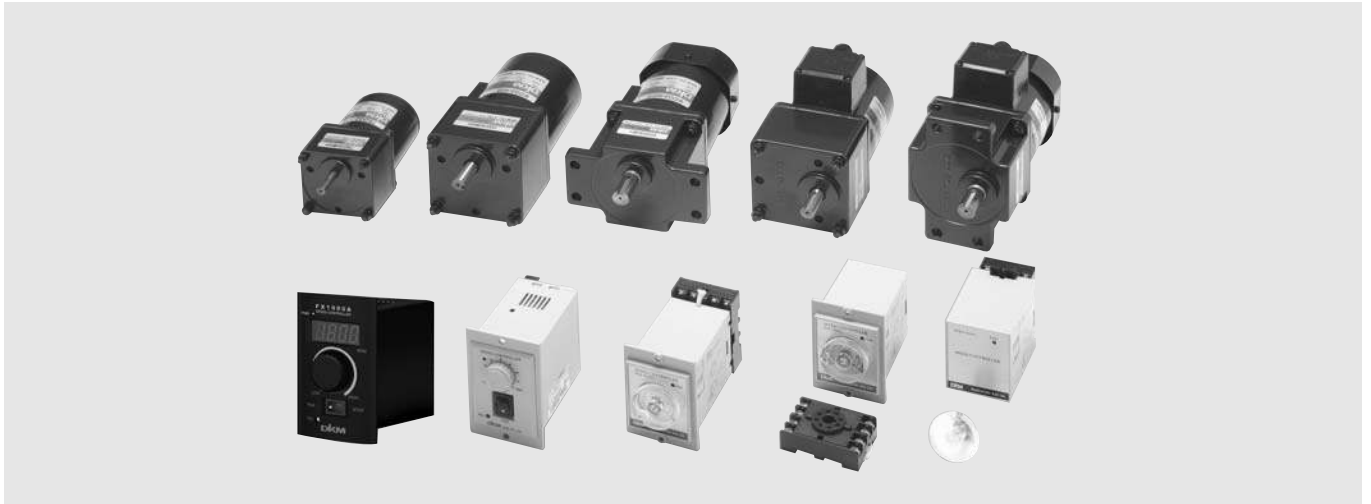


SPEED CONTROL SYSTEM



INDEX

SPEED CONTROL MOTOR FEATURES	144
6W (□70mm)	153
10W (□70mm)	155
15W (□80mm)	157
25W (□80mm)	159
40W (□90mm)	161
60W (□90mm)	163
90W (□90mm)	165
120W (□90mm)	168
180W (□90mm)	171

■ **Features of Speed Control Motor**

DKM Motor allow you to easily set and adjust the speed. DKM Motor offers three kinds of AC speed control as shown below. Select the best system depending upon your application.

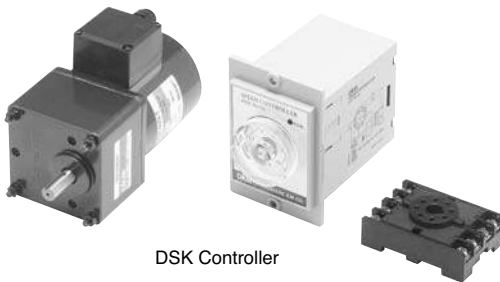
- DIGITAL TYPE (CONNECTOR Type / Digital Display) FX1000A Series



- UNIT TYPE (CONNECTOR Type) DSA Series



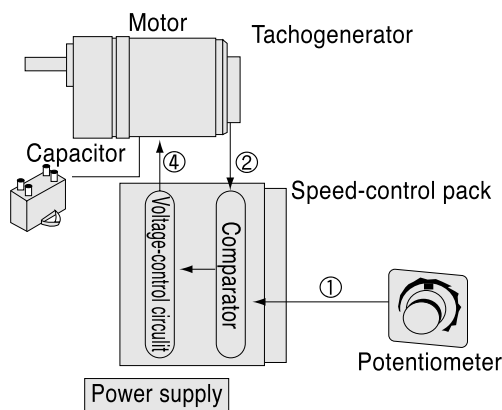
- SOCKET TYPE DSK Series



■ Technical Reference

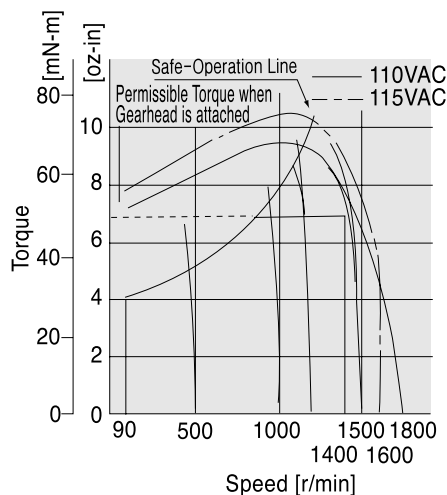
● Speed Control Methods of Speed Control Systems

- ① By a potentiometer, the speed setting voltage is supplied.
- ② The motor's speed is sensed and the speed signal voltage is supplied.
- ③ The difference between the speed setting voltage and speed signal voltage is supplied.
- ④ A voltage determined by the output from the capacitor is supplied to the motor so that it will reach the set speed.



● Speed-Torque Characteristics of Speed Control Systems

The speed-torque characteristics line of all AC speed control motors characteristics is shown in the figure below. Each set speed changes slightly according to the change in load torque.



■ Safe Operation Line and Permissible Torque When Using a Gearhead

Input power to the speed control motor depends on the load and speed. The greater the load, and the lower the speed, the greater an increase in motor temperature. In the speed-torque characteristics graph, the line is referred to as the safe operation line, while the area below the line is called the continuous operation area.

The safe operation line, measured according to motor temperature, indicates its operational limit for continuous usage with the temperature. Whether the motor can be operated at a specific torque and speed is determined by measuring the temperature of the motor case. In general, if the motor's case temperature is below 90°C (194°F), continuous operation is possible, considering the insulation class of motor coil winding. But the motor life could be extended with lower motor temperature. So it is recommended that the motor be used under conditions that keep the motor temperature low.

DKM has two kinds of cooling fan; General fan (F type) and Powerful fan (F2 type). F fan is attached in motor shaft and its speed depends on the motor shaft speed. So in slow speed of motor, there is very weak cooling effect. In the application where motor speed should be changed from low speed (below 1,000 rpm) to high speed like speed control motor, F2 fan is needed so that cooling effect keep constantly regardless of the motor speed.

In case of speed control motor and inverter motor, DKM is employing F2 type fan into them basically; In special application or by user's request F type fan can be employed in speed control motor and inverter motor.

And please be advised that in all motors, F2 fan can be attached by user's request.

Digital Type Speed Control Motor FX1000A control system

The FX1000A series combines a control unit and AC speed Control motor. Connection between the motor and control Unit is simplified by an easy-to-use connector.



■ Features

● Easy Connection

Control units combine the control pack, potentiometer and capacitor into one device. Operation is possible just by connecting the control unit into power supply after connecting the motor and control unit together using the connector.

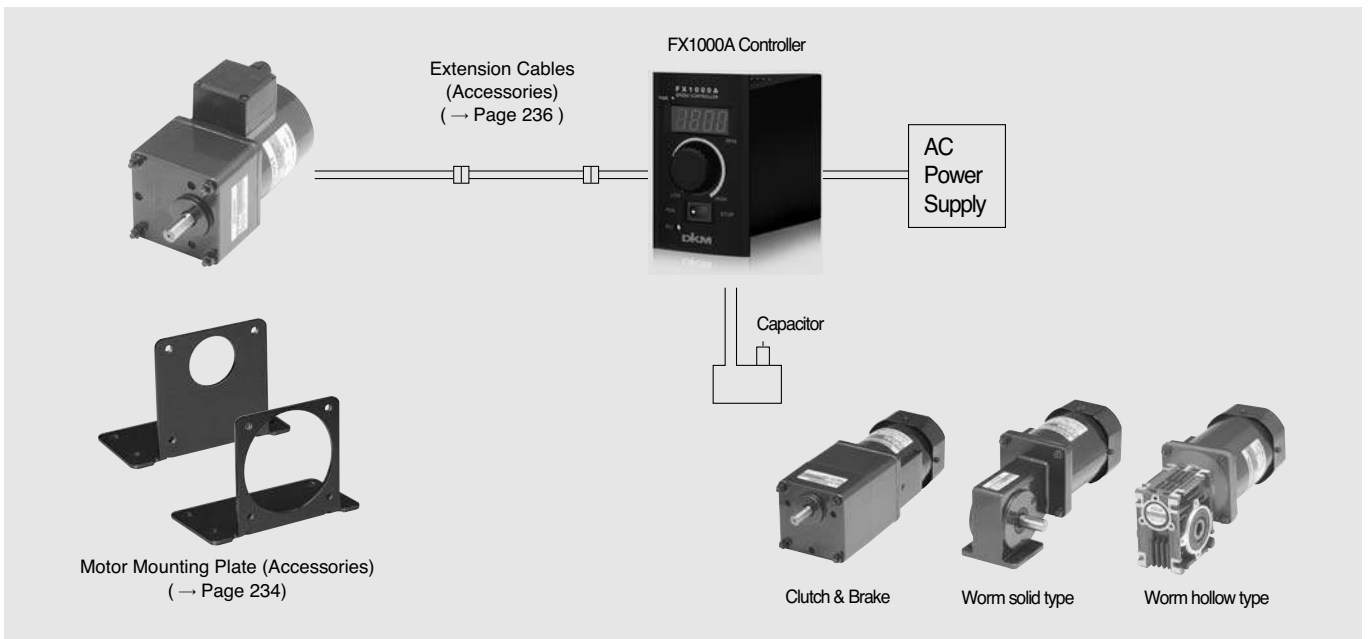
● Easy Operation

The speed can be set easily with the potentiometer on the front panel of the control unit.

● DIGITAL DISPLAY

The motor speed can see directly on the front panel of display of the control unit.

■ System Configuration



■ FX1000A Controller Specification

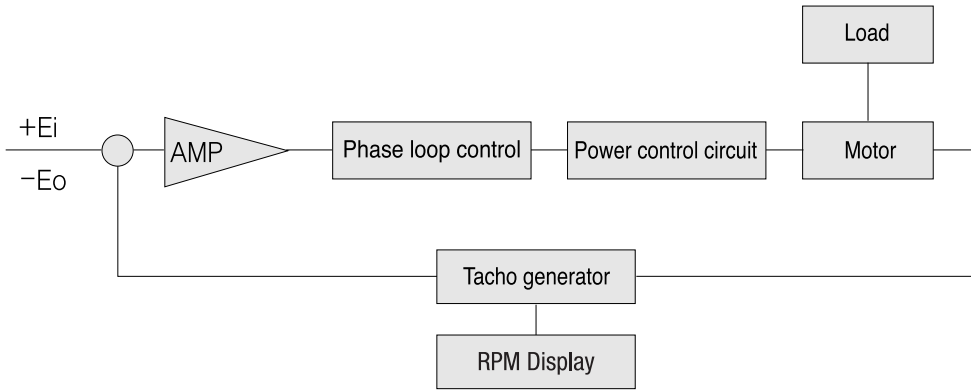
● General Specification

Item	Detail
Rated Input Voltage	220 VAC 50/60 Hz
Workable Voltage	from -15% to +10% of 220VAC
Consumption Power	Less than 4VA
Control Mode	Phase Loop Control (0 to 220 VAC)
Input Frequency	10Hz ~ 360Hz (TACHO)
Power On-Off Signal	Red color of LED
Speed Set Range	100 ~ 1750(RPM)
Ambient Temperature	from -10℃ to +55℃
Ambient Humidity	35 ~ 85% RH
Weight	300g
Dimension	60(w) x 100(h) x 92(d) mm
Insulation Resistance	100 Ω or more when 500V mega is applied between the windings and the housing after rated motor operation under normal ambient temperature and humidity
Dielectric Strength	Sufficient to withstand 1.5KV at 50/60Hz applied between the windings and the case after rated motor operation under normal ambient temperature and humidity for 1min.
Measurement	CAT III

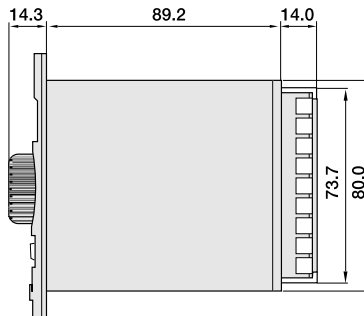
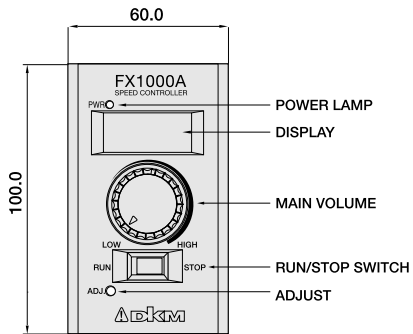
● Motor capacity / Rated Current

Specification	Output	Capacitor	Rated Current
7SDGC - 6G	6W	0.7uF	0.15A
7SDGC - 10G	10W	1.0uF	0.18A
8SDGC - 15G	15W	1.5uF	0.26A
8SDGC - 25G	25W	2.0uF	0.32A
9SDGC - 40G	40W	2.5uF	0.47A
9SDGC - 60F2P	60W	4.0uF	0.63A
9SDGC - 90F2P	90W	5.0uF	1.05A
9SDGC - 120F2P	120W	6.0uF	1.2A
9SDGC - 180F2P	180W	6.5uF	1.6A

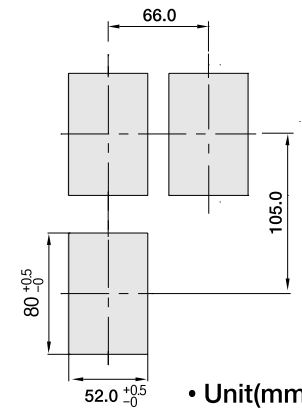
● **Circuit Diagram**



● **Dimension**

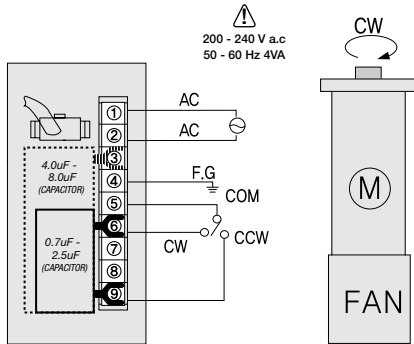


● **Dimension for Panel**



● **Unit(mm)**

● Connector Type



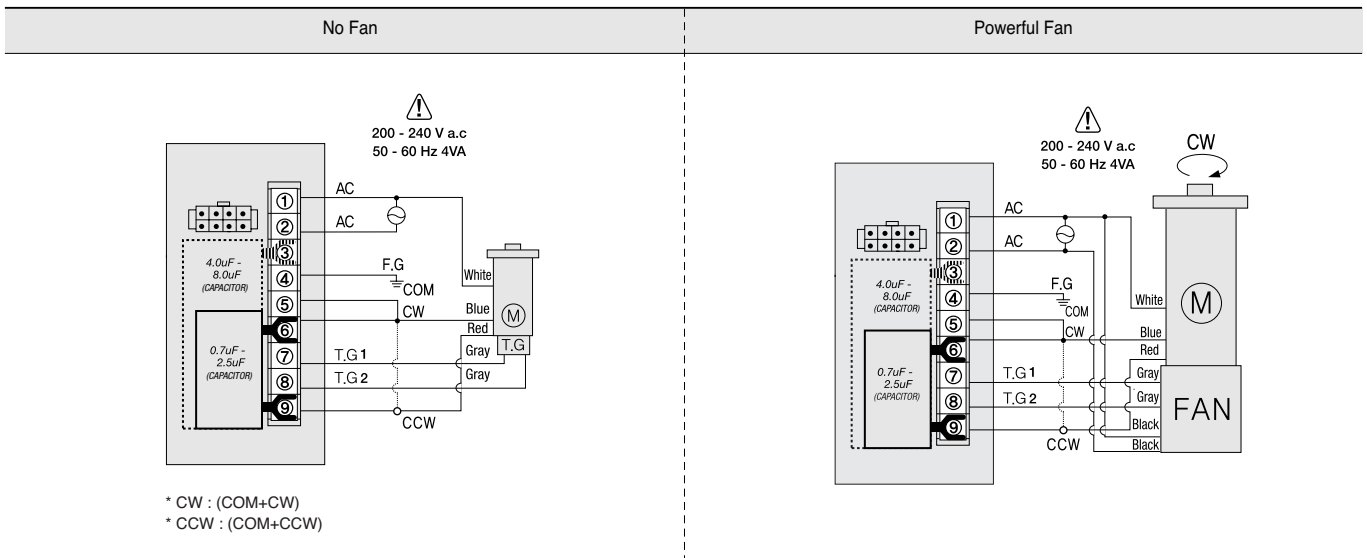
* Operation Method : At first connect each terminal on the rear panel of the controller with the motor as instructed in connection diagram. And then input the external power to both of the terminal 'AC' for the rated speed operation. Now you can adjust the main volume on the center of front panel to control the output speed of motor as user want.

* Direction : ① CW : (CW+COM)

② CCW : (CCW+COM)

* Capacitor : Connect (9-6) or (9-3) According to it's capacity

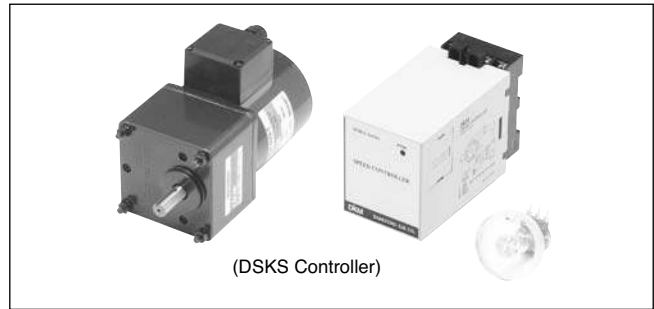
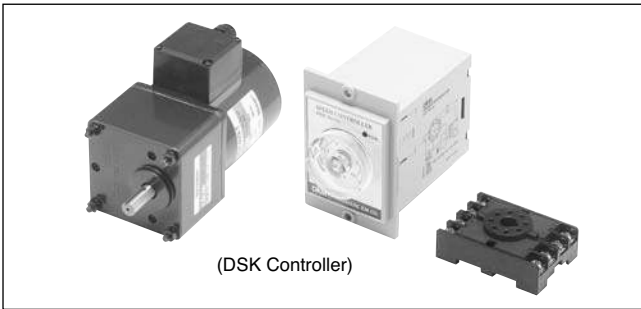
● Terminal Type



dkm

Socket Type Speed Control Motor DSK control system

The DSK control system combines a control unit and AC speed control motor. Connection between the motor and control unit is simplified by socket.



■ Features

● Compact Speed Control Pack

It is compact speed control pack with small plug-in (8 pin) type.

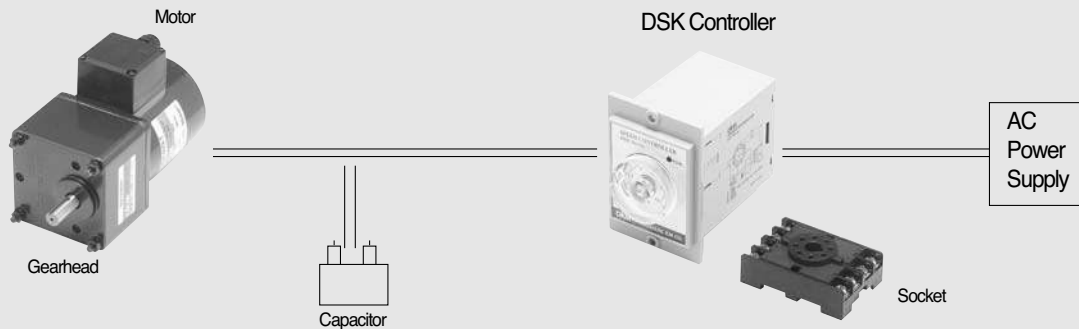
● Easy Operation

The speed can be set easily with the potentiometer on the front panel of DSK model. In case of DSKS model, the potentiometer (speed control volume) could be separated from body.

■ System Configuration

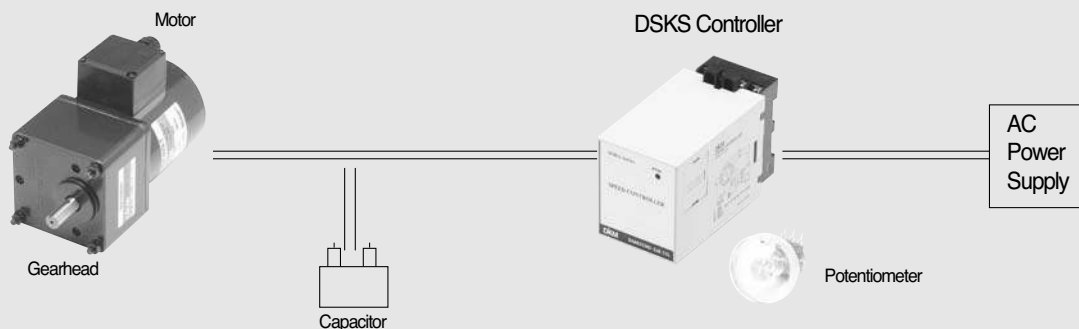
1. DSK controller

The variable resistor for speed control is installed in front of body like below



2. DSKS controller

The remote speed control is available by separate variable resistor like below.



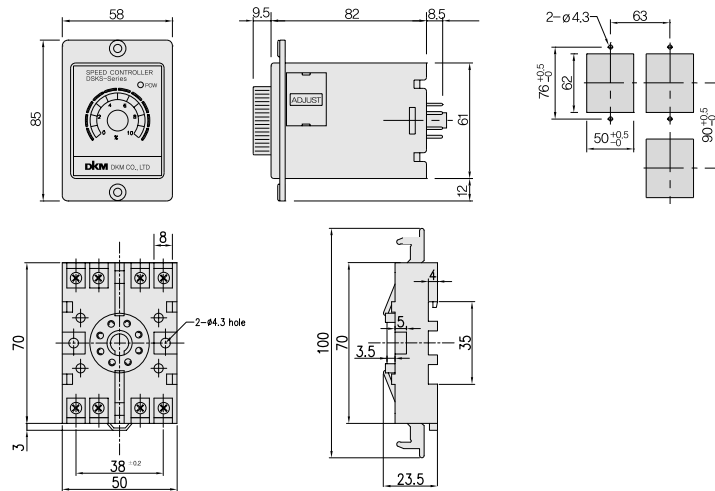
■ DSK(S) Controller Specification

● General Specification

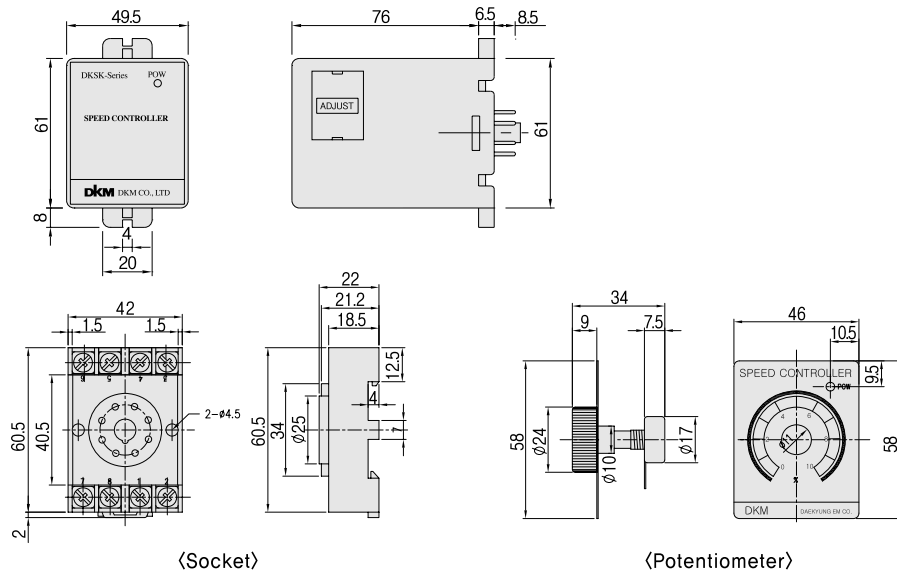
Item	Detail
Rated Input Voltage	220 VAC 50/60 Hz
Workable Voltage	from -15% to +10% of 220VAC
Consumption Power	Less than 4VA
Control Mode	Phase Loop Control (0 to 210 VAC)
Power On-Off Signal	Red color of LED
Allowed RPM Range	90 ~ 1750 RPM
Ambient Temperature	from -10℃ to +55℃
Weight	160g
Dimension	DSK (variable resistor installed) : 58(W) x 85(H) x 91(D)mm DSKS(variable resistor separated) : 49.5(W) x 77(H) x 100(D)mm
Insulation Resistance	100MΩ or more when 500V mega is applied between the windings and the housing after rated motor operation under normal ambient temperature and humidity
Dielectric Strength	Sufficient to withstand 1.5KV at 50/60Hz applied between the windings and the case after rated motor operation under normal ambient temperature and humidity for 1min

● Dimension

(1) DSK



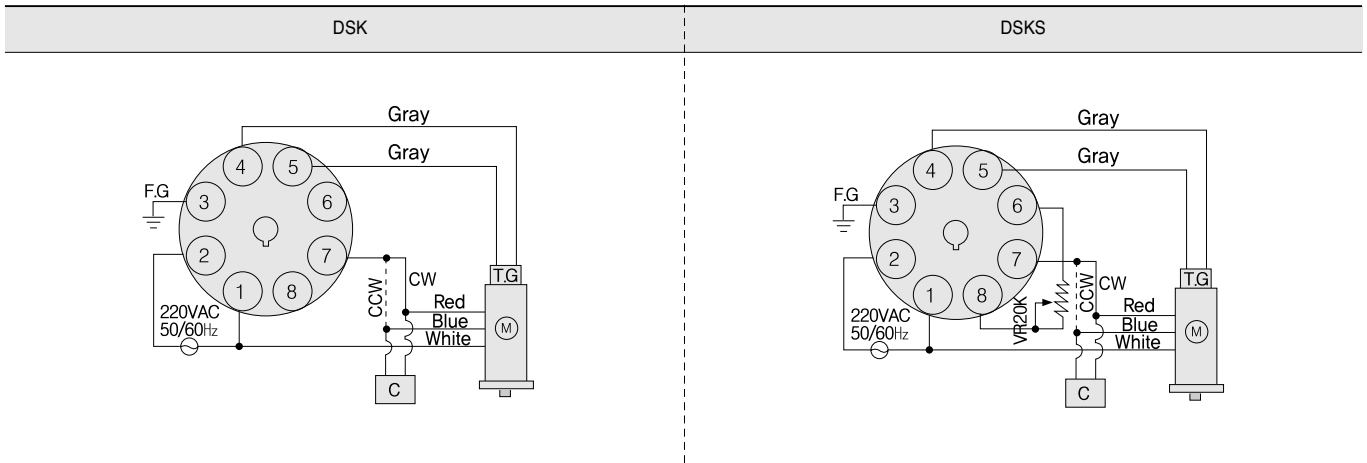
(2) DSKS



<Socket>

<Potentiometer>

● Connection Diagrams



● For CCW operation, please change Red and blue.

■ How to Read Specifications



Model 7SDG□-6G : Pinion Shaft Type 7SDS□-6 : Round Shaft Type		① Output		Voltage VAC	Freq. Hz	② Speed Range rpm	Permissible Torque ^③						④ Starting Torque			⑤ Current A	Power Consumption W
Lead Wire Type	Terminal Box Type	HP	W				1200rpm			90rpm							
				gfc	mN.m	oz-in	gfc	mN.m	oz-in	gfc	mN.m	oz-in					
7SDG(S)A-6G	-	1/125	6	Single Phase 110	60	90~1700	360	36	5.04	200	20	2.80	400	40	5.60	0.25	70
7SDG(S)B-6G	-			Single Phase 115	60												
7SDG(S)C-6G	-			Single Phase 220	50	90~1400	432	43	6.05	240	24	3.36	480	48	6.72	0.70	73
7SDG(S)D-6G	-			Single Phase 220	60	90~1700	360	36	5.04	200	20	2.80	400	40	5.60		
7SDG(S)E-6G	-			Single Phase 230	50	90~1400	432	43	6.05	240	24	3.36	480	48	6.72		
7SDG(S)F-6G	-			Single Phase 230	60	90~1700	360	36	5.04	200	20	2.80	400	40	5.60		

- ① Maximum Output : This refers to the amount of work that can be performed in a given period of time with the combination of motor and control pack. It also expresses the maximum output that can be produced within the usage limit line on the speed-torque characteristics graph.
- ② Speed range : This refers to the range of variable speed with the combination of motor and control pack. For speed control motors, the variable speed range varies with the size of load torque.
- ③ Permissible torque : This refers to the maximum torque that can be produced below the safe-operation line or the permissible torque with gearhead attached at the most commonly used speeds (1200 rpm, 90 rpm).
- ④ Starting torque : This refers to the size of torque that can be produced instantaneously at motor start-up with the combination of motor and control pack.
- ⑤ Current : This refers to the current sent into the control pack at the maximum output.

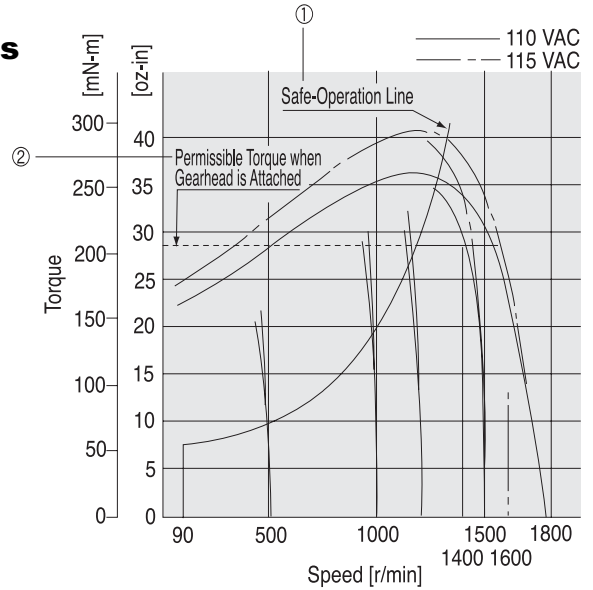
How to Read Speed-Torque Characteristics

① Safe-operation line

The safe-operation line, measured by the motor's temperature, indicates its operational limit for continuous usage with the temperature level below the permissible maximum (In case of using a reversible motor, it is measured by 30 minutes operation.) Whether the motor can be operated continuously or not, is judged by measuring the temperature of the motor case. When the temperature of the case is below 90°C (194°F), the motor is capable of continuous operation.

② Permissible torque when gearhead is attached :

When using a gearhead, be aware that it is necessary to operate below the maximum permissible torque. If the actual torque required should exceed the maximum permissible torque, it may cause possible damage to the motor and/or may shorten its life span.



General Specifications

Item	Specifications
Insulation Resistance	100 MΩ or more when 500 VDC is applied between the windings and the frame after rated motor operation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 1.5 KV at 50 Hz and 60 Hz applied between the windings and the frame for 1 minute after rated motor operation under normal ambient temperature and humidity.
Temperature Rise	Temperature rise of windings are 80°C (144°F) or less measured by the resistance change method after rated motor operation with connecting a gearhead or equivalent heat radiation plate. [Three-Phase 6W type : 70°C (126°F)]
Insulation Class	Class B [130°C (266°F)]
Overheat Protection	In single-phase 50Hz, the thermal protector is built in. (Automatic return type) In case of others, it can be built by order. Operating temperature, open : 130°C ± 5°C (266°C ± 9°F) close : 82°C ± 15°C (179.6°F ± 27°F)
Ambient Temperature Range	-10°C ~ + 40°C (14°F ~ 104°F) (nonfreezing)
Ambient Humidity	85% maximum (noncondensing)

Speed Control Motor Line-Up

Frame size □mm (in.)	Output W	Type	Power (Voltage)					Page
			Single phase		Three phase			
			100/110/115V	200/220/230V	200/220/230V	380 V	440V	
70(2.76)	6	Lead Wire Terminal box	● -	● -	- -	- -	- -	153
	10	Lead Wire Terminal box	● -	● -	- -	- -	- -	155
80(3.15)	15	Lead Wire Terminal box	● ●	● ●	- -	- -	- -	157
	25	Lead Wire Terminal box	● ●	● ●	- -	- -	- -	159
90(3.54)	40	Lead Wire Terminal box	● ●	● ●	- -	- -	- -	161
	60	Lead Wire Terminal box	● ●	● ●	- -	- -	- -	163
	90	Lead Wire Terminal box	● ●	● ●	- -	- -	- -	165
	120	Lead Wire Terminal box	● ●	● ●	- -	- -	- -	168
	180	Lead Wire Terminal box	- -	● ●	- -	- -	- -	171

SPEED CONTROL MOTOR 6W

□70mm(2.76in.)



LEAD WIRE TYPE



DSA



DSK

Motor Specification



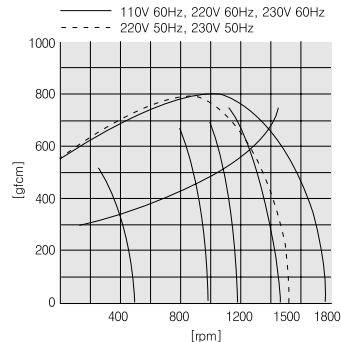
Model 7SDG□-6G : Pinion Shaft Type 7SDS□-6 : Round Shaft Type		Output HP W	Voltage VAC	Freq. Hz	Speed Range rpm	Permissible Torque						Starting Torque			Current A	Condense r μF V		
Lead Wire Type	Terminal Box Type					1200rpm			90rpm			gfcM mN.m oz-in	gfcM mN.m oz-in	gfcM mN.m oz-in				
		gfcM	mN.m	oz-in	gfcM	mN.m	oz-in	gfcM	mN.m	oz-in								
ⓉP 7SDG(S)A-6G	-	1/125 6	Single Phase 110	60	90~1700	500	50	7.0	300	30	4.2	400	40	5.6	0.25	2.5	250	
ⓉP 7SDG(S)B-6G	-																	Single Phase 115
ⓉP 7SDG(S)C-6G	-			Single Phase 220	50	90~1700	500	50	7.0	300	30	4.2	400	40	5.6	0.15	0.7	
ⓉP 7SDG(S)D-6G	-																	Single Phase 220
ⓉP 7SDG(S)E-6G	-			Single Phase 230	50	90~1400	500	50	7.0	300	30	4.2	400	40	5.6	0.15	0.7	
ⓉP 7SDG(S)F-6G	-																	Single Phase 230

* Enter the 'Phase & Voltage' code in the box(□) within the motor model name.

* 'Pinion Shaft' is for attaching gearhead and 'Round Shaft' is for using motor only.

ⓉP : Contains a built-in thermal protector. If a motor overheats for any reason the thermal protector opened and the motor stops. When the motor temperature Drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting. By attaching F2 FAN additionally, temperature reducing of over 10℃ could be available.

Speed-Torque Characteristics



Permissible Torque When using gearhead

Motor/Gearhead	rpm	Voltage	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	40	50	60	75	90	100	120	150	180	
7SDG□-6G/ 7GBD□BMH	1200	110/115	kgf cm	1.2	1.5	2.0	2.4	3.0	3.6	5.1	6.1	7.3	9	11	13	15	17	20	25	30	30	30	30	30	30
			N.m	0.12	0.15	0.20	0.24	0.30	0.36	0.51	0.61	0.73	0.91	1.1	1.3	1.5	1.7	2.0	2.5	3	3	3	3	3	3
	220/230	kgf cm	1.2	1.5	2.0	2.4	3.0	3.6	5.1	6.1	7.3	9	11	13	15	17	20	25	30	30	30	30	30	30	30
		N.m	0.12	0.15	0.20	0.24	0.30	0.36	0.51	0.61	0.73	0.91	1.1	1.3	1.5	1.7	2.0	2.5	3	3	3	3	3	3	3
90	110/115	kgf cm	0.7	0.8	1.2	1.4	1.8	2.1	3	3.5	4.2	5.5	6.4	7.6	8.5	10	11	15	17	20	23	30	30	30	30
		N.m	0.07	0.08	0.12	0.14	0.18	0.21	0.30	0.35	0.42	0.55	0.64	0.76	0.85	0.99	1.1	1.5	1.7	2.0	2.3	3	3	3	3
	220/230	kgf cm	0.7	0.8	1.2	1.4	1.8	2.1	3	3.5	4.2	5.5	6.4	7.6	8.5	10	11	15	17	20	23	30	30	30	30
		N.m	0.07	0.08	0.12	0.14	0.18	0.21	0.30	0.35	0.42	0.55	0.64	0.76	0.85	0.99	1.1	1.5	1.7	2.0	2.3	3	3	3	3
90	kgf cm	0.62	0.71	1.1	1.2	1.6	1.9	2.6	3.1	3.7	4.9	5.7	6.7	7.5	9	10	13	15	18	20	26	26	26	26	
	N.m	0.062	0.071	0.11	0.12	0.16	0.19	0.26	0.31	0.37	0.49	0.57	0.67	0.75	0.9	1.0	1.3	1.5	1.8	2.0	2.6	2.6	2.6	2.6	

* Enter the gear ratio in the box (□) within the model name. A colored background indicates gear shaft rotation in the same direction as the motor shaft ; a white background indicates rotation in the opposite direction.

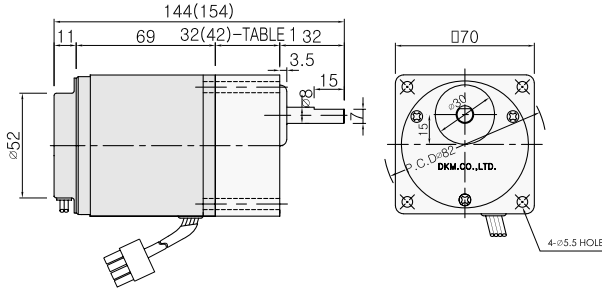
* The speed is calculated by dividing the motor's synchronous speed (50Hz : 1500 r/min, 60 Hz : 1800 r/min) by the gear ratio.

* The actual speed is 2~20% less than the displayed value, depending on the size of the load.

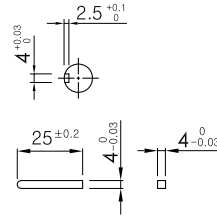
Dimension

◆ GEARED MOTOR

- * MOTOR MODEL : 7SDG□-6G (NO FAN)
- * GEARHEAD MODEL : 7GB□3BMH - 7GB□180BMH



◆ KEY SPEC

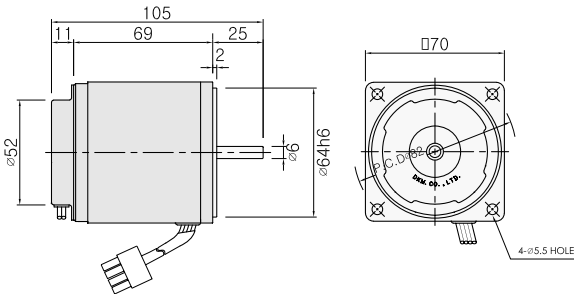


◆ GEARHEAD 출력축 사양

MODEL	출력축 구분
D-CUT TYPE	
7GBD3BMH ~7GBD180BMH	
KEY TYPE	
7GBK3BMH ~7GBK180BMH	

◆ MOTOR ONLY

- * MOTOR MODEL : 7SD□□-6 (NO FAN)



◆ 32(42)-TABLE 1

SIZE(mm)	GEAR RATIO
32	7GB□3BMH - 7GB□18BMH
42	7GB□25BMH - 7GB□180BMH

◆ WEIGHT

PART	WEIGHT(Kg)	
MOTOR	0.93	
GEAR HEAD	7GB□3BMH - 7GB□18BMH	0.36
	7GB□25BMH - 7GB□30BMH	0.44
	7GB□36BMH - 7GB□180BMH	0.5

◆ MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	
7SDG□-6G	
ROUND TYPE	
7SDS□-6	
D-CUT TYPE	
7SDD□-6	

* Note : Above table indicates output shaft dimension made by user's request and ★ indicates the basic dimension in factory shipping.

Connection Diagrams Please refer to page 148, 151.

SPEED CONTROL MOTOR 10W

□70mm(2.76in.)



LEAD WIRE TYPE



DSA



DSK

Motor Specification

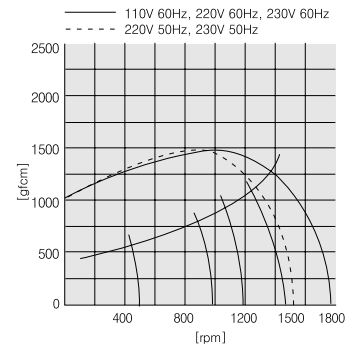


Model		Output	Voltage	Freq.	Speed Range	Permissible Torque						Starting Torque			Current	Condense r				
Lead Wire Type	Terminal Box Type					HP	W	VAC	Hz	rpm	1200rpm			90rpm			gfc	mN.m	oz-in	A
		7SDG□-10G : Pinion Shaft Type 7SDS□-10 : Round Shaft Type																		
ⓉP 7SDG(S)A-10G	-	1/75	10	Single Phase 110	60	90~1700	800	80	11.2	380	38	5.3	500	50	7.0	0.30	3.0	250		
ⓉP 7SDG(S)B-10G	-			Single Phase 115	60															
ⓉP 7SDG(S)C-10G	-			Single Phase 220	50	90~1400	800	80	11.2	380	38	5.3	500	50	7.0	1.00	1.0	400		
ⓉP 7SDG(S)D-10G	-			Single Phase 220	60															
ⓉP 7SDG(S)E-10G	-			Single Phase 230	50	90~1400	800	80	11.2	380	38	5.3	500	50	7.0	1.00	1.0	400		
ⓉP 7SDG(S)F-10G	-			Single Phase 230	60															

* Enter the 'Phase & Voltage' code in the box(□) within the motor model name.

* 'Pinion Shaft' is for attaching gearhead and 'Round Shaft' is for using motor only.

ⓉP : Contains a built-in thermal protector. If a motor overheats for any reason the thermal protector opened and the motor stops. When the motor temperature Drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting. By attaching F2 FAN additionally, temperature reducing of over 10℃ could be available.



Permissible Torque When using gearhead

Motor/Gearhead	rpm	Voltage	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	40	50	60	75	90	100	120	150	180	
7SDG□-10G / 7GBD□BMH	1200	110/115 60Hz	kgf cm	1.5	1.9	2.5	3.2	4.0	4.9	6.7	8.0	9.7	13	16	23	25	30	35	40	40	40	40	40	40	40
			N.m	0.15	0.15	0.25	0.3	0.4	0.5	0.7	0.8	1.0	1.3	1.6	2.3	2.5	3.0	3.5	4	4	4	4	4	4	4
		lb-in	1.32	1.32	2.21	2.8	3.5	4.3	5.9	7.1	8.6	11.5	14.1	20.3	22.1	26	31	35	35	35	35	35	35	35	35
	90	110/115 60Hz	kgf cm	1.1	1.3	1.8	2.2	2.7	3.3	4.6	5.5	6.6	8.2	9.9	12	14	15	18	22	27	30	36	40	40	40
			N.m	0.11	0.13	0.2	0.2	0.3	0.5	0.6	0.7	0.8	1.0	1.2	1.4	1.5	1.8	2.2	2.7	3.0	3.6	4	4	4	4
		lb-in	1.0	1.1	1.6	1.9	2.4	2.9	4.1	4.9	5.8	7.2	8.7	10.6	12.4	13	16	19	24	26	32	35	35	35	35
1200	220/230 60Hz	kgf cm	1.5	1.9	2.5	3.2	4.0	4.9	6.7	8.0	9.7	13	16	23	25	30	35	40	40	40	40	40	40	40	
		N.m	0.15	0.15	0.25	0.3	0.4	0.5	0.7	0.8	1.0	1.3	1.6	2.3	2.5	3.0	3.5	4	4	4	4	4	4	4	4
	lb-in	1.32	1.32	2.21	2.8	3.5	4.3	5.9	7.1	8.6	11.5	14.1	20.3	22.1	26	31	35	35	35	35	35	35	35	35	
90	220/230 50Hz	kgf cm	1.8	2.3	3.0	3.8	4.8	5.9	8.0	9.6	11.6	15.6	19	28	30	36	40	40	40	40	40	40	40	40	
		N.m	0.18	0.18	0.30	0.4	0.5	0.6	0.8	1.0	1.2	1.6	1.9	2.8	3.0	3.6	4	4	4	4	4	4	4	4	4
	lb-in	1.59	2.65	3.4	4.2	5.2	5.9	8.5	10.3	13.8	17.0	24.4	26.5	32	35	35	35	35	35	35	35	35	35	35	
1200	110/115 60Hz	kgf cm	0.85	1.0	1.4	1.7	2.1	2.6	3.5	4.3	5.1	6	8	9	10	12	14	17	21	23	28	35	40	40	
		N.m	0.09	0.10	0.14	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.8	0.9	1.0	1.2	1.4	1.7	2.1	2.3	2.8	3.5	4	4	
	lb-in	0.8	0.9	1.2	1.5	1.9	2.3	3.1	3.8	4.5	5.7	6.8	8.1	8.8	11	12	15	19	20	25	31	31	35	35	

* Enter the gear ratio in the box (□) within the model name. A colored background indicates gear shaft rotation in the same direction as the motor shaft ; a white background indicates rotation in the opposite direction.

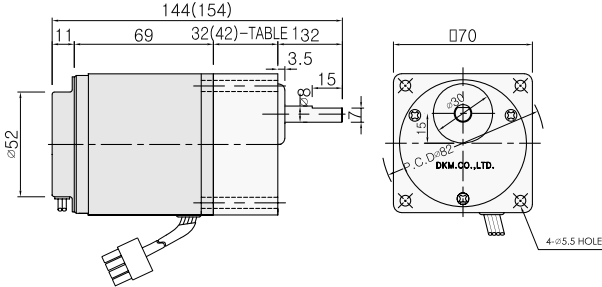
* The speed is calculated by dividing the motor's synchronous speed (50Hz : 1500 r/min, 60 Hz : 1800 r/min) by the gear ratio.

* The actual speed is 2~20% less than the displayed value, depending on the size of the load.

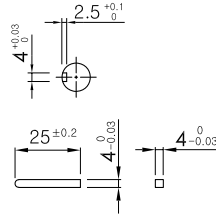
Dimension

◆ GEARED MOTOR

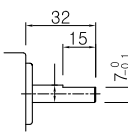
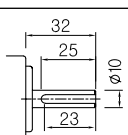
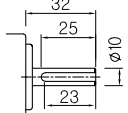
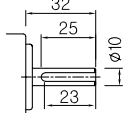
- * MOTOR MODEL : 7SDG□-10G (NO FAN)
- * GEARHEAD MODEL : 7GB□3BMH - 7GB□180BMH



◆ KEY SPEC

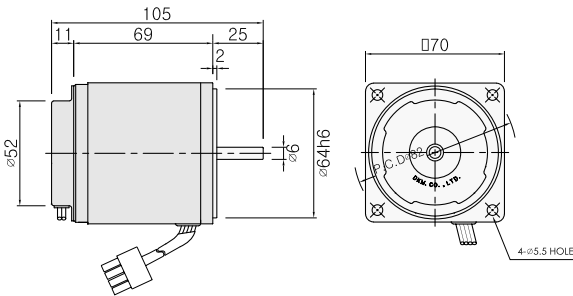


◆ GEARHEAD 출력축 사양

MODEL	출력축 구분
D-CUT TYPE	 ★
7GBD3BMH ~7GBD180BMH	
KEY TYPE	
7GBK3BMH ~7GBK180BMH	

◆ MOTOR ONLY

- * MOTOR MODEL : 7SD□□-10 (NO FAN)



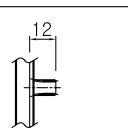
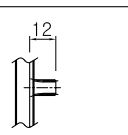
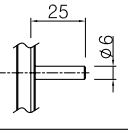
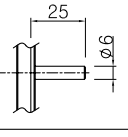
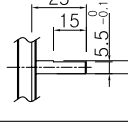
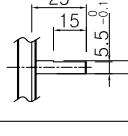
◆ WEIGHT

PART		WEIGHT(Kg)
MOTOR		0.93
GEAR HEAD	7GB□3BMH -7GB□180BMH	0.36
	7GB□25BMH -7GB□30BMH	0.44
	7GB□36BMH -7GB□180BMH	0.5

◆ 32(42)-TABLE 1

SIZE(mm)	GEAR RATIO
32	7GB□3BMH - 7GB□180BMH
42	7GB□25BMH - 7GB□180BMH

◆ MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	
7SDG□-10G	
ROUND TYPE	 ★
7SDS□-10	
D-CUT TYPE	
7SDD□-10	

* Note : Above table indicates output shaft dimension made by user's request and ★ indicates the basic dimension in factory shipping.

Connection Diagrams Please refer to page 148, 151.

SPEED CONTROL MOTOR 15W

□80mm(2.76in.)



LEAD WIRE TYPE



DSA



DSK

Motor Specification

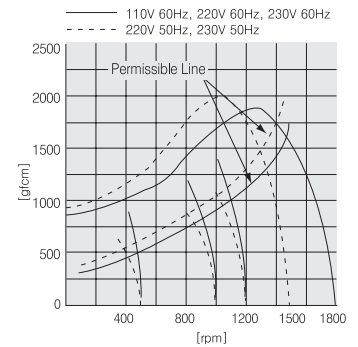


Model		Output	Voltage	Freq.	Speed Range	Permissible Torque						Starting Torque		Current	Condenser			
Lead Wire Type	Terminal Box Type					HP	W	Hz	rpm	1200rpm			90rpm			gfcM	mN.m	oz-in
		gfcM	mN.m	oz-in	gfcM					mN.m	oz-in							
TP 8SDG(S)A-15G	8SDG(S)A-15G-T	1/75	10	Single Phase 110	60	90~1700	1250	125	17.5	450	45	6.3	550	55	7.7	0.42	3.5	250
TP 8SDG(S)B-15G	8SDG(S)B-15G-T			Single Phase 115	60		1050	105	14.7									
TP 8SDG(S)C-15G	8SDG(S)C-15G-T			Single Phase 220	50	90~1400	1260	126	17.6	350	35	4.9	550	55	7.7	0.26	1.5	400
TP 8SDG(S)D-15G	8SDG(S)D-15G-T			Single Phase 220	60		1050	105	14.7									
TP 8SDG(S)E-15G	8SDG(S)E-15G-T			Single Phase 230	50	90~1400	1260	126	17.6	350	35	4.9	550	55	7.7	0.26	1.5	400
TP 8SDG(S)F-15G	8SDG(S)F-15G-T			Single Phase 230	60		1050	105	14.7									

* Enter the 'Phase & Voltage' code in the box(□) within the motor model name.

* 'Pinion Shaft' is for attaching gearhead and 'Round Shaft' is for using motor only.

TP : Contains a built-in thermal protector. If a motor overheats for any reason the thermal protector opened and the motor stops. When the motor temperature Drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting. By attaching F2 FAN additionally, temperature reducing of over 10℃ could be available.



Permissible Torque When using gearhead

Motor/Gearhead	rpm	Voltage	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	40	50	60	75	90	100	120	150	180	250	300	360	
8SDG□-15G/ 8GBK□BMH	1200	110/115 60Hz	kgf cm	3.0	3.6	5.1	6.1	7.6	9.1	13	15	18	23	27	33	36	41	50	50	50	50	50	50	50	50	50	50	50
			N.m	0.3	0.36	0.51	0.61	0.76	0.91	1.30	1.50	1.80	2.3	2.7	3.3	3.6	4.1	5	5	5	5	5	5	5	5	5	5	5
		lb-in	2.6	3.2	4.5	5.4	6.7	8.0	11.5	13.2	15.9	20	24	29	32	36	44	44	44	44	44	44	44	44	44	44	44	44
		220 60Hz	kgf cm	2.1	2.5	3.4	4.1	5.2	6.2	8.6	10	12	16	19	22	25	28	34	42	50	50	50	50	50	50	50	50	50
	N.m	0.21	0.25	0.34	0.41	0.52	0.62	0.86	1.0	1.2	1.6	1.9	2.2	2.5	2.8	3.4	4.2	5	5	5	5	5	5	5	5	5	5	
	lb-in	1.9	2.2	3.0	3.6	4.6	5.5	7.6	8.8	10.6	14	17	19	22	25	30	37	44	44	44	44	44	44	44	44	44	44	44
	230 50Hz	kgf cm	3.0	3.6	5.1	6.1	7.6	9.1	13	15	18	23	27	33	36	41	50	50	50	50	50	50	50	50	50	50	50	
	N.m	0.3	0.36	0.51	0.61	0.76	0.91	1.30	1.50	1.80	2.3	2.7	3.3	3.6	4.1	5	5	5	5	5	5	5	5	5	5	5	5	
	lb-in	2.6	3.2	4.5	5.4	6.7	8.0	11.5	13.2	15.9	20	24	29	32	36	44	44	44	44	44	44	44	44	44	44	44	44	44
	230 60Hz	kgf cm	2.6	3.1	4.3	5.1	6.4	7.7	11	13	15	19.0	23	28	31	35	42	50	50	50	50	50	50	50	50	50	50	
	N.m	0.26	0.31	0.43	0.51	0.64	0.77	1.10	1.30	1.50	1.9	2.3	2.8	3.1	3.5	4.2	5	5	5	5	5	5	5	5	5	5	5	
	lb-in	2.30	2.7	3.8	4.5	5.7	6.8	9.4	11.5	13.2	17	20	25	27	31	37	44	44	44	44	44	44	44	44	44	44	44	44
90	110/115 60Hz	kgf cm	1.1	1.3	1.8	2.2	2.7	3.3	4.6	5.5	6.6	8.2	9.9	12	14	15	18	22	27	30	36	45	50	50	50	50		
		N.m	0.11	0.13	0.18	0.22	0.27	0.33	0.46	0.55	0.66	0.82	0.99	1.2	1.4	1.5	1.8	2.2	2.7	3.0	3.6	4.5	5	5	5	5		
lb-in	1.0	1.1	1.6	1.9	2.4	2.9	4.1	4.9	5.8	7.2	8.7	10.6	12.4	13	16	19	24	26	32	40	44	44	44	44	44	44		
220/230 50Hz	kgf cm	0.85	1.0	1.4	1.7	2.1	2.6	3.5	4.3	5.1	6	8	9	10	12	14	17	21	23	28	35	42	50	50	50			
	N.m	0.09	0.10	0.14	0.17	0.21	0.26	0.35	0.43	0.51	0.64	0.77	0.92	1.0	1.2	1.4	1.7	2.1	2.3	2.8	3.5	4.2	5	5	5			
lb-in	0.8	0.9	1.2	1.5	1.9	2.3	3.1	3.8	4.5	5.7	6.8	8.1	8.8	11	12	15	19	20	25	31	37	44	44	44	44	44		

* Enter the gear ratio in the box (□) within the model name. A colored background indicates gear shaft rotation in the same direction as the motor shaft ; a white background indicates rotation in the opposite direction.

* The speed is calculated by dividing the motor's synchronous speed (50Hz : 1500 r/min, 60 Hz : 1800 r/min) by the gear ratio.

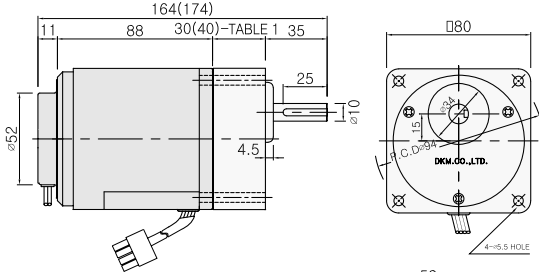
* The actual speed is 2~20% less than the displayed value, depending on the size of the load.

* If more slow speed is needed than above value, use decimal gearhead with a gear ratio of 10:1 could be used between general gearhead and motor. Even in this case, just speed will be reduced without increase in permissible torque; the maximum permissible torque is 50kgfcm (5N.m, 44lb-in).

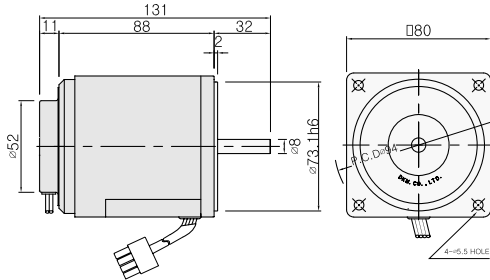
Dimension

LEAD WIRE TYPE

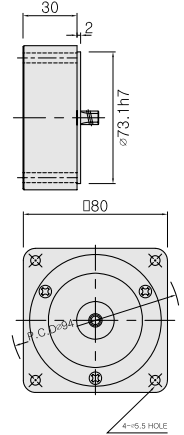
- ◆ GEARED MOTOR * MOTOR MODEL : 8SDG□-15G (NO FAN)
* GEARHEAD MODEL : 8GB□3BMH - 8GB□360BMH



- ◆ MOTOR ONLY * MOTOR MODEL : 8SD□□-15 (NO FAN)

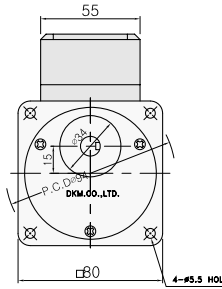
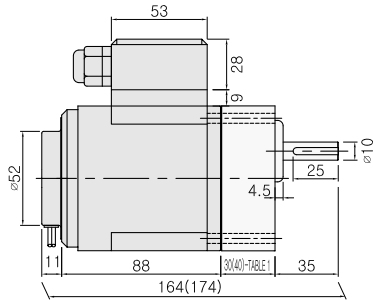


- ◆ INTER-DECIMAL GEARHEAD * MODEL : 8XD10M□



TERMINAL BOX TYPE

- * MOTOR MODEL : 8SDG□-15G-T (NO FAN)



MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	
8SDG□-15G	
ROUND TYPE	
8SBS3BMH ~8BS360BMH	
8SDS□-15	
D-CUT TYPE	
8GBD3BMH ~8GBD360BMH	
8SDD□-15	
KEY TYPE	
8GBK3BMH ~8GBK360BMH	
8SDK□-15	

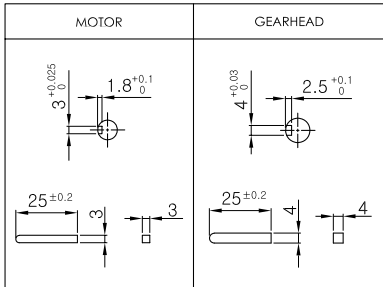
GEARHEAD OUTPUT

MODEL	SHAFT
ROUND TYPE	
8GBS3BMH ~8BS360BMH	
D-CUT TYPE	
8GBD3BMH ~8GBD360BMH	
KEY TYPE	
8GBK3BMH ~8GBK360BMH	

30(40)-TABLE 1

SIZE(mm)	GEAR RATIO
30	8GB□3BMH - 8GB□18BMH
40	8GB□25BMH - 8GB□360BMH

KEY SPEC



WEIGHT

PART	WEIGHT(Kg)	
MOTOR	1.7	
DECIMAL GEARHEAD	0.44	
GEAR	8GB□3BMH - 8GB□18BMH	0.48
	8GB□25BMH - 8GB□30BMH	0.61
HEAD	8GB□36BMH - 8GB□180BMH	0.67
	8GB□200BMH - 8GB□360BMH	0.63

* Note : Above table indicates output shaft dimension made by user's request and ★ indicates the basic dimension in factory shipping.

Connection Diagrams Please refer to page 148, 151.

SPEED CONTROL MOTOR 25W

□80mm(2.76in.)



LEAD WIRE TYPE



DSA



DSK



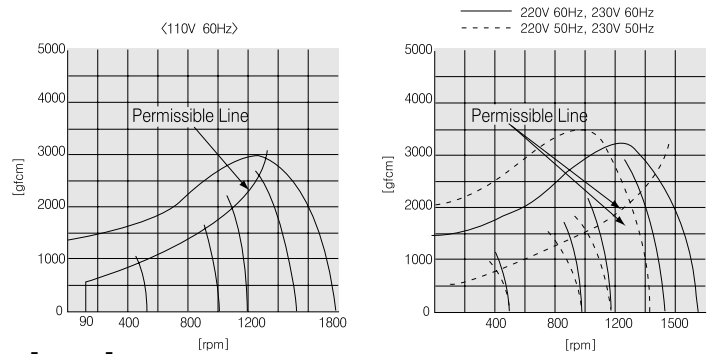
Motor Specification

Model 8SDG□-25G : Pinion Shaft Type 8SDS□-25 : Round Shaft Type		Output HP W	Voltage VAC	Freq. Hz	Speed Range rpm	Permissible Torque						Starting Torque			Current A	Condenser μF V					
Lead Wire Type	Terminal Box Type					1200rpm			90rpm			gfcM	mN.m	oz-in			gfcM	mN.m	oz-in		
				gfcM	mN.m	oz-in	gfcM	mN.m	oz-in	gfcM	mN.m	oz-in									
TP 8SDG(S)A-25G	8SDG(S)A-25G-T	1/30 25	Single Phase 110	60	90~1700	2000	200	28.0	500	50	7.0	1050	105	14.7	0.60	6.0	250				
TP 8SDG(S)B-25G	8SDG(S)B-25G-T					1900	190	26.6	430	43	6.0										
TP 8SDG(S)C-25G	8SDG(S)C-25G-T				Single Phase 220	50	90~1400	1300	130	18.2	430	43	6.0	870	87	12.2	0.30	2.0	400		
TP 8SDG(S)D-25G	8SDG(S)D-25G-T							1900	190	26.6	470	47	6.6								
TP 8SDG(S)E-25G	8SDG(S)E-25G-T						Single Phase 230	60	90~1700	1300	130	18.2	430							43	6.0
TP 8SDG(S)F-25G	8SDG(S)F-25G-T									1900	190	26.6	470							47	6.6

* Enter the 'Phase & Voltage' code in the box(□) within the motor model name.

* 'Pinion Shaft' is for attaching gearhead and 'Round Shaft' is for using motor only.

TP : Contains a built-in thermal protector. If a motor overheats for any reason the thermal protector opened and the motor stops. When the motor temperature Drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting. By attaching F2 FAN additionally, temperature reducing of over 10℃ could be available.



Permissible Torque When using gearhead

Motor/Gearhead	rpm	Voltage	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	40	50	60	75	90	100	120	150	180	250	300	360		
8SDG□-25G/ 8GBK□BMH	1200	110/115 60Hz	kgf cm	4.9	5.8	8.1	9.7	12	15	20	24	29	37	44	53	58	66	79	80	80	80	80	80	80	80	80	80	80	
			N.m	0.49	0.58	0.81	0.97	1.20	1.50	2.00	2.40	2.90	3.70	4.4	5.3	5.8	6.6	7.9	8	8	8	8	8	8	8	8	8	8	8
		lb-in	4.33	5.12	7.2	8.6	10.6	13.2	17.7	21.2	25.6	33	39	47	51	58	70	71	71	71	71	71	71	71	71	71	71	71	71
		kgf cm	3.2	3.8	5.3	6.3	7.9	9.5	13	16	19	24	28	34	39	43	51	64	77	80	80	80	80	80	80	80	80	80	80
	220/230 60Hz	N.m	0.32	0.38	0.53	0.63	0.79	0.95	1.3	1.6	1.9	2.4	2.8	3.4	3.9	4.3	5.1	6.4	7.7	8	8	8	8	8	8	8	8	8	
	lb-in	2.8	3.4	4.7	5.6	7.0	8.4	11.5	14.1	16.8	21	25	30	34	38	45	57	68	71	71	71	71	71	71	71	71	71	71	
	220/230 50Hz	kgf cm	4.6	5.5	7.7	9.2	12	14	19	23	28	35	42	50	57	63	75	80	80	80	80	80	80	80	80	80	80	80	80
	N.m	0.46	0.55	0.77	0.92	1.2	1.4	1.9	2.3	2.8	3.5	4.2	5.0	5.7	6.3	7.5	8	8	8	8	8	8	8	8	8	8	8	8	
lb-in	4.06	4.86	6.8	8.1	10.6	12.4	16.8	20.3	24.7	31	37	44	50	56	66	71	71	71	71	71	71	71	71	71	71	71	71		
110/115 60Hz	kgf cm	1.2	1.5	2	2.4	3	3.6	5.1	6.1	7.3	9.1	11	13	15	17	20	25	30	33	40	50	59	65	80	80	80	80		
N.m	0.12	0.15	0.20	0.24	0.30	0.36	0.51	0.61	0.73	0.91	1.1	1.3	1.5	1.7	2.0	2.5	3.0	3.3	4.0	5.0	5.9	6.5	8	8	8	8	8		
lb-in	1.06	1.32	1.8	2.1	2.6	3.2	4.5	5.4	6.4	8	10	11	13	15	18	22	26	29	35	44	52	57	71	71	71	71	71		
90	220/230 60Hz	kgf cm	1.0	1.3	1.7	2.1	2.6	3.1	4.4	5.2	6.3	7.8	9.4	11	13	14	17	31	26	28	34	43	51	55	75	80	80		
		N.m	0.10	0.13	0.17	0.21	0.26	0.31	0.44	0.52	0.63	0.78	0.94	1.1	1.3	1.4	1.7	3.1	2.6	2.8	3.4	4.3	5.1	5.5	7.5	8	8		
		lb-in	0.88	1.15	1.5	1.9	2.3	2.7	3.9	4.6	5.6	6.9	8.3	9.4	11.5	12	15	19	23	25	30	38	45	49	66	71			
220/230 50Hz	kgf cm	1.1	1.4	1.9	2.3	2.9	3.4	4.8	5.7	6.9	8.6	10	12	14	16	19	23	28	31	37	47	56	65	80	80	80			
	N.m	0.11	0.14	0.19	0.23	0.29	0.34	0.48	0.57	0.69	0.86	1.0	1.2	1.4	1.6	1.9	2.3	2.8	3.1	3.7	4.7	5.6	6.5	8	8	8			
		lb-in	0.97	1.24	1.68	2.03	2.56	3.0	4.2	5.0	6.1	7.6	8.8	10.6	12.4	14	17	20	25	27	33	42	49	57	71	71			

* Enter the gear ratio in the box (□) within the model name. A colored background indicates gear shaft rotation in the same direction as the motor shaft ; a white background indicates rotation in the opposite direction.

* The speed is calculated by dividing the motor's synchronous speed (50Hz : 1500 r/min, 60 Hz : 1800 r/min) by the gear ratio.

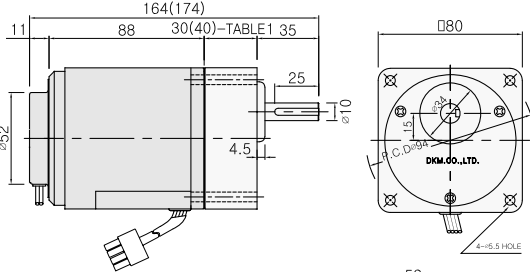
* The actual speed is 2~20% less than the displayed value, depending on the size of the load.

* If more slow speed is needed than above value, use decimal gearhead with a gear ratio of 10:1 could be used between general gearhead and motor. Even in this case, just speed will be reduced without increase in permissible torque; the maximum permissible torque is 80kgfcm (8N.m, 71lb-in).

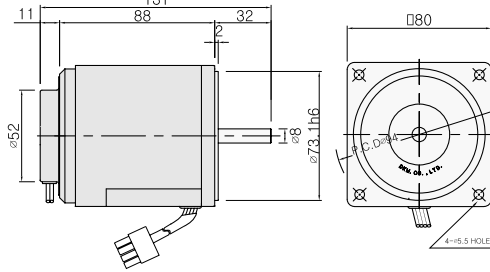
Dimension

LEAD WIRE TYPE

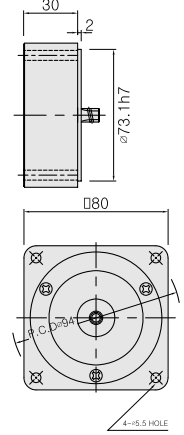
- ◆ GEARED MOTOR * MOTOR MODEL : 8SDG□-25G (NO FAN)
* GEARHEAD MODEL : 8GB□3BMH - 8GB□360BMH



- ◆ MOTOR ONLY * MOTOR MODEL : 8SD□□-25 (NO FAN)

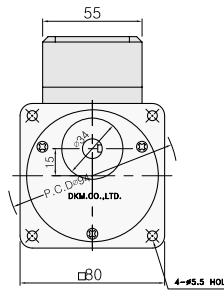
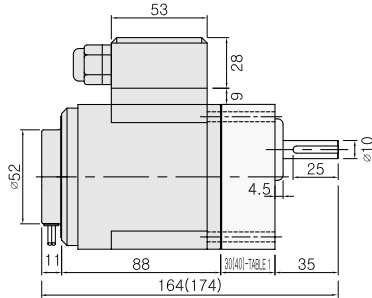


- ◆ INTER-DECIMAL GEARHEAD * MODEL : 8XD10M□



TERMINAL BOX TYPE

- * MOTOR MODEL : 8SDG□-25G-T (NO FAN)



MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	
8SDG□-25G	
ROUND TYPE	★
8SDS□-25	
D-CUT TYPE	
8SDD□-25	
KEY TYPE	
8SDK□-25	

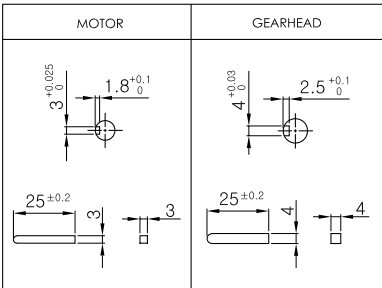
30(40)-TABLE1

SIZE(mm)	GEAR RATIO
30	8GB□3BMH - 8GB□18BMH
40	8GB□25BMH - 8GB□360BMH

GEARHEAD OUTPUT

MODEL	SHAFT
ROUND TYPE	
8GBS3BMH ~8GBS360BMH	
D-CUT TYPE	
8GBD3BMH ~8GBD360BMH	
KEY TYPE	★
8GBK3BMH ~8GBK360BMH	

KEY SPEC



WEIGHT

PART	WEIGHT(Kg)	
MOTOR	1.7	
DECIMAL GEARHEAD	0.44	
GEAR HEAD	8GB□3BMH - 8GB□18BMH	0.48
	8GB□25BMH - 8GB□30BMH	0.61
	8GB□36BMH - 8GB□180BMH	0.67
	8GB□200BMH - 8GB□360BMH	0.63

* Note : Above table indicates output shaft dimension made by user's request and ★ indicates the basic dimension in factory shipping.

Connection Diagrams Please refer to page 148, 151.

SPEED CONTROL MOTOR 40W

□90mm(3.54in.)



LEAD WIRE TYPE



DSA



DSK

Motor Specification

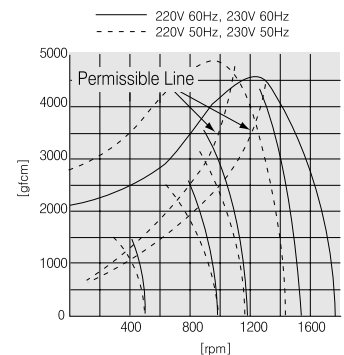
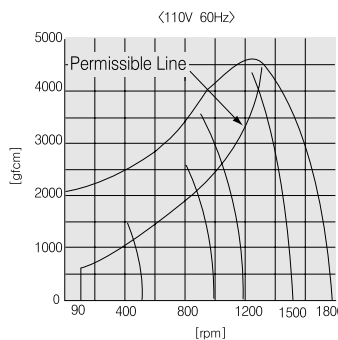


Model		Output HP W	Voltage VAC	Freq. Hz	Speed Range rpm	Permissible Torque						Starting Torque			Current A	Condenser μF V	
Lead Wire Type	Terminal Box Type					1200rpm			90rpm			gfc mN.m oz-in					
						gfc	mN.m	oz-in	gfc	mN.m	oz-in	gfc	mN.m	oz-in			
TP 9SDG(D)A-40G	9SDG(D)A-40G-T	1/18 40	Single Phase 110	60	90~1700	2600	260	26.4	700	70	9.8	1800	180	25.2	0.90	10 250	
TP 9SDG(D)B-40G	9SDG(D)B-40G-T		Single Phase 115	60													
TP 9SDG(D)C-40G	9SDG(D)C-40G-T		Single Phase 220	50	90~1400	3000	300	42.0	630	63	8.8	1400	140	19.6	0.45	2.5 400	
TP 9SDG(D)D-40G	9SDG(D)D-40G-T		Single Phase 220	60	90~1700	2300	230	32.2	630	63	8.8						
TP 9SDG(D)E-40G	9SDG(D)E-40G-T		Single Phase 230	50	90~1400	3000	300	42.0	630	63	8.8						
TP 9SDG(D)F-40G	9SDG(D)F-40G-T		Single Phase 230	60	90~1700	2300	230	32.2	630	63	8.8						

* Enter the 'Phase & Voltage' code in the box(□) within the motor model name.

* 'Pinion Shaft' is for attaching gearhead and 'D-Cut Shaft' is for using motor only.

TP : Contains a built-in thermal protector. If a motor overheats for any reason the thermal protector opened and the motor stops. When the motor temperature Drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting. By attaching F2 FAN additionally, temperature reducing of over 10℃ could be available.



Permissible Torque When using gearhead

Motor/Gearhead	rpm	Voltage	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	25	30	36	40	50	60	75	90	100	120	150	180	
9SDG□-40G/ 9GBK□MH	1200	110/115 60Hz	kgf cm	5.5	6.3	7.6	11	13	16	19	23	26	32	38	47	57	68	72	86	100	100	100	100	100	100	100	100
			N.m	0.55	0.63	0.76	1.10	1.3	1.6	1.9	2.3	2.6	3.2	3.8	4.87	5.7	6.8	7.2	8.6	10	10	10	10	10	10	10	10
		lb-in	4.9	5.6	6.7	9.7	11.5	14.1	16.8	20.3	23	28	34	42	50	60	64	76	88	88	88	88	88	88	88	88	88
	220/230 60Hz	kgf cm	4.5	5.6	6.7	9.3	11	14	17	19	23	28	34	42	50	60	68	76	91	100	100	100	100	100	100	100	100
		N.m	0.45	0.56	0.67	0.93	1.1	1.4	1.7	1.9	2.3	2.8	3.4	4.2	5.0	6.0	6.8	7.6	9.1	10	10	10	10	10	10	10	10
		lb-in	4.0	4.9	5.9	8.2	9.7	12.4	15	17	20	25	30	37	44	53	60	67	80	88	88	88	88	88	88	88	88
220/230 50Hz	kgf cm	6.5	7.3	8.7	12	15	18	22	25	30	36	44	55	66	79	85	99	100	100	100	100	100	100	100	100	100	
	N.m	0.65	0.73	0.87	1.20	1.5	1.8	2.2	2.5	3.0	3.6	4.4	5.5	6.6	7.9	8.5	9.9	10	10	10	10	10	10	10	10	10	
	lb-in	5.7	6.4	7.7	10.6	13.2	15.9	19	22	26	32	39	49	58	70	75	87	88	88	88	88	88	88	88	88	88	
90	110/115 60Hz	kgf cm	1.5	1.7	2.0	2.8	3.4	4.3	5.1	6.1	7.1	8.5	10	13	15	18	20	23	28	35	42	46	55	69	83		
		N.m	0.15	0.17	0.20	0.28	0.34	0.43	0.51	0.61	0.71	0.85	1.0	1.3	1.5	1.8	2.0	2.3	2.8	3.5	4.2	4.6	5.5	6.9	8.3		
		lb-in	1.3	1.5	1.8	2.5	3.0	3.8	4.5	5.4	6.3	7.5	8.8	11.5	13.2	15.9	17.7	30	25	31	37	41	49	61	73		
220/230	kgf cm	1.3	1.5	1.8	2.6	3.1	3.8	4.6	5.5	6.4	7.7	9.2	11	14	17	19	21	25	30	37	42	50	62	75			
		N.m	0.13	0.15	0.18	0.26	0.31	0.38	0.46	0.55	0.64	0.77	0.92	1.1	1.4	1.7	1.9	2.1	2.5	3.1	3.7	4.2	5.0	6.2	7.5		
		lb-in	1.15	1.32	1.59	2.3	2.7	3.4	4.1	4.9	5.7	6.8	8.1	10	12	15	17	19	22	27	33	37	44	55	66		

* Enter the gear ratio in the box (□) within the gearhead model name. A colored background indicates gear shaft rotation in the same direction as the motor shaft ; a white background indicates rotation in the opposite direction.

* The speed is calculated by dividing the motor's synchronous speed (50Hz : 1500 r/min, 60 Hz : 1800 r/min) by the gear ratio.

* The actual speed is 2~20% less than the displayed value, depending on the size of the load.

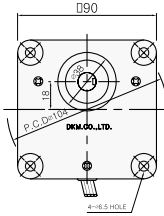
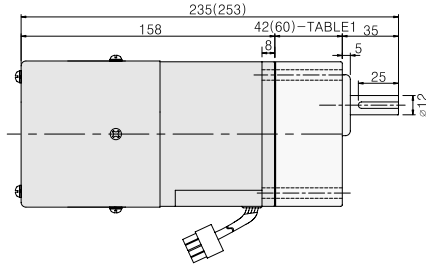
* If more slow speed is needed than above value, use decimal gearhead with a gear ratio of 10:1 could be used between general gearhead and motor. Even in this case, just speed will be reduced without increase in permissible torque; the maximum permissible torque is 100kgfcm

Dimension

LEAD WIRE TYPE

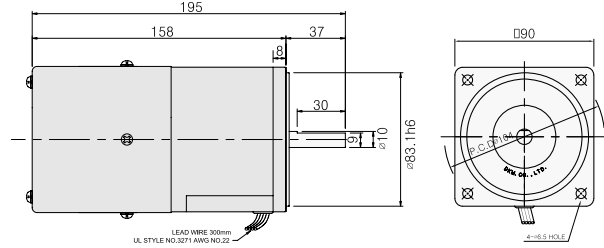
GEARED MOTOR

- * MOTOR MODEL : 9SDG□-40F2G (POWERFUL FAN)
- * GEARHEAD MODEL : 9GB□3MH - 9GB□180MH



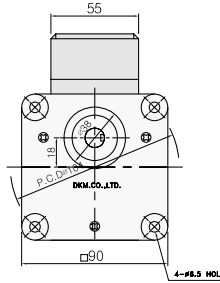
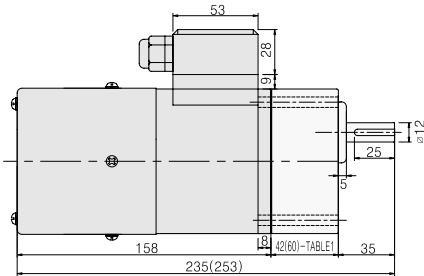
MOTOR ONLY

- * MOTOR MODEL : 9SD□□-40F2 (POWERFUL FAN)



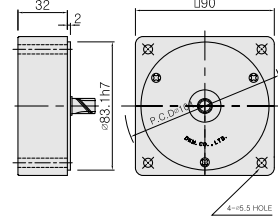
TERMINAL BOX TYPE

- * MOTOR MODEL : 9SDG□-40F2G-T (POWERFUL FAN)



INTER-DECIMAL GEARHEAD

- * MODEL : 9XD10M□

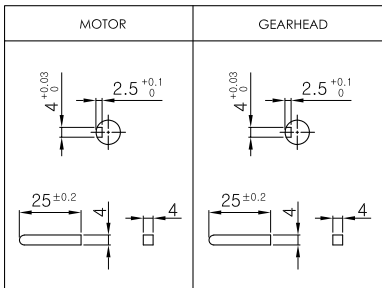


MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	17.5
9SDG□-40 G	
ROUND TYPE	37
9SDS□-40	
D-CUT TYPE	37
9SDD□-40	
KEY TYPE	37
9SDK□-40	

* Note : For speed control motor , powerful Fan(F2) is basic specification.

KEY SPEC



42(60)-TABLE1

SIZE(mm)	GEAR RATIO
42	9GB□3MH - 9GB□15MH
60	9GB□18MH - 9GB□180MH

WEIGHT

PART	WEIGHT(Kg)	
MOTOR	2.5	
DECIMAL GEARHEAD	0.5	
GEAR HEAD	9GB□3MH - 9GB□15MH	0.67
	9GB□18MH - 9GB□30MH	0.96
	9GB□36MH - 9GB□180MH	1.07

GEARHEAD OUTPUT

MODEL	SHAFT
ROUND TYPE	35
9GBS3MH - 9GBS180MH	
D-CUT TYPE	35
9GBD3MH - 9GBD180MH	
KEY TYPE	35
9GBK3MH - 9GBK180MH	

* Note : Above table indicates output shaft dimension made by user's request and ★ indicates the basic dimension in factory shipping.

Connection Diagrams

Please refer to page 148, 151.

SPEED CONTROL MOTOR 60W

□90mm(3.54in.)



LEAD WIRE TYPE
+ F2 FAN



LEAD WIRE TYPE
+ F2 FAN



DSA



DSK



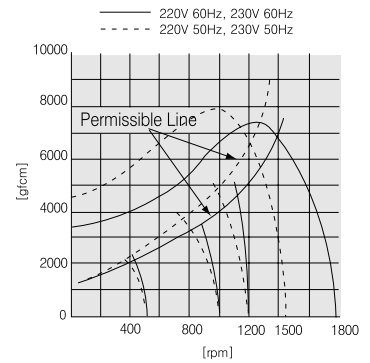
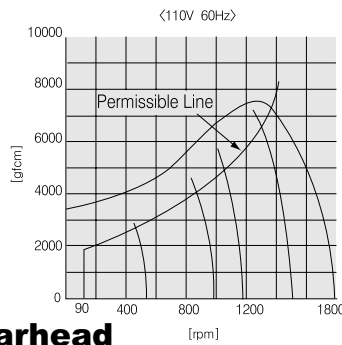
Motor Specification

Model		Output	Voltage	Freq.	Speed Range	Permissible Torque						Starting Torque		Current	Condenser			
Lead Wire Type	Terminal Box Type					HP	W	VAC	Hz	rpm	1200rpm					90rpm		
		gfc	mN.m	oz-in	gfc						mN.m	oz-in						
TP 9SDG(D)A-60F2P	9SDG(D)A-60F2P-T	1/12	60	Single Phase 110	60	90~1700	4900	490	68.6	2000	200	28.0	2850	285	39.9	1.20	16	250
TP 9SDG(D)B-60F2P	9SDG(D)B-60F2P-T			Single Phase 115	60	90~1700	4900	490	68.6	1400	140	19.6	2400	240	33.6	0.60	4	400
TP 9SDG(D)C-60F2P	9SDG(D)C-60F2P-T			Single Phase 220	50	90~1400	4900	490	68.6	1600	160	22.4						
TP 9SDG(D)D-60F2P	9SDG(D)D-60F2P-T			Single Phase 220	60	90~1700	4500	450	63.0	1400	140	19.6						
TP 9SDG(D)E-60F2P	9SDG(D)E-60F2P-T			Single Phase 230	50	90~1400	4900	490	68.6	1400	140	19.6						
TP 9SDG(D)F-60F2P	9SDG(D)F-60F2P-T			Single Phase 230	60	90~1700	4500	450	63.0	1600	160	22.4						

* Enter the 'Phase & Voltage' code in the box(□) within the motor model name.

* 'Pinion Shaft' is for attaching gearhead and 'D-Cut Shaft' is for using motor only.

TP : Contains a built-in thermal protector. If a motor overheats for any reason the thermal protector opened and the motor stops. When the motor temperature Drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting. F2 FAN is basic specification for speed control motor.



Permissible Torque When using gearhead

Motor/Gearhead	rpm	Voltage	Gear Ratio	2	3	3.6	5	6	7.5	9	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180		
9SDG□-60P/ 9PB(F)K□BH	1200	110/115 60Hz	kgf cm	10	12	14	20	24	30	36	45	54	64	70	81	97	116	132	162	194	200	200	200	200	200	200	200	
			N.m	1.0	1.2	1.4	2.0	2.4	3.0	3.6	4.5	5.4	6.4	7.0	8.1	9.7	11.6	13.2	16.2	19.4	20	20	20	20	20	20	20	20
		lb-in	8.8	10.6	12.4	17.7	21	26	32	40	48	57	62	72	86	102	117	143	171	177	177	177	177	177	177	177	177	
	90	220/230 60Hz	kgf cm	9	11	13	18	22	27	33	41	49	59	68	74	89	107	119	149	178	199	200	200	200	200	200	200	200
			N.m	0.9	1.1	1.3	1.8	2.2	2.7	3.3	4.1	4.9	5.9	6.8	7.4	8.9	10.7	11.9	14.9	17.8	19.9	20	20	20	20	20	20	20
		lb-in	7.9	9.7	11.5	15.9	19.4	24	29	36	43	52	60	65	79	94	105	132	157	176	177	177	177	177	177	177	177	
90	220/230 50Hz	kgf cm	10	12	14	20	24	30	36	45	54	64	70	81	97	116	132	162	194	200	200	200	200	200	200	200	200	
		N.m	1.0	1.2	1.4	2.0	2.4	3.0	3.6	4.5	5.4	6.4	7.0	8.1	9.7	11.6	13.2	16.2	19.4	20	20	20	20	20	20	20	20	
	lb-in	8.8	10.6	12.4	17.7	21	26	32	40	48	57	62	72	86	102	117	143	171	177	177	177	177	177	177	177	177		
90	110/115 60Hz	kgf cm	4.7	4.9	5.8	8.1	9.7	12	15	18	22	26	30	33	40	48	53	66	79	89	106	118	142	177	200	200	200	
		N.m	0.47	0.49	0.58	0.81	0.97	1.20	1.5	1.8	2.2	2.6	3.0	3.3	4.0	4.8	5.3	6.6	7.9	8.9	10.6	11.8	14.2	17.7	20	20	20	
	lb-in	4.2	4.3	5.1	7.2	8.6	10.6	13.2	15.9	19.5	23	26	29	35	42	47	58	70	79	94	104	125	156	177	20	20	20	
90	220/230 60Hz	kgf cm	3.7	3.9	4.7	6.5	7.8	9.7	12.0	15.0	18.0	21	24	26	32	38	43	53	63	71	85	94	113	142	170	170	170	
		N.m	0.37	0.39	0.47	0.65	0.78	0.97	1.2	1.5	1.8	2.1	2.4	2.6	3.2	3.8	4.3	5.3	6.3	7.1	8.5	9.4	11.3	14.2	17	17	17	
	lb-in	3.3	3.4	4.2	5.7	6.9	8.6	10.6	13.2	15.9	19	21	23	28	34	38	47	56	63	75	83	100	125	150	170	170	170	
90	220/230 50Hz	kgf cm	3.0	3.4	4.1	5.7	6.8	8.5	10	13	15	18	20	23	28	33	37	46	55	62	74	83	99	124	149	149	149	
		N.m	0.3	0.34	0.41	0.57	0.68	0.85	1.0	1.3	1.5	1.8	2.0	2.3	2.8	3.3	3.7	4.6	5.5	6.2	7.4	8.3	9.9	12.4	14.9	14.9	14.9	
	lb-in	2.6	3.0	3.6	5.0	6.0	7.5	8.8	11.5	13.2	15.9	17.7	20.3	25	29	33	41	49	55	65	73	87	109	132	149	149	149	

* Enter the gear ratio in the box (□) within the gearhead model name. A colored background indicates gear shaft rotation in the same direction as the motor shaft ; a white background indicates rotation in the opposite direction.

* The speed is calculated by dividing the motor's synchronous speed (50Hz : 1500 r/min, 60 Hz : 1800 r/min) by the gear ratio.

* The actual speed is 2~20% less than the displayed value, depending on the size of the load.

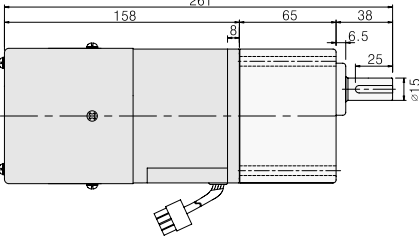
* If more slow speed is needed than above value, use decimal gearhead with a gear ratio of 10:1 could be used between general gearhead and motor. Even in this case, just speed will be reduced without increase in permissible torque; the maximum permissible torque is 200kgfcm

Dimension

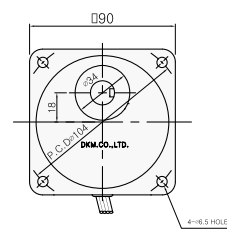
LEAD WIRE TYPE

GEARED MOTOR

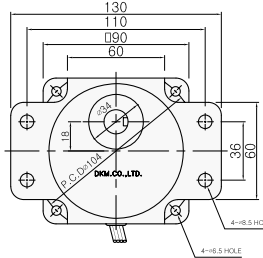
* MOTOR MODEL : 9SDG□-60F2P (POWERFUL FAN)



* GEARHEAD MODEL :
9PB □ 3BH - 9PB □ 180BH

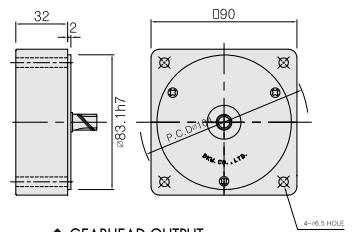


* GEARHEAD MODEL :
9PF □ 3BH - 9PF □ 180BH



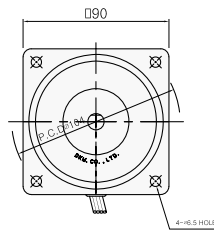
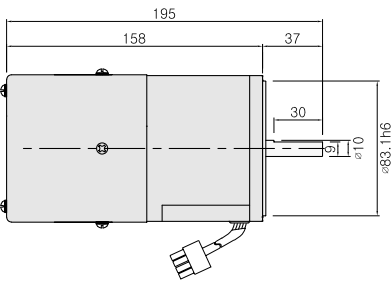
INTER-DECIMAL GEARHEAD

* MODEL : 9XD10M□



MOTOR ONLY

* MOTOR MODEL : 9SD□□-60F2 (POWERFUL FAN)

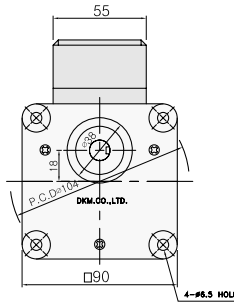
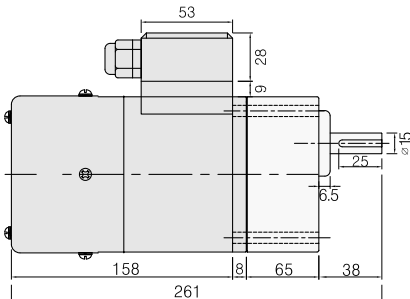


GEARHEAD OUTPUT

MODEL	SHAFT
ROUND TYPE	
9P□S3BH -9P□S180BH	
D-CUT TYPE	
9P□D3BH -9P□D180BH	
KEY TYPE	
9P□K3BH -9P□K180BH	

TERMINAL BOX TYPE

* MOTOR MODEL : 9SDG□-60F2P-T (POWERFUL FAN)



KEY SPEC

MOTOR	GEARHEAD

WEIGHT

PART	WEIGHT (Kg)	
MOTOR	2.7	
DECIMAL GEARHEAD	0.5	
GEAR HEAD	9P□□ 3BH - 9P□□ 9BH	1.3
	9P□□ 12.5BH - 9P□□ 18BH	1.3
	9P□□ 25BH - 9P□□ 60BH	1.4
	9P□□ 90BH - 9P□□ 180BH	1.4

MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	
9SDG□-60□P	
ROUND TYPE	
9SDS□-60□	
D-CUT TYPE	
9SDD□-60□	
KEY TYPE	
9SDK□-60□	

* Note : For speed control motor, powerful Fan(F2) is basic specification.

* Note : Above table indicates output shaft dimension made by user's request and ★ indicates the basic dimension in factory shipping.

Connection Diagrams

Please refer to page 148, 151.

SPEED CONTROL MOTOR 90W

□90mm(3.54in.)



LEAD WIRE TYPE
+ F2 FAN



LEAD WIRE TYPE
+ F2 FAN



DSA



DSK

Motor Specification

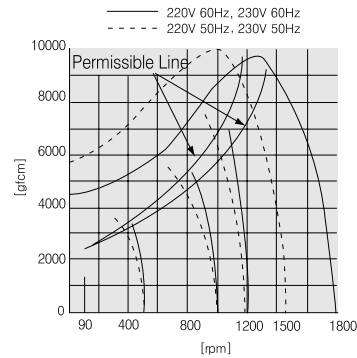
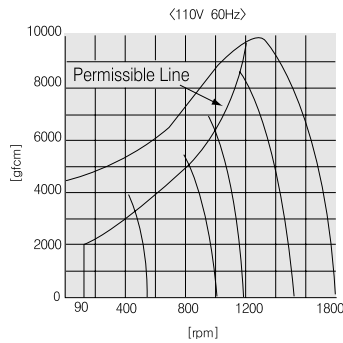


Model		Output	Voltage	Freq.	Speed Range	Permissible Torque						Starting Torque			Current	Condenser			
Lead Wire Type	Terminal Box Type					HP	W	VAC	Hz	rpm	1200rpm			90rpm			gfcM	mN.m	oz-in
		gfcM	mN.m	oz-in	gfcM						mN.m	oz-in							
ⓉP 9SDG(D)A-90F2P	9SDG(D)A-90F2P-T	1/8	90	Single Phase 110	60	90~1700	6900	690	96.6	2000	200	28.0	4200	420	58.8	2.10	20	250	
ⓉP 9SDG(D)B-90F2P	9SDG(D)B-90F2P-T			Single Phase 115															
ⓉP 9SDG(D)C-90F2P	9SDG(D)C-90F2P-T			Single Phase 220	50	90~1400	6900	690	96.6	2300	230	32.2	4200	420	58.8	1.00	5.0	400	
ⓉP 9SDG(D)D-90F2P	9SDG(D)D-90F2P-T			Single Phase 220															
ⓉP 9SDG(D)E-90F2P	9SDG(D)E-90F2P-T			Single Phase 230	60	90~1700	6300	630	88.2	2600	260	36.4	4200	420	58.8	1.00	5.0	400	
ⓉP 9SDG(D)F-90F2P	9SDG(D)F-90F2P-T			Single Phase 230															

* Enter the 'Phase & Voltage' code in the box(□) within the motor model name.

* 'Pinion Shaft' is for attaching gearhead and 'D-Cut Shaft' is for using motor only.

ⓉP : Contains a built-in thermal protector. If a motor overheats for any reason the thermal protector opens and the motor stops. When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting. F2 FAN is basic specification for speed control motor.



■ Permissible Torque When using gearhead

Motor/Gearhead	rpm / Voltage	Gear Ratio	2	3	3.6	5	6	7.5	9	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180		
9SDG□-90FP/ 9PB(F)K□BH	1200rpm	kgf cm	16	18	21	30	35	44	53	67	80	96	100	120	145	173	200	200	200	200	200	200	200	200	200	200	
		N.m	1.6	1.8	2.1	3.0	3.5	4.4	5.3	6.7	8.0	9.6	10.0	12.0	14.5	17.3	20	20	20	20	20	20	20	20	20	20	
		lb-in	14.4	15.9	18.5	26	31	39	47	59	71	85	88	106	128	153	177	177	177	177	177	177	177	177	177	177	
	90rpm	110/115 60 Hz	kgf cm	4.5	4.9	58	8.1	9.7	12	15	18	22	26	30	33	40	48	53	66	79	89	106	118	142	177	200	
			N.m	0.45	0.49	0.58	0.81	0.97	1.2	1.5	1.8	2.2	2.6	3.0	3.3	4.0	4.8	5.3	6.6	7.9	8.9	10.6	11.8	14.2	17.7	20	
		220/230 60 Hz	kgf cm	6.0	6.3	7.6	11	13	16	19	24	28	34	40	43	51	62	70	86	103	115	138	153	184	200	200	
			N.m	0.60	0.63	0.76	1.10	1.3	1.6	1.9	2.4	2.8	3.4	4.0	4.3	5.1	6.2	7.0	8.6	10.3	11.5	13.8	15.3	18.4	20	20	
		220/230 50 Hz	kgf cm	5.2	5.6	6.7	9.3	11	14	17	21	25	30	35	38	46	55	60	76	91	102	122	136	163	200	200	
			N.m	0.52	0.56	0.67	0.93	1.1	1.4	1.7	2.1	2.5	3.0	3.5	3.8	4.6	5.5	6.0	7.6	9.1	10.2	12.2	13.6	16.3	20	20	
9SDG□-90FH/ 9HBK□BH	1200rpm	kgf cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	241	289	300	300	300	300	300	300		
		N.m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	24.1	28.9	30	30	30	30	30	30	
		lb-in	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	177	213	255	265	265	265	265	265	266	
	90rpm	110/115 60 Hz	kgf cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	66	79	89	106	118	142	177	212	
			N.m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.0	6.6	7.9	8.9	10.6	11.8	14.2	17.7	21.2
		220/230 60 Hz	kgf cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	86	103	115	138	153	184	230	276
			N.m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.0	8.6	10.3	11.5	13.8	15.3	18.4	23	27.6
		220/230 50 Hz	kgf cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	76	91	102	122	136	163	204	244
			N.m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.5	7.6	9.1	10.2	12.2	13.6	16.3	20.4	24.4
220/230 50 Hz	kgf cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49	67	80	90	108	120	144	180	215		
	N.m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.9	6.7	8.0	9.0	10.8	12.0	14.4	18.0	21.5		

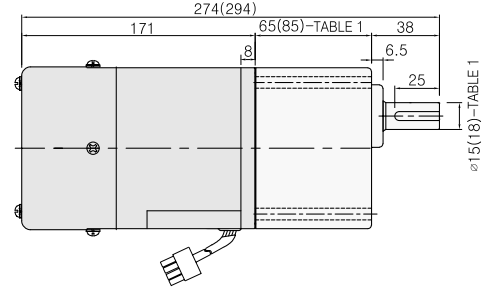
- * Enter the gear ratio in the box (□) within the gearhead model name. A colored background indicates gear shaft rotation in the same direction as the motor shaft ; a white background indicates rotation in the opposite direction.
- * The speed is calculated by dividing the motor's synchronous speed (50Hz : 1500 r/min, 60 Hz : 1800 r/min) by the gear ratio.
- * The actual speed is 2~20% less than the displayed value, depending on the size of the load.
- * If more slow speed is needed than above value, use decimal gearhead with a gear ratio of 10:1 could be used between general gearhead and motor. Even in this case, just speed will be reduced without increase in permissible torque; the maximum permissible torque is 200kgfcm (P type) / 300kgfcm (H type).

Dimension

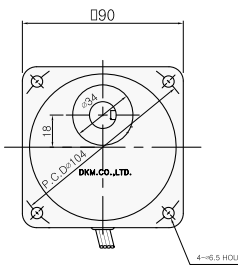
LEAD WIRE TYPE

GEARED MOTOR

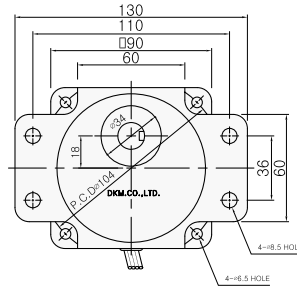
* MOTOR MODEL : 9SDG□-90F2P(H) (POWERFUL FAN)



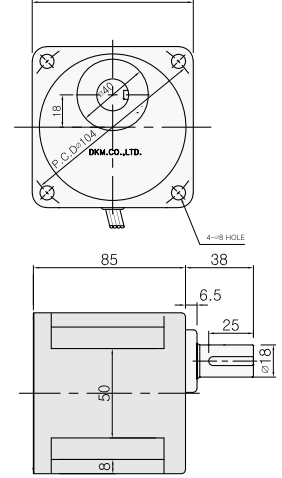
* GEARHEAD MODEL : 9PB□3BH - 9PB□180BH



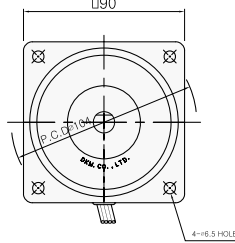
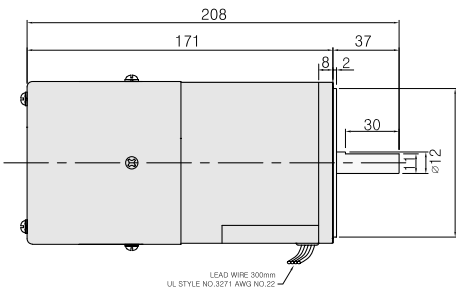
* GEARHEAD MODEL : 9PF□3BH - 9PF□180BH



* GEARHEAD MODEL : 9HB□3BH - 9HB□180BH

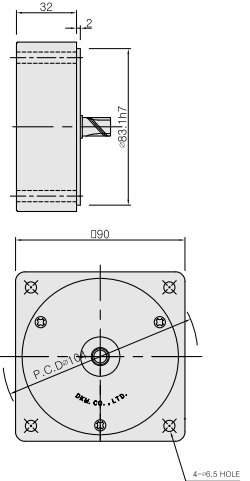


MOTOR ONLY * MOTOR MODEL : 9SD□-90F2 (POWERFUL FAN)



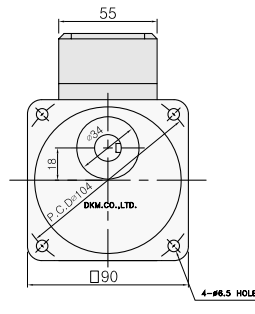
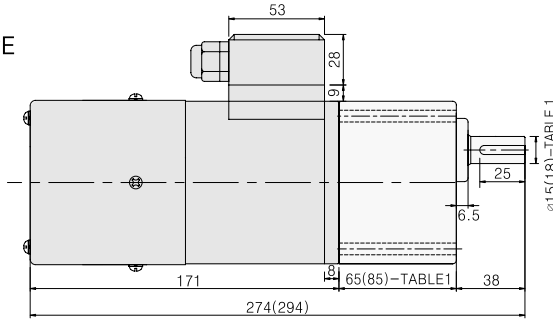
INTER-DECIMAL GEARHEAD

* MODEL : 9XD10M□



TERMINAL BOX TYPE

* MOTOR MODEL : 9SDG□-90F2P(H)-T (POWERFUL FAN)

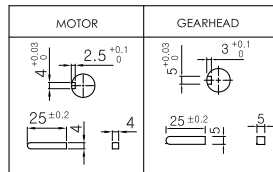


* Note : For speed control motor, powerful Fan(F2) is basic specification.

65(85)-TABLE 1

SIZE(mm)	GEARHEAD TYPE
65 - φ15	P TYPE GEARHEAD
85 - φ18	H TYPE GEARHEAD

KEY SPEC



WEIGHT

PART	WEIGHT(Kg)		
MOTOR	3.0		
DECIMAL GEARHEAD	0.5		
GEAR HEAD	GEARHEAD TYPE		
	P TYPE	H TYPE	
	9P(H)□3BH - 9P(H)□9BH	1.3	1.45
	9P(H)□12.5BH - 9P(H)□18BH	1.3	1.5
	9P(H)□25BH - 9P(H)□60BH	1.4	1.7
9P(H)□90BH - 9P(H)□180BH	1.4	1.8	

GEARHEAD OUTPUT

MODEL	P TYPE	H TYPE
ROUND TYPE	38	38
9P(H)□S3BH - 9P(H)□S180BH	15	18
D-CUT TYPE	38	38
9P(H)□D3BH - 9P(H)□D180BH	25, 15, 14-0.1	25, 18, 17-0.1
KEY TYPE	38	38
9P(H)□K3BH - 9P(H)□K180BH	25, φ15	25, φ18

MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	18.5(22)
9SDG□-90□P(H)	* 18.5 : P TYPE 22 : H TYPE
ROUND TYPE	37
9SD□-90□	12
D-CUT TYPE	37, 30, 11.5, 12
9SDD□-90□	12
KEY TYPE	37, 25, φ12
9SDK□-90□	12

* Note : Above table indicates output shaft dimension made by user's request and ★ indicates the basic dimension in factory shipping.

Connection Diagrams

Please refer to page 148, 151.

SPEED CONTROL MOTOR 120W

□90mm(3.54in.)



LEAD WIRE TYPE
+ F2 FAN



LEAD WIRE TYPE
+ F2 FAN



DSA



DSK

Motor Specification

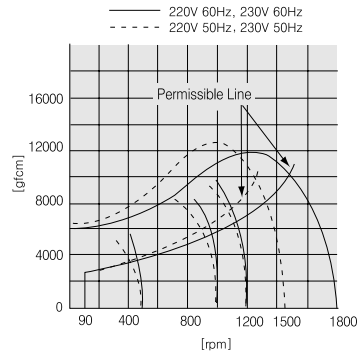
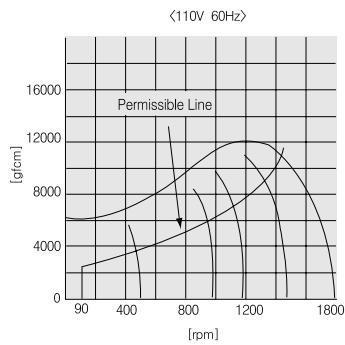


Model		Output	Voltage	Freq.	Speed Range	Permissible Torque						Starting Torque			Current	Condenser		
Lead Wire Type	Terminal Box Type					HP	W	VAC	Hz	rpm	1200rpm			90rpm			gfc	mN.m
		gfc	mN.m	oz-in	gfc						mN.m	oz-in	A	μF	V			
ⓉP 9SDG(D)A-120F2P(H)	9SDG(D)A-120F2P(H)-T	1/6	120	Single Phase 110	60	90~1700	7200	720	100.8	2400	240	33.6	5400	540	75.6	2.50	25.0	250
ⓉP 9SDG(D)B-120F2P(H)	9SDG(D)B-120F2P(H)-T			Single Phase 115	60	90~1700	7200	720	100.8	2400	240	33.6	5400	540	75.6	2.50	25.0	250
ⓉP 9SDG(D)C-120F2P(H)	9SDG(D)C-120F2P(H)-T			Single Phase 220	50	90~1400	7200	720	100.8	2800	280	39.2	5400	540	75.6	1.20	6.0	400
ⓉP 9SDG(D)D-120F2P(H)	9SDG(D)D-120F2P(H)-T			Single Phase 220	60	90~1700	7000	700	98.0	3000	300	42.0	5400	540	75.6	1.20	6.0	400
ⓉP 9SDG(D)E-120F2P(H)	9SDG(D)E-120F2P(H)-T			Single Phase 230	50	90~1400	7200	720	100.8	2800	280	39.2	5400	540	75.6	1.20	6.0	400
ⓉP 9SDG(D)F-120F2P(H)	9SDG(D)F-120F2P(H)-T			Single Phase 230	60	90~1700	7000	700	98.0	3000	300	42.0	5400	540	75.6	1.20	6.0	400

* Enter the 'Phase & Voltage' code in the box(□) within the motor model name.

* 'Pinion Shaft' is for attaching gearhead and 'D-Cut Shaft' is for using motor only.

ⓉP : Contains a built-in thermal protector. If a motor overheats for any reason the thermal protector opened and the motor stops. When the motor temperature Drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting. F2 FAN is basic specification for speed control motor.



■ Permissible Torque When using gearhead

Motor/Gearhead	rpm / Voltage	Gear Ratio	2	3	3.6	5	6	7.5	9	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	
9SDG□-120FP/ 9PB(F)K□BH	1200rpm	kgf cm	15	19	23	31	38	47	56	71	84	101	110	126	152	182	200	200	200	200	200	200	200	200	200	200
		N.m	1.5	1.9	2.3	3.1	3.8	4.7	5.6	7.1	8.4	10.1	11	12.6	15.2	18.2	20	20	20	20	20	20	20	20	20	20
		lb-in	3.6	4.5	5.7	7.4	9.4	11.2	14	17	21	24	26	31	38	45	51	56	66	80	90	106	118	142	178	200
	90rpm	110/115 60 Hz	kgf cm	4.1	5.1	6.4	8.4	11	13	16	19	24	27	30	35	43	51	56	66	80	90	106	118	142	178	200
			N.m	0.41	0.51	0.64	0.84	1.06	1.27	1.57	1.9	2.4	2.7	3.0	3.5	4.3	5.1	5.6	6.6	8	9	11	12	14	18	20
		lb-in	3.6	4.5	5.7	7.4	9.4	11.2	14	17	21	24	26	31	38	45	51	56	66	80	90	106	118	142	178	200
		220/230 60 Hz	kgf cm	5.3	6.7	8.3	11	14	17	20	26	29	35	39	45	53	66	72	86	104	116	138	154	184	200	200
			N.m	0.53	0.67	0.83	1.15	1.41	1.69	2.02	2.6	2.9	3.5	3.9	4.5	5.3	6.6	8.2	8.6	10.4	11.6	13.8	15.4	18.4	20	20
		lb-in	4.64	5.87	7.31	10.1	12.4	14.9	17.8	23	26	31	34	40	47	58	64	76	92	102	122	136	162	177	177	177
220/230 50 Hz	kgf cm	4.7	5.9	7.4	10	12	15	18	22	26	31	34	40	49	58	64	76	92	102	122	136	164	200	200		
N.m	0.47	0.59	0.74	0.96	1.18	1.50	1.79	2.2	2.6	3.1	3.4	4.0	4.9	5.8	6.4	7.6	9.2	10	12	14	16	20	20			
lb-in	4.11	4.20	6.50	8.5	10.4	13.3	16	19	23	28	30	36	43	51	57	67	81	90	108	120	145	177	177	177		
9SDG□-120FH/ 9HBK□BH	1200rpm	kgf cm	-	21	25	-	42	-	62	78	92	111	-	139	167	200	-	260	300	300	300	300	300	300	300	
		N.m	-	2.1	2.5	-	4.2	-	6.2	7.8	9.2	11.1	-	13.9	16.7	20.0	-	26	30	30	30	30	30	30	30	
		lb-in	-	18.5	22.3	-	37	-	54	69	82	98	-	122	148	177	-	230	265	265	265	265	265	265	265	
	90rpm	110/115 60 Hz	kgf cm	-	5.1	6.4	-	11	-	16	19	24	27	-	35	43	51	-	66	80	90	110	120	140	180	240
			N.m	-	0.51	0.64	-	1.06	-	1.57	1.9	2.4	2.7	-	3.5	4.3	5.1	-	6.6	8.0	9.0	11	12	14	18	24
		lb-in	-	4.5	5.7	-	9.4	-	14	17	21	24	-	31	38	45	-	58	71	79	97	106	124	159	212	
		220/230 60 Hz	kgf cm	-	6.7	8.3	-	14	-	20	26	29	35	-	45	53	66	-	86	104	116	138	154	184	250	300
			N.m	-	0.67	0.83	-	1.41	-	2.02	2.6	2.9	3.5	-	4.5	5.3	6.6	-	8.6	10.4	11.6	13.8	15.4	18.4	25	30
		lb-in	-	8.57	7.31	-	12.4	-	17.8	23	26	31	-	40	47	58	-	76	92	102	122	136	162	221	265	265
220/230 50 Hz	kgf cm	-	5.9	7.4	-	12	-	18	22	26	31	-	40	49	58	-	76	92	100	120	140	160	240	280		
N.m	-	0.59	0.74	-	1.18	-	1.79	2.2	2.6	3.1	-	4.0	4.9	5.8	-	7.6	9.2	10	12	14	16	24	28			
lb-in	-	5.20	6.50	-	10.4	-	16	19	23	28	-	36	43	51	-	67	81	88	106	124	141	212	247	247		

* Enter the gear ratio in the box (□) within the gearhead model name. A colored background indicates gear shaft rotation in the same direction as the motor shaft ; a white background indicates rotation in the opposite direction.

* The speed is calculated by dividing the motor' s synchronous speed (50Hz : 1500 r/min, 60 Hz : 1800 r/min) by the gear ratio.

* The actual speed is 2~20% less than the displayed value, depending on the size of the load.

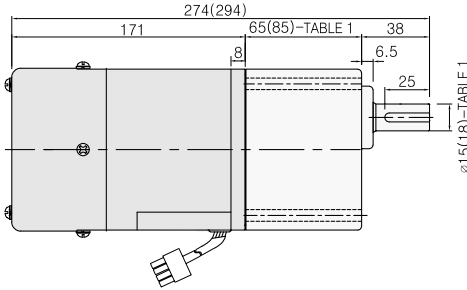
* If more slow speed is needed than above value, use decimal gearhead with a gear ratio of 10:1 between gearhead and motor. Even decimal gearhead is used, just speed will be reduced without increase in permissible torque ; the maximum permissible torque is 200kgfcm (P type) / 300kgfcm (H type).

Dimension

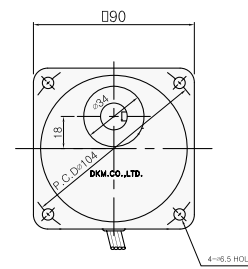
LEAD WIRE TYPE

GEARED MOTOR

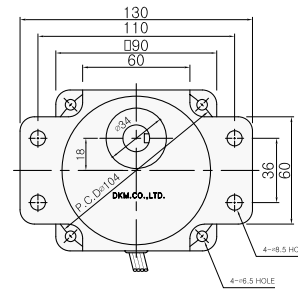
* MOTOR MODEL : 9SDG□-120F2P(H) (POWERFUL FAN)



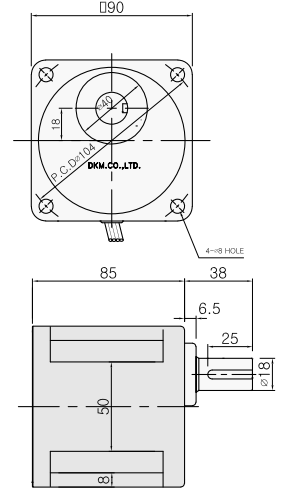
* GEARHEAD MODEL :
9PB□3BH - 9PB□180BH



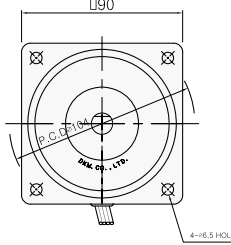
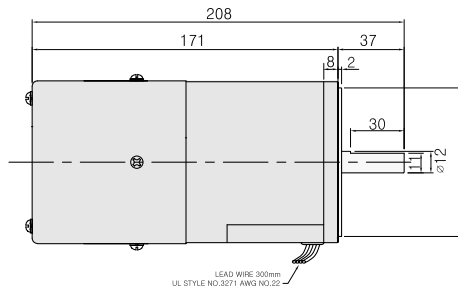
* GEARHEAD MODEL :
9PF□3BH - 9PF□180BH



* GEARHEAD MODEL :
9HB□3BH - 9HB□180BH

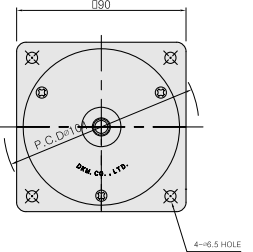
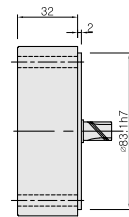


MOTOR ONLY * MOTOR MODEL : 9SD□□-120F2 (POWERFUL FAN)



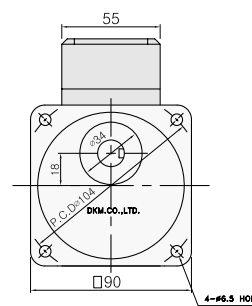
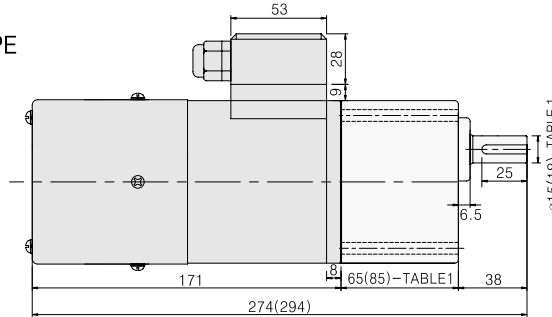
INTER-DECIMAL GEARHEAD

* MODEL : 9XD10M□



TERMINAL BOX TYPE

* MOTOR MODEL :
9SDG□-120F2P(H)-T
(POWERFUL FAN)

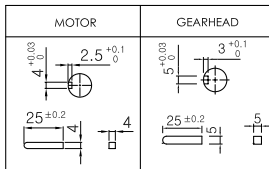


* Note : For speed control motor, powerful Fan(F2) is basic specification.

65(85)-TABLE 1

SIZE(mm)	GEARHEAD TYPE
65 - 85	P TYPE GEARHEAD
85 - 118	H TYPE GEARHEAD

KEY SPEC



WEIGHT

PART	WEIGHT(Kg)		
MOTOR	3.0		
DECIMAL GEARHEAD	0.5		
GEAR HEAD	GEARHEAD TYPE	P TYPE	H TYPE
	9P(H)□3BH - 9P(H)□9BH	1.3	1.45
	9P(H)□12.5BH - 9P(H)□18BH	1.3	1.5
	9P(H)□25BH - 9P(H)□60BH	1.4	1.7
	9P(H)□90BH - 9P(H)□180BH	1.4	1.8

GEARHEAD OUTPUT

MODEL	P TYPE	H TYPE
ROUND TYPE	38	38
9P(H)□3BH - 9P(H)□180BH	15	16
D-CUT TYPE	38	38
9P(H)□D3BH - 9P(H)□D180BH	15	17.0
KEY TYPE	38	38
9P(H)□K3BH - 9P(H)□K180BH	15	18

MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	18.5(22)
9SDG□-120□P(H)	* 18.5 : P TYPE 22 : H TYPE
ROUND TYPE	37
9SDS□-120□	12
D-CUT TYPE	37
9SDD□-120□	12
KEY TYPE	37
9SDK□-120□	12

* Note : Above table indicates output shaft dimension made by user's request and ★ indicates the basic dimension in factory shipping.

Connection Diagrams Please refer to page 148, 151

SPEED CONTROL MOTOR 180W

□90mm(3.54in.)



LEAD WIRE TYPE
+ F2 FAN



LEAD WIRE TYPE
+ F2 FAN



DSA



DSK



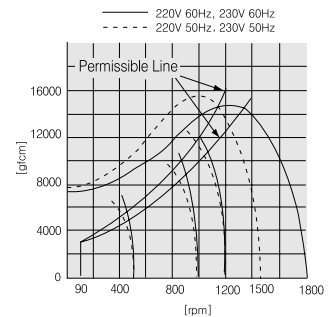
Motor Specification

Model		Output	Voltage	Freq.	Speed Range	Permissible Torque						Starting Torque	Current	Condenser					
9SDG□-180F2P(H) : Pinion Shaft Type						9SDD□-180F2 : D-Cut Shaft Type		1200rpm			90rpm								
Lead Wire Type	Terminal Box Type					HP	W	VAC	Hz	rpm	gfcM				mN.m	oz-in	gfcM	mN.m	oz-in
ⓉP	9SDG(D)C-180F2P(H)	9SDG(D)C-180F2P(H)-T	1/4	180	Single Phase 220	50	90~1400	12000	1200	168	3000	300	42.0	7000	700	98	1.40	6.5	400
ⓉP	9SDG(D)D-180F2P(H)	9SDG(D)D-180F2P(H)-T			Single Phase 220	60	90~1700	11000	1100	154	3200	320	44.8						
ⓉP	9SDG(D)E-180F2P(H)	9SDG(D)E-180F2P(H)-T			Single Phase 230	50	90~1400	12000	1200	168	3000	300	42.0						
ⓉP	9SDG(D)F-180F2P(H)	9SDG(D)F-180F2P(H)-T			Single Phase 230	60	90~1700	11000	1100	154	3200	320	44.8						

* Enter the 'Phase & Voltage' code in the box(□) within the motor model name.

* 'Pinion Shaft' is for attaching gearhead and 'D-Cut Shaft' is for using motor only.

ⓉP : Contains a built-in thermal protector. If a motor overheats for any reason the thermal protector opened and the motor stops. When the motor temperature Drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting. F2 FAN is basic specification for speed control motor.



Permissible Torque When using gearhead

Motor/Gearhead	rpm / Voltage	Gear Ratio	2	3	3.6	5	6	7.5	9	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	
9SDG□-180FP/ 9PB(F)K□BH	1200rpm	kgf cm	24	27	32	45	54	67	80	100	120	144	160	180	200	200	200	200	200	200	200	200	200	200	200	200
		N.m	2.4	2.7	3.2	4.5	5.4	6.7	8.0	10	12.0	14.4	16	18	20	20	20	20	20	20	20	20	20	20	20	20
		lb-in	21.2	23.5	28.5	39	48	60	70	88	106	128	141	159	177	177	177	177	177	177	177	177	177	177	177	177
	90rpm	110/115 60 Hz	kgf cm	6.5	7.2	9.0	12.1	15	18	22	27	34	39	43	50	56	58	62	66	80	90	106	118	142	178	200
			N.m	0.65	0.72	0.90	1.21	1.52	1.82	2.23	2.7	3.4	3.9	4.3	5.0	5.6	5.8	6.2	6.6	8	9	11	12	14	18	20
		lb-in	5.7	6.3	8.0	10.6	13.4	16.1	20	24	30	34	38	44	49	51	55	58	71	79	94	104	125	157	177	177
		220/230 60 Hz	kgf cm	8.4	9.3	11.6	17	20	24	29	36	42	51	56	65	70	72	80	86	104	116	138	154	184	200	200
			N.m	0.84	0.93	1.16	1.65	2.00	2.43	2.84	3.6	4.2	5.1	5.6	6.5	7.0	7.2	8.0	8.6	10.4	11.6	13.8	15.4	18.4	20	20
		lb-in	7.42	8.22	10.3	14.6	17.7	21.4	25.4	32	37	45	49	57	62	64	71	76	92	102	122	136	162	177	177	177
	220/230 50 Hz	kgf cm	7.4	8.2	10.3	14	17	22	26	31	37	45	50	57	64	64	70	76	92	102	122	136	164	200	200	
	N.m	0.74	0.82	1.03	1.38	1.68	2.16	2.55	3.1	3.7	4.5	5.0	5.7	6.4	6.4	7.0	7.6	9.2	10	12	14	16	20	20		
	lb-in	6.57	7.28	9.13	12.2	14.8	19.1	23	27	33	40	44	51	57	57	62	67	81	90	108	120	145	177	177	177	
9SDG□-180FH/ 9HBK□BH	1200rpm	kgf cm	-	28	34	-	57	-	84	105	126	152	-	189	227	273	-	300	300	300	300	300	300	300	300	300
		N.m	-	2.8	3.4	-	5.7	-	8.4	10.5	12.6	15.2	-	18.9	22.7	27.3	-	30	30	30	30	30	30	30	30	30
		lb-in	-	24.7	30.0	-	50	-	74	93	111	134	-	167	200	241	-	265	265	265	265	265	265	265	265	265
	90rpm	110/115 60 Hz	kgf cm	-	7.2	9.0	-	15	-	22	27	34	39	-	50	56	56	-	66	80	90	110	120	140	180	240
			N.m	-	0.72	0.90	-	1.52	-	2.23	2.7	3.4	3.9	-	5.0	5.6	5.6	-	6.6	8.0	9.0	11	12	14	18	24
		lb-in	-	6.3	8.0	-	13.4	-	20	24	30	34	-	44	49	49	-	58	71	79	97	106	124	159	212	
		220/230 60 Hz	kgf cm	-	9.3	11.6	-	20	-	29	36	42	51	-	65	70	72	-	86	104	116	138	154	184	250	300
			N.m	-	0.93	1.16	-	2.00	-	2.87	3.6	4.2	5.1	-	6.5	7.0	7.2	-	8.6	10.4	11.6	13.8	15.4	18.4	25	30
		lb-in	-	8.22	10.3	-	17.7	-	25.4	32	37	45	-	57	62	64	-	76	92	102	122	136	162	221	265	265
	220/230 50 Hz	kgf cm	-	8.2	10.3	-	17	-	26	31	37	45	-	57	64	64	-	76	92	100	120	140	160	240	280	
	N.m	-	0.82	1.03	-	1.68	-	2.55	3.1	3.7	4.5	-	5.7	6.4	6.4	-	7.6	9.2	10	12	14	16	24	28		
	lb-in	-	7.28	9.13	-	14.8	-	23	27	33	40	-	51	57	57	-	67	81	88	106	124	141	212	247	247	

* Enter the gear ratio in the box (□) within the gearhead model name. A colored background indicates gear shaft rotation in the same direction as the motor shaft ; a white background indicates rotation in the opposite direction.

* The speed is calculated by dividing the motor's synchronous speed (50Hz : 1500 r/min, 60 Hz : 1800 r/min) by the gear ratio.

* The actual speed is 2~20% less than the displayed value, depending on the size of the load.

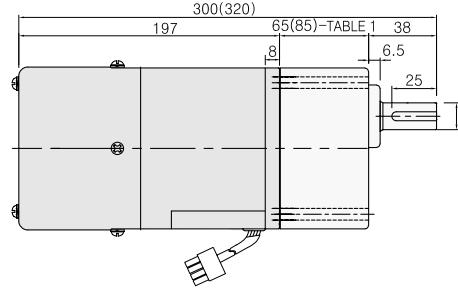
* If more slow speed is needed than above value, use decimal gearhead with a gear ratio of 10:1 could be used between general gearhead and motor. Even in this case, just speed will be reduced without increase in permissible torque; the maximum permissible torque is 200kgfcm (P type) / 300kgfcm (H type).

Dimension

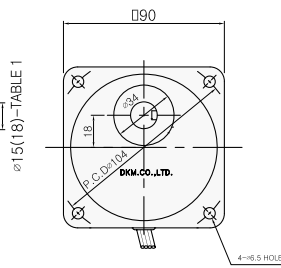
LEAD WIRE TYPE

GEARED MOTOR

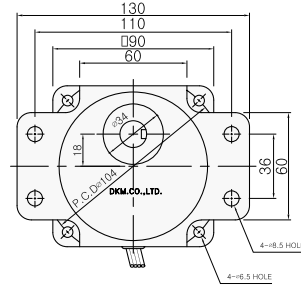
* MOTOR MODEL : 9SDG□-180F2P(H) (POWERFUL FAN)



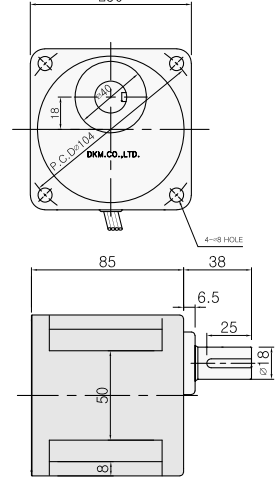
* GEARHEAD MODEL : 9PB □ 3BH - 9PB □ 180BH



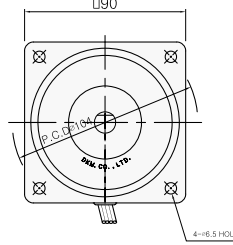
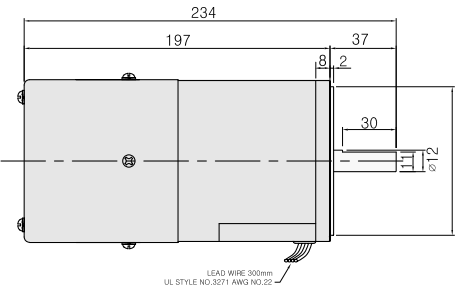
* GEARHEAD MODEL : 9PF □ 3BH - 9PF □ 180BH



* GEARHEAD MODEL : 9HB □ 3BH - 9HB □ 180BH

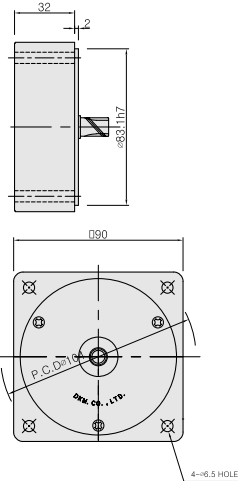
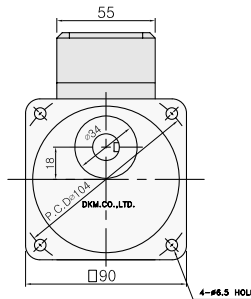
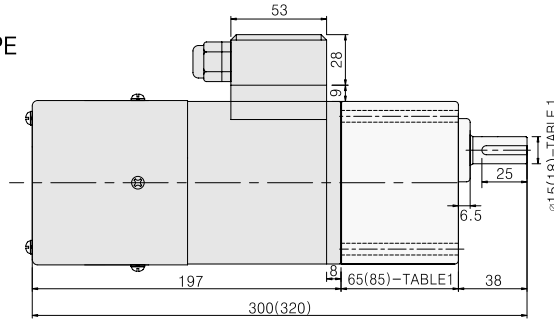


MOTOR ONLY * MOTOR MODEL : 9SD□□-180F2 (POWERFUL FAN)



TERMINAL BOX TYPE

* MOTOR MODEL : 9SDG□-180F2P(H).T (POWERFUL FAN)

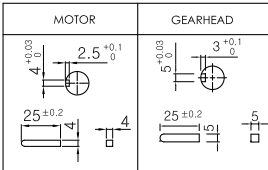


* Note : For speed control motor, powerful Fan(F2) is basic specification.

65(85)-TABLE 1

SIZE(mm)	GEARHEAD TYPE
65 - φ15	P TYPE GEARHEAD
85 - φ18	H TYPE GEARHEAD

KEY SPEC



WEIGHT

PART	WEIGHT(Kg)		
MOTOR	3.8		
DECIMAL GEARHEAD	0.5		
GEAR HEAD	GEARHEAD TYPE	P TYPE	H TYPE
	9P(H)□ 3BH - 9P(H)□ 9BH	1.3	1.45
	9P(H)□ 12.5BH - 9P(H)□ 18BH	1.3	1.5
	9P(H)□ 25BH - 9P(H)□ 60BH	1.4	1.7
	9P(H)□ 90BH - 9P(H)□ 180BH	1.4	1.8

GEARHEAD OUTPUT

MODEL	P TYPE	H TYPE
ROUND TYPE	38	38
9P(H)□S3BH ~9P(H)□S180BH	φ15	φ18
D-CUT TYPE	38	38
9P(H)□D3BH ~9P(H)□D180BH	14.5, 14.0±0.1	17.5
KEY TYPE	38	38
9P(H)□K3BH ~9P(H)□K180BH	φ15	φ18

MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	18.5(22)
9SDG□-180□ P(H)	* 18.5 : P TYPE 22 : H TYPE
ROUND TYPE	37
9SDS□-180□	φ12
D-CUT TYPE	37
9SDD□-180□	φ12
KEY TYPE	37
9SDK□-180□	φ12

* Note : Above table indicates output shaft dimension made by user's request and ★ indicates the basic dimension in factory shipping.

Connection Diagrams Please refer to page 148, 151.