~90W	–	–
					115V, 60Hz	SUA□IE-V12	6~90W	–	–
					220~240V, 50Hz	SUA□IX-V12	6~90W	–	–
	BRAKE PACK	단상 (SINGLE PHASE)	PACK TYPE	유접점(CONTACT) TYPE	110V, 60Hz	SBA-IR	6~90W	6~60W	–
					220V, 60Hz	SBB-IR	6~90W	6~60W	–
					100V, 50/60Hz	SBC-IR	6~90W	6~60W	–
					200V, 50/60Hz	SBD-IR	6~90W	6~60W	–
					220~240V, 50Hz	SBX-IR	6~90W	6~60W	–
				무접점(NON CONTACT) TYPE	110V, 60Hz	SBA-NCR	6~90W	6~90W	–
					220V, 60Hz	SBB-NCR	6~90W	6~90W	–
					100V, 50/60Hz	SBC-NCR	6~90W	6~90W	–
					200V, 50/60Hz	SBD-NCR	6~90W	6~90W	–
					220~240V, 50Hz	SBX-NCR	6~90W	6~90W	–
		삼상 (THREE PHASE)	PACK TYPE	유접점(CONTACT) TYPE	200V, 50/60Hz	SBU-IR	25~90W	–	–
					220V, 50/60Hz	SBT-IR	25~90W	–	–
					380~440V, 50/60Hz	SBS-IR	25~90W	–	–

MODEL 보는 법 (CODING SYSTEM)

MOTOR



S : SPG Co., Ltd.

6 : □60(㎜)
7 : □70(㎜)
8 : □80(㎜)
9 : □90(㎜)

I : Induction Motor
R : Reversible Motor

03 : 3W
06 : 6W
15 : 15W
25 : 25W
40 : 40W
60 : 60W
90 : 90W
120 : 120W
150 : 150W
180 : 180W
200 : 200W

G : Gear Type
S : Straight Type
D : D-Cut Type
K : Key Type

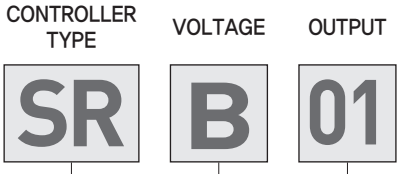
A : 1ØAC 110V 60Hz (4Pole)
B : 1ØAC 220V 60Hz (4Pole)
C : 1ØAC 100V 50/60Hz (4Pole)
D : 1ØAC 200V 50/60Hz (4Pole)
E : 1ØAC 115V 60Hz (4Pole)
X : 1ØAC 220~240V 50Hz (4Pole)
U : 3ØAC 200V 50/60Hz (4Pole)
T : 3ØAC 220V 50/60Hz (4Pole)
S : 3ØAC 380~440V 50/60Hz (4Pole)

H : Heavy Impact
L : Light Impact

E : Electro-magnetic Brake Type
T : Terminal Box Type(Terminal Block Type)
T1 : Terminal Box Type(PCB Type Terminal Block) (25~90W)
T2 : Conduit Box Type(25~90W)
B : Semi-Brake Type
S : Variable Speed Control(Pack Type)
S12 : T.G Voltage 12V Type
S24 : T.G Voltage 24V Type
V : Variable Speed Control(Unit Type)
V12 : T.G Voltage 12V Type
ES : Electro-Magnetic Brake Variable Speed Control(Pack Type)
ES12 : T.G Voltage 12V Type
ES24 : T.G Voltage 24V Type

※ 주1) 'H'와 'L' TYPE은 40W 이상에서만 적용됩니다.
• 60W 이상은 'H' TYPE이 표준타입입니다.
• 40W는 'L' TYPE이 표준타입입니다.
※ NOTE 1) 'H' & 'L' type are applied to over 40W.
• 'H' type is the standard for over 60W.
• 'L' type is the standard for over 40W.
※ 주2) Key Type은 □80 15W 이상부터 적용됩니다.
※ NOTE 2) Key Type are applied to over □80 15W

SPEED CONTROLLER (SR PACK TYPE)

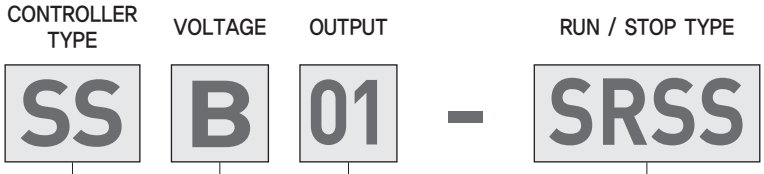


01 : 6W
02 : 15W~90W

A : 1Ø AC110V 60Hz (4Pole)
B : 1Ø AC220V 60Hz (4Pole)
C : 1Ø AC100V 50/60Hz (4Pole)
D : 1Ø AC200V 50/60Hz (4Pole)
E : 1Ø AC115V 60Hz (4Pole)
X : 1Ø AC220~240V 50Hz (4Pole)

SR SERIES
※ 주) 적용 Motor는 T.G전압이 12V用입니다.
※ NOTE) The applicable motor is for T.G. 12V.

SPEED CONTROLLER (SS PACK TYPE)



Slow Run Slow Stop

01 : 6W(표준형(Standard Type))
02 : 15W~40W(표준형(Standard Type))
03 : 6W~90W(고출력용(High Output Type))

A : 1Ø AC110V 60Hz (4Pole)
B : 1Ø AC220V 60Hz (4Pole)
C : 1Ø AC100V 50/60Hz (4Pole)
D : 1Ø AC200V 50/60Hz (4Pole)
E : 1Ø AC115V 60Hz (4Pole)
X : 1Ø AC220V~240V 50Hz (4Pole)

SS SERIES
※ 주) 적용 Motor는 T.G전압이 24V用입니다.
※ NOTE) The applicable motor is for T.G. 24V.

SPEED CONTROLLER (UNIT TYPE)

MAKER	CONTROLLER TYPE	OUTPUT	TYPE	VOLTAGE		T.G VOLTAGE
S	U	A	40	I	B	- V12

V12 : T.G Voltage 12V Type

A : 1Ø AC110V 60Hz (4Pole)
B : 1Ø AC220V 60Hz (4Pole)
C : 1Ø AC100V 50/60Hz (4Pole)
D : 1Ø AC200V 50/60Hz (4Pole)
E : 1Ø AC115V 60Hz (4Pole)
X : 1Ø AC220~240V 50Hz (4Pole)

I : Induction Motor
※ 주) Unit Type의 Speed Controller는 Reversible Motor가 없습니다.
(□70 15W는 Induction Motor "I" 표시가 없습니다.)
※ NOTE) Unit Type of Speed Controller does not have Reversible Motor.(715 Type : No marking)

06 : 6W **25** : 25W **90** : 90W
715 : 15W(□70) **40** : 40W **120** : 120W
15 : 15W(□80) **60** : 60W **180** : 180W

A : Analogue Type
D : Digital Type

U : Unit Type

S : SPG Co.,Ltd.

BRAKE PACK (CONTACT TYPE)

BRAKE TYPE	VOLTAGE		MOTOR TYPE
SB	B	-	IR

IR : 1Ø Motor
I : 3Ø Motor

A : 1Ø AC 110V 60Hz (4Pole)
B : 1Ø AC 220V 60Hz (4Pole)
C : 1Ø AC 100V 50/60Hz (4Pole)
D : 1Ø AC 200V 50/60Hz (4Pole)
X : 1Ø AC 220~240V 50Hz (4Pole)
U : 3Ø AC 200V 50/60Hz (4Pole)
T : 3Ø AC 220V 50/60Hz (4Pole)
S : 3Ø AC 380~440V 50/60Hz (4Pole)

SB SERIES

GEAR HEAD

MAKER	SIZE	SHAFT TYPE	OUTPUT	GEAR RATIO	BEARING TYPE	SHAFT IMPACT TYPE		SPECIAL TYPE
S	9	K	C	36	B	H	-	S

S : Flange Type

※
H : Heavy Impact
L : Light Impact

B : Ball bearing + Metal bearing(6W~40W)
All Ball bearing(60W 이상)
B1 : All Ball bearing(6W~40W)
M : Metal bearing(6W~40W)

Reduction Ratio(36:1/36)

T : 3W **C** : 60W~120W
A : 6W~ 25W **D** : 60W~120W
B : 40W **H** : 150W~200W

S : Straight Type
D : D-Cut Type
K : Key Type

6 : □60(㎜)
7 : □70(㎜)
8 : □80(㎜)
9 : □90(㎜)

※ 주)(NOTE)) : 'H'와 'L' TYPE은 40W 이상에서만 적용됩니다.
('H' & 'L' type are applied to over 40W.)
• 60W 이상은 'H' TYPE이 표준타입입니다.
('H' type is the standard for over 60W.)
• 40W는 'L' TYPE이 표준타입입니다.
('L' type is the standard for over 40W.)

S : SPG Co.,Ltd.

BRAKE PACK (NON CONTACT TYPE)

BRAKE TYPE	VOLTAGE		
SB	B	-	NCR

NCR : Non Contact Relay
ENCR : Brake type Non Contact Relay

A : 1Ø AC 110V 60Hz (4Pole)
B : 1Ø AC 220V 60Hz (4Pole)
C : 1Ø AC 100V 50/60Hz (4Pole)
D : 1Ø AC 200V 50/60Hz (4Pole)
X : 1Ø AC 220V~240V 50Hz (4Pole)

SB SERIES

MOTOR의 개요 (Overview of the Motors)

1. MOTOR의 종류 (Types of Motors)

(1) MOTOR는 여러 가지 분류 방법이 있으나 전원상수에 의해 단상 MOTOR와 삼상 MOTOR로 분류되고 있습니다. (A motor can generally be categorized as a single-phase motor or a three-phase motor depending on the number of phases the electrical source provides.)

1) 단상 MOTOR (Single-phase Motor)

- 단상 전원은 일반 가정용의 상용 전원으로 한 상으로 되어 있습니다. (The single-phase electrical source is a commercial power source for the household electricity and represents one phase.)
- 전원 자체만으로는 MOTOR가 회전되지 않기 때문에 기동을 위하여 CONDENSER를 보조 COIL에 연결하여 기동을 시킵니다. (Since the electrical source alone can not make a motor rotate, a condenser should be connected to the auxiliary coil to operate the motor.)

2) 삼상 MOTOR (Three-phase Motor)

- 삼상 MOTOR는 동력으로 구분되며 전원의 각상 전압의 위상이 120°씩 틀어진 3개의 전원으로 되어 있습니다.(The three-phase motor stands for electrical power and it is consisted of three electrical sources with a phase offset of 120 degrees in voltage.)
- 전원을 MOTOR에 연결하여 구동시키면 용이하게 회전자계가 일어나 기동이 됩니다. (When the motor is connected to the electrical source, the magnetic field is generated and the motor starts rotating easily.)
- MOTOR의 효율도 높으며 기동 TORQUE도 비교적 큽니다. (The motor efficiency is high and the torque is also relatively big.)

(2) MOTOR를 기능면으로 나누게 되면 크게 3가지로 나눌 수 있습니다. (Functionally, the motor can be grossly divided into three types as follows.)

1) 일정한 속도로 운전하는 MOTOR (Constant Speed Motor)

① **INDUCTION MOTOR**

- AC 소형 MOTOR의 대표적인 MODEL이며, 연속적으로 사용할 수 있습니다. (This is a standard model for small AC motors with continuous operation.)
- 단상용 CONDENSER RUN INDUCTION MOTOR와 삼상용 INDUCTION MOTOR의 2종류가 있습니다. (There are two kinds: one is an induction motor with a condenser for single-phase and the other is an induction motor for three-phase.)
- LEAD WIRE TYPE과 TERMINAL BOX TYPE의 두 가지 종류가 있습니다. (There are two types: a lead-wire type and a terminal-box type.)

② **REVERSIBLE MOTOR**

- 단상용 CONDENSER RUN INDUCTION MOTOR입니다. (This is an induction motor run by a condenser for single phase.)
- 외관 구조는 INDUCTION MOTOR와 거의 같지만 MOTOR의 회전 방향을 간편하게 역전시킬 수 있도록 간이 BRAKE봉을 MOTOR 내부에 취부하여 정 · 역 운전을 자주 반복하여 사용할 때 적합합니다.(The external appearance is similar to that of an induction motor, but it is suitable for operations that frequently change the direction of rotation from normal to reverse and vice versa through a temporary brake block inserted inside the motor which facilitates the reverse rotation.)

2) BRAKE 기능이 있는 MOTOR (Motor with Brake Function)

① **전자(電磁) BRAKE 부착 MOTOR (Electromagnetic Brake attached Motor)**

- 무여자 작동형 전자(無勵磁 作動型 電磁) BRAKE를 내장한 MOTOR입니다. (This is a motor that has a fail-safe electromagnetic brake.)
- 제동(制動)이 확실히 작동하여 유지력을 얻을 수 있습니다.(The reliable control function guarantees the stability of the motor.)
- 제동의 작동은 전원이 고장일 때에 작동하므로 안전하게 사용하는 BRAKE로 적합합니다.(Since the brake function is activated when malfunctioning is detected in the electrical source, this motor is suitable where a safer brake function is required.)

② **BRAKE PACK SB SERIES**

- INDUCTION MOTOR, REVERSIBLE MOTOR 전용의 순시제동용 회로의 전자(電子) BRAKE입니다. (This electronic brake designed exclusively for both induction and reversible motors is suitable for the operation that has to apply a brake frequently.)
- 유접점 BRAKE PACK과 무접점 BRAKE PACK 2종류가 있습니다. (There are two kinds:a brake pack with/without a contact point.)

3) 속도를 조절할 수 있는 MOTOR (Motor with Speed Controlling Function)

① **UNIT TYPE** : 속도 제어기와 MOTOR를 간단하게 접속하여 사용할 수 있는 TYPE입니다. (This type of motor is easy to use with easy connection between a speed controller and a motor.)

② **CONTROL PACK TYPE** : 속도 제어기와 MOTOR를 따로 하여, 속도 제어기와 MOTOR를 사용 용도, 사용 목적에 따라 맞게 선택하여 사용할 수 있는 TYPE입니다. (This type has separate speed controller and motor, so each of them can be selected based on the requirements, purpose and so on.)

2. MOTOR의 특징 (Characteristics of Motors)

(1) MOTOR의 정의 (Definition of Motor)

- MOTOR는 기기가 어떤 일을 할 때 그 기기의 구동원(驅動源)이 되는 것입니다. (The motor is the one that serves as a power source enable equipment to work on a certain thing.)
- MOTOR에 전원을 넣으면 전기 작용에서 발생되는 회전력을 SHAFT로 꺼내어 다른 기계에 벨트 또는 기어를 힘을 전달시키는 작용을 하며 회전축과 직결시켜 어떤 구체적인 작용을 합니다. (When the motor is connected to a power source, the rotating torgue generated by electromagnetic field is transferred to other machine's belt or gear by a shaft. That is, the force is directly connected to the axis of rotation in order to operate something explicitly.)
- 이 MOTOR는 모든 기기의 심장과 같은 중요한 역할을 하는 것입니다. (The motor plays a critical role as a heart of a machine.)
- 한마디로 정의하면 MOTOR란 전기 에너지를 기계 에너지(회전 에너지)로 변환하는 장치입니다. (In brief, the motor is a device that converts electrical energy to mechanical energy (rotational energy).)

(2) MOTOR의 특징 (Characteristics of Motors)

- 전기를 연결하면 회전 운전하여 쉽게 동력원을 얻을 수 있으며, 가정용 기기나, 산업용 기기, 생산 라인의 자동화 등 다양한 용도에 사용되고 있습니다. (When connected to a power source, the motor starts rotating to provide a source of motive power to household electric appliances, industrial equipments, or automated production line and so forth.)

1) 다양하고 풍부한 기종 (Wide Variety of Motors)

- SIZE는 □60㎜ 6W에서부터 □90㎜ 200W까지 INDUCTION, REVERSIBLE, 전자(電磁) BRAKE, TERMINAL BOX, SPEED CONTROL, 전자(電子) BRAKE 등 다양하고 풍부한 MODEL을 가지고 있습니다. (The size ranges are from 60mm/6W to 90mm/200W and there are various and rich assortment of models, including induction motor, reversible motor, electromagnetic brake, terminal box, speed controller, electronic brake, etc.)
- 전세계 지역을 COVER하는 전압 사양 (The operating voltage also covers the worldwide standards)

사용 전압 (VOLTAGE)	국가명 (COUNTRY)	사용 전압 (VOLTAGE)	국가명 (COUNTRY)
100V 50/60Hz	일본 (Japan)	200V 50/60Hz	일본 (Japan)
100V 60Hz	타이페이 (Taipei)	220V 60Hz	한국 (Korea), 타이페이 (Taipei)
115V 60Hz	북미 (North America)	230V 50Hz	유럽 (Europe), 오세아니아 (Oceania)
220V~240V 50Hz	동남 아시아 (Southeast Asia)		

2) 저소음화, 저진동화 (Low Noise and Vibration)

- MOTOR를 사용하는 장소와 조건 등 품질 기준의 강화로 저소음과 저진동을 요구하고 있습니다. (Higher quality requirements for the motor in relation with the place and condition of use ask for low noise and low vibration.)
- 이런 조건을 만족하기 위하여 GEAR 가공의 고정밀화와 SKIVING 절삭법을 채용하고, 또 저소음화 · 저진동을 위하여 진동의 근원이 되는 ROTOR를 100% BALANCE 기계로 확인하여 만들고 있습니다. (To meet the requirements, the precision gear processing and skiving methods are employed to reduce the noise level to a minimum and the rotor, a source of vibration, is verified with 100% balancing machine.)

3) 간편하게 사용 (Ease of Use)

- 사용하는 요구에 의해 최적의 설계 및 제작이 될 수 있도록 MOTOR 및 GEAR BOX를 요구 사양에 맞추어 판매를 하기 때문에 간편하고 안전하게 사용하실 수 있습니다. (The design and production of the motor and the gear box can be customized to the user's specifications. So the user can use it safely and easily.)
- 어디에나 어느 곳이나 사용되는 상용전원에 CONDESER를 연결하여 쉽게 구동하여 동력원을 얻을 수 있습니다. 삼상용 전원에는 CONDENSER가 필요하지 않으므로 MOTOR에 그대로 삼상전원을 연결하여 구동시키면 쉽게 동력원을 얻을 수 있습니다. (By simply connecting a condenser to the commercial electrical source, the user can easily operate to obtain the source of motive power. Since the condenser is not required for a three-phase electrical source, the motor can directly be connected to a three-phase electrical source and obtain dynamic force.)

3. MOTOR의 용어 해설 (Glossary)

(1) 전원(電源)에 대하여 (Electrical Source)

1) 교류(交流, AC : ALTERNATING CURRENT)

- 교류는 직류와 달라서 +극과 −극이 일정한 시간적 주기를 가지고 서로 교차되도록 전원에서 흘러내는 전류로서 전류 및 전압의 방향도 값이 일정한 주기를 가진 정현파가 되어 변화하는 것이고 정확히 시계의 추가 일정의 리듬으로 좌우로 왔다갔다 하고 있는 것과 같습니다. (Unlike the direct current, the alternating current is an electrical current that flows with alternating electrical magnitude between a positive(+) and a negative(−) electrical poles at a certain interval of time. Like a current, the direction of a voltage changes in a form of sine wave at a certain interval of time, just as a clock pendulum swings right and left at a fixed rhythm.)

2) 직류(直流, DC : DIRECT CURRENT)

- 직류에는 전지와 같이 +극과 −극이 항상 일정한 전원에서 흘러내는 전류는 방향이 불변이고 크기도 일정한 것입니다. (The direct current is an electrical current that has a positive(+) and a negative(−) fixed electrical sources like a battery. Therefore the direction and magnitude of the direct current are constant.)
- 전압의 방향도 일정합니다. (The direction of a voltage is also constant.)
- 직류 발생 장치로서는 건전지, 축전지, 직류발전기의 각종 정류기 등이 있습니다. (The examples of a direct current installation include dry batteries, storage batteries, direct current generators, and various rectifiers.)

3) 주파수 (周波數, FREQUENCY)

- 주파수는 교류가 1초간에 반복한 주기의 수입니다. (The frequency is the number of complete alternations of an alternating current per second.)
- 단위는 HERTZ(Hz)로 나타냅니다. (The unit of the frequency is represented by Hertz(Hz).)
- 우리 나라에서는 60Hz의 주파수가 표준으로 채용되고 있으며, 이것은 1초간에 60회 전류의 방향이 +에서 −로 변할 때 일시적으로 전원은 정지하는 형태가 되어 전등은 1초에 120회 꺼졌다 켜졌다 하는 것입니다. 그러나 교류의 점멸은 빠른 속도이므로 사람의 눈으로 판별은 곤란합니다. (In Korea, 60Hz is adopted as a standard frequency, which means the alternating current alternates 60 times per second between positive(+) and negative(−) electrical magnitudes, with 120 times of zero electricity per second at a crossing point of positive(+) and negative(−) electricity, meaning that the light bulb has no electricity instantaneously 120 times per second. However, such stoppages of the electricity are so instantaneous that the human visions can not sense it.)

(2) 정격 (Rating) (定格)

- MOTOR에 정해진 사용 조건에 적합하도록 설계되어 있는 것으로 그 조건에 맞았을 때의 사용 한도를 정격이라고 합니다. (The motor should be designed as to comply with the specified requirements, and the limit of its use under such a design is called rating.)
- 출력에 대한 사용 한도를 정하는 전압, 전류, 회전수, 주파수 등을 지정합니다. 그것을 정격출력(定格出力), 정격전압(定格電壓), 정격전류(定格電流), 정격회전수(定格回轉數), 정격주파수(定格周波數)라고 합니다. (Just as there are ratings specifying the limit as to how much output can be used, there are also rating specifications for voltage, current, number of rotations, and frequency. These are called rated output, rated voltage, rated current, rated number of rotations, and rated frequency.)
- 정격에는 연속정격, 단시간정격, 반복정격 등이 있으며, 당사에서 생산되는 INDUCTION MOTOR는 연속정격이며, REVERSIBLE MOTOR는 단시간(30분) 정격입니다. (The ratings are divided into a continuous rating, an intermittent rating, and an interactive rating. The induction motor we manufacture belongs to a continuous rating. On the other hand, our reversible motor is an intermittent rating (30 minutes).)

1) 연속정격 (Continuous Rating)

- 지정된 조건에서 계속하여 사용 할 때 규정된 온도상승과 제반 조건을 초과하지 않고 연속 사용 가능한 것을 연속정격이라고 합니다. (The continuous rating means that it can guarantee the continuous operation under the specified conditions that will not result in exceeding the specified temperature and comply with the other requirements.)

2) 단시간정격 (Intermittent Rating)

- 지정된 조건으로 규정된 시간 동안 운전 할 때에 규정된 온도상승 등 제반 조건으로 초과하지 않고 사용하는 것을 단시간 정격이라고 합니다. 단시간 정격은 5분, 10분, 15분, 30분, 1시간, 2시간의 6가지를 표준으로 합니다. (The intermittent rating means that the operation within aspecified period of time under the specified conditions will not result in exceeding the specified temperature and comply with the other requirements. There are six standards for the intermittent rating: 5 minutes, 10 minutes, 15 minutes, 30 minutes, 1 hour and 2 hours.)

3) 반복 정격 (Interactive Rating)

- 지정된 조건에서 일정한 부하로 운전과 정지를 주기적으로 반복 사용할 때에 규정된 온도상승 등 기타의 제반 조건으로 초과하지 않는 정격입니다. (The interactive rating means that the cyclic operations of stopping and running with a certain load under the specified conditions will not result in exceeding the specified temperature and comply with the other requirements.)

(3) 출력 (Output) (出力)

- MOTOR가 단위 시간에 할 수 있는 일을 나타내며 회전수와 힘(TORQUE)을 곱한 값으로 결정됩니다. 정격 출력 값을 MOTOR에 표시합니다. (The output is an amount of work accomplished by the motor in unit time and it is represented by the product value of the revolutions and the torque. The rated output is indicated in the motor.)

출력 (Output) = $1.027\times10^{-5}\times T\times N$ [WATTS]
여기서 1.027×10^{-5} : 정수 (Fixed Number)(定數)
T : TORQUE [g · cm]
N : 회전수 (Revolutions per minute) [rpm]
1마력(HP)은 746[WATTS] 입니다.
(1 Horse Power (HP) is 746 [Watts].)

- **정격 출력 (Rated Output)** : 지정된 전압, 주파수의 조건에서 연속적으로 발생되는 출력을 말합니다. 이 지정된 전압, 주파수를 정격전압, 정격주파수라고 합니다. 이때의 정격출력을 일반적으로 MOTOR의 출력이라고 합니다. (The rated output is a continuously generated output under the specified voltage and frequency. These specified voltage and frequency are called a rated voltage and a rated frequency. The rated output is generally called an output of the motor.)

(4) TORQUE와 회전수 (Torque and Numbers of Rotations)

- MOTOR의 TORQUE란 회전체를 돌리기 위한 회전력으로서 그 단위는 [g · ㎝] 또는 [㎏ · ㎝]가 사용됩니다. 나라별로 [N · m], [oz · in], [lb · in]를 사용합니다. (The torque of the motor is a rotatory power that makes a rotor start working and the unit is [g · ㎝] or [㎏ · ㎝]. In America, [N · m], [oz · in], and [lb · in] are in use.)
- 1㎏ · ㎝의 TORQUE라는 것은 회전체의 반경이 1㎝인 외주의 한 점에서 직각 방향으로 1㎏의 힘을 가한 경우의 회전력입니다. (1 kg · cm indicates that 1 kg of force added perpendicularly to 1cm-radius point.)

1) 기동 (Starting) TORQUE (그림1의(in Fig. 1) ①)

- MOTOR가 기동할 때 발생되는 회전력으로 회전자 구속회전력(LOCKED ROTOR TORQUE)라고도 하며, 시동 TORQUE라고도 합니다.(This is a torque when the motor is starting. It is also referred to as a locked rotating torque.)
- 이 회전력보다 큰 힘을 MOTOR에 가하면 MOTOR는 회전되지 않습니다. (If a force greater than the starting torque is applied to the motor, the motor will not work.)

2) 정동 (Stalling) TORQUE (그림1의 (in Fig. 1) ②)

- MOTOR가 낼 수 있는 회전력의 최대치로서 정동 회전력이라고 합니다. (This is a maximum torque that the motor can supply.)
- 운전 중에 최대 TORQUE 이상의 부하가 걸리면 MOTOR는 정지됩니다. (If a load greater than the maximum torque is applied to the motor, the motor will stop.)

3) 정격 (Rated Torque) TORQUE (그림1의 (in Fig. 1) ③)

- MOTOR가 정격 회전수일 때의 TORQUE입니다. (This is a torque when the motor operates at the rated speed.)
- MOTOR에 정격 전압을 가해 정격 출력을 연속적으로 낼 때의 TORQUE를 말합니다. (This is also is a torque when the motor generates a rated output continuously with the rated voltage.)

4) 동기 회전수 (Synchronous Revolutions) (그림1의 (in Fig. 1) ④)

- 전원 주파수와 MOTOR의 극수로 결정되어지는 회전수입니다. (This is the number of rotations determined by the frequency of the power source and the number of poles in the motor.)

$$NS = \frac{120f}{P}\ [rpm]$$

NS : 동기 회전수(Synchronous revolutions per minutes) [rpm]
P : MOTOR의 극수 (Number of poles in a motor)
f : 전원 주파수 (Frequency of a power source) [Hz]
120 : 정수 (Fixed Number)
rpm : 1분당 회전수(REVOLUTION PER MINUTE)

예) 전원 주파수가 60Hz에서 MOTOR가 4극인 경우 (Example) If the motor has 4 poles and the power source frequency is 60Hz,)

$$NS = \frac{120\times60}{4} = 1800\ [rpm]$$

또, 전원 주파수가 50Hz이고 MOTOR가 4극인 경우 (And if the motor has 4 poles and the power source frequency is 50Hz,)

$$NS = \frac{120\times50}{4} = 1500\ [rpm]$$

5) 무부하 회전수 (그림1의 ⑤) (No-load Revolutions(⑤ in Fig. 1))

- MOTOR 출력 축에 아무것도 걸지 않고 MOTOR를 회전시켰을 때의 회전수로 INDUCTION MOTOR나, REVERSIBLE MOTOR에서는 동기 회전수보다 약 20~80[rpm] 정도 낮게 회전됩니다. (This is the number of revolutions when the motor is operating while no load is imposed on the output axis. In case of an induction motor or a reversible motor, the number of revolutions is 20~80[rpm] less than the number of synchronous revolutions.)

6) 정격 회전수 (그림1의 ⑥) (Rated Revolutions(⑥ in Fig. 1))

- MOTOR에 정격 부하를 걸고 정격 출력을 낼 때의 회전수로 사용상 가장 이상적인 회전수입니다. (This is the number of revolutions when the motor is operating with the rated load for generating the rated output. This is an ideal number of revolutions for use.)

7) SLIP

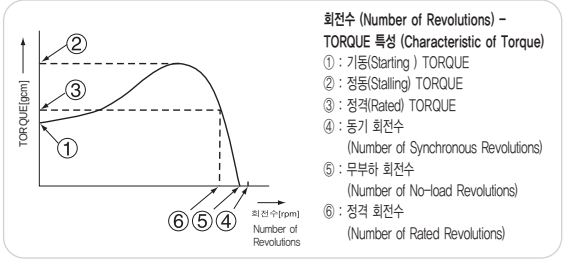
- 회전수를 다른 방법으로 표현하는 것이며 다음 식으로 표시합니다. (This is another way of expressing the number of revolutions and it is represented by the following equation.)

$$S = \frac{NS - N}{NS} \quad 또는(or)\ N = NS \times (1-S)$$

여기서 NS : 동기 회전수 (Synchronous revolutions per minute) [rpm]
N : 임의 부하시 회전수 (Revolutions per minute under an arbitrary load) [rpm]
S : SLIP

예를 들어 4극 60Hz의 INDUCTION MOTOR로 SLIP S=0.1로 운전시킨다면 (For example, if an induction motor of 4 poles and 60Hz is operating with a slip S=0.1,)

$$N = \frac{120\times60}{4}(1-S) = 1800\times(1-0.1) = 1620\ [rpm]$$



〈그림1〉회전수 - TORQUE 특성
〈Fig.1〉 Number of Revolutions - Characteristic of Torque

(5) 정마찰 TORQUE (Static Torque)

- 전자(電磁) BRAKE, CLUTCH BRAKE 등이 정지하고 있는 상태에서 부하를 HOLDING할 때에 내는 TORQUE입니다. (The static torque is a torque experienced when a load is being imposed while the electromagnetic brake and the clutch brake are stopped.)

(6) 허용 TORQUE (Ambient Torque)

- MOTOR를 운전할 때에 사용할 수 있는 최대의 TORQUE를 말합니다. MOTOR의 정격 TORQUE, 온도상승, 조합하는 GEARHEAD의 강도에 의해 제한됩니다. (The ambient torque is a maximum torque allowed to use when the motor is operating. This torque has a limitation by the rated torque, the temperature-rise, and the strength of the assembled gearhead.)

(7) OVER RUN

- 전원을 차단한 순간부터 정지하기까지 MOTOR의 초과회전을 각도(회전수)로 나타낸 것입니다. (This is an excessive number of revolutions, expressed as angular degrees, that the motor makes from the moment of power shut-off until the motor stops.)

(8) GEAR HEAD

1) 감속비 (Gear Ratio)

- GEAR HEAD가 MOTOR의 회전수를 감속하는 비율입니다. (This is a rate in which the gearhead decelerates the motor's rpm.)
- MOTOR 회전수는 GEAR HEAD 출력 축에서는 $\frac{1}{\text{감속비}}$ 가 됩니다. GEAR HEAD 감속비에는 50Hz, 60Hz에서의 MOTOR 회전수의 차이에 대응하여 GEAR HEAD의 출력축의 회전수를 동일하게 하기 위하여 3, 5, 7.5, 12.5, 15 ……라고 하는 계열과 그 1.2배의 감속비인 3.6, 6, 9, 15, 18 ……의 계열이 있습니다. (The number of rotations of the motor at the output axis of the gearhead is 1/Gear Ratio. The gear ratio has two kinds of rates in order to make the number of rotation of gearhead's output shaft in the motor between 50Hz and 60Hz equal each other. The one set of ratios are 3, 5, 7.5, 12.5, 15 …… and the other set ratios are 1.2 times of the former set, that is, 3.6, 6, 9, 15, 18 …….)
- 50Hz지역에서 감속비 3인 경우와 60Hz 지역에서 감속비 3.6은 GEAR HEAD 출력축 회전수가 거의 동일합니다. (The number of rotations for the gearhead's output shaft is almost the same between the gear ratio of 3 in the area that uses 50Hz and the gear ratio of 3.6 in the area of 60Hz.)
- 물론 50Hz지역이나, 60Hz지역이나 모든 GEAR HEAD를 사용할 수 있습니다. (Naturally, any gearhead is allowed to use either in 50Hz area or 60Hz area.)

2) 최대 허용 TORQUE (Maximum Ambient Torque)

- GEAR HEAD에 걸리는 최대의 부하 TORQUE입니다. (This is a torque with a maximum load imposed on the gearhead.)
- GEAR HEAD에 사용하고 있는 치차(齒車), 축수(軸受)의 재질, 크기 등의 기계적 강도에 의해 정해지므로 GEAR HEAD의 종류, 감속비에 따라 달라집니다. (Since this torque is determined by the mechanical factors such as material and size of the gear and pinion used with the gearhead, it varies depending on the type of gearhead and gear ratio.)

3) SERVICE FACTOR

- GEAR HEAD의 수명을 추정할 때 사용하는 계수입니다. (This is a coefficient used to estimate the lifetime of the gearhead.)
- 부하의 종류와 사용 조건에 대하여 수명시험 등에 의하여 경험적으로 결정하는 수치입니다. (This is an empirically determined value based on the results of the lifetime test conducted under the given load and the conditions of use.)

4) 전달 효율 (Delivery Efficiency Rate)

- MOTOR에 GEAR HEAD를 접속하여 TORQUE를 증폭시킬 때의 효율로서 %로 표시합니다. GEAR HEAD에 사용하고 있는 축수(軸受), 치차(齒車)의 마찰 및 윤활유의 저항 등으로 결정됩니다. (This is an efficiency rate when the torque is amplified by connecting the gearhead to the motor and it is represented by percentage(%). It is determined by the resistance of the lubricant as well as the friction of pinion and gear used with the gearhead.)
- 전달효율을 GEAR HEAD 감속단수 1단당 대략 90%로 되어 2단은 81%이며, 감속비가 커지면 감속단수가 증가되어 3단의 전달효율은 73%, 4단의 전달효율은 66%, 5단의 전달효율은 59%로 저하됩니다. (The delivery efficiency rate is 90% for each gear therefore the efficiency rate is 81% for 2nd gear, 73% for 3rd gear, 66% for 4th gear, and 59% for 5th gear. If gear ratio is higher, the number of gear will increase and the efficiency rate will decrease.)

5) OVERHUNG 하중(Load)

- GEAR HEAD 출력 축에 직각 방향으로 걸리는 하중입니다. (This is a load received vertical to the gearhead's output shaft.)
- GEAR HEAD에 걸리는 OVERHUNG 하중의 최대치를 허용 OVERHUNG 하중이라고 하고 GEAR HEAD의 종류 및 SHAFT 선단에서의 거리에 따라 달라집니다. (The maximum overhung load at the gearhead is called the ambient overhung load. The value varies depending on the type of the gearhead and the distance from the end of the shaft to the gearhead.)
- BELT 구동일 때의 장력 등이 이것에 해당됩니다.

6) THRUST 하중 (THRUST Load)

- GEAR HEAD 출력 축에 축방향으로 걸리는 하중입니다. (This is a load received horizontal to the gearhead's output shaft.)
- GEAR HEAD에 걸리는 THRUST 하중의 최대치를 허용 THRUST 하중이라하고 GEAR HEAD의 종류에 따라 달라집니다. (The maximum thrust load at the gearhead is called the ambient thrust load. The value varies depending on the type of the gearhead.)

4. Motor의 온도상승 (Motor Temperature Rise)

(1) Motor의 온도상승과 절연 (Motor Temperature Rise and Insulation)

- Motor에 전류를 흘리면 열이 발생됩니다. 이것은 Coil이나 도체의 저항에 의해 Motor의 통전부에 발생되는 동손, 자력선이 지나갈 때의 철심재료의 저항, 철심을 자화시키기 위하여 철손부에 발생되는 철손에 의한 전기적 손실입니다. (The motor generates heat when current flows.The heat is an electrical loss generated by the copper loss of the motor's conducting section, the resistance of the core material experienced when the lines of magnetic force passes, and the core loss developed when the iron core gets magnetized.)

- 마찰손이라고 하는 축수, 공기 등 마찰에 의한 기계적 손실로 인하여 발열이 됩니다. (The heat is generated by the frictional loss and the mechanical loss caused by the air friction, etc.)
- Motor에 발생된 열의 일부는 Motor내에 축적되고, 그 밖에는 복사, 대류, 전도 등에 의해서 외부로 발산됩니다. (Some of the heat generated in the motor is accumulated inside the motor, and the rest is released to the outside by means of radiation, convection, and conduction.)

- Motor가 운전 중에는 Motor 내부에서 발생된 열 손실과 밖으로 방산되는 열과의 차를 온도상승이라고 합니다. (While the motor is running, the temperature difference between the heat loss generated inside the motor and the heat released to the outside of the motor is referred to as a temperature rise.)
- Motor의 운전 중 온도상승이 되어 열이 발생되면 온도가 가장 높은 곳은 권선부가 됩니다. 따라서 Motor의 사용한계는 주위 온도와 Motor의 온도 상승에 의해 제한됩니다. (The heat is generated while the motor is running, and as a result, the temperature rises, with the highest temperature measured in a winding section. Therefore, the use of the motor is restricted from the ambient temperature as well as the temperature of the motor itself.)
- Motor가 운전 중에는 온도상승으로 온도가 높아지게 되나 허용 최고온도 이상은 올라가지 않도록 설계되어 있습니다. (The limitations on use of a motor by the insulation class are shown in the NO TABLE.)
- 당사의 표준 Motor의 절연등급은 SPG 규격 인증품 현황을 참고하여 주십시오.
  또 Induction Motor는 연속으로 사용하여 운전시작 2~3시간 정도 운전하면 온도가 포화되어 규정된 온도 이하로 일정하게 나타납니다. Reversible Motor는 연속적으로는 30분 정격이나, 부하 조건이나 운전 조건(ON/OFF 운전) 등에 따라 운전 시간이 다르게 되어 규정된 온도 이하로 사용된다면 운전시간을 연장하여 사용할 수 있습니다. (Most of our motors belong to Class E, while the motor for UL certification is Class A.
  If the induction motor runs continuously for 2 to 3 hours, its temperature may reach a saturation point, then constantly stays below the specified maximum allowable temperature afterwards. The reversible motor is rated for 30 minutes continuous operation, but the operating time can be varied depending on the load and the operating mode (how often the operation is on and off, and so on). Therefore, if the motor is used at the temperature below the specified maximum allowable temperature, the operating hours can be extended.)

(2) 사용 주위온도 (Ambient Temperature)

- Motor를 사용할 때에는 주위온도가 -10°C에서 40°C의 범위에서 사용하여 주십시오. 사용온도를 초과하는 장소나 Set에서 사용하는 경우에는 Motor를 운전한 후의 온도 상승분과 주위 온도가 더해져 내부 절연부의 열화와 Ball Bearing의 수명이 현저하게 떨어집니다. 또한 주위온도가 너무 낮은 곳에서 사용하여도 주로 기동 특성이 문제가 됩니다. 더불어 Gear Head의 윤활 Grease와 Ball Bearing의 주도가 저하되어 마찰 Torque의 증대로 인하여, 기동이 되지 않거나 기동하는데 있어서 시간이 걸립니다. (It is advised to use the motor at the ambient temperature between −10℃ and +40℃. If the motor is operating in an environment of the temperature higher than the maximum ambient temperature or inside a house, the heat emitted by the increased temperature of the motor is added to the ambient temperature and will significantly reduce the lifetime of the winding coil and the ball bearing. The operation of the motor in a too low temperature environment also causes problems associated with starting of the motor. In addition, the decrease of the interrelative influence of the gearhead's lubricating grease and the ball bearing causes the frictional torque to increase. As a result, the motor does not get started or takes longer to start.)

(3) Motor의 온도상승 측정 방법 (Method of Measuring Temperature Rise in Motor)

- Housing (Motor Case)의 중앙부에 온도기록계의 열전대 (Thermocouple)를 부착한 후 Motor를 운전시켜 Housing부의 온도가 포화되었을 때 온도를 측정하여 주위온도와의 차를 온도 상승이라고 하고 단위는 deg로 하고 있습니다. (A thermocouple of temperature multipoint recorder is attached at the center of the housing (the motor case) in order to check the housing temperature saturation caused by the heat the motor releases. The temperature difference between the saturated temperature and the ambient temperature is called a temperature rise and the unit of the temperature is degree.)
- 일반적으로 Motor에서 온도가 가장 높은 부분은 권선부입니다. 권선부의 최고 허용온도가 절연재료의 종류에 의해 K.S규격으로 규정되어 있습니다. (In general, the part that has a highest temperature in the motor is a winding section. The maximum ambient temperature of the winding section is specified as K.S. standards for each type of insulation material.)
- 온도상승을 구하는 계산법은 다음과 같습니다. (The temperature rise can be derived from the following equation.)

$$\deg(\Delta t) = \frac{R2 - R1}{R1} \times (K + t1) - (t\alpha - t1)$$

여기서,
- R1 : 온도상승 시험전의 권선저항
  (Resistance of winding before the temperature rise test)
- R2 : 온도상승 시험전의 권선저항
  (Resistance of winding after the temperature rise test)
- t1 : 온도상승 시험전의 주위온도
  (Ambient temperature before the temperature rise test)
- ta : 온도상승 시험후의 주위온도
  (Ambient temperature after the temperature rise test)
- K : 상수 234.5 - 동선 (225 - 알루미늄선)
  (Temperature coefficient of the copper wire)

- Motor를 빈번하게 기동, 정지하거나, 회전방향을 전환하거나, Brake 장치에 의해 순간정지를 빈번하게 반복하면 Motor의 온도상승은 더욱 높아집니다. Motor의 온도는 낮을수록 수명에 유리합니다. (The temperature of the motor rises further if the motor is frequently stopped and re-started, or the direction of the rotation is frequently reversed, or the instantaneous stoppage is frequent. The lower the temperature of the motor is, the longer

the lifetime of the motor.)

- Motor 운전 중에 Housing(Motor Case)의 표면온도가 다소 높아지게 되고, 경우에 따라서 부주의로 Motor에 접촉한다든지, 가연성 물질을 가까이 놓으면 사고를 초래 할 수 있으므로 주의하여 주십시오. (During the operation of the motor, the temperature of the housing (motor case) surface may rise over 90°C, which is not an anomaly. Thus, to prevent accidents, do not touch the motor carelessly nor place flammable substance near the motor.)

(4) 과열 보호 장치 (Overheat Protection Device)

1) Thermally Protected Type

- Motor를 사용 중에 과부하로 운전하거나, 주변온도의 상승으로 과열되었을 때 Motor를 보호하기 위하여 온도 과열 보호 장치인 T.P(Thermal Protector)를 권선 부에 내장한 제품도 있으며, UL 규격, 유럽 규격, 중국 CCC 인증 제품은 T.P가 내장되어 있습니다. (Some of our motors include a built-in T/P(Thermal Protection) device, which is an overheat protection device, in a winding section to protect the motor from being damaged when the motor is overheating or some other accident occurs during the operation. Especially, UL conformance products, CE marked products, and European voltage (220V~240V 50Hz) conformance products have a built-in T/P device to provide protection from overheating.)
- 이 T.P는 열을 감지하는 바이메탈을 채용하여 접점의 개폐 동작이 빠르며, 이상 온도 시 회로를 차단한 후 온도가 정상적으로 내려가면 자동적으로 복귀하는 자동 복귀형 Type 입니다. (This T/P employed a heat sensing bimetal to facilitate the opening and closing of the contact point. This is an automatic reset type, meaning that it shuts off the circuit when an abnormal temperature is detected and that it returns to the original state when the temperature returns to a normal level.)
- 당사의 T.P는 120±5°C에서 동작되는 제품을 사용하고 있습니다. (For T/P, we use 120℃ ± 5℃ (17AM031A5-4 or 7AM031A5-4), a T.I.'s product.)
- 당사의 취부 Size □70㎜, □80㎜, □90㎜의 Motor에 사용되며, Name Plate에 "Thermally Protected" 또는 T.P라고 표기하고 있습니다. (This T/P is used in our motor with frame size of □70㎜, □80㎜, □90㎜. UL conformance motors, CE marked motors, and 220V~240V(230V) 50Hz motors have a built-in T/P and "Thermally Protected" sign is indicated in the name plate.)

2) Impedance Protected Type

- Impedance Protected Type Motor는 권선의 Impedance를 크게 하여, Motor가 구속 되었을 때에도 전류(입력)의 증가를 적게 하여, 온도상승이 허용 최고 온도 이상 넘지 않도록 설계되어 있습니다. (The impedance protected motor is designed to increase the impedance of the winding to reduce the increment of (input) current in order to prevent the temperature from rising up above the maximum ambient temperature even when the motor is restrained. The maximum ambient temperature is 150℃ at the restraint for Class A UL products. (UL certification for our motors is Class A.))
- Motor Name Plate에 "Impedance Protected" 또는 "Z.P"라고 표기하고 있습니다. (The sign "Impedance Protected" or "ZP" is shown in the name plate of the motor.)
- 당사의 취부 Size □60㎜ Motor가 이에 해당됩니다. (Our 60mm motor, which is the UL certified model, belongs to this category.)

MOTOR의 안전규격 (Safety Standards of Motor)

산업용 자동화 및 여러 가지 기기를 설계할 때, 부품의 안전성 특히 Motor의 안전성을 대단히 중요한 문제입니다. 또한 이러한 안전성이 확보 된 Motor를 선정하고 분석하는데 많은 시간이 소요됩니다. SPG의 제품은 Motor와 Motor를 구성하는 부품에 대하여 안전규격을 고려하여 설계 되었습니다. 다음의 내용들은 SPG에서 설계 시 주요하게 고려하는 안전규격에 대하여 기술합니다. (The safety of the parts, in particular, the safety of the motor itself is a key feature in the design of industrial use automation and various kinds of equipment and devices. It takes extensive time to select safe motors and to inspect them. SPG products have been designed to ensure the safety standards of the motor and its parts. Safety standards at the design level of SPG products shall be as follows:)

1. 안전규격의 개요

(1) International Standard (국제)

IECEE/CB Scheme은 전기전자 제품의 안전과 전자파에 대한 국제 인증제도로서 전세계 43개국의 회원국간 중복시험 없이 해당국가의 인증을 획득할 수 있는 국제적인 상호인정 제도입니다. CB제도는 인증을 획득하기 위하여 각 회원기관의 시험 결과를 상호인정하자는 원칙을 근간으로 합니다. 또한 각 국가의 인증 또는 승인기준이 다름으로 인해 발생하는 국제적 유통의 장애물을 제거하기 위해, 여러 국가인증기관의 참여는 IEC규격에 따라 인증 또는 승인을 용이하게 하기 위함입니다. (The IECEE/CB Scheme is an international certification system for safety and maintenance of electromagnetic waves for electronic appliances and is an international cross certification system that can obtain international certification without the need for overlapping tests and inspections in 43 countries in the world. The CB system can principally certify cross test results for each membership organization to obtain certification. In order to get rid of any obstacles at an international distribution level, that might otherwise occur due to varying certification and approval systems in other countries, the certification organizations of many countries have agreed to certify and approve products easily in accordance with IBC standards.)

- CB 인증서는, IECEE에서 사용을 인정한 규격에 근거하여, 어떤 전기 제품의 대표 샘플에 관해서 시험을 실행한 결과, 그 샘플이 그 규격에 적합한 것이 증명된 것을 다른 국가인증기관에 통지하기 위해서, 시험을 실시한 국가의 국가인증기관이 시험 보고서를 첨부하여 발행하는 문서입니다. 신청자로부터 요구가 있으면, 해당하는 국가규격의 차이점(Deviation)에 대한 시험 결과도 포함합니다.
  (A CB certificate shall be released by attaching the test reports from national certification organizations for tests and inspections in order to notify other national certification organizations of the satisfaction of specifications for specific samples after conducting tests of representative samples of electrical products based on standards admitted by the IECEE. Upon the request of an applicant, any test results that deviate from the national standards shall also be included.)
- CB 인증은 회원국 국가 또는 사용자들이 인증을 확인할 수 있도록 시험을 실시한 국가의 국가인증기관이 IECEE에 등록을 하며, 그 인증 내역을 IECEE의 홈페이지에서 열람이 가능합니다.
  (The national certification organization that has conducted individual tests are required to report to either membership countries or users to allow them to inspect the certification and to register the CB certification in the IECEE and to inspect the contents of the certification on IECEE homepage.)

(2) UL Standard (미국(USA))

UL(Underwriters Laboratory)은 인체와 재산에 영향을 줄 수 있는 위험에 관해 재료, 기구, 기기, 설비, 구조, 기술 및 시스템의 조사를 위하여 1894년 미국 화재보험업자 위원회에 의해 설립된 비영리 재단법인입니다.
UL은 전기기기, 기계류 등 1400여 개 대상 품목에 대하여 안전 검사 및 시험을 실시하는 비 강제 인증제도이나, 미국의 개별 주법에서 의무화하고 소비자의 인지도가 높아 실제로 강제적인 인증제도입니다. 또한 미국의 안전규격이 UL에 의해 개발, 보급되고 그 중 약 80%가 미국 국가규격으로 미국 규격협회(ANSI)에서 인가 받고 있습니다.
(The UL (Underwriters Laboratory) is a non-profit foundation established by the fire underwriters of the United States in 1894 in order to inspect materials, apparatus, machinery and tools, facilities, structures, technology and systems carrying risks to human beings and property. The UL, non-compulsory certification system, can conduct safety tests and inspections for more than 1,400 items pertaining to electrical products and machinery, and is a compulsory certification system that is mandatory in accordance with the laws and regulations of each state in the United States in order to maintain a high confidence level with consumers. Also, the UL has developed and distributed the safety standards of the United States and approximately 80% of the standards have been approved by the ANSI, which is the national standard of the United States.)

1) NRTL(Nationally Recognized Testing Laboratorys)

미국 직업안정보건청(OSHA) 산하에서 시행중인 국가 시험 및 인증기관 프로그램 제도로 UL, CSA, ETL 등 14개 시험 및 인증기관이 인정받았습니다. 이 NRTL에 인정된 시험 및 인증기관에서 인증 받은 제품은 미국 내 모든 주에서 판매가 가능합니다. (The national test and certification organization program system under the Occupational Safety and Health Administration (OSHA) of the United States has been recognized by 14 test and certification agencies including the UL, CSA, ETL and others. The products that have been certified by test and certification agencies admitted by the NRTL can be sold throughout the whole United States.)

(3) Canada Standard (캐나다(Canada))

CSA(Canadian Standards Association)는 1919년 캐나다 정부로부터 설립된 비영리 재단법인 입니다. CSA는 인명과 재산을 보호하기 위하여 전기기기, 전기부품, 안전기구 등에 대하여 안전 검사 및 시험을 실시하여 인증서를 발행합니다. 동시에 CSA는 각 주정부의 안전감독관청의 담당자 등으로 구성된 전기안전관련 CSA 자문위원회에 CSA 인증서를 발행한 것에 대한 통지서를 송부하여 캐나다 주정부의 승인을 받는다. 또한 CSA는 캐나다 안전규격을 개발, 보급

하고 캐나다 규격평의회(SCC)에 인가 받고 있습니다. (The CSA (Canadian Standards Association) is a non-profit foundation that the Canadian Government established in 1919. The CSA conducts safety tests and inspections of electrical products, electrical parts and safety apparatus to protect human life and property and is licensed to issue certificates. At the same time, the CSA sends notices of issuances of CSA certifications to the CSA Advisory Committee of electricity safety. The committee consists of clerks in charge of safety supervision agencies for each provincial government, and it is required to get approval from the provincial governments of Canada. Also, the CSA is involved in developing and distributing Canadian safety standards that are required to be approved by the Standard Council of Canada (SCC).)

1) PALCAN(Program for the Accreditation of Laboratories - CANada)

캐나다 규격 평의회(SCC-Standars Council of Canada) 산하에서 시행중인 국가 시험 및 인증기관 프로그램 제도로 CSA, UL, ETL 등 약 100개 시험 및 인증기관이 인정 받았습니다. 이 PALCAN에 인정된 시험 및 인증기관에서 인증 받은 제품은 캐나다 내 모든 주에서 판매가 가능합니다. (The national test and certification program system that is in force under the Standard Council of Canada (SCC) has been approved by approximately 100 testing and certification agencies including the CSA, UL and ETL, etc. The products that have been approved by testing and certification agencies acknowledged by PALCAN can be sold in all of the provinces of Canada.)

(4) EN Standard (유럽 (Europe))

EC는 유럽전기기술위원회(CENELEC)에서 유럽 통합 안전규격을 제정하며, 통합 안전규격은 조화규격(Harmonized Standard)인 EN 규격으로 발행합니다. 인증기관은 EN 규격으로 전기기기, 기계, 부품 등의 안전시험 및 승인을 하고 인증 받은 제품에 인증기관의 마크를 부착합니다. 이러한 인증 마크는 비 강제적인 인증제도이나 인증기관 마크에 대하여 EC 통합 CE Marking 보다 강제 관리되는 측면에서 소비자의 선호하고 있습니다.
이러한 EC 지역의 각국 인증기관은 상호 인증된 제품 또는 부품에 대하여 특별한 조건 없이 인정하고자, IECEE CB Scheme과 동일한 체계를 가지는 CCA (CENELEC Certification Agreement) Scheme과 각 인증기관들이 상호 MRA 체결을 했습니다. (The European Committee for Electro-technical Standardization (CENELEC) of the EC has enacted an integrated safety standard for all of Europe in order to uphold EN standards that represent a uniform standard of integrated safety. Certification authorities engage in the approval of the safety tests for electrical products, machines and parts, etc according to EN standards in order to place their marks on those same products after being certified. The certification marks, non-compulsory certification system, can control the EC integrated CE markings more compulsorily as per the preference of consumers.
To certify mutually certified products and parts without special terms and conditions, the certification authorities of each country in the EC have made a mutual MRA agreement with CCA (CENELEC Certification Agreement) Scheme that possesses the same system as the IECEE CB Scheme.)

(5) CE Marking(유럽 (Europe))

유럽 내에 제품을 유통 또는 판매하고자 하는 공급자는 반드시 그 제품이 해당하는 EU지침에 적합하다는 것을 선언 또는 해당 통지기관(인증기관, Notified Body)의 형식시험 등의 적합성 평가방법을 거쳐 CE마크를 제품에 부착하여야 합니다. 이것은, "CE Marking이 부착되어져 있는 제품은, 그 제품이 부적합한 상태라는 명백한 증거가 없는 한, EU 역내에서의 자유로운 유통을 보장한다"라는 것을 의미하고 있습니다.
주요한 EU 지침은 다음과 같습니다. (Suppliers who want to sell and distribute products in Europe are required to place CE marks on the products after announcing their compliance with EU guidelines or to conduct type tests with a notified body (certification authority). In other words, this means that products with CE marking can be assured of free distribution in the EU region unless those products are found to be improperly used. An EU guideline shall be as follows:)

1) **Machinery Directive(98/37/EC)** : 산업용 기계류가 대상이 되며, 1995.1.1 부터 강제 적용이 되고 있습니다. (This has been compulsorily applied to industrial use machinery since January 1, 1995.)
2) **Low Voltage Directive(2006/95/EC)** : AC 50-1000V(DC 75-1500V)의 전기 제품이 대상이 되며, 1997.1.1 부터 강제 적용이 되고 있습니다. (This has been compulsorily applied to electrical products of AC 50-1000V (DC 75-1500V) since January 1, 1997.)
3) **EMC Directive(89/336/EEC)** : 전기, 전자 제품 및 부품을 포함하여 대부분의 제품이 대상이 되며, 1996.1.1 부터 강제적용이 되고 있습니다. (has been compulsorily applied to electrical products, electronic products and other parts and a majority of other products since January 1, 1996.)

(6) CCC GB Standard(중국 (China))

CCC(China Compulsory product Certification)는 중국이 WTO 가입을 계기로 인증제도의 개선을 위해 중국내수(CCEE) 및 수출입(CCIB)를 2002년 5월부터 하나로 통합, 2003년 8월부터 강제 발효 되었습니다.
CCC 강제 적용 품목은 19개 분류, 132개 품목으로 시작이 되었으나 이 분류 및 품목은 지속적으로 생성되며 새로운 기기들에 대하여 새로운 법령이 만들어지고 있는 상황입니다.
CCC 인증은 여타 국가의 인증처럼 현지화 또는 시험인정을 불허하여, 중국 내 인가 받은 시험소에서만 시험을 할 수 있습니다. (In May 2002, the CCC (China Compulsory product Certification) integrated not only the CCEE of the domestic Chinese market but also the CCIB of export and import business by taking exploiting China's joining the WTO. This has been in force since August 2003.
The items under the CCC initially started from 19 classifications and 132 items, and the classifications and items have been continuously adjusted to enact new laws and regulations for other equipment and apparatus. The CCC certification does not permit either localization or type testing as certification for other countries. This is in order that the testing can be conducted at authorized Chinese laboratories.)

(7) Japan Standard(일본 (Japanese) PSE)



전기용품의 안전을 확보하기 위하여 제조, 판매를 규제해 온 전기용품취체법(전취법 – DENTORI)이 기술진보와 생활환경의 다양화 등에 대응하기 위하여 일본 경제산업성(METI)이 정부 주도의 단속을 민간기관의 자율적인 규제로 전환한다는 취지에서 전기용품안전법(전취법 – DENAN)으로 제정하여 2001년 4월부터 시행하고 있습니다. 이 전안법(DENAN)에서는 강제적인 안전인증을 요구하는 특정전기용품(Specified Product, Category A)과 비강제 특정 전기용품 이외의 전기용품(Non – specified Product, Category B) 2개 분야로 나누고 있습니다.
특정전기용품(Specified Product, Category A)는 일본 경제산업성의 지침을 충족하는 승인된 인증기관에서 적합성이 평가되어야 하며, 제품에 대한 적합성 인증 시 다이아몬드 PSE Mark를 부착합니다.
특정 전기용품 이외의 전기용품(Non– specified Product, Category B)는 비강제 인증으로 Motor의 경우 이 대상에 포함되며, 필요에 의해 적합성 인증 시 원형의 PSE Mark를 부착합니다.
적용되는 규격은 일본 경제상업성 령에 의한 기술기준과 IEC 규격 중 선택할 수 있습니다. (In April 2001, the Ministry of Economy, Trade and Industry (METI) of Japan enacted the Electrical Appliance and Material Safety Law (DENAN: Denki Yohin Anzen Ho) to switch from government-directed control to private the organization's autonomous control. Thus, they have developed the Electrical Appliance Material Control Law (DENTORI) to satisfy technical development requirements as well as to establish a diversified living environment that can regulate the production and sale of electrical and electronic products for safety assurance. The Electrical Appliance and Material Safety Law (DENAN) has classified the products into two categories, that is to say, specified products into category A, requiring compulsory safety certification and non-specified products into category B.
An authorized certification authority that can satisfy the requirements of METI of Japan shall assess the appropriateness of specified products, ie; category A, and it shall affix a Diamond-shaped PSE Mark on the product and therefore satisfy the requirements of METI.
On the other hand, non – specified products, i.e.; category B, –those of non compulsory certification, will include motor products, and a round-shaped PSE mark shall be placed on the products that satisfy the requirements. The applicable standards shall follow either technical standards of METI of Japan or IEC standards.)

(8) Korea Standard(한국 KC)



2009년 3월 전기용품안전관리법을 개정하여, 20개 유형의 법정강제인증의 인증심사 절차를 9개 유형으로 간소화하고, 13개 법정강제인증 마크를 KC(Korea Certification) 마크로 통합하여, 2009년 7월부터 시행하고 있습니다.



인증 분야별로 안전(S), 품질(Q), 환경(E), 보건(H)에 대하여 KC 마크 옆에 부가적으로 표기를 합니다.
적용되는 규격은 기존 K 시리즈 규격과 IEC와 부합이 된 KS C IEC 시리즈 규격 중 선택할 수 있습니다. (In March 2009, the Korean Government revised the Electrical Appliance Safety Control Act to expedite the certification and inspection procedure ofor legal certification from 20 types to 9 types and to integrate 13 legal certification marks into KC (Korea Certification) mark that has been in force since July 2009.
The KC Mark can be added for safety (S), quality (Q), environment (E) and health (H) in each certification category. The applicable standard may follow either the existing K series standard or the KS C IEC series standard that satisfies the IEC.)

2. MOTOR의 안전규격 (Safety Standards of Motor Products)

(1) UL Standards

1) UL50 : Enclosures for Electrical Equipment
이 규격은 전기기기의 보호 구조에 대하여 요구하는 것으로 IEC의 IP 등급과 유사한 등급 분류를 가지고 있습니다. (The standard is required to protect electrical appliances and to match the grades of the IEC.)

2) UL1692 : Polymeric Materials – Coil Forms
이 규격은 Motor 절연시스템에 대한 평가 규격으로 절연등급 A종에 대하여 적용을 합니다. (The standard can assess the insulation systems of the motor and applies it to 'A' grade insulation.)

3) UL1446 : Systems of Insulating Materials – General
이 규격은 Motor 절연시스템 및 절연재질에 대한 평가 규격으로 절연등급 E종 이상에 대하여 적용을 합니다. (This standard can assess insulation systems and materials for motor products and applies an 'E' grade or higher to the insulation.)

4) UL1004-1 : Rotating Electrical Machines – General Requirements
이 규격은 모든 Motor의 구조, 외관 및 성능에 대한 평가 규격으로 2008년 9월 부 UL1004 규격을 대체하여 새롭게 발행이 되었습니다. 따라서 이전 규격인 UL1004로 평가된 Motor는 2010년 9월까지 새로운 규격으로 전환을 해야 합니다.
(In September 2008, the standard for the assessment of structure, appearance and performance of all of motors was updated to replace the UL1004 from September 2008. Therefore, motor products that were tested in accordance with the previous UL1004 need to follow UL1004-1 of the updated standard no later than September 2010.)

5) UL1004-2 : Impedance Protected Motors
이 규격은 Impedance Protected Type Motor에 대한 평가 규격으로 2008년 9월 부 UL2111 규격을 대체하여 새롭게 발행이 되었습니다. 따라서 이전 규격인 UL2111로 평가된 Z.P Type Motor는 2010년 12월까지 새로운 규격으로 전환을 해야 하며, UL1004 – 1 규격을 따라야 합니다. (In September 2008, the standard for the assessment of the impedance protected type of motor was updated to replace the UL2111 from September 2008. Therefore, the Z.P type of motor that was

tested in accordance with the previous UL2111 need to conduct additional testing in accordance with the new standard in order to meet the new UL1004-1 standard no later than December 2010.)

6) UL1004-3 : Thermally Protected Motors
이 규격은 Thermal Protected Type Motor에 대한 평가 규격으로 2008년 9월 부 UL2111 규격을 대체하여 새롭게 발행이 되었습니다. 따라서 이전 규격인 UL2111로 평가된 T.P Type Motor는 2010년 12월 까지 새로운 규격으로 전환을 해야 하며, UL1004-1 규격을 따라야 합니다. (In September 2008, the standard for assessment for the thermal protected type of motor was released to replace the existing UL211. Therefore, the T.P type of motor that was tested in accordance with the previous UL2111 need to conduct additional testing in accordance with the new standard to comply with the UL1004-1 standard no later than December 2010.)

7) Motor 관련 추가 규격 (Another Standards of Motor)
UL1004-4 : Electric Generator
UL1004-5 : Fire Pump Motors
UL1004-6 : Servo and Stepper Motors
UL1004-7 : Electronically Protected Motors
UL1004-8 : Inverter Duty Motors

8) UL507 - Electric Fans
이 규격은 600V 이하의 Fan과 Blower에 대한 평가 규격으로, Motor에 대해서는 UL1004-시리즈 규격의 평가를 요구하고 있습니다. (UL507 shall conduct tests of 600V or below for fans and blowers, and the UL1004 series shall be used to conduct tests of motor products.)

(2) CSA Standard

1) CSA C22.2 No.0-M91 : General Requirements - Canadian Electrical Code, Part II
이 규격은 Motor 절연시스템 및 절연재질에 대한 평가 규격으로 절연등급 B종 이상에 대하여 적용을 합니다. (CSA C22.2 No.0-M91 shall be applied to insulation class B or above to conduct the testing of insulation systems and materials related to the motor products.)

2) CSA C22.2 No. 100 : Motors and Generators
이 규격은 모든 Motor 및 Generator의 구조, 외관 및 성능에 대한 평가 규격입니다. (CSA C22.2 No. 100 shall be used to conduct tests of the structure, appearance and performance of all kinds of motors and generators.)

3) CSA C22.2 No. 77 : Motors with Inherent Overheating Protection
이 규격은 열 보호 장치 사용 Motor(Z.P, T.P 또는 etc)에 대한 평가 규격으로 CSA C22.2 No. 100 규격을 따라야 합니다. (CSA C22.2 No. 77 shall be used to conduct tests of Motor (Z.P, T.P and others) for thermal protection systems in order to comply with C22.2 No. 100.)

4) CSA C22.2 No. 113 : Fans and Ventilators
이 규격은 600V 이하의 Fan과 Ventilator에 대한 평가 규격으로, Motor에 대해서는 C22.2 No. 100 및 C22.2 No. 77 규격의 평가를 요구하고 있습니다. (CSA C22.2 No. 113 shall be used to conduct tests of 600V or below for fans and ventilators, and C22.2 No. 100 as well as C22.2 No. 77 shall be used to conduct tests of motors.)

(3) EN Standard (= IEC Standard)

1) EN 60034 series : Rotating Electrical Machines
이 규격들은 산업용 및 상업용 Motor에 대한 정격, 성능 및 구조에 대한 것으로 주요한 규격들로는 다음과 같습니다. (EN 60034 series shall be used to conduct tests regarding the ratings, performances and structures of industrial use motors as well as commercial use motors, and it consists of the following standards:)
- EN 60034-1 : 정격과 성능 (Rating and performance)
- EN 60034-5 : IP 코드(cord)(방진 및 방수 보호등급 (dustproof and waterproof grade))
- EN 60034-6 : IC 코드(cord)(쿨링 방법(cooling methods))
- EN 60034-7 : IM 코드(cord)(마운팅 방법(mounting methods))
- EN 60034-8 : 터미널 마킹 및 회전방향 (Terminal marking and rotation directions)
- EN 60034-11 : 내장 열 보호기 (Built-in thermal protector)
- EN 60034-12 : 삼상 유도전동기의 기동특성 (Features of running of 3-phase induction motor)
- EN 60034-30 : IE 코드(cord)(에너지 효율 등급(energy efficiency grade))

EN 60034 규격은 안전에 대한 요구사항을 다루는 것이 아니므로 완제품의 기기에서 안전에 대한 요건을 다루고 있습니다. (EN 60034 does not cover any safety requirements; therefore the safety requirements of finished products need to be tested.)

2) EN 60664-1 : Insulation Coordination for Equipment within Low - Voltage Systems
이 규격은 저전압(AC 1000V, DC 1500V 미만) Motor에 대하여 성능기준을 토대로 Motor의 공간거리, 연면거리 및 고체 절연거리의 평가 규격입니다. (EN 60664-1 shall be used to conduct tests for clearance, creepage and the solid insulation distance of the motor based on the capacity of low voltage motors (less than AC 1000V and DC 1500V).)

3) EN 62114(EN60085) : Electrical Insulation System - Thermal Classification
이 규격은 Motor 절연시스템 및 절연재질에 대한 평가 규격입니다. (EN 62114(EN60085) shall be used to conduct tests on insulation systems and materials of the motor.)

4) EN 60204-1 : Safety of Machinery - Electrical Equipment of Machines
이 규격은 산업용 Motor의 안전에 대한 요구사항을 다루고 있습니다. (EN 60204-1 shall cover the safety requirements of industrial use motors.)

5) EN 60335-1 : Household and similar Electrical Appliances - Safety
이 규격은 상업용 Motor의 안전에 대한 요구사항을 다루고 있습니다. (EN 60335-1 shall cover the safety requirements of commercial use motors.)

6) EN 60950-1 : Information Technology Equipment - Safety
이 규격은 ITE 기기용 Motor의 안전에 대한 요구사항을 다루고 있습니다. (EN 60950-1 shall cover the safety requirements of motors for ITE equipment and apparatus.)

7) EN 60601-1 : Medical Electrical Equipment, Safety
이 규격은 Medical 기기용 Motor의 안전에 대한 요구사항을 다루고 있습니다. (EN 60601-1 shall cover safety the safety requirements of motors for medical equipment and apparatus.)

(4) GB Standard

1) GB12350-2000 : Safety Requirements for Small - Power Motor

2) GB14711-2006 : Safety Requirements for Small and Medium Rotating Electrical Machines
이 규격들은 중국 강제인증인 CCC 마크 인증을 위한 Motor의 안전에 대한 요구사항을 다루고 있습니다. (Not only GB12350-2000 but also GB14711-2006 shall cover the safety requirements of the motor for CCC mark certification of the Chinese certification.)

3. Controller의 안전규격 (Safety Standard of the Controller)

(1) UL Standards

1) UL508 : Industrial Control Equipment
이 규격은 산업용 콘트롤 기기와 Motor의 사용 및 보호를 위한 안전에 대한 요구사항을 다루고 있습니다. (UL508 shall cover the safety requirements for the use and protection of industrial use control equipment and motors.)

2) UL508C : Power Conversion Equipment
이 규격은 입력 전압 및 주파수를 변환하여 Motor에 공급하는 기기의 안전에 대한 요구사항을 다루고 있습니다. (UL508C shall cover the safety requirements of the equipment and apparatus that supplies power to the motor by converting input voltage and frequency.)

3) UL60730-1A : Automatic Electrical Controls for Household and Similar Use
이 규격은 가정용 및 상업용의 자동 전기 제어장치인 Controller에 대한 안전 요구사항을 다루고 있습니다. (UL60730-1A shall cover the safety requirements of the controller that is used for the automatic power control systems for home use as well as commercial use.)

(2) CSA Standards

1) CSA C22.2 No. 14 : Industrial Control Equipment
이 규격은 산업용 콘트롤 기기와 Motor의 사용 및 보호를 위한 안전에 대한 요구사항을 다루고 있습니다. (CSA C22.2 No. 14 shall cover the safety requirements for the use and protection of industrial use equipment and motors.)

2) CSA · E60730-1 : Automatic Electrical Controls for Household and Similar Use
이 규격은 가정용 및 상업용의 자동 전기 제어장치인 Controller에 대한 안전 요구사항을 다루고 있습니다. (CSA · E60730-1 shall cover the safety requirements of the controller that is applied to the automatic power control systems for home use as well as commercial use.)

(3) EN Standards

1) EN 50178 : Electronic Equipment for Use in Power Installations
이 규격은 전원 설비에 연결하여 Motor 기동 및 운전에 사용하는 전자장비에 대한 안전 요구사항을 다루고 있습니다. (EN 50178 shall cover the safety requirements for electronic equipment that can start and run a motor by connecting it to a power supply.)

2) EN 61800-1 : Adjustable Speed Electrical Power Drive System, D.C. Power Drive System
이 규격은 저전압 가변속 직류 구동시스템에 대하여 정격 사양에 대하여 다루고 있습니다. (Drive System EN 61800-1 shall cover the rating of low voltage and adjustable speed DC power drive systems.)

3) EN 61800-2 : Adjustable Speed Electrical Power Drive System, A.C. Power Drive System
이 규격은 저전압 가변속 교류 구동시스템에 대하여 정격 사양에 대하여 다루고 있습니다.

4) EN 61800-3 : Adjustable Speed Electrical Power Drive System, EMC
이 규격은 저전압 가변속 구동시스템의 EMC 요구사항에 대하여 다루고 있습니다. (EN 61800-2 shall cover the rating of low voltage and adjustable speed AC power drive systems.)

5) EN 61800-5-1 : Adjustable Speed Electrical Power Drive System, Safety, Electrical, Thermal and Energy
이 규격은 저전압 가변속 구동시스템의 전기, 열 및 에너지에 대하여 다루고 있습니다. (EN 61800-3 shall cover the EMC requirements for low voltage and adjustable speed drive systems.)

4. 안전에 대한 주요 고려사항 및 Tests (Test Method based on Standards)

아래에서 열거하는 다양한 Test는 적용하는 규격과 평가 항목에서 몇몇의 차이가 있을 수 있습니다. (Various kinds of tests below

may vary depending upon applicable standards and evaluation items.)

(1) Electrical Insulation System

1) Insulation Materials

SPG의 Motor의 절연등급은 B종 절연을 만족하는 재질을 적용하고 있습니다. 고객의 특별한 요구가 있을 경우, 고객의 요구사항에 맞는 절연등급 재질을 사용하고 있습니다. (IEC60085, UL1692, UL1446, CSA CSS.2 No.0-M91)
SPG의 Motor는 IEC/EN 규격, UL/CSA 규격 및 CCC 규격 인증제품은 절연등급 B종으로 인증 받았습니다.
절연등급은 아래의 Table과 같은 절연 및 내열 등급을 나타냅니다. (The insulation materials of the SPG motor can satisfy the 'B' class of the insulation grade. Upon a customer's special request, material having a suitable insulation grade can be used. (IEC60085, UL1692, UL1446, CSA CSS.2 No.0-M91)
SPG motor has obtained the IEC/EN certification, and UL/CSA and CCC certified products have obtained the certification for the 'B' class of insulation grades.
The insulation grade refers to insulation and heat resistance grades (see Table below):)

Table : 절연등급과 허용 최고온도 (Insulation grades and allowable maximum temperature)

절연등급 (Insulation grade)	허용 최고온도 (allowable maximum temperature)	비고 (remarks)
A종 (class A) A)	105°C(221°F)	
E종 (class E) A), B)	120°C(248°F)	
B종 (class B)	130°C(266°F)	SM-1, SM-4, SM-5 C)
F종 (class F)	155°C(311°F)	SM-3, SM-6, SM-7 C)
H종 (class H	180°C(356°F)	SM-8, SM-9 C)

참고 (Remarks) :

A) IEC/EN 60034 시리즈 규격에는 해당되지 않습니다. (IEC/EN 60034 series standards shall not be applied.)

B) CSA 규격에는 해당되지 않습니다. (CSA standards shall not be applied.)

C) UL1446 규격에 따라서 절연시스템으로 인증 받은 SPG의 절연시스템 모델명입니다. 절연시스템 B종 이상으로 인증 받은 UL Motor의 Name Plate에 명기하고 있습니다.(The model name of the insulation system of SPG has obtained the certification of insulation systems according to UL1446. The name plate has been identified with the UL motor that has obtained the certification of the insulation system 'B' class or higher.)

2) 기기의 보호구조 (Equipment Protection Structure)

- IEC529, IEC34-5 규격에 의하여, 기기 보호 구조에 대하여 방진(防塵), 방수(防水)의 등급을 규정하고 있습니다. (IEC529 and IEC34-5 standards specify the class of dustproof and waterproof in terms of the equipment protection structure.)
- 방진(防塵), 방수(防水)에 대한 등급 분류에 의한 표시방법은 다음과 같습니다. (The class indications of dustproof and waterproof are as follows.)

I P □ □
- 방수(防水) 보호등급(Waterproof Protection Class)(두번째 번호(2nd digit))
- 방진(防塵) 보호등급(Dustproof Protection Class) (첫번째 번호(1st digit))

- 방진(防塵), 방수(防水)에 대한 등급분류 방법 및 시험 방법에 대하여는 아래의 표와 같습니다.(The classification and test methods of dustproof and waterproof are shown in the table below.)

(1) 방진(防塵)에 대한 등급 분류(The classification of dustproof)(첫번째 번호(1st digit))

IP표시 (Indication)	방진(防塵)에 대한 보호 형식 (Protection Specifications for Dust-proof)	
	보호정도 (Protection Level)	시험조건 (Test Requirement)
IP0□	없음 (None)	없음 (None)
IP1□	손의 접근으로부터의 보호 (Protected from the access of a hand)	직경 30㎜ 이상의 고형(固形) 이물체(異物體)가 침투되지 않을 것 (A solid foreign material of diameter greater than 30㎜ should not infiltrate)
IP2□	손가락의 접근으로부터의 보호 (Protected from the access of a finger)	직경 12㎜ 이상의 고형(固形) 이물체(異物體)가 침투되지 않을 것 (A solid foreign material of diameter greater than 12㎜ should not infiltrate)
IP3□	공구의 선단 등으로부터의 보호 (Protected against the tool's edge)	직경 2.5㎜ 이상의 고형(固形) 이물체(異物體)가 침투되지 않을 것 (A solid foreign material of diameter greater than 2.5㎜ should not infiltrate)
IP4□	WIRE 등으로부터의 보호 (Protected against the wire)	직경 1.0㎜ 이상의 고형(固形) 이물체(異物體)가 침투되지 않을 것 (A solid foreign material of diameter greater than 1.0㎜ should not infiltrate)
IP5□	분진(粉塵)으로부터의 보호 (Protected against the dust)	정상 동작을 방해하는 분진(粉塵)이 침투되지 않을 것 (Dust that can cause malfunction should not infiltrate)
IP6□	완전(完全)한 방진(防塵) 구조 (Perfect dust-proof structure)	분진(粉塵)의 침투로부터 완전하게 보호 될 것 (Provide perfect protection against the infiltration of dust)

(2) 방수(防水)에 대한 등급분류The classification of waterproof(두번째 번호(2nd digit))

IP표시 (Indication)	방진(防塵)에 대한 보호 형식 (Protection Specifications for Dust-proof)	
	보호정도 (Protection Level)	시험조건 (Test Requirement)
IP□0	없음 (None)	없음 (None)
IP□1	수직(垂直)으로 떨어지는 물방울로부터의 보호 (Protected from the water-drop dropping vertically)	200㎜의 높이에서 3~5ℓ /분의 물방울을 10분간 떨어뜨린다. (Drop water-drops of 3~5ℓ /min for 10 minutes at 200㎜ height)
IP□2	수직(垂直)의 15°범위에서 떨어지는 물방울로부터의 보호 (Protected from the water-drop dropping within a range of 15° from the vertical direction)	200㎜의 높이에서 15°범위로 3~5ℓ /분의 물방울을 10분간 떨어뜨린다. (Drop water-drops of 3~5ℓ /min within a range of 15° for 10 minutes at 200㎜ height)
IP□3	수직(垂直)의 60°범위에서 뿌려지는 물로부터의 보호 (Protected from the water-drop dropping within a range of 60° from the vertical direction)	200㎜의 높이에서 60°범위로 10ℓ /분의 물을 10분간 뿌린다. (Spray water of 10ℓ /min within a range of 60° for 10 minutes at 200㎜ height)
IP□4	전(全)방향으로 비산(飛散)되는 물로부터의 보호 (Protected from the water splattering from all directions)	300~500㎜의 거리에서 전(全)방향으로 10ℓ /분의 물을 10분간 뿌린다. (Spray water of 10ℓ /min in all directions for 10 minutes at 300~500㎜ distance)
IP□5	전(全)방향에서 쏟아지는 물로부터의 보호 (Protected from the water pouring from all directions)	3m의 거리로부터 全방향으로 12.5ℓ /분 · 30kPa의 물을 3분간 쏟아 붓는다. (Spray water of 12.5ℓ /min 30kPa in all directions for 3 minutes at 3m distance)
IP□6	파도와 같이 강력하게 쏟아지는 물로부터의 보호 (Protected from strong water pouring such as sea wave)	3m의 거리로부터 全방향으로 100ℓ /분 · 100kPa의 물을 3분간 쏟아 붓는다. (Spray water of 30ℓ /min 100kPa in all directions for 3 minutes at 3m distance)
IP□7	일정한 조건에서 물에 잠겨서도 사용 가능 (Possible to use while immersed in the water under certain conditions)	물밑 1m에서 30분간 (30 minutes at 1m under the water)
IP□8	물밑에서 사용 가능 (Possible to use under the water)	사용자와 제조자 측과의 협의에 의하여 (Subject to an agreement between user and manufacture)

주1(Note1)) 당사의 CE MARK MOTOR는 모두 IEC529, IEC34-5의 규정에 의해 기기의 보호 구조로 되어 있으며, 각 MOTOR의 IP등급은 NAME PLATE에 기재되어 있습니다. (All of our CE marked motors are built to the equipment protection structure under the provisions of IEC529 and IEC34-5 and the motor's IP class is indicated in the name plate.)

주2(Note2)) IP23등급의 LEAD WIRE TYPE MOTOR는 인출 방향이 DOWNWARD입니다. (Lead wire type motor with IP23 rating has DOWNWARD direction.)

2) 성능시험 (Performance Test)

성능시험은 모든 Motor에 적용이 됩니다. (Conduct performance tests on all motors.)

Test Item \ Standard	UL1004-1, CSA C22.2 No. 100	
Rating Test	Name Plate에 표기된 전압 및 주파수를 인가하여 출력 또는 RPM으로 운전하여 정격 전류 측정합니다. (Apply voltage and frequency in accordance with the markings on the name plate to run the motor at either output or RPM and to measure the rating current.) Name Plate에 표기된 전류는 측정된 값의 ± 10% 내에 들어가야 합니다. (The current marked on the name plate shall not exceed ± 10% of the measurement values.)	
Temperature Test	Continuous Duty	시험 전압은 규격에서 지정된 전압 및 주파수를 인가하여, 정격 전류 또는 정격 출력에서 운전합니다. (Apply voltage and frequency in accordance with standards to run the motor at either the rating current or rating output.) 온도 포화 될 때의 권선의 온도는 Class A-105˚C / B-130˚C / F-155˚C / H-180˚C 이내에 들어가야 합니다.(At the saturation temperature, the temperature of winding shall not exceed Class A-105˚C / B-130˚C / F-155˚C / H-180˚C.)
	Intermittent Duty	시험 전압은 규격에서 지정된 전압 및 주파수를 인가하여, 정격 전류 또는 정격 출력에서 운전 후 지정된 동작 On/Off를 반복합니다. (Apply voltage and frequency in accordance with the standard to run the motor at either the rating current or rating output and then turn it ON/OFF repeatedly.) 온도 포화 될 때의 권선의 온도는 Class A-105˚C / B-130˚C / F-155˚C / H-180˚C 이내에 들어가야 합니다. (At saturation temperature, the temperature of the winding shall not exceed Class A-105˚C / B-130˚C / F-155˚C / H-180˚C.)
Dielectric Voltage -Withstand Test	온도상승 시험 후 Motor는 Motor Case와 Lead Wire에 절연내력 (1000V + 정격전압의 2배/1 분) 시험을 하여 이상이 없어야 합니다. (After the temperature rise test, the motor case and lead wire of the motor shall satisfy tests for their dielectric strength, in other words, two times that of 1,000V plus the rating voltage per minute.)	

(3) 비정상 동작 온도시험 (Temperature tests during abnormal operations)

시험하는 전압 및 주파수는 개별 규격에서 요구하는 조건으로 시험합니다. (Conduct the test for voltage and frequency in accordance with the requirements of each standard.)

1) Impedance Protected Motor

Test Item \ Standard	UL1004-2, CSA C22.2 No. 77
Locked - Rotor or No - Load Temperature test	Impedance Protected Motor의 비정상 동작 온도상승시험 방법은 회전자를 구속하는 구속 온도상승 시험과 무부하 온도상승 시험 중 악조건 하에서 선정을 합니다. (Capacitor 기동/운전 Type은 Capacitor를 연결, Open 또는 Short 상태의 조건이 될 수 있습니다.) Conduct tests for temperature increases for abnormal running of the impedance protected motor: Select the worst conditions between the temperature increase test of the rotor jam and the temperature increase test under a negative load. (The capacitor running and operation type may be under a connection with the capacitor, open or short circuit.) a) 권선의 온도는 Class A-150˚C / B-130˚C / F-155˚C / H-180˚C 이내에 들어와야 합니다. (The temperature of the winding wire shall not exceed Class A-150˚C / B-130˚C / F-155˚C / H-180˚C.) b) 접지에 연결된 휴즈에 이상이 없어야 합니다. (The fuse connected with the ground shall have no disconnection.) c) 구속해제 후 Motor는 정상 동작해야 합니다. (When the jam is released, the motor shall run normally.) d) 시험 중 과다한 발연, 화재 발생, 절연 재질의 손상이 없어야 합니다. (No excessive smoke, fire and material damage, etc shall be produced during test.)
Dielectric Voltage - Withstand Test	구속 또는 무부하 온도상승 시험 후 Motor는 Motor Case와 Lead Wire에 절연내력 (1000V + 정격 전압의 2배/1 분) 시험을 하여 이상이 없어야 합니다. (After the temperature rise test under either jam or no load conditions, the motor shall experience no failure during a test of its dielectric strength (1000V + 2 times of rating voltage per minute) of not only the motor case but also the lead wire.)
Endurance Test	절연내력 시험 후 Motor는 구속(또는 무부하)상태로 15일 간 내구성 시험을 수행합니다. (After the dielectric strength test, conduct a test of the durability of the motor fifteen days under jam (or no load).) a) 접지에 연결된 휴즈에 이상이 없어야 합니다. (The fuse connected with the ground shall have no disconnection.) b) 구속해제 후 Motor는 정상 동작해야 합니다. (When the jam is released, the motor shall run normally.) c) 시험 중 과다한 발연, 화재 발생, 절연 재질의 손상이 없어야 합니다. (No excessive smoke, fire and material damage, etc shall be produced during test.) d) 시험 후 정격 전압의 두 배 전압으로 절연 내력시험을 하여 이상이 없어야 합니다. (No failure of during the dielectric strength test shall occur while conducting tests at two times the rating voltage.)

2) Thermally Protected Motor (Thermally Protected Motor)

시험하는 전압 및 주파수는 개별 규격에서 요구하는 조건으로 시험하며, 열 보호장치 내장 Type Motor에 적용됩니다.
(Test voltage and frequency shall meet the test conditions of each standard, and the built-in, thermally protected motor shall be used.)

Test Item \ Standard	UL1004-3, CSA C22.2 No. 77	
Locked Rotor Temperature Test (Auto-Reset Protector)	Impedance Protected Motor의 비정상 동작 온도상승시험 방법은 회전자를 구속하는 구속 온도상승 시험과 무부하 온도상승 시험 중 악조건 하에서 선정을 합니다.(Conduct the test for temperature increases of the abnormal running of the impedance protected motor: Select the worst conditions between the temperature increase test of the rotor jam and the temperature increase test under no load.) (Capacitor 기동/운전 Type은 Capacitor를 연결, Open 또는 Short 상태의 조건이 될 수 있습니다.(The capacitor running and operation type may be under connection with the capacitor, open or short circuit.)) a) 권선의 온도는 다음과 같습니다. (The temperature of the winding wire shall be as follow) (Class A/B/F/H): • 시험 시작 후 1시간 내 최대 온도 한계 : 200˚C/225˚C/250˚C/275˚C (Maximum temperature within 1 hour after test: 200˚C/225˚C/250˚C/275˚C) • 72시간 종료 전 1시간 내 최대 온도 한계 : 175˚C/200˚C/225˚C/250˚C (Maximum temperature within 1 hour after test and 72 hours before the test: 175˚C/200˚C/225˚C/250˚C) b) 접지에 연결된 휴즈에 이상이 없어야 합니다. (The fuse connected with the ground shall have no disconnection.) c) 구속 해제 후 Motor는 정상 동작해야 합니다. (When the jam is released, the motor shall run normally.) d) 시험 중 과다한 발연, 화재 발생, 절연 재질의 손상이 없어야 합니다. (No excessive smoke, fire and material damage, etc shall be produced during the test.)	
Dielectric Voltage - Withstand Test	구속 또는 무부하 온도상승 시험 후 Motor는 Motor Case와 Lead Wire에 절연내력 (1000V + 정격 전압의 2배/1 분) 시험을 하여 이상이 없어야 합니다. (After the temperature rise test under either jam or no load, the motor shall have no failure during the test for dielectric strength (1000V + 2 times of rating voltage per minute) of not only the motor case but also the lead wire.)	
Endurance Test	절연내력 시험 후 Motor는 구속(또는 무부하)상태로 15일 간 내구성 시험을 수행합니다. (After the dielectric strength test, conduct a test for the durability of the motor fifteen days under jam (or no load).) a) 접지에 연결된 휴즈에 이상이 없어야 합니다. (The fuse connected with the ground shall have no disconnection.) b) 구속해제 후 Motor는 정상 동작해야 합니다. (When the jam is released, the motor shall run normally.) c) 시험 중 과다한 발연, 화재 발생, 절연 재질의 손상이 없어야 합니다. (No excessive smoke, fire and material damage, etc shall be produced during test.) d) 시험 후 절연 내력시험(정격 전압의 두 배 전압)을 하여 이상이 없어야 합니다. (No failure during the dielectric strength test shall occur when conducting the test at two times the normal rating voltage.)	
Running Heating Temperature Test	Continuous Duty Motor	정격 부하에서 운전을 시작하여 온도 보호장치가 동작하기 전 최대 부하운전 시 권선의 온도를 측정합니다. 온도 한계는 Class A-140˚C / B-165˚C / F-190˚C / H-215˚C 미만 입니다. (Measure the temperature of the winding wire at the maximum load operation before the temperature protection system runs after the motor starts to run at the rating load. The temperature limit shall be less than Class A-140˚C / B-165˚C / F-190˚C / H-215˚C.)
	Polyphase Motor	Polyphase Motor는 정격 부하에서 운전 중 단상의 조건으로 결상 한 후 운전합니다. (모든 상에 대하여 시험이 되어져야 합니다.) 온도 보호장치가 동작하기 전 최대 부하운전 시 권선의 온도를 측정합니다. 이때 측정된 값은 Class A-140˚C / B-165˚C / F-190˚C / H-215˚C 이내에 들어와야 하며, 결상 운전 시 보호장치가 동작한다면 구속 온도 상승시험의 권선 최대 온도 한계 값 미만이 되어야 합니다. (The Polyphase motor runs after a single phase and a phase failure during the running of the rating load. (Conduct a test of all of the phases.) Measure the temperature of the winding wire at the maximum load operation before the temperature protection runs. The measurement value shall not exceed Class A-140˚C / B-165˚C / F-190˚C / H-215˚C, and it shall be less than the maximum temperature limit of the winding wire of the jam temperature rise test when the protection system runs at the phase failure.)
	Intermittent Duty Motor	정격 부하에서 운전을 시작하여 온도 보호장치가 동작한다면, 무부하 조건 및 전압을 강압하여 보호장치 동작하기 전 최대 권선의 온도를 측정합니다. 온도 한계는 Class A-140˚C / B-165˚C / F-190˚C / H-215˚C 미만 입니다. (When the temperature protection system runs after running at the rating load, measure the maximum temperature of winding wire at no load and by lowering the voltage before the running of the protection system. The temperature limit shall be less than Class A-140˚C / B-165˚C / F-190˚C / H-215˚C.)

Running Heating Temperature Test	Air – over Motor	1) 정격 부하에서 운전 시와 무부하에서 운전 시 온도 보호장치가 동작하지 않는 경우, 권선의 온도 측정 값은 Class A-140˚C / B-165˚C / F-190˚C / H-215˚C 이내에 들어와야 합니다. (When the temperature protection system does not run at the rating load and no load, the temperature measurement value of the winding wire shall not exceed Class A-140˚C / B-165˚C / F-190˚C / H-215˚C.) 2) 정격 부하에서 운전 시와 무부하에서 운전 시 모두 온도 보호장치가 동작하는 경우, 권선의 온도 측정 값은 구속 온도 상승시험 한계 미만이 되어야 합니다. (When the temperature protection system runs at the rating load and no load, the temperature measurement value of the winding wire shall not exceed the temperature rise test limit of the jam of the winding wire.)
	Polyphase Air – Over Motor	Polyphase Air – Over Motor는 정격 부하에서 운전 중 단상의 조건으로 결상 한 후 운전합니다. (The Polyphase Air – Over Motor shall run at a single phase during the rating load operation after a phase failure.)(모든 상에 대하여 시험이 되어져야 합니다.(Conduct tests of all of the phases).) 정격 부하에서 운전 시와 무부하에서 운전 시 모두 온도 보호장치가 동작하는 경우, 권선의 온도 측정 값은 구속 온도 상승시험 한계 값 미만이 되어야 합니다. (When the temperature protection system runs at an operation level of both the rating load and no load, the temperature measurement value of the winding wire shall not exceed the limit of the temperature rise test.)

5. SPG 제품의 해외 안전규격 인증 (Foreign Safety Standard Certification of SPG Products)

(1) 해외 안전규격 인증 마크 (Certification Mark of Foreign Safety Standards)

다음의 인증 마크는 인증 제품의 Name Plate에 인쇄하고 있습니다. (The name plates of the certified products shall be printed with the specified certification marks below:)

1) UL 인증 (Certification)

UL 규격 및 CSA 규격 인증제품에 부착하며, SPG는 UL 시험소 인정 프로그램 절차에 의해 공인 받은 CTDP Laboratory에서 UL 및 CSA규격 Test를 수행하고 있습니다. (UL certification shall be adhered to certified products of not only the UL standard but also the CSA standard certified products: SPG is currently conducting tests of a UL standard and the CSA standard at a CTDP laboratory that has been approved by a UL laboratory program procedure.)

2) CSA 인증 (CSA Certification)

CSA 규격 및 UL 규격 인증 제품에 부착하며, SPG는 CSA 시험소 인정 프로그램 절차에 의해 공인 받은 CCP Laboratory에서 CSA 및 UL 규격 Test를 수행하고 있습니다. (CSA certification shall be adhered to not only the CSA standard but also the UL standard certified products: SPG is currently conducting tests of UL standards and CSA standards at a CCP laboratory that has been approved by a CSA laboratory program procedure.)

3) 유럽 인증 (European Certification)

TÜV SÜD 및 DEMKO 로 부터 EN 또는 IEC 규격 인증 제품에 부착하며, SPG는 TÜV SÜD 시험소 인정 프로그램 절차에 의해 공인 받은 ACT Laboratory에서 EN 또는 IEC 규격 Test를 수행하고 있습니다. (The European certification shall be adhered to either by the EN standard or by the IEC standard certified products of TUV SUD and DEMKO: SPG is currently conducting tests of either the EN standard or the IBC standard at an ACT laboratory that has been approved by a SUD laboratory program procedure.)

4) 중국 CCC 인증 (Chinese CCC Certification)

중국 CNCA 절차에 따라 CQC로부터 GB 규격 인증 제품에 부착하고 있습니다. (The Chinese CCC certification shall be adhered to by the GB standard certified products of CQC in accordance with the Chinese CNCA procedures.)

5) 기타 인증 마킹 (Other Certification Markings)

EC LVD, EMCD에 따라서 인증 및 선언 제품에 CE Marking을 부착하고 있으며, FCC 절차에 따라서 FCC를 부착하고 있습니다. (The CE markings shall be adhered to certified products in accordance with EC LVD and EMCD, and FCC shall be adhered to in accordance with FCC procedure.)

※ Note

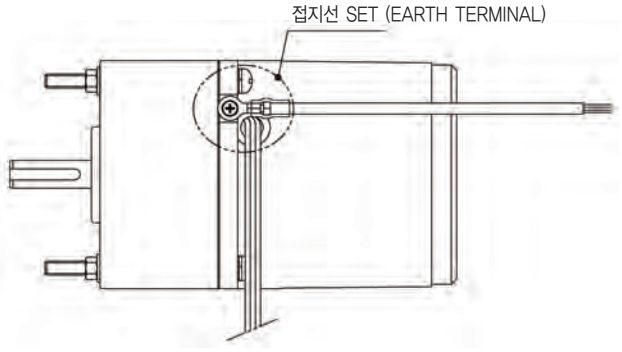
1. UL CTDP Laboratory(Client Test Data Program) : Certificate No. DA525
2. CSA CPC Laboratory(Category Program for Certification) : Certificate No. CPC?0209
3. TÜV SÜD ACT Laboratory(Acceptance of Client's Testing) : Certificate No. ROK0814A

(2) 인증 제품의 사후심사 (Post Inspection of Certified Products)
규격에 대하여 인증 받은 제품은 지속적인 제품 품질 유지를 보장하기 위하여 인증기관의 요건과 규격의 적합성 유지를 위하여 아래와 같이 정기적인 공장 심사를 실시하고 있습니다. (SPG regularly inspects its factories to keep the certification requirements and the appropriateness of the standards so that it can maintain a continuous quality of the products that have been certified in accordance with its standards)
UL : 년 4회 (4 times a year)
CSA : 년 4회 (4 times a year)
Tü V : 년 1회 (1 times a year)
DEMKO : 년 1회 (1 times a year)
CCC : 년 1회 (1 times a year)

6. EARTH 방법 (Method)

- CE MARK용 MOTOR의 EARTH가 표시된 곳에 EARTH를 연결하여 사용하십시오. (Connect the earth line to where the earth mark is indicated in the CE mark conformance motors before use.)
- TERMINAL BOX TYPE MOTOR는 BOX 내부에 EARTH용 단자가 있습니다. 이곳에 LEAD WIRE를 연결하여 사용하십시오.(A terminal box type motor has an earth terminal inside the box. Connect the lead wire to this location.)

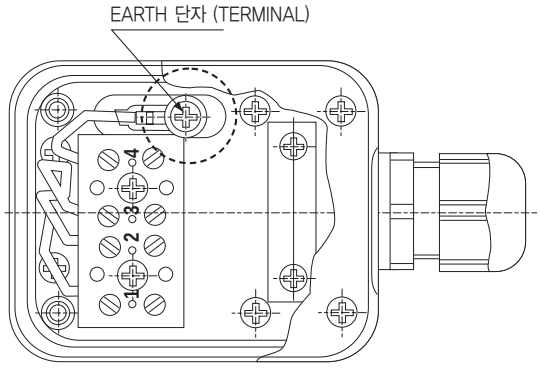
(1) LEAD WIRE TYPE MOTOR의 EARTH 연결 방법 예 (Example of the earth connection for CE Mark conformance general motors)



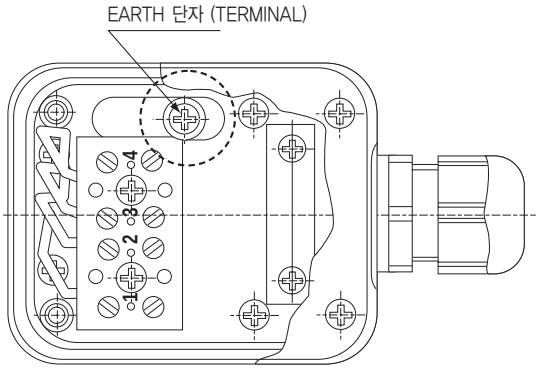
주) 동봉된 접지선 SET의 부품을 이용하여 접지하여 주십시오.
(MOTOR 가공면 위에 이붙이 와샤, 접지선, 고정용 BOLT의 순서로 체결합니다.)
(Note) Rub off the housing paint just beneath the clamping bolt shown in the circle to connect the earth terminal. If the paint is not removed and the earth is connected, the paint provides an insulation effect and the earth does not work.)

(2) TERMINAL BOX TYPE MOTOR의 EARTH 연결 방법 예 (Example of the earth connection for terminal box type motors)

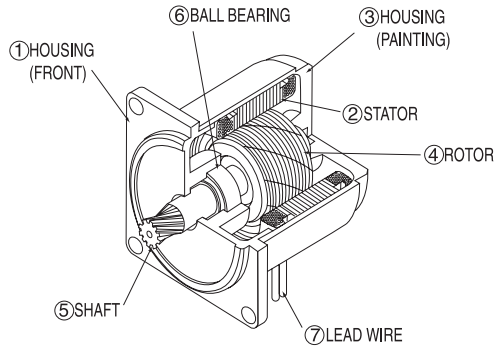
1) 3선용 MOTOR 적용 예 (Example of 3-wire motors)
- 유럽향 및 동남아시아향의 전 MODEL(1Ph. 220~240V 50Hz) (All models destined for Europe and Southeast Asia (1Ph. 220~ 240V 50Hz))
- 국내용 MODEL(1Ph. 220V 60Hz), 일본향 MODEL (1Ph. 100V 50/60Hz, 1Ph. 200V 50/60Hz), UL용 MODEL(1Ph. 115V 60Hz) REVERSIBLE MOTOR (Domestic models (1Ph. 220V 60Hz) Models destined for Japan (1Ph. 100V 50/60Hz ; 1Ph. 200V 50/60Hz) UL models (1Ph. 115V 60Hz) Reversible motors)
- 3상 전원 전 MODEL(3Ph. 200V 50/60Hz, 3Ph. 220V 50/60Hz, 3Ph. 380~440V 50/60Hz) (All three-phase type models(3Ph, 200V 50/60Hz, 3Ph, 220V 50/60Hz, 3Ph, 380~440V 50/60Hz))



2) 4선용 MOTOR 적용 예 (Example of 4-wire motors)
- 국내용 MODEL(1Ph. 220V 60Hz), 일본향 MODEL(1Ph. 100V 50/60Hz, 1Ph. 200V 50/60Hz), UL용 MODEL(1Ph. 115V 60Hz) INDUCTION MOTOR (Domestic models (1Ph. 220V 60Hz) Models destined for Japan (1Ph. 100V 50/60Hz; 1Ph. 200V 50/60Hz) UL models (1Ph. 115V 60Hz) Induction Motors)



MOTOR 구조에 대하여 (MOTOR'S STRUCTURE)



1. ① HOUSING(FRONT), ③ HOUSING(PAINTING)

- HOUSING 또는 FRAME, BRACKET라고 하며 이것은 MOTOR의 외관을 이루는 것이며 미적인 형상, 구조, 정밀가공성이 우수하여야 하며, STATOR내경에 위치한 ROTOR를 정중앙에 오도록 하여 AIR GAP 편심이 되지 않도록 하여 MOTOR 성능이 유지되는 중요한 부품입니다. (The housing is also referred to as a frame or a bracket and it forms motor's exterior covering. Thus its aesthetic shape, structure, and precision process should be excellent. This is an important part that allows the rotor to be positioned exactly at the center of the stator without causing the air gap being eccntric so that the motor can perform its function normally.)
- 재질은 ALUMINUM DIECASTING과 철판 DRAWING 등이 있으며, 폐사의 표준 GEARED MOTOR는 ALUMINUM DIECASTING로 되어 있습니다. (The material is aluminum diecasting or press. Our standard geared motors are made of aluminum diecasting.)

2. ② STATOR

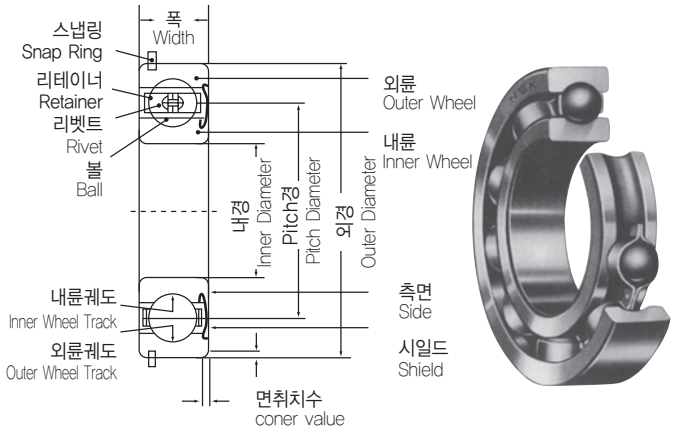
- 고정자라고 하며, 그 역할은 자석이므로 자속이 통하기 쉬운 철심과 전자석을 만들기 위하여 통전용 권선(COIL WINDING)이 있어야 합니다. (The role of the stator is to generate magnetic field. To generate magnetic field, an iron core which the magnetic field can easily pass and a coil winding which makes an electromagnet are required.)

3. ④ ROTOR ⑤ SHAFT

- 회전자라 하며, 고정자에서 받은 전기에너지를 기계적 에너지로 바꾸고 이것을 축(SHAFT)으로부터 외부로 전달하는 MOTOR의 사명과 역할을 하는 중요한 것이기 때문에 전기적 성능과 기계적 강도를 겸비하여야 합니다. (The rotor plays an important role converting the electrical energy received from the stator to the mechanical energy, which is then transferred from the shaft to the outside. Therefore, the rotor should have both electrical function and mechanical strength.)
- 회전자는 철심과 ALUMINUM DIECASTING으로 되어있는 ENDRING과 ALUMINUM BAR로 되어 있습니다. (The rotor consists of an end-ring and an aluminum bar, both of which are aluminum castings.)
- 또한 SHAFT는 튼튼한 강재(鋼材)를 절삭한 것을 사용합니다. (The shaft is made of strong steel.)

4. ⑥ BALL BEARING

- 회전자를 항상 똑바른 위치를 유지하고 고속으로 안전하게 회전시키는 역할을 합니다. 유도 전동기는 AIR GAP(고정자와 회전자 틈새)이 좁아 BEARING을 특히 주의하여 사용하여야 합니다. 특히 표준 GEARED MOTOR는 일반 유도 전동기보다도 AIR GAP이 더 좁습니다. (The ball bearing ensures that the rotor remains at the right position for the reliability and fast rotational motion. The induction motor has a narrow air-gap (a gap between a stator and a rotor) so that a great care should be taken to the bearing when using it. Especially, the standard geared motors have a narrower air gap than the general induction motors.)
- BALL BEARING은 내륜, 외륜, 전동체, 리테이너로 구성되어 있으며, 일반적으로 BALL BEARING의 형식은 여러 가지가 있으나 중, 소형 MOTOR에는 대개 깊은 홈 Ball Bearing을 사용합니다. (The ball bearing consists of inner wheels, outer wheels, vibrating bodies, and retainers. There are many types of ball bearings, but most small and medium motors use deep groove ball bearings.)



단열(單例) 깊은 홈 Ball Bearing (Single Track Deep Groove Ball Bearing)

※ 주) 단열 깊은 홈베어링은 구름 베어링 중에서 가장 대표적인 형식이고 그 용도는 넓습니다. 내륜, 외륜에 설치된 궤도(軌道)의 홈은 전동(轉動)하는 볼의 반경보다 약간 큰 반경의 원호(圓弧)로 구성되어 있습니다. 이 Bearing은 경방향 하중과 축방향 하중 이외에 어느 쪽에도 견딜 수 있습니다. 마찰 TORQUE가 적어 고속회전과 저소음, 저진동이 요구되는 용도에 가장 적합합니다. 이 Bearing에는 개방형 외에 시일드 또는 고무씨일로 밀봉한 Bearing 혹은 외륜외경에 스냅 링이 부착된 Bearing이 있습니다. 일반적으로 강판의 프레스 리테이너가 사용되고 있습니다.

(※ Note) The single track deep groove ball bearing is a representative rolling bearing and can be used in many ways. The groove of the track established at both inner and outer wheels is shaped like an arch of a radius that is a little larger than the radius of the rolling ball. This bearing can withstand the load in any direction except for the load in the rolling and axial directions. The low frictional torque makes this bearing most suitable for the low noise and low vibration applications. In addition to the open type bearing, there is a shielded bearing or a rubber sealed bearing, or a bearing with a snap ring attached to an outside diameter of an outer wheel. Generally, a press retainer is used.)

5. ⑦ LEAD WIRE

- 전원을 고정자의 coil에 공급해주는 역할을 합니다. UL STYLE NO. 3266과 UL STYLE NO. 3271 AWG NO. 20을 사용하고 있습니다. (The lead wire takes responsibility for supplying power source to the stator. The lead wire of all models for a single-phase induction motor and a three-phase 220V or less voltage motor are UL STYLE NO. 3266 AWG NO. 20. And three-phase 380V-440V motors use UL STYLE NO. 3271 AWG NO. 20.)

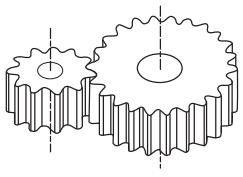
감속기의 개요 (Overview of Gearhead)

1. 감속기의 종류 (Type of Gear)

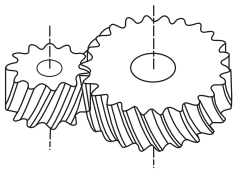
(1) 2축이 평행한 경우 : 평치차, 헬리컬치차, 내치차 등
(**2 spindles running parallel with each other** : Spur Gear, Helical Gear, Internal Gear, etc.)

(2) 2축이 한점에서 교차하는 경우 : 베벨치차 등 (**2 spindles crossing each other at a point** : Bevel Gear, etc.)

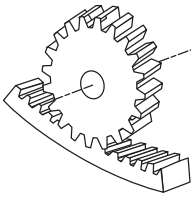
(3) 2축이 엇갈리는 경우 : 나사치차, 웜치차 등 (**2 spindles missing each other** : Crossed Helical Gear, Worm Gear, etc.)



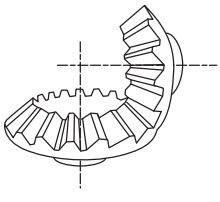
평치차 (SPUR GEAR)



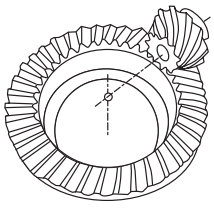
헬리컬치차 (HELICAL GEAR)



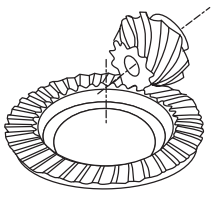
내치차 (INTERNAL GEAR)



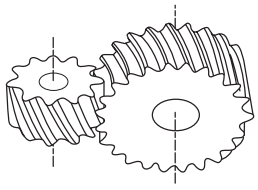
STRAIGHT BEVEL GEAR



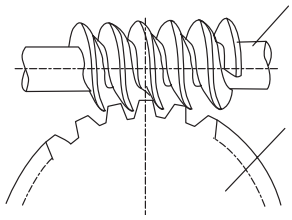
SPIRAL BEVEL GEAR



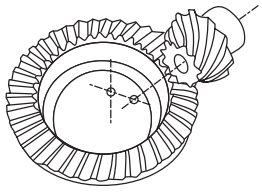
ZEROL BEVEL GEAR



나사치차(CROSSED HELICAL GEAR)



웜치차 (WORM GEAR)



HYPOID BEVEL GEAR

2. 감속기의 특징 (Chariceteristics of Gearhead)

(1) 감속기란 (What is a Gearhead?)

- GEAR를 이용한 속도 변환기로써, 구동원(MOTER)의 회전수를 필요한 회전수로 감속하는 동시에 큰 TORQUE를 얻을 수 있는 기구적인 장치입니다. (As a speed changer uses a gear, the gearhead is an instrumental device that reduces the revolutions of the motor to its necessity and provides a greater torque.)

(2) 감속기의 특징 (Characteristics of Gearhead)

- 소형으로 전달 능력이 큽니다. (Small size with big delivery capability)
- 미끄러짐이 생기지 않아 감속비가 매우 일정합니다. (Fixed reduction ratio by non-slip)
- 내구성이 있습니다. (Durability)
- 감속비를 광범위하게 선택합니다. (Wide spectrum of reduction ratio)

(3) 감속비에 대하여 (Gear Ratio)

- 서로 맞물린 치차에서 피동치차의 잇수를 구동치차의 잇수로 나눈 값이며 당사에서는 구동원 (MOTOR)의 SHAFT와 감속 기어부를 헬리컬치차로 정밀 가공한 결과 종래의 감속기와 비교하여 볼 때 10~15dB의 대폭적인 저소음을 실현하였으며, MOTOR와 간단하게 연결 할 수 있는 전용 감속기가 1/3~1/200(□60㎜은 1/3~1/250) 등 다양한 종류가 있습니다. (The gear ratio in the engaging gears is a value obtained by dividing the number of teeth in the driven gear by the number of teeth in the driving gear. SPG has gone through precision process for the motor shaft and the helical gear, and as a result, SPG could make a remarkable reduction in noise level to 10~15dB. SPG has various types of gearhead, including dedicated gearhead of 1/3~1/200)

• 1/200 이상의 감속비가 필요한 경우에는 중간 감속기 1/10을 사용하면 됩니다. (If a ratio greater than 1/200 is required, inter-decimal gearhead(1/10) can be used head(60㎜ has 1/3~1/250) which can be easily connected with the motor.)

※ REPETITION OF ABOVE SENTENCE - DELETE THE SENTENCE

(4) 감속기의 종류 (Types of Gearhead)

• 당사의 GEAR HEAD의 종류는 크게 외곽 사이즈로 분류하여 □60㎜, □70㎜, □80㎜, □90㎜로 나누어 집니다. (Our gearheads are grossly divided into □60㎜, □70㎜, □80㎜, □90㎜ depending on the exterior size.)

1) □60㎜ GEAR HEAD

• **S 6 ① A ② ③**
여기서 ①은 GEAR HEAD SPINDLE(SHAFT) TYPE으로
D : D-CUT, S : STRAIGHT, K : KEY TYPE입니다.
A는 출력의 크기를 표시하며 6W MOTOR에 적용됩니다.
(is a type of gearhead spindle (shaft). D: D-Cut type;
S : Straight type; K: Key type.
A is an output measurement, corresponding to 6W motors.)
②는 감속비를 표시하며 1/3부터 1/250까지 25가지가 있습니다.
(is a ratio. SPG has 24 ratios from 1/3 to 1/250.)
③은 BEARING TYPE으로 B1 : ALL BALL BEARING,
B : BALL BEARING + METAL BEARING,
M :METAL BEARING TYPE입니다.(is a bearing type. B1: All ball bearing types; B: Ball bearing + Metal bearing type; M: Metal bearing type.)
※ 1/250초과의 감속비가 필요한 경우에는 중간 감속기 S6GX 10B(1/10)를 사용하면 됩니다. (If a ratio greater than 1/200 is required, inter-decmial gearhead S6GX10B(1/10) can be used.)

2) □70㎜ GEAR HEAD

• **S 7 ① A ② ③**
여기서 ①은 GEAR HEAD SPINDLE(SHAFT) TYPE으로
D : D-CUT, S : STRAIGHT, K : KEY TYPE입니다.
A는 출력의 크기를 표시하며 15W MOTOR에 적용됩니다.
(is a type of a gear head spindle (shaft). D: D-Cut type;
S : Straight type; K: Key type.
A is an output measurement, corresponding to 15W motors.)
②는 감속비를 표시하며 1/3부터 1/200까지 24가지가 있습니다.
(is a ratio. SPG has 24 ratios from 1/3 to 1/200.)
③은 BEARING TYPE으로 B1 : ALL BALL BEARING,
B : BALL BEARING + METAL BEARING,
M : METAL BEARING TYPE입니다. (is a bearing type. B: All ball bearing types; B: Ball bearing+Metal bearing type; M: Metal bearing type.)
※ 1/200 이상의 감속비가 필요할 경우는 중간기어헤드 S7GX 10B(1/10)를 사용하면 됩니다. (SPG does not have an appropriate inter-decimal gearhead for use in a ration greater than 1/200.)

3) □80㎜ GEAR HEAD

• S 8 ① A ② ③
여기서 ①은 GEAR HEAD SPINDLE(SHAFT) TYPE으로
D : D-CUT, S : STRAIGHT, K : KEY TYPE입니다.
A는 출력의 크기를 표시하며 15W, 25W MOTOR에 적용됩니다.
(is a type of gearhead spindle (shaft). D: D-Cut type;
S : Straight type; K: Key type.
A is an output measurement, corresponding to 6W to 25W motors. We have two kinds of output for 80㎜ gearhead : 15W and 25W.)
②는 감속비를 표시하며 1/3부터 1/200까지 24가지가 있습니다.
(is a ratio. SPG has 24 ratios from 1/3 to 1/200.)
③은 BEARING TYPE으로 B1 : ALL BALL BEARING,
B : BALL BEARING + METAL BEARING,
M : METAL BEARING TYPE입니다. (is a bearing type. B: All ball bearing types; B: Ball bearing+Metal bearing type; M: Metal bearing type.)
※ 1/200 초과의 감속비가 필요한 경우에는 중간 감속기 S8G X10B(1/10)를 사용하면 됩니다. (If a ratio greater than 1/200 is required, inter-decimal gearhead S8GX10B(1/10) can be used.)

4) □90㎜ GEAR HEAD

• S 9 ① B ② ③ ④
여기서 ①은 GEAR HEAD SPINDLE(SHAFT) TYPE으로
D : D-CUT, S : STRAIGHT, K : KEY TYPE입니다.
B는 출력의 크기를 표시하며 40W MOTOR에 적용됩니다.
(is a type of gearhead spindle (shaft). D: D-Cut type;
S: Straight type; K: Key type.
B is an output measurement, corresponding to 40W motors.)
②는 감속비를 표시하며 1/3부터 1/200까지 24가지가 있습니다.
(is a ratio. SPG has 24 ratios from 1/3 to 1/200.)
③은 BEARING TYPE으로 B1 : ALL BALL BEARING,
B : BALL BEARING + METAL BEARING,
M : METAL BEARING TYPE입니다. (is a bearing type. B1: All ball bearing types; B: Ball bearing+Metal bearing type; M: Metal bearing type.)
④은 MOTOR 및 GEAR HEAD의 열처리 유, 무로써 H : HEAVY IMPACT(열처리)TYPE, L : LIGHT IMPACT(비열처리) TYPE 입니다. (is whether or not the heat treatment work was done on the motor shaft and the gear section. H: Heavy impact type (Heat treatment type); L: Light impact type (Non-heat treatment type).)
※ 1/200 초과의 감속비가 필요한 경우에는 중간감속기 S9GX 10BL 또는 S9GX10BH(1/10)을 사용하면 됩니다. (If a ratio greater than 1/200 is required, inter-decimal gearhead heat treatment type S9GX10BH(1/10) and non-heat treatment type S9GX10BL(1/10) can be used.)

• S 9 ① C ② B ③, S 9 ① C ② B ③-S
여기서 ①은 GEAR HEAD SPINDLE(SHAFT) TYPE으로
D : D-CUT, S : STRAIGHT, K : KEY TYPE입니다.
C는 출력의 크기를 표시하며 60W, 90W, 120W MOTOR에 적용됩니다. (is a type of gearhead spindle (shaft). D : D-Cut type ; S : Straight type ; K : Key type. C is an output

measurement, corresponding to 60W, 90W, and 120W motors.)
②는 감속비를 표시하며 1/3부터 1/200까지 24가지가 있습니다.
B는 BEARING TYPE으로 모든 제품이 ALL BEARING TYPE 입니다. (is a ratio. SPG has 24 ratios from 1/3 to 1/200.
B is a bearing type. The above gearhead is an 'all bearing' type for this unit, so we do not use a metal bearing type.)
③은 MOTOR 및 GEAR HEAD의 열처리 유, 무로써 H : HEAVY IMPACT(열처리) TYPE, L : LIGHT IMPACT(비열처리) TYPE 입니다. (is whether or not the heat treatment work was done on the motor shaft and the gear section. For 60W and 90W motors, H: Heavy impact type (Heat treatment type); L: Light impact type (Non-heat treatment type). For the shaft and gearhead of 120W motors, only H : Heavy impact type (Heat treatment type) is available.)

※ 1/200 초과의 감속비가 필요한 경우에는 중간감속기 S9GX10BL-S 또는 S9GX10BH-S(1/10)을 사용하면 됩니다.
(If a ratio greater than 1/200 is required, inter-decimal gearhead heat treatment type S9GX10BH-S(1/10) and non-heat treatment type S9GX10BL-S(1/10) can be used.)

- S 9 ① (D,H) ② B
여기서 ①은 GEAR HEAD SPINDLE(SHAFT) TYPE으로 D : D-CUT, S : STRAIGHT, K : KEY TYPE입니다.
( )는 출력의 크기를 표시하며 D는 60W, 90W, 120W MOTOR에 적용되며 H는 150W, 180W, 200W MOTOR에 적용됩니다.
(is a type of gearhead spindle (shaft). D: D-Cut type;
S : Straight type; K: Key type.
(D) is an output measurement, corresponding to 60W, 90W, and 120W motors and (H) is an corresponding to 150W, 180W and 200W motors.)
②는 감속비를 표시하며 1/3부터 1/200까지 24가지가 있습니다.
B는 BEARING TYPE으로 모든 제품이 All BEARING TYPE 입니다. (is a gear ratio. SPG has 24 ratios from 1/3 to 1/200.
B is a bearing type. The above gearhead is an 'all bearing' type for this unit, so we do not use a metal bearing type.)

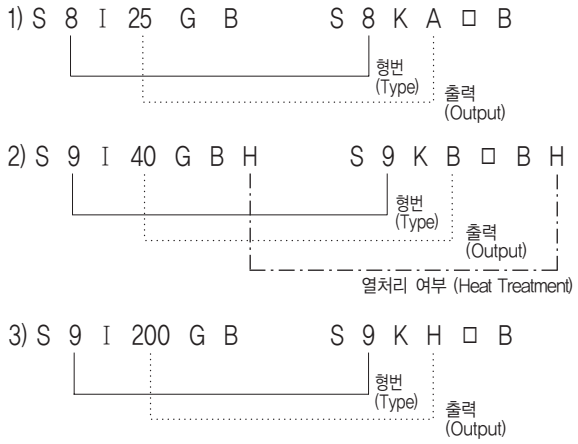
※ 여기에서는 H : HEAVY IMPACT(열처리) TYPE만 있으므로 MOTOR도 반드시 열처리 TYPE을 사용하여 주십시오.
(There is only H:Heavy impact type above the items, gearhead so that the setting motor should be used the same type which is Heavy impact.)

※ 1/200 초과의 감속비는 중간 감속기가 없기 때문에 사용할 수 없습니다. (It is not available to use a gear ratio over 1/200 because there is not an inter-decimal gearhead.)

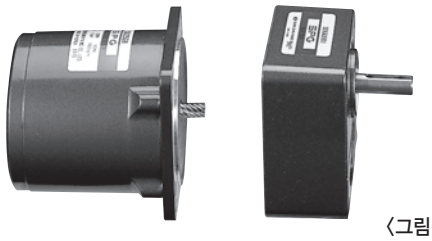
3. MOTOR와 감속기의 조합 방법 (Combination Method of Motor and Gearhead)

- 문자와 숫자(형번)가 동일한 것만 조립 가능하므로 주의하여 조립하여 주십시오. (Assembly shall be done with care, for only the same letters and numbers can be combined together.)

(1) 모터와 감속기를 사용할 때(그림1) 참조 (For examples, refer to (Fig. 1))

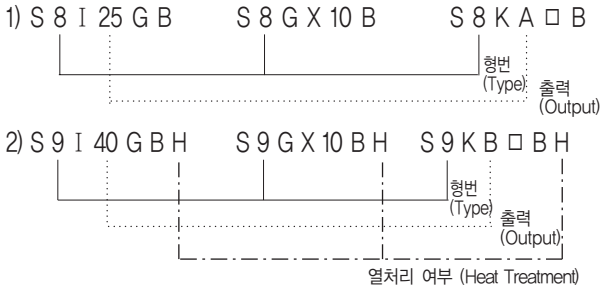


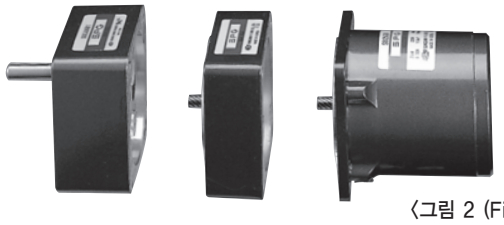
- 문자와 숫자(형번)가 동일한 것만 조립 가능하므로 주의하여 조립하여 주십시오. (Assembly shall be done with care, for only the same letters and numbers can be combined together.)



〈그림 1 (Fig.1)〉

(2) 중간 감속기를 함께 사용할 때(그림2) 참조 (When using an inter-decimal gearhead together, refer to (Fig. 2).)





〈그림 2 (Fig.2)〉

(3) 중간 감속기의 사용은 감속기 단품으로 얻을수 없는 큰 감속비가 필요한 경우에 사용되며, 감속기 단품보다 회전수는 1/10으로 줄어 들지만 감속기 측에서 허용 TORQUE가 정해져 있으므로 중간 감속기를 사용해도 허용 TORQUE는 증가되지 않습니다.
(WHAT ARE YOU TRYING TO SAY?
The number of rotations are reduced by 1/10 but the ambient torgue would not be increased because the ambient torgue is already fixed on gearhead.)

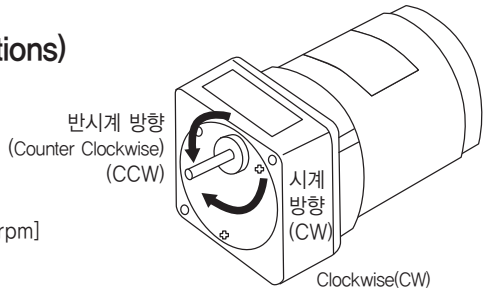
4. 회전수와 회전 방향에 대하여 (Number and Direction of Rotations)

(1) 회전수 (Number of Rotations)

- GEAR HEAD를 직결 조립한 경우의 회전수는 아래의 식에 의하여 계산됩니다.
  (For the directly assembled gearhead, the number of rotations is expressed by the following equation)

$$N_G = \frac{N_M}{i}$$

여기서 NG : GEAR HEAD의 회전수 (Revolutions of a gearhead) [rpm]
NM : MOTOR의 회전수 (Revolutions of a motor) [rpm]
i : GEAR HEAD의 감속비 (gear ratio of a gearhead)



(2) 회전방향 (Direction of Rotations)

- GEAR HEAD 출력축의 회전방향은 감속비에 의해 MOTOR의 회전방향과 동일한 것과 반대방향인 것이 있습니다.(〈표1〉 참조) (Rotating direction of the output shaft in the gearhead is either identical or opposite to the motor's rotating direction depending on the gear ratio. Refer to 〈Fig. 1〉.)
- 중간 감속기(1/10)를 사용하는 경우에는 MOTOR 단품의 회전방향과 같습니다. (In case of using an inter-decimal gearhead(1/10), the rotating direction is the same as the gearhead's direction.)

감속비 / MODEL	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
S6DA□B	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	■	■	■	■	■	■	■	■	■	■
S7KA□B	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	■	■	■	■	■	■	■	■	■	
S8KA□B	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	■	■	■	■	■	■	■	■	■	
S9KB□B( )	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	■	■	■	■	■	■	■	■	■	
S9KC□B( )	■	■	■	■	■	■	■	□	□	□	□	■	■	■	■	■	■	□	□	□	□	□	□	□	
S9KC□B( )-S	■	■	■	■	■	■	■	□	□	□	□	■	■	■	■	■	■	□	□	□	□	□	□	□	
S9KD□B	■	■	■	■	■	■	■	□	□	□	□	■	■	■	■	■	■	□	□	□	□	□	□	□	
S9KH□B	■	■	■	■	■	■	■	□	□	□	□	■	■	■	■	■	■	□	□	□	□	□	□	□	

〈표1 (Table1)〉 GEAR HEAD의 출력축 회전방향
(The rotating direction of the output shaft in the gearhead)

■: MOTOR와 같은 방향 (Same direction as the motor),
□: MOTOR와 반대 방향 (Opppsite direction as the motor)

5. GEAR HEAD를 결합할 때의 출력 TORQUE 선정 (Calculation of Output Torque When Gearhead is Combined)

- GEAR HEAD를 결합할 때의 출력 TORQUE는 다음 식과 같습니다. (When the gearhead is combined, the output torque is calculated as follows.)

$$T_G = T_M \times i \times \eta$$

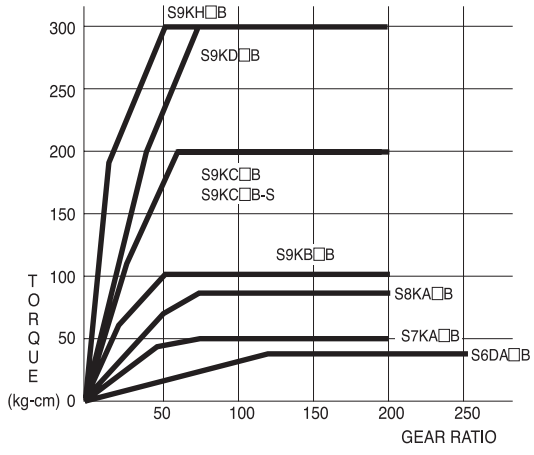
여기서 TG : GEAR HEAD의 출력축 TORQUE(Torque of a gearhead's output shaft), TM : MOTOR의 TORQUE
i : GEAR HEAD의 감속비 (Reduction ratio of a gearhead,),
η : GEAR HEAD의 전달효율 (Delivery efficiency of a gearhead.)
〈표2〉의 GEAR HEAD의 전달 효율 참조 (Refer to (Table 2)for delivery efficiency of a gearhead.)

Ratio / MODEL	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
S6DA□B	81%										73%					66%									
S7KA□B																									
S8KA□B																									
S9KB□B( )																									
S9KC□B( )	81%							73%				66%						59%							
S9KC□B( )-S																									
S9KD□B																									
S9KH□B																									

〈표2 (Table2)〉 GEAR HEAD의 전달효율 (Delivery Efficiency of Gearhead)

6. GEAR HEAD의 최대허용 TORQUE (Maximum Permissible Torque of Gearhead)

- GEAR HEAD의 출력 TORQUE는 감속비에 비례하지만 GEAR의 재질등 기타 조건에 의해 GEAR HEAD에 미치는 허용 TORQUE는 한정되는데 이것을 최대 허용 TORQUE라고 하며, GEAR HEAD의 크기, 감속비에 따라 규정하고 있습니다. (Although the output torque of the gearhead is proportional to the ratio, the torque allowable to the gearhead has a limitation depending on what materials are used and the other conditions. This is called a maximum permissible torque and determined based on the size of the gearhead and the gear ratio.)
- 예를 들면 INDUCTION MOTOR 40W와 감속비 1/100를 결합했을 때 S9I40GB의 정격 TORQUE는 2.5kg · cm 이므로 TG =TM × i × η = 2.5 ×100 × 0.66 = 165kg · cm가 됩니다. 그러나 계산상 165 kg · cm라 하더라도 아래의 〈그림 3〉에서와 같이 S9KB100B의 최대허용 TORQUE는 100kg · cm로 규정합니다. (For example, when a 40W induction motor and a gear ratio of 1/100 is combined, the rated torque of S9I40GB is 2.5kg · cm, which leads to $T_G = T_M \times i \times \eta$ = 2.5×100 ×0.66 = 165kg · cm. Although the calculation turns out to be 165kg · cm, the maximum permissible torque for S9KB100B is prescribed as 100kg · cm as shown in 〈Fig. 3〉 below.)



〈표3(Fig.3)〉 GEAR HEAD의 최대허용 TORQUE
(Maximum Ambient Torque of Gearhead)

7. GEAR HEAD의 수명과 SERVICE FACTOR (Gearhead Lifetime and Service Factor)

- GEAR HEAD의 수명은 보통 축을 지지해주는 방법에 의해 결정되지만, 일반적으로는 부하가 변하는 경우가 많으므로 부하의 종류에 따라 SERVICE FACTOR의 계수를 사용합니다. (〈표3〉 참조) (The lifetime of the gearhead is usually determined by how the shaft is supported. However, since the load varies in general, the lifetime of the gearhead is determined by the service factor based on the load. Refer to Table 3.)
- 예를 들면 일반적인 부하로 하루에 8시간 연속 운전하는 경우 SERVICE FACTOR는 1.0 이 되어 GEAR HEAD의 허용 TORQUE 내에서와 규정된 온도 이내에서 (GEAR HEAD CASE 온도 50℃ 이하) 사용한다면, GEAR HEAD의 수명은 BALL BEARING TYPE은 5,000시간, METAL TYPE은 2,000시간이 됩니다.(〈표4〉 참조) (For example, if the motor is operating with an ordinary load for 8 continuous hours a day, the service factor is 1.0. Thus, if the operation continues within the permissible torque for the gearhead and within the range of prescribed temperature (letting the gearhead case temperature stay below 50℃), the lifetime of the gearhead is 5,000 hours for the ball bearing type and 2000 hours for the metal type. Refer to Table 4.)
- 그러나 BALL BEARING TYPE의 GEAR HEAD를 하루에 24시간 운전한다면 SERVICE FACTOR는 1.5가 되어 수명이 1/1.5로 감소하게 됩니다. 따라서 SERVICE FACTOR를 고려하여 최대 허용 TORQUE가 큰 MOTOR와 GEAR HEAD를 선정하여 사용하십시오. (However, if a ball bearing type of gearhead is operating for 24 hours a day, the service factor becomes 1.5 so that the life time decreases to 1/1.5. Therefore, the service factor should be taken into account to select such a motor and a gearhead which have biggest permissible torque.)

절연등급 (TYPE OF LOAD)	8H 이하(以下)/일(日) (8 HOURS A DAY)	사용 운전의 예 (EXAMPLE OF LOAD)
균일하중 (General Load)	1	일방향으로 연속운전의 경우 (Belt conveyor ; Continuous operation in one direction)
경충격하중 변동하중 (Light Impact Load)	1.5	빈번한 정역운전의 경우 (Frequent starting/operating ; Frequent CAM driving)
충격하중 (Medium Impact Load)	2	순시 정역 및 순시 정지의 경우 (Instantaneous reversal operation; Instantaneous stopping)

〈표3 (Table3)〉 SERVICE FACTOR와 부하의 예 (Example of Load and Service Factor)

BALL BEARING TYPE	5,000시간
METAL TYPE	2,000시간

〈표4 (Table4)〉 표준 수명 (Standard Lifetime)

8. OVERHUNG 하중과 THRUST 하중 (Overhung Load and Thrust Load)

- OVERHUNG이란 외팔보와 같은 것을 말합니다. 외팔보란 2개의 BEARING 또는 지지 장치간의 축이 아니라 지지 외축의 축에 고정시키는 것을 말합니다. (The overhung is something like a cantilever. A cantilever is something fastened on the external axis, not on the shaft between two bearings or two supporting mechanisms.)
- GEAR HEAD 출력축에서의 전달 기구인 CHAIN, 치차, BELT 등을 사용하는 경우에는 OVERHUNG 하중이 걸립니다.〈그림4〉 (When a chain, a gear, or a belt is employed as an output delivery mechanism for the output shaft of a gearhead, the overhung load is loaded upon the shaft.)

$$W = \frac{K \times T \times f}{r}$$

여기서
W : OVERHUNG 하중 (Overhung load) kg]
K : 구동방법에 의한 하중계수 〈표5〉 참조 (Weight coefficient by driving method)
T : GEAR HEAD 출력축에 있어서 전달 동력 [kg · cm] (Delivery force [kg · cm] of a gear head output shaft)
f : SERVICE FACTOR 〈표3〉 참조 (Service factor (Refer to Table 3))
r : 치차, PULLEY등의 유효 반경 [cm] (Effective radius of gear, pulley, etc.)

구동의 방법 (Driving Method)	K
CHAIN, SPROCKET	1
치차 (GEAR)	1.25
V-BELT	1.5
PLAT-BELT	2.5

〈표5 (Table 5)〉 구동 방법에 의한 하중 계수 (Load Coefficient by Driving Method)

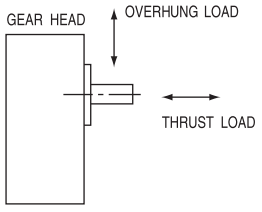
- OVERHUNG 하중은 GEAR HEAD에 직접 부하로 작용하여 감속기 수명에 영향을 줍니다. (The overhung load can be calculated from the following equation.)
- OVERHUNG 하중은 다음 식으로 구할 수 있습니다. 산출한 OVERHUNG 하중치가 〈표6〉의 허용치를 초과하여 사용하면, 축수가 짧은 기간에 파손되고, 출력축의 휨이 발생하고, 반복 하중에 의한 피로 파손을 가져오므로 주의하여 주십시오. (If the motor operates with the calculated overhung load greater than the maximum allowable value in Table 6, care should be taken for the damage of the bearing may shorten the lifetime, bend the output shaft and fatigue deformation due to the repeated load.)
- 이와 같은 경우에는 〈그림5〉와 같이 OVERHUNG 하중에 견딜 수 있는 구조로 설치하여 주십시오 (In such a case, set up the structure of the motor as depicted in (Fig. 5) to withstand the overhung load.)
- 또한 출력축에 직접 부하를 연결하여 사용하는 경우에는 편단 하중 때문에 GEAR HEAD에 가깝게 부하를 취부하여 주십시오. (Also, if a load is directly imposed on the output shaft, place the load as close as possible to the gearhead to avoid one-sided load.)
- 전달기구에 HELICAL GEAR, WORM GEAR등을 사용하는 경우에는 OVERHUNG 하중과 동시에 THRUST 하중도의 허용치를 초과하지 않도록 사용하여 주십시오. (If a helical gear or a worm gear is employed as an output delivery mechanism, make sure not to exceed both the overhung load and the thrust load simultaneously.)

MODEL	GEAR RATIO	최대허용 TORQUE(kg · cm)	허용 OVERHUNG 하중(kg)	허용 THRUST 하중(kg)
S6DT□B	3~18	0.5~3	5	3
	20~250	3~15		
S6DA□B	3~18	1~6	6	3
	20~250	6~30	15	
S7KA□B	3~18	3~18	10	4
	20~200	20~50	20	
S8KA□B	3~18	2~25	12	5
	20~200	30~80	24	
S9KB□B( )	3~18	4~40	30	10
	20~200	40~100	37	
S9KC□B( ) S9KC□B( )-S	3~10	8~40	45	15
	12.5~20	40~80	52	
	25~60 75~200	50~200	60	
S9KD□B( ) S9KH□B( )	3~200	18-300	55	

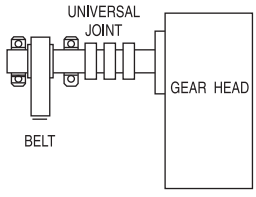
〈표6 (Table 6)〉 허용 OVERHUNG 하중과 허용 THRUST 하중 (Permissible Overhung Load and Permissible Thrust Load)

※ 주의 1 : 최대허용 TORQUE는 감속비에 따라 다릅니다. 각 감속비에 맞는 허용 TORQU E내에서 사용하여 주십시오. (Note 1 : The maximum permissible torque varies depending on the ratio. Use a range of permissible torque for each ratio.)

※ 주의 2 : Metal bearing type(품명에 "M"이 붙은 제품)은 허용 OVERHUNG 하중을 상기치의 70% 이하에서 사용하여 주십시오. (Note 2 : For Metal Bearing Type(marked as "M" in product code), shall be used below 80% of listed permissible overhung load.)



〈그림4 (Fig. 4)〉



〈그림5 (Fig. 5)〉

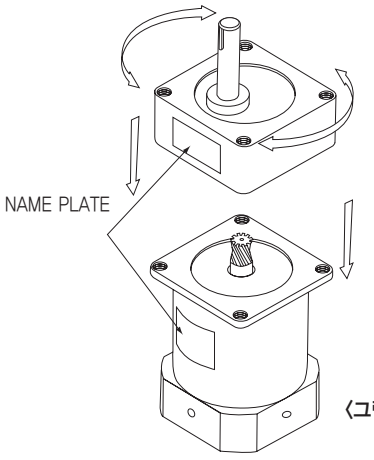
9. GEAR HEAD TYPE별 일람표 (List of Gearhead Type)

GEAR HEAD SIZE	적용 (APPLICABLE) MOTOR	열처리 (Heat Treatment) 유 · 무 (Yes/No)	BEARING TYPE			비고 (REMARKS)
			ALL BALL BEARING	BALL BEARING + METAL BEARING	METAL BEARING	
□60㎜	6W용	무(NO)	S6DA□B1	S6DA□B	S6DA□M	
□70㎜	15W용	무(NO)	S7KA□B1	S7KA□B	S7KA□M	
□80㎜	15W~25W용	무(NO)	S8KA□B1	S8KA□B	S8KA□M	
□90㎜	40W용	무(NO)	S9KB□B1L	S9KB□BL	S9KB□ML	
		유(YES)	S9KB□B1H	S9KB□BH	S9KB□MH	
	60W~90W용	무(NO)	S9KC□BL	-	-	
			S9KC□BL-S	-	-	FLANGE TYPE
	60W~120W용	유(YES)	S9KC□BH	-	-	
			S9KC□BH-S	-	-	FLANGE TYPE
			S9KD□B	-	-	고(HIGH)TORQUE용
	150W~200W용	유(YES)	S9KH□B	-	-	고(HIGH)TORQUE용

10. MOTOR와 GEAR HEAD의 조립 방법 (Assembly Method of Motor and Gearhead)

- MOTOR와 감속기의 조립은 〈그림6〉과 같이 조립면을 맞춰 감속기를 살며시 돌리면서 조립하십시오. 조립할 때에 MOTOR SHAFT에 무리한 힘을 가하거나 GEAR HEAD 내부에 부딪히면 GEAR의 손상에 의해 이상음이 발생되고, 수명이 저하되므로 각별히 주의 하십시오. (To assemble the motor and the gearhead, adjust the assembling faces together as shown in 〈Fig. 6〉 and turn slowly to complete the assembly. Special care shall be taken while assembling not to exert excessive force on the motor shaft nor to hit inside the gearhead to prevent the damage to gearhead which can result in an abnormal noise and a shortening of the lifetime of the motor.)
- MOTOR의 GEAR HEAD를 조립할 때 부속품의 BOLT를 사용해서 조립면의 틈새가 없도록 조립하십시오.(〈표7〉 참조) (When assembling the motor's gearhead, use a specified bolt of that motor to avoid a gap between the assembling faces. Refer to 〈Table 7〉.)

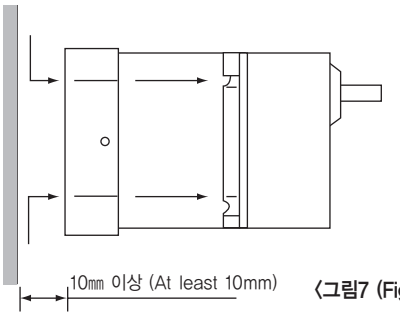
• 냉각 FAN이 부착되어 있는 MOTOR는 흡입구가 막히지 않도록 FAN COVER로 부터 최소 10㎜ 이상 확보하십시오. (〈그림7〉 참조) (For a motor equipped with a cooling fan, leave a space of at least 10mm from the fan cover to prevent the motor's intake hole from being clogged. Refer to 〈Fig. 7〉.)



〈그림6 (Fig.6)〉

SIZE	GEAR HEAD MODEL	LENGTH	중간 감속기 + GEAR HEAD
□60㎜	S6DA3B~S6DA18B	M4×L50	M4×L80
	S6DA20B~S6DA250B	M4×L60	M4×L90
□70㎜	S7KA3B~S7KA18B	M5×L55	M5×L90
	S7KA20B~S7KA200B	M5×L65	M5×L100
□80㎜	S8KA3B~S8KA18B	M5×L55	M5×L90
	S8KA20B~S8KA200B	M5×L65	M5×100
□90㎜	S9KB3B()~S9KB18B()	M6×L75	M6×L112
	S9KB20B()~S9KB200B()	M6×L85	M6×L122
	S9KC3B()~S9C200B()	M6×L95	M6×L130
	S9KC3B()-S~S9KC200B()-S	M6×L25	M6×L65
	S9KD3B~S9KD200B	M6×L20	M6×L65
	S9KH3B~S9KH200B	M6×L20	-

〈표7 (Table7)〉 FASTENING SCREWS

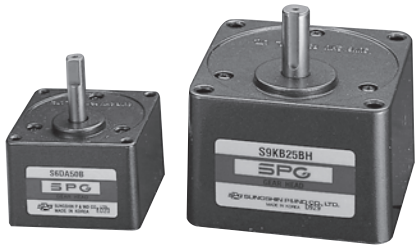


〈그림7 (Fig.7)〉

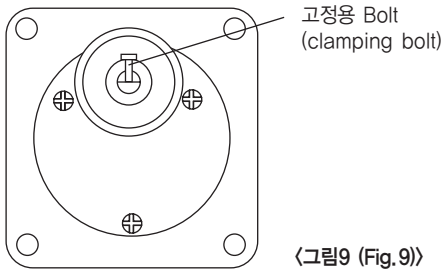
11. 부하의 고정방법 (Fastening of Load)

• GEAR HEAD의 출력축에 부하를 고정 시키기 위해 KEY홈 가공과 작은 GEAR HEAD에는 D-CUT 가공이 있습니다. (〈그림8〉 참조) (To facilitate fastening of a load to the gearhead output shaft, there is a groove in the key and D-Cut in the smaller gearhead. Refer to 〈Fig. 8〉.)

〈그림8 (Fig.8)〉



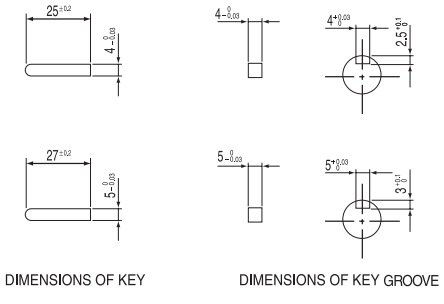
• D-CUT가공인 경우에 D-CUT 가공부에 부하가 공회전하지 않도록 고정용 BOLT를 사용하여 확실하게 고정하여 주십시오. (〈그림9〉 참조) (In case of D-Cut processing, use a clamping bolt to the D-Cut processing area in order to prevent the load from making racing. Refer to 〈Fig. 9〉.)



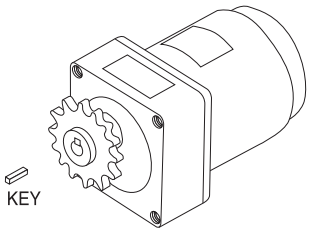
〈그림9 (Fig.9)〉

• KEY홈 가공인 경우에는 전달기구인 CHAIN, PULLEY, SPROCKET 등에 KEY홈을 가공하여 부속품 KEY〈그림10〉을 사용하여 고정하여 주십시오.(〈그림11〉, 〈그림12〉 참조) (In case of key groove processing, make a key groove in a delivery device such as a chain, a pulley, or sprocket and use a key (Fig. 10), a part, to the key groove in order to fasten the load.)

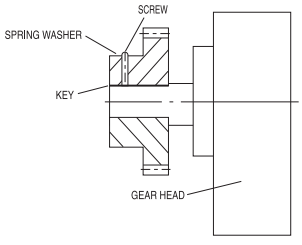
• GEAR HEAD축에 전달 기구를 고정시킬때 충격을 가하면 GEAR HEAD의 파손, 수명 단축의 원인이 되므로 각별히 주의하십시오. (It should not give impact when fastening the gearhead on delivery device. Otherwise, it will cause a damage and shortening of the lifetime.)



〈그림10 (Fig.10)〉



〈그림11 (Fig.11)〉



〈그림12 (Fig.12)〉

허용부하관성(GD^2)에 대하여 (Overview of GD^2)

1. MOTOR와 관성 부하 (Motor and Inertia Load)

- MOTOR로 관성 부하를 시킬때의 운동 방정식은 다음 식과 같습니다. (The equation to calculate the toque that is required for the motor to make the inertia load start rotating is as follows.)

$$T = J\alpha = J \cdot \frac{d\omega}{dt} = \frac{GD^2}{4g} \cdot \frac{d\omega}{dt} = \frac{2\pi}{60} \cdot \frac{GD^2}{4g} \cdot \frac{dn}{dt}$$

여기서 T : TORQUE
J : 관성 MOMENT (Inertia moment)
ω : 각속도 (Angular velocity), t : 시간 (Time)
n : 회전속도 (Rotational velocity)
GD^2 : FLYWHEEL 효과 (effect) [$GD^2 = 4gJ$]
g : 중력 가속도 (Gravitational acceleration) (g =9.8[m/sec2])
α : 각가속도 (Angular acceleration)

- 유도 전동기의 경우, MOTOR가 회전을 시작 할때의 TORQUE는 회전속도에 따라 변화합니다. (In case of an induction motor, the starting torque will be changed by rotating speed.)
- 그래서 시동에서부터 정속도까지의 평균을「평균가속 TORQUE」라고 일반적으로 사용하고 있습니다. (The average value from the starting speed to the normal constant speed is called an average acceleration torque, a value commonly used in practice.)
- GD^2[kgf · cm^2] 이라는 관성부하를 t[sec] 사이에 n[r/min]까지 가속할 때에 필요한 평균가속 TORQUE TA로 구하여 집니다. (The average acceleration torque TA required for the inertia load GD^2 to be accelerated up to the speed n[r/min] within t[sec] is represented by the following equation.)

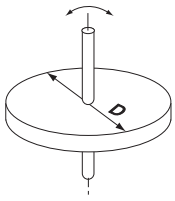
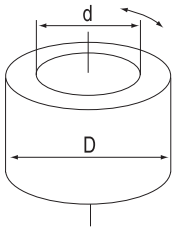
$$TA = \frac{GD^2}{37500} \times \frac{n}{t} \ [kgf \cdot cm]$$

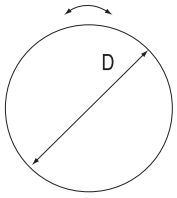
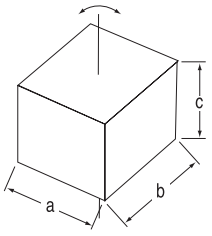
2. FLYWHEEL 효과 [GD^2]를 구하는 법 (Calculation of Flywheel Effect [GD^2])

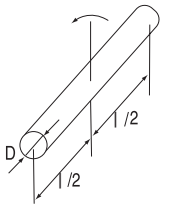
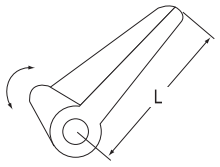
- GEAR HEAD를 연결하여 부하를 얻는 경우에 부하의 관성을 MOTOR축에 환산하여 MOTOR의 선정을 하지 않으면 안됩니다. (In case that a load is acquired through the connection of a gearhead, the motor shaft component of the load inertia should be calculated to select the motor.)
- 또, 부하의 종류에 의해 GD2의 구하는 법이 다르기 때문에 참고로 표에 각종 형상에 따른 GD2의 계산하는 방법을 나타내었습니다. (Also, the calculation method of GD^2 differs depending on the type of a load, and the following equation provides GD^2 1calculation method for each shape.)
- BRAKE MOTOR를 사용할 때에는 부하의 관성 MOMENT의 크기에 따라 정지시간, OVER RUN, 정지 정밀도 등에 큰 영향을 미칩니다. 관성 MOMNET J와 FLYWHEEL 효과 GD^2의 관계는 다음의 식과 같습니다.

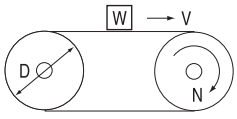
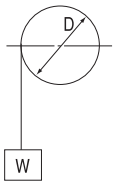
$$GD^2 = 4J \ [kgf \cdot cm^2]$$

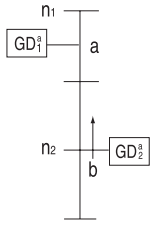
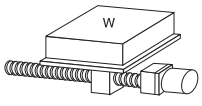
GD^2 : FLYWHEEL 효과 (effect)
J : 관성 (Inertia) MOMENT

	원판 (Circular Disk)	중공축 (Hollow)
형상 (Shape)		
GD² 계산식 (Equation)	$GD^2 = \frac{1}{2} WD^2$ [kgf · cm²] W : 질량 (Mass) [kgf] D : 외경 (Outer Diameter) [cm]	$GD^2 = \frac{1}{2} W(D^2+d^2)$ [kgf · cm²] W : 질량 (Mass) [kgf] d : 내경 (Inner Diameter) [cm] D : 외경 (Outer Diameter) [cm]

	구 (Sphere)	육면체 (Hexahedron)
형상 (Shape)		
GD² 계산식 (Equation)	$GD^2 = \frac{2}{5} WD^2$ [kgf · cm²] W : 질량 (Mass) [kgf] D : 외경 (Outer Diameter) [cm]	$GD^2 = \frac{1}{3} W(a^2+b^2)$ [kgf · cm²] W : 질량 (Mass) [kgf] a, b : 변의 길이 (Length of Side) [cm]

	봉의 구동 (POLE)	POLE
형상 (Shape)		
GD² 계산식 (Equation)	$GD^2 = W(\frac{D^2}{4} + \frac{l^2}{3})$ [kgf · cm²] W : 질량 (Mass) [kgf] d : 내경 (Inner Diameter) [cm] l : 길이 (Length) [cm]	$GD^2 = \frac{4}{3} WL^2$ [kgf · cm²] W : 질량 (Mass) [kgf] l : 길이 (Length) [cm]

	수평직선운동 (Linear Motion(Horizontal))	수직운동 (Linear Motion(Vertical))
형상 (Shape)		
GD² 계산식 (Equation)	$GD^2 = WD^2$ [kgf · cm²] = $\frac{WV^2}{\pi^2 N^2}$ V : CONVEYOR 속도 (SPEED) [cm/min] N : DRUM 회전속도 (ROTATIONAL SPEED) [rpm] W : CONVEYOR위의 무게 (WEIGHT OVER CONVEYOR)[kgf] D : DRUM 외경 (DRUM OUTSIDE Diamete)[cm] (BELT와 DRUM의 GD²은 포함 하지 않았습니다. (Not included GD² for belt and drum))	$GD^2 = WD^2$ [kgf · cm²] W : 질량 (Mass) [kgf] D : 외경 (Outer Diameter) [cm]

	감속기 (Gearhead)	SCREW의 구동 (Operation of ball screw)	임의축(任意軸)의 GD² (GD² of arbitrary shaft)
형상 (Shape)			
GD² 계산식 (Equation)	a축에서 환산한 전(全) GD² (a axis component of total GD²) $GD^2_a = GD^2_1 + (\frac{n_2}{n_1})^2$ × GD22 [kgf · cm²] n1 : a축의 회전속도 (Rotational speed of a-axis) n2 : b축의 회전속도 (Rotational speed of b-axis) 감속비는 (Reduction ratio is) $\frac{n_1}{n_2}$ (i>1)	$GD^2 = GD^2_1 + \frac{WP^2}{\pi}$ GD^2_1 : BALL SCREW의 GD² (GD² of BALL SCREW GD²)[kgf · cm²] P : BALL SCREW의 LEAD PITCH[cm] W : TABLE과 상자의 총중량 (Total weight of table and work)	$GD^2 = GD^2 + 4WS^2$ [kgf · cm] D : 직경 (Diameter) [cm] W : 질량 (Mass) [kgf] S : 회전 반경 (Radius of Rotation) [cm]

- 하기표에 MOTOR축에서의 허용 부하관성치를 표시하였습니다. 표시된 값 이하에서 사용하여 주십시오. (The table below shows the permissible inertia load per motor. Do not use to exceed the figure shown.)

- MOTOR축에서의 허용부하관성

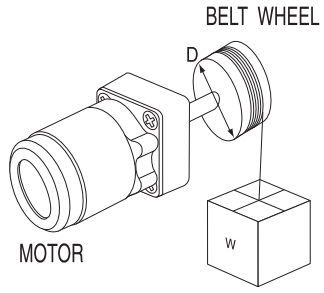
SIZE	출력 (Output)	MOTOR축에서의 허용부하관성 (Permissible Inertia Load per Motor Axis) GD²(kgf-cm²)
□60	3W	0.19
□60	6W	0.25
□70	15W	0.57
□80	15W, 25W	1.20
□90	40W	3.00
□90	60W	4.60
□90	90W, 120W, 150W	4.60
□90	180W, 200W	6.00

- GEAR HEAD 출력축에서의 허용부하관성은 감속비에 따라하기와 같습니다.
  감속비 1/3~1/50의 경우 : $GD^2G = GD^2M \times i^2$
  (Gear ratio between 1/3 ~ 1/50)
  감속비 1/60 이상인 경우 : $GD^2G = GD^2M \times 2500$
  (Gear ratio over 1/60)
  GD^2G : GEAR HEAD출력축 허용관성
  (Permissible inertia per gearhead output)
  GD^2M : MOTOR축에서의 허용관성
  (Permissible inertia per motor Axis)
  i : GEAR HEAD의 감속비 (Gear ratio)

부하 TORQUE의 산정 (Explicit Calculation Method of Motor Capacity)

• 부하 TORQUE를 산출하여 허용축 TORQUE 이하에서 사용하여 주십시오.

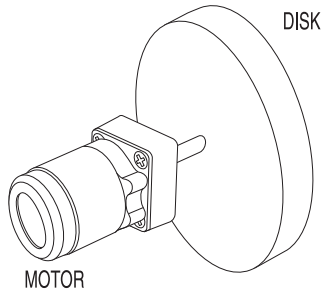
(1) 하중을 감아 올리는 경우 (In case of rolling up a load)



$T = \frac{1}{2} D \cdot W$ [kgf · cm]

D : Drum 직경 (Diameter) [cm]
W : 하중 (Weight) [kgf]

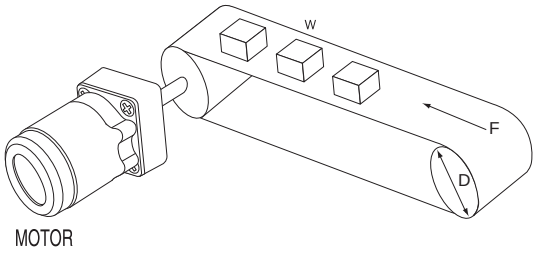
(2) 관성체를 구동하는 경우 (In case of opration inertia mass)



$T = \frac{GD^2}{37500} \times \frac{N}{t}$ [kgf · cm]

N :회전수 (Revolutions per minute) [rpm]
GD^2 : 플라이 휠 효과 (Disk wheel effect) [kgf · cm^2]
t : 시간 (Time) [sec]

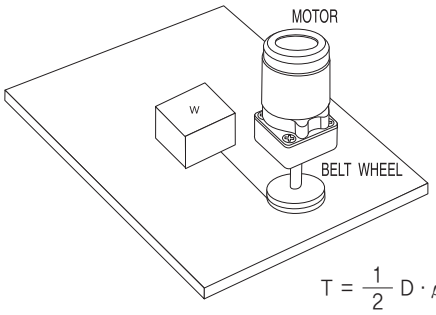
(3) BELT CONVEYOR를 구동하는 경우 (In case of belt conveyor)



$T = \frac{1}{2} D(F + \mu W)$ [kgf · cm]

D : Drum의 직경 (Drum의 Diameter) [cm]
w : 부하의 중량 (Mass of belt in unit length) [kgf]
μ : 마찰계수 (Coefficient of friction)
F : 외력 (Cutting force) [kgf]

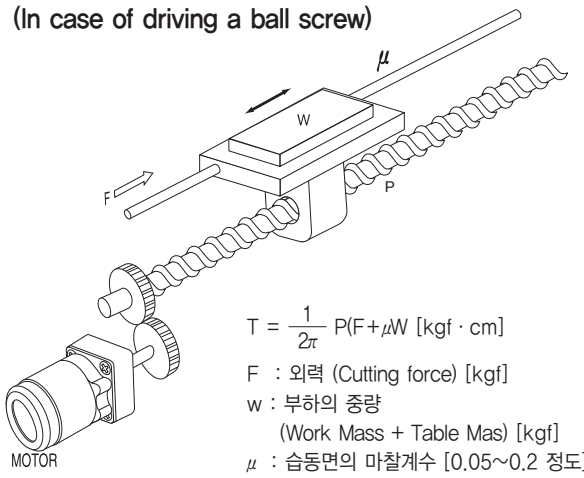
(4) 접촉면을 수평 이동하는 경우 (A case of moving an object horizontally on the surface)



$T = \frac{1}{2} D \cdot \mu W$ [kgf · cm]

w : 하중 (Weight) [kgf]
μ : 마찰계수 (Coefficient of friction)
D : WHEEL 직경 (Diameter)[cm]

(5) BALL SCREW를 구동하는 경우 (In case of driving a ball screw)



$T = \frac{1}{2\pi} P(F+\mu W$ [kgf · cm]

F : 외력 (Cutting force) [kgf]
w : 부하의 중량 (Work Mass + Table Mas) [kgf]
μ : 습동면의 마찰계수 [0.05~0.2 정도] (Coefficient of sliding friction in the slide guide surface [0.05~0.2])
P : BALL SCREW의 LEAD [cm]

사용시 주의사항

사용하시기 전에, 사용설명서를 잘 읽은 후 올바르게 사용하여 주십시오.
사용시 주의 사항에서는, 안전 주의 사항의 순서를 주의, 경고로 구분하고 있습니다.



주의

- 모터, 제어장치의 사양을 넘어서 사용하지 마십시오. 감전, 부상, 장치파손의 위험이 있습니다.
- 모터, 제어장치의 개구부에 손가락과 물건을 넣지 마십시오. 감전, 부상, 화재의 위험이 있습니다.
- 젖은 손으로 조작하지 마십시오. 감전의 위험이 있습니다.
- 운반시는 모터의 출력축, 가동부, 리드선을 잡지 마십시오. 낙하에 의한 부상의 위험이 있습니다.
- 현품이 주문대로인가를 확인하여 주십시오. 다른제품을 설치한 경우, 부상, 화재의 위험이 있습니다.
- 모터는 확실하게 고정시킨후에 사용하여 주십시오. 부상, 장치파손의 위험이 있습니다.
- 회전부분에 닿지 않도록 커버등을 설치하여 주십시오. 부상의 위험이 있습니다.
- 기계와의 결합전에 회전방향을 확인하여 주십시오. 부상, 장치파손의 위험이 있습니다.
- 모터, 제어장치에는 올라가거나, 매달리지 않도록 하여 주십시오. 부상의 위험이 있습니다.
- 모터출력축(키홈, 치절부)은 맨손으로는 만지지 마십시오. 부상의 위험이 있습니다.
- 보호장치는, 모터에 부속되어 있지 않습니다. 과부하보호장치를 설치하여 주십시오.
  과부하보호장치 이외의 보호장치(누전차단기등)도 설치하는 것을 권장합니다. 화재의 위험이 있습니다.
- 전원 플러그를 뺄 경우에는, 플러그를 잡고 빼지 마십시오. 감전, 화재의 위험이 있습니다.
- 모터와 제어장치는 지정된 조합으로 사용하여 주십시오. 화재의 위험이 있습니다.
- 기계와 결합하여 운전을 시작하기 전에 그 기계에 맞추어진 PARAMETER의 설정을 행하여 주십시오.
  부상의 위험이 있습니다.
- 기계와 결합하여 운전을 시작할 경우에, 언제라도 비상정지할 수 있는 상태로 하여 주십시오. 부상의 위험이 있습니다.
- 이상이 발생한 경우에는 곧바로 전원을 꺼 주십시오. 감전, 부상, 화재의 위험이 있습니다.
- 운전중, 회전체(출력축)에는 접촉하지 마십시오. 감겨들어가 부상의 위험이 있습니다.
- 운전중, 운전직후는 모터, 제어장치에 손과 몸을 접촉하지 마십시오. 화상의 위험이 있습니다.
- 모터를 폐기할 때에는 가능한 분해하여 산업폐기물로 처리하여 주십시오.



경고

- 폭발성분위기, 인화성가스의 분위기, 부식성의 분위기, 물이 닿을 가능성이 있는 장소, 가연물의 근처에서는 사용을 피하여 주십시오. 감전, 부상, 화재의 위험이 있습니다.
- 전류가 흐르는 상태에서 이동, 접속, 점검의 작업을 하지 마십시오. 전원을 끄고 작업하여 주십시오.
- 접속은 결선도에 기초를 두고 확실하게 행하여 주십시오. 감전, 화재의 위험이 있습니다.
- 전원 케이블과 리드선을 무리하게 휘거나, 잡아당기거나, 끼우지 마십시오. 감전, 화재의 위험이 있습니다.
- 모터, 제어장치를 기기에 붙이는 경우에는, 손이 닿지 않도록 하거나, 접지하여 주십시오. 감전의 위험이 있습니다.
- 전류가 흐르는 부분이 노출된 상태에서의 운전은 하지 마십시오. 감전의 위험이 있습니다.
- 정전시와 과열보호장치가 작동한 경우, 전원을 꺼 주십시오. 갑자기 재시동할 때, 부상, 장치파손의 위험이 있습니다.
- 브레이크기구가 접속된 모터의 브레이크기구는 확실하게 부하를 고정한 것은 아닙니다.
  안전브레이크로 사용하실 경우는, 따로 안전대책을 세워 주십시오. 부상, 장치파손의 위험이 있습니다.
- 전원을 끈 후 30초간은, 제어장치의 출력단자에 닿지 마십시오. 잔류전압에 의한 감전의 위험이 있습니다.
- 모터를 분해, 개조하지 마십시오. 감전, 부상의 원인이 됩니다.

CAUTION FOR USING

Read the Instruction Manual thoroughly before using.
For the suggestions on using, they are classified as caution and warning.



CAUTION

- Use per speed controller specifications. Otherwise, an unexpected fire, electric shock, injury and/or damage of the unit may occur.
- Do not put fingers or other objects into the outlet of the unit to prevent electric shock, injury and/or fire.
- Do not operate with the wet hands. The electric shock may occur.
- In case of moving, do not hold the output shaft, connecting part or the lead wire. It might slip off your hand and result in an injury.
- Check the products received with the products ordered. Installing incorrect product may result in injury and/or fire.
- The motor should be used after tightly attached to prevent injury and/or damage of the unit.
- If the cover installed touches the rotator part, injury may occur.
- Make sure to check the rotatory direction before connecting the machine. If not, an injury and/or damage of the unit may occur.
- Touching the side of the motor output shaft (key way, cutting part) with bare hands may cause injury.
- Make sure to install the overload device, for the protection device is not attached to the motor. It is encouraged to install other protection devices other than overload protection device to prevent fire.
- In case of pulling out power plug, do not draw with grasping the plug for the electric shock and fire may occur.
- The motor and the controlling unit should be used only by the designated compounding. If not, the fire may occur.
- Install the parameter for the machine before connecting with the machine and begin operating. Otherwise, damage of the unit may occur.
- Emergency stop may be required at anytime while connecting with the machine and begin operating.
- Turn off the power at once if any sign of abnormality is detected. If not, it may result in electric shock, injury and/or damage of the unit.
- Do not touch the rotor (output shaft) while operating. An injury and/or damage may occur due to the winding.
- While and after operating, touching the controlling device with hands or body may cause fire.



WARNING

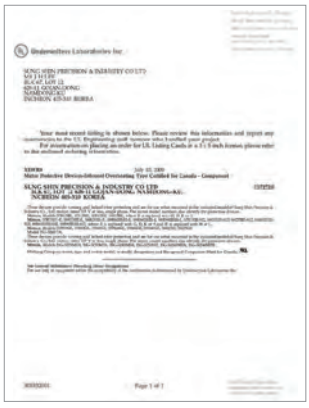
- Never expose the motors in explosive atmosphere. They should be kept away from explosive gas, corrosive air, combustibles or wet surroundings to prevent electric shock and/or fire.
- Turn off the electric power before moving, connecting or checking the motor.
- Make sure to connect motor and speed controller based on the specification. If not, electric shock and/or fire may occur.
- The power cable and the lead wire should not be forcefully bent, pulled or inserted. It may cause electric shock and/or fire.
- In case the motor and controlling unit are attached to the machine, never touch with hands or connect with the earth. If not, the electric shock may take place.
- Never operate in the state of exposing the flowing current. If not, the electric shock may take place.
- Turn off the power in case of interruption of electric power and/or protection of overheat. If not, injury and/or damage of the unit may occur.
- Do not touch the output terminal of the controlling unit for 30 seconds after shutting down the power. If not, residual volts may cause electric shock.



ISO 14001 인증서 (Certification)



ISO 9001 인증서 (Certification)



UL 인증서 (Certification)



CCC 인증서 (Certification)



CE(TUV) 인증서 (Certification)
(AC Motor)



CE(TUV) 인증서 (Certification)
(Speed Controller)



NT 인증서 (Certification)



실용신안등록증
(Certificate of Utility Model
Registration)



세계일류상품인증서
(Korean World-Class Product
Award)

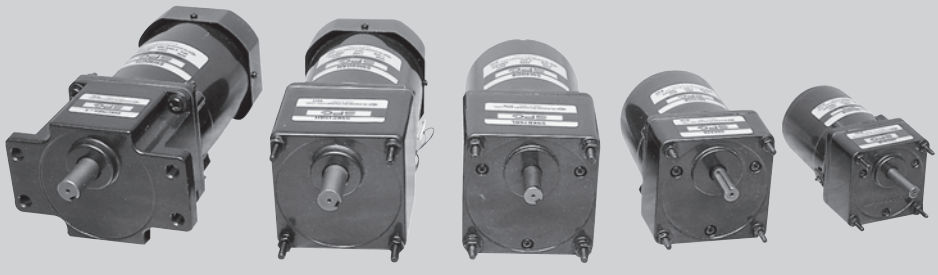


MAYTAG

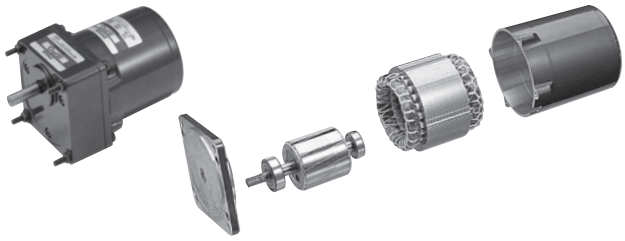
INDUCTION MOTOR

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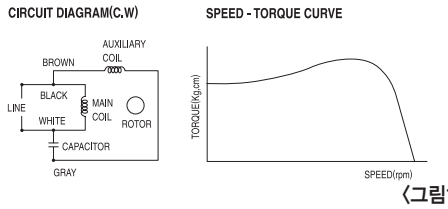


INDUCTION MOTOR의 특징 (Characteristics of INDUCTION MOTOR)

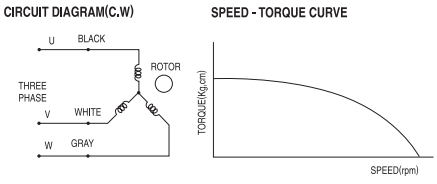


1. INDUCTION MOTOR의 특징 (Characteristics of INDUCTION MOTOR)

- 일반적으로 소형 INDUCTION MOTOR라 하면 CONDENSER RUN INDUCTION MOTOR(콘덴서 운전형 유도전동기)를 말합니다. 이 MOTOR는 기동시 뿐만 아니라 운전 중에도 항시 보조권선과 CONDENSER를 사용합니다. 일반적으로 기동 TORQUE는 높지 않지만 구조가 간단하고 신뢰성이 높고, 효율도 높게 나타납니다.(〈그림1〉 참조) (A small induction motor usually means the condenser – run induction motor. This motor always uses both auxiliary winding and condenser not only when starting but also during operation. Generally, its starting torque isn't great, but its structure is simple reliable and efficient. Refer to 〈Fig. 1〉.)
- 연속정격으로 사용이 가능합니다. (The motor can be used in continuous rated operations.)
- 부하의 크기에 따라 MOTOR의 정격회전수는 변합니다. (The number of rated rotation of the motor varies depending on the load imposed on it.)
- 속도 제어가 필요치 않는 용도에 사용합니다. (It is suitable for operations that do not require the speed control.)
- 절연 등급은 E종을 채택하고 있습니다. 그러나 UL용 MOTOR는 A종입니다. (Its insulation class is E. SPG's UL conformance motor is class A.)
- CONDENSER 운전형 단상 유도전동기와 삼상 유도전동기의 2종류가 있습니다. (There are two types. One is a condenser-run single-phase induction motor and the other is a three-phase induction motor.)
- 단상 MOTOR는 CONDENSER 운전형 INDUCTION MOTOR 이므로 고효율, 저소음 MOTOR입니다. (Since the single-phase motor is a condenser-run induction motor, it provides high efficiency and low noise.)
- 단상 MOTOR의 전원은 A(110V 60Hz), B(220V 60Hz), C(100V 50/60Hz), D(200V 50/60Hz), E(115V 60Hz), X(220~240V 50Hz) 등이 있습니다. (The power source for a single motor includes A(110V 60Hz), B(220V 60Hz), C(100V 50/60Hz), D(200V 50/60Hz), E(115V 60Hz), and X(220-240V 50Hz).)
- 단상 INDUCTION MOTOR를 사용할 때에는 반드시 MOTOR 부속품인 CONDENSER를 MOTOR용량에 맞게 사용하여 주십시오. (For a single-phase induction motor, make sure that the condenser complies with the capacity of the motor.)
- 단상 INDUCTION MOTOR는 회전중에 회전방향을 바꾸려해도 회전방향과 역방향의 TORQUE를 발생하고 있기 때문에 관성부하의 경우에는 부하를 짧은 시간에 역전시키는 것은 불가능합니다. 따라서 일단 MOTOR를 정지시킨 후에 회전방향을 교환하여 주십시오. (For a single-phase induction motor, reversing the direction of the rotation within a short time during operation is not possible due to adverse exerting of the inertia torque against reversing. Thus, stop the motor first and change the rotational direction next.)
- 삼상 MOTOR는 삼상전원에 의해 구동시키는 유도전동기로 효율이 좋으며, 기동 TORQUE도 비교적 크고, 신뢰성이 높습니다. 범용 MOTOR로 광범위하게 사용되고 있습니다. (As an induction motor is driven by a three-phase power source, the three-phase motor provides high efficiency, relatively great starting torque, and high reliability. The three-phase motor is popular as a general-purpose motor.)
- 삼상 MOTOR의 전원은 U(200V 50/60Hz), T(220V 50/60Hz), S(380~440V 50/60Hz)로 사용하는 INDUCTION MOTOR 입니다.(〈그림2〉 참조) (The power source for a three-phase motor, an induction motor, includes U(200V 50/60Hz), T(220V 50/60Hz), and S(380-440V 50/60Hz). Refer to 〈Fig. 2〉.)



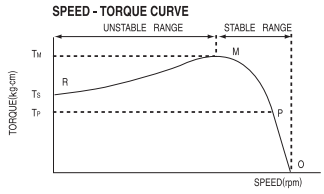
〈그림1 (Fig. 1)〉



〈그림2 (Fig. 2)〉

2. 회전수와 TORQUE의 특성 (Characteristics of Rotation and TORQUE)

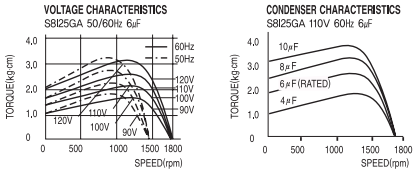
- 전압이 일정한 경우, 회전수와 TORQUE 관계는 〈그림3〉과 같습니다. 무부하의 경우는 동기회전수와 비슷하게 회전하지만, 부하가 증가함에 따라 회전수는 떨어져 부하와 MOTOR의 TORQUE Tp와 평행한 점 P로 회전합니다. (Under a constant voltage, the relationship between the number of rotation and the torque is as shown in 〈Fig. 3〉. With no-load, the number of rotation roughly approximates the number of synchronous rotation, but as the load increases, the number of rotation decreases and approaches to the speed(rpm) indicated by the point P where the torque Tp horizontally meets the load curve.)
- 부하가 더욱 증가하여 M점에 도달하면 MOTOR는 그 이상 TORQUE를 발생하지 않으므로 R점에 도달해 정지합니다. 즉 R-M구간은 불안정영역이고 MOTOR로서 안전하게 운전 가능한 구간은 M-O구간입니다. (When the load is further increased and reaches the point M, the motor stops at the point R because the motor no longer generates further torque. Therefore, the leg R-M is referred to as an unstable zone and the leg M-O is a stable zone for operation.)



〈그림3 (Fig. 3)〉

3. 전압 특성과 CONDENSER 특성 (Characteristics of Voltage and CONDENSOR)

- 전압 특성은 MOTOR로의 인가 전압에 대한 TORQUE 특성 변화를 표시한 것입니다. INDUCTION MOTOR의 TORQUE는 일반적으로 전압의 제곱에 비례하여 변화합니다. (The Characteristics of voltage can be represented by the torque's Characteristics about the applied voltage. The torque of induction motor changes proportionate to twice the voltage.)
- CONDENSER 용량에 의해서도 TORQUE 특성은 변화합니다. CONDENSER 용량을 크게 하면 기동TORQUE, 정동TORQUE는 증가하지만 용량이 2.5~3배로 되면 운전 TORQUE는 감소하고 기동TORQUE도 증가하지 않게 됩니다. (As the capacity of the condenser boost, the starting torque and stalling torque increase. But if the capacity increases by 2.5–3.0 folds, the operating torque decreases and the starting torque do not increase.)
- INDUCTION MOTOR의 TORQUE가 부족한 경우에는 TORQUE를 증가시키기위한 간단한 방법으로 전압이나 CONDENSER의 용량을 증가시켜 사용할 수 있습니다. 이런 경우에는 MOTOR의 손실입력이 증가하고, 온도상승이 급격히 높아지므로 가급적이면 출하 상태에서 그대로 사용을 권장합니다. (As a simple method to increase the torque when the induction motor is short on torque, either the voltage or the condenser capacity can be increased to continue the operation. In this case, the loss input of the motor increases and the temperature rises rapidly.)
- 그러나 부득이하게 사용을 할 경우에는 MOTOR의 열 발산이 잘 되도록 충분히 주의하여 주시고 MOTOR의 CASE(HOUSING)의 온도가 90℃이하에서 사용하여 주십시오.(〈그림4〉 참조) (However, if the motor must be run with insufficient torque, take measures to let the motor release heat as much as possible and operate the motor while keeping the temperature of the motor's housing below 90℃. Refer to (Fig. 4).)



〈그림4 (Fig. 4)〉

GENERAL SPECIFICATION OF INDUCTION MOTORS

항목 (ITEM)	사양 (SPECIFICATION)
절연저항 (Insulation Resistance)	상온 상습에서 MOTOR을 정격으로 운전 후 MOTOR의 COIL, MOTOR CASE사이를 DC 500V MEGGER로 측정하여 100MΩ 이상임. (100MΩ or more when 500V megger is applied between the windings and the housing after rated motor operation under normal ambient temperature and humidity.)
절연내압 (Dielectric Strength)	상온 상습에서 MOTOR을 정격으로 운전 후 MOTOR의 COIL, MOTOR CASE사이에 1500V 50/60Hz를 1분간 인가하여 이상 없음. (Sufficient to withstand 1.5kVat 50/60Hz applied between the windings and the case after rated motor operation under normal ambient temperature and humidity.)
온도상승 (Temperature Rise)	MOTOR를 정격으로 운전 후 온도계법으로 측정하여 온도상승치(△T)가 80℃(K) 이하임 (80℃ or less increase measured by thermometer after rated operation.)
절연등급 (Insulation Class)	B종 (Class B) (130℃)
과열보호장치 (Overheat Protection Device)(T/P)	THERMAL PROTECTOR 내장(자동 복귀형) (Built-in THERMAL PROTECTOR (automatic return type)) : 개방 (Open) 120℃±5℃ 복귀 (Close) 76℃±15℃
사용온도 (Ambient Temperature)	-10℃ ~ 40℃
사용습도 (Ambient Humidity)	85% 이하 (결로 없는 곳)



3W

INDUCTION MOTOR □60㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
60	S6I03GA S6I03GACE	4	3	1Ø 110	60	Cont.	0.15	1500	0.21	0.021	0.25	0.025	2.0
	S6I03GC S6I03GCCE	4	3	1Ø 100	50	Cont.	0.15	1200	0.25	0.025	0.25	0.025	2.0
					60			1450	0.21	0.021			
	S6I03GE S6I06GECE	4	3	1Ø 100	50	Cont.	0.15	1200	0.25	0.025	0.25	0.025	2.0
					60			1450	0.21	0.021			
				1Ø 115	60		0.15	1450	0.21	0.021			1.5

❖ 기종명 S6I03GE는 사용하는 전압사양에 따라 CONDENSER 용량이 다르게 사용됩니다. 사용전압에 맞게 CONDENSER용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문 시 사용전압을 제시하여 주십시오. 별도의 제시가 없으면 115V용 CONDENSER로 포장되어 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S6I03GE type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)

❖ 기종명 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. 기종명 S6I03GECE는 115V 사양으로만 출하 됩니다. (CE marked at the end of model name indicates that it is impedance protected type which has received CE. S6I03GECE is available only for 115V specification.)

❖ 'L' TYPE 전용으로 기종명에 표시하지 않습니다. ("L"or "H"type does not apply to motors under 40W.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5	6
S6DT□B	kg-cm	0.6	0.7	1.0	1.2	1.5	1.8	2.0	2.5	3.0	3.6	3.6	4.6	5.5	6.6	7.3	8.2	9.8	12.3	15.0	15.0	15.0	15.0	15.0	15.0	15.0
	N·m	0.06	0.07	0.10	0.12	0.15	0.18	0.20	0.25	0.30	0.36	0.36	0.46	0.55	0.66	0.73	0.82	0.98	1.23	1.5	1.5	1.5	1.5	1.5	1.5	1.5

60Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9	7.2
S6DT□B	kg-cm	0.5	0.6	0.8	1.0	1.3	1.5	1.7	2.1	2.6	3.1	3.4	3.8	4.6	5.5	6.8	6.9	8.3	10.0	12.0	14.0	15.0	15.0	15.0	15.0	15.0
	N·m	0.05	0.06	0.08	0.10	0.13	0.15	0.17	0.21	0.26	0.31	0.34	0.38	0.46	0.55	0.68	0.69	0.83	1.0	1.2	1.4	1.5	1.5	1.5	1.5	1.5

❖ 상기 표는 GEAR HEAD와 조립된 경우의 허용 TORQUE 입니다. (The code in□of gearhead model is for gear ratio.)

❖ GEAR HEAD 품명 중 □은 감속비를 표시 합니다. (It is the permissible torque of the assembled motor and gearhead.)

❖ 표의 감속비 보다 더 감속이 필요한 경우에는, 감속비 1/10인 중간 GEARHEAD의 사용이 가능합니다. 이 경우 허용 TORQUE는 15㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 15 kg-cm.)

❖ 회전방향은 ■색이 MOTOR와 동일한 회전방향이고, 기타는 MOTOR와 반대방향으로 회전합니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)

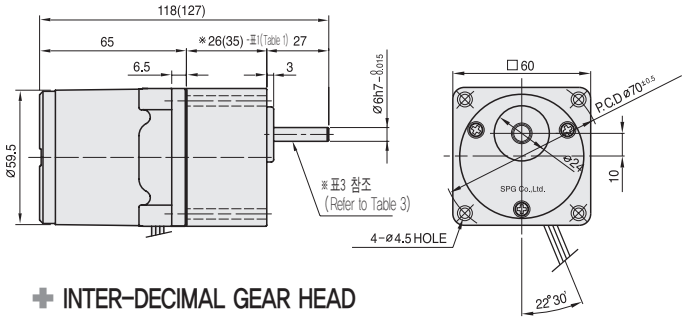
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)

❖ 'L' TYPE 전용으로 기종명에 표시하지 않습니다. ("L"or "H"type does not apply to motors under 40W.)

DIMENSIONS

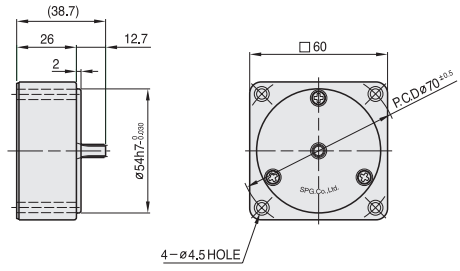
✚ GEARED MOTOR

※MOTOR MODEL : S6I03G□
※HEAD MODEL : S6□T3□~S6□T250□



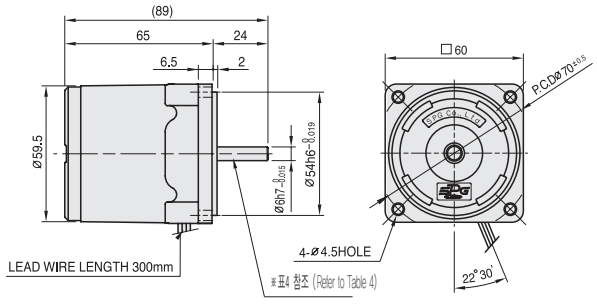
✚ INTER-DECIMAL GEAR HEAD

※ MODEL : S6GX10B



✚ MOTOR

※MOTOR MODEL : S6I03□□



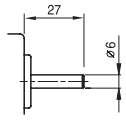
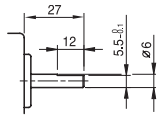
✚ ※26(35) – (표1 (Table1))

GEAR RATIO	SIZE(㎜)
S6□T3□ ~ S6□T18□	26
S6□T20□ ~ S6□T250□	35

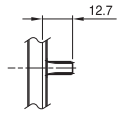
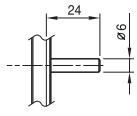
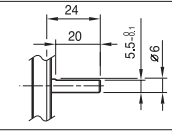
✚ WEIGHT – (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		0.60
DECIMAL GEAR HEAD		0.18
GEAR HEAD	S6□T3□ ~S6□T18□	0.21
	S6□T20□ ~S6□T40□	0.27
	S6□T50□ ~S6□T250□	0.30

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S6ST3□ ~S6ST250□	
D-CUT TYPE S6DT3□ ~S6DT250□	

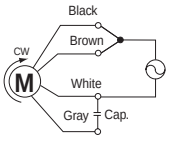
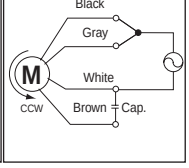
✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S6I03G□	
STRAIGHT TYPE S6I03S□	
D-CUT TYPE S6I03D□	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S6I03GA S6I03GACE
S6I03GC S6I03GACE
S6I03GE S6I03GECE

CW	CCW
	

주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



6W

INDUCTION MOTOR □60㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
60	S6I06GA S6I06GACE	4	6	1Ø 110	60	Cont.	0.20	1550	0.40	0.040	0.55	0.055	2.5
	S6I06GB S6I06GBCE	4	6	1Ø 220	60	Cont.	0.10	1550	0.40	0.040	0.55	0.055	0.7
	S6I06GC S6I06GCCE	4	6	1Ø 100	50	Cont.	0.21	1200	0.50	0.050	0.45	0.045	2.5
					60		0.19	1500	0.42	0.042			
	S6I06GD S6I06GDCE	4	6	1Ø 200	50	Cont.	0.10	1200	0.50	0.050	0.45	0.045	0.7
					60			1500	0.42	0.042			
	S6I06GE S6I06GECE	4	6	1Ø 100	50	Cont.	0.18	1200	0.50	0.050	0.52	0.052	2.5
					60		0.19	1500	0.42	0.042			
				1Ø 115	60		0.19	1500	0.42	0.042	0.55	0.055	2.0
	S6I06GX S6I06GXCE	4	6	1Ø 220	50	Cont.	0.08	1200	0.50	0.050	0.50	0.050	0.6
				1Ø 240			0.09		0.53	0.053	0.55	0.055	
	S6I06GT	4	6	3Ø 220	50	Cont.	0.085	1300	0.45	0.045	1.3	0.13	
					60		0.072	1550	0.38	0.038	1.0	0.1	

❖ 기종명 S6I06GE는 UL. 규격인증 제품으로 IMPEDANCE PROTECTED TYPE입니다.(UL FILE NO. E172722) (S6I06GE is UL approved (UL FILE No. E172722) impedance protected type.)
❖ 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S6I06GE type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise informed of the required voltage.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S6I06GECE는 115V용 사양으로만 출하됩니다. (CE marked at the end of model name indicates that it is impedance protected type which has received CE. S6I06GECE is available only for 115V specification.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L"or "H"type does not apply to motors under 40W.)

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5	6
S6DA□B	kg-cm	1.3	1.5	2.1	2.6	3.2	3.9	4.3	5.4	6.4	7.7	7.7	9.7	11.6	13.9	15.5	17.5	21.0	26.2	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	N·m	0.127	0.147	0.206	0.255	0.314	0.382	0.421	0.529	0.627	0.755	0.755	0.951	1.137	1.362	1.519	1.715	2.058	2.568	2.942	2.942	2.942	2.942	2.942	2.942	2.942

60Hz

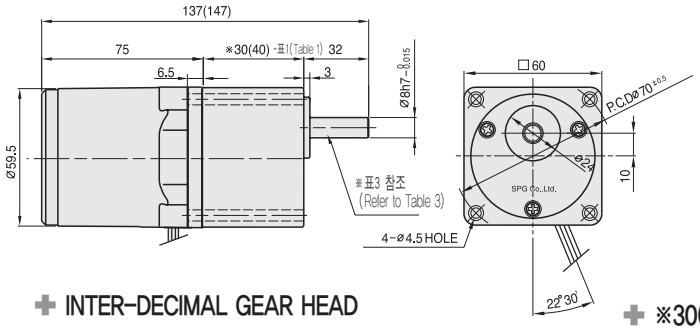
MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9	7.2
S6DA□B	kg-cm	1.0	1.3	1.7	2.1	2.6	3.1	3.5	4.4	5.2	6.3	6.3	7.8	9.4	11.3	12.6	14.2	17.0	21.3	25.5	28.4	30.0	30.0	30.0	30.0	30.0
	N·m	0.098	0.127	0.167	0.206	0.255	0.304	0.343	0.431	0.510	0.617	0.617	0.764	0.921	1.107	1.235	1.392	1.666	2.087	2.499	2.783	2.942	2.942	2.942	2.942	2.942

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 30㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 30 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향 입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L"or "H"type does not apply to motors under 40W.)

DIMENSIONS

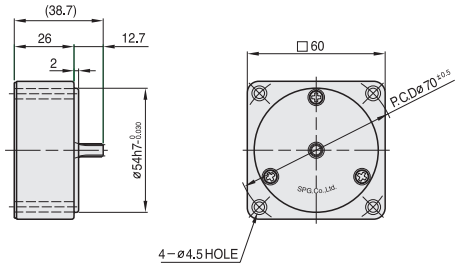
✚ GEARED MOTOR

※MOTOR MODEL : S6I06G□
※HEAD MODEL : S6□A3□~S6□A250□



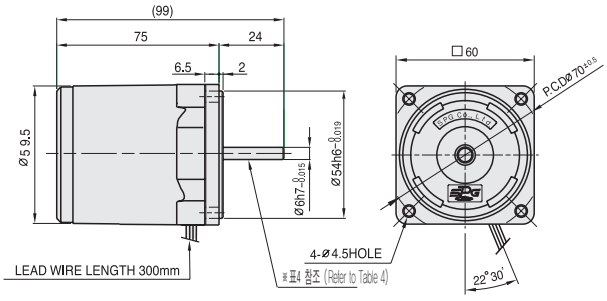
✚ INTER-DECIMAL GEAR HEAD

※ MODEL : S6GX10B



✚ MOTOR

※MOTOR MODEL : S6I06□□



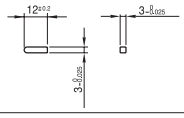
✚ ※30(40) – (표1 (Table1))

GEAR RATIO	SIZE(㎜)
S6□A3□ ~ S6□A18□	30
S6□A20□ ~ S6□A250□	40

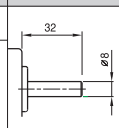
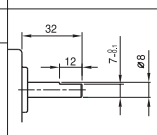
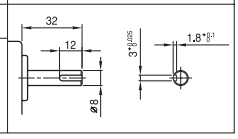
✚ WEIGHT – (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		0.70
DECIMAL GEAR HEAD		0.18
GEAR HEAD	S6□A3□ ~S6□A18□	0.24
	S6□A20□ ~S6□A40□	0.30
	S6□A50□ ~S6□A250□	0.33

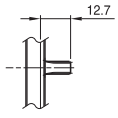
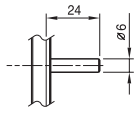
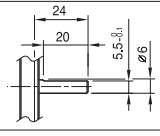
✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표3 (Table3))

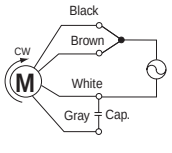
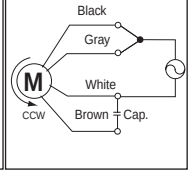
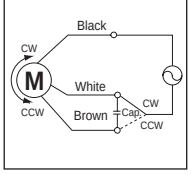
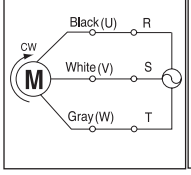
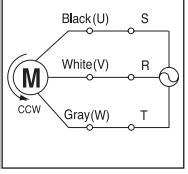
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S6SA3□ ~S6SA250□	
D-CUT TYPE S6DA3□ ~S6DA250□	
KEY TYPE S6KA3□ ~S6KA250□	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표4 (Table4))

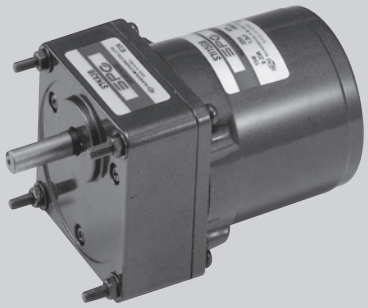
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S6I06G□	
STRAIGHT TYPE S6I06S□	
D-CUT TYPE S6I06D□	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S6I06GA S6I06GB S6I06GC S6I06GD S6I06GACE S6I06GBCE S6I06GE S6I06GCCE S6I06GDCE S6I06GECE		S6I06GX S6I06GXCE	S6I06GT	
CW	**CCW**	**CW,CCW**	**CW**	**CCW**
				

주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



15W

INDUCTION MOTOR □70㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
70	S7I15GA S7I15GA(TP) S7I15GACE	4	15	1Ø 110	60	Cont.	0.34	1600	1.00	0.100	1.10	0.110	5.0
	S7I15GB S7I15GB(TP) S7I15GBCE	4	15	1Ø 220	60	Cont.	0.19	1550	1.10	0.110	1.10	0.110	1.2
	S7I15GC S7I15GC(TP) S7I15GCCE	4	15	1Ø 100	50	Cont.	0.35	1250	1.20	0.120	0.90	0.090	5.0
					60		0.34	1550	1.00	0.100			
	S7I15GD S7I15GD(TP) S7I15GDCE	4	15	1Ø 200	50	Cont.	0.19	1200	1.25	0.125	0.90	0.090	1.2
					60		0.18	1500	1.20	0.120			
	S7I15GE S7I15GECE	4	15	1Ø 100	50	Cont.	0.35	1200	1.25	0.125	0.90	0.090	5.0
					60		0.33	1550	1.00	0.100			
				1Ø 115	60		0.30	1600	1.00	0.100			4.0
	S7I15GX S7I15GXCE	4	15	1Ø 220	50	Cont.	0.16	1200	1.25	0.125	0.75	0.075	0.9
				1Ø 240			0.18		1.35	0.135	0.90	0.090	
	S7I15GT	4	15	3Ø 220	50	Cont.	0.24	1300	1.09	0.109	3.7	0.37	
					60		0.17	1600	0.89	0.089	2.7	0.27	

❖ 기종명 S7I15GE는 UL규격 인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO. E172720) (S7I15GE is UL approved (UL FILE No.E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S7I15GE type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S7I15GECE는 115V용 사양으로만 출하됩니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP. S7I15GECE is available only for 115V specification.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S7I15GE, S7I15GX는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S7I15GE, S7I15GX is thermally protected type with TP mounted.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L"or "H"type does not apply to motors under 40W.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S7KA□B	kg-cm	3.2	3.9	5.4	6.5	8.1	9.7	10.8	13.5	16.2	19.4	19.4	24.2	29.1	34.9	38.8	43.6	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	N·m	0.314	0.382	0.530	0.637	0.794	0.951	1.059	1.324	1.587	1.902	1.902	2.373	2.854	3.423	3.805	4.276	4.900	4.900	4.900	4.900	4.900	4.900	4.900	4.900

60Hz

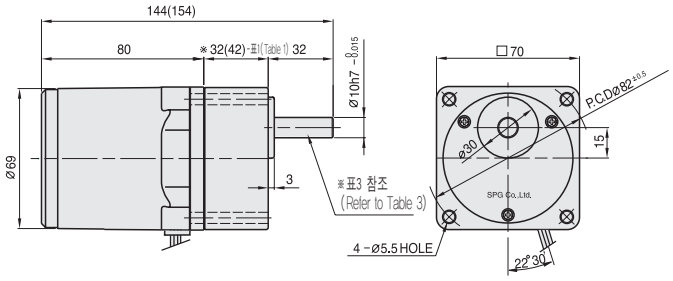
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S7KA□B	kg-cm	3.0	3.6	5.1	6.1	7.6	9.1	10.1	12.7	15.2	18.2	18.2	22.8	27.3	32.8	36.5	41.0	49.2	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	N·m	0.294	0.353	0.500	0.598	0.745	0.892	0.990	1.245	1.491	1.785	1.785	2.236	2.677	3.217	3.579	4.021	4.825	4.900	4.900	4.900	4.900	4.900	4.900	4.900

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 50㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 50 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향 입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L"or "H"type does not apply to motors under 40W.)

DIMENSIONS

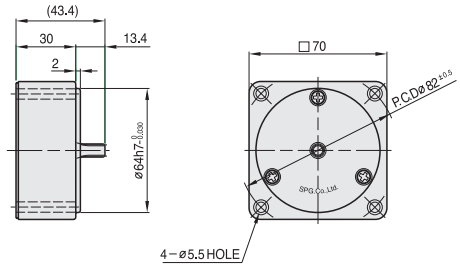
✚ GEARED MOTOR

※MOTOR MODEL : S7I15G□
※HEAD MODEL : S7□A3□~S7□A200□



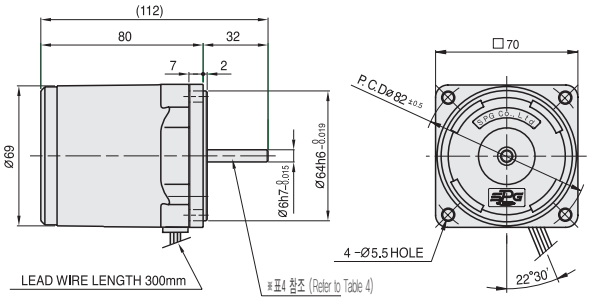
✚ INTER-DECIMAL GEAR HEAD

※ MODEL : S7GX10B



✚ MOTOR

※MOTOR MODEL : S7I15□□



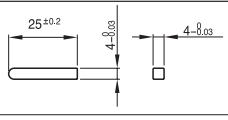
✚ ※32(42) – (표1 (Table1))

GEAR RATIO	SIZE(㎜)
S7□A3□ ~ S7□A18□	32
S7□A20□ ~ S7□A200□	42

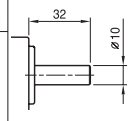
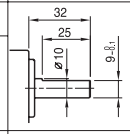
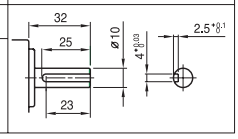
✚ WEIGHT – (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		1.04
DECIMAL GEAR HEAD		0.32
GEAR HEAD	S7□A3□ ~S7□A18□	0.38
	S7□A20□ ~S7□A40□	0.47
	S7□A50□ ~S7□A250□	0.52

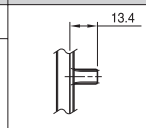
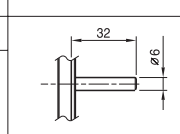
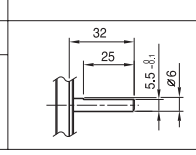
✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표3 (Table3))

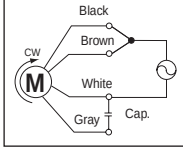
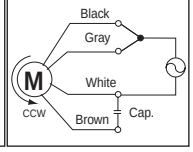
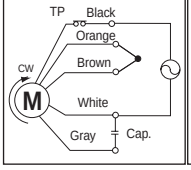
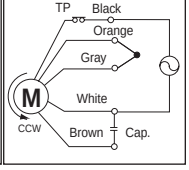
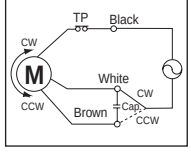
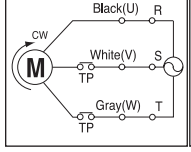
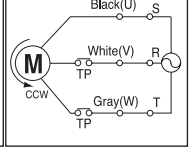
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S7SA3□ ~S7SA200□	
D-CUT TYPE S7DA3□ ~S7DA200□	
KEY TYPE S7KA3□ ~S7KA200□	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표4 (Table4))

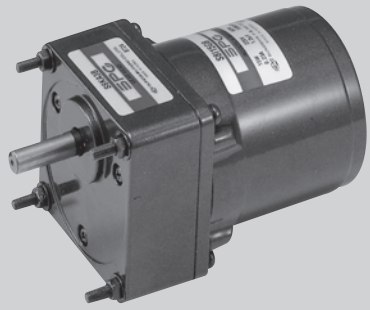
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S7I15G□	
STRAIGHT TYPE S7I15S□	
D-CUT TYPE S7I15D□	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S7I15GA S7I15GB S7I15GC S7I15GD		S7I15GA(TP) S7I15GB(TP) S7I15GC(TP) S7I15GD(TP) S7I15GACE S7I15GBCE S7I15GE S7I15GCCE S7I15GDCE S7I15GECE		S7I15GX S7I15GXCE	S7I15GT	
CW	**CCW**	**CW**	**CCW**	**CW,CCW**	**CW**	**CCW**
						

주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



15W

INDUCTION MOTOR □80㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
80	S8I15GA S8I15GA(TP) S8I15GACE	4	15	1Ø 110	60	Cont.	0.43	1600	1.00	0.100	1.20	0.120	4.0
	S8I15GB S8I15GB(TP) S8I15GBCE	4	15	1Ø 220	60	Cont.	0.22	1600	1.00	0.100	1.20	0.120	1.0
	S8I15GC S8I15GC(TP) S8I15GCCE	4	15	1Ø 100	50	Cont.	0.51	1300	1.20	0.120	0.95	0.095	4.0
					60		0.43	1550	1.00	0.100			
	S8I15GD S8I15GD(TP) S8I15GDCE	4	15	1Ø 200	50	Cont.	0.25	1300	1.20	0.120	0.95	0.095	1.0
					60		0.22	1550	1.00	0.100			
	S8I15GE S8I15GECE	4	15	1Ø 100	50	Cont.	0.51	1250	1.20	0.120	0.95	0.095	4.0
					60		0.42	1550	1.00	0.100			
				1Ø 115	60		0.46	1600	1.00	0.100			3.0
	S8I15GX S8I15GXCE	4	15	1Ø 220	50	Cont.	0.16	1200	1.30	0.130	0.95	0.095	1.0
				1Ø 240			0.17		1.40	0.140	1.10	0.110	

❖ 기종명 S7I15GE는 UL규격 인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO. E172720) (S7I15GE is UL approved (UL FILE No.E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S7I15GE type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S7I15GECE는 115V용 사양으로만 출하됩니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP. S7I15GECE is available only for 115V specification.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S7I15GE, S7I15GX는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S7I15GE, S7I15GX is thermally protected type with TP mounted.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L"or "H"type does not apply to motors under 40W.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S8KA□B	kg-cm	3.4	4.1	5.7	6.8	8.5	10.2	11.3	14.2	17.0	20.4	20.4	25.6	30.7	36.8	40.9	46.2	55.4	69.2	80	80	80	80	80	80
	N·m	0.333	0.402	0.559	0.666	0.833	1.000	1.107	1.392	1.666	1.999	1.999	2.509	3.009	3.606	4.008	4.530	5.433	6.786	7.840	7.840	7.840	7.840	7.840	7.840

60Hz

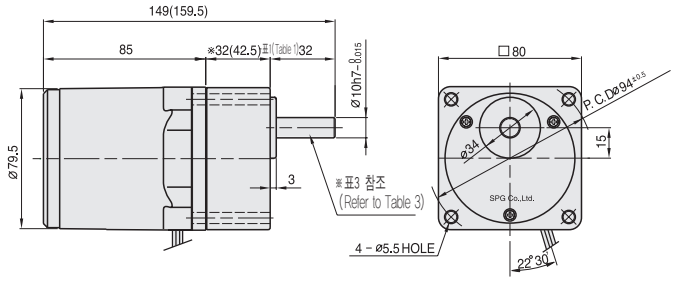
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S8KA□B	kg-cm	2.9	3.5	4.9	5.8	7.3	8.7	9.7	12.2	14.6	17.5	17.5	21.9	26.3	31.5	35.0	39.6	47.5	59.4	71.3	79.2	80	80	80	80
	N·m	0.284	0.343	0.481	0.568	0.715	0.853	0.951	1.196	1.432	1.715	1.715	2.146	2.577	3.087	3.430	3.881	4.658	5.825	6.992	7.767	7.840	7.840	7.840	7.840

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 80㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 80 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향 입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L"or "H"type does not apply to motors under 40W.)

DIMENSIONS

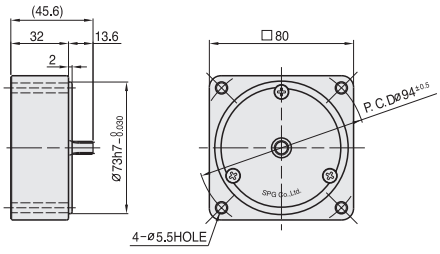
✚ GEARED MOTOR

※MOTOR MODEL : S8I15G□
※HEAD MODEL : S8□A3□~S8□A200□



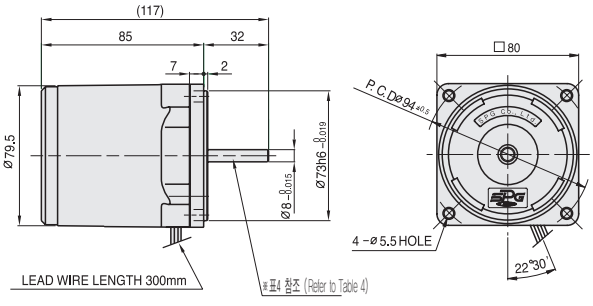
✚ INTER-DECIMAL GEAR HEAD

※ MODEL : S8GX10B



✚ MOTOR

※MOTOR MODEL : S7I15□□



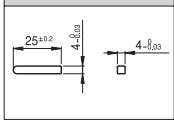
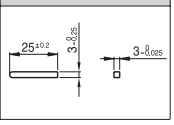
✚ ※32(42.5) - (표1 (Table1))

GEAR RATIO	SIZE(mm)
S8□A3□ ~ S8□A18□	32
S8□A20□ ~ S8□A200□	42.5

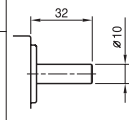
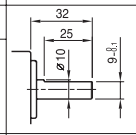
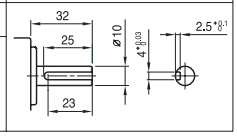
✚ WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		1.14
DECIMAL GEAR HEAD		0.43
GEAR HEAD	S8□A3□ ~S8□A18□	0.43
	S8□A20□ ~S8□A40□	0.57
	S8□A50□ ~S8□A200□	0.61

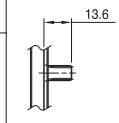
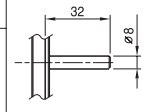
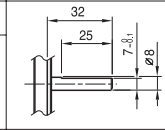
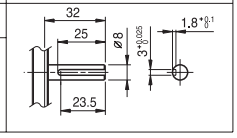
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S8SA3□ ~S8SA200□	
D-CUT TYPE S8DA3□ ~S8DA200□	
KEY TYPE S8KA3□ ~S8KA200□	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

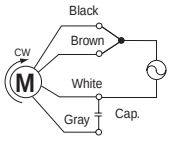
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S8I15G□	
STRAIGHT TYPE S8I15S□	
D-CUT TYPE S8I15D□	
KEY TYPE S8I15K□	

SCHEMATIC DIAGRAMS

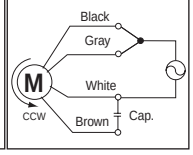
회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S8I15GA S8I15GB
S8I15GC S8I15GD

CW

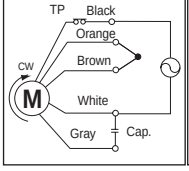


CCW

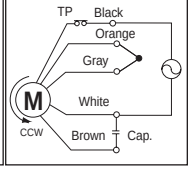


S8I15GA(TP) S8I15GB(TP)
S8I15GC(TP) S8I15GD(TP)
S8I15GACE S8I15GBCE S8I15GE
S8I15GCCE S8I15GDCE S8I15GECE

CW

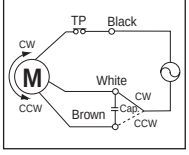


CCW



S8I15GX
S8I15GXCE

CW,CCW



주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



25W

INDUCTION MOTOR □80㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
80	S8I25GA S8I25GA(TP) S8I25GACE	4	25	1Ø 110	60	Cont.	0.51	1600	1.60	0.160	1.80	0.180	6.0
	S8I25GB S8I25GB(TP) S8I25GBCE	4	25	1Ø 220	60	Cont.	0.23	1550	1.65	0.165	1.80	0.180	1.5
	S8I25GC S8I25GC(TP) S8I25GCCE	4	25	1Ø 100	50	Cont.	0.57	1250	2.00	0.200	1.45	0.145	6.0
					60		0.52	1550	1.65	0.165			
	S8I25GD S8I25GD(TP) S8I25GDCE	4	25	1Ø 200	50	Cont.	0.30	1250	2.00	0.200	1.45	0.145	1.5
					60		0.29	1500	1.70	0.170			
	S8I25GE S8I25GECE	4	25	1Ø 100	50	Cont.	0.54	1250	2.00	0.200	1.20	0.120	6.0
					60		0.55	1500	1.70	0.170			
				1Ø 115	60		0.59	1500	1.70	0.170			4.5
	S8I25GX S8I25GXCE	4	25	1Ø 220	50	Cont.	0.23	1200	2.10	0.210	1.10	0.110	1.3
				1Ø 240			0.25		2.20	0.220	1.30	0.130	
	S8I25GU S8I25GUCE	4	25	3Ø 200	50	Cont.	0.26	1300	1.95	0.195	3.50	0.350	—
					60		0.24	1550	1.65	0.165	2.90	0.290	
	S8I25GT S8I25GTCE	4	25	3Ø 220	50	Cont.	0.28	1350	1.90	0.190	4.20	0.420	—
					60		0.24	1600	1.60	0.160	3.50	0.350	
	S8I25GS S8I25GSCE	4	25	3Ø 380	50	Cont.	0.14	1250	2.00	0.200	3.15	0.315	—
					60		0.12	1500	1.70	0.170	2.50	0.250	
				3Ø 400	50	Cont.	0.14	1250	2.10	0.210	3.50	0.350	
					60		0.12	1500	1.80	0.180	2.75	0.275	
				3Ø 415	50	Cont.	0.15	1300	1.95	0.195	3.75	0.375	
					60		0.13	1550	1.65	0.165	3.00	0.300	
				3Ø 440	50	Cont.	0.15	1300	2.10	0.210	4.40	0.440	
					60		0.13	1550	1.80	0.180	3.40	0.340	

❖ 기종명 S7I15GE는 UL규격 인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO. E172720) (S7I15GE is UL approved (UL FILE No.E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S7I15GE type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S7I15GECE는 115V용 사양으로만 출하됩니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP. S7I15GECE is available only for 115V specification.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S7I15GE, S7I15GX는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S7I15GE, S7I15GX is thermally protected type with TP mounted.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L"or "H"type does not apply to motors under 40W.)
❖ 삼상 380V~440V모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S8KA□B	kg-cm	5.3	6.4	8.9	10.7	13.4	16.0	17.8	22.3	26.7	32.1	32.1	40.2	48.2	57.8	64.2	72.6	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	N·m	0.519	0.627	0.872	1.049	1.313	1.568	1.744	2.185	2.617	3.146	3.146	3.940	4.724	5.664	6.292	7.115	7.840	7.840	7.840	7.840	7.840	7.840	7.840	7.840

60Hz

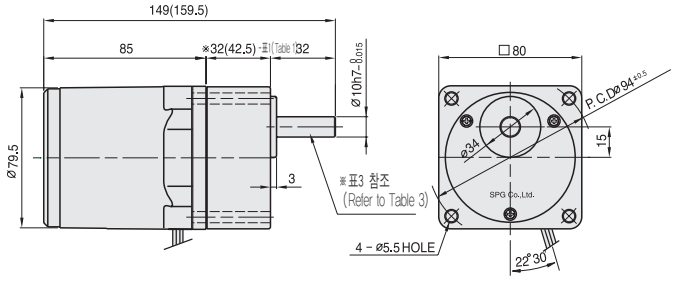
MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S8KA□B	kg-cm	4.4	5.2	7.3	8.7	10.9	13.1	14.6	18.2	21.9	26.2	26.3	32.9	39.4	47.3	52.6	59.4	71.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	N·m	0.431	0.510	0.715	0.853	1.068	1.284	1.431	1.784	2.146	2.568	2.577	3.224	3.861	4.635	5.155	5.821	6.987	7.840	7.840	7.840	7.840	7.840	7.840	7.840

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 80㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 80 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향 입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L"or "H"type does not apply to motors under 40W.)

DIMENSIONS

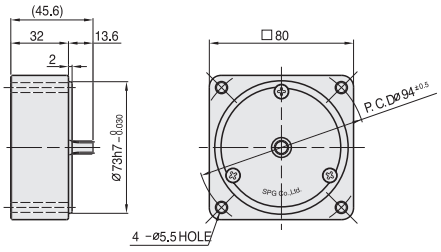
GEARED MOTOR

※MOTOR MODEL : S8I25G□
※HEAD MODEL : S8□A3□~S8□A200□



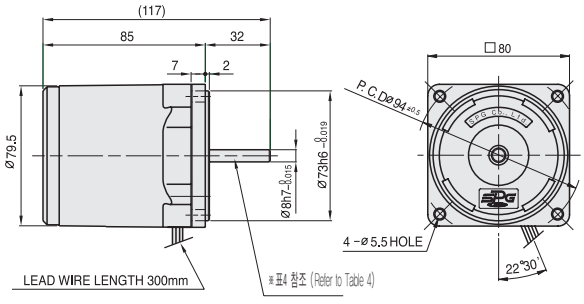
INTER-DECIMAL GEAR HEAD

※MODEL : S8GX10B



MOTOR

※MOTOR MODEL : S8I25□□



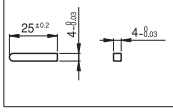
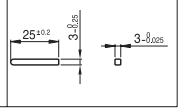
※32(42.5) - (표1 (Table1))

GEAR RATIO	SIZE(mm)
S8□A3□ ~ S8□A18□	32
S8□A20□ ~ S8□A200□	42.5

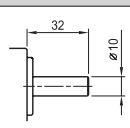
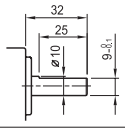
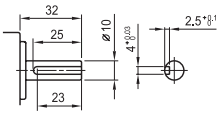
WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		1.46
DECIMAL GEAR HEAD		0.43
GEAR HEAD	S8□A3□ ~S8□A18□	0.43
	S8□A20□ ~S8□A40□	0.57
	S8□A50□ ~S8□A200□	0.61

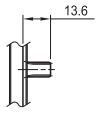
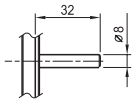
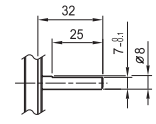
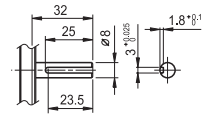
KEY SPEC

GEAR HEAD	MOTOR
	

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S8SA3□ ~S8SA200□	
D-CUT TYPE S8DA3□ ~S8DA200□	
KEY TYPE S8KA3□ ~S8KA200□	

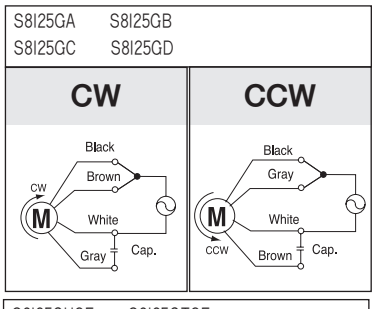
MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S8I25G□	
STRAIGHT TYPE S8I25S□	
D-CUT TYPE S8I25D□	
KEY TYPE S8I25K□	

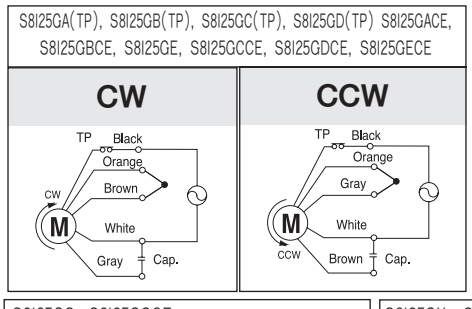
SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

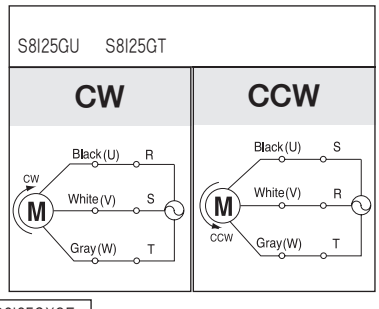
S8I25GA S8I25GB
S8I25GC S8I25GD



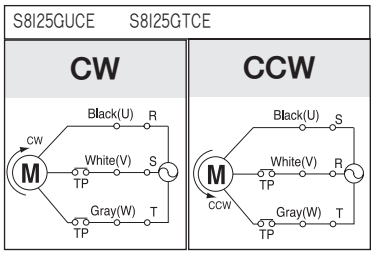
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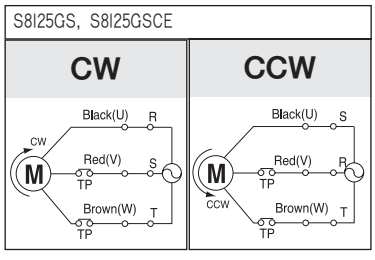
S8I25GU S8I25GT



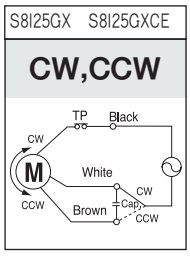
S8I25GUCE S8I25GTCE



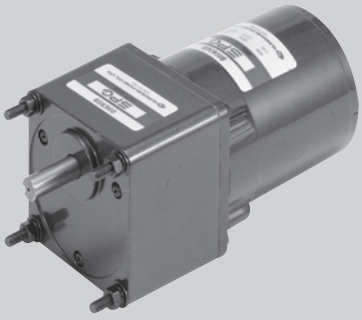
S8I25GS, S8I25GSCE



S8I25GX S8I25GXCE



주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



40W

INDUCTION MOTOR □90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9I40GA( ) S9I40GA( )(TP) S9I40GA( )CE	4	40	1 Ø 110	60	Cont.	0.82	1600	2.50	0.250	2.90	0.290	10.0
	S9I40GB( ) S9I40GB( )(TP) S9I40GB( )CE	4	40	1 Ø 220	60	Cont.	0.41	1600	2.50	0.250	2.90	0.290	2.5
	S9I40GC( ) S9I40GC( )(TP) S9I40GC( )CE	4	40	1 Ø 100	50	Cont.	0.80	1300	3.10	0.310	2.40	0.240	10.0
					60		0.85	1550	2.60	0.260			
	S9I40GD( ) S9I40GD( )(TP) S9I40GD( )CE	4	40	1 Ø 200	50	Cont.	0.41	1300	3.10	0.310	2.40	0.240	2.5
					60		0.43	1550	2.60	0.260			
	S9I40GE( ) S9I40GE( )CE	4	40	1 Ø 100	50	Cont.	0.82	1300	3.10	0.310	2.40	0.240	10.0
					60		0.85	1550	2.60	0.260			
				1 Ø 115	60		0.91	1550	2.60	0.260			8.0
	S9I40GX( ) S9I40GX( )CE	4	40	1 Ø 220	50	Cont.	0.34	1250	3.15	0.315	1.80	0.180	2.0
				1 Ø 240			0.37		3.35	0.335	2.10	0.210	
	S9I40GU( ) S9I40GU( )CE	4	40	3 Ø 200	50	Cont.	0.36	1300	3.10	0.310	6.30	0.630	—
					60		0.33	1550	2.60	0.260	5.20	0.520	
	S9I40GT( ) S9I40GT( )CE	4	40	3 Ø 220	50	Cont.	0.39	1350	3.00	0.300	7.60	0.760	—
					60		0.33	1600	2.50	0.250	6.10	0.610	
	S9I40GS( ) S9I40GS( )CE	4	40	3 Ø 380	50	Cont.	0.21	1300	3.20	0.320	6.30	0.630	—
					60		0.19	1550	2.70	0.270	4.85	0.485	
				3 Ø 400	50	Cont.	0.21	1300	3.30	0.330	6.90	0.690	
					60		0.19	1550	2.80	0.280	5.25	0.525	
				3 Ø 415	50	Cont.	0.21	1350	3.10	0.310	7.30	0.730	
					60		0.19	1600	2.60	0.260	5.70	0.570	
				3 Ø 440	50	Cont.	0.21	1350	3.20	0.320	8.20	0.820	
					60		0.19	1600	2.70	0.270	6.30	0.630	

❖ 기종명 S9I40GE는 UL, 규격인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO. E172720) (S9I40GE is UL approved (UL FILE No. E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S9I40GE type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S9I40GE( )CE는 115V용 사양으로만 출하됩니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP. S9I40GE( )CE is available only for 115V specification.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9I40GE, S9I40GX, S9I40GS는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S9I40GE, S9I40GX, S9I40GS is thermally protected type with TP mounted.)
❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)
❖ 삼상 380V~440V모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KB□B( )	kg-Cm	8.3	9.9	13.8	16.5	20.7	24.8	27.5	34.4	41.3	49.6	49.6	62.1	74.5	89.4	99.3	100	100	100	100	100	100	100	100	100
	N·m	0.813	0.970	1.352	1.617	2.029	2.430	2.695	3.371	4.047	4.861	4.861	6.086	7.301	8.761	9.731	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800

60Hz

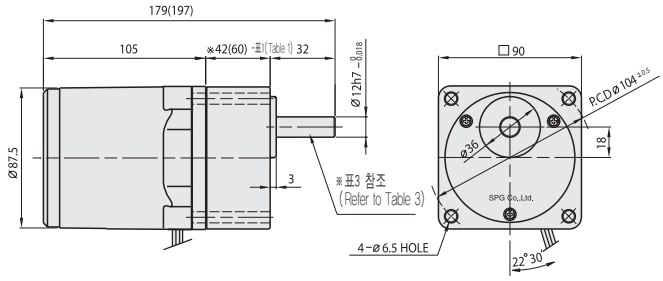
MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KB□B( )	kg-cm	6.8	8.2	11.3	13.6	17.0	20.4	22.7	28.4	34.0	40.8	40.9	51.1	61.3	73.6	81.8	100	100	100	100	100	100	100	100	100
	N·m	0.666	0.804	1.107	1.333	1.666	1.999	2.225	2.783	3.332	3.998	4.008	5.008	6.007	7.213	8.016	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 100kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 100 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향 입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)

DIMENSIONS

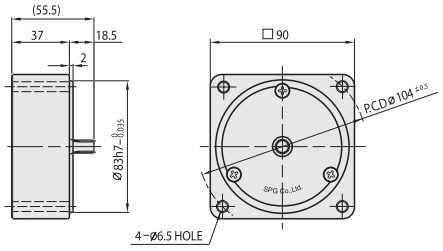
GEARED MOTOR

※MOTOR MODEL : S9I40G□□
※HEAD MODEL : S9□B3□□~S9□B200□□



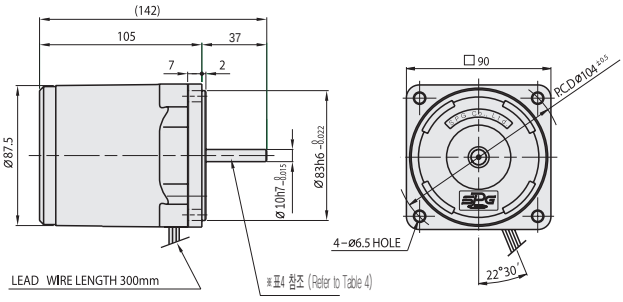
INTER-DECIMAL GEAR HEAD

※MODEL : S9GX10B(H,L)



MOTOR

※MOTOR MODEL : S9I40□□□



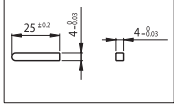
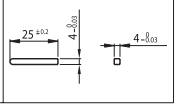
※42(60) - (표1 (Table1))

GEAR RATIO	SIZE(mm)
S9□B3□□ ~ S9□B18□□	42
S9□B20□□ ~ S9□B200□□	60

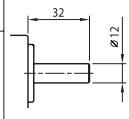
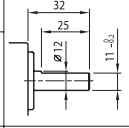
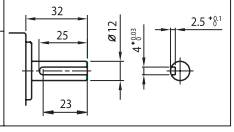
WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		2.30
DECIMAL GEAR HEAD		0.60
GEAR HEAD	S9□B3□□ ~S9□B18□□	0.73
	S9□B20□□ ~S9□B40□□	1.03
	S9□B50□□ ~S9□B200□□	1.13

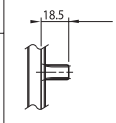
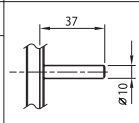
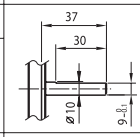
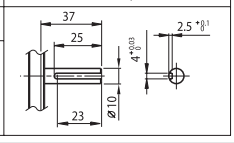
KEY SPEC

GEAR HEAD	MOTOR
	

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SB3□□ ~S9SB200□□	
D-CUT TYPE S9DB3□□ ~S9DB200□□	
KEY TYPE S9KB3□□ ~S9KB200□□	

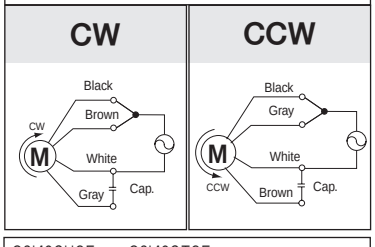
MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9I40G□□	
STRAIGHT TYPE S9I40S□	
D-CUT TYPE S9I40D□	
KEY TYPE S9I40K□	

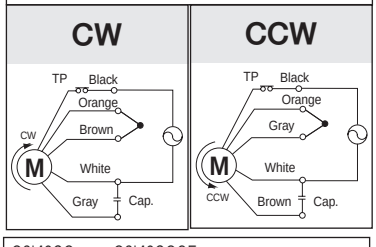
SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

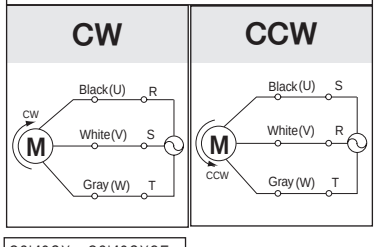
S9I40GA S9I40GB
S9I40GC S9I40GD



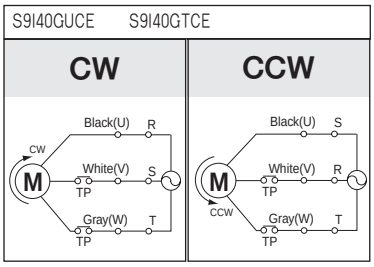
S9I40GA(TP), S9I40GB(TP), S9I40GC(TP), S9I40GD(TP)
S9I40GACE, S9I40GBCE, S9I40GE, S9I40GCCE, S9I40GDCE, S9I40GECE



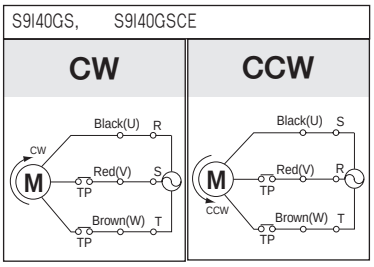
S9I40GU S9I40GT



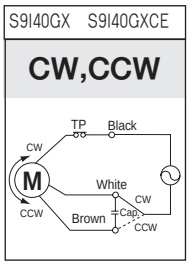
S9I40GUCE S9I40GTCE



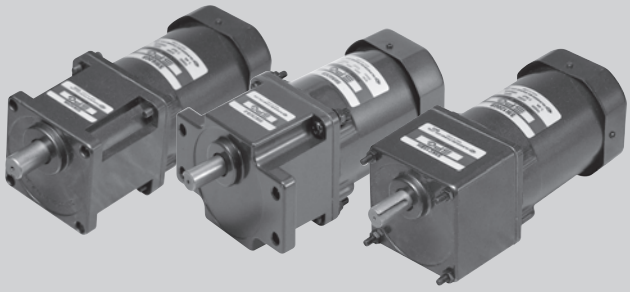
S9I40GS, S9I40GSCE



S9I40GX S9I40GXCE



주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



60W

INDUCTION MOTOR □90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9I60GA( ) S9I60GA( )(TP) S9I60GA( )CE	4	60	1Ø 110	60	Cont.	1.35	1600	3.80	0.380	4.80	0.480	15.0
	S9I60GB( ) S9I60GB( )(TP) S9I60GB( )CE	4	60	1Ø 220	60	Cont.	0.68	1600	3.90	0.390	4.80	0.480	4.0
	S9I60GC( ) S9I60GC( )(TP) S9I60GC( )CE	4	60	1Ø 100	50	Cont.	1.26	1300	4.60	0.460	3.40	0.340	15.0
					60		1.37	1550	3.90	0.390			
	S9I60GD( ) S9I60GD( )(TP) S9I60GD( )CE	4	60	1Ø 200	50	Cont.	0.65	1300	4.70	0.470	3.85	0.385	4.0
					60		0.70	1550	4.00	0.400			
	S9I60GE( ) S9I60GE( )CE	4	60	1Ø 100	50	Cont.	1.10	1300	4.60	0.460	3.20	0.320	15.0
					60		1.20	1550	3.90	0.390			
				1Ø 115	60		1.20	1550	4.00	0.400			12.0
	S9I60GX( ) S9I60GX( )CE	4	60	1Ø 220	50	Cont.	0.47	1300	4.60	0.460	3.20	0.320	3.5
				1Ø 240			0.50		4.90	0.490	3.90	0.390	
	S9I60GU( ) S9I60GU( )CE	4	60	3Ø 200	50	Cont.	0.60	1300	4.60	0.460	9.30	0.930	___
					60		0.50	1550	3.90	0.390	8.00	0.800	
	S9I60GT( ) S9I60GT( )CE	4	60	3Ø 220	50	Cont.	0.80	1350	4.40	0.440	11.35	1.135	___
					60		0.57	1600	3.90	0.390	9.30	0.930	
	S9I60GS( ) S9I60GS( )CE	4	60	3Ø 380	50	Cont.	0.27	1300	4.60	0.460	8.25	0.825	___
					60		0.24	1550	3.90	0.390	6.50	0.650	
				3Ø 400	50	Cont.	0.29	1300	4.70	0.470	9.30	0.930	
					60		0.25	1550	4.00	0.400	7.35	0.735	
				3Ø 415	50	Cont.	0.27	1350	4.60	0.460	9.95	0.995	
					60		0.23	1600	3.80	0.380	7.50	0.750	
				3Ø 440	50	Cont.	0.31	1350	4.70	0.470	10.75	1.075	
					60		0.25	1600	3.90	0.390	8.40	0.840	

❖ 기종명 S9I60GE는 UL, 규격인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO. E172720) (S9I60GE is UL approved (UL FILE No. E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S9I60GE type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S9I60GE( )CE는 115V용 사양으로만 출하됩니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP. S9I60GE( )CE is available only for 115V specification.)
❖ 기종명 맨 끝자리에 (TP)와 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9I60GE, S9I60GX, S9I60GS는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S9I60GE, S9I60GX, S9I60GS is thermally protected type with TP mounted.)
❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)
❖ 삼상 380V~440V모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KC□B( )	kg-cm	12.2	14.6	20.3	24.3	30.4	36.5	40.5	45.6	54.8	65.7	73.0	82.5	99.0	119	132	165	198	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.196	1.431	1.989	2.381	2.989	3.577	3.969	4.469	5.370	6.439	7.154	8.085	9.702	11.66	12.94	16.17	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60

60Hz

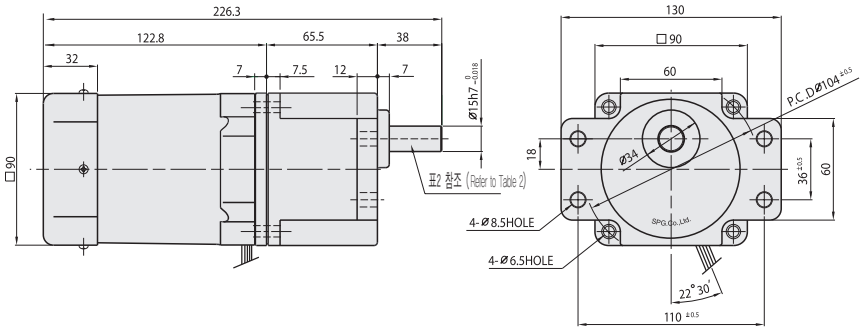
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KC□B( )	kg-cm	9.72	11.7	16.2	19.4	24.3	29.2	32.4	36.5	43.8	52.6	58.4	66.0	79.2	95.0	106	132	158	177	200	200	200	200	200	200
S9KC□B( )-S	N·m	0.953	1.147	1.588	1.901	2.381	2.862	3.175	3.577	4.292	5.155	5.723	6.468	7.762	9.310	10.39	12.94	15.48	17.35	19.60	19.60	19.60	19.60	19.60	19.60

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 200㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향 입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)

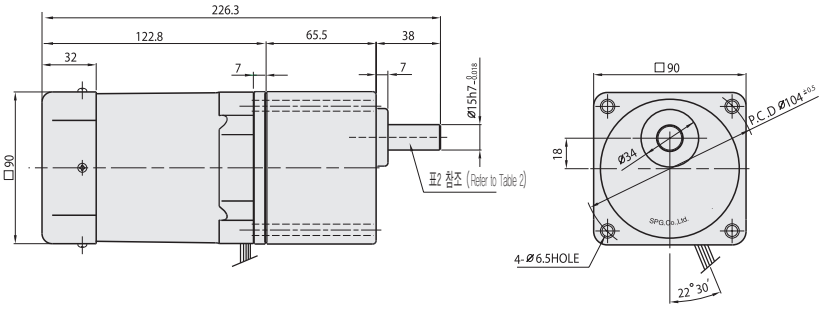
DIMENSIONS

✚ GEARED MOTOR

※MOTOR MODEL : S9I60G□□
※HEAD MODEL : S9□C3B□-S~S9□C200B□-S

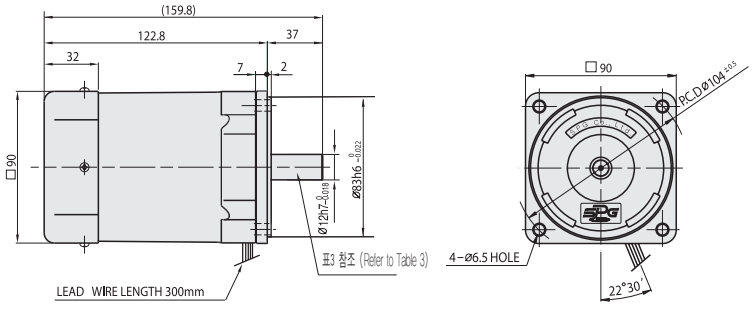


※MOTOR MODEL : S9I60G□□
※HEAD MODEL : S9□C3B□-S~S9□C200B□-S



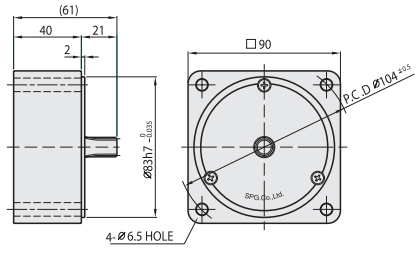
✚ MOTOR

※MOTOR MODEL : S9I60□□□



✚ INTER-DECIMAL GEAR HEAD

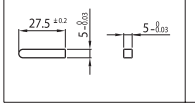
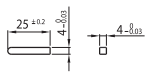
※MODEL : S9GX10B(H,L)-S



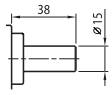
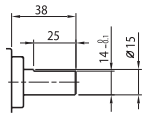
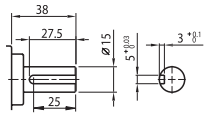
✚ WEIGHT - (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.44
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3B□ ~S9□C10B□	1.21
	S9□C12.5B□ ~S9□C20B□	1.30
	S9□C25B□ ~S9□C60B□	1.40
	S9□C75B□ ~S9□C200B□	1.45

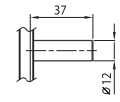
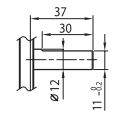
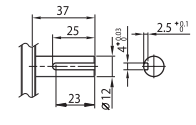
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SC3B□ ~S9SC200B□	
D-CUT TYPE S9DC3B□ ~S9DC200B□	
KEY TYPE S9KC3B□ ~S9KC200B□	

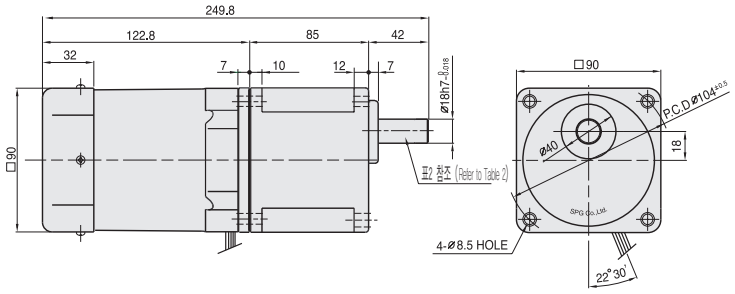
✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9I60G□□	
STRAIGHT TYPE S9I60S□	
D-CUT TYPE S9I60D□	
KEY TYPE S9I60K□	

DIMENSIONS

✚ GEARED MOTOR

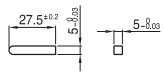
※MOTOR MODEL : S9I60G□H
※HEAD MODEL : S9□D3B~S9□D200B



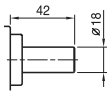
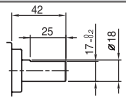
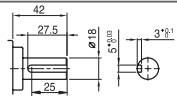
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.44
GEAR HEAD	S9□D3B ~S9□D10B□	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)	MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)	MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE		D-CUT TYPE		KEY TYPE	
S9SD3B ~S9SD200B		S9DD3B ~S9DD200B		S9KD3B ~S9KD200B	

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KD□B	kg-cm	12.2	14.6	20.3	24.3	30.4	36.5	40.5	45.6	54.8	65.7	73.0	82.5	99.0	119	132	165	198	221	266	295	300	300	300	300
	N·m	1.196	1.431	1.989	2.381	2.989	3.577	3.969	4.469	5.370	6.439	7.154	8.085	9.702	11.66	12.94	16.17	19.40	21.67	26.09	28.93	29.42	29.42	29.42	29.42

60Hz

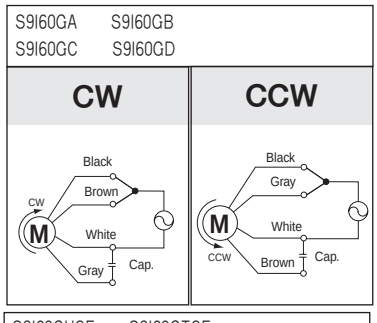
MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KD□B	kg-cm	9.72	11.7	16.2	19.4	24.3	29.2	32.4	36.5	43.8	52.6	58.4	66.0	79.2	95.0	106	132	158	177	212	236	283	300	300	300
	N·m	0.953	1.147	1.588	1.901	2.381	2.862	3.175	3.577	4.292	5.155	5.723	6.468	7.762	9.310	10.39	12.94	15.48	17.35	20.79	23.14	27.75	29.42	29.42	29.42

❖ GEAR HEAD 품명중 □은 감속비를 표시 합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 300kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. MOTOR의 H와 사용하여 주십시오. (Only "H" type is applicable. Please use 'H' type motor.)

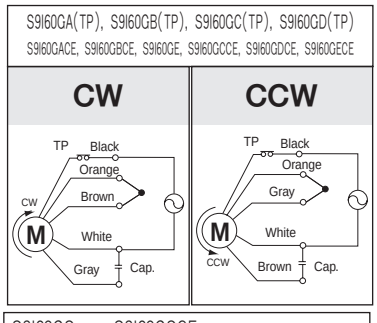
SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

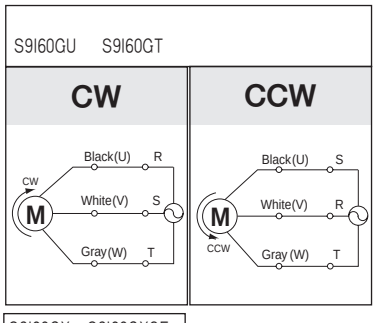
S9I60GA S9I60GB
S9I60GC S9I60GD



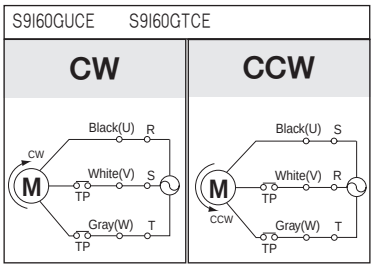
S9I60GA(TP), S9I60GB(TP), S9I60GC(TP), S9I60GD(TP)
S9I60GACE, S9I60GBCE, S9I60GE, S9I60GCCE, S9I60GDCE, S9I60GECE



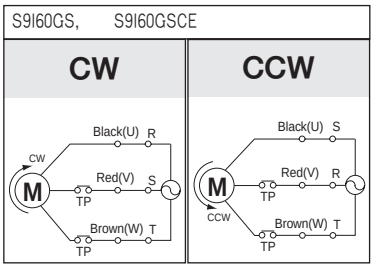
S9I60GU S9I60GT



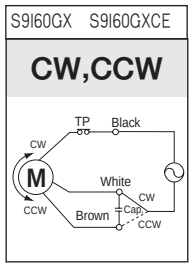
S9I60GUCE S9I60GTCE



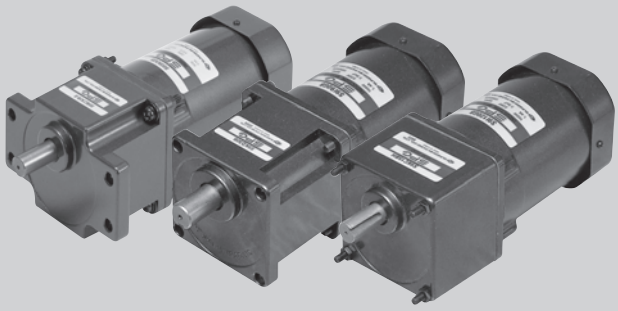
S9I60GS, S9I60GSCE



S9I60GX S9I60GXCE



주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



90W

INDUCTION MOTOR □90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9I90GA( ) S9I90GA( )(TP) S9I90GA( )CE	4	90	1Ø 110	60	Cont.	2.00	1600	5.60	0.560	5.70	0.570	25.0
	S9I90GB( ) S9I90GB( )(TP) S9I90GB( )CE	4	90	1Ø 220	60	Cont.	1.00	1600	5.60	0.560	5.70	0.570	6.0
	S9I90GC( ) S9I90GC( )(TP) S9I90GC( )CE	4	90	1Ø 100	50	Cont.	1.80	1300	6.90	0.690	5.00	0.500	25.0
					60		2.00	1550	5.80	0.580			
	S9I90GD( ) S9I90GD( )(TP) S9I90GD( )CE	4	90	1Ø 200	50	Cont.	0.90	1300	6.90	0.690	5.00	0.500	6.0
					60		1.00	1550	5.80	0.580			
	S9I90GE( ) S9I90GE( )CE	4	90	1Ø 100	50	Cont.	1.50	1300	6.90	0.690	5.00	0.500	25.0
					60		1.80	1550	5.80	0.580			
				1Ø 115	60		1.80	1550	6.00	0.600			20.0
	S9I90GX( ) S9I90GX( )CE	4	90	1Ø 220	50	Cont.	0.68	1300	6.90	0.690	4.80	0.480	5.0
				1Ø 240			0.72		7.20	0.720	5.20	0.520	
	S9I90GU( ) S9I90GU( )CE	4	90	3Ø 200	50	Cont.	0.63	1300	6.90	0.690	10.60	1.060	—
					60		0.60	1550	6.00	0.600	8.90	0.890	
	S9I90GT( ) S9I90GT( )CE	4	90	3Ø 220	50	Cont.	0.68	1350	6.80	0.680	13.00	1.300	—
					60		0.55	1600	5.70	0.570	10.50	1.050	
	S9I90GS( ) S9I90GS( )CE	4	90	3Ø 380	50	Cont.	0.32	1300	6.80	0.680	10.55	1.055	—
					60		0.30	1550	5.70	0.570	8.20	0.820	
				3Ø 400	50	Cont.	0.35	1300	6.90	0.690	11.70	1.170	
					60		0.32	1550	5.80	0.580	8.90	0.890	
				3Ø 415	50	Cont.	0.33	1350	6.80	0.680	12.00	1.200	
					60		0.29	1600	5.70	0.570	9.50	0.950	
				3Ø 440	50	Cont.	0.35	1350	6.90	0.690	13.30	1.330	
					60		0.31	1600	5.80	0.580	10.50	1.050	

❖ 기종명 S9I90GE는 UL 규격인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO. E172720) (S9I90GE is UL approved (UL FILE No. E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S9I60GE type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S9I90GE( )CE는 115V용 사양으로만 출하됩니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP. S9I90GE( )CE is available only for 115V specification.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9I90GE, S9I90GX, S9I90GS는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S9I90GE, S9I90GX, S9I90GS is thermally protected type with TP mounted.)
❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)
❖ 삼상 380V~440V 모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KC□B( )	kg-cm	18.2	21.9	30.4	36.5	45.6	54.7	60.8	68.4	82.1	98.6	110	124	149	178	198	200	200	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.784	2.146	2.979	3.577	4.469	5.361	5.958	6.703	8.046	9.663	10.78	12.15	14.60	17.44	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60

60Hz

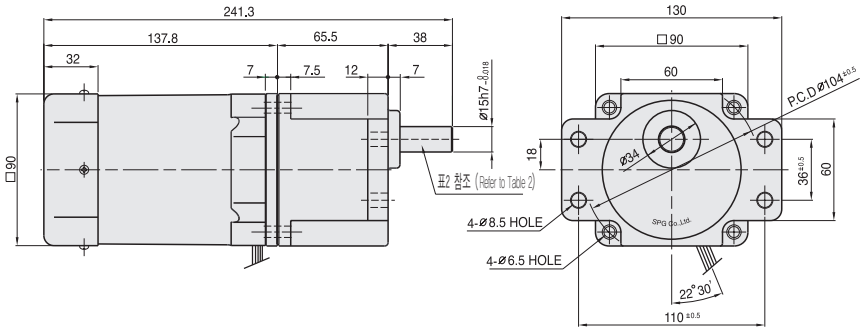
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KC□B( )	kg-cm	14.6	17.5	24.3	29.2	36.5	43.7	48.6	54.8	65.7	78.8	87.6	99.0	119	143	158	198	200	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.431	1.715	2.381	2.862	3.577	4.675	4.763	5.370	6.439	7.722	8.585	9.702	11.66	14.01	15.48	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 200kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향 입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)

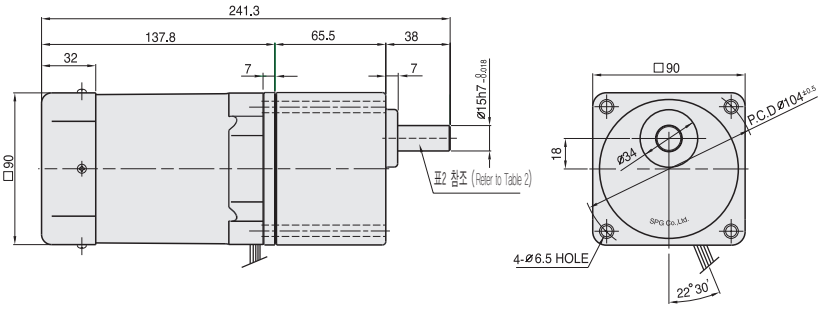
DIMENSIONS

✚ GEARED MOTOR

※MOTOR MODEL : S9I90G□□
※HEAD MODEL : S9□C3B□-S~S9□C200B□-S

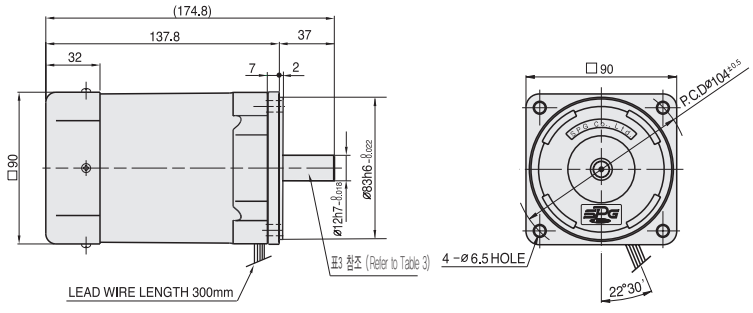


※HEAD MODEL : S9□C3B□~S9□C200B□



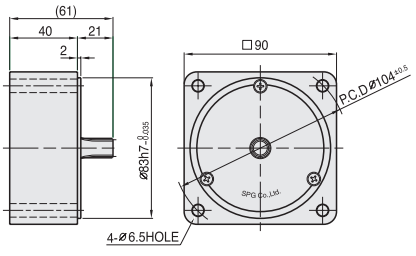
✚ MOTOR

※MOTOR MODEL : S9I90□□□



✚ INTER-DECIMAL GEAR HEAD

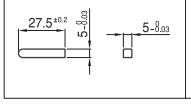
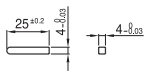
※MOTOR MODEL : S9GX10B(H,L)-S



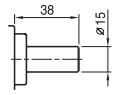
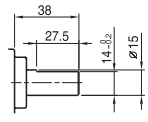
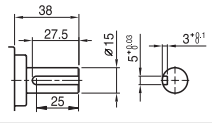
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.93
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3B□ ~S9□C10B□	1.21
	S9□C12.5B□ ~S9□C20B□	1.30
	S9□C25B□ ~S9□C60B□	1.40
	S9□C75B□ ~S9□C200B□	1.45

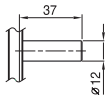
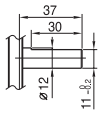
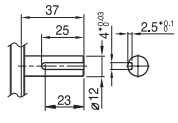
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SC3B□ ~S9SC200B□	
D-CUT TYPE S9DCB3□ ~S9DC200B□	
KEY TYPE S9KC3B□ ~S9KC200B□	

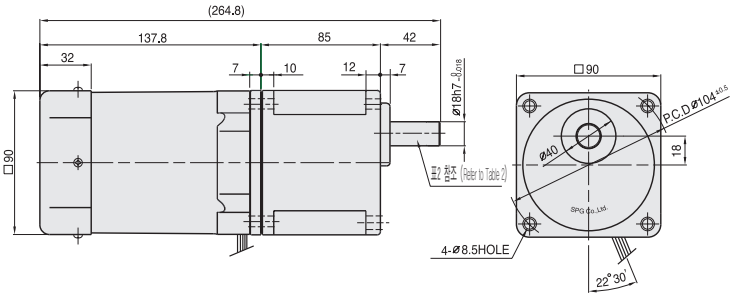
✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9I90G□□	
STRAIGHT TYPE S9I90S□	
D-CUT TYPE S9I90D□	
KEY TYPE S9I90K□	

DIMENSIONS

GEARED MOTOR

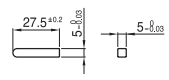
※MOTOR MODEL : S9I90G□H
※HEAD MODEL : S9□D3B~S9□D200B



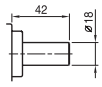
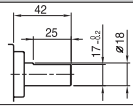
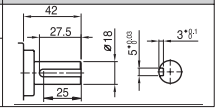
WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.93
GEAR HEAD	S9□D3B ~S9□D10B	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

KEY SPEC

GEAR HEAD


GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)	MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)	MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE		D-CUT TYPE		KEY TYPE	
S9SD3B ~S9SD200B		S9DDB3B ~S9DD200B		S9KD3B ~S9KD200B	

50Hz

MODEL / GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KD□B	kg-cm	18.2	21.9	30.4	36.5	45.6	54.7	60.8	68.4	82.1	98.6	110	124	149	178	198	248	297	300	300	300	300	300	300	300
	N·m	1.784	2.146	2.979	3.577	4.469	5.361	5.958	6.703	8.046	9.663	10.78	12.15	14.60	17.44	19.40	24.32	29.13	29.42	29.42	29.42	29.42	29.42	29.42	29.42

60Hz

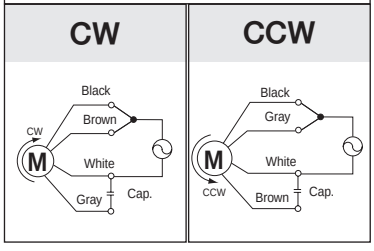
MODEL / GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KD□B	kg-cm	14.6	17.5	24.3	29.2	36.5	43.7	48.6	54.8	65.7	78.8	87.6	99.0	119	143	158	198	238	266	300	300	300	300	300	300
	N·m	1.431	1.715	2.381	2.862	3.577	4.675	4.763	5.370	6.439	7.722	8.585	9.702	11.66	14.01	15.48	19.40	23.34	26.09	29.42	29.42	29.42	29.42	29.42	29.42

❖ GEAR HEAD 품명중 □은 감속비를 표시 합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 300kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. MOTOR의 H와 사용하여 주십시오. (Only "H" type is applicable. Please use 'H' type motor.)

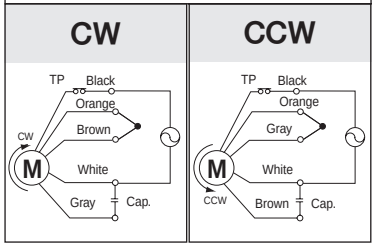
SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

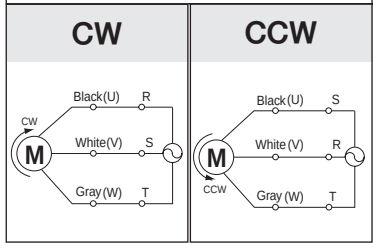
S9I90GA S9I90GB
S9I90GC S9I90GD



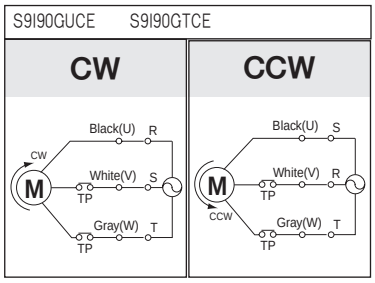
S9I90GA(TP), S9I90GB(TP), S9I90GC(TP), S9I90GD(TP)
S9I90GACE, S9I90GBCE, S9I90GE, S9I90GCCE, S9I90GDCE, S9I90GECE



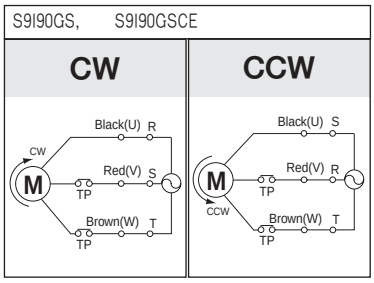
S9I90GU S9I90GT



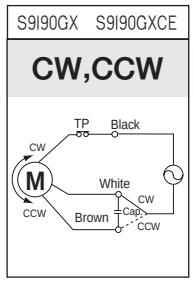
S9I90GUCE S9I90GTCE



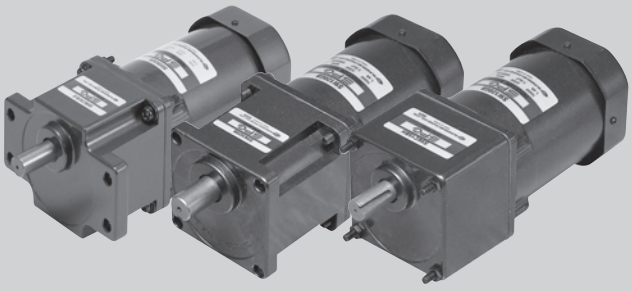
S9I90GS, S9I90GSCE



S9I90GX S9I90GXCE



주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



120W

INDUCTION MOTOR □90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9I120GA S9I120GA(TP) S9I120GACE	4	120	1 Ø 110	60	Cont.	2.10	1600	7.60	0.760	6.20	0.620	25.0
	S9I120GB S9I120GB(TP) S9I120GBCE	4	120	1 Ø 220	60	Cont.	1.00	1600	7.50	0.750	6.00	0.600	6.0
	S9I120GC S9I120GC(TP) S9I120GCCE	4	120	1 Ø 100	50	Cont.	2.00	1250	9.60	0.960	5.70	0.570	25.0
					60			1550	7.90	0.790			
	S9I120GD S9I120GD(TP) S9I120GDCE	4	120	1 Ø 200	50	Cont.	1.00	1250	9.50	0.950	5.50	0.550	6.0
					60			1550	7.80	0.780			

❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. (Only "H" type is applicable.)

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KC□BH	kg-cm	23.2	27.8	38.7	46.4	58.0	69.6	77.4	87.0	104	125	139	156	188	200	200	200	200	200	200	200	200	200	200	200
S9KC□BH-S	N·m	2.276	2.731	3.793	4.552	5.689	6.827	7.586	8.534	10.24	12.29	13.65	15.36	18.43	19.61	19.61	19.61	19.61	19.61	19.61	19.61	19.61	19.61	19.61	19.61

60Hz

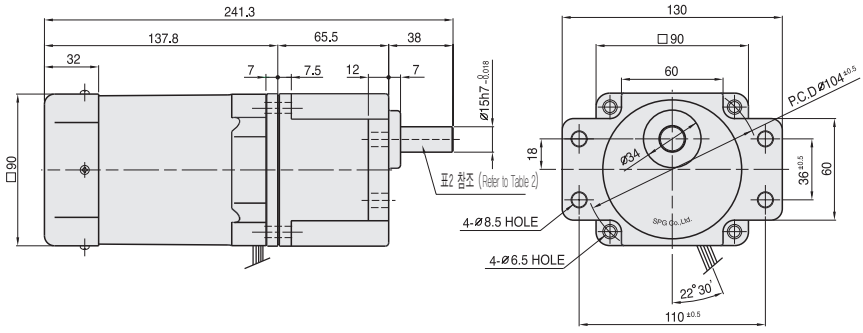
MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KC□BH	kg-cm	18.7	22.5	31.2	37.4	46.8	56.1	62.4	70.2	84.2	101	112	126	152	182	200	200	200	200	200	200	200	200	200	200
S9KC□BH-S	N·m	1.835	2.202	3.058	3.670	4.587	5.505	6.116	6.881	8.257	9.909	11.01	12.39	14.86	17.84	19.61	19.61	19.61	19.61	19.61	19.61	19.61	19.61	19.61	19.61

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 200㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type만 적용됩니다. (Only "H" type is applicable.)

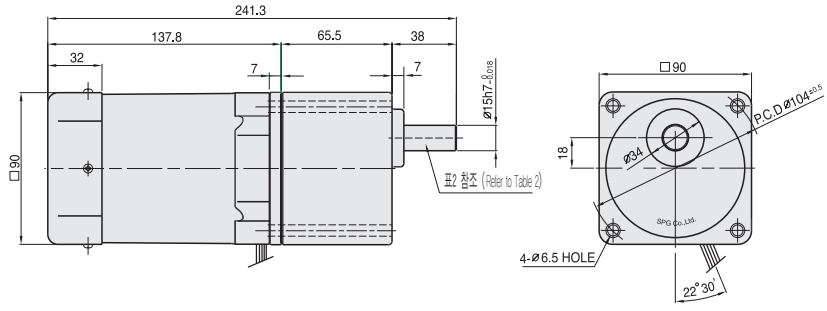
DIMENSIONS

✚ GEARED MOTOR

※MOTOR MODEL : S9I120G□
※HEAD MODEL : S9□C3BH-S~S9□C200BH-S

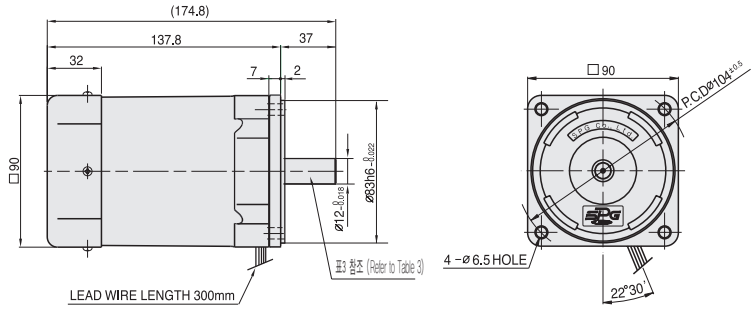


※HEAD MODEL □ : S9□C3BH~S9□C200BH



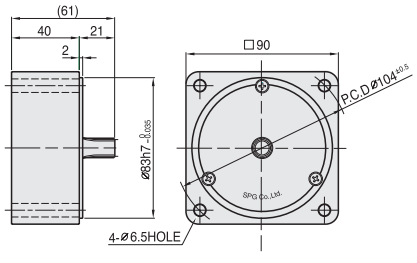
✚ MOTOR

※MOTOR MODEL : S9I120□□



✚ INTER-DECIMAL GEAR HEAD

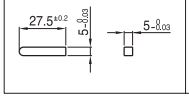
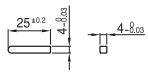
※ MODEL : S9GX10BH-S



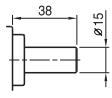
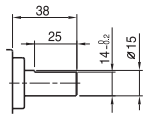
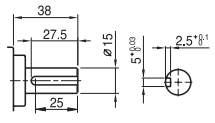
✚ WEIGHT - (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.93
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3BH ~S9□C10BH	1.21
	S9□C12.5BH ~S9□C20BH	1.30
	S9□C25BH ~S9□C60BH	1.40
	S9□C75BH ~S9□C200BH	1.45

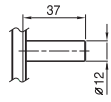
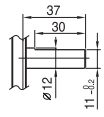
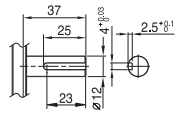
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SC3BH ~S9SC200BH	
D-CUT TYPE S9DC3BH ~S9DC200BH	
KEY TYPE S9KC3BH ~S9KC200BH	

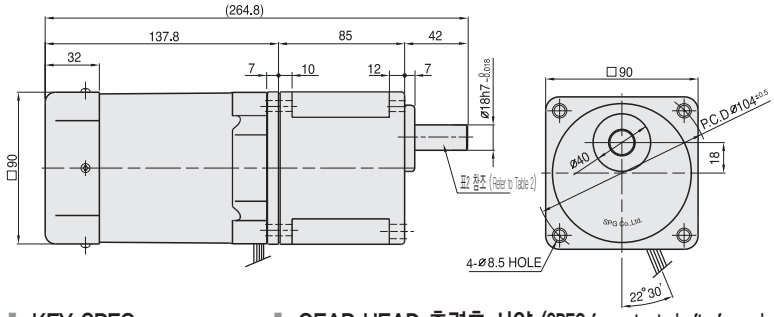
✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9I120G□	
STRAIGHT TYPE S9I120S□	
D-CUT TYPE S9I120D□	
KEY TYPE S9I120□	

DIMENSIONS

✚ GEARED MOTOR

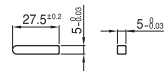
※MOTOR MODEL : S9I120G□
※HEAD MODEL □ : S9□D3B~S9□D200B



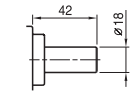
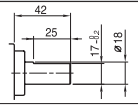
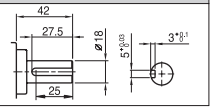
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.93
GEAR HEAD	S9□D3B ~S9□D10B	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)	MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)	MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE		D-CUT TYPE		KEY TYPE	
S9SD3B ~S9SD200B		S9DD3B ~S9DD200B		S9KD3B ~S9KD200B	

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KD□B	kg-cm	23.2	27.8	38.7	46.4	58.0	69.6	77.4	87.0	104	125	139	156	188	225	250	300	300	300	300	300	300	300	300	300
	N·m	2.276	2.731	3.793	4.552	5.689	6.827	7.586	8.534	10.24	12.29	13.65	15.36	18.43	22.12	24.58	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42

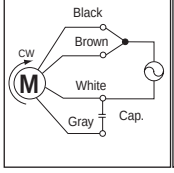
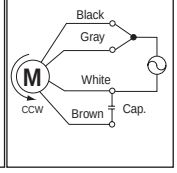
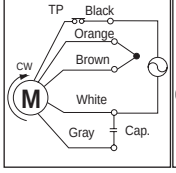
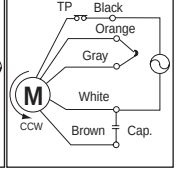
60Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KD□B	kg-cm	18.7	22.5	31.2	37.4	46.8	56.1	62.4	70.2	84.2	101	112	126	152	182	202	252	300	300	300	300	300	300	300	300
	N·m	1.835	2.202	3.058	3.670	4.587	5.505	6.116	6.881	8.757	9.909	11.01	12.39	14.86	17.84	19.82	24.77	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42

❖ GEAR HEAD 품명중 □은 감속비를 표시 합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 300㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. MOTOR의 H와 사용하여 주십시오. (Only "H" type is applicable. Please use 'H' type motor.)

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S9I120GA S9I120GB S9I120GC S9I120GD		S9I120GA(TP) S9I120GB(TP) S9I120GC(TP) S9I120GD(TP) S9I120GACE S9I120GBCE S9I120GCCE S9I120GDCE	
CW	**CCW**	**CW**	**CCW**
			

주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



150W

INDUCTION MOTOR □90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output (W)	Voltage (V)	Frequency (Hz)	Duty	Rated Load Current (A)	Rated Load Speed (rpm)	Rated Load Torque (kg-cm)	Rated Load Torque (N-m)	Starting Torque (kg-cm)	Starting Torque (N-m)	Capacitor (uF)
90	S9I150GU S9I150GUCE	4	150	3 Ø 200	50	Cont.	1.0	1250	11.70	1.170	18.0	1.800	—
					60		0.9	1500	9.70	0.970	15.0	1.500	
	S9I150GT S9I150GTCE	4	150	3 Ø 220	50	Cont.	1.0	1300	11.30	1.130	22.0	2.200	—
					60		0.9	1550	9.40	0.940	19.0	1.900	
	S9I150GS S9I150GSCE	4	150	3 Ø 380	50	Cont.	0.46	1250	11.70	1.170	18.00	1.800	—
					60		0.42	1500	9.70	0.970	15.00	1.500	
				3 Ø 400	50	Cont.	0.49	1250	11.70	1.170	19.00	1.900	
					60		0.43	1500	9.70	0.970	16.00	1.600	

❖ 상기 MODEL은 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. (Only "H" type is applicable.)
❖ 삼상 380V~440V모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KH□B	kg-cm	23.1	27.7	38.5	46.2	57.7	69.3	77.0	86.6	104	125	139	156	187	224	249	300	300	300	300	300	300	300	300	300
	N·m	2.264	2.717	3.773	4.528	5.660	6.792	7.546	8.489	10.24	12.29	13.65	15.36	18.34	21.97	24.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42

60Hz

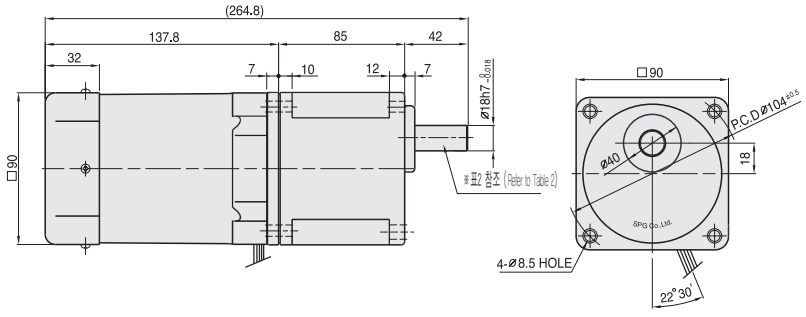
MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KH□B	kg-cm	23.2	27.8	38.7	46.4	58.0	69.6	77.4	87.0	104	125	139	156	188	225	250	300	300	300	300	300	300	300	300	300
	N·m	2.276	2.731	3.793	4.552	5.689	6.827	7.586	8.534	10.24	12.29	13.65	15.36	18.43	22.06	24.52	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible TORQUE of the assembled motor and gearhead.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. (Only "H" type is applicable.)

DIMENSIONS

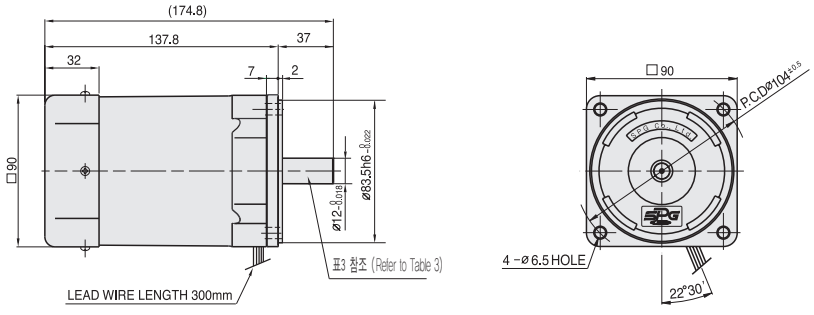
✚ GEARED MOTOR

※MOTOR MODEL : S9I150G□
※HEAD MODEL : S9□H3B~S9□H200B



✚ MOTOR

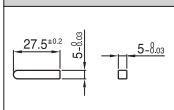
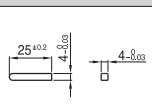
※MODEL : S9I150□□



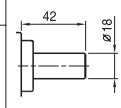
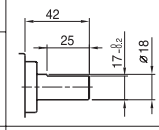
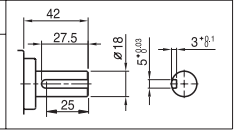
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.93
GEAR HEAD	S9□H3B ~S9□H10B	1.65
	S9□H12.5B ~S9□H20B	1.80
	S9□H25B ~S9□H60B	1.90
	S9□H75B ~S9□H200B	1.95

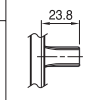
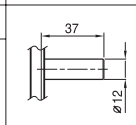
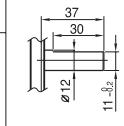
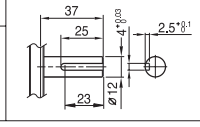
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SH3B ~S9SH200B	
D-CUT TYPE S9DH3B ~S9DH200B	
KEY TYPE S9KH3B ~S9KH200B	

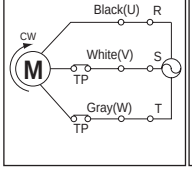
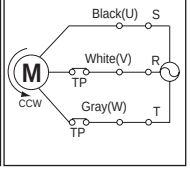
✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9I150G□	
STRAIGHT TYPE S9I150S□	
D-CUT TYPE S9I150D□	
KEY TYPE S9I150K□	

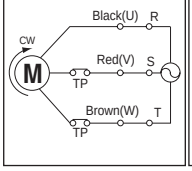
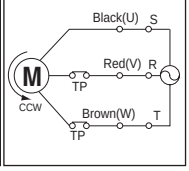
SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S9I150GU S9I150GT
S9I150GUCE S9I150GTCE

CW	CCW
	

S9I150GS
S9I150GSCE

CW	CCW
	

주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



180W

INDUCTION MOTOR □90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9I180GA S9I180GA(TP)	4	180	1 ø 110	60	Cont.	2.60	1600	11.50	1.150	8.00	0.800	25.0
	S9I180GB S9I180GB(TP)	4	180	1 ø 220	60	Cont.	1.32	1600	11.50	1.150	8.00	0.800	6.5
	S9I180GC S9I180GC(TP)	4	180	1 ø 100	50	Cont.	3.20	1250	14.00	1.400	7.00	0.700	25.0
					60		2.90	1550	11.60	1.160			
	S9I180GD S9I180GD(TP)	4	180	1 ø 200	50	Cont.	1.60	1250	14.00	1.400	7.00	0.700	6.5
					60		1.45	1550	11.60	1.160			
	S9I180GTCE	4	180	3 ø 200	50	Cont.	1.18	1250	13.20	1.320	43.20	4.32	
					60		1.02	1500	11.10	1.110	32.90	3.29	
				3 ø 220	50		1.32	1300	12.90	1.290	52.50	5.25	
					60		1.04	1550	10.80	1.080	40.20	4.02	
	S9I180GSCE	4	180	3 ø 380	50	Cont.	0.56	1300	13.4	1.34	39.0	3.90	
					60		0.50	1550	11.2	1.12	30.2	3.02	
				3 ø 400	50		0.57	1350	13.0	1.30	42.6	4.26	
					60		0.50	1600	11.0	1.10	33.0	3.30	

❖ 기종명 맨 끝자리에 (TP)가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. (Only "H" type is applicable.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KH□B	kg-cm	34.0	41.0	57.0	68.0	85.1	102	113	128	153	184	204	230	278	300	300	300	300	300	300	300	300	300	300	300
	N·m	3.336	4.021	5.590	6.672	8.341	10.01	11.12	12.55	15.01	18.04	20.02	22.56	27.26	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42

60Hz

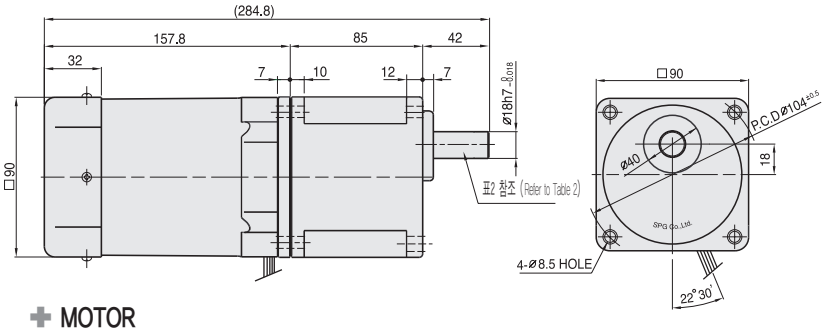
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KH□B	kg-cm	28.1	34.0	47.0	57.0	71.0	84.2	94.0	105	126	152	168	189	227	273	300	300	300	300	300	300	300	300	300	300	300
	N·m	2.756	3.334	4.609	5.590	6.963	8.257	9.218	10.30	12.39	14.91	16.51	18.58	22.29	26.75	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. (Only "H" type is applicable.)

DIMENSIONS

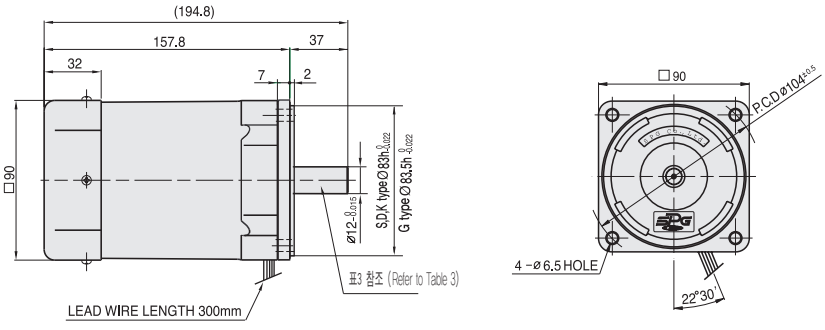
✚ GEARED MOTOR

※MOTOR MODEL : S9I180G□
※HEAD MODEL : S9□H3B~S9□H200B



✚ MOTOR

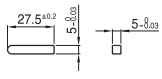
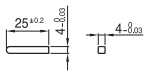
※MOTOR MODEL : S9I180□□



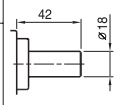
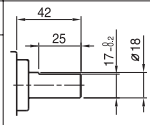
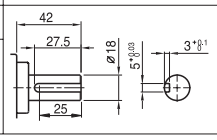
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.70
GEAR HEAD	S9□H3B ~S9□H10B	1.65
	S9□H12.5B ~S9□H20B	1.80
	S9□H25B ~S9□H60B	1.90
	S9□H75B ~S9□H200B	1.95

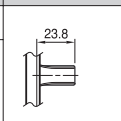
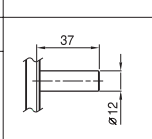
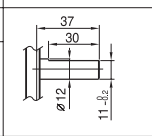
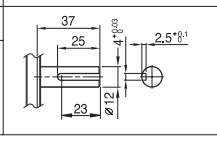
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

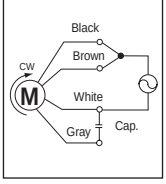
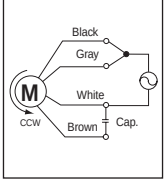
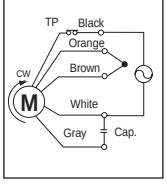
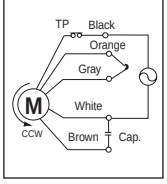
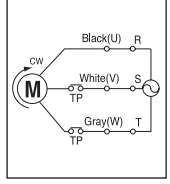
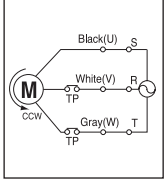
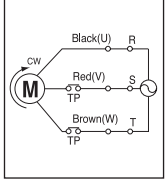
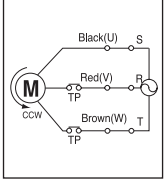
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SH3B ~S9SH200B	
D-CUT TYPE S9DH3B ~S9DH200B	
KEY TYPE S9KH3B ~S9KH200B	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9I180G□	
STRAIGHT TYPE S9I180S□	
D-CUT TYPE S9I180D□	
KEY TYPE S9I180K□	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S9I180GA S9I180GB S9I180GC S9I180GD		S9I180GA(TP) S9I180GB(TP) S9I180GC(TP) S9I180GD(TP)		S9I180GTCE		S9I180GSCE	
CW	**CCW**	**CW**	**CCW**	**CW**	**CCW**	**CW**	**CCW**
							

주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



200W

INDUCTION MOTOR □90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9I200GU	4	200	3 Ø 200	50	Cont.	1.3	1250	16.00	1.600	24.00	2.400	—
					60		1.2	1500	13.40	1.340	20.00	2.000	
	S9I200GT	4	200	3 Ø 220	50	Cont.	1.3	1300	15.00	1.500	30.00	3.000	—
					60		1.2	1550	12.90	1.290	25.00	2.500	
	S9I200GS	4	200	3 Ø 380	50	Cont.	0.62	1250	16.00	1.600	26.00	2.600	—
					60		0.55	1500	13.40	1.340	22.00	2.200	
				3 Ø 400	50	Cont.	0.64	1250	16.00	1.600	30.00	3.000	—
					60		0.55	1500	13.40	1.340	25.00	2.500	

❖ 상기 MODEL은 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. (Only "H" type is applicable.)
❖ 삼상 380V~440V 모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KH□B	kg-cm	39.0	47.0	64.8	77.8	97.2	117	130	146	175	210	233	262	300	300	300	300	300	300	300	300	300	300	300	300
	N·m	3.813	4.609	6.355	7.626	9.532	11.47	12.75	14.32	17.16	20.59	22.88	25.74	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42

60Hz

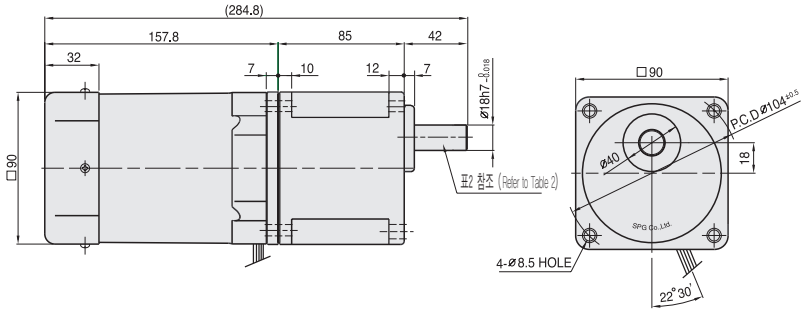
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KH□B	kg-cm	32.0	38.3	53.3	64.0	79.9	96.0	107	120	144	173	192	216	259	300	300	300	300	300	300	3000	300	300	300	300
	N·m	3.134	3.760	5.223	6.267	7.384	9.414	10.49	11.75	14.10	16.97	18.83	21.18	25.40	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. (Only "H" type is applicable.)

DIMENSIONS

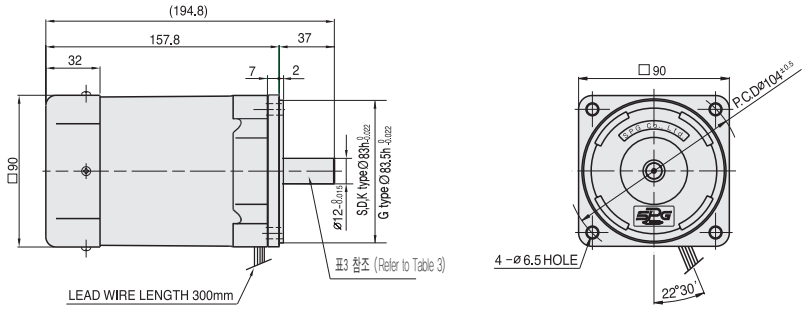
✚ GEARED MOTOR

※MOTOR MODEL : S9I200G□
※HEAD MODEL : S9□H3B~S9□H200B



✚ MOTOR

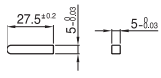
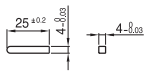
※MOTOR MODEL : S9I200□□



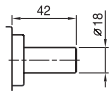
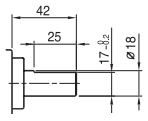
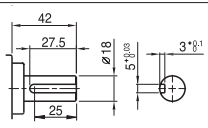
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.70
GEAR HEAD	S9□H3B ~S9□H10B	1.65
	S9□H12.5B ~S9□H20B	1.80
	S9□H25B ~S9□H60B	1.90
	S9□H75B ~S9□H200B	1.95

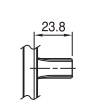
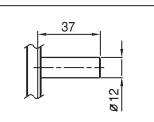
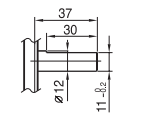
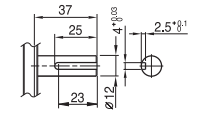
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

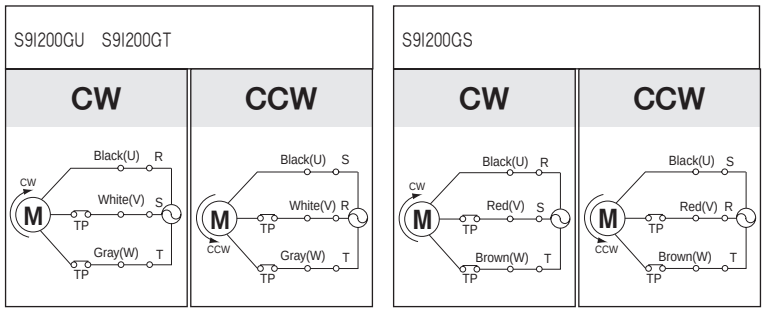
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SH3B ~S9SH200B	
D-CUT TYPE S9DH3B ~S9DH200B	
KEY TYPE S9KH3B ~S9KH200B	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9I200G□	
STRAIGHT TYPE S9I200S□	
D-CUT TYPE S9I200D□	
KEY TYPE S9I200K□	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)



주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)

REVERSIBLE MOTORS

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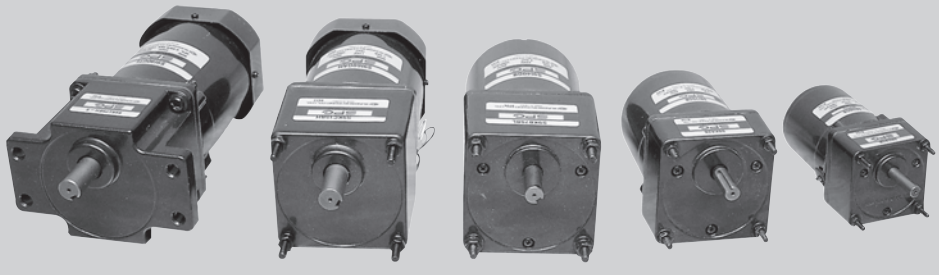
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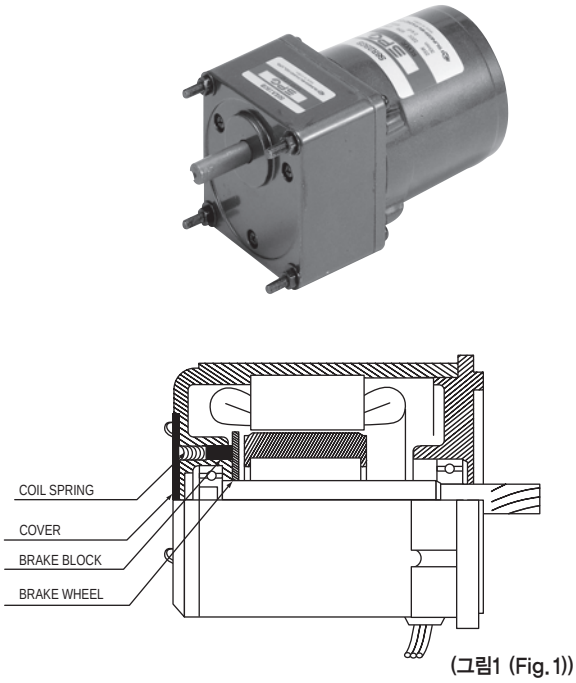
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REVERSIBLE MOTOR의 특징 (Characteristics of REVERSIBLE MOTOR)



(그림1 (Fig. 1))

1. REVERSIBE MOTOR의 특징 (Characteristics of REVERSIBE MOTOR)

- REVERSIBLE MOTOR는 CONDENSER 운전형 단상 유도전동기입니다. 따라서 일반적 특성 및 특징은 INDUCTION MOTOR와 동일합니다. (The reversible motor is a condenser type single phase induction motor. Thus, its general characteristics are the same as those of the induction motor.)
- 순시 정역운전이 가능합니다. 간이 BRAKE기구를 내장하여 짧은 시간에 정회전, 역회전이 가능하고, STATOR 권선을 MAIN COIL과 SUB COIL을 같게 권선함으써 정역회전시 같은 특성을 가지도록 설계가 되어 있습니다.(〈그림2〉 참조) (Frequent reverse operation is possible. The reversible motor has a temporary brake device built inside the motor to facilitate the operation In normal direction as well as reverse. Also, the main and sub coils of the stator have their windings manufactured with the same method to guarantee the identical characteristics between them (Refer to 〈Fig. 2〉).)
- 또한 짧은 시간에 정회전, 역회전의 순시 가역성을 좋게하기 위하여 기동 TORQUE를 크게 설계되어 있습니다.(〈그림3〉 참조) (Also, it has a higher starting torque to facilitate frequent changes in rotational direction from normal direction to reverse direction, and vice versa, within a short time (Refer to 〈Fig. 3〉).)
- OVER RUN을 방지하기위하여 간이BRAKE를 사용하여 이 간이 BRAKE에 의해 약간의 유지력을 가지고 있어 정지시에 OVER RUN을 방지하여 순시 정지력이 뛰어납니다.(〈그림1〉 참조) (The temporary brake is employed to prevent overrun. The temporary brake has a little retaining force to provide excellent instantaneous stop by preventing overrun when stopping (Refer to 〈Fig. 1〉).)
- 전환 SWITCH로 MOTOR의 회전방향을 간단하고, 짧은 시간에 역전시킬수 있으므로 정회전, 역회전을 자주 빈번하게 사용하는 용도에 적합하게 사용됩니다. 따라서 REVERSIBLE MOTOR라고 불리고 있습니다. (The changeover switch can help the motor reverse its rotational direction easily within a short time so that it is suitable for such operation that changes the rotational direction frequently from normal to reverse, and vice versa. Therefore, this motor is called a reversible motor.)
- 운전정격시간은 30분입니다. REVERSIBLE MOTOR는 짧은 시간에 정회전, 역회전등의 제어용으로 뛰어난 특성으로 운전되도록 설계되어 있어서 손실입력이 크기 때문에 INDUCTION MOTOR에비해 온도상승이 높습니다. 따라서 정격운전시간은 30분으로 되어 있습니다. (The rated operating time is 30 minutes. Since the reversible motor is designed to be capable of controlling the directional changes in rotation, the loss input is larger and the temperature can rise higher compared with the induction motor. Hence, the rated operating time is limited to 30 minutes.)
- 즉 정격운전시간이 30분이라고 하는 것은 온도상승 측면에서 볼 때에 연속으로 운전가능한 시간이 약30분 이라고 하는 것입니다. (Thus, 30 minutes of rated operating time means that the motor can have at least 30 minutes of non-stop operation within the safe upper limit of the temperature rise.)
- 일반적으로 회전수, TORQUE특성, 전압특성, CONDENSER 특성에 대해서는 INDUCTION MOTOR와 동일합니다. (In general, the reversible motor has the same characteristics as the induction motor in terms of number of rotations, characteristics of torque, voltage and condenser.)

상수 (PHASE)	SIZE	出力 (W)	MOTOR MODEL名	HOLDING TORQUE		OVER RUN
				(g · cm)	(N · cm)	
단상 (Single phase)	□60㎜	6	S6R06G□	50	0.5	4
	□70㎜	15	S7R15G□	130	1.3	5
	□80㎜	15	S8R15G□	150	1.5	5
		25	S8R25G□	150	1.5	5
	□90㎜	40	S9R40G□( )	400	4.0	6
		60	S9R60G□( )	400	4.0	6
		90	S9R90G□( )	400	4.0	6

〈표1 (Table 1)〉 REVERSIBLE MOTOR의 HOLDING TORQUE와 OVER RUN (HOLDING TORQUE and OVER RUN of REVERSIBLE MOTOR)

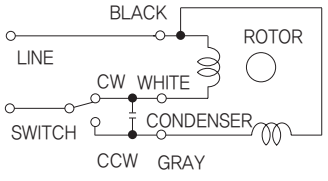
2. BRAKE의 구조 (BRAKE Structure)

- REVERSIBLE MOTOR의 간이BRAKE는 다음과 같은 특징이 있습니다. (The temporary brake of the reversible motor has characteristics as follows.)

① 마찰부하를 가하여 순시가역특성을 양호하게 합니다. (A frictional load applied to improve frequent reversal operation.)
② OVER RUN을 작게 합니다. (Reduces overrun.)
③ 약간의 HOLDING TORQUE를 갖고 있습니다. (Provides a little holding torque.)

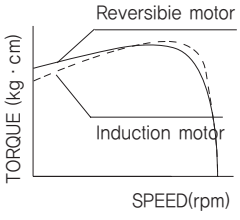
- REVERSIBLE MOTOR는 일반적으로 REMOTE CONTROL 적인 경우에 사용하는 때가 많기 때문에 위와 같은 특징을 갖고 있습니다. 따라서 구조적으로 〈그림1〉과 같이 BRAKE WHEEL에 BRAKE BLOCK을 SPRING으로 압력을 가하여 접동시키고 있습니다. (The reversible motor has characteristics described above due to its general use for remote controlling purpose. Thus, structurally, as shown in (Fig. 1), the brake rod is forced towards the brake wheel by a spring to make them contact each other.)
- 위와 같은 구조상의 BRAKE력에는 한계가 있어 당사에서는 MOTOR 출력 TORQUE의 약 10% 정도로 하고 있습니다. (Since the brake structure described above has a limitation in terms of a frictional load, SPG adjusted the brake power to be about 10% of the motor output torque.)
- 〈표1〉의 HOLDING TORQUE와 OVER RUN을 표시하고 있지만 정확하게는 각 MOTOR에 의해 다소 편차가 있습니다. 또한 운전시간, 온도에 의해서도 변화합니다. 따라서 참고치로 사용하여 주십시오.(The figures representing the holding torque and the overrun in 〈Table 1〉 may have more or less deviations for each motor. They may also have some discrepancies depending on the operating duration and the ambient temperature. It is advised therefore that the table figures should be used only for reference purpose.)
- REVERSIBLE MOTOR의 정격TORQUE, 기동TORQUE, 전류 특성 등은 BRAKE BLOCK을 MOTOR에 장착된 상태에서의 특성치를 표시하였습니다. 따라서 MOTOR 선정시 요구출력을 그대로 선정하여도 큰 무리는 없으나 BRAKE BLOCK 등의 부품의 차이에 의해 약간의 차이가 있을 수 있으므로 MOTOR 선정시 여유를 가지고 MOTOR를 선정하여 주십시오. (The rated torque, starting torque, and electric current of the reversible motor were measured in the Circumstances where the temporary brake rod is installed in the motor. Therefore, there will be no problem even if the corresponding table figures are used when selecting a motor. The conservative selection of a motor is recommended, however, because the figures may have some deviation depending on the brake rod employed to the motor.)
- 사용초기의 HOLDING TORQUE는 〈표1〉의 값보다도 떨어지는 경우가 있으므로 주의하여 사용하십시오. (Attention is required for a case has shown that the holding torque may fall below the figures in 〈Table 1〉 in the initial phase of operation.)

CIRCUIT DIAGRAM (C.W)

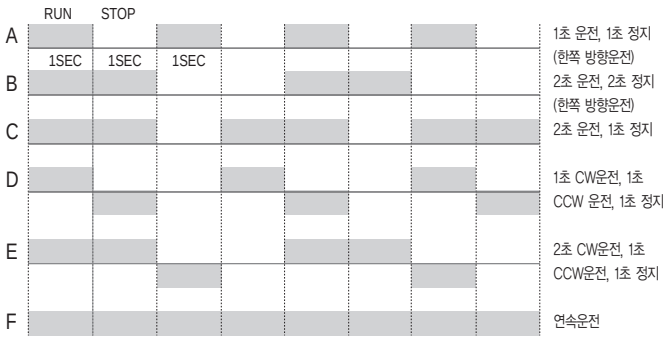


〈그림2 (Fig. 2)〉

SPEED- TORQUE CURVE



〈그림3 (Fig. 3)〉



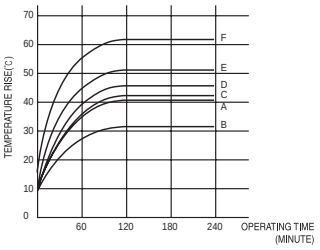
(그림4 (Fig. 4)) OPERATING CYCLE

3. 동작시간과 온도상승 (Operating Time and Temperature Rise)

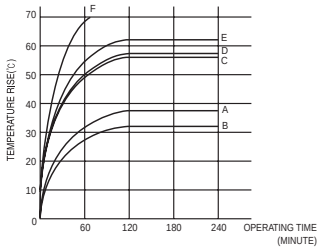
- REVERSIBLE MOTOR는 정격운전시간이 30분으로 한정되어 있지만 단시간으로 「ON-OFF」 운전을 하는 경우에는 운전조건에 의해서 정격운전 시간이 변화합니다. (Although 30 minutes of rated operating time is specified for the reversible motor, the rated operating time may change depending on the operation conditions if the operation frequently repeats stop and run (On-Off) within a short period of time.)
- REVERSIBLE MOTOR를 단시간 「ON-OFF」 운전으로 사용할 경우에는 기동전류가 커져서 많은 전류가 흘러 MOTOR의 온도 상승이 높게 나타납니다. 그러나 MOTOR가 정지해 있는 시간을 길게 사용하면 정지시의 자연냉각 효과로 인하여 MOTOR의 온도를 낮추게되므로 정격운전시간을 길게 사용할 수 있습니다. (If the reversible motor frequently repeats stop and run(On-Off) within a short time, the starting current increases and cause the motor temperature to rise. However, longer rated operating time may be obtained by allowing the motor to remain stop longer, because the stoppage can provide a chance of natural cooling for the motor and decrease its temperature.)
- 「ON-OFF」 운전 사용조건을 〈그림4〉의 A~F와 같이 결정합니다. F는 연속운전을 나타냅니다. (The conditions of the intermittent(On-Off) operation are determined as shown in A - F of 〈Fig. 4〉. F stands for continuous operation.)
- 〈그림5〉에서 〈그림8〉까지의 특성치는 운전사용조건 〈그림4〉의 A~F에 의하여 200V 50/60Hz용 MOTOR로 측정시에 나타난 특성치 결과입니다. 따라서 220V 60Hz MOTOR의 특성 전압이 약 10% 높기 때문에 특성치도 다소 높게 나타나므로 허용온도 이하에서 사용하도록 주의하여 주십시오. (The characteristics shown in 〈Fig. 5〉 through 〈Fig. 8〉 represent the measurements of the motor for 200V 50/60Hz. Naturally, the characteristics of the motor for 220V 60Hz will have better characteristic values than 200V 60W due to the increase of the voltage by 10%. Therefore, it is encouraged to operate the motor at a temperature below the ambient temperature.)
- 온도상승 측정에 있어서는 타점기록계에 의하여 MOTOR에서 발생되는 온도가 외부접촉에 의해 열이 전도되는 것을 거의 없게 하고 MOTOR의 무부하상태에서 측정합니다. 이렇게 측정하는 것이 온도가 제일 높게 나타나게 되는 방법입니다. (The temperature rise measurement is performed when the motor,

under no-load, is prevented from transferring its internal heat to the outside through the motor's external contact points using thermograph. This method of measurement can provide the highest possible temperature rise.)

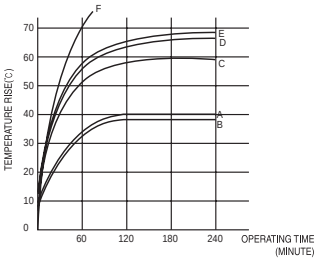
- 특히 MOTOR의 정격 TORQUE보다 부하가 크거나 관성부하가 큰 경우에는 기동이나 역회전에 필요한 시간이 길게 되어 온도 상승이 보다 높아지는 경우도 있으므로 주의하여 주십시오. (Especially, if either a load or an inertia load is greater than the motor's rated torque, it requires longer time to start or reverse the direction, resulting in a greater temperature rise, which requires a user's attention.)
- REVERSIBLE MOTOR의 온도상승은 일반적인 사양이 60deg C(△T값임)이므로 이 온도를 초과하여 사용하지 않도록 주의하여 주십시오. 또한 출력이 큰 MOTOR일수록 운전시간이 짧아집니다. (The specified temperature rise of the reversible motor is 60℃ (⊿T value) in general, and be careful not to exceed the temperature. Also, the greater the output of the motor is, the shorter the operating time becomes.)
- 실제 사용에 있어서 MOTOR 단독으로 사용하는 경우도 있지만, 대부분 GEAR HEAD와 조합하여 사용되고 있습니다. 따라서 S8R25GD의 MOTOR에 S8KA50B의 GEAR HEAD를 조합하여 무부하 운전한 경우의 온도상승은 〈그림9〉의 L CURVE처럼 되고 〈그림7〉의 MOTOR 단품에 비해서 온도상승이 작아지고 운전시간이 약30분 길게 됨을 알 수 있습니다. (There is a case that the motor alone is used, but mostly the motor is used in combination with the gearhead. Hence, when the motor of S8R25GD is used with no-load in combination with the gearhead of S8KA50B, the temperature rise draws an L curve as shown in 〈Fig. 9〉 and the temperature rise becomes lower and the operating time becomes longer by about 30 minutes as compared with the motor shown in 〈Fig. 7〉.)
- 〈표2〉에서는 취부면에 각종 방열판의 종류를 나타내고 있습니다. 이 측정의 결과로부터 방열판의 지경을 2배로 하면 약 6℃가 낮아지고, 철보다 ALUMINUM이 열전도가 높아 온도상승이 낮게되고 또한 ALUMINUM에 도장을 함으로써 약 3℃ 낮아지는 것을 알 수 있습니다. (〈Table 2〉 shows various heat radiation plates for mounting surface. The table indicates that the temperature decreases by about 6℃ when the diameter of the heat radiation plate is doubled, and greater heat conductivity of aluminum decelerates the temperature rise compared to that of the steel. Painting the aluminum will additionally lower the temperature by about 3°C.)
- 일반적으로 COIL 온도를 측정하여 절연계급에 따른 온도 이하로 관리하는 것이 원칙이지만 MOTOR HOUSING 표면 온도가 90℃ 이하이면 그 운전조건에서 연속운전이 가능합니다. MOTOR의 온도는 부하조건, 운전 CYCLE, MOTOR의 취부방법, 주위온도 등의 조건에 따라 변합니다. 이들의 DATA로 전체를 판단하기는 어렵겠지만, 참고용 자료로 사용하십시오. (Although the principle is to keep the coil temperature below the specified temperature for the insulation class, it is possible to continue the operation if the motor housing surface temperature remains lower than 90℃. The temperature of the motor varies depending on the load, operating cycle, motor's mounting method, and ambient temperature.)



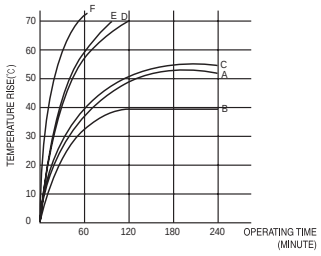
〈그림5 (Fig.5)〉 INTERMITTENT OPERATION OF S6R06GD(WITHOUT GEAR HEAD)



〈그림6 (Fig.6)〉 INTERMITTENT OPERATION OF S7R15GD(WITHOUT GEAR HEAD)



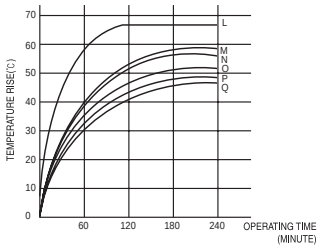
〈그림7 (Fig.7)〉 INTERMITTENT OPERATION OF S8R25GD(WITHOUT GEAR HEAD)



〈그림8 (Fig.8)〉 INTERMITTENT OPERATION OF S9R40GD(WITHOUT GEAR HEAD)

온도상승 (TEMPERATURE) CURVE	TYPE OF HEAT RADIATION PLATE		
	DIA METER(㎜)	MATERIAL	PAINTING
L	—	—	—
M	200	IRON	NO PAINTING
N	200	ALUMINUM	NO PAINTING
O	400	IRON	NO PAINTING
P	400	ALUMINUM	NO PAINTING
Q	400	ALUMINUM	BLACK

〈표2 (Table 2)〉 TYPE OF HEAT RADIATION PLATE (THICK 1.5㎜)

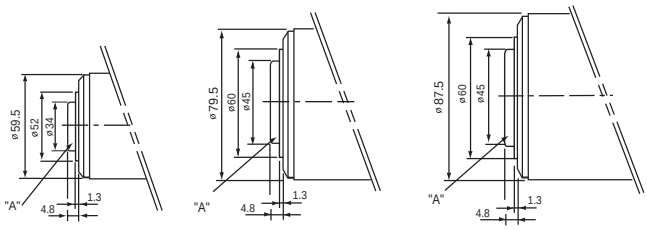


〈그림9 (Fig.9)〉 INTERMITTENT OPERATION OF S8R25GD + S8KA50B + HEAT RADITION PLATE

4. 외관구조 (External Structure)

- REVERSIBLE MOTOR의 CE용 MOTOR는 방진(防塵), 방수(防水) 효과를 높이기 위하여 "A"의 COVER를 뒷부분에 조립하였습니다.(아래그림 참조) (The CE marked reversible motor has a cover 'A' assembled to the back side of the motor to improve dust-proof and water-proof. (Refer to the figure below))
- 따라서 MOTOR의 길이가 약 4.0㎜ 정도 커졌습니다. 사용하실 때 양지하시고 사용하여 주십시오. (As a result, the motor is 4.0mm longer than induction motor lengthwise, which requires the user's attention.)

□60 6W **□70 15W, □80 25W, 25W** **□90 40W**



GENERAL SPECIFICATION OF INDUCTION MOTORS

항목 (ITEM)	사양 (Specification)
절연저항 (Insulation Resistance)	상온 상습에서 MOTOR을 정격으로 운전 후 MOTOR의 COIL, MOTOR CASE사이를 DC 500V MEGGER로 측정하여 100㏁ 이상임. (100㏁ or more when 500V megger is applied between the windings and the housing after rated motor operation under normal ambient temperature and humidity)
절연내압 (Dielectric Strength)	상온 상습에서 MOTOR을 정격으로 운전 후 MOTOR의 COIL, MOTOR CASE사이에 1500V 50/60Hz를 1분간 인가하여 이상 없음. (Sufficient to withstand 1500V at 50/60㎐ applied between the windings and the case after rated motor operation under normal ambient temperature and humidity for 1min.)
온도상승 (Temperature Rise)	MOTOR를 정격으로 운전 후 온도계법으로 측정하여 온도상승치(△T)가 80℃(K) 이하임 (80℃ or less increase measured by thermometer after rated operation.)
절연등급 (Insulation Class)	B종 (Class B) (130℃)
과열보호장치 (Overheat Protection Device) (T/P)	THERMAL PROTECTOR 내장(자동 복귀형) (Built-in thermal protector (automatic return type) : 개방 (Open) 120℃±5℃ 복귀 (Close) 76℃±15℃
사용온도 (Ambient Temperature)	-10℃ ~ 40℃
사용습도 (Ambient Humidity)	85% 이하 (maximum) (결로 없는 곳 ((non condensing)))





6W

REVERSIBLE MOTOR □60㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
60	S6R06GA S6R06GACE	4	6	1Ø 110	60	30min.	0.22	1550	0.40	0.040	0.60	0.060	3.0
	S6R06GB S6R06GBCE	4	6	1Ø 220	60	30min.	0.11	1550	0.40	0.040	0.60	0.060	0.8
	S6R06GC S6R06GCCE	4	6	1Ø 100	50	30min.	0.21	1200	0.50	0.050	0.45	0.045	3.0
					60			1500	0.42	0.042			
	S6R06GD S6R06GDCE	4	6	1Ø 200	50	30min.	0.10	1200	0.45	0.045	0.53	0.053	0.8
					60			1500	0.42	0.042			
	S6R06GE S6R06GECE	4	5.5	1Ø 100	50	30min.	0.19	1200	0.50	0.050	0.52	0.052	3.5
			5.4		60		0.22	1500	0.30	0.030			
			6	1Ø 115	60		0.18	1500	0.42	0.042	0.50	0.050	2.3
	S6R06GX S6R06GXCE	4	5.8	1Ø 220	50	30min.	0.09	1200	0.47	0.047	0.50	0.050	0.7
			6	1Ø 240			0.10		0.50	0.050	0.55	0.055	

❖ 기종명 S6R06GE는 UL규격 인증 제품으로 IMPEDANCE PROTECTED TYPE입니다.(UL FILE NO. E172722) (S6R06GE is UL approved (UL FILE No. E172722) impedance protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S6R06GE type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S6R06GECE는 115V용 사양으로만 출하됩니다. (CE marked at the end of model name indicates that it is impedance protected type which has received CE. S6R06GECE is available only for 115V specification.)
❖ 본 DATA는 BRAKE BLOCK을 MOTOR에 장착된 상태에서 측정한 DATA입니다. (Data is measured with friction brake mounted.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5	6
S6DA□B	kg-Cm	1.3	1.5	2.1	2.6	3.2	3.9	4.3	5.4	6.4	7.7	7.7	9.7	11.6	13.9	15.5	17.5	21.0	26.2	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	N·m	0.127	0.147	0.206	0.255	0.314	0.382	0.421	0.529	0.627	0.755	0.755	0.951	1.137	1.362	1.519	1.715	2.058	2.568	2.942	2.942	2.942	2.942	2.942	2.942	2.942

60Hz

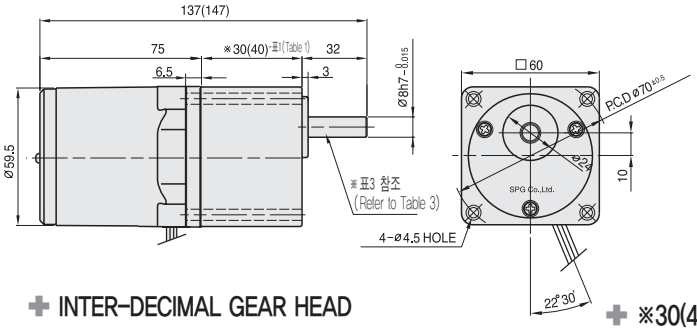
MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9	7.2
S6DA□B	kg-Cm	1.0	1.3	1.7	2.1	2.6	3.1	3.5	4.4	5.2	6.3	6.3	7.8	9.4	11.3	12.6	14.2	17.0	21.3	25.5	28.4	30.0	30.0	30.0	30.0	30.0
	N·m	0.098	0.127	0.167	0.206	0.255	0.304	0.343	0.431	0.510	0.617	0.617	0.764	0.921	1.107	1.235	1.392	1.666	2.087	2.499	2.783	2.942	2.942	2.942	2.942	2.942

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 30㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 30 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

DIMENSIONS

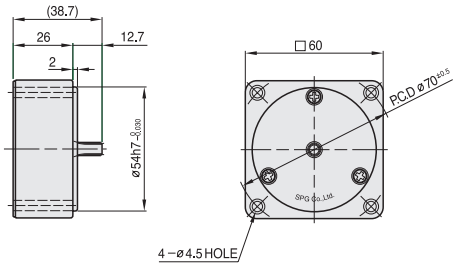
GEARED MOTOR

※MOTOR MODEL : S6R06G□
※HEAD MODEL : S6□A3□~S6□A250□



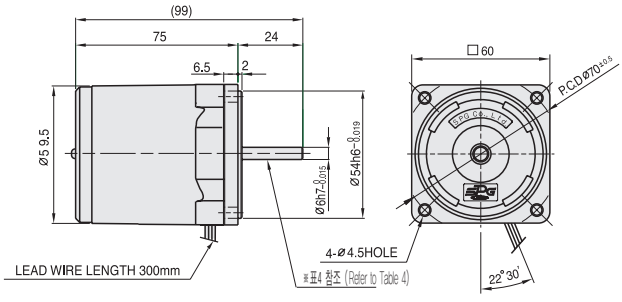
INTER-DECIMAL GEAR HEAD

※MODEL : S6GX10B



MOTOR

※MOTOR MODEL : S6R06□□



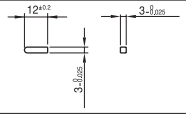
※30(40) - (표1 (Table1)

GEAR RATIO	SIZE(㎜)
S6□A3□ ~ S6□A18□	30
S6□A20□ ~ S6□A250□	40

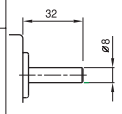
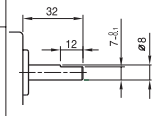
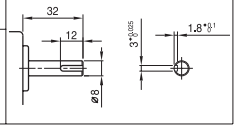
WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		0.70
DECIMAL GEAR HEAD		0.18
GEAR HEAD	S6□A3□ ~S6□A18□	0.24
	S6□A20□ ~S6□A40□	0.30
	S6□A50□ ~S6□A250□	0.33

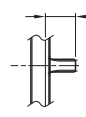
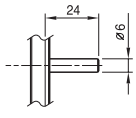
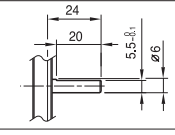
KEY SPEC

GEAR HEAD


GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

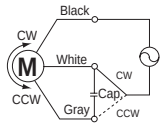
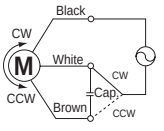
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S6SA3□ ~S6SA250□	
D-CUT TYPE S6DA3□ ~S6DA250□	
KEY TYPE S6KA3□ ~S6KA250□	

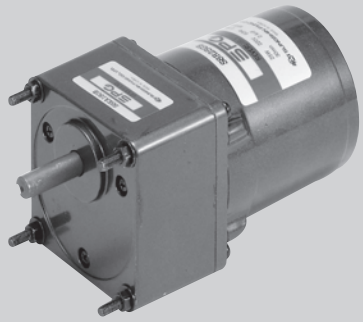
MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S6R06G□	
STRAIGHT TYPE S6R06S□	
D-CUT TYPE S6R06D□	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S6R06GA S6R06GB S6R06GC S6R06GD S6R06GACE S6R06GBCE S6R06GE S6R06GCCE S6R06GDCE S6R06GECE	S6R06GX S6R06GXCE
CW,CCW	**CW,CCW**
	



15W

REVERSIBLE MOTOR □70㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
70	S7R15GA S7R15GA(TP) S7R15GACE	4	15	1Ø 110	60	30min.	0.44	1550	1.00	0.100	1.10	0.110	6.0
	S7R15GB S7R15GB(TP) S7R15GBCE	4	15	1Ø 220	60	30min.	0.22	1550	1.00	0.100	1.10	0.110	1.5
	S7R15GC S7R15GC(TP) S7R15GCCE	4	15	1Ø 100	50	30min.	0.42	1200	1.25	0.125	0.90	0.090	6.0
					60		0.42	1500	1.00	0.100	0.90	0.090	
	S7R15GD S7R15GD(TP) S7R15GDCE	4	15	1Ø 200	50	30min.	0.21	1200	1.25	0.125	0.90	0.090	1.5
					60		0.21	1500	1.00	0.100	0.90	0.090	
	S7R15GE S7R15GECE	4	15	1Ø 100	50	30min.	0.37	1200	1.25	0.125	0.95	0.095	6.0
					60		0.41	1500	1.00	0.100			
				1Ø 115	60		0.35	1550	1.00	0.100			4.5
	S7R15GX S7R15GXCE	4	15	1Ø 220	50	30min.	0.17	1200	1.25	0.125	0.90	0.090	1.2
				1Ø 240			0.18		1.45	0.145	1.10	0.110	

❖ 기종명 S7R15GE는 UL규격 인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO. E172720) (S7R15GE is UL approved (UL FILE No. E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S7R15GE type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP. S7R15GECE is available only for 115V specification.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S7R15GECE는 115V용 사양으로만 출하됩니다. 또한 기종명 S7R15GE, S7R15GX는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S7R15GE, S7R15GX is thermally protected type with TP mounted.)
❖ 본 DATA는 BRAKE BLOCK을 MOTOR에 장착된 상태에서 측정한 DATA입니다. (Data is measured with friction brake mounted.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S7KA□B	kg-cm	3.2	3.9	5.4	6.5	8.1	9.7	10.8	13.5	16.2	19.4	19.4	24.2	29.1	34.9	38.8	43.6	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	N·m	0.314	0.382	0.530	0.637	0.794	0.951	1.059	1.324	1.587	1.902	1.902	2.373	2.854	3.423	3.805	4.276	4.900	4.900	4.900	4.900	4.900	4.900	4.900	4.900

60Hz

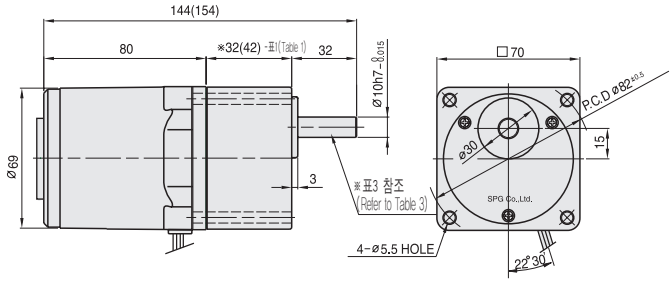
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S7KA□B	kg-cm	3.0	3.6	5.1	6.1	7.6	9.1	10.1	12.7	15.2	18.2	18.2	22.8	27.3	32.8	36.5	41.0	49.2	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	N·m	0.294	0.353	0.500	0.598	0.745	0.892	0.990	1.245	1.491	1.785	1.785	2.236	2.677	3.217	3.579	4.021	4.825	4.900	4.900	4.900	4.900	4.900	4.900	4.900

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 50㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 50 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

DIMENSIONS

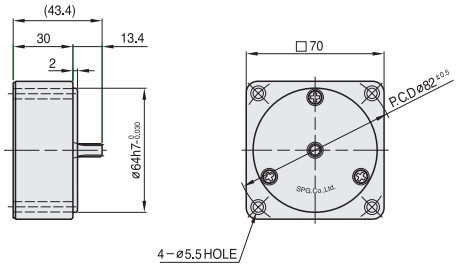
✚ GEARED MOTOR

※MOTOR MODEL : S7R15G□
※HEAD MODEL : S7□A3□~S7□A200□



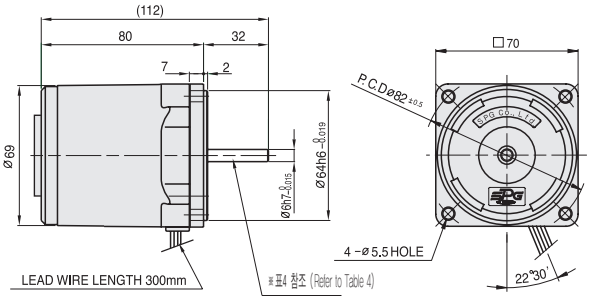
✚ INTER-DECIMAL GEAR HEAD

※ MODEL : S7GX10B



✚ MOTOR

※MOTOR MODEL : S7R15□□



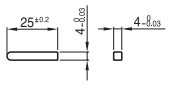
✚ ※32(42) - (표1 (Table1))

GEAR RATIO	SIZE(mm)
S7□A3□ ~ S7□A18□	32
S7□A20□ ~ S7□A200□	42

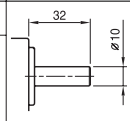
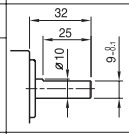
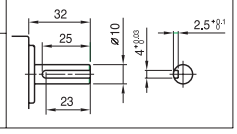
✚ WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		1.04
DECIMAL GEAR HEAD		0.32
GEAR HEAD	S7□A3□ ~S7□A18□	0.38
	S7□A20□ ~S7□A40□	0.47
	S7□A50□ ~S7□A200□	0.52

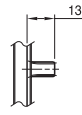
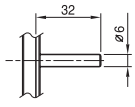
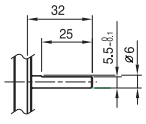
✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

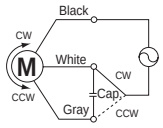
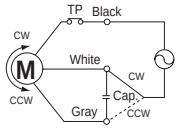
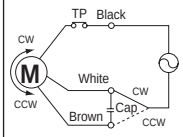
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S7SA3□ ~S7SA200□	
D-CUT TYPE S7DA3□ ~S7DA200□	
KEY TYPE S7KA3□ ~S7KA200□	

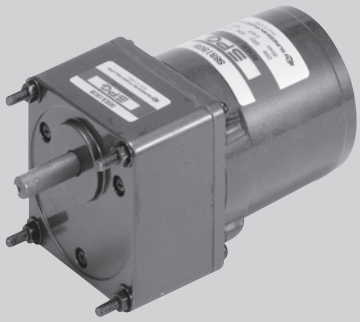
✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S7R15G□	
STRAIGHT TYPE S7R15S□	
D-CUT TYPE S7R15D□	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S7R15GA S7R15GB S7R15GC S7R15GD	S7R15GA(TP) S7R15GB(TP) S7R15GC(TP) S7R15GD(TP) S7R15GACE S7R15GBCE S7R15GE S7R15GCCE S7R15GDCE S7R15GECE	S7R15GX S7R15GXCE
CW,CCW	**CW,CCW**	**CW,CCW**
		



15W

REVERSIBLE MOTOR □80㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
80	S8R15GA S8R15GA(TP) S8R15GACE	4	15	1Ø 110	60	30min.	0.49	1550	1.00	0.100	1.20	0.120	6.0
	S8R15GB S8R15GB(TP) S8R15GBCE	4	15	1Ø 220	60	30min.	0.25	1550	1.00	0.100	1.20	0.120	1.5
	S8R15GC S8R15GC(TP) S8R15GCCE	4	15	1Ø 100	50	30min.	0.58	1200	1.30	0.130	0.95	0.095	6.0
					60		0.48	1500	1.10	0.110			
	S8R15GD S8R15GD(TP) S8R15GDCE	4	15	1Ø 200	50	30min.	0.29	1200	1.30	0.130	0.95	0.095	1.5
					60		0.25	1500	1.10	0.110			
	S8R15GE S8R15GECE	4	15	1Ø 100	50	30min.	0.59	1250	1.30	0.130	0.95	0.095	6.0
					60		0.48	1550	1.20	0.120			
				1Ø 115	60		0.52	1600	1.10	0.110			4.5
	S8R15GX S8R15GXCE	4	15	1Ø 220	50	30min.	0.16	1200	1.30	0.130	1.10	0.110	1.2
				1Ø 240			0.18		1.40	0.140	1.30	0.130	

❖ 기종명 S8R15GE는 UL규격 인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO. E172720) (S8R15GE is UL approved (UL FILE No. E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S8R15GE type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP. S8R15GECE is available only for 115V specification.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S8R15GECE는 115V용 사양으로만 출하됩니다. 또한 기종명 S8R15GE, S8R15GX는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S8R15GE, S8R15GX is thermally protected type with TP mounted.)
❖ 본 DATA는 BRAKE BLOCK을 MOTOR에 장착된 상태에서 측정한 DATA입니다. (Data is measured with friction brake mounted.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S8KA□B	kg-cm	3.4	4.1	5.7	6.8	8.5	10.2	11.3	14.2	17.0	20.4	20.4	25.6	30.7	36.8	40.9	46.2	55.4	69.2	80	80	80	80	80	80
	N·m	0.333	0.402	0.559	0.666	0.833	1.000	1.107	1.392	1.666	1.999	1.999	2.509	3.009	3.606	4.008	4.530	5.433	6.786	7.840	7.840	7.840	7.840	7.840	7.840

60Hz

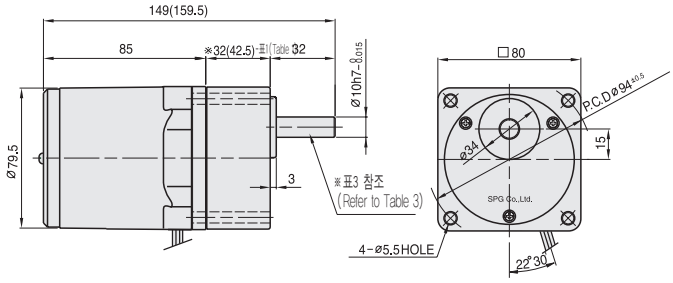
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S8KA□B	kg-cm	2.9	3.5	4.9	5.8	7.3	8.7	9.7	12.2	14.6	17.5	17.5	21.9	26.3	31.5	35.0	39.6	47.5	59.4	71.3	79.2	80	80	80	80
	N·m	0.284	0.343	0.481	0.568	0.715	0.853	0.951	1.196	1.432	1.715	1.715	2.146	2.577	3.087	3.430	3.881	4.658	5.825	6.992	7.767	7.840	7.840	7.840	7.840

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 80㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 80 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

DIMENSIONS

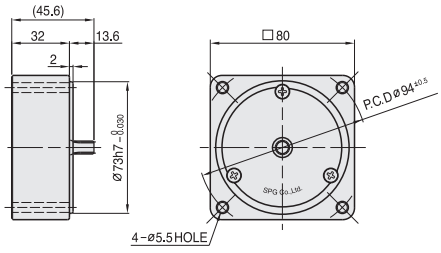
✚ GEARED MOTOR

※MOTOR MODEL : S8R15G□
※HEAD MODEL : S8□A3□~S8□A200□



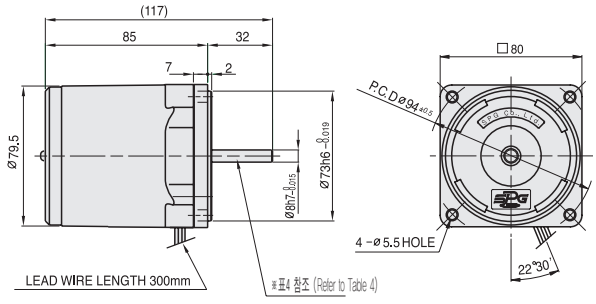
✚ INTER-DECIMAL GEAR HEAD

※MODEL : S8GX10B



✚ MOTOR

※MOTOR MODEL : S8R15□□



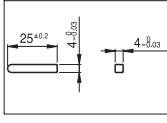
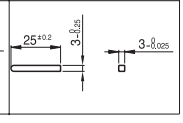
✚ ※32(42.5) - (표1 (Table1))

GEAR RATIO	SIZE(mm)
S8□A3□ ~ S8□A18□	32
S8□A20□ ~ S8□A200□	42.5

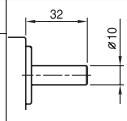
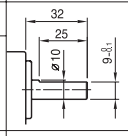
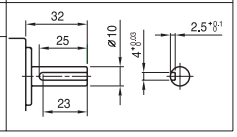
✚ WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		1.46
DECIMAL GEAR HEAD		0.43
GEAR HEAD	S8□A3□ ~S8□A18□	0.43
	S8□A20□ ~S8□A40□	0.57
	S8□A50□ ~S8□A200□	0.61

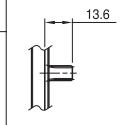
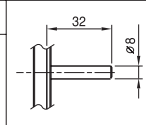
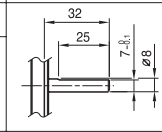
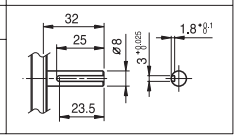
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

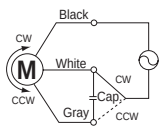
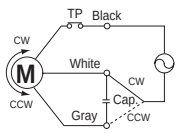
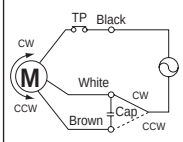
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S8SA3□ ~S8SA200□	
D-CUT TYPE S8DA3□ ~S8DA200□	
KEY TYPE S8KA3□ ~S8KA200□	

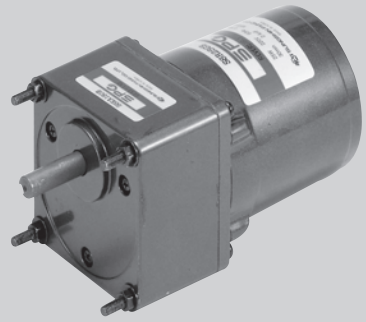
✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S8R15G□	
STRAIGHT TYPE S8R15S□	
D-CUT TYPE S8R15D□	
KEY TYPE S6R15K□	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S8R15GA S8R15GB S8R15GC S8R15GD	S8R15GA(TP) S8R15GB(TP) S8R15GC(TP) S8R15GD(TP) S8R15GACE S8R15GBCE S8R15GE S8R15GCCE S8R15GDCE S8R15GECE	S8R15GX S8R15GXCE
CW,CCW	**CW,CCW**	**CW,CCW**
		



25W

REVERSIBLE MOTOR □80㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
80	S8R25GA S8R25GA(TP) S8R25GACE	4	25	1Ø 110	60	30min.	0.71	1550	1.70	0.170	2.30	0.230	10.0
	S8R25GB S8R25GB(TP) S8R25GBCE	4	25	1Ø 220	60	30min.	0.35	1600	1.65	0.165	2.30	0.230	2.5
	S8R25GC S8R25GC(TP) S8R25GCCE	4	25	1Ø 100	50	30min.	0.63	1250	2.10	0.210	1.80	0.180	10.0
					60		0.70	1500	1.70	0.170			
	S8R25GD S8R25GD(TP) S8R25GDCE	4	25	1Ø 200	50	30min.	0.33	1250	2.10	0.210	1.80	0.180	2.5
					60			1550	1.70	0.170			
	S8R25GE S8R25GECE	4	25	1Ø 100	50	30min.	0.60	1250	2.10	0.210	1.30	0.130	8.0
					60		0.65	1450	1.80	0.180			
				1Ø 115	60		0.63	1550	1.70	0.170			7.0
	S8R25GX S8R25GXCE	4	25	1Ø 220	50	30min.	0.26	1200	2.00	0.200	1.70	0.170	2.0
				1Ø 240			0.28		2.20	0.220	2.20	0.220	

❖ 기종명 S8R25GE는 UL규격 인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO.E172720) (S8R25GE is UL approved (UL FILE No. E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S8R25GE type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S8R25GECE는 115V용 사양으로만 출하됩니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP.
S8R25GECE is available only for 115V specification.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8R25GE, S8R25GX는 TP가 내장된 THERMALLY P ROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted.S8R25GE, S8R25GX is thermally protected type with TP mounted.)
❖ 본 DATA는 BRAKE BLOCK을 MOTOR에 장착된 상태에서 측정한 DATA입니다. (Data is measured with friction brake mounted.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S8KA□B	kg-cm	5.3	6.4	8.9	10.7	13.4	16.0	17.8	22.3	26.7	32.1	32.1	40.2	48.2	57.8	64.2	72.6	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	N·m	0.519	0.627	0.872	1.049	1.313	1.568	1.744	2.185	2.617	3.146	3.146	3.940	4.724	5.664	6.292	7.115	7.840	7.840	7.840	7.840	7.840	7.840	7.840	7.840

60Hz

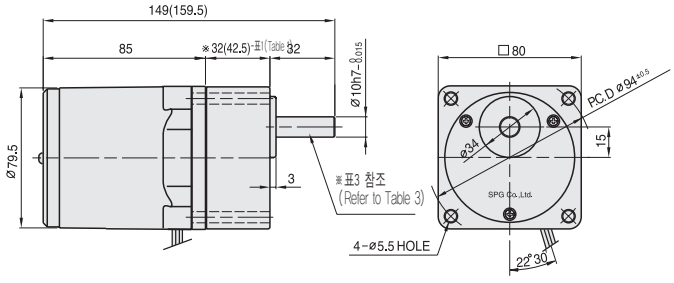
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S8KA□B	kg-cm	4.4	5.2	7.3	8.7	10.9	13.1	14.6	18.2	21.9	26.2	26.3	32.9	39.4	47.3	52.6	59.4	71.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	N·m	0.431	0.510	0.715	0.853	1.068	1.284	1.431	1.784	2.146	2.568	2.577	3.224	3.861	4.635	5.155	5.821	6.987	7.840	7.840	7.840	7.840	7.840	7.840	7.840

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 80㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 80 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

DIMENSIONS

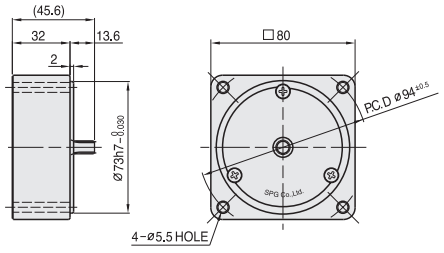
GEARED MOTOR

※MOTOR MODEL : S8R25G□
※HEAD MODEL : S8□A3□~S8□A200□



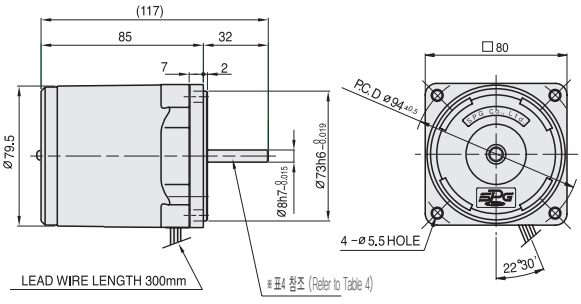
INTER-DECIMAL GEAR HEAD

※MODEL : S8GX10B



MOTOR

※MOTOR MODEL : S8R25□□



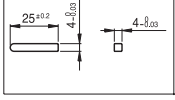
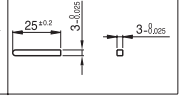
※32(42.5) - (표1 (Table1))

GEAR RATIO	SIZE(mm)
S8□A3□ ~ S8□A18□	32
S8□A20□ ~ S8□A200□	42.5

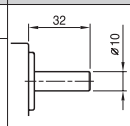
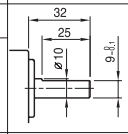
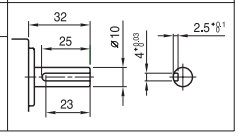
WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		1.46
DECIMAL GEAR HEAD		0.43
GEAR HEAD	S8□A3□ ~S8□A18□	0.43
	S8□A20□ ~S8□A40□	0.57
	S8□A50□ ~S8□A200□	0.61

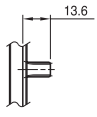
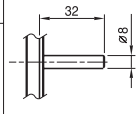
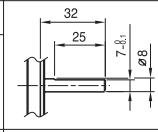
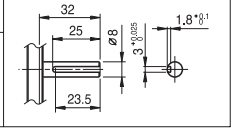
KEY SPEC

GEAR HEAD	MOTOR
	

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

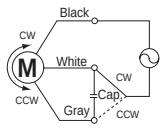
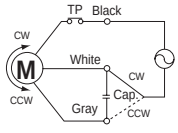
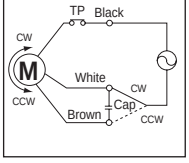
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S8SA3□ ~S8SA200□	
D-CUT TYPE S8DA3□ ~S8DA200□	
KEY TYPE S8KA3□ ~S8KA200□	

MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S8R25G□	
STRAIGHT TYPE S8R25S□	
D-CUT TYPE S8R25D□	
KEY TYPE S8R25K□	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S8R25GA S8R25GB S8R25GC S8R25GD	S8R25GA(TP) S8R25GB(TP) S8R25GC(TP) S8R25GD(TP) S8R25GACE S8R25GBCE S8R25GE S8R25GCCE S8R25GDCE S8R25GECE	S8R25GX S8R25GXCE
CW,CCW	**CW,CCW**	**CW,CCW**
		



40W

REVERSIBLE MOTOR □90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9R40GA( ) S9R40GA( )(TP) S9R40GA( )CE	4	40	1Ø 110	60	30min.	1.00	1600	2.50	0.250	3.50	0.350	15.0
	S9R40GB( ) S9R40GB( )(TP) S9R40GB( )CE	4	40	1Ø 220	60	30min.	0.46	1600	2.50	0.250	3.50	0.350	3.5
	S9R40GC( ) S9R40GC( )(TP) S9R40GC( )CE	4	40	1Ø 100	50	30min.	0.84	1300	3.00	0.300	2.80	0.280	15.0
					60		1.00	1550	2.60	0.260			
	S9R40GD( ) S9R40GD( )(TP) S9R40GD( )CE	4	40	1Ø 200	50	30min.	0.39	1300	3.10	0.310	2.80	0.280	3.5
					60		0.47	1550	2.60	0.260			
	S9R40GE( ) S9R40GE( )CE	4	40	1Ø 100	50	30min.	0.86	1300	3.10	0.310	2.90	0.290	15.0
					60		1.00	1550	2.60	0.260			
				1Ø 115	60		1.00	1550	2.70	0.270			12.0
	S9R40GX( ) S9R40GX( )CE	4	40	1Ø 220	50	30min.	0.40	1250	3.20	0.320	3.00	0.300	3.0
				1Ø 240			0.42		3.40	0.340	3.20	0.320	

❖ 기종명 S9R40GE는 UL 규격 인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO. E172720) (S9R40GE is UL approved (UL FILE No. E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S9R40GE type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S9R40GE( )CE는 115V용 사양으로만 출하됩니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP. S9R40GE( )CE is available only for 115V specification.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9R40GE, S9R40GX는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S9R40GE, S9R40GX is hermally protected type with TP mounted.)
❖ 본 DATA는 BRAKE BLOCK을 MOTOR에 장착된 상태에서 측정한 DATA입니다. (Data is measured with friction brake mounted.)
❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KB□B( )	kg-cm	8.3	9.9	13.8	16.5	20.7	24.8	27.5	34.4	41.3	49.6	49.6	62.1	74.5	89.4	99.3	100	100	100	100	100	100	100	100	100
	N·m	0.813	0.970	1.352	1.617	2.029	2.430	2.695	3.371	4.047	4.861	4.861	6.086	7.301	8.761	9.731	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800

60Hz

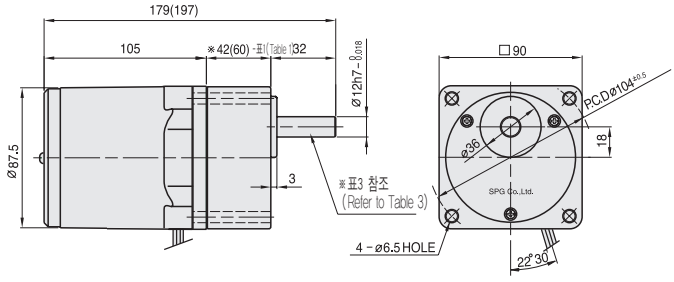
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KB□B( )	kg-cm	6.8	8.2	11.3	13.6	17.0	20.4	22.7	28.4	34.0	40.8	40.9	51.1	61.3	73.6	81.8	100	100	100	100	100	100	100	100	100
	N·m	0.666	0.804	1.107	1.333	1.666	1.999	2.225	2.783	3.332	3.998	4.008	5.008	6.007	7.213	8.016	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 100㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 100 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)

DIMENSIONS

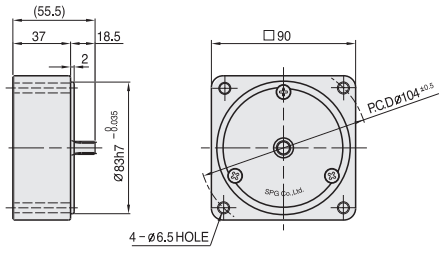
GEARED MOTOR

※MOTOR MODEL : S9R40G□□
※HEAD MODEL : S9□B3□□~S9□B200□□



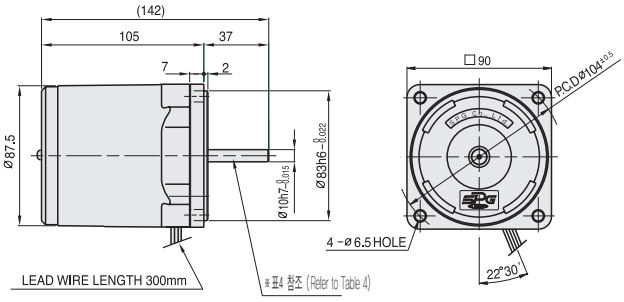
INTER-DECIMAL GEAR HEAD

※MODEL : S9GX10B(H,L)



MOTOR

※MOTOR MODEL : S9R40□□□



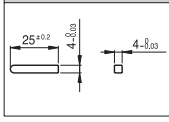
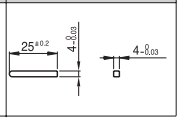
※42(60) - (표1 (Table1))

GEAR RATIO	SIZE(mm)
S9□B3□□ ~ S9□B18□□	42
S9□B20□□ ~ S9□B200□□	60

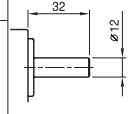
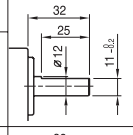
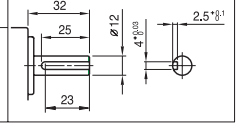
WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		2.34
DECIMAL GEAR HEAD		0.59
GEAR HEAD	S9□B3□□ ~S9□B18□□	0.73
	S9□B20□□ ~S9□B40□□	1.03
	S9□B50□□ ~S9□B200□□	1.13

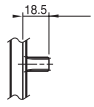
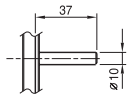
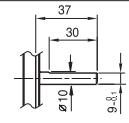
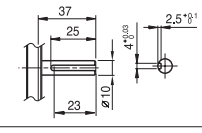
KEY SPEC

GEAR HEAD	MOTOR
	

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

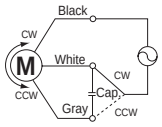
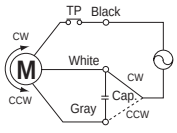
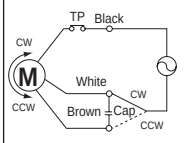
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SB3□□ ~S9SB200□□	
D-CUT TYPE S9DB3□□ ~S9DB200□□	
KEY TYPE S9KB3□□ ~S9KB200□□	

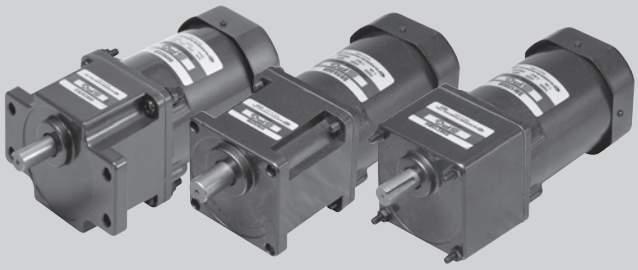
MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9R40G□□	
STRAIGHT TYPE S9R40S□	
D-CUT TYPE S9R40D□	
KEY TYPE S9R40K□	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S9R40GA S9R40GB S9R40GC S9R40GD	S9R40GA(TP) S9R40GB(TP) S9R40GC(TP) S9R40GD(TP) S9R40GACE S9R40GBCE S9R40GE S9R40GCCE S9R40GDCE S9R40GECE	S9R40GX S9R40GXCE
CW,CCW	**CW,CCW**	**CW,CCW**
		



60W

REVERSIBLE MOTOR □90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9R60GA( ) S9R60GA( )(TP) S9R60GA( )CE	4	60	1Ø 110	60	30min.	1.60	1600	3.80	0.380	7.00	0.700	25.0
	S9R60GB( ) S9R60GB( )(TP) S9R60GB( )CE	4	60	1Ø 220	60	30min.	0.75	1600	3.80	0.380	7.00	0.700	6.0
	S9R60GC( ) S9R60GC( )(TP) S9R60GC( )CE	4	60	1Ø 100	50	30min.	1.40	1250	4.80	0.480	6.00	0.600	25.0
					60		1.60	1550	3.90	0.390			
	S9R60GD( ) S9R60GD( )(TP) S9R60GD( )CE	4	60	1Ø 200	50	30min.	0.70	1250	4.80	0.480	5.50	0.550	6.0
					60		0.76	1550	3.90	0.390			
	S9R60GE( ) S9R60GE( )CE	4	60	1Ø 100	50	30min.	1.40	1250	4.80	0.480	5.90	0.590	25.0
					60		1.60	1550	3.90	0.390			
				1Ø 115	60		1.30	1600	3.90	0.390	6.00	0.600	20.0
	S9R60GX( ) S9R60GX( )CE	4	60	1Ø 220	50	30min.	0.63	1250	4.80	0.480	5.90	0.590	5.0
				1Ø 240			0.67		5.00	0.500	6.30	0.630	

❖ 기종명 S9R60GE는 UL 규격 인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO. E172720) (S9R60GE is UL approved (UL FILE No. E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S9R60GE type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S9R60GE( )CE는 115V용 사양으로만 출하됩니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP. S9R60GE( )CE is available only for 115V specification.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9R60GE, S9R60GX는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S9R60GE, S9R60GX is thermally protected type with TP mounted.)
❖ 본 DATA는 BRAKE BLOCK을 MOTOR에 장착된 상태에서 측정한 DATA입니다. (Data is measured with friction brake mounted.)
❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KC□B( )	kg-cm	12.2	14.6	20.3	24.3	30.4	36.5	40.5	45.6	54.8	65.7	73.0	82.5	99.0	119	132	165	198	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.196	1.431	1.989	2.381	2.989	3.577	3.969	4.469	5.370	6.439	7.154	8.085	9.702	11.66	12.94	16.17	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60

60Hz

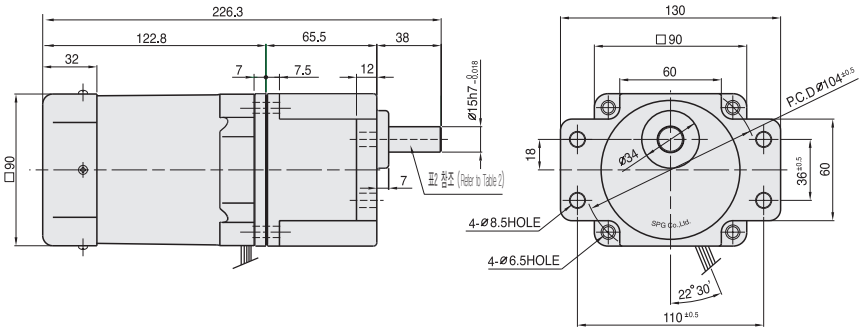
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KC□B( )	kg-cm	9.72	11.7	16.2	19.4	24.3	29.2	32.4	36.5	43.8	52.6	58.4	66.0	79.2	95.0	106	132	158	177	200	200	200	200	200	200
S9KC□B( )-S	N·m	0.953	1.147	1.588	1.901	2.381	2.862	3.175	3.577	4.292	5.155	5.723	6.468	7.762	9.310	10.39	12.94	15.48	17.35	19.60	19.60	19.60	19.60	19.60	19.60

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in□ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 200㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)

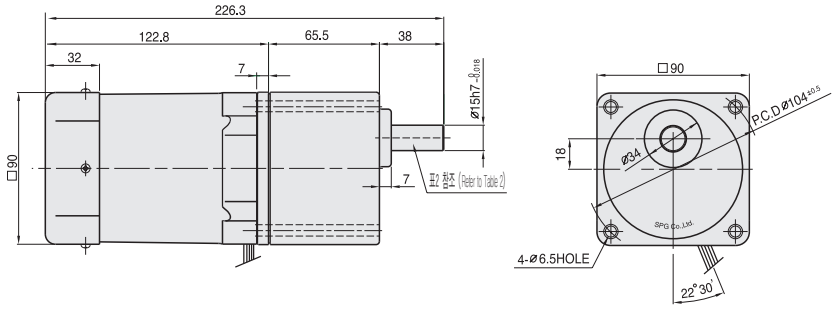
DIMENSIONS

✚ GEARED MOTOR

※MOTOR MODEL : S9R60G□□
※HEAD MODEL : S9□C3B□-S~S9□C200B□-S

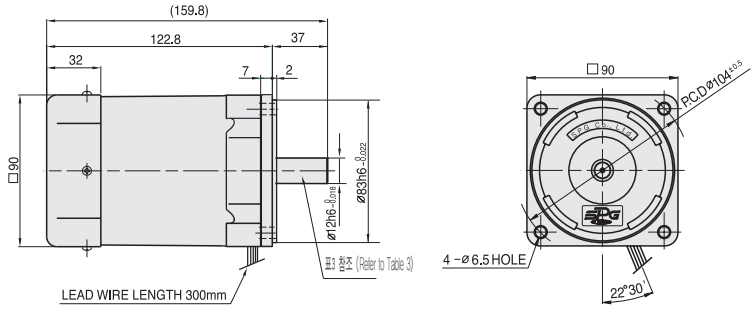


※HEAD MODEL : S9□C3B□~S9□C200B□



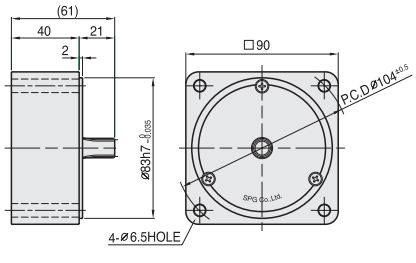
✚ MOTOR

※MOTOR MODEL : S9R60□□□



✚ INTER-DECIMAL GEAR HEAD

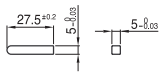
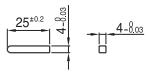
※MODEL : S9GX10B(H,L)-S



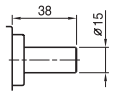
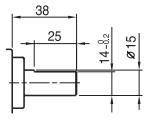
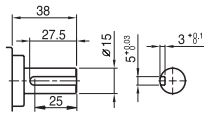
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.48
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3B□ ~S9□C10B□	1.21
	S9□C12.5B□ ~S9□C20B□	1.30
	S9□C25B□ ~S9□C60B□	1.40
	S9□C75B□ ~S9□C200B□	1.45

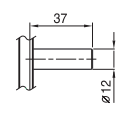
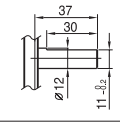
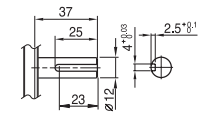
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SC3B□ ~S9SC200B□	
D-CUT TYPE S9DC3B□ ~S9DC200B□	
KEY TYPE S9KC3B□ ~S9KC200B□	

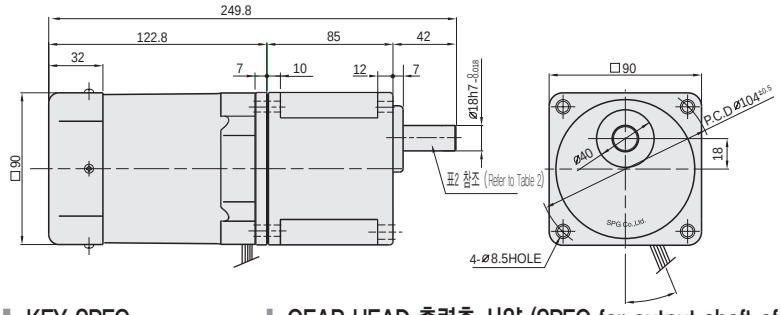
✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9R60G□□	
STRAIGHT TYPE S9R60S□	
D-CUT TYPE S9R60D□	
KEY TYPE S9R60□	

DIMENSIONS

✚ GEARED MOTOR

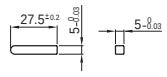
※MOTOR MODEL : S9R60G□H
※HEAD MODEL: S9□D3B~S9□D200B



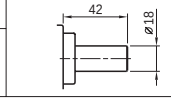
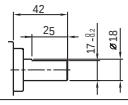
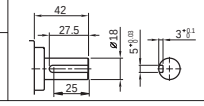
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.48
GEAR HEAD	S9□D3B ~S9□D10B	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 규분 (TYPES OF OUTPUT SHAFT)	MODEL	출력축 규분 (TYPES OF OUTPUT SHAFT)	MODEL	출력축 규분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE		D-CUT TYPE		KEY TYPE	
S9SD3B ~S9SD200B		S9DD3B ~S9DD200B		S9KD3B ~S9KD200B	

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KD□B	kg-cm	12.2	14.6	20.3	24.3	30.4	36.5	40.5	45.6	54.8	65.7	73.0	82.5	99.0	119	132	165	198	221	266	295	300	300	300	300
	N·m	1.196	1.431	1.989	2.381	2.989	3.577	3.969	4.469	5.370	6.439	7.154	8.085	9.702	11.66	12.94	16.17	19.40	21.67	26.09	28.93	29.42	29.42	29.42	29.42

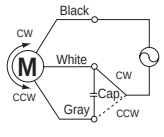
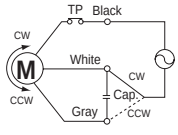
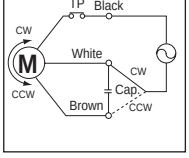
60Hz

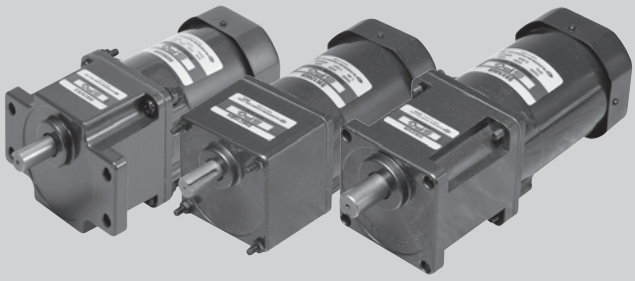
MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KD□B	kg-cm	9.72	11.7	16.2	19.4	24.3	29.2	32.4	36.5	43.8	52.6	58.4	66.0	79.2	95.0	106	132	158	177	212	236	283	300	300	300
	N·m	0.953	1.147	1.588	1.901	2.381	2.862	3.175	3.577	4.292	5.155	5.723	6.468	7.762	9.310	10.39	12.94	15.48	17.35	20.79	23.14	27.75	29.42	29.42	29.42

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 300kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. MOTOR의 H와 사용하여 주십시오. (Only "H" type is applicable. Please use "H" type motor.)

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S9R60GA S9R60GB S9R60GC S9R60GD	S9R60GA(TP) S9R60GB(TP) S9R60GC(TP) S9R60GD(TP) S9R60GACE S9R60GBCE S9R60GE S9R60GCCE S9R60GDCE S9R60GECE	S9R60GX S9R60GXCE
CW,CCW	**CW,CCW**	**CW,CCW**
		



90W

REVERSIBLE MOTOR □90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9R90GA( ) S9R90GA( )(TP) S9R90GA( )CE	4	90	1Ø 110	60	30min.	2.25	1550	5.80	0.580	8.50	0.850	30.0
	S9R90GB( ) S9R90GB( )(TP) S9R90GB( )CE	4	90	1Ø 220	60	30min.	1.00	1550	5.80	0.580	8.50	0.850	7.0
	S9R90GC( ) S9R90GC( )(TP) S9R90GC( )CE	4	90	1Ø 100	50	30min.	2.10	1200	7.50	0.750	6.50	0.650	30.0
					60		2.25	1500	6.00	0.600			
	S9R90GD( ) S9R90GD( )(TP) S9R90GD( )CE	4	90	1Ø 200	50	30min.	0.90	1200	7.50	0.750	6.50	0.650	7.0
					60		1.00	1500	6.00	0.600			
	S9R90GE( ) S9R90GE( )CE	4	90	1Ø 100	50	30min.	1.80	1200	7.50	0.750	6.50	0.650	30.0
					60		1.90	1500	6.00	0.600			
				1Ø 115	60		1.80	1550	6.00	0.600	8.00	0.800	25.0
	S9R90GX( ) S9R90GX( )CE	4	90	1Ø 220	50	30min.	0.82	1250	7.20	0.720	6.50	0.650	6.0
				1Ø 240			0.86		7.40	0.740	8.00	0.800	

❖ 기종명 S9R90GE는 UL 규격 인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO. E172720) (S9R90GE is UL approved (UL FILE No. E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S9R90GE type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S9R90GE( )CE는 115V용 사양으로만 출하됩니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP. S9R90GE( )CE is available only for 115V specification.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9R9GE, S9R90GX는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S9R90GE, S9R90GX is thermally protected type with TP mounted.)
❖ 본 DATA는 BRAKE BLOCK을 MOTOR에 장착된 상태에서 측정한 DATA입니다. (Data is measured with friction brake mounted.)
❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KC□B( )	kg-cm	18.2	21.9	30.4	36.5	45.6	54.7	60.8	68.4	82.1	98.6	110	124	149	178	198	200	200	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.784	2.146	2.979	3.577	4.469	5.361	5.958	6.703	8.046	9.663	10.78	12.15	14.60	17.44	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60

60Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KC□B( )	kg-cm	14.6	17.5	24.3	29.2	36.5	43.7	48.6	54.8	65.7	78.8	87.6	99.0	119	143	158	198	200	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.431	1.715	2.381	2.862	3.577	4.675	4.763	5.370	6.439	7.722	8.585	9.702	11.66	14.01	15.48	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60

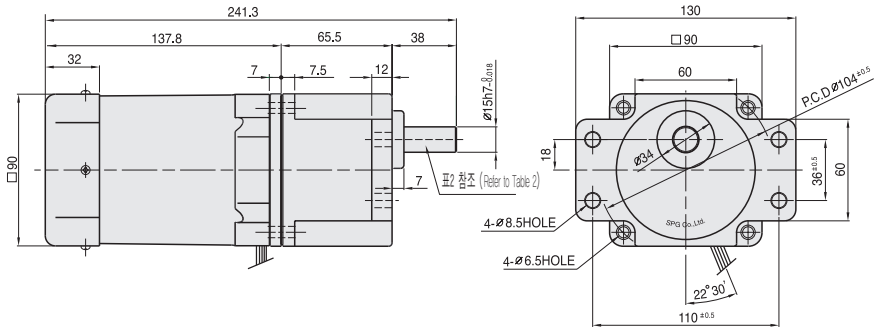
❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 200㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)

DIMENSIONS

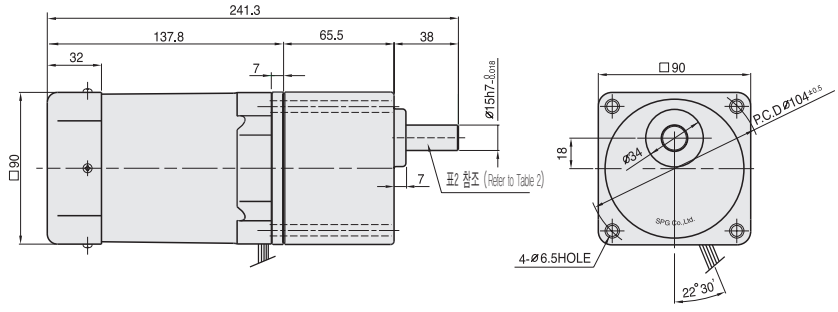
✚ GEARED MOTOR

※MOTOR MODEL : S9R90G□□

※HEAD MODEL : S9□C3B□-S~S9□C200B□-S

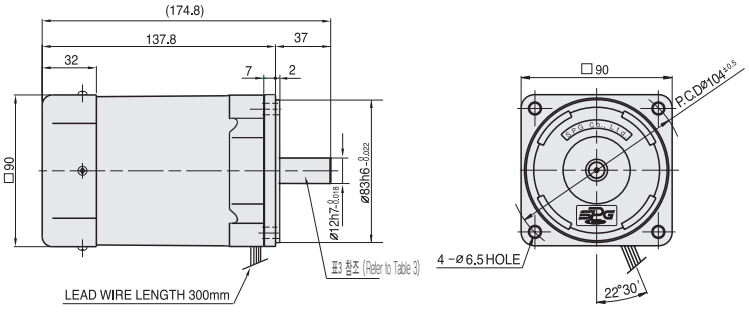


※HEAD MODEL : S9□C3B□~S9□C200B□



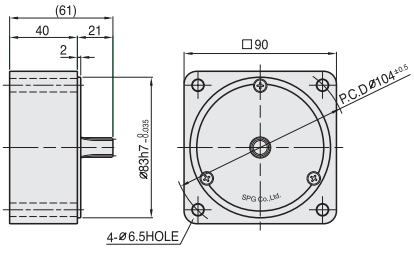
✚ MOTOR

※MOTOR MODEL : S9R90□□□



✚ INTER-DECIMAL GEAR HEAD

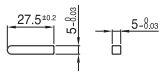
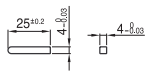
※MODEL : S9GX10B(H,L)-S



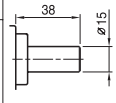
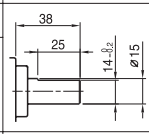
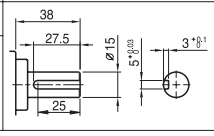
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.93
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3B□ ~S9□C10B□	1.21
	S9□C12.5B□ ~S9□C20B□	1.30
	S9□C25B□ ~S9□C60B□	1.40
	S9□C75B□ ~S9□C200B□	1.45

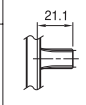
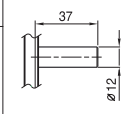
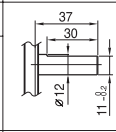
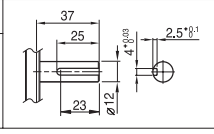
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SC3B□ ~S9SC200B□	
D-CUT TYPE S9DC3B□ ~S9DC200B□	
KEY TYPE S9KC3B□ ~S9KC200B□	

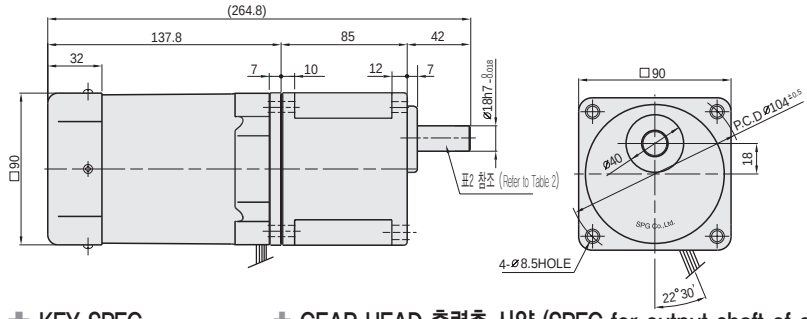
✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9R90G□□	
STRAIGHT TYPE S9R90S□	
D-CUT TYPE S9R90D□	
KEY TYPE S9R90K□	

DIMENSIONS

✚ GEARED MOTOR

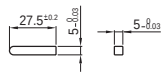
※MOTOR MODEL : S9I90G□H
※HEAD MODEL : S9□D3B~S9□D200B



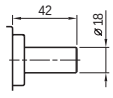
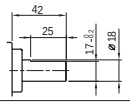
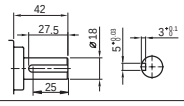
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.99
GEAR HEAD	S9□D3B ~S9□D10B	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)	MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)	MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE		D-CUT TYPE		KEY TYPE	
S9SD3B ~S9SD200B		S9DD3B ~S9DD200B		S9KD3B ~S9KD200B	

50Hz

GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KD□B	kg-cm	18.2	21.9	30.4	36.5	45.6	54.7	60.8	68.4	82.1	98.6	110	124	149	178	198	248	297	300	300	300	300	300	300	300
	N·m	1.784	2.146	2.979	3.577	4.469	5.361	5.958	6.703	8.046	9.663	10.78	12.15	14.60	17.44	19.40	24.32	29.13	29.42	29.42	29.42	29.42	29.42	29.42	29.42

60Hz

GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KD□B	kg-cm	14.6	17.5	24.3	29.2	36.5	43.7	48.6	54.8	65.7	78.8	87.6	99.0	119	143	158	198	238	266	300	300	300	300	300	300
	N·m	1.431	1.715	2.381	2.862	3.577	4.675	4.763	5.370	6.439	7.722	8.585	9.702	11.66	14.01	15.48	19.40	23.34	26.09	29.42	29.42	29.42	29.42	29.42	29.42

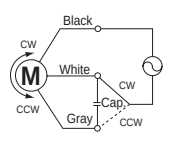
❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 300kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. MOTOR의 H와 사용하여 주십시오. (Only "H" type is applicable. Please use "H" type motor.)

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

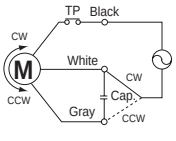
S9R90GA S9R90GB
S9R90GC S9R90GD

CW,CCW



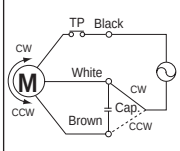
S9R90GA(TP) S9R90GB(TP)
S9R90GC(TP) S9R90GD(TP)
S9R90GACE S9R90GBCE S9R90GE
S9R90GCCE S9R90GDCE S9R90GECE

CW,CCW



S9R90GX
S9R90GXCE

CW,CCW



ELECTROMAGNETIC BRAKE MOTOR

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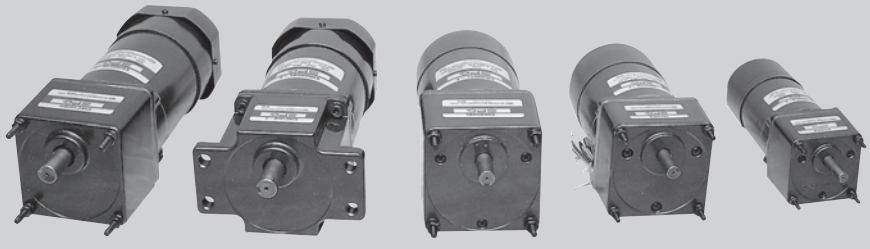
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전자(電磁) BRAKE MOTOR의 특징 (Characteristics of ELECTROMAGNETIC BRAKE MOTOR)



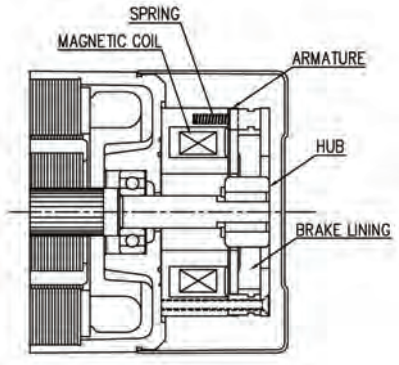
1. 전자(電磁) BRAKE MOTOR의 개요 (Overview of Electromagnetic Brake Motor)

- 교류 무여자(無勵磁) 작동형 전자(電磁) BRAKE를 MOTOR 후부(後部)에 장착하여 전원이 OFF와 동시에 MOTOR가 순시에 정지하여 부하를 유지합니다. (The electromagnetic brake of AC non-excitation run type is mounted at the back of the motor to enable the motor to stop instantly when the power is turned off, and the load maintained.)
- 단상 MOTOR의 BRAKE는 REVERSIBLE MOTOR에 연결되고, 삼상용 MOTOR에는 INDUCTION MOTOR에 직접 연결된 MOTOR입니다. (The induction motor cannot stop instantaneously even when the power is turned off while being used as a source of dynamic force.)
- 동력원으로 MOTOR 사용할 때 단시간에 MOTOR를 정지시키고 그 부하를 그 위치에서 유지하고자 할 경우에 사용됩니다. INDUCTION MOTOR에서는 전원을 OFF시에 순간적으로 정지하지 않고 30~40회전, REVERSIBLE MOTOR는 5~6회전 OVER RUN 합니다.(단 MOTOR 단품 무부하시일 경우) (Instead, it runs further by 30-40 rotations. The reversible motor also makes 5-6 additional rotations(provided no-load). Therefore, brake pack shall be used to make an instantaneous stop. Although an electric brake brake pack can make an instantaneous stop, it cannot hold torque.(The over run is less than one rotation on no-load))
- 순간적으로 MOTOR를 정지시키고 싶을 때에는 BRAKE PACK을 사용합니다. 단, BRAKE PACK은 MOTOR를 순시정지 시키는 것이 가능한 전자(電子) BRAKE 회로이지만 부하를 유지하는 힘은 없습니다.(MOTOR 단품 무부하시 OVER RUN은 1회전 미만입니다.)
- 부하를 유지하는 용도로 사용하는 경우에는 전자(電磁) BRAKE MOTOR를 사용하고 있습니다. (Therefore, the electromagnetic brake motor is employed if the load should be maintained.)
- MOTOR 후부(後部)에 무여자(無勵磁) 작동형 전자(電磁) BRAKE를 장착하여 작동하고 있습니다. (The electromagnetic brake of AC non-excitation run type is mounted at the back of the motor for operation.)
- 전자(電磁) BRAKE MOTOR는 전원 OFF시, MOTOR 단품 무부하의 경우에는 1~4회전 OVER RUN합니다. (The electromagnetic motor makes 1-4 times of over run rotation at the time the power is turned off if the electromagnetic brake motor unit is loaded.)
- 빈번한 순시 정역회전이 가능합니다. 간단한 절환으로 1분에 6회 정지가 가능합니다.(단 정지시간을 3초 이상 확보하여 주십시오.)(The frequent instantaneous directional changes are possible from normal to reverse, and vice versa. With a simple control, it is possible to make 6 stops per minute. (However, more than 3 seconds of stoppage is required.))
- MOTOR, BRAKE부가 같은 전원으로 사용할 수 있습니다. BRAKE부에 정류회로를 내장하여 MOTOR와 같은 교류전원을 사용합니다. (The motor and the brake can use the same power source. The rectifying circuit is embedded in the brake and so the brake can use the same AC source as the motor uses.)

2. 무여자(無勵磁) 작동형(作動型) 전자(電磁) BRAKE (Electromagnetic Brake of Non-excitation Run Type)

(1) 구조 및 동작원리 (Structure and Operation Principle)

- 오른쪽 〈그림1〉은 전자 BRAKE MOTOR의 구조도를 나타낸 것입니다. 당사의 전자(電磁) BRAKE MOTOR는 무여자(無勵磁) 작동형(作動型)으로 COIL에 전압을 인가하면 SPRING에 의해 억제된 ARMATURE가 흡입되어 SPRING을 눌러 ARMATURE와 BRAKE LINING 사이에 틈이 발생되고 제동이 해제되어 MOTOR SHAFT는 회전이 자유롭게 되는 것입니다. 또 COIL에 전압을 OFF(개방 開放) 하면 ARMATURE와 SPRING의 탄성에 의해 BRAKE LINING에 압력이 가해져 제동력이 발생하여 MOTOR SHAFT가 정지되는 것입니다. (〈Fig.1〉 shows a structural diagram of the electromagnetic brake motor. SPG's electromagnetic brake motor is a non-excitation run type. When the voltage is applied to the coil, the armature that is suppressed by the spring is pulled to thrust the spring to make a gap between the armature and the brake to release the braking force and then, the motor shaft can start turning freely.
  Also, when the voltage to the coil turns off (opens), the brake lining is put under the pressure created by the armature in conjunction with the elasticity of the spring, exerting the braking force to stop the motor shaft.)



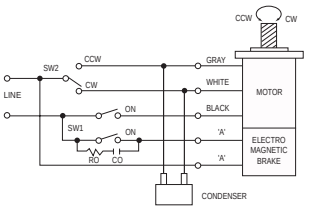
〈그림1 (Fig.1)〉 전자 BRAKE MOTOR의 구조
(STRUCTURAL DIAGRAM OF THE ELECTROMAGNETIC BRAKE)

(2) 전자(電磁) BRAKE의 특징 (Characteristic of Electromagnetic Brake)

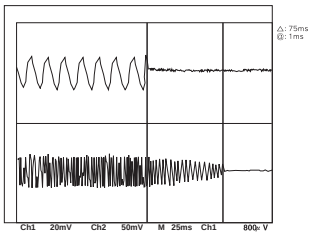
- 교류 무여자(無勵磁) 작동형(作動型) 전자(電磁) BRAKE로서 MOTOR와 직결하여, 전원이 OFF와 동시에 MOTOR는 순시에 정지되고, 부하를 유지합니다. 유지력은 0.5 kgf · cm~10kgf · cm 입니다. 전원 OFF시 유지력이 작동되는 TYPE이므로 전원이 차단된 긴급시에 안전 BRAKE로 최적입니다. (The electromagnetic brake of AC non-excitation run type can be connected directly to the motor. When the power source is turned off, the motor stops instantaneously and the load is maintained. The retention force is 0.5 kgf · cm~10kgf · cm. This type of brake is best suited if a safer brake is required when the power is turned off, because the retention force is maintained when the power turns off.)

(3) 결선방법에 의한 제동시간의 차 (Braking Time Difference by Connection Method)

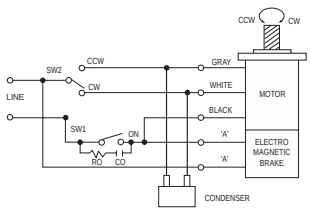
- 결선방법은 〈그림2〉와 같이 하지만 결선을 간단하게 하기 위하여 〈그림3〉과 같은 접속방법도 가능합니다. 그러나 〈그림3〉과 같은 경우에는 〈그림2〉의 접속경우와 비교하면, 제동시간이 50msec 정도 길게 되어 그 시간만큼 OVER RUN도 증가합니다. 이것은 제동 시에 MOTOR의 자기 ENERGY가 전자(電磁) BRAKE 전자석(電磁石)의 여자권선에 작용하여, 電磁 BRAKE의 여자를 해제하여도 약 50msec동안 電磁石이 계속해서 작동하여 BRAKE 작동이 늦어지기 때문입니다. (The connection can be made as shown in 〈Fig. 2〉. However, the method shown in 〈Fig. 3〉 is also possible if a simpler connection method is sought for. In case of 〈Fig. 3〉, the braking time takes longer roughly by 50msec than that of 〈Fig. 2〉, resulting in the increased overrun. This is because the braking action lags about 50msec by the magnet even after the brake's excitation is vanished, because the magnetic energy of the motor can act on the excitation winding of the electronic brake's magnet when the braking takes place.)



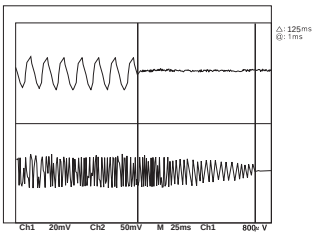
〈그림2 (Fig.2)〉
NORMAL CONNECTION



측정 MODEL S8R25GA-E
((Model S8R25GA-E is used for measurement.))



〈그림3 (Fig.3)〉
SIMPLIFIED CONNECTION



측정 MODEL S8R25GA-E
((Model S8R25GA-E is used for measurement.)

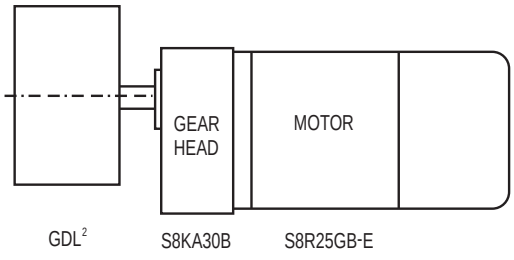
※ 주) 위의 〈그림2〉, 〈그림3〉 중에서 전자(電磁) BRAKE LEAD WIRE의 색상은 단상 AC110V계열은 청색이고, 단상 AC220V계열은 등색이며, 삼상 380~440V용은 황색입니다.

(※ Note) The colors of the electromagnetic brake lead wire shown in 〈Fig. 2〉, 〈Fig. 3〉 : single-phase AC110V is blue, single-phase AC220V is orange and three-phase 380~440V is yellow.)

SIZE (㎜)	출력 (Output) (W)	전압 (Voltage) (V)	주파수 (Frequency) (Hz)	전류 (Ampere) (A)	입력 (Input) (W)	BRAKE TORQUE (kg · cm)	BRAKE TORQUE (N · m)
□60	6	단상 100(V)계열 (Single-phase 100(V)) 단상 200(V)계열 (Single-phase 200(V)) 삼상 200(V)계열 (Three-phase 200(V))	50/60	0.06	3.0	0.5	0.05
□70	15			0.07	3.0	1.0	0.1
□80	15			0.10	4.5	2.0	0.2
	25			0.10	4.5	2.0	0.2
□90	40			0.15	7.0	3.0	0.3
	60			0.15	7.0	5.0	0.5
	90			0.15	7.0	5.0	0.5
□80	25	삼상 400(V)계열 (Three-phase 400(V))	50/60	0.03	6.3	4.0	0.4
	40			0.04	8.5	5.0	0.5
□90	60			0.04	8.5	5.0	0.5
	90			0.04	8.5	10.0	1.0

〈표1 (Table1)〉 BRAKE SPECIFICATION
(FAIL-SAFE ELECTRO MAGNETIC BRAKE TYPE)

3. 동작시간, 제동특성 (Operating time, Braking Characteristics)



(그림4 (Fig.4))

(1) S8R25GB-E를 예로 S8KA30B를 조합하여 관성체 (GDL^2=1000kgf · cm^2)를 구동하는 경우 동작시간, 제동시간, OVER RUN을 산출해 보면(전원주파수 60Hz인 경우) 일차적으로 부하의 관성 MOMENT의 값을 MOTOR SHAFT에서의 값으로 환산하면 (**Take S8R25GB-E as an example** and let it be combined with S8KA30B to drive the inertia body(GDL^2=1000kgf · cm^2).
To calculate the operating time, braking time, and overrun under the power source frequency of 60Hz, convert the load's inertia moment to the motor shaft as follows.)

$$GDM^2 = \frac{GDL^2}{i^2}\ [kgf \cdot cm^2] = \frac{1000}{30^2} = 1.1\ [kgf \cdot cm^2]$$

GDL^2 : 부하의 FLY WHEEL효과 (Fly wheel effect of load) [kgf · cm2]
GDM^2 : MOTOR SHAFT에서의 FLY WHEEL효과 (Fly wheel effect at motor shaft) [kgf · cm^2]
i : GEAR HEAD 감속비 (Ratio of gearhead)

• Si 단위로 관성 MOMENT는 i로 나타내며 다음 식으로 환산합니다. (The inertia moment expressed in SI unit can be calculated by the following expression.)

$$i = \frac{GD^2}{4g}\ [kgf \cdot cm^2]$$ 여기서 g : 9.80665 [m/s²]

(2) OVER RUN

• 아래의 〈그림5〉와 같이 MOTOR SHAFT의 OVER RUN은 NM ≒ 2.5회전이므로 GEAR HEAD의 출력축의 OVER RUN은 (As shown in 〈Fig. 5〉, the overrun of the motor shaft is NM ≒ 2.5 revolutions. Hence, the gearhead's output shaft has the overrun as follows.)

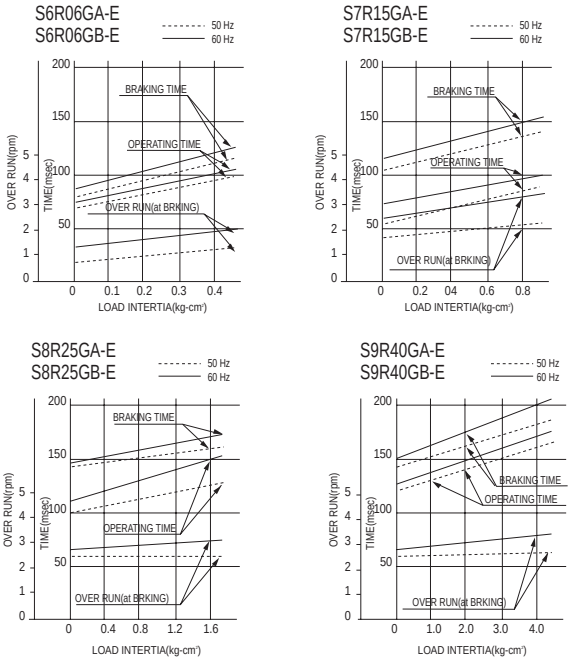
(3) 동작시간, 제동시간 (Operating Time and Braking Time)

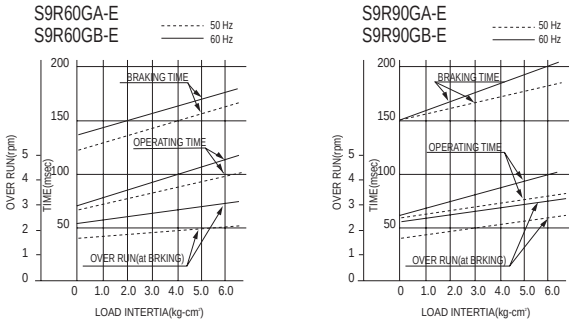
$$N_G = \frac{N_M}{i^2} = \frac{2.5}{30} = 0.08회전\ (revolutions)\ (28.8^\circ)$$

• 아래의 〈그림5〉에서와 같이 동작시간 t1 ≒ 130 [msec], 제동시간 t2 ≒ 170 [msec]가 됩니다. (As shown in 〈Fig.5〉, the operating time t1 ≒ 130 [msec], and the braking time t2 ≒ 170 [msec].)

• BRAKE MOTOR의 동작시간은 MOTOR의 동작시간에 전자(電磁) BRAKE 개방시간을 더한 것입니다. 따라서 미리 전자 BRAKE를 개방시켜두면 빠르게 MOTOR를 동작시킬 수 있습니다. (The operating time of the brake motor is a sum of the motor's operating time and the electronic brake's open time. Thus, if the electronic brake is left open in advance, the motor can be started quickly.)

• BRAKE를 개방하는 시간은 최소한 MOTOR가 동작하기 10msec 전에 하여 주십시오. (It is advised that the brake should be open at least 10msec before the motor starts operating.)





〈그림5 (Fig.5)〉 동작시간 및 제동특성 (Operating Time and Breaking Time)

GENERAL SPECIFICATION OF INDUCTION MOTORS

항목 (ITEM)	사양 (Specification)
절연저항 (Insulation Resistance)	상온 상습에서 MOTOR을 정격으로 운전 후 MOTOR의 COIL, MOTOR CASE사이를 DC 500V MEGGER로 측정하여 100MΩ 이상임. (100MΩ or more when 500V megger is applied between the windings and the housing after rated motor operation under normal ambient temperature and humidity)
절연내압 (Dielectric Strength)	상온 상습에서 MOTOR을 정격으로 운전 후 MOTOR의 COIL, MOTOR CASE사이에 1500V 50/60Hz를 1분간 인가하여 이상 없음. (Sufficient to withstand 1500V at 50/60Hz applied between the windings and the case after rated motor operation under normal ambient temperature and humidity for 1min.)
온도상승 (Temperature Rise)	MOTOR를 정격으로 운전 후 온도계법으로 측정하여 온도상승치(△T)가 80℃(K) 이하임 (80℃ or less increase measured by thermometer after rated operation.)
절연등급 (Insulation Class)	B종 (Class B) (130℃)
과열보호장치 (Overheat Protection Device) (T/P)	THERMAL PROTECTOR 내장(자동 복귀형) (Built-in thermal protector (automatic return type)) : 개방 (Open) 120℃±5℃ 복귀 (Close) 76℃±15℃
사용온도 (Ambient Temperature)	-10℃ ~ 40℃
사용습도 (Ambient Humidity)	85% 이하 (maximum) (결로 없는 곳 (non condensing))





6W

ELECTROMAGNETIC BRAKE MOTOR
□60㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
60	S6R06GA-E S6R06GA-ECE	4	6	1Ø 110	60	30min.	0.23	1500	0.40	0.040	0.65	0.065	3.0
	S6R06GB-E S6R06GB-ECE	4	6	1Ø 220	60	30min.	0.12	1550	0.40	0.040	0.70	0.070	0.8
	S6R06GC-E S6R06GC-ECE	4	6	1Ø 100	50	30min.	0.21	1200	0.50	0.050	0.50	0.050	3.0
					60			1450	0.42	0.042			
	S6R06GD-E S6R06GD-ECE	4	6	1Ø 200	50	30min.	0.11	1200	0.50	0.050	0.55	0.055	0.8
					60			1500	0.42	0.042			
	S6R06GE-E S6R06GE-ECE	4	6	1Ø 100	50	30min.	0.20	1200	0.52	0.052	0.60	0.060	3.5
					60		0.23	1500	0.43	0.043			
				1Ø 115	60		0.17	1550	0.40	0.040	0.58	0.058	2.3
	S6R06GX-E S6R06GX-ECE	4	6	1Ø 220	50	30min.	0.09	1200	0.50	0.050	0.55	0.055	0.7
				1Ø 240			0.10		0.52	0.052	0.65	0.065	

❖ 기종명 S6R06GE-E는 UL규격 인증 제품으로 IMPEDANCE PROTECTED TYPE입니다.(UL FILE NO. E172722) (S6R06GE-E is UL approved(UL FILE NO. E172722) impedance protected.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S6R06GE-E type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S6R06GE-ECE는 115V용 사양으로만 출하됩니다. (CE marked at the end of model name indicates that it is impedance protected type which has received CE. S6R06GE-ECE is available only for 115V specification.)
❖ 본 DATA는 전자 BRAKE MOTOR에서 전자 BRAKE를 제거하고 MOTOR 단독으로 측정한 DATA입니다. (Above data is measured with brake removed from electromagnetic brake motor.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5	6
S6DA□B	kg-cm	1.3	1.5	2.1	2.6	3.2	3.9	4.3	5.4	6.4	7.7	7.7	9.7	11.6	13.9	15.5	17.5	21.0	26.2	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	N·m	0.127	0.147	0.206	0.255	0.314	0.382	0.421	0.529	0.627	0.755	0.755	0.951	1.137	1.362	1.519	1.715	2.058	2.568	2.942	2.942	2.942	2.942	2.942	2.942	2.942

60Hz

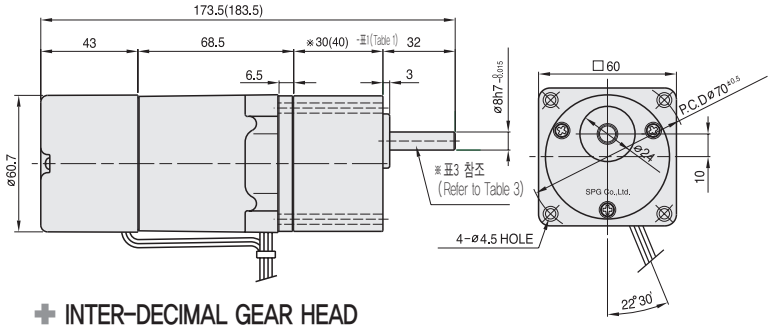
MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9	7.2
S6DA□B	kg.-cm	1.0	1.3	1.7	2.1	2.6	3.1	3.5	4.4	5.2	6.3	6.3	7.8	9.4	11.3	12.6	14.2	17.0	21.3	25.5	28.4	30.0	30.0	30.0	30.0	30.0
	N·m	0.098	0.127	0.167	0.206	0.255	0.304	0.343	0.431	0.510	0.617	0.617	0.764	0.921	1.107	1.235	1.392	1.666	2.087	2.499	2.783	2.942	2.942	2.942	2.942	2.942

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 30㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 30 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산 하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

DIMENSIONS

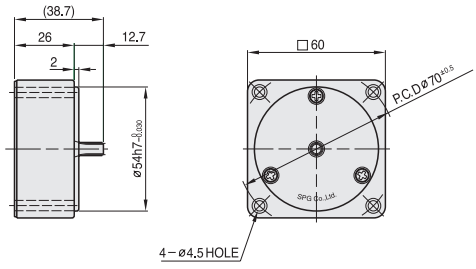
✚ GEARED MOTOR

※MOTOR MODEL : S6R06G□-E
※HEAD MODEL : S6□A3□~S6□A250□



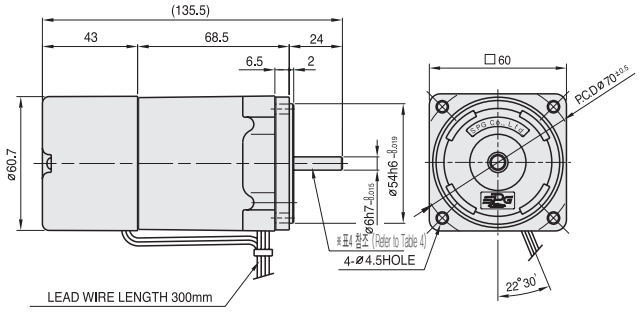
✚ INTER-DECIMAL GEAR HEAD

※MODEL : S6GX10B



✚ MOTOR

※MOTOR MODEL : S6R06□□-E



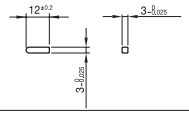
✚ ※30(40) - (표1 (Table1))

GEAR RATIO	SIZE(mm)
S6□A3□ ~ S6□A18□	30
S6□A20□ ~ S6□A250□	40

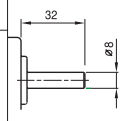
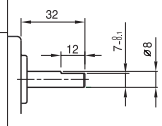
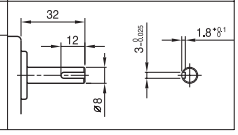
✚ WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		0.95
DECIMAL GEAR HEAD		0.18
GEAR HEAD	S6□A3□ ~S6□A18□	0.24
	S6□A20□ ~S6□A40□	0.30
	S6□A50□ ~S6□A250□	0.33

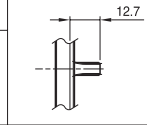
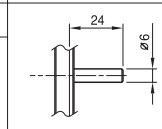
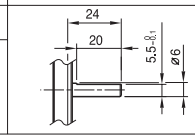
✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

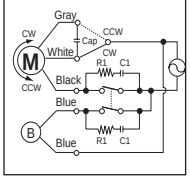
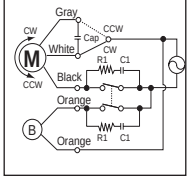
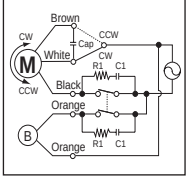
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S6SA3□ ~S6SA250□	
D-CUT TYPE S6DA3□ ~S6DA250□	
KEY TYPE S6KA3□ ~S6KA250□	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S6R06G□-E	
STRAIGHT TYPE S6R06S□-E	
D-CUT TYPE S6R06D□-E	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S6R06GA-E S6R06GA-ECE S6R06GC-E S6R06GE-E S6R06GC-ECE S6R06GE-ECE	S6R06GB-E S6R06GB-ECE S6R06GD-E S6R06GD-ECE	S6R06GX-E S6R06GX-ECE
CW,CCW	**CW,CCW**	**CW,CCW**
		

R_1 = 10 ~ 200 Ω (Min.1/4W)
C_1 = 0.1 ~ 0.33 μF (AC125WV or AC250WV)



15W

ELECTROMAGNETIC BRAKE MOTOR
□70㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
70	S7R15GA-E S7R15GA-E(TP) S7R15GA-ECE	4	15	1Ø 110	60	30min.	0.46	1550	1.00	0.100	1.25	0.125	6.0
	S7R15GB-E S7R15GB-E(TP) S7R15GB-ECE	4	15	1Ø 220	60	30min.	0.23	1600	1.00	0.100	1.20	0.120	1.5
	S7R15GC-E S7R15GC-E(TP) S7R15GC-ECE	4	15	1Ø 100	50	30min.	0.44	1200	1.25	0.125	1.00	0.100	6.0
					60		0.44	1500	1.00	0.100	1.00	0.100	
	S7R15GD-E S7R15GD-E(TP) S7R15GD-ECE	4	15	1Ø 200	50	30min.	0.22	1250	1.25	0.125	1.00	0.100	1.5
					60		0.22	1550	1.00	0.100	1.00	0.100	
	S7R15GE-E S7R15GE-ECE	4	15	1Ø 100	50	30min.	0.38	1250	1.25	0.125	1.00	0.100	6.0
					60		0.41	1550	1.00	0.100			
				1Ø 115	60		0.34	1600	1.00	0.100			4.5
	S7R15GX-E S7R15GX-ECE	4	15	1Ø 220	50	30min.	0.17	1200	1.25	0.125	1.00	0.100	1.2
				1Ø 240			0.18		1.45	0.145	1.20	0.120	

❖ 기종명 S7R15GE-E는 UL 규격 인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO. E172720) (S7R15GE-E is UL approved(UL FILE NO. E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S7R15GE-E type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S7R15GE-ECE는 115V용 사양으로만 출하됩니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE. S7R15GE-ECE is available only for 115V specification.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MODEL은 일반 MOTOR에 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S7R15GE-E, S7R15GX-E는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S7R15GE-E, S7R15GX-E is thermally protected type with TP mounted.)
❖ 본 DATA는 전자 BRAKE MOTOR에서 전자 BRAKE를 제거하고 MOTOR 단독으로 측정한 DATA입니다. (Above data is measured with brake removed from electromagnetic brake motor.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S7KA□B	kg-cm	3.2	3.9	5.4	6.5	8.1	9.7	10.8	13.5	16.2	19.4	19.4	24.2	29.1	34.9	38.8	43.6	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	N·m	0.314	0.382	0.530	0.637	0.794	0.951	1.059	1.324	1.587	1.902	1.902	2.373	2.854	3.423	3.805	4.276	4.900	4.900	4.900	4.900	4.900	4.900	4.900	4.900

60Hz

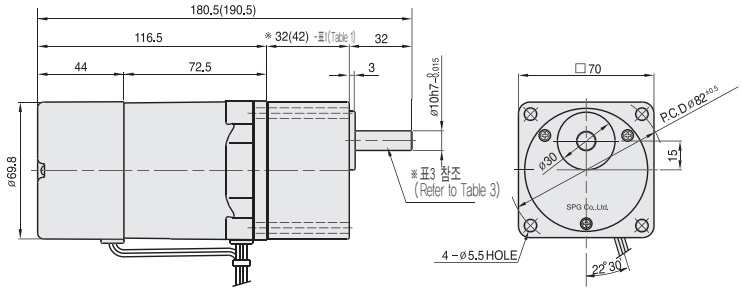
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S7KA□B	kg-cm	3.0	3.6	5.1	6.1	7.6	9.1	10.1	12.7	15.2	18.2	18.2	22.8	27.3	32.8	36.5	41.0	49.2	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	N·m	0.294	0.353	0.500	0.598	0.745	0.892	0.990	1.245	1.491	1.785	1.785	2.236	2.677	3.217	3.579	4.021	4.825	4.900	4.900	4.900	4.900	4.900	4.900	4.900

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 50㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 50 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

DIMENSIONS

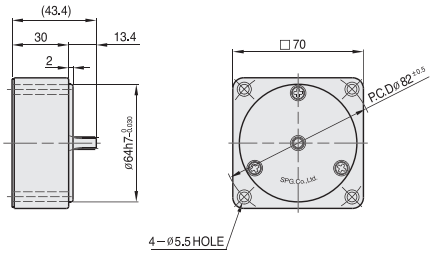
✚ GEARED MOTOR

※MOTOR MODEL : S7156G□-E
※HEAD MODEL : S7□A3□~S7□A200□



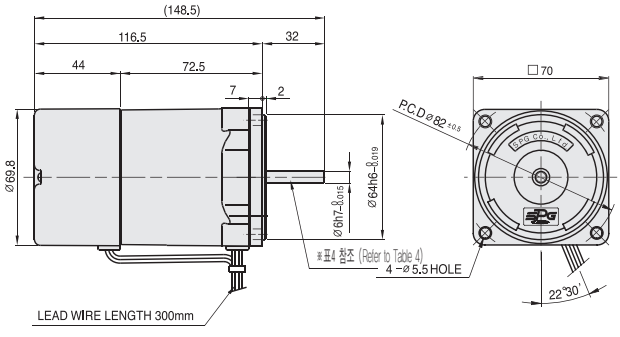
✚ INTER-DECIMAL GEAR HEAD

※MODEL : S7GX10B



✚ MOTOR

※ MOTOR MODEL : S7R15□□-E



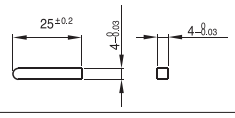
✚ ※32(42) - (표1 (Table1))

GEAR RATIO	SIZE(mm)
S7□A3□ ~ S7□A18□	32
S7□A20□ ~ S7□A200□	42

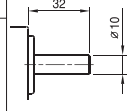
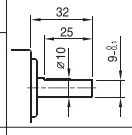
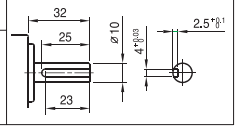
✚ WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		1.04
DECIMAL GEAR HEAD		0.32
GEAR HEAD	S7□A3□ ~S7□A18□	0.38
	S7□A20□ ~S7□A40□	0.47
	S7□A50□ ~S7□A200□	0.52

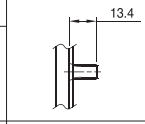
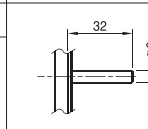
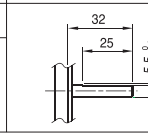
✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

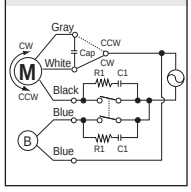
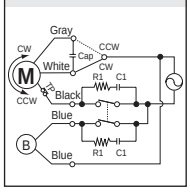
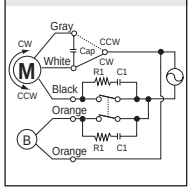
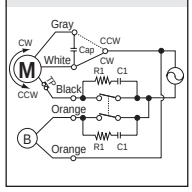
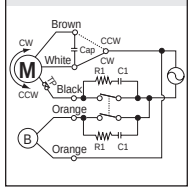
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S7SA3□ ~S7SA200□	
D-CUT TYPE S7DA3□ ~S7DA200□	
KEY TYPE S7KA3□ ~S7KA200□	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S7R15G□-E	
STRAIGHT TYPE S7R15S□-E	
D-CUT TYPE S7R15D□-E	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S7R15GA-E S7R15GC-E	S7R15GA-ECE S7R15GC-ECE S7R15GE-E S7R15GE-ECE	S7R15GB-E S7R15GD-E	S7R15GB-ECE S7R15GD-ECE	S7R15GX-E S7R15GX-ECE
CW,CCW	**CW,CCW**	**CW,CCW**	**CW,CCW**	**CW,CCW**
				

R_1 = 10 ~ 200 Ω (Min.1/4W)
C_1 = 0.1 ~ 0.33 μF (AC125WV or AC250WV)



15W

ELECTROMAGNETIC BRAKE MOTOR
□80㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
80	S8R15GA-E S8R15GA-E(TP) S8R15GA-ECE	4	15	1Ø 110	60	30min.	0.44	1550	1.00	0.100	1.50	0.150	6.0
	S8R15GB-E S8R15GB-E(TP) S8R15GB-ECE	4	15	1Ø 220	60	30min.	0.25	1600	1.00	0.100	1.50	0.150	1.5
	S8R15GC-E S8R15GC-E(TP) S8R15GC-ECE	4	15	1Ø 100	50	30min.	0.50	1200	1.30	0.130	1.25	0.125	6.0
					60		0.43	1500	1.10	0.110			
	S8R15GD-E S8R15GD-E(TP) S8R15GD-ECE	4	15	1Ø 200	50	30min.	0.28	1250	1.30	0.130	1.25	0.125	1.5
					60		0.24	1550	1.00	0.100			
	S8R15GE-E S8R15GE-ECE	4	15	1Ø 100	50	30min.	0.48	1300	1.30	0.130	1.25	0.125	6.0
					60		0.39	1600	1.10	0.110			
				1Ø 115	60		0.45	1600	1.00	0.100	1.15	0.115	4.5
	S8R15GX-E S8R15GX-ECE	4	15	1Ø 220	50	30min.	0.16	1200	1.30	0.130	1.25	0.125	1.0
				1Ø 240			0.17		1.40	0.140	1.45	0.145	

❖ 기종명 S8R15GE-E는 UL규격 인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO. E172720) (S8R15GE-E is UL approved(UL FILE NO. E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S8R15GE-E type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S8R15GE-ECE는 115V용 사양으로만 출하됩니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE. S8R15GE-ECE is available only for 115V specification.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MODEL은 일반 MOTOR에 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8R15GE-E, S8R15GX-E는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S8R15GE-E, S8R15GX-E is thermally protected type with TP mounted.)
❖ 본 DATA는 전자 BRAKE MOTOR에서 전자 BRAKE를 제거하고 MOTOR 단독으로 측정한 DATA입니다. (Above data is measured with brake removed from electromagnetic brake motor.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S8KA□B	kg-cm	3.4	4.1	5.7	6.8	8.5	10.2	11.3	14.2	17.0	20.4	20.4	25.6	30.7	36.8	40.9	46.2	55.4	69.2	80	80	80	80	80	80
	N·m	0.333	0.402	0.559	0.666	0.833	1.000	1.107	1.392	1.666	1.999	1.999	2.509	3.009	3.606	4.008	4.530	5.433	6.786	7.840	7.840	7.840	7.840	7.840	7.840

60Hz

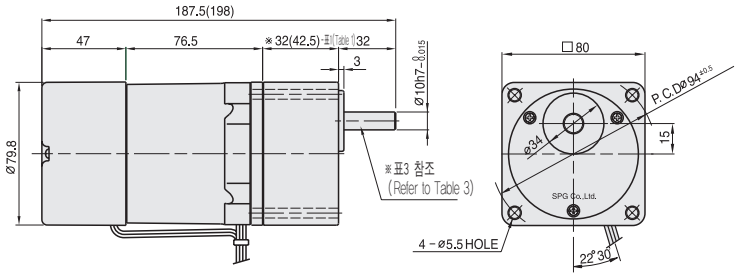
MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S8KA□B	kg-cm	2.9	3.5	4.9	5.8	7.3	8.7	9.7	12.2	14.6	17.5	17.5	21.9	26.3	31.5	35.0	39.6	47.5	59.4	71.3	79.2	80	80	80	80
	N·m	0.284	0.343	0.481	0.568	0.715	0.853	0.951	1.196	1.432	1.715	1.715	2.146	2.577	3.087	3.430	3.881	4.658	5.825	6.992	7.767	7.840	7.840	7.840	7.840

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 80㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 80 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

DIMENSIONS

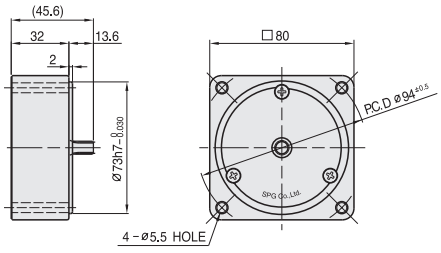
✚ GEARED MOTOR

※MOTOR MODEL : S8R15G□-E
※HEAD MODEL : S8□A3□~S8□A200□



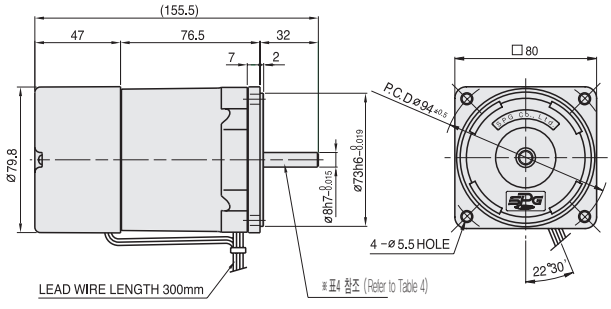
✚ INTER-DECIMAL GEAR HEAD

※MODEL : S8GX10B



✚ MOTOR

※MOTOR MODEL : S8R15□□-E



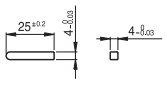
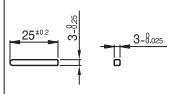
✚ ※32(42.5) – (표1 (Table1))

GEAR RATIO	SIZE(mm)
S8□A3□ ~ S8□A18□	32
S8□A20□ ~ S8□A200□	42.5

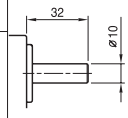
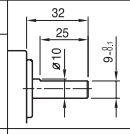
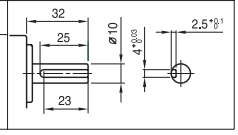
✚ WEIGHT – (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		1.86
DECIMAL GEAR HEAD		0.43
GEAR HEAD	S8□A3□ ~S8□A18□	0.43
	S8□A20□ ~S8□A40□	0.57
	S8□A50□ ~S8□A250□	0.61

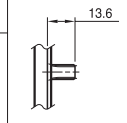
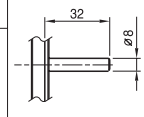
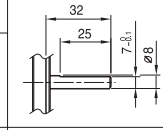
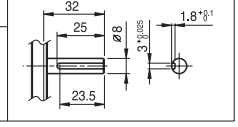
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표3 (Table3))

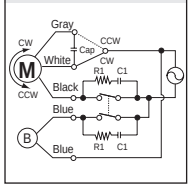
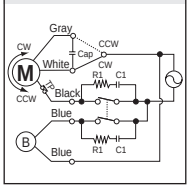
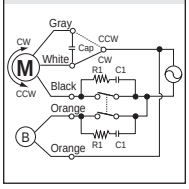
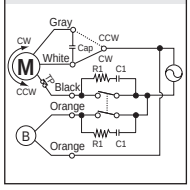
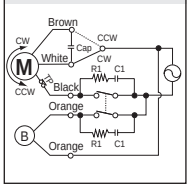
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE	
S8SA3□ ~S8SA200□	
D-CUT TYPE	
S8DA3□ ~S8DA200□	
KEY TYPE	
S8KA3□ ~S8KA200□	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE	
S8R15G□-E	
STRAIGHT TYPE	
S8R15S□-E	
D-CUT TYPE	
S8R15S□-E	
KEY TYPE	
S8R15K□-E	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S8R15GA-E S8R15GC-E	S8R15GA-ECE S8R15GC-ECE S8R15GE-E S8R15GE-ECE	S8R15GB-E S8R15GD-E	S8R15GB-ECE S8R15GD-ECE	S8R15GX-E S8R15GX-ECE
CW,CCW	**CW,CCW**	**CW,CCW**	**CW,CCW**	**CW,CCW**
				

R_1 = 10~200 Ω (Min.1/4W)
C_1 = 0.1~0.33μF (AC125WV or AC250WV)



25W

ELECTROMAGNETIC BRAKE MOTOR
□80㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
80	S8R25GA-E S8R25GA-E(TP) S8R25GA-ECE	4	25	1Ø 110	60	30min.	0.73	1550	1.62	0.162	2.40	0.240	10.0
	S8R25GB-E S8R25GB-E(TP) S8R25GB-ECE	4	25	1Ø 220	60	30min.	0.36	1550	1.62	0.162	2.40	0.240	2.5
	S8R25GC-E S8R25GC-E(TP) S8R25GC-ECE	4	25	1Ø 100	50	30min.	0.60	1250	2.00	0.200	2.20	0.220	10.0
					60		0.70	1500	1.70	0.170			
	S8R25GD-E S8R25GD-E(TP) S8R25GD-ECE	4	25	1Ø 200	50	30min.	0.30	1250	2.00	0.200	2.00	0.200	2.5
					60		0.35	1500	1.70	0.170			
	S8R25GE-E S8R25GE-ECE	4	25	1Ø 100	50	30min.	0.58	1250	2.00	0.200	1.60	0.160	8.0
					60		0.54	1550	1.70	0.170			
				1Ø 115	60		0.52	1600	1.65	0.165	1.90	0.190	7.0
	S8R25GX-E S8R25GX-ECE	4	25	1Ø 220	50	30min.	0.25	1250	2.00	0.200	2.10	0.210	2.0
				1Ø 240			0.27		2.10	0.210	2.50	0.250	
	S8I25GU-E S8I25GU-ECE	4	25	3Ø 200	50	Cont.	0.26	1300	1.95	0.195	3.50	0.350	—
					60		0.24	1550	1.65	0.165	2.90	0.290	
	S8I25GT-E S8I25GT-ECE	4	25	3Ø 220	50	Cont.	0.28	1350	1.90	0.190	4.20	0.420	—
					60		0.24	1600	1.60	0.160	3.50	0.350	
	S8I25GS-E S8I25GS-ECE	4	25	3Ø 380	50	Cont.	0.14	1250	2.00	0.200	3.15	0.315	—
					60		0.12	1500	1.70	0.170	2.50	0.250	
				3Ø 400	50	Cont.	0.14	1250	2.10	0.210	3.50	0.350	
					60		0.12	1500	1.80	0.180	2.75	0.275	
				3Ø 415	50	Cont.	0.15	1300	1.95	0.195	3.75	0.375	
					60		0.13	1550	1.65	0.165	3.00	0.300	
				3Ø 440	50	Cont.	0.15	1300	2.10	0.210	4.40	0.440	
					60		0.13	1600	1.60	0.160	3.40	0.340	

❖ 기종명 S8R25GE-E는 UL 규격 인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO. E172720) (S8R25GE-E is UL approved(UL FILE NO. E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S8R25GE-E type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S8R25GE-ECE는 115V용 사양으로만 출하됩니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE. S8R25GE-ECE is available only for 115V specification.)
❖ 기종명 맨끝자리에 TP가 명기된 MODEL은 일반 MOTOR에 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8R25GE-E, S8R25GX-E는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S8R25GE-E, S8R25GX-E is thermally protected type with TP mounted.)
❖ 본 DATA는 전자 BRAKE MOTOR에서 전자 BRAKE를 제거하고 MOTOR 단독으로 측정한 DATA입니다. (Above data is measured with brake removed from electromagnetic brake motor.Above data is measured with brake removed from electromagnetic brake motor.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)
❖ 삼상 380V~440V 모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S8KA□B	kg-cm	5.3	6.4	8.9	10.7	13.4	16.0	17.8	22.3	26.7	32.1	32.1	40.2	48.2	57.8	64.2	72.6	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	N·m	0.519	0.627	0.872	1.049	1.313	1.568	1.744	2.185	2.617	3.146	3.146	3.940	4.724	5.664	6.292	7.115	7.840	7.840	7.840	7.840	7.840	7.840	7.840	7.840

60Hz

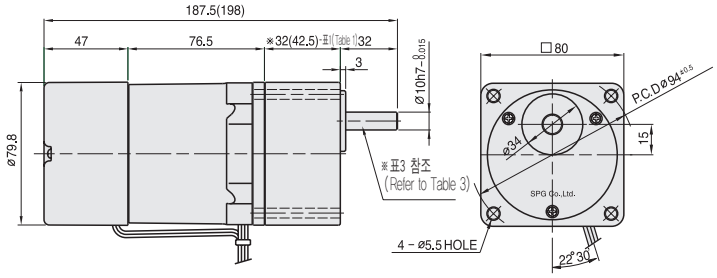
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S8KA□B	kg-cm	4.4	5.2	7.3	8.7	10.9	13.1	14.6	18.2	21.9	26.2	26.3	32.9	39.4	47.3	52.6	59.4	71.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	N·m	0.431	0.510	0.715	0.853	1.068	1.284	1.431	1.784	2.146	2.568	2.577	3.224	3.861	4.635	5.155	5.821	6.987	7.840	7.840	7.840	7.840	7.840	7.840	7.840

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 80㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 80 kg-cm.)
❖ 회전방향은 ■ 색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

DIMENSIONS

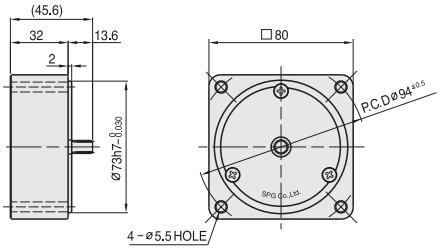
GEARED MOTOR

※MOTOR MODEL : S8R25G□-E
※HEAD MODEL : S8□A3□~S8□A200□



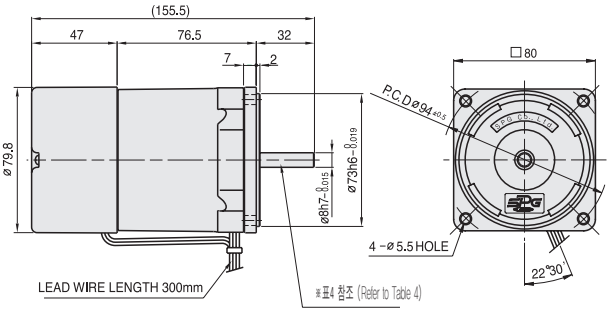
INTER-DECIMAL GEAR HEAD

※MODEL : S8GX10B



MOTOR

※MOTOR MODEL : S8R25□□-E



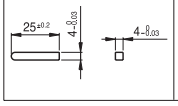
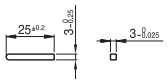
※32(42.5) - (표1 (Table1))

GEAR RATIO	SIZE(㎜)
S8□A3□ ~ S8□A18□	32
S8□A20□ ~ S8□A200□	42.5

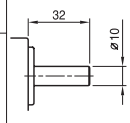
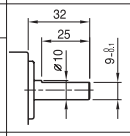
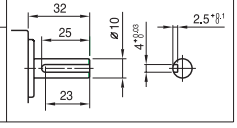
WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		1.86
DECIMAL GEAR HEAD		0.43
GEAR HEAD	S8□A3□ ~S8□A18□	0.43
	S8□A20□ ~S8□A40□	0.57
	S8□A50□ ~S8□A200□	0.61

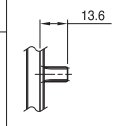
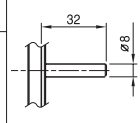
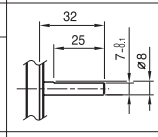
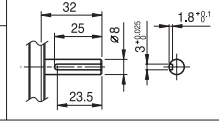
KEY SPEC

GEAR HEAD	MOTOR
	

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

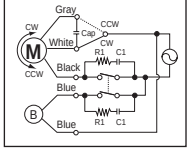
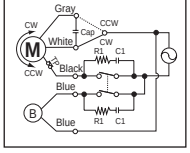
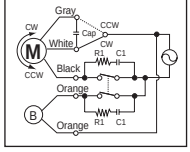
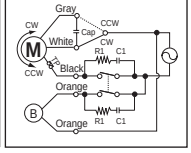
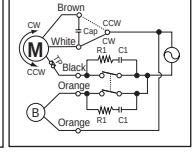
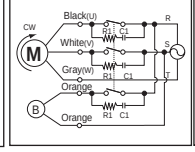
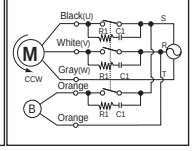
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S8SA3□ ~S8SA200□	
D-CUT TYPE S8DA3□ ~S8DA200□	
KEY TYPE S8KA3□ ~S8KA200□	

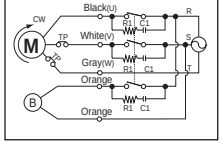
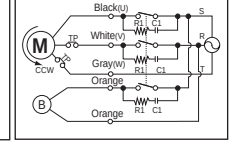
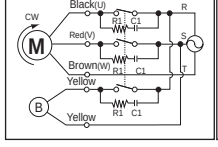
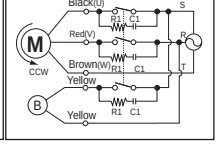
MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S8R25G□-E	
STRAIGHT TYPE S8R25S□-E	
D-CUT TYPE S8R25D□-E	
KEY TYPE S8R25K□-E	

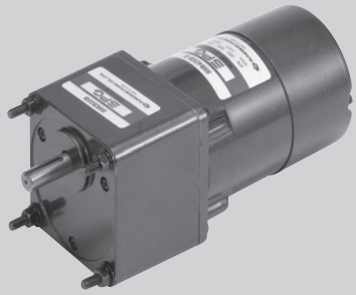
SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S8R25GA-E S8R25GC-E	S8R25GA-ECE S8R25GC-ECE S8R25GE-E S8R25GE-ECE	S8R25GB-E S8R25GD-E	S8R25GB-ECE S8R25GD-ECE	S8R25GX-E S8R25GX-ECE	S8I25GU-E S8I25GT-E	
CW,CCW	**CW,CCW**	**CW,CCW**	**CW,CCW**	**CW,CCW**	**CW**	**CCW**
						

S8I25GU-ECE S8I25GT-ECE		S8I25GS-E S8I25GS-ECE	
CW	**CCW**	**CW**	**CCW**
			

$R_1 = 10 \sim 200\,\Omega$ (Min1/4W) $C_1 = 0.1 \sim 0.33\,\mu F$ (AC125WV or AC250WV)



40W

ELECTROMAGNETIC BRAKE MOTOR
□90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9R40GA( )-E S9R40GA( )-E(TP) S9R40GA( )-ECE	4	40	1Ø 110	60	30min.	1.00	1600	2.50	0.250	4.00	0.400	15.0
	S9R40GB( )-E S9R40GB( )-E(TP) S9R40GB( )-ECE	4	40	1Ø 220	60	30min.	0.48	1600	2.50	0.250	4.00	0.400	3.5
	S9R40GC( )-E S9R40GC( )-E(TP) S9R40GC( )-ECE	4	40	1Ø 100	50	30min.	0.85	1300	3.10	0.310	3.50	0.350	15.0
					60		1.00	1550	2.60	0.260			
	S9R40GD( )-E S9R40GD( )-E(TP) S9R40GD( )-ECE	4	40	1Ø 200	50	30min.	0.40	1300	3.10	0.310	3.35	0.335	3.5
					60		0.48	1550	2.60	0.260			
	S9R40GE( )-E S9R40GE( )-ECE	4	40	1Ø 100	50	30min.	0.85	1300	3.10	0.310	3.45	0.345	15.0
					60		1.00	1550	2.60	0.260			
				1Ø 115	60		0.86	1600	2.60	0.260			12.0
	S9R40GX( )-E S9R40GX( )-ECE	4	40	1Ø 220	50	30min.	0.40	1250	3.20	0.320	3.30	0.330	3.0
				1Ø 240			0.43		3.40	0.340	4.00	0.400	
	S9I40GU( )-E S9I40GU( )-ECE	4	40	3Ø 200	50	Cont.	0.36	1300	3.10	0.310	6.30	0.630	—
					60		0.33	1550	2.60	0.260	5.20	0.520	
	S9I40GT( )-E S9I40GT( )-ECE	4	40	3Ø 220	50	Cont.	0.39	1350	3.00	0.300	7.60	0.760	—
					60		0.33	1600	2.50	0.250	6.10	0.610	
	S9I40GS( )-E S9I40GS( )-ECE	4	40	3Ø 380	50	Cont.	0.21	1300	3.20	0.320	6.30	0.630	—
					60		0.19	1550	2.70	0.270	4.85	0.485	
				3Ø 400	50	Cont.	0.21	1300	3.30	0.330	6.90	0.690	
					60		0.19	1550	2.80	0.280	5.25	0.525	
				3Ø 415	50	Cont.	0.21	1350	3.10	0.310	7.30	0.730	
					60		0.19	1600	2.60	0.260	5.70	0.570	
				3Ø 440	50	Cont.	0.21	1350	3.20	0.320	8.20	0.820	
					60		0.19	1600	2.70	0.270	6.30	0.630	

❖ 기종명 S9R40GE-E는 UL 규격 인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO. E172720) (S9R40GE-E is UL approved(UL FILE NO. E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S9R40GE-E type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S9R40GE( )-ECE는 115V용 사양으로만 출하됩니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP. S9R40GE( )-ECE is available only for 115V specification.)
❖ 기종명 맨 끝자리에 TP가 명기된 MODEL은 일반 MOTOR에 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9R40GE-E, S9R40GX-E는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S9R40GE-E, S9R40GX-E is thermally protected type with TP mounted.)
❖ 본 DATA는 전자 BRAKE MOTOR에서 전자 BRAKE를 제거하고 MOTOR 단독으로 측정한 DATA입니다. (Above data is measured with brake removed from electromagnetic brake motor.)
❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)
❖ 삼상 380V~440V 모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KB□B( )	kg-cm	8.3	9.9	13.8	16.5	20.7	24.8	27.5	34.4	41.3	49.6	49.6	62.1	74.5	89.4	99.3	100	100	100	100	100	100	100	100	100
	N·m	0.813	0.970	1.352	1.617	2.029	2.430	2.695	3.371	4.047	4.861	4.861	6.086	7.301	8.761	9.731	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800

60Hz

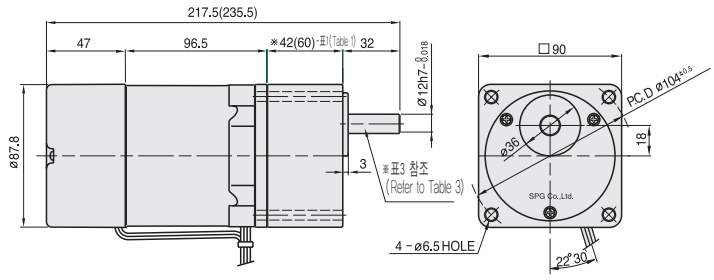
MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KB□B( )	kg-cm	6.8	8.2	11.3	13.6	17.0	20.4	22.7	28.4	34.0	40.8	40.9	51.1	61.3	73.6	81.8	100	100	100	100	100	100	100	100	100
	N·m	0.666	0.804	1.107	1.333	1.666	1.999	2.225	2.783	3.332	3.998	4.008	5.008	6.007	7.213	8.016	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 100kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 100 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)

DIMENSIONS

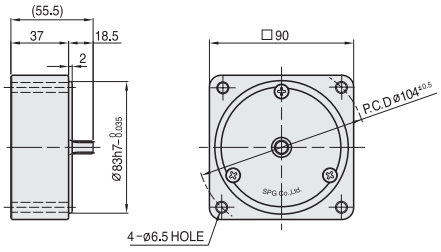
GEARED MOTOR

※MOTOR MODEL : S9R40G□□-E
※HEAD MODEL : S9□B3□□~S9□B200□□



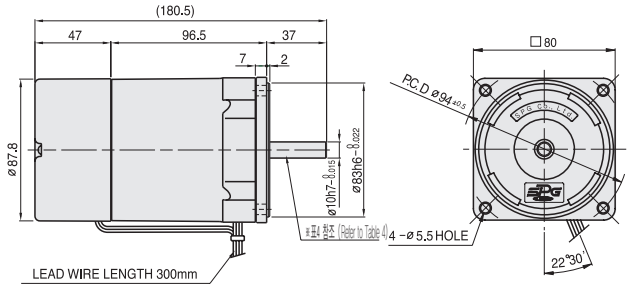
INTER-DECIMAL GEAR HEAD

※ MODEL : S9GX10B(H,L)



MOTOR

※MOTOR MODEL : S9R40□□□-E



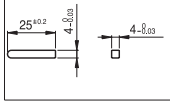
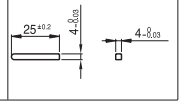
※42(60) - (표1 (Table1))

GEAR RATIO	SIZE(mm)
S9□B3□□ ~ S9□B18□□	42
S9□B20□□ ~ S9□B200□□	60

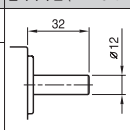
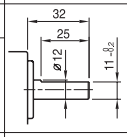
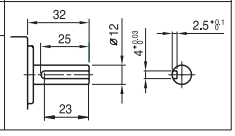
WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		2.74
DECIMAL GEAR HEAD		0.59
GEAR HEAD	S9□B3□□ ~S9□B18□□	0.73
	S9□B20□□ ~S9□B40□□	1.03
	S9□B50□□ ~S9□B200□□	1.13

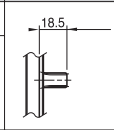
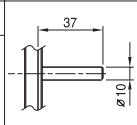
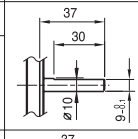
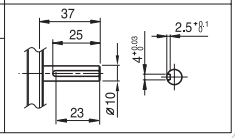
KEY SPEC

GEAR HEAD	MOTOR
	

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

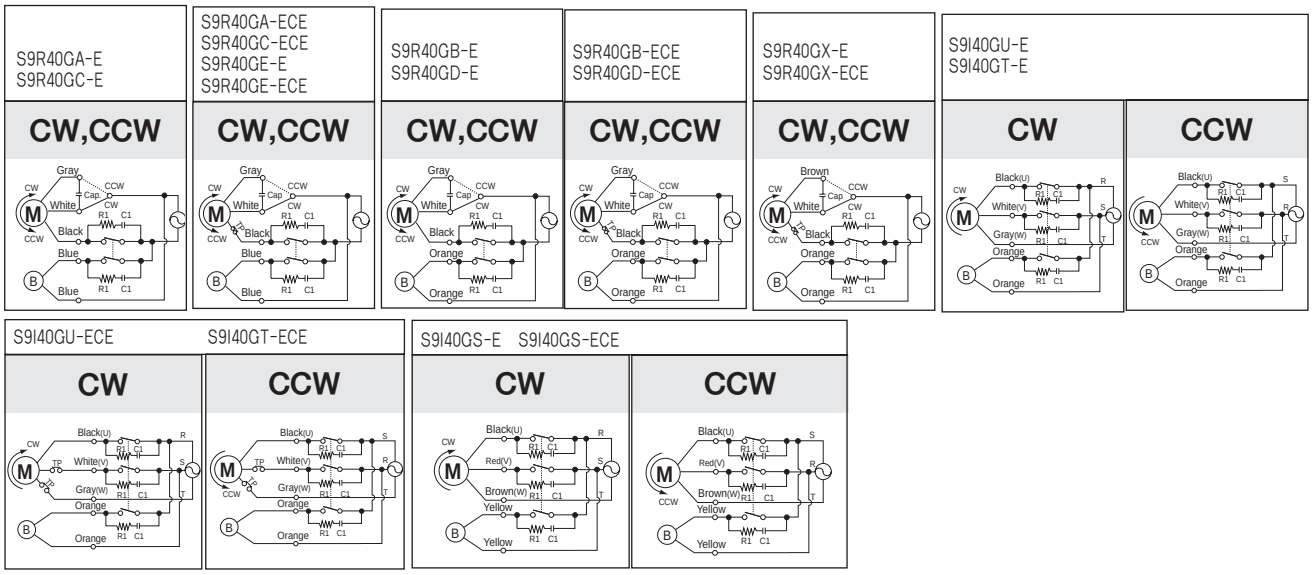
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SB3□□ ~S9SB200□□	
D-CUT TYPE S9DB3□□ ~S9DB200□□	
KEY TYPE S9KB3□□ ~S9KB200□□	

MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

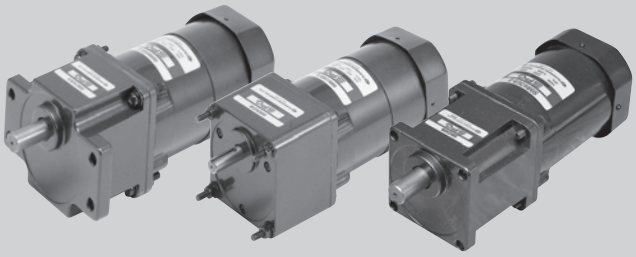
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9R40G□□-E	
STRAIGHT TYPE S9R40S□-E	
D-CUT TYPE S9R40D□-E	
KEY TYPE S9R40K□-E	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)



R_1 = 10~200Ω (Min.1/4W) C_1 = 0.1~0.33㎌ (AC125WV or AC250WV)



60W

ELECTROMAGNETIC BRAKE MOTOR
□90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9R60GA( )-E S9R60GA( )-E(TP) S9R60GA( )-ECE	4	60	1Ø 110	60	30min.	1.70	1550	3.90	0.390	7.00	0.700	25.0
	S9R60GB( )-E S9R60GB( )-E(TP) S9R60GB( )-ECE	4	60	1Ø 220	60	30min.	0.90	1550	3.90	0.390	7.00	0.700	6.5
	S9R60GC( )-E S9R60GC( )-E(TP) S9R60GC( )-ECE	4	60	1Ø 100	50	30min.	1.50	1250	4.80	0.480	6.20	0.620	25.0
					60		1.75	1500	4.00	0.400			
	S9R60GD( )-E S9R60GD( )-E(TP) S9R60GD( )-ECE	4	60	1Ø 200	50	30min.	0.75	1250	4.80	0.480	6.20	0.620	6.5
					60		0.90	1500	4.00	0.400			
	S9R60GE( )-E S9R60GE( )-ECE	4	60	1Ø 100	50	30min.	1.30	1300	4.80	0.480	5.80	0.580	25.0
					60		1.70	1550	4.00	0.400			
				1Ø 115	60		1.40	1600	3.90	0.390			20.0
	S9R60GX( )-E S9R60GX( )-ECE	4	60	1Ø 220	50	30min.	0.58	1300	4.60	0.460	6.00	0.600	5.0
				1Ø 240			0.61		4.90	0.490	7.00	0.700	
	S9I60GU( )-E S9I60GU( )-ECE	4	60	3Ø 200	50	Cont.	0.60	1300	4.60	0.460	9.30	0.930	—
					60		0.50	1550	3.90	0.390	8.00	0.800	
	S9I60GT( )-E S9I60GT( )-ECE	4	60	3Ø 220	50	Cont.	0.80	1350	4.40	0.440	11.35	1.135	—
					60		0.57	1600	3.90	0.390	9.30	0.930	
	S9I60GS( )-E S9I60GS( )-ECE	4	60	3Ø 380	50	Cont.	0.27	1300	4.60	0.460	8.25	0.825	—
					60		0.24	1550	3.90	0.390	6.50	0.650	
				3Ø 400	50	Cont.	0.29	1300	4.70	0.470	9.30	0.930	
					60		0.25	1550	4.00	0.400	7.35	0.735	
				3Ø 415	50	Cont.	0.27	1350	4.60	0.460	9.95	0.995	
					60		0.23	1600	3.80	0.380	7.50	0.750	
				3Ø 440	50	Cont.	0.31	1350	4.70	0.470	10.75	1.075	
					60		0.25	1600	3.90	0.390	8.40	0.840	

❖ 기종명 S9R60GE-E는 UL 규격 인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO. E172720) (S9R60GE-E is UL approved (UL FILE NO. E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S9R60GE-E type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S9R60GE( )-ECE는 115V용 사양으로만 출하됩니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP. S9R60GE( )-ECE is available only for 115V specification.)
❖ 기종명 맨 끝자리에 TP가 명기된 MODEL은 일반 MOTOR에 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9R60GE-E, S9R60GX-E는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S9R60GE-E, S9R60GX-E is thermally protected type with TP mounted.)
❖ 본 DATA는 전자 BRAKE MOTOR에서 전자 BRAKE를 제거하고 MOTOR 단독으로 측정한 DATA입니다. (Above data is measured with brake removed from eletromagnetic brake motor.)
❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)
❖ 삼상 380V~440V 모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KC□B( )	kg-cm	12.2	14.6	20.3	24.3	30.4	36.5	40.5	45.6	54.8	65.7	73.0	82.5	99.0	119	132	165	198	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.196	1.431	1.989	2.381	2.989	3.577	3.969	4.469	5.370	6.439	7.154	8.085	9.702	11.66	12.94	16.17	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60

60Hz

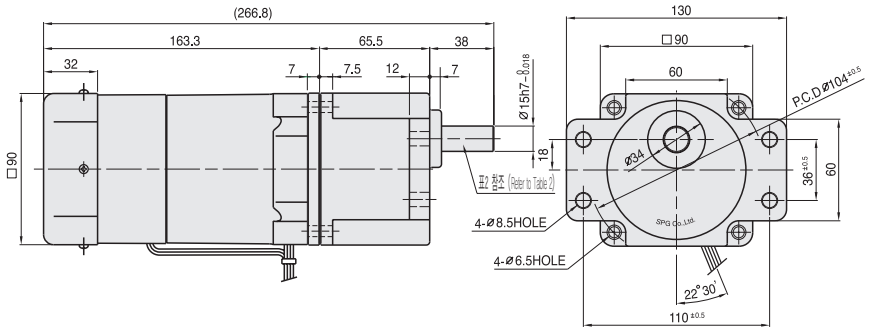
MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KC□B( )	kg-cm	9.72	11.7	16.2	19.4	24.3	29.2	32.4	36.5	43.8	52.6	58.4	66.0	79.2	95.0	106	132	158	177	200	200	200	200	200	200
S9KC□B( )-S	N·m	0.953	1.147	1.588	1.901	2.381	2.862	3.175	3.577	4.292	5.155	5.723	6.468	7.762	9.310	10.39	12.94	15.48	17.35	19.60	19.60	19.60	19.60	19.60	19.60

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 200㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)

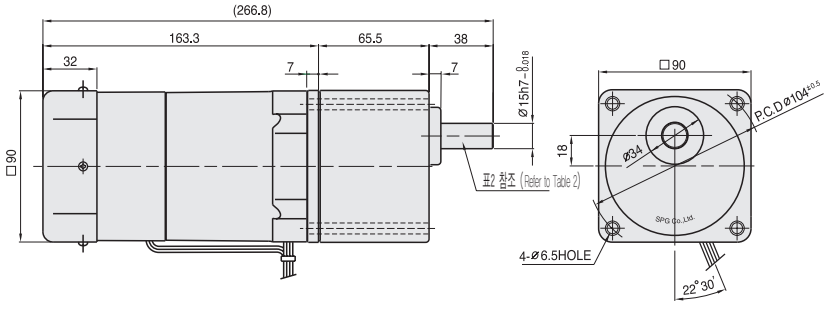
DIMENSIONS

✚ GEARED MOTOR

※MOTOR MODEL : S9R60G□□-E
※HEAD MODEL : S9□C3B□-S~S9□C200B□-S

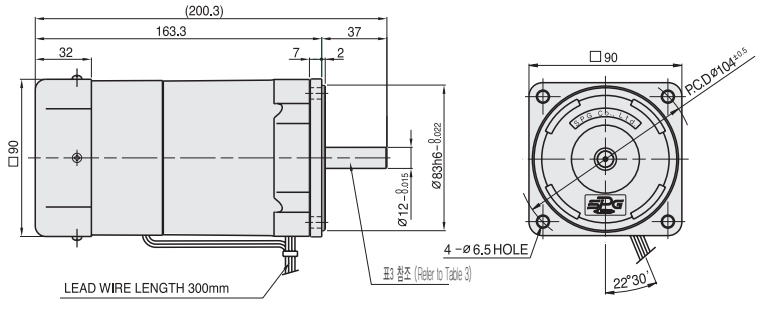


※HEAD MODEL : S9□C3B□-S~S9□C200B□



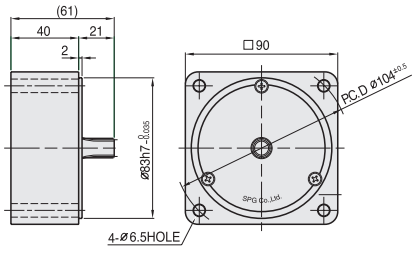
✚ MOTOR

※MOTOR MODEL : S9R60□□□-E



✚ INTER-DECIMAL GEAR HEAD

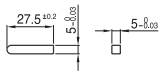
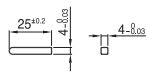
※MODEL : S9GX10B(H,L)-S



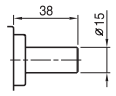
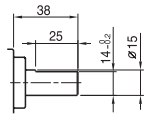
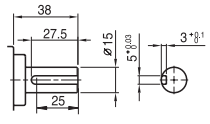
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.90
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3B□ ~S9□C10B□	1.21
	S9□C12.5B□ ~S9□C20B□	1.30
	S9□C25B□ ~S9□C60B□	1.40
	S9□C75B□ ~S9□C200B□	1.45

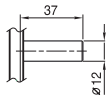
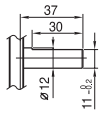
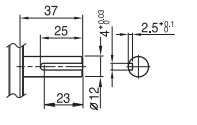
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SC3B□ ~S9SC200B□	
D-CUT TYPE S9DC3B□ ~S9DC200B□	
KEY TYPE S9KC3B□ ~S9KC200B□	

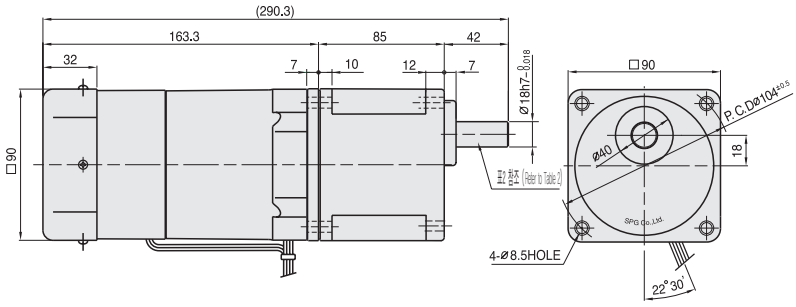
✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9R60G□□-E	
STRAIGHT TYPE S9R60S□-E	
D-CUT TYPE S9R60D□-E	
KEY TYPE S9R60K□-E	

DIMENSIONS

✚ GEARED MOTOR

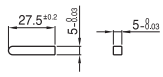
※MOTOR MODEL : S9R60G□H-E
※HEAD MODEL □ : S9□D3B~S9□D200B



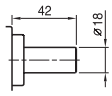
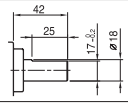
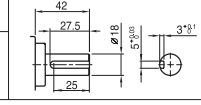
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.90
GEAR HEAD	S9□D3B ~S9□D10B	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)	MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)	MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE		D-CUT TYPE		KEY TYPE	
S9SD3B ~S9SD200B		S9DD3B ~S9DD200B		S9KD3B ~S9KD200B	

50Hz

MODEL	GEAR RATIO	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KD□B	kg-cm	12.2	14.6	20.3	24.3	30.4	36.5	40.5	45.6	54.8	65.7	73.0	82.5	99.0	119	132	165	198	221	266	295	300	300	300	300
	N·m	1.196	1.431	1.989	2.381	2.989	3.577	3.969	4.469	5.370	6.439	7.154	8.085	9.702	11.66	12.94	16.17	19.40	21.67	26.09	28.93	29.42	29.42	29.42	29.42

60Hz

MODEL	GEAR RATIO	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KD□B	kg-	9.72	11.7	16.2	19.4	24.3	29.2	32.4	36.5	43.8	52.6	58.4	66.0	79.2	95.0	106	132	158	177	212	236	283	300	300	300
	cmN·m	0.953	1.147	1.588	1.901	2.381	2.862	3.175	3.577	4.292	5.155	5.723	6.468	7.762	9.310	10.39	12.94	15.48	17.35	20.79	23.14	27.75	29.42	29.42	29.42

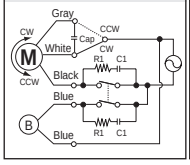
❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the ambient torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 300kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향 입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. MOTOR의 H와 사용하여 주십시오. (Only "H" type is applicable. Please use "H" type motor.)

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

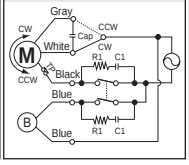
S9R60GA-E
S9R60GC-E

CW,CCW



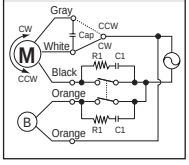
S9R60GA-ECE
S9R60GC-ECE
S9R60GE-E
S9R60GE-ECE

CW,CCW



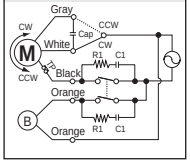
S9R60GB-E
S9R60GD-E

CW,CCW



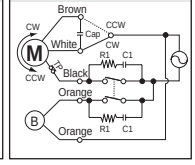
S9R60GB-ECE
S9R60GD-ECE

CW,CCW



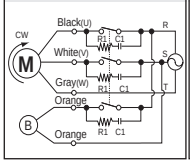
S9R60GX-E
S9R60GX-ECE

CW,CCW

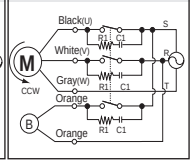


S9I60GU-E
S9I60GT-E

CW

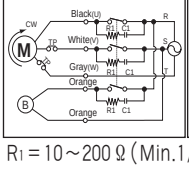


CCW

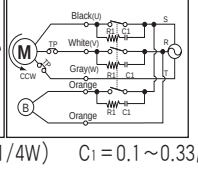


S9I60GU-ECE
S9I60GT-ECE

CW

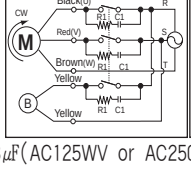


CCW

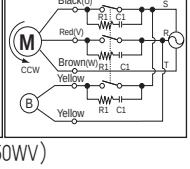


S9I60GS-E
S9I60GS-ECE

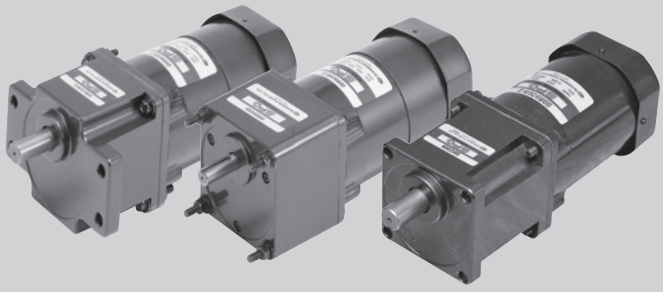
CW



CCW



R_1 = 10~200 Ω (Min.1/4W) C_1 = 0.1~0.33 μF (AC125WV or AC250WV)



90W

ELECTROMAGNETIC BRAKE MOTOR
□90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9R90GA( )-E S9R90GA( )-E(TP) S9R90GA( )-ECE	4	90	1Ø 110	60	30min.	2.20	1550	5.80	0.580	8.90	0.890	30.0
	S9R90GB( )-E S9R90GB( )-E(TP) S9R90GB( )-ECE	4	90	1Ø 220	60	30min.	1.10	1550	5.80	0.580	8.90	0.890	7.5
	S9R90GC( )-E S9R90GC( )-E(TP) S9R90GC( )-ECE	4	90	1Ø 100	50	30min.	2.00	1250	7.20	0.720	7.00	0.700	30.0
					60		2.25	1500	6.00	0.600			
	S9R90GD( )-E S9R90GD( )-E(TP) S9R90GD( )-ECE	4	90	1Ø 200	50	30min.	0.90	1250	7.20	0.720	7.00	0.700	7.5
					60		1.10	1500	6.00	0.600			
	S9R90GE( )-E S9R90GE( )-ECE	4	90	1Ø 100	50	30min.	1.80	1300	7.20	0.720	6.30	0.630	30.0
					60		2.10	1550	6.00	0.600			
				1Ø 115	60		1.90	1600	5.80	0.580	6.90	0.690	25.0
	S9R90GX( )-E S9R90GX( )-ECE	4	90	1Ø 220	50	30min.	0.71	1300	6.90	0.690	6.80	0.680	6.0
				1Ø 240			0.75		7.20	0.720	8.60	0.860	
	S9I90GU( )-E S9I90GU( )-ECE	4	90	3Ø 200	50	Cont.	0.63	1300	6.90	0.690	10.60	1.060	—
					60		0.60	1550	6.00	0.600	8.90	0.890	
	S9I90GT( )-E S9I90GT( )-ECE	4	90	3Ø 220	50	Cont.	0.68	1350	6.80	0.680	13.00	1.300	—
					60		0.55	1600	5.70	0.570	10.50	1.050	
	S9I90GS( )-E S9I90GS( )-ECE	4	90	3Ø 380	50	Cont.	0.32	1300	6.80	0.680	10.55	1.055	—
					60		0.30	1550	5.70	0.570	8.20	0.820	
				3Ø 400	50	Cont.	0.35	1300	6.90	0.690	11.70	1.170	
					60		0.32	1550	5.80	0.580	8.90	0.890	
				3Ø 415	50	Cont.	0.33	1350	6.80	0.680	12.00	1.200	
					60		0.29	1600	5.70	0.570	9.50	0.950	
				3Ø 440	50	Cont.	0.35	1350	6.90	0.690	13.30	1.330	
					60		0.31	1600	5.80	0.580	10.50	1.050	

❖ 기종명 S9R90GE-E는 UL규격 인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO. E172720) (S9R90GE-E is UL approved(UL FILE NO. E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S9R90GE-E type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S9R90GE( )-ECE는 115V용 사양으로만 출하됩니다. 또한 기종명 S9R90GE-E, S9R90GX-E는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP. S9R90GE( )-ECE is available only for 115V specification.)
❖ 본 DATA는 전자 BRAKE MOTOR에서 전자 BRAKE를 제거하고 MOTOR 단독으로 측정한 DATA입니다. (Above data is measured with brake removed from electromagnetic brake motor.)
❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)
❖ 삼상 380V~440V 모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KC□B( )	kg-cm	18.2	21.9	30.4	36.5	45.6	54.7	60.8	68.4	82.1	98.6	110	124	149	178	198	200	200	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.784	2.146	2.979	3.577	4.469	5.361	5.958	6.703	8.046	9.663	10.78	12.15	14.60	17.44	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60

60Hz

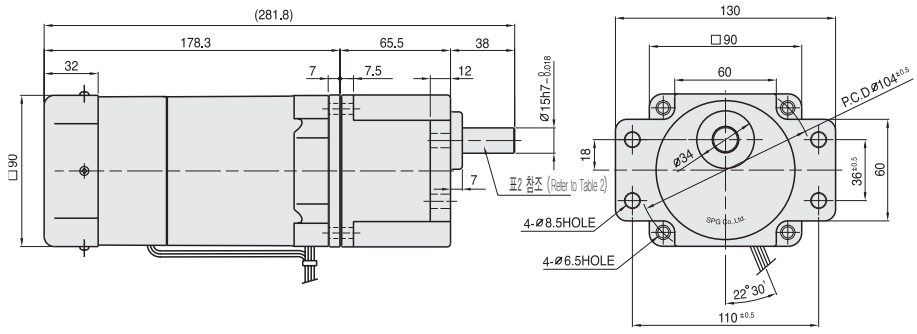
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KC□B( )	kg-cm	14.6	17.5	24.3	29.2	36.5	43.7	48.6	54.8	65.7	78.8	87.6	99.0	119	143	158	198	200	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.431	1.715	2.381	2.862	3.577	4.675	4.763	5.370	6.439	7.722	8.585	9.702	11.66	14.01	15.48	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 200㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)

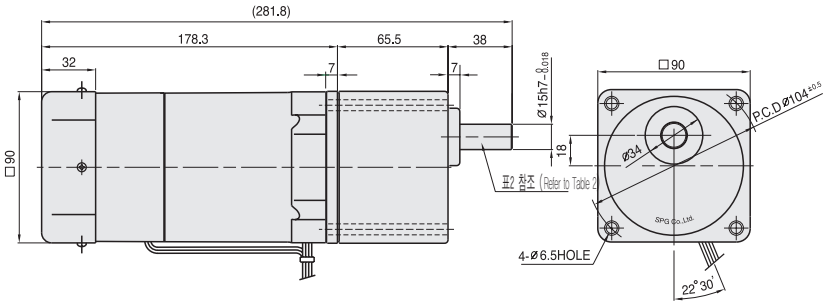
DIMENSIONS

✚ GEARED MOTOR

※MOTOR MODEL : S9R90G□□-E
※HEAD MODEL : S9□C3B□-S~S9□C200B□-S

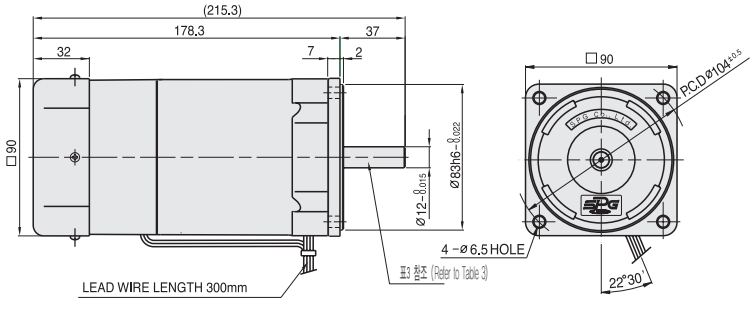


※HEAD MODEL : S9□C3B□~S9□C200B□



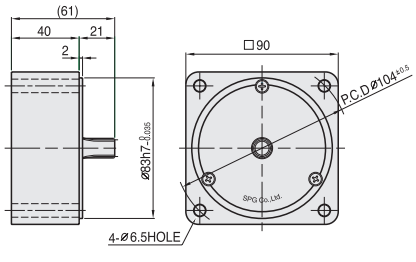
✚ MOTOR

※MOTOR MODEL : S9R90□□□-E



✚ INTER-DECIMAL GEAR HEAD

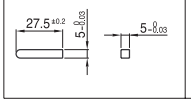
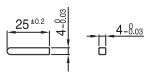
※MODEL : S9GX10B(H,L)-S



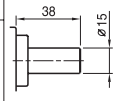
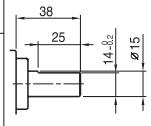
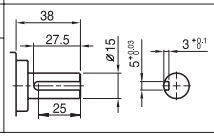
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.41
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3B□ ~S9□C10B□	1.21
	S9□C12.5B□ ~S9□C20B□	1.30
	S9□C25B□ ~S9□C60B□	1.40
	S9□C75B□ ~S9□C200B□	1.45

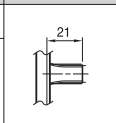
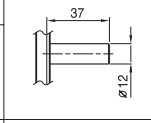
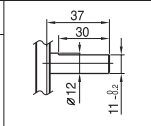
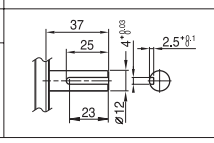
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SC3B□ ~S9SC200B□	
D-CUT TYPE S9DC3B□ ~S9DC200B□	
KEY TYPE S9KC3B□ ~S9KC200B□	

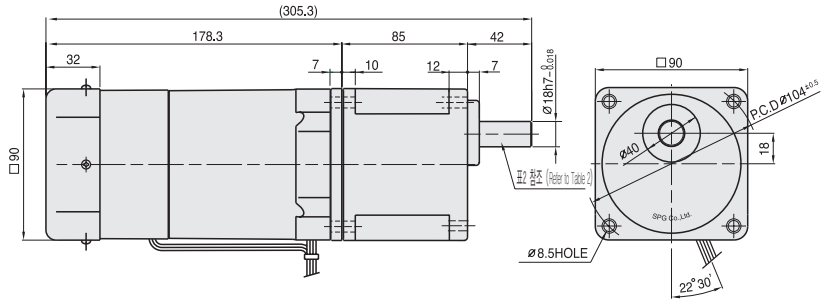
✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9R90G□□-E	
STRAIGHT TYPE S9R90S□-E	
D-CUT TYPE S9R90D□-E	
KEY TYPE S9R90K□-E	

DIMENSIONS

GEARED MOTOR

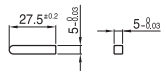
※MOTOR MODEL : S9R90G□H
※HEAD MODEL : S9□D3B~S9□D200B



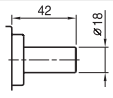
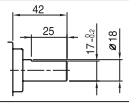
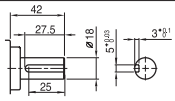
WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.41
GEAR HEAD	S9□D3B ~S9□D10B	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

KEY SPEC

GEAR HEAD


GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)	MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)	MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE		D-CUT TYPE		KEY TYPE	
S9SD3B ~S9SD200B		S9DD3B ~S9DD200B		S9KD3B ~S9KD200B	

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KD□B	kg-cm	18.2	21.9	30.4	36.5	45.6	54.7	60.8	68.4	82.1	98.6	110	124	149	178	198	248	297	300	300	300	300	300	300	300
	N·m	1.784	2.146	2.979	3.577	4.469	5.361	5.958	6.703	8.046	9.663	10.78	12.15	14.60	17.44	19.40	24.32	29.13	29.42	29.42	29.42	29.42	29.42	29.42	29.42

60Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KD□B	kg-cm	14.6	17.5	24.3	29.2	36.5	43.7	48.6	54.8	65.7	78.8	87.6	99.0	119	143	158	198	238	266	300	300	300	300	300	300
	N·m	1.431	1.715	2.381	2.862	3.577	4.675	4.763	5.370	6.439	7.722	8.585	9.702	11.66	14.01	15.48	19.40	23.34	26.09	29.42	29.42	29.42	29.42	29.42	29.42

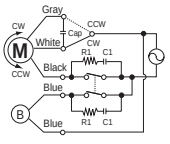
❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.))
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 300㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.)
❖ 회전방향은 ■ 색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. MOTOR의 H와 사용하여 주십시오. (Only "H" type is applicable. Please use "H" type motor.)

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

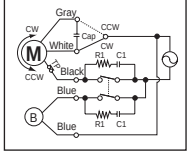
S9R90GA-E
S9R90GC-E

CW,CCW



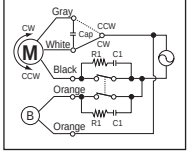
S9R90GA-ECE
S9R90GC-ECE
S9R90GE-E
S9R90GE-ECE

CW,CCW



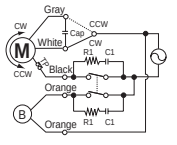
S9R90GB-E
S9R90GD-E

CW,CCW



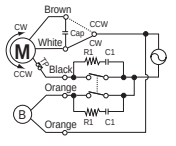
S9R90GB-ECE
S9R90GD-ECE

CW,CCW



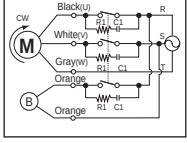
S9R90GX-E
S9R90GX-ECE

CW,CCW

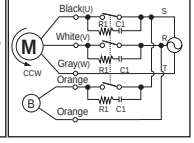


S9I90GU-E
S9I90GT-E

CW

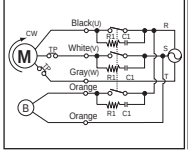


CCW

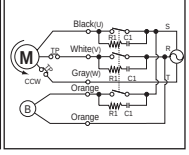


S9I90GU-ECE
S9I90GT-ECE

CW

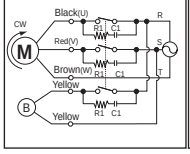


CCW

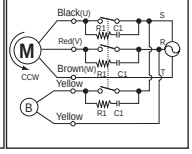


S9I90GS-E
S9I90GS-ECE

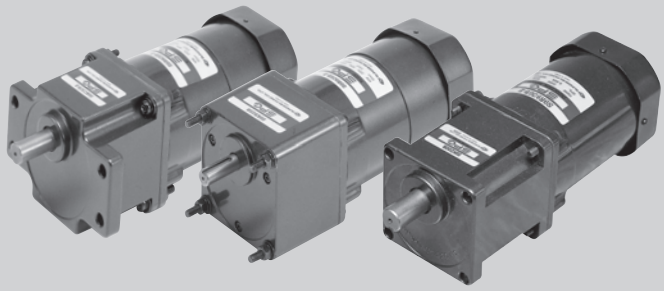
CW



CCW



R_1 = 10~200 Ω (Min.1/4 W)
C_1 = 0.1~0.33 μF (AC125WV or AC250WV)



150W

ELECTROMAGNETIC BRAKE MOTOR
□90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9I150GU-E S9I150GU-ECE	4	150	3 Ø 200	50	Cont.	1.0	1250	11.70	1.170	18.0	1.800	—
					60		0.9	1500	9.70	0.970	15.0	1.500	
	S9I150GT-E S9I150GT-ECE	4	150	3 Ø 220	50	Cont.	1.0	1300	11.30	1.130	22.0	2.200	—
					60		0.9	1550	9.40	0.940	19.0	1.900	
	S9I150GS-E S9I150GS-ECE	4	150	3 Ø 380	50	Cont.	0.46	1250	11.70	1.170	18.00	1.800	—
					60		0.42	1500	9.70	0.970	15.00	1.500	
				3 Ø 400	50	Cont.	0.49	1250	11.70	1.170	19.00	1.900	
					60		0.43	1500	9.70	0.970	16.00	1.600	

❖ 상기 MODEL은 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. (Only "H" type is applicable.)
❖ 삼상 380V~440V모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KH□B	kg-cm	23.1	27.7	38.5	46.2	57.7	69.3	77.0	86.6	104	125	139	156	187	224	249	300	300	300	300	300	300	300	300	300
	N·m	2.264	2.717	3.773	4.528	5.660	6.792	7.546	8.489	10.24	12.29	13.65	15.36	18.34	21.97	24.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42

60Hz

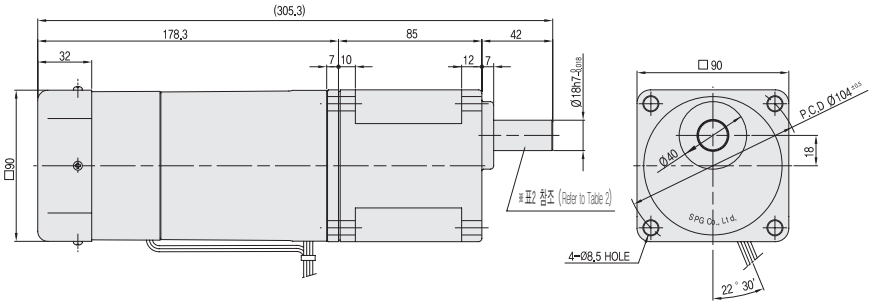
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KH□B	kg-cm	23.2	27.8	38.7	46.4	58.0	69.6	77.4	87.0	104	125	139	156	188	225	250	300	300	300	300	300	300	300	300	300
	N·m	2.276	2.731	3.793	4.552	5.689	6.827	7.586	8.534	10.24	12.29	13.65	15.36	18.43	22.06	24.52	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible TORQUE of the assembled motor and gearhead.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. (Only "H" type is applicable.)

DIMENSIONS

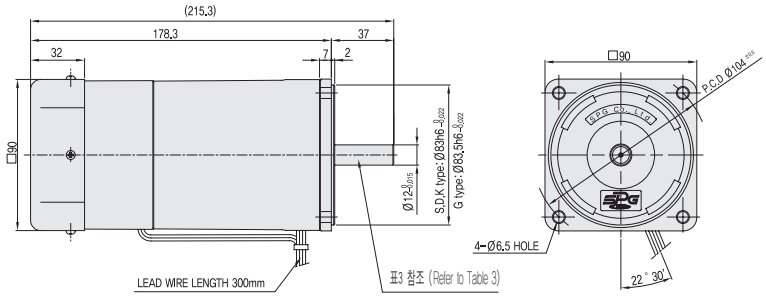
GEARED MOTOR

※MOTOR MODEL : S9I150G□-E
※HEAD MODEL : S9□H3B~S9□H200B

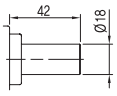
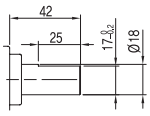
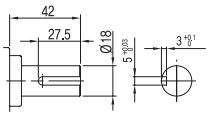


MOTOR

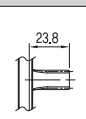
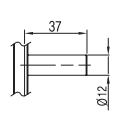
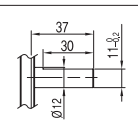
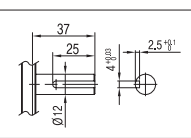
※MODEL : S9I150□□-E



GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SH3B ~S9SH200B	
D-CUT TYPE S9DH3B ~S9DH200B	
KEY TYPE S9KH3B ~S9KH200B	

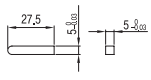
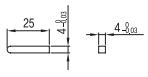
MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9I150G□-E	
STRAIGHT TYPE S9I150S□-E	
D-CUT TYPE S9I150D□-E	
KEY TYPE S9I150K□-E	

WEIGHT – (표1 (Table1))

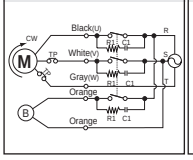
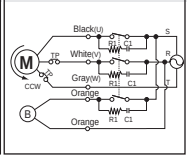
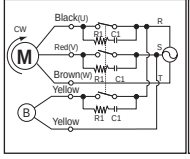
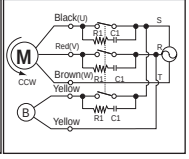
PART		WEIGHT(kg)
MOTOR		3.41
GEAR HEAD	S9□H3B ~S9□H10B	1.65
	S9□H12.5B ~S9□H20B	1.80
	S9□H25B ~S9□H60B	1.90
	S9□H75B ~S9□H200B	1.95

KEY SPEC

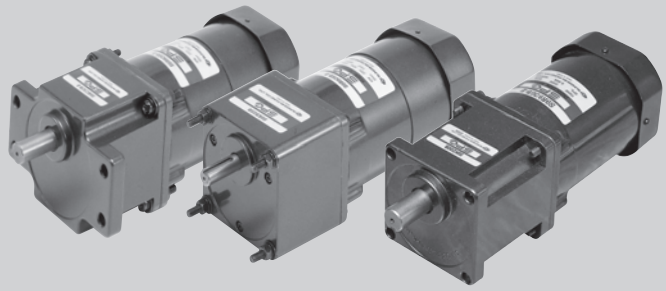
GEAR HEAD	MOTOR
	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S9I1150GU-E S9I1150GU-ECE S9I1150GT-E S9I1150GT-ECE		S9I1150GS-E S9I1150GS-ECE	
CW	**CCW**	**CW**	**CCW**
			

R_1 = 10~200 Ω (Min.1/4 W)
C_1 = 0.1~0.33μF (AC125WV or AC250WV)



180W

ELECTROMAGNETIC BRAKE MOTOR
□90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output (W)	Voltage (V)	Frequency (Hz)	Duty	Rated Load Current (A)	Rated Load Speed (rpm)	Rated Load Torque (kg-cm)	Rated Load Torque (N-m)	Starting Torque (kg-cm)	Starting Torque (N-m)	Capacitor (uF)
90	S9I180GT-ECE	4	180	3 Ø 200	50	Cont.	1.18	1250	13.20	1.320	43.20	4.32	
					60		1.02	1500	11.10	1.110	32.90	3.29	
				3 Ø 220	50	Cont.	1.32	1300	12.90	1.290	52.50	5.25	
					60		1.04	1550	10.80	1.080	40.20	4.02	
	S9I180GS-ECE	4	180	3 Ø 380	50	Cont.	0.56	1300	13.4	1.34	39.0	3.90	
					60		0.50	1550	11.2	1.12	30.2	3.02	
				3 Ø 400	50	Cont.	0.57	1350	13.0	1.30	42.6	4.26	
					60		0.50	1600	11.0	1.10	33.0	3.30	

❖ 상기 MODEL은 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. (Only "H" type is applicable.)
❖ 삼상 380V~440V모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KH□B	kg-cm	34.0	41.0	57.0	68.0	85.1	102	113	128	153	184	204	230	278	300	300	300	300	300	300	300	300	300	300	300
	N·m	3.336	4.021	5.590	6.672	8.341	10.01	11.12	12.55	15.01	18.04	20.02	22.56	27.26	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42

60Hz

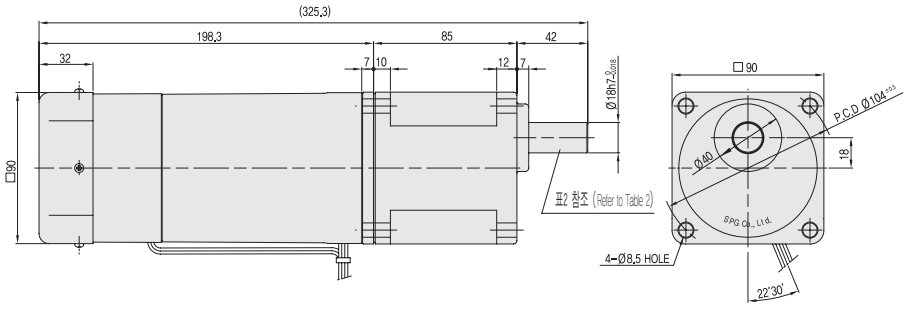
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KH□B	kg-cm	28.1	34.0	47.0	57.0	71.0	84.2	94.0	105	126	152	168	189	227	273	300	300	300	300	300	300	300	300	300	300
	N·m	2.756	3.334	4.609	5.590	6.963	8.257	9.218	10.30	12.39	14.91	16.51	18.58	22.29	26.75	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. (Only "H" type is applicable.)

DIMENSIONS

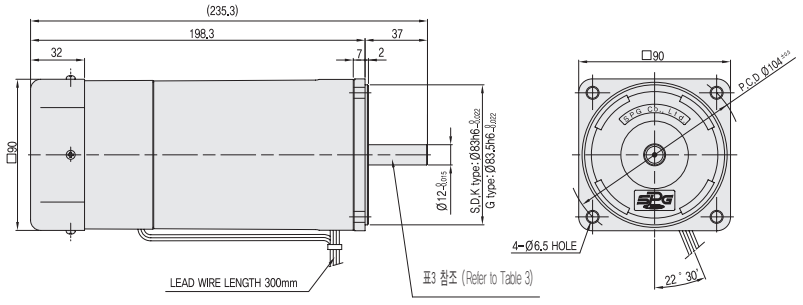
✚ GEARED MOTOR

※MOTOR MODEL : S9I180G□-E
※HEAD MODEL : S9□H3B~S9□H200B



✚ MOTOR

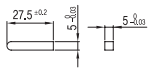
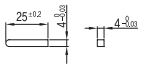
※MOTOR MODEL : S9I180□□-E



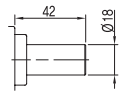
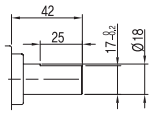
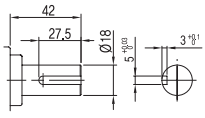
✚ WEIGHT - (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		4.18
GEAR HEAD	S9□H3B ~S9□H10B	1.65
	S9□H12.5B ~S9□H20B	1.80
	S9□H25B ~S9□H60B	1.90
	S9□H75B ~S9□H200B	1.95

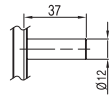
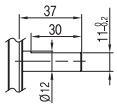
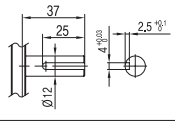
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표2 (Table2))

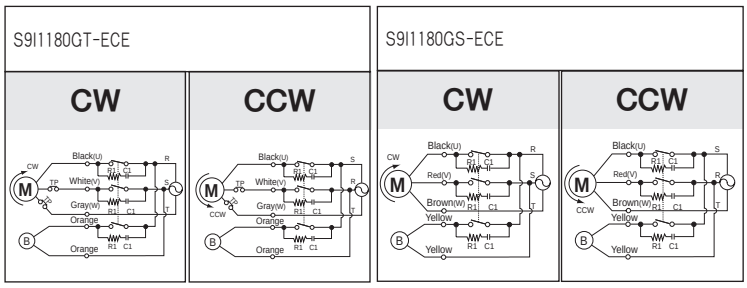
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SH3B ~S9SH200B	
D-CUT TYPE S9DH3B ~S9DH200B	
KEY TYPE S9KH3B ~S9KH200B	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표3 (Table3))

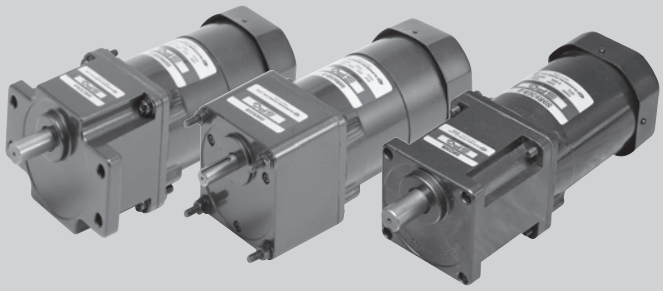
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9I180G□-E	
STRAIGHT TYPE S9I180S□-E	
D-CUT TYPE S9I180D□-E	
KEY TYPE S9I180K□-E	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)



$R_1 = 10 \sim 200\ \Omega$ (Min.1/4 W)
$C_1 = 0.1 \sim 0.33\mu F$ (AC125WV or AC250WV)



200W

ELECTROMAGNETIC BRAKE MOTOR
□90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9I200GT-E	4	200	3 Ø 220	50	Cont.	1.3	1300	15.00	1.500	30.00	3.000	—
					60		1.2	1550	12.90	1.290	25.00	2.500	
	S9I200GS-E	4	200	3 Ø 380	50	Cont.	0.62	1250	16.00	1.600	26.00	2.600	—
					60		0.55	1500	13.40	1.340	22.00	2.200	
				3 Ø 400	50	Cont.	0.64	1250	16.00	1.600	30.00	3.000	—
					60		0.55	1500	13.40	1.340	25.00	2.500	

❖ 상기 MODEL은 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. (Only "H" type is applicable.)
❖ 삼상 380V~440V 모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KH□B	kg-cm	39.0	47.0	64.8	77.8	97.2	117	130	146	175	210	233	262	300	300	300	300	300	300	300	300	300	300	300	300
	N·m	3.813	4.609	6.355	7.626	9.532	11.47	12.75	14.32	17.16	20.59	22.88	25.74	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42

60Hz

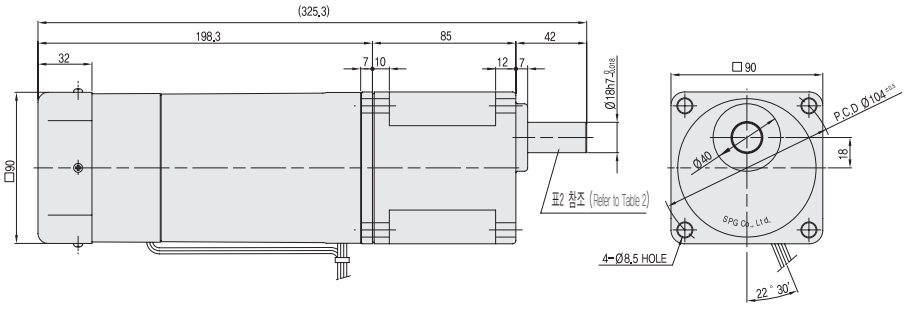
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KH□B	kg-cm	32.0	38.3	53.3	64.0	79.9	96.0	107	120	144	173	192	216	259	300	300	300	300	300	300	3000	300	300	300	300
	N·m	3.134	3.760	5.223	6.267	7.384	9.414	10.49	11.75	14.10	16.97	18.83	21.18	25.40	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. (Only "H" type is applicable.)

DIMENSIONS

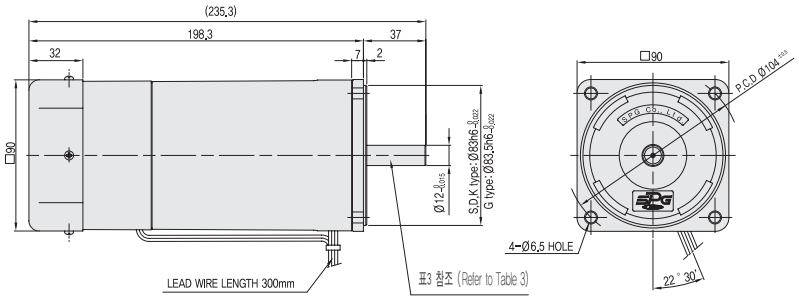
GEARED MOTOR

※MOTOR MODEL : S9I200G□-E
※HEAD MODEL : S9□H3B~S9□H200B



MOTOR

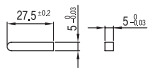
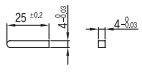
※MOTOR MODEL : S9I200□□-E



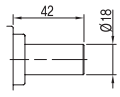
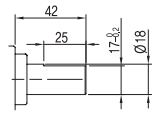
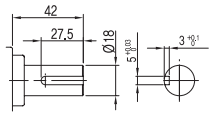
WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		4.18
GEAR HEAD	S9□H3B ~S9□H10B	1.65
	S9□H12.5B ~S9□H20B	1.80
	S9□H25B ~S9□H60B	1.90
	S9□H75B ~S9□H200B	1.95

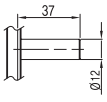
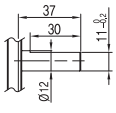
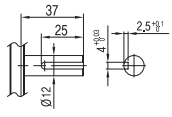
KEY SPEC

GEAR HEAD	MOTOR
	

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

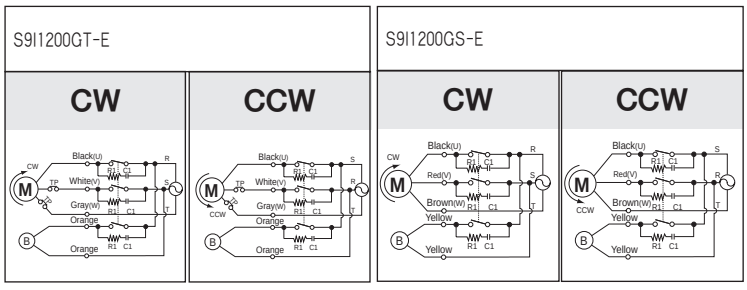
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SH3B ~S9SH200B	
D-CUT TYPE S9DH3B ~S9DH200B	
KEY TYPE S9KH3B ~S9KH200B	

MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9I200G□-E	
STRAIGHT TYPE S9I200S□-E	
D-CUT TYPE S9I200D□-E	
KEY TYPE S9I200K□-E	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)



$R_1 = 10 \sim 200\ \Omega$ (Min.1/4 W)
$C_1 = 0.1 \sim 0.33\mu F$ (AC125WV or AC250WV)

TERMINAL BOX TYPE MOTORS

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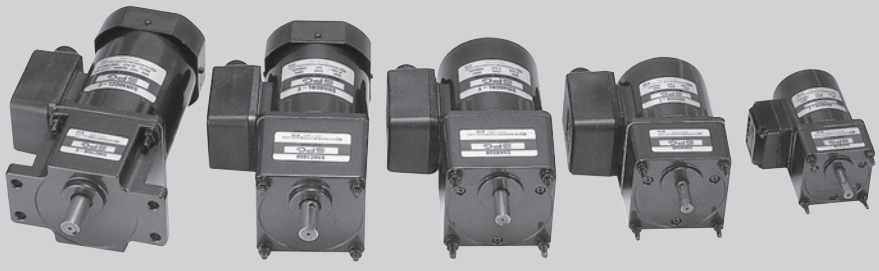
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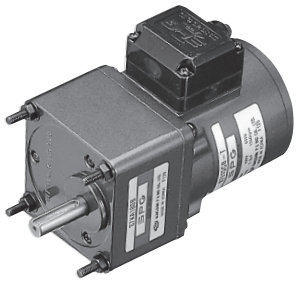
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TERMINAL BOX TYPE MOTOR의 특징 (CHARACTERISTICS OF TERMINAL BOX TYPE INDUCTION, REVERSIBLE MOTORS)



1. TERMINAL BOX TYPE MOTOR의 특징 (Characteristics of Terminal Box Type Motors)

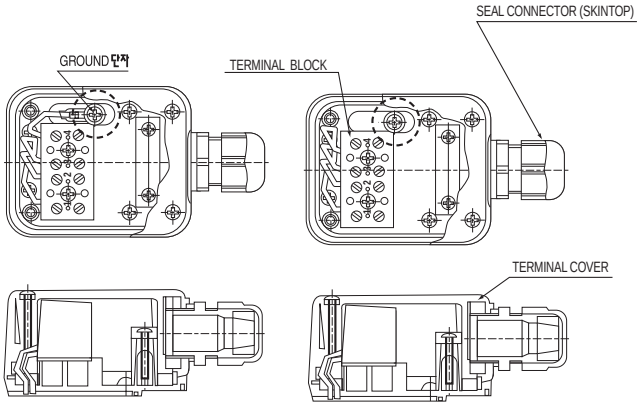
- TERMINAL BOX에 의해 MOTOR의 구출선 등 충전부가 밀폐되어 먼지, 수분 등을 보호합니다. (The motor's charging section including leadwire is made airtight by the terminal box to provide the protection from dust and moisture.)
- 따라서 내환경성이 중요시되는 곳에서 사용이 용이합니다. (Therefore, the motor can be used in harsh environment.)
- 또한 GASKET를 사용하여 확실하게 밀폐되어 있습니다. (And the motor is made completely airtight with a gasket.)
- 당사의 TERMINAL BOX TYPE은 T TYPE(TERMINAL BLOCK)과 T1 TYPE(PCB용 TERMINAL BLOCK)의 2가지가 있습니다. (SPG has two terminal box types; Skintop terminal box type and cord bush terminal box type)
- 당사 TERMINAL BOX부의 기기보호구조에 대한 등급은 IP54로 되어 있습니다.(MOTOR부에 대한 보호등급은 종류에따라 IP20~IP54 범위임) (The classification of the device protection structure for the skintop terminal box type motor is IP54.)
- COMPACT한 설계로 되어있습니다. (The motor features a compact design.)
- GROUND단자가 부착되어 있습니다. 단, T TYPE(6~15W)과 T1 TYPE의 단상 INDUCTION MOTOR는 접지가 TERMINAL BOX 내부에 설치되어 있지를 않습니다. MOTOR 외부에 앞에서 설명된 EARTH 방법에 의해 설치하여 사용하십시오. (The ground terminal is attached to the motor. However, the cord bush terminal box type of the single-phase induction motor does not have a built-in ground inside the terminal box. Before use, install the ground at the outside of the motor.)
- 배관에 편리한 구조로 되어있어 결선시 작업성이 뛰어나며, CABLE이 확실하게 고정되어 CABLE 배선 후 인장력이 높습니다. (Since the motor is structured to make piping work easier, it is excellent in connection work. The cable is firmly fixed to provide strong tension when wiring the cable. When using a cap tire cable, it is recommended to use a cable having an outside diameter of Ø6~Ø12.)
- T TYPE의 TERMINAL BLOCK은 안전성이 높은 유럽규격 인증품을 사용하고 있습니다. (The terminal block uses a VDE certified product that provides high reliability.)
- AWG NO. 24~AWG No.10(0.25㎟ ~4.0㎟) shall be used for the lead wire, and the peeled-off lead wire shall be about 8㎜.

2. TERMINAL BOX 구조도 (Diagram of Terminal Box Structure)

(1) TERMINAL BLOCK BOX TYPE (T TYPE)

1) □80 15W ~ □90 90W

- Terminal Box 재질 (Material of Terminal Box) : 알루미늄 (Aluminum)
- 적용 Cable 외경 (Applicable Cable Diameter) : Ø6~Ø12
- 적용 Lead Wire (Applicable Lead Wire) : AWG 24~12(0.2~4.0㎟)
- 탈피길이 (Peeled-off Lead Wire Length) : 8㎜

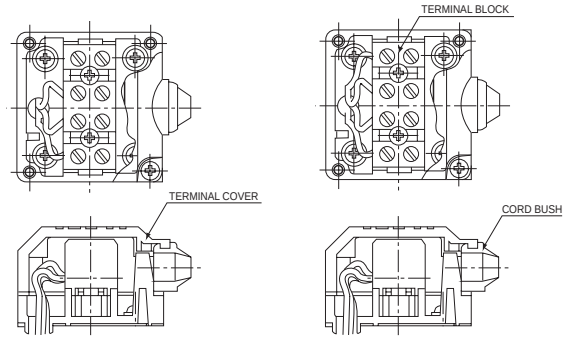


단상 REVERSIBLE MOTOR의 경우
삼상 INDUCTION MOTOR의 경우
(In case of Single-phase Reversible Motor
In case of Three-phase Reversible Motor)

단상 INDUCTION MOTOR의 경우
(In case of Single-phase Induction Motor)

2) □60 6W ~ □70 15W

- Terminal Box 재질 (Material of Terminal Box) : 플라스틱 (Plastic)
- 적용 Cable 외경 (Applicable Cable Diameter) : Ø6.8 ~ Ø8.6

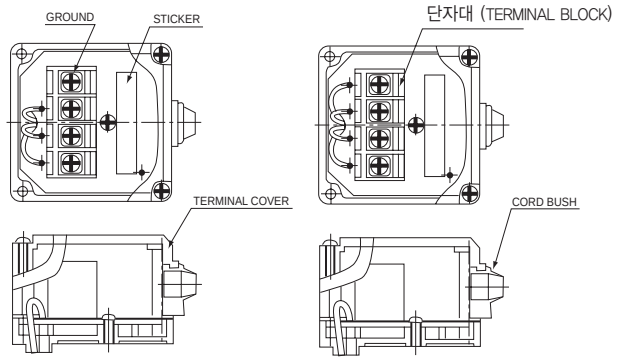


단상 REVERSIBLE MOTOR의 경우
(In case of Single-phase Reversible Motor)

단상 INDUCTION MOTOR의 경우
(In case of Single-phase Induction Motor)

(2) PCB TERMINAL BOX TYPE (T1 TYPE) : □80 25W ~ □90 90W

- Terminal Box 재질 (Material of Terminal Box) : 플라스틱 (Plastic)
- 적용 Cable 외경 (Applicable Cable Diameter) : Ø6.8 ~ Ø8.6



단상 REVERSIBLE MOTOR의 경우
삼상 INDUCTION MOTOR의 경우
(In case of Single-phase Reversible Motor
In case of Three-phase Induction Motor)

단상 INDUCTION MOTOR의 경우
(In case of Single-phase Induction Motor)

(3) CONDUIT BOX TYPE (T2 TYPE) : □80 25W ~ □90 90W

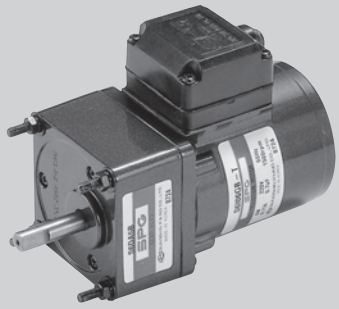
3. MOTOR의 외관구조도 (External Structure of Motor)

- REVERSIBLE MOTOR의 CE용 MOTOR는 방진(防塵), 방수(放水) 효과를 높이기 위하여 추가로 Cover를 뒷부분에 조립하였습니다. 따라서 Motor의 길이가 약 4.0㎜ 정도 길어졌습니다. 양지하시고 사용하여 주십시오. (The reversible motor for CE mark has a cover 'A' assembled to the back side of the motor to improve dust-proof and water-proof. (Refer to the figure in page 65) As a result, the motor is 4.0mm longer than induction motor lengthwise, which requires the user's attention.)

GENERAL SPECIFICATION OF INDUCTION MOTORS

항목 (ITEM)	사양 (Specification)
절연저항 (Insulation Resistance)	상온 상습에서 MOTOR을 정격으로 운전 후 MOTOR의 COIL, MOTOR CASE사이를 DC 500V MEGGER로 측정하여 100㏁ 이상임. (100㏁ or more when 500V megger is applied between the windings and the housing after rated motor operation under normal ambient temperature and humidity)
절연내압 (Dielectric Strength)	상온 상습에서 MOTOR을 정격으로 운전 후 MOTOR의 COIL, MOTOR CASE사이에 1500V 50/60Hz를 1분간 인가하여 이상 없음. (Sufficient to withstand 1500V at 50/60Hz applied between the windings and the case after rated motor operation under normal ambient temperature and humidity for 1min.)
온도상승 (Temperature Rise)	MOTOR를 정격으로 운전 후 온도계법으로 측정하여 온도상승치(△T)가 80℃(K) 이하임 (80℃ or less increase measured by thermometer after rated operation.)
절연등급 (Insulation Class)	B종 (Class B) (130℃)
과열보호장치 (Overheat Protection Device) (T/P)	THERMAL PROTECTOR 내장(자동 복귀형) (Built-in thermal protector (automatic return type)) : 개방 (Open) 120℃±5℃ 복귀 (Close) 76℃±15℃
사용온도 (Ambient Temperature)	-10℃ ~ 40℃
사용습도 (Ambient Humidity)	85% 이하 (maximum) (결로 없는 곳 (non condensing))





6W

INDUCTION MOTOR, REVERSIBLE MOTOR
□60㎜ TERMINAL BOX TYPE

INDUCTION MOTOR - CONTINUOUS RATING

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
60	S6I06GA-T	4	6	1Ø 110	60	Cont.	0.20	1550	0.40	0.040	0.55	0.055	2.5
	S6I06GB-T	4	6	1Ø 220	60	Cont.	0.10	1550	0.40	0.040	0.55	0.055	0.7
	S6I06GC-T	4	6	1Ø 100	50	Cont.	0.21	1200	0.50	0.050	0.45	0.045	2.5
					60		0.19	1500	0.42	0.042			
	S6I06GD-T	4	6	1Ø 200	50	Cont.	0.10	1200	0.50	0.050	0.45	0.045	0.7
					60			1500	0.42	0.042			
	S6I06GE-T	4	6	1Ø 100	50	Cont.	0.18	1200	0.50	0.050	0.52	0.052	2.5
					60		0.19	1500	0.42	0.042			
				1Ø 115	60		0.19	1500	0.42	0.042	0.55	0.055	2.0
	S6I06GX-T S6I06GX-TCE	4	6	1Ø 220	50	Cont.	0.08	1200	0.50	0.050	0.50	0.050	0.6
				1Ø 240			0.09		0.53	0.053	0.55	0.055	

❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of the model name indicates that it is impedance protected type which has received CE.)
❖ 기종명 S6I06GE-T는 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S6I06GE-T type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

REVERSIBLE MOTOR - 30MINUTES RATING

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
60	S6R06GA-T S6R06GA-TCE	4	6	1Ø 110	60	30min.	0.22	1550	0.40	0.040	0.60	0.060	3.0
	S6R06GB-T S6R06GB-TCE	4	6	1Ø 220	60	30min.	0.11	1550	0.40	0.040	0.60	0.060	0.8
	S6R06GC-T	4	6	1Ø 100	50	30min.	0.21	1200	0.50	0.050	0.45	0.045	3.0
	S6R06GC-TCE				60			1500	0.42	0.042			
	S6R06GD-T	4	6	1Ø 200	50	30min.	0.10	1200	0.45	0.045	0.53	0.053	0.8
	S6R06GD-TCE				60			1500	0.42	0.042			
	S6R06GE-T	4	6	1Ø 100	50	30min.	0.19	1200	0.50	0.050	0.52	0.052	3.5
	S6R06GE-TCE				60		0.22	1500	0.30	0.030			
				1Ø 115	60		0.18	1500	0.42	0.042	0.50	0.050	2.3
	S6R06GX-T	4	6	1Ø 220	50	30min.	0.09	1200	0.47	0.047	0.50	0.050	0.7
	S6R06GX-TCE			1Ø 240			0.10		0.50	0.050	0.55	0.055	

❖ 기종명 S6R06GE-T는 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S6R06GE-T type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S6R06GE-TCE는 115V용 사양으로만 출하됩니다. (CE marked at the end of the model name indicates that it is impedance protected type which has received CE. S6R06GE-TCE is available only for 115V specification.)
❖ 본 DATA는 BRAKE BLOCK을 MOTOR에 장착된 상태에서 측정한 DATA입니다. (Above data is measured with friction brake mounted.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5	6
S6DA□B	kg-cm	1.3	1.5	2.1	2.6	3.2	3.9	4.3	5.4	6.4	7.7	7.7	9.7	11.6	13.9	15.5	17.5	21.0	26.2	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	N·m	0.127	0.147	0.206	0.255	0.314	0.382	0.421	0.529	0.627	0.755	0.755	0.951	1.137	1.362	1.519	1.715	2.058	2.568	2.942	2.942	2.942	2.942	2.942	2.942	2.942

60Hz

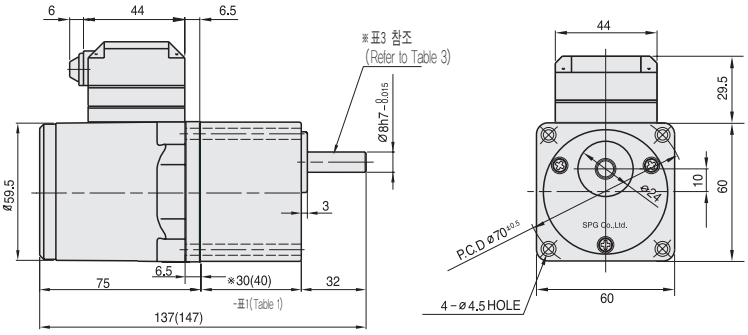
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9	7.2
S6DA□B	kg-cm	1.0	1.3	1.7	2.1	2.6	3.1	3.5	4.4	5.2	6.3	6.3	7.8	9.4	11.3	12.6	14.2	17.0	21.3	25.5	28.4	30.0	30.0	30.0	30.0	30.0
	N·m	0.098	0.127	0.167	0.206	0.255	0.304	0.343	0.431	0.510	0.617	0.617	0.764	0.921	1.107	1.235	1.392	1.666	2.087	2.499	2.783	2.942	2.942	2.942	2.942	2.942

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 30㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 30 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

DIMENSIONS

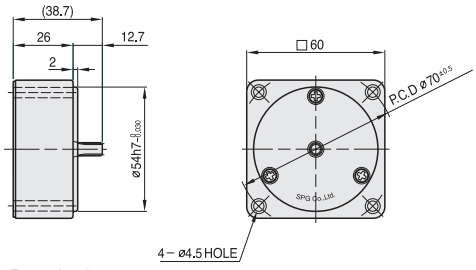
GEARED MOTOR

※MOTOR MODEL : S6(I,R)06G□-T
※HEAD MODEL : S6□A3□~S6□A250□



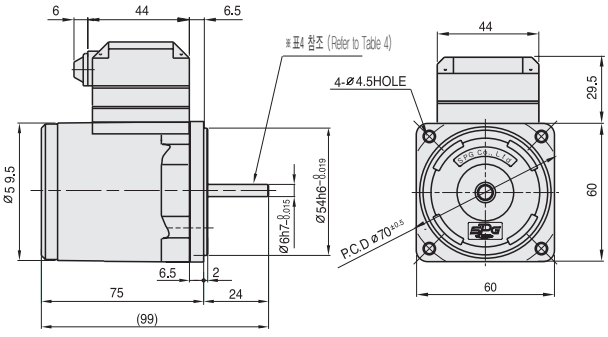
INTER-DECIMAL GEAR HEAD

※MODEL : S6GX10B



MOTOR

※MOTOR MODEL : S6(I,R)06□□-T



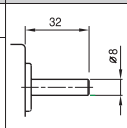
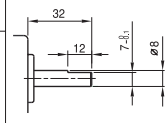
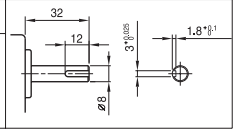
※30(40) - (표1 (Table1))

GEAR RATIO	SIZE(㎜)
S6□A3□ ~ S6□A18□	30
S6□A20□ ~ S6□A250□	40

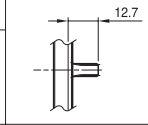
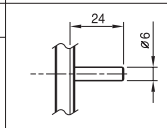
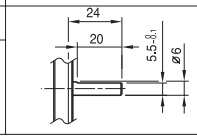
WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		0.76
REVERSIBLE MOTOR		0.77
DECIMAL GEAR HEAD		0.18
GEAR HEAD	S6□A3□ ~S6□A18□	0.24
	S6□A20□ ~S6□A40□	0.30
	S6□A50□ ~S6□A250□	0.33

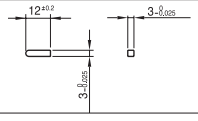
GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S6SA3□ ~S6SA250□	
D-CUT TYPE S6DA3□ ~S6DA250□	
KEY TYPE S6KA3□ ~S6KA250□	

MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S6(I,R)06G□-T	
STRAIGHT TYPE S6(I,R)06S□-T	
D-CUT TYPE S6(I,R)06S□-T	

KEY SPEC

GEAR HEAD


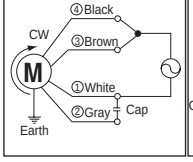
SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. 원안의 번호는 TERMINAL BOX 내의 단자 번호입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor. Circled number is the terminal number inside terminal box.)

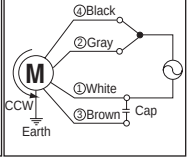
■INDUCTION MOTOR

S6I06GA-T S6I06GB-T
S6I06GC-T S6I06GD-T
S6I06GE-T

CW

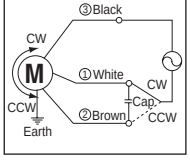


CCW



S6I06GX-TCE
S6I06GX-T

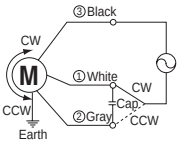
CW,CCW



■REVERSIBLE MOTOR

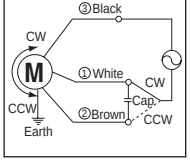
S6R06GA-T S6R06GB-T
S6R06GC-T S6R06GD-T
S6R06GA-TCE S6R06GB-TCE S6R06GC-TCE
S6R06GD-TCE S6R06GE-T S6R06GE-TCE

CW,CCW

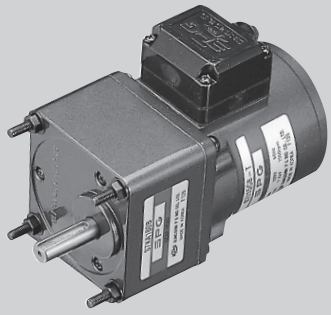


S6R06GX-TCE
S6R06GX-T

CW,CCW



주의 : INDUCTION MOTOR 회전방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나, 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



15W

INDUCTION MOTOR, REVERSIBLE MOTOR
□70㎜ TERMINAL BOX TYPE

INDUCTION MOTOR - CONTINUOUS RATING

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
70	S7I15GA-T	4	15	1Ø 110	60	Cont.	0.34	1600	1.00	0.100	1.10	0.110	5.0
	S7I15GB-T	4	15	1Ø 220	60	Cont.	0.19	1550	1.10	0.110	1.10	0.110	1.2
	S7I15GC-T	4	15	1Ø 100	50	Cont.	0.35	1250	1.20	0.120	0.90	0.090	5.0
					60		0.34	1550	1.00	0.100			
	S7I15GD-T	4	15	1Ø 200	50	Cont.	0.19	1200	1.25	0.125	0.90	0.090	1.2
					60		0.18	1500	1.20	0.120			
	S7I15GX-T	4	15	1Ø 220	50	Cont.	0.16	1200	1.25	0.125	0.75	0.075	0.9
	S7I15GX-TCE			1Ø 240			0.18		1.35	0.135	0.90	0.090	

❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of the model name indicates that it is thermally protected type which has received CE with built-in TP.)
또한 기종명 S7I15GX-T는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the modelname indicates that it is standard motor with Thermal Protector mounted. S7I15GX-T is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

REVERSIBLE MOTOR - 30MINUTES RATING

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
70	S7R15GA-T S7R15GA-T(TP) S7R15GA-TCE	4	15	1Ø 110	60	30min.	0.44	1550	1.0	0.100	1.10	0.110	6.0
	S7R15GB-T S7R15GB-T(TP) S7R15GB-TCE	4	15	1Ø 220	60	30min.	0.22	1550	1.0	0.100	1.10	0.110	1.5
	S7R15GC-T S7R15GC-T(TP) S7R15GC-TCE	4	15	1Ø 100	50	30min.	0.42	1200	1.25	0.125	0.90	0.090	6.0
					60			1500	1.0	0.100			
	S7R15GD-T S7R15GD-T(TP) S7R15GD-TCE	4	15	1Ø 200	50	30min.	0.21	1200	1.25	0.125	0.90	0.090	1.5
					60			1500	1.0	0.100			
	S7R15GE-T S7R15GE-TCE	4	15	1Ø 100	50	30min.	0.37	1200	1.25	0.125	0.95	0.095	6.0
					60		0.41	1500	1.0	0.100			
				1Ø 115	60		0.35	1550	1.0	0.100			4.5
	S7R15GX-T S7R15GX-TCE	4	15	1Ø 220	50	30min.	0.17	1200	1.25	0.125	0.9	0.090	1.2
				1Ø 240			0.18		1.45	0.145	1.1	0.110	

❖ 기종명 S7R15GE-T는 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다.
주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S7R15GE-T type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)

❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S7R15GE-TCE는 115V용 사양으로만 출하됩니다. (CE marked at the end of the model name indicates that it is thermally protected type which has received CE. S7R15GE-TCE is available only for 115V specification.)

❖ 기종명 맨 끝자리에 TP가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S7R15GE-T, S7R15GX-T는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S7R15GE-T, S7R15GX-T is thermally protected type with TP mounted.)

❖ 본 DATA는 BRAKE BLOCK을 MOTOR에 장착된 상태에서 측정한 DATA입니다. (Above data is measured with friction brake mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S7KA□B	kg-cm	3.2	3.9	5.4	6.5	8.1	9.7	10.8	13.5	16.2	19.4	19.4	24.2	29.1	34.9	38.8	43.6	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	N·m	0.314	0.382	0.530	0.637	0.794	0.951	1.059	1.324	1.587	1.902	1.902	2.373	2.854	3.423	3.805	4.276	4.900	4.900	4.900	4.900	4.900	4.900	4.900	4.900

60Hz

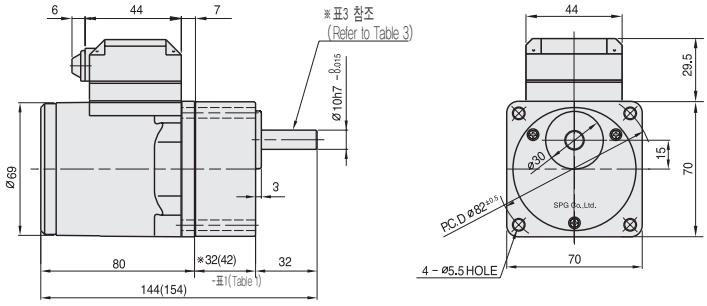
MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S7KA□B	kg-cm	3.0	3.6	5.1	6.1	7.6	9.1	10.1	12.7	15.2	18.2	18.2	22.8	27.3	32.8	36.5	41.0	49.2	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	N·m	0.294	0.353	0.500	0.598	0.745	0.892	0.990	1.245	1.491	1.785	1.785	2.236	2.677	3.217	3.579	4.021	4.825	4.900	4.900	4.900	4.900	4.900	4.900	4.900

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 50㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 50 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

DIMENSIONS

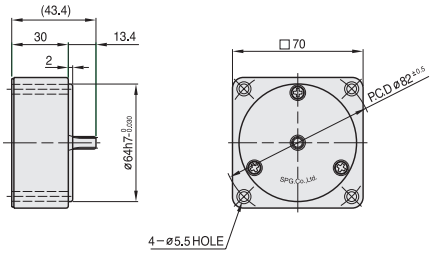
✚ GEARED MOTOR

※MOTOR MODEL : S7(I,R)15G□-T
※HEAD MODEL : S7□A3□~S7□A200□



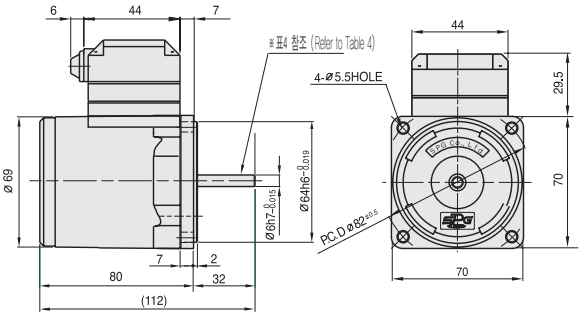
✚ NTER-DECIMAL GEAR HEAD

※MODEL : S7GX10B



✚ MOTOR

※MOTOR MODEL : S7(I,R)15□□-T



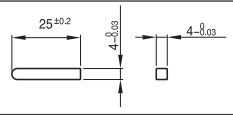
✚ ※32(42) - (표1 (Table1))

GEAR RATIO	SIZE(mm)
S7□A3□ ~ S7□A18□	32
S7□A20□ ~ S7□A200□	42

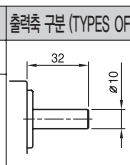
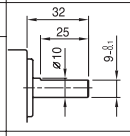
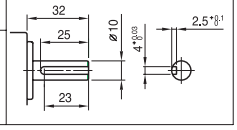
✚ WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		1.10
DECIMAL GEAR HEAD		1.11
GEAR HEAD	S7□A3□ ~S7□A18□	0.38
	S7□A20□ ~S7□A40□	0.47
	S7□A50□ ~S7□A250□	0.52

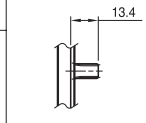
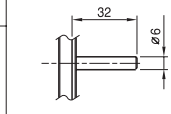
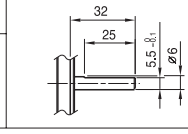
✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S7SA3□ ~S7SA200□	
D-CUT TYPE S7DA3□ ~S7DA200□	
KEY TYPE S7KA3□ ~S7KA200□	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S7(I,R)15G□-T	
STRAIGHT TYPE S7(I,R)15S□-T	
D-CUT TYPE S7(I,R)15D□-T	

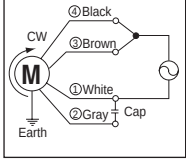
SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. 원안의 번호는 TERMINAL BOX 내의 단자 번호입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor. Circled number is the terminal number inside terminal box.)

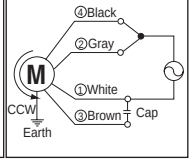
■ INDUCTION MOTOR

S7I15GA-T S7I15GB-T
S7I15GC-T S7I15GD-T

CW

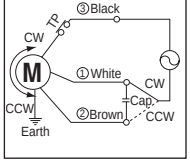


CCW



S7I15GX-TCE
S7I15GX-T

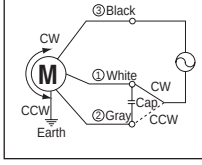
CW,CCW



■ REVERSIBLE MOTOR

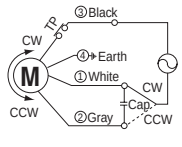
S7R15GA-T S7R15GB-T
S7R15GC-T S7R15GD-T

CW,CCW



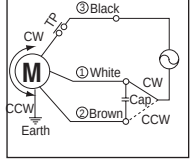
S7R15GA-TCE S7R15GB-TCE
S7R15GC-TCE S7R15GD-TCE
S7R15GE-T S7R15GE-TCE

CW,CCW

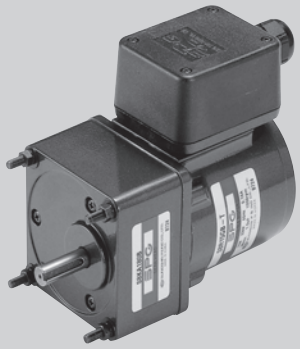


S7R15GX-TCE
S7R15GX-T

CW,CCW



주의 : INDUCTION MOTOR 회전방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나, 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



15W

INDUCTION MOTOR, REVERSIBLE MOTOR
□80㎜ TERMINAL BOX TYPE

INDUCTION MOTOR - CONTINUOUS RATING

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
80	S8I15GA-T S8I15GA-T1	4	15	1Ø 110	60	Cont.	0.43	1600	1.00	0.100	1.20	0.120	4.0
	S8I15GB-T S8I15GB-T1	4	15	1Ø 220	60	Cont.	0.22	1600	1.00	0.100	1.20	0.120	1.0
	S8I15GC-T S8I15GC-T1	4	15	1Ø 100	50	Cont.	0.51	1300	1.20	0.120	0.95	0.095	4.0
					60		0.43	1550	1.00	0.100			
	S8I15GD-T S8I15GD-T1	4	15	1Ø 200	50	Cont.	0.25	1300	1.20	0.120	0.95	0.095	1.0
					60		0.22	1550	1.00	0.100			
	S8I15GX-T S8I15GX-T S8I15GX-TCE S8I15GX-T1CE	4	15	1Ø 220	50	Cont.	0.16	1200	1.30	0.130	0.95	0.095	1.0
				1Ø 240			0.17		1.40	0.140	1.10	0.110	

❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of the model name indicates that it is thermally protected type which has received CE with built-in TP.)
또한 기종명 S8I15GX-T는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the modelname indicates that it is standard motor with Thermal Protector mounted. S8I15GX-T is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

REVERSIBLE MOTOR - 30MINUTES RATING

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
80	S8R15GA-T S8R15GA-T1 S8R15GA-T(TP) S8R15GA-T1(TP) S8R15GA-TCE S8R15GA-T1CE	4	15	1Ø 110	60	30min.	0.49	1550	1.00	0.100	1.20	0.120	6.0
	S8R15GB-T S8R15GB-T1 S8R15GB-T(TP) S8R15GB-T1(TP) S8R15GB-TCE S8R15GB-TCE1	4	15	1Ø 220	60	30min.	0.25	1550	1.00	0.100	1.20	0.120	1.5
	S8R15GC-T S8R15GC-T1 S8R15GC-T(TP) S8R15GC-T(TP)1 S8R15GC-TCE S8R15GC-T1CE	4	15	1Ø 100	50	30min.	0.58	1200	1.30	0.130	0.95	0.095	6.0
					60		0.48	1500	1.10	0.110			
	S8R15GD-T S8R15GD-T1 S8R15GD-T(TP) S8R15GD-T1(TP) S8R15GD-TCE S8R15GD-T1CE	4	15	1Ø 200	50	30min.	0.29	1200	1.30	0.130	0.95	0.095	1.5
					60		0.25	1500	1.10	0.110			
	S8R15GE-T S8R15GE-T1 S8R15GE-TCE S8R15GE-T1CE	4	15	1Ø 100	50	30min.	0.59	1250	1.30	0.130	0.95	0.095	6.0
					60		0.48	1550	1.20	0.120			
				1Ø 115	60		0.52	1600	1.10	0.110			4.5
	S8R15GX-T S8R15GX-T1 S8R15GX-TCE S8R15GX-T1CE	4	15	1Ø 220	50	30min.	0.16	1200	1.30	0.130	1.10	0.110	1.2
				1Ø 240			0.18		1.40	0.140	1.30	0.130	

❖ 기종명 S8R15GE-T는 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S8R15GE-T type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)

❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S8R15GE-TCE는 115V용 사양으로만 출하됩니다. (CE marked at the end of the model name indicates that it is thermally protected type which has received CE. S8R15GE-TCE is available only for 115V specification.)

❖ 기종명 맨 끝자리에 TP가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8R15GE-T, S8R15GX-T는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S8R15GE-T, S8R15GX-T is thermally protected type with TP mounted.)

❖ 본 DATA는 BRAKE BLOCK을 MOTOR에 장착된 상태에서 측정한 DATA입니다. (Above data is measured with friction brake mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S8KA□B	kg-cm	3.4	4.1	5.7	6.8	8.5	10.2	11.3	14.2	17.0	20.4	20.4	25.6	30.7	36.8	40.9	46.2	55.4	69.2	80	80	80	80	80	80
	N·m	0.333	0.402	0.559	0.666	0.833	1.000	1.107	1.392	1.666	1.999	1.999	2.509	3.009	3.606	4.008	4.530	5.433	6.786	7.840	7.840	7.840	7.840	7.840	7.840

60Hz

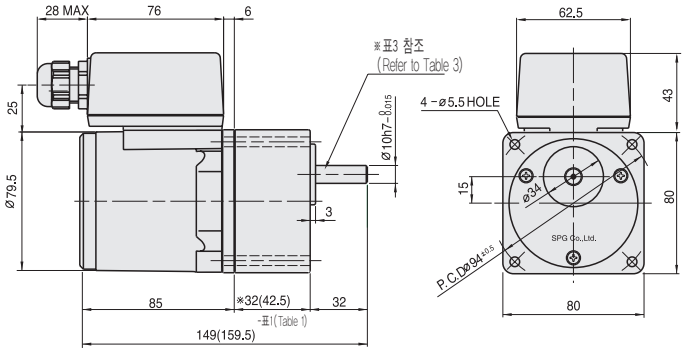
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S8KA□B	kg-cm	2.9	3.5	4.9	5.8	7.3	8.7	9.7	12.2	14.6	17.5	17.5	21.9	26.3	31.5	35.0	39.6	47.5	59.4	71.3	79.2	80	80	80	80
	N·m	0.284	0.343	0.481	0.568	0.715	0.853	0.951	1.196	1.432	1.715	1.715	2.146	2.577	3.087	3.430	3.881	4.658	5.825	6.992	7.767	7.840	7.840	7.840	7.840

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 80kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 80g-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

DIMENSIONS

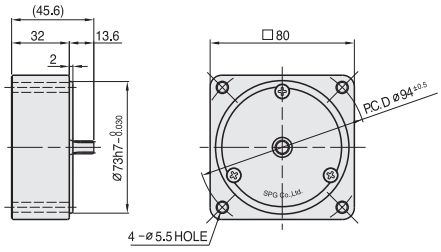
✚ GEARED MOTOR

※MOTOR MODEL : S8(I,R)15G□-T
※HEAD MODEL : S8□A3□~S8□A200□



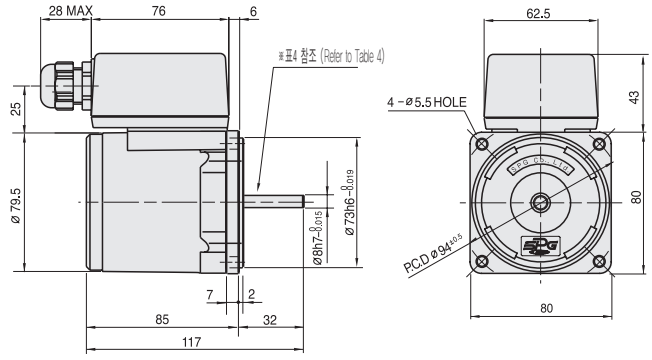
✚ INTER-DECIMAL GEAR HEAD

※MODEL : S8GX10B



✚ MOTOR

※MOTOR MODEL : S6R06□□-E



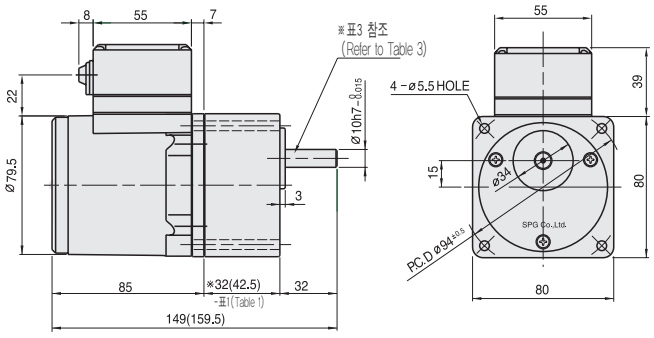
✚ WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		1.30
REVERSIBLE MOTOR		1.60
DECIMAL GEAR HEAD		0.43
GEAR HEAD	S8□A3□ ~S8□A18□	0.43
	S8□A20□ ~S8□A40□	0.57
	S8□A50□ ~S8□A200□	0.61

DIMENSIONS

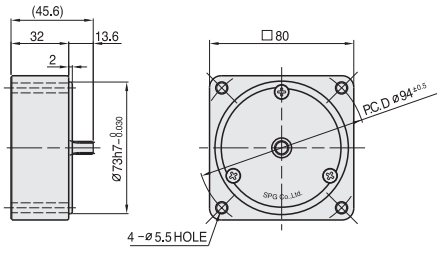
✚ GEARED MOTOR

※MOTOR MODEL : S8(I,R)15G□-T1
※HEAD MODEL : S8□A3□~S8□A200□



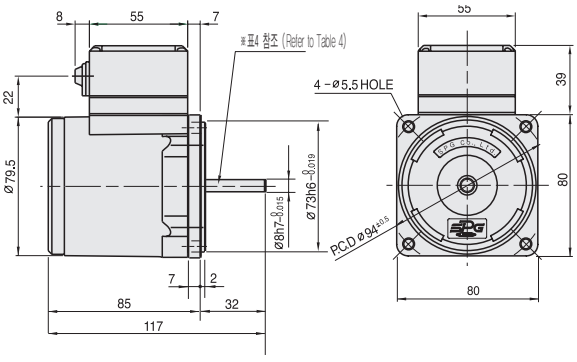
✚ INTER-DECIMAL GEAR HEAD

※MODEL : S8GX10B



✚ MOTOR

※MOTOR MODEL : S8(I,R)15□□-T1



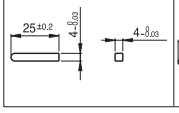
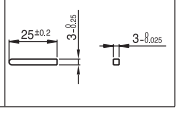
✚ ※32(42.5) - (표1 (Table1))

GEAR RATIO	SIZE(mm)
S8□A3□ ~ S8□A18□	32
S8□A20□ ~ S8□A200□	42.5

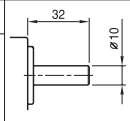
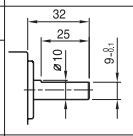
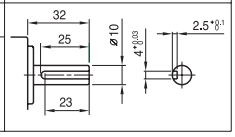
✚ WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		1.25
REVERSIBLE MOTOR		0.55
DECIMAL GEAR HEAD		1.43
GEAR HEAD	S8□A3□ ~S8□A18□	0.43
	S8□A20□ ~S8□A40□	0.57
	S8□A50□ ~S8□A200□	0.61

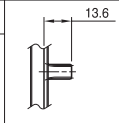
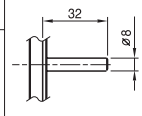
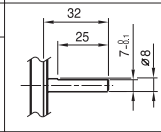
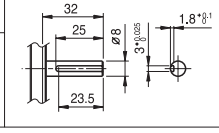
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S8SA3□ ~S8SA200□	
D-CUT TYPE S8DA3□ ~S8DA200□	
KEY TYPE S8KA3□ ~S8KA200□	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S8(I,R)15G□-T S8(I,R)15G□-T1	
STRAIGHT TYPE S8(I,R)15S□-T S8(I,R)15S□-T1	
D-CUT TYPE S8(I,R)15D□-T S8(I,R)15D□-T1	
KEY TYPE S8(I,R)15K□-T S8(I,R)15K□-T1	

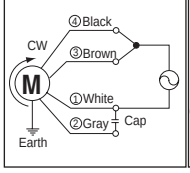
SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. 원안의 번호는 TERMINAL BOX 내의 단자 번호입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor. Circled number is the terminal number inside terminal box.)

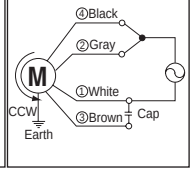
■ INDUCTION MOTOR

S8I15GA-T S8I15GB-T
S8I15GA-T1 S8I15GB-T1
S8I15GC-T S8I15GD-T
S8I15GC-T1 S8I15GD-T1

CW

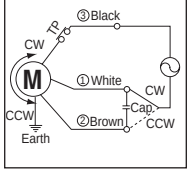


CCW



S8I15GX-T
S8I15GX-T1
S8I15GX-TCE
S8I15GX-T1CE

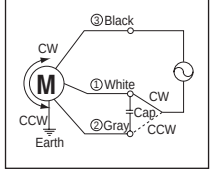
CW,CCW



■ REVERSIBLE MOTOR

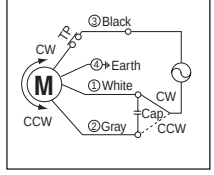
S8R15GA-T S8R15GC-T
S8R15GD-T S8R15GA-T1
S8R15GB-T S8R15GC-T1
S8R15GD-T1 S8R15GB-T1

CW,CCW



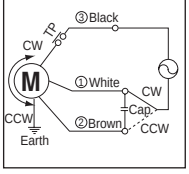
S8R15GA-TCE S8R15GB-TCE
S8R15GC-TCE S8R15GD-TCE
S8R15GE-T S8R15GE-TCE
S8R15GA-T1CE S8R15GB-T1CE
S8R15GC-T1CE S8R15GD-T1CE
S8R15GE-T1 S8R15GE-T1CE

CW,CCW

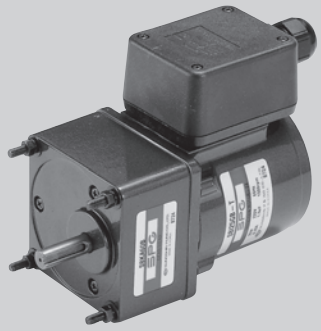


S8R15GX-TCE
S8R15GX-T1CE
S8R15GX-T
S8R15GX-T1

CW,CCW



주의 : INDUCTION MOTOR 회전방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나, 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



25W

INDUCTION MOTOR, REVERSIBLE MOTOR
□80㎜ TERMINAL BOX TYPE

INDUCTION MOTOR - CONTINUOUS RATING

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
80	S8I25GA-T S8I25GA-T1	4	25	1Ø 110	60	Cont.	0.51	1600	1.60	0.160	1.80	0.180	6.0
	S8I25GB-T S8I25GB-T1	4	25	1Ø 220	60	Cont.	0.23	1550	1.65	0.165	1.80	0.180	1.5
	S8I25GC-T S8I25GC-T1	4	25	1Ø 100	50	Cont.	0.57	1250	2.00	0.200	1.45	0.145	6.0
					60		0.52	1550	1.65	0.165			
	S8I25GD-T S8I25GD-T1	4	25	1Ø 200	50	Cont.	0.30	1250	2.00	0.200	1.45	0.145	1.5
					60		0.29	1500	1.70	0.170			
	S8I25GX-T S8I25GX-T1 S8I25GX-TCE S8I25GX-T1CE	4	25	1Ø 220	50	Cont.	0.23	1200	2.10	0.210	1.10	0.110	1.3
				1Ø 240			0.25		2.20	0.220	1.30	0.180	
	S8I25GU-T S8I25GU-T1 S8I25GU-TCE S8I25GU-T1CE	4	25	3Ø 200	50	Cont.	0.26	1300	1.95	0.195	3.50	0.350	–
					60		0.24	1550	1.65	0.165	2.90	0.290	
	S8I25GT-T S8I25GT-T1 S8I25GT-TCE S8I25GT-T1CE	4	25	3Ø 220	50	Cont.	0.28	1350	1.90	0.190	4.20	0.420	–
					60		0.24	1600	1.60	0.160	3.50	0.350	
	S8I25GS-T S8I25GS-T1 S8I25GS-TCE S8I25GS-T1CE	4	25	3Ø 380	50	Cont.	0.14	1250	2.00	0.200	3.15	0.315	–
					60		0.12	1500	1.70	0.170	2.50	0.250	
				3Ø 400	50	Cont.	0.14	1250	2.10	0.210	3.50	0.350	
					60		0.12	1500	1.80	0.180	2.75	0.275	
				3Ø 415	50	Cont.	0.15	1300	1.95	0.195	3.75	0.375	
					60		0.13	1550	1.65	0.165	3.00	0.300	
				3Ø 440	50	Cont.	0.15	1300	2.10	0.210	4.40	0.440	
					60		0.13	1550	1.80	0.180	3.40	0.340	

❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of the model name indicates that it is thermally protected type which has received CE with built-in TP.)
또한 기종명 S8I25GX-T, S8I25GS-T는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S8I25GX-T, S8I25GS-T is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

❖ 삼상 380V~440V 모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

REVERSIBLE MOTOR - 30MINUTES RATING

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
80	S8R25GA-T S8R25GA-T S8R25GA-T(TP) S8R25GA-T1(TP) S8R25GA-TCE S8R25GA-T1CE	4	25	1Ø 110	60	30min.	0.71	1550	1.70	0.170	2.30	0.230	10.0
	S8R25GB-T S8R25GB-T S8R25GB-T(TP) S8R25GB-T1(TP) S8R25GB-TCE S8R25GB-T1CE	4	25	1Ø 220	60	30min.	0.35	1600	1.65	0.165	2.30	0.230	2.5
	S8R25GC-T S8R25GC-T S8R25GC-T(TP) S8R25GC-T1(TP) S8R25GC-TCE S8R25GC-T1CE	4	25	1Ø 100	50	30min.	0.63	1250	2.10	0.210	1.80	0.180	10.0
					60		0.70	1500	1.70	0.170			
	S8R25GD-T S8R25GD-T S8R25GD-T(TP) S8R25GD-T1(TP) S8R25GD-TCE S8R25GD-T1CE	4	25	1Ø 200	50	30min.	0.33	1250	2.10	0.210	1.80	0.180	2.5
					60			1550	1.70	0.170			
	S8R25GE-T S8R25GE-T S8R25GE-TCE S8R25GE-T1CE	4	25	1Ø 100	50	30min.	0.60	1250	2.10	0.210	1.30	0.130	8.0
					60		0.65	1450	1.80	0.180			
				1Ø 115	60		0.63	1550	1.70	0.170			7.0
	S8R25GX-T S8R25GX-T S8R25GX-TCE S8R25GX-T1CE	4	25	1Ø 220	50	30min.	0.26	1200	2.00	0.200	1.70	0.170	2.0
				1Ø 240			0.28		2.20	0.220	2.20	0.220	

❖ 기종명 S8R25GE-T는 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S8R25GE-T type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)

❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S8R25GE-TCE는 115V용 사양으로만 출하됩니다. (CE marked at the end of the model name indicates that it is thermally protected type which has received CE. S8R25GE-TCE is available only for 115V specification.)

❖ 기종명 맨끝자리에 (TP)가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8R25GE-T, S8R25GX-T는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S8R25GE-T, S8R25GX-T is thermally protected type with TP mounted.)

❖ 본 DATA는 BRAKE BLOCK을 MOTOR에 장착된 상태에서 측정한 DATA입니다. (Above data is measured with friction brake mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S8KA□B	kg-cm	5.3	6.4	8.9	10.7	13.4	16.0	17.8	22.3	26.7	32.1	32.1	40.2	48.2	57.8	64.2	72.6	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	N·m	0.519	0.627	0.872	1.049	1.313	1.568	1.744	2.185	2.617	3.146	3.146	3.940	4.724	5.664	6.292	7.115	7.840	7.840	7.840	7.840	7.840	7.840	7.840	7.840

60Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S8KA□B	kg-cm	4.4	5.2	7.3	8.7	10.9	13.1	14.6	18.2	21.9	26.2	26.3	32.9	39.4	47.3	52.6	59.4	71.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	N·m	0.431	0.510	0.715	0.853	1.068	1.284	1.431	1.784	2.146	2.568	2.577	3.224	3.861	4.635	5.155	5.821	6.987	7.840	7.840	7.840	7.840	7.840	7.840	7.840

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)

❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)

❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 80㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 8 kg-cm.)

❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)

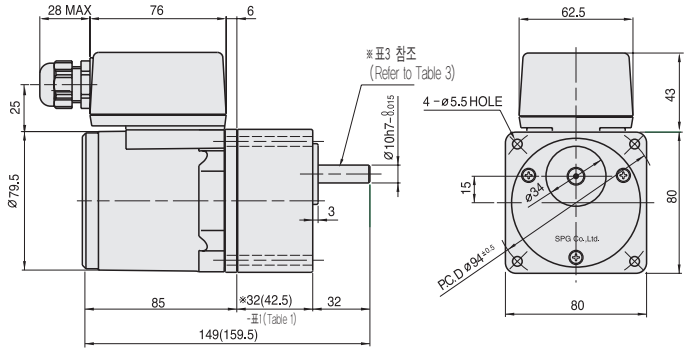
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

DIMENSIONS

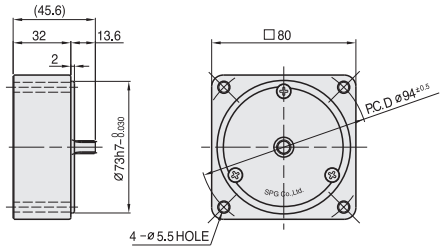
GEARED MOTOR

※MOTOR MODEL : S8(I,R)25G□-T
※HEAD MODEL : S8□A3□~S8□A200□



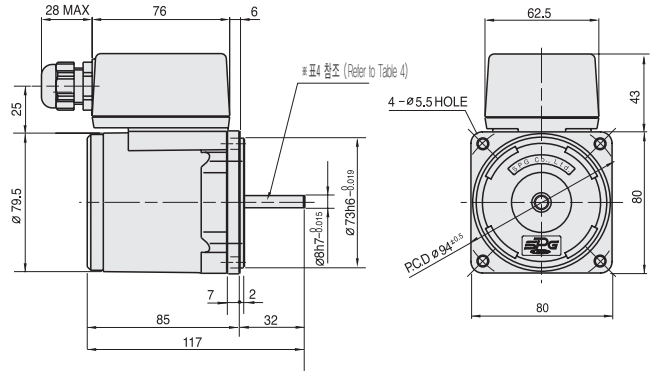
INTER-DECIMAL GEAR HEAD

※MODEL : S8GX10B



MOTOR

※MOTOR MODEL : S8(I,R)25□□-T

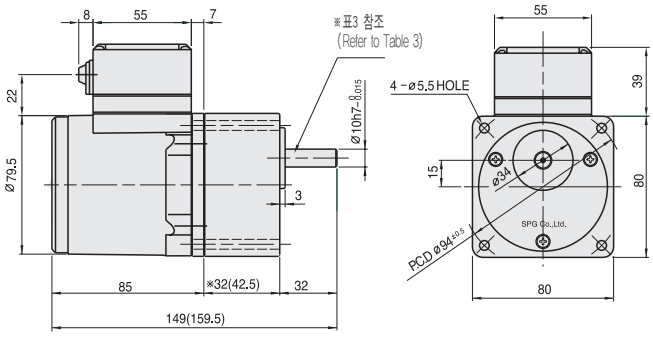


WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		1.60
REVERSIBLE MOTOR		1.65
DECIMAL GEAR HEAD		0.43
GEAR HEAD	S8□A3□ ~S8□A18□	0.43
	S8□A20□ ~S8□A40□	0.57
	S8□A50□ ~S8□A200□	0.61

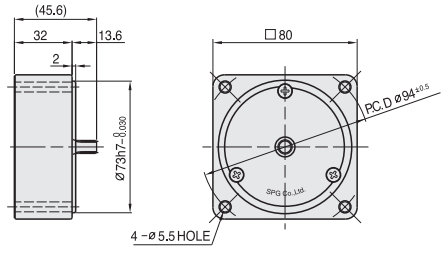
GEARED MOTOR

※MOTOR MODEL : S8(I,R)25G□-T1
※HEAD MODEL : S8□A3□~S8□A200□



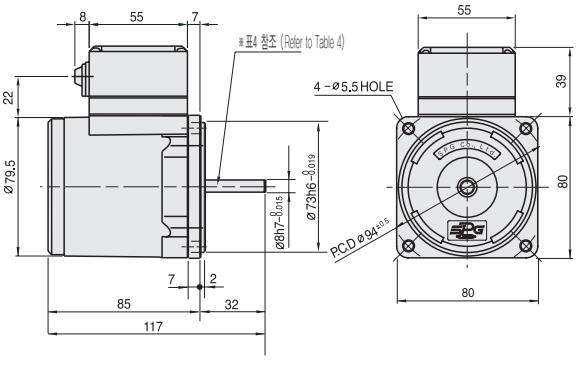
INTER-DECIMAL GEAR HEAD

※ MODEL : S8GX10B



MOTOR

※MOTOR MODEL : S8(I,R)25 □□-T1



WEIGHT - (표2 (Table2))

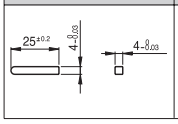
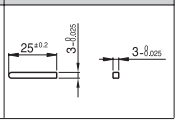
PART		WEIGHT(kg)
MOTOR		1.55
REVERSIBLE MOTOR		1.60
DECIMAL GEAR HEAD		0.43
GEAR HEAD	S8□A3□ ~S8□A18□	0.43
	S8□A20□ ~S8□A40□	0.57
	S8□A50□ ~S8□A200□	0.61

DIMENSIONS

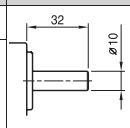
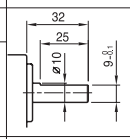
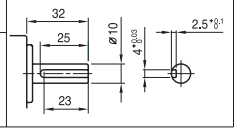
✚ ※32(42.5) – (표1 (Table1))

GEAR RATIO	SIZE(㎜)
S8□A3□ ~ S8□A18□	32
S8□A20□ ~ S8□A200□	42.5

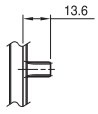
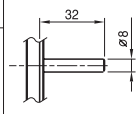
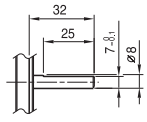
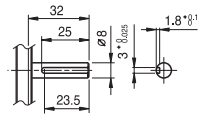
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S8SA3□ ~S8SA200□	
D-CUT TYPE S8DA3□ ~S8DA200□	
KEY TYPE S8KA3□ ~S8KA200□	

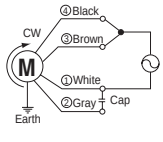
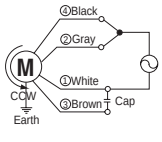
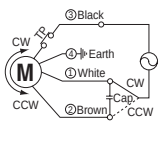
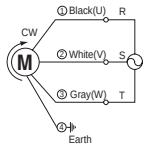
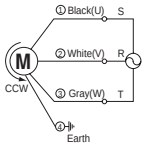
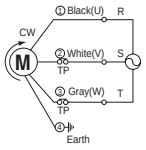
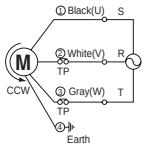
✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S8(I,R)25G□-T S8(I,R))25G□-T1	
STRAIGHT TYPE S8(I,R)25S□-T S8(I,R)25S□-T1	
D-CUT TYPE S8(I,R))25D□-T S8(I,R)25D□-T1	
KEY TYPE S8(I,R)25K□-T S8(I,R25K□-T1	

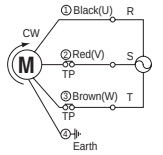
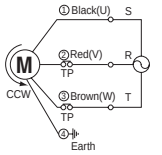
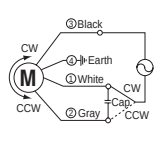
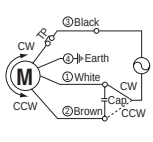
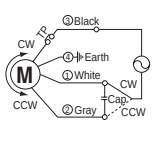
SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. 원안의 번호는 TERMINAL BOX 내의 단자 번호입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor. Circled number is the terminal number inside terminal box.)

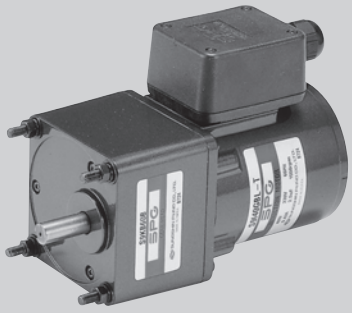
■INDUCTION MOTOR

S8I25GA-T S8I25GB-T S8I25GC-T S8I25GD-T S8I25GA-T1S8I25GB-T1 S8I25GC-T1 S8I25GD-T1		S8I25GX-T S8I25GX-TCE S8I25GX-T1 S8I25GX-T1CE	S8I25GU-T S8I25GT-T S8I25GU-T1 S8I25GT-T1		S8I25GU-TCE S8I25GT-TCE S8I25GU-T1CE S8I25GT-T1CE	
CW	**CCW**	**CW,CCW**	**CW**	**CCW**	**CW**	**CCW**
						

■REVERSIBLE MOTOR

S8I25GS-TCE S8I25GS-T S8I25GS-T1CE S8I25GS-T1		S8R25GA-T, S8R25GB-T S8R25GA-T1, S8R25GB-T1 S8R25GC-T, S8R25GD-T S8R25GC-T1, S8R25GD-T1	S8R25GX-T, S8R25GX-TCE S8R25GX-T1, S8R25GX-T1CE	S8R25GA-T(TP), S8R25GB-T(TP), S8R25GC-T(TP), S8R25GD-T(TP), S8R25GA-T1(TP), S8R25GB-T1(TP), S8R25GC-T1(TP), S8R25GD-T1(TP), S8R25GA-TCE , S8R25GB-TCE , S8R25GC-TCE S8R25GD-TCE , S8R25GE-T , S8R25GE-TCE S8R25GA-T1CE , S8R25GB-T1CE , S8R25GC-T1CE S8R25GD-T1CE , S8R25GE-T1 , S8R25GE-T1CE
CW	**CCW**	**CW,CCW**	**CW,CCW**	**CW,CCW**
				

주의 : INDUCTION MOTOR 회전방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나, 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



40W

INDUCTION MOTOR, REVERSIBLE MOTOR
□90㎜ TERMINAL BOX TYPE

INDUCTION MOTOR - CONTINUOUS RATING

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9I40GA( )-T S9I40GA( )-T1	4	40	1Ø 110	60	Cont.	0.82	1600	2.50	0.250	2.90	0.290	10.0
	S9I40GB( )-T S9I40GB( )-T1	4	40	1Ø 220	60	Cont.	0.41	1600	2.50	0.250	2.90	0.290	2.5
	S9I40GC( )-T S9I40GC( )-T1	4	40	1Ø 100	50	Cont.	0.80	1300	3.10	0.310	2.40	0.240	10.0
					60		0.85	1550	2.60	0.260			
	S9I40GD( )-T S9I40GD( )-T1	4	40	1Ø 200	50	Cont.	0.41	1300	3.10	0.310	2.40	0.240	2.5
					60		0.43	1550	2.60	0.260			
	S9I40GX( )-T S9I40GX( )-T1 S9I40GX( )-TCE S9I40GX( )-T1CE	4	40	1Ø 220	50	Cont.	0.34	1250	3.15	0.320	1.80	0.180	2.0
				1Ø 240			0.37		3.35	0.355	2.10	0.210	
	S9I40GU( )-T S9I40GU( )-T1 S9I40GU( )-TCE S9I40GU( )-T1CE	4	40	3Ø 200	50	Cont.	0.36	1300	3.10	0.310	6.30	0.630	—
					60		0.33	1550	2.60	0.260	5.20	0.520	
	S9I40GT( )-T S9I40GT( )-T1 S9I40GT( )-TCE S9I40GT( )-T1CE	4	40	3Ø 220	50	Cont.	0.39	1350	3.00	0.300	7.60	0.760	—
					60		0.33	1600	2.50	0.250	6.10	0.610	
	S9I40GS( )-T S9I40GS( )-T1 S9I40GS( )-TCE S9I40GS( )-T1CE	4	40	3Ø 380	50	Cont.	0.21	1300	3.20	0.320	6.30	0.630	—
					60		0.19	1550	2.70	0.270	4.85	0.485	
				3Ø 400	50	Cont.	0.21	1300	3.30	0.330	6.90	0.690	
					60		0.19	1550	2.80	0.280	5.25	0.525	
				3Ø 415	50	Cont.	0.21	1350	3.10	0.310	7.30	0.730	
					60		0.19	1600	2.60	0.260	5.70	0.570	
				3Ø 440	50	Cont.	0.21	1350	3.20	0.320	8.20	0.820	
					60		0.19	1600	2.70	0.270	6.30	0.630	

❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of the model name indicates that it is thermally protected type which has received CE with built-in TP.)
또한 기종명 S9I40GX, S9I40GX-T, S9I40GS-T는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S9I40GX, S9I40GX-T, S9I40GS-T is thermally protected type with TP mounted.)

❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

❖ 삼상 380V~440V 모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

REVERSIBLE MOTOR - 30MINUTES RATING

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9R40GA( )-T S9R40GA( )-T1 S9R40GA( )-T(TP) S9R40GA( )-T1(TP) S9R40GA( )-TCE S9R40GA( )-T1CE	4	40	1 Ø 110	60	30min	1.00	1600	2.50	0.250	3.50	0.350	15.0
	S9R40GB( )-T S9R40GB( )-T1 S9R40GB( )-T(TP) S9R40GB( )-T1(TP) S9R40GB( )-TCE S9R40GB( )-T1CE	4	40	1 Ø 220	60	30min.	0.46	1600	2.50	0.250	3.50	0.350	3.5
	S9R40GC( )-T S9R40GC( )-T1 S9R40GC( )-T(TP) S9R40GC( )-T1(TP) S9R40GC( )-TCE S9R40GC( )-T1CE	4	40	1 Ø 100	50	30min.	0.84	1300	3.00	0.300	2.80	0.280	15.0
					60		1.00	1550	2.60	0.260			
	S9R40GD( )-T S9R40GD( )-T1 S9R40GD( )-T(TP) S9R40GD( )-T1(TP) S9R40GD( )-TCE S9R40GD( )-T1CE	4	40	1 Ø 200	50	30min.	0.39	1300	3.10	0.310	2.80	0.280	3.5
					60		0.47	1550	2.60	0.260			
	S9R40GE( )-T S9R40GE( )-T1 S9R40GE( )-TCE S9R40GE( )-T1CE	4	40	1 Ø 100	50	30min.	0.86	1300	3.10	0.310	2.90	0.290	15.0
					60		1.00	1550	2.60	0.260			
				1 Ø 115	60		1.00	1550	2.70	0.270			12.0
	S9R40GX( )-T S9R40GX( )-T1 S9R40GX( )-TCE S9R40GX( )-T1CE	4	40	1 Ø 220	50	30min.	0.40	1250	3.20	0.320	3.00	0.300	3.0
				1 Ø 240			0.42		3.40	0.340	3.20	0.320	

❖ 기종명 S9R40GE-T는 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S9R40GE-T type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)

❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S9R40GE( )-TCE는 115V용 사양으로만 출하됩니다. (CE marked at the end of the model name indicates that it is thermally protected type which has received CE. S9R40GE-TCE is available only for 115V specification.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9R40GE-T, S9R40GX-T는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S9R40GE-T, S9R40GX-T is thermally protected type with TP mounted.)

❖ 본 DATA는 BRAKE BLOCK을 MOTOR에 장착된 상태에서 측정한 DATA입니다. (Above data is measured with friction brake mounted.)

❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KB□B( )	kg-cm	8.3	9.9	13.8	16.5	20.7	24.8	27.5	34.4	41.3	49.6	49.6	62.1	74.5	89.4	99.3	100	100	100	100	100	100	100	100	100
	N·m	0.813	0.970	1.352	1.617	2.029	2.430	2.695	3.371	4.047	4.861	4.861	6.086	7.301	8.761	9.731	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800

60Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KB□B( )	kg-cm	6.8	8.2	11.3	13.6	17.0	20.4	22.7	28.4	34.0	40.8	40.9	51.1	61.3	73.6	81.8	100	100	100	100	100	100	100	100	100
	N·m	0.666	0.804	1.107	1.333	1.666	1.999	2.225	2.783	3.332	3.998	4.008	5.008	6.007	7.213	8.016	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)

❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)

❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 100㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 100 kg-cm.)

❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)

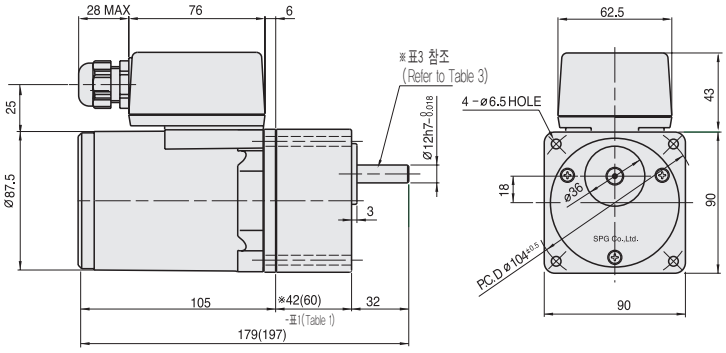
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)

❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)

DIMENSIONS

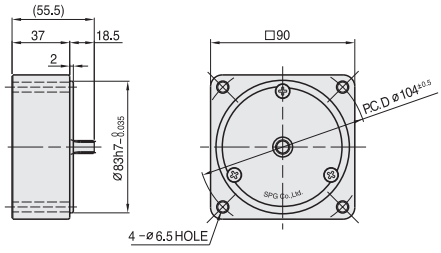
✚ GEARED MOTOR

※MOTOR MODEL : S9(I,R)40G□□-T
※HEAD MODEL : S9□B3□□~S9□B200□□



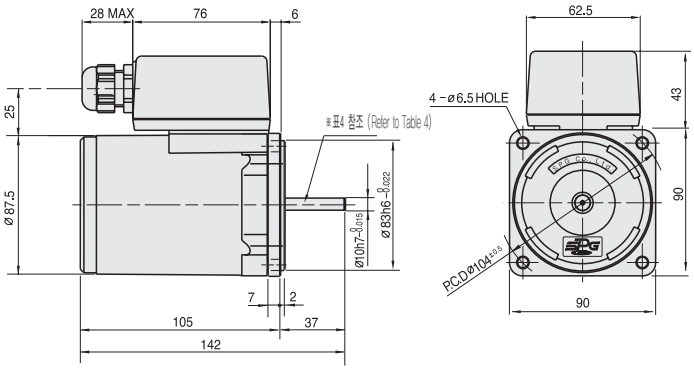
✚ INTER-DECIMAL GEAR HEAD

※MODEL : S9GX10B(H,L)



✚ MOTOR

※MOTOR MODEL : S9(I,R)40□□□-T

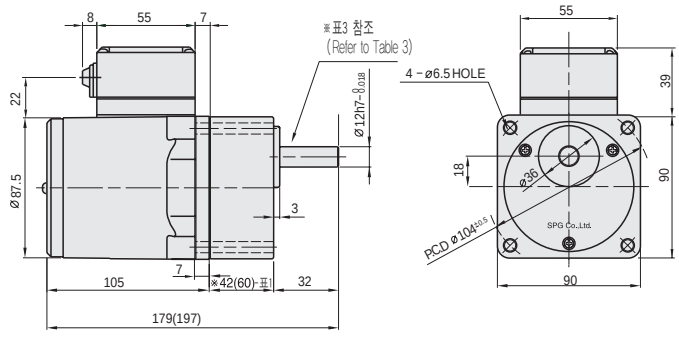


✚ WEIGHT - (표2 (Table2)

PART		WEIGHT(kg)
MOTOR		2.45
REVERSIBLE MOTOR		2.50
DECIMAL GEAR HEAD		0.60
GEAR HEAD	S9□B3□□ ~S9□B18□□	0.73
	S9□B20□□ ~S9□B40□□	1.03
	S9□B50□□ ~S9□B200□□	1.13

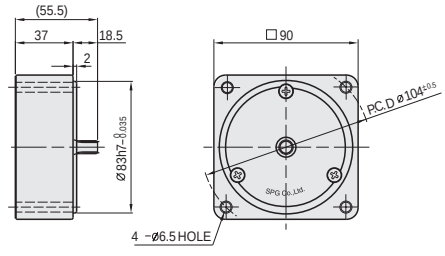
✚ GEARED MOTOR

※MOTOR MODEL : S9(I,R)40G□□-T1
※HEAD MODEL : S9□B3□□~S9□B200□



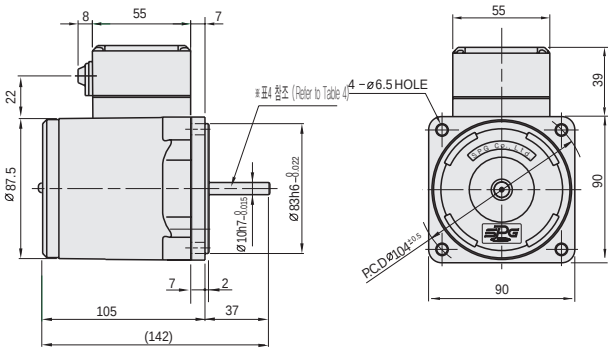
✚ INTER-DECIMAL GEAR HEAD

※MODEL : S9GX10B(H,L)



✚ MOTOR

※MOTOR MODEL : S9(I,R)40□□□-T1



✚ WEIGHT - (표2 (Table2))

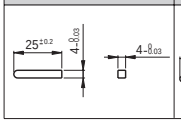
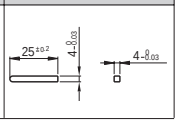
PART		WEIGHT(kg)
MOTOR		2.40
REVERSIBLE MOTOR		2.45
DECIMAL GEAR HEAD		0.60
GEAR HEAD	S9□B3□□ ~S9□B18□□	0.73
	S9□B20□□ ~S9□B40□□	1.03
	S9□B50□□ ~S9□B200□□	1.13

DIMENSIONS

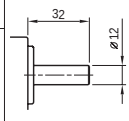
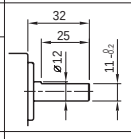
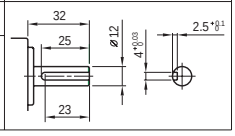
✚ ※42(60) – (표1 (Table1))

GEAR RATIO	SIZE(㎜)
S9□B3□□ ~ S9□B18□□	42
S9□B20□□ ~ S9□B200□□	60

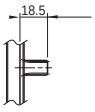
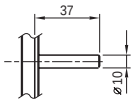
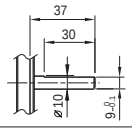
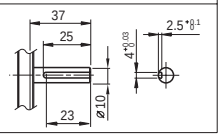
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SB3□□ ~S9SB200□□	
D-CUT TYPE S9DB3□□ ~S9DB200□□	
KEY TYPE S9IRB3□□ ~S9IR200□□	

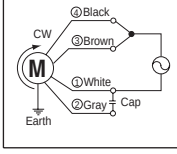
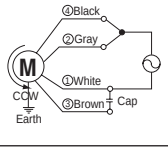
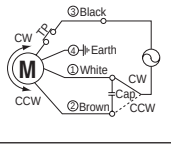
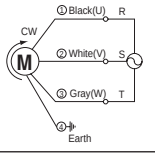
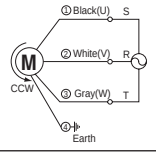
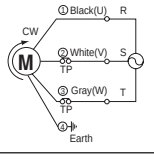
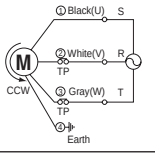
✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9(I,R)40G□□–T S9(I,R)40G□□–T1	
STRAIGHT TYPE S9(I,R)40S□–T S9(I,R)40S□–T1	
D-CUT TYPE S9(I,R)40D□–T S9(I,R)40D□–T1	
KEY TYPE S9(I,R)40K□–T S9(I,R)40K□–T1	

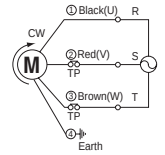
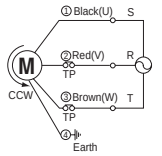
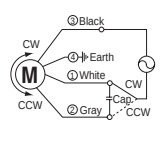
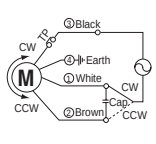
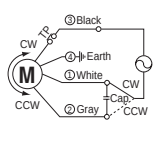
SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. 원안의 번호는 TERMINAL BOX 내의 단자 번호입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor. Circled number is the terminal number inside terminal box.)

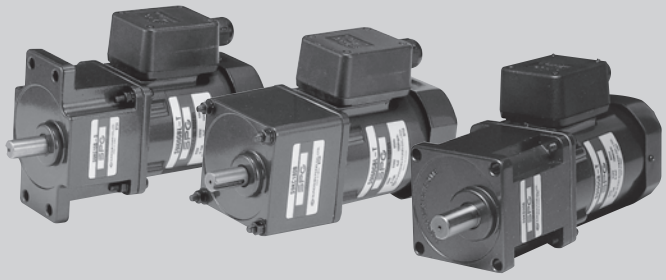
■INDUCTION MOTOR

S9I40GA( )-T S9I40GB( )-T S9I40GC( )-T S9I40GD( )-T S9I40GA( )-T1S9I40GB( )-T1 S9I40GC( )-T1 S9I40GD( )-T1		S9I40GX( )-T S9I40GX( )-TCE S9I40GX( )-T1 S9I40GX( )-T1CE	S9I40GU( )-T S9I40GT( )-T S9I40GU( )-T1 S9I40GT( )-T1		S9I40GU( )-TCE S9I40GT( )-TCE S9I40GU( )-T1CE S9I40GT( )-T1CE	
CW	**CCW**	**CW,CCW**	**CW**	**CCW**	**CW**	**CCW**
						

■REVERSIBLE MOTOR

S9I40GS( )-TCE S9I40GS( )-T S9I40GS( )-T1CE S9I40GS( )-T1		S9R40GA( )-T, S9R40GB( )-T S9R40GA( )-T1, S9R40GB( )-T1 S9R40GC( )-T, S9R40GD( )-T S9R40GC( )-T1, S9R40GD( )-T1	S9R40GX( )-T, S9R40GX( )-TCE S9R40GX( )-T1, S9R40GX( )-T1CE	S9R40GA( )-T(TP), S9R40GB( )-T(TP), S9R40GC( )-T(TP), S9R40GD( )-T(TP), S9R40GA( )-T1(TP), S9R40GB( )-T1(TP), S9R40GC( )-T1(TP), S9R40GD( )-T1(TP), S9R40GA( )-TCE , S9R40GB( )-TCE , S9R40GC( )-TCE S9R40GD( )-TCE , S9R40GE( )-T , S9R40GE( )-TCE S9R40GA( )-T1CE , S9R40GB( )-T1CE , S98R40GC( )-T1CE S9R40GD( )-T1CE , S9R40GE( )-T1 , S9R40GE( )-T1CE
CW	**CCW**	**CW,CCW**	**CW,CCW**	**CW,CCW**
				

주의 : INDUCTION MOTOR 회전방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나, 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



60W

INDUCTION MOTOR, REVERSIBLE MOTOR
□90㎜ TERMINAL BOX TYPE

INDUCTION MOTOR - CONTINUOUS RATING

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9I60GA( )-T S9I60GA( )-T1	4	60	1 Ø 110	60	Cont.	1.35	1600	3.80	0.380	4.80	0.480	15.0
	S9I60GB( )-T S9I60GB( )-T1	4	60	1 Ø 220	60	Cont.	0.68	1600	3.90	0.390	4.80	0.480	4.0
	S9I60GC( )-T S9I60GC( )-T1	4	60	1 Ø 100	50	Cont.	1.26	1300	4.60	0.460	3.40	0.340	15.0
					60		1.37	1550	3.90	0.390			
	S9I60GD( )-T S9I60GD( )-T1	4	60	1 Ø 200	50	Cont.	0.65	1300	4.70	0.470	3.85	0.385	4.0
					60		0.70	1550	4.00	0.400			
	S9I60GX( )-T S9I60GX( )-T1 S9I60GX( )-TCE S9I60GX( )-T1CE	4	60	1 Ø 220	50	Cont.	0.47	1300	4.60	0.460	3.20	0.320	3.5
				1 Ø 240			0.50		4.90	0.490	3.90	0.390	
	S9I60GU( )-T S9I60GU( )-T1 S9I60GU( )-TCE S9I60GU( )-T1CE	4	60	3 Ø 200	50	Cont.	0.60	1300	4.60	0.460	9.30	0.930	—
					60		0.50	1550	3.90	0.390	8.00	0.800	
	S9I60GT( )-T S9I60GT( )-T1 S9I60GT( )-TCE S9I60GT( )-T1CE	4	60	3 Ø 220	50	Cont.	0.80	1350	4.40	0.440	11.35	1.135	—
					60		0.57	1600	3.90	0.390	9.30	0.930	
	S9I60GS( )-T S9I60GS( )-T1 S9I60GS( )-TCE S9I60GS( )-T1CE	4	60	3 Ø 380	50	Cont.	0.27	1300	4.60	0.460	8.25	0.825	—
					60		0.24	1550	3.90	0.390	6.50	0.650	
				3 Ø 400	50	Cont.	0.29	1300	4.70	0.470	9.30	0.930	
					60		0.25	1550	4.00	0.400	7.35	0.735	
				3 Ø 415	50	Cont.	0.27	1350	4.60	0.460	9.95	0.995	
					60		0.23	1600	3.80	0.380	7.50	0.750	
				3 Ø 440	50	Cont.	0.31	1350	4.70	0.470	10.75	1.075	
					60		0.25	1600	3.90	0.390	8.40	0.840	

❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of the model name indicates that it is thermally protected type which has received CE with built-in TP.)
또한 기종명 S9I40GX, S9I40GX-T, S9I40GS-T는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S9I40GX, S9I40GX-T, S9I40GS-T is thermally protected type with TP mounted.)

❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

❖ 삼상 380V~440V 모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

REVERSIBLE MOTOR - 30MINUTES RATING

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9R60GA( )-T S9R60GA( )-T1 S9R60GA( )-T(TP) S9R60GA( )-T1(TP) S9R60GA( )-TCE S9R60GA( )-T1CE	4	60	1 Ø 110	60	30min.	1.60	1600	3.80	0.380	7.00	0.700	25.0
	S9R60GB( )-T S9R60GB( )-T1 S9R60GB( )-T(TP) S9R60GB( )-T1(TP) S9R60GB( )-TCE S9R60GB( )-T1CE	4	60	1 Ø 220	60	30min.	0.75	1600	3.80	0.380	7.00	0.700	6.0
	S9R60GC( )-T S9R60GC( )-T1 S9R60GC( )-T(TP) S9R60GC( )-T1(TP) S9R60GC( )-TCE S9R60GC( )-T1CE	4	60	1 Ø 100	50	30min.	1.40	1250	4.80	0.480	6.00	0.600	25.0
					60		1.60	1550	3.90	0.390			
	S9R60GD( )-T S9R60GD( )-T1 S9R60GD( )-T(TP) S9R60GD( )-T1(TP) S9R60GD( )-TCE S9R60GD( )-T1CE	4	60	1 Ø 200	50	30min.	0.70	1250	4.80	0.480	5.50	0.550	6.0
					60		0.76	1550	3.90	0.390			
	S9R60GE( )-T S9R60GE( )-T1 S9R60GE( )-TCE S9R60GE( )-T1CE	4	60	1 Ø 100	50	30min.	1.40	1250	4.80	0.480	5.90	0.590	25.0
					60		1.60	1550	3.90	0.390			
				1 Ø 115	60		1.30	1600	3.90	0.390	6.00	0.600	20.0
	S9R60GX( )-T S9R60GE( )-T1CE S9R60GX( )-TCE S9R60GX( )-T1CE	4	60	1 Ø 220	50	30min.	0.63	1250	4.80	0.480	5.90	0.590	5.0
				1 Ø 240			0.67		5.00	0.500	6.30	0.630	

❖ 기종명 S9R60GE-T는 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S9R60GE-T type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)

❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S9R60GE( )-TCE는 115V용 사양으로만 출하됩니다. (CE marked at the end of the model name indicates that it is thermally protected type which has received CE. S9R60GE-TCE is available only for 115V specification.)

❖ 기종명 맨 끝자리에 TP가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9R60GE-T, S9R60GX-T는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S9R60GE-T, S9R60GX-T is thermally protected type with TP mounted.)

❖ 본 DATA는 BRAKE BLOCK을 MOTOR에 장착된 상태에서 측정한 DATA입니다. (Above data is measured with friction brake mounted.)

❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

50Hz

GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KC□B( )	kg-cm	12.2	14.6	20.3	24.3	30.4	36.5	40.5	45.6	54.8	65.7	73.0	82.5	99.0	119	132	165	198	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.196	1.431	1.989	2.381	2.989	3.577	3.969	4.469	5.370	6.439	7.154	8.085	9.702	11.66	12.94	16.17	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60

60Hz

GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KC□B( )	kg-cm	9.72	11.7	16.2	19.4	24.3	29.2	32.4	36.5	43.8	52.6	58.4	66.0	79.2	95.0	106	132	158	177	200	200	200	200	200	200
S9KC□B( )-S	N·m	0.953	1.147	1.588	1.901	2.381	2.862	3.175	3.577	4.292	5.155	5.723	6.468	7.762	9.310	10.39	12.94	15.48	17.35	19.60	19.60	19.60	19.60	19.60	19.60

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)

❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)

❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 200kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.)

❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)

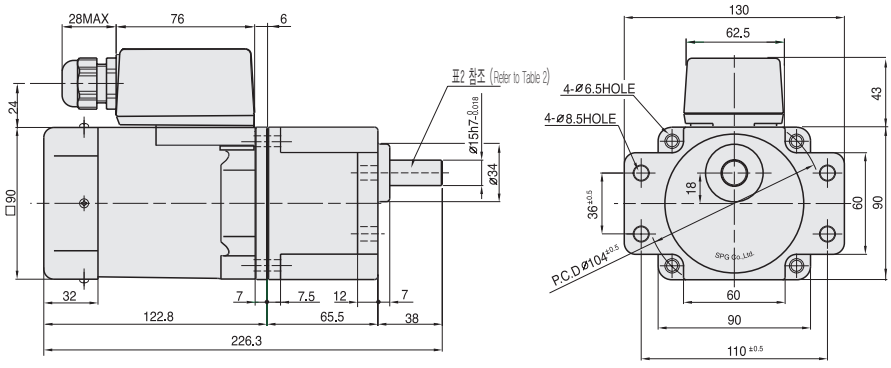
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)

❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)

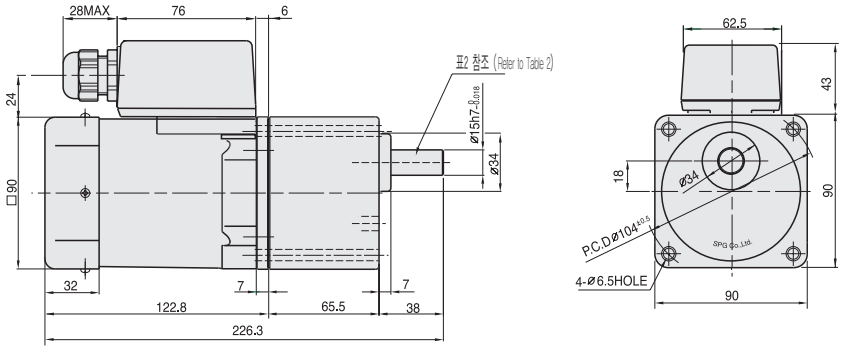
DIMENSIONS

GEARED MOTOR

※MOTOR MODEL : S9(I,R)60G□□-T
※HEAD MODEL □ : S9□C3B□-S~S9□C200B□-S

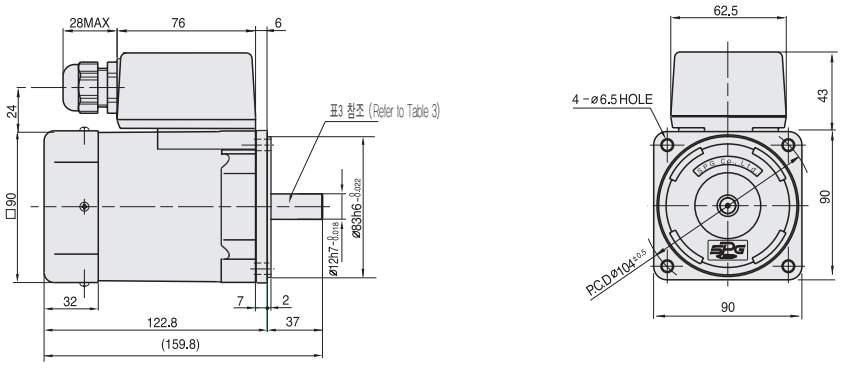


※HEAD MODEL : S9□C3B□~S9□C200B□



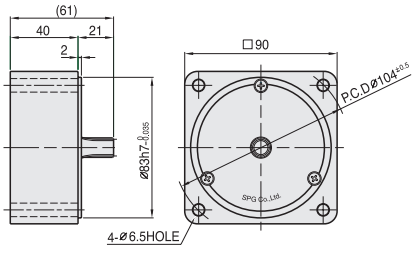
MOTOR

※MOTOR MODEL : S9(I,R)60□□□-T



INTER-DECIMAL GEAR HEAD

※ MODEL : S9GX10B(H,L)-S



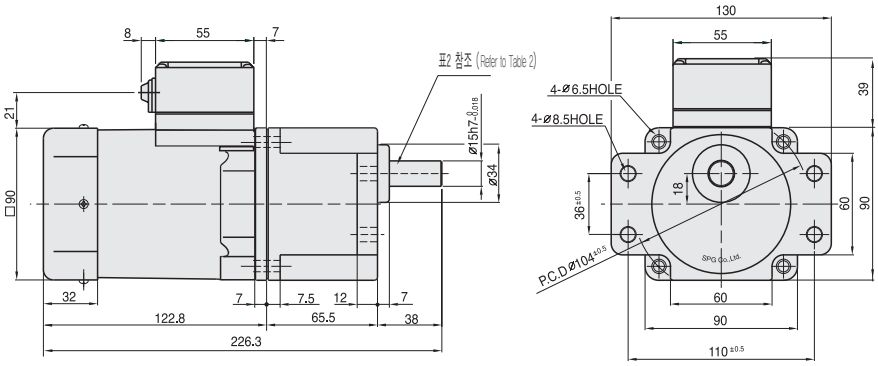
WEIGHT - (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.60
REVERSIBLE MOTOR		2.65
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3B□ ~S9□C10B□	1.21
	S9□C12.5B□ ~S9□C20B□	1.30
	S9□C25B□ ~S9□C60B□	1.40
	S9□C75B□ ~S9□C200B□	1.45

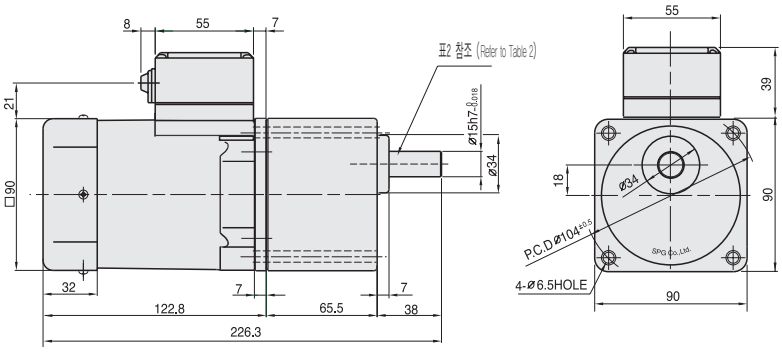
DIMENSIONS

GEARED MOTOR

※MOTOR MODEL : S9(I,R)60G□□-T1
※HEAD MODEL : S9□C3B□-S~S9□C200B□-S

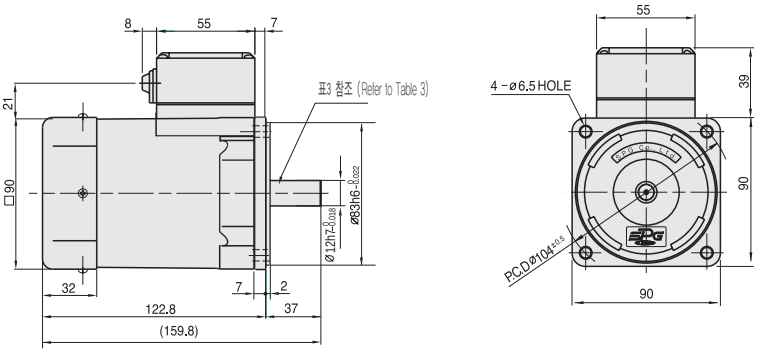


※HEAD MODEL □ : S9□C3B□~S9□C200B□



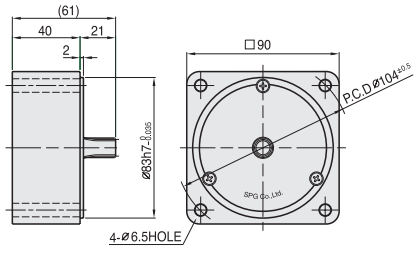
MOTOR

※MOTOR MODEL : S9(I,R)60□□□-T1



INTER-DECIMAL GEAR HEAD

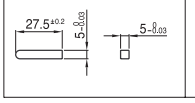
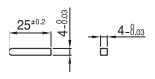
※ MODEL : S9GX10B(H,L)-S



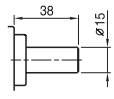
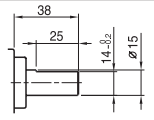
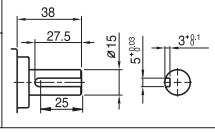
WEIGHT - (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.55
REVERSIBLE MOTOR		2.60
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3B□ ~S9□C10B□	1.21
	S9□C12.5B□ ~S9□C20B□	1.30
	S9□C25B□ ~S9□C60B□	1.40
	S9□C75B□ ~S9□C200B□	1.45

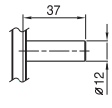
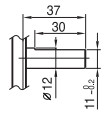
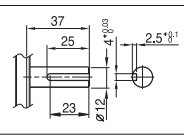
KEY SPEC

GEAR HEAD	MOTOR
	

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SC3B□ ~S9SC200B□	
D-CUT TYPE S9DC3B□ ~S9DC200B□	
KEY TYPE S9KC3B□ ~S9KC200B□	

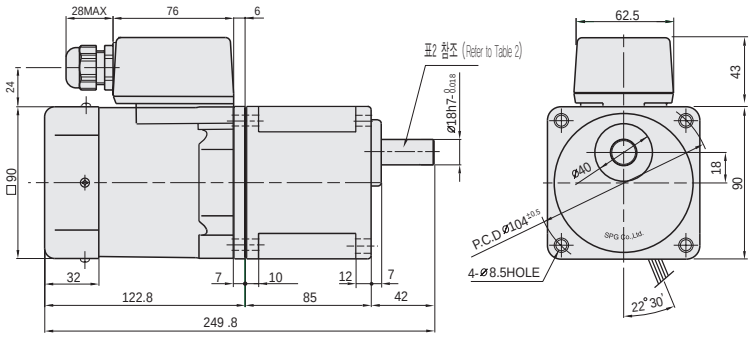
MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9(I,R)60G□□-T S9(I,R)60G□□-T1	
STRAIGHT TYPE S9(I,R)60S□-T S9(I,R)60S□-T1	
D-CUT TYPE S9(I,R)60D□-T S9(I,R)60D□-T1	
KEY TYPE S9(I,R)60K□-T S9(I,R)60K□-T1	

DIMENSIONS

✚ GEARED MOTOR

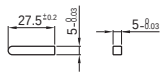
※MOTOR MODEL : S9(I,R)60G□H-T
※HEAD MODEL : S9□D3B~S9□D200B



✚ WEIGHT – (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		2.60
GEAR HEAD	S9□D3B ~S9□D10B	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

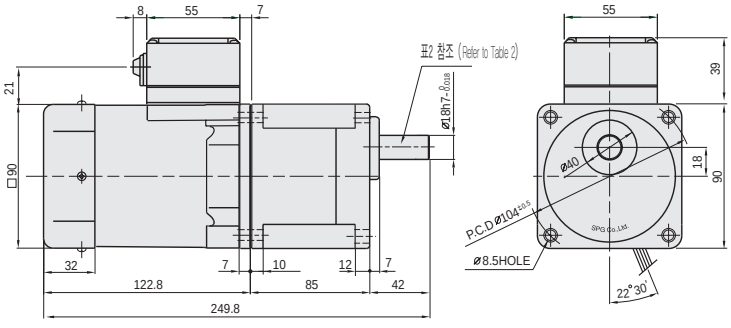
✚ KEY SPEC

GEAR HEAD


DIMENSIONS

✚ GEARED MOTOR

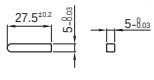
※MOTOR MODEL : S9(I,R)60G□H-T1
※HEAD MODEL : S9□D3B~S9□D200B



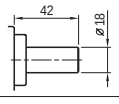
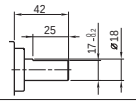
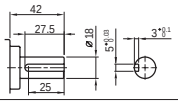
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.55
GEAR HEAD	S9□D3B ~S9□D10B	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)	MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)	MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE		D-CUT TYPE		KEY TYPE	
S9SD3B ~S9SD200B		S9DD3B ~S9DD200B		S9KDB ~S9KD200B	

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KD□B	kg-cm	12.2	14.6	20.3	24.3	30.4	36.5	40.5	45.6	54.8	65.7	73.0	82.5	99.0	119	132	165	198	221	266	295	300	300	300	300
	N·m	1.196	1.431	1.989	2.381	2.989	3.577	3.969	4.469	5.370	6.439	7.154	8.085	9.702	11.66	12.94	16.17	19.40	21.67	26.09	28.93	29.42	29.42	29.42	29.42

60Hz

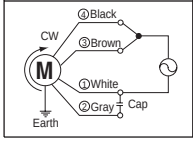
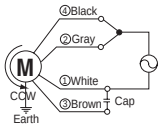
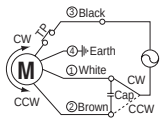
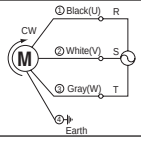
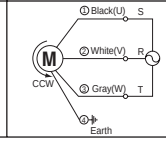
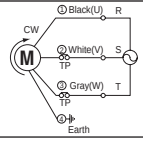
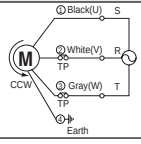
MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KD□B	kg-cm	9.72	11.7	16.2	19.4	24.3	29.2	32.4	36.5	43.8	52.6	58.4	66.0	79.2	95.0	106	132	158	177	212	236	283	300	300	300
	N·m	0.953	1.147	1.588	1.901	2.381	2.862	3.175	3.577	4.292	5.155	5.723	6.468	7.762	9.310	10.39	12.94	15.48	17.35	20.79	23.14	27.75	29.42	29.42	29.42

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 300kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. MOTOR의 H와 사용하여 주십시오. (Only "H" type is applicable. Please use "H" type motor.)

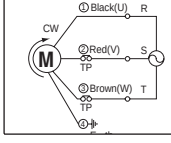
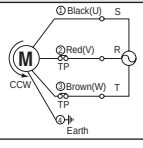
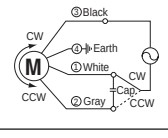
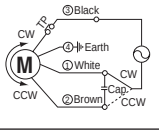
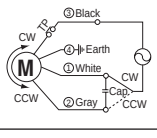
SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. 원안의 번호는 TERMINAL BOX 내의 단자 번호입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor. Circled number is the terminal number inside terminal box.)

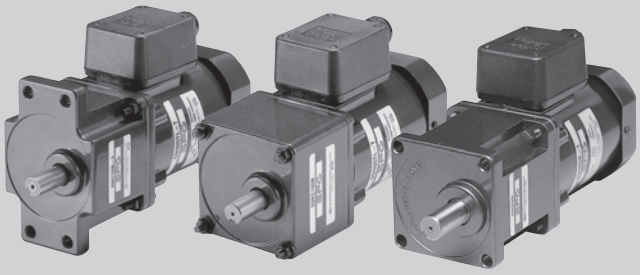
■INDUCTION MOTOR

S9I60GA( )-T S9I60GB( )-T S9I60GC( )-T S9I60GD( )-T S9I60GA( )-T1S9I60GB( )-T1 S9I60GC( )-T1 S9I60GD( )-T1		S9I60GX( )-T S9I60GX( )-TCE S9I60GX( )-T1 S9I60GX( )-T1CE	S9I60GU( )-T S9I60GT( )-T S9I60GU( )-T1 S9I60GT( )-T1		S9I60GU( )-TCE S9I60GT( )-TCE S9I60GU( )-T1CE S9I60GT( )-T1CE	
CW	**CCW**	**CW,CCW**	**CW**	**CCW**	**CW**	**CCW**
						

■REVERSIBLE MOTOR

S9I60GS( )-TCE S9I60GS( )-T S9I60GS( )-T1CE S9I60GS( )-T1	S9R60GA( )-T, S9R60GB( )-T S9R60GA( )-T1, S9R60GB( )-T1 S9R60GC( )-T, S9R60GD( )-T S9R60GC( )-T1, S9R60GD( )-T1	S9R60GX( )-T, S9R60GX( )-TCE S9R60GX( )-T1, S9R60GX( )-T1CE	S9R60GA( )-T(TP), S9R60GB( )-T(TP), S9R60GC( )-T(TP), S9R60GD( )-T(TP), S9R60GA( )-T1(TP), S9R60GB( )-T1(TP), S9R60GC( )-T1(TP), S9R60GD( )-T1(TP), S9R60GA( )-TCE , S9R60GB( )-TCE , S9R60GC( )-TCE S9R60GD( )-TCE , S9R60GE( )-T , S9R60GE( )-TCE S9R60GA( )-T1CE , S9R60GB( )-T1CE , S98R60GC( )-T1CE S9R60GD( )-T1CE , S9R60GE( )-T1 , S9R60GE( )-T1CE
CW **CCW**	**CW,CCW**	**CW,CCW**	**CW,CCW**
						

주의 : INDUCTION MOTOR 회전방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나, 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



90W

INDUCTION MOTOR, REVERSIBLE MOTOR
□90㎜ TERMINAL BOX TYPE

INDUCTION MOTOR - CONTINUOUS RATING

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9I90GA( )-T S9I90GA( )-T1	4	90	1Ø 110	60	Cont.	2.00	1600	5.60	0.560	5.70	0.570	25.0
	S9I90GB( )-T S9I90GB( )-T1	4	90	1Ø 220	60	Cont.	1.00	1600	5.60	0.560	5.70	0.570	6.0
	S9I90GC( )-T S9I90GC( )-T1	4	90	1Ø 100	50	Cont.	1.80	1300	6.90	0.690	5.00	0.500	25.0
					60		2.00	1550	5.80	0.580			
	S9I90GD( )-T S9I90GD( )-T1	4	90	1Ø 200	50	Cont.	0.90	1300	6.90	0.690	5.00	0.500	6.0
					60		1.00	1550	5.80	0.580			
	S9I90GX( )-T S9I90GX( )-T1 S9I90GX( )-TCE S9I90GX( )-T1CE	4	90	1Ø 220	50	Cont.	0.68	1300	6.90	0.690	4.80	0.480	5.0
				1Ø 240			0.72		7.20	0.720	5.20	0.520	
	S9I90GU( )-T S9I90GU( )-T1 S9I90GU( )-TCE S9I90GU( )-T1CE	4	90	3Ø 200	50	Cont.	0.63	1300	6.90	0.690	10.60	1.060	—
					60		0.60	1550	6.00	0.600	8.90	0.890	
	S9I90GT( )-T S9I90GT( )-T1 S9I90GT( )-TCE S9I90GT( )-TCE1	4	90	3Ø 220	50	Cont.	0.68	1350	6.80	0.680	13.00	1.300	—
					60		0.55	1600	5.70	0.570	10.50	1.050	
	S9I90GS( )-T S9I90GS( )-T1 S9I90GS( )-TCE S9I90GS( )-TCE	4	90	3Ø 380	50	Cont.	0.32	1300	6.80	0.680	10.55	1.055	—
					60		0.30	1550	5.70	0.570	8.20	0.820	
				3Ø 400	50	Cont.	0.35	1300	6.90	0.690	11.70	1.170	
					60		0.32	1550	5.80	0.580	8.90	0.890	
				3Ø 415	50	Cont.	0.33	1350	6.80	0.680	12.00	1.200	
					60		0.29	1600	5.70	0.570	9.50	0.950	
				3Ø 440	50	Cont.	0.35	1350	6.90	0.690	13.30	1.330	
					60		0.31	1600	5.80	0.580	10.50	1.050	

❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of the model name indicates that it is thermally protected type which has received CE with built-in TP.)
또한 기종명 S9I90GX-T, S9I90GS-T는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S9140GX, S9140GX-T, S9140GS-T is thermally protected type with TP mounted.)

❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

❖ 삼상 380V~440V 모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

REVERSIBLE MOTOR-30MINUTES RATING

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9R90GA( )-T S9R90GA( )-T1 S9R90GA( )-T(TP) S9R90GA( )-T1(TP) S9R90GA( )-TCE S9R90GA( )-T1CE	4	90	1Ø 110	60	30min.	2.25	1550	5.80	0.580	8.50	0.850	30.0
	S9R90GB( )-T S9R90GB( )-T1 S9R90GB( )-T(TP) S9R90GB( )-T1(TP) S9R90GB( )-TCE S9R90GB( )-T1CE	4	90	1Ø 220	60	30min.	1.00	1550	5.80	0.580	8.50	0.850	7.0
	S9R90GC( )-T S9R90GC( )-T1 S9R90GC( )-T(TP) S9R90GC( )-T1(TP) S9R90GC( )-TCE S9R90GC( )-T1CE	4	90	1Ø 100	50	30min.	2.10	1200	7.50	0.750	6.50	0.650	30.0
					60		2.25	1500	6.00	0.600			
	S9R90GD( )-T S9R90GD( )-T1 S9R90GD( )-T(TP) S9R90GD( )-T1(TP) S9R90GD( )-TCE S9R90GD( )-T1CE	4	90	1Ø 200	50	30min.	0.90	1200	7.50	0.750	6.50	0.650	7.0
					60		1.00	1500	6.00	0.600			
	S9R90GE( )-T S9R90GE( )-T1 S9R90GE( )-TCE S9R90GE( )-T1CE	4	90	1Ø 100	50	30min.	1.80	1200	7.50	0.750	6.50	0.650	30.0
					60		1.90	1500	6.00	0.600			
				1Ø 115	60		1.80	1550	6.00	0.600	8.00	0.800	25.0
	S9R90GX( )-T S9R90GX( )-T1 S9R90GX( )-TCE S9R90GX( )-T1CE	4	90	1Ø 220	50	30min.	0.82	1250	7.20	0.720	6.50	0.650	6.0
				1Ø 240			0.86		7.40	0.740	8.00	0.800	

❖ 기종명 S9R90GE-T는 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S9R60GE-T type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)

❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S9R90GE( )-TCE는 115V용 사양으로만 출하됩니다. (CE marked at the end of the model name indicates that it is thermally protected type which has received CE. S9R60GE-TCE is available only for 115V specification.)

❖ 기종명 맨 끝자리에 TP가 명기된 MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9R90GE-T, S9R90GX-T는 (TP)가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S9R60GE-T, S9R60GX-T is thermally protected type with TP mounted.)

❖ 본 DATA는 BRAKE BLOCK을 MOTOR에 장착된 상태에서 측정한 DATA입니다. (Above data is measured with friction brake mounted.)

❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KC□B( )	kg-cm	18.2	21.9	30.4	36.5	45.6	54.7	60.8	68.4	82.1	98.6	110	124	149	178	198	200	200	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.784	2.146	2.979	3.577	4.469	5.361	5.958	6.703	8.046	9.663	10.78	12.15	14.60	17.44	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60

60Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KC□B( )	kg-cm	14.6	17.5	24.3	29.2	36.5	43.7	48.6	54.8	65.7	78.8	87.6	99.0	119	143	158	198	200	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.431	1.715	2.381	2.862	3.577	4.675	4.763	5.370	6.439	7.722	8.585	9.702	11.66	14.01	15.48	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)

❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)

❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 200㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.)

❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)

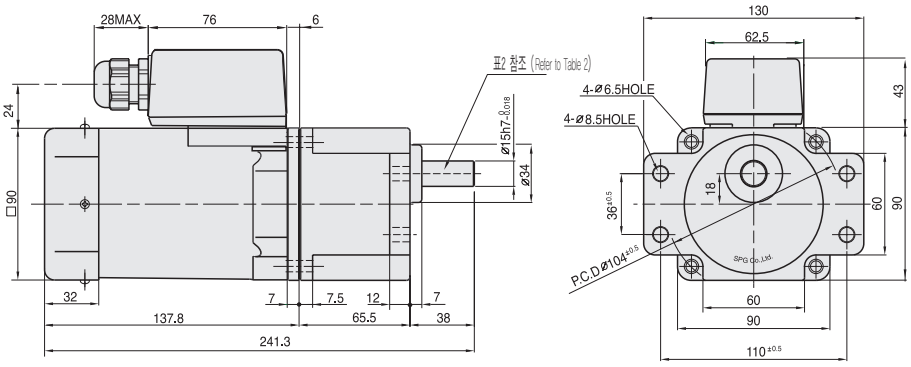
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)

❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)

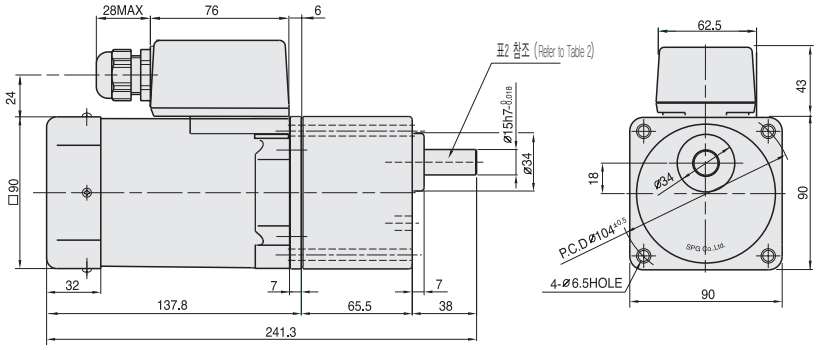
DIMENSIONS

✚ GEARED MOTOR

※MOTOR MODEL : S9(I,R)90G□□-T
※HEAD MODEL : S9□C3B□-S~S9□C200B□-S

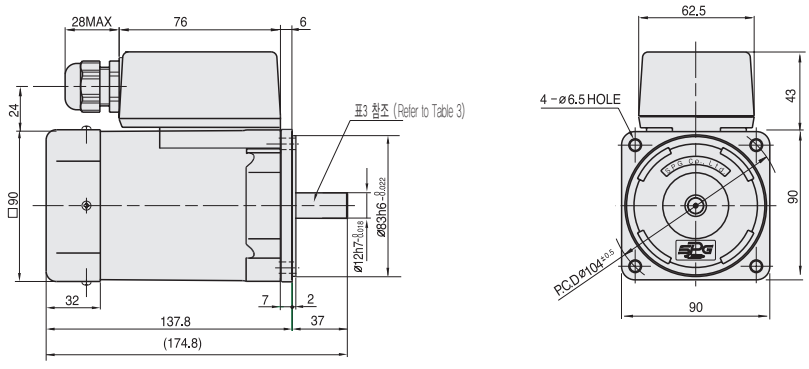


※HEAD MODEL □ : S9□C3B□~S9□C200B□



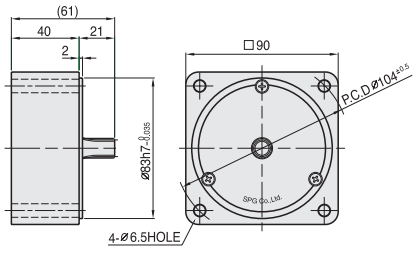
✚ MOTOR

※MOTOR MODEL : S9(I,R)90□□□-T



✚ INTER-DECIMAL GEAR HEAD

※ MODEL : S9GX10B(H,L)-S



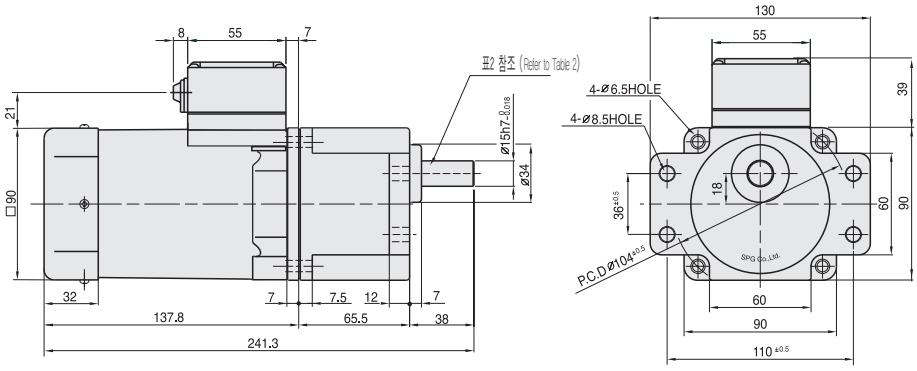
✚ WEIGHT - (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.10
REVERSIBLE MOTOR		3.15
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3B□ ~S9□C10B□	1.21
	S9□C12.5B□ ~S9□C20B□	1.30
	S9□C25B□ ~S9□C60B□	1.40
	S9□C75B□ ~S9□C200B□	1.45

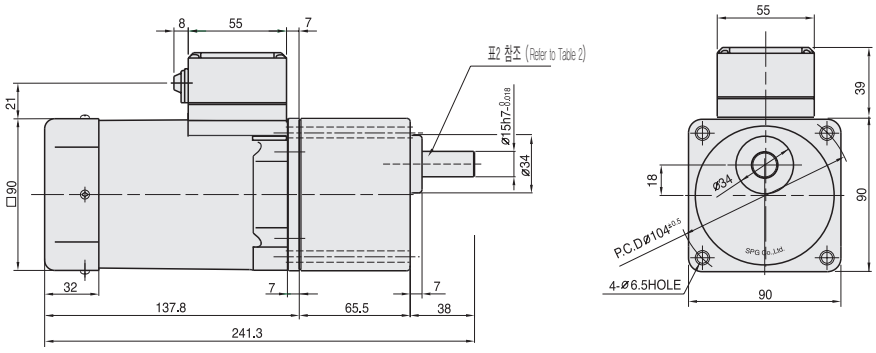
DIMENSIONS

GEARED MOTOR

※MOTOR MODEL : S9(I,R)90G□□-T1
※HEAD MODEL : S9□C3B□-S~S9□C200B□-S

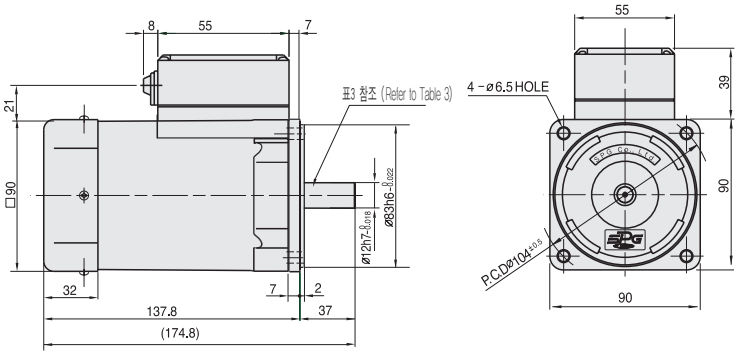


※HEAD MODEL : S9□C3B□~S9□C200B□



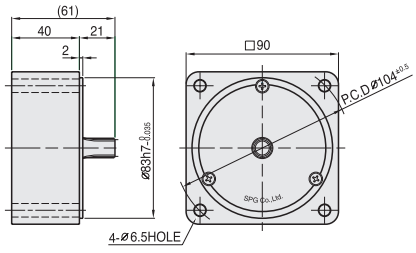
MOTOR

※MOTOR MODEL : S9(I,R)90□□□-T1



INTER-DECIMAL GEAR HEAD

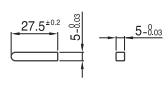
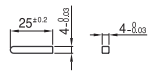
※MODEL : S9GX10B(H,L)-S



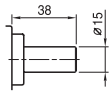
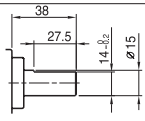
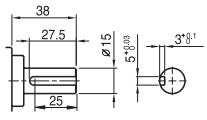
WEIGHT - (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.05
REVERSIBLE MOTOR		3.10
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3B□ ~S9□C10B□	1.21
	S9□C12.5B□ ~S9□C20B□	1.30
	S9□C25B□ ~S9□C60B□	1.40
	S9□C75B□ ~S9□C200B□	1.45

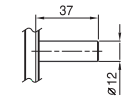
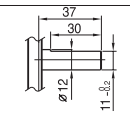
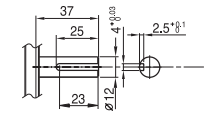
KEY SPEC

GEAR HEAD	MOTOR
	

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SC3B□ ~S9SC200B□	
D-CUT TYPE S9DC3B□ ~S9DC200B□	
KEY TYPE S9KC3B□ ~S9KC200B□	

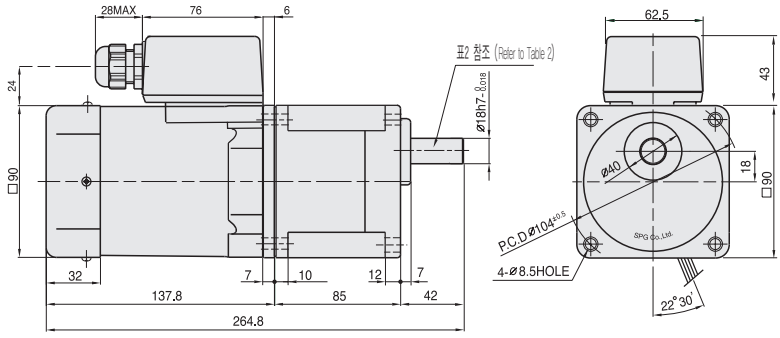
MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9(I,R)90G□□-T S9(I,R)90G□□-T1	
STRAIGHT TYPE S9(I,R)90S□-T S9(I,R)90S□-T1	
D-CUT TYPE S9(I,R)90D□-T S9(I,R)90D□-T1	
KEY TYPE S9(I,R)90K□-T S9(I,R)90K□-T1	

DIMENSIONS

✚ GEARED MOTOR

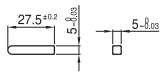
※MOTOR MODEL : S9(I,R)90G□H-T
※HEAD MODEL : S9□D3B~S9□D200B



✚ WEIGHT – (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		3.10
GEAR HEAD	S9□D3B ~S9□D10B	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

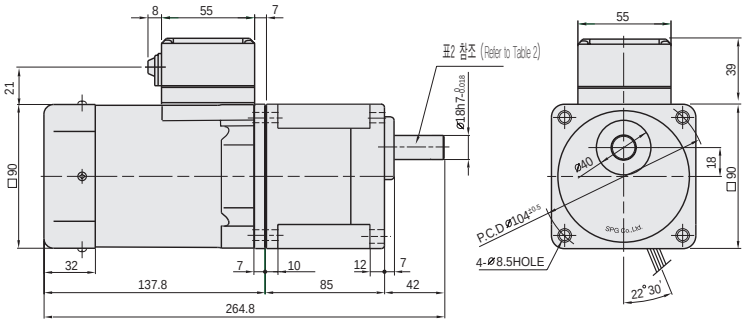
✚ KEY SPEC

GEAR HEAD


DIMENSIONS

✚ GEARED MOTOR

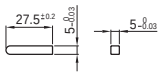
※MOTOR MODEL : S9(I,R)90G□H-T1
※HEAD MODEL : S9□D3B~S9□D200B



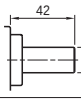
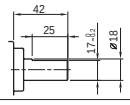
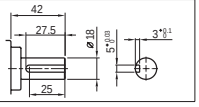
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.05
GEAR HEAD	S9□D3B ~S9□D10B	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)	MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)	MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE		D-CUT TYPE		KEY TYPE	
S9SD3B ~S9SD200B		S9DD3B ~S9DD200B		S9KDB ~S9KD200B	

50Hz

MODEL	GEAR RATIO	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KD□B	kg-cm	18.2	21.9	30.4	36.5	45.6	54.7	60.8	68.4	82.1	98.6	110	124	149	178	198	248	297	300	300	300	300	300	300	300
	N·m	1.784	2.146	2.979	3.577	4.469	5.361	5.958	6.703	8.046	9.663	10.78	12.15	14.60	17.44	19.40	24.32	29.13	29.42	29.42	29.42	29.42	29.42	29.42	29.42

60Hz

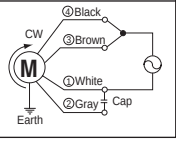
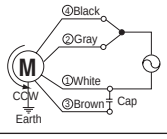
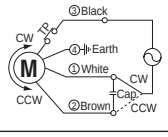
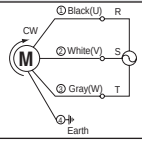
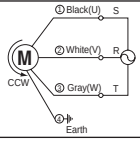
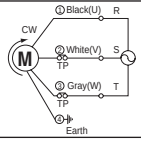
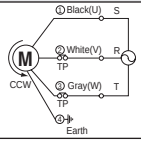
MODEL	GEAR RATIO	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KD□B	kg-cm	14.6	17.5	24.3	29.2	36.5	43.7	48.6	54.8	65.7	78.8	87.6	99.0	119	143	158	198	238	266	300	300	300	300	300	300
	N·m	1.431	1.715	2.381	2.862	3.577	4.675	4.763	5.370	6.439	7.722	8.585	9.702	11.66	14.01	15.48	19.40	23.34	26.09	29.42	29.42	29.42	29.42	29.42	29.42

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque (in small letters to be consistent with others) of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 300kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. MOTOR의 H와 사용하여 주십시오. (Only "H" type is applicable. Please use "H" type motor.)

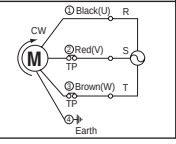
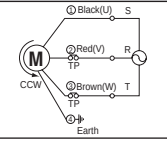
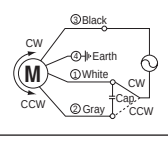
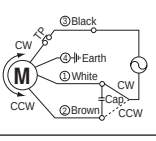
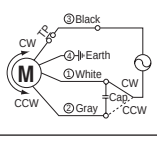
SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. 원안의 번호는 TERMINAL BOX 내의 단자 번호입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor. Circled number is the terminal number inside terminal box.)

■INDUCTION MOTOR

S9I90GA( )-T S9I90GB( )-T S9I90GC( )-T S9I90GD( )-T S9I90GA( )-T1S9I90GB( )-T1 S9I90GC( )-T1 S9I90GD( )-T1		S9I90GX( )-T S9I90GX( )-TCE S9I90GX( )-T1 S9I90GX( )-T1CE		S9I90GU( )-T S9I90GT( )-T S9I90GU( )-T1 S9I90GT( )-T1		S9I90GU( )-TCE S9I90GT( )-TCE S9I90GU( )-T1CE S9I90GT( )-T1CE	
CW	**CCW**	**CW,CCW**		**CW**	**CCW**	**CW**	**CCW**
							

■REVERSIBLE MOTOR

S9I90GS( )-TCE S9I90GS( )-T S9I90GS( )-T1CE S9I90GS( )-T1		S9R90GA( )-T, S9R90GB( )-T S9R90GA( )-T1, S9R90GB( )-T1 S9R90GC( )-T, S9R90GD( )-T S9R90GC( )-T1, S9R90GD( )-T1		S9R90GX( )-T, S9R90GX( )-TCE S9R90GX( )-T1, S9R90GX( )-T1CE	S9R90GA( )-T(TP), S9R90GB( )-T(TP), S9R90GC( )-T(TP), S9R90GD( )-T(TP), S9R90GA( )-T1(TP), S9R90GB( )-T1(TP), S9R90GC( )-T1(TP), S9R90GD( )-T1(TP), S9R90GA( )-TCE , S9R90GB( )-TCE , S9R90GC( )-TCE S9R90GD( )-TCE , S9R90GE( )-T , S9R90GE( )-TCE S9R90GA( )-T1CE , S9R90GB( )-T1CE , S98R90GC( )-T1CE S9R90GD( )-T1CE , S9R90GE( )-T1 , S9R90GE( )-T1CE
CW	**CCW**	**CW,CCW**		**CW,CCW**	**CW,CCW**
					

주의 : INDUCTION MOTOR 회전방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나, 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



150W

INDUCTION MOTOR
□90㎜ TERMINAL BOX TYPE

INDUCTION MOTOR - CONTINUOUS RATING

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load				Starting Torque		Capacitor
							Current	Speed	Torque				
			(W)	(V)	(Hz)		(A)	(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(uF)
90	S9I150GU-T S9I150GU-T1 S9I150GU-TCE S9I150GU-T1CE	4	150	3Ø 200	50	Cont.	1.0	1250	11.70	1.170	18.0	1.800	—
					60		0.9	1500	9.70	0.970	15.0	1.500	
	S9I150GT-T S9I150GT-T1 S9I150GT-TCE S9I150GT-T1CE	4	150	3Ø 220	50	Cont.	1.0	1300	11.30	1.130	22.0	2.200	—
					60		0.9	1550	9.40	0.940	19.0	1.900	
	S9I150GS-T S9I150GS-T1 S9I150GS-TCE S9I150GS-T1CE	4	150	3Ø 380	50	Cont.	0.46	1250	11.70	1.170	18.00	1.800	—
					60		0.42	1500	9.70	0.970	15.00	1.500	
				3Ø 400	50	Cont.	0.49	1250	11.70	1.170	19.00	1.900	
					60		0.43	1500	9.70	0.970	16.00	1.900	

❖ 상기 MODEL은 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (Above model is a TP embeded and thermally protected type.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of the model name indicates that it is t hermally protected type which has received CE with built-in TP.)
❖ H Type전용으로 기종명에 표시하지 않습니다. (Only "H" type is applicable.)
❖ 삼상 380V~440V 모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KH□B	kg-cm	23.1	27.7	38.5	46.2	57.7	69.3	77.0	86.6	104	125	139	156	187	224	249	300	300	300	300	300	300	300	300	300
	N·m	2.26	2.72	3.77	4.53	5.66	6.79	7.55	8.49	10.24	12.29	13.65	15.36	18.34	21.97	24.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42

60Hz

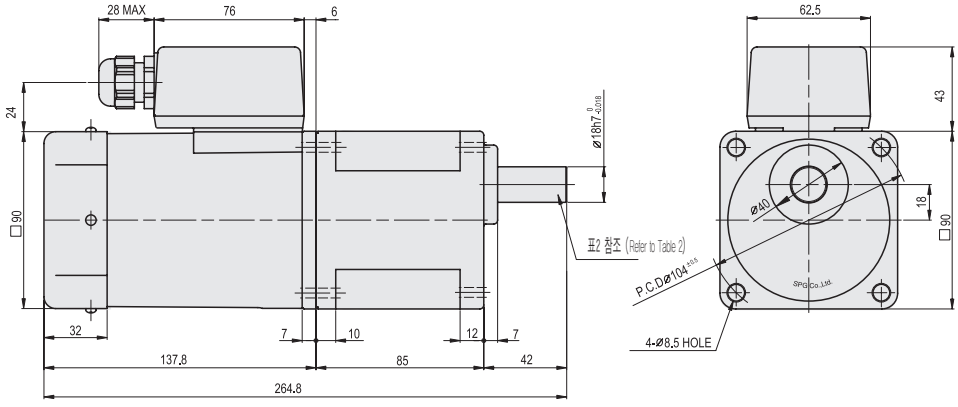
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KH□B	kg-cm	23.2	27.8	38.7	46.4	58.0	69.6	77.4	87.0	104	125	139	156	188	225	250	300	300	300	300	300	300	300	300	300
	N·m	2.28	2.73	3.79	4.55	5.69	6.83	7.59	8.53	10.24	12.29	13.65	15.36	18.43	22.06	24.52	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque (in small letters to be consistent with others) of the assembled motor and gearhead.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. (Only "H" type is applicable.)

DIMENSIONS

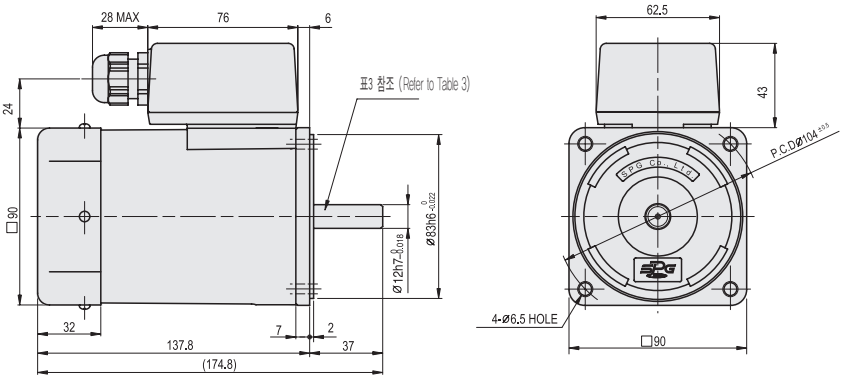
GEARED MOTOR

※MOTOR MODEL : S9I150G□-T
※HEAD MODEL : S9□H3B~S9□H200B



MOTOR

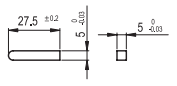
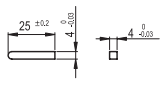
※MOTOR MODEL : S9I150□□-T



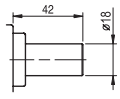
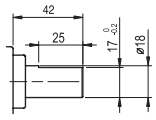
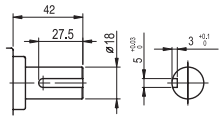
WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.10
GEAR HEAD	S9□H3B ~S9□H10B	1.65
	S9□H12.5B ~S9□H20 B	1.80
	S9□H25B ~S9□H60B	1.90
	S9□H75B ~S9□H200B	1.95

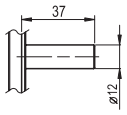
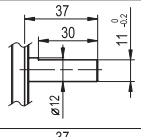
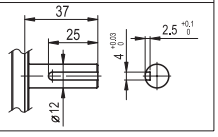
KEY SPEC

GEAR HEAD	MOTOR
	

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SH3B ~S9SH200B	
D-CUT TYPE S9DH3B ~S9DH200B	
KEY TYPE S9KH3B ~S9KH200B	

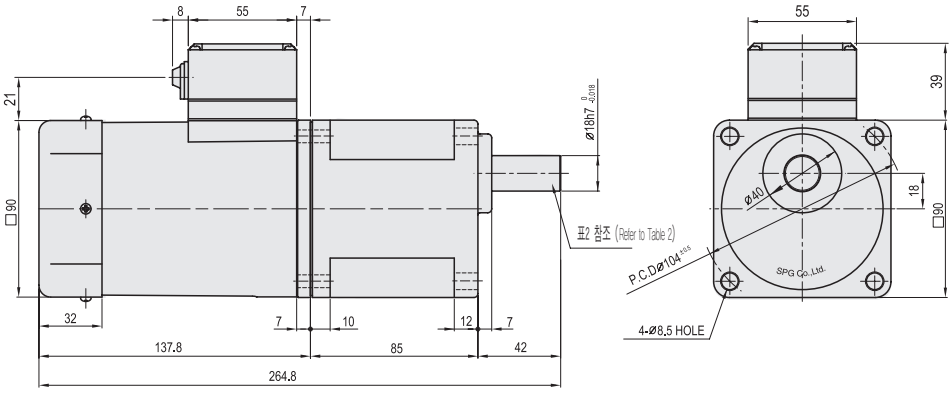
MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9I150G□-T	
STRAIGHT TYPE S9I150S□-T	
D-CUT TYPE S9I150D□-T	
KEY TYPE S9I150K□-T	

DIMENSIONS

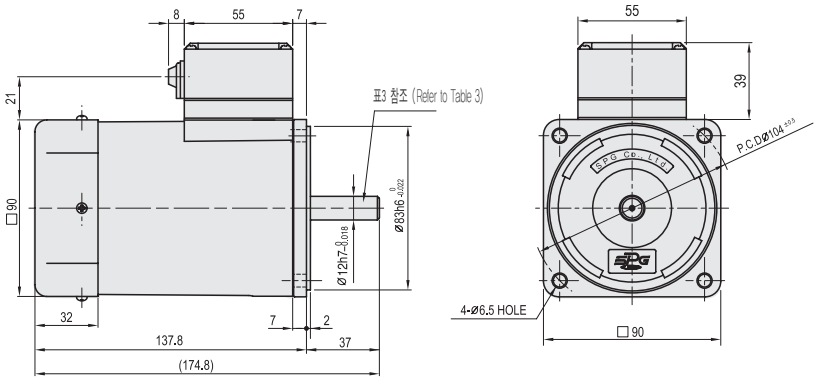
GEARED MOTOR

※MOTOR MODEL : S9I150G□-T1
※HEAD MODEL : S9□H3B~S9□H200B



MOTOR

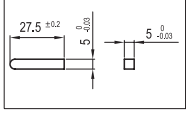
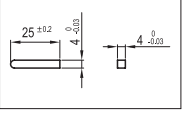
※MOTOR MODEL : S9I150□□-T1



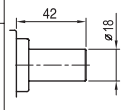
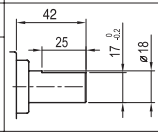
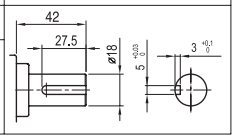
WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.05
GEAR HEAD	S9□H3B ~S9□H10B	1.65
	S9□H12.5B ~S9□H20B	1.80
	S9□H25B ~S9□H60B	1.90
	S9□H75B ~S9□H200B	1.95

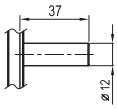
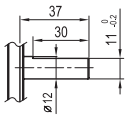
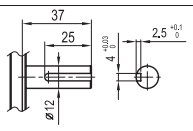
KEY SPEC

GEAR HEAD	MOTOR
	

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SH3B ~S9SH200B	
D-CUT TYPE S9DH3B ~S9DH200B	
KEY TYPE S9KH3B ~S9KH200B	

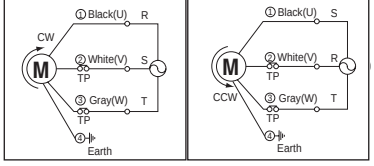
MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9I150G□-T1	
STRAIGHT TYPE S9I150S□-T1	
D-CUT TYPE S9I150D□-T1	
KEY TYPE S9I150K□-T1	

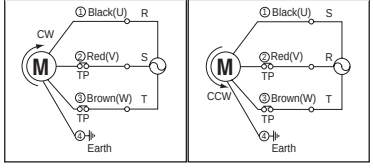
SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. 원안의 번호는 TERMINAL BOX 내의 단자 번호입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor. Circled number is the terminal number inside terminal box.)

S9I150GU-T	S9I150GU-T
S9I150GU-T1	S9I150GU-T1
S9I150GU-TCE	S9I150GU-TCE
S9I150GU-T1CE	S9I150GU-T1CE



S9I150GS-TCE	S9I150GS-T
S9I150GS-T1CE	S9I150GS-T1



주의 : INDUCTION MOTOR 회전방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나, 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)

SPEED CONTROLLER AND CONTROL MOTORS

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SPEED CONTROL MOTOR 의 특징 (CHARACTERISTICS OF SPEED CONTROL MOTORS)



1. SPEED CONTROL MOTOR의 특징 (Characteristics of Speed Control Motos)

- SPEED CONTROLLER와 같이 사용하여 넓은 범위(50Hz : 90~1400rpm, 60Hz : 90~1700rpm)의 속도를 조절할 수 있습니다. 속도조절은 속도설정기에 의해 간단하게 조절할 수 있습니다. (By using it with the speed controller, a wide range of speed can be controlled (50Hz: 90~1400rpm, 60Hz: 90~1700rpm). The speed can be controlled easily with the speed controller.)
- SPEED CONTROLER의 종류에 따라 MOTOR와 간단하게 구성하여 속도조절, 제동, SLOW RUN · SLOW STOP등 목적에 맞게 여러곳에 다양하게 사용이 가능합니다. (Depending on the type of speed controller, it can be combined with the motor for various purposes such as speed-control, braking, slow run, slow stop, etc.)
- T.G(TACHO GENERATOR)가 내장되어 있어 FEEDBACK 제어가 되도록 설계되어 있어서 전원주파수가 변하여도 회전수는 변하지 않습니다. (Built in T.G(Tacho Generator) to control the feedback. Thus, even if the power frequency changes the rotating numbers does not change.)
- 전자 BRAKE 부착 SPEED CONTROL MOTOR는 SPEED CONTROLLER를 사용하여 순시정지와 전자 BRAKE를 동시에 작용하여 강력한 제동력을 얻을 수 있습니다. (When the speed control motor with an electronic brake is used instantaneous braking and electronic braking operate simultaneously for strong braking power.)
- 또한 전자 BRAKE 부착 SPEED CONTROL MOTOR에 무여자작동형 전자 BRAKE가 부착되어 있어 전원이 OFF되어도 제동력이 작동되어 확실하게 부하의 제동을 유지시킵니다. (The speed control motor with an electronic brake also has a non-excitation run type of electronic brake. Even if the power is off, braking remains active to maintain braking of a load.)
- SPEED CONTROL MOTOR는 AC 소형 MOTOR인 INDUCTION MOTOR와 REVERSIBLE MOTOR 및 전자 BRAKE 부착 SPEED CONTROL MOTOR 등이 있으므로 용도에 맞게 선정하여 사용하여 주십시오. (There are 3 types of speed control motors: induction motor, reversible motor and speed control motor, all with an electronic brake. An appropriate motor should be selected depending on its usage.)
- MOTOR의 출력은 INDUCTION MOTOR06W~90W(단 UNIT TYPE은 6W~180W까지 입니다.) REVERSIBLE MOTOR는 6W~40W, 전자 BRAKE부착 MOTOR는 6W~40W(단, SR TYPE은 6W~90W)까지 있습니다. (Output range of the induction motor is 06W~90W (unit types are 06W~180W). The reversible motor has an output range of 06W~40W and the electronic brake motor has an output range of 06W~40W (However, SR types are 06W~90W).)

2. 선정방법 (Selection Method)

(1) MOTOR 및 CONTROLLER 선정방법 (Selection of motor and controller)

- 변속만을 필요로 하는가? (Is speed control needed only?)
- 순시정지기능이 필요한가? (Is instantaneous braking needed?)
- 제동력의 유지가 필요한가? (Is maintenance of braking power needed?)
- 적용 MOTOR의 출력은 어느 정도인가? (How much is the output of the applicable motor?)
- SLOW RUN, SLOW STOP 기능이 필요한가? (Are the slow run, slow stop functions needed?)

위의 기준으로 SPEED CONTROL MOTOR와 SPEED CONTROLLER의 종류를 검토 선정합니다. (Based on the above criteria, the type of the speed control motor and the speed controller is selected and selected.)

(2) GEAR HEAD 감속비의 선정방법 (Selection of gear ratio of gearhead)

GEAR 출력축의 회전수가 A rpm에서 B rpm까지 필요한 경우,

높은 쪽의 회전수(B rpm)를 사용하여 감속비를 계산합니다. MOTOR의 회전수는 AC SPEED CONTROL MOTOR의 경우 1300rpm으로 계산합니다.(1300rpm일 때의 출력 TORQUE가 크고, 사용한계범위가 크기 때문입니다.

감속비 (at Gear Ratio) $i = \frac{1300[rpm]}{B[rpm]}$ 에서 계산치로 가장 근사치 값의 GEAR HEAD(감속비=i)를 사용하여 주십시오.

(When the number of rotations of the output shaft of the gear requires A rpm to B rpm, the gear ratio is calculated by using the higher number of rotations (B rpm). For the AC speed control motor, the number of rotations for the motor is calculated with 1300rpm. (1300 rpm is used as a numerator since the largest output torque is required and 1300 rpm is most frequently used). Use the nearest approximated value of the gearhead (gear ratio = i))

(3) MOTOR축의 최고회전수와 최저회전수 (Highest number of rotations and lowest number of rotations of the motor shaft)

- MOTOR의 최고회전수를 NH, 최저회전수를 NL 이라고 하면 다음과 같습니다. (When the highest number of rotations is NH and the lowest number of rotations is NL, they are as follows.)
- 소요 MOTOR의 최고회전수 (Highest number of rotations of the required motor) : $NH = B \times i$[rpm]
- 소요 MOTOR의 최저회전수 (Lowest number of rotations of the required motor) : $NL = A \times i$[rpm]

(4) MOTOR의 소요 TORQUE (Required torque of the motor)

MOTOR의 소요 TORQUE는 다음 식과 같이 구합니다. (The required torque of the motor is found as follows.)

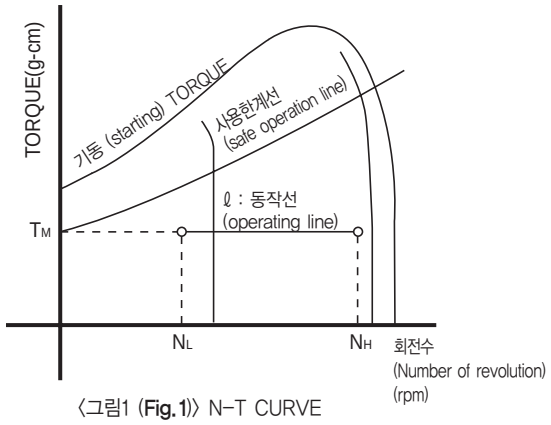
$$T_M = \frac{T_L}{i \times \eta} \quad [g \cdot cm]$$

여기서 TM : MOTOR의 소요 TORQUE
(required torque of the motor) [g · cm]
T_L : 실제 부하를 구동하기 위하여 필요한 TORQUE
(torque necessary to operate actual load) [g · cm]
i : 감속비 (reduction ratio)
η : GEAR HEAD의 효율 (efficiency of the gearhead)

(5) MOTOR의 선정방법 (Selection of the motor)

- MOTOR의 소요 TORQUE TM과 회전수 NL~NH 및 MOTOR의 TORQUE-회전수 특성곡선(이하 N-T CURVE라고 합니다.)으로부터 MOTOR를 결정 합니다.
  AC SPEED CONTROL MOTOR의 경우 〈그림1〉의 특성곡선 중 동작선 이 사용한계선의 아래에 있는 MOTOR를 선정합니다.
  (The motor is decided by the required torque TM, rotational frequencies NL~NH and the torque-number of rotations curve (hereafter, N-T curve). When selecting an AC speed control motor, choose the motor with its operating line below the safe operation line shown in 〈Fig. 1〉)

(사용한계선의 위의 영역에서도 MOTOR의 운전조건 등에 의하여 MOTOR표면 온도가 90°C이하이면 사용상 문제는 없습니다.
(Even in the area above the limit curve, the motor can be used without any problems as long as the surface temperature remains below 90°C.)



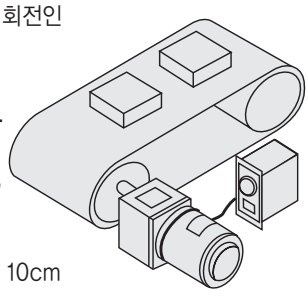
〈그림1 (**Fig.1**)〉 N-T CURVE

(6) GEAR HEAD의 선정방법 (Selection of gearhead)

- 이상의 방법으로 MOTOR가 선정되면 다음으로 부하의 TORQUE의 크기를 생각하여 GEAR HEAD의 품명을 결정합니다. 이때 부하 TORQUE가 GEAR HEAD의 허용 TORQUE 이내인 것을 확인하여 주십시오. (After the motor is selected, the gearhead should be decided with consideration of the torque size of the load. Confirm that the torque of the load is within the torque allowed by the gearhead.)

3. 선정계산의 예〈그림2〉 (Example of selecting the appropriate motor)

BELT CONVEYOR의 한쪽방향 회전인 경우 이송되는 물건의 속도를 1m/minute, 2m/minute, 4m/minute 3단계로 변화합니다.
Conditions: One way rotation, changing speed within 1m/minute, 2m/minute and 4m/minute.



〈그림2 (**Fig.2**)〉

DRUM의 직경 (Drum diameter) : 10cm
구동 (Operating) TORQUE : 30kg · cm
전원 (Power) : 단상 (single phase) 220V 60Hz
비상시에는 순시 정지하지만 유지력은 없는 경우 (instantaneous braking in emergencies, but no holding power.)

(1) MOTOR와 CONTROLLER

- 한쪽방향운동이며, 유지력이 없으므로 INDUCTION MOTOR를 선정합니다. (Rotation is in one direction and there is no holding power. Therefore, the induction motor is selected.)

(2) GEAR HEAD 출력축의 회전수 (Revolutions of output shaft of gearhead)

- BELT CONVEYOR 속도 1m/minute일 때 GEAR HEAD축의 회전수 (The number of rotations of the gearhead shaft when the belt conveyor speed is 1m/minute.)

$$\underset{\text{(Number of rotations)}}{\text{회전수}} = \frac{\text{BELT CONVEYOR 속도 (Speed)}}{\text{DRUM 외경 (Outer diameter of drum)}} = \frac{100}{10\pi} \fallingdotseq 3.18[\text{rpm}]$$

- BELT CONVERYOR 속도 2m/minute일 때 GEAR HEAD축의 회전수 (Number of rotations of the gearhead shaft when the belt conveyor speed is 2m/minute.)

$$\underset{\text{(Number of rotations)}}{\text{회전수}} = \frac{\text{BELT CONVEYOR 속도 (Speed)}}{\text{DRUM 외경 (Outer diameter of drum)}} = \frac{200}{10\pi} \fallingdotseq 6.37[\text{rpm}]$$

- BELT CONVERYOR 속도 4m/minute일 때 GEAR HEAD축의 회전수 (Number of rotations of the gearhead shaft when the belt conveyor speed is 4m/minute.)

$$\underset{\text{(Number of rotations)}}{\text{회전수}} = \frac{\text{BELT CONVEYOR 속도 (Speed)}}{\text{DRUM 외경 (Outer diameter of drum)}} = \frac{400}{10\pi} \fallingdotseq 12.74[\text{rpm}]$$

(3) GEAR HEAD의 감속비 (Gear ratio)

- GEAR HEAD축의 회전수가 높은 쪽을 기준으로 감속비를 구합니다. (The gear ratio is calculated using the higher number of rotations of the gearhead.)

$$\frac{\text{MOTOR 회전수 (Number of rotations of the motor)}}{\text{GEAR HEAD 회전수 (Number of rotations of the gearhead)}} = \frac{1300}{12.74} \fallingdotseq 102$$

위의 식의 결과치인 102에 의해서 1/102는 감속비가 없으므로 1/100의 감속 비를 선택합니다. (The nearest approximated reduction ratio is 1/100.)

(4) MOTOR축의 회전수 (Number of rotations of motor shaft)

- BELT CONVEYOR 각각의 속도에 대응하는 GEAR HEAD축 회전수로부터 MOTOR축 회전수는 GEAR HEAD축 회전수 × 감속비의 식에 의해서 (The number of rotations of the motor shaft is calculated by the number of rotations of the gearhead shaft × reduction ratio for each speed of the belt conveyor.)
  - 3.18 × 100 = 318 [rpm]
  - 6.37 × 100 = 637 [rpm]
  - 12.74 × 100 = 1274 [rpm]의 3단계로 됩니다.

(5) MOTOR의 소요 TORQUE (Required torque of motor)

감속비 100의 GEAR HEAD의 전달효율은 66%이므로 MOTOR의 소요 TORQUE는 (The transfer efficiency of a gear head with gear ratio 100 is 66%, so the required torque of the motor is)

$$\frac{\text{구동 TORQUE (operating torque)}}{\text{감속비 (gear ratio) X 효율 (Efficiency)}} = \frac{30}{100\times0.66} \fallingdotseq 0.45[\text{kg}\cdot\text{cm}]$$

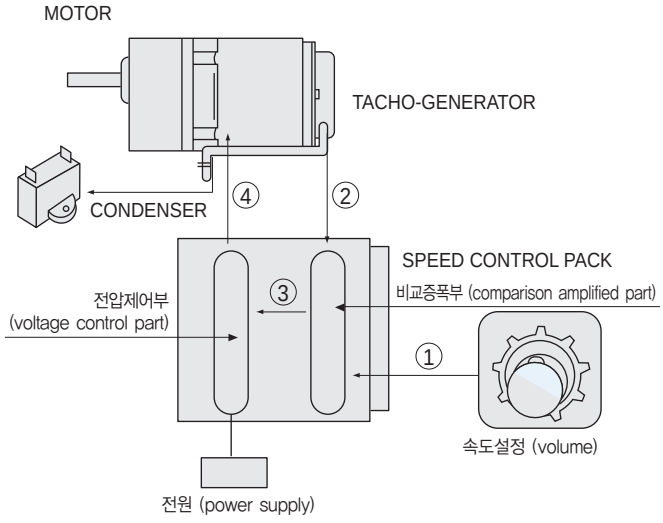
(6) MOTOR의 선정 (Selection of motor)

- INDUCTION MOTOR의 N-T CURVE 중에서 MOTOR는 S8I25GB-V12와 GEAR HEAD는 S8KA100B를 조합하여 사용할 수 있다는 것을 알 수 있습니다. 그러나 이런 경우 관성부하가 선정된 MOTOR의 사양치 이내인지를 확인하여 주십시오. (From the N-T curve of the induction motor, the S8125GB-V12 motor and the S8KA100B gearhead can be combined to use. However, in such a case, make sure that the inertia load should fall within the specification of the selected motor.)

4. 속도제어의 원리 (The Principle of Speed Control)

(1) CLOSE LOOP계 속도제어의 원리 (The Principle of Speed Control)

- 〈그림3〉은 CLOSE LOOP 전압제어방식의 SPEED CONTROL 기본구조도입니다. (〈Fig. 3〉 shows is the basic speed control structure of the close loop current control method.)
  이 CLOSE LOOP계 속도제어에 대하여 설명합니다. (The followings are explanations of close loop speed control.)



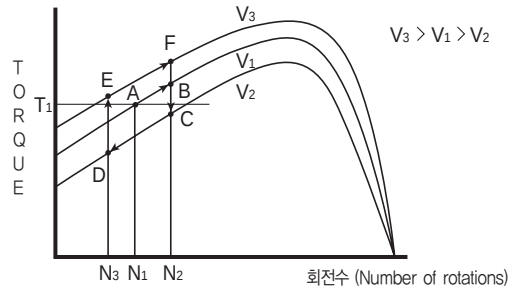
〈그림3 (Fig.3)〉 CLOSE LOOP 전압제어방식의 속도제어 기본구조도
(Basic structure of speed control for the close loopvoltage control method)

- MOTOR의 회전수를 TACHO GENERATOR(속도검출부)에서 회전 수에 비례된 전압으로 변환하고, 속도설정기에서 설정된 전압과 비교합니다. (If Tacho-Generator changes the voltage that is proportional to the rotations, make comparison between the number of rotations of the motor and the voltage preset by the volume.)
- 이 전압의 차를 비교전압이라고 합니다. (This difference in voltage is called "comparative voltage".)
- 비교전압은 비교증폭부, 전압제어부를 통하여 MOTOR를 구동합니다. (Comparative voltage operates the motor through the voltage amplifier and the voltage controller.)
- 비교전압은 대부분 ZERO-CROSSING으로 제어되어 있으므로 회전수는 속도설정부에 의해 설정되는 값이 얻어지게 됩니다. (Comparative voltage is mostly controlled by zero-crossing. Number of rotations is decided by the value that the speed controller selects.)
- 그러므로 부하가 변화하는 경우에도 회전수는 변동하지 않습니다. TACHO-GENERATOR설정이 변화한 경우 그 설정치로 회전수도 변화됩니다. (Even when the load changes, the number of rotations does not change. When the Tacho-Generator changes, the number of rotations immediately changes with the value.)
- 이와같이 CLOSE LOOP계 속도제어에서는, MOTOR의 회전수를 검출하고, 그것을 일정하게 유지시키게 구동전압을 제어하고 있습니다.(Accordingly, CLOSE LOOP speed control detects the

number of rotations of the motor and controls the operating voltage to maintain it constantly.)

(2) CLOSE LOOP에 의한 1차전압제어 (Primary voltage control by CLOSE LOOP)

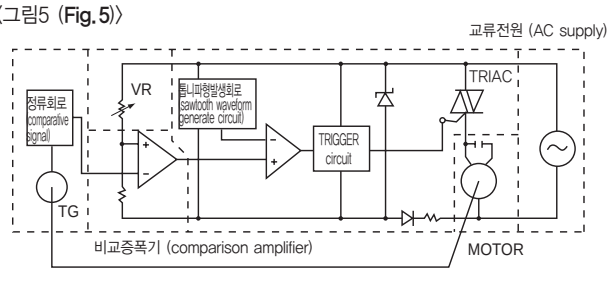
- 유도전동기의 TORQUE와 회전수의 관계는, MOTOR 인가전압(1차전압)을 변화시키면 아래의 〈그림4〉와 같이 됩니다. (〈Fig. 4〉 shows the relationship between the torque of the induction motor and the number of rotations as applied voltage (primary voltage) changes.)



〈그림4 (**Fig. 4**)〉

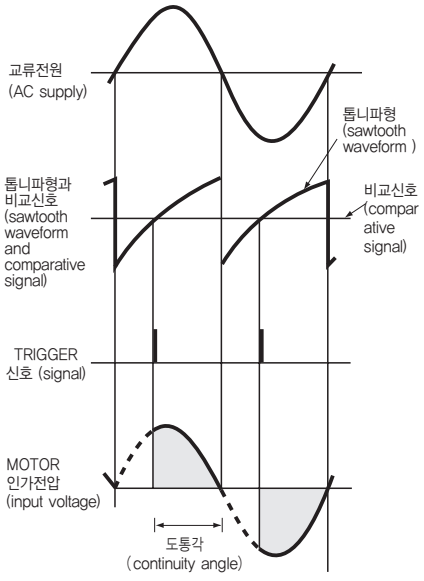
- 지금 전압이 V_1, 부하 TORQUE가 T_1이라면, 그때의 회전수가 N_1으로 됩니다. 그 점을 A로 하면, 그 A에서 속도를 증가시켜 B에 도달한 상태에서, V_1으로 부터 전압이 낮은 V_2로 전압을 변화하면 C로 이동합니다. (Point A indicates current voltage (V_1), torque of the load (T_1), and the number of rotations (N_1). When rpm increases to N_2 and voltages changes to V_2, torque of the load changes to C)
- C에서는 부하 TORQUE T_1쪽이 MOTOR TORQUE보다 크게 되기 때문에 회전수가 N_2로부터 낮아집니다. (At C, the torque of the load T_1 is larger than the torque of the motor, thus the number of rotations drops below N_2.)
- 회전수가 N_3로 될 경우 전압을 V_3로 올리면, MOTOR의 상태는, E점으로 이동하기 위하여 발생 TORQUE는 부하 TORQUE보다 크게 되어 F점으로 향하여 다시 속도가 빨라집니다. (When the number of rotations becomes N_3 and the voltage is raised to V_3, then the generated torque becomes larger than the torque of the load to move to E, and then the speed increases toward F.)
- 이러한 상태로 C → D → E → F라고 하는 LOOP를 충분히 작게 되도록 계속해서 1차전압을 제어한다면 안정된 회전수가 얻어지게 됩니다. (To stabilize the number of rotations, it has to make loop smaller like C→D→E→F by controlling the primary voltage.)
- CLOSE LOOP에 의한 1차전압제어에서는 MOTOR 회전수를 검출한, 그 변화에 대응해서, 1차전압을 제어하고 회전수를 일정하게 유지합니다. (During the primary voltage control by close loop, to meet the changes according to the number of rotations of the motor, it should have the primary voltage controlled and maintain the number of rotations constant.)

〈그림5 (**Fig. 5**)〉



(3) SPEED CONTROLLER의 동작 (Operation of speed controller)

- 〈그림5〉를 사용한 당사 SPEED CONTROLLER의 동작을 설명합니다. (The speed controller is explained in 〈Fig. 5.〉)
- MOTOR의 회전수는TACHO-GENERATOR(T.G)에서 검출하고 정류회로를 통한 FEED BACK 전압을 얻게 됩니다. (Number of rotations of the motor comes from the Tacho-Generator through feedback voltage through the rectifying circuit.)



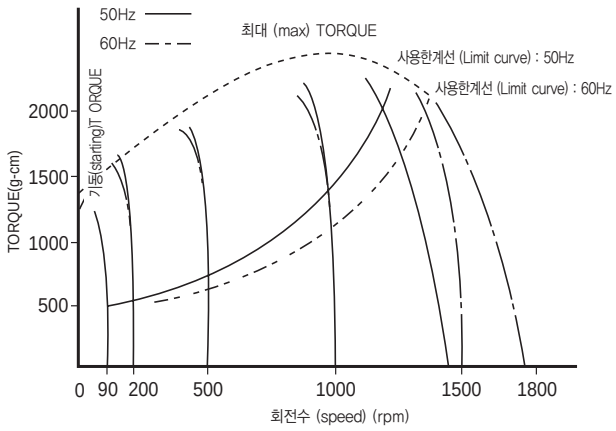
〈그림6 (**Fig. 6**)〉

- VR에서 가변 조정된 속도설정부의 설정전압과 FEED BACK 전압의 차를 비교증폭기에서 증폭합니다. (The difference between the selected voltage of the speed controller which was controlled in the VR and the feedback voltage is amplified in the comparative amplifier.)
- 톱니파형발생기에서 얻어진 톱니 파형과 비교신호로부터 비교기 · TRIGGER 회로를 통한 TRIAC의 TRIGGER 신호를 발생시킵니다. (A trigger signal is generated from the sawtooth waveform which comes from the sawtooth waveform generator, comparator from the comparative signal and triac from the trigger circuit.)
- TRIGGER 신호로 TRIAC의 도통각을 제어해서 MOTOR에 인가되는 전압을 조정합니다. (The angle of the triac is controlled with the trigger signal to control voltage in the motor.)
- 그 결과 MOTOR의 회전수가 일정하게 되도록 제어하게 됩니다. (〈그림6〉 참조) (This makes the number of rotations of the motor constant, thereby controlling it. Refer to 〈Fig. 6〉.)

5. 사용범위 (Limit of Use)

(1) 사용한계선 (Limit curve)

- AC SPEED CONTROL MOTOR N-T CURVE에서는 〈그림7〉과 같이 [사용한계선]이 있어서 그 선의 하측부분을 연속운전영역이라고 합니다. (In the AC speed control motor N-T graph 〈Fig. 7〉, the area below the Limit curve is called the continuous operation area.)



〈그림7 (**Fig.7**)〉 N-T CURVE

- [사용한계선]은 MOTOR의 허용 최고온도를 벗어나지 않으며 연속(INDUCTION MOTOR의 경우 연속이며, REVERSIBLE MOTOR의 경우는 30분 운전 정격입니다.)으로 운전이 가능한 한계로 MOTOR의 온도로부터 결정됩니다. (The limit curve does not go beyond the highest temperature allowed by the motor (continuous for induction motors and 30 minutes rating for reversible motors) and because continuous operation is possible Limit curve does not go beyond the highest temperature within its continuous operation(continuous for induction motors, 30 minutes rating for reversible motors), and the curve is decided by the motor's temperature. is decided by the temperature of the motor.)

- 당사의 SPEED CONTROL MOTOR는 절연등급이 B종(130℃) 입니다.
  일반적으로 권선부의 온도가 120℃ 이하이면 연속으로 운전이 가능하지만, 일반 사용자측에서 권선부의 온도를 측정한다는 것은 어렵기 때문에 일반적으로 MOTOR HOUSING의 표면온도를 측정하여 대략적으로 90℃ 이하이면 연속운전이 가능합니다. MOTOR 권선부와 HOUSING 표면과의 차이는 각 MOTOR마다 차이가 있지만 대략적으로 10℃~20℃가 됩니다. (Our speed control motor has a class E insulation and the permitted temperature of the winding section is 120℃.
  Therefore, if the temperature of the winding section is less than 120℃, continuous operation is possible, But since measuring the temperature of the winding section is difficult, continuous operation is generally possible when the surface temperature of the motor housing is less than 90℃. The temperature difference between the winding section and the housing surface is generally around 10°C to 20°C, but may vary depending on the type of the motor.)

(2) 순시정지에 의한 사용범위 (Surface temperature of 90°C or less)

- 순시정지는 MOTOR에 반파정류시킨 직류를 통해 급속정지시키기 때문에 MOTOR의 온도가 급속히 상승됩니다. (The highest part of the motor's rising temperature is the winding section. Thus, the highest allowable temperature is decided by the insulation level of the winding section.
  (SPG's small AC motors have a class E insulation and the highest allowable temperature is 120℃.))
- N-T특성의 N-T CURVE에서 사용 한계선은 연속운전의 경우이며, 순시정지를 빈번하게 하는 경우 사용한계선에서의 사용가능 범위는 좁아집니다. (The difference between the temperature of the surface of the motor and the winding section is about 10°C~20°C. (A motor with a cooling fan has about 30°C difference because the cooling fan cools the surface of the motor.))
- 순시정지를 하는 용도로는 정지빈도에 의해 온도상승이 높아지므로 MOTOR의 표면온도가 90℃를 초과하지 않도록 특별히 주의하여 운전하여 주십시오. (When the temperature of the winding section is 120℃, the surface temperature is about 100℃. Therefore 90℃ is the sufficient value.)

ANALOGUE TYPE SPEED CONTROLLER



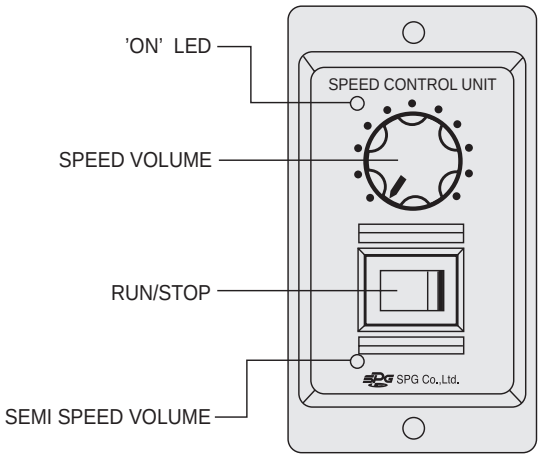
1. 사용방법 (How to use)

(1) 운전 (Operation)

1) SPEED CONTROL UNIT와 MOTOR의 LEAD WIRE CONNECTOR를 접속하고 PLUG CORD를 AC전원에 접속합니다. (The speed control unit and the lead wire connector of the motor are connected and then the plug cord is connected to AC power.)
2) CONTROL UNIT의 [RUN/STOP] SWITCH를 [RUN] 측으로 하면 MOTOR는 출력 축에서 볼 때 시계방향으로 회전합니다. (When the 「RUN/STOP」 switch of the control unit is switched to 「RUN」, it turns clockwise.)
3) 출하 시에는 회전방향은 시계방향으로 회전하도록 접속되어 있습니다. 그러나 GEAR HEAD 출력축의 회전방향은 감속 비에 의하여 반대로(반시계방향)으로 회전하는 경우도 있습니다. (The product is made so that it will rotate in the clockwise direction. However, at times, due to gear ratio, the gearhead shaft rotates counterclockwise.)

(2) 속도조절 (Speed control)

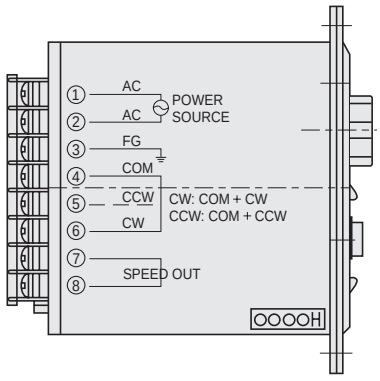
1) ANALOGUE TYPE SPEED CONTROLLER의 「SPEED VOLUME」 손잡이를 시계방향으로 돌리면 MOTOR의 회전수가 빨라지고 반대로 반시계방향으로 돌리면 속도가 늦어집니다. (If the 「SPEED VOLUME」 switch of the analogue type speed controller is turned clockwise, number of rotation of the motor increases and when turned counterclockwise, it slows down.)
2) 50Hz에서는 90[rpm]~1400[rpm], 60Hz에서는 90[rpm]~1700[rpm]의 범위에서 MOTOR의 SPEED가 조정, 설정이 가능합니다. (It is possible to control and designate the speed of the motor between 90[rpm]~1400[rpm] at 50Hz and 90[rpm]~1700[rpm] at 60Hz.)



〈그림1 (**Fig.1**)〉 ANALOGUE TYPE SPEED CONTROLLER의 정면도
(**Front of the analogue type speed controller**)

(3) 정지 (Stop)

1) ANALOGUE TYPE SPEED CONTROLLER의 「RUN/STOP」 SWITCH를 「STOP」 측으로 하면 MOTOR는 정지합니다.
(If the 「RUN/STOP」 switch of the analogue type speed controller is switched to 「STOP」, the motor stops.)
2) 이 SWITCH는 전원의 ON-OFF가 아니므로 MOTOR를 장기간 정지하는 경우에는 별도의 전원을 설치하여 OFF하여 주십시오. (This switch is not an on-off switch for power. When the motor needs to be stopped for a long time, a separate power source should be installed and turned off.)



〈그림2 (**Fig.2**)〉 ANALOGUE TYPE SPEED CONTROLLER의 측면도
(**Side of the unit type speed controller**)

(4) 회전방향의 전환〈그림3〉 (Changing of rotation direction〈Fig. 3〉)

1) 연속으로 한쪽으로 운전하는 경우 (Continuous operation by uni-direction)

- GEAR HEAD 등의 전달기구에서 MOTOR의 회전방향을 반대로 하는 경우에는 CONTROLLER 옆면에 붙어있는 ④COM과 ⑥CW의 연결단자의 위치를 ④COM과 ⑤CCW의 위치로 연결되도록 단자의 위치를 교환하여 주십시오. (When ④COM and ⑤CCM are connected, the motor will rotate in an opposite direction with that of the conveyer unit.)
- 전원의 CORD단자는 항상 ①AC와 ②AC에 접속하여 주십시오. 이 때반드시 전원을 OFF로 한 후에 교환 및 접속하여 주십시오. (Power cords should always be connected to the ①AC and ② AC terminals. Make sure the unit is off when connecting.)

2) 정 · 역회전을 운전하는 경우 (Normal/reverse operation)

- 〈그림3〉와 같이 전원용 SWITCH(SW1)와 정역회전 교환 SWITCH(SW2)를 설치하여 회전방향을 교체하여 주십시오. (Install the power supply switch (SW1) and the switch (SW2) to changeover between normal and reverse direction as shown in 〈Fig. 3〉 to change the direction of rotation.)
- 순시 정역회전은 불가능합니다. 일단 전원 SWITCH(SW1)를 끄고 MOTOR가 완전히 정지한 후에 SWITCH(SW2)를 교환하여 주십시오. (The motor should completely stop after the power switch (SW1) is turned off in order to turn switch (SW2) on. Therefore, instantaneous reverse is not possible.)

SWITCH 번호 (number)	SWITCH 접점용량 (contact capacity)
SW1	AC 125V 또는(or) AC 250V 5A이상(more than 5A)
SW2	AC 125V 또는(or) AC 250V 5A이상(more than 5A)

(5) SPEED OUT

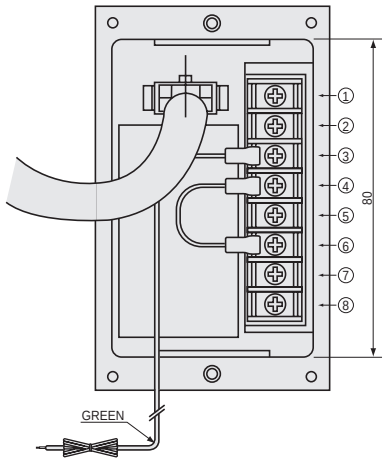
⑦, ⑧은 SPEED OUT으로 회전계를 접속하여 사용하는 단자입니다. (⑦ and ⑧ are jacks to connect the rpm meter.)

1) DIGITAL 표시형 회전계를 접속하여 회전수를 볼 수 있습니다.

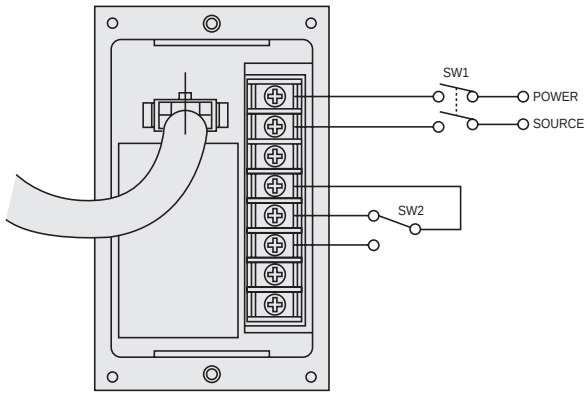
2) ANALOGUE 표시형 회전계를 접속하여 회전수를 볼 수 있습니다. (Number of rotation can be seen by connecting a digital display rpm meter(both of Digital and Analogue).)

(주) 사용품은 2000rpm, AC 10V 상당품으로 하십시오.
((Note) Use the spec, suitable as 2000 rpm, AC 10V products.)

〈일방향 운전일 때(Uni-direction) 〉



〈양방향 운전일 때 (Bi-direction)〉



〈그림3 (**Fig.3**)〉 ANALOGUE TYPE SPEED CONTROLLER의 뒷면
(**Back of the unit type speed controller**)

3. 취부 방법 (Combination)

• CONTROL UNIT의 취부 방법은 아래의 2종류가 있습니다.
(There are 2 ways to combine the control unit)

(1) 4각 구멍을 뚫어서 취부하는 방법 (〈그림4〉의 (A)참조) (Combination by making a rectangular hole 〈Refer to Fig. 4A〉)

1) 취부 PANEL에 4각 구멍을 뚫어 주십시오. (Make rectangular holes in the combination panel.)

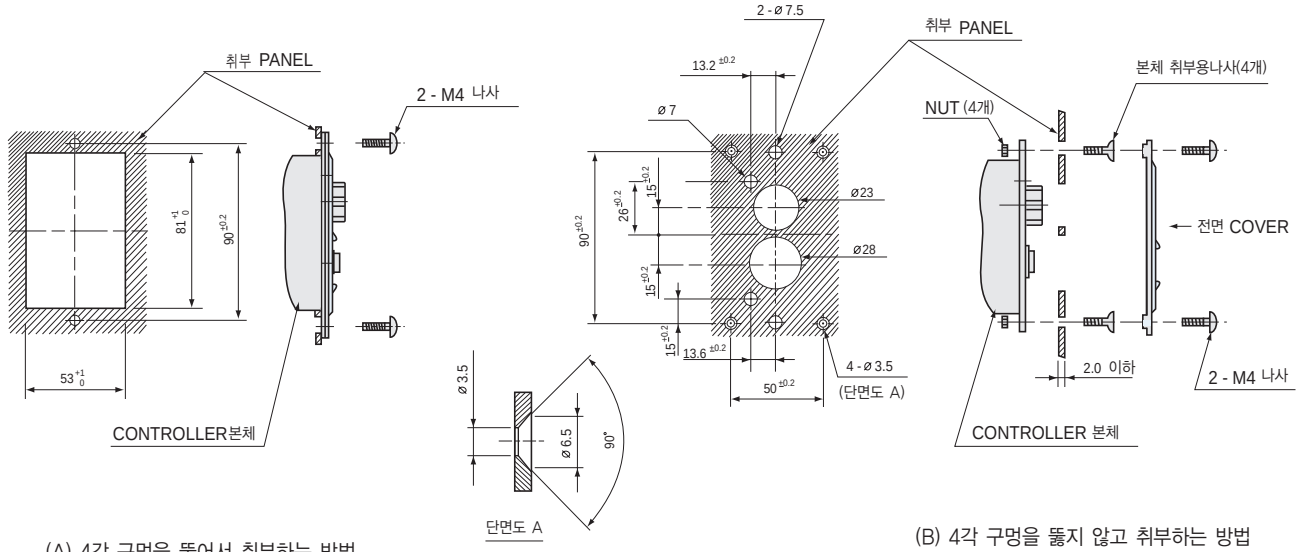
2) CONTROLLER본체와 전면 COVER를 조합하여 PANEL의 4각 구멍에 CONTROLLER본체를 넣어 M4의 나사와 NUT를 사용하여 고정하십시오. (Assemble the main body of the controller and the front cover so that the controller body fits in the rectangular holes of the panel. Use M4 bolts and nuts to fix.)

(2) 4각 구멍을 뚫지 않고 취부하는 방법 (〈그림4〉의 (B)참조) (Combination without making a rectangular hole 〈Refer to Fig. 4B〉)

1) 취부 PANEL에 각각의 HOLE을 뚫어 주십시오. (Make holes in the combination panel.)

2) CONTROLLER본체와 전면 COVER를 분리하십시오. (Separate the main body of the controller and the front cover.)

3) CONTROLLER의 전면으로 취부 PANEL에 M3 접시머리 나사와 NUT를 사용하여 고정하십시오. (Put the controller surface in the combination panel hole and fix with M3 flat-head bolts and nuts.)
4) CONTROLLER의 전면 COVER를 취부 PANEL에 부착하고 M4의 나사와 NUT를 사용하여 고정하십시오. (Attach the front cover of the controller to the combination panel and fix with M4 bolts and nuts.)
5) 취부 PANEL의 두께는 2㎜ 이하의 것을 사용하십시오. (The combination panel should be less than 2㎜ thick.)



(A) 4각 구멍을 뚫어서 취부하는 방법
(Combination by making a rectangular hole)

(B) 4각 구멍을 뚫지 않고 취부하는 방법
(Combination without making a rectangular hole)

〈그림4 (**Fig. 4**)〉 ANALOGUE CONTROLLER 취부 방법 (**combination**)

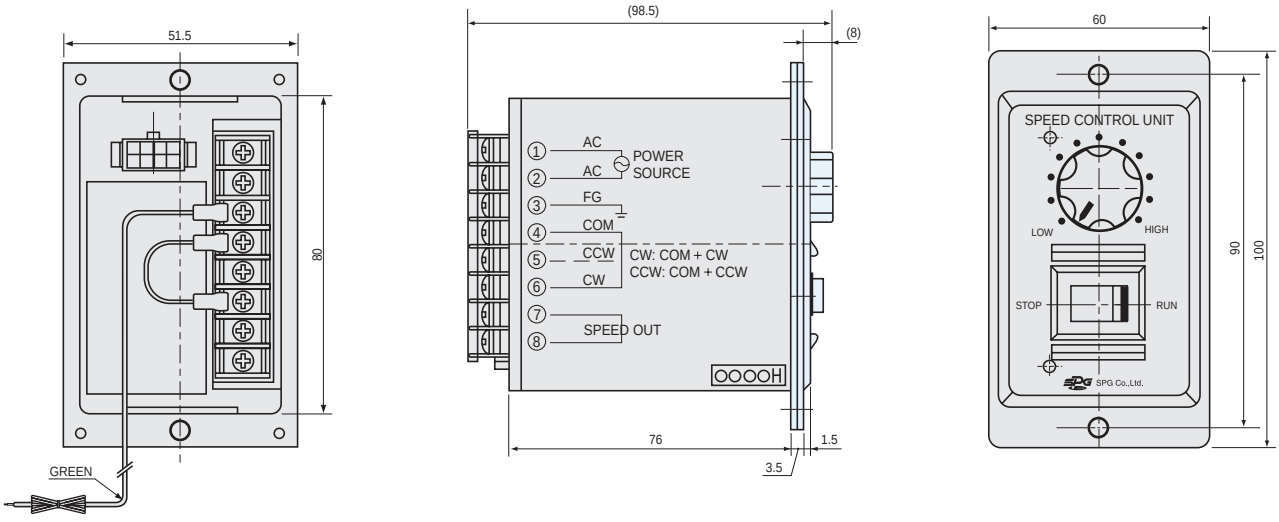
4. 사양 (SPECIFICATIONS)

항목(SPEC) \ MOTOR	SUA□IA-V12	SUA□IB-V12	SUA□IC-V12	SUA□ID-V12	SUA□IX-V12
정격전압 (Rated Voltage)	단상 110V	단상 220V	단상 100V	단상 200V	단상 220V-240V
사용 전압 범위 (Operation Voltage Range)	±10%(정격 전압 대비)				
전원 주파수 (Power Source Frequency)	60Hz	60Hz	50/60Hz	50/60Hz	50Hz
속도 제어 범위 (Speed control range)	60Hz:90-1700rpm 50Hz:90-1400rpm				
속도 변동율 (Speed variation)	5%(표준치 (Standard))				
속도 설정 (Speed setting device)	VR 설정 (Built in external speed setting device attachable)				
SLOW RUN SLOW STOP시간	없음 (None)				
사용 온도 범위 (Operation Temperature)	0~40℃				
보존 온도 범위 (Storage Temperature)	-10~60℃				
사용 습도 범위 (Ambient humidity)	85% RH이하 (Maximum) (결로가 없는 곳 (non condensing))				

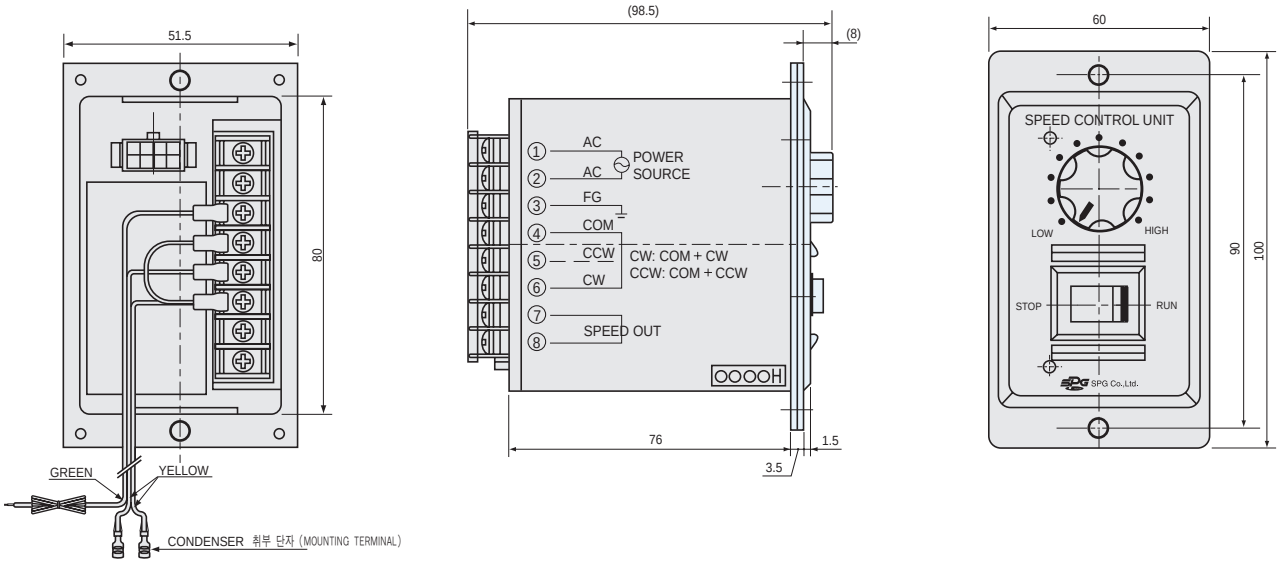
DIMENSIONS

✚ SPEED CONTROLLER (SCALE = 1/2)

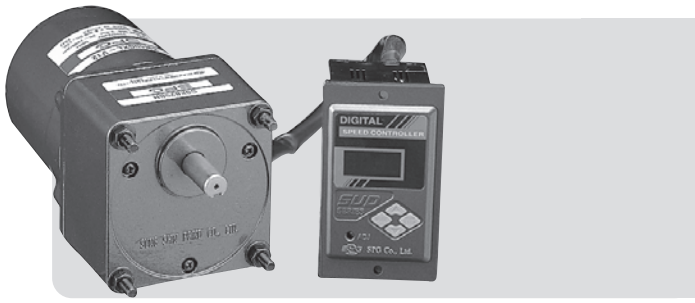
• **180W 이하 (and below)**(CONDENSER 내장TYPE (interior condenser))
→ 60W 이상 110V 계열 제외 (Except for over 60W 110V types)



• **60W 이상(and over)** (CONDENSER 외장 TYPE (exterior condenser))
→ 60W 이상 110V 계열 (110V types)



DIGITAL TYPE SPEED CONTROLLER



1. DIGITAL TYPE SPEED CONTROLLER의 기능

• 마이컴 방식으로 다음과 같은 기능이 있습니다. (Automatic computer control)

기 능 (Function)	사 양 (Contents)
회전 방향의 절환 기능 (Change rotating direction)	정 · 역 회전 단자 처리(출하시 C.W로 설정) (CW/CCW termianls(Default setting: Clockwise))
운전 / 정지 (Run / Stop)	RUN/STOP KEY로 설정 (Operated with RUN/STOP Key)
회전 속도의 설정 (Set RPM)	DIGITAL 설정(승산배율 10rpm 단위) (Set digital(multiple magnification unit, 10rpm))
표시 배율의 설정 (Set mark magnification)	GEAR감속비(일람 참조)와 승산배율(0.005단위)로 설정 (Set with Gear ratio(refer to gear ratio chat) & multiple magnification(Unit 0.005))
SLOW RUN SLOW STOP	0.1초~30초 (0.1초 단위) (0.1 sec. ~ 30 sec.(Unit 0.1))
POWER-ON 상태의 설정	전원 투입시 전원 상태의 설정 (Set the mode when power is supplied)
LOCK 기능 (Function)	오조작 방지 (Prevents malfunctions)
설정(Setup) PARAMETER	전원을 OFF설정 PARAMETER기억 (Setup for powering off and saving the parameters)

2. 올바른 사용에 대하여 (How to use)

(1) POWER-ON 상태 절환 SWITCH(출하시는 "NO"로 설정되어 있습니다.) (Power on/off Switch (Default setting: 'NO'))

이 MODE는 전원을 투입할 때 MOTOR의 운전 상태를 선택하는 다음의 2가지 종류의 기능이 있습니다. (The following features the functions when the power is supplied.)

YES	전원을 OFF하기전 상태가 "RUN"이면, 전원 투입시도"RUN"이 됩니다. (It keeps running even when the power is off, if set to "Run".) 전원을 OFF하기전 상태가 "STOP"이면, 전원 투입시도 "STOP"이 됩니다. (It stops when the power is off,if set to "Stop".)
NO	전원을 OFF하기전 상태가 "RUN", "STOP"에 관계없이 전원 투입시 "STOP"이 됩니다. (It stops regardless of "Run/Stop".)

• 통상은 "NO"에 설정 후 사용하여 주십시오. 정전 후 복구되었을 때 또는 전원 재투입시 돌발적인 운전의 위험을 방지할 수 있습니다. (Setting up to "NO" can help prevent unexpected dangers.)

• "YES"에 설정 후 사용할 경우 (When using"YES" mode)

(SET MODE에서 사용하여 주십시오. (Please use in set mode))

전원을 "개폐"할 때 RUN/STOP KEY의 조작으로 「운전」,「정지」의 REMOTE CONTROL이 가능합니다. (The user can remotely control "RUN/STOP" regardless the power is on or off.)

설정 방법 (Installation)

1. POWER-ON 상태 절환 SWITCH를 "YES"로 선택하여 주십시오. (Set the switch to 'YES' when power is on)
2. 통전 중에 RUN/STOP KEY를 한번 조작하여 주십시오. ("YES"의 동작을 인식합니다.) (Operate RUN/STOP once when power is on (It recognizes YES))

⚠ 주의 (Caution)

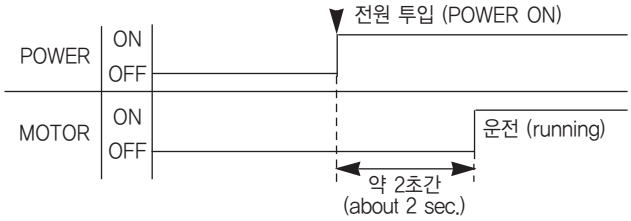
1. 전원 투입에서 운전이 시작되기까지는 RESET 시간을 위해 약 2초 정도 소모됩니다. (It takes about 2 seconds to commence operation after the power is supplied.)
2. RUN/STOP KEY 조작을 병용하면서 조작횟수가 수만회를 넘을 경우 운전이 느슨하게 됩니다. 이때, "RUN"과 "STOP"이 동시에 표시됩니다. 이 상태가 되면 "NO"로 전환하고 1초 이상 OFF한 뒤 재투입함으로써 운전이 가능합니다. 단, "YES"의 기능을 사용할 수 있습니다. (Both "Run" and "Stop" may lighten up when the "Run/Stop" key is used over 10,000 times. In such a case, alter the switch to "No" for a second to restore its normal condition.)

(2) 정전 후의 복귀 (Restoration after a blackout)

순시정전을 검출하는 것과 정전 후 재복귀시는 정전 전의 전원 투입시와 같은 상태에 POWER-ON 상태 절환 SWITCH의 선택 상태에 따라 동작이 달라집니다. (The conditions will be restored in a same manner before the blackout occurred.)

(3) RESET 시간 (time)

전원 투입시에는 약 2초간의 "RESET 시간"이 필요합니다. 또한 이 시간동안은 DIGITAL 표시를 하지 않습니다. (Reset time takes approximately 2 seconds. No digital indication will be made while resetting.)



전원 투입 후 DIGITAL 표시가 완료된 후부터 KEY 조작을 하여 주십시오. 또, POWER-ON상태절환 SWITCH가 "YES"에서 전원을 OFF하기 전 상태가 "RUN"일 때는 전원 투입 후 약 2초 후에 운전을 개시합니다. 순시 정전의 경우도 마찬가지로 약 2초 후에 운전을 개시합니다. (Operate the key after digital signal is on.

When "Run/Stop" key is set to "Run" before turning the power off, it will take 2 seconds to run when the power is supplied. Reset time applies to post-blackout as well.)

(4) 상용주파수의 자동절환 (Automatic alteration of frequency)

60Hz지역에 1400~1800rpm(승산배율이 1인 경우)으로 설정된 경우, 50Hz 지역에는 1500rpm으로 됩니다. 하지만, 50Hz 지역에서 1500rpm으로 설정된 경우는 60Hz지역에서도 1500rpm으로 됩니다. (When set as 1400 rpm ~ 1800 rpm at 60 Hz, rpm becomes at 1500 at 50 Hz, but when set as 1500 rpm at 50 Hz, rpm remains 1500 even when Hz increases to 60.)

(5) 이상표시 (Trouble Indications)

이상현상이 발생한 경우 "RUN"과 "STOP"이 동시에 표시됩니다. 전원 재투입시 정상적으로 복귀 되는 경우가 있습니다.(단, 설정치는 출하상태로 됩니다.) 전원 재투입시에도 "RUN"과 "STOP"이 동시에 표시될때에는 내부 회로의 이상을 고려해야 합니다.(본사 기술 연구소로 연락바랍니다.)
단, POWER-ON 상태절환 SWITCH가 "YES"에서 RUN/STOP KEY의 조작 수명이 다한 경우는 7항 고장시 원인과 대책을 참고하십시오. (Whenever trouble occurs, "Run" and "Stop" signals are both indicated. It may be restored and set to default setting when the power is resupplied. If the trouble is not resolved after resupplying the power, please contact SPG's R&D department or refer to 7. Troubleshooting.)

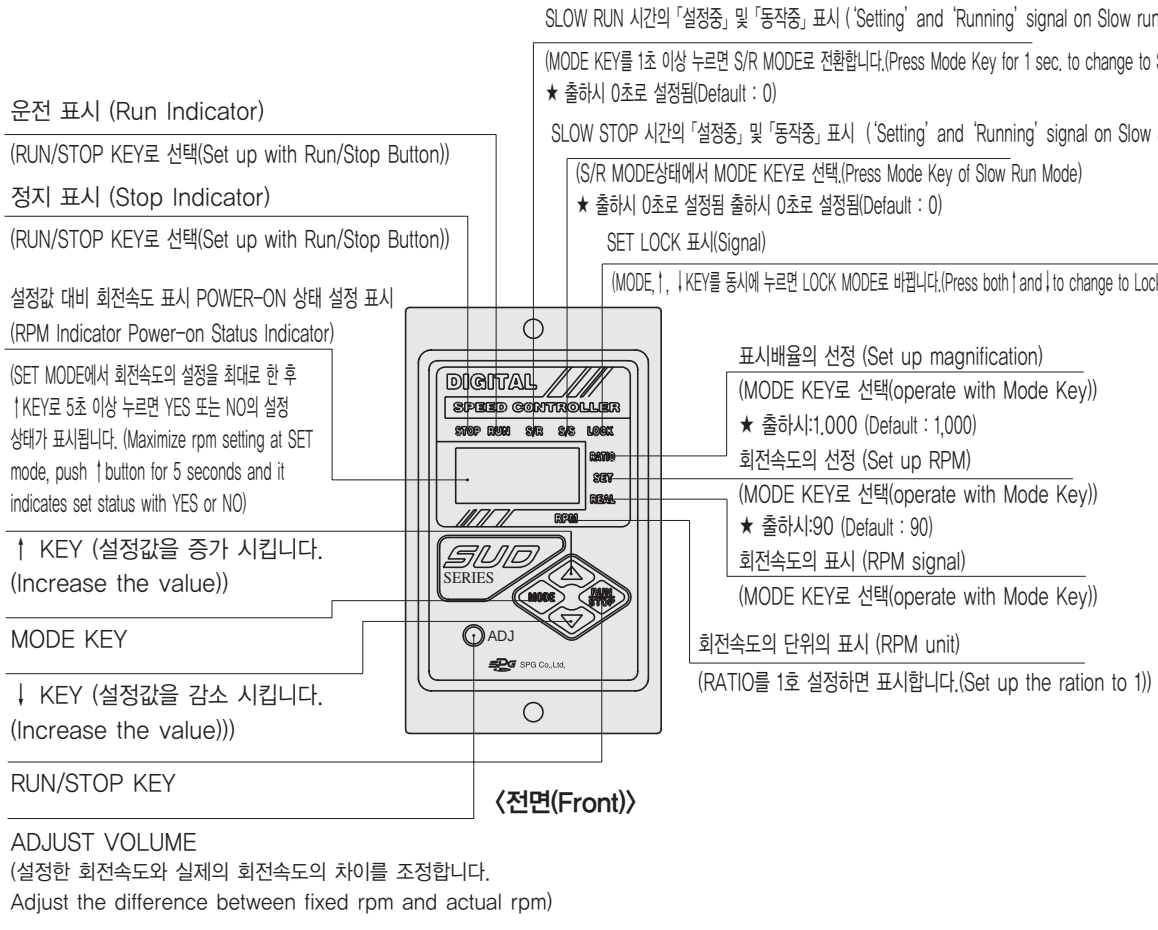
(6) THERMAL PROTECTOR(자동복귀형)

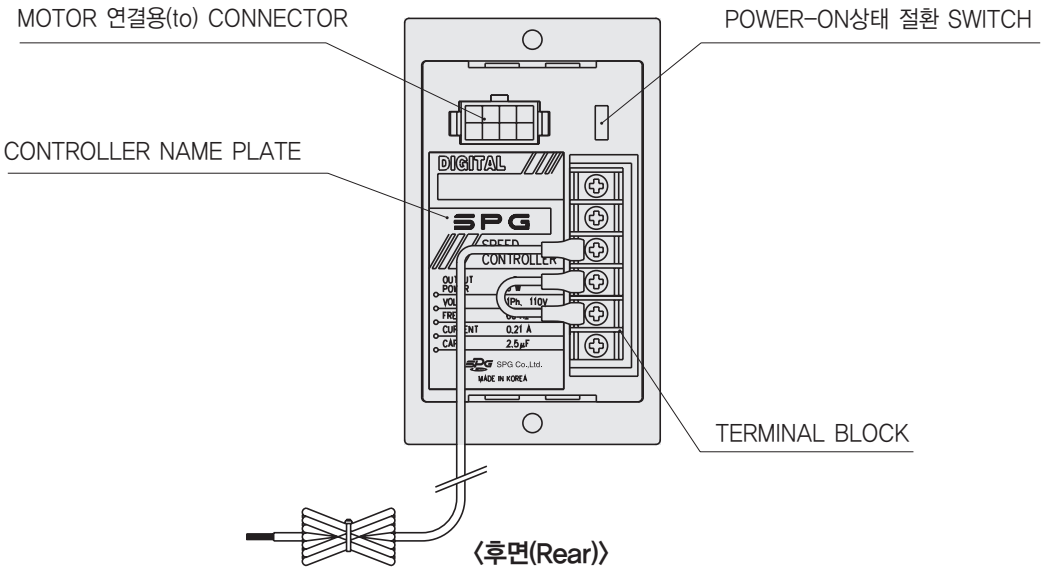
과열보호장치로서 MOTOR의 종류에 따라 THERMAL PROTECTOR를 내장한 MOTOR가 있습니다. MOTOR가 과열되어 THERMAL PROTECTOR가 동작하면 운전을 정지합니다. 그 후 MOTOR가 냉각되면 THERMAL PROTECTOR가 복귀되면서 "RUN"의 조작없이 재기동합니다. (A thermal protector (TP) is installed in a motor to prevent the motor from overheating. When the motor overheats, the TP activates to stop the motor. It automatically deactivates when the motor cools down and start the motor again.)

(7) 내전압 시험, IMPULSE 전압 시험 (Test for withstand voltage & Impulse voltage)

제어반에 설치된 상태에서 LINE EARTH간의 내전압 시험, IMPULSE 내압시험, 절연저항측정 등을 하는 경우는 MOTOR 접지선 외부에서 전원 CODE의 두선을 단락시킨 후 행하여 주십시오. (Need to disconnect of two power codes from outer motor wire in the case of withstand voltage testing with line earth, impulse voltage testing and testing of heat transfer resistance.)

3. 각부의 명칭과 기능 (Parts names and functions)



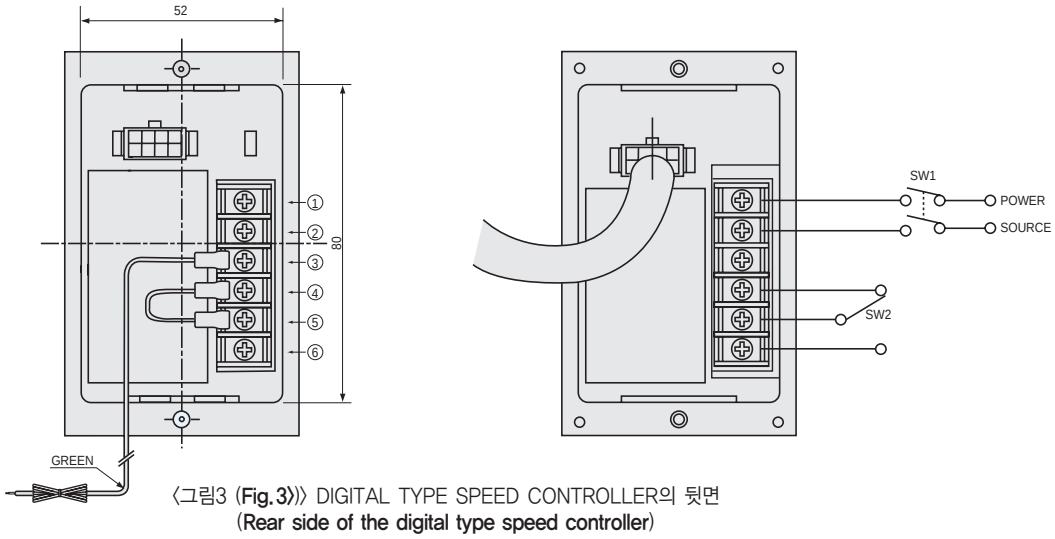


〈후면(Rear)〉

4. 사용방법 (Usage)

(1) 회전방향의 설정 (Transformation of rotation direction)

〈일방향 운전일 때 (Uni-direction)〉 〈양방향 운전일 때 (Bi-direction)〉



〈그림3 (Fig.3)〉 DIGITAL TYPE SPEED CONTROLLER의 뒷면
(Rear side of the digital type speed controller)

1) 연속으로 한쪽으로 운전하는 경우 (Uni-direction continuous operation)

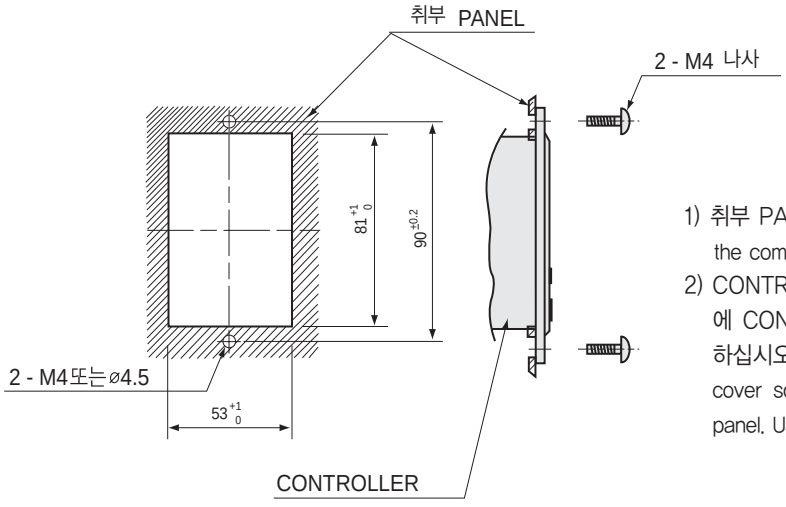
- GEAR HEAD 등의 전달기구에서 MOTOR의 회전방향을 반대로 하는 경우에는 CONTROLLER 옆면에 붙어있는 ⑤COM과 ④CW의 연결단자의 위치를 ⑤COM과 ⑥CCW의 위치로 연결되도록 단자의 위치를 교환하여 주십시오. (To reverse the direction of rotation from clockwise to counter-clockwise, connect ⑤COM and ⑥CCW instead of connecting ⑤COM and ④CW.)
- 전원의 CORD 단자는 항상 ①AC와 ②AC에 접속하여 주십시오. 이 때 반드시 전원을 OFF로 한 후에 교환 및 접속하여 주십시오. (Power cords should always be connected to ①AC and ②AC terminals. Do not forget to turn the power off before connecting.)

2) 정 · 역회전을 운전하는 경우 (Bi-direction operation)

- 전원용 SWITCH(SW1)와 정역회전 교환 SWITCH(SW2)를 설치하여 회전방향을 교체하여 주십시오. (Install the switches as shown in 〈Fig. 3〉 〈Bi-direction?〉)
- 순시 정역회전은 불가능합니다. 일단 전원 SWITCH(SW1)를 끄고 MOTOR가 완전히 정지한 후에 SWITCH(SW2)를 교환하여 주십시오. (The rotating direction cannot be reversed instantaneously. (SW1) must be turned off and the motor must be completely stopped before switching (SW2).)

SWITCH 번호 (number)	SWITCH 접점용량 (contact capacity)
SW1	AC 125V 또는(or) AC 250V 5A 이상 (more than 5A)
SW2	AC 125V 또는(or) AC 250V 5A 이상 (more than 5A)

(2) 취부방법



1) 취부 PANEL에 4각 구멍을 뚫어 주십시오. (Make rectangular holes in the combination panel.)
2) CONTROLLER본체와 전면 COVER를 조합하여 PANEL의 4각 구멍에 CONTROLLER 본체를 넣어 M4의 나사와 NUT를 사용하여 고정하십시오. (Assemble the main body of the controller and the front cover so that the controller body fits in the rectangular holes of the panel. Use M4 bolts and nuts to fix)

5. 동작 MODE의 설명 (Mode Descriptions)

(1) RATIO MODE

MOTOR의 회전속도에 배율을 곱하고 속도를 설정하여 실제의 속도를 표시하는 것으로서 GEAR HEAD출력축 회전속도의 환산과 벨트 콘베어의 반송속도 환산이 가능합니다. (Ratio mode indicates the actual speed of gearhead output RPM and conveyor speed by multiplying rpm with magnification.)

1) GEAR 감속비의 설정값(GEAR HEAD 출력축의 회전속도에 맞게 표시하는 경우) (Gear Ratio (for indication conforming to gearhead output rpm))

〈"SER" 또는(or) "REAL"의 표시값(value) = MOTOR의 회전속도(rpm) ÷GEAR 감속비의 설정값(Gear ratio)〉

ex) 당사 GEAR HEAD의 감속비가 기억되어 있으므로 ↑와 ↓ KEY로 선택하여 주십시오. 1.000 ↔ 3 ↔... ↔ 100... ↔ 202... ↔ 1000... ↔ 2515 「14. 감속비 일람」 P14 참조 (The Gear Ratio chart is listed. Select the required value with ↑, ↓ button 1.000 ↔ 3 ↔ ... ↔ 100 ... ↔ 202 ... ↔ 1000 ... ↔ 2515 [Refer to P14. Gear ratio])

2) 승산배율의 설정값(벨트콘베어의 반송속도에 맞게 표시하는 경우) (Multiple magnification value (for indication conforming to the transfer speed of conveyor belt))

〈"SER"또는(or) "REAL"의 표시값(value) = MOTOR의 회전속도(rpm) × 승산배율의 설정값(Multiple magnification value)〉

ex) 0.005에서 0.995가지의 승산배율이 설정되어 있으므로 ↑와 ↓ KEY로 설정하여 주십시오. 1.000 ↔ 0.995 ↔... ↔ 0.015 ↔ 0.010 ↔ 0.005 (The Multiple magnifications are listed from 0.005 thru 0.995. Select the required value with ↑, ↓ button 1.000 ↔ 0.995 ↔... ↔ 0.015 ↔ 0.010 ↔ 0.005) (0.005간격(0.005 per tick))

(2) SET MODE

회전 속도를 설정하는 MODE로 ↑와 ↓KEY로 아래의 값을 선택할 수 있습니다. (Set mode is used to setup RPM using ↑, ↓ button)

표시 배율 1.000의 경우 (If the indicated magnification is 1.000)

10rpm 단위로 선택 됩니다. (Term Value is 10 rpm)

ex) • 전원주파수(Frequency) 50Hz : 90↔100↔110↔...↔1400↔1500rpm

ex) • 전원주파수(Frequency) 60Hz : 90↔100↔110↔...↔1400↔...↔1700↔1800rpm

표시 배율 1.000 이외의 경우 (If the indicated magnification is not 1.000)

"RATIO" MODE에서의 표시 배율 설정과 GEAR감속비 설정에 따라서 표시되는 것으로 ↑와 ↓KEY로 아래의 값을 선택할 수 있습니다. (Rpm can be set in connection with the Multiple Magnification value set on Ratio Mode.)

ex) GEAR 감속비의 설정값 (Gear ratio value) = 3
10÷3 rpm 단위로 선택할 수 있습니다. 소숫점 둘째자리부터는 버리고 표시합니다. (Base Unit, 10÷3rpm. The value is rounded to nearest tenth.)

- 전원주파수(Frequency) 50Hz : 29.9↔33.3↔36.6↔...↔466.6↔500.0rpm
- 전원주파수(Frequency) 60Hz : 29.9↔33.3↔36.6↔...↔466.6↔...↔566.6↔600.0 rpm

ex) 승산 배율의 설정값 (Multiple magnifications valu) = 0.500
10×0.500 rpm 단위로 선택할 수 있습니다. 소숫점 둘째 자리부터는 버리고 표시합니다. (Base Unit, 10X0.500. The value is rounded to nearest tenth.)

- 전원주파수(Frequency) 50Hz : 45.0↔50.0↔55.0↔...↔700.0↔750.0rpm
- 전원주파수(Frequency) 60Hz : 45.0↔50.0↔55.0↔...↔700.0↔...↔850.0↔900.0 rpm

(3) REAL MODE

REAL MODE는 MOTOR의 실제 회전속도를 표시 배율을 곱하여 표시합니다. (Real mode indicates the actual speed of a motor by multiplying with magnification.)

「표시배율 1.000의 경우」 5rpm단위로 선택 됩니다. (If the indicated magnification is 1.000 Term Value is 5 rpm)
ex) 0↔5↔10↔ ... ↔90↔95↔100↔...↔1400↔...↔1700rpm
「표시배율 1.000 이외의 경우」 RATIO MODE의 표시 배율 설정에 따라 표시됩니다. (「If the indicated magnification is not 1.000」 Operate on "Ratio" Mode by follows magnification and Gear ratio value)
ex) GEAR 감속비의 설정값 (Gear ratio value) = 3
5÷3 rpm 단위로 선택할 수 있습니다. 소숫점 둘째자리부터는 버리고 표시합니다. (Base Unit, 5÷3rpm. The value is rounded to nearest tenth.)
0↔1.6↔...↔29.9↔31.6↔33.3↔...↔466.6↔...↔566.6rpm
ex) 승산 배율의 설정값 (Multiple magnification value) = 0.500
5×0.500rpm 단위로 선택할 수 있습니다. 소숫점 둘째 자리부터는 버리고 표시합니다. (Base Unit, 5X0.500. The value is rounded to nearest tenth.)
0↔1.6↔...↔29.9↔31.6↔33.3↔...↔466.6↔...↔566.6rpm

주(NOTE) 표시 배율 1.000을 넘는 경우에만 "rpm"을 표시합니다. (표시 배율 1.000포함) 표시 배율 1.000을 미달하는 경우 아무것도 표시하지 않습니다. (Nothing will be indicated if the magnification is under 1.000)

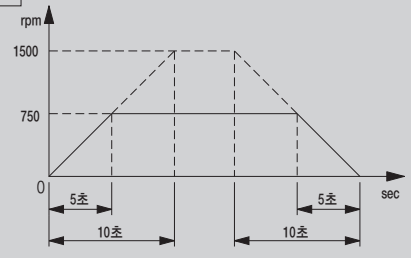
(4) S/R MODE

SLOW RUN 시간을 설정하는 MODE로 ↑와 ↓KEY로 설정하여 주십시오. 0.1초 단위로 최대 30초 까지 설정 가능합니다. (S/R mode sets up the Slow Run time using ↑, ↓ button. 0.1 sec per tick, up to 30 seconds)
0↔0.1↔...↔0.2↔0.3↔0.4↔...↔29.9↔30.0초(sec.)

(5) S/S MODE

SLOW STOP시간을 설정하는 MODE로 ↑와 ↓KEY로 주십시오. 0.1초 단위로 최대 30초 까지 설정 가능합니다. (S/S mode sets up the Slow Stop time using ↑, ↓ button. 0.1 sec per tick, up to 30 seconds)
0↔0.1↔...↔0.2↔0.3↔0.4↔...↔29.9↔30.0초(sec.)

주(NOTE) 1. SLOW RUN · SLOW STOP시간(time)



SLOW RON · SLOW STOP 시간을 회전속도 0rpm~1500rpm 및 1500rpm~0rpm까지 변화하는데 필요한 시간입니다. (Slow Run and Slow Stop time refers to time required to change rpm from 0 to 1500 and vice versa.)
(ex) SLOW RUN 시간을 10초로 설정하고 "SET"의 회전속도가 750rpm일 때 (When Slow Run time is 10sec. And "Set" rpm is 750rpm)

$$10s \times \frac{750rpm}{1500rpm} = 5s$$

0rpm에서 750rpm까지 도달하는데 걸리는 시간은 약 5초 입니다. SLOW STOP시간도 동일합니다. (It takes about 5sec from 0rpm to 750rpm. The same time will be required for Slow Stop.)

주(NOTE) 2. 부하의 관성이 클 경우는 실제의 회전 속도의 변화는 설정한 SLOW RUN SLOW STOP시간보다 길 수도 있습니다. (Slow Run and Slow Stop time can be longer if Inertia of load is bigger)

(6) POWER-ON 상태설정 MODE (Power-On Status Setup Mode)

POWER-ON 상태절환 SWITCH로서 전원 투입시의 운전동작을 설정하는 것이 가능합니다. (Power-On Status Setup mode enables selections of operation when the power is supplied.)

1) "YES"일 때 (Indicating "YES")
전원 투입시의 운전동작은 전원을 OFF하기 전의 상태와 동일한 동작을 재현합니다. (When the power is resupplied, it recovers its previous operating conditions.)

전원을 OFF하기 전 (Previous condition)	전원 투입 시 (After the power is resupplied)
"RUN"상태	기동(Run) (약 2초후(after 2Sec.))
"STOP"상태	정지 (Stop)

2) "NO"일 때 (Indicating "NO")
전원 투입시의 운전 동작은 전원을 OFF하기 전의 상태에 관계없이 정지합니다. 재기동을 할 경우는 RUN/STOP KEY를 조작하여 주십시오. (When the power is resupplied, it stops regardless of its previous condition)

전원을 OFF하기 전 (Previous condition)	전원 투입 시 (After the power is resupplied)
"RUN"상태	정지 (Stop)
"STOP"상태	정지 (Stop)

6. 감속비의 일람 (Gear Ratio Char)

실감속비와 공칭감속비가 조금 다를수가 있으니 참고하여 설정하여 주십시오. (The gear ratio between actual and nominal can be different. Prefer to the chart in below)

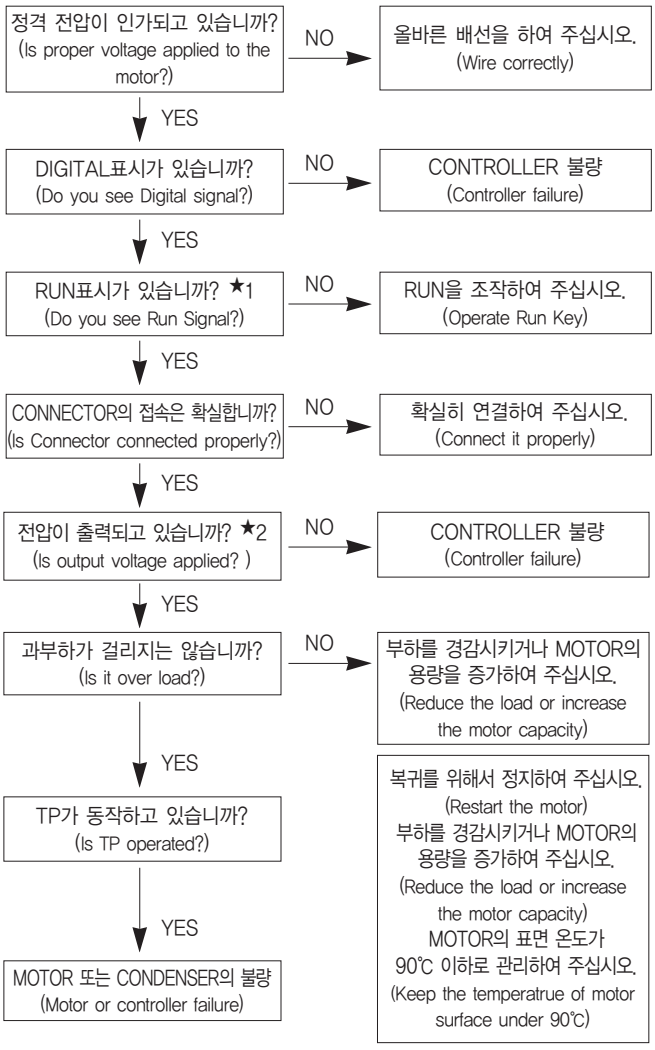
공칭감속비	실 감속비(Actual gear ratio)							중간GEAR HEAD
(Nominal gear ratio)	□60 6W	□70 15W	□80 15W	□80 25W	□90 40W	□90 60W	□90 90W	(Inter-decimal gear head)
3	3.00	3.00	3.00	3.00	3.00	3.00	3.00	
3.6	3.60	3.59	3.57	3.57	3.60	3.60	3.60	
5	5.00	5.00	5.00	5.00	5.00	5.04	5.04	
6	6.00	6.00	6.00	6.00	6.03	6.00	6.00	
7.5	7.50	7.50	7.50	7.50	7.50	7.50	7.50	
9	9.00	9.00	9.00	9.00	9.00	9.00	9.00	
10	10.00	10.29	10.00	10.00	10.00	10.00	10.00	
12.5	12.50	12.14	12.50	12.50	12.50	12.50	12.50	
15	15.00	15.00	15.00	15.00	15.00	15.00	15.00	
18	18.00	17.92	18.08	18.08	17.67	18.00	18.00	
20	19.90	20.00	20.00	20.00	20.00	20.19	20.19	
25	25.06	24.80	25.00	25.00	24.73	25.00	25.00	10
30	30.25	30.00	30.00	30.00	30.00	30.00	30.00	
36	36.30	36.00	36.00	36.00	36.00	36.00	36.00	
40	40.80	40.36	40.11	40.11	40.36	39.68	39.68	
50	50.00	50.00	50.00	50.00	50.00	50.00	50.00	
60	60.00	60.00	60.00	60.00	60.00	60.00	60.00	
75	75.00	75.00	75.00	75.00	75.00	76.02	76.02	
90	90.00	90.67	90.00	90.00	90.00	90.00	90.00	
100	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
120	120.0	118.0	120.0	120.0	120.0	120.0	120.0	
150	150.0	154.0	150.0	150.0	150.0	149.9	149.9	
180	180.0	181.2	180.0	180.0	180.0	179.8	179.8	
200	198.9	194.8	200.0	200.0	201.8	197.2	197.2	
250	251.5	-	-	-	-	-	-	

(예) 40W의 공칭 감속비 1/200일 경우, 실감속비는 약1/201.8이므로 RATIO의 설정은 201.8로 설정하여 주십시오.

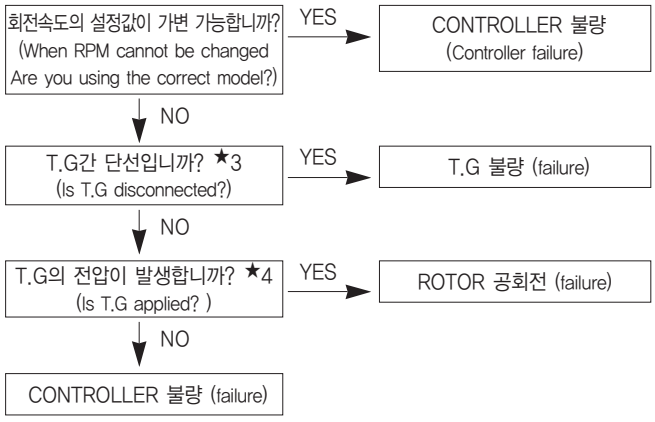
7. 고장시 원인과 대책 (Trouble shooting)

고장이 발생한 경우 다음의 표에 따라 정검, 대책을 행하여 주십시오. 만약 원인을 모를 경우와 고장이라 생각될 경우 다소 불편하시더라도 대리점 또는 본사 기술 연구소로 연락하여 주십시오. (Whenever the trouble occurs, check the following table to see if it can be repaired on site. If the trouble remains unresolved after corresponding to the following steps, please contact the dealer or manufacturer.)

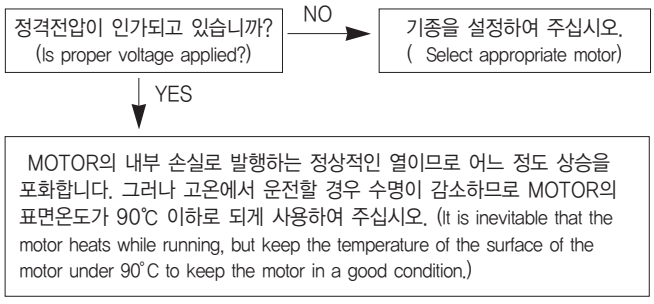
1. MOTOR가 회전을 하지 않을 때 (The motor does not rotate)



2. MOTOR가 가변이 되지 않을 때 (When RPM cannot be changed)



3. MOTOR 회전시 이상열이 발생한 경우



★1. **RUN/STOP동시에 표시할 경우** CONTROLLER 불량 또는 "YES"의 조작 회수수명한도입니다. "NO"로 사용하여 주십시오.(**If "Run" and "Stop" signals are indicated simultaneously,** it is caused either by a failure of the controller or as the operation limit of "Yes" mode has been reached. Use "No" mode instead.)

★2. **전압측정 (Check the voltage)** : MOTOR CONNECTOR투입 상태에서 MOTOR의 흑-백, 흑-회 전압을 측정하여 주십시오. 〈C.W 흑-백 =110V 〉〈 C.C.W 흑-회 =110V 〉(220V 사양은 2배 전압) (: Check the motor voltage of black-white, black-gray during motor connector is plugged. 〈C.W black-white=100V〉 〈CCW black-grey=100V〉 (Voltage doubles for 220V specifications))

★3. **도통 TEST (Turn on Test)**
MOTOR CONNECTOR를 분리한 상태에서 적색-적색 선의 저항을 확인하여 주십시오. (Disconnect the motor connector and check the resistance of red-red wire.)

★4. **전압측정 (Check the voltage)**
MOTOR CONNECTOR를 연결한 상태에서 적색-적색 선의 전압을 측정하여 주십시오. (Connect the motor connector and check the voltage of red-red wire.)

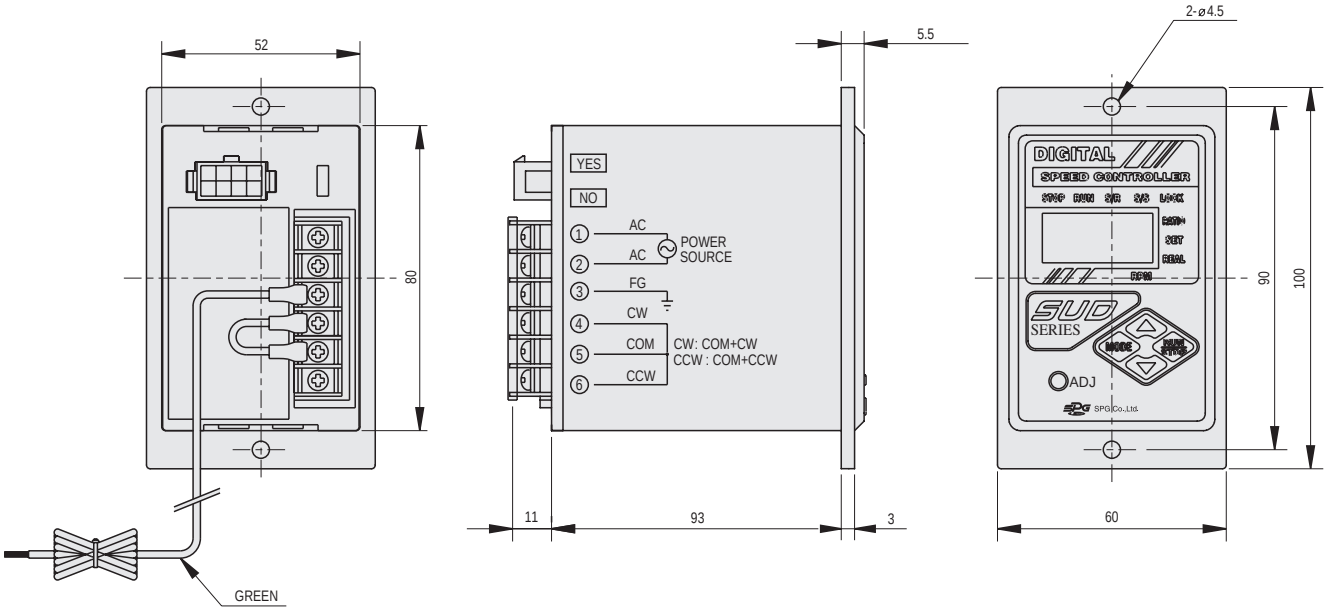
8. 사양 (Specifications)

MOTOR명 / 항목 (List)	SUD□IA-V12	SUD□IB-V12	SUD□IC-V12	SUD□ID-V12	SUD□IX-V12
정격전압 (Rated Voltage)	단상(1-phase) 110V	단상(1-phase) 220V	단상(1-phase) 100V	단상(1-phase) 200V	단상(1-phase) 220~240V
사용 전압 범위 (Voltage range)	±10%(정격 전압 대비 (Compared with arted Voltage))				
전원 주파수 (Frequency)	60Hz	60Hz	50/60Hz	50/60Hz	50Hz
속도 제어 범위 (Speed control range)	60Hz : 90-1700rpm 50Hz : 90-1400rpm				
속도 변동율 (Speed changing rate)	5%(표준치(Standard))				
속도 설정 (Set Speed)	Digital 설정(setting)				
SLOW RUN SLOW STOP시간(time)	있음(0.1~30sec.)				
사용 온도 범위 (Temperature range)	0~40℃				
보존 온도 범위 (Conservation temperature range)	-10~60℃				
사용 습도 범위 (Humidity range)	85% RH 이하 (Less than 85%) (결로가 없는 곳(There is not dewing))				

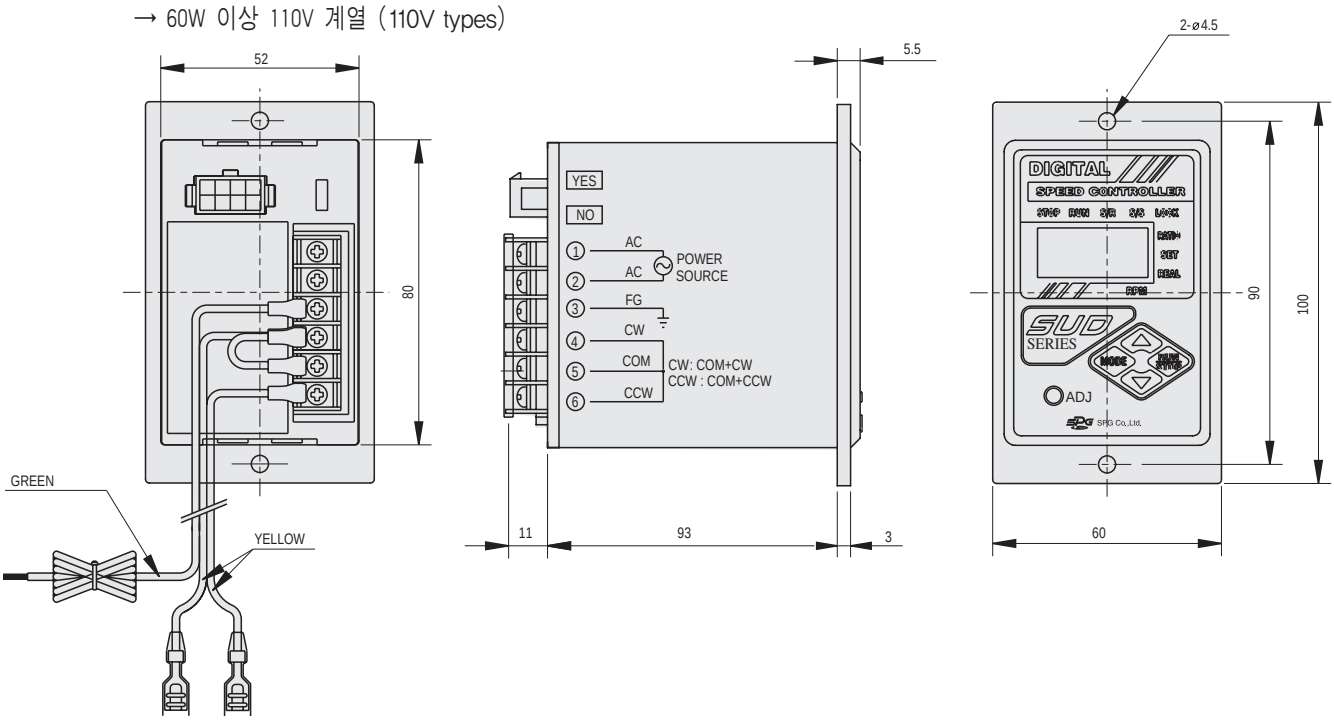
DIMENSIONS

✚ SPEED CONTROLLER (SCALE = 1/2)

• **90W 이하(and below)**(CONDENSER 내장 TYPE(interior condenser))
→ 60W 이상 110V 계열 제외 (Except over 60W 110V types)



• **60W 이상(and over)**(CONDENSER 외장 TYPE(exterior condenser))
→ 60W 이상 110V 계열 (110V types)



UNIT TYPE SPEED CONTROL MOTOR



UNIT TYPE SPEED CONTROL MOTOR의 특징 (Characteristics of the unit type speed control motor)

- 분리형 UNIT TYPE의 CONTROLLER와 MOTOR가 일체로 사용되는 UNIT 제품입니다. (This is a unit product that uses the seperate unit type controller and motor simultaneously.)
- MOTOR와 CONNECTOR를 ONE TOUCH로 접속하고, AC 전원을 간단히 연결하여 별도의 결선 방법이 필요치 않으며 속도제어를 외부에 부착되어 있는 KEY 조작으로 간단히 조정하여 사용할 수 있습니다.따라서 원격 조작이 필요로 하는 용도에 가장 적합하게 사용할 수 있습니다. (The motor and the controller are connected with one touch. AC power is connected and does not require a separate connection method. Speed can be controlled by a volume switch on the exterior. Therefore, it is appropriate for uses requiring remote control.)
- UNIT TYPE의 CONTROLLER에 속도제어회로, MOTOR용 CONDENSER, 속도설정기 등이 조립되어 있습니다. (CONDENSER는 일부 기종에 따라 CONDENSER 크기 때문에 외부에서 취부하는 MODEL도 있습니다. 양지하시어 사용하십시오.) (The unit type controller has a speed controller circuit, a condenser for the motor and the volume.(By the size of the condenser, some units have to use the condenser on the outside.))
- UNIT TYPE의 CONTROLLER는 순시정지기능이 없습니다. (The unit type controller does not have an instantaneous braking function.)
- 별매하고 있는 중간 CONNECTOR용 CORD를 사용하면 MOTOR와 CONTROLLER와 최대 2.0m까지 떨어뜨려서 속도제어가 가능합니다. (By using an extension cable(sold separately), it is possible to have a max distance of 2m between the motor and the controller.)
- 가변범위는 50Hz인 경우 90[rpm]~1400[rpm]이며, 60Hz인 경우 90[rpm]~1700[rpm]의 광범위하게 변속이 가능합니다.(무부하 조건일 때) (The control range is 90[rpm]~1400[rpm] for 50Hz and 90[rpm]~1700[rpm] for 60Hz.)

MOTOR의 일반사양 (GENERAL SPECIFICATIONS OF SPEED CONTROL MOTORS)

항목 (ITEM)	사양 (Specification)
절연저항 (Insulation Resistance)	상온 상습에서 MOTOR를 정격으로 운전 후 MOTOR의 COIL, MOTOR CASE 사이를 DC 500V MEGGER로 측정하여 100MΩ 이상임. (100MΩ or more when 500V megger is applied between the windings and the housing after rated motor operation under normal ambient temperature and humidity)
절연내압 (Dielectric Strength)	상온 상습에서 MOTOR를 정격으로 운전 후 MOTOR의 COIL, MOTOR CASE 사이에 1500V 50/60Hz를 1분간 인가하여 이상없음 (Sufficient to withstand 1.5V at 50/60Hz applied between the windings and the case after rated motor operation under normal ambient temperature and humidity for 1min.)
온도상승 (Temperature Rise)	MOTOR를 정격으로 운전 후 온도계법으로 측정하여 온도 상승 치(△T)가 80℃(K) 이하 (FAN 부착 MOTOR는 45℃이하임) (80℃ or less increase measured by thermometer after rated operation. (45°C less than the motor with fan motors with fan))
절연등급 (Insulation Class)	B종(B Class) (130℃)
과열보호 장치 (T/P) (Overheat Protection Device)	THERMAL PROTECTOR 내장(자동 복귀형) : 개방 120℃±5℃, 복귀 76℃±15℃ (Built-in thermal protector (automatic return type): Open 120℃±5℃, Close 76℃±15℃)
사용온도 (Ambient Temperature)	-10℃~40℃
사용습도 (Ambient Humidity)	85% 이하(maximum) (결로없는곳(non condensing))



6W

INDUCTION SPEED CONTROL MOTOR
□60㎜ CONNECTOR TYPE

SIZE mm sq.	Motor Type	Controller Type	Poles	Output (W)	Voltage (V)	Freq. (Hz)	Duty	Speed Range (rpm)	Permissible Torque at 1200rpm (kg-cm)	Permissible Torque at 1200rpm (N-m)	Permissible Torque at 90rpm (kg-cm)	Permissible Torque at 90rpm (N-m)	Starting Torque (kg-cm)	Starting Torque (N-m)	Cap. (μF)
60	S6I06GA-V12 S6I06GA-V12CE	SUA06IA-V12	4	6	1Ø 110	60	Cont.	90-1700	0.55	0.055	0.40	0.040	0.52	0.052	2.5
	S6I06GB-V12 S6I06GB-V12CE	SUA06IB-V12	4	6	1Ø 220	60	Cont.	90-1700	0.55	0.055	0.40	0.040	0.52	0.052	0.7
	S6I06GC-V12 S6I06GC-V12CE	SUA06IC-V12	4	6	1Ø 100	50 60	Cont.	90-1400 90-1700	0.48	0.048	0.30	0.030	0.40	0.040	2.5
	S6I06GD-V12 S6I06GD-V12CE	SUA06ID-V12	4	6	1Ø 200	50 60	Cont.	90-1400 90-1700	0.48	0.048	0.30	0.030	0.40	0.040	0.7
	S6I06GX-V12 S6I06GX-V12CE	SUA06IX-V12	4	6	1Ø 220 1Ø 240	50	Cont.	90-1400	0.35 0.45	0.035 0.045	0.22 0.22	0.022 0.022	0.35 0.42	0.035 0.042	0.7

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is impedance protected type which has received CE.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

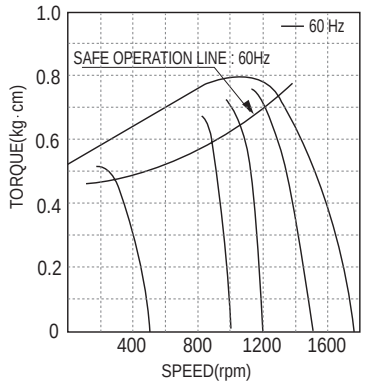
50Hz

MODEL / GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5	6
S6DA□B	kg-cm	1.3	1.5	2.1	2.6	3.2	3.9	4.3	5.4	6.4	7.7	7.7	9.7	11.6	13.9	15.5	17.5	21.0	26.2	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	N·m	0.127	0.147	0.206	0.255	0.314	0.382	0.421	0.529	0.627	0.755	0.755	0.951	1.137	1.362	1.519	1.715	2.058	2.568	2.942	2.942	2.942	2.942	2.942	2.942	2.942

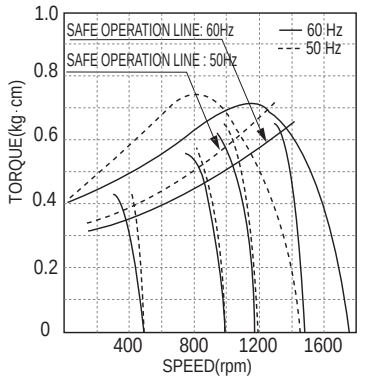
60Hz

MODEL / GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9	7.2
S6DA□B	kg-cm	1.0	1.3	1.7	2.1	2.6	3.1	3.5	4.4	5.2	6.3	6.3	7.8	9.4	11.3	12.6	14.2	17.0	21.3	25.5	28.4	30.0	30.0	30.0	30.0	30.0
	N·m	0.098	0.127	0.167	0.206	0.255	0.304	0.343	0.431	0.510	0.617	0.617	0.764	0.921	1.107	1.235	1.392	1.666	2.087	2.499	2.783	2.942	2.942	2.942	2.942	2.942

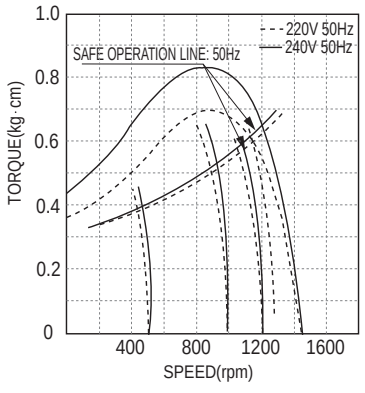
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The value in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (This is permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 30㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 30 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)



▲ S6I06GA-V12 , S6I06GB-V12
S6I06GA-V12CE , S6I06GB-V12CE



▲ S6I06GC-V12 , S6I06GD-V12
S6I06GC-V12CE , S6I06GD-V12CE

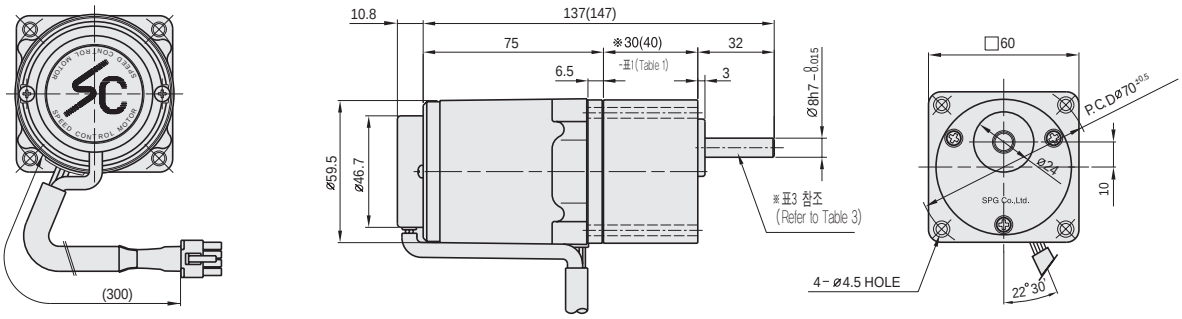


▲ S6I06GX-V12
S6I06GX-V12CE

DIMENSIONS

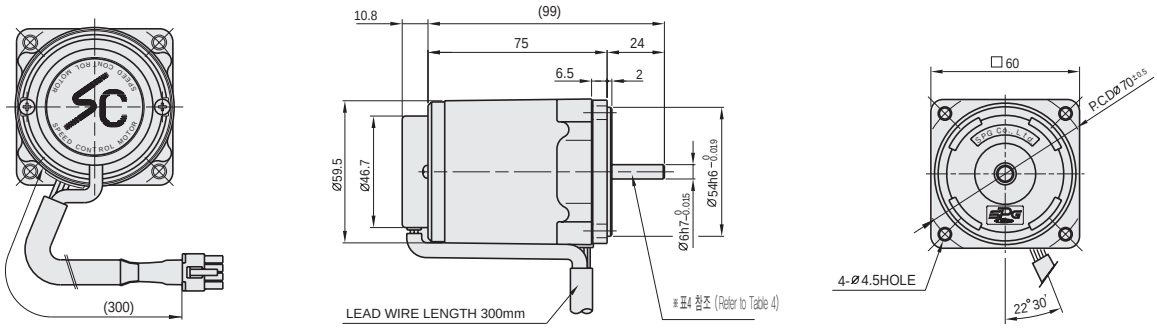
✚ GEARED MOTOR

※MOTOR MODEL : S6I06G□-V12
※HEAD MODEL : S6□A3□~S6□A250□



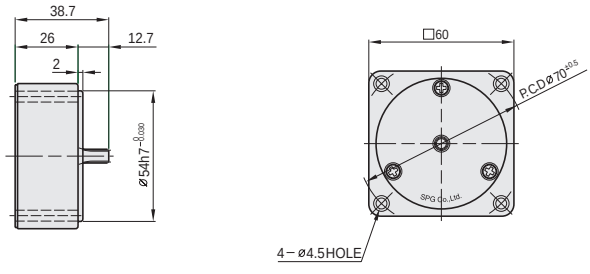
✚ MOTOR

※MOTOR MODEL : S6I06□□-V12



✚ INTER-DECIMAL GEAR HEAD

※MODEL : S6GX10B



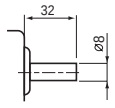
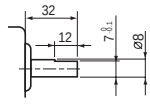
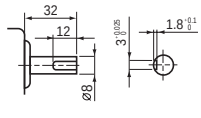
✚ ※30(40) - (표1 (Table1))

GEAR RATIO	SIZE(㎜)
S6□A3□ ~ S6□A18□	30
S6□A20□ ~ S6□A250□	40

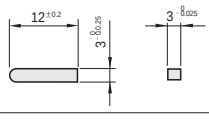
✚ WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		0.76
DECIMAL GEAR HEAD		0.18
GEAR HEAD	S6□A3□ ~S6□A18□	0.24
	S6□A20□ ~S6□A40□	0.30
	S6□A50□ ~S6□A250□	0.33

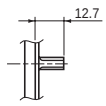
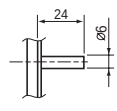
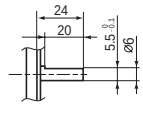
✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S6SA3□ ~S6SA250□	
D-CUT TYPE S6DA3□ ~S6DA250□	
KEY TYPE S6KA3□ ~S6KA250□	

✚ KEY SPEC

GEAR HEAD


✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S6I06G□-V12	
STRAIGHT TYPE S6I06S□-V12	
D-CUT TYPE S6I06D□-V12	



15W

INDUCTION SPEED CONTROL MOTOR
□70㎜ CONNECTOR TYPE

SIZE mm sq.	Motor Type	Controller Type	Poles	Output (W)	Voltage (V)	Freq. (Hz)	Duty	Speed Range (rpm)	Permissible Torque at 1200rpm (kg-cm)	Permissible Torque at 1200rpm (N-m)	Permissible Torque at 90rpm (kg-cm)	Permissible Torque at 90rpm (N-m)	Starting Torque (kg-cm)	Starting Torque (N-m)	Cap. (μF)
70	S7I15GA-V12 S7I15GA-V12(TP) S7I15GA-V12CE	SUA715A-V12	4	15	1Ø 110	60	Cont.	90-1700	1.15	0.115	0.60	0.060	0.90	0.090	5.0
	S7I15GB-V12 S7I15GB-V12(TP) S7I15GB-V12CE	SUA715B-V12	4	15	1Ø 220	60	Cont.	90-1700	1.15	0.115	0.60	0.060	0.90	0.090	1.2
	S7I15GC-V12 S7I15GC-V12(TP) S7I15GC-V12CE	SUA715C-V12	4	15	1Ø 100	50	Cont.	90-1400	1.10	0.110	0.40	0.040	0.75	0.075	5.0
						60		90-1700	1.00	0.100					
	S7I15GD-V12 S7I15GD-V12(TP) S7I15GD-V12CE	SUA715D-V12	4	15	1Ø 200	50	Cont.	90-1400	1.10	0.110	0.40	0.040	0.75	0.075	1.2
						60		90-1700	1.00	0.100					
	S7I15GX-V12 S7I15GX-V12CE	SUA715X-V12	4	15	1Ø 220	50	Cont.	90-1400	1.05	0.105	0.50	0.050	0.70	0.070	0.9
					1Ø 240				1.25	0.125	0.60	0.060	0.85	0.085	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is impedance protected type which has received CE.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된THERMALLY PROTECTED TYPE입니다. 또한 기종명 S7I15GX-V12, S7I15GX-V12CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S8I15GX-V12, S8I15GX-V12CE is thermally protected type with TP mounted.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

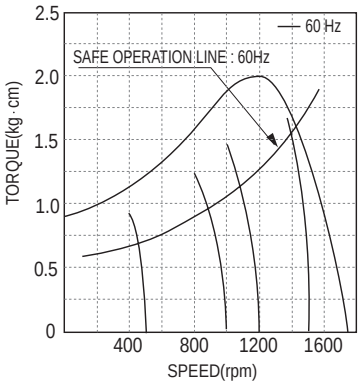
50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S7KA□B	kg-cm	3.2	3.9	5.4	6.5	8.1	9.7	10.8	13.5	16.2	19.4	19.4	24.2	29.1	34.9	38.8	43.6	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	N·m	0.314	0.382	0.530	0.637	0.794	0.951	1.059	1.324	1.587	1.902	1.902	2.373	2.854	3.423	3.805	4.276	4.900	4.900	4.900	4.900	4.900	4.900	4.900	4.900

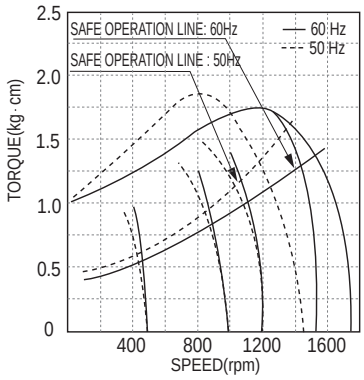
60Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S7KA□B	kg-cm	3.0	3.6	5.1	6.1	7.6	9.1	10.1	12.7	15.2	18.2	18.2	22.8	27.3	32.8	36.5	41.0	49.2	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	N·m	0.294	0.353	0.500	0.598	0.745	0.892	0.990	1.245	1.491	1.785	1.785	2.236	2.677	3.217	3.579	4.021	4.825	4.900	4.900	4.900	4.900	4.900	4.900	4.900

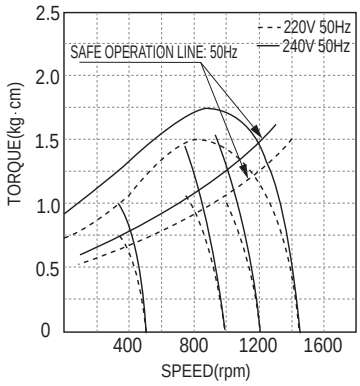
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 50㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 50 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)



▲ S7I15GA-V12 S7I15GB-V12
S7I15GA-V12(TP) S7I15GB-V12(TP)
S7I15GA-V12CE S7I15GB-V12CE



▲ S7I15GC-V12 S7I15GD-V12
S7I15GC-V12(TP) S7I15GD-V12(TP)
S7I15GC-V12CE S7I15GD-V12CE

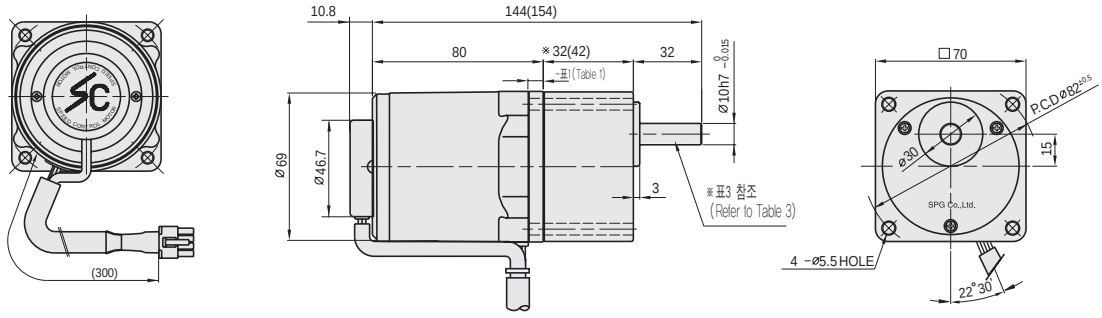


▲ S7I15GX-V12
S7I15GX-V12CE

DIMENSIONS

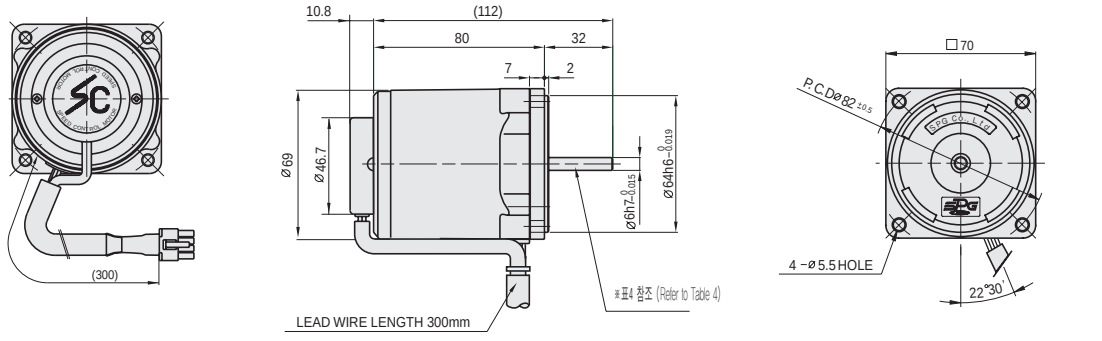
✚ GEARED MOTOR

※MOTOR MODEL : S7I15G□-V12
※HEAD MODEL : S7□A3□~S7□A200□



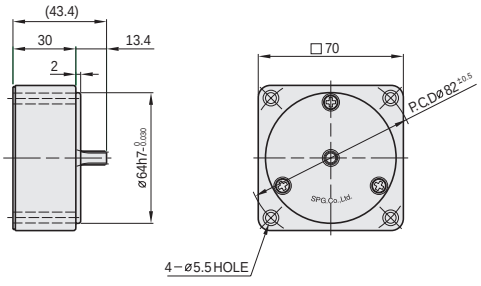
✚ MOTOR

※MOTOR MODEL : S7I15G□-V12

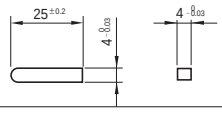


✚ INTER-DECIMAL GEAR HEAD

※MODEL : S7GX10B



✚ KEY SPEC

GEAR HEAD


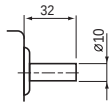
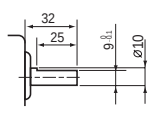
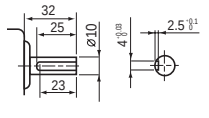
✚ ※32(42) - (표1 (Table1))

GEAR RATIO	SIZE(㎜)
S7□A3□ ~ S7□A18□	32
S7□A20□ ~ S7□A200□	42

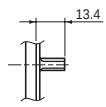
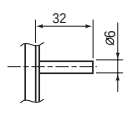
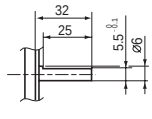
✚ WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		1.04
DECIMAL GEAR HEAD		0.32
GEAR HEAD	S7□A3□ ~S7□A18□	0.38
	S7□A20□ ~S7□A40□	0.47
	S7□A50□ ~S7□A200□	0.52

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S7SA3□ ~S7SA200□	
D-CUT TYPE S7DA3□ ~S7DA200□	
KEY TYPE S7KA3□ ~S7KA200□	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S7I15G□-V12	
STRAIGHT TYPE S7I15S□-V12	
D-CUT TYPE S7I15D□-V12	



15W

INDUCTION SPEED CONTROL MOTOR
□80㎜ CONNECTOR TYPE

SIZE mm sq.	Motor Type	Controller Type	Poles	Output (W)	Voltage (V)	Freq. (Hz)	Duty	Speed Range (rpm)	Permissible Torque at 1200rpm (kg-cm)	Permissible Torque at 1200rpm (N-m)	Permissible Torque at 90rpm (kg-cm)	Permissible Torque at 90rpm (N-m)	Starting Torque (kg-cm)	Starting Torque (N-m)	Cap. (μF)
80	S8I15GA-V12 S8I15GA-V12(TP) S8I15GA-V12CE	SUA15IA-V12	4	15	1Ø 110	60	Cont.	90-1700	1.50	0.150	0.35	0.035	0.75	0.075	4.0
	S8I15GB-V12 S8I15GB-V12(TP) S8I15GB-V12CE	SUA15IB-V12	4	15	1Ø 220	60	Cont.	90-1700	1.50	0.150	0.35	0.035	0.75	0.075	1.0
	S8I15GC-V12 S8I15GC-V12(TP) S8I15GC-V12CE	SUA15IC-V12	4	15	1Ø 100	50	Cont.	90-1400	1.20	0.120	0.32	0.032	0.60	0.060	4.0
						60		90-1700	1.00	0.100					
	S8I15GD-V12 S8I15GD-V12(TP) S8I15GD-V12CE	SUA15ID-V12	4	15	1Ø 200	50	Cont.	90-1400	1.20	0.120	0.32	0.032	0.60	0.060	1.0
						60		90-1700	1.00	0.100					
	S8I15GX-V12 S8I15GX-V12CE	SUA15IX-V12	4	15	1Ø 220	50	Cont.	90-1400	1.20	0.120	0.35	0.035	0.55	0.055	1.0
					1Ø 240				1.40	0.140	0.35	0.035	0.60	0.060	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is impedance protected type which has received CE.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8I15GX-V12, S8I15GX-V12CE는 TP가 내장된 THERMALLY PROTECTED TYPE 입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S8I15GX-V12, S8I15GX-V12CE is thermally protected type with TP mounted.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

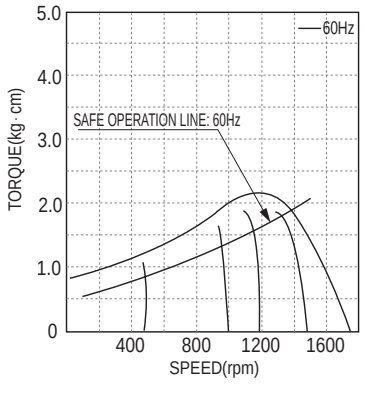
50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S8KA□B	kg-cm	3.4	4.1	5.7	6.8	8.5	10.2	11.3	14.2	17.0	20.4	20.4	25.6	30.7	36.8	40.9	46.2	55.4	69.2	80	80	80	80	80	80
	N·m	0.333	0.402	0.559	0.666	0.833	1.000	1.107	1.392	1.666	1.999	1.999	2.509	3.009	3.606	4.008	4.530	5.433	6.786	7.840	7.840	7.840	7.840	7.840	7.840

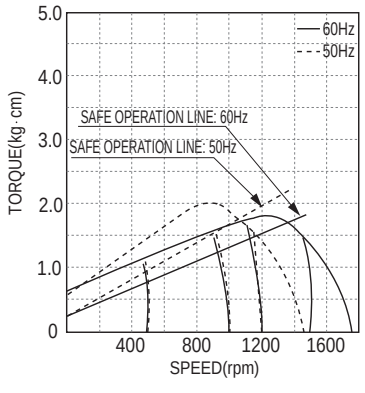
60Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S8KA□B	kg-cm	2.9	3.5	4.9	5.8	7.3	8.7	9.7	12.2	14.6	17.5	17.5	21.9	26.3	31.5	35.0	39.6	47.5	59.4	71.3	79.2	80	80	80	80
	N·m	0.284	0.343	0.481	0.568	0.715	0.853	0.951	1.196	1.432	1.715	1.715	2.146	2.577	3.087	3.430	3.881	4.658	5.825	6.992	7.767	7.840	7.840	7.840	7.840

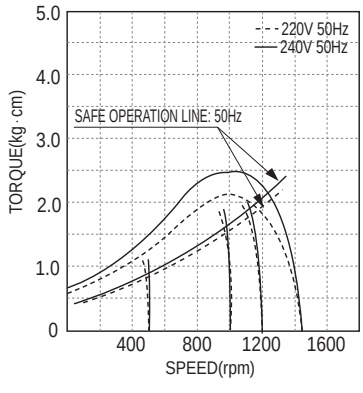
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 80㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 80 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)



▲ S8I15GA-V12 S8I15GB-V12
S8I15GA-V12(TP) S8I15GB-V12(TP)
S8I15GA-V12CE S8I15GB-V12CE



▲ S8I15GC-V12 S8I15GD-V12
S8I15GC-V12(TP) S8I15GD-V12(TP)
S8I15GC-V12CE S8I15GD-V12CE



▲ S8I15GX-V12
S8I15GX-V12CE



25W

INDUCTION SPEED CONTROL MOTOR
□80㎜ CONNECTOR TYPE

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
80	S8I25GA-V12 S8I25GA-V12(TP) S8I25GA-V12CE	SUA25IA-V12	4	25	1Ø 110	60	Cont.	90-1700	1.70	0.170	0.08	0.080	1.50	0.150	6.0
	S8I25GB-V12 S8I25GB-V12(TP) S8I25GB-V12CE	SUA25IB-V12	4	25	1Ø 220	60	Cont.	90-1700	1.70	0.170	0.08	0.080	1.50	0.150	1.5
	S8I25GC-V12 S8I25GC-V12(TP) S8I25GC-V12CE	SUA25IC-V12	4	25	1Ø 100	50	Cont.	90-1400	1.60	0.160	0.55	0.055	1.10	0.110	6.0
						60		90-1700	1.50	0.150					
	S8I25GD-V12 S8I25GD-V12(TP) S8I25GD-V12CE	SUA25ID-V12	4	25	1Ø 200	50	Cont.	90-1400	1.60	0.160	0.55	0.055	1.10	0.110	1.5
						60		90-1700	1.50	0.150					
	S8I25GX-V12 S8I25GX-V12CE	SUA25IX-V12	4	25	1Ø 220	50	Cont.	90-1400	1.50	0.150	0.50	0.050	1.00	0.100	1.5
					1Ø 240				1.80	0.180	0.50	0.050	1.20	0.120	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is impedance protected type which has received CE.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8I15GX-V12, S8I15GX-V12CE는 TP가 내장된 THERMALLY PROTECTED TYPE 입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S8I15GX-V12, S8I15GX-V12CE is thermally protected type with TP mounted.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

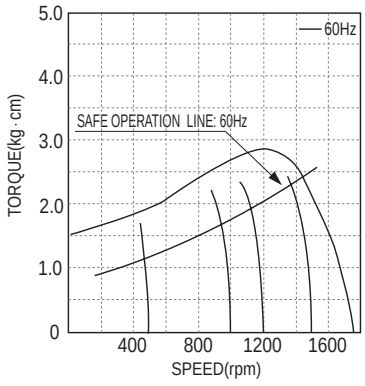
50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S8KA□B	kg-cm	5.3	6.4	8.9	10.7	13.4	16.0	17.8	22.3	26.7	32.1	32.1	40.2	48.2	57.8	64.2	72.6	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	N·m	0.519	0.627	0.872	1.049	1.313	1.568	1.744	2.185	2.617	3.146	3.146	3.940	4.724	5.664	6.292	7.115	7.840	7.840	7.840	7.840	7.840	7.840	7.840	7.840

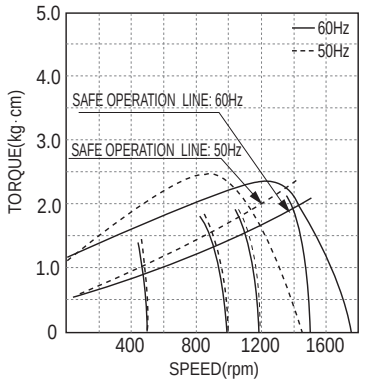
60Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S8KA□B	kg-cm	4.4	5.2	7.3	8.7	10.9	13.1	14.6	18.2	21.9	26.2	26.3	32.9	39.4	47.3	52.6	59.4	71.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	N·m	0.431	0.510	0.715	0.853	1.068	1.284	1.431	1.784	2.146	2.568	2.577	3.224	3.861	4.635	5.155	5.821	6.987	7.840	7.840	7.840	7.840	7.840	7.840	7.840

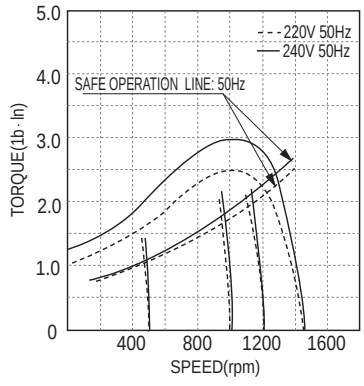
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 80㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 80 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)



▲ S8I25GA-V12 S8I25GB-V12
S8I25GA-V12(TP) S8I25GB-V12(TP)
S8I25GA-V12CE S8I25GB-V12CE



▲ S8I25GC-V12 S8I25GD-V12
S8I25GC-V12(TP) S8I25GD-V12(TP)
S8I25GC-V12CE S8I25GD-V12CE

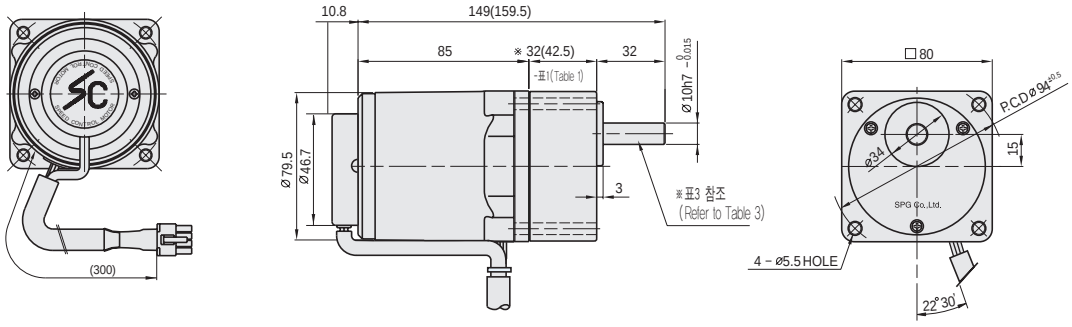


▲ S8I25GX-V12
S8I25GX-V12CE

DIMENSIONS

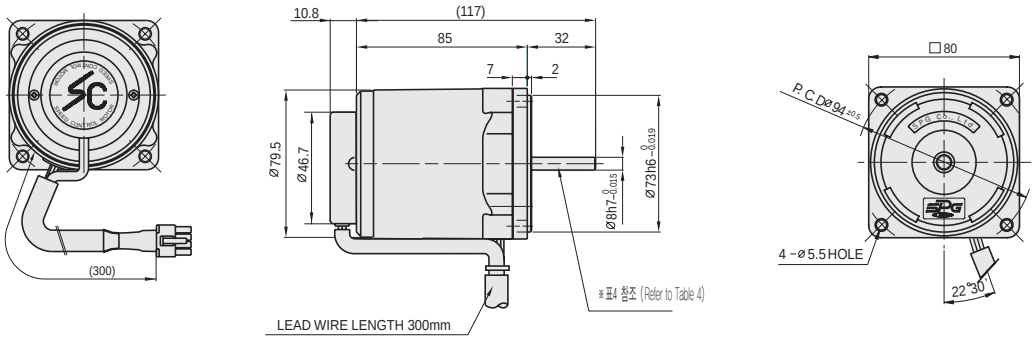
✚ GEARED MOTOR

※MOTOR MODEL : S8(15,25)G□-V12
※HEAD MODEL : S8□A3□~S8□A200□



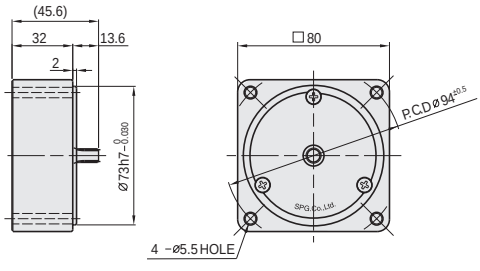
✚ MOTOR

※MOTOR MODEL : S8I(15,25)□□-V12



✚ INTER-DECIMAL GEAR HEAD

※MODEL : S8GX10B



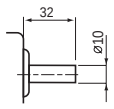
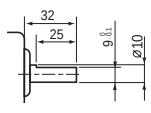
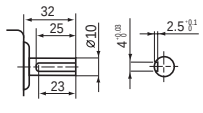
✚ ※32(42.5) - (표1 (Table1))

GEAR RATIO	SIZE(㎜)
S8□A3□ ~ S8□A18□	32
S8□A20□ ~ S8□A200□	42.5

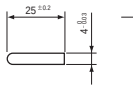
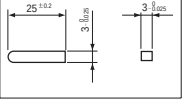
✚ WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
15W MOTOR		1.6
25W MOTOR		1.6
DECIMAL GEAR HEAD		0.43
GEAR HEAD	S8□A3□ ~S8□A18□	0.43
	S8□A20□ ~S8□A40□	0.57
	S8□A50□ ~S8□A200□	0.61

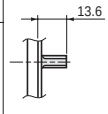
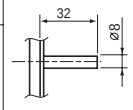
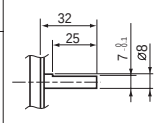
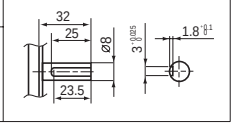
✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

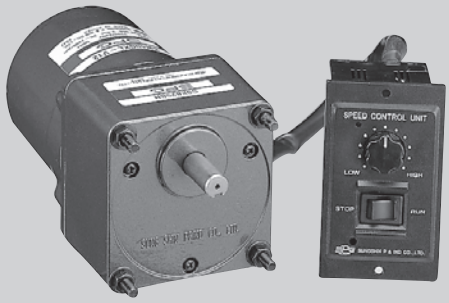
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S8SA3□ ~S8SA200□	
D-CUT TYPE S8DA3□ ~S8DA200□	
KEY TYPE S8KA3□ ~S8KA200□	

✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S8I15G□-V12 S8I25G□-V12	
STRAIGHT TYPE S8I15S□-V12 S8I25S□-V12	
D-CUT TYPE S8I15D□-V12 S8I25D□-V12	
KEY TYPE S8I15K□-V12 S8I25K□-V12	



40W

INDUCTION SPEED CONTROL MOTOR
□90㎜ CONNECTOR TYPE

SIZE mm sq.	Motor Type	Controller Type	Poles	Output (W)	Voltage (V)	Freq. (Hz)	Duty	Speed Range (rpm)	Permissible Torque at 1200rpm (kg-cm)	Permissible Torque at 1200rpm (N-m)	Permissible Torque at 90rpm (kg-cm)	Permissible Torque at 90rpm (N-m)	Starting Torque (kg-cm)	Starting Torque (N-m)	Cap. (μF)
90	S9I40GA()-V12 S9I40GA()-V12(TP) S9I40GA()-V12CE	SUA40IA-V12	4	40	1Ø 110	60	Cont.	90-1700	2.70	0.270	1.00	0.100	2.20	0.220	10.0
	S9I40GB()-V12 S9I40GB()-V12(TP) S9I40GB()-V12CE	SUA40IB-V12	4	40	1Ø 220	60	Cont.	90-1700	2.70	0.270	1.00	0.100	2.20	0.220	2.5
	S9I40GC()-V12 S9I40GC()-V12(TP) S9I40GC()-V12CE	SUA40IC-V12	4	40	1Ø 100	50	Cont.	90-1400	2.70	0.270	0.90	0.090	1.80	0.180	10.0
						60		90-1700	2.00	0.200					
	S9I40GD()-V12 S9I40GD()-V12(TP) S9I40GD()-V12CE	SUA40ID-V12	4	40	1Ø 200	50	Cont.	90-1400	2.70	0.270	0.90	0.090	1.80	0.180	2.5
						60		90-1700	2.00	0.200					
	S9I40GX()-V12 S9I40GX()-V12CE	SUA40IX-V12	4	40	1Ø 220	50	Cont.	90-1400	2.50	0.250	0.70	0.070	1.70	0.170	2.0
					1Ø 240				3.00	0.300	0.70	0.070	2.10	0.210	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is impedance protected type which has received CE.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9I40GX( )-V12, S9I40GX( )-V12CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S9I40GX( )-V12, S9I40GX( )-V12CE is thermally protected type with TP mounted.)
❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

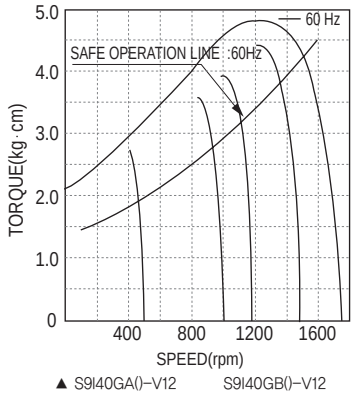
50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KB□B( )	kg-cm	8.3	9.9	13.8	16.5	20.7	24.8	27.5	34.4	41.3	49.6	49.6	62.1	74.5	89.4	99.3	100	100	100	100	100	100	100	100	100
	N·m	0.813	0.970	1.352	1.617	2.029	2.430	2.695	3.371	4.047	4.861	4.861	6.086	7.301	8.761	9.731	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800

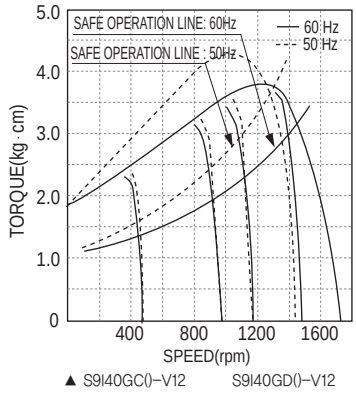
60Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KB□B( )	kg-cm	6.8	8.2	11.3	13.6	17.0	20.4	22.7	28.4	34.0	40.8	40.9	51.1	61.3	73.6	81.8	100	100	100	100	100	100	100	100	100
	N·m	0.666	0.804	1.107	1.333	1.666	1.999	2.225	2.783	3.332	3.998	4.008	5.008	6.007	7.213	8.016	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800

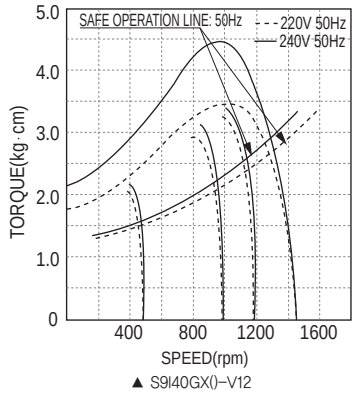
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 100㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 100 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)



▲ S9I40GA()-V12 S9I40GB()-V12
S9I40GA()-V12(TP) S9I40GB()-V12(TP)
S9I40GA()-V12CE S9I40GB()-V12CE



▲ S9I40GC()-V12 S9I40GD()-V12
S9I40GC()-V12(TP) S9I40GD()-V12(TP)
S9I40GC()-V12CE S9I40GD()-V12CE

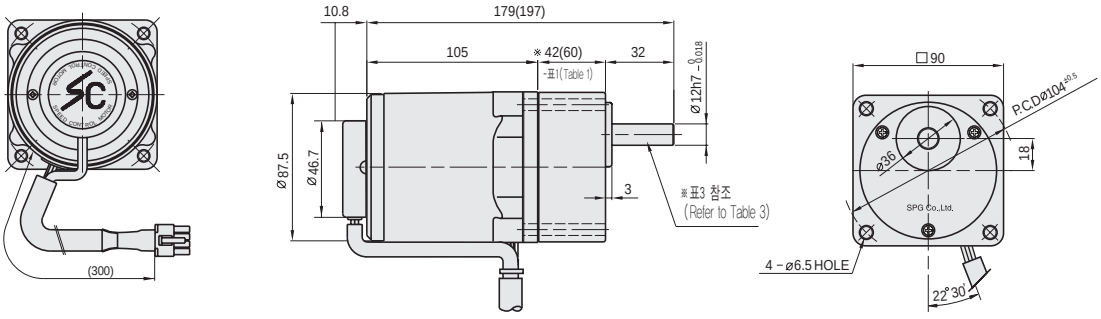


▲ S9I40GX()-V12
S9I40GX()-V12CE

DIMENSIONS

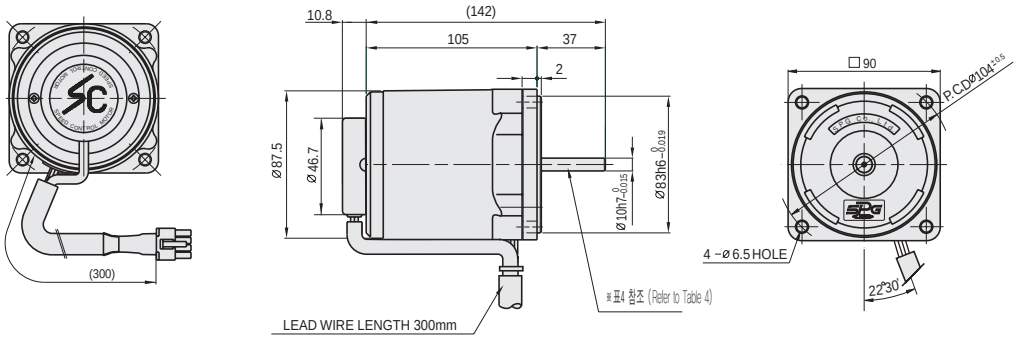
✚ GEARED MOTOR

※MOTOR MODEL : S9I40G□-V12
※HEAD MODEL : S9□A3□~S9□A200□



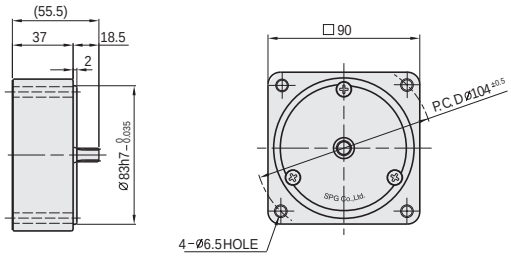
✚ MOTOR

※MOTOR MODEL : S9I40□□-V12

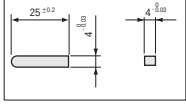
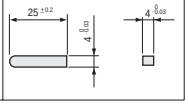


✚ INTER-DECIMAL GEAR HEAD

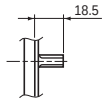
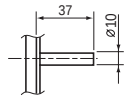
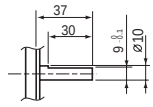
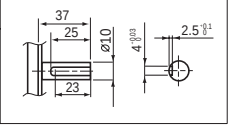
※MODEL : S9GX10B



✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9I40G□□-V12	
STRAIGHT TYPE S9I40S□-V12	
D-CUT TYPE S9I40D□-V12	
KEY TYPE S9I40K□-V12	

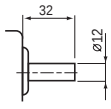
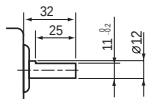
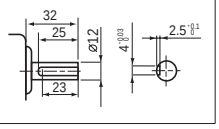
✚ ※42(60) - (표1 (Table1))

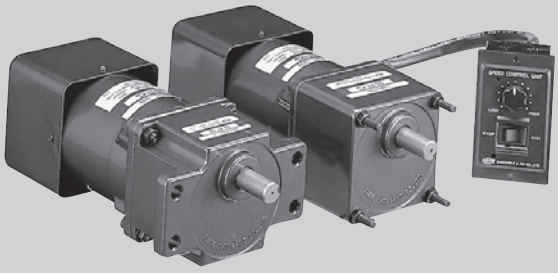
GEAR RATIO	SIZE(㎜)
S9□B3□ ~ S9□B18□	42
S9□B20□ ~ S9□B200□	60

✚ WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		2.42
DECIMAL GEAR HEAD		0.60
GEAR HEAD	S9□B3□□ ~S9□B18□□	0.73
	S9□B20□□ ~S9□B40□□	1.03
	S9□B50□□ ~S9□B200□□	1.13

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SB3□ ~S9SB200□	
D-CUT TYPE S9DB3□ ~S9DB200□	
KEY TYPE S9KB3□□ ~S9KB200□□	



60W

INDUCTION SPEED CONTROL MOTOR
□90㎜ CONNECTOR TYPE

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
90	S9I60GA()-V12 S9I60GA()-V12(TP) S9I60GA()-V12CE	SUA60IA-V12	4	60	1Ø 110	60	Cont.	90-1700	5.50	0.550	2.00	0.200	5.00	0.500	20.0
	S9I60GB()-V12 S9I60GB()-V12(TP) S9I60GB()-V12CE	SUA60IB-V12	4	60	1Ø 220	60	Cont.	90-1700	5.50	0.550	2.00	0.200	5.00	0.500	5.0
	S9I60GC()-V12 S9I60GC()-V12(TP) S9I60GC()-V12CE	SUA60IC-V12	4	60	1Ø 100	50	Cont.	90-1400	5.50	0.550	1.20	0.120	4.00	0.400	20.0
						60		90-1700	5.00	0.500					
	S9I60GD()-V12 S9I60GD()-V12(TP) S9I60GD()-V12CE	SUA60ID-V12	4	60	1Ø 200	50	Cont.	90-1400	5.50	0.550	1.20	0.120	4.00	0.400	5.0
						60		90-1700	5.00	0.500					
	S9I60GX()-V12 S9I60GX()-V12CE	SUA60IX-V12	4	60	1Ø 220	50	Cont.	90-1400	5.20	0.520	0.90	0.090	3.10	0.310	3.5
					1Ø 240				5.80	0.580	0.90	0.090	3.60	0.360	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is impedance protected type which has received CE.)
❖ 기종명 맨 끝자리에 (TP)와 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9I60GX( )-V12, S9I60GX( )-V12CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S9I60GX( )-V12, S9I60GX( )-V12CE is thermally protected type with TP mounted.)
❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

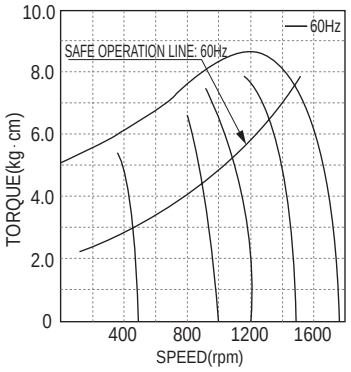
50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KC□B( )	kg-cm	12.2	14.6	20.3	24.3	30.4	36.5	40.5	45.6	54.8	65.7	73.0	82.5	99.0	119	132	165	198	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.196	1.431	1.989	2.381	2.989	3.577	3.969	4.469	5.370	6.439	7.154	8.085	9.702	11.66	12.94	16.17	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60

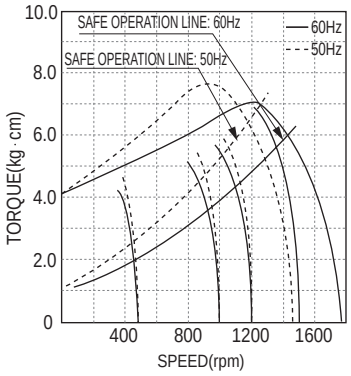
60Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KC□B( )	kg-cm	9.72	11.7	16.2	19.4	24.3	29.2	32.4	36.5	43.8	52.6	58.4	66.0	79.2	95.0	106	132	158	177	200	200	200	200	200	200
S9KC□B( )-S	N·m	0.953	1.147	1.588	1.901	2.381	2.862	3.175	3.577	4.292	5.155	5.723	6.468	7.762	9.310	10.39	12.94	15.48	17.35	19.60	19.60	19.60	19.60	19.60	19.60

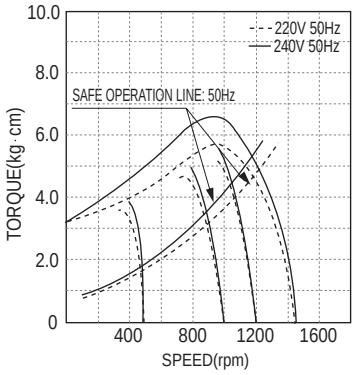
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 200㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)



▲ S9I60GA()-V12 S9I60GB()-V12
S9I60GA()-V12(TP) S9I60GB()-V12(TP)
S9I60GA()-V12CE S9I60GB()-V12CE



▲ S9I60GC()-V12 S9I60GD()-V12
S9I60GC()-V12(TP) S9I60GD()-V12(TP)
S9I60GC()-V12CE S9I60GD()-V12CE

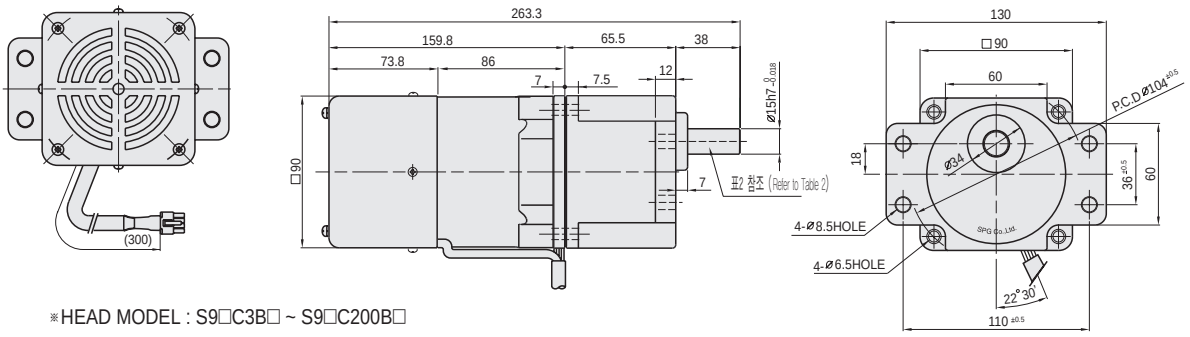


▲ S9I60GX()-V12
S9I60GX()-V12CE

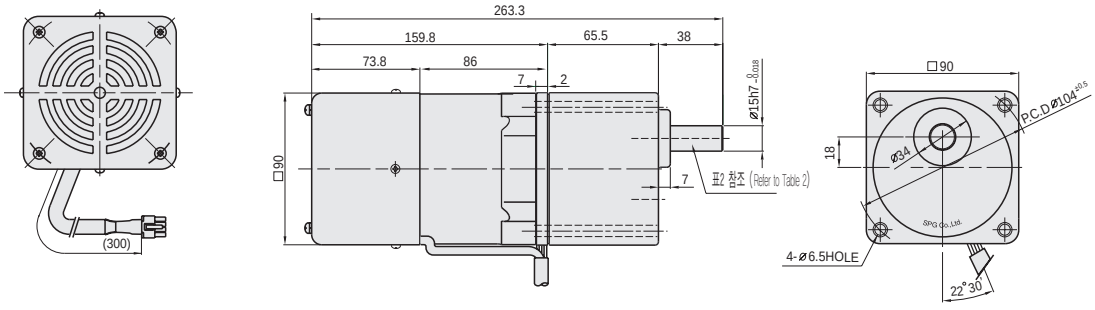
DIMENSIONS

✚ GEARED MOTOR

※MOTOR MODEL : S9I60G□□-V12
※HEAD MODEL : S9□C3B□ ~ S9□C200□-S

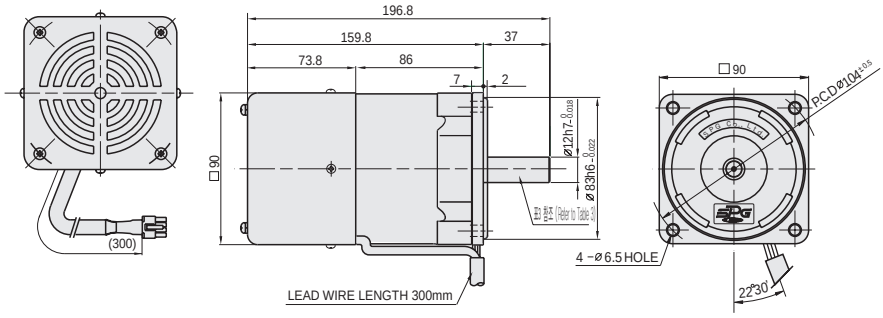


※HEAD MODEL : S9□C3B□ ~ S9□C200B□



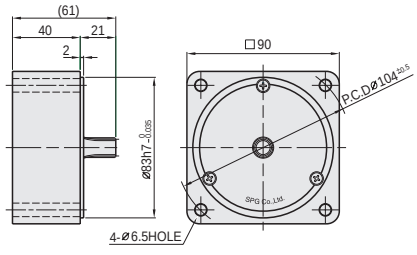
✚ MOTOR

※MOTOR MODEL : S9I60□□□-V12



✚ INTER-DECIMAL GEAR HEAD

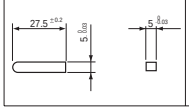
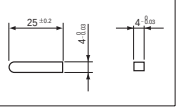
※MODEL : S9GX10B(H,L)-S



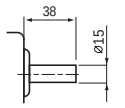
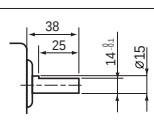
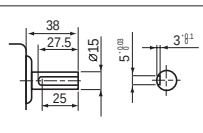
✚ WEIGHT - (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.93
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3B□ ~S9□C10B□	1.21
	S9□C12.5B□ ~S9□C20B□	1.30
	S9□C25B□ ~S9□C60B□	1.40
	S9□C75B□ ~S9□C200B□	1.45

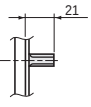
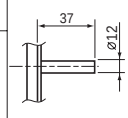
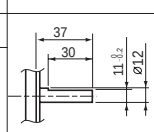
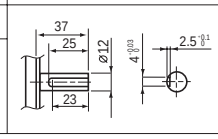
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE	
S9SC3B□ ~S9SC200B□	
D-CUT TYPE	
S9DC3B□ ~S9DC200B□	
KEY TYPE	
S9KC3B□ ~S9KC200B□	

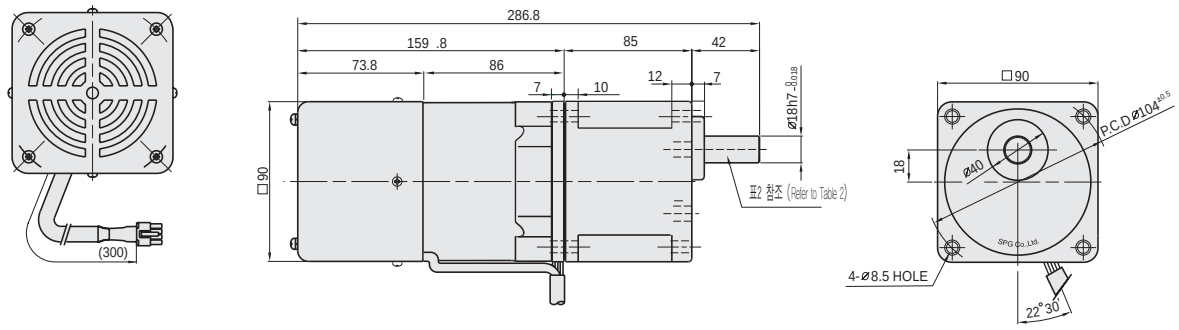
✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE	
S9I60G□□-V12	
STRAIGHT TYPE	
S9I60S□-V12	
D-CUT TYPE	
S9I60D□-V12	
KEY TYPE	
S9I60K□-V12	

DIMENSIONS

✚ GEARED MOTOR

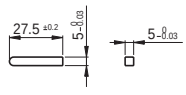
※MOTOR MODEL : S9I60G□H-V12
※HEAD MODEL : S9□D3B□~S9□D200B



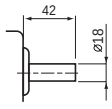
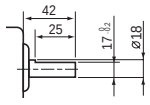
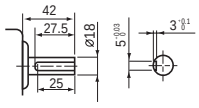
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.93
GEAR HEAD	S9□D3B ~S9□D10B	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE	
S9SD3B ~S9SD200B	
D-CUT TYPE	
S9DD3B ~S9DD200B	
KEY TYPE	
S9KD3B ~S9KD200B	

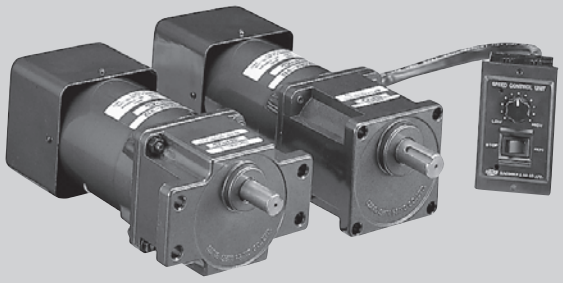
50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KD□B	kg-cm	12.2	14.6	20.3	24.3	30.4	36.5	40.5	45.6	54.8	65.7	73.0	82.5	99.0	119	132	165	198	221	266	295	300	300	300	300
	N·m	1.196	1.431	1.989	2.381	2.989	3.577	3.969	4.469	5.370	6.439	7.154	8.085	9.702	11.66	12.94	16.17	19.40	21.67	26.09	28.93	29.42	29.42	29.42	29.42

60Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KD□B	kg-cm	9.72	11.7	16.2	19.4	24.3	29.2	32.4	36.5	43.8	52.6	58.4	66.0	79.2	95.0	106	132	158	177	212	236	283	300	300	300
	N·m	0.953	1.147	1.588	1.901	2.381	2.862	3.175	3.577	4.292	5.155	5.723	6.468	7.762	9.310	10.39	12.94	15.48	17.35	20.79	23.14	27.75	29.42	29.42	29.42

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 300kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. MOTOR의 H와 사용하여 주십시오. (Only "H" type is applicable. Please use "H" type motor.)



90W

INDUCTION SPEED CONTROL MOTOR
□90㎜ CONNECTOR TYPE

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
90	S9I90GA( )-V12 S9I90GA( )-V12(TP) S9I90GA( )-V12CE	SUA90IA-V12	4	90	1ø 110	60	Cont.	90-1700	6.30	0.630	3.00	0.300	6.50	0.650	24.0
	S9I90GB( )-V12 S9I90GB( )-V12(TP) S9I90GB( )-V12CE	SUA90IB-V12	4	90	1ø 220	60	Cont.	90-1700	6.30	0.630	3.00	0.300	6.50	0.650	7.0
	S9I90GC( )-V12 S9I90GC( )-V12(TP) S9I90GC( )-V12CE	SUA90IC-V12	4	90	1ø 100	50	Cont.	90-1400	5.80	0.580	2.50	0.250	5.50	0.550	24.0
						60		90-1700	5.30	0.530					
	S9I90GD( )-V12 S9I90GD( )-V12(TP) S9I90GD( )-V12CE	SUA90ID-V12	4	90	1ø 200	50	Cont.	90-1400	5.80	0.580	2.50	0.250	5.50	0.550	7.0
						60		90-1700	5.30	0.530					
	S9I90GX( )-V12 S9I90GX( )-V12CE	SUA90IX-V12	4	90	1ø 220	50	Cont.	90-1400	5.40	0.540	2.20	0.220	4.60	0.460	5.0
					1ø 240				6.10	0.610	2.20	0.220	5.50	0.550	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is impedance protected type which has received CE.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9I90GX( )-V12, S9I90GX( )-V12CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S9I90GX( )-V12, S9I90GX( )-V12CE is thermally protected type with TP mounted.)
❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

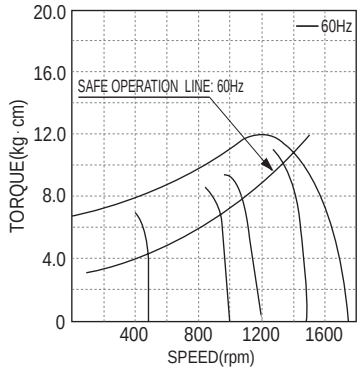
50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KC□B( )	kg-cm	18.2	21.9	30.4	36.5	45.6	54.7	60.8	68.4	82.1	98.6	110	124	149	178	198	200	200	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.784	2.146	2.979	3.577	4.469	5.361	5.958	6.703	8.046	9.663	10.78	12.15	14.60	17.44	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60

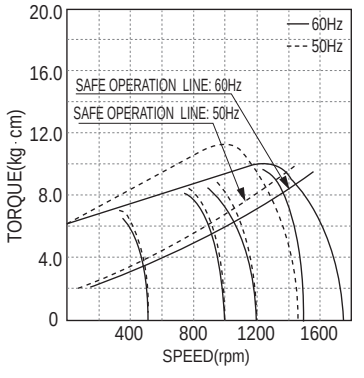
60Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KC□B( )	kg-cm	14.6	17.5	24.3	29.2	36.5	43.7	48.6	54.8	65.7	78.8	87.6	99.0	119	143	158	198	200	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.431	1.715	2.381	2.862	3.577	4.675	4.763	5.370	6.439	7.722	8.585	9.702	11.66	14.01	15.48	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60

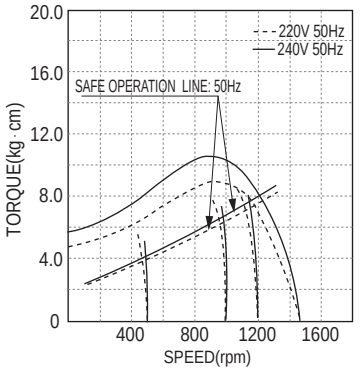
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 200kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)



▲ S9I90GA()-V12 S9I90GB()-V12
S9I90GA()-V12(TP) S9I90GB()-V12(TP)
S9I90GA()-V12CE S9I90GB()-V12CE



▲ S9I90GC()-V12 S9I90GD()-V12
S9I90GC()-V12(TP) S9I90GD()-V12(TP)
S9I90GC()-V12CE S9I90GD()-V12CE

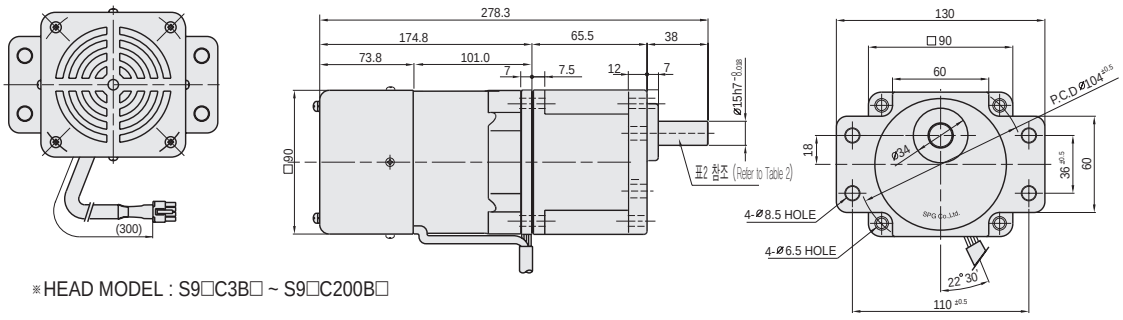


▲ S9I90GX()-V12
S9I90GX()-V12CE

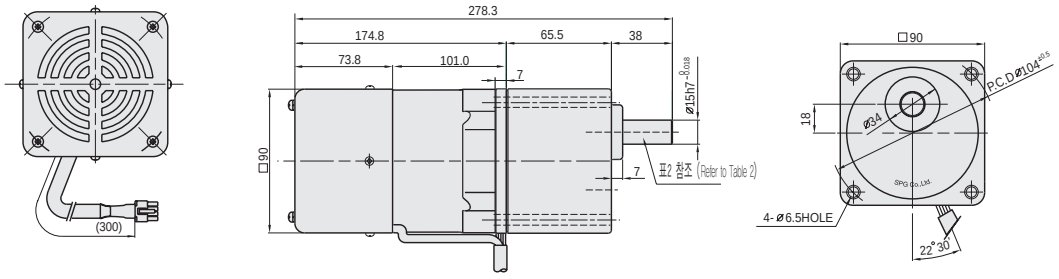
DIMENSIONS

GEARED MOTOR

※MOTOR MODEL : S9I90G□H-V12
※HEAD MODEL : S9□C3B□-S ~ S9□C200B□-S

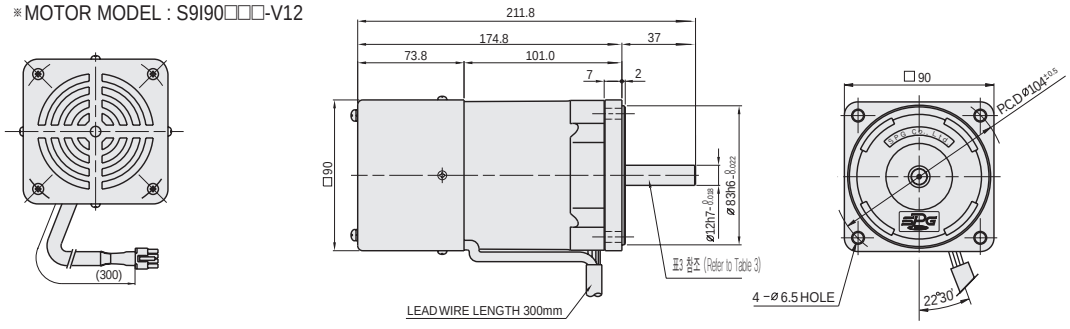


※HEAD MODEL : S9□C3B□ ~ S9□C200B□



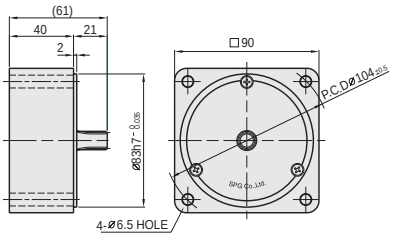
MOTOR

※MOTOR MODEL : S9I90□□□-V12



INTER-DECIMAL GEAR HEAD

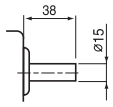
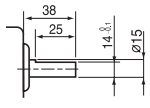
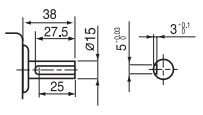
※MODEL : S9GX10B(H,L)-S



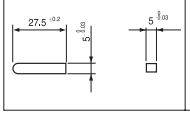
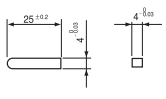
WEIGHT - (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.53
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3B□ ~S9□C10B□	1.21
	S9□C12.5B□ ~S9□C20B□	1.30
	S9□C25B□ ~S9□C60B□	1.40
	S9□C75B□ ~S9□C200B□	1.45

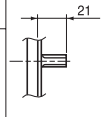
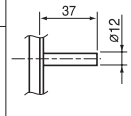
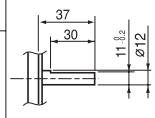
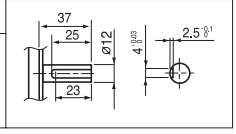
GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SC3B□ ~S9SC200B□	
D-CUT TYPE S9DC3B□ ~S9DC200B□	
KEY TYPE S9KC3B□ ~S9KC200B□	

KEY SPEC

GEAR HEAD	MOTOR
	

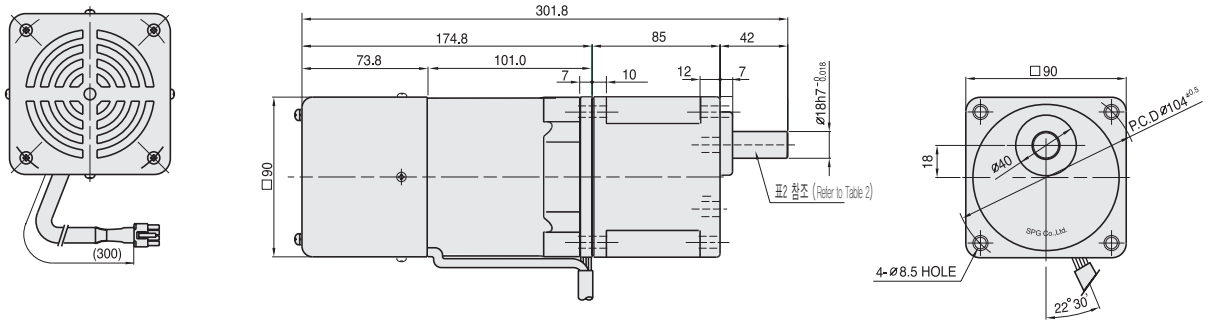
MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9I90G□□-V12	
STRAIGHT TYPE S9I90S□-V12	
D-CUT TYPE S9I90D□-V12	
KEY TYPE S9I90K□-V12	

DIMENSIONS

✚ GEARED MOTOR

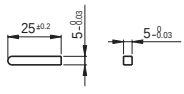
※MOTOR MODEL : S9I90G□H-V12
※HEAD MODEL : S9□D3B~S9□D200B



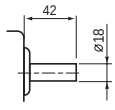
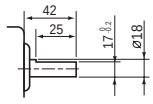
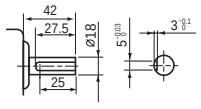
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.53
GEAR HEAD	S9□D3B ~S9□D10B	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE	
S9SD3B ~S9SD200B	
D-CUT TYPE	
S9DD3B ~S9DD200B	
KEY TYPE	
S9KD3B ~S9KD200B	

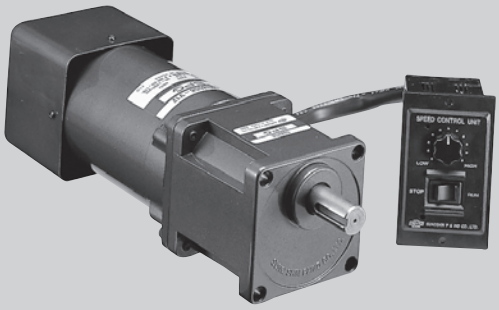
50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KD□B	kg-cm	18.2	21.9	30.4	36.5	45.6	54.7	60.8	68.4	82.1	98.6	110	124	149	178	198	248	297	300	300	300	300	300	300	300
	N·m	1.784	2.146	2.979	3.577	4.469	5.361	5.958	6.703	8.046	9.663	10.78	12.15	14.60	17.44	19.40	24.32	29.13	29.42	29.42	29.42	29.42	29.42	29.42	29.42

60Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KD□B	kg-cm	14.6	17.5	24.3	29.2	36.5	43.7	48.6	54.8	65.7	78.8	87.6	99.0	119	143	158	198	238	266	300	300	300	300	300	300
	N·m	1.431	1.715	2.381	2.862	3.577	4.675	4.763	5.370	6.439	7.722	8.585	9.702	11.66	14.01	15.48	19.40	23.34	26.09	29.42	29.42	29.42	29.42	29.42	29.42

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 300㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. MOTOR의 H와 사용하여 주십시오. (Only "H" type is applicable. Please use "H" type motor.)



180W

INDUCTION SPEED CONTROL MOTOR
□90㎜ CONNECTOR TYPE

SIZE mm sq.	Motor Type	Controller Type	Poles	Output (W)	Voltage (V)	Freq. (Hz)	Duty	Speed Range (rpm)	Permissible Torque at 1200rpm (kg-cm)	Permissible Torque at 1200rpm (N-m)	Permissible Torque at 90rpm (kg-cm)	Permissible Torque at 90rpm (N-m)	Starting Torque (kg-cm)	Starting Torque (N-m)	Cap. (μF)
90	S9I180GB( )-V12 S9I180GB( )-V12(TP) S9I180GB( )-V12CE	SUA180IB-V12	4	180	1 Ø 220	60	Cont.	90-1700	7.72	0.772	4.25	0.425	6.45	0.645	7.0

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is impedance protected type which has received CE.)
❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. (Only "H" type is applicable. Please use "H" type motor.)

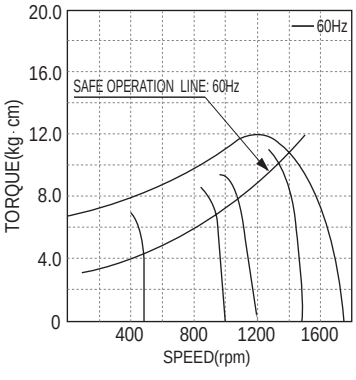
50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KH□B	kg-cm	34.0	41.0	57.0	68.0	85.1	102	113	128	153	184	204	230	278	300	300	300	300	300	300	300	300	300	300	300
	N·m	3.336	4.021	5.590	6.672	8.341	10.01	11.12	12.55	15.01	18.04	20.02	22.56	27.26	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42

60Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KH□B	kg-cm	28.1	34.0	47.0	57.0	71.0	84.2	94.0	105	126	152	168	189	227	273	300	300	300	300	300	300	300	300	300	300
	N·m	2.756	3.334	4.609	5.590	6.963	8.257	9.218	10.30	12.39	14.91	16.51	18.58	22.29	26.75	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42	29.42

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the ambient torque of the assembled motor and gearhead.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. (Only "H" type is applicable. Please use "H" type motor.)

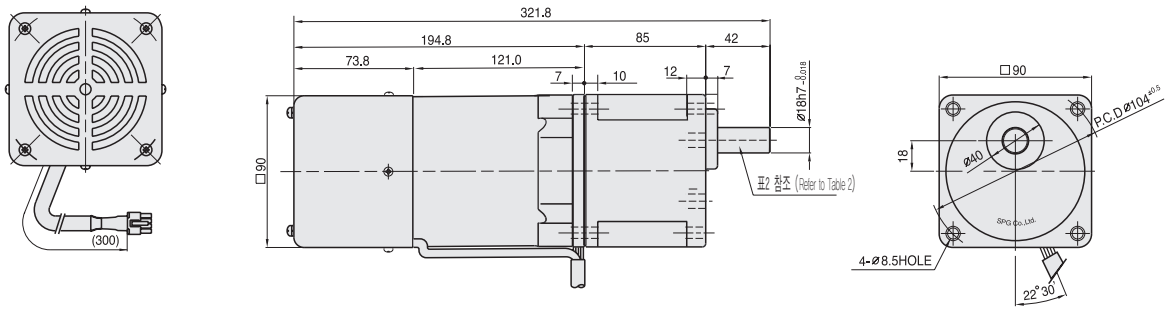


▲ S9I180GB( )-V12
S9I180GB( )-V12(TP)
S9I180GB( )-V12CE

DIMENSIONS

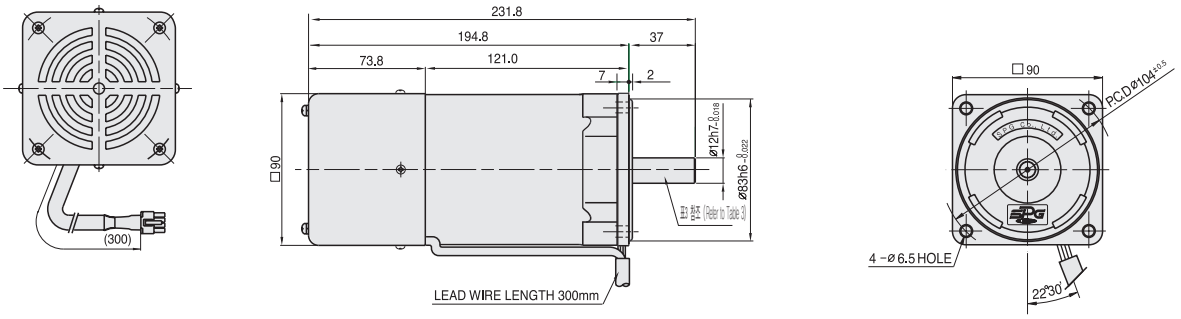
✚ GEARED MOTOR

※MOTOR MODEL : S9I180G□-V12
※HEAD MODEL : S9□H3B~S9□H200B



✚ MOTOR

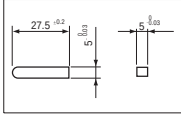
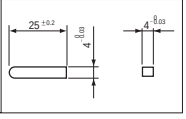
※MOTOR MODEL : S9I180□-V12



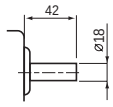
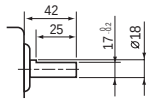
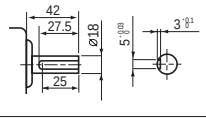
✚ WEIGHT – (표1)

PART		WEIGHT(kg)
MOTOR		4.30
GEAR HEAD	S9□H3B ~S9□H10B	1.65
	S9□H12.5B ~S9□H20B	1.80
	S9□H25B ~S9□H60B	1.90
	S9□H75B ~S9□H200B	1.95

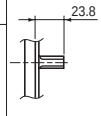
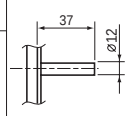
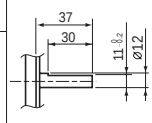
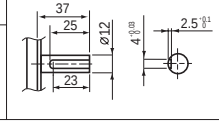
✚ KEY SPEC

GEAR HEAD	MOTOR
	

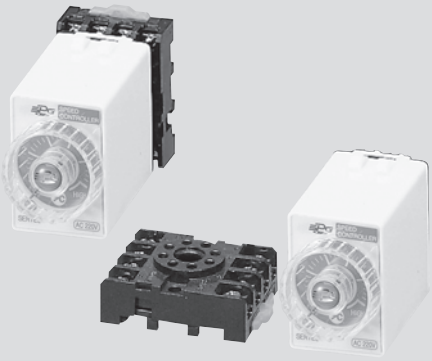
✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분
STRAIGHT TYPE S9SH3B ~S9SH200B	
D-CUT TYPE S9DH3B ~S9DH200B	
KEY TYPE S9KH3B ~S9KH200B	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표3 (Table3))

MODEL	출력축 구분
GEAR TYPE S9I180G□-V12	
STRAIGHT TYPE S9I180S□-V12	
D-CUT TYPE S9I180D□-V12	
KEY TYPE S9I180K□-V12	

SPEED CONTROLLER
: SR TYPE



특징 (Characteristics)
- MOTOR의 가변속 요구에 대응하여 개발된 소형 GEARED MOTOR용 SPEED CONTROLLER입니다. (This is a speed controller for small geared motors which was developed to meet the motor's variable speed demands.)
- 당사에서 독자적으로 개발한 IC회로에 의해 소형, 경량, 높은 신뢰성을 실현하였습니다. (It uses the IC circuit that SPG Motor independently developed and is small, lightweight and reliable.)
- 속도 설정은 CASE전면에 속도설정용 가변저항기에 의해 회전 속도 조정이 가능합니다. (Speed control is possible by controlling the number of revolutions with the variable resistor on the front of the case.)
- 속도설정기를 별도로 설치하여 원거리 운전 조작도 가능합니다. (Remote control is possible by installing a speed controller(speed setter).)
- 전기 BRAKE에 의한 순시정지기능이 가능합니다. (Instantaneous braking is possible with an electric brake.)
- 소형의 8PIN PLUG IN 방식을 채용하였습니다. (The small 8 pin plug in method was used.)

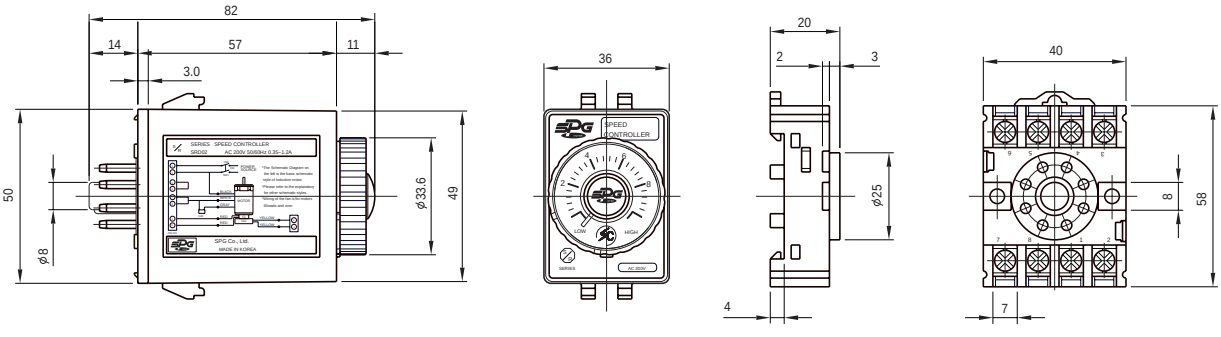
SPECIFICATIONS

	품명 (MODEL) / 특성 (SPEC)		SR TYPE									
			SRA01	SRA02	SRB01	SRB02	SRC01	SRC02	SRD01	SRD02	SRX01	SRX02
	정격전압 (Rated Voltage)		AC110V 60Hz		AC220V 60Hz		AC100V 50/60Hz		AC200V 50/60Hz		AC220~240V 50Hz	
	사용전압범위 (Operation Voltage Range)		±10%									
※1	적용 MOTOR 출력 (APPLICABLE MOTOR OUTPUT)	INDUCTION	6W	15W~90W	6W	15W~90W	6W	15W~90W	6W	15W~90W	6W	15W~90W
		REVERSIBLE	6W	15W~40W	6W	15W~40W	6W	15W~40W	6W	15W~40W	6W	15W~40W
		E·S	6W	15W~90W	6W	15W~90W	6W	15W~90W	6W	15W~90W	6W	15W~90W
	속도제어범위 (Speed control range)		50Hz : 90~1400rpm						60Hz : 90~1700rpm			
	속도변동율 (Speed variation)		5%(표준치(standard))									
	속도설정기 (Speed setting device)		외부속도 설정기에 의한 조정가능 (Built in external speed setting device attachable)									
	제동 (Braking)		전기 BRAKE에 의한 순시 정지가 가능 (Possible to stop brake for certain period by electric brake)									
※2	전기 Brake 시간 (Braking period)		약 0.5sec (0.5sec(standard))									
	병렬운전 (Parallel operation)		기능 없음 (Not suitable for parallel operation)									
	Slow Run, Slow Stop		기능 없음 (none)									
	사용온도범위 (Operation Temperature)		-10~50℃									
	보존온도범위 (Storage Temperature)		-20~60℃									
	사용습도범위 (Ambient humidity)		85% 이하 (Maximum) (결로 없을 것(non condensing))									

※ 1 : 적용 MOTOR는 당사 SOCKET TYPE SPEED CONTROL MOTOR 입니다.(T.G 전압이 12V용 MOTOR를 사용하십시오.) (Suitable motors are Socket Type Speed Control Motor. (Use for 12V motor T.G))

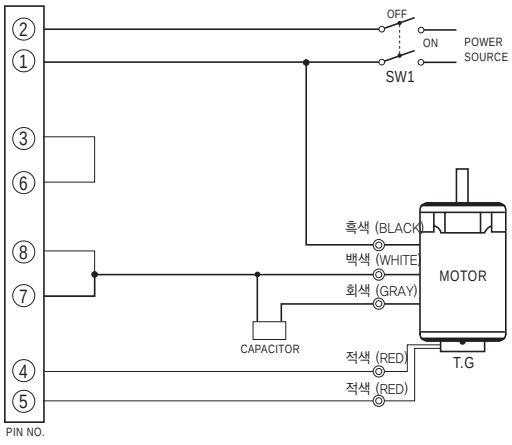
※ 2 : 전기 BRAKE에는 유지력이 없습니다. (The electric brake does not have holding torque.)

DIMENSIONS SR TYPE SPEED CONTROLLER



✚ 전기배선도(SCHEMATIC DIAGRAM) (INDUCTION MOTOR)

1-1 일방향운전 + 변속
(Uni Direction+Variable Speed)
INDUCTION MOTOR (6W~90W) REVERSIBLE MOTOR (6W~40W)

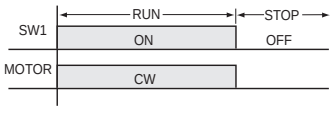


SW1	AC 125V or AC 250V 5A 이상 (MIN. 5A)

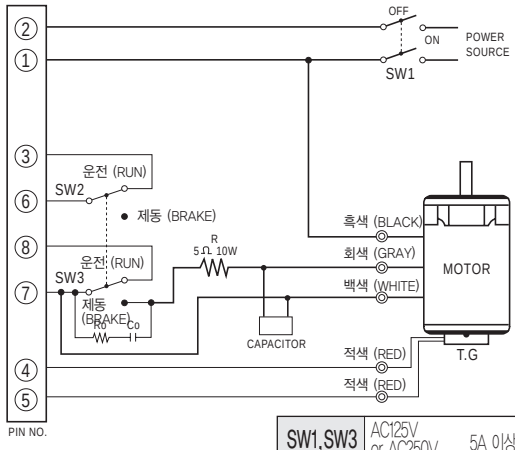
▲ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

주(Note))
1. 상기결선시, MOTOR의 회전방향은 축측에서 보아 시계방향(CW)입니다. 반시계방향(CCW)으로 할 경우는 MOTOR의 백색선과 회색선을 교체 결선하여 주십시오 (The motor rotating direction is CW when viewed from output shaft. When adjusting to CCW, change and connect white and gray wire of motor.)
2. FAN MOTOR 결선은 MOTOR출력 60W이상에만 적용되며, 결선 방법은 194page를 참고하시기 바랍니다. (The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 194 for the connection method.)

◆ 운전 조작예 (Example of operation)



1-2 일방향운전 + 변속 + 제동
(Uni Direction + Variable Speed + Brake)
INDUCTION MOTOR (6W~25W) REVERSIBLE MOTOR (6W~25W)

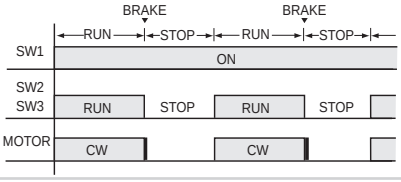


▲ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

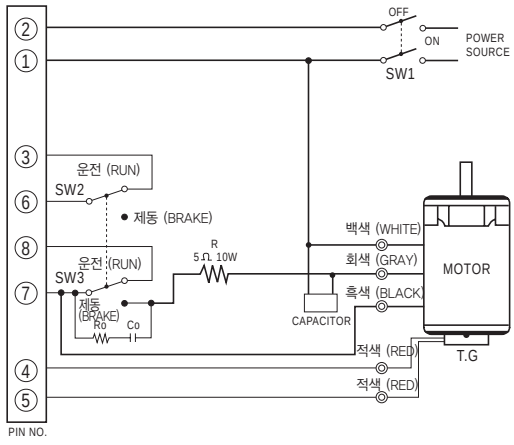
SW1,SW3	AC125V or AC250V 5A 이상
SW2	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV ,AC250WV)
R	4.7Ω ~6.8Ω 10W이상(MIN. 10W)

주(Note))
1. 상기결선시, MOTOR의 회전방향은 축측에서 보아 시계방향(CW)입니다. 반시계방향(CCW)으로 할 경우는 MOTOR의 백색선과 회색선을 교체 결선하여 주십시오 (The motor rotating direction is CW when viewed from output shaft. When adjusting to CCW, change and connect white and gray wire of motor.)
2. 운전에서 정지로 하면 제동(전기 BRAKE)이 약 0.5초간 동작하여 MOTOR가 급속으로 정지합니다. (When switched from Run to Stop, electric brake will function about 0.5 sec and motor will stop instantaneously.)

◆ 운전 조작예 (Example of operation)



1-3 일방향운전 + 변속 + 제동
(Uni Direction + Variable Speed + Brake)
INDUCTION MOTOR (40W~90W) REVERSIBLE MOTOR (40W)

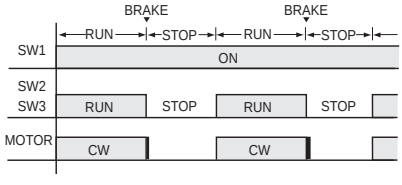


▲ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

SW1,3	AC125V or AC250V 5A 이상 (MIN. 5A)
SW2	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV ,AC250WV)
R	4.7Ω ~6.8Ω 10W이상(MIN. 10W)

주(Note))
1. 그림의 결선시, MOTOR의 회전방향은 축측에서 보아 시계방향(CW)입니다. 반시계방향(CCW)으로 할 경우에는 MOTOR의 백색선과 회색선을 교체 결선하여 주십시오 (The motor rotating direction is CW when viewed from output shaft. When adjusting to CCW, change and connect white and gray wire of motor.)
2. 운전에서 정지로 하면 제동(전기 BRAKE)이 약 0.5초간 동작하여 MOTOR가 급속으로 정지합니다. (When switched from Run to Stop, electric brake will function about 0.5 sec and motor will stop instantaneously.)
3. FAN MOTOR 결선은 MOTOR출력 60W 이상에만 적용되며, 결선 방법은 194page를 참고하시기 바랍니다. (The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 194 for the connection method.)

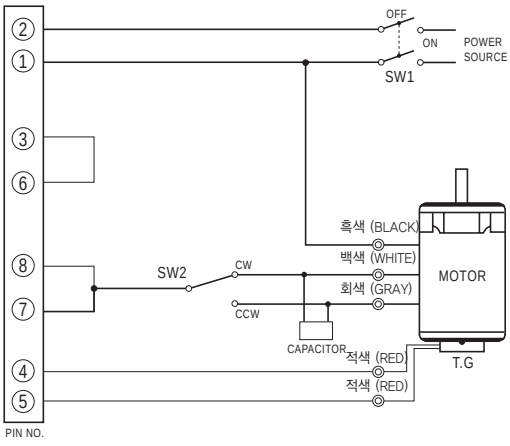
◆ 운전 조작예 (Example of operation)



※ CONTROLLER를 SOCKET홈에 삽입시에는 전원을 OFF하고 PIN 번호를 확인 후 삽입하여 주십시오.(소손의 우려가 있습니다.) (The power switch should be off and check the PIN number when inserting a control pack into socket groove. (There is a possibility to be burned.))

✚ 전기배선도(SCHEMATIC DIAGRAM) (REVERSIBLE MOTOR)

2-1 정역운전 + 변속
(Reverse+Variable Speed)
INDUCTION MOTOR (6W~90W) REVERSIBLE MOTOR (6W~40W)

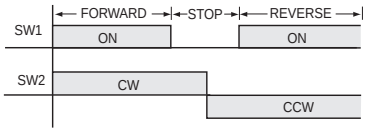


▲ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

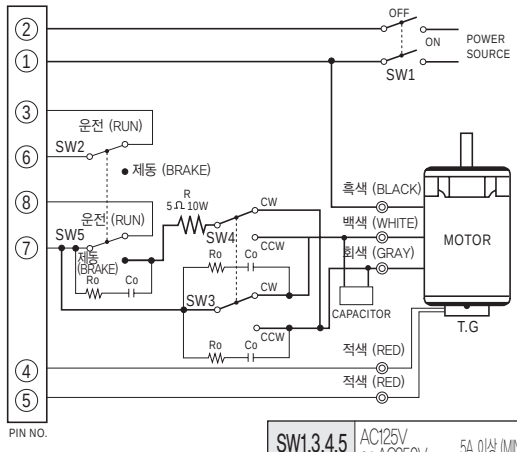
SW1,2	AC125V or AC 250V	5A 이상 (MIN. 5A)

주(Note))
1. INDUCTION MOTOR는 정지기간을 설정하여 회전이 정지한 후에 SW2를 교체하여 주십시오. (Set"Stop"period for induction motor and switch SW2 after rotation has stopped.)
2. REVERSIBLE MOTOR는 정지 기간이 필요없습니다. SW1을 ON한 상태에서 SW2를 조작하여도 무관합니다. (Rversible Motor does not need "Stop" period. It has no relation operating SW2 when SW1 is on.)
3. FAN MOTOR 결선은 MOTOR 출력 60W 이상에만 적용되며, 결선 방법은 194page를 참고하시기 바랍니다. (The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 194 for the connection method.)

◆ 운전 조작예 (Example of operation)



2-2 정역운전 + 변속 + 제동
(Reverse + Variable Speed + Brake)
INDUCTION MOTOR (6W~25W) REVERSIBLE MOTOR (6W~25W)

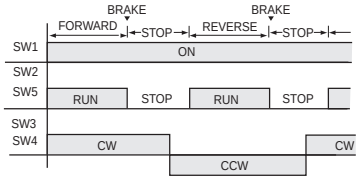


▲ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

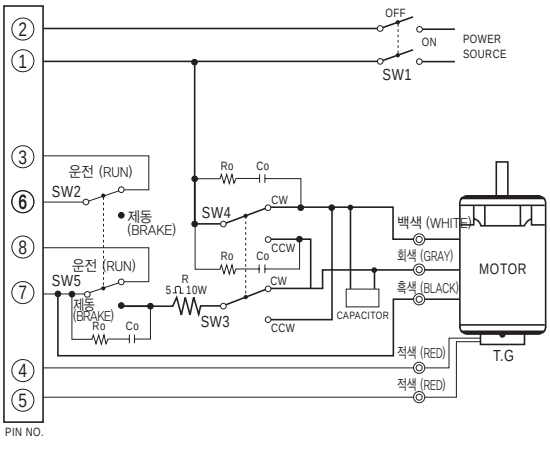
SW1,3,4,5	AC125V or AC250V	5A 이상 (MIN. 5A)
SW2	DC 20V 10mA	
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV ,AC250WV)	
R	4.7Ω ~6.8Ω 10W이상(MIN. 10W)	

주(Note))
1. 운전에서 정지로 하면 제동(전기 BRAKE)이 약 0.5초간 동작하여 MOTOR가 급속으로 정지합니다. (When switched from Run to Stop, electric brake will function for 0.5sec. and motor will stop instantaneously.)
2. 이때의 약 0.5초간에는 SW3, SW4를 조작하지 마십시오. (Do not operate SW4, SW5 for this 0.5 sec.)
3. SW3, SW4의 절환은 SW2, SW5의 정지에서 운전의 교체보다 빨리하여 주십시오. (Changing period of SW4, SW5 should be done quicker than Stop to Run of SW2, SW3.)

◆ 운전 조작예 (Example of operation)



2-3 정역운전 + 변속 + 제동
(Reverse + Variable Speed + Brake)
INDUCTION MOTOR (40W~90W) REVERSIBLE MOTOR (40W)

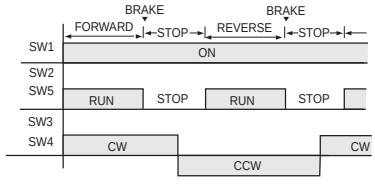


▲ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

SW1,3,4,5	AC125V or AC250V	5A 이상 (MIN. 5A)
SW2	DC 20V 10mA	
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV ,AC250WV)	
R	4.7Ω ~6.8Ω 10W이상(MIN. 10W)	

주(Note))
1. 운전에서 정지로 하면 제동 (전기 BRAKE) 이 약 0.5초간 동작하여 MOTOR가 급속으로 정지합니다. (When switched from Run to Stop, electric brake will function for 0.5sec. and motor will stop instantaneously.)
2. 이때의 약 0.5초간에는 SW3, SW4를 조작하지 마십시오. (Do not operate SW4, SW5 for this 0.5 sec.)
3. SW3, SW4의 절환은 SW2, SW5의 정지에서 운전의 교체보다 빨리하여 주십시오. (Changing period of SW4, SW5 should be done quicker than Stop to Run of SW2, SW3.)
4. FAN MOTOR 결선은 MOTOR 출력 60W 이상에만 적용되며, 결선 방법은 194page를 참고하시기 바랍니다. (The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to 194 page for the connection method.)

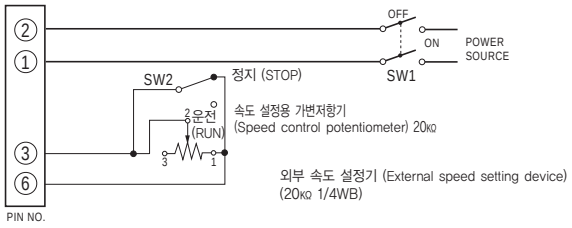
◆ 운전 조작예 (Example of operation)



※ CONTROLLER를 SOCKET홈에 삽입시에는 전원을 OFF하고 PIN 번호를 확인 후 삽입하여 주십시오.(소손의 우려가 있습니다.) (The power switch should be off and check the PIN number when inserting a control pack into socket groove. (There is a possibility to be burned.))

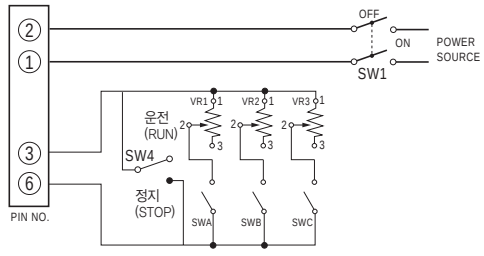
3-1 외부속도 설정기 사용방법
(External speed setting device)

■ 원거리 조작이 필요한 경우 (When Distance Control is Necessary)



주(Note)) 1. 본체의 속도설정기의 눈금은 (LOW)로 하여 주십시오. (Set the volume to 'LOW'.)
2. 배선을 가능한한 짧게 하여 주십시오. 오동작하는 경우가 있습니다. (Shorten the connection cable as much as possible.)

■ 다단계 속도 설정이 필요한 경우 (When Multi-Stage Speed Setting is Necessary)

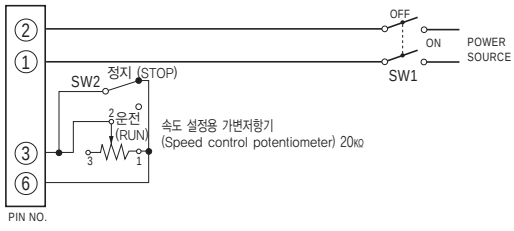


주(Note)) 1. 본체의 속도설정기의 눈금은 (LOW)로 하여 주십시오. (Set the volume to 'LOW'.)
2. 다단계 속도 조정이 필요한 경우 VRl, VR2, VR3, 를 각각 설정하고 SWA, SWB, SWC에의해 속도 절환이 가능 합니다. SWITCH의 절환 시기는 RELATY 접점 개폐시간 정도로 해 주십시오. (If multi-stage speed control is needed, install VR1, VR2, and VR3 respectively and the speed can be changed by SWA, SWB, and SWC. The open/close time of the switch is advised to follow the open/close time of the relay contact point.)

3-2 기동 시간을 빠르게 하는 방법 (1)
(For prompt start(1))

▼ 제동을 안할 경우 (Without braking)

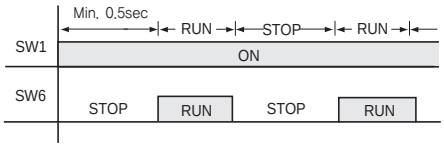
※ 운전 스위치(SW1)에서 시동 신호를 인가하였을 때 MOTOR 기동이 늦을 경우에는 외부 속도 설정기 VR을 사용하여 SW2에서 운전/정지를 조작하십시오. (When the motor starts slowly while starting signal is input at Run switch(SW1), use external volume VR at SW2 for Run/Stop.)



SW2	DC 20V 10mA

외부 속도 설정기 (External speed setting device) (20㏀ 1/4WB)

◆ 운전 조작예 (Example of operation)

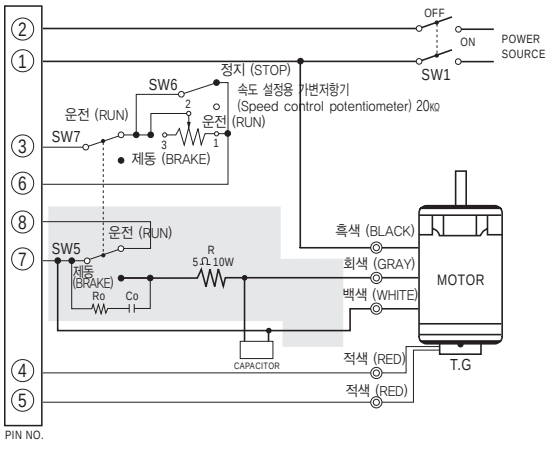


주(Note)) 1. 전원스위치 (SW1)의 투입시간은 SW2의 운전 시동 신호 보다 약 0.5초 이상 빠르게 하십시오. (Input time of SW1 should be about 0.5sec earlier than starting signal of SW2.)
2. 본체의 속도 설정기 눈금을 (LOW)로 하고, 외부 속도 설정기 VR에서 속도 조정을 하십시오. (Set the volume to "LOW" and use external volume VR to control speed.)
3. 운전/정지를 할 경우에는 SW1를 ON상태에서 SW2를 조작 하십시오. 작은 신호에도 MOTOR 제어가 가능합니다. (During Run/Stop operation, control SW2 while SW1 is on. Even with small signal motor can be controlled.)
4. 장시간 정지할 경우에는 SW1을 OFF해 주십시오. (When not in use for long period turn SW1 off.)

※ CONTROLLER를 SOCKET홈에 삽입시에는 전원을 OFF하고 PIN 번호를 확인 후 삽입하여 주십시오.(소손의 우려가 있습니다.) (The power switch should be off and check the PIN number when inserting a control pack into socket groove. (There is a possibility to be burned.))

3-3 기동 시간을 빠르게 하는 방법 (2)
(For prompt start(2))

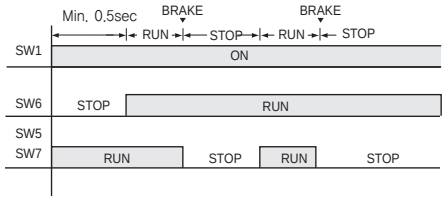
▼ 제동을 할 경우 (While braking) INDUCTION MOTOR(6W~25W) REVERSIBLE MOTOR (6W~25W)



SW1,5	AC125V or AC250V 5A 이상 (MIN. 5A)
SW6,7	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV ,AC250WV)
R	4.7Ω ~6.8Ω 10W이상(MIN. 10W)

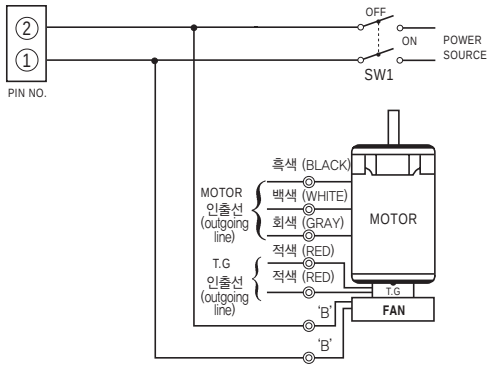
▲ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

◆ 운전 조작예 (Example of operation)



주(Note))
1. 위 전기 배선은 25W 이하의 (일방향운전 + 변속 + 제동)입니다. 40W 이상의 운전은 ■ 부분의 전기배선이 다릅니다. 각각의 전기배선을 참조해 주십시오. (This wiring is for unidirection+variable speed+braking of motors 25W or less. For motors 40W over ■ part of wiring is different. Refer to the electrical wiring diagram for the corresponding connection.)
2. 전원스위치 SW1은 SW6보다 약 0.5초 이상 빠르게 조작하십시오. (Input time of SW1 should be about 0.5sec earlier than SW6.)
3. 본체의 속도 설정기 눈금을 (LOW)로 하고 외부 속도 설정기 VR에서 속도 조정을 해주십시오. (Set the volume to "LOW" and use external volume VR to control speed.)
4. 장시간 정지할 경우에는 SW1을 OFF해 주십시오. (When not in use for long period turn SW1 off.)

3-4 BOX FAN MOTOR 결선 방법
(Box fan motor connection method)



전압 (VOLTAGE)	LEAD WIRE 색(COLOR) 'B'
단상(SINGLE PHASE) AC100V~110V	갈 (BROWN)
단상(SINGLE PHASE) AC200V~240V	황 (YELLOW)

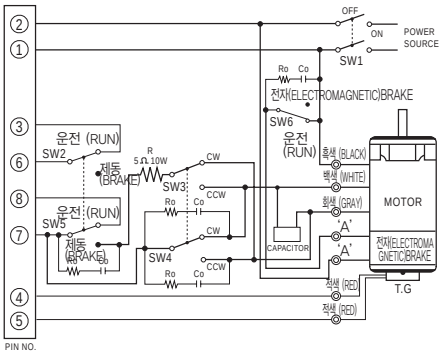
▲ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

※ BOX FAN 이외의 결선은 각각의 전기 배선을 참조해 주십시오. (For the connection of something other than the box fan, refer to the electrical wiring diagram for the corresponding connection.)

※ CONTROLLER를 SOCKET홈에 삽입시에는 전원을 OFF하고 PIN 번호를 확인 후 삽입하여 주십시오.(소손의 우려가 있습니다.) (The power switch should be off and check the PIN number when inserting a control pack into socket groove. (There is a possibility to be burned.))

4-1 전자 BRAKE 부착 MOTOR의 배선 예
(Wire connection for electromagnetic brake motor)

CONTROLLER의 전기 BRAKE를 병용하는 경우
(When electric brake of controller is used at the same time)



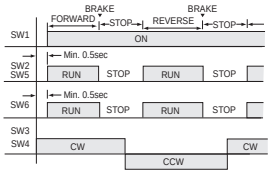
E·S MOTOR (6W~25W)

◀ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

전압 (VOLTAGE)	LEAD WIRE 'A'
단상(SINGLE PHASE) AC100V~110V	청색 (Blue)
단상(SINGLE PHASE) AC200V~240V	등색 (Orange)

SW1,3,4,5,6	AC125V or AC250V 5A 이상 (MIN. 5A)
SW2	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV ,AC250WV)
R	4.7Ω~6.8Ω 10W이상(MIN. 10W)

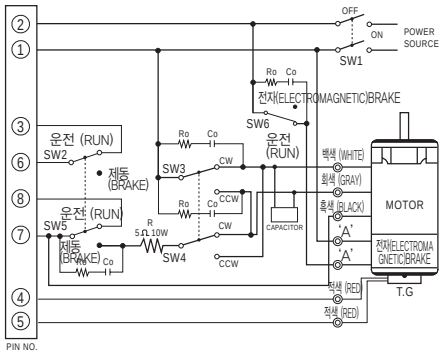
◆ **운전 조작예** (Example of operation)



주(Note))
1. RUN에서 STOP으로 하면 제동 (전기 BRAKE) 이 약 0.5초간 동작하여 MOTOR가 급속으로 정지합니다. (When switched from Run to Stop, electromagnetic brake will function for about 0.5sec. and motor will stop instantaneously.)
2. MOTOR가 정지한후 SW3, SW4를 조작하여 주십시오. (Operate SW3, SW4 after the motor has stopped.)
3. SW3, SW4의 절환은 SW2, SW5, SW6의 정지에서 운전으로 절환보다 빠르게 하여 주십시오. (Changing period of SW3, SW4 should be done quicker than stop to run of SW2, SW5, SW6.)
4. 전원 SWITCH (SW1)투입시간은 SW2, SW5, SW6에 의한 운전시동 신호보다도 약 0.5초 이상 빨리하여 주십시오. (Power input for SW1 should be at least 0.5sec. earlier than starting signals of SW2, SW5, SW6.)
5. 운전/정지를 하는 경우 SW1을 ON상태로 SW2, SW5, SW6에서 조작하십시오. 작은신호에도 MOTOR의 제어가 가능합니다. 또한 장시간 운전하지 않는 경우는 SW1을 OFF하여 주십시오. (When Run/Stop, operate with SW2, SW5, SW6 while SW1 is On condition. Even with small signal it can control the motor. Turn SW1 off when not used for long period.)

4-2 전자 BRAKE 부착 MOTOR의 배선 예
(Wire connection for electromagnetic brake motor)

CONTROLLER의 전기 BRAKE를 병용하는 경우
(When electric brake of controller is used at the same time)



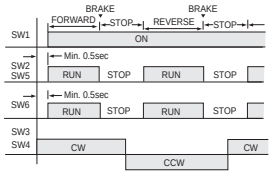
E·S MOTOR (40W~90W)

◀ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

전압 (VOLTAGE)	LEAD WIRE 'A'
단상(SINGLE PHASE) AC100V~110V	청색 (Blue)
단상(SINGLE PHASE) AC200V~240V	등색 (Orange)

SW1,3,4,5,6	AC125V or AC250V 5A 이상 (MIN. 5A)
SW2	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV ,AC250WV)
R	4.7Ω~6.8Ω 10W이상(MIN. 10W)

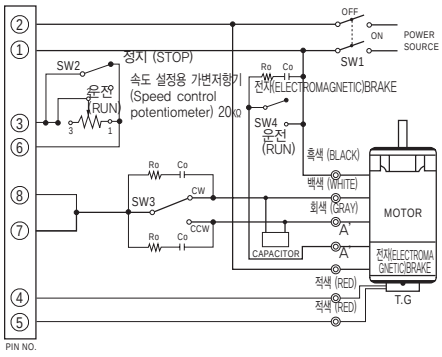
◆ **운전 조작예** (Example of operation)



주(Note))
1. RUN에서 STOP으로 하면 제동(전기 BRAKE)이 약 0.5초간 동작하여 MOTOR가 급속으로 정지합니다. (When switched from Run to Stop, electromagnetic brake will function for about 0.5sec. and motor will stop instantaneously.)
2. MOTOR가 정지한 후 SW3, SW4를 조작하여 주십시오. (Operate SW3, SW4 after the motor has stopped.)
3. SW3, SW4의 절환은 SW2, SW5, SW6의 정지에서 운전으로 절환보다 빠르게 하여 주십시오. (Changing period of SW3, SW4 should be done quicker than stop to run of SW2, SW5, SW6.)
4. 전원 SWITCH (SW1)투입시간은 SW2, SW5, SW6에 의한 운전시동 신호보다도 약 0.5초 이상 빨리하여 주십시오. (Power input for SW1 should be at least 0.5sec. earlier than starting signals of SW2, SW5, SW6.)
5. 운전/정지를 하는 경우 SW1을 ON상태로 SW2, SW5, SW6 에서 조작하십시오. 작은신호에도 MOTOR의 제어가 가능합니다. 또한 장시간 운전하지 않는 경우는 SW1을 OFF하여 주십시오. (When Run/Stop, operate with SW2, SW5, SW6 while SW1 is 'On' condition. Even with small signal it can control the motor. Turn SW1 off when not used for long period.)
6. FAN MOTOR 결선은 MOTOR 출력 60W이상에만 적용되며, 결선 방법은 194page를 참고하시기 바랍니다. (The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 194 for the connection method.)

4-3 전자 BRAKE 부착 MOTOR의 배선 예
(Wire connection for electromagnetic brake motor)

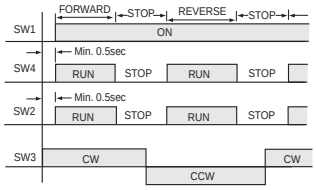
CONTROLLER의 전기BRAKE를 병용하지 않는 경우 (When electric brake of controller is used at the same time)



E·S MOTOR (6W~90W)

◀ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

◆ 운전 조작예 (Example of operation)



전압 (VOLTAGE)	LEAD WIRE 'A'
단상(SINGLE PHASE) AC100V~110V	청색 (Blue)
단상(SINGLE PHASE) AC200V~240V	등색 (Orange)

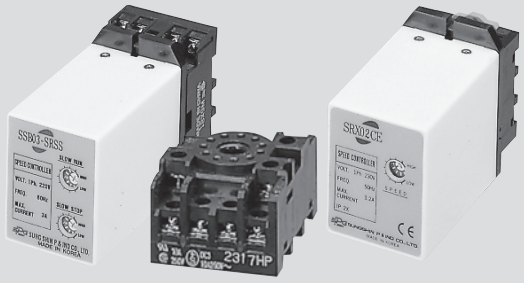
SW 1,3,4	AC125V or AC250V	5A 이상 (MIN. 5A)
SW 2	DC 20V 10mA	
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV ,AC250WV)	

주(Note))

1. 정지시간을 설정하여 회전이 정지한 후 SW3를 절환하여 주십시오. (Set the stop period to stop and convert to SW2 after rotation has stopped)
2. 전원 SWITCH(SW1) 투입시간은 SW2, SW4에 의한 운전시동 신호보다도 약 0.5초 이상 빨리하여 주십시오. (Input period for power switch SW1 should be about 0.5sec. earlier than the signal of start operating of SW6, SW9)
3. 운전/정지를 하는 경우는 SW1을 ON 상태로 SW2, SW4 에서 조작하십시오. 작은신호에서 MOTOR 제어가 가능합니다. 또한 장시간 운전하지 않는 경우는 SW1을 OFF하여 주십시오. (When Run/Stop, operate with SW2, SW4 while SW1 is on. Even with small signal it can control the motor Turn SW1 off when not used for long period.)
4. 본체의 속도 설정기 눈금을 (LOW)로 하고 외부속도 설정기 VR에서 속도를 조정하여 주십시오. (Set the volume low and control the speed with external speed setting device VR)
5. FAN MOTOR 결선은 MOTOR 출력 60W이상에만 적용되며, 결선 방법은 194page를 참고하시기 바랍니다. (The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 194 for the connection method.)

※ CONTROLLER를 SOCKET홈에 삽입시에는 전원을 OFF하고 PIN 번호를 확인 후 삽입하여 주십시오.(소손의 우려가 있습니다.) (The power switch should be off and check the PIN number when inserting a control pack into socket groove. (There is a possibility to be burned.))

SPEED CONTROLLER
: SRCE TYPE



특징 (Characteristics)

- MOTOR의 가변속 요구에 대응하여 개발된 SC SERIES용 SPEED CONTROLLER입니다. (Speed controller SR series are developed by the demands of speed variation.)
- 당사 독자의 IC개발에 의한 소형, 경량, 고신뢰성을 실현하였습니다. (It uses the IC circuit that SPG Motor independently developed and is small, light weight and reliability.)
- CE 인증을 획득한 제품으로 더욱 큰 신뢰성을 확보하였습니다. (With acquisition of CE Mark certification, the product guarantees higher reliability.)
- 속도 설정은 내장 CASE전면의 속도 설정용 가변 저항기에 의해 MOTOR의 회전속도 조정이 가능하고, 속도 설정기를 별도로 취부하여 원거리 운전 조작도 가능합니다. (The rotating speed of the motor may be adjusted by a speed control variable resistor located at the front of the case and can also operate long-range by an extra speed setter.)
- 전기 BRAKE 에 의한 순시 정지 기능이 가능 합니다. (Increase of instantaneous stop function by electromagnetic brake)
- 소형의 11P PLUG IN 방식을 채용했습니다. (Miniaturized type with 11pin plug)

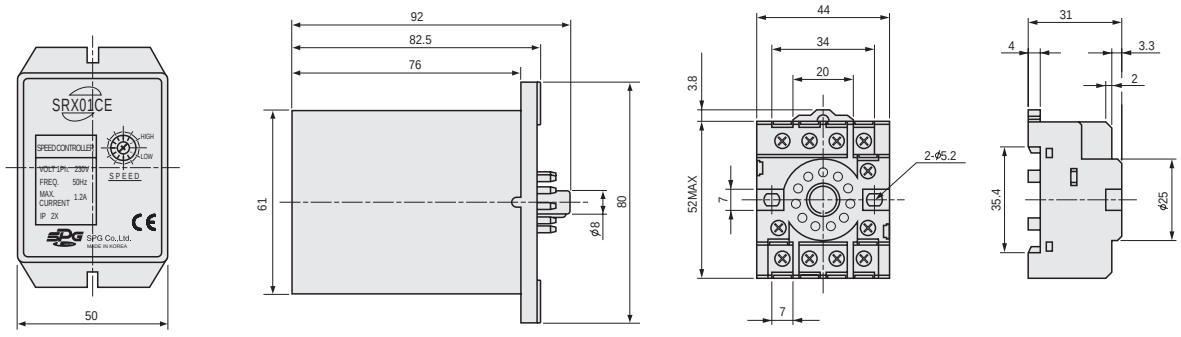
SPECIFICATIONS

품명 (MODEL) / 특성 (SPEC)		SRCE TYPE									
		SRA01CE	SRA02CE	SRB01CE	SRB02CE	SRC01CE	SRC02CE	SRD01CE	SRD02CE	SRX01CE	SRX02CE
정격전압 (Rated Voltage)		AC110V 60Hz		AC220V 60Hz		AC100V 50/60Hz		AC200V 50/60Hz		AC220~240V 50Hz	
사용전압범위 (Operation Voltage Range)		±10%									
※1 적용 MOTOR 출력 (APPLICABLE MOTOR OUTPUT)	INDUCTION	6W	15W~90W	6W	15W~90W	6W	15W~90W	6W	15W~90W	6W	15W~90W
	REVERSIBLE	6W	15W~40W	6W	15W~40W	6W	15W~40W	6W	15W~40W	6W	15W~40W
	E·S	6W	15W~90W	6W	15W~90W	6W	15W~90W	6W	15W~90W	6W	15W~90W
속도제어범위 (Speed control range)		50Hz : 90~1400rpm						60Hz : 90~1700rpm			
속도변동율 (Speed variation)		5%(표준치(standard))									
속도설정기 (Speed setting device)		외부속도 설정기에 의한 조정가능 (Built in external speed setting device attachable)									
제동 (Braking)		전기 BRAKE에 의한 순시 정지가 가능 (Possible to stop brake for certain period by electric brake)									
※2 전기 Brake 시간 (Braking period)		약 0.5sec (0.5sec(standard))									
병렬운전 (Parallel operation)		기능 없음 (Not suitable for parallel operation)									
Slow Run, Slow Stop		기능 없음 (none)									
사용온도범위 (Operation Temperature)		-10~50℃									
보존온도범위 (Storage Temperature)		-20~60℃									
사용습도범위 (Ambient humidity)		85% 이하 (Maximum) (결로 없을 것(non condensing))									

※ 1 : 적용 MOTOR는 당사 SOCKET TYPE SPEED CONTROL MOTOR 입니다.(T.G 전압이 12V용 MOTOR를 사용하십시오.) (Suitable motors are Socket Type Speed Control Motor. (Use for 12V motor T.G))

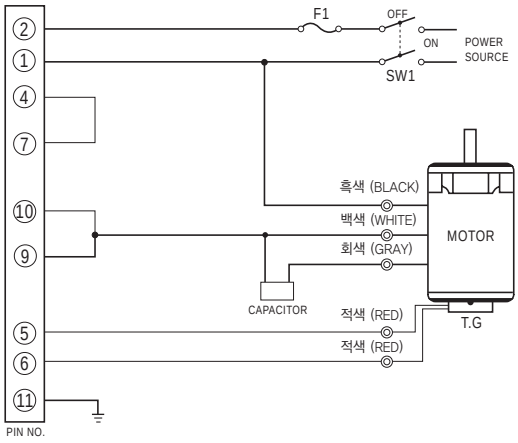
※ 2 : 전기 BRAKE에는 유지력이 없습니다. (The electric brake does not have holding torque.)

+ DIMENSIONS SRCE TYPE SPEED CONTROLLER



✚ 전기배선도

1-1 일방향운전 + 변속
(Uni Direction+Variable Speed)
INDUCTION MOTOR (6W~90W) REVERSIBLE MOTOR (6W~40W)

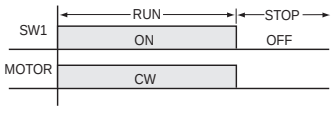


SW1	AC 125V or AC 250V	5A 이상 (MIN. 5A)
F1	AC 125V or AC 250V	3A

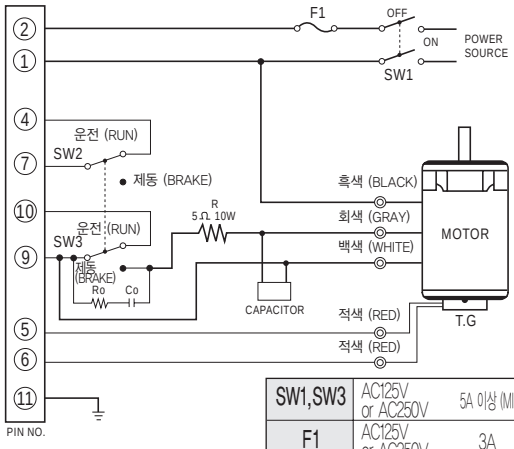
▲ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

주(Note))
1. 상기결선시 MOTOR의 회전방향은 축측에서 보아 시계방향(CW)입니다. 반시계방향(CCW)으로 할 경우는 MOTOR의 백색선과 회색선을 교체 결선하여 주십시오 (The motor rotating direction is CW when viewed from output shaft. When adjusting to CCW, change and connect white and gray wire of motor.)
2. FAN MOTOR 결선은 MOTOR 출력 60W 이상에만 적용되며, 결선 방법은 201page를 참고하시기 바랍니다. (The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 201 for the connection method.)

◆ 운전 조작예 (Example of operation)



1-2 일방향운전 + 변속 + 제동
(Uni Direction + Variable Speed + Brake)
INDUCTION MOTOR (6W~25W) REVERSIBLE MOTOR (6W~25W)

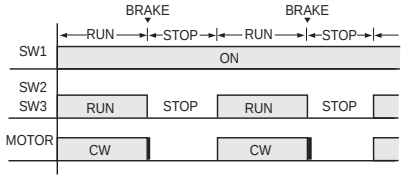


SW1,SW3	AC125V or AC250V	5A 이상 (MIN. 5A)
F1	AC125V or AC250V	3A
SW2	DC 20V 10mA	
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV ,AC250WV)	
R	4.7Ω ~6.8Ω 10W이상(MIN. 10W)	

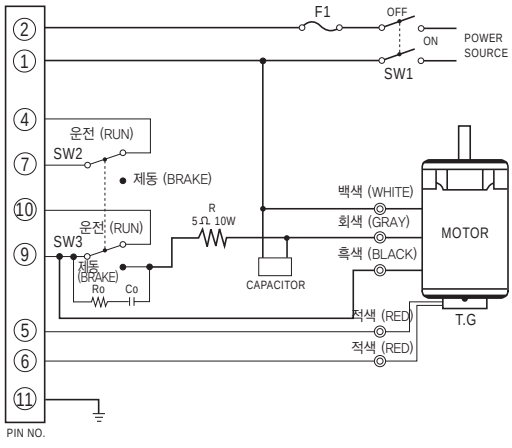
▲ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

주(Note))
1. 상기결선시, MOTOR의 회전방향은 축측에서 보아 시계방향(CW)입니다. 반시계방향(CCW)으로 할 경우는 MOTOR의 백색선과 회색선을 교체 결선하여 주십시오 (The motor rotating direction is CW when viewed from output shaft. When adjusting to CCW, change and connect white and gray wire of motor.)
2. 운전에서 정지로 하면 제동 (전기 BRAKE)이 약 0.5초간 동작하여 MOTOR가 급속으로 정지합니다. (When switched from Run to Stop, electric brake will function about 0.5 sec. and motor will stop instantaneously.)

◆ 운전 조작예 (Example of operation)



1-3 일방향운전 + 변속 + 제동
(Uni Direction + Variable Speed + Brake)
INDUCTION MOTOR (40W~90W) REVERSIBLE MOTOR (40W)

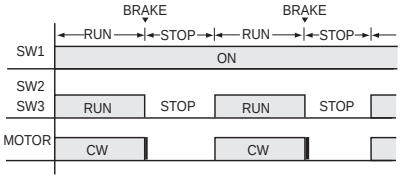


▲ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

SW1,SW3	AC125V or AC250V	5A 이상 (MIN. 5A)
F1	AC125V or AC250V	3A
SW2	DC 20V 10mA	
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV ,AC250WV)	
R	4.7Ω ~6.8Ω 10W이상(MIN. 10W)	

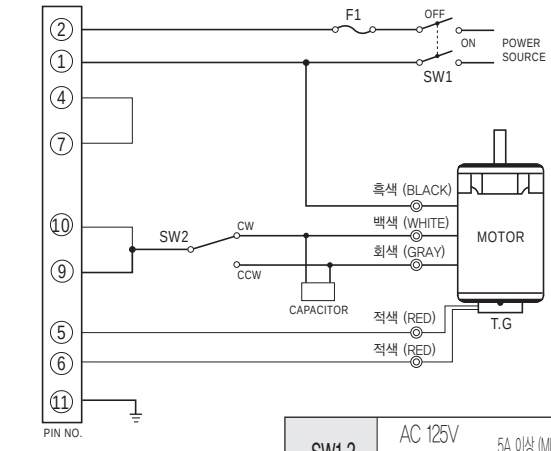
주(Note))
1. 그림의 결선시, MOTOR의 회전방향은 축측에서 보아 시계방향(CW)입니다. 반시계방향(CCW)으로 할 경우에는 MOTOR의 백색선과 회색선을 교체 결선하여 주십시오 (The motor rotating direction is CW when viewed from output shaft. When adjusting to CCW, change and connect white and gray wire of motor.)
2. 운전에서 정지로 하면 제동(전기 BRAKE)이 약 0.5초간 동작하여 MOTOR가 급속으로 정지합니다. (When switched from Run to Stop, electric brake will function about 0.5 sec and motor will stop instantaneously.)
3. FAN MOTOR 결선은 MOTOR 출력 60W 이상에만 적용되며, 결선 방법은 201page를 참고하시기 바랍니다. (The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 201 for the connection method.)

◆ 운전 조작예 (Example of operation)



※ CONTROLLER를 SOCKET홈에 삽입시에는 전원을 OFF하고 PIN 번호를 확인 후 삽입하여 주십시오. (소손의 우려가 있습니다.) (The power switch should be off and check the PIN number when inserting a control pack into socket groove. (There is a possibility to be burned.))

2-1 정역운전 + 변속
(Reverse+Variable Speed)
INDUCTION MOTOR (6W~90W) REVERSIBLE MOTOR (6W~40W)

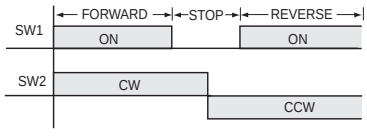


▲ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

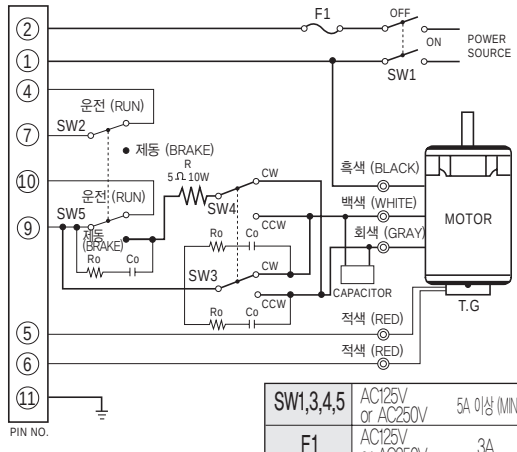
SW1,2	AC 125V or AC 250V	5A 이상 (MIN. 5A)
F1	AC 125V or AC 250V	3A

주(Note))
1. INDUCTION MOTOR는 정지기간을 설정하여 회전이 정지한 후에 SW2를 교체하여 주십시오. (Set"Stop"period for induction motor and switch SW2 after rotation has stopped.)
2. REVERSIBLE MOTOR는 정지 기간이 필요없습니다. SW1을 ON한 상태에서 SW2를 조작하여도 무관합니다. (Reversible Motor does not need "Stop" period. SW2 does not work when SW1 is on.)
3. FAN MOTOR 결선은 MOTOR출력 60W 이상에만 적용며, 결선 방법은 201page를 참고하시기 바랍니다. (The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 201 for the connection method.)

◆ 운전 조작예
(Example of operation)



2-2 정역운전 + 변속 + 제동
(Reverse + Variable Speed + Brake)
INDUCTION MOTOR (6W~25W) REVERSIBLE MOTOR (6W~25W)

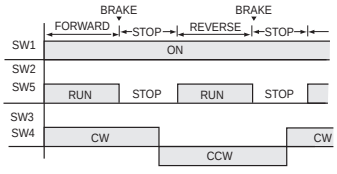


▲ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

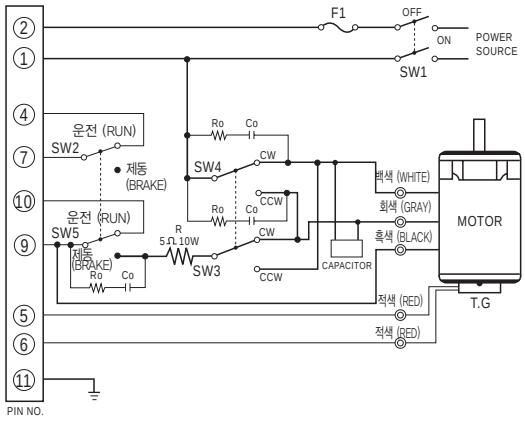
SW1,3,4,5	AC125V or AC250V	5A 이상 (MIN. 5A)
F1	AC125V or AC250V	3A
SW2	DC 20V 10mA	
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV ,AC250WV)	
R	4.7Ω~6.8Ω 10W이상(MIN. 10W)	

주(Note))
1. 운전에서 정지로 하면 제동 (전기 BRAKE)이 약 0.5초간 동작하여 MOTOR가 급속으로 정지합니다. (When switched from Run to Stop, electric brake will function for 0.5sec. and motor will stop instantaneously)
2. 이때의 약 0.5초간에는 SW3, SW4를 조작하지 마십시오. (Do not operate SW4, SW5 for this 0.5 sec.)
3. SW3, SW4의 절환은 SW2, SW5의 정지에서 운전의 교체보다 빨리하여 주십시오. (Changing period of SW4, SW5 should be done quicker than Stop to Run of SW2, SW3)

◆ 운전 조작예
(Example of operation)



2-3 정역운전 + 변속 + 제동
(Reverse + Variable Speed + Brake)
INDUCTION MOTOR (40W~90W) REVERSIBLE MOTOR (40W)

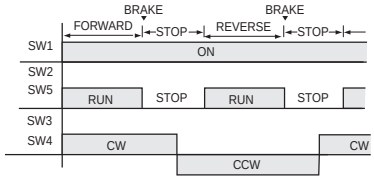


▲ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

SW1,3,4,5	AC125V or AC250V	5A 이상 (MIN. 5A)
F1	AC125V or AC250V	3A
SW2	DC 20V 10mA	
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV ,AC250WV)	
R	4.7Ω~6.8Ω 10W이상(MIN. 10W)	

주(Note))
1. 운전에서 정지로 하면 제동 (전기 BRAKE)이 약 0.5초간 동작하여 MOTOR가 급속으로 정지합니다. (When switched from Run to Stop, electric brake will function for 0.5sec. and motor will stop instantaneously)
2. 이때의 약 0.5초간에는 SW3, SW4를 조작하지 마십시오. (Do not operate SW4, SW5 for this 0.5 sec.)
3. SW3, SW4의 절환은 SW2, SW5의 정지에서 운전의 교체보다 빨리하여 주십시오. (Changing period of SW4, SW5 should be done quicker than Stop to Run of SW2, SW3)
4. FAN MOTOR 결선은 MOTOR 출력 60W 이상에만 적용되며, 결선 방법은 201page를 참고하시기 바랍니다. (The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 201 for the connection method.)

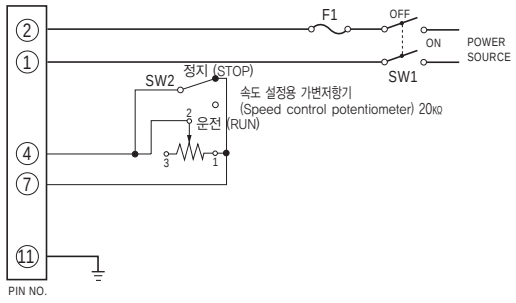
◆ 운전 조작예 (Example of operation)



※ CONTROLLER를 SOCKET홈에 삽입시에는 전원을 OFF하고 PIN 번호를 확인 후 삽입하여 주십시오. (소손의 우려가 있습니다.) (The power switch should be off and check the PIN number when inserting a control pack into socket groove. (There is a possibility to be burned.))

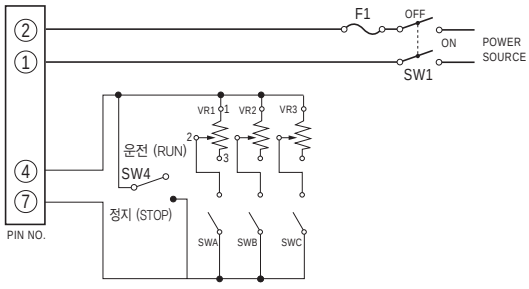
3-1 외부속도 설정기 사용방법
(External speed setting device)

■ 원거리 조작이 필요한 경우 (When Distance Control is Necessary)



주(Note))
1. 본체의 속도설정기의 눈금은 (LOW)로 하여 주십시오. (Set the volume to 'LOW'.)
2. 배선을 가능한한 짧게 하여 주십시오. 오동작하는 경우가 있습니다. (Shorten the connection cable as much as possible)

■ 다단계 속도 설정이 필요한 경우 (When Multi-Stage Speed Setting is Necessary)

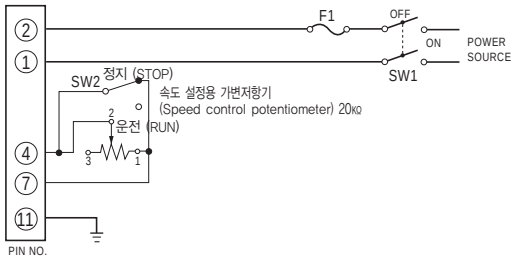


주(Note))
1. 본체의 속도설정기의 눈금은 (LOW)로 하여 주십시오. (Set the volume to 'LOW'.)
2. 다단계 속도 조정이 필요한 경우 VRI, VR2, VR3, 를 각각 설정하고 SWA, SWB, SWC에 의해 속도 절환이 가능 합니다. SWITCH의 절환시기는 RELATY 접점 개폐시간 정도로 해 주십시오. (If multi-stage speed control is needed, install VR1, VR2, and VR3 respectively and the speed can be changed by SWA, SWB, and SWC. The open/close time of the switch is advised to follow the open/close time of the relay contact point.)

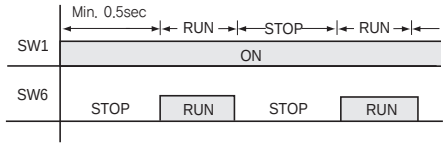
3-2 기동 시간을 빠르게 하는 방법 (1)
(For prompt start(1))

▼ 제동을 안할 경우 (Without braking)

※ 운전 스위치(SW1)에서 시동 신호를 인가하였을 때 MOTOR 기동이 늦을 경우에는 외부 속도 설정기VR을 사용하여 SW2에서 운전/정지를 조작하십시오. (When the motor starts slowly while starting signal is input at FUN switch(SW1), use external volume VR at SW2 for Run/Stop.)



◆ 운전 조작예 (Example of operation)

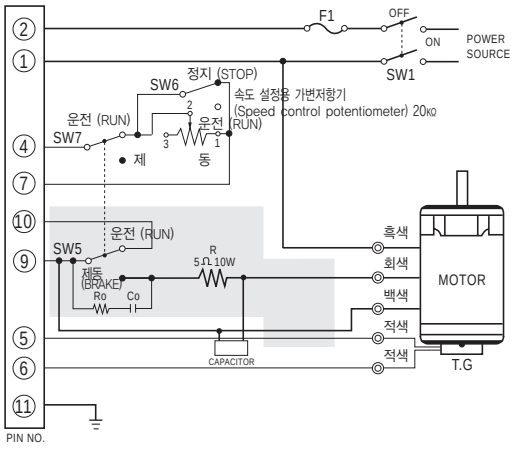


주(Note))
1. 전원스위치 (SW1)의 투입시간은 SW2의 운전 시동 신호 보다 약 0.5초 이상 빠르게 하십시오. (Input time of SW1 should be about 0.5sec quicker than starting signal of SW2.)
2. 본체의 속도 설정기 눈금을 (LOW)로 하고, 외부 속도 설정기 VR에서 속도 조정을 하십시오. (Set the volume to "LOW" and use external volume VR to control speed.)
3. 운전/정지를 할 경우에는 SW1를 ON상태에서 SW2를 조작하십시오. 작은 신호에도 MOTOR 제어가 가능합니다. (During Run/Stop operation, control SW2 while SW1 is on. Even with small signal motor can be controlled.)
4. 장시간 정지할 경우에는 SW1을 OFF해 주십시오. (When not in use for long period turn SW1 off.)

※ CONTROLLER를 SOCKET홈에 삽입시에는 전원을 OFF하고 PIN 번호를 확인 후 삽입하여 주십시오. (소손의 우려가 있습니다.) (The power switch should be off and check the PIN number when inserting a control pack into socket groove. (There is a possibility to be burned.))

3-3 기동 시간을 빠르게 하는 방법 (2)
(For prompt start(2))

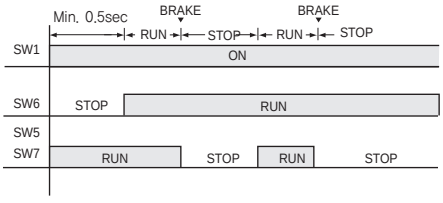
▼ 제동을 할 경우 (While braking) INDUCTION MOTOR(6W~25W)
REVERSIBLE MOTOR (6W~25W)



SW1,5	AC125V or AC250V	5A 이상 (MIN. 5A)
F1	AC125V or AC250V	3A
SW6,7	DC 20V 10mA	
Ro,Co	Ro=10~200Ω(1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV ,AC250WV)	
R	4.7Ω ~6.8Ω 10W이상(MIN. 10W)	

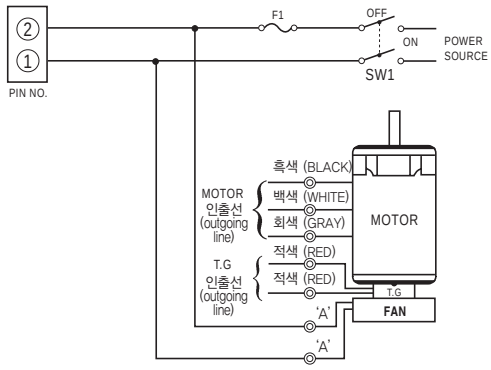
▲ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

◆ 운전 조작예 (Example of operation)



주(Note))
1. 위 전기 배선은 25W 이하의 (일방향운전+변속+제동)입니다. 40W 이상의 운전은 ■ 부분의 전기배선이 다릅니다. 각각의 전기배선을 참조해 주십시오. (This wiring is for unidirection+Variable speed+braking of motors 25W or less. For motors 40W and over ■ part of wiring is different. Refer to the electrical wiring diagram for the corresponding connection.)
2. 전원스위치 SW1은 SW6보다 약 0.5초 이상 빠르게 조작하십시오. (Input time of SW1 should be about 0.5sec quicker than SW6.)
3. 본체의 속도 설정기 눈금을 (LOW)로 하고 외부 속도 설정기 VR에서 속도 조정을 해주십시오. (Set the volume to "LOW" and use external volume VR to control speed.)
4. 장시간 정지할 경우에는 SW1을 OFF해 주십시오. (When not in use for long period turn SW1 off.)

3-4 BOX FAN MOTOR 결선 방법
(Box fan motor connection method)



전압 (VOLTAGE)	LEAD WIRE 색(COLOR) 'A'
단상(SINGLE PHASE) AC100V~110V	갈 (BROWN)
단상(SINGLE PHASE) AC200V~240V	황 (YELLOW)

▲ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

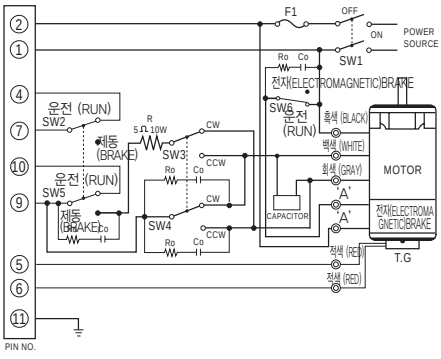
※ BOX FAN 이외의 결선은 각각의 전기 배선을 참조해 주십시오. (For the connection of something other than the box fan, refer to the electrical wiring diagram for the corresponding connection.)

※ CONTROLLER를 SOCKET홈에 삽입시에는 전원을 OFF하고 PIN 번호를 확인 후 삽입하여 주십시오. (소손의 우려가 있습니다.) (The power switch should be off and check the PIN number when inserting a control pack into socket groove. (There is a possibility to be burned.))

4-1 전자 BRAKE 부착 MOTOR의 배선 예
(Wire connection for electromagnetic brake motor)

CONTROLLER의 전기 BRAKE를 병용하는 경우
(When electric brake of controller is used at the same time)

E·S MOTOR (6W~25W)

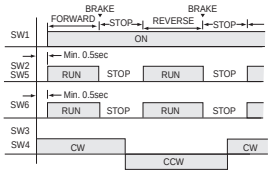


◀ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

전압 (VOLTAGE)	LEAD WIRE 'A'
단상(SINGLE PHASE) AC100V~110V	청색 (Blue)
단상(SINGLE PHASE) AC200V~240V	등색 (Orange)

SW1,3,4,5,6	AC125V or AC250V 5A 이상 (MIN. 5A)
F1	AC125V or AC250V 3A
SW2	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV ,AC250WV)
R	4.7Ω~6.8Ω 10W이상(MIN. 10W)

◆ 운전 조작예 (Example of operation)

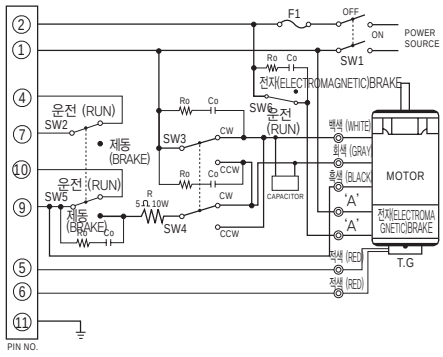


주(Note))
1. RUN에서 STOP으로 하면 제동 (전기 BRAKE)이 약 0.5초간 동작하여 MOTOR가 급속으로 정지합니다. (When switched from Run to Stop, electromagnetic brake will function for about 0.5sec. and motor will stop instantaneously.)
2. MOTOR가 정지한 후 SW3, SW4를 조작하여 주십시오. (Operate SW3, SW4 after the motor has stopped.)
3. SW3, SW4의 절환은 SW2, SW5, SW6의 정지에서 운전으로 절환보다 빠르게 하여 주십시오. (Changing period of SW3, SW4 should be done quicker than stop to run of SW2, SW5, SW6.)
4. 전원 SWITCH (SW1)투입시간은 SW2, SW5, SW6에 의한 운전시동 신호보다도 약 0.5초 이상 빨리하여 주십시오. (Power input for SW1 should be at least 0.5sec. quicker than starting signals of SW2, SW5, SW6.)
5. 운전/정지를 하는 경우 SW1을 ON상태로 SW2, SW5, SW6 에서 조작하십시오. 작은신호에도 MOTOR의 제어가 가능합니다. 또한 장시간 운전하지 않는 경우는 SW1을 OFF하여 주십시오. (When Run/Stop, operate with SW2, SW5, SW6 while SW1 is 'On' condition. Even with small signal it can control the motor. Turn SW1 off when not used for long period.)

4-2 전자 BRAKE 부착 MOTOR의 배선 예
(Wire connection for electromagnetic brake motor)

CONTROLLER의 전기 BRAKE를 병용하는 경우
(When electric brake of controller is used at the same time)

E·S MOTOR (40W~90W)

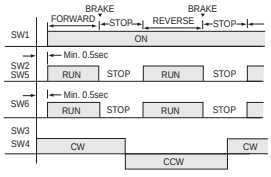


◀ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

전압 (VOLTAGE)	LEAD WIRE 'A'
단상(SINGLE PHASE) AC100V~110V	청색 (Blue)
단상(SINGLE PHASE) AC200V~240V	등색 (Orange)

SW1,3,4,5,6	AC125V or AC250V 5A 이상 (MIN. 5A)
F1	AC125V or AC250V 3A
SW2	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV ,AC250WV)
R	4.7Ω~6.8Ω 10W이상(MIN. 10W)

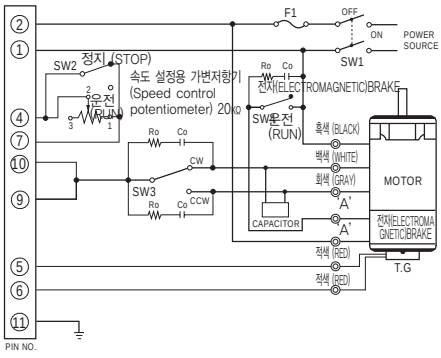
◆ 운전 조작예 (Example of operation)



주(Note))
1. RUN에서 STOP으로 하면 제동 (전기 BRAKE)이 약 0.5초간 동작하여 MOTOR가 급속으로 정지합니다. (When switched from Run to Stop, electromagnetic brake will function for about 0.5sec. and motor will stop instantaneously.)
2. MOTOR가 정지한 후 SW3, SW4를 조작하여 주십시오. (Operate SW3, SW4 after the motor has stopped.)
3. SW3, SW4의 절환은 SW2, SW5, SW6의 정지에서 운전으로 절환보다 빠르게 하여 주십시오. (Changing period of SW3, SW4 should be done quicker than stop to run of SW2, SW5, SW6.)
4. 전원 SWITCH (SW1) 투입시간은 SW2, SW5, SW6에 의한 운전시동 신호보다도 약 0.5초 이상 빨리하여 주십시오. (Power input for SW1 should be at least 0.5sec. quicker than starting signals of SW2, SW5&SW6.)
5. 운전/정지를 하는 경우 SW1을 ON상태로 SW2, SW5, SW6 에서 조작하십시오. 작은신호에도 MOTOR의 제어가 가능합니다. 또한 장시간 운전하지 않는 경우는 SW1을 OFF하여 주십시오. (When Run/Stop, operate with SW2, SW5, SW6 while SW1 is On condition. Even with small signal it can control the motor. Turn SW1 off when not used for long period.)
6. FAN MOTOR 결선은 MOTOR 출력 60W이상에만 적용되며, 결선 방법은 201page를 참고하시기 바랍니다. (The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 201 for the connection method.)

4-3 전자 BRAKE 부착 MOTOR의 배선 예
(Wire connection for electromagnetic brake motor)

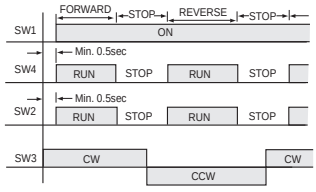
CONTROLLER의 전기 BRAKE를 병용하지 않는 경우
(When electric brake of controller is used at the same time)



E·S MOTOR (6W~90W)

◀ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

◆ 운전 조작예 (Example of operation)



전압 (VOLTAGE)	LEAD WIRE 'A'
단상(SINGLE PHASE) AC100V~110V	청색 (Blue)
단상(SINGLE PHASE) AC200V~240V	등색 (Orange)

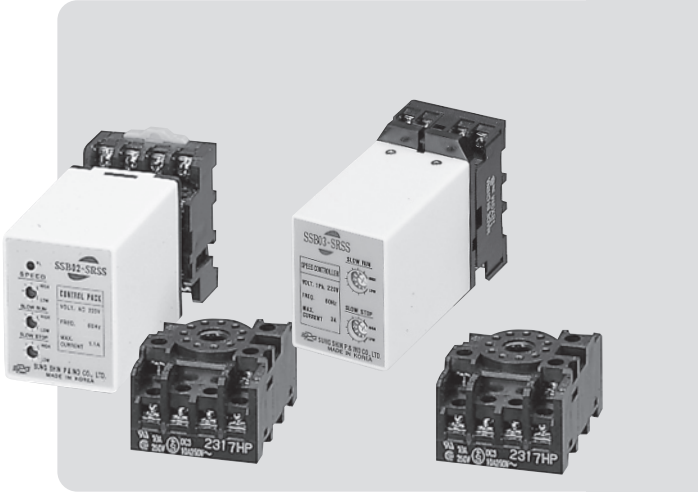
SW 1,3,4	AC125V or AC250V 5A 이상 (MIN. 5A)
SW 2	DC 20V 10mA
Ro,Co	Ro=10~200Ω(1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV ,AC250WV)

주(Note))

1. 정지시간을 설정하여 회전이 정지한 후 SW3를 절환하여 주십시오. (Set the stop period to stop and convert to SW2 after rotation has stopped)
2. 전원 SWITCH(SW1) 투입시간은 SW2, SW4에 의한 운전시동 신호보다도 약 0.5초 이상 빨리하여 주십시오. (Input period for power switch SW1 should be about 0.5sec. earlier than the signal of start operating of SW6, SW9)
3. 운전/정지를 하는 경우는 SW1을 ON 상태로 SW2, SW4 에서 조작하십시오. 작은신호에서 MOTOR 제어가 가능합니다. 또한 장시간 운전하지 않는 경우는 SW1을 OFF하여 주십시오. (When Run/Stop, operate with SW2, SW4 while SW1 is on. Even with small signal it can control the motor Turn SW1 off when not used for long period.)
4. 본체의 속도 설정기 눈금을 (LOW)로 하고 외부속도 설정기 VR에서 속도를 조정하여 주십시오.(Set the volume low and control the speed with external speed setting device VR)
5. FAN MOTOR 결선은 MOTOR 출력 60W 이상에만 적용되며, 결선 방법은 201page를 참고하시기 바랍니다. (The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 201 for the connection method.)

※ CONTROLLER를 SOCKET홈에 삽입시에는 전원을 OFF하고 PIN 번호를 확인 후 삽입하여 주십시오. (소손의 우려가 있습니다.) (The power switch should be off and check the PIN number when inserting a control pack into socket groove. (There is a possibility to be burned.))

SS TYPE
SPEED CONTROLLER



1. SS 표준 TYPE의 특징 (Characteristics of the socket SS standard type)

(1) 6W~40W의 INDUCTION SPEED CONTROL MOTOR와 6W~40W의 REVERSIBLE SPEED CONTROL MOTOR에 사용됩니다. (This is used with the 6W~40W induction speed control motor and the 6W~40W reversible speed control motor.)

(2) 속도설정기를 내장 CASE전면의 속도설정기에 의한 MOTOR의 회전속도조정, 설정이 가능합니다. (Number of revolutions may be controlled and designated with the speed setter on the front of the case.)

(3) 전기 BRAKE에 의한 순시정지기능이 가능합니다. (Instantaneous braking is possible with an electric brake.)

(4) 소형의 11PIN PLUG IN방식을 채용했습니다. (The small 11 pin plug-in method was used.)

(5) SLOW RUN, SLOW STOP 기능이 있어 기동과 정지가 급격히 이루어지지 않으며, 서서히 작동합니다. (It has slow run and slow stop functions, so operating and braking are not working rapidly, instead, slowly.)

(6) SLOW RUN, SLOW STOP의 시간설정기능이 내장되어 있어서 조정이 간편합니다. (It is simple to control because the slow run and slow stop functions have time setting functions.)

(7) 당사의 SS TYPE 표준 SPEED CONTROLLER는 병렬운전에는 사용할 수 없습니다. 병렬운전이 필요한 경우에는 당사 제품의 SS TYPE 고출력용 SPEED CONTROLLER를 사용하십시오. (SPG has socket (SS) type standard speed controller may not be used for parallel operations. When parallel operation is necessary, the socket (SS) type high-output speed controller should be used.)

2. SS 고출력 TYPE의 특징 (Characteristics of the socket SS high-output type speed control)

(1) 6W~90W의 INDUCTION SPEED CONTROL MOTOR와 6W~40W의 REVERSIBLE SPEED CONTROL MOTOR와 6W~40W의 ELECTRO-MAGNETIC BRAKE SPEED CONTROL MOTOR에 사용됩니다. (It is used in the 6W~90W induction speed control motor, the 6W~40W reversible speed control motor and the 6W~40W electro-magnetic brake speed control motor.)

(2) 외부설정기에의해 MOTOR의 회전속도를 조정, 설정할 수 있습니다. (An external controller can control the number of rotation of the motor.)

(3) 전기 BRAKE에 의한 순시정지기능이 가능합니다. (Instantaneous braking is possible with an electric brake.)

(4) COMPACT한 PLUG IN 11PIN TYPE으로 취급 및 설치가 간편합니다. (Installation and operation is simple because of a compact plug-in 11pin type.)

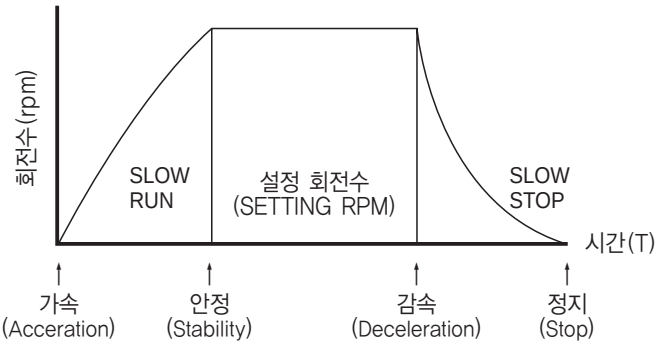
(5) SLOW RUN, SLOW STOP기능이 있어 기동과 정지가 급격히 이루어지지 않으며, 서서히 작동합니다. (It has slow run and slow stop functions, so operating and braking are not working rapidly instead, slowly.)

(6) SLOW RUN, SLOW STOP의 시간설정기능이 내장되어 있어서 조정이 간편합니다. (It is simple to control because the slow run and slow stop functions have time setting functions.)

(7) 병렬운전이 가능합니다. 병렬운전이란 1개의 속도설정기에의해 복수의 MOTOR CONTROLLER를 동시에 같은 속도로 설정하여 운전할 수 있습니다. (Parallel operation is possible. Parallel operation allows multiple motor control packs to be operated at the same speed with one speed setter.)

3. SS TYPE 사용방법

(1) SLOW RUN, SLOW STOP의 사용



- SS TYPE SPEED CONTROLLER의 SRSS 기능은 설정속도까지 서서히 가속하는 SLOW RUN 및 설정속도까지 서서히 감속하는 SLOW STOP 기능을 가지고 있습니다. (The SRSS function of the socket SS type speed controller allows slow acceleration with slow run and gradual deceleration with slow stop function.)
- 기동 및 정지시의 충격을 완화시켜, 부드러운 가속, 감속을 원할 때 이 기능을 이용하십시오. (This function relieves impact when accelerating and decelerating and should be used when smooth acceleration and deceleration are desired.)
- SLOW RUN 및 SLOW STOP의 시간 설정은 CONTROLLER 내부의 가변 저항기에 의해 각각 약 0.5초~15초/1200[rpm] 범위에서 설정이 가능합니다. (Slow run and slow stop functions have time setting functions. The variable resistor in the control pack allows time to be set within 0.5 seconds~ 15 seconds/1200[rpm].)
- MOTOR의 자연정지보다 짧은 시간내의 SLOW STOP 정지는 불가능합니다. (Slow stop braking in a shorter time than the natural braking of the motor is impossible.)
- SLOW 운전이 필요 없는 경우에는 내부 VOLUME을 좌측(반시계방향)으로 끝까지 돌리십시오. (When slow operation is not necessary, turn the volume switch inside all the way to the left (counter-clockwise).)

(2) 순시정지특성 (Characteristics of instantaneous braking)

- CONTROLLER에는 전기적인 BRAKE 기능이 있으므로 운전중 MOTOR를 0.1초의 짧은 시간에 순시정지 시킬 수 있습니다. (The control pack has an electric brake which allows instantaneous braking of the motor within 0.1 seconds.)
- 제동전류는 약0.5초 정도 작동하고 그후로는 자동해제됩니다. (Brake current operates for about 0.5 seconds and then automatically discharges.)
- MOTOR를 잡아주는 유지력이 없기 때문에 정지 후에는 원하는 위치조정이 가능합니다. (Because there is no holding torque to hold the motor, after it stops, it is possible to control the location.)
- 상, 하 운동을 하는 물체를 정지시킬 경우 등의 유지력이 필요한 경우에는 당사의 ELECTRO-MAGNETIC BRAKE가 부착된 CONTROL MOTOR(E.S MOTOR)를 선정하여 사용하십시오. (When holding torque is necessary to stop an object that is moving up and down, use SPG has electro-magnetic brake control motor.)

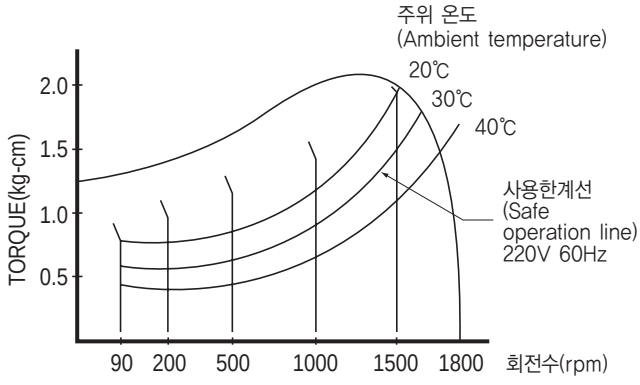
※ 주의 (Note)

- CONTROLLER에는 순시정지 조작 후에 MOTOR를 운전하기 위하여 제동용 SWITCH를 운전 측으로 돌린 후 MOTOR가 회전하기까지는 약0.5초의 시간이 소요됩니다. (In the control pack, after instantaneous braking, it takes about 0.5 seconds before the motor starts rotating after the brake switch is turned to operate.)
- CONTROLLER에서는 속도설정용 가변저항기를 0Ω 혹은 운전/정지 SWITCH를 정지 측으로 한 상태에서 순시정지조작을 하면 다음에 운전 측으로 돌렸을 때 MOTOR가 약 1회전하는 수가 있으므로 이와 같은 조작은 삼가해 주십시오. (In the control pack, if instantaneous braking is applied with the variable resistor at 0Ω or with the run/stop switch at stop and then turned to run again, the motor might rotates once, so do not operate it in this manner.)
- 또한 AC전원에서 운전/정지 SWITCH를 0.5초이내에 반복적으로 할 경우 MOTOR가 순간적으로 회전하는 수가 있으므로 AC 전원단에의 운전/정지는 삼가해 주십시오. (If the run/stop switch is repeatedly switched from the AC power source within 0.5 seconds, the motor might momentarily rotate, so do not run/stop with the AC power source.)

(3) MOTOR의 온도상승 (Temperature rise of the motor)

- AC SPEED CONTROL MOTOR는 부하의 크기에 따라 입력이 가해지므로 부하가 클수록 MOTOR의 온도상승이 높아집니다. (The AC speed control motor gets higher input power as the load increases so the rise in temperature is greater with a larger load.)
- MOTOR의 온도상승, 한계 TORQUE와 회전수를 구한 곡선을 사용한계 곡선이라고 합니다. 곡선하측의 TORQUE-회전수에서 MOTOR를 사용하십시오. (The curve with the temperature rise of the motor, the threshold torque and the number of rotations are called the safe operation line. Use the motor at the torque and number of revolutions below the curve.)
- 다음과 같은 경우에는 사용한계곡선은 위로 이동하여 더 많은 TORQUE를 이용할 수 있습니다. (Safe operation line may be used at above the curve in the following cases.)

〉 방열효과가 좋은 경우 (When radiation is high.)
〉 FAN으로 냉각시킬 경우 (When a cooling fan is used.)
〉 주위온도가 낮은 경우 (When the ambient temperature is low.)



★ MOTOR CASE의 표면온도가 90℃ 이하에서 사용하여 주십시오. (Use at surface temperature of the motor case below 90℃)

4. 사용상의 주의사항 (Cautions)

1) 설치상의 주의사항 (Cautions in installation)

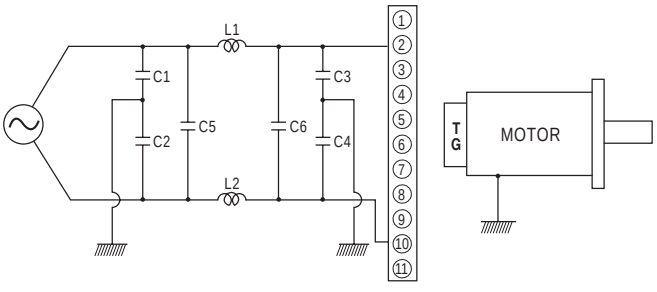
- 사용주위 온도범위는 -10℃~+50℃, 습도 85% 이하의 장소에서 사용하여 주십시오. 또한 직사광선이 닿는 곳, 수분이나 기름기가 있는곳은 피하여 주시고 이러한 곳에서 사용할 때에는 COVER 등을 설치하여 사용하십시오. (Use in temperature

range between −10˚C and +50˚C and humidity of 85% or less. Avoid places with direct sunlight, moisture and oiliness. When used in such places, use a cover.)

- 진동, 충격이 심한 곳, 먼지가 많은 곳, 인화성 GAS가 발생하는 곳, 부식성 GAS가 발생하는 장소는 피하여 주십시오. (Avoid places with vibration, shock, dust, inflammable and corrosive gas.)

2) 배선상의 주의사항 (Cautions in wiring)

- 접속은 SOCKET을 사용하고 본체의 PIN에는 직접 납땜을 하지 마십시오. (Use sockets for connection and do not solder on the PIN of the main body.)
- SOCKET을 결선하는 경우에는 단자번호를 확인하여 주십시오. (When connecting the socket, check the terminal number.)
- CONTROLLER를 SOCKET 홈에 삽입 시에는 전원을 OFF하고 PIN번호를 확인한 후 삽입하여 주십시오. (When inserting the control pack in the socket, turn the power off, check the PIN number and then insert.)
- 큰 출력의 MOTOR, 솔레노이드, 고주파 전원, 전기용접기 등은 CONTROLLER의 오동작 원인이 되는 경우가 있습니다. 별도회로의 전원으로 상기의 기기 주회로의 CABLE과 분리해서 배선하여 주십시오. (High-output motors, solenoid, high frequency power and electric welding machines could cause malfunctions of the control pack.
  Use a separate circuit and wire the above equipment circuits separately.)



C1~C4 : 1000㎊ (2000VDC)
C5~C6 : 0.1㎌~0.2㎌ (AC125WV 또는(or) AC250WV)
L1~L2 : 100㎌정도
주(Note))

1. L1~L2는 MOTOR전류에 의해 자기포화를 하지 않는 사양으로 하여 주십시오. (The specification of L1~L2 should not be magnetically saturated by the motor current.)
2. CONDENSER의 접지장소와 같은 위치로 MOTOR를 접지하여 주십시오. (The condenser and the motor should be grounded in the same place.)
3. 짧게 배선하고, 굵은 전선으로 접지하여 주십시오. (Use short wiring and ground with thick wires.)

- NOISE에 있어서는 NOISE FILTER를 설치하여 오동작을 방지하여 주십시오. (Install a noise filter to prevent malfunctions.)
- MOTOR와 CONTROLLER를 가능한 가까이 설치하여 최단거리에서 배선하여 주십시오. (Install the motor and the control pack as closely as possible.)
- 개별부품에서 NOISE FILTER가 필요한 경우에는 위의 회로도와 같이 회로를 구성하여 주십시오. (When noise filters are necessary for independent parts, use a circuit as shown in the picture.)

3) 운전시의 주의사항 (Cautions in operation)

- 실 부하상태에서 MOTOR의 표면온도는 90℃ 이하에서 사용하여 주십시오. 빈번하게 순시정지 · 운전을 반복하면 MOTOR의 온도가 높아집니다. (Use at a motor surface temperature below 90℃ in rated load. Frequent instantaneous braking and repetition of operating raises the temperature of the motor.)
- 장시간 정지할 경우에는 전원을 OFF하여 주십시오. (When stopping for a long time, turn the power off.)
- MOTOR의 기동, 정지는 AC 전원에서 실행하지 마십시오. SWITCH에서 발생하는 SURGE전압으로 제품이 파손될 염려가 있습니다. (Do not operate or stop the motor with the AC power source. The surge voltage from the switch could destroy the product.)

5. 고장원인과 처치방법 (Cause of malfunctions and management methods)

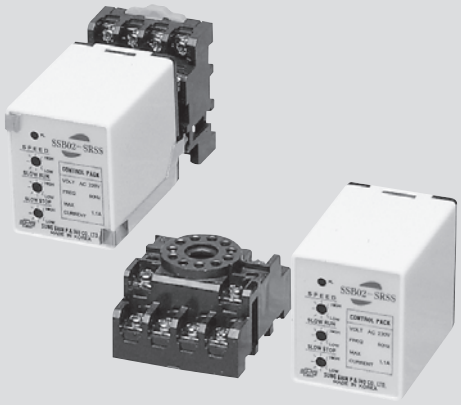
1) 보수 (Check)

- 작업의 능률을 향상시키고 본 CONTROLLER를 오래 사용하기 위하여 다음과 같은 평소의 점검이 필요합니다. (To raise efficiency and use the control pack longer, check the followings.)
  ① 운전이 원활하게 행하여지고 있는가?
  (Is operation being carried out smoothly?)
  ② 운전 중에 이상음이 발생하지 않는가?
  (Is there a strange noise when operating?)
  ③ 이상발열이 되고 있지 않는가?
  (Is abnormal heat being generated?)

2) 고장원인과 처치방법 (Cause of malfunctions and management methods)

이상현상 (Malfunction)	점 검 (Checklist)	고장부분판정 (Malfunctioning part)	대책내용 (How to fix)
MOTOR가 회전하지 않는다. (The motor does not rotate.)	SOCKET으로부터 CONTROLLER를 분리하여 SOCKET④, ⑩ 단자를 연결 (Separate the pack from the socket and connect socket ④ and ⑩ terminals.)	• MOTOR가 회전하면 속도설정부나 CONTROLLER부 (The speed controller or the controller parts if the motor rotates.)	• 속도 설정용 가변저항기의 접속 확인 (Check the connection of the speed control variable resistor.)
		• MOTOR가 회전하지 않으면 MOTOR (The motor parts if the motor does not rotate.)	• MOTOR의 접속부 확인 (Check the connection of the motor.) • MOTOR용 CONDENSER 접속 확인 (Check the connection of the condenser.)
	SOCKET으로부터 CONTROLLER를 분리하여 SOCKET⑧, ⑨ 단자를 개방 (Separate the pack with the socket and open socket ⑧ and ⑨ terminals.)	• MOTOR가 최대로 회전하면 속도설정부 (The speed controller parts if the motor rotates at maximum.)	• 속도설정용 가변저항기의 접속 확인 (Check the connection of the speed control variable resistor.) • 운전/정지 SWITCH부 접속 확인 (Check the connection of the run/stop switch.)
		• MOTOR가 회전하지 않으면 MOTOR (The motor parts if the motor does not rotate.)	• MOTOR의 접속부 확인 (Check the connection parts of the motor.)
MOTOR가 최대속도로 회전한다. (The motor is rotating at maximum speed.)	SOCKET으로부터 CONTROLLER를 분리하여 AC전원인가 (Separate the control pack from the socket and allow AC power.)	• MOTOR가 회전하면 속도설정부나 CONTROLLER부 (The speed controller or the controller if the motor rotates.)	• 속도설정용 가변저항기의 접속 확인 (Check the connection of the speed control variable resistor.)
		• MOTOR가 회전하지 않으면 MOTOR (The motor parts if the motor does not rotate.)	• MOTOR의 접속부 확인 (Check the connection of the motor.)
	SOCKET으로부터 CONTROLLER를 분리하여 SOCKET의⑧, ⑨ 단자를 연결 (Separate the pack from the socket and connect socket ⑧ and ⑨ terminals.)	• MOTOR가 정지하면 속도설정부 (The speed controller if the motor stop.)	• 속도설정용 가변저항기의 접속 확인 (Check the connection of the speed control variable resistor.) • 운전/정지 SWITCH부 접속 확인 (Check the connection of the run/stop switch) • ①, ⑪단자의 접속 확인 (Check the connection of ① and ⑪ terminals.)
		• MOTOR가 회전하면 속도설정부나 CONTROLLER부 (The speed controller or the controller if the motor rotates.)	
MOTOR가 변속되지 않는다. (The motor's speed is not controlled.)	속도 설정용 가변저항기를 최대로 설정한 후 SOCKET의 ①, ⑪단자간 전압 CHECK (Select the variable resistor at maximum and check the voltage of ① and ⑪ terminals of the socket.)	• AC20V 이상이면 속도설정부나 CONTROLLER부 (The speed controller or the control parts if it is more than AC20V)	• 속도설정용 가변저항기의 접속 확인 (Check the connection of the speed controlvariable resistor.)
		• AC20V 미만이면 T.G.부 (The tacho if it is less than AC20V)	• ①, ⑪단자의 접속확인 (Check the connection of ① and ⑪ terminals.) • T.G.부 단품으로서의 저항치가 약 1.5kΩ 확인 (Check that the resistance of the tacho part is 1.5kΩ.)
MOTOR가 즉시 정지하지 않는다. (The motor does not stop instantaneously.) (순시정지특성)	속도 설정용 가변저항기를 가변했을 때⑧, ⑨단자간 전압 CHECK (When changing the speed of the variable resistor, check the voltage of ⑧ and ⑨ terminals.)	• DC 0~6V 사이로 변환하면 속도설정부 (The speed controller parts (speed setting section) if it changes between DC 0~6V)	• 속도설정용 가변저항기의 접속 확인 (Check the connection of the speed control variable resistor) • 운전/정지 SWITCH부 접속 확인 (Check the connection of the run/stop switch) • 속도설정용 가변저항기가 0~20kΩ 까지 변화하는지 확인 (Check if the speed control variable resistor changes between 0~20kΩ.)
		• DC 0~6V 사이로 변환 안되면 CONTROLLER부 (The controller if it does not change between DC 0~6V)	
			• 외부저항 10Ω, 10W 접속 확인 (Check the connection of external resistance 10Ω, 10W.) • 운전/정지 SWITCH부 접속 확인 (Check the connection of the run/stop switch.)

SPEED CONTROLLER
: SS 표준 TYPE



특징

- 6W~40W의 INDUCTION SPEED CONTROL MOTOR와 REVESIBLE SPEED CONTROL MOTOR에 사용됩니다.
- 속도 설정기를 내장 CASE 전면의 속도설정기에의한 MOTOR의 회전속도조정, 설정이 가능합니다.
- 전기 BRAKE에 의한 순시 정지 기능이 가능합니다.
- 소형의 11PIN PLUG IN방식을 채용했습니다.
- SLOW RUN, SLOW STOP기능이 있어 기동과 정지가 급격히 이루어 지지않으며 서서히 작동합니다.
- SLOW RUN, SLOW STOP의 시간 설정기능이 내장되어있어 조정이 간편합니다.
- 병렬 운전에는 사용할 수 없습니다.(병렬 운전이 필요한 경우에는 당사 제품 SS고출력 TYPE을 구입하여 사용하십시오.)

SPECIFICATIONS

	품명 (MODEL) / 특성 (SPEC)	SS TYPE									
		SSA01-SRSS	SSA02-SRSS	SSB01-SRSS	SSB02-SRSS	SSC01-SRSS	SSC02-SRSS	SSD01-SRSS	SSD02-SRSS	SSX01-SRSS	SSX02-SRSS
	정격전압 (Rated Voltage)	단상(SINGLE-PHASE) AC110V		단상(SINGLE-PHASE) AC220V		단상(SINGLE-PHASE) AC100V		단상(SINGLE-PHASE) AC200V		단상(SINGLE-PHASE) AC220V~240V	
	사용전압범위 (Operation Voltage Range)	±10%									
	정격주파수 (Power source frequency)	60Hz				50/60Hz				50Hz	
	정격전류 (Rated current)	1.1A	1.5A	1.1A	1.1A	1.0A	1.4A	1.0A	1.0A	1.1A	1.1A
※1	적용 Motor 출력 (Applicable motor output)	6W	15W~40W	6W	15W~40W	6W	15W~40W	6W	15W~40W	6W	15W~40W
	속도제어범위 (Speed control range)	90~1700rpm				90~1400rpm /90~1700rpm				90~1400rpm	
	속도변동율 (Speed variation)	5%(표준치(standard))									
	속도설정기 (Speed setting device)	외부속도 설정기에 의한 조정 가능 (Built in external speed setting device attachable)(20KΩ)								(10KΩ)	
	제동 (Braking)	전기 Brake에 의한 순시정지가 가능 (Possible to stop for certain period by electric brake)									
※2	전기 Brake 시간 (Braking period)	0.5초(sec)(표준치(standard))									
	병렬운전 (Parallel operation)	기능없음 (Not suitable for parallel operation)									
	Slow Run, Slow Stop	기능있음(Possible) (0.5초(sec)~15초(sec)/1200rpm)									
	사용온도범위 (Operation Temperature)	-10℃~50℃									
	사용습도범위 (Ambient humidity)	85% 이하(Maximum)(결로 없을 것(non condensing))									
	보존온도 (Storage temperature)	-20℃~+60℃									
	절연저항 (Insulation resistance)	상온 상습에서 CASE와 PIN간을 DC 500V MEGGER로 측정하여 100MΩ 이상임 (100MΩ or more when 500V megger is applied between the pin and the housing at ambient temperature and humidity)									
	절연내압 (Dielectric strength)	상온 상습에서 CASE와 PIN간을 1500V 50/60Hz를 1분간 인가하여도 이상없음 (sufficient 1500V at 50/60Hz applied between the pin and the housing at ambient temperature and humidity for 1min)									

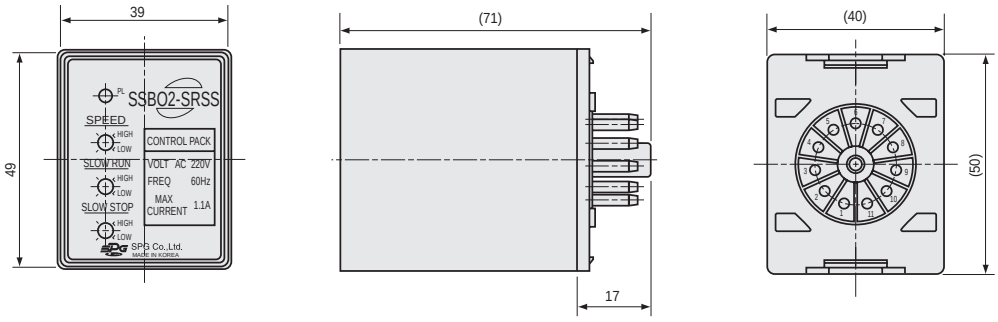
※ 1 : 적용 MOTOR는 당사 PACK TYPE SPEED CONTROL MOTOR입니다.(T.G.전압이 24V용 MOTOR를 사용하십시오.) (Applicable motors are socket type control motors of SPG. (Use for 24V motor T.G))

※ 2 : 전기 BRAKE에는 유지력이 없습니다. (There are no holding torque on electromagnetic brake.)

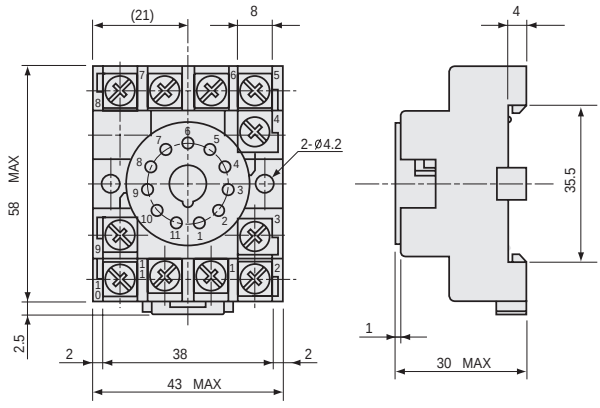
DIMENSIONS

■ SS 표준형(STANDARD) TYPE SPEED CONTROLLER

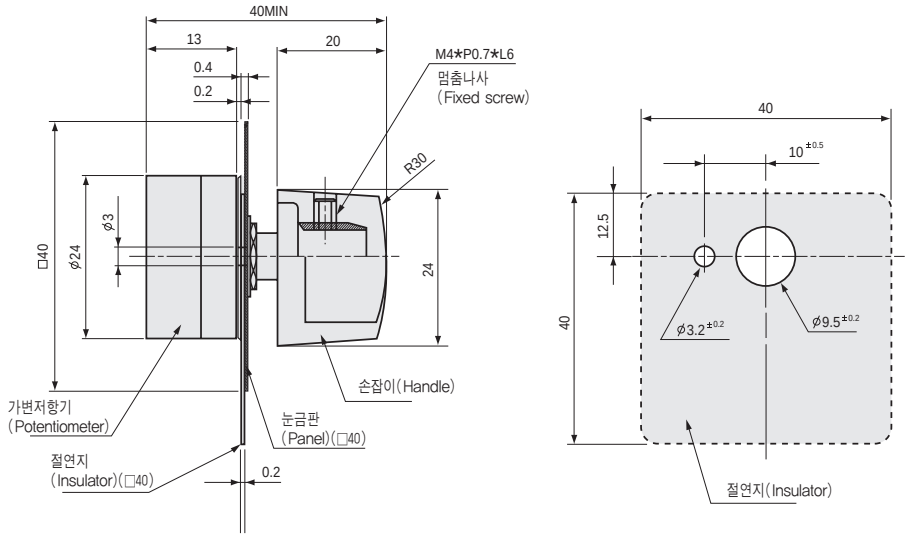
✚ CONTROLLER



✚ 11PIN SOCKET

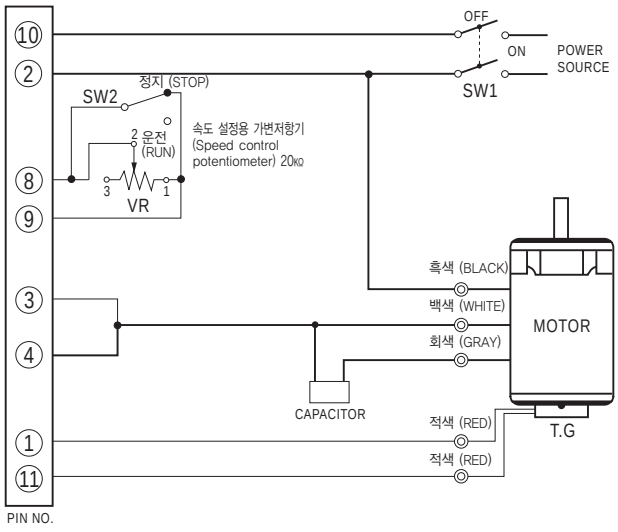


✚ 속도설정용 가변 저항기(SPECIFICATION OF VARIABLE RESISTOR FOR SPEED SETTING) 20㏀(10㏀)1/4W B특성 (CHARACTERISTIC)



✚ 전기배선도(SCHEMATIC DIAGRAM)(INDUCTION MOTOR)

1-1 일방향운전 + 변속 (6W~40W)
(Uni Direction+Variable Speed)

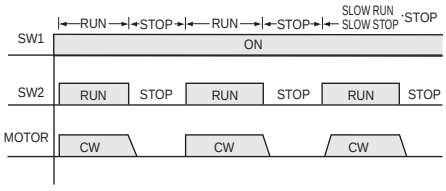


SW1	AC125V or AC250V 5A 이상 (MIN. 5A)
SW2	DC 20V 10mA

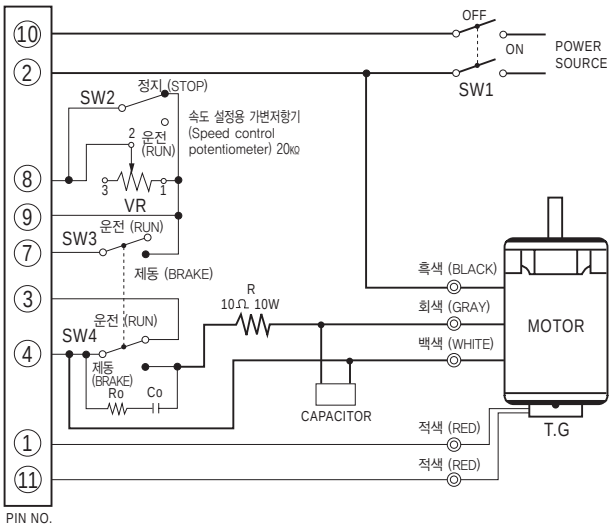
◀ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. 이때의 VR은 10㏀입니다.
(For wiring of 220V~240V, 50Hz motor, change gray to brown. Here, VR is 10㏀.)

주(Note))
MOTOR의 회전방향은 출력축 측에서 보아 시계방향(CW)입니다. 반시계방향(CCW)으로 할 경우는 MOTOR LEAD 선중 백색과 회색을 교환하여 주십시오.
(The motor rotating direction is CW when viewed from output shaft. When adjusting to CCW direction, exchange white wire to gray.)

◆ 운전 조작예 (Example of operation)



1-2 일방향운전 + 변속 + 제동 (6W~25W)
(Uni Direction + Variable Speed + Brake)

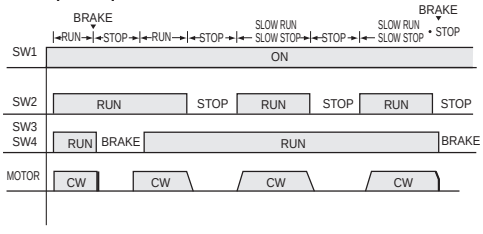


SW1,4	AC125V or AC250V 5A 이상 (MIN. 5A)
SW2,3	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2㎌ (AC125WV, AC250WV)
R:제동용 외부저항 (Braking external resistor)	10Ω, 10W이상(MIN. 10W)

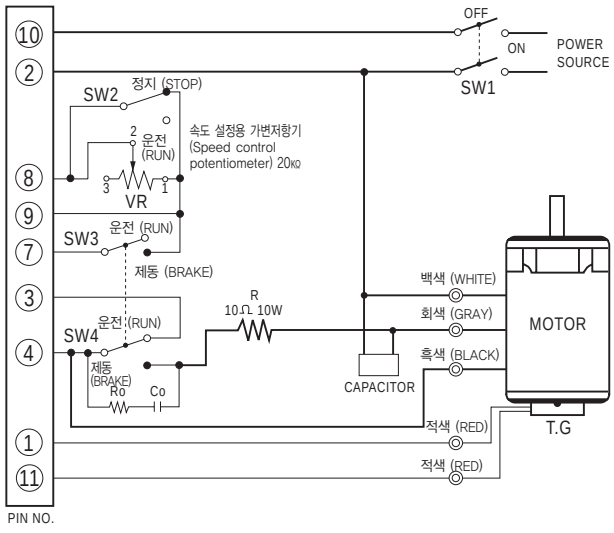
◀ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. 이때의 VR은 10㏀입니다.
(For wiring of 220V~240V, 50Hz motor, change gray to brown. Here, VR is 10㏀.)

주(Notte))
MOTOR의 회전방향은 출력축 측에서 보아 시계방향(CW)입니다. 반시계방향(CCW)으로 할 경우는 MOTOR LEAD 선중 백색과 회색을 교환하여 주십시오.
(The motor rotating direction is CW when viewed from output shaft. When adjusting to CCW direction, exchange white wire to gray.)

◆ 운전 조작예 (Example of operation)



1-3 일방향운전 + 변속 + 제동 (40W)
(Uni Direction + Variable Speed + Brake)

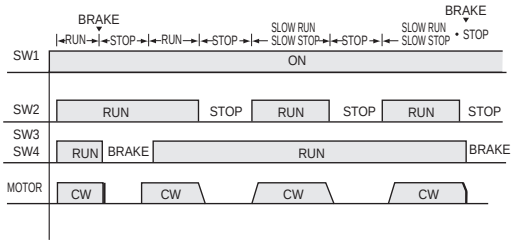


◀ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. 이때의 VR은 10KΩ입니다.
(For wiring of 220V~240V, 50Hz motor, change gray to brown. Here, VR is 10KΩ.)

SW1,4	AC125V or AC250V 5A 이상 (MIN. 5A)
SW2,3	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV, AC250WV)
R:제동용 외부저항 (Braking external resistor)	10Ω, 10W이상(MIN. 10W)

주(Notice))
MOTOR의 회전방향은 출력축 측에서 보아 시계방향(CW)입니다. 반시계방향(CCW)으로 할 경우는 MOTOR LEAD 선중 백색과 회색을 교환하여 주십시오.
(The motor rotating direction is CW when viewed from output shaft. When adjusting to CCW direction, exchange white wire to gray.)

◆ 운전 조작예 (Example of operation)



1-4 사용방법 (Instruction) (SPEED CONTROL INDUCTION MOTOR)

● **운전/정지기능 (Run/Stop function)**
1-1, 2, 3항의 기본전기 배선에서 SW2를 운전측으로 하면 MOTOR는 외부 속도 설정기로 설정한 속도로 회전하고, 정지측으로 하면 관성에 의해서 자연 정지합니다. (If SW2 is switched to "RUN"as section 1-1,2,3, the motor will rotate per fixed speed set by external speed controller. When switched to "STOP" rotation will spontaneously stop by inertia force.)

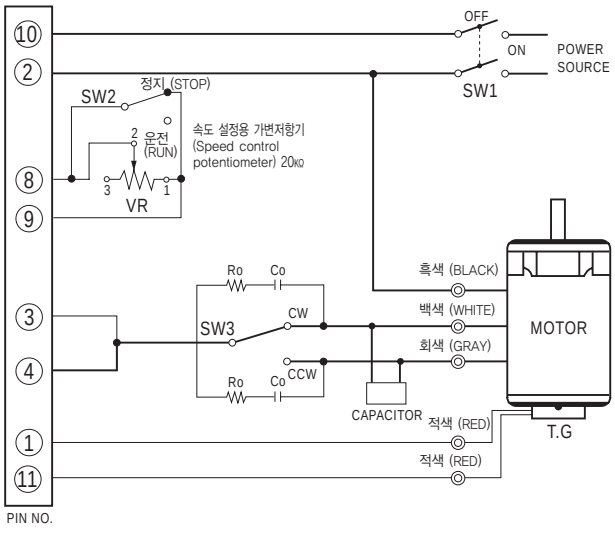
● **운전/제동기능 (Run/Brake function)**
1-2, 3항의 기본전기 배선에서 SW2를 운전측으로 한 상태에서 SW3, SW4를 운전에서 제동측으로 하면 MOTOR는 BRAKE가 약 0.5초간 동작하여 순시 정지합니다. (f SW3 and SW4 is turned to stop while SW2 is on RUN condition, the brake will function for about 0.5 seconds and stop the motor instantaneously.)

● **SLOW RUN, SLOW STOP 기능 (function)**
- CONTROLLER의 SLOW RUN, SLOW STOP조정 VOLUME을 설정한 다음 SW2에 의하여 운전/정지측으로 하면 MOTOR는 설정한 시간만큼 속도 설정기에 의하여 SLOW RUN, SLOW STOP됩니다. (When SW2 is switched to Run/Stop after slow run, slow stop is set by the volume of controller, the motor will slowly start and slowly stop per set time.)
- SLOW RUN, SLOW STOP은 설정 시간에대해 속도가 직선적으로 변화하고 이때의 경사는 0.5~15초/1200rpm 범위에서 조정가능합니다. (The speed of slow run and slow stop changes in rectilinearly against set time and the slope can be controlled within 0.5sec~15sec/1200rpm.)
- MOTOR의 자연 정지보다 짧은 시간으로 SLOW STOP 정지는 불가능합니다. (Slow stop cannot be set for shorter period than natural stopping period of motor.)

※ 장시간 사용하지 않을 때에는 CONTROLLER의 발열을 예방하기 위하여 SW1을 OFF로 하십시오. (Turn SW1 off to prevent control pack from generating heat when not used for a long period.)

✚ 전기배선도(SCHEMATIC DIAGRAM)(INDUCTION MOTOR)

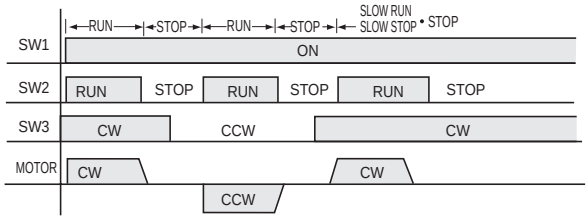
2-1 정역 운전 + 변속 (6W~40W)
(Reverse + Variable Speed)



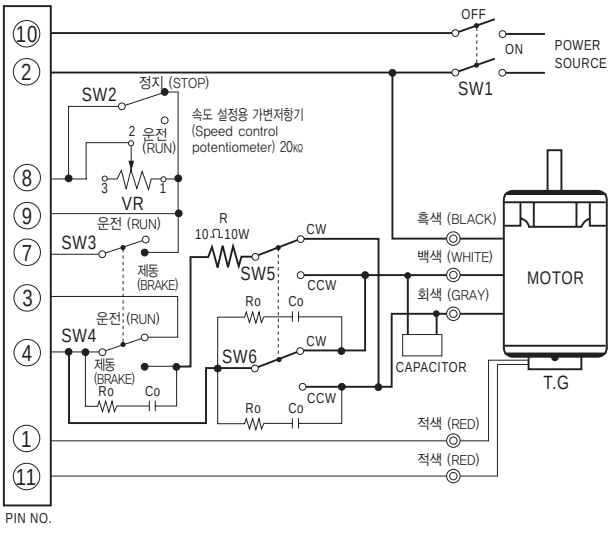
SW1.3	AC125V or AC 250V 5A 이상 (MIN. 5A)
SW2	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2㎌ (AC125WV,AC250WV)

◀ 단상 AC220V~240V 50㎐용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. 이때의 VR은 10㏀입니다.
(For wiring of 220V~240V, 50Hz motor, change gray to brown. Here, VR is 10㏀.)

◆ 운전 조작예 (Example of operation)



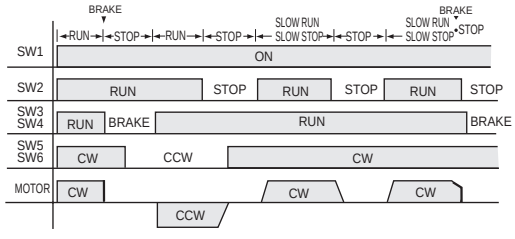
2-2 정역 운전 + 변속 + 제동 (6W~25W)
(Reverse + Variable Speed + Brake)



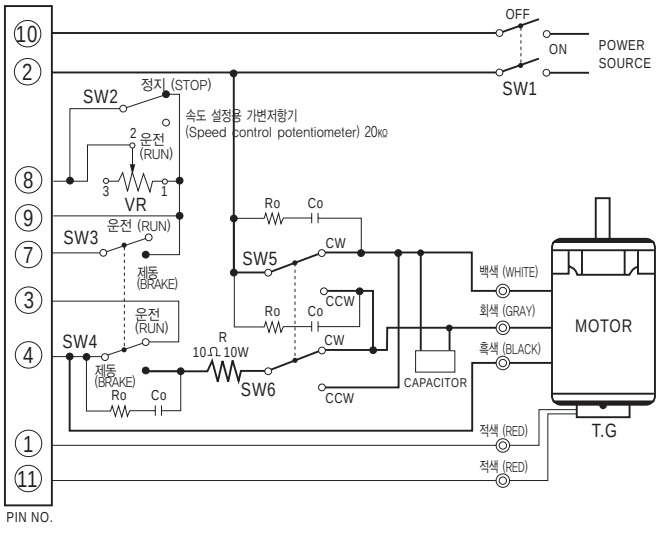
SW1,4,5,6	AC125V or AC250V 5A 이상 (MIN. 5A)
SW2,3	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2㎌ (AC125WV, AC250WV)
R:제동용 외부저항 (Braking external resistor)	10Ω, 10W이상(MIN. 10W)

◀ 단상 AC220V~240V 50㎐용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. 이때의 VR은 10㏀입니다.
(For wiring of 220V~240V, 50Hz motor, change gray to brown. Here, VR is 10㏀.)

◆ 운전 조작예 (Example of operation)



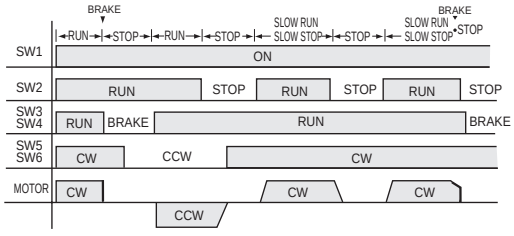
2-3 정역 운전 + 변속 + 제동 (40W)
(Reverse + Variable Speed + Brake)



SW1,4,5,6	AC125V or AC250V 5A 이상 (MIN. 5A)
SW2,3	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV, AC250WV)
R:제동용 외부저항 (Braking external resistor)	10Ω, 10W이상(MIN. 10W)

◀ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. 이때의 VR은 10KΩ입니다. (For wiring of 220V~240V, 50Hz motor, change gray to brown. Here, VR is 10KΩ.)

◆ **운전 조작예 (Example of operation)**



2-4 사용방법 (Instruction) (SPEED CONTROL REVERSIBLE MOTOR)

● **운전/정지기능 (Run/Stop function)**
2-1, 2, 3항의 기본전기 배선에서 SW2를 운전측으로 하면 MOTOR는 외부 속도 설정기로 설정한 속도로 회전하고, 정지측으로 하면 관성에 의해서 자연 정지합니다. (If SW2 is switched to "RUN"as section 1-1,2,3, the motor will rotate per fixed speed set by external speed controller. When switched to "STOP" rotation will spontaneously stop by inertia force.)

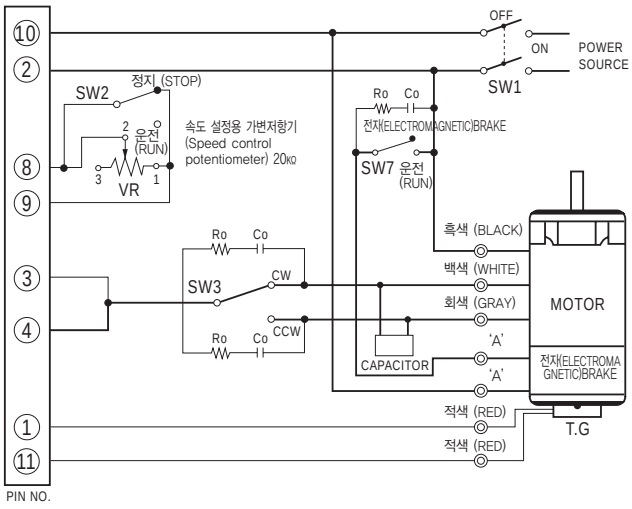
● **운전/제동기능 (Run/Brake function)**
2-2, 3항의 기본전기 배선에서 SW2를 운전측으로 한 상태에서 SW3,SW4를 운전에서 제동측으로 하면 MOTOR는 BRAKE가 약 0.5초간 동작하여 순시 정지합니다. (If SW3 and SW4 is turned to stop while SW2 is on RUN condition, the brake will function for about 0.5 seconds and stop the motor instantaneously.)

● **SLOW RUN, SLOW STOP 기능 (Slow Run/Slow Stop function)**
- CONTROLLER의 SLOW RUN, SLOW STOP조정 VOLUME을 설정한 다음 SW2에 의하여 운전/정지측으로 하면 MOTOR는 설정한 시간만큼 속도 설정기에 의하여 SLOW RUN, SLOW STOP됩니다. (When SW2 is switched to Run/Stop after slow run, slow stop is set by the volume of controller, the motor will slowly start and slowly stop per set time.)
- SLOW RUN, SLOW STOP은 설정 시간에대해 속도가 직선적으로 변화하고 이때의 경사는 0.5~15초/1200rpm 범위에서 조정가능 합니다. (The speed of slow run and slow stop changes in rectilinearly against set time and the slope can be controlled within 0.5sec~15sec/1200rpm.)
- MOTOR의 자연 정지보다 짧은 시간으로 SLOW STOP 정지는 불가능합니다. (Slow stop cannot be set for shorter period than natural stopping period of motor.)

※ 장시간 사용하지 않은 때에는 CONTROLLER의 발열을 예방하기 위하여 SW1을 OFF로 하십시오. (Turn SW1 off to prevent control pack from generating heat when not used for a long period.)

✚ 전기배선도 (SCHEMATIC DIAGRAM) (E·S MOTOR)

3-1 정역 운전 + 변속 (6W~40W)
(Reverse + Variable Speed)

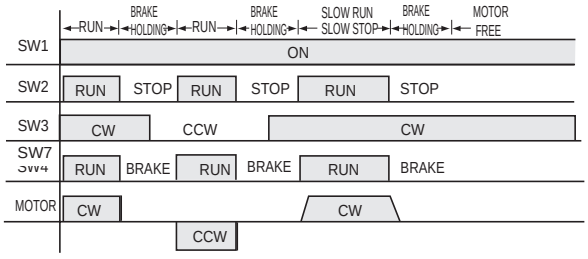


◀ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. 이때의 VR은 10KΩ 입니다. (For wiring of 220V~240V, 50Hz motor, change gray to brown. Here, VR is 10KΩ.)

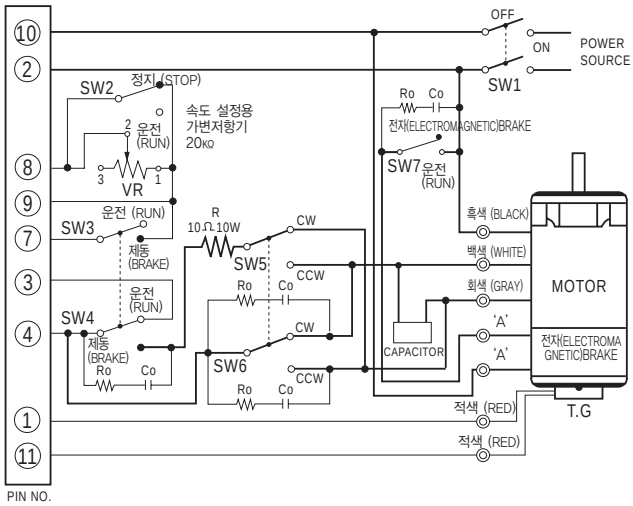
전압 (VOLTAGE)	LEAD WIRE 'A'
단상(SINGLE PHASE) AC100V~110V	청색 (Blue)
단상(SINGLE PHASE) AC200V~240V	등색 (Orange)

SW1,3,7	AC125V or AC 250V 5A 이상 (MIN. 5A)
SW2	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV,AC250WV)

◆ 운전 조작예 (Example of operation)



3-2 정역 운전 + 변속 + 제동 (6W~25W)
(Reverse + Variable Speed)

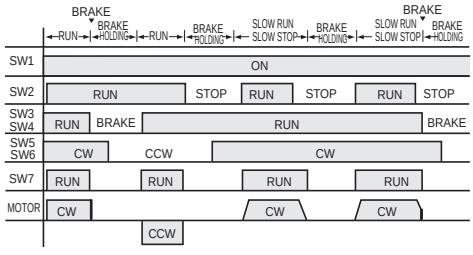


◀ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. 이때의 VR은 10KΩ 입니다. (For wiring of 220V~240V, 50Hz motor, change gray to brown. Here, VR is 10KΩ.)

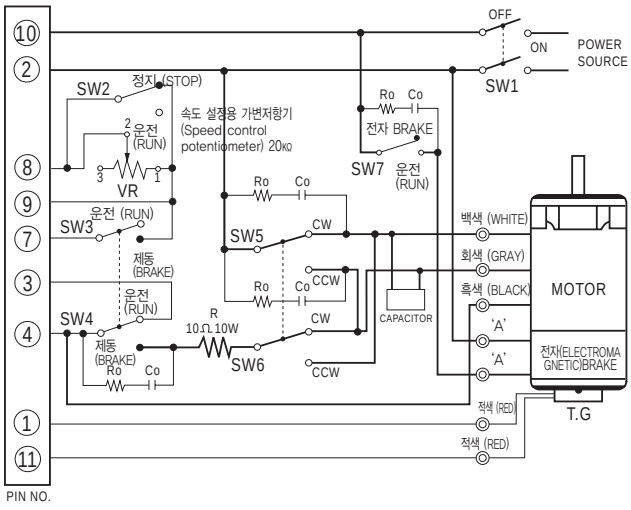
SW1,4,5,6	AC125V or AC250V 5A 이상 (MIN. 5A)
SW2,3	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV, AC250WV)
R:제동용 외부저항 (Braking external resistor)	10Ω, 10W이상(MIN. 10W)

전압 (VOLTAGE)	LEAD WIRE 'A'
단상(SINGLE PHASE) AC100V~110V	청색 (Blue)
단상(SINGLE PHASE) AC200V~240V	등색 (Orange)

◆ 운전 조작예 (Example of operation)



3-3 정역운전 + 변속 + 제동 (40W)
(Reverse + Variable Speed)

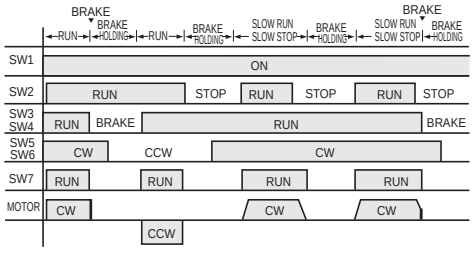


◀ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. 이때의 VR은 10KΩ 입니다. (For wiring of 220V~240V, 50Hz motor, change gray to brown. Here, VR is 10KΩ.)

SW1,4,5,6	AC125V or AC250V 5A 이상 (MIN. 5A)
SW2,3	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV, AC250WV)
R:제동용 외부저항 (Braking external resistor)	10Ω, 10W이상(MIN. 10W)

전압 (VOLTAGE)	LEAD WIRE 'A'
단상(SINGLE PHASE) AC100V~110V	청색 (Blue)
단상(SINGLE PHASE) AC200V~240V	등색 (Orange)

◆ 운전 조작예 (Example of operation)



3-4 사용방법 (Instruction) (E.S MOTOR)

● **운전/정지기능 (Run/Stop function)**

3-1, 2, 3항의 기본전기 배선에서 SW7를 운전측으로 하고 SW2를 운전측으로하면 MOTOR는 외부 속도 설정기로 설정한 속도로 회전하고, 정지측으로 하면 관성에 의해서 자연 정지합니다.(단SW2와 SW7를 연동으로 할 경우에는 전자 BRAKE에 의한 제동 및 위치 유지를 합니다.) (If SW7 is switched to "RUN" and then switch SW2 to run from section 3-1,2 and 3, the motor will rotate per fixed speed set by external speed controller. When switched to "STOP" rotation will spontaneously stop by inertia force. (When SW2 and SW7 is to be linked and used braking and keeping position will be done by electromagnetic brake.))

● **운전/제동기능 (Run/Brake function)**

3-2, 3항의 기본전기 배선에서 SW2를 운전측으로 한 상태에서 SW3, SW4와 SW7를 연동으로하여 제동 및 BRAKE측으로 하면 MOTOR는 전기 BRAKE가 약 0.5초간 동작하여 순시정지하고 전자 BRAKE에 의하여 위치 유지를 합니다. 이때의 약0.5초간은 SW5, SW6를 조작하지 마십시오. (If SW3, SW4 and SW7 is linked and set to brake while SW2 is on RUN position from the basic diagram of section 3-2,3 electric brake will function for 0.5 seconds to stop motor instantaneously and will keep position by electromagnetic brake. Please do not tamper with SW5 or SW6 for 0.5 seconds while brake is functioning.)

●**SLOW RUN, SLOW STOP 기능 (function)**

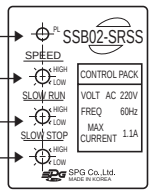
- CONTROLLER의 SLOW RUN, SLOW STOP조정 VOLUME을 설정한 다음 SW2에 의하여 운전/정지측으로 하면 MOTOR는 설정한 시간 만큼 속도 설정기에 의하여 SLOW RUN, SLOW STOP됩니다. (When SW2 is switched to Run/Stop after slow run, slow stop is set by the volume of controller, the motor will slowly start and slowly stop per set time.)
- SLOW RUN, SLOW STOP은 설정 시간에 대해 속도가 직선적으로 변화하고 이때의 경사는 0.5~15초/1200rpm 범위에서 조정가능 합니다. (The speed of slow run and slow stop changes in rectilinearly against set time and the slope can be controlled within 0.5sec~15sec/1200rpm.)
- MOTOR의 자연 정지보다 짧은 시간으로 SLOW STOP 정지는 불가능 합니다. (Slow stop cannot be set for shorter period than natural stopping period of motor.)

※ 장시간 사용하지 않은 때에는 CONTROLLER의 발열을 예방하기 위하여 SW1을 OFF로 하십시오. (Turn SW1 off to prevent control pack from generating heat when not used for a long period.)

+ 전기 배선의 응용 (WIDE APPLICATION OF ELECTRIC WIRING)

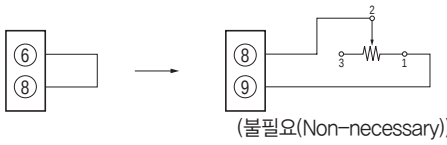
조작면 (Panel Layout)

LED	전원 투입시 점등 (Lights when electric power is on)
VR1	속도 설정용 가변저항기(내장) (Various resistance for setting speed(internal))
VR2	SLOW RUN 시간 설정용 가변저항기 (Various resistance for setting slow run period)
VR3	SLOW STOP 시간 설정용 가변저항기 (Various resistance for setting slow run period)



내장 볼륨 (VR)의 사용방법 (Using Internal Volume)

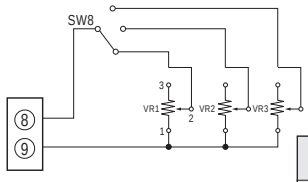
SS TYPE은 속도 설정용 가변저항기를 내장하고 있으므로 외부 속도 설정용 가변저항기 없이도 사용할 수 있습니다. 11PIN 프러그의 ⑥번과 ⑧번 PIN을 접속하면 내장 볼륨을 사용할 수 있습니다. 이때의 접속도는 속도 설정용 가변 저항기가 불필요할 뿐 기타 접속은 동일합니다. (SS TYPE has various internal resistance for speed setting device installed. Therefore, it is possible to use without external variable resistor for speed setting. When pin no.⑥ and ⑧ of 11pin plug is connected, it is possible to use internal volume. Wiring diagram is the same except wiring for variable resistor for speed setting is not required.)



(불필요(Non-necessary))

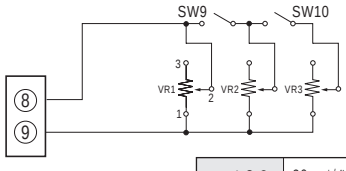
다단계 속도 설정이 필요한 경우 (Multistage Speed Control)

1. 다단계 속도 조정이 필요한 경우 VR1,VR2,VR3를 각각 설정하고 스위치 SW8 등으로 절환하여 사용하십시오. (When multistage speed control is required, set each VR1, VR2 and VR3 and then use SW8 to convert.)



VR1,2,3	20㏀ 1/4W B특성(Characteristic)
SW8	DC 20V 10mA

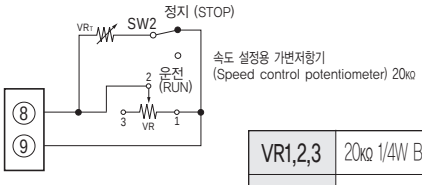
2. 위와 같이 로터리 스위치(SW8)등의 절환되는 타이밍이 느린 경우, MOTOR가 일순간 최대 속력으로 회전하므로 아래 그림과 같이 접속하면 SW9, SW10 에 속도 절환이 가능합니다. (When converting time is slow as rotating switch SW8, converting speed is possible by connecting SW9, SW10 as following diagram since motor rotates with full speed momentarily.)



VR1,2,3	20㏀ 1/4W B특성(Characteristic)
SW9, SW10	DC 20V 10mA

동작 시간을 빠르게 하는 방법 (How to Speed Up Operation)

MOTOR의 설정속도가 저속으로 됨에 따라, 운전/정지 스위치를 운전 측으로 하고나서 MOTOR가 회전을 시작하기 까지는 시간이 길어 지게 됩니다. 저속 설정시 동작시간이 문제가 되는 경우에는 다음 회로를 참조하여 동작시간 조정가변저항 VRT를 접속하십시오. (To quicken operating speed, as the set speed is decelerated, there are more delays to start rotation when switch is turned ON If this causes problems, refer to following diagram and connect VRT.(Variable resistor for operating time control.))

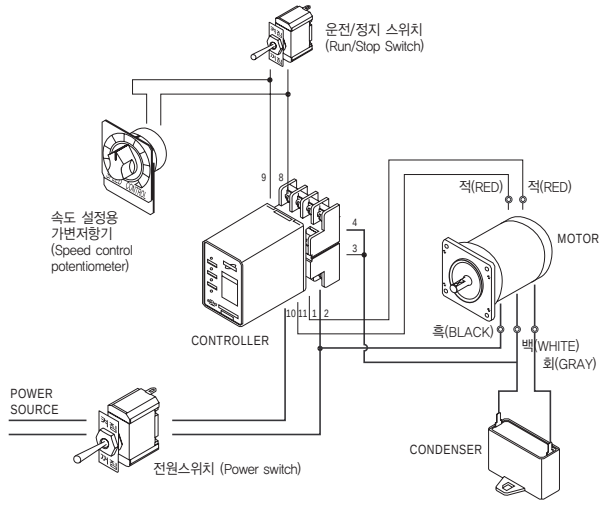


VR1,2,3	20㏀ 1/4W B특성(Characteristic)
SW2	DC 20V 10mA

※ 순시정지를 행하는 경우에는 운전/제동 스위치와 위 회로의 운전/정지 스위치를 연동으로 사용하십시오. (For instantaneous stop, operate both RUN/BRAKE switch and RUN/STOP switch above.)

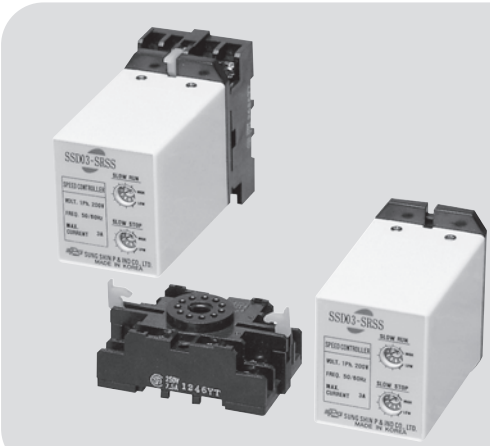
※ 운전/정지 스위치를 정지측으로 한 상태에서 MOTOR가 기동하기 직전까지 VRT를 조정하십시오. (Place RUN/STOP switch to stop and control VRT until motor starts.)

본체 배선도 (Total system)



1. 전원 스위치(SW1)을 ON으로 하면 CONTROLLER의 POWER LAMP가 점등 합니다. (If the power switch (SW1) is turned on, the power lamp of the control pack will be lighted.)
2. 속도 설정용 가변 저항기에 의해 MOTOR속도를 단계없이 조정가능 합니다. 가변저항기를 HIGH로 돌리면 고속으로 LOW로 돌리면 저속(정지)됩니다. (Speed of motor can be controlled without steps by using variable speed resistor for external speed setting. Turn to (HIGH) for high speed, and (LOW) for low speed.)
3. 굵은 실선에는 MOTOR의 운전 전류가 흐릅니다. 굵은 실선은 0.75㎟ 정도의 전선을, 얇은 실선은 0.5㎟ 정도의 전선을 사용하여 주십시오. (There are operating current flowing on thick line. Use cable with 0.75㎟ for thick line and 0.5㎟ for thin line.)

SPEED CONTROLLER
: SS 고출력(HIGH OUTPUT)TYPE



특징 (Characteristics)
- 6W~90W의 INDUCTION SPEED CONTROL MOTOR 와 6W~40W의 REVERSIBLE SPEED CONTROL MOTOR와 6W~40W의 ELECTRO-MAGNETIC BRAKE SPEED CONTROL MOTOR에 사용됩니다. (Used for induction speed control motors of 6W~90W, reversible speed control motors of 6W~40W and electromagnetic brake speed control motors of 6W~40W.)
- 외부 속도 설정기에 의해서 MOTOR의 회전 속도를 조정, 설정할수 있습니다. (Built-in speed setting device on the case enables to control and set the speed of motors.)
- 전기 BRAKE에 의한 순시 정지 기능이 가능합니다. (Instantaneous stop function is possible by electric brake.)
- COMPACT한 PLUG-IN(11PIN)TYPE이므로 취급 및 설치가 간편합니다. (It is a compact plug-in type with 11pins so it is easy to set and use.)
- SLOW RUN, SLOW STOP기능이 있어 기동과 정지가 급격히 이루어 지지 않으며 서서히 작동합니다. (It has slow run and slow stop functions, so operating and braking are not working rapidly, instead slowly.)
- SLOW RUN, SLOW STOP의 시간 설정기능이 내장되어 있어 조정이 간편합니다. (There is time (period) setting device installed to control easily slow run and slow stop function.)
- 병렬 운전이 가능합니다. (Parallel operation is possible.) (병렬 운전이란 1개의 속도 설정용 가변저항기로 복수의 MOTOR CONTROLLER을 동시에 같은 속도로 설정하여 운전할 수 있습니다.(Parallel operation means that with one speed control volume, It can control plural speed controller at same time at same speed.))

SPECIFICATIONS

	품명 (MODEL) / 특성 (SPEC)		SS TYPE				
			SSA03-SRSS	SSB03-SRSS	SSC03-SRSS	SSD03-SRSS	SSX03-SRSS
	정격전압 (Rated Voltage)		단상(SINGLE-PHASE) AC110V	단상(SINGLE-PHASE) AC220V	단상(SINGLE-PHASE) AC100V	단상(SINGLE-PHASE) AC200V	단상(SINGLE-PHASE) AC220V~240V
	사용전압범위 (Operation Voltage Range)		±10%				
	정격주파수 (Power source frequency)		60Hz		50/60Hz		50Hz
	정격전류 (Rated current)		3.0A				
※1	적용 Motor 출력 (Applicable motor output)	Induction	6W~90W	6W~90W	6W~90W	6W~90W	6W~90W
		Reversible	6W~40W	6W~40W	6W~40W	6W~40W	6W~40W
		E • S	6W~40W	6W~40W	6W~40W	6W~40W	6W~40W
	속도제어범위 (Speed control range)		90~1700rpm		90~1400rpm/90~1700rpm		90~1400rpm
	속도변동율 (Speed variation)		5%(표준치(standard))				
	속도설정기 (Speed setting device)		외부속도 설정기에 의한 조정가능 (Built in external speed setting device attachable)				
	제동 (Braking)		전기Brake에 의한 순시정지가 가능 (possible to stop for certain period by electric brake)				
※2	전기 Brake 시간 (Braking period)		0.5초(sec)(표준치(standard))				
	병렬운전 (Parallel operation)		기능있음 (Possible)				
	Slow Run, Slow Stop		기능있음(Possible)(0.5초(sec)~15초(sec)/1200rpm)				
	사용온도범위 (Operation Temperature)		-10℃~50℃				
	사용습도범위 (Ambient humidity)		85% 이하(Max)(결로 없을 것(non condensing))				
	보존온도 (Storage temperature)		-20℃~60℃				
	절연저항 (Insulation resistance)		상온 상습에서 CASE와 PIN간을 DC 500V MEGGER로 측정하여 100MΩ 이상임 (100MΩ or more when 500V megger is applied between the pin and the housing at ambient temperature and humidity)				
	절연내압 (Dielectric strength)		상온 상습에서 CASE와 PIN간을 1500V 50/60Hz를 1분간 인가하여도 이상 없음 (No abnormality after input of 1500V 50/60Hz between the pin and the housing at ambient temperature and humidity for 1min)				

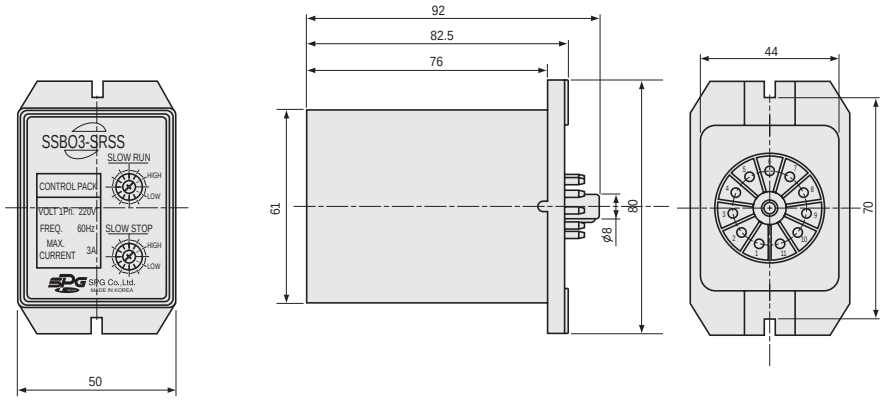
※ 1 : 적용 MOTOR는 당사 SOCKET TYPE SPEED CONTROL MOTOR입니다.(T.G 전압이 24V용 MOTOR를 사용하십시오.) (Applicable motors are socket type control motors of SPG. (Use for 24V motor T.G))

※ 2 : 전기 BRAKE에는 유지력이 없습니다. (There are no holding torque on electric brake.)

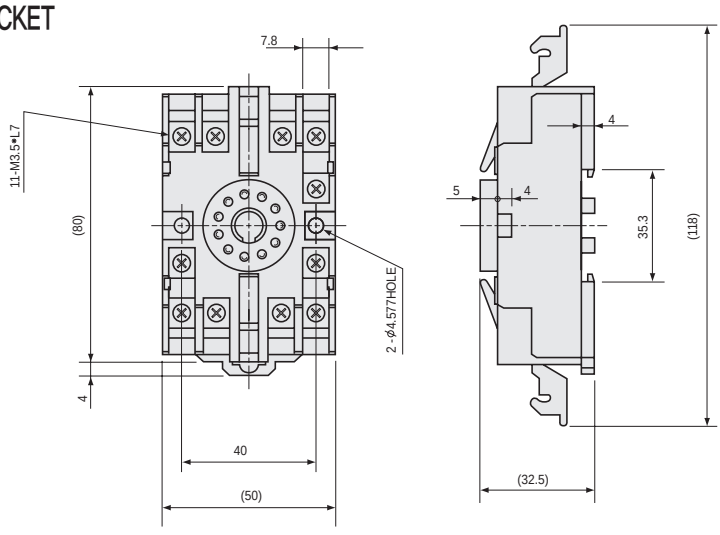
DIMENSIONS

■ SS 고출력(HIGH OUTPUT) TYPE SPEED CONTROLLER

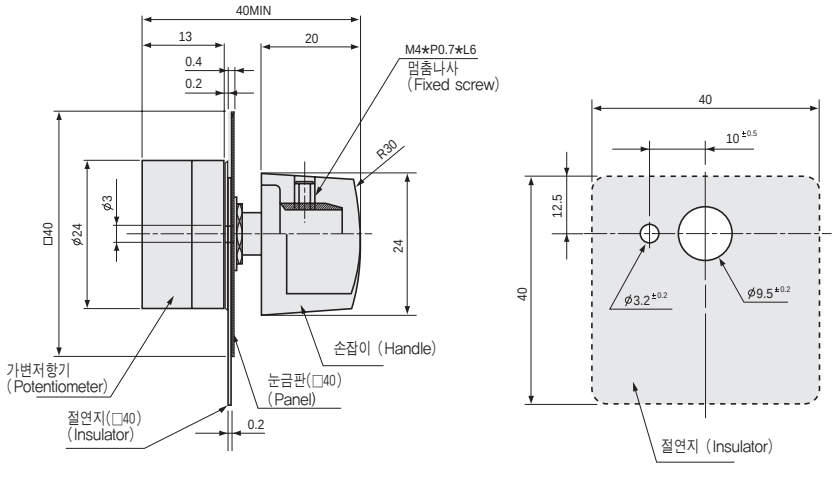
✚ CONTROLLER



✚ 11PIN SOCKET

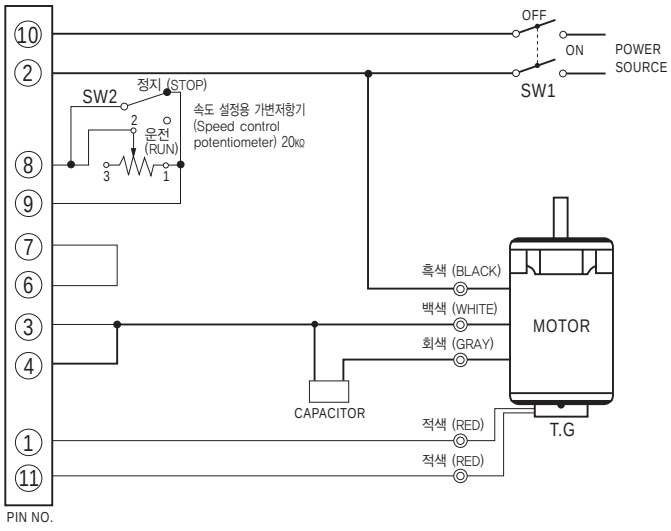


✚ 속도설정용 가변저항기 20KΩ(10KΩ) 1/4W B 특성 (VARIABLE RESISTOR 20KΩ 1/4W)



✚ 전기배선도(SCHEMATIC DIAGRAM)(INDUCTION MOTOR)

1-1 일방향운전 + 변속 (6W~90W)
(Uni Direction + Variable Speed)

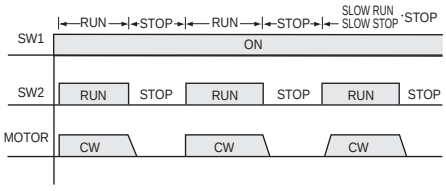


◀ 단상 AC220V~240V 50㎐용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. 이때의 VR은 10㏀입니다. (For wiring of 220V~240V, 50Hz motor, change gray to brown. Here, VR is 10㏀.)

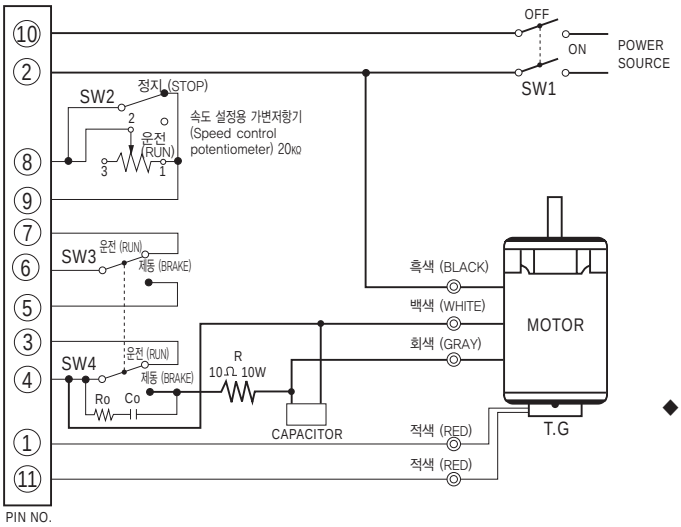
SW1	AC125V or AC 250V 5A 이상 (MIN. 5A)
SW2	DC 20V 10mA

주Note))
1. MOTOR의 회전방향은 출력축 측에서 보아 시계방향(CW)입니다. 반시계방향(CCW)으로 할 경우는 MOTOR LEAD선 중 백색과 회색을 교환하여 주십시오. (The motors, rotating direction is CW when viewed from output shaft. When adjusting to CCW direction, exchange white wire to gray.)
2. FAN MOTOR 결선은 MOTOR출력 60W 이상에만 적용되며, 결선 방법은 228page를 참고하시기 바랍니다. (The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 228 for the connection method.)

◆ **운전 조작예 (Example of operation)**



1-2 일방향운전 + 변속 + 제동 (6W~25W)
(Uni Direction + Variable Speed + Brake)

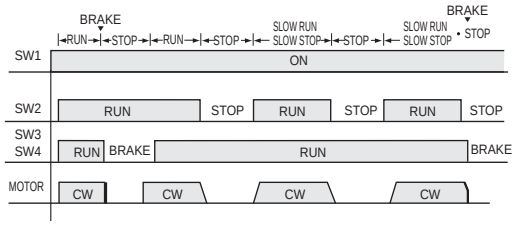


◀ 단상 AC220V~240V 50㎐용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. 이때의 VR은 10㏀입니다. (For wiring of 220V~240V, 50Hz motor, change gray to brown. Here, VR is 10㏀.)

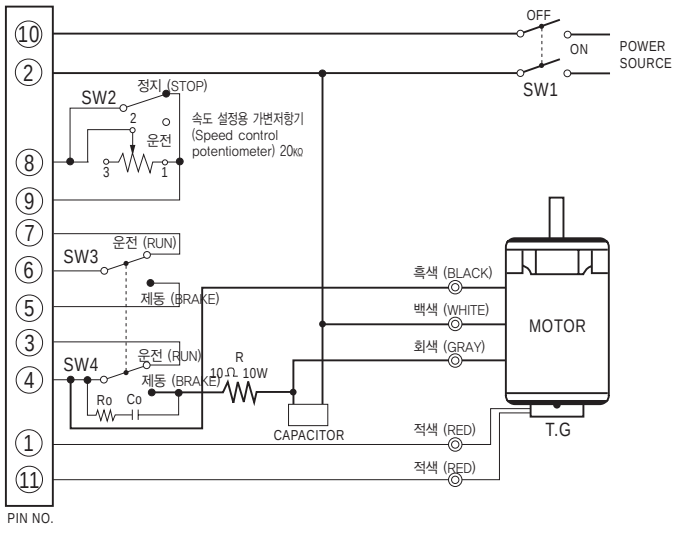
SW1,4	AC125V or AC250V 5A 이상 (MIN. 5A)
SW2,3	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2㎌ (AC125WV, AC250WV)
R:제동용 외부저항 (Braking external resistor)	10Ω, 10W이상(MIN. 10W)

주Note))
MOTOR의 회전방향은 출력 측에서 보아 시계방향(CW)입니다. 반시계방향(CCW)으로 할 경우는 MOTOR LEAD WIRE 중 백색과 회색을 교환하여 주십시오. (The motor rotating direction is CW when viewed from output shaft When adjusting to CCW direction, exchange white wire to gray.)

◆ **운전 조작예 (Example of operation)**



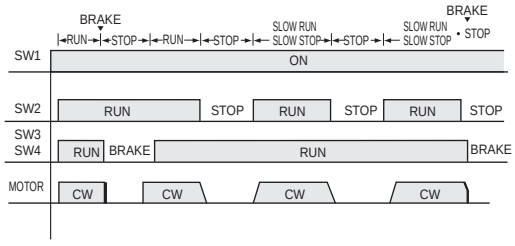
1-3 일방향운전 + 변속 + 제동 (40W~90W)
(Uni Direction + Variable Speed + Brake)



◀ 단상 AC220V~240V 50㎐용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. 이때의 VR은 10㏀입니다. (For wiring of 220V~240V, 50Hz motor, change gray to brown. Here, VR is 10㏀.)

SW1,4	AC125V or AC250V 5A 이상 (MIN. 5A)
SW2,3	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2㎌ (AC125WV, AC250WV)
R:제동용 외부저항 (Braking external resistor)	10Ω, 10W이상(MIN. 10W)

◆ **운전 조작예** (Example of operation)



주Note))
1. MOTOR의 회전방향은 출력 측에서 보아 시계방향(CW)입니다. 반시계방향(CCW)으로 할 경우는 MOTOR LEAD WIRE 중 백색과 회색을 교환하여 주십시오. (The motor's rotating direction is CW when viewed from output shaft. When adjusting to CCW direction, exchange white wire to gray.)
2. FAN MOTOR 결선은 MOTOR출력 60W 이상에만 적용되며, 결선 방법은 228page를 참고하시기 바랍니다. (The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 228 for the connection method.)

1-4 사용방법 (Instruction) (INDUCTION MOTOR)

● **운전/정지기능 (Run/Stop function)**
1-1, 2, 3항의 기본전기 배선에서 SW2를 운전측으로하면 MOTOR는 외부 속도 설정기로 설정한 속도로 회전하고, 정지측으로 하면 관성에 의해서 자연 정지합니다. (If SW2 is switched to "RUN"as section 1-1,2,3, the motor will rotates per fixed speed set by external speed controller. When switched to "STOP" rotation will spontaneously stop by inertia force.)

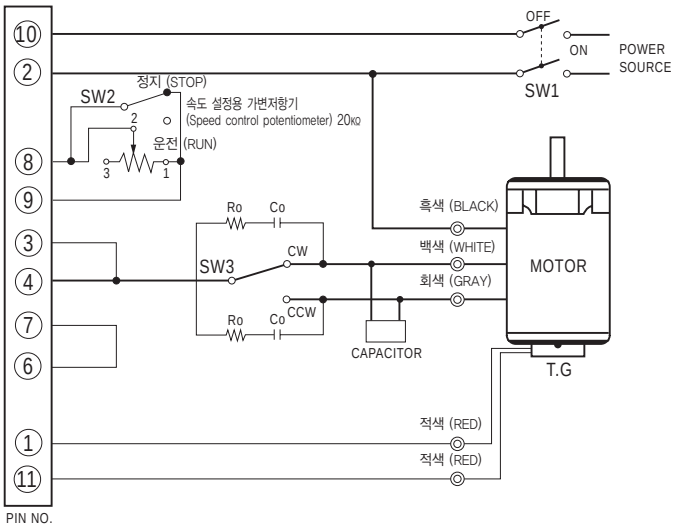
● **운전/제동기능 (Run/Brake function)**
1-2, 3항의 기본전기 배선에서 SW2를 운전측으로 한 상태에서 SW3,SW4,를 운전에서 제동측으로 하면 MOTOR는 BRAKE가 약 0.5초간 동작하여 순시 정지합니다. (If SW3 and SW4 is turned to stop while SW2 is on RUN condition, the brake will function for about 0.5 seconds and stop the motor instantaneously.)

● **SLOW RUN, SLOW STOP 기능 (function)**
- CONTROLLER의 SLOW RUN, SLOW STOP조정 VOLUME을 설정한 다음 SW2에 의하여 운전/정지측으로 하면 MOTOR는 설정한 시간만큼 속도 설정기에 의하여 SLOW RUN, SLOW STOP됩니다. (When SW2 is switched to Run/Stop after slow run, slow stop is set by the volume of controller, the motor will slowly start and slowly stop per set time.)
- SLOW RUN, SLOW STOP은 설정 시간에 대해 속도가 직선적으로 변화하고 이때의 경사는 0.5~15초/1200rpm 범위에서 조정가능 합니다. (The speed of slow run and slow stop changes in rectilinearly against set time and the slope can be controlled within 0.5sec ~15sec/1200rpm.)
- MOTOR의 자연 정지보다 짧은 시간으로 SLOW STOP 정지는 불가능 합니다. (Slow stop cannot be set for shorter period than natural stopping period of motor.)

※ 장시간 사용하지 않을 때에는 CONTROLLER의 발열을 예방하기 위하여 SW1을 OFF로 하십시오. (Turn SW1 off to prevent control pack from generating heat when not used for a long period.)

✚ 전기배선도(SCHEMATIC DIAGRAM)(REVERSIBLE MOTOR)

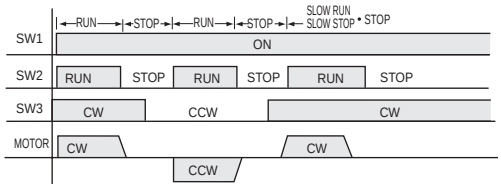
2-1 정역운전 + 변속 (6W~40W)
(Reverse + Variable Speed)



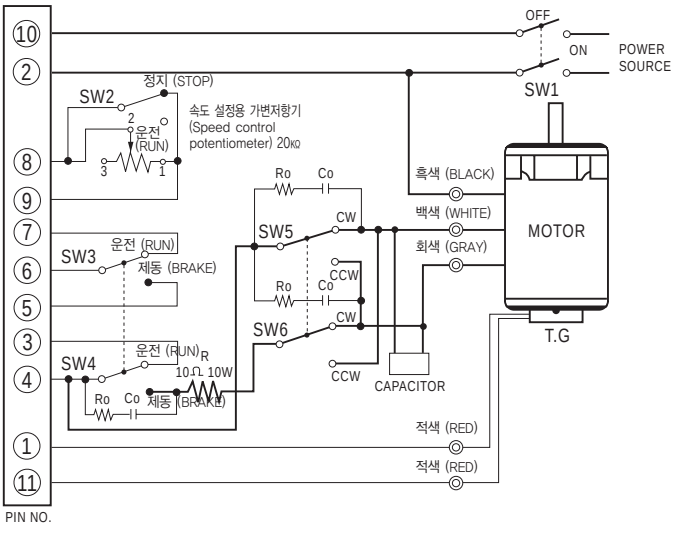
◀ 단상 AC220V~240V 50㎐용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. 이때의 VR은 10㏀입니다.
(For wiring of 220V~240V, 50Hz motor, change gray to brown. Here, VR is 10㏀.)

SW1,3	AC125V 5A 이상 (MIN. 5A) or AC 250V
SW2	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2㎌ (AC125WV, AC250WV)

◆ 운전 조작예 (Example of operation)



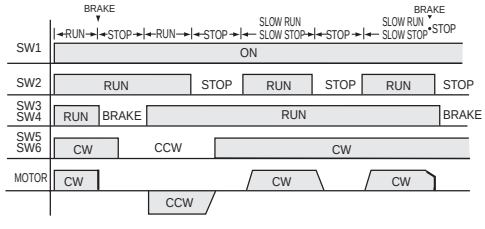
2-2 정역운전 + 변속 + 제동 (6W~25W)
(Reverse + Variable Speed + Brake)



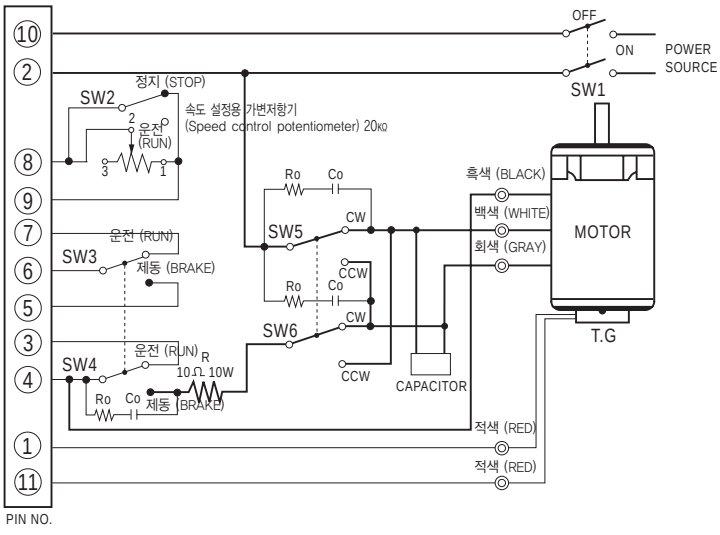
◀ 단상 AC220V~240V 50㎐용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. 이때의 VR은 10㏀입니다.
(For wiring of 220V~240V, 50Hz motor, change gray to brown. Here, VR is 10㏀.)

SW1,4,5,6	AC125V or AC250V 5A 이상 (MIN. 5A)
SW2,3	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2㎌ (AC125WV, AC250WV)
R:제동용 외부저항 (Braking external resistor)	10Ω, 10W이상(MIN. 10W)

◆ 운전 조작예 (Example of operation)



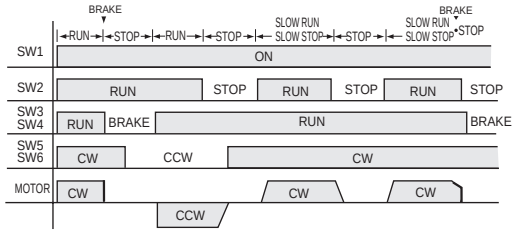
2-3 정역운전 + 변속 + 제동 (40W)
(Reverse + Variable Speed + Brake)



◀ 단상 AC220V~240V 50㎐용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. 이때의 VR은 10㏀입니다. (For wiring of 220V~240V, 50Hz motor, change gray to brown. Here, VR is 10㏀.)

SW1,4,5,6	AC125V or AC250V 5A 이상 (MIN. 5A)
SW2,3	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2㎌ (AC125WV, AC250WV)
R:제동용 외부저항 (Braking external resistor)	10Ω, 10W이상(MIN. 10W)

◆ **운전 조작예** (Example of operation)



2-4 사용방법 (Instruction) (REVERSIBLE MOTOR)

● **운전/정지기능 (Run/Stop function)**
2-1, 2, 3항의 기본전기 배선에서 SW2를 운전측으로 하면 MOTOR는 외부 속도 설정기로 설정한 속도로 회전하고, 정지측으로 하면 관성에 의해서 자연 정지합니다. (If SW2 is switched to "RUN"as section 2-1,2,3, the motor will rotate per fixed speed set by external speed controller. When switched to "STOP" rotation will spontaneously stop by inertia force.)

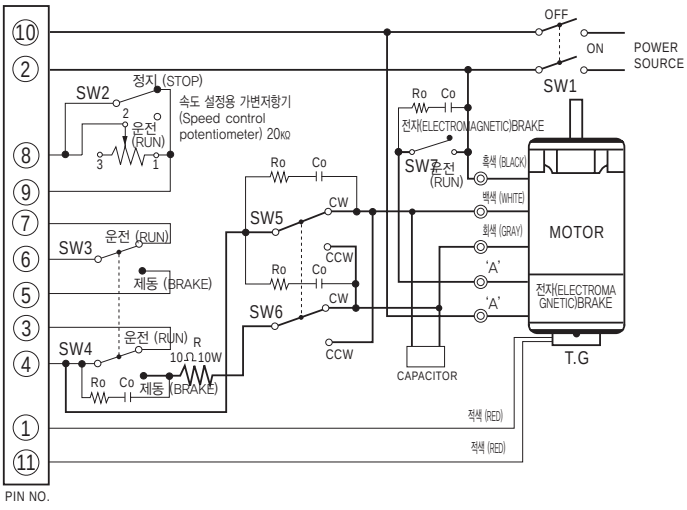
● **운전/제동기능** (Run/Brake function)
2-2, 3항의 기본전기 배선에서 SW2를 운전측으로 한 상태에서 SW3,SW4를 운전에서 제동측으로 하면 MOTOR는 BRAKE가 약 0.5초간 동작하여 순시 정지합니다. (If SW3 and SW4 is turned to stop while SW2 is on RUN condition, the brake will function for about 0.5 seconds and stop the motor instantaneously.)

● **SLOW RUN, SLOW STOP 기능 (function)**
- CONTROLLER의 SLOW RUN, SLOW STOP조정 VOLUME을 설정한 다음 SW2에 의하여 운전/정지측으로 하면 MOTOR는 설정한 시간만큼 속도 설정기에 의하여 SLOW RUN, SLOW STOP됩니다. (When SW2 is switched to Run/Stop after slow run, slow stop is set by the volume of controller, the motor will slowly start and slowly stop per set time.)
- SLOW RUN, SLOW STOP은 설정 시간에대해 속도가 직선적으로 변화하고 이때의 경사는 0.5~15초/1200rpm 범위에서 조정가능 합니다. (The speed of slow run and slow stop changes in rectilinearly against set time and the slope can be controlled within 0.5sec~15sec/1200rpm.)
- MOTOR의 자연 정지보다 짧은 시간으로 SLOW STOP 정지는 불가능 합니다. (Slow stop cannot be set for shorter period than natural stopping period of motor.)

※ 장시간 사용하지 않을 때에는 CONTROLLER의 발열을 예방하기 위하여 SW1을 OFF로 하십시오. (Turn SW1 off to prevent control pack from generating heat when not used for a long period.)

✚ 전기배선도 (SCHEMATIC DIAGRAM)(E·S MOTOR)

3-1 정역운전 + 변속 + 제동 (6W~25W)
(Reverse + Variable Speed)

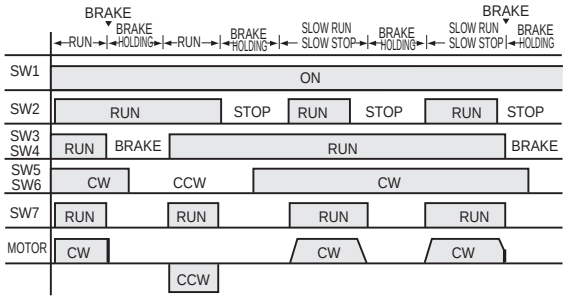


전압 (VOLTAGE)	LEAD WIRE 'A'
단상(SINGLE PHASE) AC100V~110V	청색 (Blue)
단상(SINGLE PHASE) AC200V~240V	등색 (Orange)

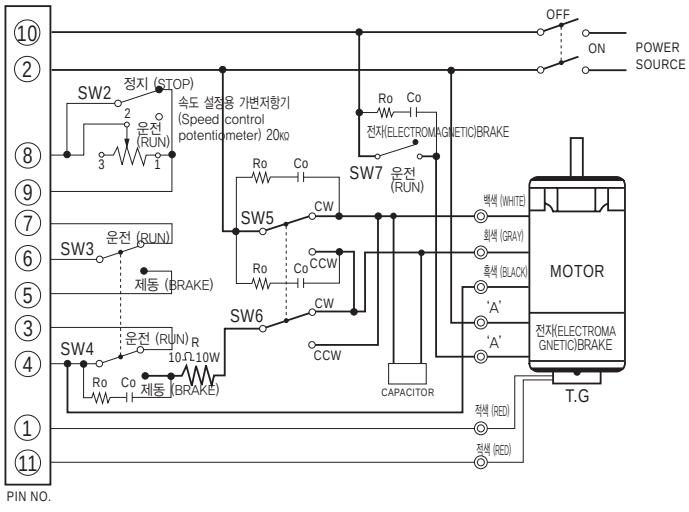
◀ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. 이때의 VR은 10kΩ 입니다. (For wiring of 220V~240V, 50Hz motor, change gray to brown. Here, VR is 10kΩ.)

SW1,4,5,6,7	AC125V or AC250V 5A 이상 (MIN. 5A)
SW2,3	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV, AC250WV)
R:제동용 외부저항 (Braking external resistor)	10Ω, 10W이상(MIN. 10W)

◆ 운전 조작예 (Example of operation)



3-2 정역운전 + 변속 + 제동 (40W)
(Reverse + Variable Speed + Brake)

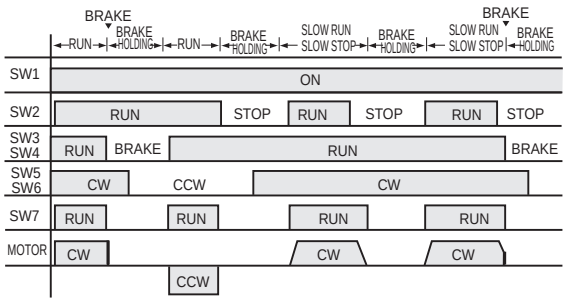


◀ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. 이때의 VR은 10kΩ 입니다. (For wiring of 220V~240V, 50Hz motor, change gray to brown. Here, VR is 10kΩ.)

전압 (VOLTAGE)	LEAD WIRE 'A'
단상(SINGLE PHASE) AC100V~110V	청색 (Blue)
단상(SINGLE PHASE) AC200V~240V	등색 (Orange)

SW1,4,5,6,7	AC125V or AC250V 5A 이상 (MIN. 5A)
SW2,3	DC 20V 10mA
Ro,Co	Ro=10~200Ω (1/4W 이상(MIN. 1/4W)) Co=0.1~0.2μF (AC125WV, AC250WV)
R:제동용 외부저항 (Braking external resistor)	10Ω, 10W이상(MIN. 10W)

◆ 운전 조작예 (Example of operation)



3-3 사용방법 (Instruction) (E · S MOTOR)

● **운전/정지기능 (Run/Stop function)**

3-1, 2항의 기본전기 배선에서 SW7를 운전측으로 하고 SW2를 운전측으로하면 MOTOR는 외부 속도 설정기로 설정한 속도로 회전하고, 정지측으로 하면 관성에 의해서 자연 정지합니다. (단, SW2와 SW7를 연동으로 할 경우에는 전자 BRAKE에 의한 제동 및 위치 유지를 합니다.) (If SW2 is switched to "RUN"as section 3-1,2,3, the motor will rotate per fixed speed set by external speed controller. When switched to "STOP" rotation will spontaneously stop by inertia force.)

● **운전/제동기능 (Run/Brake function)**

3-1, 2항의 기본전기 배선에서 SW2를 운전측으로 한 상태에서 SW3, SW4와 SW7를 연동으로 하여 제동 및 BRAKE측으로 하면 MOTOR는 전기 BRAKE가 약 0.5초간 동작하여 순시정지하고 전자 BRAKE에 의하여 위치 유지를 합니다. 이때의 약 0.5초간은 SW5, SW6를 조작하지 마십시오. (If SW3 and SW4 is turned to stop while SW2 is on RUN condition, the brake will function for about 0.5 seconds and stop the motor instantaneously.)

● **SLOW RUN, SLOW STOP 기능 (function)**

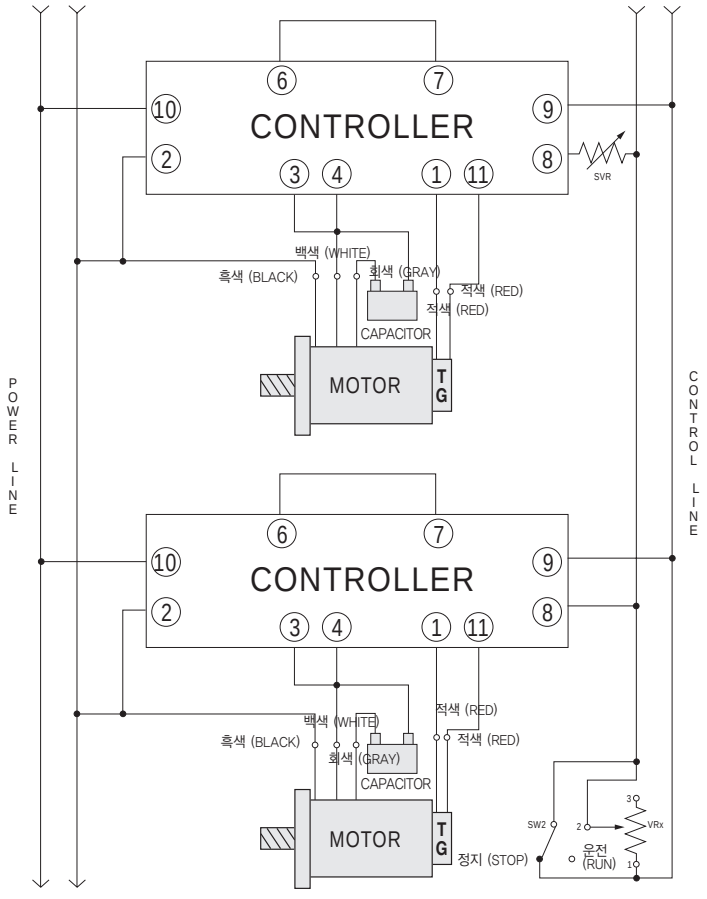
- CONTROLLER의 SLOW RUN, SLOW STOP 조정 VOLUME을 설정한 다음 SW2에 의하여 운전/정지측으로 하면 MOTOR는 설정한 시간 만큼 속도 설정기에 의하여 SLOW RUN, SLOW STOP됩니다. (When SW2 is switched to Run/Stop after slow run, slow stop is set by the volume of controller, the motor will slowly start and slowly stop per set time.)
- SLOW RUN, SLOW STOP은 설정 시간에 대해 속도가 직선적으로 변화하고 이때의 경사는 0.5~15초/1200rpm 범위에서 조정가능 합니다. (The speed of slow run and slow stop changes in rectilinearly against set time and the slope can be controlled within 0.5sec~ 15sec/1200rpm.)
- MOTOR의 자연 정지보다 짧은 시간으로 SLOW STOP 정지는 불가능 합니다. (Slow stop cannot be set for shorter period than natural stopping period of motor.)

※ 장시간 사용하지 않을 때에는 CONTROLLER의 발열을 예방하기 위하여 SW1을 OFF로 하십시오. (Turn SW1 off to prevent control pack from generating heat when not used for a long period.)

✚ 전기배선도 (APPLICATION OF SCHEMATIC DIAGRAM)

병열 운전 (Parallel operation)

SS 고출력 TYPE CONTROLLER는 아래의 배선도와 같이 1개의 속도설정용 가변저항기로 다수의 MOTOR를 동시에 동일한 속도로 설정하여 속도 제어를 할 수 있는 병렬 운전이 가능합니다. (SS TYPE high output controller can control speed of multiple motors using one variable resistor as per following diagram at same speed.)



사용방법(Usage) (병열 운전(Parallel operation))

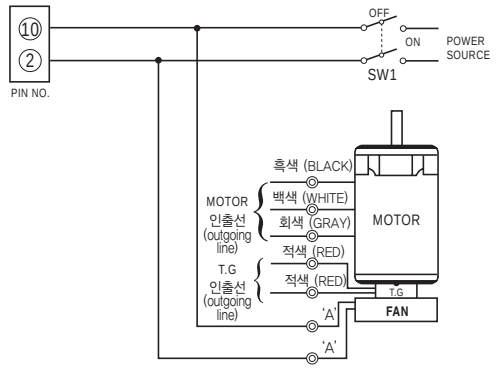
옆 배선도와 같이 전원부(단자번호②,⑩) 및 제어부 (단자번호⑧,⑨)를 각각 동일한 선으로 배선하십시오. 기타의 MOTOR 및 CONTROLLER의 조합인 경우에도 전원부 및 제어부를 같게해서 병렬 운전을 할 수 있습니다. (Connect power supply line(Terminal No. ②,⑩)& control line (Terminal No. ⑧, ⑨) for same line like the side wiring. In case of other motor and control pack, set power line and control line for parallel operation.)

⚠ 주의(Warning)

- 전원부와 제어부는 각각 PIN 번호를 같게 배선하십시오. (Connect to correct pin numbers for power line and control line.)
- 속도설정용 가변저항기의 용량은 다음과 같이 구합니다. (The capacity of variable resistor for speed setting is calculated as follows.)
  VRx = 20/N KΩ, N/4W (N : MOTOR의 수량 (Quantity of motor))
  예(eg)) MOTOR가 2대인 경우는 10KΩ 1/2W 입니다.
  (For 2EA of motors, it is 10KΩ 1/2W)
- 각 MOTOR는 거의 같은 속도로 회전하지만 부하의 차이 제품의 편차에 의해 약간의 오차가 발생합니다. 이와 같은 현상을 방지하기 위해서 단자번호⑧에 미세조정용 가변 저항기(SVR)를 속도 설정용 가변저항기(VRx) 저항치의 약 5~10%, 용량은 1/4W를 준비하십시오. (Although every motor runs at almost the same speed, there could be slight error due to difference of load and variation of products. To prevent this phenomenon, prepare 5~10% of resistance and 1/4 capacity of VR×(Variable resistance for speed setting)with SVR(Variable resistor for precise control) of terminal ⑧.)

◀ 단상 AC220V~240V 50Hz용 MOTOR의 결선은 그림에서 회색선을 갈색선으로 교체 결선하여 주십시오. (For wiring of 220V~240V, 50Hz motor, change gray to brown.)

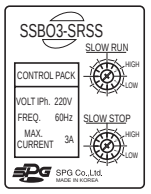
BOX FAN MOTOR의 결선방법 (Connection)



전압 (VOLTAGE)	LEAD WIRE 'A'
단상(SINGLE PHASE) AC100V~110V	청색 (Blue)
단상(SINGLE PHASE) AC200V~240V	황색 (Yellow)

※ BOX FAN 이외의 결선은 각각의 전기 배선을 참조해 주십시오. (For the connection of something other than the box fan, refer to the electrical wiring diagram for the corresponding connection.)

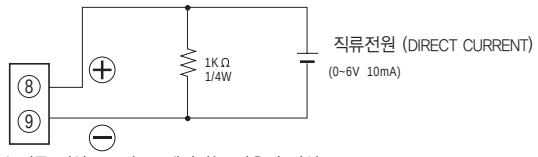
조작면 (Panel)



VR1	SLOW RUN 시간 설정용 가변저항기 (Variable resistor forSlow Run period)
VR2	SLOW STOP 시간 설정용 가변저항기 (Variable resistor for Slow Stop period)

외부 직류 전압으로 회전수를 제어하는 경우 (Speed control using external direct current)

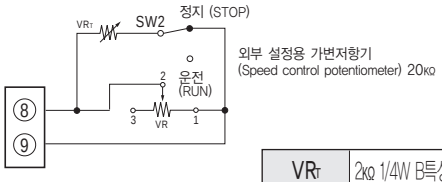
부속품인 외부 속도 설정용 가변 저항기 대신에 외부직류전원으로 MOTOR의 속도를 설정하는 경우에는 직류 전원과 CONTROLLER를 다음과 같이 접속하십시오. (단, 직류 전원출력은 반드시 교류 입력과 절연된 것을 사용하고, 극성이 바뀌지 않도록 주의 하십시오.) (When speed is controlled by external direct current instead of supplied variable resistor for external speed setting, connect the wires of direct current with control pack as following diagram. (However, output of direct current has to be seperated and insulated with alternative current input and avoid changing polarity.))



〈외부 직류 전압으로 속도 제어하는 경우의 결선도
(The connection of speed control using external direct current)

동작 시간을 빠르게 하는 방법 (Increasing operating speed)

MOTOR의 설정속도가 저속으로 됨에 따라, 운전/정지 스위치를 운전측으로 하고나서 MOTOR가 회전을 시작하기 까지는 시간이 길어지게 됩니다. 저속 설정시 동작시간이 문제가 되는 경우에는 다음 회로를 참조하여 동작시간 조정가변저항 VRT를 접속하십시오. (To quicken operating speed, as the set speed is decelerated, there are more delays to start rotations when switch is turned 'ON'. If this causes problems, please refer to following diagram and connect VRT (Variable resistor for operating time control))



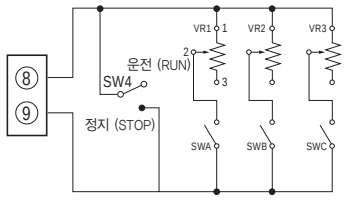
VRT	2KΩ 1/4W B특성 (Characteristic)
SW2	DC 20V 10mA

※ 순시정지를 행하는 경우에는 운전/제동 스위치와 위 회로의 운전/정지 스위치를 연동으로 사용하십시오. (For instantaneous stop, operate both RUN/BRAKE switch and RUN/STOP switch above.)

※ 운전/정지 스위치를 정지측으로 한 상태에서 MOTOR가 기동하기 직전까지 VRT를 조정합니다. (Place RUN/STOP switch to stop and control VRT until motor starts.)

회전수의 다단계 교환 방법 (Multistage speed conversion)

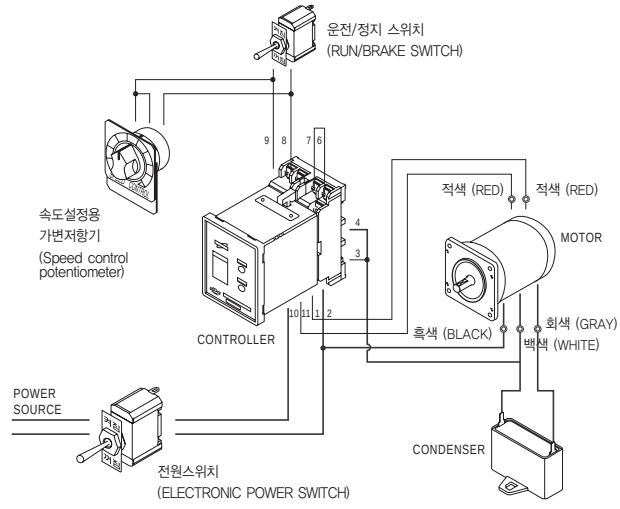
1. 다단계 속도 조정이 필요한 경우 VR1, VR2, VR3를 각각 설정하고 SWA, SWB, SWC에 의해 속도 절환이 가능 합니다. SWITCH의 절환 시기는 RELATY 접점 개폐시간 정도로 해 주십시오. (When multistage speed control is required, set each VR1, VR2 & VR3 and conversion is possible by using SWA, SWB, and SWC. Switch conversion time should be maintained similar to the operating time of relay operation.)



VR1,2,3	20KΩ 1/4W B 특성 (Characteristic)
SW1,2,3,4	DC 20V 10mA

2. CONTROLLER 포장 BOX에는 외부 설정용 VOLUME이 1SET 내장 되어 있습니다. 구입이 더 필요하신 경우에는 당사 제품SVR20KH를 별매로 구입하여 주십시오. (One external speed setting volume is included in a control pack. If additional external speed setting volume is required, please purchase SVR20KH.)

본체 배선도 (Total system)



1. 외부 속도 설정용 가변 저항기에 의해 MOTOR속도를 단계없이 조정 가능합니다. 가변저항기를 HIGH로 돌리면 고속으로 LOW로 돌리면 저속(정지) 됩니다. (Speed of motor can be controlled without steps by using variable speed resistor for external speed setting. Turn to (HIGH) for high speed, and (LOW) for low speed.)
2. 굵은 실선에는 MOTOR의 운전 전류가 흐릅니다. 굵은 실선은 0.75㎟ 정도의 전선을, 잃은 실선은 0.5㎟ 정도의 전선을 사용하여 주십시오. (There are operating current flowing on thick line. Use cable with 0.75㎟ for thick line and 0.5㎟ for thin ine.)
3. 단상 AC 220V~240V 50Hz용 MOTOR의 경우에는 위의 그림에서 회색선을 갈색선으로 교체 결선 하여 주십시오. (For single-phase AC220V~240V 50Hz motors, change gray wire to brown.)

PACK TYPE SPEED CONTROL MOTORS



특징 (Characteristics)

- SPEED CONTROLLER를 이용하여 넓은 속도 변화가 가능합니다. (Variable speed conversion is possible using speed controller.)
  (변속범위 50Hz : 90~1400rpm, 60Hz:90~1700rpm)
- 변속, 제동, 정역전 등의 많은 용도의 운전이 가능합니다. (Variable operation is possible such as speed conversion, braking, reversion.)
  (SS TYPE의 CONTROLLER 이용시 SLOW RUN SLOW STOP 기능이 추가됩니다.(Slow Run/Slow Stop is possible when SS type controller is used))
- TACHO GENERATOR을 내장하여 FEEDBACK 제어를 사용하기 때문에 전원 주파수를 변화하여도 회전수는 변화하지 않습니다. (Tacho Generator is installed to control feedback, so even when Hz changes, rpm remains the same.)
- MOTOR의 종류는 INDUCTION TYPE과 REVERSIBLE TYPE, 전자 BRAKE부착 TYPE SPEED CONTROL용 MOTOR가 있습니다. (Applicable motors include Induction Motors, Reversible Motors, and Electromagnetic Brake Motors)
- MOTOR 용량은 INDUCTION TYPE 6W~90W, REVERSIBLE TYPE 6W~40W, 전자 BRAKE 부착 TYPE은 6W~40W(단, SR TYPE은 6W~90W)까지 있습니다. (Motor capacity for induction motor is 6W~90W, reversible motor and electromagnetic brake motor is 6W~40W(6W~90W for SR type).)

SPECIFICATION OF SOCKET TYPE SPEED COTROL MOTORS

GENERAL SPECIFICATION OF SPEED CONTROL MOTORS

항목 (ITEM)	사양 (Specification)
절연저항 (Insulation Resistance)	상온 상습에서 MOTOR를 정격으로 운전 후 MOTOR의 COIL, MOTOR CASE 사이를 DC 500V MEGGER로 측정하여 100㏁ 이상임. (100 ㏁ or more when 500V megger is applied between the windings and the housing after rated motor operation under normal ambient temperature and humidity)
절연내압 (Dielectric Strength)	상온 상습에서 MOTOR를 정격으로 운전 후 MOTOR의 COIL, MOTOR CASE 사이에 1500V 50/60Hz 를 1분간 인가하여 이상 없음 (Sufficient to withstand 1.5V at 50/60Hz applied between the windings and the case after rated motor operation under normal ambient temperature and humidity for 1min.)
온도상승 (Temperature Rise)	MOTOR를 정격으로 운전 후 온도계법으로 측정하여 온도 상승치(ΔT)가 80℃(K) 이하 (FAN 부착 MOTOR는 45℃이하임) (80℃ or less increase measured by thermometer after rated operation, (less than 45℃ for motors with fan))
절연등급 (Insulation Class)	B종(Class) (130℃)
과열보호 장치 (T/P) (Overheat Protection Device)	THERMAL PROTECTOR 내장(자동 복귀형) : 개방 120℃±5℃, 복귀 76℃±15℃ (THERMAL PROTECTOR (automatic return type) : Open 120℃±5℃, Close 76℃±15℃)
사용온도 (Ambient Temperature)	-10℃ ~ +40℃
사용습도 (Ambient Humidity)	85% 이하(maximum) (결로 없는 곳(non condensing))

SPEED CONTROL INDUCTION MOTORS

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SPEED CONTROL INDUCTION MOTOR 6W(□60㎜) 238

SPEED CONTROL INDUCTION MOTOR 15W(□70㎜) 241

SPEED CONTROL INDUCTION MOTOR 15W(□80㎜) 242

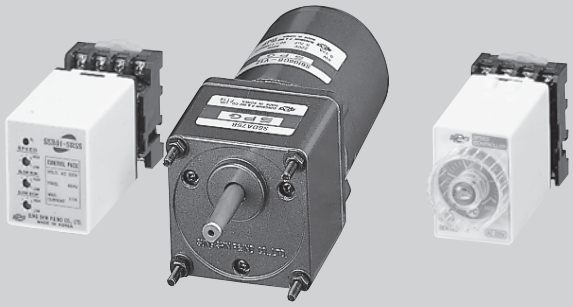
SPEED CONTROL INDUCTION MOTOR 25W(□80㎜) 246

SPEED CONTROL INDUCTION MOTOR 40W(□90㎜) 249

SPEED CONTROL INDUCTION MOTOR 60W(□90㎜) 252

SPEED CONTROL INDUCTION MOTOR 90W(□90㎜) 256





6W

INDUCTION SPEED CONTROL MOTOR
□60㎜ LEAD WIRE TYPE

SPECIFICATION OF SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
60	S6I06GA-S12 S6I06GA-S12CE	SRA01 SRA01CE	4	6	1Ø 110	60	Cont.	90-1700	0.55	0.055	0.40	0.040	0.52	0.052	2.5
	S6I06GB-S12 S6I06GB-S12CE	SRB01 SRB01CE	4	6	1Ø 220	60	Cont.	90-1700	0.55	0.055	0.40	0.040	0.52	0.052	0.7
	S6I06GC-S12 S6I06GC-S12CE	SRC01 SRC01CE	4	6	1Ø 100	50	Cont.	90-1400	0.48	0.048	0.30	0.030	0.40	0.040	2.5
						60		90-1700							
	S6I06GD-S12 S6I06GD-S12CE	SRD01 SRD01CE	4	6	1Ø 200	50	Cont.	90-1400	0.48	0.048	0.30	0.030	0.40	0.040	0.7
						60		90-1700							
	S6I06GX-S12 S6I06GX-S12CE	SRX01 SRX01CE	4	6	1Ø 220	50	Cont.	90-1400	0.35	0.035	0.22	0.022	0.35	0.035	0.7
					1Ø 240				0.45	0.045	0.22	0.022	0.42	0.042	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is impedance protected type which has received CE.)

❖ 기종명 맨 끝자리에 CE가 명기된 SR TYPE CONTROLLER MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (SR type controller model with "CE" appeared at the end of motor model name indicates that the product acquired CE MARK certification.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

SPECIFICATION OF SS TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
60	S6I06GA-S24 S6I06GA-S24CE	SSA01-SRSS SSA03-SRSS	4	6	1Ø 110	60	Cont.	90-1700	0.55	0.055	0.40	0.040	0.52	0.052	2.5
	S6I06GB-S24 S6I06GB-S24CE	SSB01-SRSS SSB03-SRSS	4	6	1Ø 220	60	Cont.	90-1700	0.55	0.055	0.40	0.040	0.52	0.052	0.7
	S6I06GC-S24 S6I06GC-S24CE	SSC01-SRSS SSC03-SRSS	4	6	1Ø 100	50	Cont.	90-1400	0.48	0.048	0.30	0.030	0.40	0.040	2.5
						60		90-1700							
	S6I06GD-S24 S6I06GD-S24CE	SSD01-SRSS SSD03-SRSS	4	6	1Ø 200	50	Cont.	90-1400	0.48	0.048	0.30	0.030	0.40	0.040	0.7
						60		90-1700							
	S6I06GX-S24 S6I06GX-S24CE	SSX01-SRSS SSX03-SRSS	4	6	1Ø 220	50	Cont.	90-1400	0.35	0.035	0.22	0.022	0.35	0.035	0.7
					1Ø 240				0.45	0.045	0.22	0.022	0.42	0.042	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오.(CE marked at the end of motor model name indicates that it is impedance protected type which has received CE.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

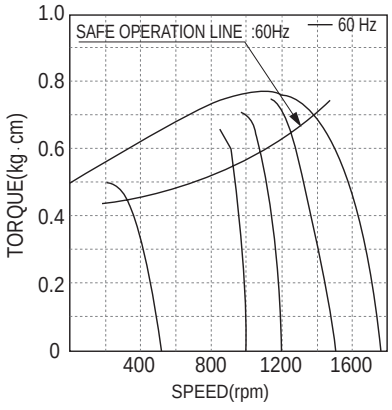
50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5	6
S6DA□B	kg-cm	1.3	1.5	2.1	2.6	3.2	3.9	4.3	5.4	6.4	7.7	7.7	9.7	11.6	13.9	15.5	17.5	21.0	26.2	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	N·m	0.127	0.147	0.206	0.255	0.314	0.382	0.421	0.529	0.627	0.755	0.755	0.951	1.137	1.362	1.519	1.715	2.058	2.568	2.942	2.942	2.942	2.942	2.942	2.942	2.942

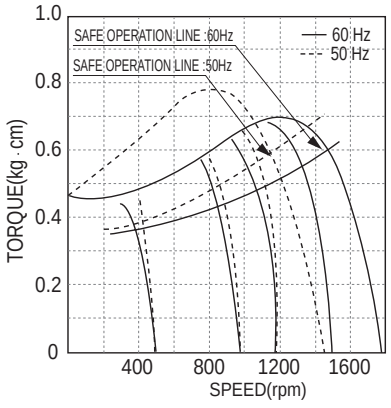
60Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9	7.2
S6DA□B	kg.-cm	1.0	1.3	1.7	2.1	2.6	3.1	3.5	4.4	5.2	6.3	6.3	7.8	9.4	11.3	12.6	14.2	17.0	21.3	25.5	28.4	30.0	30.0	30.0	30.0	30.0
	N·m	0.098	0.127	0.167	0.206	0.255	0.304	0.343	0.431	0.510	0.617	0.617	0.764	0.921	1.107	1.235	1.392	1.666	2.087	2.499	2.783	2.942	2.942	2.942	2.942	2.942

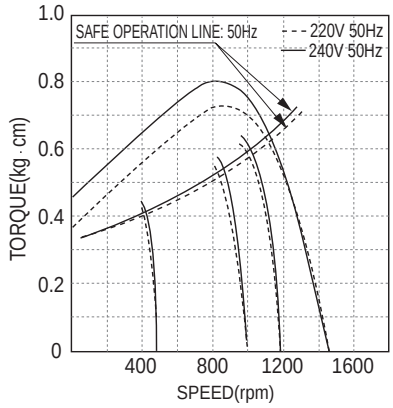
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 30㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 30 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)



▲ S6I06GA-S12 S6I06GA-S24
S6I06GA-S12CE S6I06GA-S24CE
S6I06GB-S12 S6I06GB-S24
S6I06GB-S12CE S6I06GB-S24



▲ S6I06GC-S12 S6I06GC-S24
S6I06GC-S12CE S6I06GC-S24CE
S6I06GD-S12 S6I06GD-S24
S6I06GD-S12CE S6I06GD-S24

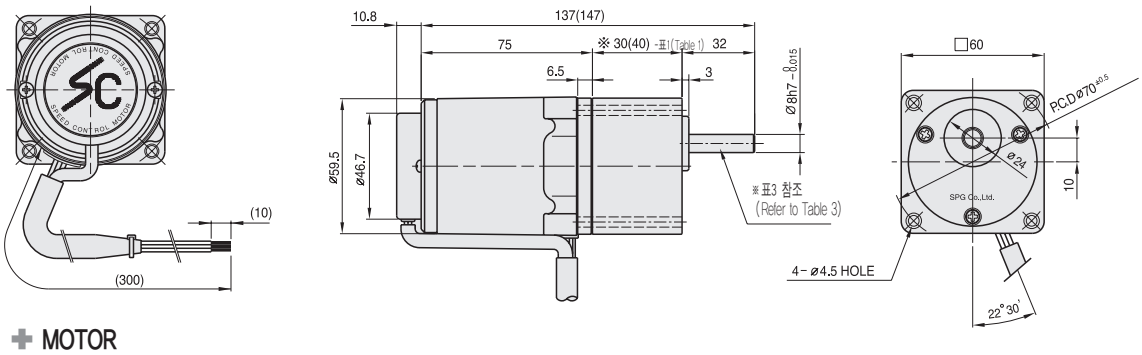


▲ S6I06GX-S12 S6I06GX-S24
S6I06GX-S12CE S6I06GX-S24CE

DIMENSIONS

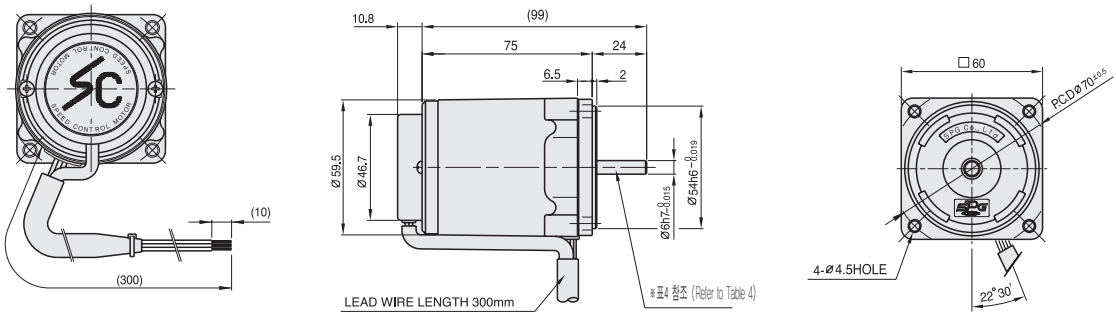
GEARED MOTOR

※MOTOR MODEL : S6I06G□-S12, S6I06G□-S24
※HEAD MODEL : S6□A3□~S6□A250□



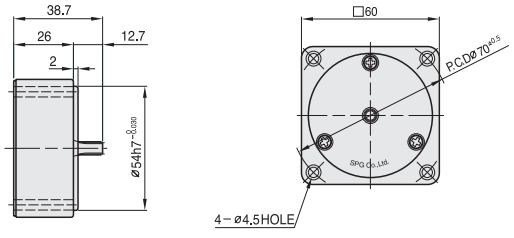
MOTOR

※MOTOR MODEL : S6I06□□-S12
S6I06□□-S24

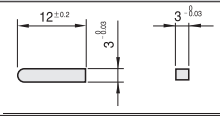


INTER-DECIMAL GEAR HEAD

※MODEL : S6GX10B



KEY SPEC

GEAR HEAD


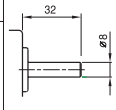
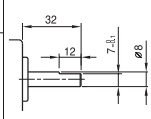
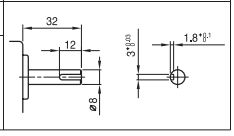
※30(40) - (표1 (Table1))

GEAR RATIO	SIZE(㎜)
S6□A3□ ~ S6□A18□	30
S6□A20□ ~ S6□A250□	40

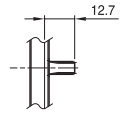
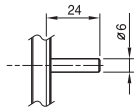
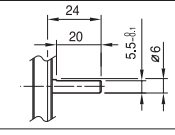
WEIGHT - (표2 (Table2))

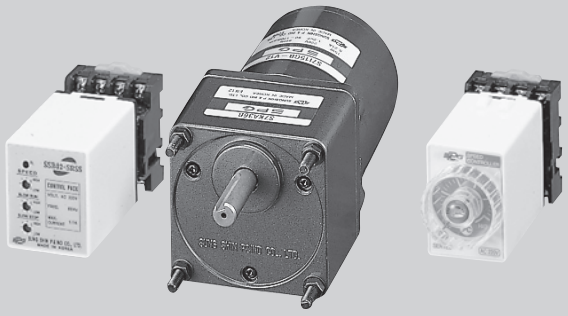
PART		WEIGHT(kg)
MOTOR		0.76
DECIMAL GEAR HEAD		0.18
GEAR HEAD	S6□A3□ ~S6□A18B□	0.24
	S6□A20□ ~S6□A40□	0.30
	S6□A50□ ~S6□A250□	0.33

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S6SA3□ ~S6SA250B□	
D-CUT TYPE S6DA3□ ~S6DA250□	
KEY TYPE S6KA3B□ ~S6KA250□	

MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S6I06G□-S12 S6I06G□-S24	
STRAIGHT TYPE S6I06S□-S24 S6I06S□-S24	
D-CUT TYPE S6I06D□-S12 S6I06D□-S24	



15W

INDUCTION SPEED CONTROL MOTOR
□70㎜ LEAD WIRE TYPE

SPECIFICATION OF SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output (W)	Voltage (V)	Freq. (Hz)	Duty	Speed Range (rpm)	Permissible Torque at 1200rpm (kg-cm)	Permissible Torque at 1200rpm (N-m)	Permissible Torque at 90rpm (kg-cm)	Permissible Torque at 90rpm (N-m)	Starting Torque (kg-cm)	Starting Torque (N-m)	Cap. (μF)
70	S7I15GA-S12 S7I15GA-S12(TP) S7I15GA-S12CE	SRA02 SRA02CE	4	15	1Ø 110	60	Cont.	90-1700	1.15	0.115	0.60	0.060	0.90	0.090	5.0
	S7I15GB-S12 S7I15GB-S12(TP) S7I15GB-S12CE	SRB02 SRB02CE	4	15	1Ø 220	60	Cont.	90-1700	1.15	0.115	0.60	0.060	0.90	0.090	1.2
	S7I15GC-S12 S7I15GC-S12(TP) S7I15GC-S12CE	SRC02 SRC02CE	4	15	1Ø 100	50	Cont.	90-1400	1.10	0.110	0.40	0.040	0.75	0.075	5.0
						60		90-1700	1.00	0.100					
	S7I15GD-S12 S7I15GD-S12(TP) S7I15GD-S12CE	SRD02 SRD02CE	4	15	1Ø 200	50	Cont.	90-1400	1.10	0.110	0.40	0.040	0.75	0.075	1.2
						60		90-1700	1.00	0.100					
	S7I15GX-S12 S7I15GX-S12CE	SRX02 SRX02CE	4	15	1Ø 220	50	Cont.	90-1400	1.05	0.105	0.50	0.050	0.70	0.070	0.9
					1Ø 240				1.25	0.125	0.60	0.060	0.85	0.085	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 CE가 명기된 SR TYPE CONTROLLER MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (SR type controller model with "CE" appeared at the end of motor model name indicates that the product acquired CE MARK certification.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S7I15GX-S12, S7I15GX-S12CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S7I15GX-S12, S7I15GX-S12CE is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

SPECIFICATION OF SS TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output (W)	Voltage (V)	Freq. (Hz)	Duty	Seed Range (rpm)	Permissible Torque at 1200rpm (kg-cm)	Permissible Torque at 1200rpm (N-m)	Permissible Torque at 90rpm (kg-cm)	Permissible Torque at 90rpm (N-m)	Starting Torque (kg-cm)	Starting Torque (N-m)	Cap. (μF)
70	S7I15GA-S24 S7I15GA-S24(TP) S7I15GA-S24CE	SSA02-SRSS SSA03-SRSS	4	15	1Ø 110	60	Cont.	90-1700	1.15	0.115	0.60	0.060	0.90	0.090	5.0
	S7I15GB-S24 S7I15GB-S24(TP) S7I15GB-S24CE	SSB02-SRSS SSB03-SRSS	4	15	1Ø 220	60	Cont.	90-1700	1.15	0.115	0.60	0.060	0.90	0.090	1.2
	S7I15GC-S24 S7I15GC-S24(TP) S7I15GC-S24CE	SSC02-SRSS SSC03-SRSS	4	15	1Ø 100	50	Cont.	90-1400	1.10	0.110	0.40	0.040	0.75	0.075	5.0
						60		90-1700	1.00	0.100					
	S7I15GD-S24 S7I15GD-S24(TP) S7I15GD-S24CE	SSD02-SRSS SSD03-SRSS	4	15	1Ø 200	50	Cont.	90-1400	1.10	0.110	0.40	0.040	0.75	0.075	1.2
						60		90-1700	1.00	0.100					
	S7I15GX-S24 S7I15GX-S24CE	SSX02-SRSS SSX03-SRSS	4	15	1Ø 220	50	Cont.	90-1400	1.05	0.105	0.50	0.050	0.70	0.070	0.9
					1Ø 240				1.25	0.125	0.60	0.060	0.85	0.085	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S7I15GX-S24, S7I15GX-S24CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S7I15GX-S24, S7I15GX-S24CE is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

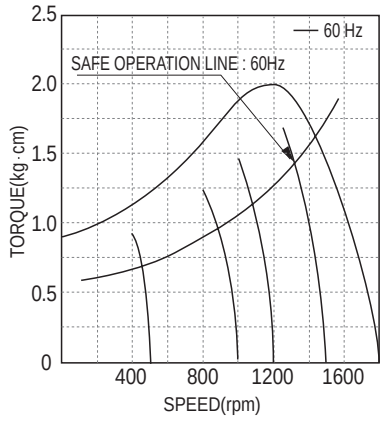
50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S7KA□B	kg-cm	3.2	3.9	5.4	6.5	8.1	9.7	10.8	13.5	16.2	19.4	19.4	24.2	29.1	34.9	38.8	43.6	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	N·m	0.314	0.382	0.530	0.637	0.794	0.951	1.059	1.324	1.587	1.902	1.902	2.373	2.854	3.423	3.805	4.276	4.900	4.900	4.900	4.900	4.900	4.900	4.900	4.900

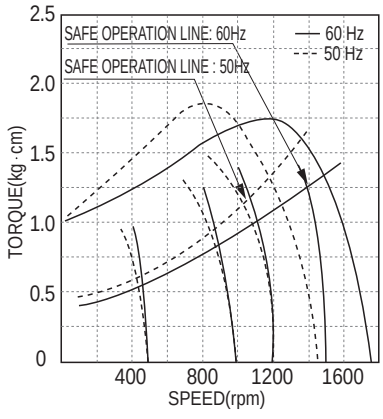
60Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S7KA□B	kg-cm	3.0	3.6	5.1	6.1	7.6	9.1	10.1	12.7	15.2	18.2	18.2	22.8	27.3	32.8	36.5	41.0	49.2	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	N·m	0.294	0.353	0.500	0.598	0.745	0.892	0.990	1.245	1.491	1.785	1.785	2.236	2.677	3.217	3.579	4.021	4.825	4.900	4.900	4.900	4.900	4.900	4.900	4.900

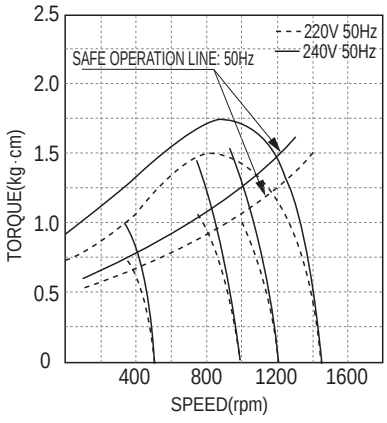
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 50㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 50 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)



▲ S7I15GA-S12 S7I15GA-S24
S7I15GA-S12(TP) S7I15GA-S24(TP)
S7I15GA-S12CE S7I15GA-S24CE
S7I15GB-S12 S7I15GB-S24
S7I15GB-S12(TP) S7I15GB-S24(TP)
S7I15GB-S12CE S7I15GB-S24



▲ S7I15GC-S12 S7I15GC-S24
S7I15GC-S12(TP) S7I15GC-S24(TP)
S7I15GC-S12CE S7I15GC-S24CE
S7I15GD-S12 S7I15GD-S24
S7I15GD-S12(TP) S7I15GD-S24(TP)
S7I15GD-S12CE S7I15GD-S24

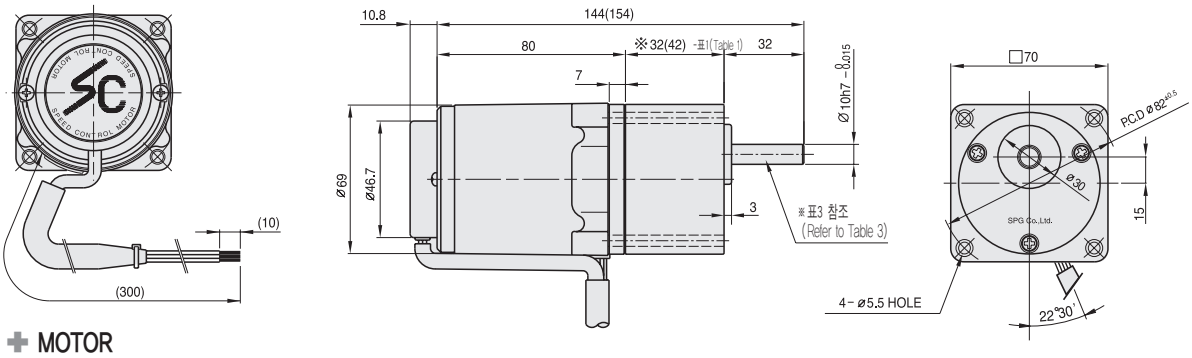


▲ S7I15GX-S12 S7I15GX-S24
S7I15GX-S12CE S7I15GX-S24CE

DIMENSIONS

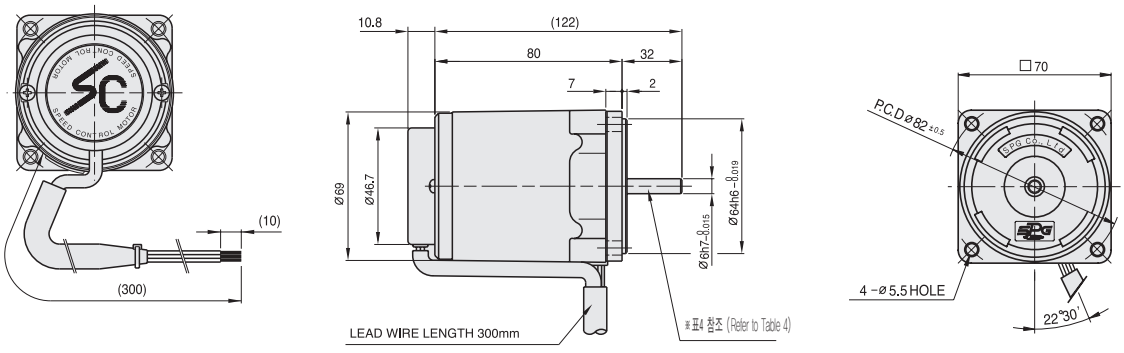
GEARED MOTOR

※MOTOR MODEL : S7I15G□-S12, S7I15G□-S24
※HEAD MODEL : S7□A3□~S7□A200□



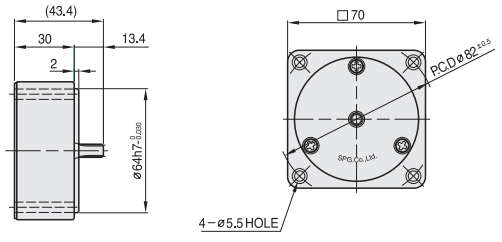
MOTOR

※MOTOR MODEL : S7I15□□-S12, S7I15□□-S24

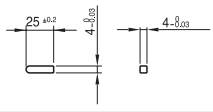


INTER-DECIMAL GEAR HEAD

※MODEL : S7GX10B



KEY SPEC

GEAR HEAD


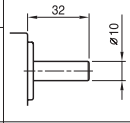
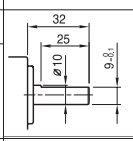
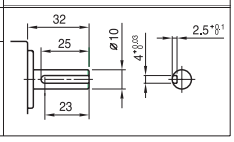
※32(42) - (표1 (Table1))

GEAR RATIO	SIZE(mm)
S7□A3□ ~ S7□A18□	32
S7□A20□ ~ S7□A200□	42

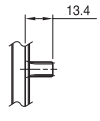
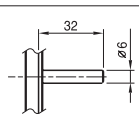
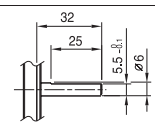
WEIGHT - (표2 (Table2))

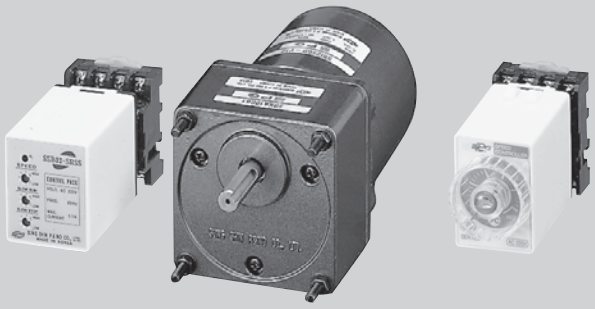
PART		WEIGHT(kg)
MOTOR		1.04
DECIMAL GEAR HEAD		0.32
GEAR HEAD	S7□A3□ ~S7□A40□	0.38
	S7□A20□ ~S7□A40□	0.47
	S7□A50□ ~S7□A200□	0.52

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S7SA3□ ~S7SA200□	
D-CUT TYPE S7DA3□ ~S7DA200□	
KEY TYPE S7KA3□ ~S7KA200□	

MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S7I15G□-S12 S7I15G□-S24	
STRAIGHT TYPE S7I15S□-S12 S7I15S□-S24	
D-CUT TYPE S7I15D□-S12 S7I15D□-S24	



15W

INDUCTION SPEED CONTROL MOTOR
□80㎜ LEAD WIRE TYPE

SPECIFICATION OF SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
80	S8I15GA-S12 S8I15GA-S12(TP) S8I15GA-S12CE	SRA02 SRA02CE	4	15	1Ø 110	60	Cont.	90-1700	1.50	0.150	0.35	0.035	0.75	0.075	4.0
	S8I15GB-S12 S8I15GB-S12(TP) S8I15GB-S12CE	SRB02 SRB02CE	4	15	1Ø 220	60	Cont.	90-1700	1.50	0.150	0.35	0.035	0.75	0.075	1.0
	S8I15GC-S12 S8I15GC-S12(TP) S8I15GC-S12CE	SRC02 SRC02CE	4	15	1Ø 100	50	Cont.	90-1400	1.20	0.120	0.32	0.032	0.60	0.060	4.0
						60		90-1700	1.00	0.100					
	S8I15GD-S12 S8I15GD-S12(TP) S8I15GD-S12CE	SRD02 SRD02CE	4	15	1Ø 200	50	Cont.	90-1400	1.20	0.120	0.32	0.032	0.60	0.060	1.0
						60		90-1700	1.00	0.100					
	S8I15GX-S12 S8I15GX-S12CE	SRX02 SRX02CE	4	15	1Ø 220	50	Cont.	90-1400	1.20	0.120	0.35	0.035	0.55	0.055	1.0
					1Ø 240				1.40	0.140	0.35	0.035	0.60	0.060	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 CE가 명기된 SR TYPE CONTROLLER MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (SR type controller model with "CE" appeared at the end of motor model name indicates that the product acquired CE MARK certification.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8I15GX-S12, S8I15GX-S12CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S8I15GX-S12, S8I15GX-S12CE is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

SPECIFICATION OF SS TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Seed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
80	S8I15GA-S24 S8I15GA-S24(TP) S8I15GA-S24CE	SSA02-SRSS SSA03-SRSS	4	15	1Ø 110	60	Cont.	90-1700	1.50	0.150	0.35	0.035	0.75	0.075	4.0
	S8I15GB-S24 S8I15GB-S24(TP) S8I15GB-S24CE	SSB02-SRSS SSB03-SRSS	4	15	1Ø 220	60	Cont.	90-1700	1.50	0.150	0.35	0.035	0.75	0.075	1.0
	S8I15GC-S24 S8I15GC-S24(TP) S8I15GC-S24CE	SSC02-SRSS SSC03-SRSS	4	15	1Ø 100	50	Cont.	90-1400	1.20	0.120	0.32	0.032	0.60	0.060	4.0
						60		90-1700	1.00	0.100					
	S8I15GD-S24 S8I15GD-S24(TP) S8I15GD-S24CE	SSD02-SRSS SSD03-SRSS	4	15	1Ø 200	50	Cont.	90-1400	1.20	0.120	0.32	0.032	0.60	0.060	1.0
						60		90-1700	1.00	0.100					
	S8I15GX-S24 S8I15GX-S24CE	SSX02-SRSS SSX03-SRSS	4	15	1Ø 220	50	Cont.	90-1400	1.20	0.120	0.35	0.035	0.55	0.055	1.0
					1Ø 240				1.40	0.140	0.35	0.035	0.60	0.060	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8I15GX-S24, S8I15GX-S24CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S8I15GX-S24, S8I15GX-S24CE is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

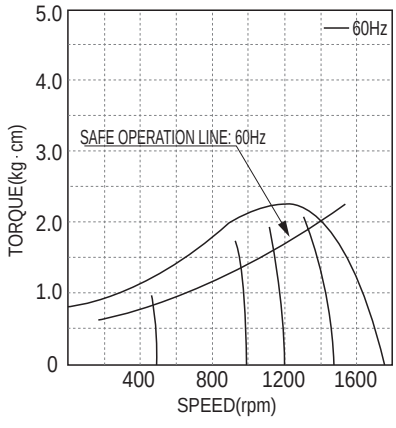
50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S8KA□B	kg-cm	3.4	4.1	5.7	6.8	8.5	10.2	11.3	14.2	17.0	20.4	20.4	25.6	30.7	36.8	40.9	46.2	55.4	69.2	80	80	80	80	80	80
	N·m	0.333	0.402	0.559	0.666	0.833	1.000	1.107	1.392	1.666	1.999	1.999	2.509	3.009	3.606	4.008	4.530	5.433	6.786	7.840	7.840	7.840	7.840	7.840	7.840

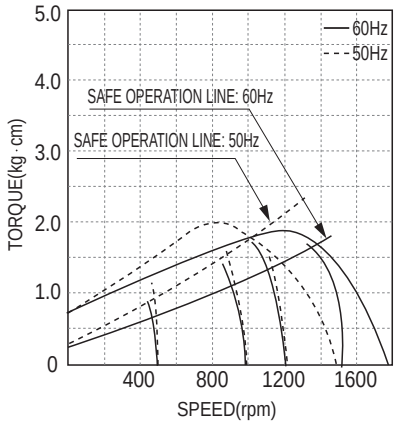
60Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S8KA□B	kg-cm	2.9	3.5	4.9	5.8	7.3	8.7	9.7	12.2	14.6	17.5	17.5	21.9	26.3	31.5	35.0	39.6	47.5	59.4	71.3	79.2	80	80	80	80
	N·m	0.284	0.343	0.481	0.568	0.715	0.853	0.951	1.196	1.432	1.715	1.715	2.146	2.577	3.087	3.430	3.881	4.658	5.825	6.992	7.767	7.840	7.840	7.840	7.840

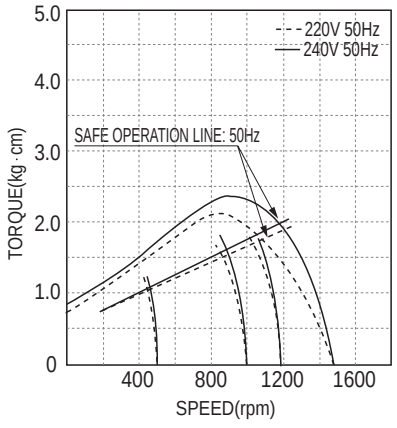
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 80㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 80 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)



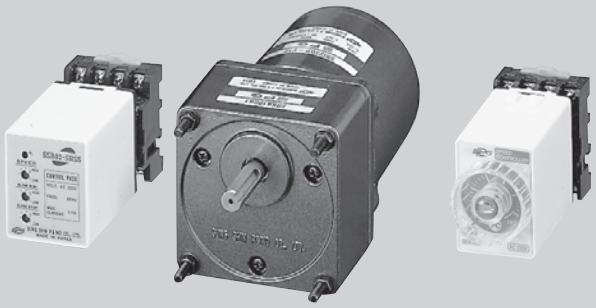
▲ S8I15GA-S12 S8I15GA-S24
S8I15GA-S12(TP) S8I15GA-S24(TP)
S8I15GA-S12CE S8I15GA-S24CE
S8I15GB-S12 S8I15GB-S24
S8I15GB-S12(TP) S8I15GB-S24(TP)
S8I15GB-S12CE S8I15GB-S24



▲ S8I15GC-S12 S8I15GC-S24
S8I15GC-S12(TP) S8I15GC-S24(TP)
S8I15GC-S12CE S8I15GC-S24CE
S8I15GD-S12 S8I15GD-S24
S8I15GD-S12(TP) S8I15GD-S24(TP)
S8I15GD-S12CE S8I15GD-S24



▲ S8I15GX-S12 S8I15GX-S24
S8I15GX-S12CE S8I15GX-S24CE



25W

INDUCTION SPEED CONTROL MOTOR
□80㎜ LEAD WIRE TYPE

SPECIFICATION OF SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
80	S8I25GA-S12 S8I25GA-S12(TP) S8I25GA-S12CE	SRA02 SRA02CE	4	25	1Ø 110	60	Cont.	90-1700	1.70	0.170	0.80	0.080	1.50	0.150	6.0
	S8I25GB-S12 S8I25GB-S12(TP) S8I25GB-S12CE	SRB02 SRB02CE	4	25	1Ø 220	60	Cont.	90-1700	1.70	0.170	0.80	0.080	1.50	0.150	1.5
	S8I25GC-S12 S8I25GC-S12(TP) S8I25GC-S12CE	SRC02 SRC02CE	4	25	1Ø 100	50	Cont.	90-1400	1.60	0.160	0.55	0.055	1.10	0.110	6.0
						60		90-1700	1.50	0.150					
	S8I25GD-S12 S8I25GD-S12(TP) S8I25GD-S12CE	SRD02 SRD02CE	4	25	1Ø 200	50	Cont.	90-1400	1.60	0.160	0.55	0.055	1.10	0.110	1.5
						60		90-1700	1.50	0.150					
	S8I25GX-S12	SRX02 SRX02CE	4	25	1Ø 220	50	Cont.	90-1400	1.50	0.150	0.50	0.050	1.00	0.100	1.5
	S8I25GX-S12CE				1Ø 240				1.80	0.180	0.50	0.050	1.20	0.120	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 CE가 명기된 SR TYPE CONTROLLER MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (SR type controller model with "CE" appeared at the end of motor model name indicates that the product acquired CE MARK certification.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8I25GX-S12, S8I25GX-S12CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S8I25GX-S12, S8I25GX-S12CE is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

SPECIFICATION OF SS TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
80	S8I25GA-S24 S8I25GA-S24(TP) S8I25GA-S24CE	SSA02-SRSS SSA03-SRSS	4	25	1Ø 110	60	Cont.	90-1700	1.70	0.170	0.80	0.080	1.50	0.150	6.0
	S8I25GB-S24 S8I25GB-S24(TP) S8I25GB-S24CE	SSB02-SRSS SSB03-SRSS	4	25	1Ø 220	60	Cont.	90-1700	1.70	0.170	0.80	0.080	1.50	0.150	1.5
	S8I25GC-S24 S8I25GC-S24(TP) S8I25GC-S24CE	SSC02-SRSS SSC03-SRSS	4	25	1Ø 100	50	Cont.	90-1400	1.60	0.160	0.55	0.055	1.10	0.110	6.0
						60		90-1700	1.50	0.150					
	S8I25GD-S24 S8I25GD-S24(TP) S8I25GD-S24CE	SSD02-SRSS SSD03-SRSS	4	25	1Ø 200	50	Cont.	90-1400	1.60	0.160	0.55	0.055	1.10	0.110	1.5
						60		90-1700	1.50	0.150					
	S8I25GX-S24	SSX02-SRSS SSX03-SRSS	4	25	1Ø 220	50	Cont.	90-1400	1.50	0.150	0.50	0.050	1.00	0.100	1.5
	S8I25GX-S24CE				1Ø 240				1.80	0.180	0.50	0.050	1.20	0.120	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8I25GX-S24, S8I25GX-S24CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S8I25GX-S24, S8I25GX-S24CE is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

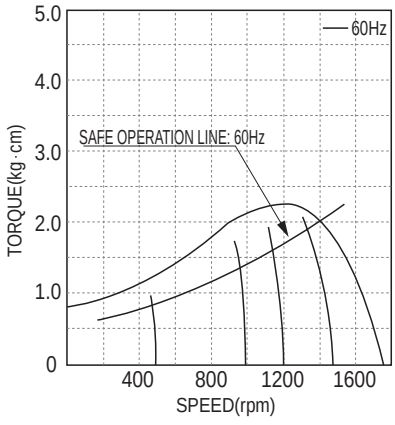
50Hz

GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S8KA□B	kg-cm	5.3	6.4	8.9	10.7	13.4	16.0	17.8	22.3	26.7	32.1	32.1	40.2	48.2	57.8	64.2	72.6	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	N·m	0.519	0.627	0.872	1.049	1.313	1.568	1.744	2.185	2.617	3.146	3.146	3.940	4.724	5.664	6.292	7.115	7.840	7.840	7.840	7.840	7.840	7.840	7.840	7.840

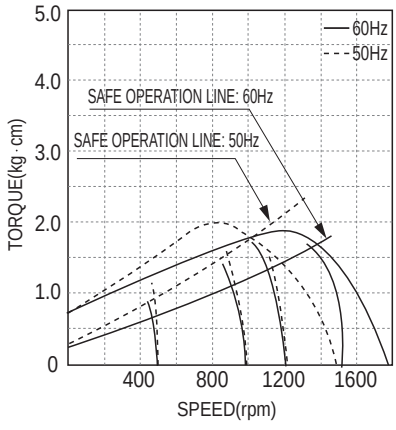
60Hz

GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S8KA□B	kg-cm	4.4	5.2	7.3	8.7	10.9	13.1	14.6	18.2	21.9	26.2	26.3	32.9	39.4	47.3	52.6	59.4	71.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	N·m	0.431	0.510	0.715	0.853	1.068	1.284	1.431	1.784	2.146	2.568	2.577	3.224	3.861	4.635	5.155	5.821	6.987	7.840	7.840	7.840	7.840	7.840	7.840	7.840

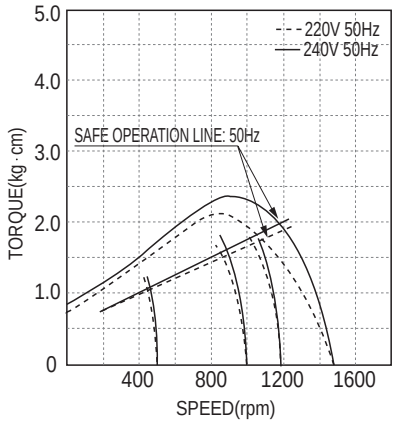
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 80㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 80 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)



▲ S8I25GA-S12 S8I25GA-S24
S8I25GA-S12(TP) S8I25GA-S24(TP)
S8I25GA-S12CE S8I25GA-S24CE
S8I25GB-S12 S8I25GB-S24
S8I25GB-S12(TP) S8I25GB-S24(TP)
S8I25GB-S12CE S8I25GB-S24



▲ S8I25GC-S12 S8I25GC-S24
S8I25GC-S12(TP) S8I25GC-S24(TP)
S8I25GC-S12CE S8I25GC-S24CE
S8I25GD-S12 S8I25GD-S24
S8I25GD-S12(TP) S8I25GD-S24(TP)
S8I25GD-S12CE S8I25GD-S24

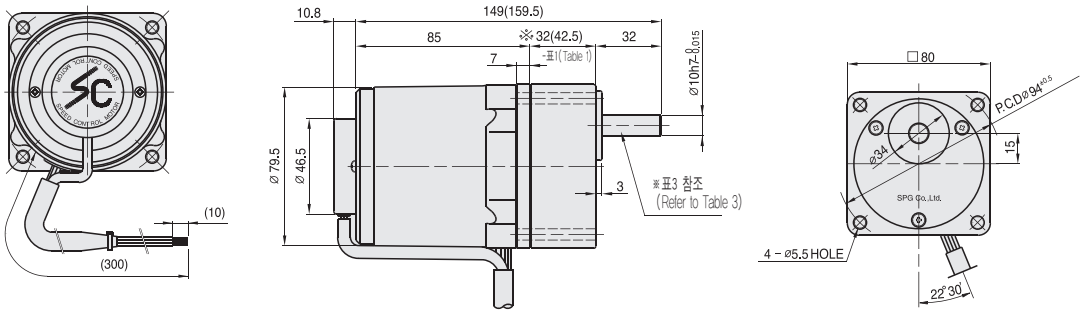


▲ S8I25GX-S12 S8I25GX-S24
S8I25GX-S12CE S8I25GX-S24CE

DIMENSIONS

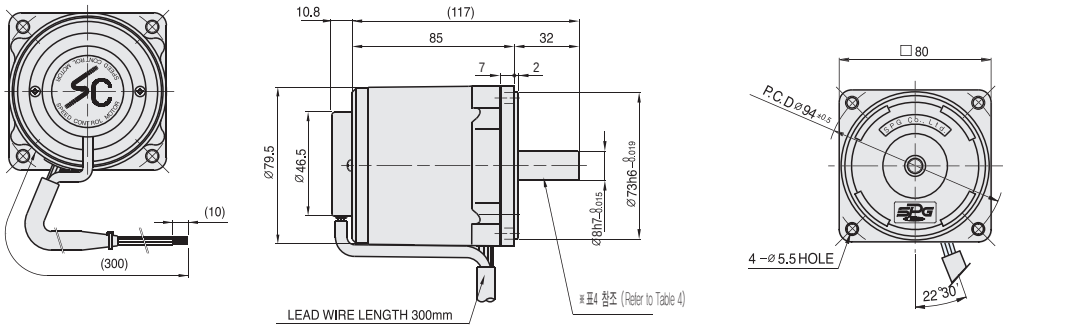
✚ GEARED MOTOR

※MOTOR MODEL : S8I(15,25)G□-S12, S8I(15,25)G□-S24
※HEAD MODEL : S8□A3□~S8□A200□



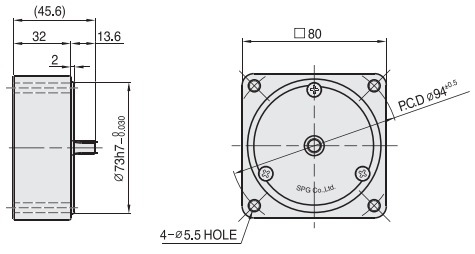
✚ MOTOR

※MOTOR MODEL : S8I(15,25)□□-S12, S8I(15,25)□□-S24



✚ INTER-DECIMAL GEAR HEAD

※MODEL : S8GX10B



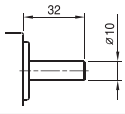
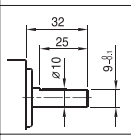
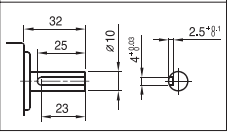
✚ ※32(42.5) - (표1 (Table1))

GEAR RATIO	SIZE(㎜)
S8□A3□ ~ S8□A18□	32
S8□A20□ ~ S8□A200□	42.5

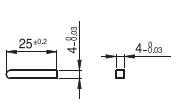
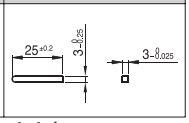
✚ WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
15W MOTOR		1.6
25W MOTOR		1.6
DECIMAL GEAR HEAD		0.43
GEAR HEAD	S8□A3□ ~S8□A18□	0.43
	S8□A20□ ~S8□A40□	0.57
	S8□A50□ ~S8□A200□	0.61

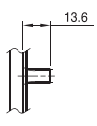
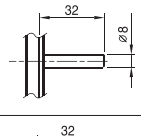
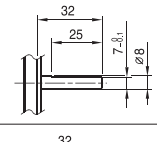
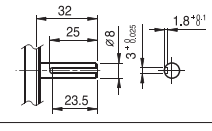
✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

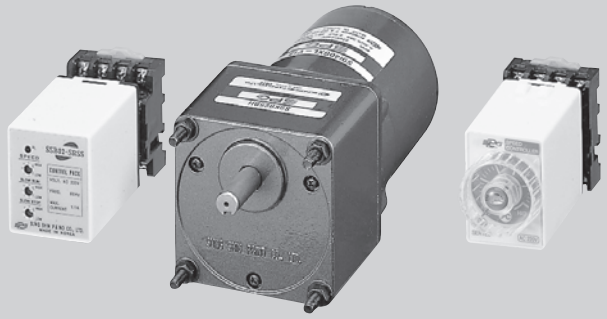
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE	
S8SA3□ ~S8SA200□	
D-CUT TYPE	
S8DA3□ ~S8DA200□	
KEY TYPE	
S8KA3□ ~S8KA200□	

✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE	
S8I15G□-S12 S8I25G□-S12 S8I15G□-S24 S8I25G□-S24	
STRAIGHT TYPE	
S8I15S□-S12 S8I25S□-S12 S8I15S□-S24 S8I25S□-S24	
D-CUT TYPE	
S8I15D□-S12 S8I25D□-S12 S8I15D□-S24 S8I25D□-S24	
KEY TYPE	
S8I15K□-S12 S8I25K□-S12 S8I15K□-S24 S8I25K□-S24	



40W

INDUCTION SPEED CONTROL MOTOR
□90㎜ LEAD WIRE TYPE

SPECIFICATION OF SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
90	S9I40GA( )-S12 S9I40GA( )-S12(TP) S9I40GA( )-S12CE	SRA02 SRA02CE	4	40	1Ø 110	60	Cont.	90-1700	2.70	0.270	1.00	0.100	2.20	0.220	10.0
	S9I40GB( )-S12 S9I40GB( )-S12(TP) S9I40GB( )-S12CE	SRB02 SRB02CE	4	40	1Ø 220	60	Cont.	90-1700	2.70	0.270	1.00	0.100	2.20	0.220	2.5
	S9I40GC( )-S12 S9I40GC( )-S12(TP) S9I40GC( )-S12CE	SRC02 SRC02CE	4	40	1Ø 100	50	Cont.	90-1400	2.70	0.270	0.90	0.090	1.80	0.180	10.0
						60		90-1700	2.00	0.200					
	S9I40GD( )-S12 S9I40GD( )-S12(TP) S9I40GD( )-S12CE	SRD02 SRD02CE	4	40	1Ø 200	50	Cont.	90-1400	2.70	0.270	0.90	0.090	1.80	0.180	2.5
						60		90-1700	2.00	0.200					
	S9I40GX( )-S12 S9I40GX( )-S12CE	SRX02 SRX02CE	4	40	1Ø 220	50	Cont.	90-1400	2.50	0.250	0.70	0.070	1.70	0.170	2.0
					1Ø 240				3.00	0.300	0.70	0.070	2.10	0.210	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 CE가 명기된 SR TYPE CONTROLLER MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (SR type controller model with "CE" appeared at the end of motor model name indicates that the product acquired CE MARK certification.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9I40GX( )-S12, S9I40GX( )-S12CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S9I40GX-S12, S9I40GX-S12CE is thermally protected type with TP mounted.)

❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H')

SPECIFICATION OF SS TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
90	S9I40GA( )-S24 S9I40GA( )-S24(TP) S9I40GA( )-S24CE	SSA02-SRSS SSA03-SRSS	4	40	1Ø 110	60	Cont.	90-1700	2.70	0.270	1.00	0.100	2.20	0.220	10.0
	S9I40GB( )-S24 S9I40GB( )-S24(TP) S9I40GB( )-S24CE	SSB02-SRSS SSB03-SRSS	4	40	1Ø 220	60	Cont.	90-1700	2.70	0.270	1.00	0.100	2.20	0.220	2.5
	S9I40GC( )-S24 S9I40GC( )-S24(TP) S9I40GC( )-S24CE	SSC02-SRSS SSC03-SRSS	4	40	1Ø 100	50	Cont.	90-1400	2.70	0.270	0.90	0.090	1.80	0.180	10.0
						60		90-1700	2.00	0.200					
	S9I40GD( )-S24 S9I40GD( )-S24(TP) S9I40GD( )-S24CE	SSD02-SRSS SSD03-SRSS	4	40	1Ø 200	50	Cont.	90-1400	2.70	0.270	0.90	0.090	1.80	0.180	2.5
						60		90-1700	2.00	0.200					
	S9I40GX( )-S24 S9I40GX( )-S24CE	SSX02-SRSS SSX03-SRSS	4	40	1Ø 220	50	Cont.	90-1400	2.50	0.250	0.70	0.070	1.70	0.170	2.0
					1Ø 240				3.00	0.300	0.70	0.070	2.10	0.210	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9I40GX( )-S24, S9I40GX( )-S24CE는 TP가 내장된 THERMALLY PROTECTED TYPE 입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S9I40GX-S24, S9I40GX-S24CE is thermally protected type with TP mounted.)

❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H')

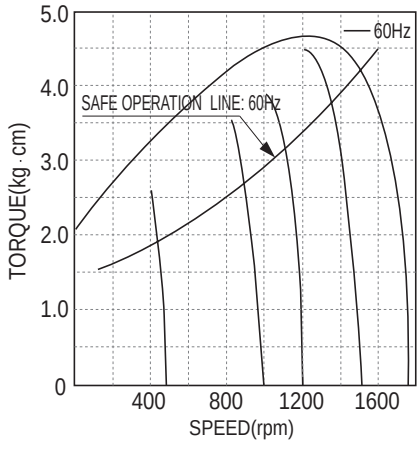
50Hz

GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KB□B( )	kg-cm	8.3	9.9	13.8	16.5	20.7	24.8	27.5	34.4	41.3	49.6	49.6	62.1	74.5	89.4	99.3	100	100	100	100	100	100	100	100	100
	N·m	0.813	0.970	1.352	1.617	2.029	2.430	2.695	3.371	4.047	4.861	4.861	6.086	7.301	8.761	9.731	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800

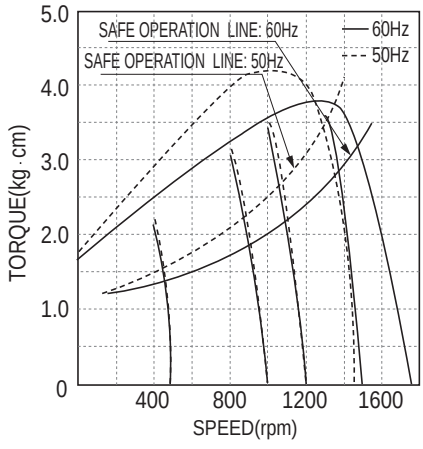
60Hz

GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KB□B( )	kg-cm	6.8	8.2	11.3	13.6	17.0	20.4	22.7	28.4	34.0	40.8	40.9	51.1	61.3	73.6	81.8	100	100	100	100	100	100	100	100	100
	N·m	0.666	0.804	1.107	1.333	1.666	1.999	2.225	2.783	3.332	3.998	4.008	5.008	6.007	7.213	8.016	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800

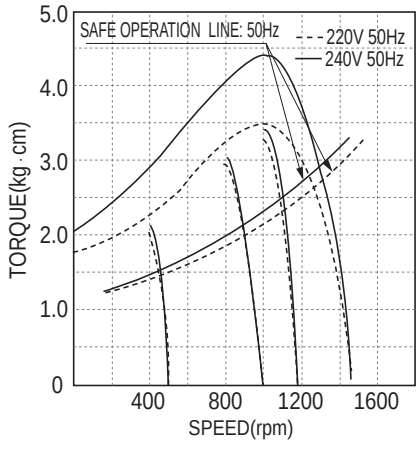
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 100㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 100 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수 (50Hz:1500rpm, 60Hz:1800rpm)를 기준으로 하여 감속비로 나누어서 계산 하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)



▲ S9I40GA()-S12 S9I40GA()-S24
S9I40GA()-S12(TP) S9I40GA()-S24(TP)
S9I40GA()-S12CE S9I40GA()-S24CE
S9I40GB()-S12 S9I40GB()-S24
S9I40GB()-S12(TP) S9I40GB()-S24(TP)
S9I40GB()-S12CE S9I40GB()-S24



▲ S9I40GC()-S12 S9I40GC()-S24
S9I40GC()-S12(TP) S9I40GC()-S24(TP)
S9I40GC()-S12CE S9I40GC()-S24CE
S9I40GD()-S12 S9I40GD()-S24
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S9I40GD()-S12CE S9I40GD()-S24

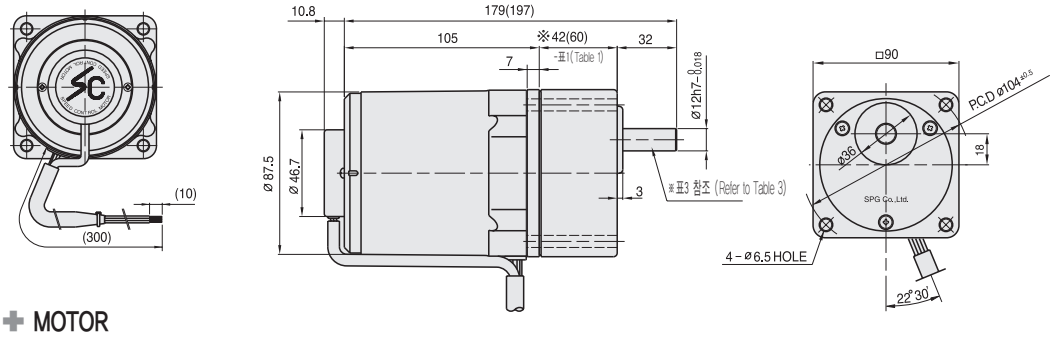


▲ S9I40GX()-S12 S9I40GX()-S24
S9I40GX()-S12CE S9I40GX()-S24CE

DIMENSIONS

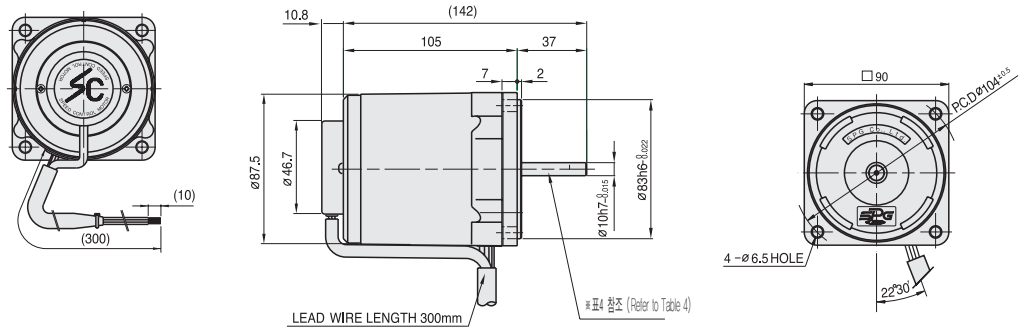
✚ GEARED MOTOR

※MOTOR MODEL : S9I40G□□-S12, S9I40G□□-S24
※HEAD MODEL : S9□B3□□~S9□B200□□



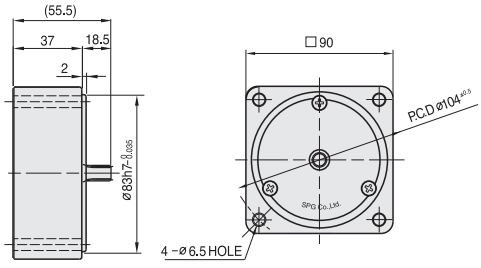
✚ MOTOR

※MOTOR MODEL : S9I40□□□-S12, S9I40□□□-S24

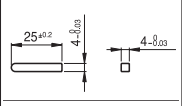
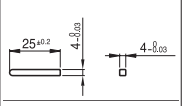


✚ INTER-DECIMAL GEAR HEAD

※MODEL : S9GX10B(H,L)



✚ KEY SPEC

GEAR HEAD	MOTOR
	

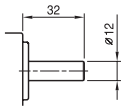
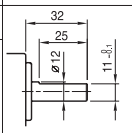
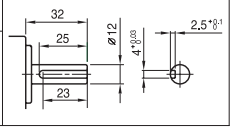
✚ ※42(60) – (표1 (Table1))

GEAR RATIO	SIZE(mm)
S9□B3□ ~ S9□B18□	42
S9□B20□ ~ S9□B200□	60

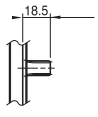
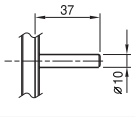
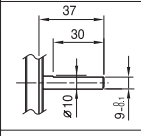
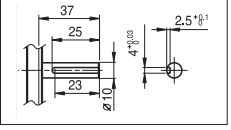
✚ WEIGHT – (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		2.42
DECIMAL GEAR HEAD		0.60
GEAR HEAD	S9□B3□□ ~S9□B18□□	0.73
	S9□B20□ ~S9□B40□	1.03
	S9□B50□□ ~S9□B200□□	1.13

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SB3□ ~S9SB200□	
D-CUT TYPE S9DB3□ ~S9DB200□	
KEY TYPE S9KB3□□ ~S9KB200□□	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9I40G□□-S12 S9I40G□□-S24	
STRAIGHT TYPE S9I40S□-S12 S9I40S□-S24	
D-CUT TYPE S9I40D□-S12 S9I40D□-S24	
KEY TYPE S9I40K□-S12 S9I40K□-S24	



60W

INDUCTION SPEED CONTROL MOTOR
□90㎜ LEAD WIRE TYPE

SPECIFICATION OF SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
90	S9I60GA( )-S12 S9I60GA( )-S12(TP) S9I60GA( )-S12CE	SRA02 SRA02CE	4	60	1Ø 110	60	Cont.	90-1700	5.50	0.550	2.00	0.200	5.00	0.500	20.0
	S9I60GB( )-S12 S9I60GB( )-S12(TP) S9I60GB( )-S12CE	SRB02 SRB02CE	4	60	1Ø 220	60	Cont.	90-1700	5.50	0.550	2.00	0.200	5.00	0.500	5.0
	S9I60GC( )-S12 S9I60GC( )-S12(TP) S9I60GC( )-S12CE	SRC02 SRC02CE	4	60	1Ø 100	50	Cont.	90-1400	5.50	0.550	1.20	0.120	4.00	0.400	20.0
						60		90-1700	5.00	0.500					
	S9I60GD( )-S12 S9I60GD( )-S12(TP) S9I60GD( )-S12CE	SRD02 SRD02CE	4	60	1Ø 200	50	Cont.	90-1400	5.50	0.550	1.20	0.120	4.00	0.400	5.0
						60		90-1700	5.00	0.500					
	S9I60GX( )-S12 S9I60GX( )-S12CE	SRX02 SRX02CE	4	60	1Ø 220	50	Cont.	90-1400	5.20	0.520	0.90	0.090	3.10	0.310	3.5
					1Ø 240				5.80	0.580	0.90	0.090	3.60	0.360	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9I60GX( )-S12, S9I60GX( )-S12CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (SR type controller model with "CE" appeared at the end of motor model name indicates that the product acquired CE MARK certification.)

❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

SPECIFICATION OF SS TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
90	S9I60GA( )-S24 S9I60GA( )-S24(TP) S9I60GA( )-S24CE	SSA03-SRSS	4	60	1Ø 110	60	Cont.	90-1700	5.50	0.550	2.00	0.200	5.00	0.500	20.0
	S9I60GB( )-S24 S9I60GB( )-S24(TP) S9I60GB( )-S24CE	SSB03-SRSS	4	60	1Ø 220	60	Cont.	90-1700	5.50	0.550	2.00	0.200	5.00	0.500	5.0
	S9I60GC( )-S24 S9I60GC( )-S24(TP) S9I60GC( )-S24CE	SSC03-SRSS	4	60	1Ø 100	50	Cont.	90-1400	5.50	0.550	1.20	0.120	4.00	0.400	20.0
						60		90-1700	5.00	0.500					
	S9I60GD( )-S24 S9I60GD( )-S24(TP) S9I60GD( )-S24CE	SSD03-SRSS	4	60	1Ø 200	50	Cont.	90-1400	5.50	0.550	1.20	0.120	4.00	0.400	5.0
						60		90-1700	5.00	0.500					
	S9I60GX( )-S24 S9I60GX( )-S24CE	SSX03-SRSS	4	60	1Ø 220	50	Cont.	90-1400	5.20	0.520	0.90	0.090	3.10	0.310	3.5
					1Ø 240				5.80	0.580	0.90	0.090	3.60	0.360	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9I60GX( )-S24, S9I60GX( )-S24CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S9I60GX( )-S24, S9I60GX( )-S24CE is thermally protected type with TP mounted.)

❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

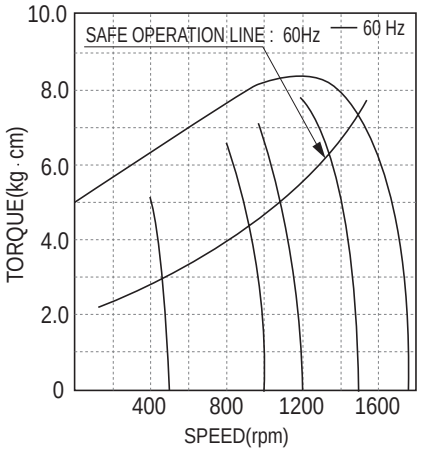
50Hz

GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KC□B( )	kg-cm	12.2	14.6	20.3	24.3	30.4	36.5	40.5	45.6	54.8	65.7	73.0	82.5	99.0	119	132	165	198	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.196	1.431	1.989	2.381	2.989	3.577	3.969	4.469	5.370	6.439	7.154	8.085	9.702	11.66	12.94	16.17	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60

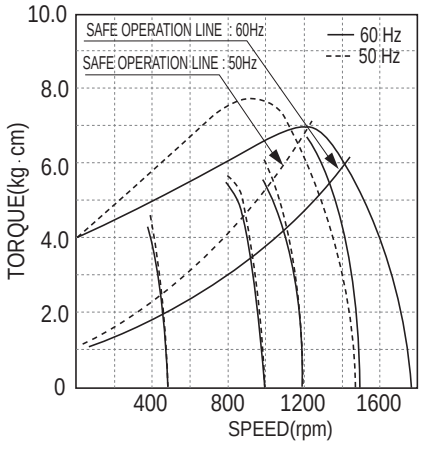
60Hz

GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KC□B( )	kg-Cm	9.72	11.7	16.2	19.4	24.3	29.2	32.4	36.5	43.8	52.6	58.4	66.0	79.2	95.0	106	132	158	177	200	200	200	200	200	200
S9KC□B( )-S	N·m	0.953	1.147	1.588	1.901	2.381	2.862	3.175	3.577	4.292	5.155	5.723	6.468	7.762	9.310	10.39	12.94	15.48	17.35	19.60	19.60	19.60	19.60	19.60	19.60

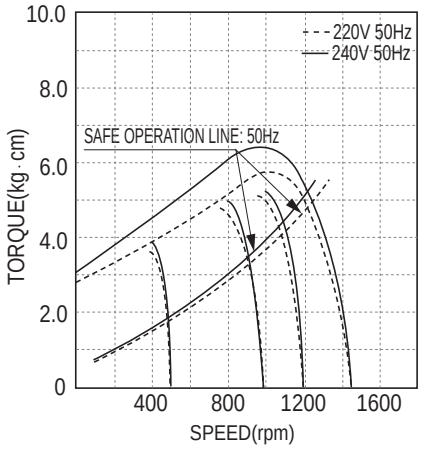
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 200kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. ( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)



▲ S9I60GA()-S12 S9I60GA()-S24
S9I60GA()-S12(TP) S9I60GA()-S24(TP)
S9I60GA()-S12CE S9I60GA()-S24CE
S9I60GB()-S12 S9I60GB()-S24
S9I60GB()-S12(TP) S9I60GB()-S24(TP)
S9I60GB()-S12CE S9I60GB()-S24



▲ S9I60GC()-S12 S9I60GC()-S24
S9I60GC()-S12(TP) S9I60GC()-S24(TP)
S9I60GC()-S12CE S9I60GC()-S24CE
S9I60GD()-S12 S9I60GD()-S24
S9I60GD()-S12(TP) S9I60GD()-S24(TP)
S9I60GD()-S12CE S9I60GD()-S24

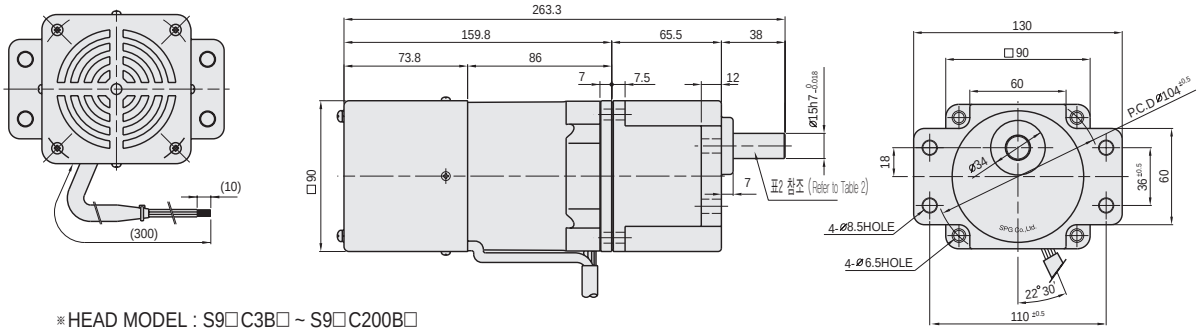


▲ S9I60GX()-S12 S9I60GX()-S24
S9I60GX()-S12CE S9I60GX()-S24CE

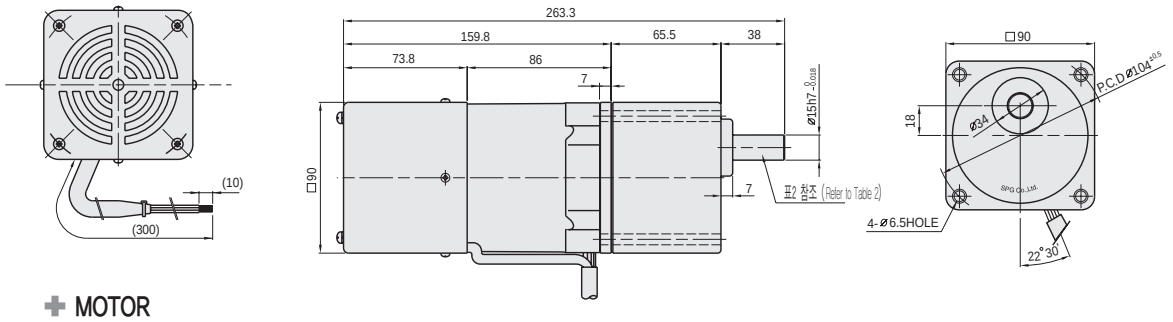
DIMENSIONS

GEARED MOTOR

※ MOTOR MODEL : S9I60G□□-S12, S9I60G□□-S24
※ HEAD MODEL : S9□C3B□-S ~ S9□C200B□-S

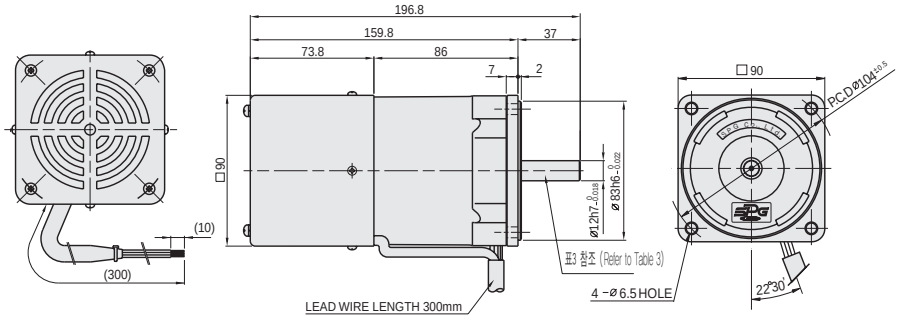


※HEAD MODEL : S9□C3B□ ~ S9□C200B□



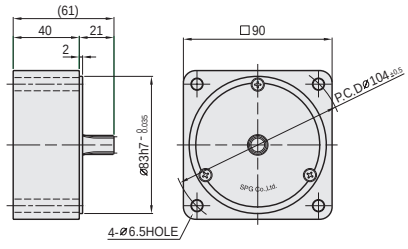
MOTOR

※ MOTOR MODEL : S9I60□□□-S12, S9I60□□□-S24



INTER-DECIMAL GEAR HEAD

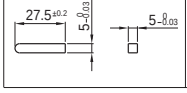
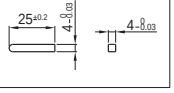
※MODEL : S9GX10B(H,L)-S



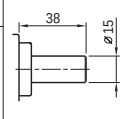
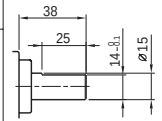
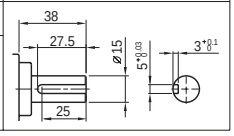
WEIGHT - (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.93
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3B□ ~S9□C10B□	1.21
	S9□C12.5B□ ~S9□C20B□	1.30
	S9□C25B□ ~S9□C60B□	1.40
	S9□C75B□ ~S9□C200B□	1.45

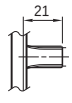
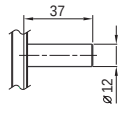
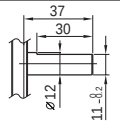
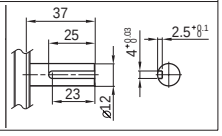
KEY SPEC

GEAR HEAD	MOTOR
	

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SC3B□ ~S9SC200B□	
D-CUT TYPE S9DC3B□ ~S9DC200B□	
KEY TYPE S9KC3B□ ~S9KC200B□	

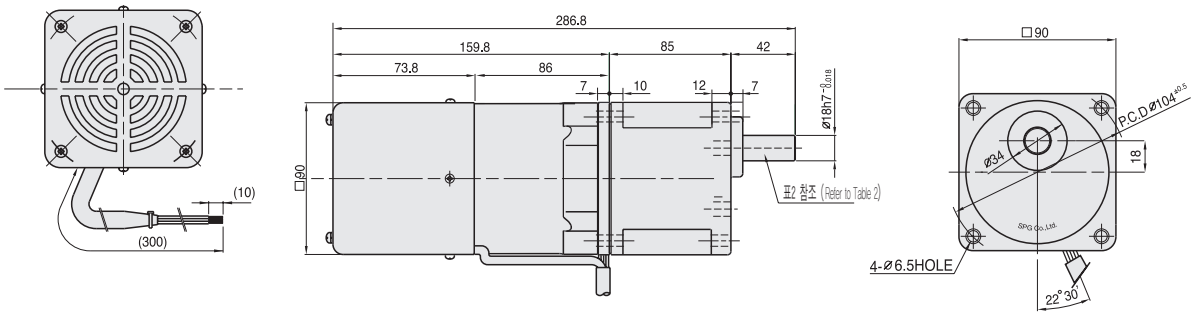
MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9I60G□-S12 S9I60G□-S24	
STRAIGHT TYPE S9I60S□-S12 S9I60S□-S24	
D-CUT TYPE S9I60D□-S12 S9I60D□-S24	
KEY TYPE S9I60K□-S12 S9I60K□-S24	

DIMENSIONS

GEARED MOTOR

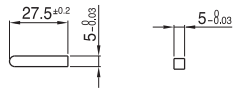
※ MOTOR MODEL : S9I60G□H-S12, S9I60G□H-S24
※ HEAD MODEL : S9□D3B-S9□D200B



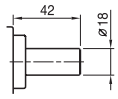
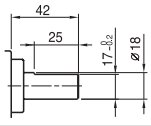
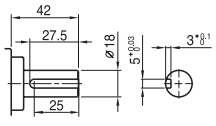
WEIGHT – (표1)

PART		WEIGHT(kg)
MOTOR		2.93
GEAR HEAD	S9□D3B ~S9□D10B	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

KEY SPEC

GEAR HEAD


GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE	
S9SD3B ~S9SD200B	
D-CUT TYPE	
S9DD3B ~S9DD200B	
KEY TYPE	
S9KD3B ~S9KD200B	

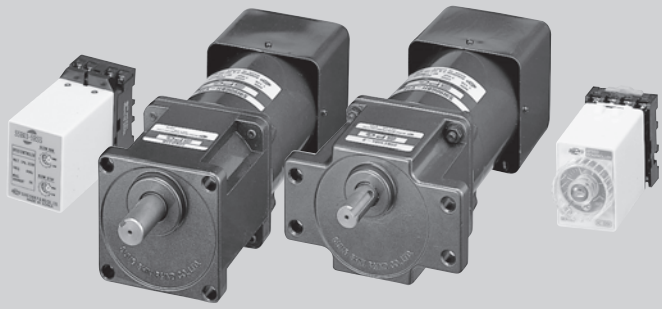
50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KD□B	kg-cm	12.2	14.6	20.3	24.3	30.4	36.5	40.5	45.6	54.8	65.7	73.0	82.5	99.0	119	132	165	198	221	266	295	300	300	300	300
	N·m	1.196	1.431	1.989	2.381	2.989	3.577	3.969	4.469	5.370	6.439	7.154	8.085	9.702	11.66	12.94	16.17	19.40	21.67	26.09	28.93	29.42	29.42	29.42	29.42

60Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KD□B	kg-cm	9.72	11.7	16.2	19.4	24.3	29.2	32.4	36.5	43.8	52.6	58.4	66.0	79.2	95.0	106	132	158	177	212	236	283	300	300	300
	N·m	0.953	1.147	1.588	1.901	2.381	2.862	3.175	3.577	4.292	5.155	5.723	6.468	7.762	9.310	10.39	12.94	15.48	17.35	20.79	23.14	27.75	29.42	29.42	29.42

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 300kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. MOTOR의 H와 사용하여 주십시오. (Only "H" type is applicable. Please use "H" type motor.)



90W

INDUCTION SPEED CONTROL MOTOR
□90㎜ LEAD WIRE TYPE

SPECIFICATION OF SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
90	S9I90GA( )-S12 S9I90GA( )-S12(TP) S9I90GA( )-S12CE	SRA02 SRA02CE	4	90	1Ø 110	60	Cont.	90-1700	6.30	0.630	3.00	0.300	6.50	0.650	24.0
	S9I90GB( )-S12 S9I90GB( )-S12(TP) S9I90GB( )-S12CE	SRB02 SRB02CE	4	90	1Ø 220	60	Cont.	90-1700	6.30	0.630	3.00	0.300	6.50	0.650	7.0
	S9I90GC( )-S12 S9I90GC( )-S12(TP) S9I90GC( )-S12CE	SRC02 SRC02CE	4	90	1Ø 100	50	Cont.	90-1400	5.80	0.580	2.50	0.250	5.50	0.550	24.0
						60		90-1700	5.30	0.530					
	S9I90GD( )-S12 S9I90GD( )-S12(TP) S9I90GD( )-S12CE	SRD02 SRD02CE	4	90	1Ø 200	50	Cont.	90-1400	5.80	0.580	2.50	0.250	5.50	0.550	7.0
						60		90-1700	5.30	0.530					
	S9I90GX( )-S12 S9I90GX( )-S12CE	SRX02 SRX02CE	4	90	1Ø 220	50	Cont.	90-1400	5.40	0.540	2.20	0.220	4.60	0.460	5.0
					1Ø 240				6.10	0.610	2.20	0.220	5.50	0.550	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9I90GX( )-S24, S9I90GX( )-S24CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S9I90GX( )-S24, S9I90GX( )-S24CE is thermally protected type with TP mounted.)

❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

SPECIFICATION OF SS TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
90	S9I90GA( )-S24 S9I90GA( )-S24(TP) S9I90GA( )-S24CE	SSA03-SRSS	4	90	1Ø 110	60	Cont.	90-1700	6.30	0.630	3.00	0.300	6.50	0.650	24.0
	S9I90GB( )-S24 S9I90GB( )-S24(TP) S9I90GB( )-S24CE	SSB03-SRSS	4	90	1Ø 220	60	Cont.	90-1700	6.30	0.630	3.00	0.300	6.50	0.650	7.0
	S9I90GC( )-S24 S9I90GC( )-S24(TP) S9I90GC( )-S24CE	SSC03-SRSS	4	90	1Ø 100	50	Cont.	90-1400	5.80	0.580	2.50	0.250	5.50	0.550	24.0
						60		90-1700	5.30	0.530					
	S9I90GD( )-S24 S9I90GD( )-S24(TP) S9I90GD( )-S24CE	SSD03-SRSS	4	90	1Ø 200	50	Cont.	90-1400	5.80	0.580	2.50	0.250	5.50	0.550	7.0
						60		90-1700	5.30	0.530					
	S9I90GX( )-S24 S9I90GX( )-S24CE	SSX03-SRSS	4	90	1Ø 220	50	Cont.	90-1400	5.40	0.540	2.20	0.220	4.60	0.460	5.0
					1Ø 240				6.10	0.610	2.20	0.220	5.50	0.550	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9I90GX( )-S24, S9I90GX( )-S24CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S9I90GX( )-S24, S9I90GX( )-S24CE is thermally protected type with TP mounted.)

❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

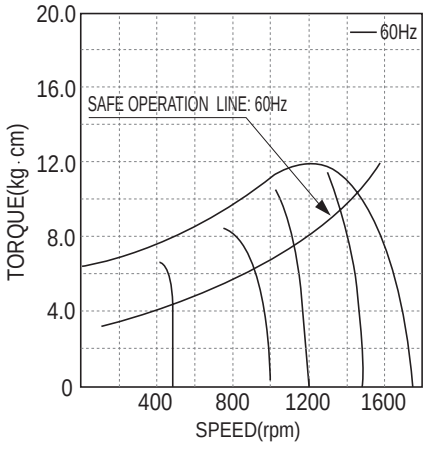
50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KC□B( )	kg-cm	18.2	21.9	30.4	36.5	45.6	54.7	60.8	68.4	82.1	98.6	110	124	149	178	198	200	200	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.784	2.146	2.979	3.577	4.469	5.361	5.958	6.703	8.046	9.663	10.78	12.15	14.60	17.44	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60

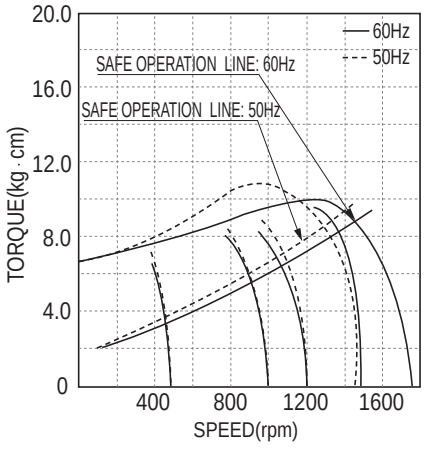
60Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KC□B( )	kg-cm	14.6	17.5	24.3	29.2	36.5	43.7	48.6	54.8	65.7	78.8	87.6	99.0	119	143	158	198	200	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.431	1.715	2.381	2.862	3.577	4.675	4.763	5.370	6.439	7.722	8.585	9.702	11.66	14.01	15.48	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60

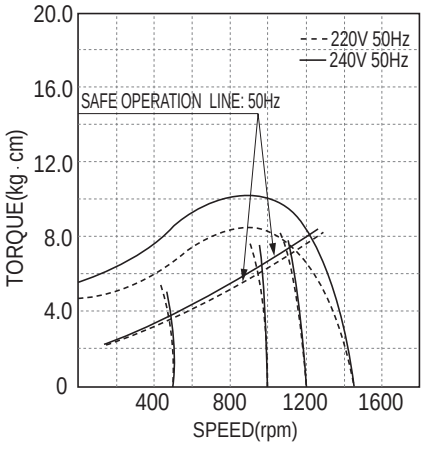
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 200kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)



▲ S9I90GA()-S12 S9I90GA()-S24
S9I90GA()-S12(TP) S9I90GA()-S24(TP)
S9I90GA()-S12CE S9I90GA()-S24CE
S9I90GB()-S12 S9I90GB()-S24
S9I90GB()-S12(TP) S9I90GB()-S24(TP)
S9I90GB()-S12CE S9I90GB()-S24



▲ S9I90GC()-S12 S9I90GC()-S24
S9I90GC()-S12(TP) S9I90GC()-S24(TP)
S9I90GC()-S12CE S9I90GC()-S24CE
S9I90GD()-S12 S9I90GD()-S24
S9I90GD()-S12(TP) S9I90GD()-S24(TP)
S9I90GD()-S12CE S9I90GD()-S24

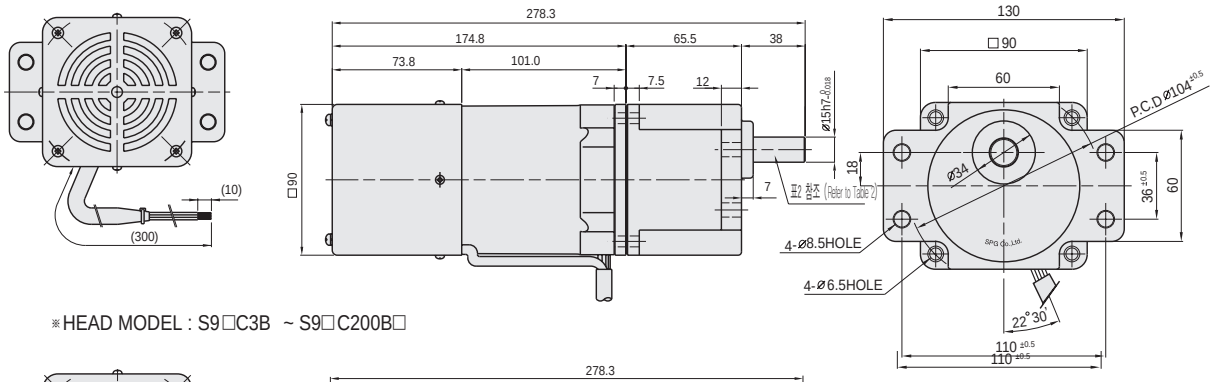


▲ S9I90GX()-S12 S9I90GX()-S24
S9I90GX()-S12CE S9I90GX()-S24CE

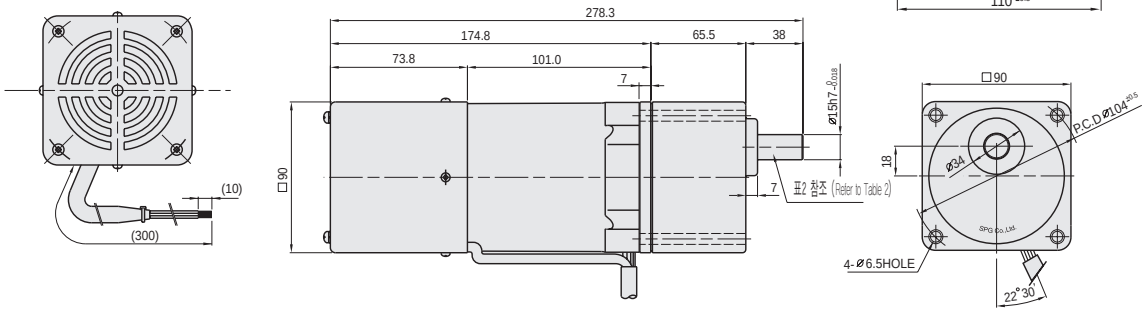
DIMENSIONS

✚ GEARED MOTOR

※ MOTOR MODEL : S9I90G□□-S12, S9I90G□□-S24
※ HEAD MODEL : S9□C3B□-S ~ S9□C200B□-S

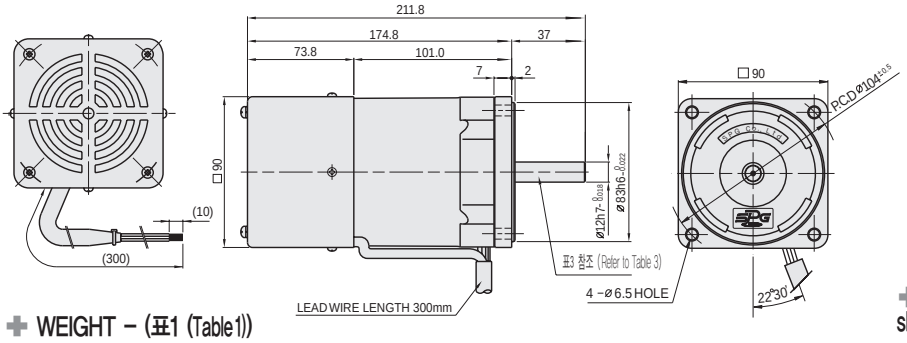


※HEAD MODEL : S9□C3B ~ S9□C200B□



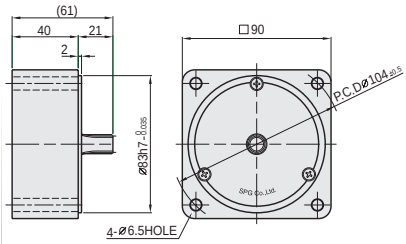
✚ MOTOR

※MOTOR MODEL : S9I90□□□-S12, S9I90□□□-S24



✚ INTER-DECIMAL GEAR HEAD

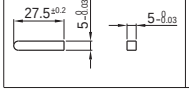
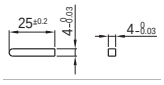
※MODEL : S9GX10B(H,L)-S



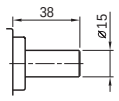
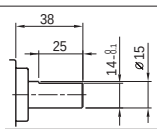
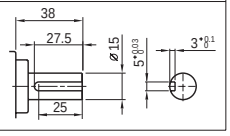
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.53
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3B□ ~S9□C10B□	1.21
	S9□C12.5B□ ~S9□C20B□	1.30
	S9□C25B□ ~S9□C60B□	1.40
	S9□C75B□ ~S9□C200B□	1.45

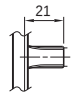
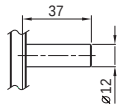
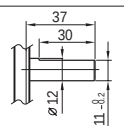
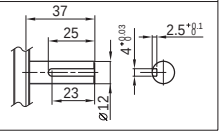
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SC3B□ ~S9SC200B□	
D-CUT TYPE S9DC3B□ ~S9DC200B□	
KEY TYPE S9KC3B□ ~S9KC200B□	

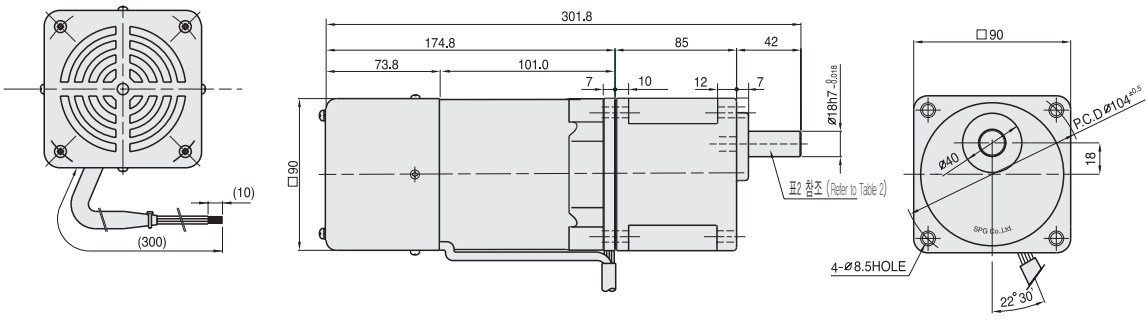
✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9I90G□□-S12 S9I90G□□-S24	
STRAIGHT TYPE S9I90S□-S12 S9I90S□-S24	
D-CUT TYPE S9I90D□-S12 S9I90D□-S24	
KEY TYPE S9I90K□ -S12 S9I90K□ -S24	

DIMENSIONS

✚ GEARED MOTOR

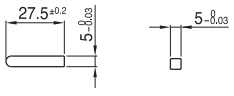
※ MOTOR MODEL : S9I90G□H-S12, S9I90G□H-S24
※ HEAD MODEL : S9□D3B-S9□D200B



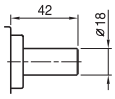
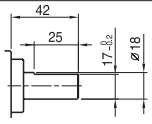
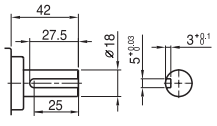
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.53
GEAR HEAD	S9□D3B ~S9□D10B	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE	
S9SD3B ~S9SD200B	
D-CUT TYPE	
S9DD3B ~S9DD200B	
KEY TYPE	
S9KD3B ~S9KD200B	

50Hz

	GEAR RATIO	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KD□B	kg-cm	18.2	21.9	30.4	36.5	45.6	54.7	60.8	68.4	82.1	98.6	110	124	149	178	198	248	297	300	300	300	300	300	300	300
	N·m	1.784	2.146	2.979	3.577	4.469	5.361	5.958	6.703	8.046	9.663	10.78	12.15	14.60	17.44	19.40	24.32	29.13	29.42	29.42	29.42	29.42	29.42	29.42	29.42

60Hz

	GEAR RATIO	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KD□B	kg-cm	14.6	17.5	24.3	29.2	36.5	43.7	48.6	54.8	65.7	78.8	87.6	99.0	119	143	158	198	238	266	300	300	300	300	300	300
	N·m	1.431	1.715	2.381	2.862	3.577	4.675	4.763	5.370	6.439	7.722	8.585	9.702	11.66	14.01	15.48	19.40	23.34	26.09	29.42	29.42	29.42	29.42	29.42	29.42

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 300kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. MOTOR의 H와 사용하여 주십시오. (Only "H" type is applicable. Please use "H" type motor.)

SPEED CONTROL REVERSIBLE MOTORS

INDEX

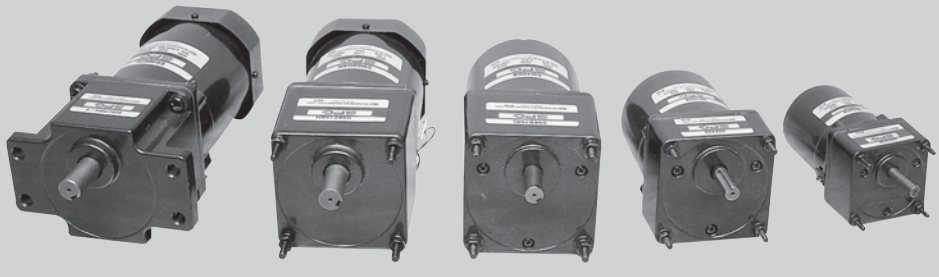
SPEED CONTROL REVERSIBLE MOTOR 6W(□60㎜) 262

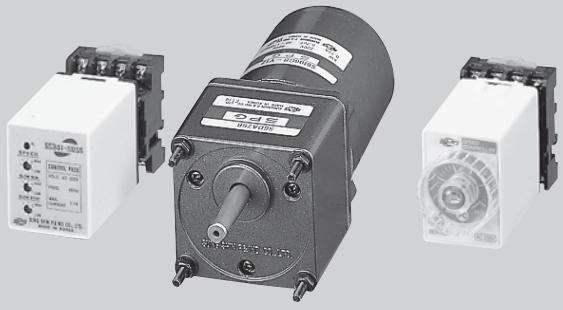
SPEED CONTROL REVERSIBLE MOTOR 15W(□70㎜) 265

SPEED CONTROL REVERSIBLE MOTOR 15W(□80㎜) 268

SPEED CONTROL REVERSIBLE MOTOR 25W(□80㎜) 270

SPEED CONTROL REVERSIBLE MOTOR 40W(□90㎜) 273





6W

REVERSIBLE SPEED CONTROL MOTOR
□60㎜ LEAD WIRE TYPE

SPECIFICATION OF SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
60	S6R06GA-S12 S6R06GA-S12CE	SRA01 SRA01CE	4	6	1Ø 110	60	30min.	90-1700	0.65	0.065	0.40	0.040	0.52	0.052	3.0
	S6R06GB-S12 S6R06GB-S12CE	SRB01 SRB01CE	4	6	1Ø 220	60	30min.	90-1700	0.60	0.060	0.40	0.040	0.52	0.052	0.8
	S6R06GC-S12 S6R06GC-S12CE	SRC01 SRC01CE	4	6	1Ø 100	50	30min.	90-1400	0.55	0.055	0.35	0.035	0.45	0.045	3.0
						60		90-1700							
	S6R06GD-S12 S6R06GD-S12CE	SRD01 SRD01CE	4	6	1Ø 200	50	30min.	90-1400	0.55	0.055	0.35	0.035	0.45	0.045	0.8
						60		90-1700							
	S6R06GX-S12 S6R06GX-S12CE	SRX01 SRX01CE	4	6	1Ø 220	50	30min.	90-1400	0.45	0.045	0.32	0.032	0.40	0.040	0.7
					1Ø 240				0.50	0.050	0.32	0.032	0.47	0.047	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 CE가 명기된 SR TYPE CONTROLLER MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (SR type controller model with "CE" appeared at the end of motor model name indicates that the product acquired CE MARK certification.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

SPECIFICATION OF SS TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
60	S6R06GA-S24 S6R06GA-S24CE	SSA01-SRSS SSA03-SRSS	4	6	1Ø 110	60	30min.	90-1700	0.65	0.065	0.40	0.040	0.52	0.052	3.0
	S6R06GB-S24 S6R06GB-S24CE	SSB01-SRSS SSB03-SRSS	4	6	1Ø 220	60	30min.	90-1700	0.60	0.060	0.40	0.040	0.52	0.052	0.8
	S6R06GC-S24 S6R06GC-S24CE	SSC01-SRSS SSC03-SRSS	4	6	1Ø 100	50	30min.	90-1400	0.55	0.055	0.35	0.035	0.45	0.045	3.0
						60		90-1700							
	S6R06GD-S24 S6R06GD-S24CE	SSD01-SRSS SSD03-SRSS	4	6	1Ø 200	50	30min.	90-1400	0.55	0.055	0.35	0.035	0.45	0.045	0.8
						60		90-1700							
	S6R06GX-S24 S6R06GX-S24CE	SSX01-SRSS SSX03-SRSS	4	6	1Ø 220	50	30min.	90-1400	0.45	0.045	0.32	0.032	0.40	0.040	0.7
					1Ø 240				0.50	0.050	0.32	0.032	0.47	0.047	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received. CE.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

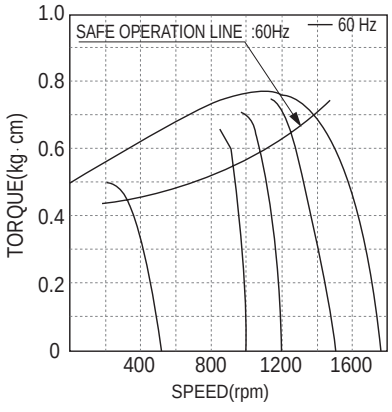
50Hz

GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
MODEL	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5	6
S6DA□B	kg-cm	1.3	1.5	2.1	2.6	3.2	3.9	4.3	5.4	6.4	7.7	7.7	9.7	11.6	13.9	15.5	17.5	21.0	26.2	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	N·m	0.127	0.147	0.206	0.255	0.314	0.382	0.421	0.529	0.627	0.755	0.755	0.951	1.137	1.362	1.519	1.715	2.058	2.568	2.942	2.942	2.942	2.942	2.942	2.942	2.942

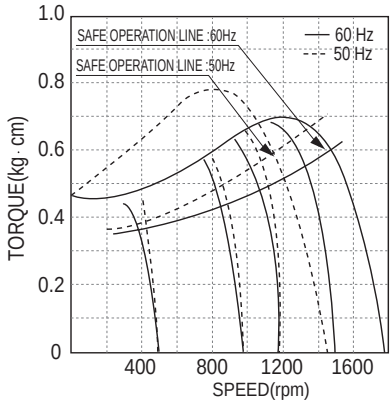
60Hz

GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
MODEL	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9	7.2
S6DA□B	kg-cm	1.0	1.3	1.7	2.1	2.6	3.1	3.5	4.4	5.2	6.3	6.3	7.8	9.4	11.3	12.6	14.2	17.0	21.3	25.5	28.4	30.0	30.0	30.0	30.0	30.0
	N·m	0.098	0.127	0.167	0.206	0.255	0.304	0.343	0.431	0.510	0.617	0.617	0.764	0.921	1.107	1.235	1.392	1.666	2.087	2.499	2.783	2.942	2.942	2.942	2.942	2.942

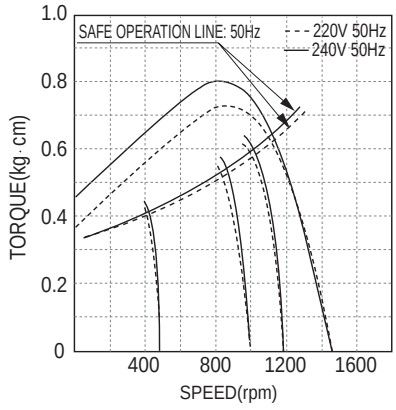
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 30kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 30 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)



▲ S6R06GA-S12 S6R06GA-S24
S6R06GA-S12CE S6R06GA-S24CE
S6R06GB-S12 S6R06GB-S24
S6R06GB-S12CE S6R06GB-S24



▲ S6R06GC-S12 S6R06GC-S24
S6R06GC-S12CE S6R06GC-S24CE
S6R06GD-S12 S6R06GD-S24
S6R06GD-S12CE S6R06GD-S24CE

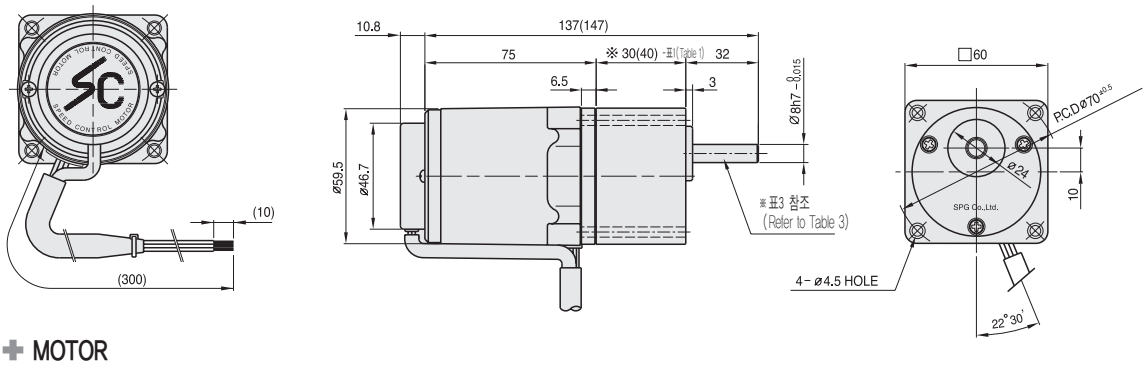


▲ S6R06GX-S12 S6R06GX-S24
S6R06GX-S12CE S6R06GX-S24CE

DIMENSIONS

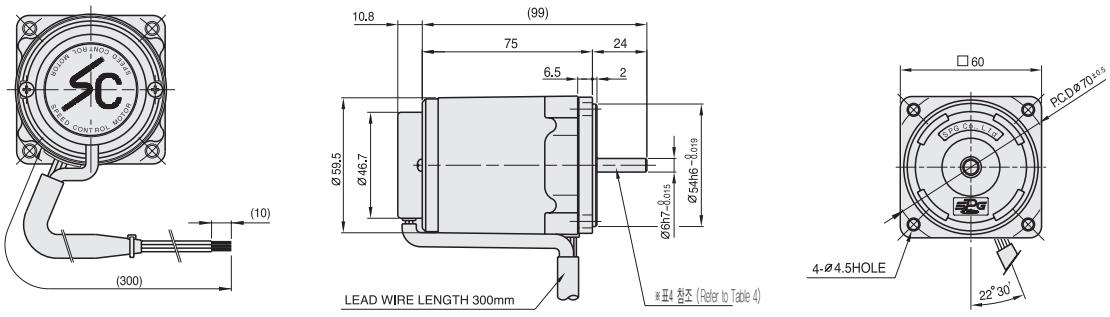
GEARED MOTOR

※MOTOR MODEL : S6R06G□-S12, S6R06G□-S24
※HEAD MODEL □ : S6□A3□~S6□A250□



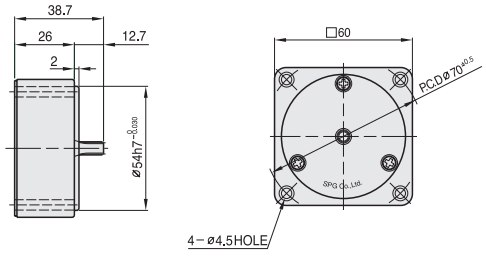
MOTOR

※MOTOR MODEL : S6R06□□-S12, S6R06□□-S24

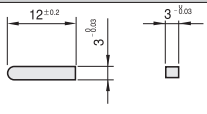


INTER-DECIMAL GEAR HEAD

※MODEL : S6GX10B



KEY SPEC

GEAR HEAD


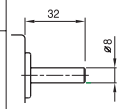
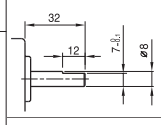
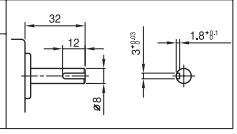
※30(40) - (표1 (Table1))

GEAR RATIO	SIZE(mm)
S6□A3□ ~ S6□A18□	30
S6□A20□ ~ S6□A250□	40

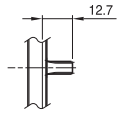
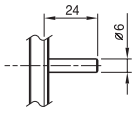
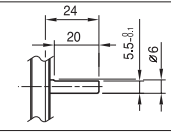
WEIGHT - (표2 (Table2))

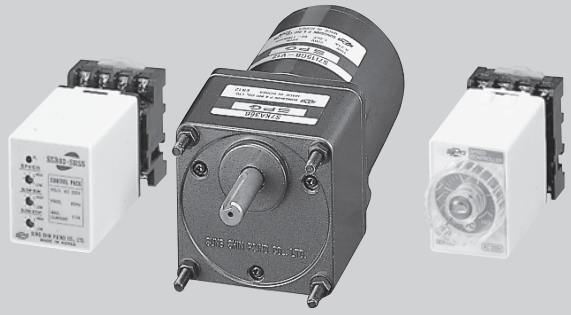
PART		WEIGHT(kg)
MOTOR		0.76
DECIMAL GEAR HEAD		0.18
GEAR HEAD	S6□A3□ ~S6□A18B□	0.24
	S6□A20□ ~S6□A40□	0.30
	S6□A50□ ~S6□A250□	0.33

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S6SA3□ ~S6SA250□	
D-CUT TYPE S6DA3□ ~S6DA250□	
KEY TYPE S6KA3□ ~S6KA250□	

MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S6R06G□-S12 S6R06G□-S24	
STRAIGHT TYPE S6R06GS-□S12 S6R06GS-□S24	
D-CUT TYPE S6R06D□-12 S6R06D□-12	



15W

REVERSIBLE SPEED CONTROL MOTOR
□70㎜ LEAD WIRE TYPE

SPECIFICATION OF SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
70	S7R15GA-S12 S7R15GA-S12(TP) S7R15GA-S12CE	SRA02 SRA02CE	4	15	1Ø 110	60	30min.	90-1700	1.10	0.110	0.55	0.055	1.00	0.100	6.0
	S7R15GB-S12 S7R15GB-S12(TP) S7R15GB-S12CE	SRB02 SRB02CE	4	15	1Ø 220	60	30min.	90-1700	1.10	0.110	0.55	0.055	1.00	0.100	1.5
	S7R15GC-S12 S7R15GC-S12(TP) S7R15GC-S12CE	SRC02 SRC02CE	4	15	1Ø 100	50	30min.	90-1400	1.05	0.105	0.50	0.050	0.80	0.080	6.0
						60		90-1700	0.80	0.080					
	S7R15GD-S12 S7R15GD-S12(TP) S7R15GD-S12CE	SRD02 SRD02CE	4	15	1Ø 200	50	30min.	90-1400	1.05	0.105	0.50	0.050	0.80	0.080	1.5
						60		90-1700	0.80	0.080					
	S7R15GX-S12 S7R15GX-S12CE	SRX02 SRX02CE	4	15	1Ø 220	50	30min.	90-1400	1.00	0.100	0.50	0.050	0.75	0.075	1.2
					1Ø 240				1.10	0.110	0.75	0.075	1.00	0.100	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 CE가 명기된 SR TYPE CONTROLLER MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (SR type controller model with "CE" appeared at the end of motor model name indicates that the product acquired CE MARK certification.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S7R15GX-S12, S7R15GX-S12CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S7R15GX-S12, S7R15GX-S12CE is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

SPECIFICATION OF SS TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
70	S7R15GA-S24 S7R15GA-S24(TP) S7R15GA-S24CE	SSA02-SRSS SSA03-SRSS	4	15	1Ø 110	60	30min.	90-1700	1.10	0.110	0.55	0.055	1.00	0.100	6.0
	S7R15GB-S24 S7R15GB-S24(TP) S7R15GB-S24CE	SSB02-SRSS SSB03-SRSS	4	15	1Ø 220	60	30min.	90-1700	1.10	0.110	0.55	0.055	1.00	0.100	1.5
	S7R15GC-S24 S7R15GC-S24(TP) S7R15GC-S24CE	SSC02-SRSS SSC03-SRSS	4	15	1Ø 100	50	30min.	90-1400	1.05	0.105	0.50	0.050	0.80	0.080	6.0
						60		90-1700	0.80	0.080					
	S7R15GD-S24 S7R15GD-S24(TP) S7R15GD-S24CE	SSD02-SRSS SSD03-SRSS	4	15	1Ø 200	50	30min.	90-1400	1.05	0.105	0.50	0.050	0.80	0.080	1.5
						60		90-1700	0.80	0.080					
	S7R15GX-S24 S7R15GX-S24CE	SSX02-SRSS SSX03-SRSS	4	15	1Ø 220	50	30min.	90-1400	1.00	0.100	0.50	0.050	0.75	0.075	1.2
					1Ø 240				1.10	0.110	0.75	0.075	1.00	0.100	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S7R15GX-S24, S7R15GX-S24CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S7R15GX-S24, S7R15GX-S24CE is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

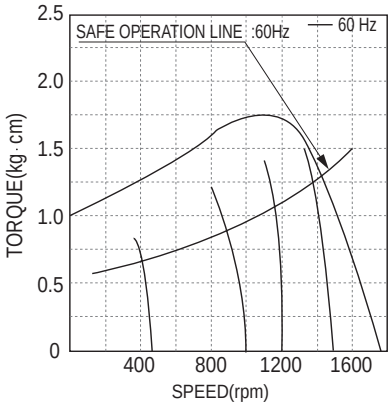
50Hz

MODEL	GEAR RATIO	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S7KA□B	kg-cm	3.2	3.9	5.4	6.5	8.1	9.7	10.8	13.5	16.2	19.4	19.4	24.2	29.1	34.9	38.8	43.6	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	N·m	0.314	0.382	0.530	0.637	0.794	0.951	1.059	1.324	1.587	1.902	1.902	2.373	2.854	3.423	3.805	4.276	4.900	4.900	4.900	4.900	4.900	4.900	4.900	4.900

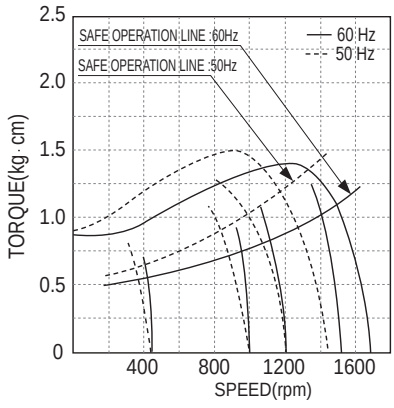
60Hz

MODEL	GEAR RATIO	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S7KA□B	kg-cm	3.0	3.6	5.1	6.1	7.6	9.1	10.1	12.7	15.2	18.2	18.2	22.8	27.3	32.8	36.5	41.0	49.2	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	N·m	0.294	0.353	0.500	0.598	0.745	0.892	0.990	1.245	1.491	1.785	1.785	2.236	2.677	3.217	3.579	4.021	4.825	4.900	4.900	4.900	4.900	4.900	4.900	4.900

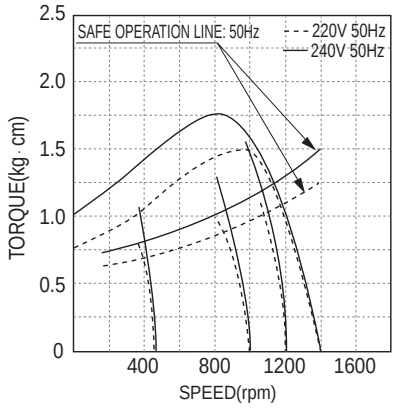
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 50㎏-㎝입니다. (he permissible torque of the motor and inter-decimal gearhead is 50 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)



▲ S7R15GA-S12 S7R15GA-S24
S7R15GA-S12(TP) S7R15GA-S24(TP)
S7R15GA-S12CE S7R15GA-S24CE
S7R15GB-S12 S7R15GB-S24
S7R15GB-S12(TP) S7R15GB-S24(TP)
S7R15GB-S12CE S7R15GB-S24



▲ S7R15GC-S12 S7R15GC-S24
S7R15GC-S12(TP) S7R15GC-S24(TP)
S7R15GC-S12CE S7R15GC-S24CE
S7R15GD-S12 S7R15GD-S24
S7R15GC-S12 S7R15GC-S24(TP)
S7R15GD-S12CE S7R15GD-S24CE

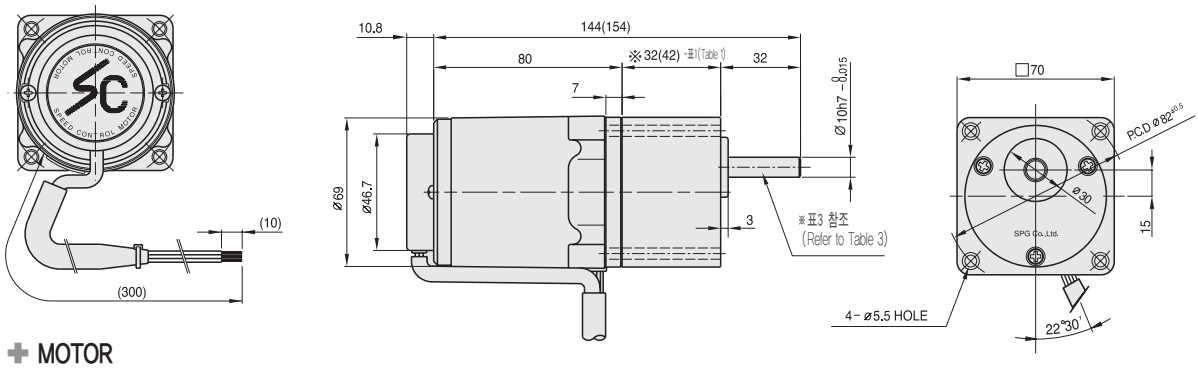


▲ S7R15GX-S12 S7R15GX-S24
S7R15GX-S12CE S7R15GX-S24CE

DIMENSIONS

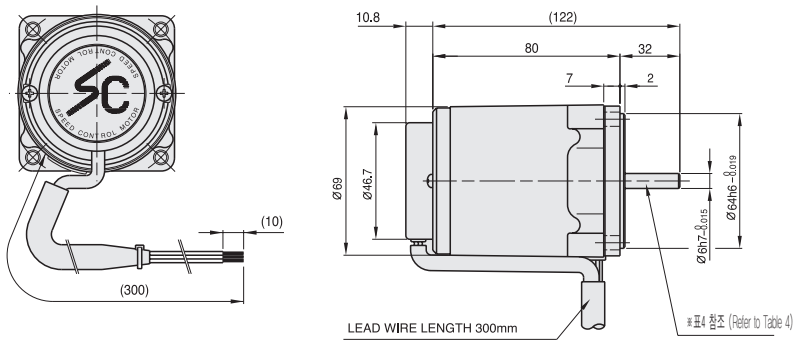
GEARED MOTOR

※MOTOR MODEL : S7R15G□-S12, S7R15G□-S24
※HEAD MODEL : S7□A3□~S7□A200□



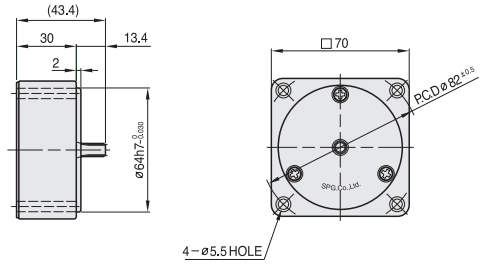
MOTOR

※MOTOR MODEL : S7R15□□-S12, S7R15□□-S24

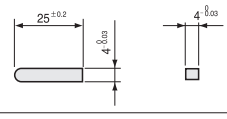


INTER-DECIMAL GEAR HEAD

※MODEL : S7GX10B



KEY SPEC

GEAR HEAD


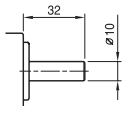
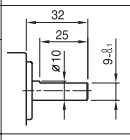
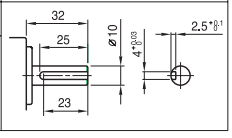
※32(42) - (표1 (Table1))

GEAR RATIO	SIZE(㎜)
S7□A3□ ~ S7□A18□	32
S7□A20□ ~ S7□A200□	42

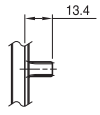
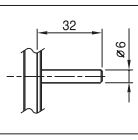
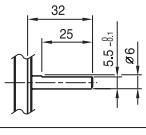
WEIGHT - (표2 (Table2))

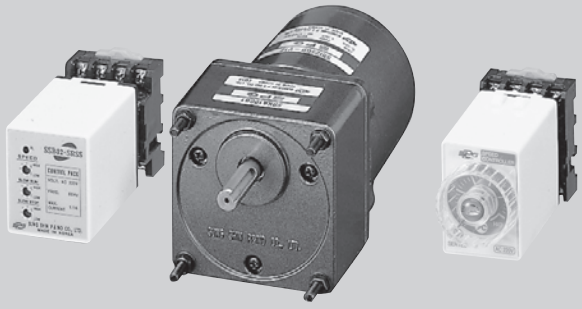
PART		WEIGHT(kg)
MOTOR		1.04
DECIMAL GEAR HEAD		0.32
GEAR HEAD	S7□A3□ ~S7□A40□	0.38
	S7□A20□ ~S7□A40□	0.47
	S7□A50□ ~S7□A200□	0.52

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE	
S7SA3□ ~S7SA200□	
D-CUT TYPE	
S7DA3□ ~S7DA200□	
KEY TYPE	
S7KA3□ ~S7KA200□	

MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE	
S7R15G□-S12 S7R15G□-S24	
STRAIGHT TYPE	
S7R15S□-S12 S7R15S□-S24	
D-CUT TYPE	
S7R15D□-S12 S7R15D□-S24	



15W

REVERSIBLE SPEED CONTROL MOTOR
□80㎜ LEAD WIRE TYPE

SPECIFICATION OF SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
80	S8R15GA-S12 S8R15GA-S12(TP) S8R15GA-S12CE	SRA02 SRA02CE	4	15	1Ø 110	60	30min.	90-1700	1.40	0.140	0.50	0.050	0.80	0.080	6.0
	S8R15GB-S12 S8R15GB-S12(TP) S8R15GB-S12CE	SRB02 SRB02CE	4	15	1Ø 220	60	30min.	90-1700	1.40	0.140	0.50	0.050	0.80	0.070	1.5
	S8R15GC-S12 S8R15GC-S12(TP) S8R15GC-S12CE	SRC02 SRC02CE	4	15	1Ø 100	50	30min.	90-1400	1.30	0.130	0.45	0.045	0.70	0.070	6.0
						60		90-1700	1.10	0.110					
	S8R15GD-S12 S8R15GD-S12(TP) S8R15GD-S12CE	SRD02 SRD02CE	4	15	1Ø 200	50	30min.	90-1400	1.30	0.130	0.45	0.045	0.70	0.070	1.5
						60		90-1700	1.10	0.110					
	S8R15GX-S12 S8R15GX-S12CE	SRX02 SRX02CE	4	15	1Ø 220	50	30min.	90-1400	1.30	0.130	0.45	0.045	0.70	0.070	1.2
					1Ø 240				1.40	0.140	0.80	0.080	0.80	0.08	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 CE가 명기된 SR TYPE CONTROLLER MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (SR type controller model with "CE" appeared at the end of motor model name indicates that the product acquired CE MARK certification.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8R15GX-S12, S8R15GX-S12CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S8R15GX-S12, S8R15GX-S12CE is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

SPECIFICATION OF SS TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
80	S8R15GA-S24 S8R15GA-S24(TP) S8R15GA-S24CE	SSA02-SRSS SSA03-SRSS	4	15	1Ø 110	60	30min.	90-1700	1.40	0.140	0.50	0.050	0.80	0.080	6.0
	S8R15GB-S24 S8R15GB-S24(TP) S8R15GB-S24CE	SSB02-SRSS SSB03-SRSS	4	15	1Ø 220	60	30min.	90-1700	1.40	0.140	0.50	0.050	0.80	0.070	1.5
	S8R15GC-S24 S8R15GC-S24(TP) S8R15GC-S24CE	SSC02-SRSS SSC03-SRSS	4	15	1Ø 100	50	30min.	90-1400	1.30	0.130	0.45	0.045	0.70	0.070	6.0
						60		90-1700	1.10	0.110					
	S8R15GD-S24 S8R15GD-S24(TP) S8R15GD-S24CE	SSD02-SRSS SSD03-SRSS	4	15	1Ø 200	50	30min.	90-1400	1.30	0.130	0.45	0.045	0.70	0.070	1.5
						60		90-1700	1.10	0.110					
	S8R15GX-S24 S8R15GX-S24CE	SSX02-SRSS SSX03-SRSS	4	15	1Ø 220	50	30min.	90-1400	1.30	0.130	0.45	0.045	0.70	0.070	1.2
					1Ø 240				1.40	0.140	0.80	0.080	0.80	0.08	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8R15GX-S24, S8R15GX-S24CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S8R15GX-S24, S8R15GX-S24CE is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

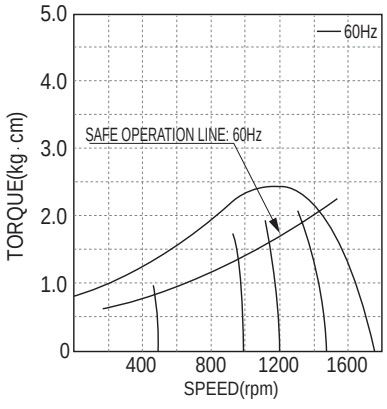
50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S8KA□B	kg-cm	3.4	4.1	5.7	6.8	8.5	10.2	11.3	14.2	17.0	20.4	20.4	25.6	30.7	36.8	40.9	46.2	55.4	69.2	80	80	80	80	80	80
	N·m	0.333	0.402	0.559	0.666	0.833	1.000	1.107	1.392	1.666	1.999	1.999	2.509	3.009	3.606	4.008	4.530	5.433	6.786	7.840	7.840	7.840	7.840	7.840	7.840

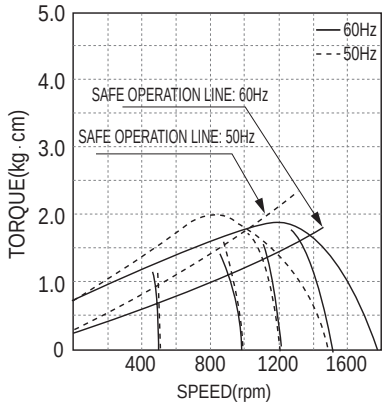
60Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S8KA□B	kg-cm	2.9	3.5	4.9	5.8	7.3	8.7	9.7	12.2	14.6	17.5	17.5	21.9	26.3	31.5	35.0	39.6	47.5	59.4	71.3	79.2	80	80	80	80
	N·m	0.284	0.343	0.481	0.568	0.715	0.853	0.951	1.196	1.432	1.715	1.715	2.146	2.577	3.087	3.430	3.881	4.658	5.825	6.992	7.767	7.840	7.840	7.840	7.840

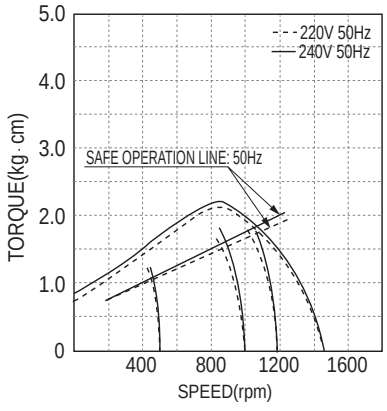
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 80㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 80 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)



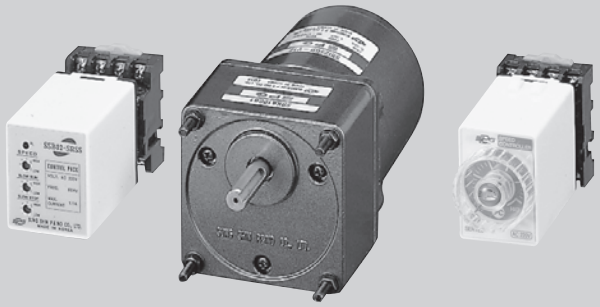
▲ S8R15GA-S12 S8R15GA-S24
S8R15GA-S12(TP) S8R15GA-S24(TP)
S8R15GA-S12CE S8R15GA-S24CE
S8R15GB-S12 S8R15GB-S24
S8R15GB-S12(TP) S8R15GB-S24(TP)
S8R15GB-S12CE S8R15GB-S24



▲ S8R15GC-S12 S8R15GC-S24
S8R15GC-S12(TP) S8R15GC-S24(TP)
S8R15GC-S12CE S8R15GC-S24CE
S8R15GD-S12 S8R15GD-S24
S8R15GC-S12 S8R15GC-S24(TP)
S8R15GD-S12CE S8R15GD-S24CE



▲ S8R15GX-S12 S8R15GX-S24
S8R15GX-S12CE S8R15GX-S24CE



25W

REVERSIBLE SPEED CONTROL MOTOR
□80㎜ LEAD WIRE TYPE

SPECIFICATION OF SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
80	S8R25GA-S12 S8R25GA-S12(TP) S8R25GA-S12CE	SRA02 SRA02CE	4	25	1Ø 110	60	30min.	90-1700	2.30	0.230	0.80	0.080	1.80	0.180	10.0
	S8R25GB-S12 S8R25GB-S12(TP) S8R25GB-S12CE	SRB02 SRB02CE	4	25	1Ø 220	60	30min.	90-1700	2.30	0.230	0.70	0.070	1.80	0.180	2.5
	S8R25GC-S12 S8R25GC-S12(TP) S8R25GC-S12CE	SRC02 SRC02CE	4	25	1Ø 100	50	30min.	90-1400	2.20	0.220	0.70	0.070	1.60	0.160	10.0
						60		90-1700	1.90	0.190					
	S8R25GD-S12 S8R25GD-S12(TP) S8R25GD-S12CE	SRD02 SRD02CE	4	25	1Ø 200	50	30min.	90-1400	2.20	0.220	0.70	0.070	1.60	0.160	2.5
						60		90-1700	1.90	0.190					
	S8R25GX-S12 S8R25GX-S12CE	SRX02 SRX02CE	4	25	1Ø 220	50	30min.	90-1400	2.00	0.200	0.70	0.070	1.50	0.150	2.0
					1Ø 240				2.25	0.225	0.70	0.070	1.70	0.170	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 CE가 명기된 SR TYPE CONTROLLER MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (SR type controller model with "CE" appeared at the end of motor model name indicates that the product acquired CE MARK certification.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8R25GX-S12, S8R25GX-S12CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S8R25GX-S12, S8R25GX-S12CE is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

SPECIFICATION OF SS TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
80	S8R25GA-S24 S8R25GA-S24(TP) S8R25GA-S24CE	SSA02-SRSS SSA03-SRSS	4	15	1Ø 110	60	30min.	90-1700	2.30	0.230	0.80	0.080	1.80	0.180	10.0
	S8R25GB-S24 S8R25GB-S24(TP) S8R25GB-S24CE	SSB02-SRSS SSB03-SRSS	4	15	1Ø 220	60	30min.	90-1700	2.30	0.230	0.70	0.070	1.80	0.180	2.5
	S8R25GC-S24 S8R25GC-S24(TP) S8R25GC-S24CE	SSC02-SRSS SSC03-SRSS	4	15	1Ø 100	50	30min.	90-1400	2.20	0.220	0.70	0.070	1.60	0.160	10.0
						60		90-1700	1.90	0.190					
	S8R25GD-S24 S8R25GD-S24(TP) S8R25GD-S24CE	SSD02-SRSS SSD03-SRSS	4	15	1Ø 200	50	30min.	90-1400	2.20	0.220	0.70	0.070	1.60	0.160	2.5
						60		90-1700	1.90	0.190					
	S8R25GX-S24 S8R25GX-S24CE	SSX02-SRSS SSX03-SRSS	4	15	1Ø 220	50	30min.	90-1400	2.00	0.200	0.70	0.070	1.50	0.150	2.0
					1Ø 240				2.25	0.225	0.70	0.070	1.70	0.170	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8R25GX-S24, S8R25GX-S24CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S8R25GX-S24, S8R25GX-S24CE is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

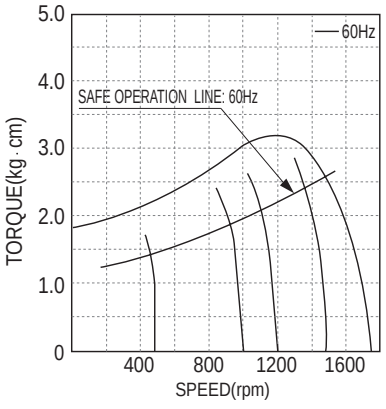
50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S8KA□B	kg-cm	5.3	6.4	8.9	10.7	13.4	16.0	17.8	22.3	26.7	32.1	32.1	40.2	48.2	57.8	64.2	72.6	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	N·m	0.519	0.627	0.872	1.049	1.313	1.568	1.744	2.185	2.617	3.146	3.146	3.940	4.724	5.664	6.292	7.115	7.840	7.840	7.840	7.840	7.840	7.840	7.840	7.840

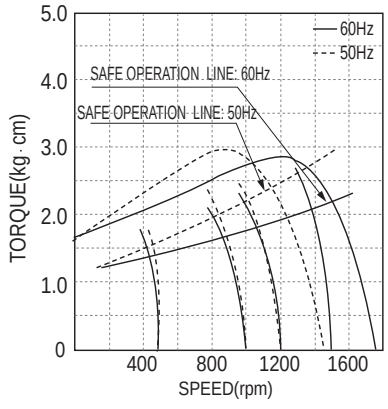
60Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S8KA□B	kg-cm	4.4	5.2	7.3	8.7	10.9	13.1	14.6	18.2	21.9	26.2	26.3	32.9	39.4	47.3	52.6	59.4	71.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	N·m	0.431	0.510	0.715	0.853	1.068	1.284	1.431	1.784	2.146	2.568	2.577	3.224	3.861	4.635	5.155	5.821	6.987	7.840	7.840	7.840	7.840	7.840	7.840	7.840

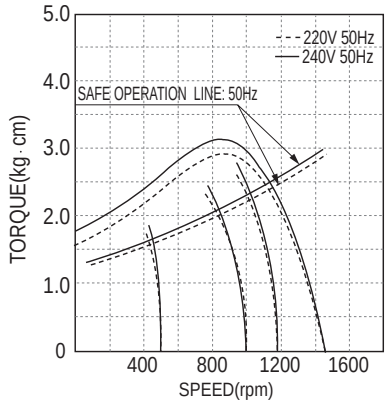
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 80kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 80 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)



▲ S8R25GA-S12 S8R25GA-S24
S8R25GA-S12(TP) S8R25GA-S24(TP)
S8R25GA-S12CE S8R25GA-S24CE
S8R25GB-S12 S8R25GB-S24
S8R25GB-S12(TP) S8R25GB-S24(TP)
S8R25GB-S12CE S8R25GB-S24



▲ S8R25GC-S12 S8R25GC-S24
S8R25GC-S12(TP) S8R25GC-S24(TP)
S8R25GC-S12CE S8R25GC-S24CE
S8R25GD-S12 S8R25GD-S24
S8R25GC-S12 S8R25GC-S24(TP)
S8R25GD-S12CE S8R25GD-S24CE

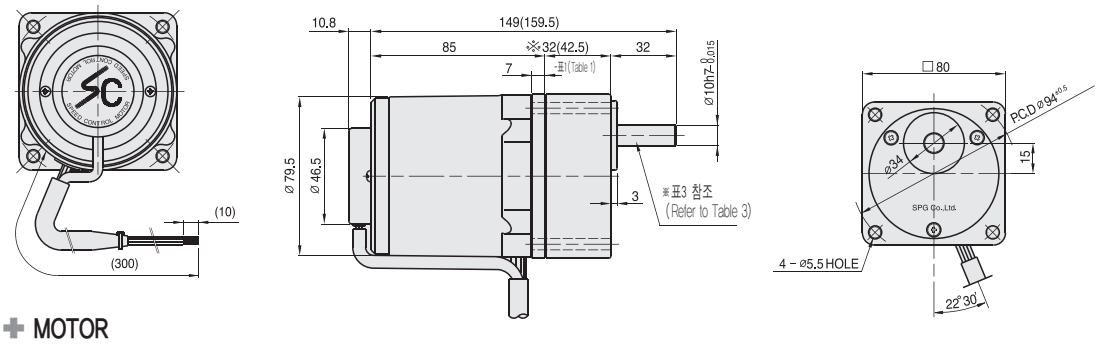


▲ S8R25GX-S12 S8R25GX-S24
S8R25GX-S12CE S8R25GX-S24CE

DIMENSIONS

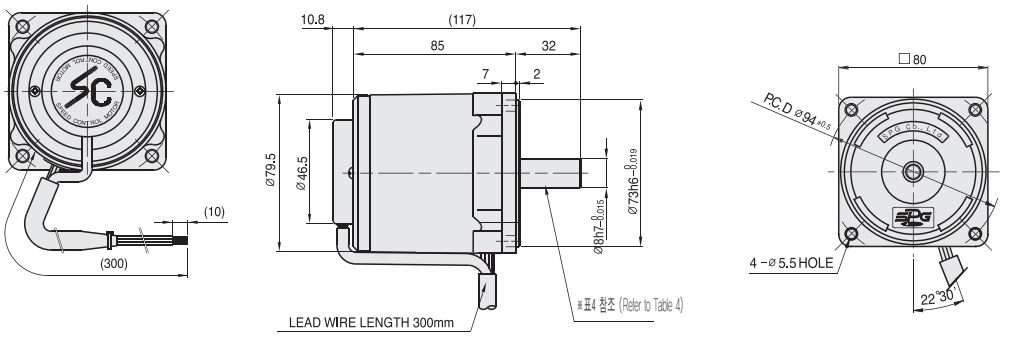
GEARED MOTOR

※MOTOR MODEL : S8R(15, 25)G□-S12, S8R(15,25)G□-S24
※HEAD MODEL : S8□A3□~S8□A200□



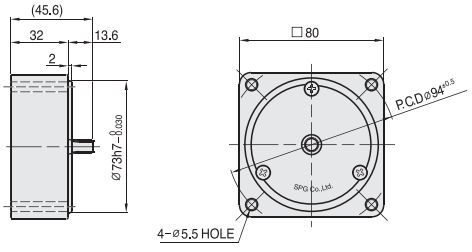
MOTOR

• MOTOR MODEL : S8R(15,25)□□-S12, S8R(15,25)□□-S24

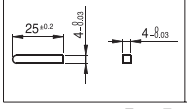
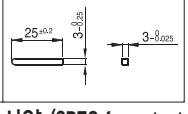


INTER-DECIMAL GEAR HEAD

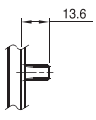
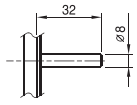
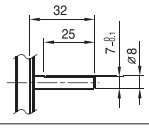
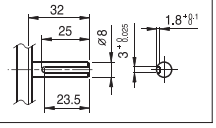
• MODEL : S8GX10B



KEY SPEC

GEAR HEAD	MOTOR
	

MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S8R15G□-S12 S8R25G□-S12 S8R15G□-S24 S8R25G□-S24	
STRAIGHT TYPE S8R15S□-S12 S8R25S□-S12 S8R15S□-S24 S8R25S□-S24	
D-CUT TYPE S8R15D□-S12 S8R25D□-S12 S8R15D□-S24 S8R25D□-S24	
KEY TYPE S8R15K□-S12 S8R25K□-S12 S8R15K□-S24 S8R25K□-S24	

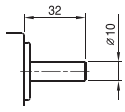
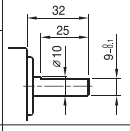
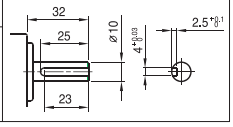
※32(42.5) - (표1 (Table1))

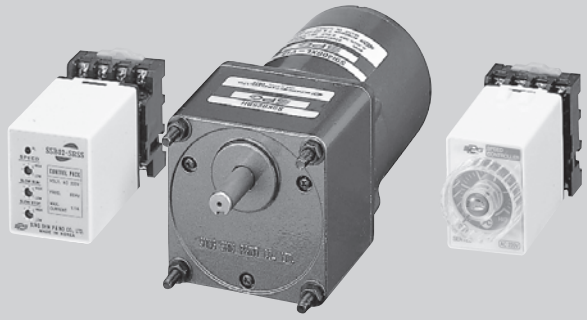
GEAR RATIO	SIZE(mm)
S8□A3□ ~ S8□A18□	32
S8□A20□ ~ S8□A200□	42.5

WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
15W MOTOR		1.6
25W MOTOR		1.6
DECIMAL GEAR HEAD		0.43
GEAR HEAD	S8□A3□ ~S8□A18□	0.43
	S8□A20□ ~S8□A40□	0.57
	S8□A50□ ~S8□A200□	0.61

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S8SA3□ ~S8SA200□	
D-CUT TYPE S8DA3□ ~S8DA200□	
KEY TYPE S8KA3□ ~S8KA200□	



40W

REVERSIBLE SPEED CONTROL MOTOR
□90㎜ LEAD WIRE TYPE

SPECIFICATION OF SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output (W)	Voltage (V)	Freq. (Hz)	Duty	Speed Range (rpm)	Permissible Torque at 1200rpm (kg-cm)	Permissible Torque at 1200rpm (N-m)	Permissible Torque at 90rpm (kg-cm)	Permissible Torque at 90rpm (N-m)	Starting Torque (kg-cm)	Starting Torque (N-m)	Cap. (μF)
90	S9R40GA( )-S12 S9R40GA( )-S12(TP) S9R40GA( )-S12CE	SRA02 SRA02CE	4	40	1Ø 110	60	30min.	90-1700	2.80	0.280	1.10	0.110	3.50	0.350	15.0
	S9R40GB( )-S12 S9R40GB( )-S12(TP) S9R40GB( )-S12CE	SRB02 SRB02CE	4	40	1Ø 220	60	30min.	90-1700	2.80	0.280	1.10	0.110	3.50	0.350	4.0
	S9R40GC( )-S12 S9R40GC( )-S12(TP) S9R40GC( )-S12CE	SRC02 SRC02CE	4	40	1Ø 100	50	30min.	90-1400	3.00	0.300	1.10	0.110	3.00	0.300	15.0
						60		90-1700	2.10	0.210					
	S9R40GD( )-S12 S9R40GD( )-S12(TP) S9R40GD( )-S12CE	SRD02 SRD02CE	4	40	1Ø 200	50	30min.	90-1400	3.00	0.300	0.95	0.095	3.00	0.300	4.0
						60		90-1700	2.10	0.210					
	S9R40GX( )-S12 S9R40GX( )-S12CE	SRX02 SRX02CE	4	40	1Ø 220	50	30min.	90-1400	2.50	0.250	0.90	0.090	2.90	0.290	3.0
					1Ø 240				3.80	0.380	0.90	0.090	3.30	0.330	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 CE가 명기된 SR TYPE CONTROLLER MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (SR type controller model with "CE" appeared at the end of motor model name indicates that the product acquired CE MARK certification.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9R40GX-S12, S9R40GX-S12CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S9R40GX-S12, S9R40GX-S12CE is thermally protected type with TP mounted.)

❖ ( )는 L · H TYPE을 포함합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

SPECIFICATION OF SS TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output (W)	Voltage (V)	Freq. (Hz)	Duty	Speed Range (rpm)	Permissible Torque at 1200rpm (kg-cm)	Permissible Torque at 1200rpm (N-m)	Permissible Torque at 90rpm (kg-cm)	Permissible Torque at 90rpm (N-m)	Starting Torque (kg-cm)	Starting Torque (N-m)	Cap. (μF)
90	S9R40GA( )-S24 S9R40GA( )-S24(TP) S9R40GA( )-S24CE	SSA02-SRSS SSA03-SRSS	4	40	1Ø 110	60	30min.	90-1700	2.80	0.280	1.10	0.110	3.50	0.350	15.0
	S9R40GB( )-S24 S9R40GB( )-S24(TP) S9R40GB( )-S24CE	SSB02-SRSS SSB03-SRSS	4	40	1Ø 220	60	30min.	90-1700	2.80	0.280	1.10	0.110	3.50	0.350	4.0
	S9R40GC( )-S24 S9R40GC( )-S24(TP) S9R40GC( )-S24CE	SSC02-SRSS SSC03-SRSS	4	40	1Ø 100	50	30min.	90-1400	3.00	0.300	1.10	0.110	3.00	0.300	15.0
						60		90-1700	2.10	0.210					
	S9R40GD( )-S24 S9R40GD( )-S24(TP) S9R40GD( )-S24CE	SSD02-SRSS SSD03-SRSS	4	40	1Ø 200	50	30min.	90-1400	3.00	0.300	0.95	0.095	3.00	0.300	4.0
						60		90-1700	2.10	0.210					
	S9R40GX( )-S24 S9R40GX( )-S24CE	SSX02-SRSS SSX03-SRSS	4	40	1Ø 220	50	30min.	90-1400	2.50	0.250	0.90	0.090	2.90	0.290	3.0
					1Ø 240				3.80	0.380	0.90	0.090	3.30	0.330	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9R40GX-S24, S9R40GX-S24CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S9R40GX-S24, S9R40GX-S24CE is thermally protected type with TP mounted.)

❖ ( )는 L · H TYPE을 포함합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

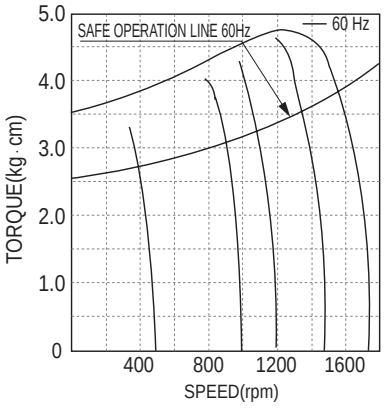
50Hz

GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KB□B( )	kg-cm	8.3	9.9	13.8	16.5	20.7	24.8	27.5	34.4	41.3	49.6	49.6	62.1	74.5	89.4	99.3	100	100	100	100	100	100	100	100	100
	N·m	0.813	0.970	1.352	1.617	2.029	2.430	2.695	3.371	4.047	4.861	4.861	6.086	7.301	8.761	9.731	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800

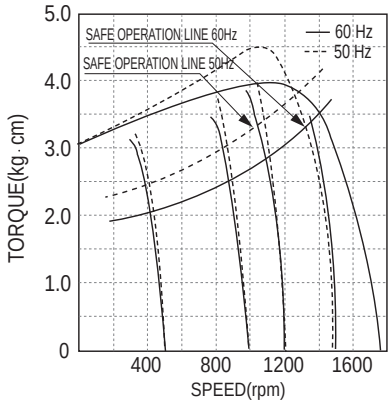
60Hz

GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KB□B( )	kg-cm	6.8	8.2	11.3	13.6	17.0	20.4	22.7	28.4	34.0	40.8	40.9	51.1	61.3	73.6	81.8	100	100	100	100	100	100	100	100	100
	N·m	0.666	0.804	1.107	1.333	1.666	1.999	2.225	2.783	3.332	3.998	4.008	5.008	6.007	7.213	8.016	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800

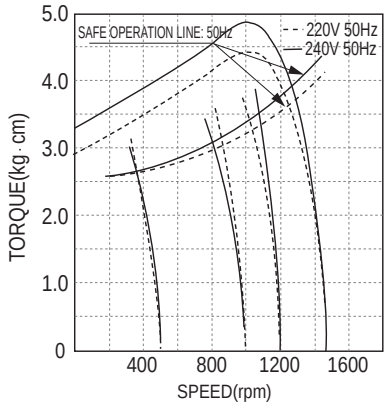
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 100㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 100 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)



▲ S9R40GA()-S12 S9R40GA()-S24
S9R40GA()-S12(TP) S9R40GA()-S24(TP)
S9R40GA()-S12CE S9R40GA()-S24CE
S9R40GB()-S12 S9R40GB()-S24
S9R40GB()-S12(TP) S9R40GB()-S24(TP)
S9R40GB()-S12CE S9R40GB()-S24



▲ S9R40GC()-S12 S9R40GC()-S24
S9R40GC()-S12(TP) S9R40GC()-S24(TP)
S9R40GC()-S12CE S9R40GC()-S24CE
S9R40GD()-S12 S9R40GD()-S24
S9R40GC()-S12 S9R40GC()-S24(TP)
S9R40GD()-S12CE S9R40GD()-S24CE

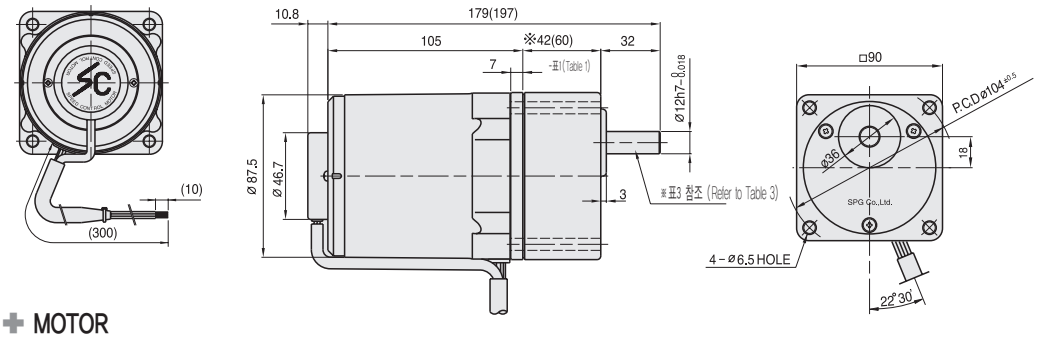


▲ S9R40GX()-S12 S9R40GX()-S24
S9R40GX()-S12CE S9R40GX()-S24CE

DIMENSIONS

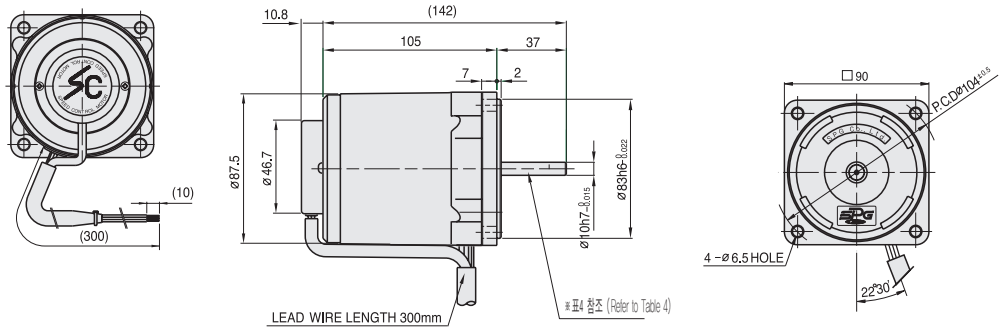
✚ GEARED MOTOR

※MOTOR MODEL : S9R40G□□-S12, S9R40G□□-S24
※HEAD MODEL : S9□B3□~S9□B200□□



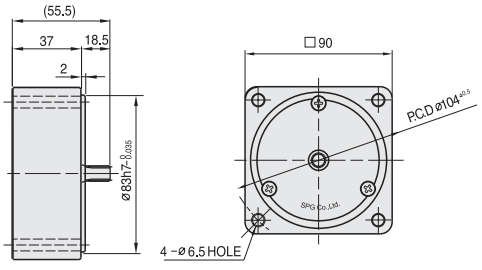
✚ MOTOR

• MOTOR MODEL : S9R40□□□-S12, S9R40□□□-S24

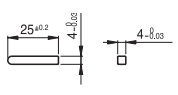
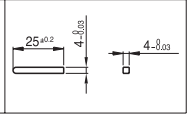


✚ INTER-DECIMAL GEAR HEAD

• MODEL : S9GX10B(H,L)



✚ KEY SPEC

GEAR HEAD	MOTOR
	

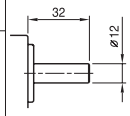
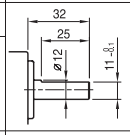
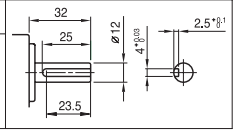
✚ ※42(60) - (표1 (Table1))

GEAR RATIO	SIZE(mm)
S9□B3□ ~ S9□B18□	42
S9□B20□ ~ S9□B200□	60

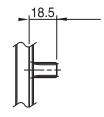
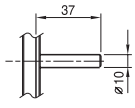
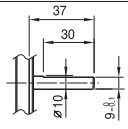
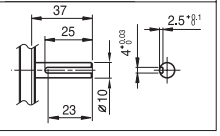
✚ WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		2.48
DECIMAL GEAR HEAD		0.60
GEAR HEAD	S9□B3□□ ~S9□B18□□	0.73
	S9□B20□□ ~S9□B40□□	1.03
	S9□B50□□ ~S9□B200□□	1.13

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SB3□ ~S9SB200□	
D-CUT TYPE S9DB3□ ~S9DB200□	
KEY TYPE S9KB3□ ~S9KB200□	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9R40G□□-S12 S9R40G□□-S24	
STRAIGHT TYPE S9R40S□□-S12 S9R40S□□-S24	
D-CUT TYPE S9R40D□□-S12 S9R40D□□-S24	
KEY TYPE S9R40K□-S12 S9R40K□-S24	

SPEED CONTROL ELECTROMAGNETIC BRAKE MOTOR (E · S MOTOR)

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SPEED CONTROL ELECTROMAGNETIC BRAKE MOTOR 15W(□70㎜) 281

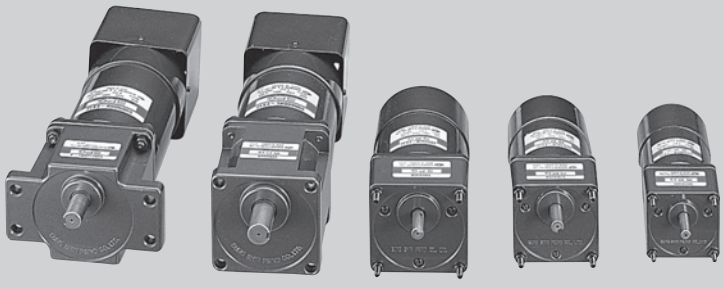
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6W

E · S MOTOR □60㎜ LEAD WIRE TYPE

SPECIFICATION OF SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
60	S6R06GA-ES12 S6R06GA-ES12CE	SRA01 SRA01CE	4	6	1Ø 110	60	30min.	90-1700	0.62	0.062	0.45	0.045	0.55	0.055	3.0
	S6R06GB-ES12 S6R06GB-ES12CE	SRB01 SRB01CE	4	6	1Ø 220	60	30min.	90-1700	0.62	0.062	0.45	0.045	0.55	0.055	0.8
	S6R06GC-ES12 S6R06GC-ES12CE	SRC01 SRC01CE	4	6	1Ø 100	50	30min.	90-1400	0.56	0.056	0.38	0.038	0.50	0.050	3.0
						60		90-1700							
	S6R06GD-ES12 S6R06GD-ES12CE	SRD01 SRD01CE	4	6	1Ø 200	50	30min.	90-1400	0.55	0.055	0.38	0.038	0.50	0.050	0.8
						60		90-1700							
	S6R06GX-ES12 S6R06GX-ES12CE	SRX01 SRX01CE	4	6	1Ø 220	50	30min.	90-1400	0.47	0.047	0.38	0.038	0.45	0.045	0.7
					1Ø 240				0.52	0.052	0.38	0.038	0.52	0.052	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 CE가 명기된 SR TYPE CONTROLLER MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (SR type controller model with "CE" appeared at the end of motor model name indicates that the product acquired CE MARK certification.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

SPECIFICATION OF SOCKET SS TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
60	S6R06GA-ES24 S6R06GA-ES24CE	SSA01-SRSS SSA03-SRSS	4	6	1Ø 110	60	30min.	90-1700	0.62	0.062	0.45	0.045	0.55	0.055	3.0
	S6R06GB-ES24 S6R06GB-ES24CE	SSB01-SRSS SSB03-SRSS	4	6	1Ø 220	60	30min.	90-1700	0.62	0.062	0.45	0.045	0.55	0.055	0.8
	S6R06GC-ES24 S6R06GC-ES24CE	SSC01-SRSS SSC03-SRSS	4	6	1Ø 100	50	30min.	90-1400	0.56	0.056	0.38	0.038	0.50	0.050	3.0
						60		90-1700							
	S6R06GD-ES24 S6R06GD-ES24CE	SSD01-SRSS SSD03-SRSS	4	6	1Ø 200	50	30min.	90-1400	0.55	0.055	0.38	0.038	0.50	0.050	0.8
						60		90-1700							
	S6R06GX-ES24 S6R06GX-ES24CE	SSX01-SRSS SSX03-SRSS	4	6	1Ø 220	50	30min.	90-1400	0.47	0.047	0.38	0.038	0.45	0.045	0.7
					1Ø 240				0.52	0.052	0.38	0.038	0.52	0.052	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

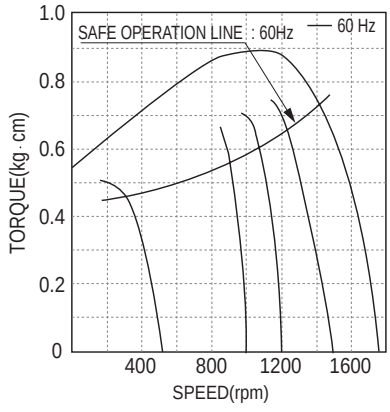
50Hz

GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
MODEL	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5	6
S6DA□B	kg-cm	1.3	1.5	2.1	2.6	3.2	3.9	4.3	5.4	6.4	7.7	7.7	9.7	11.6	13.9	15.5	17.5	21.0	26.2	30.0	30.0	30.0	30.0	30.0	30.0	30.0
	N·m	0.127	0.147	0.206	0.255	0.314	0.382	0.421	0.529	0.627	0.755	0.755	0.951	1.137	1.362	1.519	1.715	2.058	2.568	2.942	2.942	2.942	2.942	2.942	2.942	2.942

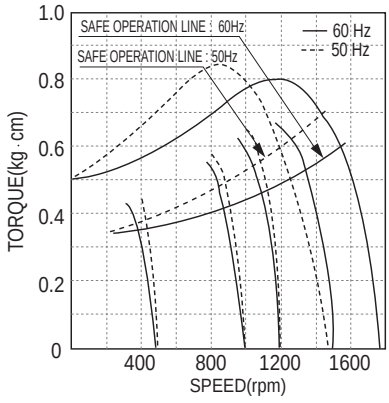
60Hz

GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
MODEL	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9	7.2
S6DA□B	kg.-cm	1.0	1.3	1.7	2.1	2.6	3.1	3.5	4.4	5.2	6.3	6.3	7.8	9.4	11.3	12.6	14.2	17.0	21.3	25.5	28.4	30.0	30.0	30.0	30.0	30.0
	N·m	0.098	0.127	0.167	0.206	0.255	0.304	0.343	0.431	0.510	0.617	0.617	0.764	0.921	1.107	1.235	1.392	1.666	2.087	2.499	2.783	2.942	2.942	2.942	2.942	2.942

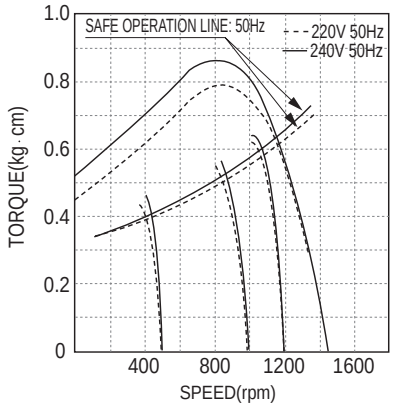
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 30㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 30 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)



▲ S6R06GA-ES12 S6R06GA-ES24
S6R06GA-ES12CE S6R06GA-ES24CE
S6R06GB-ES12 S6R06GB-ES24
S6R06GB-ES12CE S6R06GB-ES24



▲ S6R06GC-ES12 S6R06GC-ES24
S6R06GC-ES12CE S6R06GC-ES24CE
S6R06GD-ES12 S6R06GD-ES24
S6R06GD-ES12CE S6R06GD-ES24CE

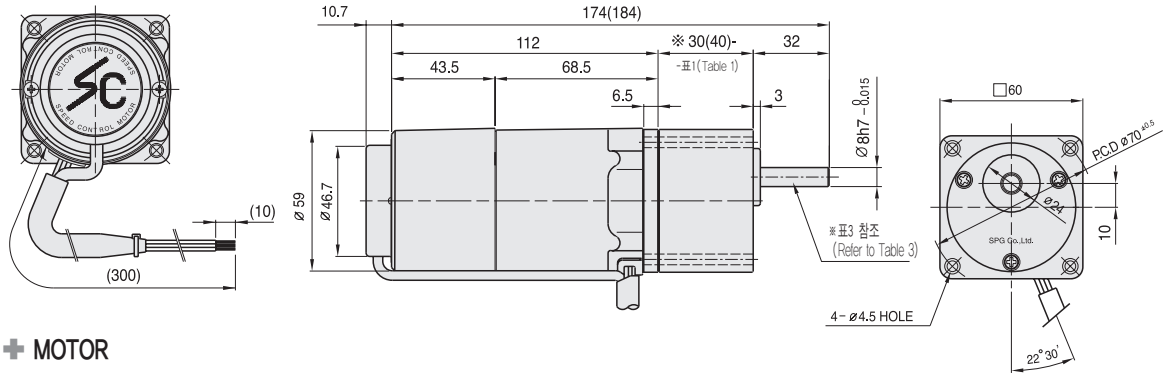


▲ S6R06GX-ES12 S6R06GX-ES24
S6R06GX-ES12CE S6R06GX-ES24CE

DIMENSIONS

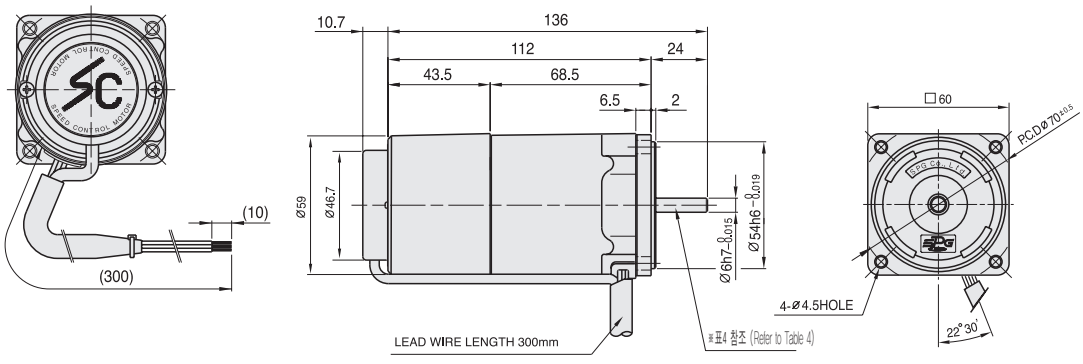
GEARED MOTOR

※MOTOR MODEL : S6R06G□-ES12, S6R06G□-ES24
※HEAD MODEL : S6□A3□~S6□A250□



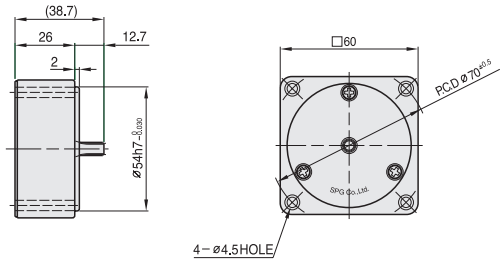
MOTOR

※MOTOR MODEL : S6R06□□-ES12, S6R06□□-ES24

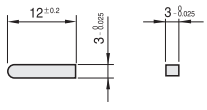


INTER-DECIMAL GEAR HEAD

※MODEL : S6GX10B



KEY SPEC

GEAR HEAD


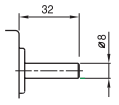
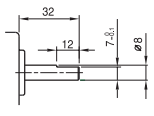
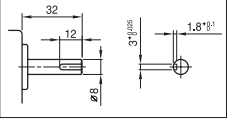
※30(40) - (표1 (Table1))

GEAR RATIO	SIZE(㎜)
S6□A3□ ~ S6□A18□	30
S6□A20□ ~ S6□A250□	40

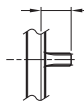
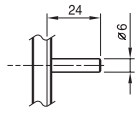
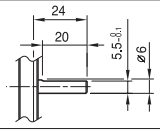
WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		1.00
DECIMAL GEAR HEAD		0.18
GEAR HEAD	S6□A3□ ~S6□A18□	0.24
	S6□A20□ ~S6□A40□	0.30
	S6□A50□ ~S6□A250□	0.33

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S6SA3□ ~S6SA250□	
D-CUT TYPE S6DA3□ ~S6DA250□	
KEY TYPE S6KA3□ ~S6KA250□	

MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S6R06G□-ES12 S6R06G□-ES24	
STRAIGHT TYPE S6R06S□-ES12 S6R06S□-ES24	
D-CUT TYPE S6R60D□-ES12 S6R60D□-ES24	



15W

E · S MOTOR □70㎜ LEAD WIRE TYPE

SPECIFICATION OF SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)			(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
70	S7R15GA-ES12 S7R15GA-ES12(TP) S7R15GA-ES12CE	SRA02 SRA02CE	4	15	1Ø 110	60	30min.	90-1700	1.40	0.140	0.70	0.070	1.30	0.130	6.0
	S7R15GB-ES12 S7R15GB-ES12(TP) S7R15GB-ES12CE	SRB02 SRB02CE	4	15	1Ø 220	60	30min.	90-1700	1.40	0.140	0.70	0.070	1.30	0.130	1.5
	S7R15GC-ES12 S7R15GC-ES12(TP) S7R15GC-ES12CE	SRC02 SRC02CE	4	15	1Ø 100	50	30min.	90-1400	1.10	0.110	0.60	0.060	1.00	0.100	6.0
						60		90-1700	0.90	0.090					
	S7R15GD-ES12 S7R15GD-ES12(TP) S7R15GD-ES12CE	SRD02 SRD02CE	4	15	1Ø 200	50	30min.	90-1400	1.10	0.110	0.60	0.060	1.00	0.100	1.5
						60		90-1700	0.90	0.090					
	S7R15GX-ES12 S7R15GX-ES12CE	SRX02 SRX02CE	4	15	1Ø 220	50	30min.	90-1400	1.00	0.100	0.55	0.055	0.90	0.090	1.2
					1Ø 240				1.15	0.115	0.60	0.060	1.00	0.100	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 CE가 명기된 SR TYPE CONTROLLER MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (SR type controller model with "CE" appeared at the end of motor model name indicates that the product acquired CE MARK certification.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S7R15GX-ES12, S7R15GX-ES12CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S7R15GX-ES12, S7R15GX-ES12CE is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

SPECIFICATION OF SS TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
70	S7R15GA-ES24 S7R15GA-ES24(TP) S7R15GA-ES24CE	SSA02-SRSS SSA03-SRSS	4	15	1Ø 110	60	30min.	90-1700	1.40	0.140	0.70	0.070	1.30	0.130	6.0
	S7R15GB-ES24 S7R15GB-ES24(TP) S7R15GB-ES24CE	SSB02-SRSS SSB03-SRSS	4	15	1Ø 220	60	30min.	90-1700	1.40	0.140	0.70	0.070	1.30	0.130	1.5
	S7R15GC-ES24 S7R15GC-ES24(TP) S7R15GC-ES24CE	SSC02-SRSS SSC03-SRSS	4	15	1Ø 100	50	30min.	90-1400	1.10	0.110	0.60	0.060	1.00	0.100	6.0
						60		90-1700	0.90	0.090					
	S7R15GD-ES24 S7R15GD-ES24(TP) S7R15GD-ES24CE	SSD02-SRSS SSD03-SRSS	4	15	1Ø 200	50	30min.	90-1400	1.10	0.110	0.60	0.060	1.00	0.100	1.5
						60		90-1700	0.90	0.090					
	S7R15GX-ES24 S7R15GX-ES24CE	SSX02-SRSS SSX03-SRSS	4	15	1Ø 220	50	30min.	90-1400	1.00	0.100	0.55	0.055	0.90	0.090	1.2
					1Ø 240				1.15	0.115	0.60	0.060	1.00	0.100	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S7R15GX-ES24, S7R15GX-ES24CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S7R15GX-ES24, S7R15GX-ES24CE is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

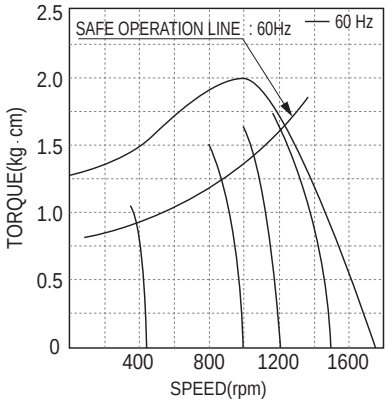
50Hz

MODEL	GEAR RATIO	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S7KA□B	kg-cm	3.2	3.9	5.4	6.5	8.1	9.7	10.8	13.5	16.2	19.4	19.4	24.2	29.1	34.9	38.8	43.6	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	N·m	0.314	0.382	0.530	0.637	0.794	0.951	1.059	1.324	1.587	1.902	1.902	2.373	2.854	3.423	3.805	4.276	4.900	4.900	4.900	4.900	4.900	4.900	4.900	4.900

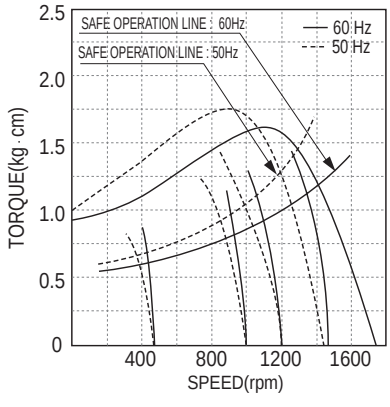
60Hz

MODEL	GEAR RATIO	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S7KA□B	kg-cm	3.0	3.6	5.1	6.1	7.6	9.1	10.1	12.7	15.2	18.2	18.2	22.8	27.3	32.8	36.5	41.0	49.2	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	N·m	0.294	0.353	0.500	0.598	0.745	0.892	0.990	1.245	1.491	1.785	1.785	2.236	2.677	3.217	3.579	4.021	4.825	4.900	4.900	4.900	4.900	4.900	4.900	4.900

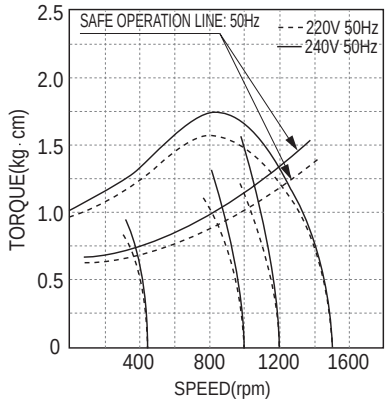
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 40㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 40 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)



▲ S7R15GA-ES12 S7R15GA-ES24
S7R15GA-ES12(TP) S7R15GA-ES24(TP)
S7R15GA-ES12CE S7R15GA-ES24CE
S7R15GB-ES12 S7R15GB-ES24
S7R15GB-ES12(TP) S7R15GB-ES24(TP)
S7R15GB-ES12CE S7R15GB-ES24CE



▲ S7R15GC-ES12 S7R15GC-ES24
S7R15GC-ES12(TP) S7R15GC-ES24(TP)
S7R15GC-ES12CE S7R15GC-ES24CE
S7R15GD-ES12 S7R15GD-ES24
S7R15GD-ES12(TP) S7R15GD-ES24(TP)
S7R15GD-ES12CE S7R15GD-ES24CE

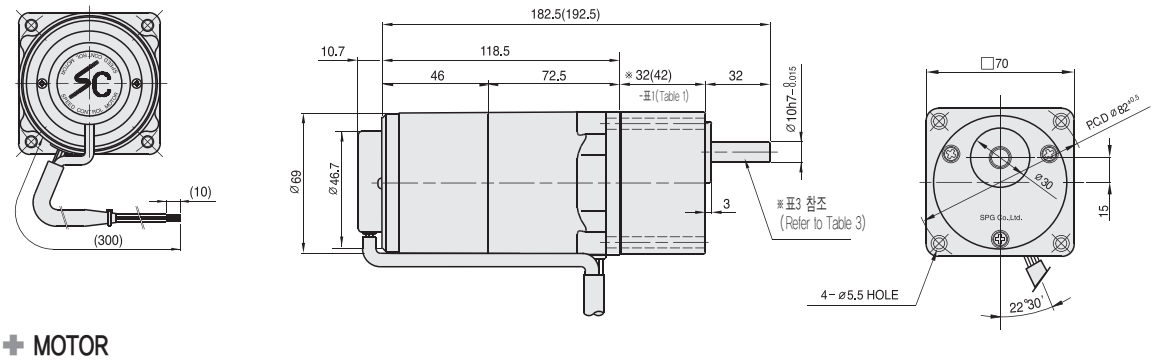


▲ S7R15GX-ES12 S7R15GX-ES24
S7R15GX-ES12CE S7R15GX-ES24CE

DIMENSIONS

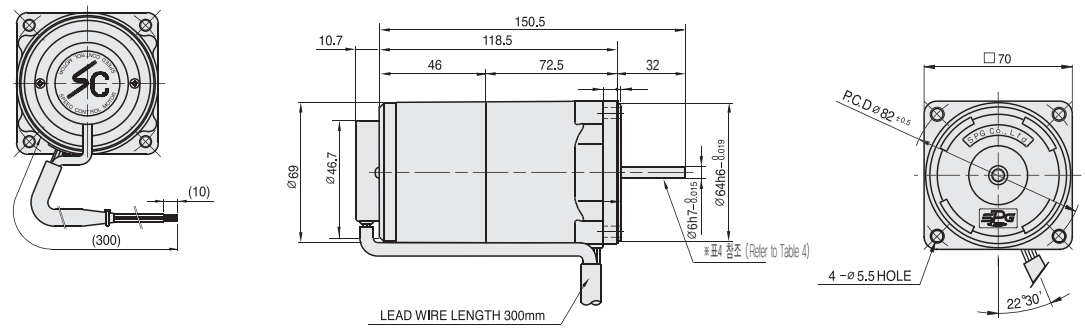
✚ GEARED MOTOR

※MOTOR MODEL : S7R15G□-ES12, S7R15G□-ES24
※HEAD MODEL : S7□A3□~S7□A200□



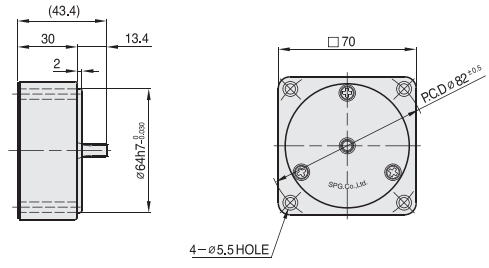
✚ MOTOR

※MOTOR MODEL : S7R15□□-ES12, S7R15□□-ES24



✚ INTER-DECIMAL GEAR HEAD

※ MODEL : S7GX10B



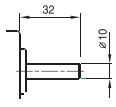
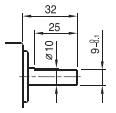
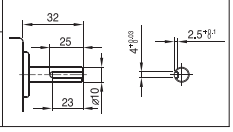
✚ ※32(42) - (표1 (Table1))

GEAR RATIO	SIZE(mm)
S7□A3□ ~ S7□A18□	32
S7□A20□ ~ S7□A200□	42

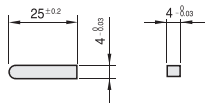
✚ WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		1.04
DECIMAL GEAR HEAD		0.32
GEAR HEAD	S7□A3□ ~S7□A18□	0.38
	S7□A20□ ~S7□A40□	0.47
	S7□A50□ ~S7□A200□	0.52

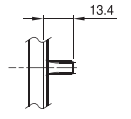
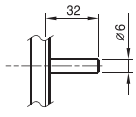
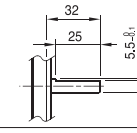
✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

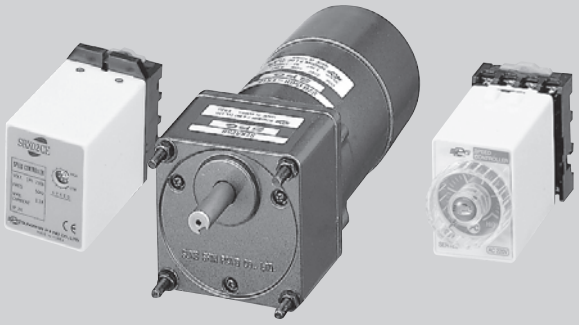
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE	
S7SA3□ ~S7SA200□	
D-CUT TYPE	
S7DA3□ ~S7DA200□	
KEY TYPE	
S7KA3□ ~S7KA200□	

✚ KEY SPEC

GEAR HEAD


✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE	
S7R15G□-ES12 S7R15G□-ES24	
STRAIGHT TYPE	
S7R15S□-ES12 S7R15S□-ES24	
D-CUT TYPE	
S7R15D□-ES12 S7R15D□-ES24	



15W

E · S MOTOR □80㎜ LEAD WIRE TYPE

SPECIFICATION OF SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
80	S8R15GA-ES12 S8R15GA-ES12(TP) S8R15GA-ES12CE	SRA02 SRA02CE	4	15	1Ø 110	60	30min.	90-1700	1.45	0.145	0.60	0.060	0.90	0.090	6.0
	S8R15GB-ES12 S8R15GB-ES12(TP) S8R15GB-ES12CE	SRB02 SRB02CE	4	15	1Ø 220	60	30min.	90-1700	1.45	0.145	0.55	0.055	0.90	0.090	1.5
	S8R15GC-ES12 S8R15GC-ES12(TP) S8R15GC-ES12CE	SRC02 SRC02CE	4	15	1Ø 100	50	30min.	90-1400	1.32	0.132	0.50	0.050	0.75	0.075	6.0
						60		90-1700	1.15	0.115					
	S8R15GD-ES12 S8R15GD-ES12(TP) S8R15GD-ES12CE	SRD02 SRD02CE	4	15	1Ø 200	50	30min.	90-1400	1.32	0.132	0.50	0.050	0.75	0.075	1.5
						60		90-1700	1.15	0.115					
	S8R15GX-ES12	SRX02 SRX02CE	4	15	1Ø 220	50	30min.	90-1400	1.35	0.135	0.50	0.050	0.75	0.075	1.2
	S8R15GX-ES12CE				1Ø 240				1.44	0.144	0.50	0.050	0.86	0.086	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 CE가 명기된 SR TYPE CONTROLLER MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (SR type controller model with "CE" appeared at the end of motor model name indicates that the product acquired CE MARK certification.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8R15GX-ES12, S8R15GX-ES12CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S8R15GX-ES12, S8R15GX-ES12CE is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

SPECIFICATION OF SS TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
80	S8R15GA-ES24 S8R15GA-ES24(TP) S8R15GA-ES24CE	SSA02-SRSS SSA03-SRSS	4	15	1Ø 110	60	30min.	90-1700	1.45	0.145	0.60	0.060	0.90	0.090	6.0
	S8R15GB-ES24 S8R15GB-ES24(TP) S8R15GB-ES24CE	SSB02-SRSS SSB03-SRSS	4	15	1Ø 220	60	30min.	90-1700	1.45	0.145	0.55	0.055	0.90	0.090	1.5
	S8R15GC-ES24 S8R15GC-ES24(TP) S8R15GC-ES24CE	SSC02-SRSS SSC03-SRSS	4	15	1Ø 100	50	30min.	90-1400	1.32	0.132	0.50	0.050	0.75	0.075	6.0
						60		90-1700	1.15	0.115					
	S8R15GD-ES24 S8R15GD-ES24(TP) S8R15GD-ES24CE	SSD02-SRSS SSD03-SRSS	4	15	1Ø 200	50	30min.	90-1400	1.32	0.132	0.50	0.050	0.75	0.075	1.5
						60		90-1700	1.15	0.115					
	S8R15GX-ES24	SSX02-SRSS SSX03-SRSS	4	15	1Ø 220	50	30min.	90-1400	1.35	0.135	0.50	0.050	0.75	0.075	1.2
	S8R15GX-ES24CE				1Ø 240				1.44	0.144	0.50	0.050	0.86	0.086	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8R15GX-ES24, S8R15GX-ES24CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S8R15GX-ES24, S8R15GX-ES24CE is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

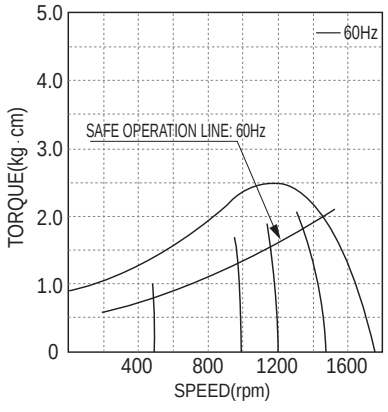
50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S8KA□B	kg-cm	3.4	4.1	5.7	6.8	8.5	10.2	11.3	14.2	17.0	20.4	20.4	25.6	30.7	36.8	40.9	46.2	55.4	69.2	80	80	80	80	80	80
	N·m	0.333	0.402	0.559	0.666	0.833	1.000	1.107	1.392	1.666	1.999	1.999	2.509	3.009	3.606	4.008	4.530	5.433	6.786	7.840	7.840	7.840	7.840	7.840	7.840

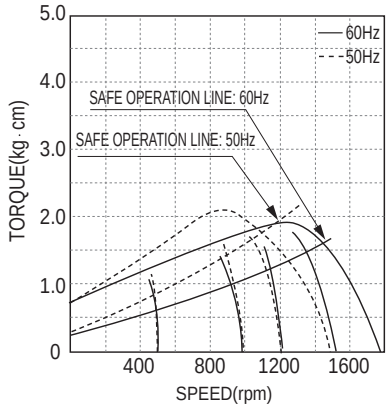
60Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S8KA□B	kg-cm	2.9	3.5	4.9	5.8	7.3	8.7	9.7	12.2	14.6	17.5	17.5	21.9	26.3	31.5	35.0	39.6	47.5	59.4	71.3	79.2	80	80	80	80
	N·m	0.284	0.343	0.481	0.568	0.715	0.853	0.951	1.196	1.432	1.715	1.715	2.146	2.577	3.087	3.430	3.881	4.658	5.825	6.992	7.767	7.840	7.840	7.840	7.840

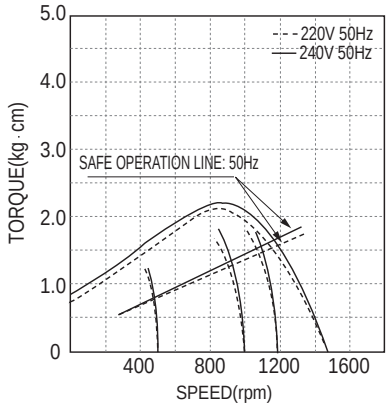
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 80kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 80 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)



▲ S8R15GA-ES12 S8R15GA-ES24
S8R15GA-ES12(TP) S8R15GA-ES24(TP)
S8R15GA-ES12CE S8R15GA-ES24CE
S8R15GB-ES12 S8R15GB-ES24
S8R15GB-ES12(TP) S8R15GB-ES24(TP)
S8R15GB-ES12CE S8R15GB-ES24CE



▲ S8R15GC-ES12 S8R15GC-ES24
S8R15GC-ES12(TP) S8R15GC-ES24(TP)
S8R15GC-ES12CE S8R15GC-ES24CE
S8R15GD-ES12 S8R15GD-ES24
S8R15GD-ES12(TP) S8R15GD-ES24(TP)
S8R15GD-ES12CE S8R15GD-ES24CE



▲ S8R15GX-ES12 S8R15GX-ES24
S8R15GX-ES12CE S8R15GX-ES24CE



25W

E · S MOTOR □80㎜ LEAD WIRE TYPE

SPECIFICATION OF SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
80	S8R25GA-ES12 S8R25GA-ES12(TP) S8R25GA-ES12CE	SRA02 SRA02CE	4	25	1Ø 110	60	30min.	90-1700	2.45	0.245	0.90	0.090	1.90	0.190	10.0
	S8R25GB-ES12 S8R25GB-ES12(TP) S8R25GB-ES12CE	SRB02 SRB02CE	4	25	1Ø 220	60	30min.	90-1700	2.45	0.245	0.90	0.090	1.90	0.190	2.5
	S8R25GC-ES12 S8R25GC-ES12(TP) S8R25GC-ES12CE	SRC02 SRC02CE	4	25	1Ø 100	50	30min.	90-1400	2.25	0.225	0.75	0.075	1.75	0.175	10.0
						60		90-1700	2.00	0.200					
	S8R25GD-ES12 S8R25GD-ES12(TP) S8R25GD-ES12CE	SRD02 SRD02CE	4	25	1Ø 200	50	30min.	90-1400	2.25	0.225	0.75	0.075	1.75	0.175	2.5
						60		90-1700	2.00	0.200					
	S8R25GX-ES12 S8R25GX-ES12CE	SRX02 SRX02CE	4	25	1Ø 220	50	30min.	90-1400	2.30	0.230	0.75	0.075	1.75	0.175	2.0
					1Ø 240				2.45	0.245	0.75	0.075	1.860	0.186	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 CE가 명기된 SR TYPE CONTROLLER MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (SR type controller model with "CE" appeared at the end of motor model name indicates that the product acquired CE MARK certification.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8R25GX-ES12, S8R25GX-ES12CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S8R25GX-ES12, S8R25GX-ES12CE is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

SPECIFICATION OF SS TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	kg-cm)	(N-m)	kg-cm)	(N-m)	kg-cm)	(N-m)	(μF)
80	S8R25GA-ES24 S8R25GA-ES24(TP) S8R25GA-ES24CE	SSA02-SRSS SSA03-SRSS	4	25	1Ø 110	60	30min.	90-1700	2.45	0.245	0.90	0.090	1.90	0.190	10.0
	S8R25GB-ES24 S8R25GB-ES24(TP) S8R25GB-ES24CE	SSB02-SRSS SSB03-SRSS	4	25	1Ø 220	60	30min.	90-1700	2.45	0.245	0.90	0.090	1.90	0.190	2.5
	S8R25GC-ES24 S8R25GC-ES24(TP) S8R25GC-ES24CE	SSC02-SRSS SSC03-SRSS	4	25	1Ø 100	50	30min.	90-1400	2.25	0.225	0.75	0.075	1.75	0.175	10.0
						60		90-1700	2.00	0.200					
	S8R25GD-ES24 S8R25GD-ES24(TP) S8R25GD-ES24CE	SSD02-SRSS SSD03-SRSS	4	25	1Ø 200	50	30min.	90-1400	2.25	0.225	0.75	0.075	1.75	0.175	2.5
						60		90-1700	2.00	0.200					
	S8R25GX-ES24 S8R25GX-ES24CE	SSX02-SRSS SSX03-SRSS	4	25	1Ø 220	50	30min.	90-1400	2.30	0.230	0.75	0.075	1.75	0.175	2.0
					1Ø 240				2.45	0.245	0.75	0.075	1.860	0.186	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S8R25GX-ES24, S8R25GX-ES24CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S8R25GX-ES24, S8R25GX-ES24CE is thermally protected type with TP mounted.)

❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)

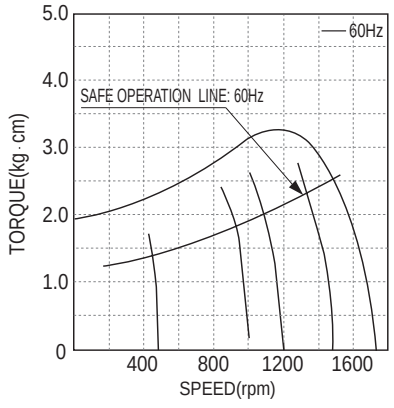
50Hz

GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S8KA□B	kg-cm	5.3	6.4	8.9	10.7	13.4	16.0	17.8	22.3	26.7	32.1	32.1	40.2	48.2	57.8	64.2	72.6	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	N·m	0.519	0.627	0.872	1.049	1.313	1.568	1.744	2.185	2.617	3.146	3.146	3.940	4.724	5.664	6.292	7.115	7.840	7.840	7.840	7.840	7.840	7.840	7.840	7.840

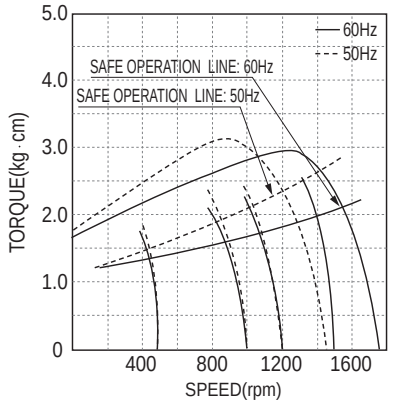
60Hz

GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S8KA□B	kg-cm	4.4	5.2	7.3	8.7	10.9	13.1	14.6	18.2	21.9	26.2	26.3	32.9	39.4	47.3	52.6	59.4	71.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0
	N·m	0.431	0.510	0.715	0.853	1.068	1.284	1.431	1.784	2.146	2.568	2.577	3.224	3.861	4.635	5.155	5.821	6.987	7.840	7.840	7.840	7.840	7.840	7.840	7.840

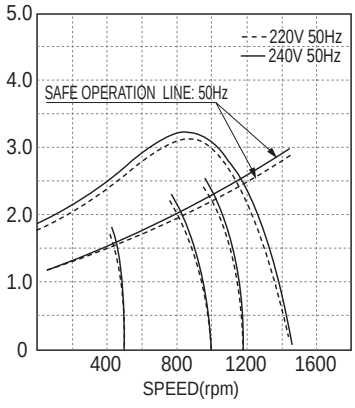
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 80kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 80 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L" or "H" type does not apply to motors under 40W.)



▲ S8R25GA-ES12 S8R25GA-ES24
S8R25GA-ES12(TP) S8R25GA-ES24(TP)
S8R25GA-ES12CE S8R25GA-ES24CE
S8R25GB-ES12 S8R25GB-ES24
S8R25GB-ES12(TP) S8R25GB-ES24(TP)
S8R25GB-ES12CE S8R25GB-ES24CE



▲ S8R25GC-ES12 S8R25GC-ES24
S8R25GC-ES12(TP) S8R25GC-ES24(TP)
S8R25GC-ES12CE S8R25GC-ES24CE
S8R25GD-ES12 S8R25GD-ES24
S8R25GD-ES12(TP) S8R25GD-ES24(TP)
S8R25GD-ES12CE S8R25GD-ES24CE

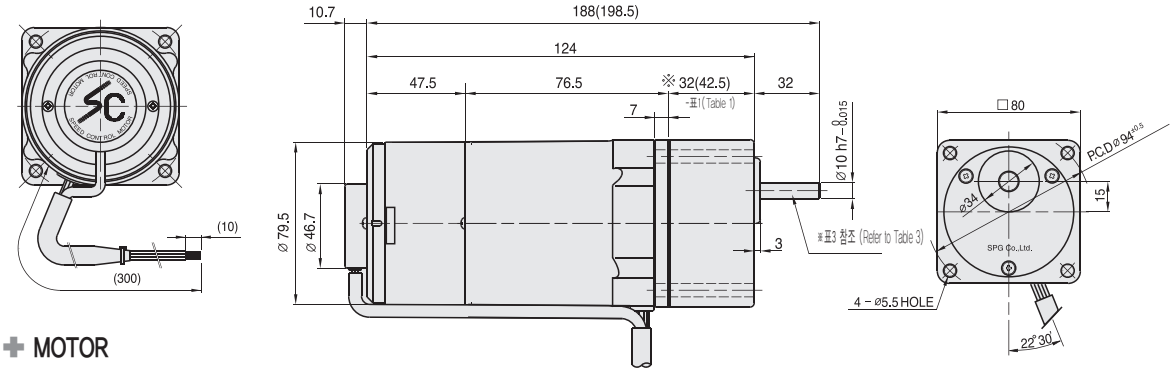


▲ S8R25GX-ES12 S8R25GX-ES24
S8R25GX-ES12CE S8R25GX-ES24CE

DIMENSIONS

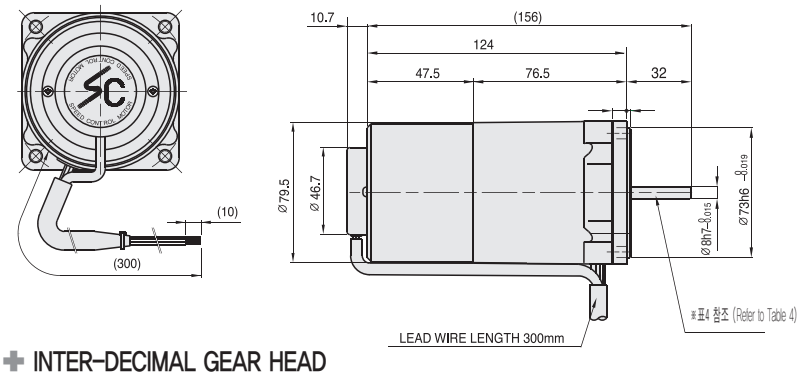
✚ GEARED MOTOR

※MOTOR MODEL : S8R(15,25)G□-ES12, S8R(15,25)G□-ES24
※HEAD MODEL : S8□A3□~S8□A200□



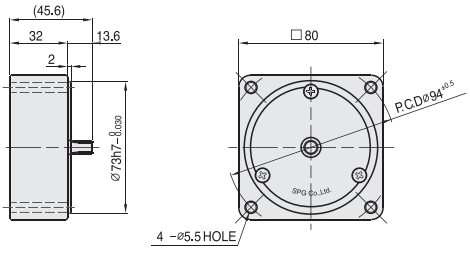
✚ MOTOR

※MOTOR MODEL : S8R(15,25)□□-ES12, S8R(15,25)□□-ES24



✚ INTER-DECIMAL GEAR HEAD

※MODEL : S8GX10B



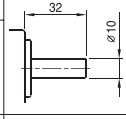
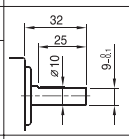
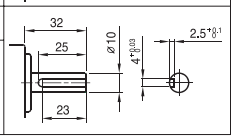
✚ ※32(42.5) - (표1 (Table1))

GEAR RATIO	SIZE(㎜)
S8□A3□ ~ S8□A18□	32
S8□A20□ ~ S8□A200□	42.5

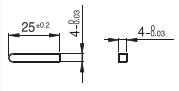
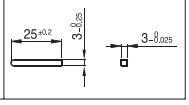
✚ WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
15W MOTOR		2.00
25W MOTOR		2.00
DECIMAL GEAR HEAD		0.43
GEAR HEAD	S8□A3□ ~S8□A18□	0.43
	S8□A20□ ~S8□A40□	0.57
	S8□A50□ ~S8□A200□	0.61

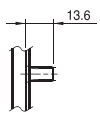
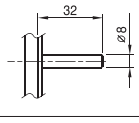
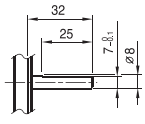
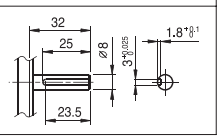
✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S8SA3□ ~S8SA200□	
D-CUT TYPE S8DA3□ ~S8DA200□	
KEY TYPE S8KA3□ ~S8KA200□	

✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S8R15G□-ES12 S8R25G□-ES12 S8R15G□-ES24 S8R25G□-ES24	
STRAIGHT TYPE S8R15S□-ES12 S8R25S□-ES12 S8R15S□-ES24 S8R25S□-ES24	
D-CUT TYPE S8R15D□-ES12 S8R25D□-ES12 S8R15D□-ES24 S8R25D□-ES24	
KEY TYPE S8R15K□-ES12 S8R15K□-ES24 S8R15K□-ES12 S8R15K□-ES24	



40W

E · S MOTOR □90㎜ LEAD WIRE TYPE

SPECIFICATION SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
90	S9R40GA( )-ES12 S9R40GA( )-ES12(TP) S9R40GA( )-ES12CE	SRA02 SRA02CE	4	40	1Ø 110	60	30min.	90-1700	3.00	0.300	1.20	0.120	3.75	0.375	15.0
	S9R40GB( )-ES12 S9R40GB( )-ES12(TP) S9R40GB( )-ES12CE	SRB02 SRB02CE	4	40	1Ø 220	60	30min.	90-1700	3.00	0.300	1.20	0.120	3.75	0.375	4.0
	S9R40GC( )-ES12 S9R40GC( )-ES12(TP) S9R40GC( )-ES12CE	SRC02 SRC02CE	4	40	1Ø 100	50	30min.	90-1400	3.10	0.310	1.00	0.100	3.20	0.320	15.0
						60		90-1700	2.20	0.220					
	S9R40GD( )-ES12 S9R40GD( )-ES12(TP) S9R40GD( )-ES12CE	SRD02 SRD02CE	4	40	1Ø 200	50	30min.	90-1400	3.10	0.310	1.00	0.100	3.20	0.320	4.0
						60		90-1700	2.20	0.220					
	S9R40GX( )-ES12 S9R40GX( )-ES12CE	SRX02 SRX02CE	4	40	1Ø 220	50	30min.	90-1400	2.50	0.250	1.20	0.120	3.20	0.320	3.0
					1Ø 240				3.10	0.310	1.20	0.120	3.50	0.321	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 CE가 명기된 SR TYPE CONTROLLER MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (SR type controller model with "CE" appeared at the end of motor model name indicates that the product acquired CE MARK certification.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9R40GX-ES12, S9R40GX-ES12CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S9R40GX-ES12, S9R40GX-ES12CE is thermally protected type with TP mounted.)

❖ ()는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GRAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

SPECIFICATION OF SS TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
90	S9R40GA( )-ES24 S9R40GA( )-ES24(TP) S9R40GA( )-ES24CE	SSA02-SRSS SSA03-SRSS	4	40	1Ø 110	60	30min.	90-1700	3.00	0.300	1.20	0.120	3.75	0.375	15.0
	S9R40GB( )-ES24 S9R40GB( )-ES24(TP) S9R40GB( )-ES24CE	SSB02-SRSS SSB03-SRSS	4	40	1Ø 220	60	30min.	90-1700	3.00	0.300	1.20	0.120	3.75	0.375	4.0
	S9R40GC( )-ES24 S9R40GC( )-ES24(TP) S9R40GC( )-ES24CE	SSC02-SRSS SSC03-SRSS	4	40	1Ø 100	50	30min.	90-1400	3.10	0.310	1.00	0.100	3.20	0.320	15.0
						60		90-1700	2.20	0.220					
	S9R40GD( )-ES24 S9R40GD( )-ES24(TP) S9R40GD( )-ES24CE	SSD02-SRSS SSD03-SRSS	4	40	1Ø 200	50	30min.	90-1400	3.10	0.310	1.00	0.100	3.20	0.320	4.0
						60		90-1700	2.20	0.220					
	S9R40GX( )-ES24 S9R40GX( )-ES24CE	SSX02-SRSS SSX03-SRSS	4	40	1Ø 220	50	30min.	90-1400	2.50	0.250	1.20	0.120	3.20	0.320	3.0
					1Ø 240				3.10	0.310	1.20	0.120	3.50	0.321	

❖ 기종명 맨 끝자리에 CE가 명기된 MOTOR MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. (CE marked at the end of motor model name indicates that it is thermally protected type which has received CE.)

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9R40GX-ES24, S9R40GX-ES24CE는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S9R40GX-ES24, S9R40GX-ES24CE is thermally protected type with TP mounted.

❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GRAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

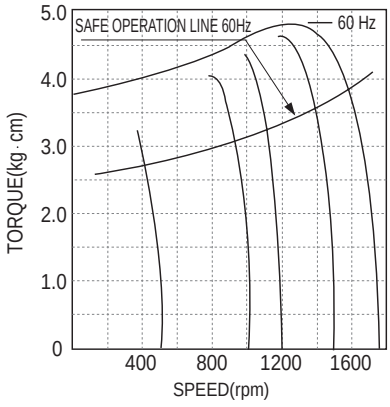
50Hz

MODEL	GEAR RATIO	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KB□B( )	kg-cm	8.3	9.9	13.8	16.5	20.7	24.8	27.5	34.4	41.3	49.6	49.6	62.1	74.5	89.4	99.3	100	100	100	100	100	100	100	100	100
	N·m	0.813	0.970	1.352	1.617	2.029	2.430	2.695	3.371	4.047	4.861	4.861	6.086	7.301	8.761	9.731	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800

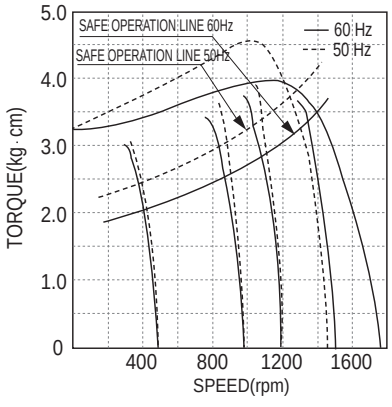
60Hz

MODEL	GEAR RATIO	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KB□B( )	kg-cm	6.8	8.2	11.3	13.6	17.0	20.4	22.7	28.4	34.0	40.8	40.9	51.1	61.3	73.6	81.8	100	100	100	100	100	100	100	100	9.800
	N·m	0.666	0.804	1.107	1.333	1.666	1.999	2.225	2.783	3.332	3.998	4.008	5.008	6.007	7.213	8.016	9.800	9.800	9.800	9.800	9.800	9.800	9.800	9.800	100

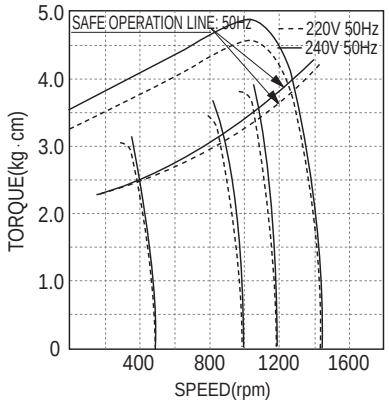
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 100㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 100 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)



▲ S9R40GA()-ES12 S9R40GA()-ES24
S9R40GA()-ES12(TP) S9R40GA()-ES24(TP)
S9R40GA()-ES12CE S9R40GA()-ES24CE
S9R40GB()-ES12 S9R40GB()-ES24
S9R40GB()-ES12(TP) S9R40GB()-ES24(TP)
S9R40GB()-ES12CE S9R40GB()-ES24CE



▲ S9R40GC()-ES12 S9R40GC()-ES24
S9R40GC()-ES12(TP) S9R40GC()-ES24(TP)
S9R40GC()-ES12CE S9R40GC()-ES24CE
S9R40GD()-ES12 S9R40GD()-ES24
S9R40GD()-ES12(TP) S9R40GD()-ES24(TP)
S9R40GD()-ES12CE S9R40GD()-ES24CE

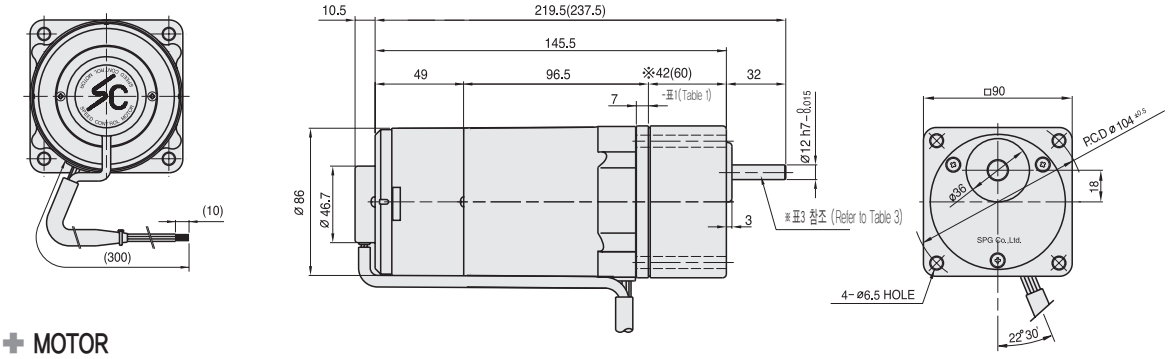


▲ S9R40GX()-ES12 S9R40GX()-ES24
S9R40GX()-ES12CE S9R40GX()-ES24CE

DIMENSIONS

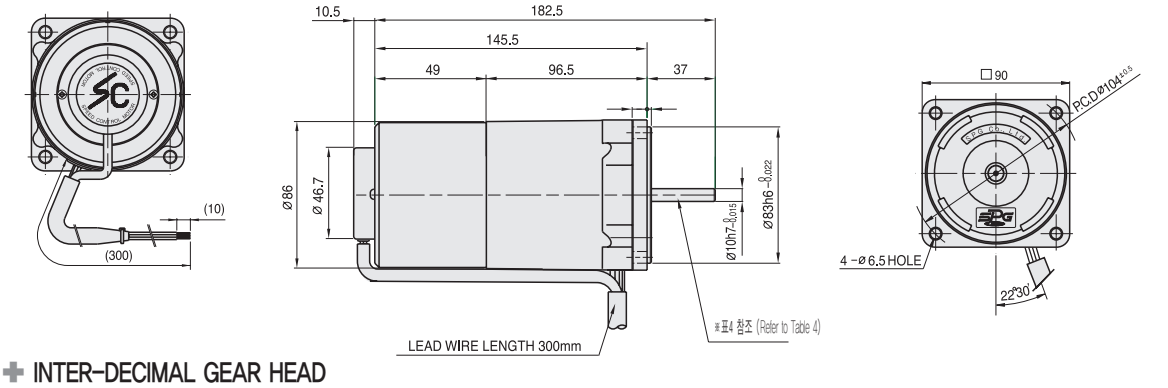
GEARED MOTOR

※MOTOR MODEL : S9R40G□□-ES12, S9R40G□□-ES24
※HEAD MODEL : S9□B3□~S9□B200□□



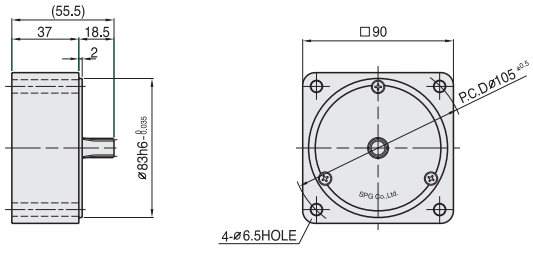
MOTOR

※MOTOR MODEL : S9R40□□□-ES12, S9R40□□□-ES24



INTER-DECIMAL GEAR HEAD

※MODEL : S9GX10B(H,L)



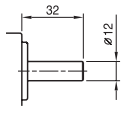
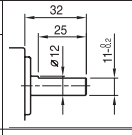
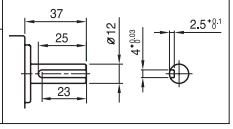
※42(60) - (표1 (Table1))

GEAR RATIO	SIZE(mm)
S9□B3□□ ~ S9□B18□□	42
S9□B20□□ ~ S9□B200□□	60

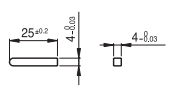
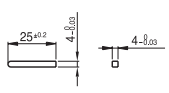
WEIGHT - (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		2.87
DECIMAL GEAR HEAD		0.60
GEAR HEAD	S9□B3□□ ~S9□B18□□	0.73
	S9□B20□□ ~S9□B40□□	1.03
	S9□B50□□ ~S9□B200□□	1.13

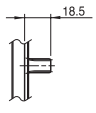
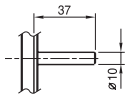
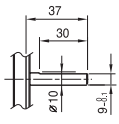
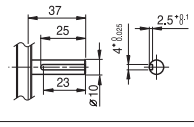
GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SB3□□ ~S9SB200□□	
D-CUT TYPE S9DB3□□ ~S9DB200□□	
KEY TYPE S9KB3□□ ~S9KB200□□	

KEY SPEC

GEAR HEAD	MOTOR
	

MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표4 (Table4))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9R40G□-ES12 S9R40G□-ES24	
STRAIGHT TYPE S9R40S□-ES12 S9R40S□-ES24	
D-CUT TYPE S9R40D□-ES12 S9R40D□-ES24	
KEY TYPE S9R40K□-ES12 S9R40K□-ES24	



60W

E · S MOTOR □90㎜ LEAD WIRE TYPE

SPECIFICATION OF SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
90	S9R60GA( )-ES12 S9R60GA( )-ES12CE	SRA02 SRA02CE	4	60	1Ø 110	60	30min.	90-1700	5.50	0.550	3.92	0.392	6.10	0.610	25.0
	S9R60GB( )-ES12 S9R60GB( )-ES12CE	SRB02 SRB02CE	4	60	1Ø 220	60	30min.	90-1700	5.50	0.550	3.92	0.392	6.10	0.610	6.0
	S9R60GC( )-ES12 S9R60GC( )-ES12CE	SRC02 SRC02CE	4	60	1Ø 100	50	30min.	90-1400	5.11	0.511	3.61	0.361	6.04	0.604	25.0
						60		90-1700	4.42	0.442					
	S9R60GD( )-ES12 S9R60GD( )-ES12CE	SRD02 SRD02CE	4	60	1Ø 200	50	30min.	90-1400	5.11	0.511	3.61	0.361	6.04	0.604	6.0
						60		90-1700	4.42	0.442					
	S9R60GX( )-ES12 S9R60GX( )-ES12CE	SRX02 SRX02CE	4	60	1Ø 220	50	30min.	90-1400	5.25	0.525	3.01	0.301	6.02	0.602	5.0
					1Ø 240				5.90	0.590	3.25	0.325	6.32	0.632	

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9R60GX-ES12는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted S9R60GX-ES12 is thermally protected type with TP mounted.)

❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KC□B( )	kg-cm	12.2	14.6	20.3	24.3	30.4	36.5	40.5	45.6	54.8	65.7	73.0	82.5	99.0	119	132	165	198	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.196	1.431	1.989	2.381	2.989	3.577	3.969	4.469	5.370	6.439	7.154	8.085	9.702	11.66	12.94	16.17	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60

60Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
MODEL	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KC□B( )	kg-cm	9.72	11.7	16.2	19.4	24.3	29.2	32.4	36.5	43.8	52.6	58.4	66.0	79.2	95.0	106	132	158	177	200	200	200	200	200	200
S9KC□B( )-S	N·m	0.953	1.147	1.588	1.901	2.381	2.862	3.175	3.577	4.292	5.155	5.723	6.468	7.762	9.310	10.39	12.94	15.48	17.35	19.60	19.60	19.60	19.60	19.60	19.60

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)

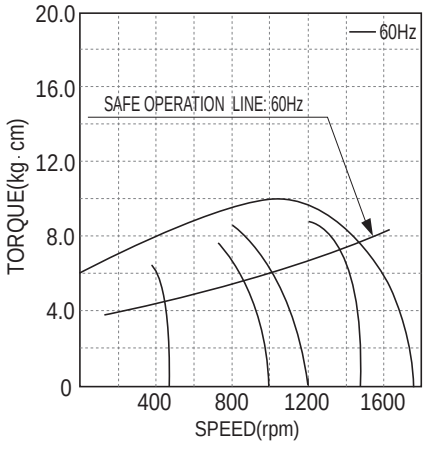
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible TORQUE of the assembled motor and gearhead.)

❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 200㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.)

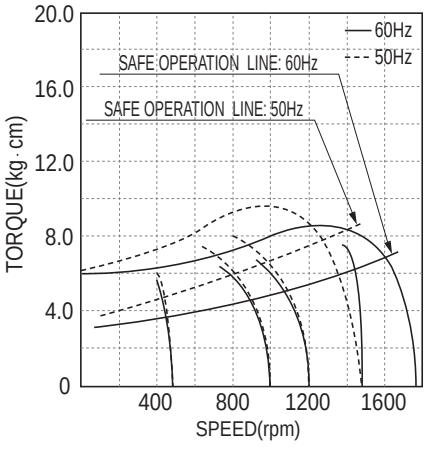
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)

❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)

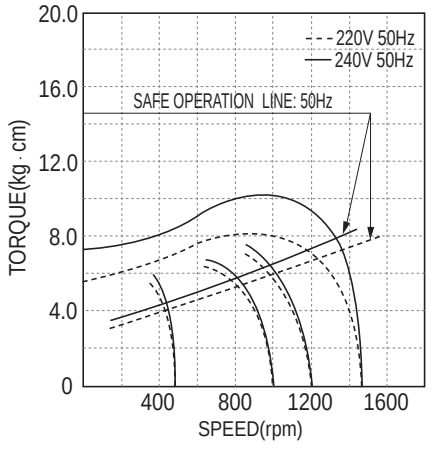
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)



▲ S9R60GA()-ES12 S9R60GB()-ES12
S9R60GA()-ES12(TP) S9R60GB()-ES12(TP)



▲ S9R60GC()-ES12 S9R60GD()-ES12
S9R60GC()-ES12(TP) S9R60GD()-ES12(TP)

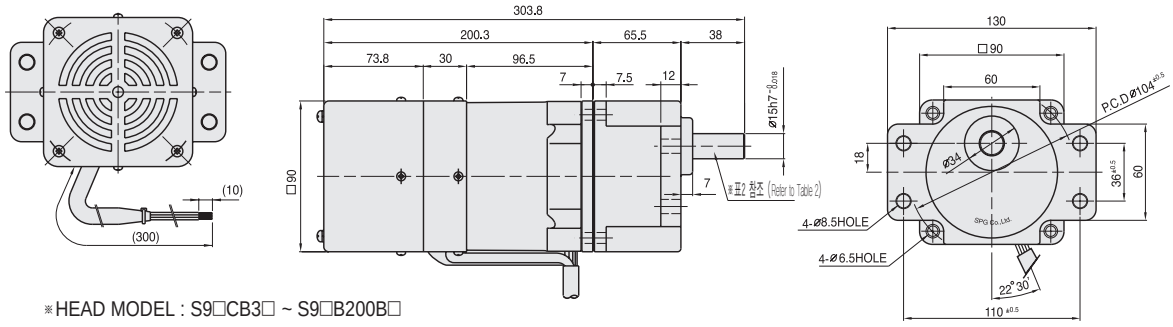


▲ S9R60GX()-ES12

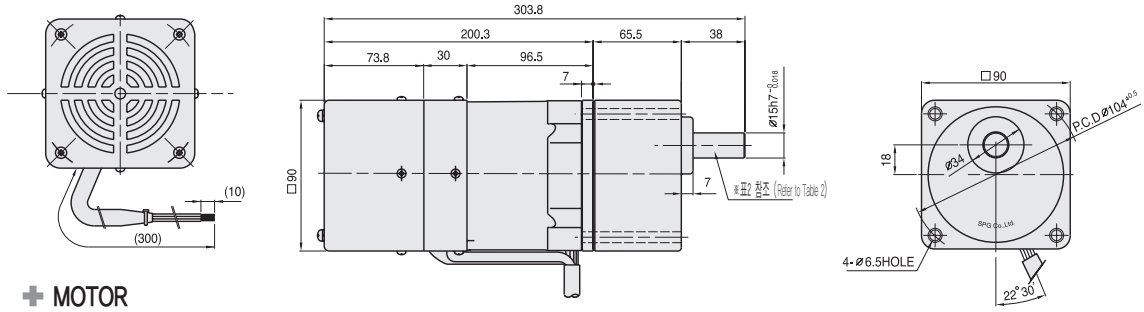
DIMENSIONS

GEARED MOTOR

※MOTOR MODEL : S9R60G□□-ES12
※HEAD MODEL : S9□C3B□~S9□C200B□-S

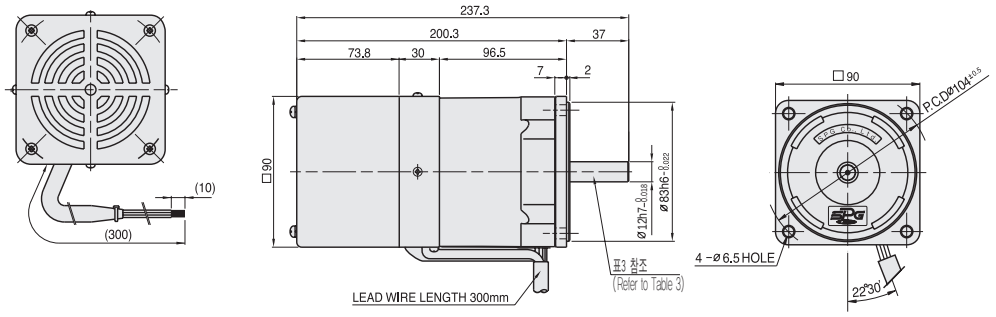


※HEAD MODEL : S9□CB3□ ~ S9□B200B□



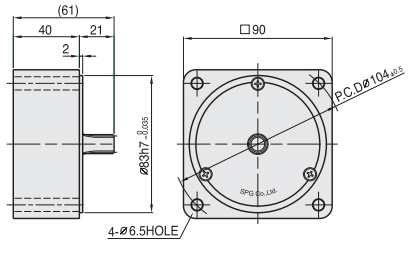
MOTOR

※MOTOR MODEL : S9R60□□□-ES12



INTER-DECIMAL GEAR HEAD

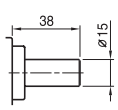
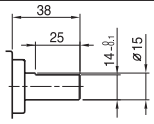
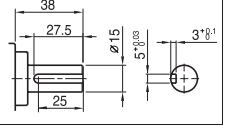
※MODEL : S9GX10B(H,L)



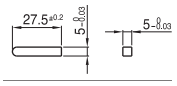
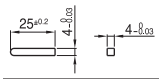
WEIGHT - (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.45
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3B□ ~S9□C10B□	1.21
	S9□C12.5B□ ~S9□C20B□	1.30
	S9□C25B□ ~S9□C60B□	1.40
	S9□C75B□ ~S9□C200B□	1.45

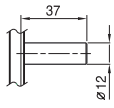
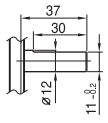
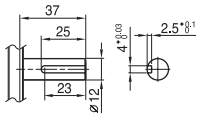
GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SC3B□ ~S9SC200B□	
D-CUT TYPE S9SDC3B□ ~S9SDC200B□	
KEY TYPE S9KC3B□ ~S9KC200B□	

KEY SPEC

GEAR HEAD	MOTOR
	

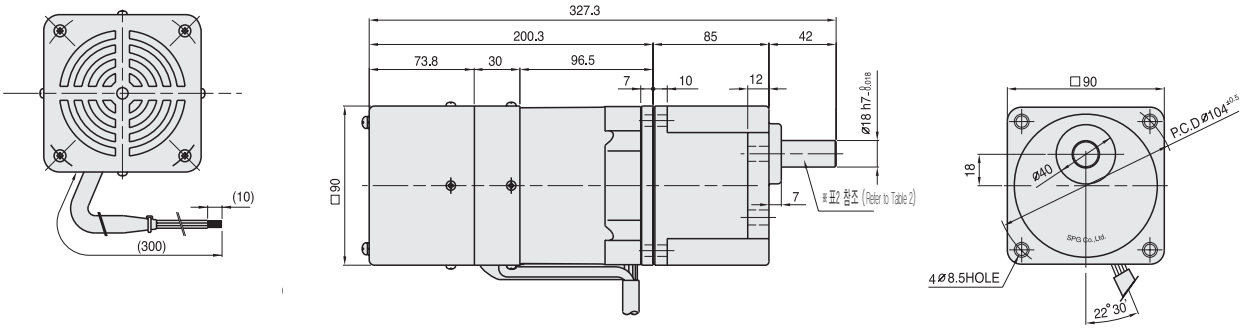
MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9R60G□-ES12	
STRAIGHT TYPE S9R60S□-ES12	
D-CUT TYPE S9R60D□-ES12	
KEY TYPE S9R60K□-ES12	

DIMENSIONS

✚ GEARED MOTOR

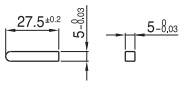
※MOTOR MODEL : S9R60G□H-ES12
※HEAD MODEL : S9□D3B□~S9□D200B



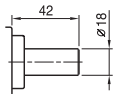
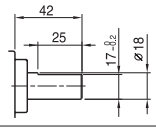
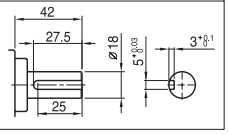
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.45
DECIMAL GEAR HEAD		1.65
GEAR HEAD	S9□D3B□ ~S9□D10B□	1.65
	S9□D12.5B□ ~S9□D20B□	1.80
	S9□D25B□ ~S9□D60B□	1.90
	S9□D75B□ ~S9□D200B□	1.95

✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE	
S9SD3B□ ~S9SD200B□	
D-CUT TYPE	
S9DD3B□ ~S9DD200B□	
KEY TYPE	
S9KD3B□ ~S9KD200B□	

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KD□B	kg-cm	12.2	14.6	20.3	24.3	30.4	36.5	40.5	45.6	54.8	65.7	73.0	82.5	99.0	119	132	165	198	221	266	295	300	300	300	300
	N·m	1.196	1.431	1.989	2.381	2.989	3.577	3.969	4.469	5.370	6.439	7.154	8.085	9.702	11.66	12.94	16.17	19.40	21.67	26.09	28.93	29.42	29.42	29.42	29.42

60Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KD□B	kg-cm	9.72	11.7	16.2	19.4	24.3	29.2	32.4	36.5	43.8	52.6	58.4	66.0	79.2	95.0	106	132	158	177	212	236	283	300	300	300
	N·m	0.953	1.147	1.588	1.901	2.381	2.862	3.175	3.577	4.292	5.155	5.723	6.468	7.762	9.310	10.39	12.94	15.48	17.35	20.79	23.14	27.75	29.42	29.42	29.42

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 300㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. MOTOR의 H와 사용하여 주십시오. (Only "H" type is applicable.)



90W

E · S MOTOR □90㎜ LEAD WIRE TYPE

SPECIFICATION OF SR TYPE SPEED CONTROL MOTORS

SIZE mm sq.	Motor Type	Controller Type	Poles	Output	Voltage	Freq.	Duty	Speed Range	Permissible Torque at 1200rpm		Permissible Torque at 90rpm		Starting Torque		Cap.
				(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(kg-cm)	(N-m)	(μF)
90	S9R90GA( )-ES12 S9R90GA( )-ES12(CE)	SRA02 SRA02CE	4	90	1 Ø 110	60	30min.	90-1700	8.02	0.802	5.42	0.542	7.65	0.765	30.0
	S9R90GB( )-ES12 S9R90GB( )-ES12(CE)	SRB02 SRB02CE	4	90	1 Ø 220	60	30min.	90-1700	8.02	0.802	5.42	0.542	7.65	0.765	8.0
	S9R90GC( )-ES12 S9R90GC( )-ES12(CE)	SRC02 SRC02CE	4	90	1 Ø 100	50	30min.	90-1400	7.22	0.722	4.92	0.492	6.90	0.690	30.0
						60		90-1700	6.32	0.632					
	S9R90GD( )-ES12 S9R90GD( )-ES12(CE)	SRD02 SRD02CE	4	90	1 Ø 200	50	30min.	90-1400	7.22	0.722	4.92	0.492	6.90	0.690	8.0
						60		90-1700	6.32	0.632					
	S9R90GX( )-ES12 S9R90GX( )-ES12(CE)	SRX02 SRX02CE	4	90	1 Ø 220	50	30min.	90-1400	5.98	0.598	3.79	0.379	5.90	0.590	6.0
					1 Ø 240				6.35	0.635	4.09	0.409	7.20	0.720	

❖ 기종명 맨 끝자리에 (TP)가 명기된 MOTOR MODEL은 일반 MOTOR의 TP가 내장된 THERMALLY PROTECTED TYPE입니다. 또한 기종명 S9R90GX( )-ES12는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (TP marked at the end of the motor model name indicates that it is standard motor with Thermal Protector mounted. S9R90GX( )-ES12 is thermally protected type with TP mounted.)

❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KC□B( )	kg-cm	18.2	21.9	30.4	36.5	45.6	54.7	60.8	68.4	82.1	98.6	110	124	149	178	198	200	200	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.784	2.146	2.979	3.577	4.469	5.361	5.958	6.703	8.046	9.663	10.78	12.15	14.60	17.44	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60

60Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KC□B( )	kg-cm	14.6	17.5	24.3	29.2	36.5	43.7	48.6	54.8	65.7	78.8	87.6	99.0	119	143	158	198	200	200	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.431	1.715	2.381	2.862	3.577	4.675	4.763	5.370	6.439	7.722	8.585	9.702	11.66	14.01	15.48	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)

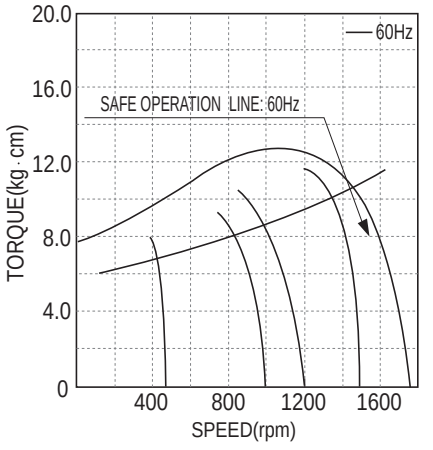
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible TORQUE of the assembled motor and gearhead.)

❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 200㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.)

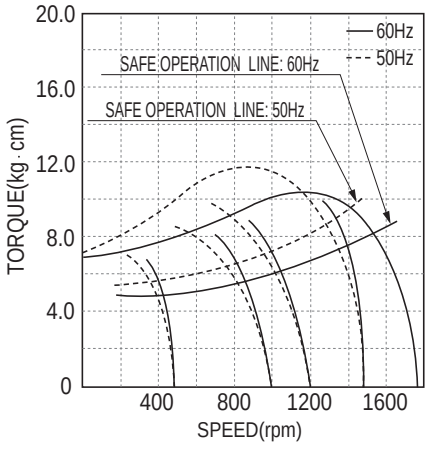
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)

❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)

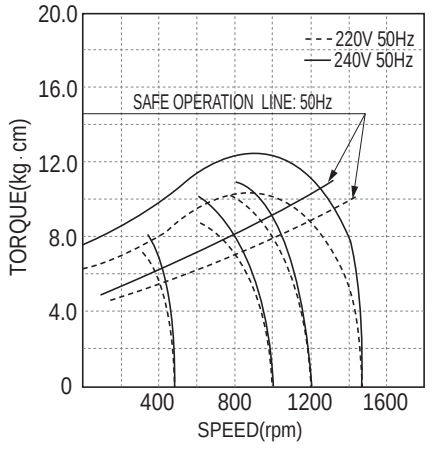
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)



▲ S9R90GA()-ES12 S9R90GB()-ES12
S9R90GA()-ES12(TP) S9R90GB()-ES12(TP)



▲ S9R90GC()-ES12 S9R90GD()-ES12
S9R90GC()-ES12(TP) S9R90GD()-ES12(TP)

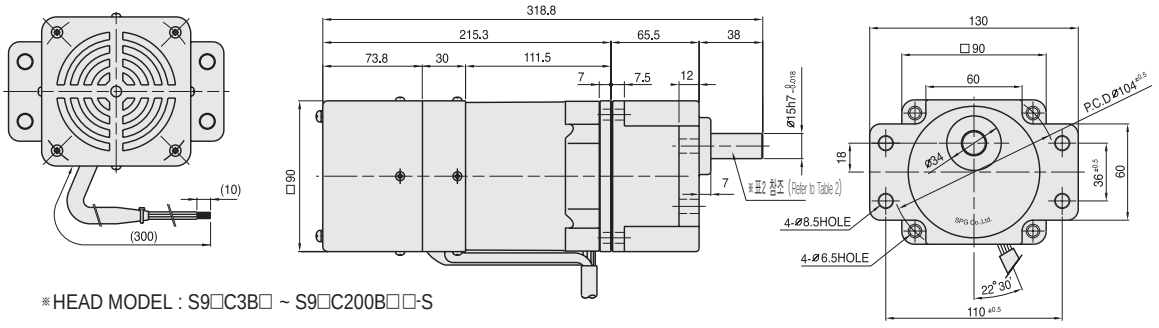


▲ S9R90GX()-ES12

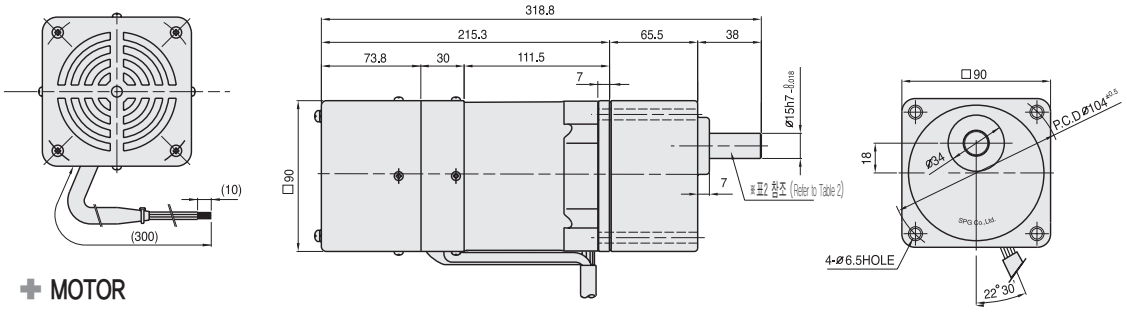
DIMENSIONS

✚ GEARED MOTOR

※MOTOR MODEL : S9R90G□□-ES12
※HEAD MODEL : S9□C3B□-S~S9□C200B□-S

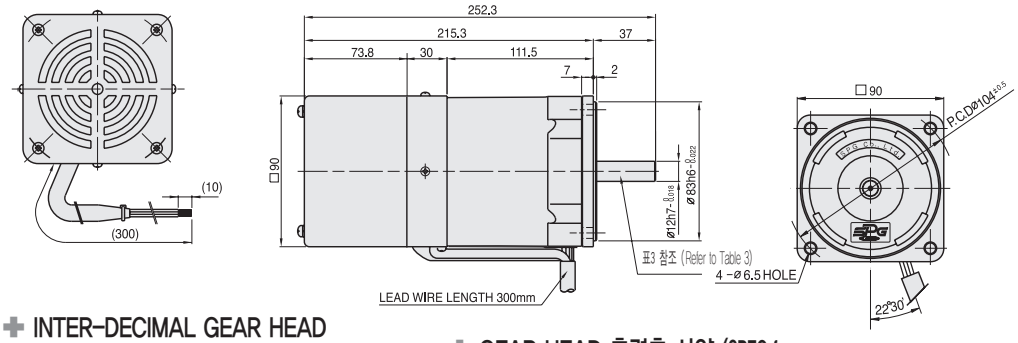


※HEAD MODEL : S9□C3B□ ~ S9□C200B□□-S



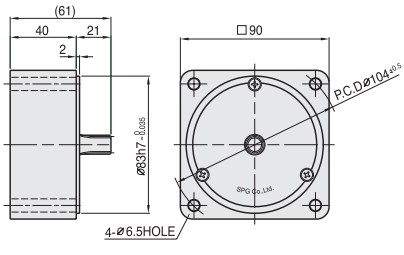
✚ MOTOR

※MOTOR MODEL : S9R90□□□-ES12



✚ INTER-DECIMAL GEAR HEAD

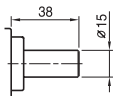
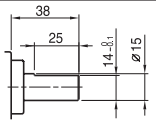
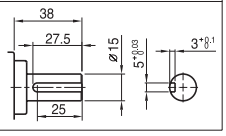
※MODEL : S9GX10B(H,L)



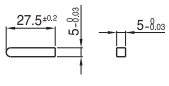
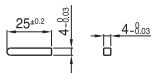
✚ WEIGHT - (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.97
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3B□ ~S9□C10B□	1.21
	S9□C12.5B□ ~S9□C20B□	1.30
	S9□C25B□ ~S9□C60B□	1.40
	S9□C75B□ ~S9□C200B□	1.45

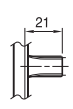
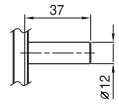
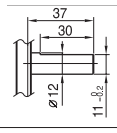
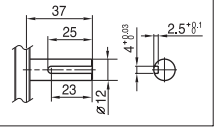
✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SC3B□ ~S9SC200B□	
D-CUT TYPE S9DC3B□ ~S9DC200B□	
KEY TYPE S9KC3B□ ~S9KC200B□	

✚ KEY SPEC

GEAR HEAD	MOTOR
	

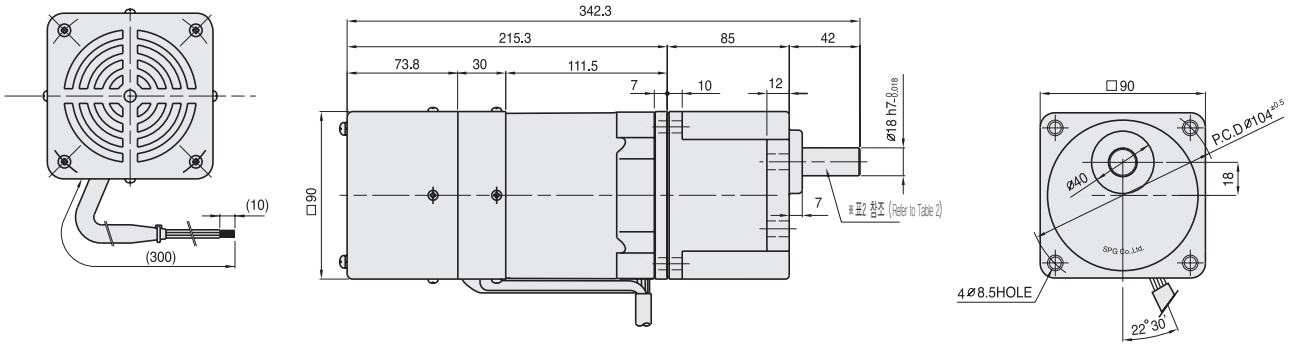
✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9R90G□-ES12	
STRAIGHT TYPE S9R90S□-ES12	
D-CUT TYPE S9R90D□-ES12	
KEY TYPE S9R90K□-ES12	

DIMENSIONS

✚ GEARED MOTOR

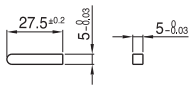
※MOTOR MODEL : S9R90G□H-ES12
※HEAD MODEL : S9□D3B□~S9□D200B



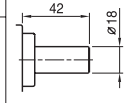
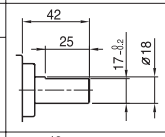
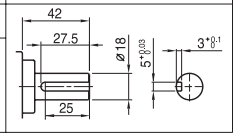
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.97
GEAR HEAD	S9□D3B□ ~S9□D10B□	1.65
	S9□D12.5B□ ~S9□D20B□	1.80
	S9□D25B□ ~S9□D60B□	1.90
	S9□D75B□ ~S9□D200B□	1.95

✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE	
S9SD3B□ ~S9SD200B□	
D-CUT TYPE	
S9DD3B□ ~S9DD200B□	
KEY TYPE	
S9KD3B□ ~S9KD200B□	

50Hz

MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KD□B	kg-cm	18.2	21.9	30.4	36.5	45.6	54.7	60.8	68.4	82.1	98.6	110	124	149	178	198	248	297	300	300	300	300	300	300	300
	N·m	1.784	2.146	2.979	3.577	4.469	5.361	5.958	6.703	8.046	9.663	10.78	12.15	14.60	17.44	19.40	24.32	29.13	29.42	29.42	29.42	29.42	29.42	29.42	29.42

60Hz

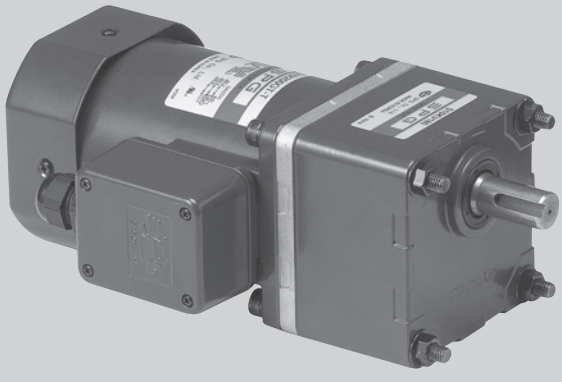
MODEL \ GEAR RATIO		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KD□B	kg-cm	14.6	17.5	24.3	29.2	36.5	43.7	48.6	54.8	65.7	78.8	87.6	99.0	119	143	158	198	238	266	300	300	300	300	300	300
	N·m	1.431	1.715	2.381	2.862	3.577	4.675	4.763	5.370	6.439	7.722	8.585	9.702	11.66	14.01	15.48	19.40	23.34	26.09	29.42	29.42	29.42	29.42	29.42	29.42

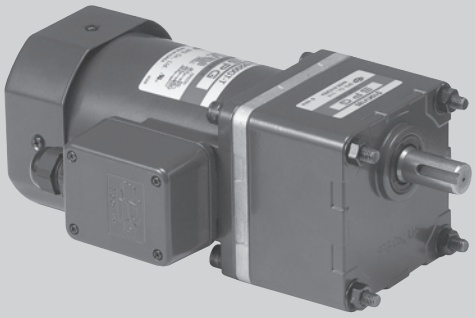
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 300kg-cm입니다. (The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. MOTOR의 H와 사용하여 주십시오. (Only "H" type is applicable.)

200W □104 MOTOR & GEAR HEAD

INDEX

200W □104 MOTOR & GEAR HEAD 300





200W

□104 MOTOR & GEAR HEAD

□104 MOTOR & GEAR HEAD 특징 (Characteristics of 104 MOTOR & GEAR HEAD)

- 기존 90각 GEAR HEAD 대비 고출력, 고강도 적용 가능 (Large output and high strength applicable) : 최대 허용 TORQUE 400 ㎏f · ㎝, 고강도 BALL BEARING, NEEDLE BEARING 적용 (Maximum Permissible TORQUE is 400 kgf · cm, It is applied to BALL BEARING, NEEDLE BEARING of high strength.)
- GEAR BOX 정밀 가공을 통해 강도 및 소음을 개선하였습니다. (Improvement of strength and noise through precise processing of GEAR BOX.)
- MOTOR 단자 BOX 부착 및 CABTYRE CABLE 부착으로 기밀을 유지합니다. (Improvement of security for TERMINAL BOX TYPE MOTOR) (IP54)
- 세계 주요 지역의 광범위한 전압 및 해외규격 대응이 가능합니다.(Applicable in America, Europe & S.E Asia)(UL, CE 및 CCC 인증 취득)
- 절연등급 (Insulation Class) : B종 (Class) (130℃)

□104 MOTOR CODING SYSTEM

MAKER MODEL	SIZE	TYPE	OUTPUT	SHAFT TYPE	VOLTAGE		SPECIAL TYPE
S	10	I	200	G	B	-	T

- S : SPG Co., Ltd.
- 10 : □104(㎜)
- I : Induction Motor
- 200 : 200W
- SHAFT TYPE — EX) G : GEAR TYPE / D : D-cut Type / K : Key Type
- VOLTAGE

A :	1ØAC 100V	50/60Hz	(4Pole)
	1ØAC 110/115V	60Hz	(4Pole)
B :	1ØAC 200V	50/60Hz	(4Pole)
	1ØAC 220V	60Hz	(4Pole)
	1ØAC 230V	50/60Hz	(4Pole)
T :	3ØAC 200V	50/60Hz	(4Pole)
	3ØAC 220V	50/60Hz	(4Pole)
	3ØAC 230V	60Hz	(4Pole)

- SPECIAL TYPE — EX) T : Terminal Box Type (Terminal Block Type)

□104 GEAR HEAD CODING SYSTEM

MAKER MODEL	SIZE	SHAFT TYPE	OUTPUT	GEAR RATIO		SPECIAL TYPE
S	10	K	V	180	-	□□□

- S : SPG Co., Ltd.
- 10 : □104㎜
- SHAFT TYPE — S : Straight type / D : D-cut type / K : Key type
- V : □104 200W
- 3~180 : Reduction Ratio

Type		Poles	Output (W)	Voltage (V)	Freq. (Hz)	Duty	Rated Load			Starting Touque (kgf-cm)	Capacitor (μF)
단자 BOX	LEAD WIRE						Current (A)	Speed (rpm)	Torque (kgf-cm)		
S10I200□A-T	S10I200□A	4	200	1Ø 100	50	CONT.	3.45	1250	15.6	8.8	47
					60		3.05	1550	12.6	8.8	
				1Ø 100	60		2.85	1550	12.6	8.8	40
				1Ø 115			2.85	1600	12.2	9.8	
S10I200□B-T	S10I200□B	4	200	1Ø 200	50	CONT.	1.65	1250	15.6	8.8	12
					60		1.57	1550	12.6	8.8	
				1Ø 220	60		1.40	1550	12.6	8.8	10
				1Ø 230	50		1.66	1300	15.0	9.8	
					60		1.36	1600	12.2	9.8	
S10I200□T-T	S10I200□T	4	200	3Ø 200	50	CONT.	1.10	1250	15.6	15.6	–
					60		1.05	1500	13.0	13.0	
				3Ø 220	50		1.05	1300	15.0	15.0	
					60		0.95	1550	12.6	12.6	
				3Ø 230	60		0.95	1600	12.2	12.2	

50Hz

GEAR RATIO		3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
MODEL	rpm	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
S10KV□	kg-cm	41	49	68	82	103	123	163	196	235	327	392	400	400	400	400	400	400	400	400	400
	N·m	4.1	4.9	6.8	8.2	10.3	12.3	16.3	19.6	23.5	32.7	39.2	40	40	40	40	40	40	40	40	40
	효율 (Efficiency)	90%						86%						81%							

60Hz

GEAR RATIO		3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
MODEL	rpm	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
S10KV□	kg-cm	34	41	57	69	86	103	137	164	197	273	328	393	400	400	400	400	400	400	400	400
	N·m	3.4	4.1	5.7	6.9	8.6	10.3	13.7	16.4	19.7	27.3	32.8	39.3	40	40	40	40	40	40	40	40
	효율 (Efficiency)	90%						86%						81%							

❖ 회전방향은 ■색이 MOTOR와 동일한 회전방향 이고, 기타는 MOTOR와 반대방향으로 회전합니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)

❖ 회전수는 MOTOR의 동기 회전수를 기준으로 하였습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)

❖ 효율은 참고값으로, 실제 적용 시 상이할 수 있습니다. (The efficiency referenced may vary when applied.)

허용 부하 관성 (PERMISSIBLE LOAD INERTIA) MOMENT

구분 (DIVISION)	출력축에서의 허용 부하 관성 MOMENT (PERMISSIBLE LOAD INERTIA MOMENT IN OUTPUT SHAFT)		비고
	J($\times 10^{-4}$kg-㎡)	GD^2(kgf-㎠)	
MOTOR	2	8	J_G : GEAR HEAD 허용 부하 관성 MOMENT(Permissible load inertia on the gear head output shaft.) J_M : MOTOR 허용 부하 관성 MOMENT (Permissible load inertia on the motor shaft.) i : 감속비 (Gear Ratio)
GEAR HEAD	$J_G = J_M \times i^2$ (감속비 1/3~50일 경우 (Gear ratio 1/3~1/50)) $J_G = J_M \times 2500$ (감속비 1/60 이상일 경우 (Gear ratio 1/60 or higher))		

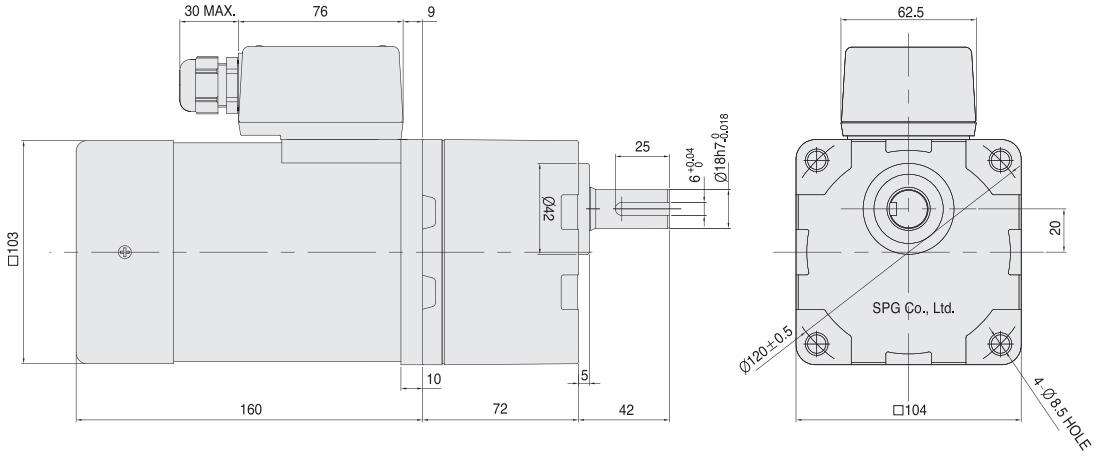
허용 (PERMISSIBLE) OVERHUNG / TRUHST 하중 (LOAD0

구분 (DIVISION)		허용(PERMISSIBLE) OVERHUNG 하중(LOAD) N (kgf)		허용(PERMISSIBLE) THRUST 하중(LOAD) N(kgf)
		SHAFT(SPINDLE) 앞끝에서 거리 (DISTANCE FROM FRONT EDGE OF)		
		10㎜	20㎜	
MOTOR		320(32)	350(35)	–
GEAR HEAD	감속비 (GEAR RATIO) 1/3~36	550(55)	800(80)	200(20)
	감속비(GEAR RATIO) 1/50~180	650(65)	1000(100)	

DIMENSIONS : TERMINAL BOX TYPE

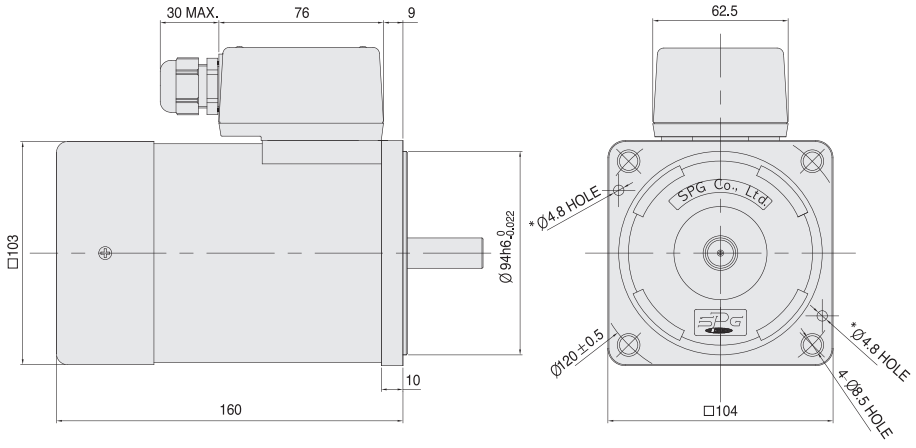
✚ GEARED MOTOR

※ MOTOR MODEL : S10I200□□ -T
※ GEAR HEAD MODEL : S10KV□

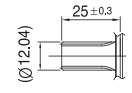
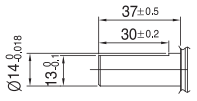
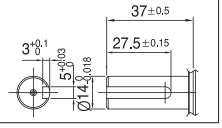


✚ MOTOR

※ MOTOR MODEL : S10I200□□ -T



✚ MOTOR 출력축 사양 (SPEC for output shaft of Motor)

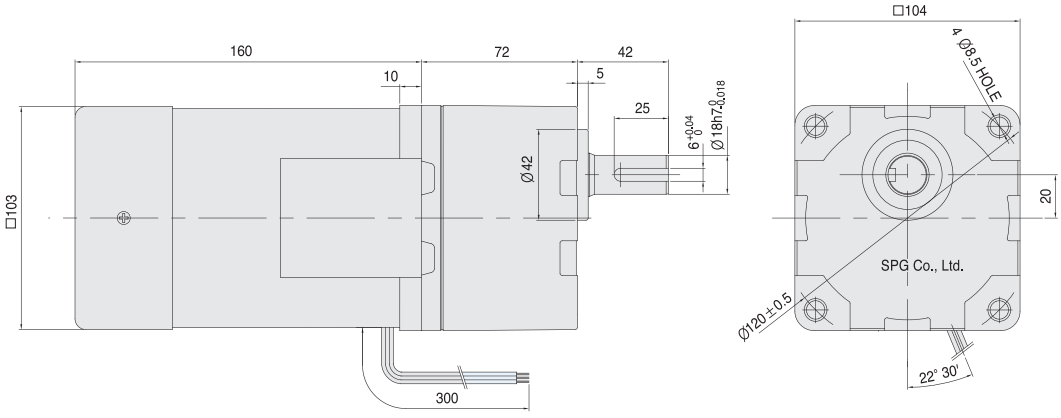
구분 (MODEL)	출력축 차수 (TYPES OF OUTPUT SHAFT)
GEAR TYPE	
D-CUT TYPE	
KEY TYPE	

※ Ø4.8 HOLE 2개소는 GEAR TYPE MOTOR에만 적용됨
(Two of Ø4.8 holes shall be used for gear type motor only.)

DIMENSIONS : LEAD WIRE TYPE

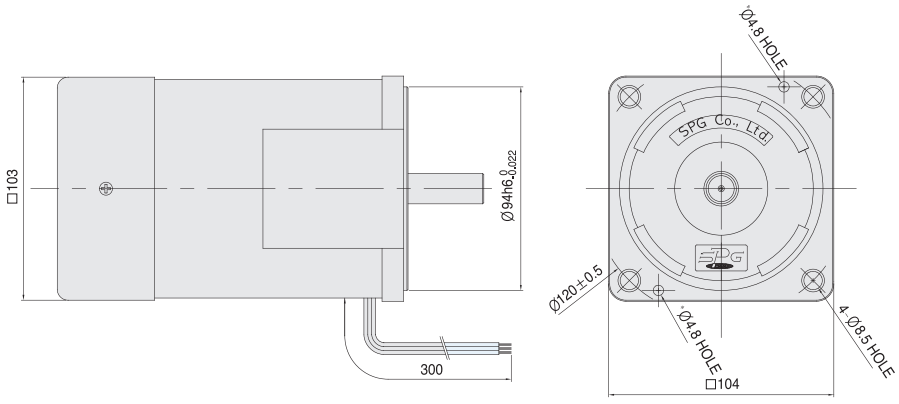
✚ GEARED MOTOR

※ MOTOR MODEL : S10I200□□
※ GEAR HEAD MODEL : S10KV□

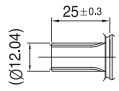
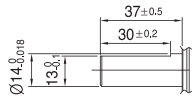
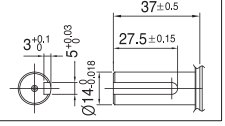


✚ MOTOR

※ MOTOR MODEL : S10I200□□



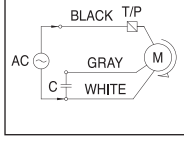
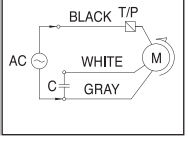
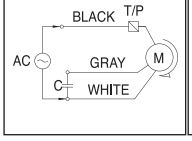
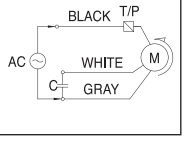
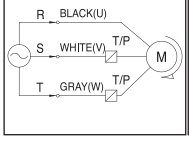
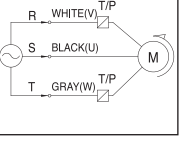
✚ MOTOR 출력축 사양 (SPEC for output shaft of Motor)

구분 (MODEL)	출력축 처수 (TYPES OF OUTPUT SHAFT)
GEAR TYPE	
D-CUT TYPE	
KEY TYPE	

※ Ø4.8 HOLE 2개소는 GEAR TYPE MOTOR에만 적용됨
(Two of Ø4.8 holes shall be used for gear type motor only.)

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

MODEL : S10I200□A, S10I200□A-T POWER : AC 1Ph. 100V 50/60Hz, 110/115V 60Hz		MODEL : S10I200□B, S10I200□B-T POWER : AC 1Ph. 200V 50/60Hz, 220 60Hz, 230V 50/60Hz		MODEL : S10I200□T, S10I200□T-T POWER : AC 3Ph. 200V 50/60Hz, 220 50/60Hz, 230V 60Hz	
CW	**CCW**	**CW**	**CCW**	**CW**	**CCW**
					

TORQUE MOTOR

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TORQUE MOTOR 20W(□90㎜) 315

TORQUE MOTOR 30W(□90㎜) 318

TORQUE MOTOR 40W(□90㎜) 322

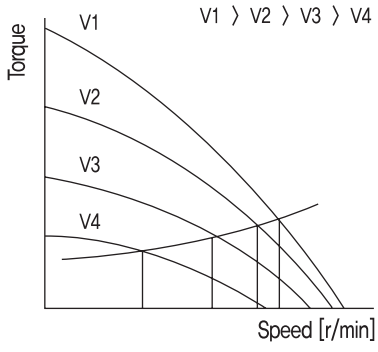
TORQUE MOTOR 60W(□90㎜) 326

TORQUE MOTOR의 특징 (Characteristics of TORQUE MOTOR)

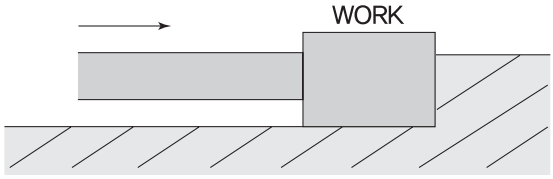
1. 토크모터 (The torque motor)

- 토크모터는 기동토크가 크며 수하(垂下)특성을 갖고 있습니다. (Regarding the torque motor, the starting torque is big. And it has the special drooping and hanging characteristics.) (수하특성 : 기동 시 최대토크를 내며 속도가증가함에 따라 토크가 감소하는 특성 (The special drooping and hanging characteristics : The special characteristics of producing the maximum torque when maneuvering and the torque decreasing according to the increase of the speed.))

(1) 광범위한 속도가변이 가능 (The wide range speed variations are possible.)
토크모터의 토크는 전압의 제곱에 비례하여 공급전압을 변경하여 회전속도를 바꿀 수 있습니다. (Regarding the torque of the torque motor, proportionately to the square of the voltage, by changing the supplied voltage, the speed of the rotation can be changed.)

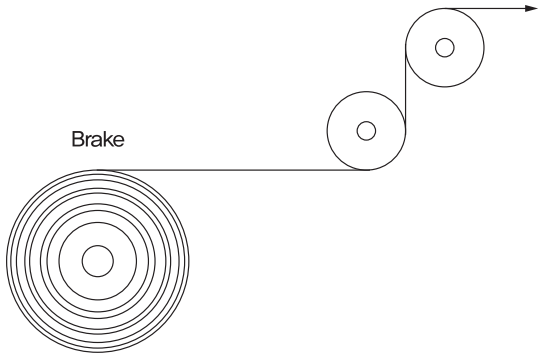


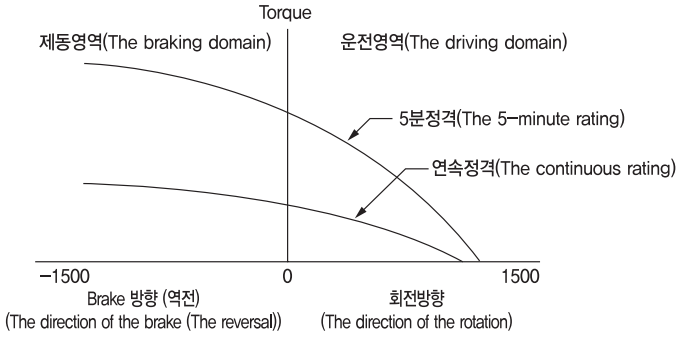
(2) 구속운전 사용 가능 (The use of the restricted driving is possible.)
토크모터는 일반적인 Induction Motor와 Reversible Motor와 다르게 구속상태에서도 모터의 온도상승이 크지 않아 안정적으로 사용할 수 있습니다. 물건을 누르고 있을 때와 같이 정지토크가 필요한 용도나 공정 끝 부분에서 구속샹태가 되는 구속운전에 적합합니다. 140V에서는 연속운전이 가능하나 140V를 초과하는 전압에서 사용할 경우사용시간의 한계가 있으며 220V에서는 5분 정격입니다. (Regarding the torque motor, differently from the ordinary induction motor and the reversible motor, in the restricted condition, too, because the rise of the temperature of the motor is not big, it can be used stably. In the same way as when pressing a thing, it is suitable to the restricted driving which becomes the restricted condition regarding the use that needs the stop torque and at the end part of the process. Although, at 140V, the continued driving is possible, in the case of using at a voltage that exceeds 140V, there is a limitation of the time of the use. And, at 220V, it is the 5 minutes rating.)



* 주의 : 구속운전에 사용할 경우에는 출력 토크가 매우 커집니다. 따라서 감속기의 최대 허용토크를 넘지 않도록 주의하십시오. 정면충돌은 절대로 하지 마십시오. 정면충돌할 경우 충격에 의해 감속기가 파손될 수 있습니다. (*Caution: In the case of using for restricted riving, the output torque becomes very big. As a result, please be cautious so that you do not go over the maximum permitted torque of the reducer. Please do not collide head-on absolutely. In the case of colliding head-on, the reducer can be damaged by the impact.)

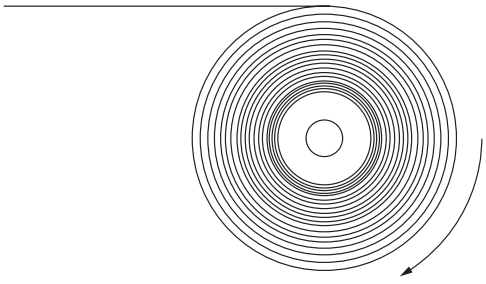
(3) 브레이크로 사용 가능 (The use of the brake is possible.)
토크 모터를 모터의 회전방향에 대해 외력으로 반대방향으로 돌리면 브레이크 토크를 얻을 수 있습니다. 보통의 회전속도-토크 그래프로 표시되는 영역을 운전영역, 브레이크로 작동하는 영역을 제동 영역이라고 합니다.(Regarding the torque motor, regarding the direction of the rotation of the motor, if it is rotated in the opposite direction with the external force, a brake torque can be obtained. The domain that gets indicated with an ordinary rotation speed-torque graph is called "the driving domain". And the domain that operates with the brake is called "the braking domain".)





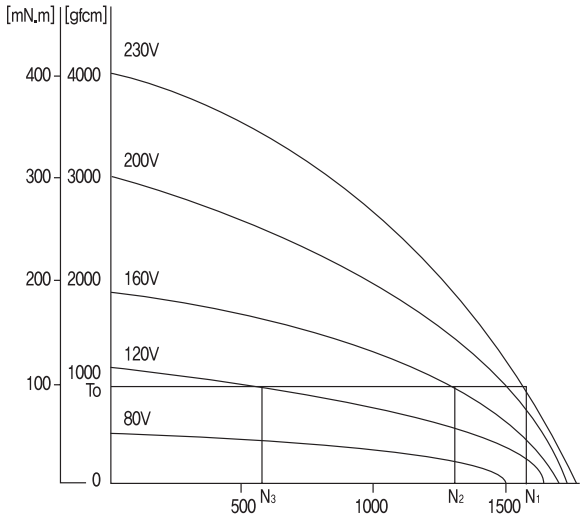
(4) 감는 작업에 적합 (Suitable to the work of winding.)
토크모터는 연속해서 일정한 속도로 나오는 물체를 일정한 장력으로 감는 작업에 적합합니다. 지름이 두배가 되면 토크는 두 배가되고 속도는 절반이 됩니다. (The torque motor is suitable for the work of winding an object that comes out continuously at a certain speed with a certain tension. When the diameter becomes twice longer, the torque becomes two times bigger, and the speed becomes a half.)

일정한 장력으로 감기(Winding with a certain tension)



2. 회전속도-토크 그래프 보는 방법 (The method of looking at the rotation speed-torque graph.)

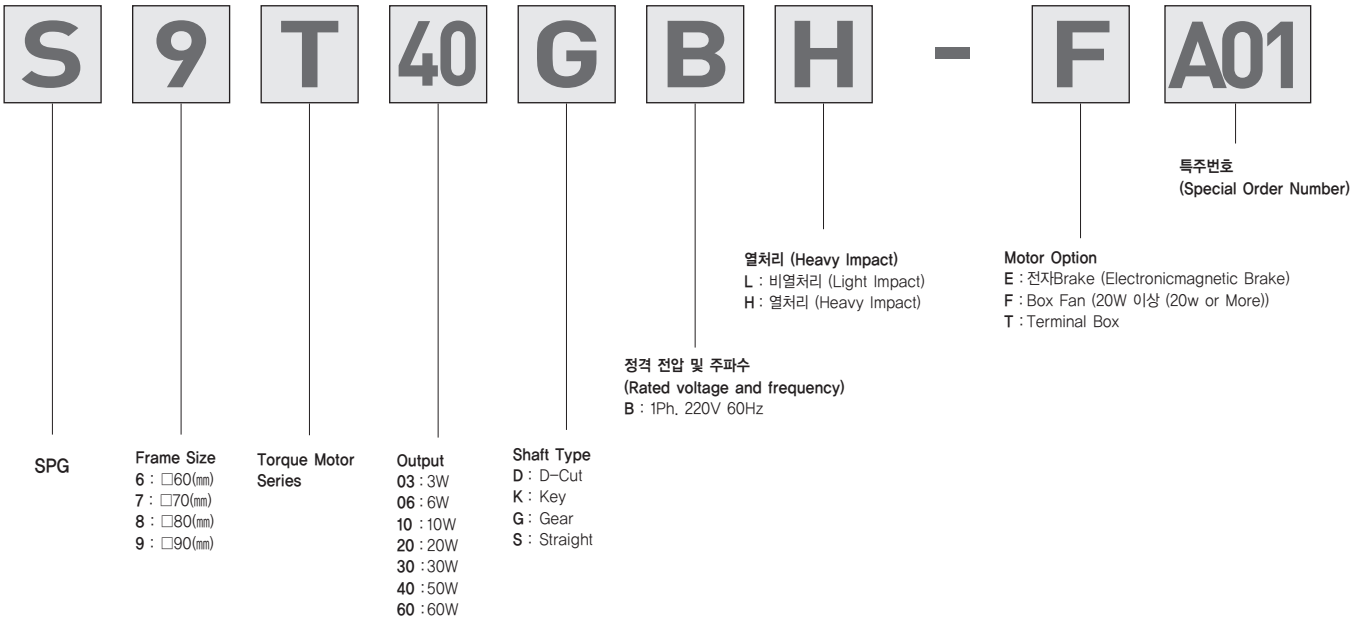
- 토크모터의 토크는 전압의 제곱에 비례하여 변화합니다. 모터의 공급전압을 바꾸면 각 전압에서 가각 수하 특성을 지닌 회전속도-토크 그래프를 얻을 수 있습니다. 부하토크가 T0 일 때전압을 230V, 160V, 120V로 바꾸면 모터는 각각 N1, N2, N3의 회전속도로 회전합니다. 이처럼 전압을 바꾸어 회전속도를 쉽게 바꿀 수 있습니다. 토크모터를 선정할때는 먼저 필요한 토크와 회전속도를 결정하고 나서 회전속도-토크 곡선을 참조하여 연속 사용용도 또는 단시간 사용용도인지 결정하여 모터를 선정하여 주십시오. 구속상태에서 사용할 경우 속도가 0이므로 토크만 고려하면 됩니다.(The torque of the torque motor changes proportionately to the square of the voltage. If the supplied voltage of the motor is changed, you can obtain a rotation speed-torque graph that possesses the special characteristic of each voltage having its own characteristics. When the load torque is T0, if the voltage is changed to 230V, 160V, and 120V, the motor rotates at the rotation speed of each at N1, N2, and N3. In this way, by changing the voltage, the rotation speed can be changed easily. When selecting a torque motor, first, decide the torque and the rotation speed that are needed. And then, by referring to the rotation speed-torque curve, by deciding whether it is a use for the continuous use or for the use for the use from a short time, please select the motor. In the case of using in the restricted condition, as the speed is 0, you can just consider only the torque.)



3. 일반사양 (The general specifications.)

항목 (ITEM)	사양 (SPECIFICATION)
절연저항 (Insulation Resistance)	상온, 상습에서 모터 정격운전 후 모터의 코일과 Case 사이를 DC 500V MEGA로 측정하여 100㏁ 이상 (At the room temperature and the room humidity, after the rated driving of the motor, by measuring between the coil of the motor and the case with a DC 500V MEGA, 100MΩ or higher.)
절연내압 (Dielectric Strength)	상온, 상습에서 모터 정격운전 후 모터의 코일과 Case 사이에 1.5kV 50Hz 또는 60Hz를 1분간 인가하여 이상없음 (At the room temperature and the room humidity, after the rated driving of the motor, between the coil of the motor and the case, by authorizing 1.5kV 50Hz or 60Hz for 1 minute, there is no abnormality.)
온도상승 (Temperature Rise)	모터를 정격운전 후 온도계법으로 권선의 온도상승을 측정한 값이 80℃(K) 이하 (After the rated driving of the motor, the value that was measured with the rise of the temperature of the coil with the thermometer method was lower than 80℃(K).)
절연등급 (Insulation Class)	B종 (Class B) (130℃)
과열보호장치 (Overheat Protection Device)(T/P)	THERMAL PROTECTOR 내장(자동 복귀형) (Built-in THERMAL PROTECTOR (automatic return type)) : 개방 (Open) 130℃±5℃ 복귀 (Close) 83℃±15℃
사용온도 (Ambient Temperature)	-10℃ ~ 40℃
사용습도 (Ambient Humidity)	85% 이하 (85% or lower) (결로 없는 곳(A place where there is no dew condensation))

TORQUE MOTOR CODING SYSTEM





3W

TORQUE MOTOR □60㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load					Starting Torque		Capacitor
							Speed	Torque		Current	Input			
			(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(A)	(W)	(kg-cm)	(N-m)	(uF)
60	S6T03GB	4	4.2	1 Ø 220	60	5min.	900	0.43	0.043	0.21	45.6	0.87	0.087	1.2
			1.4	1 Ø 140		Cont.		0.18	0.018	0.15	20.5	0.36	0.036	

❖ 'L' TYPE 전용으로 기종명에 표시하지 않습니다. ("L"or "H"type does not apply to motors under 20W.)

60Hz

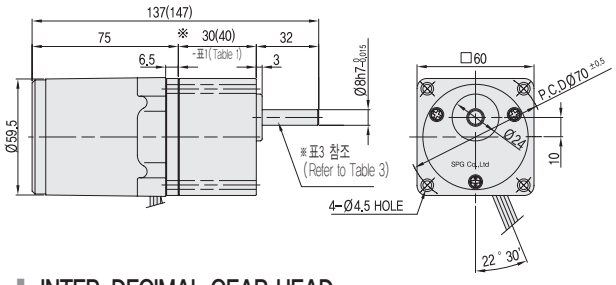
GEAR RATIO			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200	250
S6DA□B	5min	kg-cm	1.0	1.3	1.7	2.1	2.6	3.1	3.5	4.4	5.2	6.3	6.3	7.8	9.4	11.3	12.6	14.2	17.0	21.3	25.5	28.4	30	30	30	30	30
		N·m	0.10	0.12	0.17	0.20	0.26	0.31	0.34	0.43	0.51	0.61	0.62	0.77	0.92	1.11	1.23	1.39	1.67	2.09	2.50	2.78	2.94	2.94	2.94	2.94	2.94
	Cont.	kg-cm	0.4	0.5	0.7	0.9	1.1	1.3	1.5	1.8	2.2	2.6	2.6	3.3	3.9	4.7	5.3	5.9	7.1	8.9	10.7	11.9	14.3	17.8	21.4	23.8	29.7
		N·m	0.04	0.05	0.07	0.09	0.11	0.13	0.14	0.18	0.21	0.26	0.26	0.32	0.39	0.46	0.52	0.58	0.70	0.87	1.05	1.17	1.40	1.75	2.10	2.33	2.91

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 30㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 30 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향 입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L"or "H"type does not apply to motors under 20W.)

DIMENSIONS

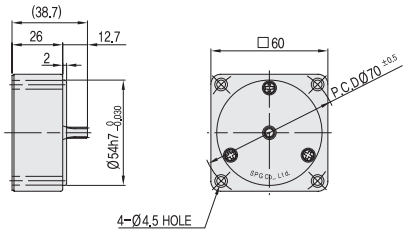
GEARED MOTOR

※MOTOR MODEL : S6T03GB
※HEAD MODEL : S6□A3B~S6□A250B



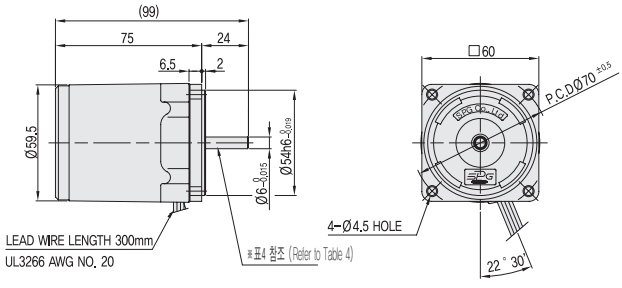
INTER-DECIMAL GEAR HEAD

※ MODEL : S6GX10B



MOTOR

※MOTOR MODEL : S6T06□B



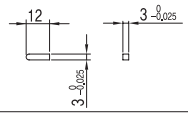
※30(40) – (표1 (Table1))

GEAR RATIO	SIZE(mm)
S6□A3B ~ S6□A18B	30
S6□A20B ~ S6□A250B	40

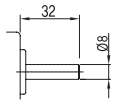
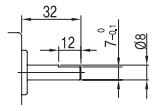
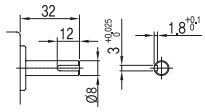
WEIGHT – (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		0.70
DECIMAL GEAR HEAD		0.18
GEAR HEAD	S6□A3B ~S6□A18B	0.24
	S6□A20B ~S6□A40B	0.30
	S6□A50B ~S6□A250B	0.33

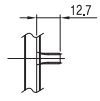
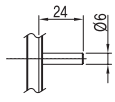
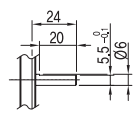
KEY SPEC

GEAR HEAD


GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S6SA3B ~S6SA250B	
D-CUT TYPE S6DA3B ~S6DA250B	
KEY TYPE S6KA3B ~S6KA250B	

MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표4 (Table4))

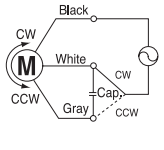
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S6T03GB	
STRAIGHT TYPE S6T03SB	
D-CUT TYPE S6T03DB	

SCHEMATIC DIAGRAMS

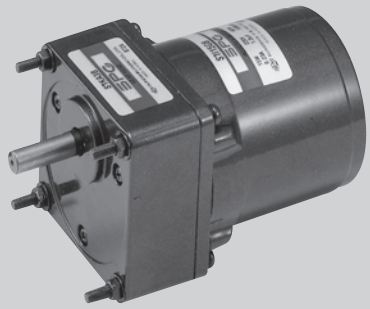
회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S6T03GB

CW,CCW



주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



6W

TORQUE MOTOR □70㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load					Starting Torque		Capacitor
							Speed	Torque		Current	Input			
			(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(A)	(W)	(kg-cm)	(N-m)	(uF)
70	S7T06GB	4	7.3	1 Ø 220	60	5min.	900	0.82	0.082	0.23	50.5	1.57	0.157	1.5
			2.7	1 Ø 140		Cont.		0.37	0.037	0.18	25.1	0.67	0.067	

❖ 'L' TYPE 전용으로 기종명에 표시하지 않습니다. ("L"or "H"type does not apply to motors under 20W.)

60Hz

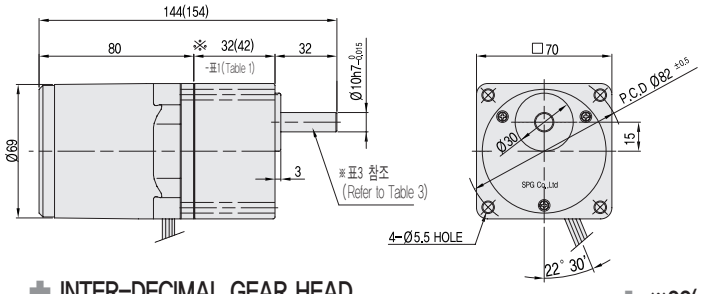
GEAR RATIO			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
S7KA□B	5min	kg-cm	2	2.4	3.3	4	5	6	6.6	8.3	10	12	12	15	18	21.5	23.9	27.1	32.5	40.6	48.7	50	50	50	50	50
		N·m	0.20	0.23	0.33	0.39	0.49	0.59	0.65	0.81	0.98	1.17	1.17	1.47	1.76	2.11	2.35	2.65	3.18	3.98	4.78	4.90	4.90	4.90	4.90	4.90
	Cont.	kg-cm	0.9	1.1	1.5	1.8	2.2	2.7	3.0	3.7	4.5	5.4	5.4	6.8	8.1	9.7	10.8	12.2	14.7	18.3	22.0	24.4	29.3	36.6	44.0	48.8
		N·m	0.09	0.11	0.15	0.18	0.22	0.26	0.29	0.37	0.44	0.53	0.53	0.66	0.79	0.95	1.06	1.20	1.44	1.80	2.16	2.39	2.87	3.59	4.31	4.79

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 50㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 50 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향 입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L"or "H"type does not apply to motors under 20W.)

DIMENSIONS

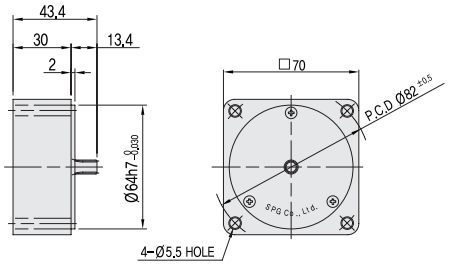
GEARED MOTOR

※MOTOR MODEL : S7T06GB
※HEAD MODEL : S7□A3B~S7□A200B



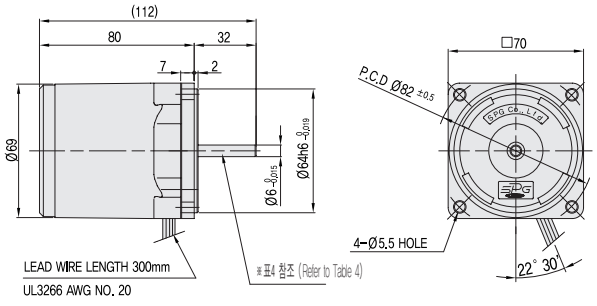
INTER-DECIMAL GEAR HEAD

※ MODEL : S7GX10B



MOTOR

※MOTOR MODEL : S7T06□B



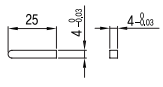
※32(42) – (표1 (Table1))

GEAR RATIO	SIZE(mm)
S7□A3B ~ S7□A18B	32
S7□A20B ~ S7□A200B	42

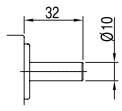
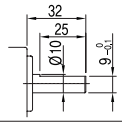
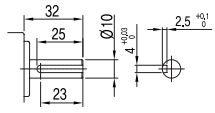
WEIGHT – (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		1.04
DECIMAL GEAR HEAD		0.32
GEAR HEAD	S7□A3B ~S7□A18B	0.38
	S7□A20B ~S7□A40B	0.47
	S7□A50B ~S7□A200B	0.52

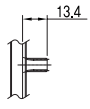
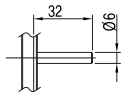
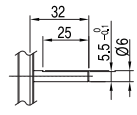
KEY SPEC

GEAR HEAD


GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S7SA3B ~S7SA200B	
D-CUT TYPE S7DA3B ~S7DA200B	
KEY TYPE S7KA3B ~S7KA200B	

MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표4 (Table4))

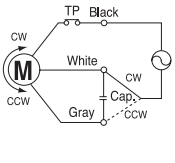
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S7T06GB	
STRAIGHT TYPE S7T06SB	
D-CUT TYPE S7T06DB	

SCHEMATIC DIAGRAMS

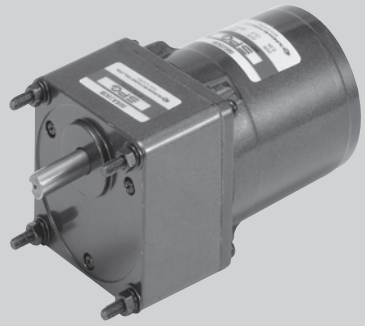
회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S7T06GB

CW,CCW



주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



10W

TORQUE MOTOR □80㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load					Starting Torque		Capacitor
							Speed	Torque		Current	Input			
			(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(A)	(W)	(kg-cm)	(N-m)	(uF)
80	S8T10GB	4	12.8	1 Ø 220	60	5min.	900	1.34	0.134	0.34	74.2	2.41	0.241	2.0
			4.3	1 Ø 140		Cont.		0.52	0.052	0.24	33.3	0.98	0.098	

❖ 'L' TYPE 전용으로 기종명에 표시하지 않습니다. ("L"or "H"type does not apply to motors under 20W.)

60Hz

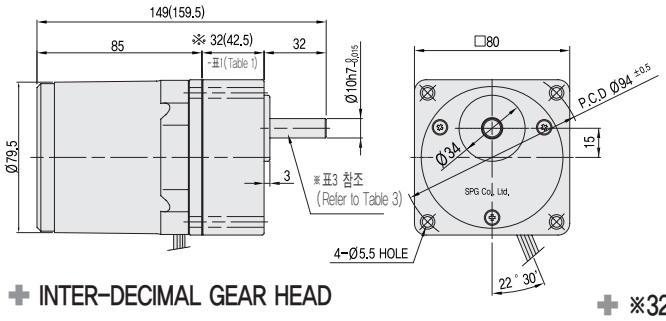
GEAR RATIO			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
S8KA□B	5min	kg-cm	3.3	3.9	5.4	6.5	8.1	9.8	10.9	13.6	16.3	19.5	19.6	24.5	29.3	35.2	39.1	44.2	53.1	66.3	79.6	80	80	80	80	80
		N·m	0.32	0.38	0.53	0.64	0.80	0.96	1.06	1.33	1.60	1.92	1.92	2.40	2.88	3.45	3.84	4.34	5.20	6.50	7.81	7.85	7.85	7.85	7.85	7.85
	Cont.	kg-cm	1.3	1.5	2.1	2.5	3.2	3.8	4.2	5.3	6.3	7.6	7.6	9.5	11.4	13.7	15.2	17.2	20.6	25.7	30.9	34.3	41.2	51.5	61.8	68.6
		N·m	0.12	0.15	0.21	0.25	0.31	0.37	0.41	0.52	0.62	0.74	0.74	0.93	1.12	1.34	1.49	1.68	2.02	2.52	3.03	3.37	4.04	5.05	6.06	6.73

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 80㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 80 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향 입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'L' Type 전용으로 기종명에 표시하지 않습니다. ("L"or "H"type does not apply to motors under 20W.)

DIMENSIONS

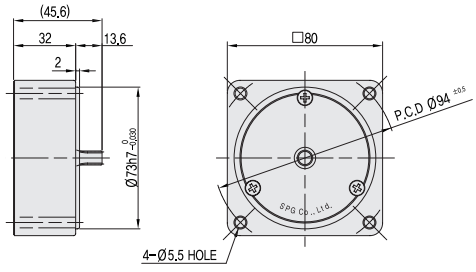
GEARED MOTOR

※MOTOR MODEL : S8T10GB
※HEAD MODEL : S8□A3B~S8□A200B



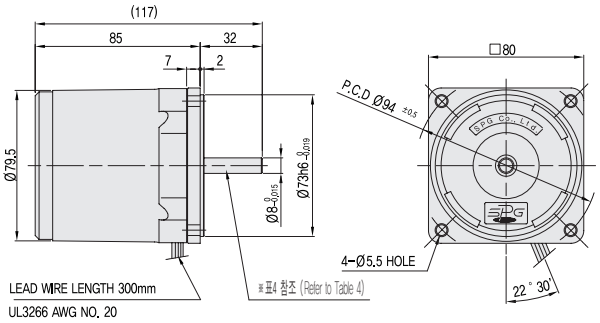
INTER-DECIMAL GEAR HEAD

※ MODEL : S8GX10B



MOTOR

※MOTOR MODEL : S8T10□B



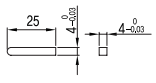
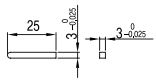
※32(42.5) – (표1 (Table1))

GEAR RATIO	SIZE(mm)
S8□A3B ~ S8□A18B	32
S8□A20B ~ S8□A200B	42.5

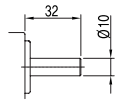
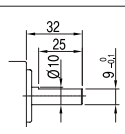
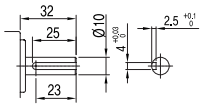
WEIGHT – (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		1.46
DECIMAL GEAR HEAD		0.43
GEAR HEAD	S8□A3B ~S8□A18B	0.43
	S8□A20B ~S8□A40B	0.57
	S8□A50B ~S8□A200B	0.61

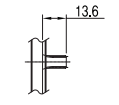
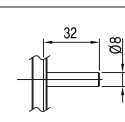
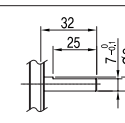
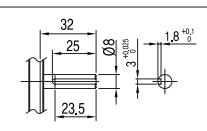
KEY SPEC

GEAR HEAD	MOTOR
	

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표3 (Table3))

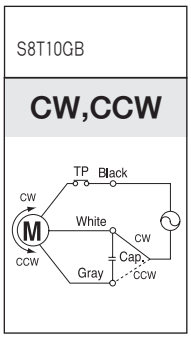
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S8SA3B ~S8SA200B	
D-CUT TYPE S8DA3B ~S8DA200B	
KEY TYPE S8KA3B ~S8KA200B	

MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표4 (Table4))

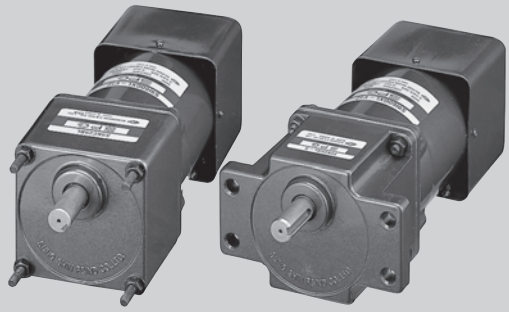
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S8T10GB	
STRAIGHT TYPE S8T10SB	
D-CUT TYPE S8T10DB	
KEY TYPE S8T10KB	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)



주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



20W

TORQUE MOTOR □90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load					Starting Torque		Capacitor
							Speed	Torque		Current	Input			
			(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(A)	(W)	(kg-cm)	(N-m)	(uF)
90	S9T20GB( )-F	4	28.0	1 Ø 220	60	5min.	900	2.78	0.278	0.64	140.2	4.95	0.495	4.0
			8.3	1 Ø 140		Cont.		0.91	0.091	0.43	60.2	1.83	0.183	

❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H')
❖ 20W 이상은 팬부착 모델이 기본 모델 입니다.

60Hz

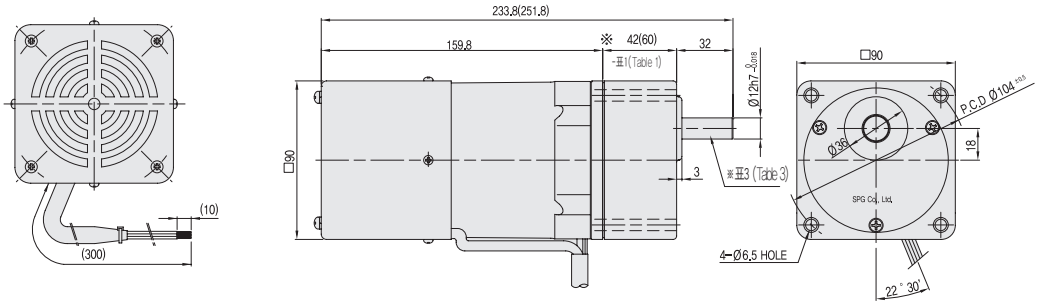
GEAR RATIO			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
S9KB□B()	5min	kg-cm	6.8	8.1	11.3	13.5	16.9	20.3	22.5	28.1	33.8	40.5	40.6	50.7	60.9	73.1	81.2	91.7	100	100	100	100	100	100	100	100
		N·m	0.66	0.79	1.10	1.32	1.66	1.99	2.21	2.76	3.31	3.97	3.98	4.98	5.97	7.16	7.96	9.00	9.81	9.81	9.81	9.81	9.81	9.81	9.81	9.81
	Cont.	kg-cm	2.2	2.7	3.7	4.4	5.5	6.6	7.4	9.2	11.1	13.3	13.3	16.6	19.9	23.9	26.6	30.0	36.0	45.0	54.1	60.1	72.1	90.1	100	100
		N·m	0.22	0.26	0.36	0.43	0.54	0.65	0.72	0.90	1.08	1.30	1.30	1.63	1.95	2.35	2.61	2.94	3.53	4.42	5.30	5.89	7.07	8.83	9.81	9.81

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 100㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 100 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향 입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)

DIMENSIONS

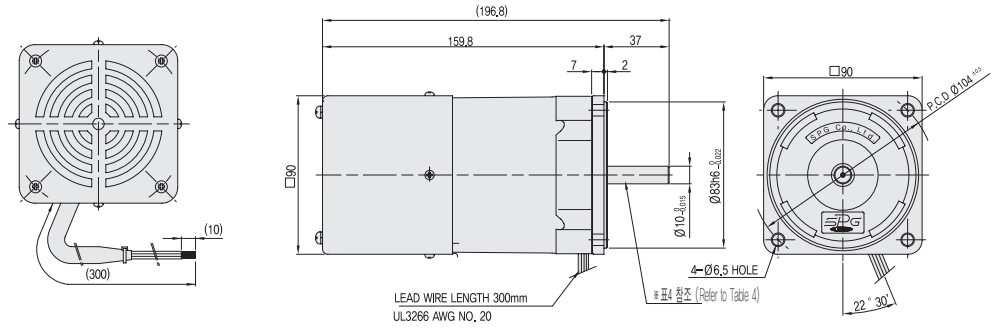
✚ GEARED MOTOR

※MOTOR MODEL : S9T20GBH(L)-F
※HEAD MODEL : S9□B3BH(L)~S9□B200BH(L)



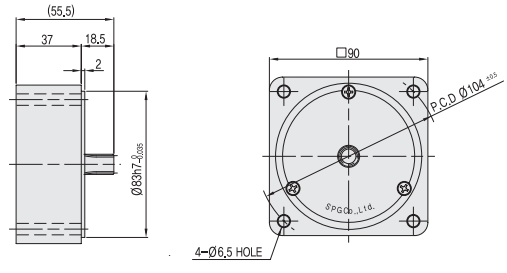
✚ MOTOR

※MOTOR MODEL : S9T20□B□-F

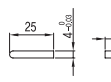
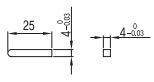


✚ INTER-DECIMAL GEAR HEAD

※MODEL : S9GX10B(H,L)



✚ KEY SPEC

GEAR HEAD	MOTOR
	

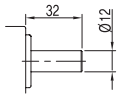
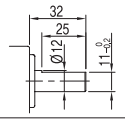
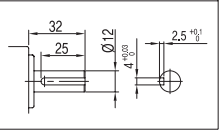
✚ ※42(60) – (표1 (Table1))

GEAR RATIO	SIZE(mm)
S9□B3BH(L) ~ S9□B18BH(L)	42
S9□B20BH(L) ~ S9□B200BH(L)	60

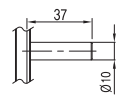
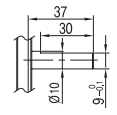
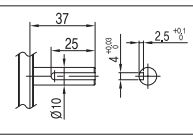
✚ WEIGHT – (표2 (Table2))

PART		WEIGHT(kg)
MOTOR		2.30
DECIMAL GEAR HEAD		0.60
GEAR HEAD	S9□B3BH(L) ~S9□B18BH(L)	0.73
	S9□B20BH(L) ~S9□B40BH(L)	1.03
	S9□B50BH(L) ~S9□B200BH(L)	1.13

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SB3BH(L) ~S9SB200BH(L)	
D-CUT TYPE S9DB3BH(L) ~S9DB200BH(L)	
KEY TYPE S9KB3BH(L) ~S9KB200BH(L)	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표4 (Table4))

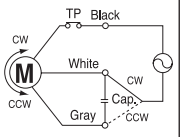
MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9T20GBH(L)-F	
STRAIGHT TYPE S9T20SB-F	
D-CUT TYPE S9T20DB-F	
KEY TYPE S9T20KB-F	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S9T20GB

CW,CCW



주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



30W

TORQUE MOTOR □90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load					Starting Torque		Capacitor
							Speed	Torque		Current	Input			
			(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(A)	(W)	(kg-cm)	(N-m)	(uF)
90	S9T30GB( )-F	4	35.2	1 Ø 220	60	5min.	900	3.49	0.349	0.8	174.1	6.38	0.638	5.0
			10.7	1 Ø 140		Cont.		1.19	0.119	0.55	76.9	2.39	0.239	

❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H')
❖ 20W 이상은 팬부착 모델이 기본 모델 입니다.

60Hz

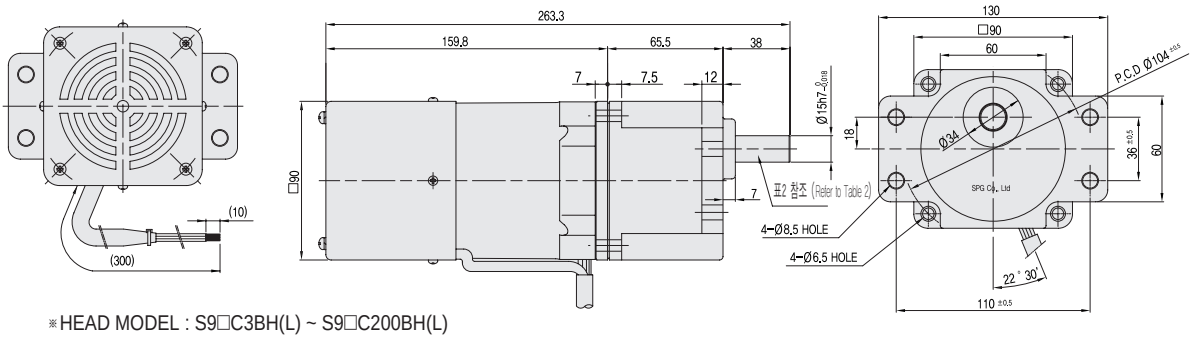
GEAR RATIO			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
S9KC□B()	5min	kg-cm	8.5	10.2	14.1	17.0	21.2	25.4	28.3	31.8	38.2	45.9	51.0	57.6	69.1	82.9	92.1	115.2	138.2	154.4	185.3	200	200	200	200	200
		N·m	0.83	1.00	1.39	1.66	2.08	2.50	2.77	3.12	3.75	4.50	5.00	5.65	6.78	8.13	9.04	11.29	13.55	15.14	18.17	19.61	19.61	19.61	19.61	19.61
	Cont.	kg-cm	2.9	3.5	4.8	5.8	7.2	8.7	9.6	10.9	13.0	15.6	17.4	19.6	23.6	28.3	31.4	39.3	47.1	52.7	63.2	70.2	84.3	105.3	26.4	140.4
		N·m	0.28	0.34	0.47	0.57	0.71	0.85	0.95	1.06	1.28	1.53	1.70	1.93	2.31	2.77	3.08	3.85	4.62	5.16	6.20	6.89	8.26	10.33	12.39	13.77

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 200㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향 입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)

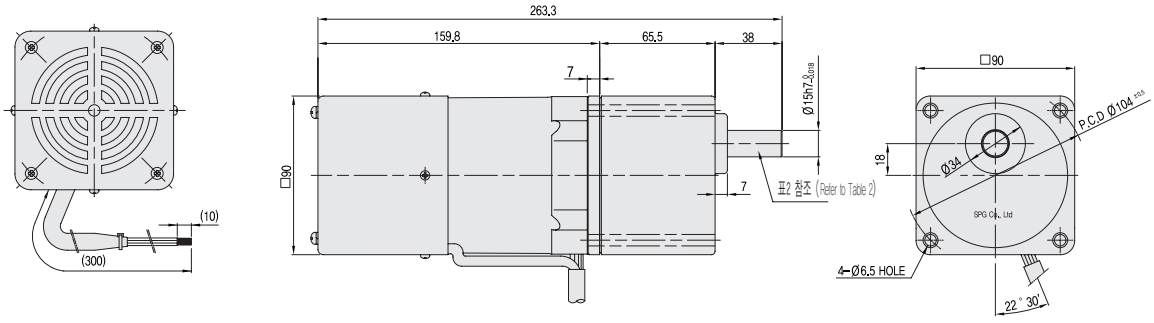
DIMENSIONS

✚ GEARED MOTOR

※MOTOR MODEL : S9I30GBH(L)-F
※HEAD MODEL : S9□C3BH(L)-S ~ S9□C200BH(L)-S

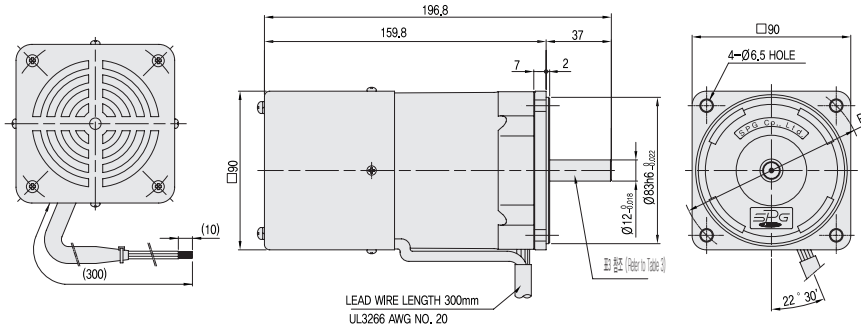


※HEAD MODEL : S9□C3BH(L) ~ S9□C200BH(L)



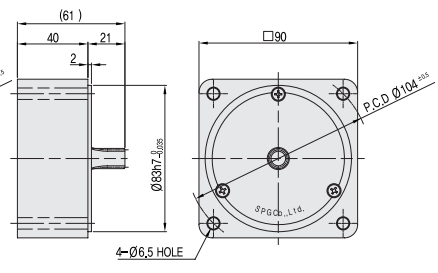
✚ MOTOR

※MOTOR MODEL : S9I30□B□-F



✚ INTER-DECIMAL GEAR HEAD

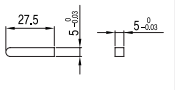
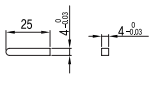
※MODEL : S9GX10BH(L)-S



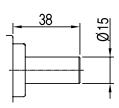
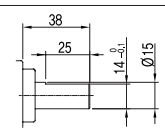
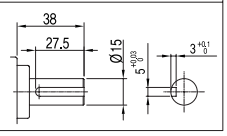
✚ WEIGHT - (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.93
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3BH(L) ~S9□C10BH(L)	1.21
	S9□C12.5BH(L) ~S9□C20BH(L)	1.30
	S9□C25BH(L) ~S9□C60BH(L)	1.40
	S9□C75BH(L) ~S9□C200BH(L)	1.45

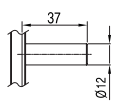
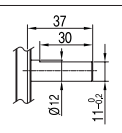
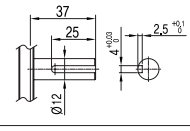
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SC3BH(L) ~S9SC200BH(L)	
D-CUT TYPE S9DC3BH(L) ~S9DC200BH(L)	
KEY TYPE S9KC3BH(L) ~S9KC200BH(L)	

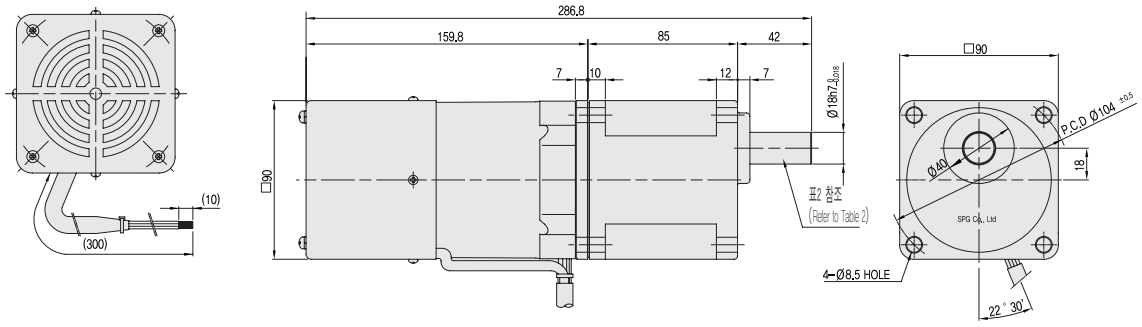
✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9T30GBH(L)-F	
STRAIGHT TYPE S9T30SB-F	
D-CUT TYPE S9T30DB-F	
KEY TYPE S9T30KB-F	

DIMENSIONS

✚ GEARED MOTOR

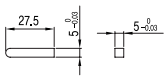
※MOTOR MODEL : S9I30GBH-F
※HEAD MODEL : S9□D3B□~S9□D200B



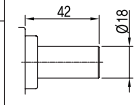
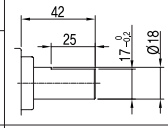
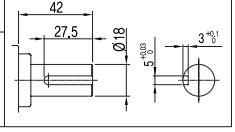
✚ WEIGHT – (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		2.93
GEAR HEAD	S9□D3B ~S9□D10B	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SD3B ~S9SD200B	
D-CUT TYPE S9DD3B ~S9DD200B	
KEY TYPE S9KD3B ~S9KD200B	

60Hz

GEAR RATIO			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
S9KD□B	5min	kg-cm	8.5	10.2	14.1	17.0	21.2	25.4	28.3	31.8	38.2	45.9	51.0	57.6	69.1	82.9	92.1	115.2	138.2	154.4	185.3	205.9	247.1	300	300	300
		N·m	0.83	1.00	1.39	1.66	2.08	2.50	2.77	3.12	3.75	4.50	5.00	5.65	6.78	8.13	9.04	11.29	13.55	15.14	18.17	20.19	24.23	29.42	29.42	29.42
	Cont.	kg-cm	2.9	3.5	4.8	5.8	7.2	8.7	9.6	10.9	13.0	15.6	17.4	19.6	23.6	28.3	31.4	39.3	47.1	52.7	63.2	70.2	84.3	105.3	126.4	140.4
		N·m	0.28	0.34	0.47	0.57	0.71	0.85	0.95	1.06	1.28	1.53	1.70	1.93	2.31	2.77	3.08	3.85	4.62	5.16	6.20	6.89	8.26	10.33	12.39	13.77

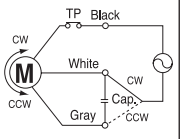
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 300㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. MOTOR의 H와 사용하여 주십시오. (Only "H" type is applicable. Please use "H" type motor.)

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S9T30GB

CW,CCW



주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



40W

TORQUE MOTOR □90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load					Starting Torque		Capacitor
							Speed	Torque		Current	Input			
			(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(A)	(W)	(kg-cm)	(N-m)	(uF)
90	S9T40GB( )-F	4	54.1	1Ø 220	60	5min.	900	5.14	0.514	1.0	218.5	8.76	0.876	6.5
			19.0	1Ø 140		Cont.		1.93	0.193	0.7	97.7	3.52	0.352	

❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H')
❖ 20W 이상은 팬부착 모델이 기본 모델 입니다.

60Hz

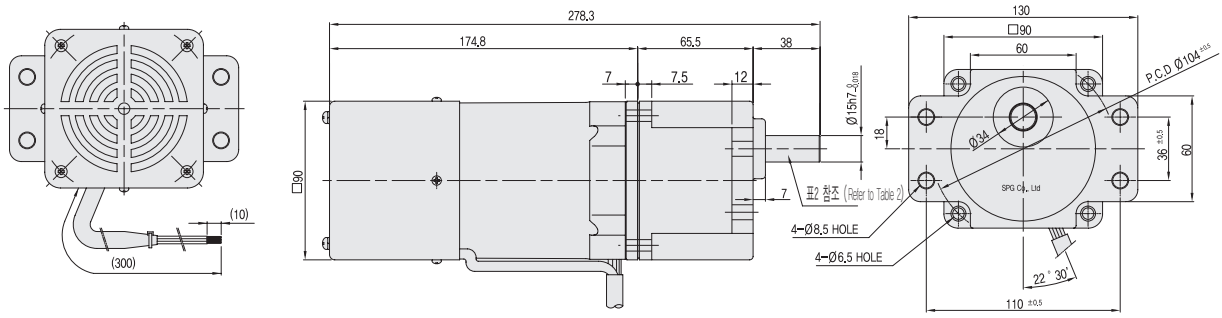
GEAR RATIO			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
S9KC□B()	5min	kg-cm	12.5	15	20.8	25	31.2	37.5	41.6	46.9	56.3	67.5	75	84.8	101.8	122.1	135.7	169.6	200	200	200	200	200	200	200	200
		N·m	1.22	1.47	2.04	2.45	3.06	3.67	4.08	4.60	5.52	6.62	7.36	8.32	9.98	11.98	13.31	16.63	19.61	19.61	19.61	19.61	19.61	19.61	19.61	19.61
	Cont.	kg-cm	4.7	5.6	7.8	9.4	11.7	14.1	15.6	17.6	21.1	25.4	28.2	31.8	38.2	45.9	51	63.7	76.4	85.4	102.5	113.9	136.6	170.8	200	200
		N·m	0.46	0.55	0.77	0.92	1.15	1.38	1.53	1.73	2.07	2.49	2.76	3.12	3.75	4.50	5.00	6.25	7.49	8.38	10.05	11.17	13.40	16.75	19.61	19.61

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 200㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향 입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)

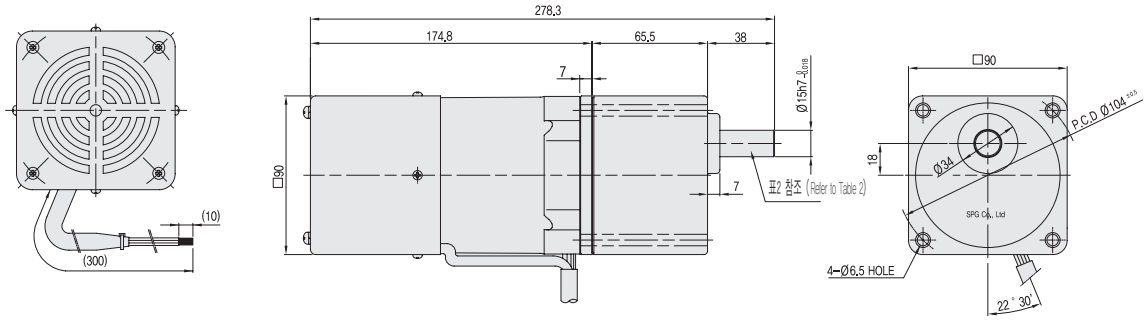
DIMENSIONS

GEARED MOTOR

※MOTOR MODEL : S9I40GBH(L)-F
※HEAD MODEL : S9□C3BH(L)-S ~ S9□C200BH(L)-S

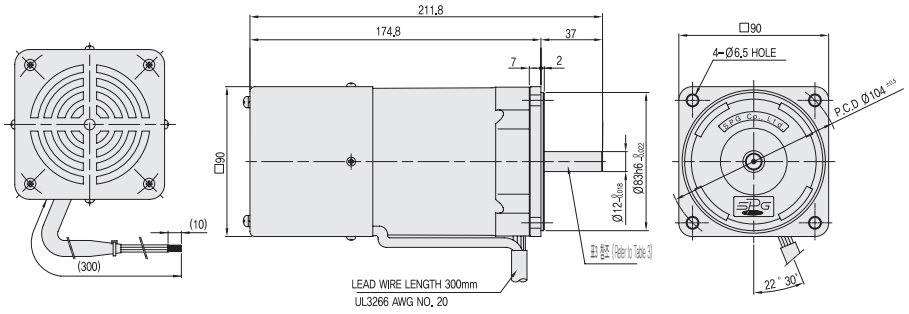


※HEAD MODEL : S9□C3BH(L) ~ S9□C200BH(L)



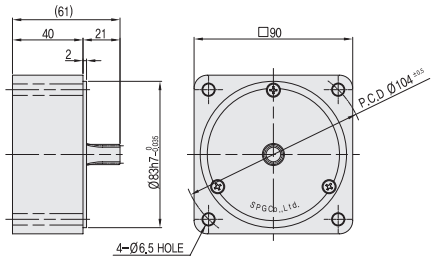
MOTOR

※MOTOR MODEL : S9I40□B□-F



INTER-DECIMAL GEAR HEAD

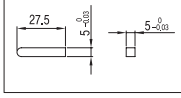
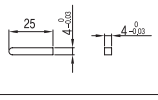
※MODEL : S9GX10BH(L)-S



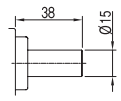
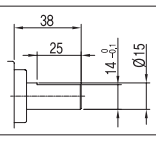
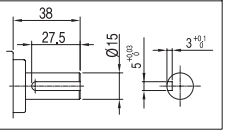
WEIGHT - (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.53
DECIMAL GEAR HEAD		0.65
GEAR HEAD	S9□C3BH(L) ~S9□C10BH(L)	1.21
	S9□C12.5BH(L) ~S9□C20BH(L)	1.30
	S9□C25BH(L) ~S9□C60BH(L)	1.40
	S9□C75BH(L) ~S9□C200BH(L)	1.45

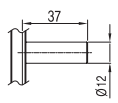
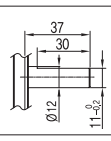
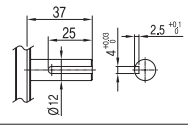
KEY SPEC

GEAR HEAD	MOTOR
	

GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE S9SC3BH(L) ~S9SC200BH(L)	
D-CUT TYPE S9DC3BH(L) ~S9DC200BH(L)	
KEY TYPE S9KC3BH(L) ~S9KC200BH(L)	

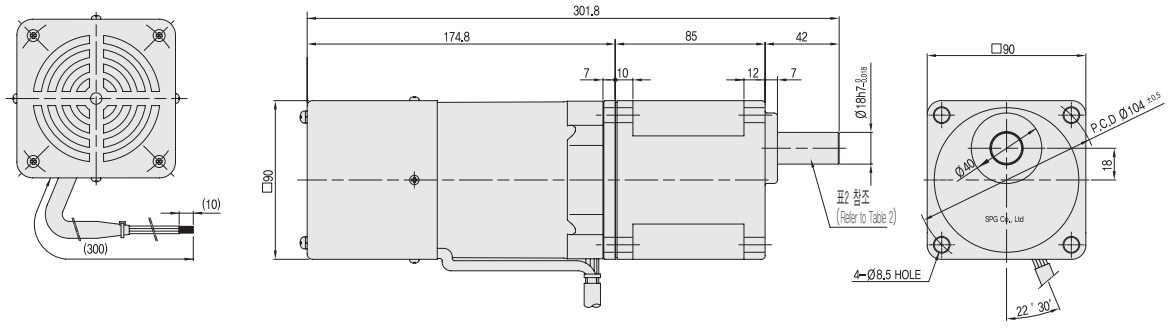
MOTOR 출력축 사양 (SPEC for output shaft of motor) - (표3 (Table3))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
GEAR TYPE S9T40BH(L)-F	
STRAIGHT TYPE S9T40SB-F	
D-CUT TYPE S9T40DB-F	
KEY TYPE S9T40KB-F	

DIMENSIONS

✚ GEARED MOTOR

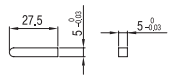
※MOTOR MODEL : S9I40GBH-F
※HEAD MODEL : S9□D3B~S9□D200B



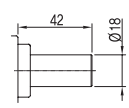
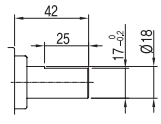
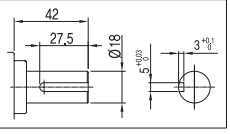
✚ WEIGHT - (표1 (Table1))

PART		WEIGHT(kg)
MOTOR		3.53
GEAR HEAD	S9□D3B ~S9□D10B	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

✚ KEY SPEC

GEAR HEAD


✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) - (표2 (Table2))

MODEL	출력축 구분 (TYPES OF OUTPUT SHAFT)
STRAIGHT TYPE	
S9SD3B ~S9SD200B	
D-CUT TYPE	
S9DD3B ~S9DD200B	
KEY TYPE	
S9KD3B ~S9KD200B	

60Hz

GEAR RATIO			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
S9KD□B	5min	kg-cm	12.5	15	20.8	25	31.2	37.5	41.6	46.9	56.3	67.5	75	84.8	101.8	122.1	135.7	169.6	203.5	254.4	300	300	300	300	300	300
		N·m	1.22	1.47	2.04	2.45	3.06	3.67	4.08	4.60	5.52	6.62	7.36	8.32	9.98	11.98	13.31	16.63	19.96	24.95	29.42	29.42	29.42	29.42	29.42	29.42
	Cont.	kg-cm	4.7	5.6	7.8	9.4	11.7	14.1	15.6	17.6	21.1	25.4	28.2	31.8	38.2	45.9	51	63.7	76.4	85.4	102.5	113.9	136.6	170.8	205.0	227.7
		N·m	0.46	0.55	0.77	0.92	1.15	1.38	1.53	1.73	2.07	2.49	2.76	3.12	3.75	4.50	5.00	6.25	7.49	8.38	10.05	11.17	13.40	16.75	20.10	22.33

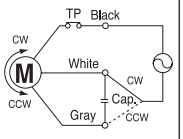
❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 300㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. MOTOR의 H와 사용하여 주십시오. (Only "H" type is applicable. Please use "H" type motor.)

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S9T40GB

CW,CCW



주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



60W

TORQUE MOTOR □90㎜ LEAD WIRE TYPE

SIZE mm sq.	Type	Poles	Output	Voltage	Frequency	Duty	Rated Load					Starting Torque		Capacitor
							Speed	Torque		Current	Input			
			(W)	(V)	(Hz)		(rpm)	(kg-cm)	(N-m)	(A)	(W)	(kg-cm)	(N-m)	(uF)
90	S9T60GB-F	4	74.1	1 Ø 220	60	5min.	900	6.57	0.657	1.17	254.2	10.12	1.012	8.0
			28.6	1 Ø 140		Cont.		2.66	0.266	0.77	106.8	4.26	0.426	

❖ 'H' TYPE 전용으로 기종명에 표시하지 않습니다. (Only"H" type is applicable.)
❖ 20W 이상은 팬부착 모델이 기본 모델 입니다.

60Hz

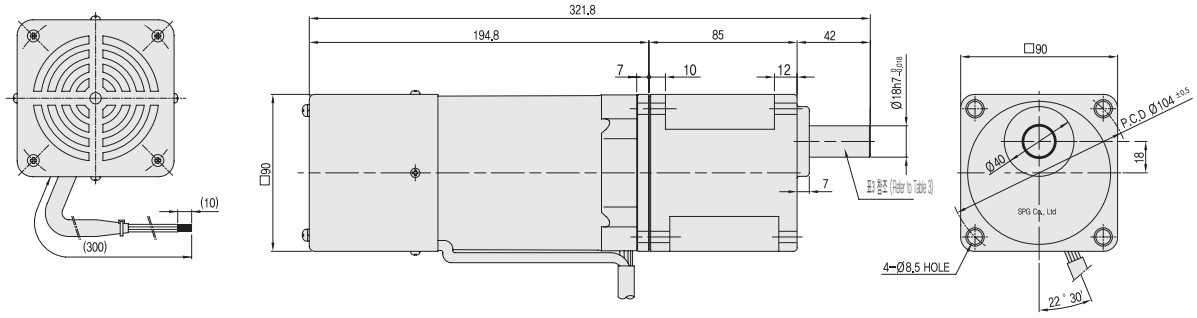
GEAR RATIO			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
S9KH□B	5min	kg-cm	16.0	19.2	26.6	31.9	39.9	47.9	53.2	60	71.9	86.3	95.9	108.4	130.1	156.1	173.4	216.8	260.2	290.7	300	300	300	300	300	300
		N·m	1.57	1.88	2.61	3.13	3.91	4.70	5.22	5.88	7.06	8.47	9.41	10.63	12.76	15.31	17.01	21.26	25.51	28.51	29.42	29.42	29.42	29.42	29.42	29.42
	Cont.	kg-cm	6.5	7.8	10.8	12.9	16.2	19.4	21.5	24.3	29.1	35.0	38.8	43.9	52.7	63.2	70.2	87.8	105.3	117.7	141.2	156.9	188.3	235.4	282.5	300.0
		N·m	0.63	0.76	1.06	1.27	1.58	1.90	2.11	2.38	2.86	3.43	3.81	4.30	5.16	6.20	6.89	8.61	10.33	11.54	13.85	15.39	18.47	23.09	27.70	29.42

❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향 입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. (Only "H" type is applicable.)

DIMENSIONS

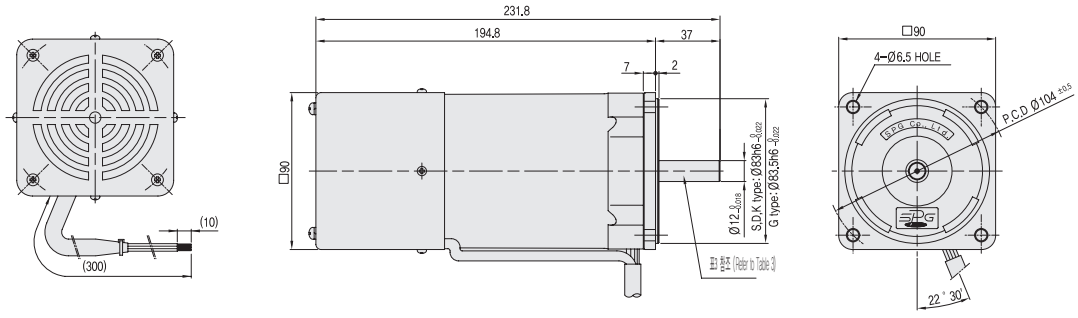
✚ GEARED MOTOR

※MOTOR MODEL : S9I60GB-F
※HEAD MODEL : S9□H3B~S9□H200B



✚ MOTOR

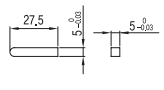
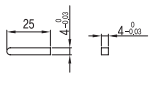
※MOTOR MODEL : S9I60GB-F



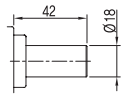
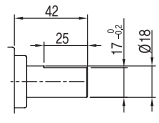
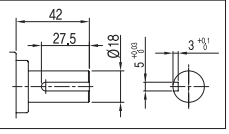
✚ WEIGHT – (표1)

PART		WEIGHT(kg)
MOTOR		4.30
GEAR HEAD	S9□H3B ~S9□H10B	1.65
	S9□H12.5B ~S9□H20B	1.80
	S9□H25B ~S9□H60B	1.90
	S9□H75B ~S9□H200B	1.95

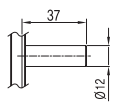
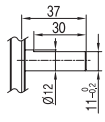
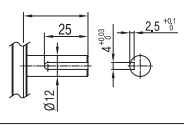
✚ KEY SPEC

GEAR HEAD	MOTOR
	

✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

MODEL	출력축 구분
STRAIGHT TYPE S9SH3B ~S9SH200B	
D-CUT TYPE S9DH3B ~S9DH200B	
KEY TYPE S9KH3B ~S9KH200B	

✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표3 (Table3))

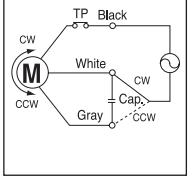
MODEL	출력축 구분
GEAR TYPE S9I60GB-F	
STRAIGHT TYPE S9I60SB-F	
D-CUT TYPE S9I60DB-F	
KEY TYPE S9I60KB-F	

SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

S9T60GB

CW,CCW



주의 : MOTOR 회전 방향의 교환은 MOTOR가 완전히 정지한 후에 실시하여 주십시오. MOTOR가 회전 중에 회전방향을 교환할 경우 회전방향이 바뀌지 않거나 회전방향이 바뀌어지는 데 있어서 시간이 걸리는 수도 있습니다. (Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.)



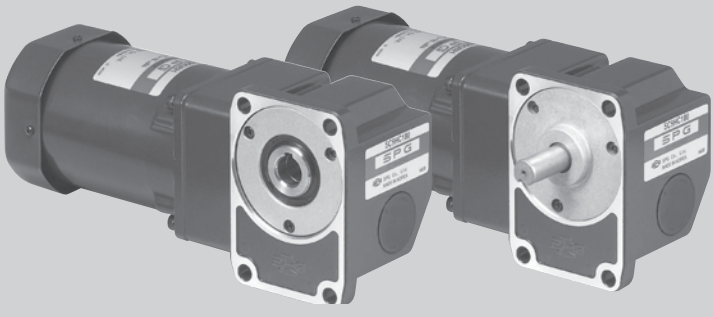
RIGHT ANGLE GEAR HEAD

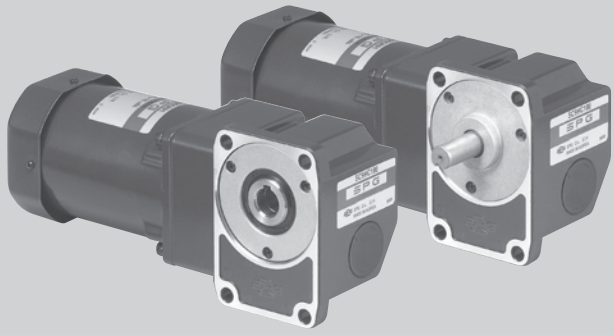
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SF9 TYPE RIGHT ANGLE GEAR HEAD 337

SR9 TYPE RIGHT ANGLE GEAR HEAD 339





RIGHT ANGLE GEAR HEAD

□80㎜ / □90㎜, 25W / 40W / 60W / 90W

RIGHT ANGLE GEAR HEAD 특징 (Characteristics of RIGHT ANGLE GEAR HEAD)

- WORM GEAR를 이용하여 모터와 직각으로 설치하여 사용할 수 있습니다. (Can be installed to a motor at a right angle using worm gears and special helical gears.)
- 기존 사각 박스 대비 설치 공간을 줄일 수 있습니다.(최대 50%) (Space saving of maximum 50% compared to existing square boxes.)
- SPG 표준 AC/DC 모터와 바로 조립하여 적용 가능합니다. (Can be assembled and applied with SPG standard motors.)
- 감속비는 표준형 GEAR HEAD와 유사하게 구성되어 있으며, 1/3~1/180까지 가능합니다. (Ratio can be selected in between 1/3 and 1/180, and is shown in the cover of the gear head.)

RIGHT ANGLE GEAR HEAD CODING SYSTEM

MAKER MODEL	SIZE	SHAFT TYPE	OUTPUT	GEAR RATIO		SPECIAL TYPE
SC	9	K	C	180	-	□□□
	8 : □80㎜ 9 : □90㎜	K : Key type H : Hollow shaft	A : 25W B : 40W C : 60W/90W	3~180 : Reduction Ratio		

SC : SPG Crossing Gear Head

RIGHT ANGLE GEAR HEAD 사양 (SPECIFICATION OF RIGHT ANGLE GEAR HEAD)

품명 (TYPE)	감속비 (RATIO)	최대허용토크(MAXIMUM PERMISSIBLE TORQUE)		허용(PERMISSIBLE) OVERHUNG 하중 (LOAD)				허용(PERMISSIBLE) THRUST 하중(LOAD)	
				SHAFT 앞 끝에서 10㎜ (DISTANCE FROM FRONT EDGE OF SHAFT 10mm)		SHAFT 앞 끝에서 20㎜ (DISTANCE FROM FRONT EDGE OF SHAFT 20mm)			
		kgf · cm	N · m	kgf	N	kgf	N	kgf	N
SC8HA□	3~180	80	8	★25	★250	★22	★220	10	100
SC9HB□	3~180	100	10	★35	★350	★31	★310	20	200
SC9HC□	3~180	200	20	★56	★560	★50	★500	25	250
SC8KA□	3~18	80	8	10	100	15	150	10	100
	25~180			20	200	30	300		
SC9KB□	3~18	100	10	25	250	35	350	20	200
	25~180			30	300	45	450		
SC9KC□	3~9	200	20	40	400	50	500	25	250
	12.5~25			45	450	60	600		
	30~180			50	500	70	700		

❖ 중공축 type에서 허용 OVERHUNG 하중은 FLANGE 면에서의 거리입니다.(★ 부분) (★ is the distance from the flange mounting surface.)
❖ 품명 중 □는 감속비입니다. (The code in □ of gearhead model is gear ratio.)
❖ Self Locking은 작동하지 않습니다. (Self Locking isn't working.)

RIGHT ANGLE GEAR HEAD 전달 효율 (TRANSFER EFFICIENCY)

품명(Model) \ 감속비 (Gear Ratio)	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
SC8KA□ SC8HA□	50%						60%													
SC9KB□ SC9HB□	68%									60%										
SC9KC□ SC9HC□	68%										60%							50%		

❖ 효율은 정격 기준이고 참고값이므로 실제 적용시 상이할 수 있습니다.(The efficiency referenced may vary when applied.)

RIGHT ANGLE GEAR HEAD 허용 TORQUE (PERMISSIBLE TORQUE)

50Hz

MODEL	GEAR RATIO / rpm	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
	rpm	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
SC8KA□ SC8HA□ (25W)	kg-cm	3.2	3.8	5.3	6.3	7.9	9.5	15.8	18.9	22.7	31.5	37.8	45.4	63	75.6	80	80	80	80	80	80
	N-m	0.32	0.38	0.53	0.63	0.79	0.95	1.58	1.89	2.27	3.15	3.78	4.58	6.30	7.56	8	8	8	8	8	8
SC9KB□ SC9HB□ (40W)	kg-cm	6.4	7.7	10.7	12.9	16.1	19.3	26.8	32.1	38.6	47.3	56.7	68	94.5	100	100	100	100	100	100	100
	N-m	0.64	0.77	1.07	1.29	1.61	1.93	2.68	3.21	3.86	4.73	5.67	6.8	9.45	10	10	10	10	10	10	10
SC9KC□ SC9HC□ (60W)	kg-cm	9.4	11.3	15.6	18.8	23.5	28.2	39.1	46.9	56.3	78.2	82.8	99.4	138	165.6	200	200	200	200	200	200
	N-m	0.94	1.13	1.56	1.88	2.35	2.82	3.91	4.69	5.63	7.82	8.28	9.94	13.8	16.56	20	20	20	20	20	20
SC9KC□ SC9HC□ (90W)	kg-cm	14.1	16.9	23.5	28.2	35.2	42.2	58.7	70.4	84.5	117.3	124.2	149	200	200	200	200	200	200	200	200
	N-m	1.41	1.69	2.35	2.82	3.52	4.22	5.87	7.04	8.45	11.73	12.42	14.9	20	20	20	20	20	20	20	20

60Hz

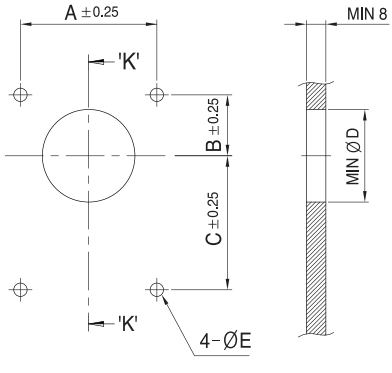
MODEL	GEAR RATIO / rpm	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
	rpm	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
SC8KA□ SC8HA□ (25W)	kg-cm	25	3	4.1	5	6.2	7.4	12.4	14.9	17.8	24.8	29.7	35.6	49.5	59.4	74.3	80	80	80	80	80
	N-m	0.25	0.3	0.41	0.5	0.62	0.74	1.24	1.49	1.78	2.48	2.97	3.56	4.95	5.94	7.43	8	8	8	8	8
SC9KB□ SC9HB□ (40W)	kg-cm	5.1	6.1	8.5	10.2	12.8	15.3	21.3	25.5	30.6	37.5	45	54	75	90	100	100	100	100	100	100
	N-m	0.51	0.61	0.85	1.02	1.28	1.53	2.13	2.55	3.06	3.75	4.5	5.4	7.5	9	10	10	10	10	10	10
SC9KC□ SC9HC□ (60W)	kg-cm	8	9.5	13.3	15.9	19.9	23.9	33.2	39.8	47.7	66.3	70.2	84.2	117	140.4	175.5	200	200	200	200	200
	N-m	0.8	0.95	1.33	1.59	1.99	2.39	3.32	3.98	4.77	6.63	7.02	8.42	11.7	14.04	17.5	20	20	20	20	20
SC9KC□ SC9HC□ (90W)	kg-cm	11.4	13.7	19	22.8	28.6	34.3	47.6	57.1	68.5	95.2	100.8	121	168	200	200	200	200	200	200	200
	N-m	1.14	1.37	19	2.28	2.86	3.43	4.76	5.71	6.85	9.52	10.08	12.1	16.8	20	20	20	20	20	20	20

❖ 출력축 회전방향은 모두 MOTOR 회전방향과 반대방향입니다. (Basically, all output shaft rotates in an opposite way to that of a motor.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어 계산하였습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio.)
❖ 실제 회전수는 부하의 크기에 따라 2~20% 적습니다. (The actual rotation speed can be 2~20% less than displayed value depending on the load.)

RIGHT ANGLE GEAR HEAD 설치 치수 (Dimensions of the gearhead mounting surface)

TYPE	품명(MODEL)	A	B	C	ØD	ØE
중공축	SC8HA□	56	25	55	Ø16	Ø5.5
	SC9HB□	58	33	57	Ø16	Ø6.5
	SC9HC□	60	33	67	Ø18	Ø8.5
중실축	SC8KA□	56	25	55	Ø35	Ø5.5
	SC9KB□	58	33	57	Ø35	Ø6.5
	SC9KC□	60	33	67	Ø35	Ø8.5

❖ 품명 중 □는 감속비입니다. (The code in □ of gearhead model is gear ratio.)



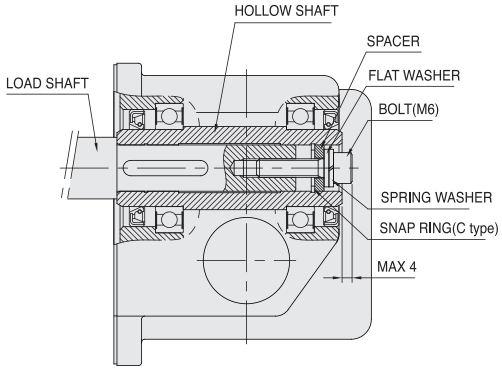
SECTION 'K' - 'K'

중공축 RIGHT ANGLE GEAR HEAD 부하축 설치 방법 (Mounting load shaft to hollow shaft right angle gearhead)

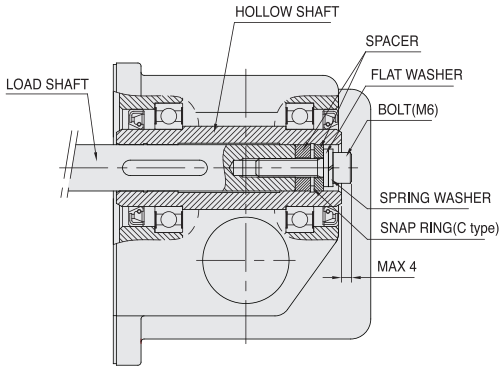
(부하축 설치 예(Example of mounting the load))
부하축 단이 있는 경우는 단을 출력축에 밀착시켜 조립하시고, 부하축 단이 없는 경우는 출력단 끝을 SANP RING에 밀착시켜 조립하여 주십시오. 만일 단이 없는 경우에서 부하축이 짧은 경우 SPACER를 사용하여 부하단 끝과 SNAP RING의 유격이 없도록 하여 주십시오. 부하축의 권장지수는 아래쪽 표를 참조하십시오. 볼트의 끝과 중공축 단면보다 4㎜ 이상 나오면 안전커버(부속품)를 장착할 수 없습니다. (**For stepped load shaft, insert the load shaft all the way into the hollow shaft. For straight load shaft, insert the load shaft all the way to the snap ring. If the load shaft is not long enough, use spacer to eliminate any space between the load shaft and the snap ring. Refer to the below table for the dimensional relationship between the load shaft and the hollow shaft. Note that if the extrusion of the bolt is more than 4mm, the safety cover (accessory) cannot be installed.**)

품명 (MODEL)	중공축 내경 및 공차 (Inner diameter and tolerance of hollow shaft)	부하축 권장 축지름 및 공차 (Shaft diameter and tolerance recommended of load shaft)
SC8HA□	Ø15H8 $^{+0.027}_{0}$	Ø15h7 $^{0}_{-0.018}$
SC9HB□	Ø15H8 $^{+0.027}_{0}$	Ø15h7 $^{0}_{-0.018}$
SC9HC□	Ø17H8 $^{+0.027}_{0}$	Ø17h7 $^{0}_{-0.018}$

❖ 품명 중 □는 감속비입니다. (The code in □ of gearhead model is gear ratio.)



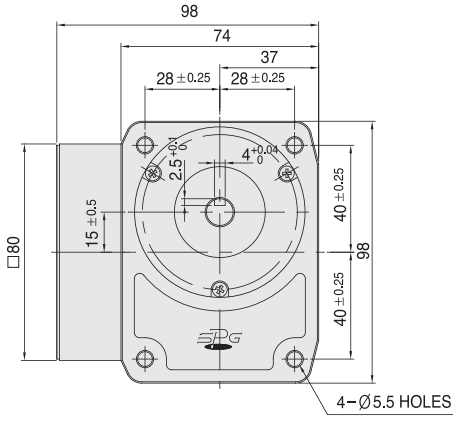
(부하축 단이 있는 경우 (Stepped load shaft))

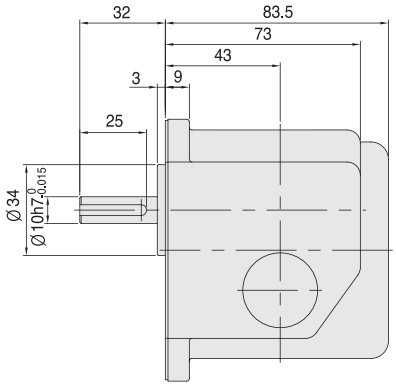


(부하축 단이 없는 경우 (Straight load shaft))

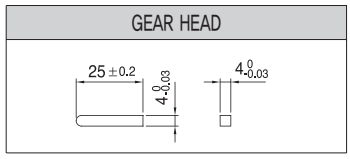
DIMENSIONS : SOLID SHAFT

SC8KA□ (Weight : 1.6kg)

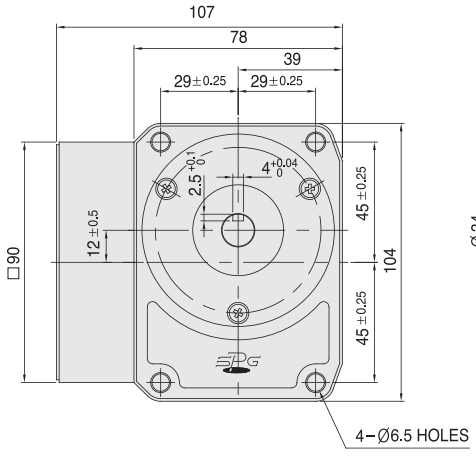


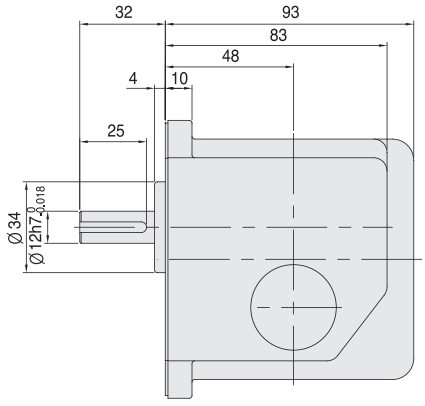


✚ KEY SPEC

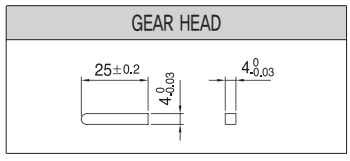


SC9KB□ (Weight : 2.0kg)

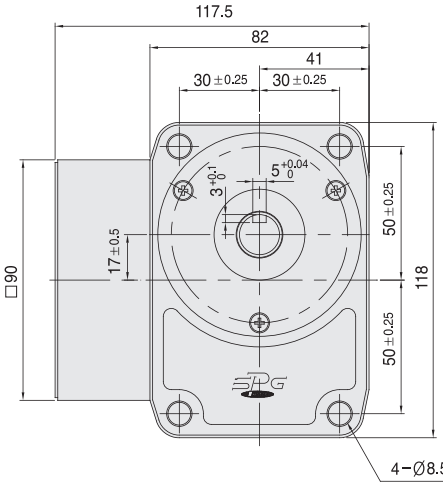


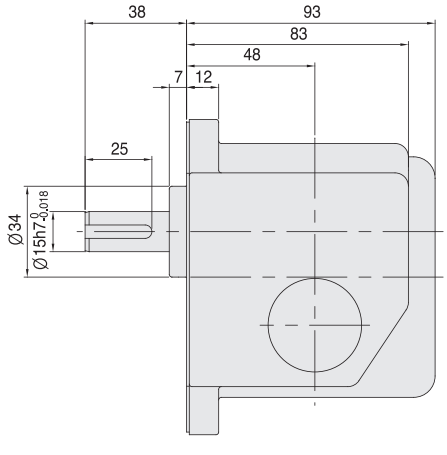


✚ KEY SPEC

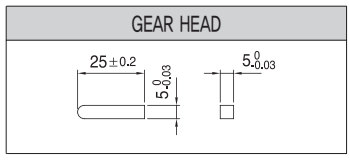


SC9KC□ (Weight : 2.5kg)



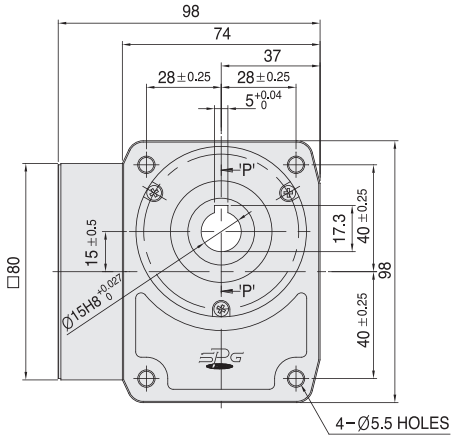


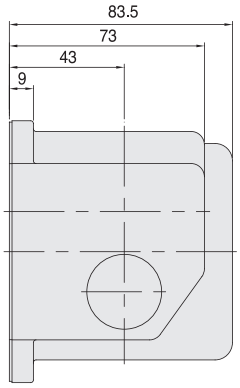
✚ KEY SPEC

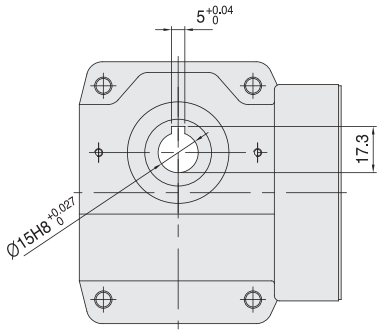


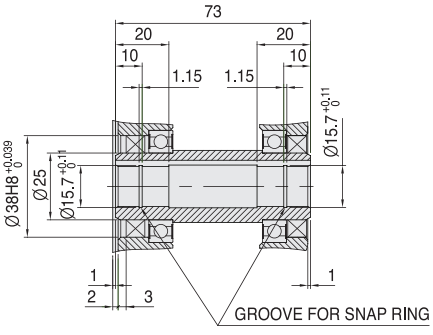
DIMENSIONS : HOLLOW SHAFT

SC8HA□ (Weight : 1.6kg)



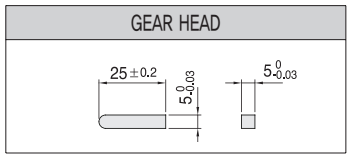




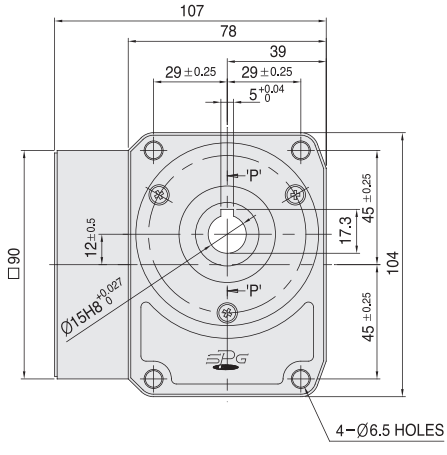


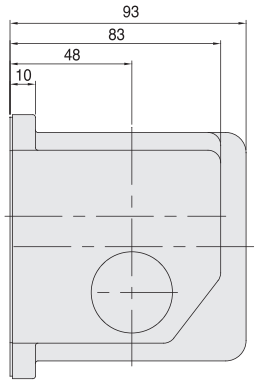
SECTION 'P'-'P'(DETAIL OF OUTPUT SHAFT)

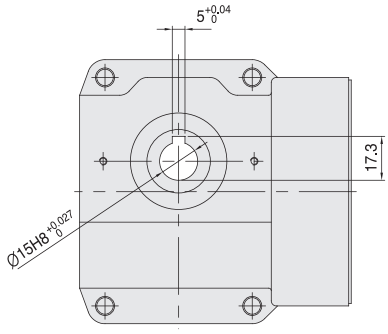
✚ KEY SPEC

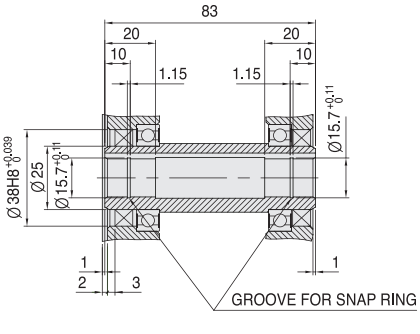


SC9HB□ (Weight : 2.0kg)



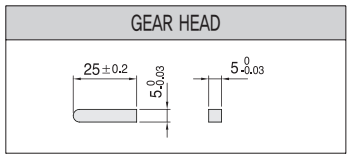






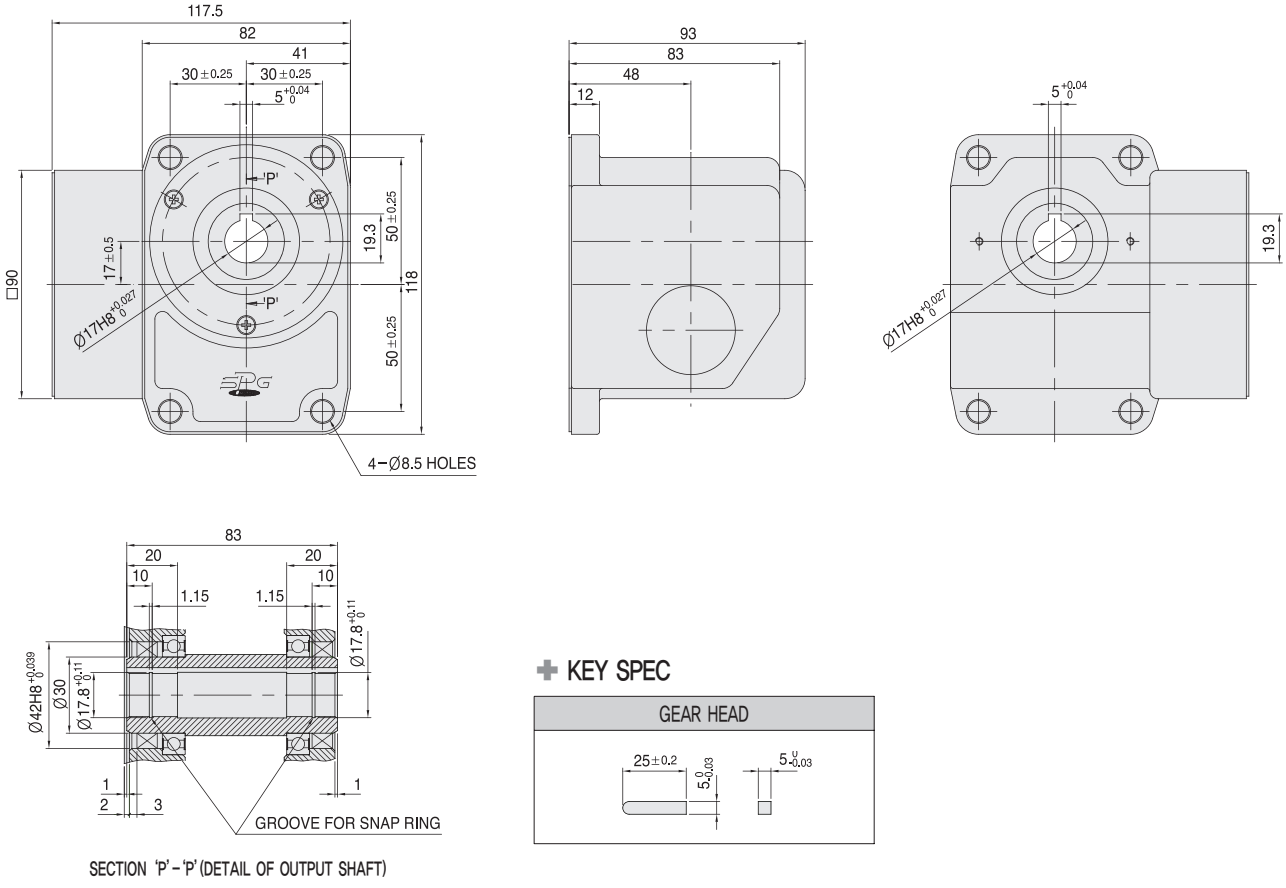
SECTION 'P'-'P'(DETAIL OF OUTPUT SHAFT)

✚ KEY SPEC



DIMENSIONS : HOLLOW SHAFT

SC9HC□ (Weight : 2.5kg)



SECTION 'P'-'P' (DETAIL OF OUTPUT SHAFT)

KEY SPEC

GEAR HEAD



SF9 TYPE RIGHT ANGLE GEAR HEAD

□90㎜, 40W

RIGHT ANGLE GEAR HEAD 특징 (Characteristics of RIGHT ANGLE GEAR HEAD)

- WORM GEAR를 이용하여 모터와 직각으로 설치하여 사용할 수 있습니다. (Can be installed to a motor at a right angle using worm gears and special helical gears.)
- 기존 사각 박스 대비 설치 공간을 줄일 수 있습니다.(최대 50%) (Space saving of maximum 50% compared to existing square boxes.)
- SPG 표준 AC/DC 모터와 바로 조립하여 적용 가능합니다. (Can be assembled and applied with SPG standard motors.)
- 감속비는 표준형 GEAR HEAD와 유사하게 구성되어 있으며, 1/3~1/180까지 가능합니다. (Ratio can be selected in between 1/3 and 1/180, and is shown in the cover of the gear head.)

* FOOT TYPE 구조로 단축 또는 양축으로 사용 가능합니다. (With FOOT TYPE structure, it can be used with single axis or double axis.)

SF9 TYPE GEAR HEAD CODING SYSTEM

MAKER MODEL	SIZE	SHAFT TYPE	OUTPUT	GEAR RATIO	SHAFT 방향		SPECIAL TYPE
SF	9	K	B	180	T	-	□□□
SC : SPG Foot Type Gear Head	9 : □90㎜	K : Key type	B : 40W	3~180 : Reduction Ratio	L : Shaft on left R : Shaft on right T : Shaft on both sides		

SF9 TYPE GEAR HEAD 사양 (SPECIFICATION SF9 TYPE GEAR HEAD)

품명 (TYPE)	감속비 (RATIO)	최대허용토크(MAXIMUM PERMISSIBLE TORQUE)		허용(PERMISSIBLE) OVERHUNG 하중 (LOAD)				허용(PERMISSIBLE) THRUST 하중(LOAD)	
				SHAFT 앞 끝에서 10㎜ (DISTANCE FROM FRONT EDGE OF SHAFT 10mm)		SHAFT 앞 끝에서 20㎜ (DISTANCE FROM FRONT EDGE OF SHAFT 20mm)			
		kgf · cm	N · m	kgf	N	kgf	N	kgf	N
SF9KB□	3～18	100	10	25	250	35	350	20	200
	25～180			30	300	45	450		

❖ 품명 중 □는 감속비입니다. (The code in □ of gearhead model is gear ratio.)
❖ Self Locking은 작동하지 않습니다. (Self Locking isn't working.)

SF9 TYPE GEAR HEAD 전달 효율 (TRANSFER EFFICIENCY)

품명(Model) \ 감속비 (Gear Ratio)	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
SF9KB□	68%									60%										

❖ 효율은 정격 기준이고 참고값이므로 실제 적용시 상이할 수 있습니다.(The efficiency referenced may vary when applied.)

SF9 TYPE GEAR HEAD 허용 TORQUE (PERMISSIBLE TORQUE)

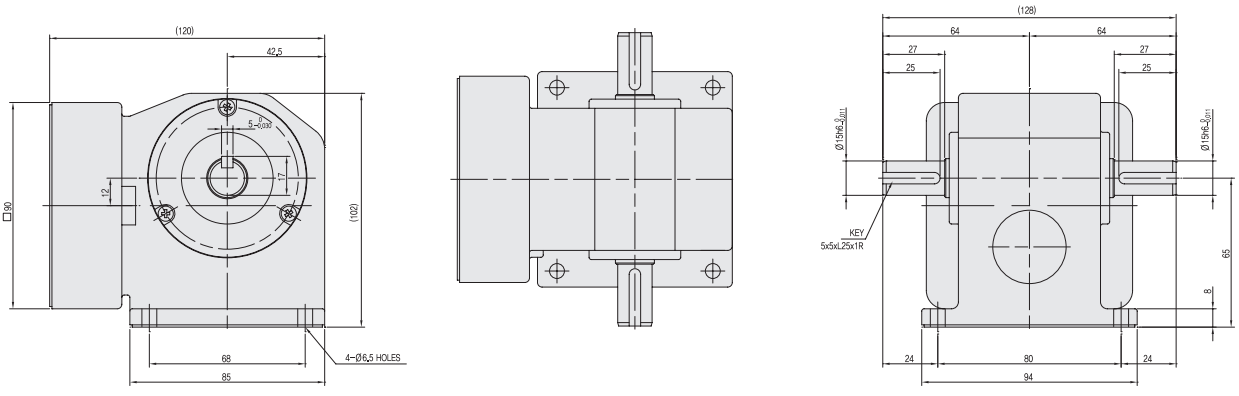
50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
	rpm	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
40W	kg-cm	6.4	7.7	10.7	12.9	16.1	19.3	26.8	32.1	38.6	47.3	56.7	68	94.5	100	100	100	100	100	100	100
	N-m	0.64	0.77	1.07	1.29	1.61	1.93	2.68	3.21	3.86	4.73	5.67	6.8	9.45	10	10	10	10	10	10	10

60Hz

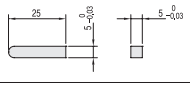
GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
	rpm	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
40W	kg-cm	5.1	6.1	8.5	10.2	12.8	15.3	21.3	25.5	30.6	37.5	45	54	75	90	100	100	100	100	100	100
	N-m	0.51	0.61	0.85	1.02	1.28	1.53	2.13	2.55	3.06	3.75	4.5	5.4	7.5	10	10	10	10	10	10	10

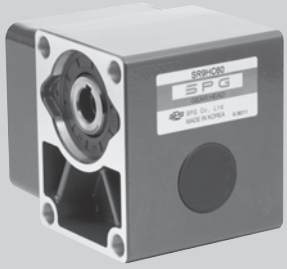
SF9 TYPE GEAR HEAD LAY-OUT (mm)



CHECK			
TOP VIEW	L TYPE GEAR HEAD	R TYPE GEAR HEAD	T TYPE GEAR HEAD
	Shaft on left	Shaft on right	Shaft on both sides
GEAR HEAD	SF9KB10L	SF9KB10R	SF9KB10T

✚ KEY SPEC

GEAR HEAD




SR9 TYPE RIGHT ANGLE GEAR HEAD

□90㎜, 60W / 90W

RIGHT ANGLE GEAR HEAD 특징 (Characteristics of RIGHT ANGLE GEAR HEAD)

- WORM GEAR를 이용하여 모터와 직각으로 설치하여 사용할 수 있습니다. (Can be installed to a motor at a right angle using worm gears and special helical gears.)
- 기존 사각 박스 대비 설치 공간을 줄일 수 있습니다.(최대 50%) (Space saving of maximum 50% compared to existing square boxes.)
- SPG 표준 AC/DC 모터와 바로 조립하여 적용 가능합니다. (Can be assembled and applied with SPG standard motors.)
- 감속비는 표준형 GEAR HEAD와 유사하게 구성되어 있으며, 1/3~1/180까지 가능합니다. (Ratio can be selected in between 1/3 and 1/180, and is shown in the cover of the gear head.)

* 양면 대칭구조로 SET 설치에 용의합니다. (The double-sided symmetrical structure is convenient for SET installation.)

SR9 TYPE GEAR HEAD CODING SYSTEM

MAKER MODEL	SIZE	SHAFT TYPE	OUTPUT	GEAR RATIO		SPECIAL TYPE
SR	9	H	C	180	-	□□□
SR : SPG 대칭 Type Gear Head	9 : □90㎜	H : Hollow shaft	C : 60W/90W	3~180 : Reduction Ratio		

SR9 TYPE GEAR HEAD 사양 (SPECIFICATION SR9 TYPE GEAR HEAD)

품명 (TYPE)	감속비 (RATIO)	최대허용토크(MAXIMUM PERMISSIBLE TORQUE)		허용(PERMISSIBLE) OVERHUNG 하중 (LOAD)				허용(PERMISSIBLE) THRUST 하중(LOAD)	
				SHAFT 앞 끝에서 10㎜ (DISTANCE FROM FRONT EDGE OF SHAFT 10mm)		SHAFT 앞 끝에서 20㎜ (DISTANCE FROM FRONT EDGE OF SHAFT 20mm)			
		kgf · cm	N · m	kgf	N	kgf	N	kgf	N
SR9HC□	3~180	200	20	★56	★560	★50	★500	25	250

❖ 중공축 type에서 허용 OVERHUNG 하중은 FLANGE 면에서의 거리입니다.(★ 부분) (★ is the distance from the flange mounting surface.)
❖ 품명 중 □는 감속비입니다. (The code in □ of gearhead model is gear ratio.)
❖ Self Locking은 작동하지 않습니다. (Self Locking isn't working.)

SR9 TYPE GEAR HEAD 전달 효율 (TRANSFER EFFICIENCY)

감속비 (Gear Ratio) / 품명(Model)	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
SR9HC□	68%										60%							50%		

❖ 효율은 정격 기준이고 참고값이므로 실제 적용시 상이할 수 있습니다.(The efficiency referenced may vary when applied.)

SR9 TYPE GEAR HEAD 허용 TORQUE (PERMISSIBLE TORQUE)

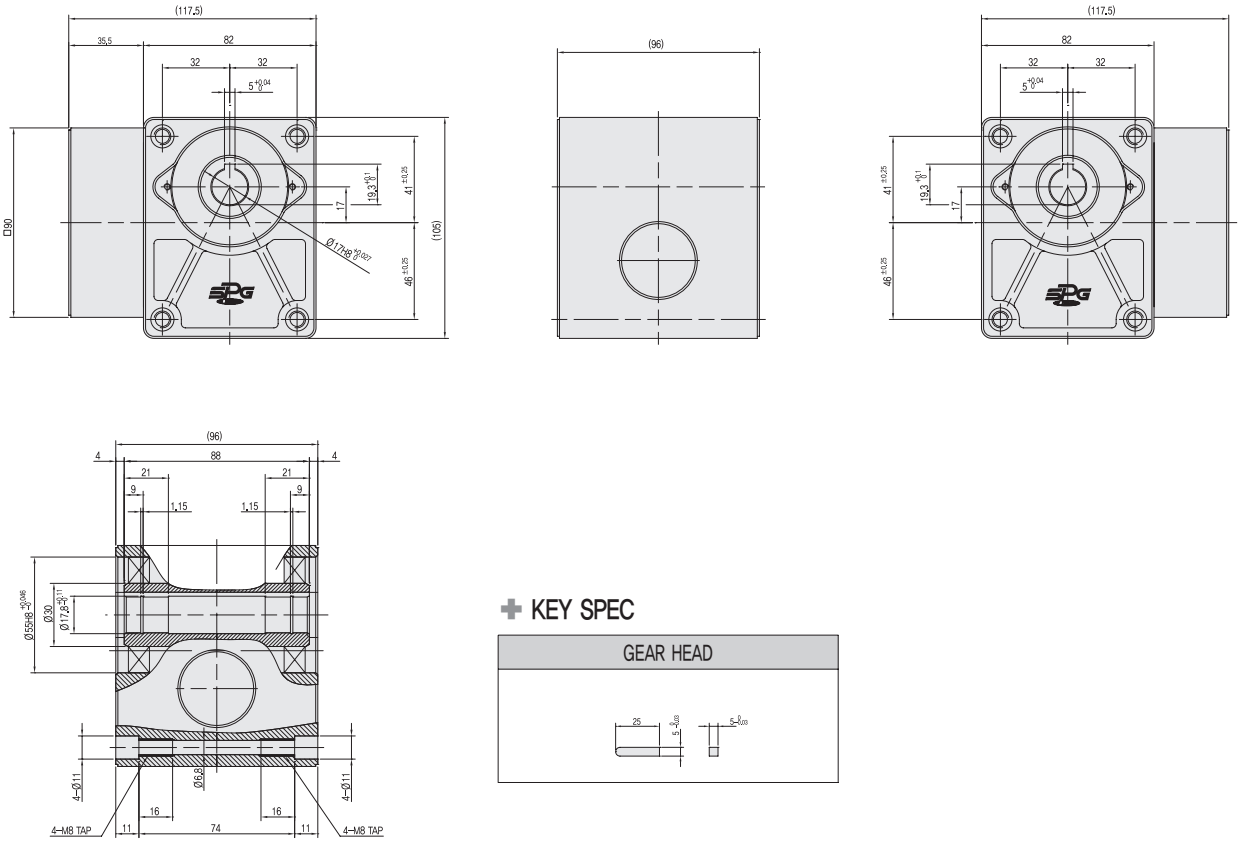
50Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
	rpm	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
60W	kg-cm	9.4	11.3	15.6	18.8	23.5	28.2	39.1	46.9	56.3	78.2	82.8	99.4	138	165.6	200	200	200	200	200	200
	N-m	0.94	1.13	1.56	1.88	2.35	2.82	3.91	4.69	5.63	7.82	8.28	9.94	13.8	16.56	20	20	20	20	20	20
90W	kg-cm	14.1	16.9	23.5	28.2	35.2	42.2	58.7	70.4	84.5	117.3	124.2	149	200	200	200	200	200	200	200	200
	N-m	1.41	1.69	2.35	2.82	3.52	4.22	5.87	7.04	8.45	11.73	12.42	14.9	20	20	20	20	20	20	20	20

60Hz

GEAR RATIO / MODEL		3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
	rpm	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
60W	kg-cm	8	9.5	13.3	15.9	19.9	23.9	33.2	39.8	47.7	66.3	70.2	84.2	117	140.4	175.5	200	200	200	200	200
	N-m	0.8	0.95	1.33	1.59	1.99	2.39	3.32	3.98	4.77	6.63	7.02	8.42	11.7	14.04	17.5	20	20	20	20	20
90W	kg-cm	11.4	13.7	19	22.8	28.6	34.3	47.6	57.1	68.5	95.2	100.8	121	168	200	200	200	200	200	200	200
	N-m	1.14	1.37	19	2.28	2.86	3.43	4.76	5.71	6.85	9.52	10.08	12.1	16.8	20	20	20	20	20	20	20

SR9 TYPE GEAR HEAD LAY-OUT (mm)



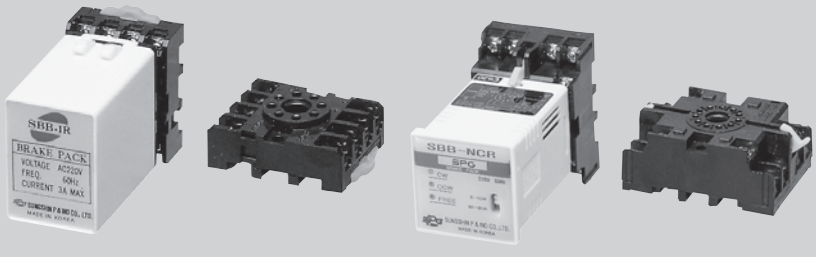
BRAKE PACK

INDEX

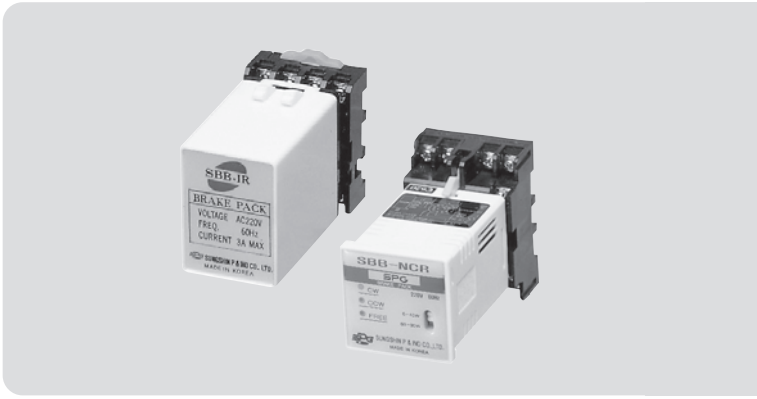
BRAKE PACK의 특징 (CHARACTERISTICS OF BRAKE PACK) 342

CONTACT TYPE 346

NON-CONTACT TYPE 357



BRAKE PACK



1. BRAKE PACK의 특징 (Characteristics of Brake Pack)

1) 전자(電子) BRAKE로 MOTOR를 순시 정지시킵니다. (The electronic brake can stop the motor instantaneously.)
   - MOTOR 단품의 경우 약 0.1초 이하로 순시 정지합니다. (The motor stops instantaneously within 0.1 second.)
   - 제동전류는 약 0.4초 동안 MOTOR에 흐르고 이후에는 MOTOR의 전원은 자동적으로 차단됩니다. (유지력은 없습니다.) (The braking current flows for about 0.4 seconds. Afterwards, the motor's power source shuts off automatically. (The brake pack has no holding torque.))
2) INDUCTION MOTOR와 연결 사용하였을 때에는 순시정지용 BRAKE로 사용되며, REVERSIBLE MOTOR와 연결 사용하였을 때에는 순시정지와 순시정역회전용 BRAKE PACK으로 사용되는 전자 회로(電子 回路)입니다. (This is an electronic circuit that is used as an instant stop brake when used with induction motors and is also used as an instant reversible brake pack when used with reversible motors.)
3) 전자식(電子式) BRAKE이므로 기계적 BRAKE (ELETRO-MAGNETIC BRAKE)와는 달리 기계적 마찰부분이 없어서 수명이 길며, 제동력이 큽니다. 따라서 MOTOR의 INCHING 동작 등의 용도에 적합합니다. (Unlike mechanical brakes (electromagnetic brakes), an electronic brake does not have a mechanical friction point, therefore has longer life cycle and stronger breaking torque. Thus it is suitable for the inching operation of the motor.)

2. BRAKE PACK의 사용방법 (Usage of Brake Pack)

(1) MOTOR의 회전방향 변경방법 (How to Change Rotational Direction of Motor)

1) INDUCTION MOTOR의 회전방향을 변경할 때에는 반드시 MOTOR가 정지한 후에 정지된 것을 확인한 후에 회전방향을 변경하여 주십시오. (When changing the rotational direction of the induction motor, the stoppage of the motor must be confirmed before changing the rotational direction.)
2) 삼상 INDUCTION MOTOR의 회전방향을 변경할 때에는 반드시 전원측의 R과 S를 MOTOR가 정지된 것을 확인한 후에 회전 방향을 변경하여 주십시오. 전원의 T는 고정되어 변환하지 않습니다. (When changing the rotational direction of the three-phase induction motor, the stoppage of the motor must be confirmed before changing the rotational direction. The power source T is fixed and does not change.)
3) BRAKE PACK을 사용하여 MOTOR를 순시정지 시킬 때 약 0.4초 동안 큰 제동전류가 흐르게 되어 이때 MOTOR의 회전방향을 변경조작하면 RELAY 접점간에 큰 SPARK가 일어나 수명이 짧아집니다. 따라서 MOTOR를 순시정지 후에는 0.5초 동안은 회전방향 변경을 하지 말아 주십시오. (When stopping the motor instantaneously by using the brake pack, a large surge of braking current occurs for about 0.4 seconds. At this time, if an attempt is made to change the rotational direction of the motor, the big sparks are generated between the relay contact points, reducing the life cycle of the motor.Therefore, do not attempt to change the rotational direction of the motor for 0.5 seconds after the motor is stopped instantaneously.)

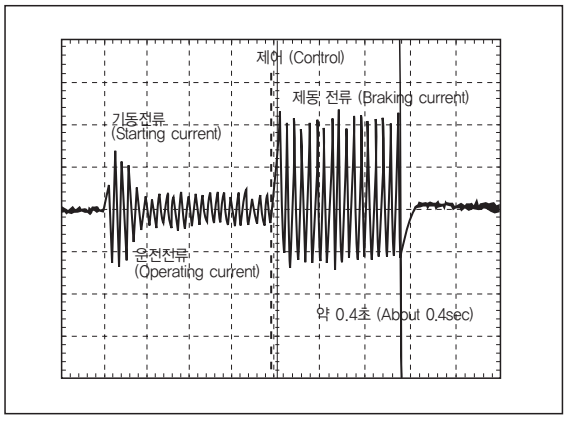
(2) POWER RELAY 사용 (Use of Power Relay)

1) 유접점 BRAKE PACK을 사용할 때에는 운전, 제동 절환용 POWER RELAY가 필요합니다.
   이 때에 POWER RELAY를 개폐시 접점간에 SPARK가 발생하여 접점의 수명이 짧아지거나, RADIO잡음 장애가 발생할 수 있습니다. (If the brake pack with a contact point is going to be used, the power relay ils required to switch between operation and brake. When opening and closing the power relay, the sparks are generated between contact points, either reducing the life cycle or causing the radio noise interference.)
2) 이럴 때에는 RELAY 접점간에 SURGE전압 흡수용 CR회로를 사용하여 주십시오. (In such a case, use a CR circuit to absorb the surge voltage occurred between the relay contact points.)
3) SURGE전압 흡수용 CR회로를 접속 사용하면 SPARK 전압의 파고(波高)값이 저하되고 주파수도 저하되므로, 접점의 약화를 방지하고, RADIO잡음 방해의 방지에 효과가 있습니다. (If the CR circuit for absorbing the surge voltage is connected and employed, the fluctuation of spark voltage and frequency is alleviated, preventing both weakening of the contact points and interfering of the radio noise.)

4) 또한 REVERSIBLE MOTOR를 사용할 때에도 회전방향 변경 시 사용하는 SWITCH의 접점보호로 SURGE전압 흡수용 CR 회로를 사용하여 주십시오. (When used with reversible motors, use CR circuit to absorb surge voltage to protect the contact point of the switch used to change the rotational direction.)

(3) FUSE

1) BRAKE PACK을 사용하여 MOTOR를 순시 정지시킬 경우 약 0.4초 동안 MOTOR에 큰 전류가 흐르게 됩니다. (When stopping the motor instantaneously with the brake pack, a large surge of current occurs for about 0.4 seconds.)
2) 따라서 전원부에 FUSE를 접속할 때에는 사용 MOTOR의 제동 전류 값을 참조하여 적당한 용량의 FUSE를 사용하여 주십시오. (Therefore, when connecting the fuse to the power switch, check the breaking current value and use the appropriate quantity of the fuse.)
3) 사용 MOTOR의 제동전류값은 각 BRAKE PACK SPECIFICATION을 참조하여 주십시오. (To find out the braking current value of the corresponding motor, refer to the specifications of each brake pack.)

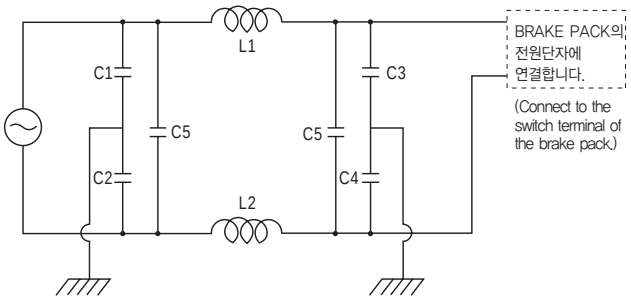


(4) MOTOR의 온도상승과 연속사용 가능시간 (Motor Temperature Rise and Maximum Continuous Operation)

1) BRAKE PACK은 짧은 CYCLE로 사용하여도 MOTOR는 정확히 순시 정지합니다. (Even if the brake pack is adjusted to a short cycle, the motor can make an accurate stop instantaneously.)
2) 그러나 운전 CYCLE이 짧을수록 MOTOR의 온도상승이 높아지므로 연속사용은 제한이 됩니다. (Shorter the operation cycle, higher the the temperture rises. So the limitation must be given for the continuous operation.)
3) 이것은 MOTOR의 제동과 시동 시에는 전류가 정격운전시보다도 몇배 높게 흘러서 정격운전시보다도 온도상승이 높게 되기 때문입니다. (Stopping and starting the motor makes the current flow more frequently compared to a rated operation resulting in a faster increase of the motor temperature.)
4) 따라서 짧은 CYCLE 운전을 할 경우에는 MOTOR의 온도상승이 과다하게 상승되지 않도록 주의하여 주십시오. (Thus if it is operated for shot cycle, be careful with the temperature increase.)
5) MOTOR의 CASE 표면 온도가 90℃ 이하가 되도록 사용하여 주십시오. (Make sure to keep the temperature of the motor's housing surface 90℃ or less while the motor is operating.)

(5) NOISE 대책에 대하여 (Noise Solution)

1) 큰 전력의 제어나 개폐 등으로 인해 큰 외부 NOISE가 발생하는 장소에서 사용하는 경우에는 NOISE에 의해 THYRISTOR 등이 오동작하고 MOTOR가 정지할 때 진동이 발생하는 경우가 있습니다. (When using the motor in a place where a large external noise may occur due to opening and closing of a large power, such noise may cause the thyristor to malfunction and the motor may vibrate when it stops.)
2) 이러한 NOISE 발생원인으로는 대출력 MOTOR, SOLENOID, 고주파 전원, 전기용접기 등이 있습니다. (The source of such noise includes high-powered motors, solenoid, high frequency quencher, and electrical welding machine.)



3) 외부 NOISE 대책으로는 그림과 같이 NOISE FILTER를 BRAKE PACK의 전원 LINE에 접속하면 큰 효과가 있습니다. (One effective solution to the external noise problem is to connect the noise filter to the power line of the brake pack as shown in the figure.)
4) SBS-ICE Type에는 전원 LINE NOISE 대책용 FILTER가 내장되어 있습니다. (The brake pack SBS-ICE type has a built-in filter to address the noise problem associated with the power source line.)
5) 또한 BRAKE PACK으로 MOTOR를 순시정지 시킬 경우 제동전류가 위상 제어되기 때문에 약간의 RADIO NOISE가 발생합니다.
다른 기기에는 거의 영향이 없으나 위의 그림과 같이 NOISE FILTER를 접속하는 것이 좋습니다. (Also, when stopping the motor instantaneously with the brake pack, a little radio noise may be experienced because the braking current is controlled by the phase.
It is recommended to connect the noise filter as shown in the figure above, because it gives minimal influence on the other device.)

3. BRAKE PACK의 사용상 주의사항 (Cautions for Using Brake Pack)

(1) 설치상의 주의사항 (Installation)

1) 사용상의 주위온도 범위는 0℃~+40℃, 습도 85% 이하의 장소에서 사용하여 주십시오. (Use it in a place where an ambient temperature ranges from 0℃ to +40℃ and an ambient humidity is less than 85%.)
2) 직사광선이 닿는 곳, 수분이나 기름기가 있는 곳은 피해주시고, 이러한 장소에서 사용할 때에는 COVER 등을 설치하여 주십시오. (Avoid direct sunlight, moistened or oily place. If the motor is going to be used in such a place, install a cover for it.)
3) 진동, 충격이 심한 곳, 먼지가 많은 곳, 인화성 GAS, 부식성 GAS 등이 발생하는 장소는 피하여 주십시오. (Avoid places with vibrations, shocks, a lot of dusts, flammable or caustic gas, and the like.)

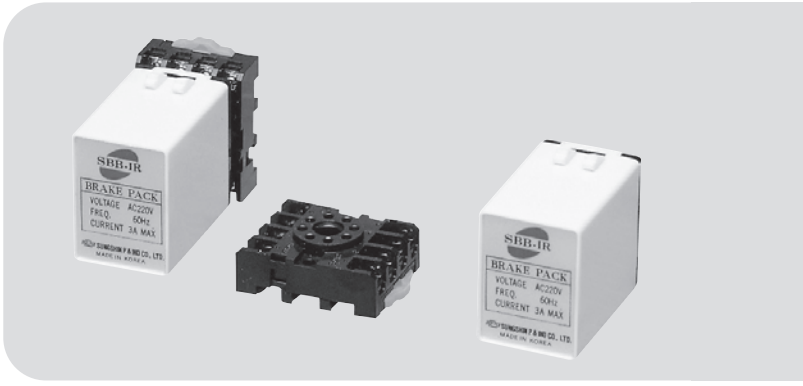
(2) 배선상의 주의사항 (Wiring)

1) 접속 SOCKET를 사용하고 본체의 PIN에는 직접 납땜을 하지 말아 주십시오. (Connection socket must be used and do not directly solder the main body.)
2) SOCKET를 결선하는 경우에는 단자번호를 잘 확인하여 주십시오. (Check the terminal number when connecting the socket.)
3) 또한 BRAKE PACK을 SOCKET홈에 삽입 시에는 전원을 OFF하고 PIN NO.를 확인한 후 삽입하여 주십시오. (When inserting the brake pack into the socket groove, turn off the power and check the pin number before inserting.)
4) NOISE FILTER를 접속할 때에는 가능한 한 BRAKE PACK 가까이에 설치하고 반드시 EARTH 단자를 접지시켜 주십시오. (When connecting the noise filter, install it as close as possible to the brake pack. Do not forget to ground the earth terminal.)
5) 운전과 제동절환의 신호는 가능한 한 MOTOR LEAD선이나 다른 동력선과 분리하여 짧게 배선하여 주십시오. (The wiring for the switching signal between operating and braking should be short, separating it from the motor lead line or any other power line.)

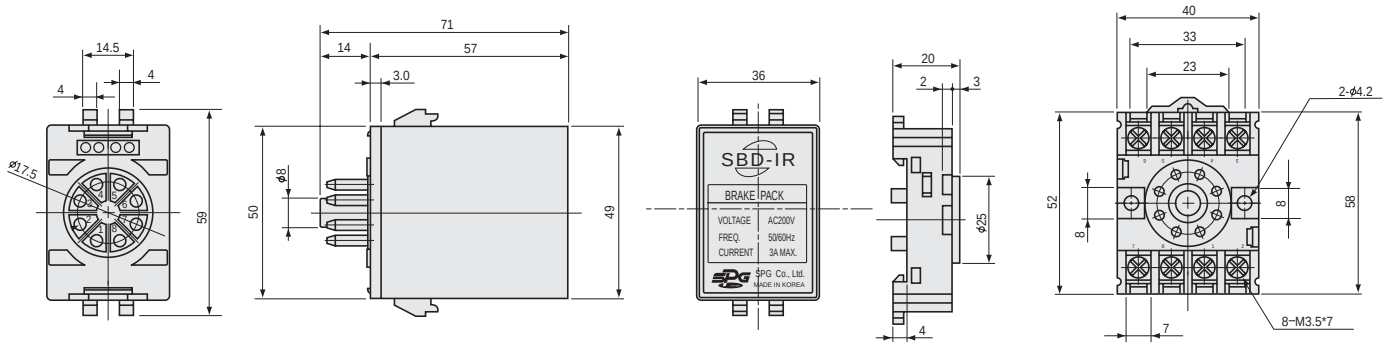
(3) 운전시 주의사항 (Others)

1) 실 부하상태에서 MOTOR의 표면온도는 90℃ 이하에서 사용하여 주십시오. 특별히 빈번하게 순시정지, 운전을 반복하면 MOTOR의 온도가 높아집니다. (If the motor is actually loaded, use the motor while its surface temperature is 90℃ or less. Especially, frequent repetition of instantaneous stop and start increases the motor temperature.)
2) 장시간 정지할 경우에는 전원을 OFF하여 주십시오. (If the motor is not going to run for a long period of time, turn the power source off.)
3) MOTOR의 기동, 정지는 AC 전원에서 실행하지 마십시오. SWITCH에서 발생하는 SURGE 전압으로 제품이 파손될 염려가 있습니다. (Do not use AC power source to start or stop the motor. The surge voltage generated from the switch may damage the product.)

BRAKE PACK
: CONTACT TYPE



✚ DIMENSIONS



❖ BRAKE PACK은 단상, 삼상 MOTOR를 순시정지시키는 전자 제동회로입니다. (BREAK PACK is an electronic braking circuit to stop single and three phase motor instantaneously.)
❖ 짧은 CYCLE에서도 확실한 제동 작용을 할 수 있으므로 INCHING(촌동(寸動)) 등에도 적용하고 있습니다. (Applicable to inching, etc, since it can give a dynamical braking function at short cycle.)

1 SBA-IR, SBC-IR

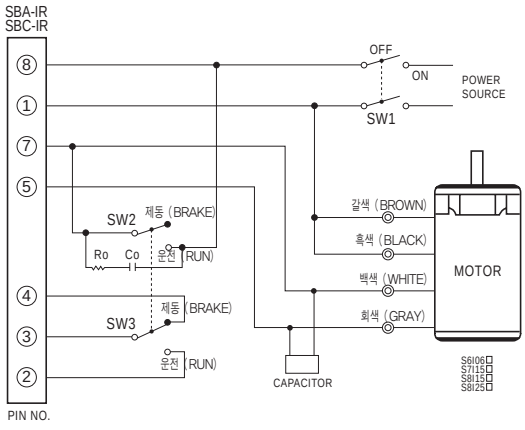
SPECIFICATION

품명 (MODEL)	SBA-IR	SBC-IR
전압, 주파수 (Voltage & Frequency)	단상(Single - phas) 110V±10% , 60Hz	단상(Single - phas) 100V±10%, 50/60Hz
적용(Applicated)MOTOR	●INDUCTION MOTOR 90W이하(INDUCTION MOTOR 90W or less) (90W 사용시는 외부저항이 필요합니다.(external resistance needed for operating 90W)) ●REVERSIBLE MOTOR 60W이하 (REVERSIBLE MOTOR 60W or less) (60W 사용시는 외부저항이 필요합니다.(external resistance needed for operating 60W))	
허용 제동 전류 (Permissible Braking)	3A 이하(or less)	
제동 전류 계속 시간 (Braking Current Time)	약 0.4초간 (About 0.4sec)	
사용주위 온도 (Ambient Temp)	-10℃~+50℃	
사용주위 습도 (Ambient Humidity)	85℃이하(85% or less) (결로 없을 것(No condensing)))	
절연저항 (Insulation Resistance)	상온 상습에서 BRAKE PACK을 정격으로 운전한 후에 BRAKE PACK의 전원 단자와 신호 입력 단자간의 사이를 DC 500V MEGGER로 측정하여 100MΩ 이상임 (100MΩ or more when 500V DC megger is applied between the power terminal and signal input terminal at ambient temperature and humidity after brake pack)	
절연내압 (Dielectric Strength)	상온 상습에서 BRAKE PACK을 정격으로 운전한 후에 BRAKE PACK의 전원 단자와 신호 입력 단자간의 사이에 1500V 50/60Hz 를 1분간 인가하여 이상없음 (Sufficient to withstand 1500V 50/60Hz applied between the power terminal and signal input terminal at ambient temperature and humidity after brake pack running at rated speed for 1mi)	

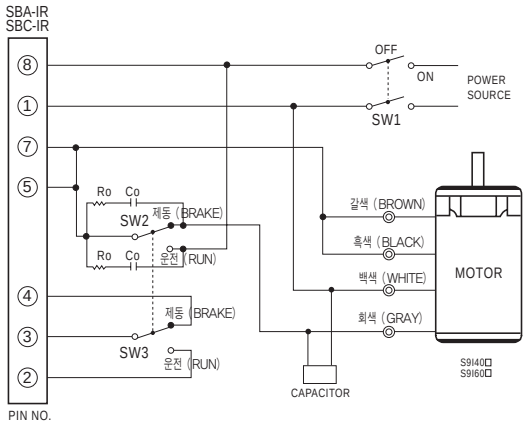
1. BRAKE PACK은 접속 방법이 MOTOR의 출력, 사용 방법에 따라 다릅니다. (Connections differ with types and output power of the motors.)
   • MOTOR출력이 25W 이하의 경우는 A결선으로 하십시오. (A Diagram : Motors with output power 25W or less.)
   • MOTOR출력이 25W 초과하는 경우는 B결선으로 하십시오. (B Diagram : Motors with output power 40W ~ 60W.)
   • MOTOR출력이 INDUCTION MOTOR 90W, REVERSIBLE MOTOR 60W의 경우는 B결선 + 외부저항 30Ω 50W의 제동용 외부 저항기가 필요합니다.
   (B Diagram + External Resistor 30Ω 50W : 90W induction motor, 60W reversible motor.)
2. 단자간에는 높은 전압이 걸리는 곳이 있으므로 주의 하십시오. (Be careful since there is high voltage on some terminals.)

✚ INDUCTION MOTOR 의 결선도 (SCHEMATIC DIAGRAM OF INDUCTION MOTOR)

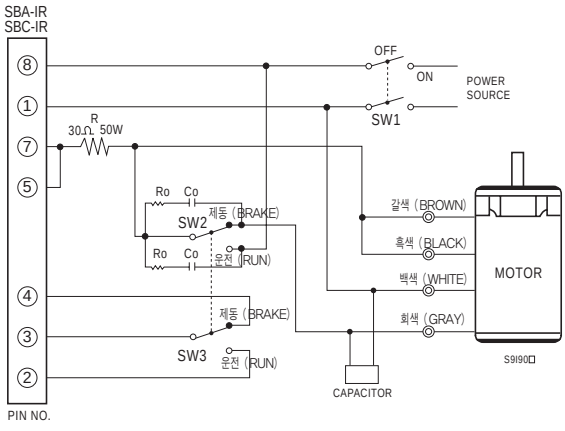
▼ A 결선 (Diagram)



▼ B 결선 (Diagram)

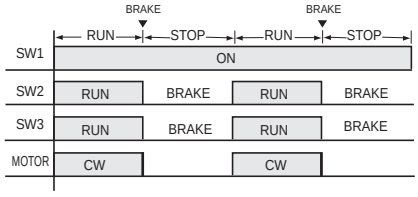


▼ B 결선+외부저항 (B Diagram + External Resistor) 30Ω 50W



■ 제동용 외부저항기의 용량(50W)는 10초에 1회 제동하는 경우의 수치입니다. 이보다 짧은 CYCLE인때는 더 큰 용량을 사용하십시오. (The capacity(50W) of braking external resistance is to brake once every 10seconds. When the motor is operated in a shorter cycle bigger capacity is required.)

SWITCH 번호(NO.)	SWITCH 의 접점용량 (SWITCH CONTACT)	비고 (REMARK)
SW1	AC 125V 5A 이상 (or more)	
SW2	AC 125V 5A 이상 (or more)	연동일것(Should be operating at same time)
SW3	DC 20V 10mA	
R:제동전류 제한저항 (braking current)	30Ω 50W (제동용 외부 저항기 (EXTERNAL RESISTOR FOR BRAKING))	B결선+외부저항 30Ω 50W인 경우 (B DIAGRAM+EXTERNAL RESISTOR 30Ω50W)
Ro,Co (SPARK KILLER)	Ro=5~200Ω Co=0.1~0.2μF 125WV	



운전/순시 정지 (OPERATION/INSTANTANEOUS STOP)

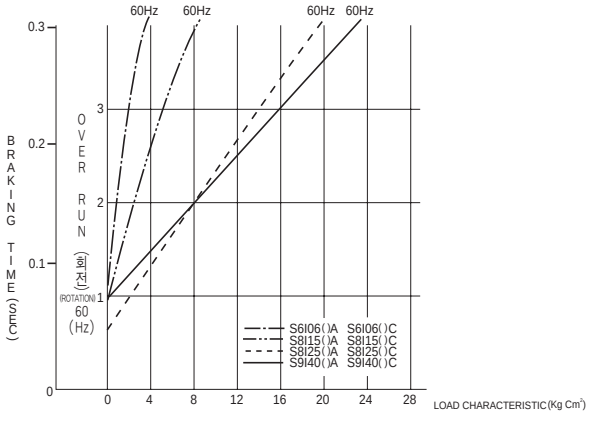
■ SW2, SW3를 동시에 운전측으로 하면 MOTOR가 운전하고 제동측으로 하면 MOTOR는 순시 정지 합니다. 제동후 약0.4초간 MOTOR에 제동전류가 흐르고 그후 MOTOR는 자동적으로 전원으로부터 차단됩니다. (When switch SW2, SW3 are flipped to "RUN", the motor begins to rotate. When these switches are flipped to "STOP", the motor stops instantaneously. Braking current runs through the motor winding for approximately 0.4 seconds and the power is cut automatically.)

회전 방향 (DIRECTION OF ROTATION)

■ 결선도의 회전방향은 MOTOR축 측에서 보아 MOTOR축이 시계방향(CW) 회전으로 되어있습니다. 반시계 방향(CCW)으로 회전시킬 경우에는 MOTOR LEAD선의 회색과 갈색을 교환하십시오, 제동 조작후 0.4초간은 회전방향의 교환을 행하지 마십시오. (These diagrams all refer CW rotation as viewed from shaft end of the motor. To rotate the motor in a counter clock wise, exchange gray and brown wire. Do not change direction of rotation 0.4 seconds after braking operation.)

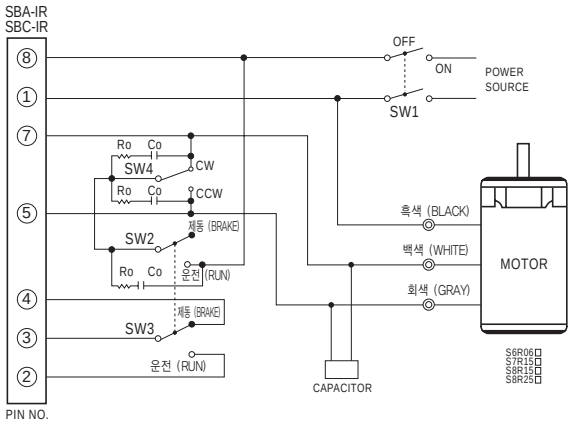
제동 특성사례 (EXAMPLE OF BRAKING CHARACTERISTIC)

INDUCTION MOTOR 경우의 제동 특성예를 참고로 아래에 표시합니다.
(Braking characteristics of induction motor are shown as below..)

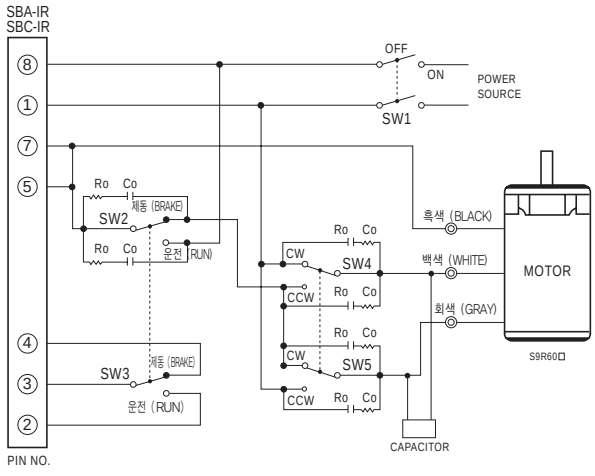


✚ REVERSIBLE MOTOR의 결선도 (SCHEMATIC DIAGRAM OF INDUCTION MOTOR)

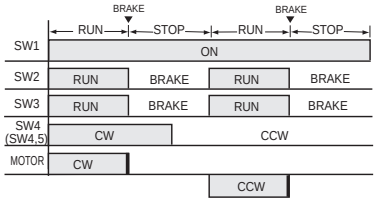
▼ A 결선 (Diagram)



▼ B 결선 (Diagram)



SWITCH 번호(NO.)	SWITCH 의 접점용량 (SWITCH CONTACT)	비고 (REMARK)
SW1	AC 125V 5A 이상 (or more)	
SW2	AC 125V 5A 이상 (or more)	연동일것 (Should be operating at same time)
SW3	DC 20V 10mA	
SW4, 5	AC 125V 5A 이상 (or more)	
Ro,Co (SPARK KILLER)	Ro=5~200Ω Co=0.1~0.2μF125WV	



운전/순시 정지 (OPERATION/INSTANTANEOUS STOP)

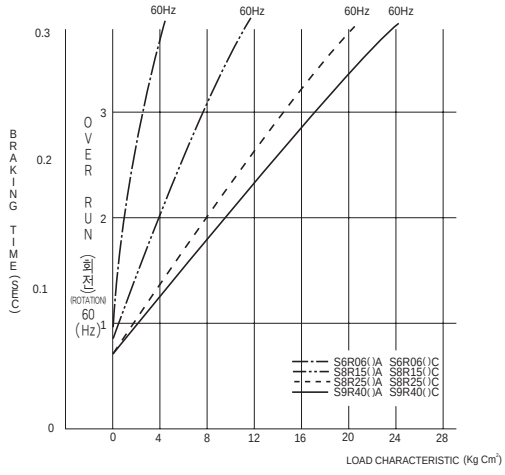
■ SW2, SW3를 동시에 운전측으로 하면 MOTOR가 운전하고 제동측으로 하면 MOTOR는 순시정지 합니다. 제동후 약 0.4초간은 MOTOR에 제동 전류가 흘러 그후 MOTOR는 자동적으로 전원으로부터 차단됩니다. (When switch SW2, SW3 are flipped to "RUN", the motor begins to rotate. When these switches are flipped to "STOP", the motor stops instantaneously. Braking current runs through the motor winding for approximately 0.4 seconds and the power is cut automatically.)

회전방향 (DIRECTION OF ROTATION)

■ 결선도의 회전방향은 MOTOR축 측에서 본 MOTOR축의 회전방향을 표시하고 있습니다. 전원투입시, 또는 제동조작후 약 0.4초간은 역전조작을 하지 마십시오. 제동 조작시는 SW4, SW5를 반드시 CW측이나 CCW측으로 접속하게 하십시오. (These diagrams all refer clockwise(CW) rotation as viewed from the front shaft end of the motor. Do not reverse the rotation for 0.4sec. after braking. While braking, set SW4, SW5 should be accessed to connect to CW or CCW.)

■ 제동 특성 사례 (EXAMPLE OF BRAKING CHARACTERISTIC)

REVERSIBLE MOTOR 경우의 제동 특성예를 참고로 아래에 표시합니다. (Braking characteristics of induction motor are shown as below.)



■ 운전 CYCLE과 연속 사용 한계 (OPERATION CYCLE AND LIMIT FOR CONTINUOUS OPERATION)

SBA-IR (SBC-IR)은 INCHING(寸動) 등의 짧은 운전CYCLE에서 사용해도 MOTOR를 확실하게 순시 정지 시킵니다. 그러나 0.5초 제동정지하는 짧은 CYCLE에서 사용하면 MOTOR는 기동, 순시정지를 반복하는 결과가 되어 MOTOR의 온도상승이 높게 됩니다. MOTOR는 운전 CYCLE에 관계없이 MOTOR CASE 온도가 90℃이하의 범위에서 사용하십시오. (Even when brake pack SBA-IR or SBC-IR is used in short operating cycles such as inching operation, the motor can be stopped instantaneously. However, if the motor is operated in a cycle shorter than 0.5sec for running and stopping, this will be like repeating starting and instantaneous stopping, and will cause rise of temperature. The temperature of the motor case should be maintained 90℃ or less regardless of operating cycles.)

2 SBB-IR, SBD-IR

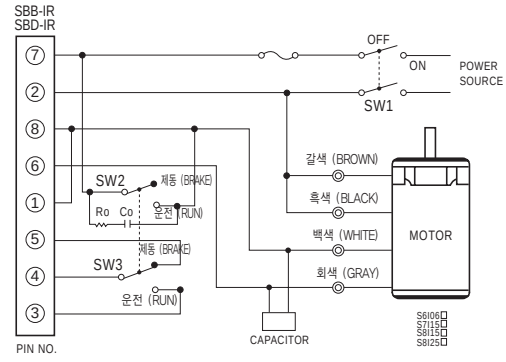
SPECIFICATION

품명 (MODEL)	SBB-IR	SBD-IR
전압, 주파수 (Voltage & Frequency)	단상(Single - phas) 220V±10%, 60Hz	단상(Single - phas) 200V±10%, 50/60Hz
적용(Applicated)MOTOR	●INDUCTION MOTOR 90W이하 (INDUCTION MOTOR 90W or less) (90W 사용시는 외부저항이 필요합니다. (external resistance needed for operating 90W)) ●REVERSIBLE MOTOR 60W이하 (REVERSIBLE MOTOR 60W or less)	
허용 제동 전류 (Permissible Braking)	3A 이하 (or less)	
제동 전류 계속 시간 (Braking Current Time)	약 0.4초간 (About 0.4sec)	
사용주위 온도 (Ambient Temp)	-10℃~+50℃	
사용주위 습도 (Ambient Humidity)	85% 이하 (or less) (결로 없을 것(No condensing))	
절연저항 (Insulation Resistance)	상온 상습에서 BRAKE PACK을 정격으로 운전한 후에 BRAKE PACK의 전원 단자와 신호 입력 단자간의 사이를 DC 500V MEGGER로 측정하여 100MΩ 이상임 (100MΩ or more when 500V DC megger is applied between the power terminal and signal input terminal at ambient temperature and humidity after brake pack)	
절연내압 (Dielectric Strength)	상온 상습에서 BRAKE PACK을 정격으로 운전한 후에 BRAKE PACK의 전원 단자와 신호 입력 단자간의 사이에 1500V 50/60Hz 를 1분간 인가하여 이상없음 (Sufficient to withstand 1500V 50/60Hz applied between the power terminal and signal input terminal at ambient temperature and humidity after brake pack running at rated speed for 1min)	

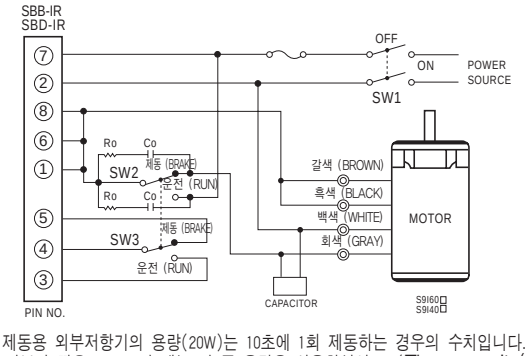
1. BRAKE PACK은 접속 방법이 MOTOR의 출력, 사용 방법에 따라 다릅니다. (Connections differ with types and output power of the motors.)
   • MOTOR 출력이 25W 이하의 경우는 A결선으로 하십시오. (A Diagram : Motors with output power 25W or less)
   • MOTOR 출력이 25W를 초과하는 경우에는 B결선으로 하십시오. (B Diagram : Motors with output power 40W ~ 60W.)
   • MOTOR 출력이 60W를 초과하는 경우는에는 B결선 + 외부저항 50Ω 20W의 제동용 외부 저항기가 필요합니다.
   (B connection and external braking resistor with external resistance of 50Ω 20W is required for motors over 60W)
2. 단자간에는 높은 전압이 걸리는 곳이 있으므로 주의하십시오. (Be careful since there is high voltage on some terminals.)

✚ INDUCTION MOTOR 의 결선도 (SCHEMATIC DIAGRAM OF INDUCTION MOTOR)

▼ A 결선 (Diagram)

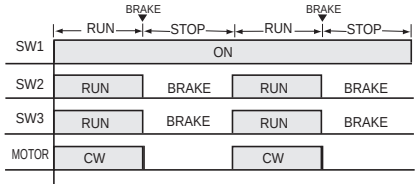


▼ B 결선 (Diagram)



■ 제동용 외부저항기의 용량(20W)는 10초에 1회 제동하는 경우의 수치입니다. 이보다 짧은 CYCLE인 때는 더 큰 용량을 사용하십시오. (The capacity(20W) of braking external resistance is to brake once every 10seconds. When the motor is operated in a shorter cycle bigger capacity is Required.)

SWITCH 번호(NO.)	SWITCH 의 접점용량 (SWITCH CONTACT)	비고 (REMARK)
SW1	AC 125V 5A 이상 (or more)	
SW2	AC 125V 5A 이상 (or more)	연동일것(Should be operating at same time)
SW3	DC 20V 10mA	
R:제동전류 제한저항 (braking current)	30Ω 50W (제동용 외부 저항기 (EXTERNAL RESISTOR FOR BRAKING))	B결선+외부저항 30Ω 50W인 경우 (B DIAGRAM+EXTERNAL RESISTOR 30Ω50W)
Ro,Co (SPARK KILLER)	Ro=5~200Ω Co=0.1~0.2μF 125WV	



운전/순시 정지 (OPERATION/INSTANTANEOUS STOP)

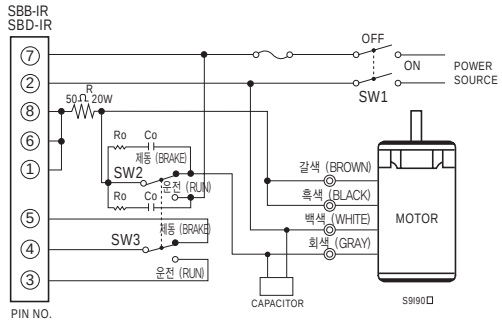
SW2, SW3를 동시에 운전측으로 하면 MOTOR가 운전하고 제동측으로 하면 MOTOR는 순시정지 합니다. 제동후 약 0.4초간은 MOTOR에 제동전류가 흐르고 그후 MOTOR는 자동적으로 전원으로부터 차단됩니다. (When switch SW2, SW3 are flipped to "RUN", the motor begins to rotate. When these switches are flipped to "STOP", the motor stops instantaneously. Braking current runs through the motor winding for approximately 0.4 seconds and the power is cut automatically.)

회전방향 (DIRECTION OF ROTATION)

결선도의 회전방향은 MOTOR축 측에서 보아 MOTOR축의 시계방향을(CW) 회전방향으로 되어 있습니다. 반시계 방향(CCW)으로 회전시킬 경우에는 MOTOR LEAD선의 회색과 갈색으로 교환하십시오. 제동조작후 약 0.4초간은 회전 방향의 절환을 하지 마십시오. (These diagrams all refer clockwise(CW) rotation as viewed from the front shaft end of the motor. To rotate counter-clockwise(CCW), change gray wire to brown. Do not reverse the rotation for 0.4sec. after braking.)

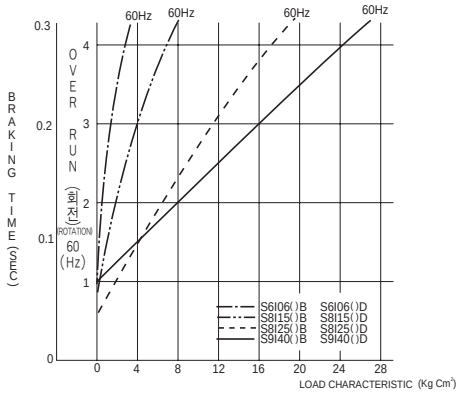
▼ B 결선+외부저항 50Ω 20W (B Diagram + External Resistor 50Ω 20W)

■ 제동용 외부저항기의 용량(20W)는 10초에 1회 제동하는 경우의 수치입니다. 이보다 짧은 CYCLE인때는 더 큰 용량을 사용하십시오. (The capacity(20W) of braking external resistance is to brake once every 10 seconds. When the motor is operated in a shorter cycle bigger capacity is required.)



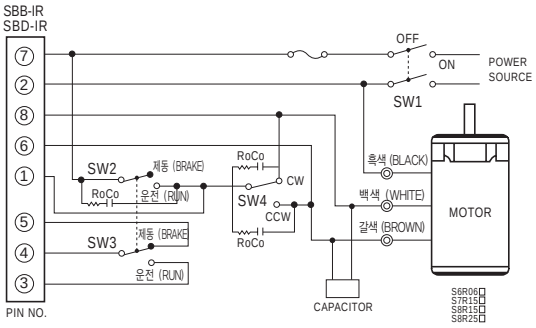
■ 제동 특성사례 (EXAMPLE OF BRAKING CHARACTERISTIC)

INDUCTION MOTOR 경우의 제동 특성예를 참고로 아래에 표시합니다.
(Braking characteristics of induction motor are shown as below.)

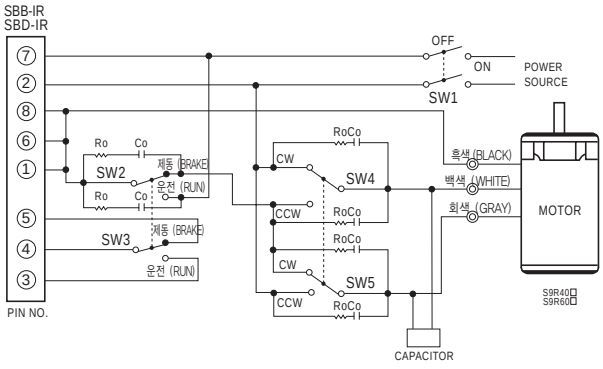


✚ REVERSIBLE MOTOR의 결선도 (SCHEMATIC DIAGRAM OF REVERSIBLE MOTOR)

▼ A 결선 (Diagram)



▼ B 결선 (Diagram)



SWITCH 번호(NO.)	SWITCH 의 접점용량 (SWITCH CONTACT)	비고 (REMARK)
SW1	AC 250V 5A 이상 (or more)	
SW2	AC 250V 5A 이상 (or more)	연동일것 (Should be operating at same time)
SW3	DC 20V 10mA	
SW4, 5	AC 250V 5A 이상 (or more)	
Ro,Co (SPARK KILLER)	Co=0.1~0.2μF 250WV	

운전/순시 정지 (RUN/INSTANTANEOUS STOP)

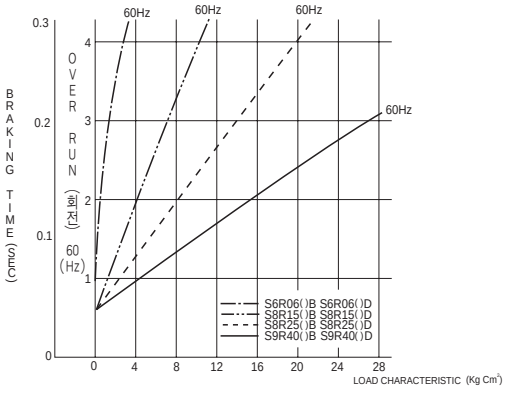
SW2, SW3를 동시에 운전측으로 하면 MOTOR 가 운전하고 제동측으로 하면 MOTOR는 순시정지 합니다. 제동후 약0.4초간 MOTOR에 제동전류 가 흘러 그후 MOTOR는 자동적으로 전원으로부터 차단됩니다. (When switch SW2, SW3 are flipped to "RUN", the motor begins to rotate. When these switches are flipped to "STOP", the motor stops instantaneously. Braking current runs through the motor winding for approximately 0.4 seconds and the power is cut automatically.)

회전방향 (DIRECTION OF ROTATION)

결선도의 회전방향은 MOTOR축 측에서 보아 MOTOR축이 회전방향을 표시하고 있습니다. 전원투입시 , 또는 제동조직후 0.4초간은 역전조작을 하지 마십시오. 제동조작시는 SW4, SW5를 반드시 CW측 이나 CCW측으로 접속 가능하게 하십시오. (These diagrams all refer clockwise(CW) rotation as viewed from the front shaft end of the motor. Do not reverse the rotation for 0.4sec. after braking. While braking, set SW4 SW5 to be accessible to connect to CW or CCW.)

■ 제동 특성사례 (EXAMPLE OF BRAKING CHARACTERISTIC)

REVERSIBLE MOTOR 경우의 제동 특성예를 참고로 아래에 표시합니다.
(Braking characteristics of induction motor are shown as below.)



■ 운전 CYCLE 과 연속 사용한계 (OPERATION CYCLE AND LIMIT FOR CONTINUOUS OPERATION)

SBB-IR (SBD-IR)은 INCHING(寸動) 등의 짧은 운전CYCLE에서 사용해도 MOTOR를 확실하게 순시 정지시킵니다. 그러나 0.5초 제동정지하는 짧은CYCLE에서 사용하면 MOTOR는 기동, 순시정지를 반복하는 결과가 되어 MOTOR의 온도상승이 높게 됩니다. MOTOR는 운전 CYCLE에 관계없이 MOTOR CASE 온도가 90℃이하의 범위에서 사용하십시오. Even when brake pack SBB-IR or SBD-IR is used in short operating cycles such as inching operation, the motor can be stopped instantaneously. However, if the motor is operated in a cycle shorter than 0.5sec for running and stopping, this will be like repeating starting and instantaneous stopping, and will cause rise of temperature. The temperature of the motor case should be maintained 90℃ or less regardless of operating cycles.

3 SBX - IR

SPECIFICATION

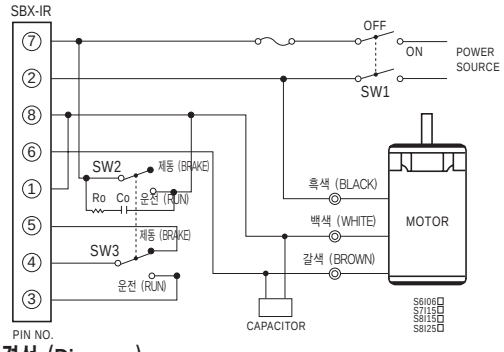
품명 (MODEL)	SBX-IR
전압, 주파수 (Voltage & Frequency)	단상(Single – phas) 200–240V, 50Hz
적용(Applicated)MOTOR	●INDUCTION MOTOR 90W이하 (INDUCTION MOTOR 90W or less) (90W 사용시는 외부저항이 필요합니다.(external resistance needed for operating 90W)) ●REVERSIBLE MOTOR 60W이하 (REVERSIBLE MOTOR 60W or less)
허용 제동 전류 (Permissible Braking)	3A 이하 (or less)
제동 전류 계속 시간 (Braking Current Time)	약 0.4초간 (About 0.4sec)
사용주위 온도 (Ambient Temp)	–10℃~+50℃
사용주위 습도 (Ambient Humidity)	85% 이하 (or less) (결로 없을 것(No condensing))
절연저항 (Insulation Resistance)	상온 상습에서 BRAKE PACK을 정격으로 운전한 후에 BRAKE PACK의 전원 단자와 신호 입력 단자간의 사이를 DC 500V MEGGER로 측정하여 100MΩ 이상임 (100MΩ or more when 500V DC megger is applied between the power terminal and signal input terminal at ambient temperature and humidity after brake pack)
절연내압 (Dielectric Strength)	상온 상습에서 BRAKE PACK을 정격으로 운전한 후에 BRAKE PACK의 전원 단자와 신호 입력 단자간의 사이에 1500V 50/60Hz 를 1분간 인가하여 이상없음 (Sufficient to withstand 1500V 50/60Hz applied between the power terminal and signal input terminal at ambient temperature and humidity after brake pack running at rated speed for 1min)

❖ 접속에 있어서

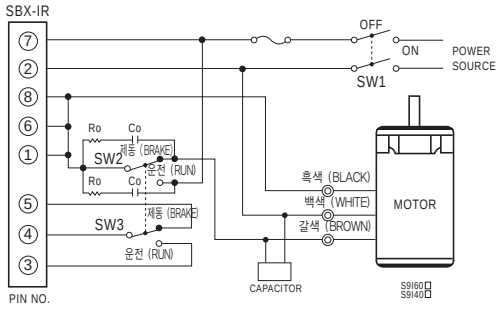
1. BRAKE PACK은 접속 방법이 MOTOR의 출력, 사용 방법에 따라 다릅니다. (Connections differ with types and output power of the motors.)
   - MOTOR 출력이 25W 이하의 경우는 A결선으로 하십시오. (A Diagram : Motors with output power 25W or less)
   - MOTOR 출력이 25W를 초과하는 경우에는 B결선으로 하십시오. (B Diagram : Motors with output power 40W ~ 60W.)
   - MOTOR 출력이 60W를 초과하는 경우에는 B결선 + 외부저항 50Ω 20W의 제동용 외부 저항기가 필요합니다. (B connection and external braking resistor with external resistance of 50Ω 20W is required for motors over 60W)
2. 단자간에는 높은 전압이 걸리는 곳이 있으므로 주의하십시오. (Be careful since there is high voltage on some terminals.)

✚ INDUCTION MOTOR 의 결선도 (SCHEMATIC DIAGRAM OF INDUCTION MOTOR)

▼ A 결선 (Diagram)

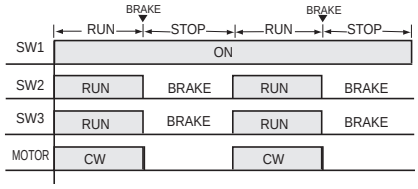


▼ B 결선 (Diagram)



■ 제동용 외부저항기의 용량(20W)는 10초에 1회 제동하는 경우의 수치입니다. 이보다 짧은 CYCLE인 때는 더 큰 용량을 사용하십시오. (The capacity(20W) of braking external resistance is to brake once every 10seconds. When the motor is operated in a shorter cycle bigger capacity is required.)

SWITCH 번호(NO.)	SWITCH 의 접점용량 (SWITCH CONTACT)	비고 (REMARK)
SW1	AC 250V 5A 이상 (or more)	
SW2	AC 250V 5A 이상 (or more)	연동일것(Should be operating at same time)
SW3	DC 20V 10mA	
R:제동전류 제한저항 (braking current)	50Ω 20W (제동용 외부 저항기 (EXTERNAL RESISTOR FOR BRAKING))	B결선+외부저항 50Ω 20W인 경우 (B DIAGRAM+EXTERNAL RESISTOR 30,050W)
Ro,Co (SPARK KILLER)	Ro=5~200Ω Co=0.1~0.2μF 125WV	



운전/순시 정지 (OPERATION/INSTANTANEOUS STOP)

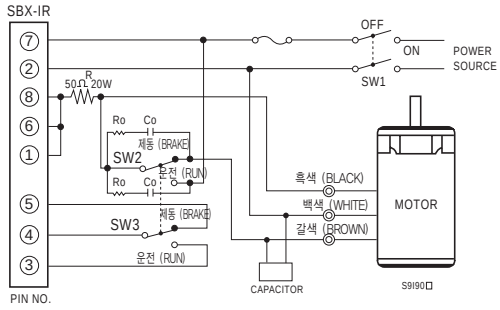
SW2, SW3를 동시에 운전측으로 하면 MOTOR가 운전하고 제동측으로 하면 MOTOR는 순시정지 합니다. 제동후 약 0.4초간은 MOTOR에 제동전류가 흐르고 그후 MOTOR는 자동적으로 전원으로부터 차단됩니다. (When switch SW2, SW3 are flipped to "RUN", the motor begins to rotate. When these switches are flipped to "STOP", the motor stops instantaneously. Braking current runs through the motor winding for approximately 0.4 seconds and the power is cut automatically.)

회전방향 (DIRECTION OF ROTATION)

결선도의 회전방향은 MOTOR축 측에서 보아 MOTOR축의 시계방향을(CW) 회전방향으로 되어 있습니다. 반시계 방향(CCW)으로 회전시킬 경우에는 MOTOR LEAD선의 회색과 갈색으로 교환하십시오. 제동조작후 약 0.4초간은 회전 방향의 절환을 하지 마십시오. (These diagrams all refer clockwise(CW) rotation as viewed from the front shaft end of the motor. To rotate counter-clockwise(CCW), change gray wire to brown. Do not reverse the rotation for 0.4sec. after braking.)

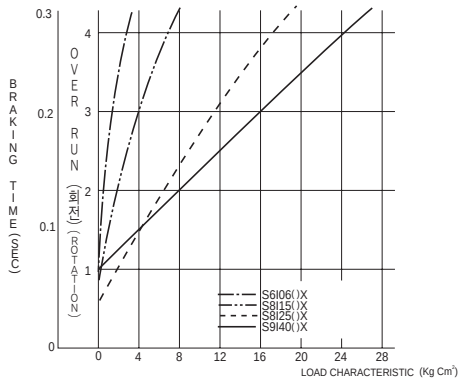
▼ B 결선+외부저항 50Ω 20W (B Diagram + External Resistor 50Ω 20W)

■ 제동용 외부저항기의 용량(20W)는 10초에 1회 제동하는 경우의 수치입니다. 이보다 짧은 CYCLE인때는 더 큰 용량을 사용하십시오. (The capacity(20W) of braking external resistance is to brake once every 10 seconds. When the motor is operated in a shorter cycle bigger capacity is required.)



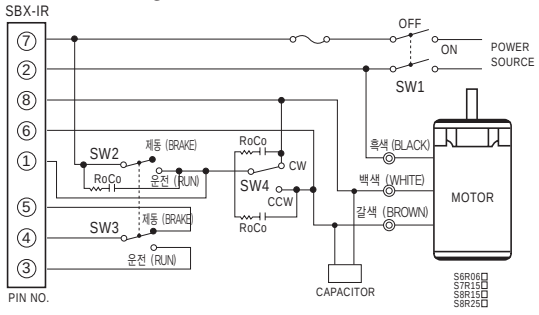
■ 제동 특성사례 (EXAMPLE OF BRAKING CHARACTERISTIC)

INDUCTION MOTOR 경우의 제동 특성예를 참고로 아래에 표시합니다.
(Braking characteristics of induction motor are shown as below.)

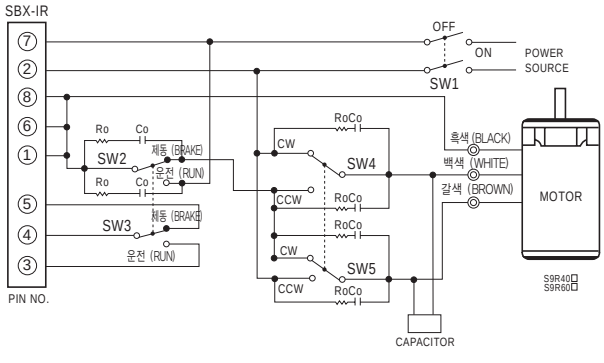


✚ REVERSIBLE MOTOR의 결선도 (SCHEMATIC DIAGRAM OF REVERSIBLE MOTOR)

▼ A 결선 (Diagram)



▼ B 결선 (Diagram)



SWITCH 번호(NO.)	SWITCH 의 접점용량 (SWITCH CONTACT)	비고 (REMARK)
SW1	AC 250V 5A 이상 (or more)	
SW2	AC 250V 5A 이상 (or more)	연동일것 (Should be operating at same time)
SW3	DC 20V 10mA	
SW4, 5	AC 250V 5A 이상 (or more)	
Ro,Co (SPARK KILLER)	Co=0.1~0.2μF 250WV	

운전/순시 정지 (RUN/INSTANTANEOUS STOP)

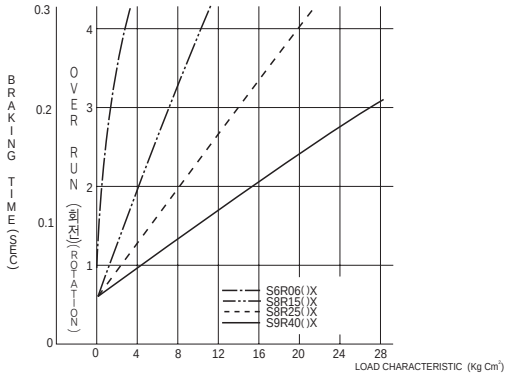
SW2, SW3를 동시에 운전측으로 하면 MOTOR 가 운전하고 제동측으로 하면 MOTOR는 순시정지 합니다. 제동후 약0.4초간 MOTOR에 제동전류 가 흘러 그후 MOTOR는 자동적으로 전원으로부터 차단됩니다. (When switch SW2, SW3 are flipped to "RUN", the motor begins to rotate. When these switches are flipped to "STOP", the motor stops instantaneously. Braking current runs through the motor winding for approximately 0.4 seconds and the power is cut automatically.)

회전방향 (DIRECTION OF ROTATION)

결선도의 회전방향은 MOTOR축 측에서 보아 MOTOR축이 회전방향을 표시하고 있습니다. 전원투입시 , 또는 제동조직후 0.4초간은 역전조작을 하지 마십시오. 제동조작시는 SW4, SW5를 반드시 CW측 이나 CCW측으로 접속 가능하게 하십시오. (These diagrams all refer clockwise(CW) rotation as viewed from the front shaft end of the motor. Do not reverse the rotation for 0.4sec. after braking. While braking, set SW4 SW5 to be accessible to connect to CW or CCW.)

■ 제동 특성사례 (EXAMPLE OF BRAKING CHARACTERISTIC)

REVERSIBLE MOTOR 경우의 제동 특성예를 참고로 아래에 표시합니다.
(Braking characteristics of induction motor are shown as below.)



■ 운전 CYCLE 과 연속 사용한계 (OPERATION CYCLE AND LIMIT FOR CONTINUOUS OPERATION)

SBB-IR (SBD-IR)은 INCHING(寸動) 등의 짧은 운전CYCLE에서 사용해도 MOTOR를 확실하게 순시 정지시킵니다. 그러나 0.5초 제동정지하는 짧은CYCLE에서 사용하면 MOTOR는 기동, 순시정지를 반복하는 결과가 되어 MOTOR의 온도상승이 높게 됩니다. MOTOR는 운전 CYCLE에 관계없이 MOTOR CASE 온도가 90℃이하의 범위에서 사용하십시오. Even when brake pack SBB-IR or SBD-IR is used in short operating cycles such as inching operation, the motor can be stopped instantaneously. However, if the motor is operated in a cycle shorter than 0.5sec for running and stopping, this will be like repeating starting and instantaneous stopping, and will cause rise of temperature. The temperature of the motor case should be maintained 90℃ or less regardless of operating cycles.

4 SBU-I, SBT-I

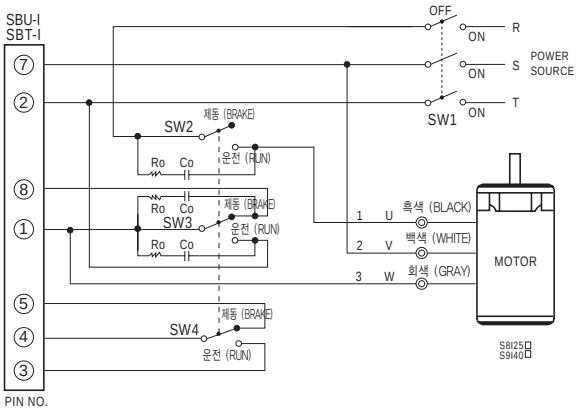
SPECIFICATION

품명 (MODEL)	SBU-I	SBT-I
전압, 주파수 (Voltage & Frequency)	삼상(Three phase) 200V±10%, 50/60Hz	삼상(Three phase) 220V±10%, 50/60Hz
적용(Applicated)MOTOR	●INDUCTION MOTOR 90W이하 (INDUCTION MOTOR 90W or less) (60W,90W 사용시는 외부저항이 필요합니다.(external resistance needed for operating 60w~90W))	
허용 제동 전류 (Permissible Braking)	3A 이하 (or less)	
제동 전류 계속 시간 (Braking Current Time)	약 0.4초간 (About 0.4sec)	
사용주위 온도 (Ambient Temp)	-10℃~+50℃	
사용주위 습도 (Ambient Humidity)	85%이하 (or less) (결로 없을것(No condensing))	
절연저항 (Insulation Resistance)	상온 상습에서 BRAKE PACK을 정격으로 운전한 후에 BRAKE PACK의 전원 단자와 신호 입력 단자간의 사이를 DC 500V MEGGER로 측정하여 100MΩ 이상임 (100MΩ or more when 500V DC megger is applied between the power terminal and signal input terminal at ambient temperature and humidity after brake pack)	
절연내압 (Dielectric Strength)	상온 상습에서 BRAKE PACK을 정격으로 운전한 후에 BRAKE PACK의 전원 단자와 신호 입력 단자간의 사이에 1500V 50/60Hz 를 1분간 인가하여 이상없음 (Sufficient to withstand 1500V 50/60Hz applied between the power terminal and signal input terminal at ambient temperature and humidity after brake pack running at rated speed for 1min)	

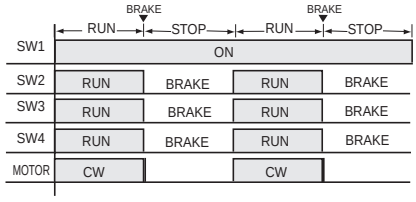
1. BRAKE PACK은 접속 방법이 MOTOR의 출력, 사용 방법에 따라 다릅니다. (Connection of brake pack is different according to the output and usage of motor.)
   - MOTOR 출력이 40W 이하인 경우는 A결선으로 하십시오. (A Diagram : Motors with output power 25W or less)
   - MOTOR 출력이 60W 이상인 경우는 B결선 + 외부저항 30Ω 20W의 제동용 외부 저항기가 필요합니다.
   - MOTOR 출력이 40W 이하라도 짧은 CYCLE(5초에 1회 제동 이상)로 제동시킬 경우에는 B결선으로 하고, 외부에 제동용 외부저항기를 접속하여 주십시오.
   (B Diagram : Motors with output torque over 60W or motors with output torque less than 40W with short cycle braking (more than once per 5 seconds))
2. 단자간에는 높은 전압이 걸리는 곳이 있으므로 주의하십시오. (Be careful since there is a high voltage on some terminals.)

✚ INDUCTION MOTOR 의 결선도 (SCHEMATIC DIAGRAM OF INDUCTION MOTOR)

▼ A 결선 (Diagram)



SWITCH 번호(NO.)	SWITCH 의 접점용량 (SWITCH CONTACT)	비고 (REMARK)
SW1	AC 250V 5A 이상 (or more)	
SW2, 3	AC 250V 7A 이상 (or more)	연동일것 (Should be operating at same time)
SW4	DC 20V 10mA	
R0,C0 (SPARK KILLER)	R0=5~200Ω C0=0.1~0.2μF 250WV	



운전/순시 정지 (OPERATION/INSTANTANEOUS STOP)

SW2, SW3, SW4를 동시에 운전측으로 하면 MOTOR가 운전하고 제동측으로 하면 MOTOR는 순시 정지 합니다. 제동후 약0.4초간 MOTOR에 제동전류가 흐르고 그후 MOTOR는 자동적으로 전원으로부터 차단됩니다. (When switch SW2, SW3 and SW4 are flipped to "RUN", the motor begins to rotate. When these switches are flipped to "STOP", the motor stops instantaneously. Braking current runs through the motor winding for approximately 0.4 seconds and the power is cut automatically.)

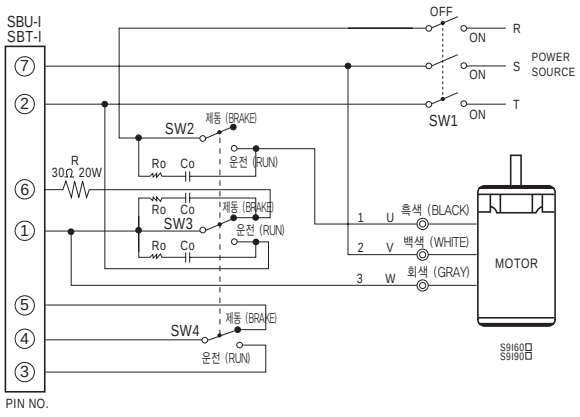
회전방향 (DIRECTION OF ROTATION)

결선도의 회전방향은 MOTOR축 측에서 보아 MOTOR축이 시계 방향(CW) 회전으로 되어 있습니다. 반시계 방향(CCW)으로 회전시킬 경우에는 전원의 U상과 V상을 교환하십시오 제동조작후 0.4초간은 회전방향의 교환을 행하지 마십시오. (These diagrams all refer clockwise(CW) rotation as viewed from the front shaft end of the motor. To rotate the motor in a counter-clockwise(CCW), exchange U and V phase. Do not change the rotating direction for 0.4seconds after operating brake function.)

✚ INDUCTION MOTOR의 결선도 (SCHEMATIC DIAGRAM OF REVERSIBLE MOTOR)

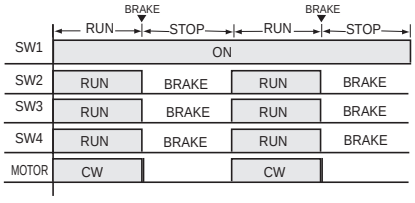
- 짧은 CYCLE로 제동하는 경우 (**Short cycle braking**)
- 출력 60W~90W MOTOR (**Output of 60W~90W**)

▼ B 결선 (Diagram)



※주의: 제동 전류 제한저항R(30Ω 20W) 를 반드시 사용하여 주십시오.
(※ Note : Use external resistor R(30Ω, 20W))

SWITCH 번호(NO.)	SWITCH 의 접점용량 (SWITCH CONTACT)	비고 (REMARK)
SW1	AC 250V 5A 이상 (or more)	
SW2	AC 250V 5A 이상 (or more)	연동일것(Should be operating at same time)
SW3	DC 20V 10mA	
R:제동전류 제한저항 (braking current)	30Ω 20W (제동용 외부 저항기 (EXTERNAL RESISTOR FOR BRAKING))	B결선+외부저항 30Ω 20W인 경우 (B DIAGRAM+EXTERNAL RESISTOR 30Ω20W)
Ro,Co (SPARK KILLER)	Ro=5~200Ω Co=0.1~0.2μF 125WV	



운전/순시 정지 (OPERATION/INSTANTANEOUS STOP)

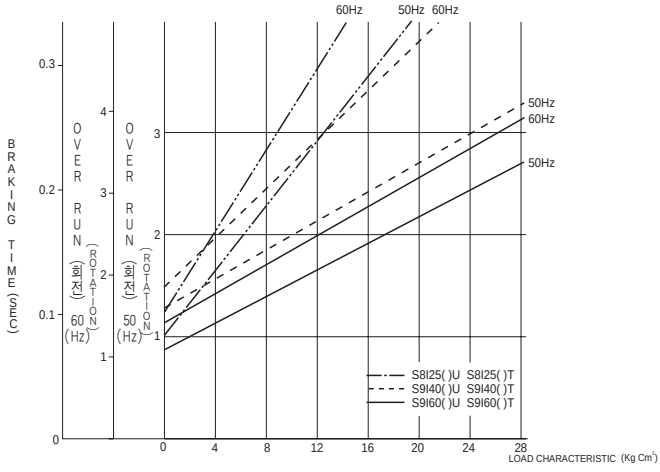
SW2, SW3, SW4를 동시에 운전측으로 하면 MOTOR가 운전하고 제동측으로 하면 MOTOR는 순시 정지 합니다. 제동후 약0.4초간 MOTOR에 제동전류가 흐르고 그후 MOTOR는 자동적으로 전원으로부터 차단됩니다. (When switch SW2, SW3 and SW4 are flipped to "RUN", the motor begins to rotate. When these switches are flipped to "STOP", the motor stops instantaneously. Braking current runs through the motor winding for approximately 0.4 seconds and the power is cut automatically.)

회전방향 (DIRECTION OF ROTATION)

결선도의 회전방향은 MOTOR축 측에서 보아 MOTOR축이 시계 방향(CW) 회전으로 되어 있습니다. 반시계 방향(CCW)으로 회전시킬 경우에는 전원의 U상과 V상을 교환하십시오 제동조작후 0.4초간은 회전방향의 교환을 행하지 마십시오. (These diagrams all refer clockwise(CW) rotation as viewed from the front shaft end of the motor. To rotate the motor in a counter-clockwise(CCW), exchange U and V phase. Do not change the rotating direction for 0.4seconds after operating brake function.)

■ 제동 특성사례 (EXAMPLE OF BRAKING CHARACTERISTIC)

REVERSIBLE MOTOR 경우의 제동 특성예를 참고로 아래에 표시합니다.
(Braking characteristics of induction motor are shown as below.)



■ 스위치의 규격 및 접점 보호 (SWITCH STANDARD AND CONTACT POINT PROTECTION)

SW2및 SW3에 접점 간격이 좁은 RELAY 를 사용하여 절환을 행하면 SPARK 에 의해 회로 소자가 파손될 염려가 있습니다. 반드시 접점 간격이 넓은POWER RELAY를 사용하여 주십시오.
(접점 용량 AC 250V7A이상 상당품) 또한 MOTOR기동시와 제동시에 대전류가 흘러 접점간에 SPARK가 발생하므로 결선도와 같이 써지 전압 흡수용회로를 반드시 삽입하여 주십시오. (Use power relay with wide contact point. If relay with narrow contact point is used on SW2 and SW3, circuit elements may be damaged by spark.(Contact point capacity AC 250V, over 7A) Use CR circuit for absorbing surge voltage to keep out spark.)

※ Ro:5~200Ω 1/4W B 이상 (5~200Ω 1/4W over B)
Co:0.1~0.2μF 250WV 이상 (0.1~0.2μF over 250WV)

■ 운전 CYCLE 과 연속 사용한계 (OPERATION CYCLE AND LIMIT FOR CONTINUOUS OPERATION)

삼상 BRAKE PACK은 INCHING등의 짧은 CYCLE로 사용해도 MOTOR를 확실하게 순시정지시킵니다. 그러나 삼상 MOTOR인 경우에는 부하의 크기에 따라 운전시 MOTOR 온도 상승이 변화하므로 연속 사용한계 등은 온도상승이 가장높은 최대 부하 조건으로 고려하여 주십시오. 또한, 짧은CYCLE(5초에 1회 이상의 순시정지)로 사용하면 MOTOR 온도상승이 급격히 높아집니다. MOTOR는 CYCLE에 관계없이 CASE표면 온도가 90℃이하 에서 사용하십시오. (Even when three-phase brake pack is used in short operating cycles such as inching operation, the motor can be stopped instantaneously. However, consider maximum load condition because for three phase motor, temperature may be changed according to the given load. When motor repeats starting and stopping in short cycle of more than one instantaneous stop per 5 seconds, the motor's temperature rises rapidly. The temperature of the motor case should be maintained 90℃ or less regardless of operating cycles.)

5 SBS-ICE

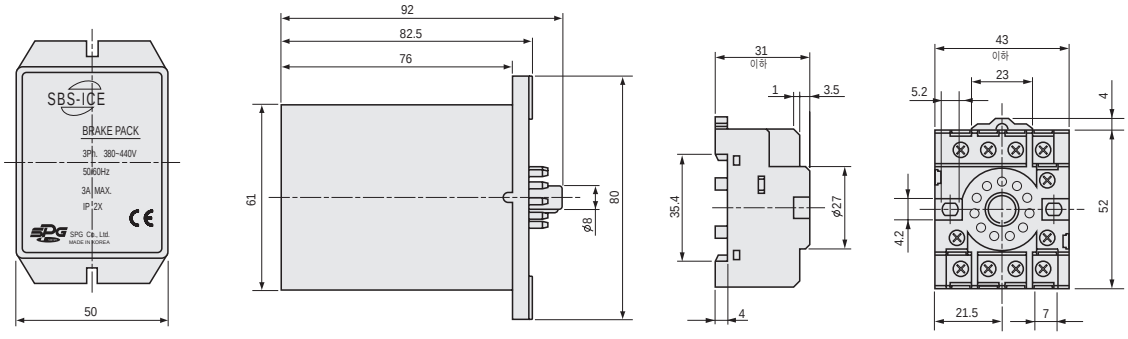
■ CE MARK를 획득한 제품입니다. (Take certification CE Mark)
(FILE NO. E9766429E01. 인증기관(Certifi-organization):TUV Rheinland)

SPECIFICATION

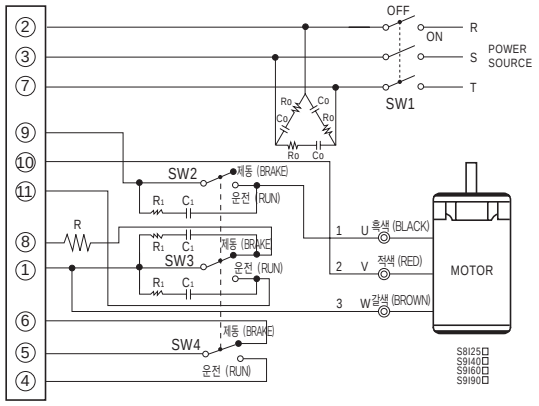
품명 (MODEL)	SBS - ICE
전압, 주파수 (Voltage & Frequency)	삼상(Three-phase) AC 440V±10%, 50/60Hz
적용(Applicated)MOTOR	●INDUCTION MOTOR 25W-90W (외부저항기가 별도로 필요합니다.(external resistance needed))
허용 제동 전류 (Permissible Braking)	3A 이하 (or less)
제동 전류 계속 시간 (Braking Current Time)	약 0.4초간 (About 0.4sec)
사용주위 온도 (Ambient Temp)	-10℃~+50℃
사용주위 습도 (Ambient Humidity)	85℃ 이하 (or less) (결로 없을 것 (No condensing))
절연저항 (Insulation Resistance)	상온 상습에서 BRAKE PACK을 정격으로 운전한 후에 BRAKE PACK의 전원 단자와 신호 입력 단자간의 사이를 DC 500V MEGGER로 측정하여 100MΩ 이상임 (100MΩ or more when 500V DC megger is applied between the power terminal and signal input terminal at ambient temperature and humidity after brake pack)
절연내압 (Dielectric Strength)	상온 상습에서 BRAKE PACK을 정격으로 운전한 후에 BRAKE PACK의 전원 단자와 신호 입력 단자간의 사이에 1800V 50/60Hz 를 1분간 인가하여 이상없음 (Sufficient to withstand 1800V 50/60Hz applied between the power terminal and signal input terminal at ambient temperature and humidity after brake pack running at rated speed for 1min)

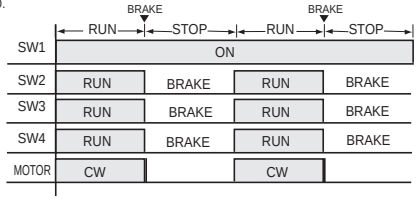
1. BRAKE PACK은 접속 방법이 MOTOR의 출력, 사용 방법에 따라 다릅니다. (Connection of brake pack is different according to the output and usage of motor.)
2. 단자간에는 높은 전압이 걸리는 곳이 있으므로 주의하십시오. (Be careful since there is high voltage on some terminals.)

✚ DIMENSIONS



✚ INDUCTION MOTOR 의 결선도 (SCHEMATIC DIAGRAM OF INDUCTION MOTOR)





※주의: 제동 전류 제한저항 R을 반드시 사용하여 주십시오. (※ Note : Use external resistor R)

SWITCH 번호(NO.)	SWITCH 의 접점용량 (SWITCH CONTACT)	비고 (REMARK)
SW1	AC 500V 5A이상 (or more)	
SW2, SW3	AC 500V 7A이상 (or more)	연동일것 (Should be operating at same time)
SW4	DC 20V 10mA	
R	50Ω 10W	Motor 출력(output) 25~40 Watts,
	50Ω 20W	Motor 출력(output) 60~90 Watts,
R1, C1	R1:5 ~ 200Ω C1:0.1 ~ 0.2μF, 500VAC	
R0, C0	R0:27Ω, 5W이상 C0:0.47μF, 500VAC이상	

MOTOR 출력(Output)	제동 전류 제한 저항 R (Braking External Resistor)
25W~40W	50Ω 10W
60W~90W	50Ω 20W

운전/순시 정지 (OPERATION/INSTANTANEOUS STOP)

SW2, SW3, SW4를 동시에 운전측으로 하면 MOTOR가 운전하고 제동측으로 하면 MOTOR는 순시 정지 합니다. 제동후 약0.4초간 MOTOR에 제동전류가 흐르고 그후 MOTOR는 자동적으로 전원으로부터 차단됩니다. (When switch SW2, SW3 and SW4 are flipped to "RUN", the motor begins to rotate. When these switches are flipped to "STOP", the motor stops instantaneously. Braking current runs through the motor winding for approximately 0.4 seconds and the power is cut automatically.)

회전방향 (DIRECTION OF ROTATION)

결선도의 회전방향은 MOTOR축 측에서 보아 MOTOR축이 시계 방향(CW) 회전으로 되어 있습니다. 반시계 방향(CCW)으로 회전시킬 경우에는 전원의 U상과 V상을 교환하십시오 제동조작후 0.4초간은 회전방향의 교환을 행하지 마십시오. (These diagrams all refer clockwise(CW) rotation as viewed from the front shaft end of the motor. To rotate the motor in a counter-clockwise(CCW), exchange U and V phase. Do not change the rotating direction for 0.4seconds after operating brake function.)

스위치의 규격 및 접점 보호 (SWITCH STANDARD AND CONTACT POINT PROTECTION)

■ SW2및 SW3에 접점 간격이 좁은 RELAY 를 사용하여 절환을 행하면 SPARK에 의해 회로 소자가 파손될 염려가 있습니다. 반드시 접점 간격이 넓은 POWER RELAY를 사용하여 주십시오. (접점 용량 AC 250V7A이상 상당품) 또한 MOTOR기동시와 제동시에 대전류가 흘러 접점간에 SPARK가 발생하므로 결선도와 같이 써지 전압 흡수용회로를 반드시 삽입하여 주십시오. (Use power relay with wide contact point. If relay with narrow contact point is used on SW2 and SW3, circuit elements may be damaged by spark. (Contact point capacity AC 250V, over 7A) Use CR circuit for absorbing surge voltage to keep out spark.)

※ R_1:5~200Ω 1/4W B이상 (5~200Ω 1/4W over B)
C_1:0.1~0.2μF 500VAC 이상 (0.1~0.2μF over 500WV)

■ 삼상 BRAKE PACK에는 노이즈 필터가 내장되어 있으나, 스위칭시 나타나는 노이즈를 완전히 제거할 수는 없습니다.
결선도에서 보여주듯이 각상과 상사이에 Ro, Co을 연결하여 주십시오. (Three-phase brake pack has noise filter inside. However, it can not remove noise perfectly. Please connect with Ro and Co.(See the Schematic Diagram) R_o, C_o spec is as follow.)

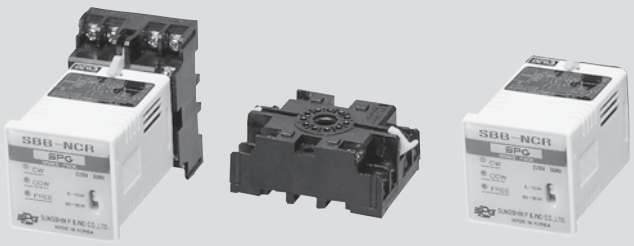
Ro, Co에 대한 사양은 다음과 같습니다. (R_o, C_o spec is as follow.)

※ Ro:27Ω, 5W 이상 (27Ω, 5W and more)
Co:0.47μF, 500VAC 이상 (0.47μF, 500VAC and more)

운전 CYCLE 과 연속 사용한계 (OPERATION CYCLE AND LIMIT FOR CONTINUOUS OPERATION)

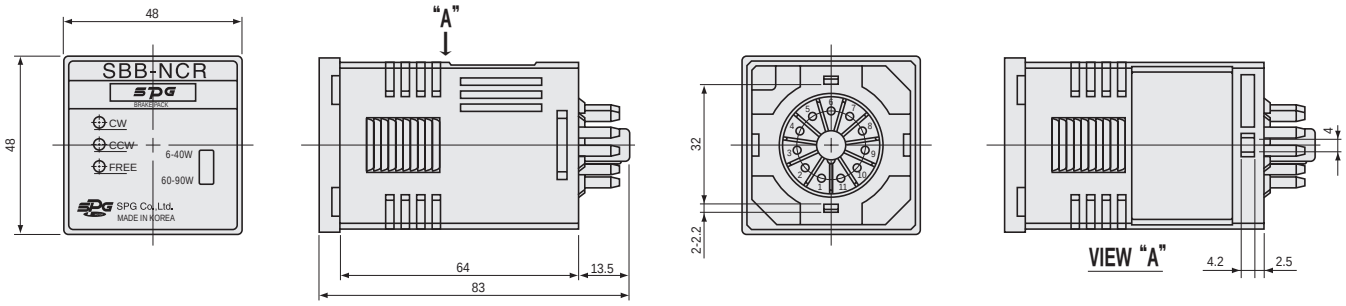
삼상 BRAKE PACK은 INCHING등의 짧은 CYCLE로 사용해도 MOTOR를 확실하게 순시정지시킵니다. 그러나 삼상 MOTOR인 경우에는 부하의 크기에 따라 운전시 MOTOR 온도 상승이 변화하므로 연속 사용한계 등은 온도상승이 가장높은 최대 부하 조건으로 고려하여 주십시오.
또한, 짧은CYCLE(5초에 1회 이상의 순시정지)로 사용하면 MOTOR 온도상승이 급격히 높아집니다. MOTOR는 CYCLE에 관계없이 CASE표면 온도가 90℃이하 에서 사용하십시오. (Even when three-phase brake pack is used in short operating cycles such as inching operation, the motor can be stopped instantaneously. However, consider maximum load condition because for three phase motor, temperature may be changed according to the given load. When motor repeats starting and stopping in short cycle of more than one instantaneous stop per 5 seconds, the motor's temperature rises rapidly. The temperature of the motor case should be maintained 90℃ or less regardless of operating cycles.)

BRAKE PACK
: NON CONTACT TYPE

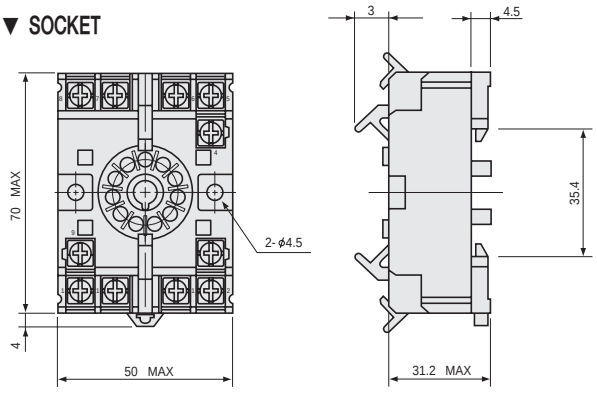


✚ DIMENSIONS

▼ BRAKE PACK



▼ SOCKET



제품의 개요 (Feature)

1.SBA-NCR, SBB-NCR, SBC-NCR, SBD-NCR. SBX-NCR은 INDUCTION MOTOR, REVERSIBLE MOTOR용의 무접점 BRAKE PACK입니다. (SBA-NCR, SBB-NCR, SBC-NCR, SBD-NCR, SBX-NCR are non contact type brake pack for induction motor. For reversible motor, there is a non contact type brake pack.)

2.SBA-ENCR, SBB-ENCR, SBC-ENCR, SBD-ENCR. SBX-ENCR은 전자 BRAKE MOTOR 용의 무접점 BRAKE PACK입니다.

3.MOTOR를 제어하기 위해서는 BRAKE PACK 이외의 신호용 직류전원 (DC12~24V 0.1A이상)과 접속용SOCKET(11PIN용)이 필요 합니다. (To control the motor, connecting socket(11pin) and direct current for signal (12-24V over 0.1A) as well as brake pack is needed.)

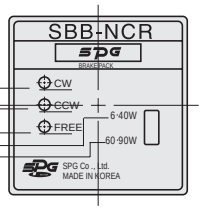
SPECIFICATION

품명 (MODEL)	SBA-NCR SBA-ENCR	SBB-NCR SBB-ENCR	SBC-NCR SBC-ENCR	SBD-NCR SBD-ENCR	SBX-NCR SBX-ENCR
전압, 주파수 (Voltage & Frequency)	단상(Single-phase) 110V±10%	단상(Single-phase) 220V±10%	단상(Single-phase) 100V±10%	단상(Single-phase) 200V±10%	단상(Single-phase) 220V~240V±10%
적용(Applicated)MOTOR	60Hz		50/60Hz		50Hz
허용 제동 전류 (Permissible Braking)	INDUCTION MOTOR & REVERSIBLE MOTOR(6~90W) ELECTROMAGNETIC BRAKE MOTOR(6W~90W)				
제동 전류 계속 시간 (Braking Current Time)	DC 12V~DC 24V(±10%) PHOTO COUPLER INPUT : CW, CCW TRANSITOR INPUT : FREE				
사용주위 온도 (Ambient Temp)	-10℃~+40℃				
사용주위 습도 (Ambient Humidity)	85% 이하(or less) (결로없을것(No condensing))				
절연저항 (Insulation Resistance)	상온 상습에서 BRAKE PACK을 정격으로 운전한 후에 BRAKE PACK의 전원 단자와 신호 입력 단자간의 사이를 DC 500V MEGGER로 측정하여 100MΩ 이상임 (100MΩ or more when 500V DC megger is applied between the power terminal and signal input terminal at ambient temperature and humidity after brake pack)				
절연내압 (Dielectric Strength)	상온 상습에서 BRAKE PACK을 정격으로 운전한 후에 BRAKE PACK의 전원 단자와 신호 입력 단자간의 사이에 1=1500V 50/60Hz 를 1분간 인가하여 이상없음 (100MΩ or more when 500V DC megger is applied between the power terminal and signal input terminal at ambient temperature and humidity after brake pack)				

판넬면의 표시 (LED DISPLAY)

1.입력 신호 표시 (**LED display**)

CW	CW 신호가 입력되어 있을때 점등 (Lights whenCW signals are input)
CCW	CCW 신호가 입력되어 있을때 점등 (Lights when CCW signals are input)
FREE	FREE 신호가 입력되어 있을때 점등 (Lights when FREE signals are input)



2.MOTOR 출력 교체 스위치 (**Switches for changing output of motor**)

6~40W 60~90W	6W ,15W, 25W, 40W MOTOR를 접속하는 경우 6~40W측으로 하십시오. (switch position of 6W~40W motor 6W, 15W, 25W, 40W)
6~40W 60~90W	60W ,90W MOTOR를 접속하는 경우 60~90W측으로 하십시오. (switch position of 60W~90W motor 60W, 90W)

출하시에는 60W~90W측으로 되어 있습니다. (Set to 60W~90W when shipped.)

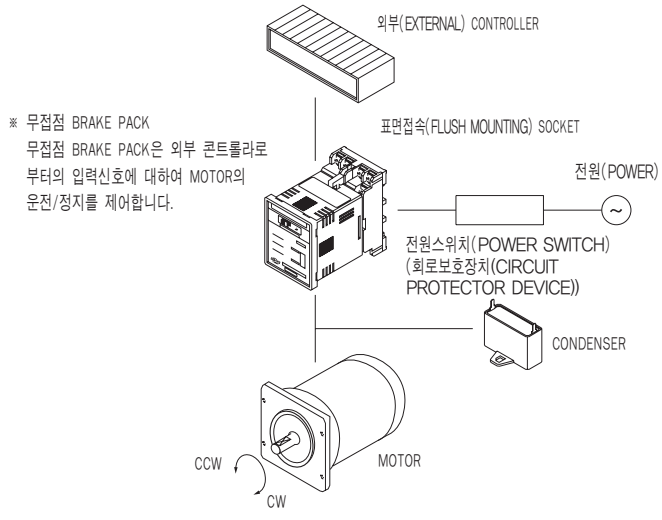
적용 MOTOR

품명 (MODEL)	전원전압 (VOLTAGE)	MOTOR TYPE
SBA-NCR	단상(SINGLE-PHASE) 110V	INDUCTION MOTOR 6W~90W REVERSIBLE MOTOR 6W~90W
SBC-NCR	단상(SINGLE-PHASE) 100V	
SBB-NCR	단상(SINGLE-PHASE) 220V	
SBD-NCR	단상(SINGLE-PHASE) 200V	
SBX-NCR	단상(SINGLE-PHASE) 220V~240V	
SBA-ENCR	단상(SINGLE-PHASE) 110V	전자(ELECTROMAGNETIC) BRAKE MOTOR 6W~90W
SBC-ENCR	단상(SINGLE-PHASE) 100V	
SBB-ENCR	단상(SINGLE-PHASE) 220V	
SBD-ENCR	단상(SINGLE-PHASE) 200V	
SBX-ENCR	단상(SINGLE-PHASE) 220V~240V	

접속과 조작 (CONNECTION AND SETTING)

1. 6~40W INDUCTION MOTOR, REVERSIBLE MOTOR
   ➔ MOTOR출력 교체 스위치를 6~40W로 설정하십시오. (change output switch to 6~40W)
2. 60~90W INDUCTION MOTOR, REVERSIBLE MOTOR
   ➔ MOTOR출력 교체 스위치를 60~90W로 설정하십시오. (change output switch to 60~90W)

SYSTEM의 구성 (SYSTEM LAYOUT)



● 사용상의 주의 (Notes on Operation)

1. MOTOR 운전(Operation) CYCLE

MOTOR의 운전/순시 정지를 빈번하게 작동시키면 BRAKE PACK과 MOTOR의 온도 상승이 높아집니다. 운전 CYCLE은 가능한 시간을 길게하고 MOTOR CASE 온도가 90℃ 이하에서 사용하십시요.
(If the motor is actually loaded, use the motor while its surface temperature is 90˚C or less. Especially, the frequent repetition of instantaneous stop and start raises the motor temperature.)

MOTOR 출력(OUTPUT)	운전(OPERATION) CYCLE
6~25W	2초 이상 (more 2sec)
40~90W	4초 이상 (more 4sec)

※2초 CYCLE은 1초 운전. 1초 정지
(1sec run / 1sec stop per 2sec cycle.)
※4초 CYCLE은 2초 운전. 2초 정지
(2srun / 2sec stop per 4sec cycle.)

2. 보호 장치의 용량 (Capacity of Protection)

MOTOR를 순시 정지시키면 반파 정류시킨 대전류가 약 0.2~0.4초간 흐릅니다. 이 전기BRAKE 전류가 흐르는 LINE에 보호 소자(회로 보호장치)를 접속하는 경우는 아래 표를 참고로 보호장치 용량을 선정하여 주십시요. (If the motor brakes instantaneously, half-wave current flows about 0.2 ~ 0.4 seconds. Refer to the table below when choosing the capacity of a protection circuit.)

• 전기BRAKE 전류 (Brake Current)(파고치)

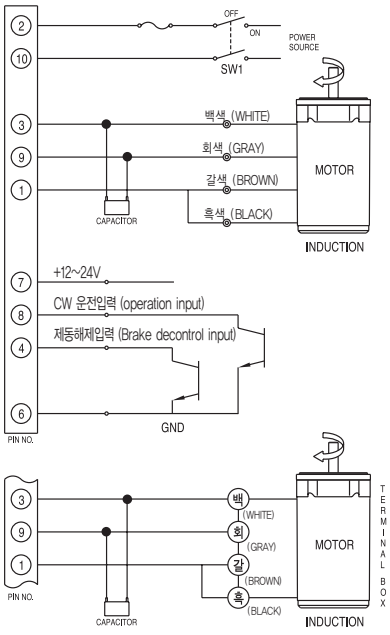
단위(Unit):[A]

MOTOR 출력(OUTPUT)	110V 60Hz	220V 60Hz	100V 50Hz	100V 60Hz	200V 50Hz	200V 60Hz	220/240V 50Hz
6W	1.2	0.4	1.2	1.2	0.5	0.4	0.6
15W	3.1	1.5	3.1	3.1	1.7	1.5	1.7
25W	7.5	3.3	7.4	7.4	3.4	3.2	3.5
40W	12.0	4.2	12.2	12.2	5.4	4.2	6.6
60W	11.8	6.4	14.2	11.6	8.1	6.2	8.4
90W	16.5	7.9	17.4	16.4	10.4	8.0	10.6

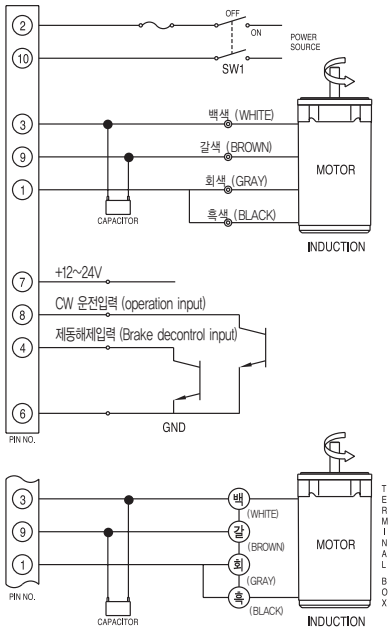
적용(APPLICATION) BRAKE PACK : SBA-NCR, SBB-NCR, SBC-NCR, SBD-NCR

■ 적용(APPLICATION)MOTOR
1ØINDUCTION MOTOR 6W
1ØINDUCTION MOTOR TERMINAL BOX
TYPE 6W~90W

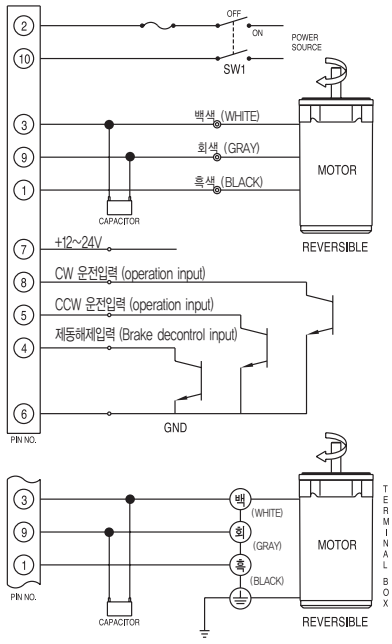
▽ CW운전입력시 (operation input)



▽ CCW운전입력시 (operation input)

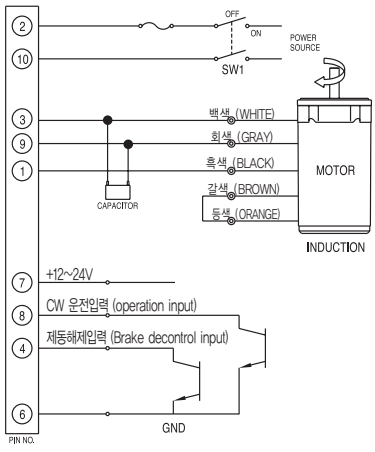


■ 적용(APPLICATION)MOTOR
1ØREVERSIBLE MOTOR 6W
1ØREVERSIBLE MOTOR TERMINAL BOX
TYPE 6W~90W

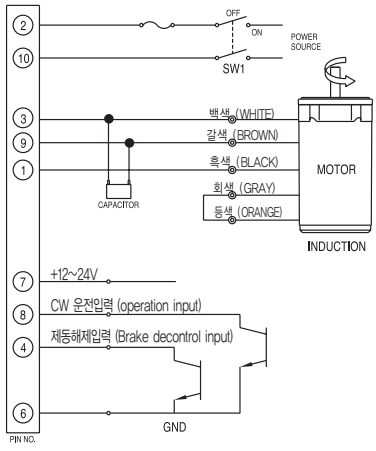


■ 적용(APPLICATION)MOTOR
1ØINDUCTION MOTOR 15W~90W

▽ CW운전입력시 (operation input)



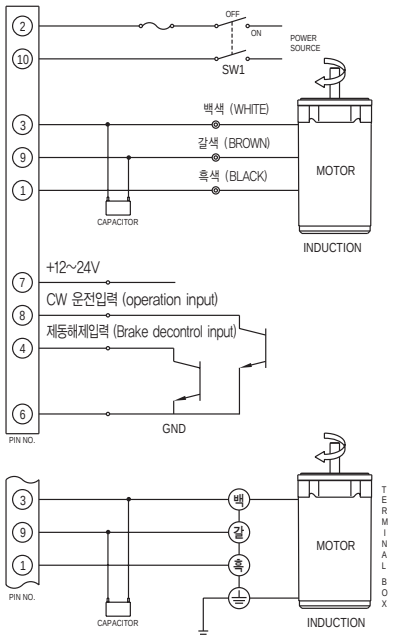
▽ CCW운전입력시 (operation input)



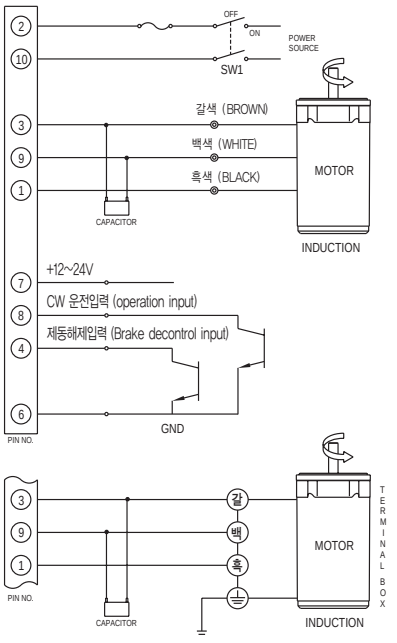
적용(APPLICATION0 BRAKE PACK : SBX-NCR

■ 적용(APPLICATION)MOTOR
1ØINDUCTION MOTOR 6W~90W
1ØINDUCTION MOTOR TERMINAL BOX TYPE 6W~90W

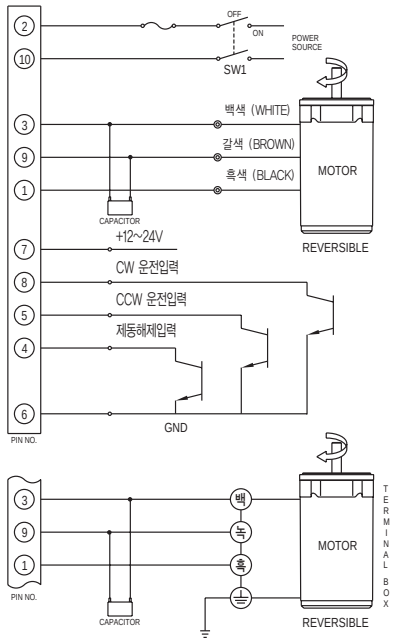
▽ CW운전입력시 (operation input)



▽ CCW운전입력시 (operation input)

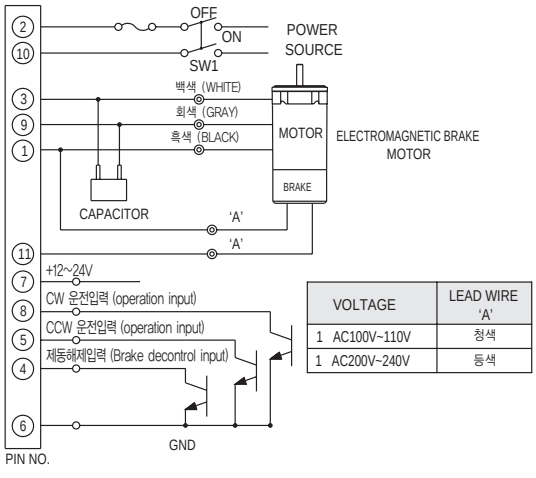


■ 적용(APPLICATION)MOTOR
1ØREVERSIBLE MOTOR 6W~90W
1ØREVERSIBLE MOTOR TERMINAL BOX TYPE 6W~90W



적용(APPLICATION) BRAKE PACK : SBA-ENCR, SBB-ENCR, SBC-ENCR, SBD-ENCR

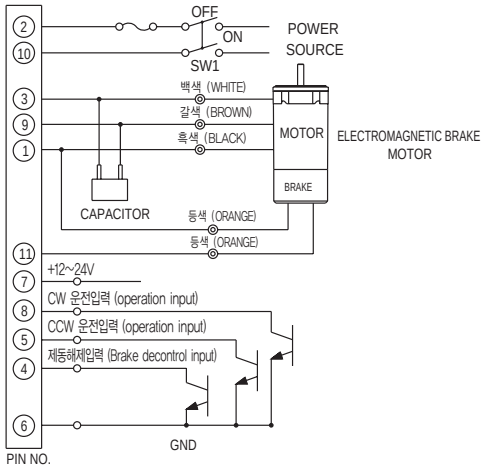
■ 적용(APPLICATION)MOTOR
1ØELECTROMAGNETIC BRAKE MOTOR 6W~90W



VOLTAGE	LEAD WIRE 'A'
1 AC100V~110V	청색
1 AC200V~240V	등색

적용(APPLICATION) BRAKE PACK : SBX-ENCR

■ 적용(APPLICATION)MOTOR
1ØELECTROMAGNETIC BRAKE MOTOR 6W~90W



신호 입력과 MOTOR의 작동 (INPUT OF SIGNAL AND OPERATION)

① CW 운전 입력 (Input of CW)

CW 운전 입력을 ON으로하면 MOTOR의 출력축은 시계방향으로 회전하고 OFF로 하면 순시 정지 합니다. INDUCTION MOTOR는 「CW운전입력」단자를 사용하여 운전합니다. CCW운전시는 MOTOR의 결선이 변경되어 운전됩니다.REVERSIBLE MOTOR는 「CW운전입력」과 「CCW운전입력」단자를 이용하여 회전방향이 결정됩니다. 「CW운전입력」과 「CCW운전입력」이 동시에 입력되는 경우에는 CW가 우선입니다.
(When CW operation input is turned on, rotating direction is CW and when turned off, it will instantaneous stop. When connected as per diagram, it will turn CW and to turn CCW, change white and brown wire. (for terminal box type motors change ② and ③). (However, for 220V~240V, 50Hz motor, change white and brown wire.)

② 제동 해제 입력 (Input of anti-braking)

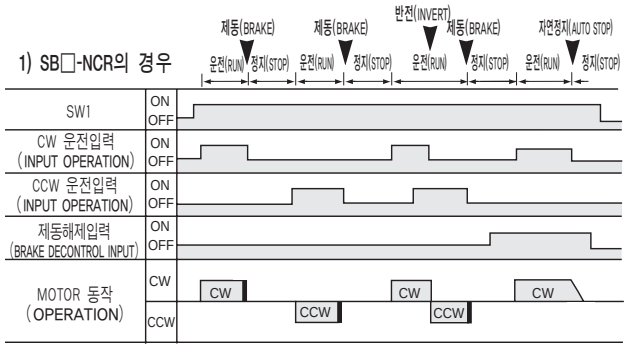
제동해제 입력을 ON으로 하면 전기BRAKE는 작동하지 않고 CW입력, CCW입력을 OFF로하면 관성으로 회전한 후 정지합니다. 제동해제 입력을 OFF로하면 전기BRAKE가 작동하고 CW입력, CCW입력을 OFF로 하면 MOTOR는 순시정지합니다. 정지후 전기BRAKE는 자동적으로 해제됩니다. (When anti-braking input is turned on, electromagnetic brake will not function, and if CW and CCW signal input is turn off, it will come to natural stop due to inertia force. If anti-braking input is off, electromagnetic brake will function and CW, CCW are off as well, motor will come to instantaneous stop. Electromagnetic brake will automatically terminate its function after stopping)

결선시의 주의 (CAUTION)

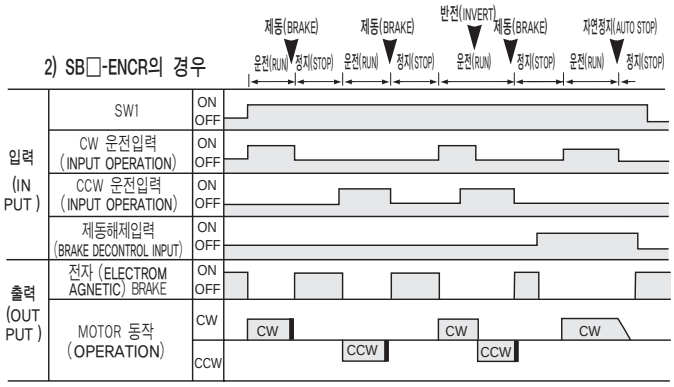
1. MOTOR와 BRAKE PACK, BRAKE PACK과 외부 CONTROLLER는 최단 거리로 배선하십시요. (When connecting brake pack and external controller, shortest distance connection is highly recommended.)
2. MOTOR용 배선, AC 전원용 배선은 0.75㎟이상의 전선을 사용하십시요. (Wire with thickness of 0.75mm or more recommended.)
3. MOTOR용 배선, AC 전원용배선(단자번호 ①②③⑨⑩⑪)과 신호용 배선(④⑤⑥⑦⑧)과는 선을 같이 묶지 말고 10㎝이상 간격을 두고 배선하십시요. (AC lead wire(Terminal NO ①②③⑨⑩) and signal lead wire(④⑤⑥⑦⑧) have at least 10cm distance.)
4. BRAKE PACK의 단자 PIN에 직접 납땜하지 마십시요. (Be careful not to solder the brake pack's terminal pin directly.)
5. 단자대에 결선 할 때에는 단자 번호를 꼭 확인 하십시요. 잘못 결선하면 고장의 원인이 됩니다. (When brake is to be connected, be sure to check the terminal number.)
6. BRAKE PACK을 SOCKET에 삽입 할 때에는 전원을 OFF하고 확실하게 삽입 하십시요. (The power switch must be turned off when inserting the brake to a socket.)
7. CW또는 CCW 운전입력에 의한 순시정지 기능을 사용시⑥번 단자의 접지를 반드시 행하여 주십시오. (To prevent malfunctions, earth pin No.6 terminal when instant brake is required for CW or CCW operations.)
(고장의 원인이 됩니다)

8. 운전조작 예 (Example of Operation)

1) SB□-NCR의 경우



2) SB□-ENCR의 경우



DIGITAL SPEED INDICATOR

INDEX

SID250 364



DIGITAL SPEED INDICATOR

● **DIGITAL SPEED INDICATOR의 특징 (Features of digital speed indicator)**

- MOTOR의 회전속도와 GEAR HEAD 출력축의 회전속도를 (DIRECT)표시하는 회전속도 표시계입니다. (It is rotating speed display that indicating the rotation speed of motor and the rotation speed of gear head's output shaft.)
- 입력전압은 AC 100V~240V로 FREE VOLTAGE입니다. (Input voltage is free voltage from AC 100V to 240V.)
- GEAR HEAD의 감속비 및 승산배율 설정이 가능합니다. (The reduction rate and multiplication magnification for gear head can be set.)
- 벨트 콘베어의 반송 속도 환산이 가능합니다. (The returning speed for belt conveyor can be converted.)
- 1회전당 12펄스 / 15펄스 / 24펄스 / 30펄스의 입력에 따른 회전수 표시가 가능합니다. (RPM can be indicated according to the input of 12 pulse/ 15 pulse/ 24 pulse/ 30 pulse by 1 RPM.)

적용 제품 (Application) : UNIT / SR / SS / X-TOR Series

※ 규격 인증품은 아닙니다. (Not specified product.)



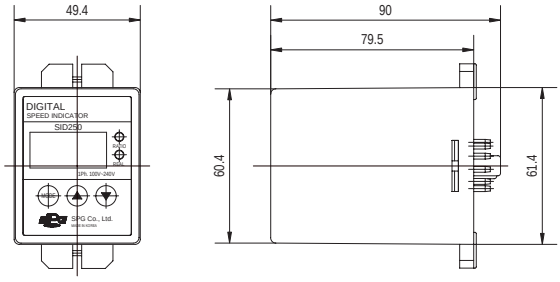
SID250

SPECIFICATIONS

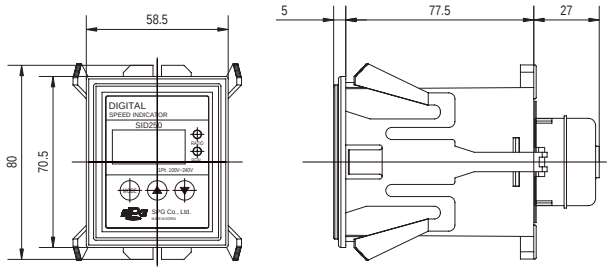
제품명 (Nomenclature) / 항목 (Item)	SID250
정격전압 (Rated voltage)	단상(Single Phase) 100V ~ 240V 50Hz/60Hz
사용 전압 범위 (Operating voltage range)	단상(Single Phase) 85V ~ 264V 50Hz/60Hz
소비전류 (Consumption Voltage)	0.1 A
회전속도표시 (Rotating speed indication)	4-DIGIT
설정감속비 (Setting reduction rate)	116종류 및 승산배율(116 types and multiplication magnification) (0.005단위(unit)
사용주의온도 (Operating caution temperature)	0 ~ 40 ℃
무게 (Weight)	200 g
절연저항 (Insulated resistance)	상온상습에서 전원입력단자와 FG간,전원입력단자와 케이스간.케이스와 FG단자간을 DC500V MEGGER로 측정한 값이 100MΩ 이상임 (In the normal temperature and humidity, values measured by mega between power input terminal and FG, power input terminal and case, case and FG terminal, are above 100 MΩ.)
절연내압 (Insulated internal pressure)	상온상습에서 전원입력단자와 FG간, 전원입력단자와 케이스간.케이스와 FG단자간을 1500V 50/60Hz를 1분간 인가하여도 이상없음. (In the normal temperature and humidity, power between power input terminal and FG, power input terminal and case, case and FG terminal, shall be approved for 1 minute.)

✚ DIMENSIONS

DIGITAL SPEED INDICATOR



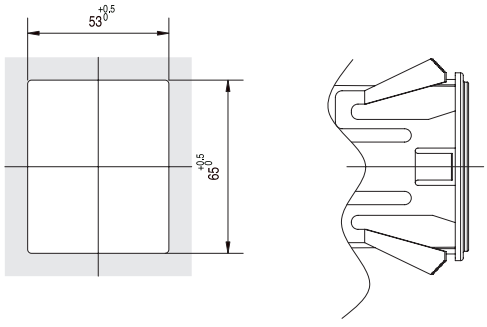
ADAPTOR 취부시 (FOR INSTALLING THE ADAPTOR)



✚ PANEL 가공도 (machining diagram)

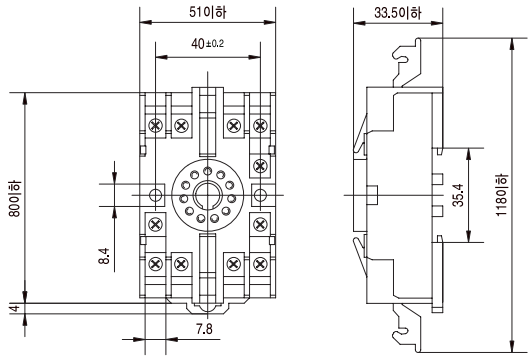
[unit:mm]

PANEL 두께(thickness) : 1mm~3.2mm



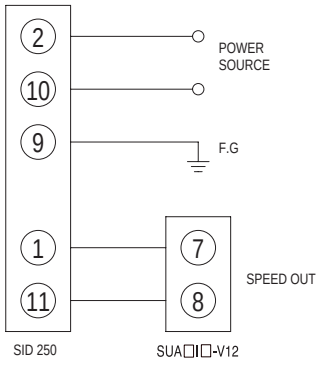
✚ DIN 레일 취부용 SOCKET (Socket for installing DIN rail) (Deliberately purchase)

MODEL명 : SB11-H

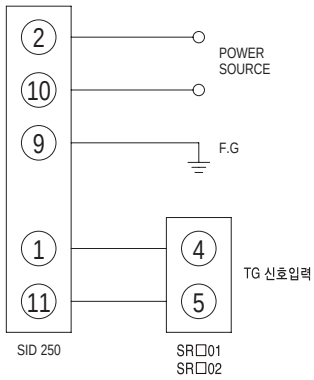


✚ 전기 배선도 (Electrical Wiring)

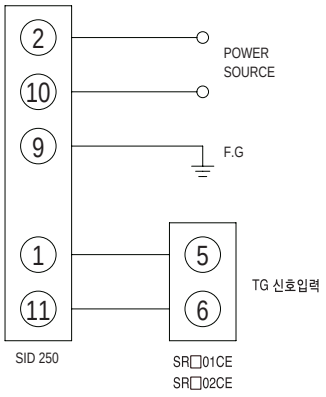
UNIT Series



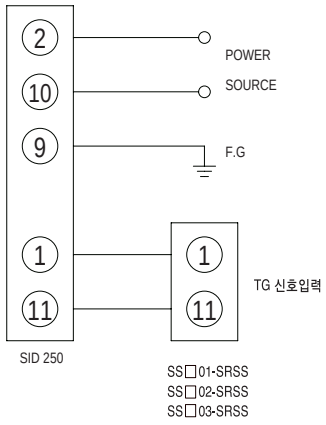
SR Series



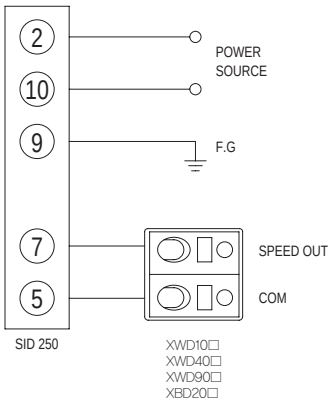
SR CE Series



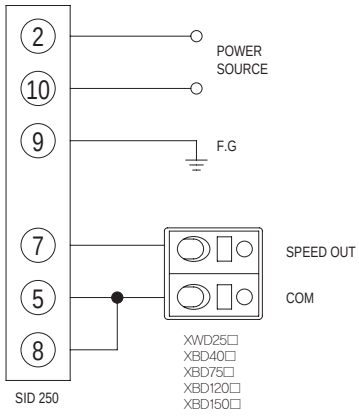
SS Series



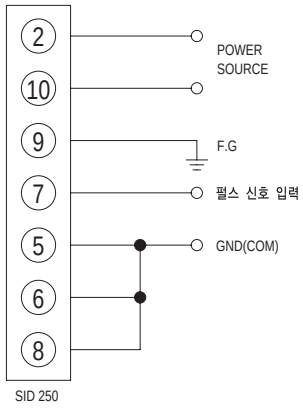
X-TOR Series (12펄스(pulse) / 회전(rpm))



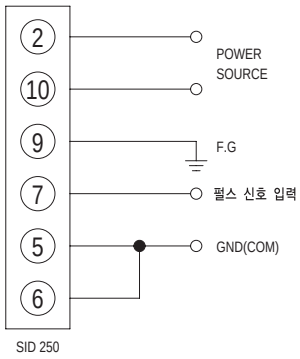
X-TOR Series (15펄스(pulse) / 회전(rpm))



12펄스 신호 입력(pulse signal input) (open collector)



30펄스 신호 입력(pulse signal input) (open collector)



OPTION

INDEX

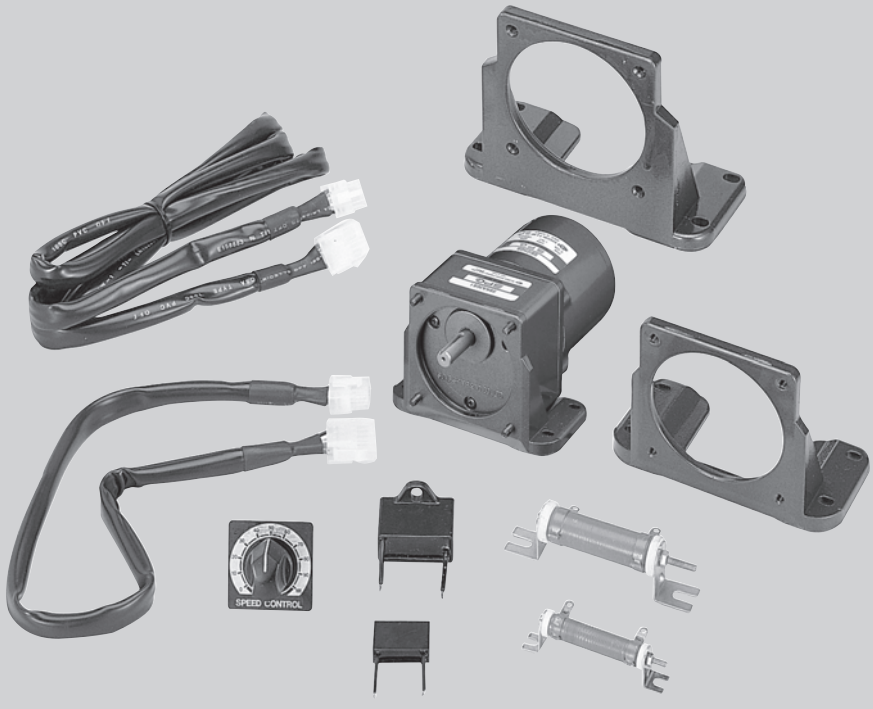
MOTOR, GEAR HEAD용 취부 PLATE (Mounting Plate for Motor & Gearhead) 368

연장선 (Extension Cable) 372

SURGE 전압 흡수용 CR회로 (Surge Absorber) 372

외부속도 설정기 (External Speed Controller) 373

제동용 외부 저항기 (Braking External Resistor) 373

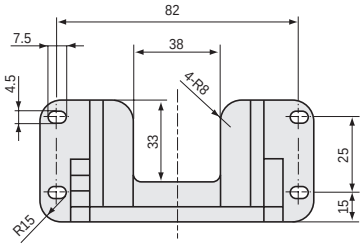


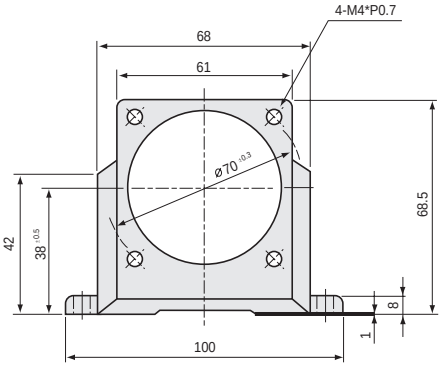
✚ MOTOR, GEAR HEAD 용 취부 PLATE (Mounting Plate for Motor & Gearhead)

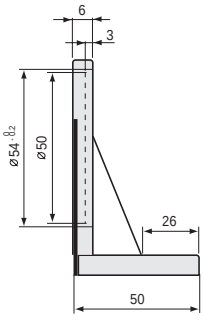


□60용





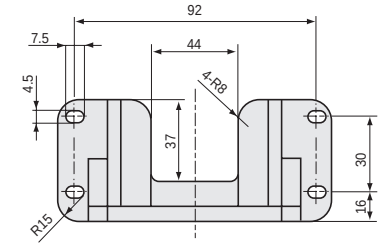


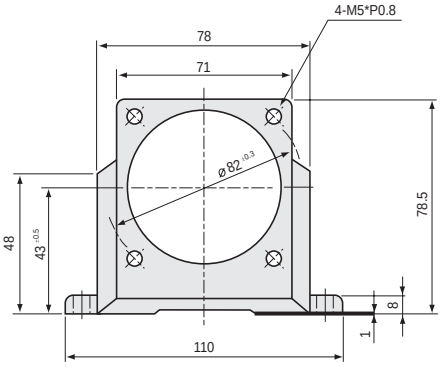


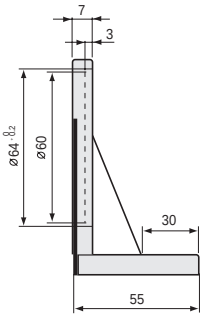
- **MODEL : SPL-6A**
  중량(WEIGHT) 45g, 재질(MATERIAL) Al
- **적용 제품 (APPLICATION ITEMS)**
  GEARHEAD : S6□A
  MOTOR : S6□06

□70용





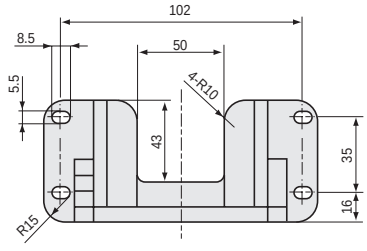


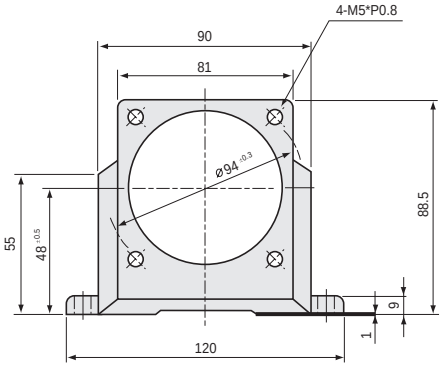


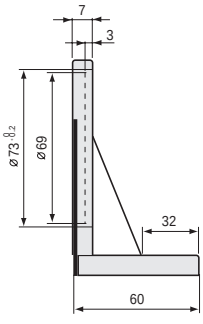
- **MODEL : SPL-7A**
  중량(WEIGHT) 75g, 재질(MATERIAL) Al
- **적용 제품 (APPLICATION ITEMS)**
  GEARHEAD : S7□A
  MOTOR : S7□15

□80용





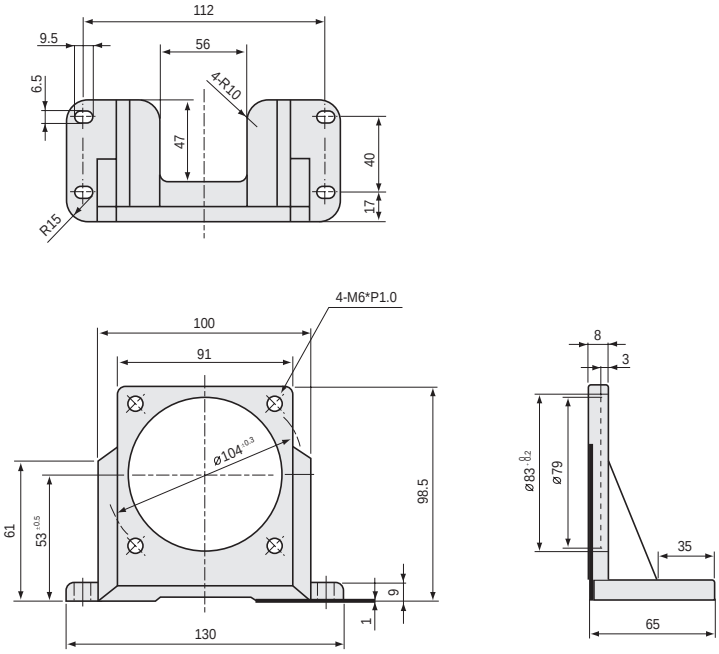




- **MODEL : SPL-8A**
  중량(WEIGHT) 120g, 재질(MATERIAL) Al
- **적용 제품 (APPLICATION ITEMS)**
  GEARHEAD : S8□A
  MOTOR : S8□(15,25)

90용

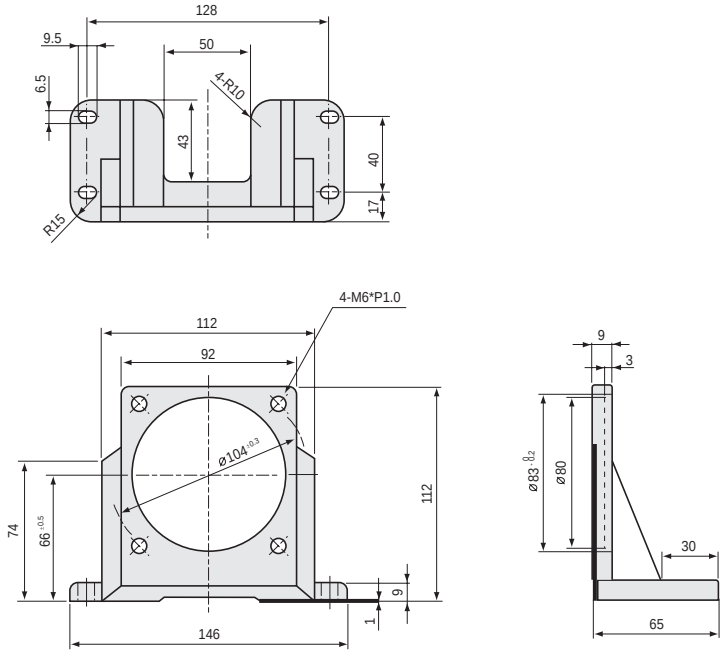




- **MODEL : SPL-9A**
  중량(WEIGHT) 140g, 재질(MATERIAL) Al
- **적용 제품 (APPLICATION ITEMS)**
  GEARHEAD : S9□B
  MOTOR : S9□40～200

90용



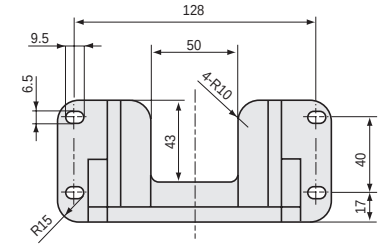


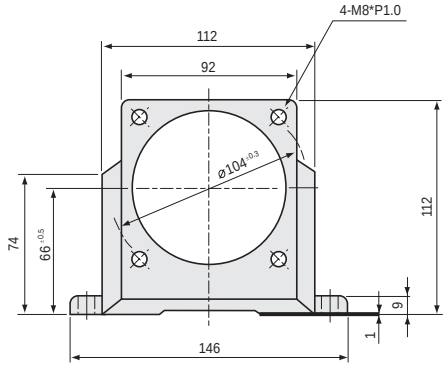
- **MODEL : SPL-9SA**
  중량(WEIGHT) 270g, 재질(MATERIAL) Al
- **적용 제품 (APPLICATION ITEMS)**
  GEARHEAD : S9□C(L, H)
  GEARHEAD : S9□B(L, H)
  MOTOR : S9□40～200(L, H)

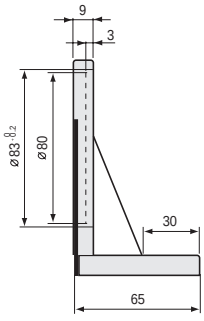
TYPE의 취부 PLATE의 강도를 높이고 싶을 경우.
(When needed stronger mounting plate.)

90용









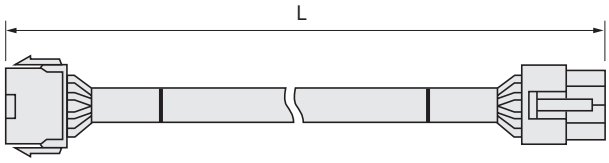
- **MODEL : SPL-9SB**
  중량(WEIGHT) 270g, 재질(MATERIAL) Al
- **적용 제품 (APPLICATION ITEMS)**
  GEARHEAD : S9□D□B, S9□H□B

✚ 연장선 (EXTENSION CABLE)

- SPEED CONTROL MOTOR와 CONTROLLER UNIT간에 사용되는 연장선입니다. (Use the extension cable between speed control motor and controller unit.)
- 별매품입니다. (Sold separately.)
- CONTROLLER UNIT 구입시 0.5m 장선은 기본적으로 포장되어 있습니다. 추가로 더 연장할 경우에 추가로 구입하여 사용하십시오. (Controller unit has 0.5m built-in cable. Additional purchase of extension cable is possible if required.)
- 연장선 길이 및 MODEL 명은 아래의 표를 참조하십시오. (Refer to the below table, for the length of extension cable and the name of model.)



DIMENSION [단위(Unit) : m]

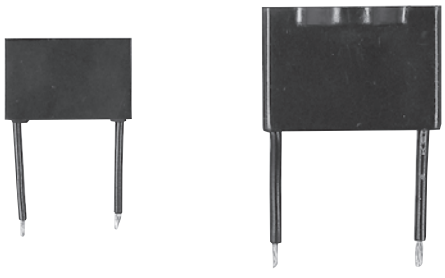


MODEL명 (NAME)

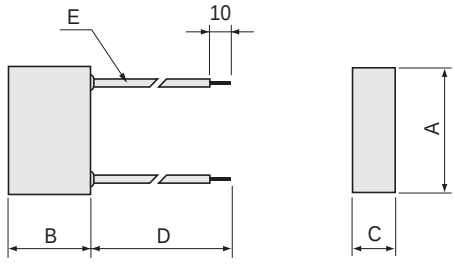
MODEL 명 (NAME)	L (연장선 길이 (LENGTH OF EXTENSION CABLE))
SOEW-05	0.5m
SOEW-10	1.0m
SOEW-15	1.5m
SOEW-20	2.0m
SOEW-30	3.0m
SOEW-40	4.0m
SOEW-50	5.0m

✚ SURGE 전압 흡수용 CR 회로 (SURGE ABSORBER)

- MOTOR의 정역전 운전 조작시 및 급속 정지 회로부에 사용되는 RELAY, SWITCH의 접점 보호용에 사용하여 주십시오. (Contact protector of relay switch used to operate direction of the motor and/or braking circuit.)
- 별매품입니다. (Sold separately.)



DIMENSION [단위(Unit) : m]



MODEL명 및 외형촌법 (MODEL Name and Dimension)

MODEL	전압 (VOLTAGE)	저항치 (RESISTANCE)	콘덴서 (CAPACITOR)	외형촌법(DIMENSION) (㎜)				E (LEAD WIRE)
				A	B	C	D	
SK1202-25	AC 250V	120Ω	0.2uF	26.0	16.5	8.5	200	UL1007 AWG #22
SK1202-50	AC 500V	120Ω	0.2uF	36.0	25.0	16.0	200	UL1015 AWG #20

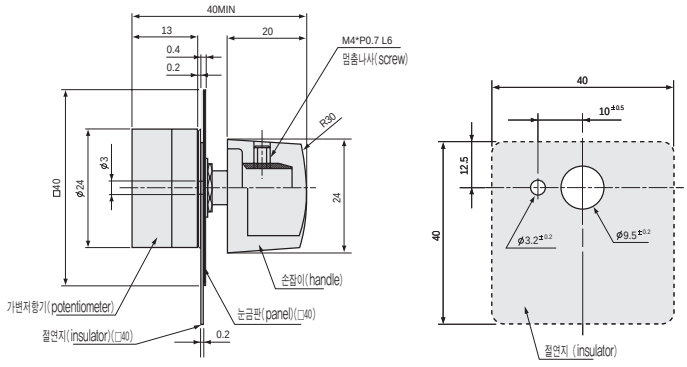
✚ 외부 속도 설정기 (EXTERNAL SPEED CONTROLLER)

- SS TYPE CONTROLLER에는 외부속도 설정기 1SET가 부속품으로 내장되어 있습니다. (Built-in 1 set of external speed controller in SS Type controller of speed control pack by parts.)
- SR TYPE CONTROLLER에는 자체적으로 속도 설정기가 부착되어 있어 속도조정 및 설정이 가능합니다. 원거리 조작이 필요한 경우에는 별도로 구입하여 사용하여 주십시오. (A speed controller is installed in SR Type controller, thus it can institute and control speed. Remote operation kits available for purchase.)
- 또한 속도 설정을 다단계로 할 경우에는 필요한 수량만큼 별도로 구입하여 사용하십시오. (Additional speed controllers are available for purchase if multi-stage speed control is required.)
- 별매품입니다. (Sold separately)





DIMENSION [단위(Unit) : m]



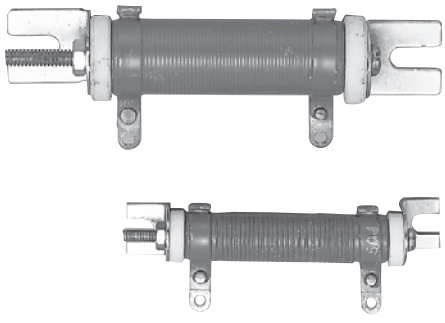
MODEL명 및 외형촌법 (MODEL NAME AND EXTERIOR DIMENSION)

MODEL 명 (NAME)	특성 (CHARACTERISTIC)
SVR10KH	10㏀, 1/4W · B특성 (Characteristic)
SVR20KH	20㏀, 1/4W · B특성 (Characteristic)

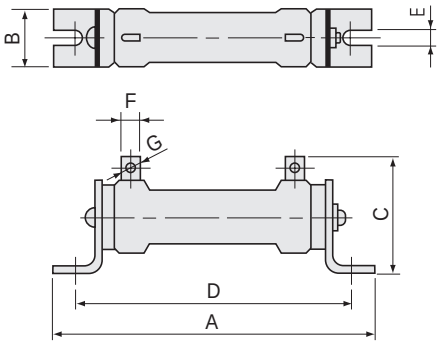
※주의) SVR10KH(10㏀, 1/4W · B특성)는 SS TYPE표준형 CONTROLLER의 220~240V 50Hz용 MODEL에만 적용됩니다. (Note) SVR10KH (10KΩ, 1/4W · B SPEC) have only application to SS type speed controller which is 220~240V, 50Hz.)

✚ 제동용 외부 저항기 (BRAKING EXTERNAL RESISTOR)

- SPEED CONTROL PACK에서의 순시정지 기능이나, BRAKE PACK에서 출력이 큰 MOTOR의 순시정지를 할 경우에 반드시 사용하여 주십시오. (It should be used for instantaneous function in speed control pack and high power motor(over 60W).)
- 별매품입니다. (sold separately)



DIMENSION
[단위(Unit) : m]



MODEL명 (NAME0

MODEL	저항치 (Ω) (RESISTANCE)	정격전력 (W) (RATEDPOWER)	외형촌법 (DIMENSION) (㎜)							적용 (APPLICABLE) PACK	사용조건 (OPERATING CONDITIONS)
			A	B	C	D	E	F	G		
SR05H10	5	10	77	14	26	67	3.5	5	2.2	SR TYPE	급속 정지시(INSTANTANEOUS STOP)
SR10H10	10	10	77	14	26	67	3.5	5	2.2	SS TYPE	급속 정지시(INSTANTANEOUS STOP)
SR50H10	50	10	77	14	26	67	3.5	5	2.2	SBS-ICE	25W, 40W
SR30H20	30	20	91	22	35	75	4.5	5	2.2	SBT(U)-I	60W, 90W
SR50H20	50	20	91	22	35	75	4.5	5	2.2	SBB(D)-IR	90W
										SBS-ICE	60W, 90W
SR30H50	30	50	139	32	55	113	6.2	7	2.8	SBA(C)-IR	60W, 90W

SPG 규격 인증품 현황
(SPG Standard Certifications)

Electrical Insulation system

System Designation	Insulation Class	Maximum Temperature	UL File No.	Used	Notes
SM-1	Class B	130℃	E162261	Indoor/Outdoor(Enclosed)	
SM-3	Class F	155℃	E162261	Indoor/Outdoor(Enclosed)	
SM-4	Class B	130℃	E162261	Indoor/Outdoor(Enclosed)	
SM-5	Class B	130℃	E162261	Indoor/Outdoor(Enclosed)	
SM-6	Class F	155℃	E162261	Indoor/Outdoor(Enclosed)	
SM-7	Class F	155℃	E162261	Indoor/Outdoor(Enclosed)	
SM-8	Class H	180℃	E162261	Indoor/Outdoor(Enclosed)	
SM-9	Class H	180℃	E162261	Indoor/Outdoor(Enclosed)	

AC Induction motor (Terminal Box Type : Induction motor model + "-T or -T1")

Model	Protection Type	UL File No	EN Certificate		CCC Certificate	IP Protection	Notes
			Certificate Mark	Certificate No.			
S6I03( )A	Z.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S6I03( )C	Z.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S6I03( )E	Z.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S6I06( )A	Z.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S6I06( )B	Z.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S6I06( )C	Z.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S6I06( )D	Z.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S6I06( )E	Z.P	E172722	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S6I06( )X	Z.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S7I15( )A	T.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S7I15( )B	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S7I15( )C	T.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S7I15( )D	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S7I15( )E	T.P	E172720	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S7I15( )X	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S8I15( )A	T.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S8I15( )B	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S8I15( )C	T.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S8I15( )D	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S8I15( )E	T.P	E172720	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S8I15( )X	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S8I25( )A	T.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S8I25( )B	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S8I25( )C	T.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S8I25( )D	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S8I25( )E	T.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S8I25( )X	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S8I25( )U	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23/54	
S8I25( )T	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23/54	
S8I25( )S	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23/54	
S9I40( )A	T.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S9I40( )B	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S9I40( )C	T.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S9I40( )D	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S9I40( )E	T.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S9I40( )X	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S9I40( )U	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23/54	
S9I40( )T	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23/54	
S9I40( )S	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23/54	

AC Induction motor (Terminal Box Type : Induction motor model + "-T or -T1")

Model	Protection Type	UL File No	EN Certificate		CCC Certificate	IP Protection	Notes
			Certificate Mark	Certificate No.			
S9I60( )A	T.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S9I60( )B	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S9I60( )C	T.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S9I60( )D	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S9I60( )E	T.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S9I60( )X	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S9I60( )U	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23/54	
S9I60( )T	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23/54	
S9I60( )S	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23/54	
S9I90( )A	T.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S9I90( )B	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S9I90( )C	T.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S9I90( )D	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S9I90( )E	T.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S9I90( )X	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S9I90( )U	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23/54	
S9I90( )T	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23/54	
S9I90( )S	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23/54	
S9I120( )A	T.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S9I120( )B	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S9I120( )C	T.P	-	TüV	B.08.04.39314.025	2004010401120757	IP23/54	
S9I120( )D	T.P	-	TüV	B.08.04.39314.025	2003010401089272	IP23/54	
S9I150( )U	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23/54	
S9I150( )T	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23/54	
S9I150( )S	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23/54	
S9I180( )A	T.P	-	TüV	B.08.04.39314.025	-	IP23/54	
S9I180( )B	T.P	-	TüV	B.08.04.39314.025	-	IP23/54	
S9I180( )C	T.P	-	TüV	B.08.04.39314.025	-	IP23/54	
S9I180( )D	T.P	-	TüV	B.08.04.39314.025	-	IP23/54	
S9I180( )U	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23/54	
S9I180( )T	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23/54	
S9I180( )S	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23/54	

AC Reversible motor (Terminal Box Type : Reversible motor model + "-T or -T1")

Model	Protection Type	UL File No	EN Certificate		CCC Certificate	IP Protection	Notes
			Certificate Mark	Certificate No.			
S6R06( )A	Z.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S6R06( )B	Z.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S6R06( )C	Z.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S6R06( )D	Z.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S6R06( )E	Z.P	E172722	TüV	B.08.06.39314.027	2007010401240888	IP23	
S6R06( )X	Z.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S7R15( )A	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S7R15( )B	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S7R15( )C	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S7R15( )D	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S7R15( )E	T.P	E172720	TüV	B.08.06.39314.027	2007010401240888	IP23	
S7R15( )X	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R15( )A	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R15( )B	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R15( )C	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R15( )D	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R15( )E	T.P	E172720	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R15( )X	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R25( )A	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R25( )B	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R25( )C	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R25( )D	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R25( )E	T.P	E172720	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R25( )X	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R40( )A	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R40( )B	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R40( )C	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R40( )D	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R40( )E	T.P	E172720	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R40( )X	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R60( )A	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R60( )B	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R60( )C	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R60( )D	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R60( )E	T.P	E172720	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R60( )X	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R90( )A	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R90( )B	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R90( )C	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R90( )D	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R90( )E	T.P	E172720	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R90( )X	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	

AC Electromagnetic Brake motor

Model	Protection Type	UL File No	EN Certificate		CCC Certificate	IP Protection	Notes
			Certificate Mark	Certificate No.			
S6R06( )A-E	Z.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S6R06( )B-E	Z.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S6R06( )C-E	Z.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S6R06( )D-E	Z.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S6R06( )E-E	Z.P	E172722	TüV	B.08.06.39314.027	2007010401240888	IP23	
S6R06( )X-E	Z.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S7R15( )A-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S7R15( )B-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S7R15( )C-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S7R15( )D-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S7R15( )E-E	T.P	E172720	TüV	B.08.06.39314.027	2007010401240888	IP23	
S7R15( )X-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R15( )A-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R15( )B-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R15( )C-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R15( )D-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R15( )E-E	T.P	E172720	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R15( )X-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R25( )A-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R25( )B-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R25( )C-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R25( )D-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R25( )E-E	T.P	E172720	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8R25( )X-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S8I25( )U-E	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23	
S8I25( )T-E	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23	
S8I25( )S-E	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23	
S9R40( )A-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R40( )B-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R40( )C-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R40( )D-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R40( )E-E	T.P	E172720	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R40( )X-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9I40( )U-E	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23	
S9I40( )T-E	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23	
S9I40( )S-E	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23	

AC Electromagnetic Brake motor

Model	Protection Type	UL File No	EN Certificate		CCC Certificate	IP Protection	Notes
			Certificate Mark	Certificate No.			
S9R60( )A-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R60( )B-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R60( )C-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R60( )D-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R60( )E-E	T.P	E172720	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R60( )X-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9I60( )U-E	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23	
S9I60( )T-E	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23	
S9I60( )S-E	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23	
S9R90( )A-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R90( )B-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R90( )C-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R90( )D-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R90( )E-E	T.P	E172720	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9R90( )X-E	T.P	-	TüV	B.08.06.39314.027	2007010401240888	IP23	
S9I90( )U-E	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23	
S9I90( )T-E	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23	
S9I90( )S-E	T.P	-	TüV	B.08.04.39314.025	2003010401089270	IP23	

AC Speed Control Induction motor

Model	Protection Type	UL File No	EN Certificate		CCC Certificate	IP Protection	Notes
			Certificate Mark	Certificate No.			
S6I06( )A-V12	Z.P	-	TüV	B.08.07.39314.029	2004010401120757	IP23	
S6I06( )B-V12	Z.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S6I06( )C-V12	Z.P	-	TüV	B.08.07.39314.029	2004010401120757	IP23	
S6I06( )D-V12	Z.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S6I06( )E-V12	Z.P	E172722	TüV	B.08.07.39314.029	2004010401120757	IP23	
S6I06( )X-V12	Z.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S7I15( )A-V12	T.P	-	TüV	B.08.07.39314.029	2004010401120757	IP23	
S7I15( )B-V12	T.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S7I15( )C-V12	T.P	-	TüV	B.08.07.39314.029	2004010401120757	IP23	
S7I15( )D-V12	T.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S7I15( )E-V12	T.P	E172720	TüV	B.08.07.39314.029	2004010401120757	IP23	
S7I15( )X-V12	T.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S8I15( )A-V12	T.P	-	TüV	B.08.07.39314.029	2004010401120757	IP23	
S8I15( )B-V12	T.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S8I15( )C-V12	T.P	-	TüV	B.08.07.39314.029	2004010401120757	IP23	
S8I15( )D-V12	T.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S8I15( )E-V12	T.P	E172720	TüV	B.08.07.39314.029	2004010401120757	IP23	
S8I15( )X-V12	T.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S8I25( )A-V12	T.P	-	TüV	B.08.07.39314.029	2004010401120757	IP23	
S8I25( )B-V12	T.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S8I25( )C-V12	T.P	-	TüV	B.08.07.39314.029	2004010401120757	IP23	
S8I25( )D-V12	T.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S8I25( )E-V12	T.P	E172720	TüV	B.08.07.39314.029	2004010401120757	IP23	
S8I25( )X-V12	T.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S9I40( )A-V12	T.P	-	TüV	B.08.07.39314.029	2004010401120757	IP23	
S9I40( )B-V12	T.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S9I40( )C-V12	T.P	-	TüV	B.08.07.39314.029	2004010401120757	IP23	
S9I40( )D-V12	T.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S9I40( )E-V12	T.P	E172720	TüV	B.08.07.39314.029	2004010401120757	IP23	
S9I40( )X-V12	T.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S9I60( )A-V12	T.P	-	TüV	B.08.07.39314.029	2004010401120757	IP23	
S9I60( )B-V12	T.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S9I60( )C-V12	T.P	-	TüV	B.08.07.39314.029	2004010401120757	IP23	
S9I60( )D-V12	T.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S9I60( )E-V12	T.P	E172720	TüV	B.08.07.39314.029	2004010401120757	IP23	
S9I60( )X-V12	T.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S9I90( )A-V12	T.P	-	TüV	B.08.07.39314.029	2004010401120757	IP23	
S9I90( )B-V12	T.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S9I90( )C-V12	T.P	-	TüV	B.08.07.39314.029	2004010401120757	IP23	
S9I90( )D-V12	T.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S9I90( )E-V12	T.P	E172720	TüV	B.08.07.39314.029	2004010401120757	IP23	
S9I90( )X-V12	T.P	-	TüV	B.08.07.39314.029	2003010401089272	IP23	
S9I180( )B-V12	T.P	-	TüV	B.08.07.39314.029	-	IP23	

AC Speed Controller

Model	UL File No	CE-LVD Certificate		1) CE-EMCD Certificate 2) FCC Verification		Notes
		Agency	Certificate No.	Agency	Certificate No.	
SUA□IA-V12	E190517	TüV	N8.08.10.29314.032			
SUA□IB-V12	E190517	TüV	N8.08.10.29314.032	1) DEMKO	EMC15568-08-02	
SUA□IC-V12	E190517	TüV	N8.08.10.29314.032			
SUA□ID-V12	E190517	TüV	N8.08.10.29314.032	1) DEMKO	EMC15568-08-02	
SUA□IX-V12	E190517	TüV	N8.08.10.29314.032	1) DEMKO	EMC15568-08-02	
SUD□IA-V12	E190517	TüV	N8.08.10.29314.032	2) UL	08CA54110-FCC	
SUD□IB-V12	E190517	TüV	N8.08.10.29314.032	1) DEMKO 2) UL	EMC15568-08-01 08CA54104-FCC	
SUD□IC-V12	E190517	TüV	N8.08.10.29314.032	2) UL	08CA54110-FCC	
SUD□ID-V12	E190517	TüV	N8.08.10.29314.032	1) DEMKO 2) UL	EMC15568-08-02 08CA54110-FCC	
SUD□IX-V12	E190517	TüV	N8.08.10.29314.032	1) DEMKO 2) UL	EMC15568-08-01 08CA54104-FCC	
SRA01	E190517	TüV	N8.08.10.29314.032			
SRA02	E190517	TüV	N8.08.10.29314.032			
SRB01	E190517	TüV	N8.08.10.29314.032			
SRB02	E190517	TüV	N8.08.10.29314.032			
SRC01	E190517	TüV	N8.08.10.29314.032			
SRC02	E190517	TüV	N8.08.10.29314.032			
SRD01	E190517	TüV	N8.08.10.29314.032			
SRD02	E190517	TüV	N8.08.10.29314.032			
SRX01	E190517	TüV	N8.08.10.29314.032			
SRX02	E190517	TüV	N8.08.10.29314.032			
SSA01-SRSS	E190517	TüV	N8.08.10.29314.032			
SSA02-SRSS	E190517	TüV	N8.08.10.29314.032			
SSB01-SRSS	E190517	TüV	N8.08.10.29314.032			
SSB02-SRSS	E190517	TüV	N8.08.10.29314.032			
SSC01-SRSS	E190517	TüV	N8.08.10.29314.032			
SSC02-SRSS	E190517	TüV	N8.08.10.29314.032			
SSD01-SRSS	E190517	TüV	N8.08.10.29314.032			
SSD02-SRSS	E190517	TüV	N8.08.10.29314.032			
SSX01-SRSS	E190517	TüV	N8.08.10.29314.032			
SSX02-SRSS	E190517	TüV	N8.08.10.29314.032			
SHA03-SRSS	E190517	TüV	N8.08.10.29314.032			
SHB03-SRSS	E190517	TüV	N8.08.10.29314.032			
SHC03-SRSS	E190517	TüV	N8.08.10.29314.032			
SHD03-SRSS	E190517	TüV	N8.08.10.29314.032			
SHX03-SRSS	E190517	TüV	N8.08.10.29314.032			



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