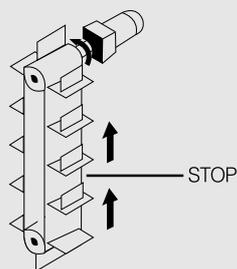


ELECTROMAGNETIC BRAKE MOTOR (Power off activated type)



■ INDEX

ELECTRO MAGNETIC BRAKE MOTOR FEATURES	86
6W (□70mm)	88
10W (□70mm)	91
15W (□80mm)	93
25W (□80mm)	95
40W (□90mm)	97
60W (□90mm)	100
90W (□90mm)	102
120W (□90mm)	104
150W (□90mm)	106
180W (□90mm)	108
200W (□90mm)	110

■ Features

● Power Off Activated Type Electromagnetic Brake

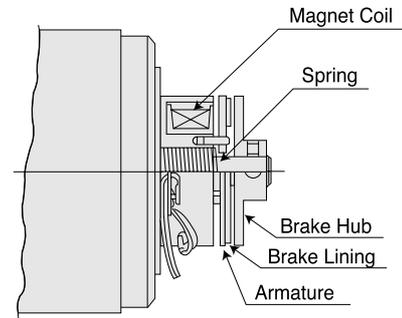
AC electromagnetic brake is employed in electromagnetic brake motors. When the power source is turned off, the brake is activated and the motor stops instantaneously and holds the load. The electromagnetic brake has holding power in power-off, so it is optimal for emergency brakes and vertical load applications.

● Operation

- There is 1-4 times of over run rotation at the time the power is turned off as individual motor.
(Induction motor : 30~40 times over run, Reversible motor : 5~6 times over run)
- The frequent and instantaneous directional changes are possible. By a simple control, it is possible to make 6 stops per minute with more than 3 seconds of stoppage. Roughly the operating cycle is 50cycles per minute or less.
(Note : This value is based merely on brake response. And this value is maximum, so it may not be possible to repeat braking operation at this frequency. Please make the treatment so that the surface of the motor case remains below 90℃ (144°F).
- The motor and the brake use the same power source. (For example, if motor voltage is 110V, that of brake is 110V.)

● Structure

When the voltage is applied to the coil, the spring attracts the armature and the brake lining is pulled away from the brake hub. Then the motor is able to rotate freely. Please refer to right figure.



■ Electromagnetic Brake 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	● -	● -				88
	10	Lead Wire Terminal box	● -	● -				91
80 (3.15)	15	Lead Wire Terminal box	● ●	● ●	● ●	● ●	● ●	93
	25	Lead Wire Terminal box	● ●	● ●	● ●	● ●	● ●	95
90 (3.54)	40	Lead Wire Terminal box	● ●	● ●	● ●	● ●	● ●	97
	60	Lead Wire Terminal box	● ●	● ●	● ●	● ●	● ●	100
	90	Lead Wire Terminal box	● ●	● ●	● ●	● ●	● ●	102
	120	Lead Wire Terminal box	● ●	● ●	● ●	● ●	● ●	104
	150	Lead Wire Terminal box	- -	- -	● ●	● ●	● ●	106
	180	Lead Wire Terminal box	- -	● ●	- -	- -	- -	108
	200	Lead Wire Terminal box	- -	- -	● ●	● ●	● ●	110

■ 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	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)

ELECTROMAGNETIC BRAKE MOTOR

(Power off activated type)

6W

□70mm(2.76in.)
LEAD WIRE TYPE



LEAD WIRE TYPE MOTOR

Motor Specification - 30min. Rating



Model		Starting Time	Output		Voltage	Freq.	Current	Starting Torque			Rated Torque			Rated Speed	Capacitor	
7BDG□-6G : Pinion Shaft Type	7BDS□-6 : Round Shaft Type		HP	W				VAC	Hz	A	gfc	mN.m	oz-in		gfc	mN.m
ⓉP 7BDG(S)A-6G	-	30min	1/125	6	Single Phase 110	60	0.35	500	50	7	620	62	9	1400	3.0	250
ⓉP 7BDG(S)B-6G	-				Single Phase 115	60										
ⓉP 7BDG(S)C-6G	-	30min	1/125	6	Single Phase 220	50	0.19	500	50	7	744	74	11	1300	1.0	400
ⓉP 7BDG(S)D-6G	-				Single Phase 220	60										
ⓉP 7BDG(S)E-6G	-				Single Phase 230	50										
ⓉP 7BDG(S)F-6G	-				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°C could be available.

Permissible Torque When using gearhead

60Hz

Model	speed RPM (r/min)	600	500	360	300	240	200	144	120	100	72	60	50	45	36	30	24	20	18	15	12	10
Motor/Gearhead	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
7BDG□-6G / 7GBD□BMH	kgf cm	1.0	1.2	1.7	2.0	2.5	3.0	4.2	5.1	6.1	7.5	9.1	11	12.5	14	16	20	24	27	30	30	30
	N.m	0.10	0.12	0.17	0.20	0.25	0.30	0.42	0.50	0.60	0.75	0.89	1.1	1.2	1.4	1.6	2.0	2.4	2.7	3	3	3
	lb-in	0.88	1.06	1.50	1.77	2.2	2.6	3.7	4.4	5.3	6.6	7.9	9.7	10.6	12.4	14	18	21	24	26	26	26

50Hz

Model	speed RPM (r/min)	500	416	300	250	200	166	120	100	83	60	50	41	38	30	25	20	16	15	15	10	8.3
Motor/Gearhead	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
7BDG□-6G / 7GBD□BMH	kgf cm	1.2	1.4	2.0	2.4	3.0	3.6	5.1	6.1	7.1	8.9	11	13	15	16	19	24	29	30	30	30	30
	N.m	0.12	0.14	0.20	0.24	0.30	0.36	0.50	0.60	0.71	0.89	1.1	1.3	1.5	1.6	1.9	2.4	2.9	3	3	3	3
	lb-in	1.06	1.24	1.77	2.1	2.6	3.2	4.4	5.3	6.3	7.9	9.7	11	13	14	17	21	26	26	26	26	26

* 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.

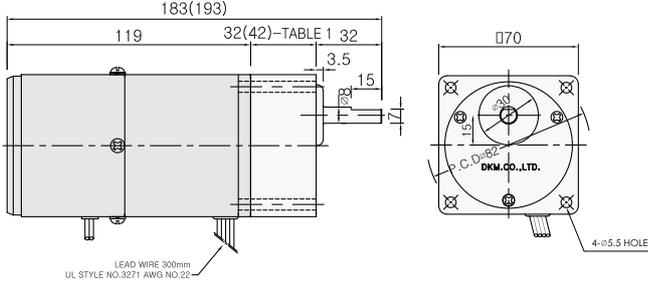
* The speed is calculated by dividing the motor's synchronous speed (50Hz : 1500 r/min, 60 Hz : 1800 r/min) by the gear ratio.

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

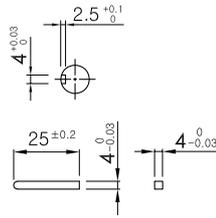
Dimension

◆ GEARED MOTOR

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



◆ KEY SPEC



◆ GEARHEAD 출력축 사양

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

◆ WEIGHT

PART		WEIGHT(Kg)
MOTOR		1.3
GEAR HEAD	7GB□3BMH - 7GB□18BMH	0.36
	7GB□25BMH - 7GB□30BMH	0.44
	7GB□36BMH - 7GB□180BMH	0.5

◆ 32(42)-TABLE1

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

◆ MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	★
7BDG□-6G	

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

■ Connection Diagrams

Single Phase																	
	<p>SW1 operates both motor and electromagnetic brake action. The motor will rotate when SW1 is switched simultaneously to ON (short circuit). When SW1 is switched simultaneously with the electromagnetic brake and holds the load. (To release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).)</p>																
<p>Direction of Rotation For CW direction, flip SW2 to CW. For CCW direction, flip SW2 to CCW.</p>																	
<table border="1"> <tr> <th rowspan="2">Switch</th> <th colspan="2">Specifications</th> <th rowspan="2">Note</th> </tr> <tr> <td>Single phase 110VAC, Single phase 115VAC Input</td> <td>Single phase 220VAC, Single phase 230VAC Input</td> </tr> <tr> <td>SW1</td> <td>125 VAC 3A minimum (inductive Load)</td> <td>250 VAC 1.5A minimum (inductive Load)</td> <td>Switched simultaneously</td> </tr> <tr> <td>SW2</td> <td></td> <td></td> <td>-</td> </tr> </table>	Switch	Specifications		Note	Single phase 110VAC, Single phase 115VAC Input	Single phase 220VAC, Single phase 230VAC Input	SW1	125 VAC 3A minimum (inductive Load)	250 VAC 1.5A minimum (inductive Load)	Switched simultaneously	SW2			-			
Switch		Specifications			Note												
	Single phase 110VAC, Single phase 115VAC Input	Single phase 220VAC, Single phase 230VAC Input															
SW1	125 VAC 3A minimum (inductive Load)	250 VAC 1.5A minimum (inductive Load)	Switched simultaneously														
SW2			-														
Three Phase																	
	<p>SW1 operates both motor and electromagnetic brake action. The motor will rotate when SW1 is switched simultaneously to ON (short circuit). When SW1 is switched simultaneously with the electromagnetic brake and holds the load. (To release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).)</p>																
<p>Direction of Rotation To rotate the motor in a CCW direction, change any two connections between U, V and W.</p>																	
<table border="1"> <tr> <th rowspan="2">Switch</th> <th colspan="2">Specifications</th> <th rowspan="2">Note</th> </tr> <tr> <td colspan="2">250 VAC 1.5A minimum (inductive Load)</td> </tr> <tr> <td>SW1</td> <td colspan="2">250 VAC 1.5A minimum (inductive Load)</td> <td>Switched simultaneously</td> </tr> </table>	Switch	Specifications		Note	250 VAC 1.5A minimum (inductive Load)		SW1	250 VAC 1.5A minimum (inductive Load)		Switched simultaneously							
Switch		Specifications			Note												
	250 VAC 1.5A minimum (inductive Load)																
SW1	250 VAC 1.5A minimum (inductive Load)		Switched simultaneously														

- The direction of motor rotation is as viewed from the shaft end of the motor.
- CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Connection diagrams are also valid for the equivalent round shaft motors.
- Ro and Co indicates surge absorber circuit. [Ro=5~200 Ω , Co=0.1~0.2μF , 200WV (400WV)]

ELECTROMAGNETIC BRAKE MOTOR

(Power off activated type)

10W

□70mm(2.76in.)
LEAD WIRE TYPE



LEAD WIRE TYPE MOTOR

Motor Specification - 30min. Rating



Model		Starting Time	Output	Voltage	Freq.	Current	Starting Torque			Rated Torque			Rated Speed	Capacitor		
Lead Wire Type	Terminal Box Type						HP	W	VAC	Hz	A	gfc		mN.m	oz-in	gfc
TP 7BDG(S)A-10G	-	30min	1/75	10	Single Phase 110	60	0.40	650	65	9	850	85	12	1400	3.5	250
TP 7BDG(S)B-10G	-				Single Phase 115	60										
TP 7BDG(S)C-10G	-	30min	1/75	10	Single Phase 220	50	0.27	650	65	9	1020	102	14	1300	1.5	400
TP 7BDG(S)D-10G	-				Single Phase 220	60										
TP 7BDG(S)E-10G	-				Single Phase 230	50										
TP 7BDG(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.

Ⓧ : 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°C could be available.

Permissible Torque When using gearhead

60Hz

Model	speed RPM (r/min)	600	500	360	300	240	200	144	120	100	72	60	50	45	36	30	24	20	18	15	12	10
Motor/Gearhead	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
7BDG□-10G / 7GBD□BMH	kgf cm	1.5	1.9	2.5	3.2	4.0	4.9	6.7	8.0	9.7	1.2	15	18	20	22	26	32	40	40	40	40	40
	N.m	0.15	0.19	0.25	0.32	0.40	0.49	0.67	0.80	0.97	1.2	1.5	1.8	2.0	2.2	2.6	3.2	4	4	4	4	4
	lb-in	1.32	1.68	2.21	2.83	3.5	4.3	5.9	7.1	8.6	10.6	13.2	15.9	17.7	20	23	28	35	35	35	35	35

50Hz

Model	speed RPM (r/min)	500	416	300	250	200	166	120	100	83	60	50	41	38	30	25	20	16	15	15	10	8.3
Motor/Gearhead	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
7BDG□-10G / 7GBD□BMH	kgf cm	1.8	2.3	3.0	3.8	4.8	5.9	8.1	9.6	11.6	14	18	22	24	27	31	38	40	40	40	40	40
	N.m	0.18	0.23	0.3	0.38	0.48	0.59	0.81	0.96	1.16	1.4	1.8	2.2	2.4	2.7	3.1	3.8	4	4	4	4	4
	lb-in	1.59	2.01	2.65	3.39	4.2	5.2	7.1	8.5	10.3	12.7	15.9	19.1	21.2	24	28	34	35	35	35	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.

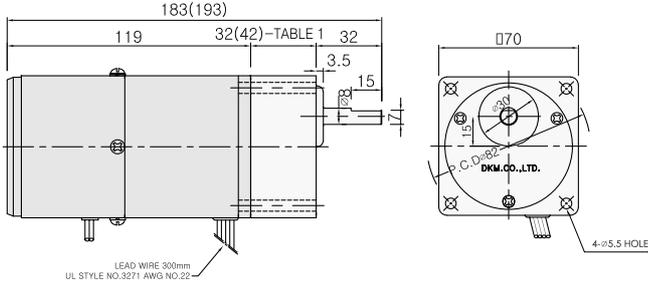
* The speed is calculated by dividing the motor's synchronous speed (50Hz : 1500 r/min, 60 Hz : 1800 r/min) by the gear ratio.

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

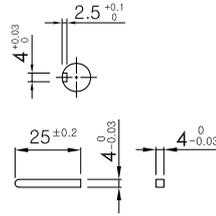
Dimension

◆ GEARED MOTOR

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



◆ KEY SPEC



◆ GEARHEAD 출력축 사양

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

◆ WEIGHT

PART		WEIGHT(Kg)
MOTOR		1.3
GEAR HEAD	7GB□3BMH -7GB□18BMH	0.36
	7GB□25BMH -7GB□30BMH	0.44
	7GB□36BMH -7GB□180BMH	0.5

◆ 32(42)-TABLE1

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

◆ MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	★
7BDG□-10G	

* 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 90.

ELECTROMAGNETIC BRAKE MOTOR

(Power off activated type)

15W

□80mm(3.15in.)



LEAD WIRE TYPE MOTOR



TERMINAL BOX TYPE MOTOR

Motor Specification - 30min. Rating



Model		Starting Time	Output	Voltage	Freq.	Current	Starting Torque			Rated Torque			Rated Speed	Capacitor		
Lead Wire Type	Terminal Box Type						HP	W	VAC	Hz	A	gfc		mN.m	oz-in	gfc
TP 8BDG(S)A-15G	9BDG(S)A-15G-T	30min	1/50	15	Single Phase 110	60	0.50	800	80	11	1000	100	14	1550	6.0	250
TP 8BDG(S)B-15G	9BDG(S)B-15G-T				Single Phase 115						1200	120	17			
TP 8BDG(S)C-15G	9BDG(S)C-15G-T	30min	1/50	15	Single Phase 220	50	0.3	800	80	11	1000	100	14	1550	2.0	400
TP 8BDG(S)D-15G	9BDG(S)D-15G-T				Single Phase 220						1200	120	17			
TP 8BDG(S)E-15G	9BDG(S)E-15G-T				Single Phase 230						1000	100	14			
TP 8BDG(S)F-15G	9BDG(S)F-15G-T				Single Phase 230						1200	120	17			
TP 8BDG(S)G-15G	9BDG(S)G-15G-T	30min	1/50	15	Three Phase 220	50	0.25	1300	130	18.5	1200	120	17	1300		
TP 8BDG(S)H-15G	9BDG(S)H-15G-T				Three Phase 220						1000	100	14.2			
TP 8BDG(S)I-15G	9BDG(S)I-15G-T				Three Phase 230						1200	120	17			
TP 8BDG(S)J-15G	9BDG(S)J-15G-T				Three Phase 230						1000	100	14.2			
TP 8BDG(S)K-15G	9BDG(S)K-15G-T	30min	1/50	15	Three Phase 380	50	0.14	1300	130	18.5	1200	120	17	1300		
TP 8BDG(S)L-15G	9BDG(S)L-15G-T				Three Phase 380						1000	100	14.2			
TP 8BDG(S)M-15G	9BDG(S)M-15G-T	30min	1/50	15	Three Phase 400	50	0.11	1300	130	18.5	1200	120	17	1300		
TP 8BDG(S)N-15G	9BDG(S)N-15G-T				Three Phase 440						1000	100	14.2			
TP 8BDG(S)O-15G	9BDG(S)O-15G-T				Three Phase 440						1000	100	14.2			

* 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°C could be available.

Permissible Torque When using gearhead

60Hz

Model	speed RPM (r/min)	600	500	360	300	240	200	144	120	100	72	60	50	45	36	30	24	20	18	15	12	10	7	6	5	
Motor/Gearhead	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	
8BDG□-15G / 8GBK□BMH	kgf cm	2.9	3.5	4.9	5.8	7.3	8.7	12.2	14.6	17.5	21.9	26.3	31.5	36.5	39.6	47.5	59.4	71.3	79.2	80	80	80	80	80	80	80
	N.m	0.29	0.35	0.49	0.58	0.73	0.87	1.2	1.5	1.8	2.2	2.6	3.2	3.6	4.0	4.8	5.9	7.1	7.9	8	8	8	8	8	8	8
	lb-in	2.6	3.1	4.3	5.1	6.4	7.7	11	13	15	19	23	28	32	35	42	52	63	70	71	71	71	71	71	71	71

50Hz

Model	speed RPM (r/min)	500	417	300	250	200	167	120	100	83	60	50	42	38	30	25	20	17	15	13	10	8	6	5	5
Motor/Gearhead	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
8BDG□-15G / 8GBK□BMH	kgf cm	3.4	4.1	5.7	6.8	8.5	10.2	14.2	17.0	20.4	25.6	30.7	36.8	38.8	46.2	55.4	69.2	80	80	80	80	80	80	80	80
	N.m	0.34	0.41	0.57	0.68	0.85	1.02	1.4	1.7	2.0	2.6	3.1	3.7	3.8	4.6	5.5	6.9	8	8	8	8	8	8	8	8
	lb-in	3.0	3.6	5.0	6.0	7.5	9.0	13	15	18	23	27	32	34	41	49	61	71	71	71	71	71	71	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.

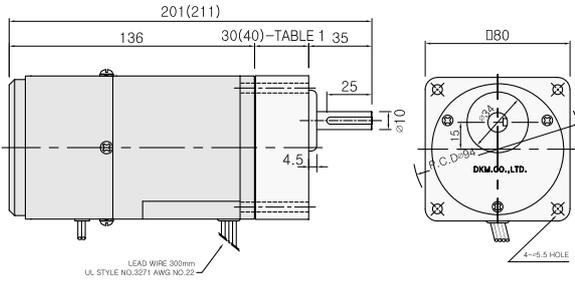
* The actual speed is 2~20% less than the displayed value, depending on the size of the load.

* If more slow speed is needed than above value, use decimal gear head with a gear ratio of 10:1 could be used between general gear head 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).

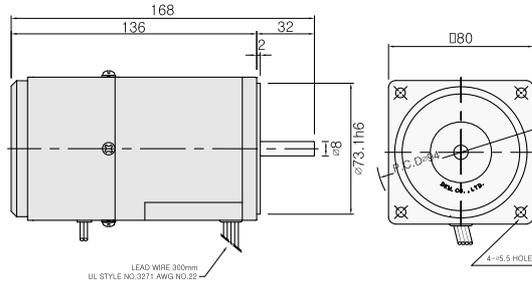
Dimension

LEAD WIRE TYPE

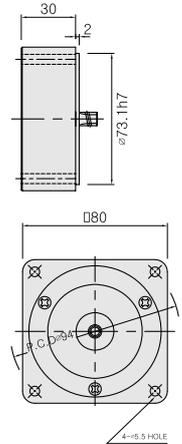
- ◆ GEARED MOTOR * MOTOR MODEL : 8BDG□-15G (NO FAN)
* HEAD MODEL : 8GB□3BMH - 8GB□360BMH



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

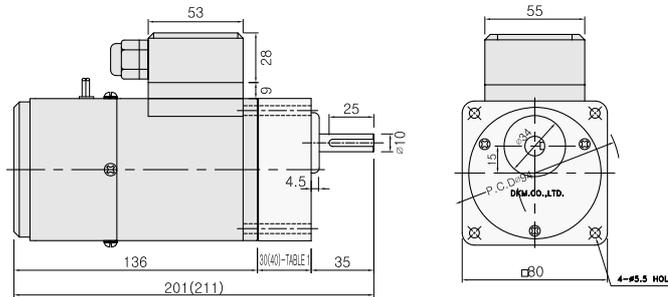


- ◆ INTER-DECIMAL GEARHEAD * MODEL : 8XD10M□



TERMINAL BOX TYPE

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



MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	11
8BDG□-15G	
ROUND TYPE	32 ★
8BDS□-15	
D-CUT TYPE	32
8BDD□-15	
KEY TYPE	32
8BDK□-15	

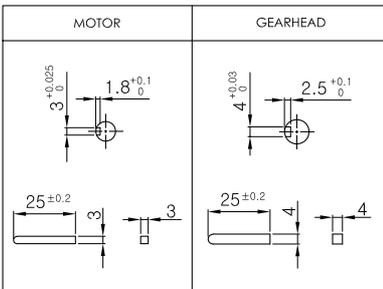
30(40)-TABLE 1

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

GEARHEAD OUTPUT

MODEL	SHAFT
ROUND TYPE	35
8GBS38MH ~8GBS360BMH	
D-CUT TYPE	35
8GBD38MH ~8GBD360BMH	
KEY TYPE	35 ★
8GBK38MH ~8GBK360BMH	

KEY SPEC



WEIGHT

PART	WEIGHT(Kg)	
MOTOR	2.0	
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 90.

ELECTROMAGNETIC BRAKE MOTOR

(Power off activated type)

25W

□80mm(3.18in.)



LEAD WIRE TYPE MOTOR



TERMINAL BOX TYPE MOTOR

Motor Specification - 30min. Rating



Model		Starting Time	Output	Voltage	Freq.	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor					
Lead Wire Type	Terminal Box Type									HP	W	VAC	Hz	A	gfcM
TP 8BDG(S)A-25G	8BDG(S)A-25G-T	30min		Single Phase 110	60	0.75	1550 155 22	1700 170 9	1500	10	250				
TP 8BDG(S)B-25G	8BDG(S)B-25G-T			Single Phase 115	60										
TP 8BDG(S)C-25G	8BDG(S)C-25G-T	30min		Single Phase 220	50	0.35	1550 155 22	2040 204 29	1300	2.5	400				
TP 8BDG(S)D-25G	8BDG(S)D-25G-T			Single Phase 220	60										
TP 8BDG(S)E-25G	8BDG(S)E-25G-T			Single Phase 230	50										
TP 8BDG(S)F-25G	8BDG(S)F-25G-T			Single Phase 230	60										
TP 8BDG(S)G-25G	8BDG(S)G-25G-T	30min	1/30 25	Three Phase 220	50	0.25	1500 150 21	1800 180 25	1300						
TP 8BDG(S)H-25G	8BDG(S)H-25G-T			Three Phase 220	60										
TP 8BDG(S)I-25G	8BDG(S)I-25G-T			Three Phase 230	50										
TP 8BDG(S)J-25G	8BDG(S)J-25G-T			Three Phase 230	60										
TP 8BDG(S)K-25G	8BDG(S)K-25G-T	30min		Three Phase 380	50	0.14	1500 150 21	1800 180 25	1300						
TP 8BDG(S)L-25G	8BDG(S)L-25G-T			Three Phase 380	60										
TP 8BDG(S)M-25G	8BDG(S)M-25G-T	30min		Three Phase 400	50	0.11	1500 150 21	1800 180 25	1550						
TP 8BDG(S)N-25G	8BDG(S)N-25G-T			Three Phase 440	60										
TP 8BDG(S)O-25G	8BDG(S)O-25G-T			Three Phase 440	50										

* 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°C could be available.

Permissible Torque When using gearhead

60Hz

Model	speed RPM (r/min)	600	500	360	300	240	200	144	120	100	72	60	50	45	36	30	24	20	18	15	12	10	7	6	5	
8RDG□-25G	8GBK□BMH	kgf cm	4.4	5.2	7.3	8.7	10.9	13.1	18.2	21.9	26.2	32.9	39.4	47.3	52.6	59.4	71.3	80	80	80	80	80	80	80	80	80
		N.m	0.44	0.52	0.73	0.87	1.09	1.31	1.82	2.19	2.62	3.29	3.9	4.7	5.2	5.9	7.1	8	8	8	8	8	8	8	8	8
		lb-in	3.9	4.6	6.4	7.7	9.6	12	16	19	23	29	35	42	46	52	63	71	71	71	71	71	71	71	71	71

50Hz

Model	speed RPM (r/min)	500	417	300	250	200	167	120	100	83	60	50	42	38	30	25	20	17	15	13	10	8	6	5	4	
8RDG□-25G	8GBK□BMH	kgf cm	5.3	6.4	8.9	10.7	13.4	16.0	22.3	26.7	32.1	40.2	48.2	57.8	64.2	72.6	80	80	80	80	80	80	80	80	80	80
		N.m	0.53	0.64	0.89	1.07	1.34	1.60	2.23	2.67	3.21	4.02	4.8	5.8	6.4	7.3	8	8	8	8	8	8	8	8	8	8
		lb-in	4.7	5.7	7.9	9.4	11.8	14	20	24	28	35	43	51	57	64	71	71	71	71	71	71	71	71	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.

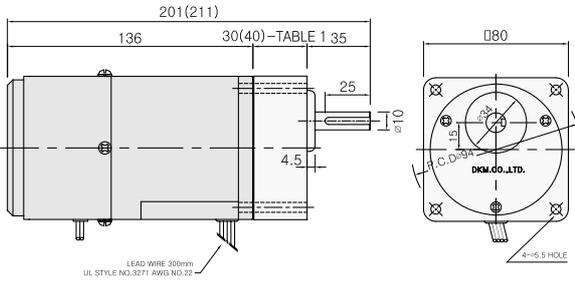
* The actual speed is 2~20% less than the displayed value, depending on the size of the load.

* 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).

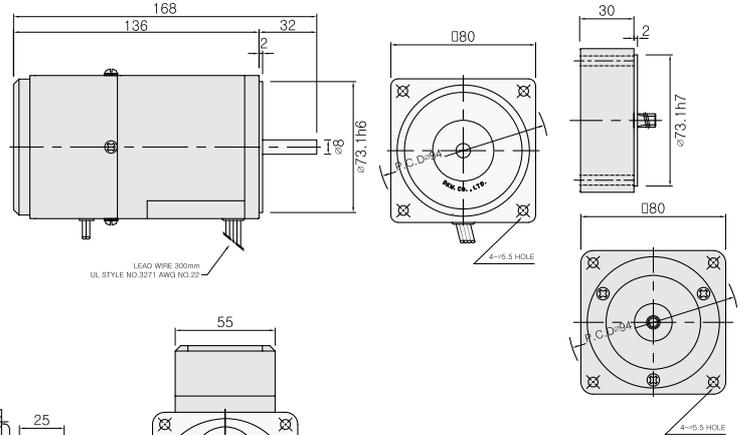
Dimension

LEAD WIRE TYPE

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



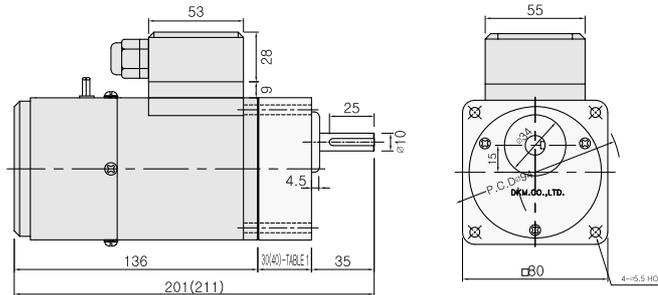
- ◆ MOTOR ONLY * MOTOR MODEL : 8BD□□-25 (NO FAN)



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

TERMINAL BOX TYPE

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



MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	
8BDG□-25G	
ROUND TYPE	
8BDS□-25	
D-CUT TYPE	
8BDD□-25	
KEY TYPE	
8BDK□-25	

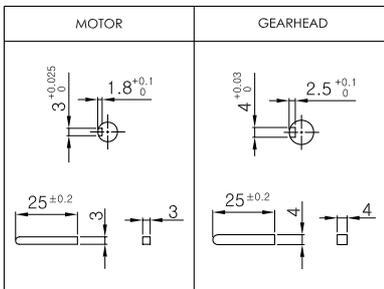
30(40)-TABLE 1

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	
8GBK360BMH	

KEY SPEC



WEIGHT

PART	WEIGHT(Kg)	
MOTOR	2.0	
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 90.

ELECTROMAGNETIC BRAKE MOTOR

(Power off activated type)

40W

□90mm(3.54in.)



LEAD WIRE TYPE MOTOR



TERMINAL BOX TYPE MOTOR

Motor Specification - 30min. Rating (Continuous : F2 fan)



Model		Starting Time	Output	Voltage	Freq.	Current	Starting Torque			Rated Torque			Rated Speed		Capacitor		
Lead Wire Type	Terminal Box Type						HP	W	VAC	Hz	A	gfcM	mN.m	oz-in	gfcM	mN.m	oz-in
TP 9BDG(D)A-40G	9BDG(D)A-40G-T	30min	1/19	40	Single Phase 110	60	1.0	1600	160	23	2600	260	37	1550	16	250	
TP 9BDG(D)B-40G	9BDG(D)B-40G-T				Single Phase 115	60					2600	260	37				
TP 9BDG(D)C-40G	9BDG(D)C-40G-T	30min	1/19	40	Single Phase 220	50	0.5	2000	200	28	3120	312	44	1300	4.0	400	
TP 9BDG(D)D-40G	9BDG(D)D-40G-T				Single Phase 220	60					2600	260	37				
TP 9BDG(D)E-40G	9BDG(D)E-40G-T				Single Phase 230	50					3120	312	44				1300
TP 9BDG(D)F-40G	9BDG(D)F-40G-T	30min	1/19	40	Single Phase 230	60	0.42	2600	260	37	2600	260	37	1550	-	-	
TP 9BDG(D)G-40G	9BDG(D)G-40G-T				Three phase 220	50					3120	312	44				1300
TP 9BDG(D)H-40G	9BDG(D)H-40G-T				Three phase 220	60					2600	260	37				1550
TP 9BDG(D)I-40G	9BDG(D)I-40G-T				Three phase 230	50					3120	312	44				1300
TP 9BDG(D)J-40G	9BDG(D)J-40G-T	30min	1/19	40	Three phase 230	60	0.22	2600	260	37	2600	260	37	1550	-	-	
TP 9BDG(D)K-40G	9BDG(D)K-40G-T				Three phase 380	50					3120	312	44				1300
TP 9BDG(D)L-40G	9BDG(D)L-40G-T	30min	1/19	40	Three phase 380	60	0.18	2600	260	37	2600	260	37	1550	-	-	
TP 9BDG(D)M-40G	9BDG(D)M-40G-T				Three phase 440	50					3120	312	44				1300
TP 9BDG(D)N-40G	9BDG(D)N-40G-T	30min	1/19	40	Three phase 440	50	0.18	2600	260	37	3120	312	44	1300	-	-	
TP 9BDG(D)O-40G	9BDG(D)O-40G-T				Three phase 440	60					2600	260	37				1550

* 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°C could be available.

Permissible Torque When using gearhead

60Hz

Model	speed RPM (r/min)	900	600	500	360	300	240	200	180	144	120	100	72	60	50	45	36	30	24	20	18	15	12	10	
Motor/Gearhead	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	
9BDG□-40G / 9GBK□MH	kgf cm	5.0	6.8	8.2	11.3	13.6	17.0	20.4	22.7	28.4	34.0	40.8	51.1	61.3	73.6	81.5	100	100	100	100	100	100	100	100	100
	N.m	0.50	0.68	0.82	1.13	1.36	1.70	2.04	2.27	2.84	3.40	4.08	5.11	6.1	7.4	8.2	10	10	10	10	10	10	10	10	10
	lb-in	4.4	6.0	7.2	10.0	12.0	15.0	18.0	20.0	25.1	30.0	36.0	45.1	54.1	65.0	72.0	88	88	88	88	88	88	88	88	88

50Hz

Model	speed RPM (r/min)	750	500	417	300	250	200	167	150	120	100	83	60	50	42	38	30	25	20	17	15	13	10	8	
Motor/Gearhead	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	
9BDG□-40G / 9GBK□MH	kgf cm	6.0	8.3	9.9	13.8	16.5	20.7	24.8	27.5	34.4	41.3	49.6	62.1	74.5	89.4	99.1	100	100	100	100	100	100	100	100	100
	N.m	0.60	0.83	0.99	1.38	1.65	2.07	2.48	2.75	3.44	4.13	4.96	6.21	7.5	8.9	9.9	10	10	10	10	10	10	10	10	10
	lb-in	5.3	7.3	8.7	12.2	14.6	18.3	21.9	24.3	30.4	36.5	43.8	54.8	65.8	78.9	87.5	88	88	88	88	88	88	88	88	88

* 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.

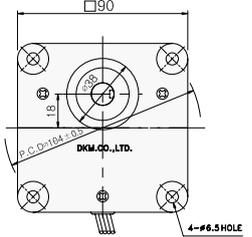
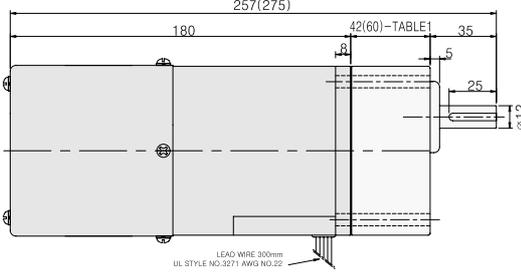
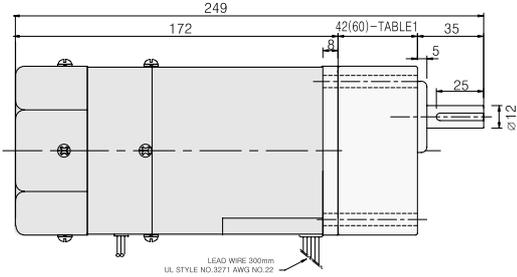
* If more slow speed is needed than above value, use decimal gearhead with a gear ratio of 10:1 could be used between general gearhead and motor. Even in this case, just speed will be reduced without increase in permissible torque; the maximum permissible torque is 100kgfcm (10N.m, 88lb-in).

Dimension

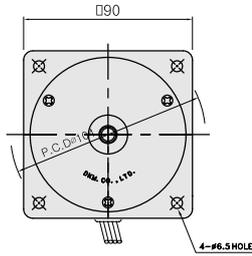
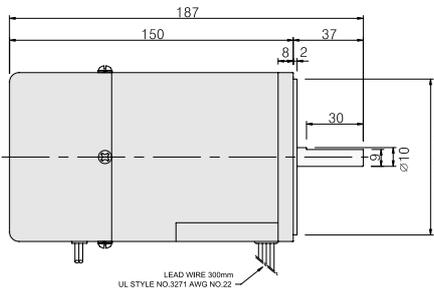
LEAD WIRE TYPE

◆ GEARED MOTOR * MOTOR MODEL : 9BDG□-40FG (GENERAL FAN)
* HEAD MODEL : 9GB□3MH - 9GB□180MH

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

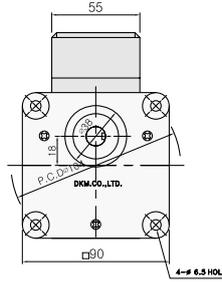
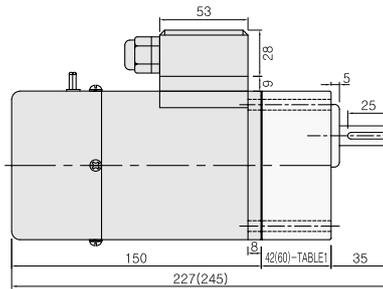


◆ MOTOR ONLY * MOTOR MODEL : 9BD□□ - 40 (NO FAN)



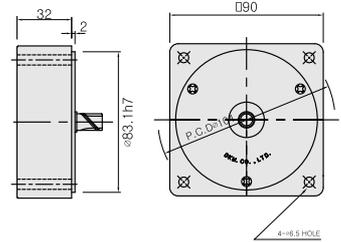
TERMINAL BOX TYPE

* MOTOR MODEL : 9BDG□-40G-T (NO FAN)



◆ INTER-DECIMAL GEARHEAD

* MODEL : 9XD10M□



* Note : There are 3 kinds of fan type (No Fan / General Fan / Powerful Fan).
Customer can choose fan type according to wanted rating time.

MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	17.5
9BDG□-40G	
ROUND TYPE	37
9BDS□-40	
D-CUT TYPE	37
9BDD□-40	
KEY TYPE	37
9BDK□-40	

42(60)-TABLE1

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

GEARHEAD OUTPUT

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

KEY SPEC

MOTOR	GEARHEAD

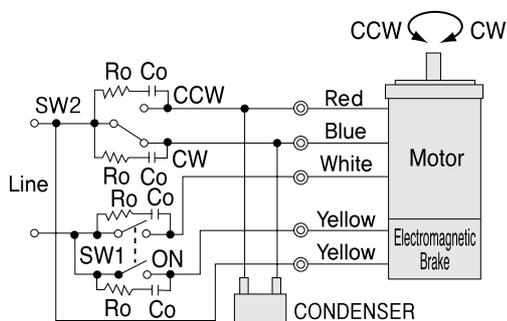
WEIGHT

PART	WEIGHT(Kg)	
MOTOR	3.0	
DECIMAL GEARHEAD	0.5	
GEAR HEAD	9GB□3MH - 9GB□15MH	0.67
	9GB□18MH - 9GB□30MH	0.96
	9GB□36MH - 9GB□180MH	1.07

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

■ Connection Diagrams

Single Phase



SW1 operates both motor and electromagnetic brake action. The motor will rotate when SW1 is switched simultaneously to ON (short circuit). When SW1 is switched simultaneously with the electromagnetic brake and holds the load.

(To release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).)

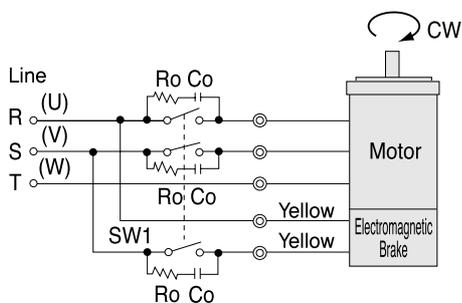
Direction of Rotation

For CW direction, flip SW2 to CW.

For CCW direction, flip SW2 to CCW.

Switch	Specifications		Note
	Single phase 110VAC, Single phase 115VAC Input	Single phase 220VAC, Single phase 230VAC Input	
SW1	125 VAC 3A minimum (inductive Load)	250 VAC 1.5A minimum (inductive Load)	Switched simultaneously
SW2			-

Three Phase



SW1 operates both motor and electromagnetic brake action. The motor will rotate when SW1 is switched simultaneously to ON (short circuit). When SW1 is switched simultaneously with the electromagnetic brake and holds the load.

(To release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).)

Direction of Rotation

To rotate the motor in a CCW direction, change any two connections between U, V and W.

Switch	Specifications	Note
SW1	250 VAC 1.5A minimum (inductive Load)	Switched simultaneously

- The direction of motor rotation is as viewed from the shaft end of the motor.
- CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Connection diagrams are also valid for the equivalent round shaft motors.
- Ro and Co indicates surge absorber circuit. [Ro=5~200 Ω , Co=0.1~0.2μF , 200WV (400WV)]

ELECTROMAGNETIC BRAKE MOTOR

(Power off activated type)

60W

□90mm(3.54in.)



LEAD WIRE TYPE MOTOR



TERMINAL BOX TYPE MOTOR

Motor Specification - 30min. Rating (Continuous : F2 fan)



Model		Starting Time	Output	Voltage	Freq.	Current	Starting Torque			Rated Torque			Rated Speed	Capacitor	
Lead Wire Type	Terminal Box Type						HP	W	VAC	Hz	A	gfcM		mN.m	oz-in
9BDG□-60P : Pinion Shaft Type	9BDD□-60 : D-Cut Shaft Type	30min	1/12 60	Single Phase 110	60	1.2	3000	300	42	3800	380	37	1550	20	250
TP 9BDG(D)A-60P	9BDG(D)A-60P-T														
TP 9BDG(D)B-60P	9BDG(D)B-60P-T	30min	1/12 60	Single Phase 115	60	0.6	3000	300	42	4560	456	65	1300	5.0	400
TP 9BDG(D)C-60P	9BDG(D)C-60P-T														
TP 9BDG(D)D-60P	9BDG(D)D-60P-T	30min	1/12 60	Single Phase 220	50	0.6	5000	500	71	4560	456	65	1300	-	-
TP 9BDG(D)E-60P	9BDG(D)E-60P-T														
TP 9BDG(D)F-60P	9BDG(D)F-60P-T	30min	1/12 60	Single Phase 220	60	0.38	5000	500	71	4560	456	65	1300	-	-
TP 9BDG(D)G-60P	9BDG(D)G-60P-T														
TP 9BDG(D)H-60P	9BDG(D)H-60P-T	30min	1/12 60	Single Phase 230	50	0.27	5000	500	71	4560	456	65	1300	-	-
TP 9BDG(D)I-60P	9BDG(D)I-60P-T														
TP 9BDG(D)J-60P	9BDG(D)J-60P-T	30min	1/12 60	Single Phase 230	60	0.27	5000	500	71	4560	456	65	1300	-	-
TP 9BDG(D)K-60P	9BDG(D)K-60P-T														
TP 9BDG(D)L-60P	9BDG(D)L-60P-T	30min	1/12 60	Three phase 220	50	0.27	5000	500	71	4560	456	65	1300	-	-
TP 9BDG(D)M-60P	9BDG(D)M-60P-T														
TP 9BDG(D)N-60P	9BDG(D)N-60P-T	30min	1/12 60	Three phase 220	60	0.27	5000	500	71	4560	456	65	1300	-	-
TP 9BDG(D)O-60P	9BDG(D)O-60P-T														

* 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

60Hz

Model	speed RPM (r/min)	900	600	500	360	300	240	200	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	
Motor/Gearhead	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	
9BDG□-60FP	9PBK□BH 9PFK□BH	kgf cm	7.5	9.7	11.7	16.2	19.4	24.3	29.2	36.5	43.8	52.6	59.0	66.0	79.2	95	106	132	158	177	200	200	200	200	200
		N.m	0.8	1.0	1.2	1.6	1.9	2.4	2.9	3.7	4.4	5.3	5.9	6.6	7.9	9.5	10.6	13.2	15.8	17.7	20	20	20	20	20
		lb-in	6.6	8.6	10	14	17	21	26	32	39	46	52	58	70	84	94	117	140	156	177	177	177	177	177

50Hz

Model	speed RPM (r/min)	750	500	417	300	250	200	167	120	100	83	75	60	50	42	38	30	25	20	17	15	13	10	8	
Motor/Gearhead	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	
9BDG□-60FP	9PBK□BH 9PFK□BH	kgf cm	10.0	12.2	14.6	20.3	24	30	37	46	55	66	72	83	99	119	132	165	198	200	200	200	200	200	200
		N.m	1.0	1.2	1.5	2.0	2.4	3.0	3.7	4.6	5.5	6.6	7.2	8.3	9.9	11.9	13.2	16.5	20	20	20	20	20	20	20
		lb-in	8.8	10.8	12.9	17.9	21.5	26.8	32.2	40.3	48.4	58.0	63.6	72.8	87	105	117	146	175	177	177	177	177	177	177

* 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 (20N.m, 177lb-in).

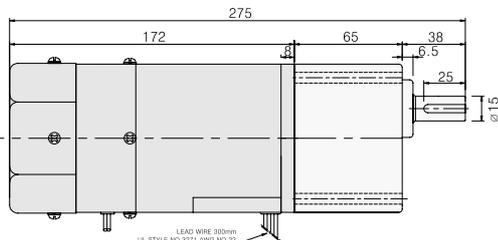
Dimension

LEAD WIRE TYPE

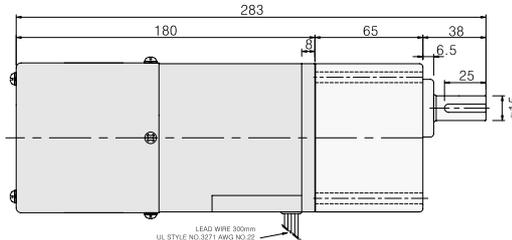
GEARED MOTOR

* MOTOR MODEL : 9BDG□-60FP (GENERAL FAN)

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

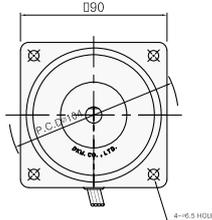
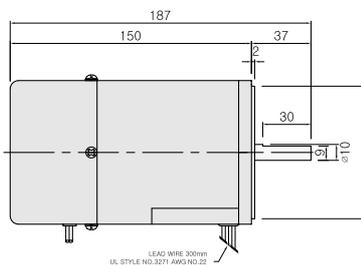


* MOTOR MODEL : 9BDG□-60F2P (POWERFUL FAN)

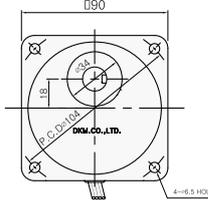


MOTOR ONLY

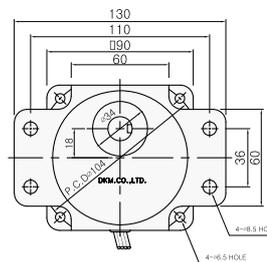
* MOTOR MODEL : 9BD□□-60 (NO FAN)



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

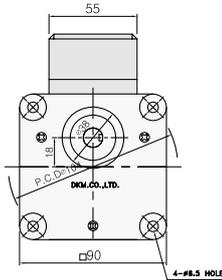
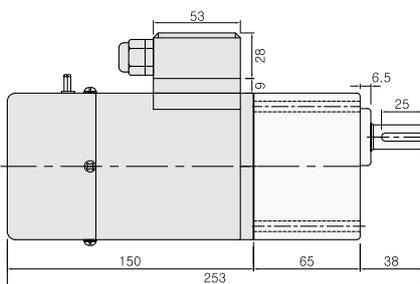


* GEARHEAD MODEL : 9PF□3BH - 9PF□180BH



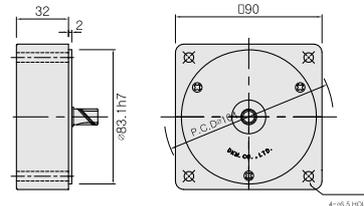
TERMINAL BOX TYPE

* MOTOR MODEL : 9BDG□-60P-T (NO FAN)



INTER-DECIMAL GEARHEAD

* MODEL : 9XD10M□



* Note : There are 3 kinds of fan type (No Fan / General Fan / Powerful Fan).
Customer can choose fan type according to wanted rating time.

MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	
9BDG□-60□P	
ROUND TYPE	
9BDS□-60□	
D-CUT TYPE	
9BDD□-60□	
KEY TYPE	
9BDK□-60□	

GEARHEAD OUTPUT

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

WEIGHT

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

KEY SPEC

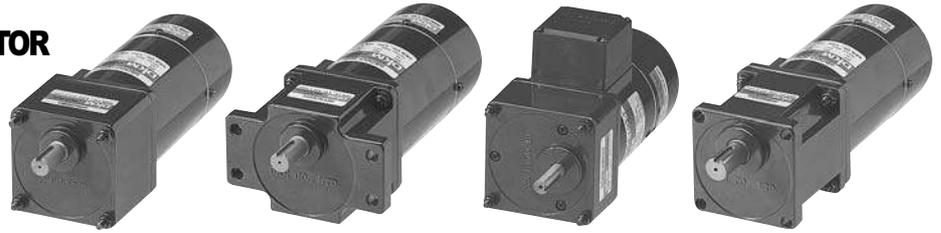
MOTOR	GEARHEAD

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

ELECTROMAGNETIC BRAKE MOTOR
(Power off activated type)

90W

□90mm(3.54in.)



LEAD WIRE TYPE MOTOR LEAD WIRE TYPE MOTOR TERMINAL BOX TYPE MOTOR LEAD WIRE TYPE MOTOR

Motor Specification - 30min. Rating (Continuous : F2 fan)



Model 9BDG□-90P(H) : Pinion Shaft Type 9BDD□-90 : D-Cut Shaft Type		Starting Time	Output		Voltage	Freq.	Current	Starting Torque			Rated Torque			Rated Speed	Capacitor	
Lead Wire Type	Terminal Box Type		HP	W	VAC	Hz	A	gfcm	mN.m	oz-in	gfcm	mN.m	oz-in	r/min	μF	VAC
TP 9BDG(D)A-90P(H)	9BDG(D)A-90P(H)-T	30min	1/8	90	Single Phase 110	60	20.	4500	450	67	5700	570	81	1550	25	250
TP 9BDG(D)B-90P(H)	9BDG(D)B-90P(H)-T				Single Phase 115	60										
TP 9BDG(D)C-90P(H)	9BDG(D)C-90P(H)-T	30min	1/8	90	Single Phase 220	50	1.0	4500	450	64	6840	684	97	1300	6.0	400
TP 9BDG(D)D-90P(H)	9BDG(D)D-90P(H)-T				Single Phase 220	60										
TP 9BDG(D)E-90P(H)	9BDG(D)E-90P(H)-T				Single Phase 230	50										
TP 9BDG(D)F-90P(H)	9BDG(D)F-90P(H)-T				Single Phase 230	60										
TP 9BDG(D)G-90P(H)	9BDG(D)G-90P(H)-T	30min	1/8	90	Three phase 220	50	0.8	7000	700	99	6840	684	97	1300	-	-
TP 9BDG(D)H-90P(H)	9BDG(D)H-90P(H)-T				Three phase 220	60										
TP 9BDG(D)I-90P(H)	9BDG(D)I-90P(H)-T				Three phase 230	50										
TP 9BDG(D)J-90P(H)	9BDG(D)J-90P(H)-T	30min	1/8	90	Three phase 230	60	0.44	7000	700	99	6840	684	97	1300	-	-
TP 9BDG(D)K-90P(H)	9BDG(D)K-90P(H)-T				Three phase 380	50										
TP 9BDG(D)L-90P(H)	9BDG(D)L-90P(H)-T	30min	1/8	90	Three phase 380	60	0.36	7000	700	99	6840	684	97	1300	-	-
TP 9BDG(D)M-90P(H)	9BDG(D)M-90P(H)-T				Three phase 440	50										
TP 9BDG(D)N-90P(H)	9BDG(D)N-90P(H)-T				Three phase 440	50										
TP 9BDG(D)O-90P(H)	9BDG(D)O-90P(H)-T	30min	1/8	90	Three phase 440	60	0.36	7000	700	99	6840	684	97	1300	-	-

* 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 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. By attaching F2 FAN additionally, temperature reducing of over 10°C could be available.

Permissible Torque When using gearhead

60Hz

Model	speed RPM (r/min)	900	600	500	360	300	240	200	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	
Motor/Gearhead	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	
9BDG□-90FP	9PBK□BH	kgf cm	12	14.6	17.5	24.3	29.2	36.5	43.7	54.8	65.7	78.8	88.0	99	119	143	158	198	200	200	200	200	200	200	200
	9PFK□BH	N.m	1.2	1.5	1.8	2.4	2.9	3.7	4.4	5.5	6.6	7.9	8.8	9.9	12	14	16	20	20	20	20	20	20	20	20
9BDG□-90FH	9HBK□BH	kgf cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	198	232	259	300	300	300	300	
	9HBK□BH	N.m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	175	205	229	265	265	265	265	

50Hz

Model	speed RPM (r/min)	750	500	417	300	250	200	167	120	100	83	75	60	50	42	38	30	25	20	17	15	13	10	8
Motor/Gearhead	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
9BDG□-90FP	9PBK□BH	kgf cm	15	18.2	21.9	30.4	36.5	45.6	54.7	68.4	82.1	98.6	110	124	150	180	199	200	200	200	200	200	200	200
	9PFK□BH	N.m	1.5	1.8	2.2	3.0	3.7	4.6	5.5	6.8	8.2	9.9	11	12	15	18	20	20	20	20	20	20	20	20
9BDG□-90FH	9HBK□BH	kgf cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	241	289	300	300	300	300	300
	9HBK□BH	N.m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	213	255	265	265	265	265	265

* 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.

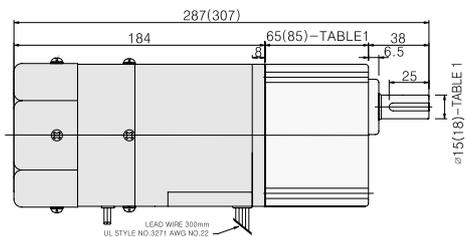
* If more slow speed is needed than above value, use decimal gearhead with a gear ratio of 10:1 could be used between general gearhead and motor. Even in this case, just speed will be reduced without increase in permissible torque; the maximum permissible torque is 200kgfcm (P type) / 300kgfcm (H type).

Dimension

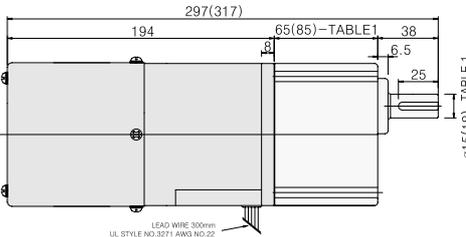
LEAD WIRE TYPE

GEARED MOTOR

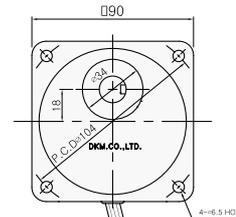
- * MOTOR MODEL : 9BDG□-90FP(H) (GENERAL FAN)
- * GEARHEAD MODEL : 9PB□3BH - 9PB□180BH



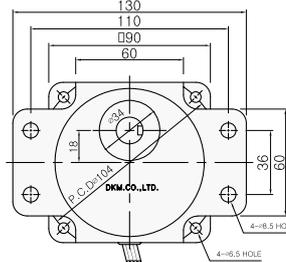
- * MOTOR MODEL : 9BDG□-90F2P(H) (POWERFUL FAN)
- * GEARHEAD MODEL : 9PB□3BH - 9PB□180BH



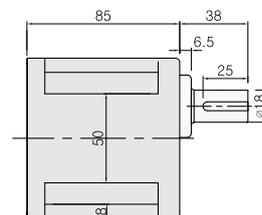
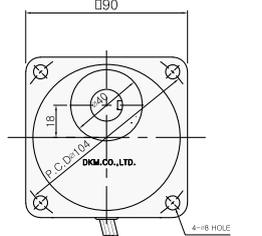
* GEARHEAD MODEL : 9PB □ 3BH - 9PB □ 180BH



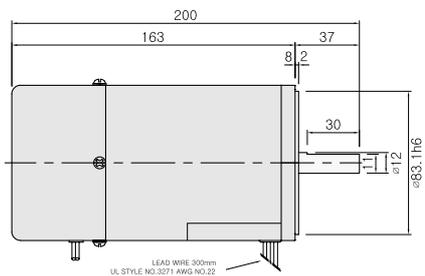
* GEARHEAD MODEL : 9PF □ 3BH - 9PF □ 180BH



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

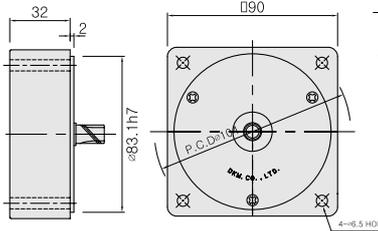


MOTOR ONLY * MOTOR MODEL : 9BD□□-90 (NO FAN)



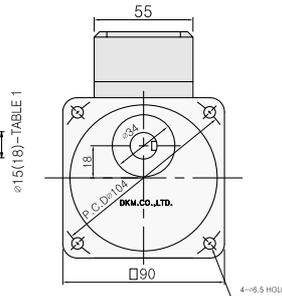
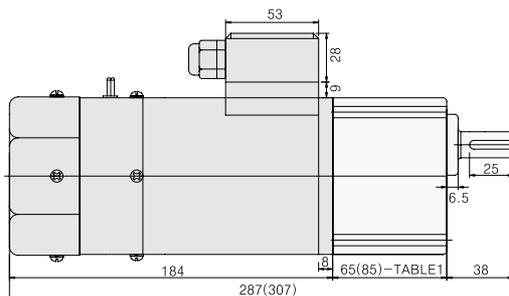
INTER-DECIMAL GEARHEAD

* MODEL : 9XD10M□



TERMINAL BOX TYPE

- * MOTOR MODEL : 9BDG□-90FP(H)-T (GENERAL FAN)



* Note : There are 3 kinds of fan type (No Fan / General Fan / Powerful Fan). Customer can choose fan type according to wanted rating time.

65(85)-TABLE1

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

KEY SPEC

MOTOR	GEARHEAD

WEIGHT

PART	WEIGHT(Kg)		
MOTOR	3.5		
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		
D-CUT TYPE		
KEY TYPE		
9P(H)□K3BH - 9P(H)□K180BH		

MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	18.5(22)
9BDG□-90 P(H)	
ROUND TYPE	
9BDS□-90□	
D-CUT TYPE	
9BDD□-90□	
KEY TYPE	
9BDK□-90□	

* 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 99.

ELECTROMAGNETIC BRAKE MOTOR
(Power off activated type)

120W

□90mm(3.54in.)



LEAD WIRE TYPE MOTOR LEAD WIRE TYPE MOTOR TERMINAL BOX TYPE MOTOR LEAD WIRE TYPE MOTOR

Motor Specification - 30min. Rating (Continuous : F2 fan)



Model		Starting Time	Output		Voltage	Freq.	Current	Starting Torque			Rated Torque			Rated Speed	Capacitor	
9BDG□-120P(H) : Pinion Shaft Type	9BDG□-120 : D-Cut Shaft Type		HP	W	VAC	Hz	A	gfcm	mN.m	oz-in	gfcm	mN.m	oz-in	r/min	μF	VAC
Lead Wire Type	Terminal Box Type															
TP 9BDG(D)A-120P(H)	9BDG(D)A-120P(H)-T	30min			Single Phase 110	60	2.0	5900	590	83	7600	760	108	1550	30	250
TP 9BDG(D)B-120P(H)	9BDG(D)B-120P(H)-T				Single Phase 115	60										
TP 9BDG(D)C-120P(H)	9BDG(D)C-120P(H)-T	30min			Single Phase 220	50	1.0	5900	590	83	9120	912	129	1300	6.5	400
TP 9BDG(D)D-120P(H)	9BDG(D)D-120P(H)-T				Single Phase 220	60										
TP 9BDG(D)E-120P(H)	9BDG(D)E-120P(H)-T				Single Phase 230	50										
TP 9BDG(D)F-120P(H)	9BDG(D)F-120P(H)-T				Single Phase 230	60										
TP 9BDG(D)G-120P(H)	9BDG(D)G-120P(H)-T	30min	1/6	120	Three phase 220	50	0.8	9300	930	132	9120	912	129	1300	-	-
TP 9BDG(D)H-120P(H)	9BDG(D)H-120P(H)-T				Three phase 220	60										
TP 9BDG(D)I-120P(H)	9BDG(D)I-120P(H)-T				Three phase 230	50										
TP 9BDG(D)J-120P(H)	9BDG(D)J-120P(H)-T				Three phase 230	60										
TP 9BDG(D)K-120P(H)	9BDG(D)K-120P(H)-T	30min			Three phase 380	50	0.55	9300	930	132	9120	912	129	1300	-	-
TP 9BDG(D)L-120P(H)	9BDG(D)L-120P(H)-T				Three phase 380	60										
TP 9BDG(D)M-120P(H)	9BDG(D)M-120P(H)-T	30min			Three phase 440	50	0.54	9300	930	132	9120	912	129	1300	-	-
TP 9BDG(D)N-120P(H)	9BDG(D)N-120P(H)-T				Three phase 440	50										
TP 9BDG(D)O-120P(H)	9BDG(D)O-120P(H)-T				Three phase 440	60										

* 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

60Hz

Model	speed RPM (r/min)	900	600	500	360	300	240	200	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	
Motor/Gearhead	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	
9BDG□-120FP	9PBK□BH	kgf cm	17.5	18.7	22.5	31.2	37.4	46.8	56.1	70.2	84.2	101	114	126	152	182	200	200	200	200	200	200	200	200	200
	9PFK□BH	N.m	1.8	1.9	2.3	3.1	3.7	4.7	5.6	7.0	8.4	10.1	11.4	12.6	15	18	20	20	20	20	20	20	20	20	20
9BDG□-120FH	9HBK□BH	kgf cm	-	20.6	24.8	-	41.1	-	61.7	77.2	93	111	-	139	167	200	-	220	240	300	300	300	300	300	300
		N.m	-	2.1	2.5	-	4.1	-	6.2	7.7	9.3	11.1	-	13.9	16.7	20.0	-	24	30	30	30	30	30	30	30
		lb-in	-	18.2	21.9	-	36.3	-	54.5	68.2	81.8	98.1	-	122	148	177	-	194	212	265	265	265	265	265	265

50Hz

Model	speed RPM (r/min)	750	500	417	300	250	200	167	120	100	83	75	60	50	42	38	30	25	20	17	15	13	10	8	
Motor/Gearhead	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	
9BDG□-120FP	9PBK□BH	kgf cm	22.0	23.2	27.8	38.7	46.4	58.0	69.6	87.0	104	125	140	156	188	200	200	200	200	200	200	200	200	200	200
	9PFK□BH	N.m	2.20	2.32	2.78	3.87	4.64	5.80	6.96	8.7	10.4	12.5	14.0	15.6	19	20	20	20	20	20	20	20	20	20	20
9BDG□-120FH	9HBK□BH	kgf cm	-	25.5	30.6	-	51.0	-	76.6	95.7	114	138	-	172	207	220	-	240	260	300	300	300	300	300	300
		N.m	-	2.6	3.1	-	6.1	-	7.7	9.6	11.4	13.8	-	17.2	20.7	22	-	24	26	30	30	30	30	30	30
		lb-in	-	22.5	27.0	-	45.1	-	67.6	84.5	101	121	-	152	183	194	-	212	230	265	265	265	265	265	265

* 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.

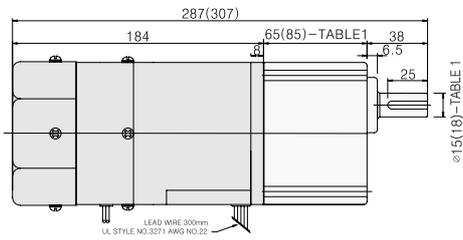
* If more slow speed is needed than above value, use decimal gearhead with a gear ratio of 10:1 could be used between general gearhead and motor. Even in this case, just speed will be reduced without increase in permissible torque; the maximum permissible torque is 200kgfcm (P type) / 300kgfcm (H type).

Dimension

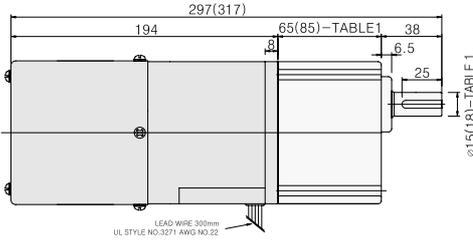
LEAD WIRE TYPE

GEARED MOTOR

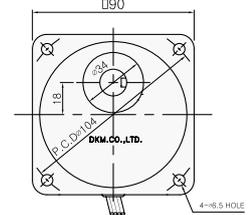
* MOTOR MODEL : 9BDG□-120FP(H) (GENERAL FAN)
 * GEARHEAD MODEL : 9PB□3BH - 9PB□180BH



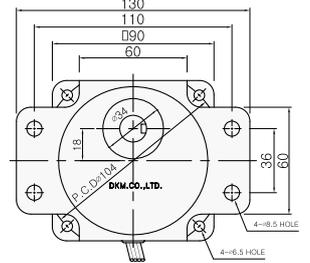
* MOTOR MODEL : 9BDG□-120F2P(H) (POWERFUL FAN)
 * GEARHEAD MODEL : 9PB□3BH - 9PB□180BH



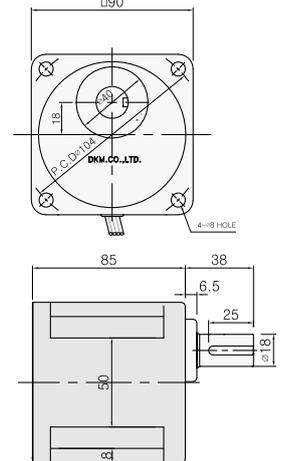
* GEARHEAD MODEL : 9PB□3BH - 9PB□180BH



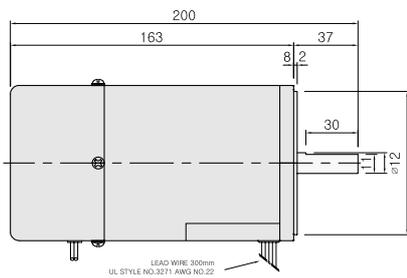
* GEARHEAD MODEL : 9PF□3BH - 9PF□180BH



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

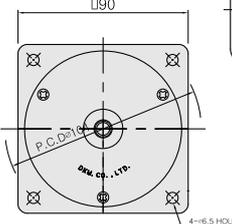
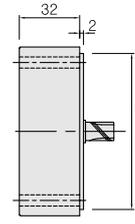
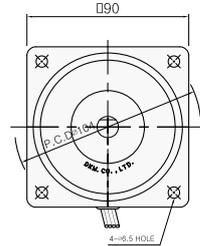


MOTOR ONLY * MOTOR MODEL : 9BD□□-120(NO FAN)



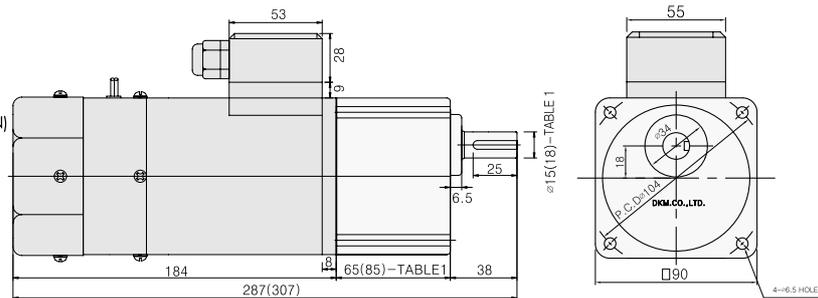
INTER-DECIMAL GEARHEAD

* MODEL : 9XD10M□



TERMINAL BOX TYPE

* MOTOR MODEL : 9BDG□-120FP(H)-T (GENERAL FAN)

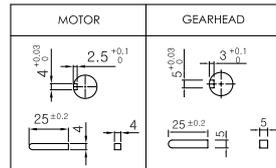


* Note : There are 3 kinds of fan type (No Fan / General Fan / Powerful Fan).
 Customer can choose fan type according to wanted rating time.

65[85]-TABLE 1

SIZE(mm)	GEARHEAD TYPE
65 - ø15	P TYPE GEARHEAD
85 - ø18	H TYPE GEARHEAD

KEY SPEC



WEIGHT

PART	WEIGHT(Kg)		
MOTOR	3.5		
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		
9P(H)□□3BH ~9P(H)□□180BH	38, ø15	38, ø18
D-CUT TYPE		
9P(H)□□D3BH ~9P(H)□□D180BH	38, 25, ø15, 14.±0.1	38, 25, ø18, 17.±0.1
KEY TYPE		
9P(H)□□K3BH ~9P(H)□□K180BH	38, 25, ø15	38, 25, ø18

MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	
9BDG□-120□P(H)	18.5(22) * 18.5 : P TYPE 22 : H TYPE
ROUND TYPE	
9BDS□-120□	37, ø12
D-CUT TYPE	
9BDD□-120□	37, 30, ø12
KEY TYPE	
9BDK□-120□	37, 25, ø12

* 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 99.

ELECTROMAGNETIC BRAKE MOTOR
(Power off activated type)

150W

□90mm(3.54in.)



LEAD WIRE TYPE MOTOR LEAD WIRE TYPE MOTOR TERMINAL BOX TYPE MOTOR LEAD WIRE TYPE MOTOR

Motor Specification - 30min. Rating (Continuous : F2 fan)



Model		Starting Time	Output	Voltage	Freq.	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor		
Lead Wire Type	Terminal Box Type									HP	W	VAC
9BDG□-150P(H) : Pinion Shaft Type 9BDD□-150 : D-Cut Shaft Type		30min	1/5 150	Three phase 220	50	1.2	11400 1140 161	11160 1116 158	1300	-	-	
TP 9BDG(D)G-150P(H)	9BDG(D)G-150P(H)-T			220	60			9300 930 132	1550			
TP 9BDG(D)J-150P(H)	9BDG(D)J-150P(H)-T			220	50			11160 1116 158	1300			
TP 9BDG(D)I-150P(H)	9BDG(D)I-150P(H)-T			230	60			9300 930 132	1550			
TP 9BDG(D)K-150P(H)	9BDG(D)K-150P(H)-T			380	50			11160 1116 158	1300			
TP 9BDG(D)L-150P(H)	9BDG(D)L-150P(H)-T			380	60			9300 930 132	1550			
TP 9BDG(D)M-150P(H)	9BDG(D)M-150P(H)-T	30min	1/5 150	Three phase 400	50	0.66	11400 1140 161	11160 1116 158	1300	-	-	
TP 9BDG(D)N-150P(H)	9BDG(D)N-150P(H)-T			440	50			11160 1116 158	1300			
TP 9BDG(D)O-150P(H)	9BDG(D)O-150P(H)-T			440	60			9300 930 132	1550			

* 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°C could be available.

Permissible Torque When using gearhead

60Hz

Model	speed RPM (r/min)	900	600	500	360	300	240	200	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	
Motor/Gearhead	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	
9BDG□-150FP / 9PBK□BH 9PFBK□BH	kgf cm	19	23.2	27.8	38.7	46.4	58.0	69.6	87	104	125	135	156	188	200	200	200	200	200	200	200	200	200	200	200
	N.m	1.9	2.3	2.8	3.9	4.6	5.8	7.0	8.7	10.4	12.5	13.5	15.6	19	20	20	20	20	20	20	20	20	20	20	20
	lb-in	17	20	25	34	41	51	61	77	92	110	119	138	166	177	177	177	177	177	177	177	177	177	177	177
9BDG□-150FH / 9HBK□BH	kgf cm	-	25.5	30.6	-	51.0	-	76.6	96	114	138	-	172	207	225	-	300	300	300	300	300	300	300	300	300
	N.m	-	2.6	3.1	-	5.1	-	7.7	9.6	11.4	13.8	-	17.2	20.7	23	-	30	30	30	30	30	30	30	30	30
	lb-in	-	23	27	-	45	-	68	85	101	121	-	152	183	199	-	265	265	265	265	265	265	265	265	265

50Hz

Model	speed RPM (r/min)	750	500	417	300	250	200	167	120	100	83	75	60	50	42	38	30	25	20	17	15	13	10	8	
Motor/Gearhead	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	
9BDG□-150FP / 9PBK□BH 9PFBK□BH	kgf cm	22	23.1	27.7	38.5	46.4	58.0	69.6	87	104	125	135	156	188	200	200	200	200	200	200	200	200	200	200	200
	N.m	2.2	2.3	2.8	3.9	4.6	5.8	7.0	8.7	10.4	12.5	13.5	16	19	20	20	20	20	20	20	20	20	20	20	20
	lb-in	19	20	24	34	41	51	61	77	92	110	119	138	166	177	177	177	177	177	177	177	177	177	177	177
9BDG□-150FH / 9HBK□BH	kgf cm	-	25.4	30.5	-	51.0	-	76.6	96	114	138	-	172	207	225	-	300	300	300	300	300	300	300	300	300
	N.m	-	2.5	3.0	-	5.1	-	7.7	9.6	11.4	13.8	-	17	21	23	-	30	30	30	30	30	30	30	30	30
	lb-in	-	22	27	-	45	-	68	85	101	121	-	152	183	199	-	265	265	265	265	265	265	265	265	265

* 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.

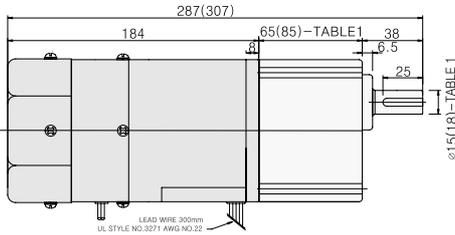
* If more slow speed is needed than above value, use decimal gearhead with a gear ratio of 10:1 could be used between general gearhead and motor. Even in this case, just speed will be reduced without increase in permissible torque; the maximum permissible torque is 200kgfcm (P type) / 300kgfcm (H type).

Dimension

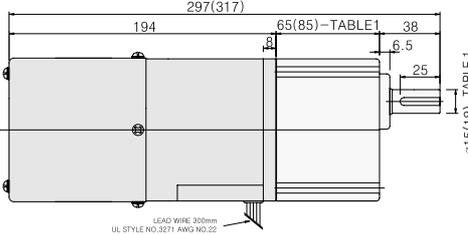
LEAD WIRE TYPE

GEARED MOTOR

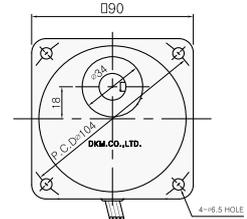
- * MOTOR MODEL : 9BDG□-150FP(H) (GENERAL FAN)
- * GEARHEAD MODEL : 9PB□3BH - 9PB□180BH



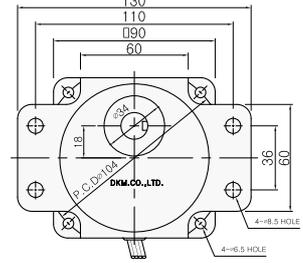
- * MOTOR MODEL : 9BDG□-150F2P(H) (POWERFUL FAN)
- * GEARHEAD MODEL : 9PB□3BH - 9PB□180BH



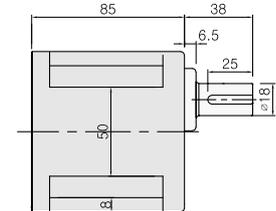
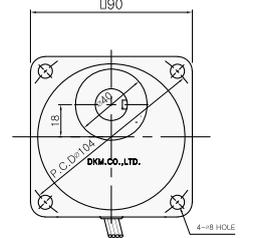
* GEARHEAD MODEL : 9PB□3BH - 9PB□180BH



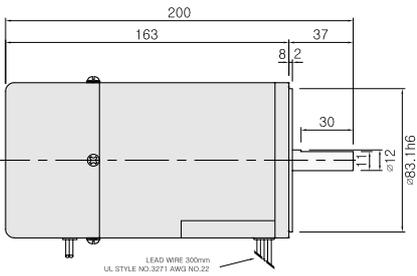
* GEARHEAD MODEL : 9PF□3BH - 9PF□180BH



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

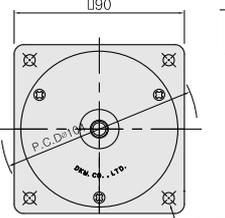
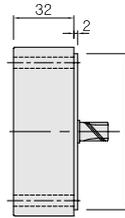
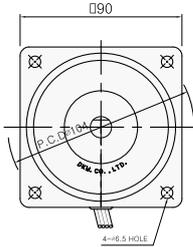


MOTOR ONLY * MOTOR MODEL : 9BD□□-150 (NO FAN)



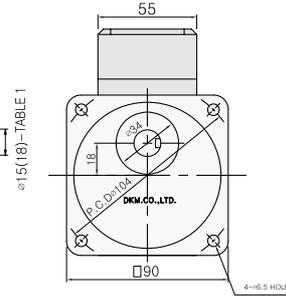
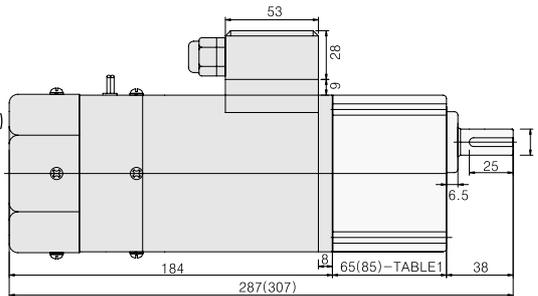
INTER-DECIMAL GEARHEAD

* MODEL : 9XD10M□



TERMINAL BOX TYPE

- * MOTOR MODEL : 9BDG□-150FP(H)-T (GENERAL FAN)



* Note : There are 3 kinds of fan type (No Fan / General Fan / Powerful Fan). Customer can choose fan type according to wanted rating time.

65(85)-TABLE 1

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

KEY SPEC

MOTOR	GEARHEAD

WEIGHT

PART	WEIGHT(Kg)		
MOTOR	3.5		
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		
D-CUT TYPE		
KEY TYPE		

MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	
ROUND TYPE	
D-CUT TYPE	
KEY TYPE	

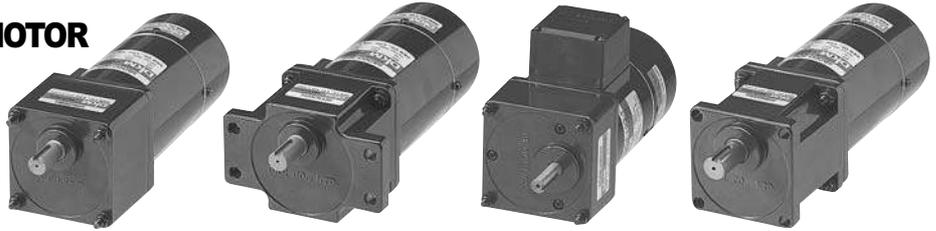
* Note : Above table indicates output shaft dimension made by user's request and ★ indicates the basic dimension in factory shipping.

Connection Diagrams Please refer to page 99.

ELECTROMAGNETIC BRAKE MOTOR
(Power off activated type)

180W

□90mm(3.54in.)



LEAD WIRE TYPE MOTOR LEAD WIRE TYPE MOTOR TERMINAL BOX TYPE MOTOR LEAD WIRE TYPE MOTOR

Motor Specification - 30min. Rating (Continuous : F2 fan)



Model		Starting Time	Output		Voltage	Freq.	Current	Starting Torque			Rated Torque			Rated Speed	Capacitor	
Lead Wire Type	Terminal Box Type		HP	W	VAC	Hz	A	gfcm	mN.m	oz-in	gfcm	mN.m	oz-in	r/min	μF	VAC
9BDG□-180P(H) : Pinion Shaft Type	9BDD□-180 : D-Cut Shaft Type	30min	1/4	180	Single Phase 220	50	1.6	7000	700	99	13560	1356	192	1300	8	400
TP 9BDG(D)C-180P(H)	9BDG(D)C-180P(H)-T				Single Phase 220	60					11300	1130	160	1550		
TP 9BDG(D)D-180P(H)	9BDG(D)D-180P(H)-T				Single Phase 230	50					13560	1356	192	1300		
TP 9BDG(D)E-180P(H)	9BDG(D)E-180P(H)-T				Single Phase 230	60					11300	1130	160	1550		

- * 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

60Hz

Model	speed RPM (r/min)	900	600	500	360	300	240	200	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10
Motor/Gearhead	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
9BDG□-180FP / 9PBK□BH	kgf cm	22	27	32	45	54	67	80	100	120	152	171	189	200	200	200	200	200	200	200	200	200	200	200
	N.m	2.2	2.7	3.2	4.5	5.4	6.7	8.0	10	12	15	17	19	20	20	20	20	20	20	20	20	20	20	20
	lb-in	19	24	29	39	48	60	71	88	106	134	151	167	177	177	177	177	177	177	177	177	177	177	177
9BDG□-180FH / 9HBK□BH	kgf cm	-	28	34	-	54	-	84	105	126	160	-	210	227	273	-	240	300	300	300	300	300	300	300
	N.m	-	2.8	3.4	-	5.7	-	8.4	11	13	16	-	21	23	27	-	24	30	30	30	30	30	30	30
	lb-in	-	25	30	-	50	-	74	93	111	141	-	185	200	241	-	265	265	265	265	265	265	265	265

50Hz

Model	speed RPM (r/min)	750	500	417	300	250	200	167	120	100	83	75	60	50	42	38	30	25	20	17	15	13	10	8
Motor/Gearhead	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
9BDG□-180FP / 9PBK□BH	kgf cm	25	32	39	54	65	81	97	122	145	190	200	200	200	200	200	200	200	200	200	200	200	200	200
	N.m	2.5	3.2	3.9	5.4	6.5	8.1	9.7	12	15	19	20	20	20	20	20	20	20	20	20	20	20	20	20
	lb-in	22	29	34	48	57	71	86	107	128	168	177	177	177	177	177	177	177	177	177	177	177	177	177
9BDGC-180FH / 9HBK□BH	kgf cm	-	34	41	-	68	-	102	128	153	200	-	230	278	300	-	300	300	300	300	300	300	300	300
	N.m	-	3.4	4.1	-	6.8	-	10.2	13	15	20	-	23	28	30	-	30	30	30	30	30	30	30	30
	lb-in	-	30	36	-	60	-	90	113	135	177	-	203	245	265	-	265	265	265	265	265	265	265	265

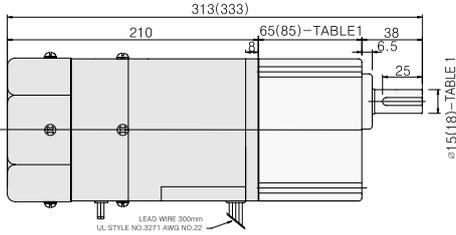
- * Enter the gear ratio in the box (□) within the gearhead model name. A colored background indicates gear shaft rotation in the same direction as the motor shaft ; a white background indicates rotation in the opposite direction.
- * The speed is calculated by dividing the motor' s synchronous speed (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

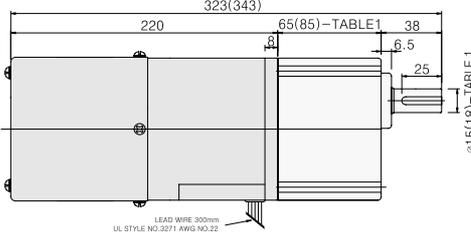
LEAD WIRE TYPE

GEARED MOTOR

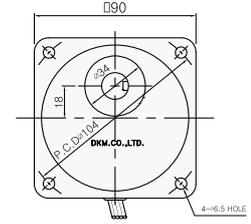
* MOTOR MODEL : 9BDG□-180FP(H) (GENERAL FAN)
 * GEARHEAD MODEL : 9PB□3BH - 9PB□180BH



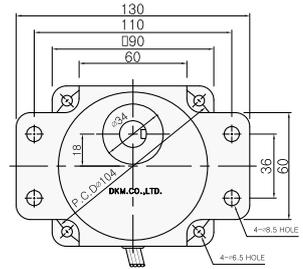
* MOTOR MODEL : 9BDG□-180F2P(H) (POWERFUL FAN)
 * GEARHEAD MODEL : 9PB□3BH - 9PB□180BH



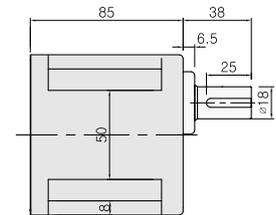
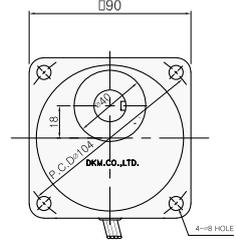
* GEARHEAD MODEL : 9PB□3BH - 9PB□180BH



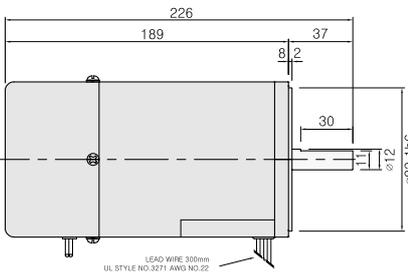
* GEARHEAD MODEL : 9PF□3BH - 9PF□180BH



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

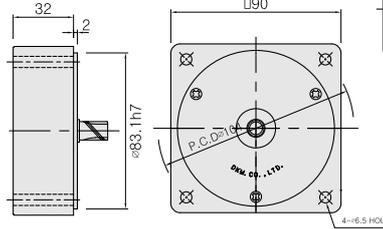


MOTOR ONLY * MOTOR MODEL : 9BD□□-180 (NO FAN)



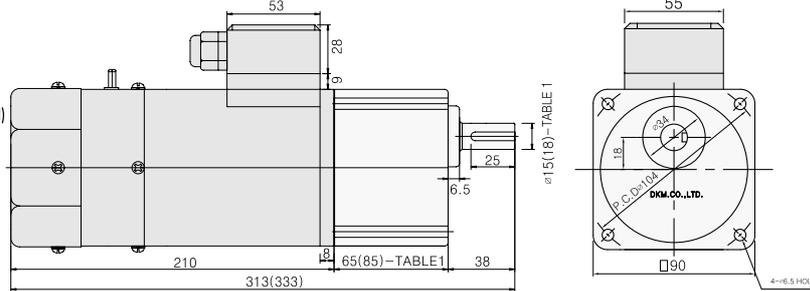
INTER-DECIMAL GEARHEAD

* MODEL : 9XD10M□



TERMINAL BOX TYPE

* MOTOR MODEL : 9BDG□-180FP(H)-T (GENERAL FAN)



* Note : There are 3 kinds of fan type (No Fan / General Fan / Powerful Fan). Customer can choose fan type according to wanted rating time.

65(85)-TABLE 1

SIZE(mm)	GEARHEAD TYPE
65 - $\phi 15$	P TYPE GEARHEAD
85 - $\phi 18$	H TYPE GEARHEAD

KEY SPEC

MOTOR	GEARHEAD

WEIGHT

PART	WEIGHT(Kg)		
MOTOR	4.3		
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		
9P(H)□S3BH - 9P(H)□S180BH		
D-CUT TYPE		
9P(H)□D3BH - 9P(H)□D180BH		
KEY TYPE		
9P(H)□K3BH - 9P(H)□K180BH		

MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	
9BDG□-180□ P(H)	* 18.5 : P TYPE 22 : H TYPE
ROUND TYPE	
9BDS□-180□	
D-CUT TYPE	
9BDD□-180□	
KEY TYPE	
9BDK□-180□	

* 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 99.

ELECTROMAGNETIC BRAKE MOTOR
(Power off activated type)

200W

□90mm(3.54in.)



LEAD WIRE TYPE MOTOR LEAD WIRE TYPE MOTOR TERMINAL BOX TYPE MOTOR LEAD WIRE TYPE MOTOR

Motor Specification - 30min. Rating (Continuous : F2 fan)



Model		Starting Time	Output	Voltage	Freq.	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor			
Lead Wire Type	Terminal Box Type									HP	W	VAC	Hz
9BDG□-200P(H)	Pinion Shaft Type	30min	1/4	220	50	1.80	14500	1500	1500	212	1300	-	-
9BDD□-200	D-Cut Shaft Type												
9BDG(D)G-200P(H)	9BDG(D)G-200P(H)-T												
9BDG(D)H-200P(H)	9BDG(D)H-200P(H)-T												
9BDG(D)I-200P(H)	9BDG(D)I-200P(H)-T	30min	1/4	380	50	0.90	14500	1500	1500	212	1300	-	-
9BDG(D)J-200P(H)	9BDG(D)J-200P(H)-T												
9BDG(D)K-200P(H)	9BDG(D)K-200P(H)-T	30min	1/4	400	50	0.68	14500	1500	1500	212	1300	-	-
9BDG(D)L-200P(H)	9BDG(D)L-200P(H)-T												
9BDG(D)M-200P(H)	9BDG(D)M-200P(H)-T	30min	1/4	440	50	0.68	14500	1500	1500	212	1300	-	-
9BDG(D)N-200P(H)	9BDG(D)N-200P(H)-T												
9BDG(D)O-200P(H)	9BDG(D)O-200P(H)-T			440	60		12500	1250	177	1550			

* 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°C could be available.

Permissible Torque When using gearhead

60Hz

Model	speed RPM (r/min)	900	600	500	360	300	240	200	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	
Motor/Gearhead	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	
9BDG□-200FP	9PBK□BH	kgf cm	28	30	36	51	61	76	91	114	137	164	200	200	200	200	200	200	200	200	200	200	200	200	200
	9PFB□BH	N.m	2.8	3	4	5	6	8	9	11	14	16	20	20	20	20	20	20	20	20	20	20	20	20	20
9BDG□-200FH	9HBK□BH	kgf cm	-	32	38.3	-	64	-	96	120	144	173	-	216	259	300	-	300	300	300	300	300	300	300	300
		N.m	-	3	4	-	6	-	10	12	14	17	-	22	26	30	-	30	30	30	30	30	30	30	30
		lb-in	25	27	32	45	54	67	81	101	121	145	177	177	177	177	177	177	177	177	177	177	177	177	177
		lb-in	-	28	34	-	57	-	85	106	127	153	-	191	229	265	-	265	265	265	265	265	265	265	265

50Hz

Model	speed RPM (r/min)	750	500	417	300	250	200	167	120	100	83	75	60	50	42	38	30	25	20	17	15	13	10	8	
Motor/Gearhead	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	
9BDG□-200FP	9PBK□BH	kgf cm	33	37	45	62	74	92	111	139	166	200	200	200	200	200	200	200	200	200	200	200	200	200	200
	9PFB□BH	N.m	3.3	4	4	6	7	9	11	14	17	20	20	20	20	20	20	20	20	20	20	20	20	20	20
9BDG□-200FH	9HBK□BH	kgf cm	-	39	47	-	78	-	117	146	175	210	-	262	300	300	-	300	300	300	300	300	300	300	300
		N.m	-	4	5	-	8	-	12	15	18	21	-	26	30	30	-	30	30	30	30	30	30	30	30
		lb-in	29	33	39	54	65	82	98	122	147	176	177	177	177	177	177	177	177	177	177	177	177	177	177
		lb-in	-	34	42	-	69	-	103	129	155	185	-	231	265	265	-	265	265	265	265	265	265	265	265

* 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.

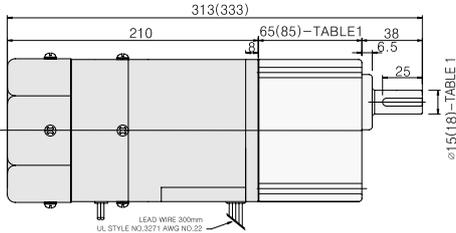
* If more slow speed is needed than above value, use decimal gearhead with a gear ratio of 10:1 could be used between general gearhead and motor. Even in this case, just speed will be reduced without increase in permissible torque; the maximum permissible torque is 200kgfcm (P type) / 300kgfcm (H type).

Dimension

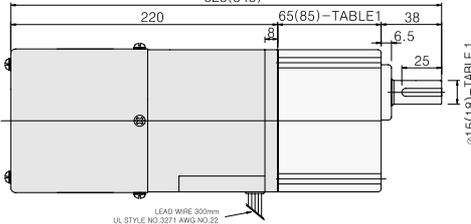
LEAD WIRE TYPE

GEARED MOTOR

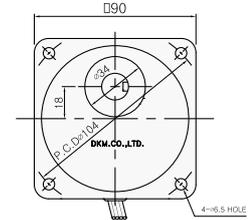
* MOTOR MODEL : 9BD□-200FP(H) (GENERAL FAN)
 * GEARHEAD MODEL : 9PB□3BH - 9PB□180BH



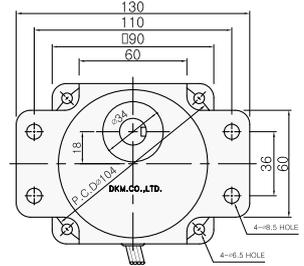
* MOTOR MODEL : 9BDG□-200F2P(H) (POWERFUL FAN)
 * GEARHEAD MODEL : 9PB□3BH - 9PB□180BH



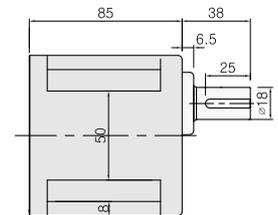
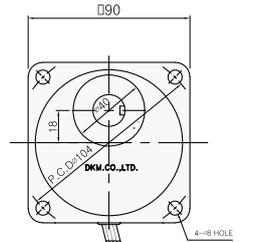
* GEARHEAD MODEL : 9PB□3BH - 9PB□180BH



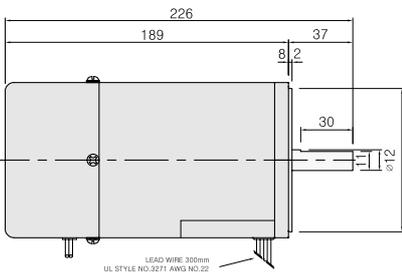
* GEARHEAD MODEL : 9PF□3BH - 9PF□180BH



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

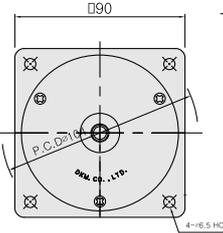
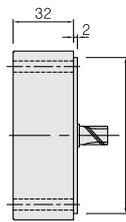
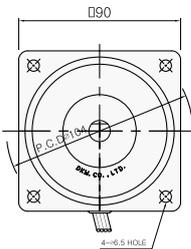


MOTOR ONLY * MOTOR MODEL : 9BD□-200(NO FAN)



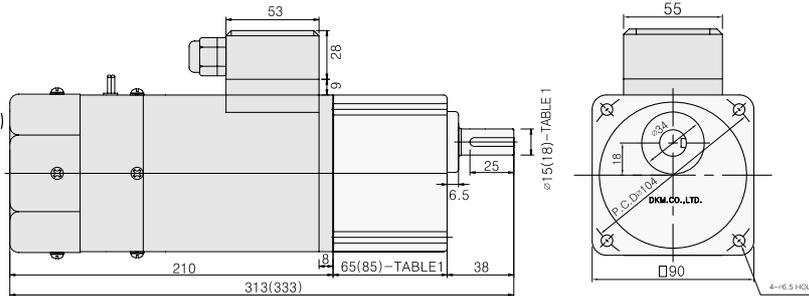
INTER-DECIMAL GEARHEAD

* MODEL : 9XD10M□



TERMINAL BOX TYPE

* MOTOR MODEL : 9BDG□-200FP(H)-T (GENERAL FAN)

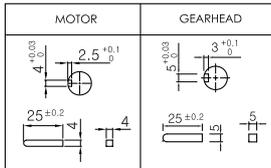


* Note : There are 3 kinds of fan type (No Fan / General Fan / Powerful Fan). Customer can choose fan type according to wanted rating time.

65(85)-TABLE 1

SIZE(mm)	GEARHEAD TYPE
65 - $\phi 15$	P TYPE GEARHEAD
85 - $\phi 18$	H TYPE GEARHEAD

KEY SPEC



WEIGHT

PART	WEIGHT(Kg)	
MOTOR	4.3	
DECIMAL GEARHEAD	0.5	
GEAR HEAD	GEARHEAD 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		
9P(H)□S3BH - 9P(H)□S180BH		
D-CUT TYPE		
9P(H)□D3BH - 9P(H)□D180BH		
KEY TYPE		
9P(H)□K3BH - 9P(H)□K180BH		

MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	
9BDG□-200□P(H)	* 18.5 : P TYPE 22 : H TYPE
ROUND TYPE	
9BDS□-200□	
D-CUT TYPE	
9BDD□-200□	
KEY TYPE	
9BDK□-200□	

* 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 99.