



Brake Motor

Brake Motor

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B AC Motors

Outline of Brake Motor

☐ Power Off Activated Type Electromagnetic Brake

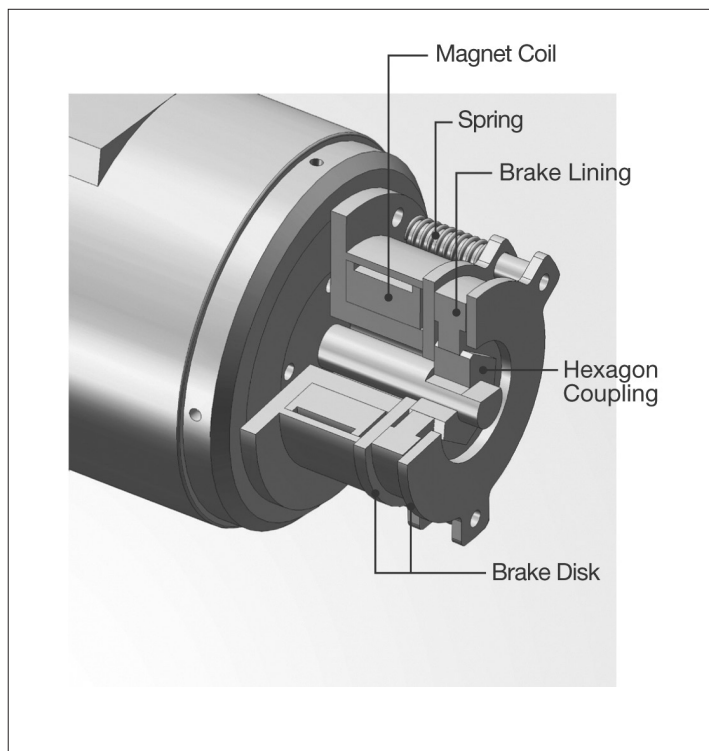
- AC electromagnetic brake is employed in brake motors. When the power source is turned off, the brake is activated and the motor stops instantaneously and holds the load. The electromagnetic brake has holding power in power-off, so it is optimal for emergency brakes and vertical load applications.

☐ Operation

- There is 2-3 times of overrun rotation at the time the power is turned off as individual motor. (Induction motor: 30~40 times overrun, Reversible motor: 5~6 times overrun)
- 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 50 cycles 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°C.)
- The motor and the brake use the same power source. (For example, if motor voltage is 110V, that of brake is 110V.)

☐ Structure

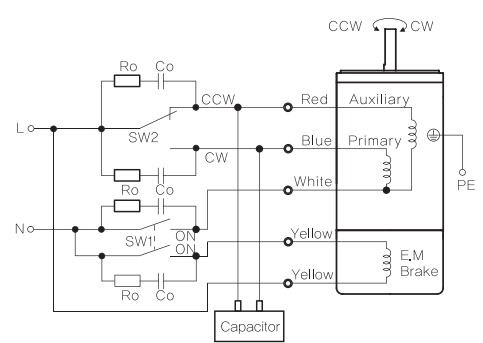
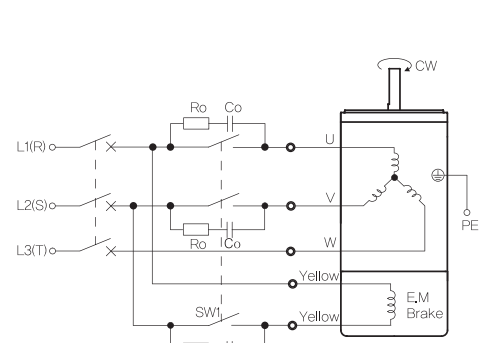
- Brake motor is equipped with a power-off activated type electromagnetic brake. As shown in the figure, when voltage is applied to the magnet coil, the armature is attracted to the electromagnet against the force of the spring, thereby releasing the brake and allowing the motor shaft to rotate freely. When no voltage is applied, the spring works to press the armature onto the brake hub and hold the motor's shaft in place, thereby actuating the brake.



General Specifications

Item	Specification
Insulation Resistance	100MΩ or more when DC500V MEGA is applied between the windings and the frame after rated motor operation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 1.5KV at 50Hz and 60Hz 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 or less measured by the resistance change method after rated motor operation with connecting a Gearbox or equivalent heat radiation plate.
Insulation Class	Class B [130°C]
Overheat Protection	Operating temperature (Built-in thermal protector type motor): Open 120°C±5°C, Close 90°C±5°C
Ambient Temperature	-10°C~+40°C (Three phase 220VAC: -10°C~+50°C)
Ambient Humidity	85% maximum

Connection Diagrams

Single Phase	Three Phase																				
 <p>The diagram shows a single-phase AC input (L, N) connected to a motor. It includes a capacitor, switches SW1 and SW2, and a thermal protector. The motor has an auxiliary winding (Red), primary winding (Blue), and an electromagnetic brake (EM Brake) with two yellow leads. A PE ground is also shown.</p> <p>* Rotation Direction: To rotate the motor in a clockwise (CW) direction, turn SW2 to CW. To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Switch No.</th> <th colspan="2">Specifications</th> <th rowspan="2">Note</th> </tr> <tr> <th>Single Phase 110V/115V Input</th> <th>Single Phase 220V/230V Input</th> </tr> </thead> <tbody> <tr> <td>SW1</td> <td>AC 125V 3A minimum (Inductive load)</td> <td>AC 250V 1.5A minimum (Inductive load)</td> <td>Switched Simultaneously</td> </tr> <tr> <td>SW2</td> <td></td> <td></td> <td>-</td> </tr> </tbody> </table>	Switch No.	Specifications		Note	Single Phase 110V/115V Input	Single Phase 220V/230V Input	SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously	SW2			-	 <p>The diagram shows a three-phase AC input (L1(R), L2(S), L3(T)) connected to a motor. It includes a capacitor, switch SW1, and a thermal protector. The motor has a primary winding (U, V, W) and an electromagnetic brake (EM Brake) with two yellow leads. A PE ground is also shown.</p> <p>* CCW Direction: Change any two connections among R, S and T.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Switch No.</th> <th>Specifications</th> <th>Note</th> </tr> </thead> <tbody> <tr> <td>SW1</td> <td>AC 250V 1.5A minimum (Inductive load)</td> <td>Switched Simultaneously</td> </tr> </tbody> </table>	Switch No.	Specifications	Note	SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
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- 1) SW1 operates both motor and electromagnetic brake action.
- 2) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON.
- 3) When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
- 4) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
- 5) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

A Information

Product Coding System

AC Motors

Motor

- I** : Induction Motor
- R** : Reversible Motor
- B** : Electromagnetic Brake Motor
- Cl** : Clutch & Brake Motor
- T** : Torque Motor
- S** : Speed Control Induction Motor
- SR** : Speed Control Reversible Motor
- SB** : Speed Control . Brake Motor
- CS** : Speed Control Clutch & Brake Motor

9

I

D

Brand
D : DKM

G

Output Shaft Type

- G** : Gear Type Shaft
(Pinion Shaft for Attaching Gearbox)
- S** : Round Type Shaft ○
- D** : D-Cut Type Shaft □
- K** : Key Type Shaft ⊕

A

Phase & Voltage

- 1** : 1Ø AC 110V 60Hz
- 2** : 1Ø AC 220V 60Hz
- 3** : 3Ø AC 220~230V 50/60Hz
- 4** : 3Ø AC 380V~400V 50/60Hz
- 5** : 3Ø AC 415V~440V 50/60Hz
- 6** : 3Ø AC 220/380V 60Hz
- 7** : 3Ø AC 230/400V 50Hz
- 8** : 3Ø AC 440V 50/60Hz

Phase & Voltage

[Built-in Thermal Protector Type]

- A** : 1Ø AC 110V 60Hz
- D** : 1Ø AC 220V 60Hz
- E** : 1Ø AC 220~240V 50Hz
- G** : 3Ø AC 220V 50/60Hz
- K** : 3Ø AC 380V~400V 50/60Hz
- L** : 3Ø AC 415V~440V 50/60Hz

90

Output

- 6** : 6W
- 10** : 10W
- 15** : 15W
- 25** : 25W
- 40** : 40W
- 60** : 60W
- 90** : 90W
- 120** : 120W
- 150** : 150W
- 180** : 180W
- 200** : 200W
- 250** : 250W (E)
- 300** : 300W (D, 7, 8)
- 400** : 400W (6)

F

Fan Type

- F** : General Fan (Self Cooling)
- F2** : Powerful Fan (Separate Fan Motor)
Powerful fan makes powerful cooling performance rotating in high speed regardless of motor shaft speed.
- No Mark** : Without Fan

Pole

- A** : 2 Pole
- No Mark** : 4 Pole

P

Attaching Gearbox

- G** : General Box Type
- P** : Powerful Box/Flange Type
- H** : High Powerful Box/Flange Type
- W** : Worm Solid Type
- WH** : Worm Hollow Type
- No Mark** : Without Gearbox

A

Connection Type

- T** : Terminal Box Type
- No Mark** : Lead Wire Type

T

DC Motors

DC
DC MOTOR

9

DC

G

12

Motor Frame Size

- 6** : □60mm sq. (2.36 in.sq.)
- 8** : □80mm sq. (3.15 in.sq.)
- 9** : □90mm sq. (3.54 in.sq.)

DC Voltage

- 12** : DC 12V
- 24** : DC 24V
- 90** : DC 90V

25

Output

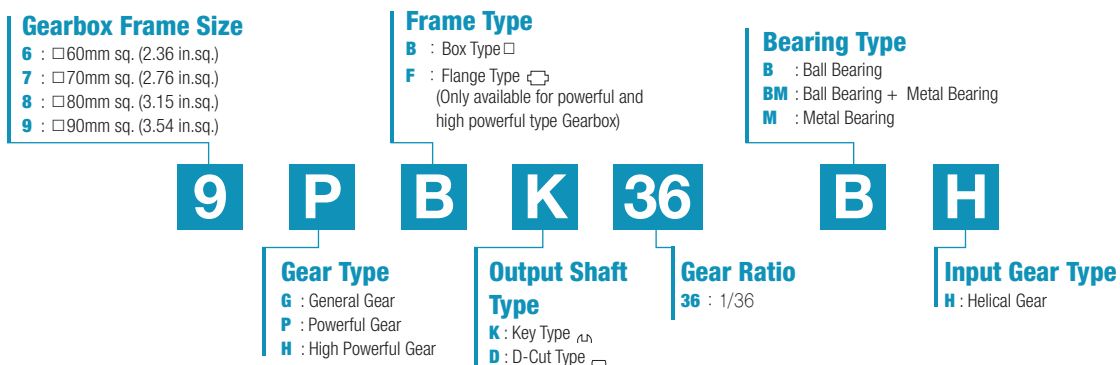
- 15** : 15W
- 25** : 25W
- 40** : 40W
- 60** : 60W
- 90** : 90W
- 120** : 120W

30

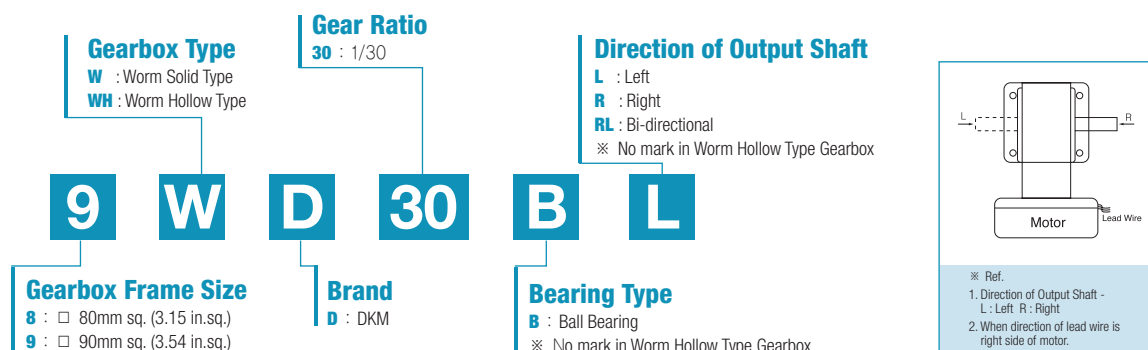
r/min

- 30** : 3000r/min

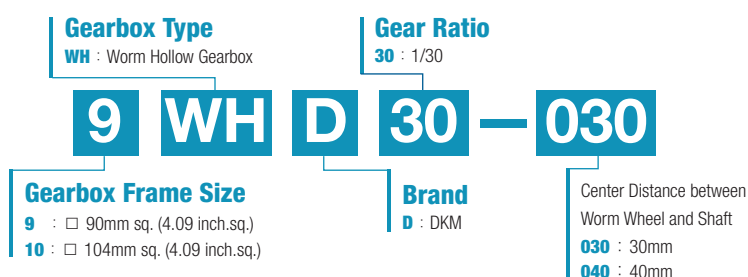
Parallel Gearbox



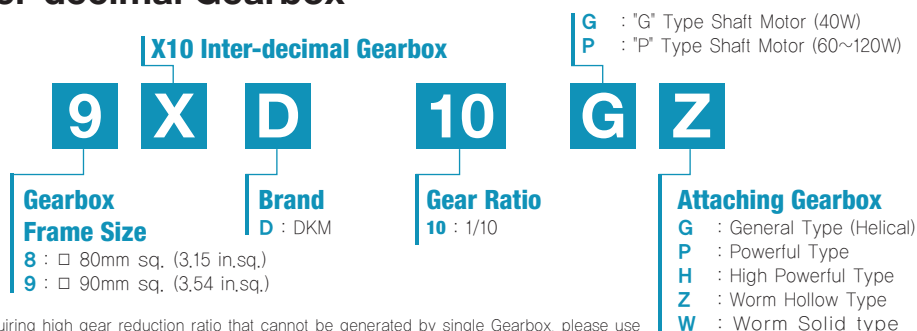
Worm Solid Gearbox



Worm Hollow Gearbox



Inter-decimal Gearbox



In case of requiring high gear reduction ratio that cannot be generated by single Gearbox, please use Inter-decimal Gearbox with general Gearbox. And please be advised that in this case only revolution speed of output shaft will reduce by 10:1 without increasing of maximum permissible torque.

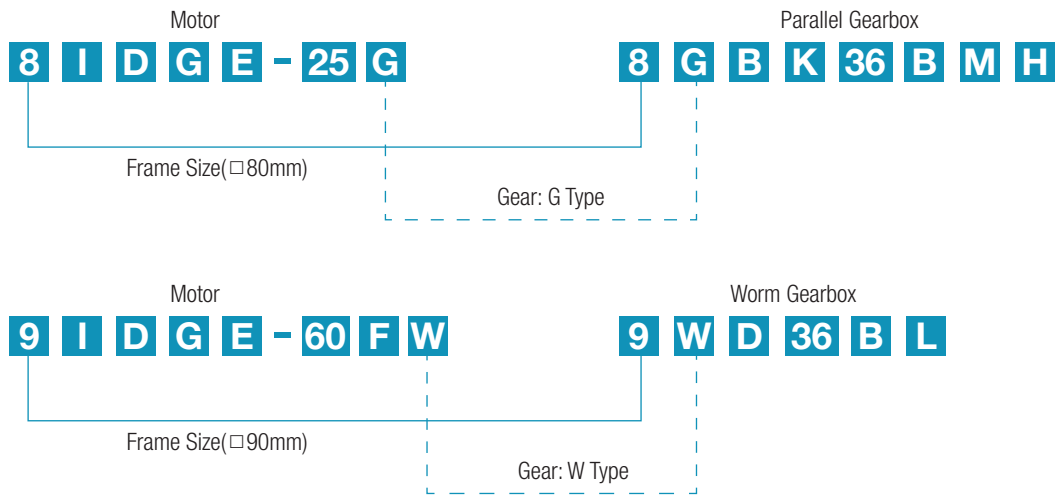
A Information

Product Coding System

Assembly of Motor and Gearbox

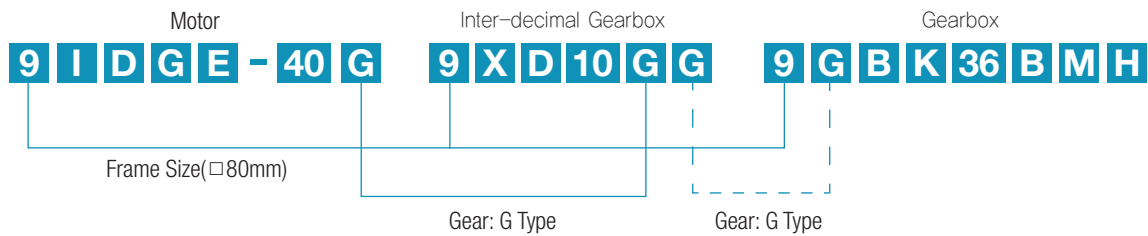
Motor + Gearbox

- As shown in the following scheme, motor and Gearbox which have same frame size and gear type could be assembled.



Motor + Inter-decimal Gearbox + Gearbox

- When using an inter-decimal Gearbox together, give attention to the gear types of motor, Gearbox and inter-decimal Gearbox.



- When attaching inter-decimal Gearbox, the output shaft type of the motor is always G type. For example, when using P/H/W/WH type Gearbox, only the gear type of inter-decimal Gearbox is identical with attached Gearbox and the output shaft type of the motor is G type. (Refer to the scheme below.)

B AC Motors

Brake Motor 6W (□70mm)

6W Brake Motor 6W(□70mm)

Motor Specification

Model 7BDG□-6G: Gear Type Shaft 7BDD□-6: D-Cut Type Shaft	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque		Rated Load			Capacitor μF / VAC	
						kgfcm	N.m	Speed r/min	Current A	Torque kgfcm N.m		
7BDGA-6G	6	1∅110	60	4	30min.	0.64	0.064	1600	0.29	0.50	0.050	3.0 / 250
7BDGD-6G	6	1∅220	60	4	30min.	0.85	0.085	1600	0.16	0.60	0.060	1.0 / 450
7BDGE-6G	6	1∅220	50	4	30min.	0.61	0.061	1250	0.13	0.68	0.068	0.8 / 450
		1∅240				0.75	0.075		0.14	0.76	0.076	

- 1) Enter the phase & voltage code in the box (□) within the motor model name.
- 2) All models contain a built-in thermal protector.
- 3) Gear Type Shaft is for attaching Gearbox and D-Cut Type Shaft is for using motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
			r/min	600	500	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12
7BDG□-6G	7GBK□BMH	kgfcm	1.5	1.8	3.0	3.7	4.5	6.2	7.5	9.0	11.3	13.5	14.7	20.4	24.5	30.6	36.7	40.8	49.0	50.0	50.0
		N.m	0.15	0.18	0.29	0.37	0.44	0.61	0.73	0.88	1.10	1.32	1.44	2.00	2.40	3.00	3.60	4.00	4.80	4.90	4.90

50Hz

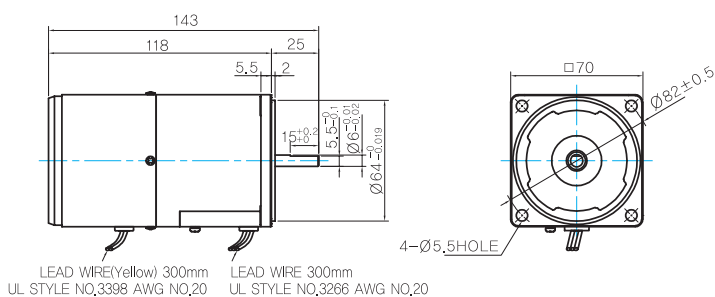
Motor Model	Gearbox Model	Gear Ratio	3	3.6	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
			r/min	500	416	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10
7BDG□-6G	7GBK□BMH	kgfcm	1.7	2.0	3.4	4.2	5.1	7.1	8.5	10.2	12.8	15.3	16.6	23.1	27.7	34.7	41.6	46.2	50.0	50.0	50.0
		N.m	0.17	0.20	0.33	0.41	0.50	0.69	0.83	1.00	1.25	1.50	1.63	2.27	2.72	3.40	4.08	4.53	4.90	4.90	4.90

- 1) Enter the phase & voltage code in the box (□) within the motor model name.
- 2) Enter the gear ratio in the box (□) within the Gearbox model name.
- 3) A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
- 4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio.
The actual speed is 2~20% less than the displayed value, depending on the size of the load.

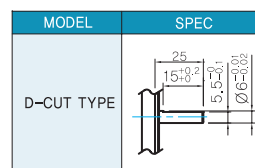
Dimensions

MOTOR ONLY

● MOTOR MODEL: 7BDD□-6 (NO FAN)



MOTOR OUTPUT SHAFT

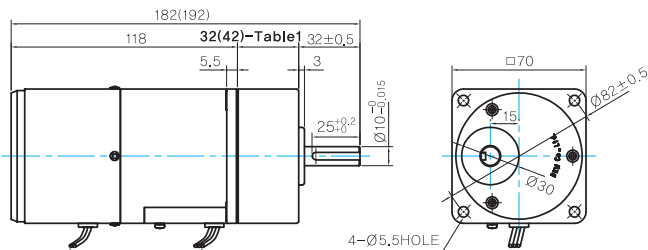


GEARED MOTOR

G TYPE GEARBOX

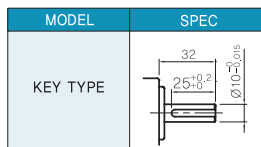
● MOTOR MODEL:
7BDG□-6G (NO FAN)

● GEARBOX MODEL:
7GBK□BMH

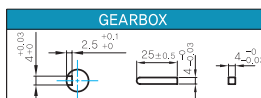


LEAD WIRE(Yellow) 300mm UL STYLE NO.3398 AWG NO.20
LEAD WIRE 300mm UL STYLE NO.3266 AWG NO.20

GEARBOX OUTPUT SHAFT



KEY SPEC



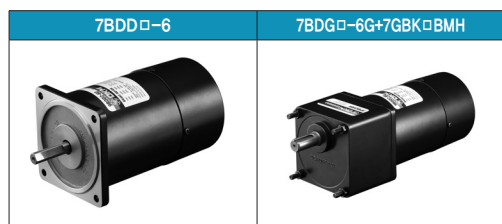
WEIGHT

PART	WEIGHT(Kg)
MOTOR	1,3
7GBK3BMH - 7GBK18BMH	0,36
7GBK25BMH - 7GBK30BMH	0,44
7GBK36BMH - 7GBK180BMH	0,5

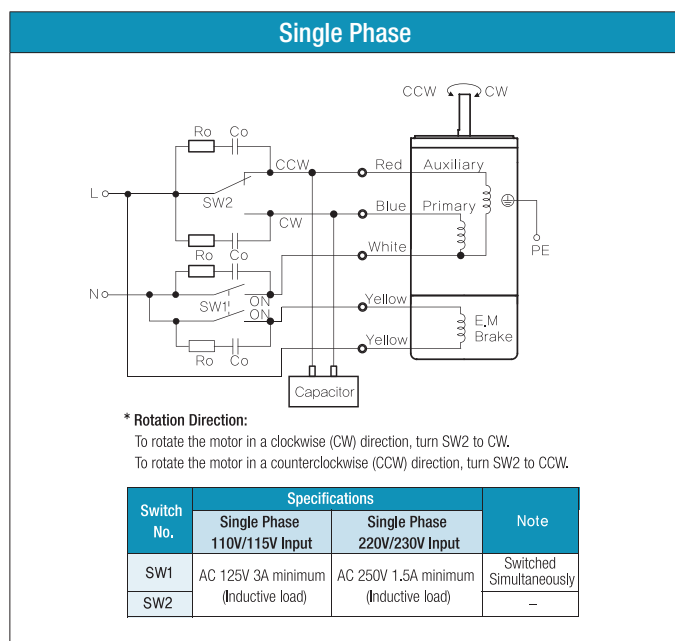
32(42)-Table1

SIZE(mm)	GEAR RATIO
32	7GBK3BMH - 7GBK18BMH
42	7GBK25BMH - 7GBK180BMH

Motor Images



Connection Diagrams



- 1) The direction of motor rotation is as viewed from the shaft end of the motor.
- 2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- 3) SW1 operates both motor and electromagnetic brake action.
- 4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
- 5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
- 6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

B AC Motors

Brake Motor 10W (□70mm)

10W Brake Motor 10W(□70mm)

Motor Specification

Model 7BDG□-10G: Gear Type Shaft 7BDD□-10: D-Cut Type Shaft	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque		Rated Load			Capacitor μF / VAC	
						kgfcm	N.m	Speed r/min	Current A	Torque kgfcm N.m		
7BDGA-10G	10	1∅110	60	4	30min.	0.83	0.083	1550	0.31	0.70	0.070	3.5 / 250
7BDGD-10G	10	1∅220	60	4	30min.	1.00	0.100	1550	0.20	0.79	0.079	1.2 / 450
7BDGE-10G	10	1∅220	50	4	30min.	0.86	0.086	1250	0.16	0.82	0.082	1.0 / 450
		0.99				0.099	0.18		0.90	0.090		

- 1) Enter the phase & voltage code in the box (□) within the motor model name.
- 2) All models contain a built-in thermal protector.
- 3) Gear Type Shaft is for attaching Gearbox and D-Cut Type Shaft is for using motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	
			r/min	600	500	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
7BDG□-10G	7GBK□BMH	kgfcm	2.0	2.4	3.9	4.9	5.9	8.2	9.8	11.8	14.8	17.8	19.3	26.9	32.2	40.3	48.3	50.0	50.0	50.0	50.0	50.0
		N.m	0.19	0.23	0.39	0.48	0.58	0.80	0.96	1.16	1.45	1.74	1.90	2.63	3.16	3.95	4.74	4.90	4.90	4.90	4.90	4.90

50Hz

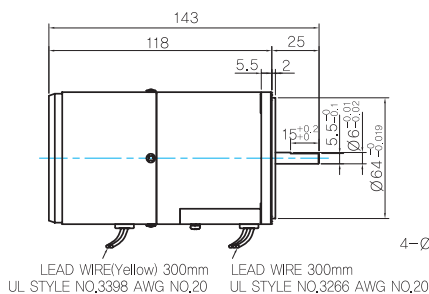
Motor Model	Gearbox Model	Gear Ratio	3	3.6	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	
			r/min	500	416	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3
7BDG□-10G	7GBK□BMH	kgfcm	2.0	2.5	4.1	5.1	6.1	8.5	10.2	12.3	15.4	18.5	20.1	27.9	33.5	41.8	50.0	50.0	50.0	50.0	50.0	50.0
		N.m	0.20	0.24	0.40	0.50	0.60	0.83	1.00	1.20	1.51	1.81	1.97	2.73	3.28	4.10	4.90	4.90	4.90	4.90	4.90	4.90

- 1) Enter the phase & voltage code in the box (□) within the motor model name.
- 2) Enter the gear ratio in the box (□) within the Gearbox model name.
- 3) A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
- 4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio.
The actual speed is 2~20% less than the displayed value, depending on the size of the load.

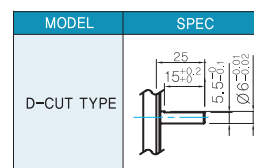
Dimensions

MOTOR ONLY

● MOTOR MODEL: 7BDD□-10 (NO FAN)



● MOTOR OUTPUT SHAFT

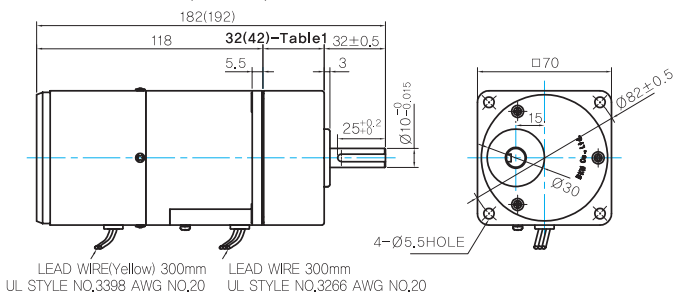


GEARED MOTOR

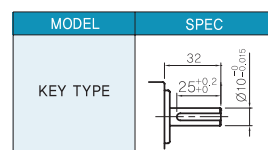
G TYPE GEARBOX

● MOTOR MODEL:
7BDG□-10G (NO FAN)

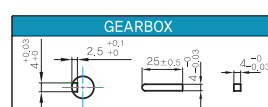
● GEARBOX MODEL:
7GBK□BMH



GEARBOX OUTPUT SHAFT



KEY SPEC



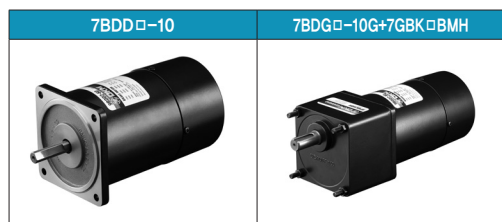
WEIGHT

PART		WEIGHT(Kg)
MOTOR		1,3
GEAR BOX	7GBK3BMH - 7GBK18BMH	0,36
	7GBK25BMH - 7GBK30BMH	0,44
	7GBK36BMH - 7GBK180BMH	0,5

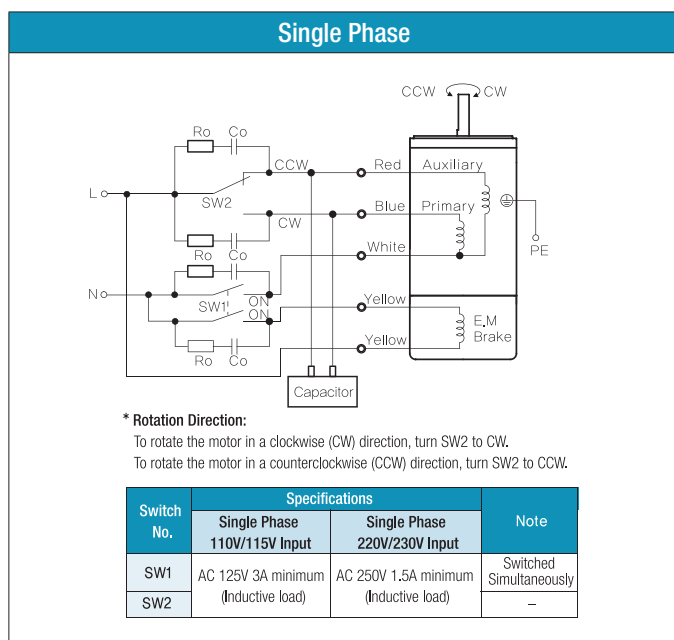
32(42)-Table1

SIZE(mm)	GEAR RATIO
32	7GBK3BMH - 7GBK18BMH
42	7GBK25BMH - 7GBK180BMH

Motor Images



Connection Diagrams



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B AC Motors

Brake Motor 15W (□70mm)

15W Brake Motor 15W(□70mm)

Motor Specification

Model 7BDG□-15G: Gear Type Shaft 7BDD□-15: D-Cut Type Shaft	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque		Rated Load			Capacitor μF / VAC	
						kgfcm	N.m	Speed r/min	Current A	Torque kgfcm N.m		
7BDGA-15G	15	1∅110	60	4	30min.	1.30	0.130	1600	0.46	1.05	0.105	6.0 / 250
7BDGD-15G	15	1∅220	60	4	30min.	1.25	0.125	1600	0.23	1.10	0.110	1.5 / 450
7BDGE-15G	15	1∅220	50	4	30min.	1.10	0.110	1250	0.17	1.25	0.125	1.2 / 450
		1.30				0.130	0.18		1.45	0.145		

- 1) Enter the phase & voltage code in the box (□) within the motor model name.
- 2) All models contain a built-in thermal protector.
- 3) Gear Type Shaft is for attaching Gearbox and D-Cut Type Shaft is for using motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	
			r/min	600	500	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
7BDG□-15G	7GBK□BMH	kgfcm	2.7	3.3	5.5	6.8	8.2	11.4	13.7	16.4	20.6	24.8	26.9	37.4	44.9	50.0	50.0	50.0	50.0	50.0	50.0	50.0
		N.m	0.27	0.32	0.54	0.67	0.81	1.12	1.34	1.61	2.02	2.43	2.64	3.67	4.40	4.90	4.90	4.90	4.90	4.90	4.90	4.90

50Hz

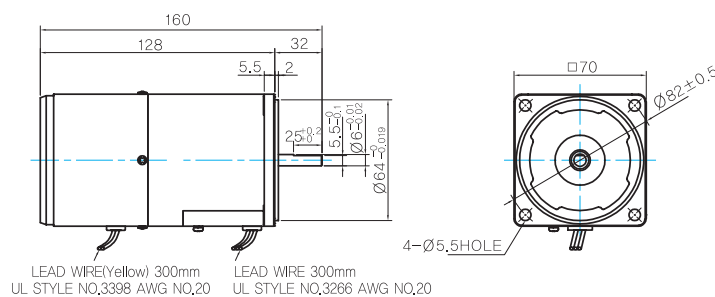
Motor Model	Gearbox Model	Gear Ratio	3	3.6	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	
			r/min	500	416	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3
7BDG□-15G	7GBK□BMH	kgfcm	3.6	4.3	7.2	9.0	10.8	15.0	18.1	21.7	27.2	32.6	35.5	49.3	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
		N.m	0.35	0.42	0.71	0.88	1.06	1.47	1.77	2.12	2.66	3.20	3.48	4.83	4.90	4.90	4.90	4.90	4.90	4.90	4.90	4.90

- 1) Enter the phase & voltage code in the box (□) within the motor model name.
- 2) Enter the gear ratio in the box (□) within the Gearbox model name.
- 3) A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
- 4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio.
The actual speed is 2~20% less than the displayed value, depending on the size of the load.

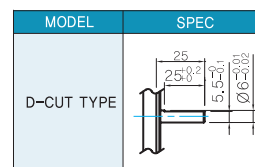
Dimensions

MOTOR ONLY

● MOTOR MODEL: 7BDD□-15 (NO FAN)



MOTOR OUTPUT SHAFT

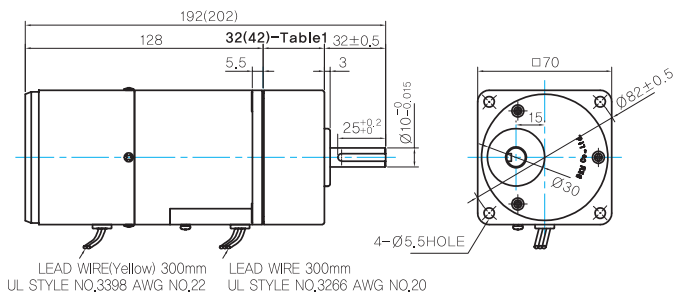


GEARED MOTOR

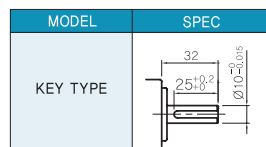
G TYPE GEARBOX

● MOTOR MODEL:
7BDG□-15G (NO FAN)

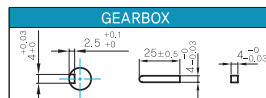
● GEARBOX MODEL:
7GBK□BMH



GEARBOX OUTPUT SHAFT



KEY SPEC



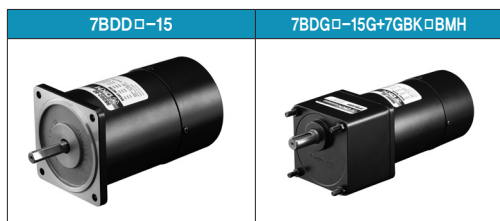
WEIGHT

	PART	WEIGHT(Kg)
	MOTOR	1,5
GEAR BOX	7GBK3BMH - 7GBK18BMH	0,36
	7GBK25BMH - 7GBK30BMH	0,44
	7GBK36BMH - 7GBK180BMH	0,5

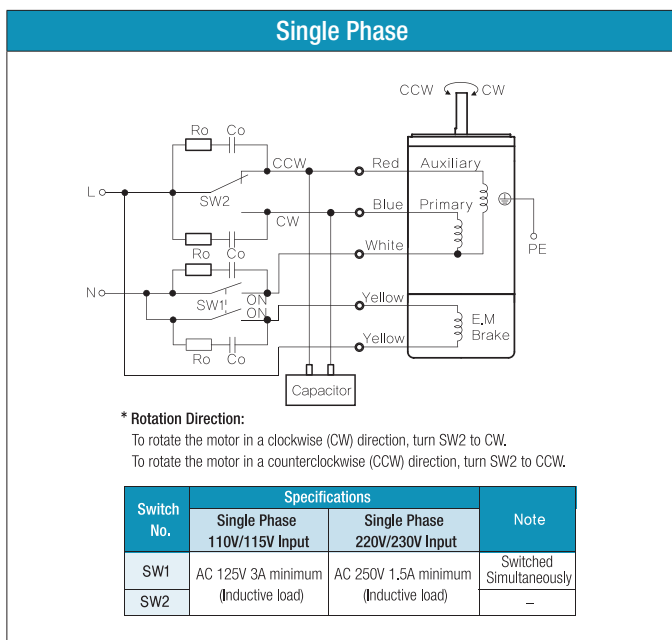
32(42)-Table1

SIZE(mm)	GEAR RATIO
32	7GBK3BMH - 7GBK18BMH
42	7GBK25BMH - 7GBK180BMH

Motor Images



Connection Diagrams



- 1) The direction of motor rotation is as viewed from the shaft end of the motor.
- 2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- 3) SW1 operates both motor and electromagnetic brake action.
- 4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
- 5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
- 6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

B AC Motors

Brake Motor 15W (□80mm)

15W Brake Motor 15W(□80mm)

Motor Specification

Model 8BDG*-15□: Gear Type Shaft 8BDD*-15: D-Cut Type Shaft	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque		Rated Load			Capacitor μF / VAC	
						kgfcm	N.m	Speed r/min	Current A	Torque kgfcm N.m		
8BDGA-15□	15	1∅110	60	4	30min.	1.55	0.155	1600	0.44	1.20	0.120	6.0 / 250
8BDGD-15□	15	1∅220	60	4	30min.	1.50	0.150	1600	0.25	1.00	0.100	1.5 / 450
8BDGE-15□	15	1∅220	50	4	30min.	1.25	0.125	1200	0.16	1.30	0.130	1.5 / 450
		1∅240				1.45	0.145		0.17	1.40	0.140	
8BDGG-15□	15	3∅220	50	4	Cont.	4.80	0.480	1300	0.22	1.40	0.140	-
			60			4.00	0.400	1600	0.18	1.00	0.100	
8BDGK-15□	15	3∅380	50	4	Cont.	4.60	0.460	1300	0.13	1.20	0.120	-
			60			3.60	0.360	1550	0.11	1.00	0.100	
		3∅400	50	4	Cont.	5.00	0.500	1300	0.14	1.40	0.140	
			60			4.00	0.400	1600	0.12	1.00	0.100	
		3∅415	50	4	Cont.	5.40	0.540	1350	0.15	1.20	0.120	
			60			4.20	0.420	1600	0.13	1.00	0.100	
		3∅440	50	4	Cont.	6.00	0.600	1350	0.16	1.40	0.140	
			60			4.60	0.460	1600	0.14	1.40	0.140	

- 1) Enter the phase & voltage code in the place * and enter the model type of attaching Gearbox in the box (□) within the motor model name.
- 2) All models contain a built-in thermal protector.
- 3) Gear Type Shaft is for attaching Gearbox and D-Cut Type Shaft is for using motor only.
- * It is not possible to use inverter for three phase 380-440V motor. When inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	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
			r/min	600	500	360	300	240	200	144	120	100	72	60	50	45	36	30	24	20	18	15	12
8BDG□-15G	8GBK□BMH	kgfcm	3.0	3.6	5.0	6.0	7.5	9.0	12.5	14.9	17.9	22.5	27.0	29.4	32.6	40.8	49.0	61.2	73.4	80.0	80.0	80.0	80.0
		N.m	0.29	0.35	0.49	0.59	0.73	0.88	1.22	1.46	1.76	2.21	2.65	2.88	3.20	4.00	4.80	6.00	7.20	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	200	250	300	360
			r/min	9	7	6
8BDG□-15G	8GBK□BMH	kgfcm	80.0	80.0	80.0	80.0
		N.m	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
			r/min	180	150	120	100	72	60	50	36
8BDG□-15W	8WD□BL/□BR/□BRL	kgfcm	9.8	11.5	13.9	16.0	21.0	23.8	27.6	36.0	39.6
		N.m	0.96	1.13	1.36	1.57	2.06	2.33	2.71	3.53	3.88

50Hz

Motor Model	Gearbox Model	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
			r/min	500	417	300	250	200	167	120	100	83	60	50	42	38	30	25	20	17	15	13	10
8BDG□-15G	8GBK□BMH	kgfcm	3.5	4.2	5.8	7.0	8.7	10.5	14.5	17.4	20.9	26.3	31.5	34.3	38.1	47.6	57.1	71.4	80.0	80.0	80.0	80.0	80.0
		N.m	0.34	0.41	0.57	0.68	0.85	1.02	1.42	1.71	2.05	2.57	3.09	3.36	3.73	4.66	5.60	7.00	7.84	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	200	250	300	360
			r/min	7	6	5
8BDG□-15G	8GBK□BMH	kgfcm	80.0	80.0	80.0	80.0
		N.m	7.84	7.84	7.84	7.84

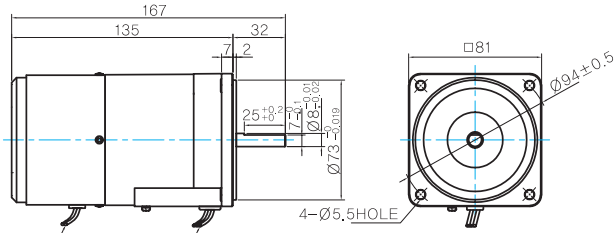
Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
			r/min	150	125	100	83	60	50	42	30
8BDG□-15W	8WD□BL/□BR/□BRL	kgfcm	11.5	13.4	16.2	18.6	24.5	27.7	32.3	42.0	46.2
		N.m	1.13	1.32	1.58	1.83	2.40	2.72	3.16	4.12	4.53

- 1) Enter the phase & voltage code in the box (□) within the motor model name.
- 2) Enter the gear ratio in the box (□) within the Gearbox model name.
- 3) A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
- 4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2-20% less than the displayed value, depending on the size of the load.

Dimensions

MOTOR ONLY

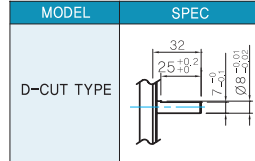
- MOTOR MODEL: 8BDD□-15 (NO FAN)



LEAD WIRE(Yellow) 300mm
UL STYLE NO,3398 AWG NO,22
380V OVER NO,3613 AWG NO,22

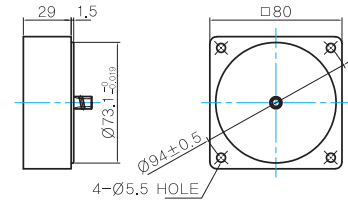
LEAD WIRE 300mm
UL STYLE NO,3271 AWG NO,22

MOTOR OUTPUT SHAFT



INTER-DECIMAL GEARBOX

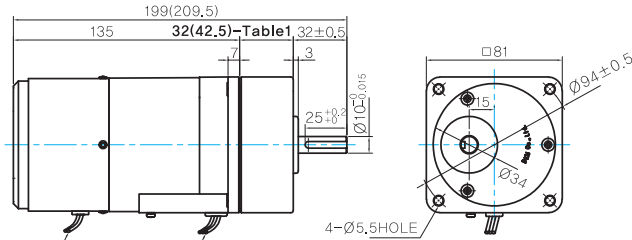
- MODEL: 8XD10□□



GEARED MOTOR

G TYPE GEARBOX

- MOTOR MODEL:
8BDG□-15G (NO FAN)

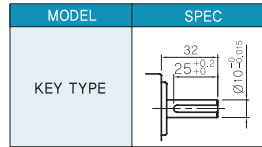


LEAD WIRE(Yellow) 300mm
UL STYLE NO,3398 AWG NO,22
380V OVER NO,3613 AWG NO,22

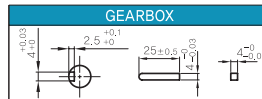
LEAD WIRE 300mm
UL STYLE NO,3271 AWG NO,22

- GEARBOX MODEL:
8GBK□BMH

GEARBOX OUTPUT SHAFT



KEY SPEC

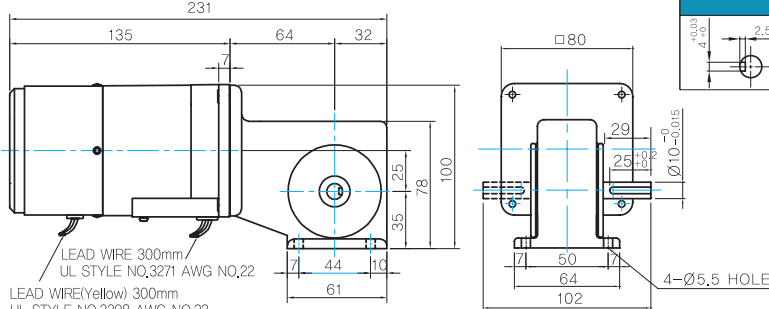


- 32(42.5)-Table1

SIZE(mm)	GEAR RATIO
32	8GBK3BMH - 8GBK18BMH
42.5	8GBK25BMH - 8GBK360BMH

W TYPE GEARBOX

- MOTOR MODEL:
8BDG□-15W (NO FAN)

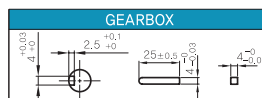


LEAD WIRE 300mm
UL STYLE NO,3271 AWG NO,22

LEAD WIRE(Yellow) 300mm
UL STYLE NO,3398 AWG NO,22
380V OVER NO,3613 AWG NO,22

- GEARBOX MODEL:
8WD□BL/BR/BRL

KEY SPEC



WEIGHT

PART	WEIGHT(Kg)
MOTOR	2,0
8GBK3BMH - 8GBK18BMH	0,48
8GBK25BMH - 8GBK30BMH	0,61
8GBK36BMH - 8GBK180BMH	0,67
8GBK200BMH - 8GBK360BMH	0,63
8WD□BL/BR/BRL	0,67
8XD10□□	0,44

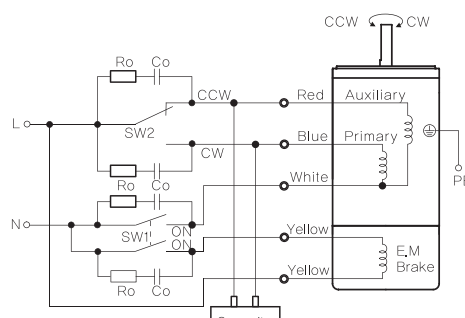
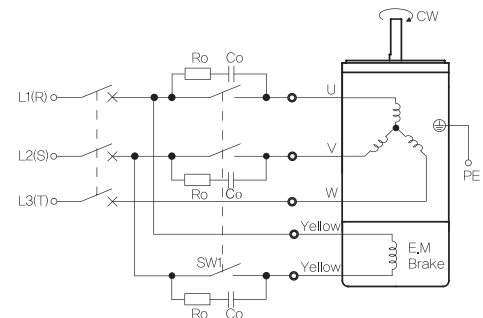
Motor Images



B AC Motors

Brake Motor 15W (□80mm)

Connection Diagrams

Single Phase	Three Phase																				
 <p>The diagram shows a single-phase AC input (L, N) connected to a motor. The motor has an Auxiliary winding (Red), Primary winding (Blue), and E.M. Brake (Yellow). A capacitor is connected between the primary and auxiliary windings. Two switches, SW1 and SW2, control the motor. SW1 is a double-throw switch that controls both the motor and the brake. SW2 is a selector switch for rotation direction (CW or CCW). Surge suppression components (Ro, Co) are connected to the input lines.</p> <p>* Rotation Direction: To rotate the motor in a clockwise (CW) direction, turn SW2 to CW. To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr style="background-color: #0070C0; color: white;"> <th rowspan="2">Switch No.</th> <th colspan="2">Specifications</th> <th rowspan="2">Note</th> </tr> <tr style="background-color: #0070C0; color: white;"> <th>Single Phase 110V/115V Input</th> <th>Single Phase 220V/230V Input</th> </tr> </thead> <tbody> <tr> <td>SW1</td> <td>AC 125V 3A minimum (Inductive load)</td> <td>AC 250V 1.5A minimum (Inductive load)</td> <td>Switched Simultaneously</td> </tr> <tr> <td>SW2</td> <td></td> <td></td> <td>-</td> </tr> </tbody> </table>	Switch No.	Specifications		Note	Single Phase 110V/115V Input	Single Phase 220V/230V Input	SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously	SW2			-	 <p>The diagram shows a three-phase AC input (L1(R), L2(S), L3(T)) connected to a motor. The motor has three main windings (U, V, W) and an E.M. Brake (Yellow). A capacitor is connected between the main windings. A switch SW1 controls the motor and brake. Surge suppression components (Ro, Co) are connected to the input lines.</p> <p>* CCW Direction: Change any two connections among R, S and T.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr style="background-color: #0070C0; color: white;"> <th>Switch No.</th> <th>Specifications</th> <th>Note</th> </tr> </thead> <tbody> <tr> <td>SW1</td> <td>AC 250V 1.5A minimum (Inductive load)</td> <td>Switched Simultaneously</td> </tr> </tbody> </table>	Switch No.	Specifications	Note	SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
Switch No.		Specifications			Note																
	Single Phase 110V/115V Input	Single Phase 220V/230V Input																			
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SW2			-																		
Switch No.	Specifications	Note																			
SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously																			

- 1) The direction of motor rotation is as viewed from the shaft end of the motor.
- 2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- 3) SW1 operates both motor and electromagnetic brake action.
- 4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
- 5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
- 6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

Brake Motor 25W (□80mm)

25W Brake Motor
25W(□80mm)

Brake Motor 25W (□80mm)

Motor Specification

Model 8BDG*-25□: Gear Type Shaft 8BDD*-25: D-Cut Type Shaft	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm N.m		Rated Load			Capacitor μF / VAC	
								Speed r/min	Current A	Torque kgfcm N.m		
8BDGA-25□	25	1∅110	60	4	30min.	2.40	0.240	1550	0.73	1.62	0.162	10.0 / 250
8BDGD-25□	25	1∅220	60	4	30min.	2.40	0.240	1550	0.36	1.62	0.162	2.5 / 450
8BDGE-25□	25	1∅220	50	4	30min.	2.10	0.210	1250	0.28	2.00	0.200	2.0 / 450
		1∅240				2.50	0.250		0.30	2.10	0.210	
8BDGG-25□	25	3∅220	50	4	Cont.	5.00	0.500	1300	0.32	2.00	0.200	-
			60			0.40	0.040	1600	0.25	1.60	0.160	
8BDGK-25□	25	3∅380	50	4	Cont.	3.60	0.360	1250	0.14	2.00	0.200	-
			60			3.00	0.300	1500	0.12	1.65	0.165	
			50	4	Cont.	3.80	0.380	1250	0.15	2.20	0.220	
			60			3.20	0.320	1500	0.13	1.80	0.180	
		3∅415	4	Cont.	4.10	0.410	1300	0.15	2.00	0.200		
					60	3.40	0.340	1550	0.13	1.80	0.180	
		3∅440	4	Cont.	4.40	0.440	1300	0.17	2.20	0.220		
					60	3.60	0.360	1600	0.14	1.60	0.160	

- 1) Enter the phase & voltage code in the place * and enter the model type of attaching Gearbox in the box (□) within the motor model name.
 - 2) All models contain a built-in thermal protector.
 - 3) Gear Type Shaft is for attaching Gearbox and D-Cut Type Shaft is for using motor only.
- ※ It is not possible to use inverter for three phase 380~440V motor. When inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio r/min	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	40	50	60	75	90	100	120	150	180
			600	500	360	300	240	200	144	120	100	72	60	50	45	36	30	24	20	18	15	12	10
8BDG□-25G	8GBK□BMH	kgfcm N.m	4.5 0.44	5.4 0.53	7.5 0.73	9.0 0.88	11.2 1.10	13.4 1.32	18.7 1.83	22.4 2.20	26.9 2.64	33.8 3.31	40.5 3.97	44.1 4.32	49.0 4.80	61.2 6.00	73.4 7.20	80.0 7.84	80.0 7.84	80.0 7.84	80.0 7.84	80.0 7.84	80.0 7.84

Motor Model	Gearbox Model	Gear Ratio r/min	200	250	300	360	Motor Model	Gearbox Model	Gear Ratio r/min	10	12	15	18	25	30	36	50	60
			9	7	6	5				8BDG□-25W	8WD□BL/□BR/□BRL	kgfcm N.m	13.3 1.30	15.6 1.52	18.7 1.83	21.6 2.11	28.4 2.78	32.1 3.14
8BDG□-25G	8GBK□BMH	kgfcm N.m	80.0 7.84	80.0 7.84	80.0 7.84	80.0 7.84	8BDG□-25W	8WD□BL/□BR/□BRL	kgfcm N.m	13.3 1.30	15.6 1.52	18.7 1.83	21.6 2.11	28.4 2.78	32.1 3.14	37.3 3.66	48.6 4.76	53.5 5.24

50Hz

Motor Model	Gearbox Model	Gear Ratio r/min	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	40	50	60	75	90	100	120	150	180
			500	417	300	250	200	167	120	100	83	60	50	42	38	30	25	20	17	15	13	10	8
8BDG□-25G	8GBK□BMH	kgfcm N.m	5.0 0.49	6.0 0.59	8.3 0.81	10.0 0.98	12.5 1.22	14.9 1.46	20.8 2.03	24.9 2.44	29.9 2.93	37.5 3.68	45.0 4.41	49.0 4.80	54.4 5.33	68.0 6.66	80.0 7.84	80.0 7.84	80.0 7.84	80.0 7.84	80.0 7.84	80.0 7.84	80.0 7.84

Motor Model	Gearbox Model	Gear Ratio r/min	200	250	300	360	Motor Model	Gearbox Model	Gear Ratio r/min	10	12	15	18	25	30	36	50	60
			7	6	5	5				8BDG□-25W	8WD□BL/□BR/□BRL	kgfcm N.m	17.2 1.69	20.2 1.98	24.3 2.38	28.0 2.74	36.8 3.60	41.6 4.07
8BDG□-25G	8GBK□BMH	kgfcm N.m	80.0 7.84	80.0 7.84	80.0 7.84	80.0 7.84	8BDG□-25W	8WD□BL/□BR/□BRL	kgfcm N.m	17.2 1.69	20.2 1.98	24.3 2.38	28.0 2.74	36.8 3.60	41.6 4.07	48.4 4.74	63.0 6.17	69.3 6.79

- 1) Enter the phase & voltage code in the box (□) within the motor model name.
- 2) Enter the gear ratio in the box (□) within the Gearbox model name.
- 3) A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
- 4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio.
The actual speed is 2~20% less than the displayed value, depending on the size of the load.

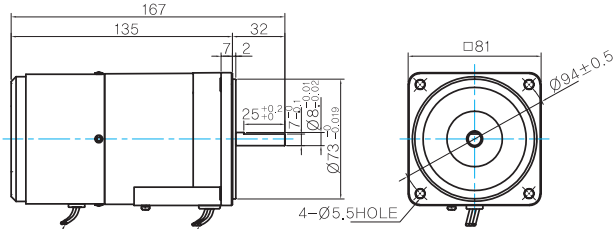
B AC Motors

Brake Motor 25W (□80mm)

Dimensions

MOTOR ONLY

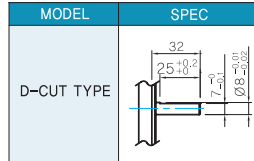
- MOTOR MODEL: 8BDD□-25 (NO FAN)



LEAD WIRE(Yellow) 300mm
UL STYLE NO,3398 AWG NO,22
380V OVER NO,3613 AWG NO,22

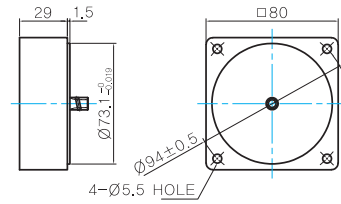
LEAD WIRE 300mm
UL STYLE NO,3271 AWG NO,22

- MOTOR OUTPUT SHAFT



INTER-DECIMAL GEARBOX

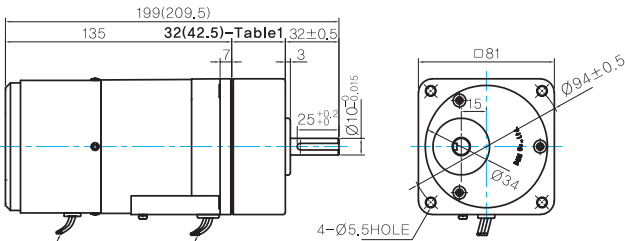
- MODEL: 8XD10□□



GEARED MOTOR

G TYPE GEARBOX

- MOTOR MODEL: 8BDG□-25G (NO FAN)

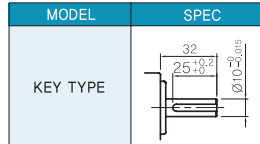


LEAD WIRE(Yellow) 300mm
UL STYLE NO,3398 AWG NO,22
380V OVER NO,3613 AWG NO,22

LEAD WIRE 300mm
UL STYLE NO,3271 AWG NO,22

- GEARBOX MODEL: 8GBK□BMH

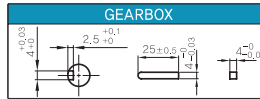
- GEARBOX OUTPUT SHAFT



- 32(42.5)-Table1

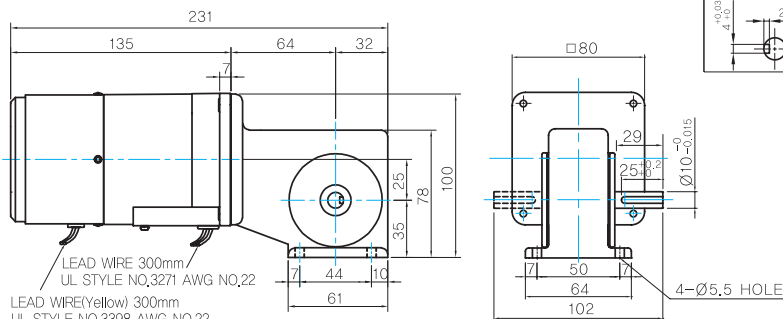
SIZE(mm)	GEAR RATIO
32	8GBK3BMH - 8GBK18BMH
42.5	8GBK25BMH - 8GBK360BMH

- KEY SPEC



W TYPE GEARBOX

- MOTOR MODEL: 8BDG□-25W (NO FAN)

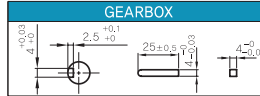


LEAD WIRE 300mm
UL STYLE NO,3271 AWG NO,22

LEAD WIRE(Yellow) 300mm
UL STYLE NO,3398 AWG NO,22
380V OVER NO,3613 AWG NO,22

- GEARBOX MODEL: 8WD□BL/BR/BRL

- KEY SPEC



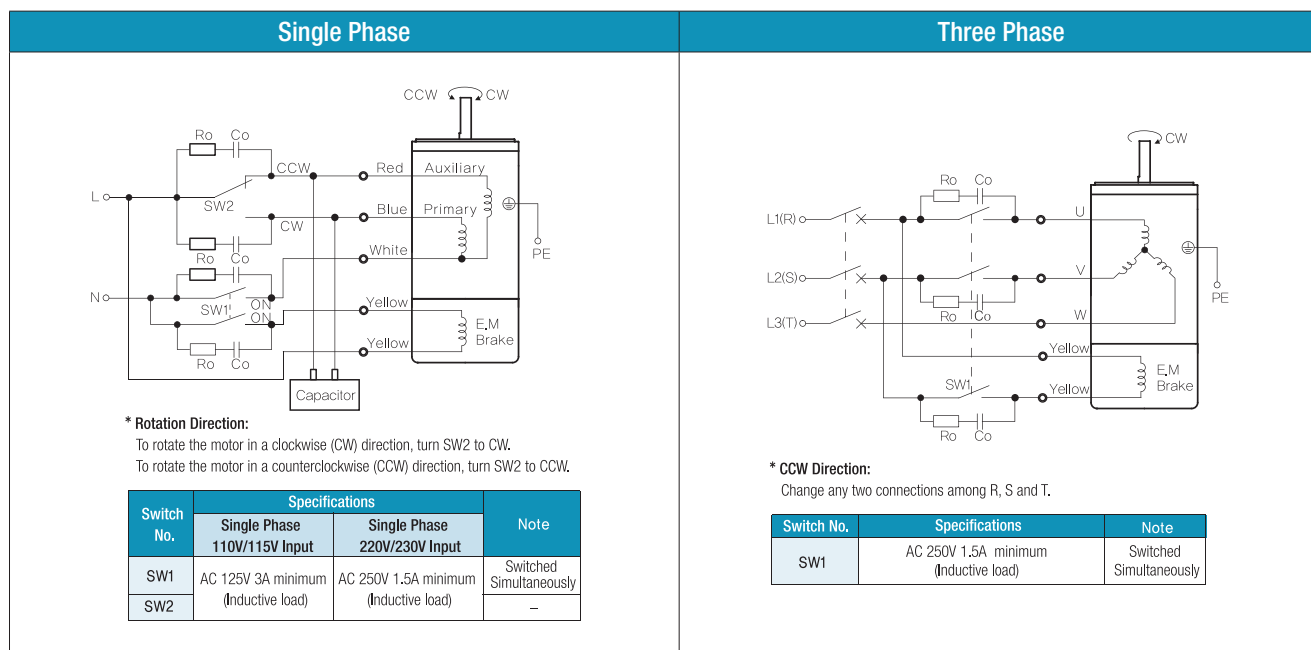
WEIGHT

PART	WEIGHT(Kg)
MOTOR	2,0
8GBK3BMH - 8GBK18BMH	0,48
8GBK25BMH - 8GBK30BMH	0,61
8GBK36BMH - 8GBK180BMH	0,67
8GBK200BMH - 8GBK360BMH	0,63
8WD□BL/BR/BRL	0,67
8XD10□□	0,44

Motor Images



Connection Diagrams



- 1) The direction of motor rotation is as viewed from the shaft end of the motor.
- 2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- 3) SW1 operates both motor and electromagnetic brake action.
- 4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
- 5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
- 6) R_o and C_o indicate CR circuit for surge suppression. [R_o=5~200Ω, C_o=0.1~0.2μF, 200WV (400WV)]

B AC Motors

Brake Motor 40W (□90mm)

40W Brake Motor 40W(□90mm)

Motor Specification

Model 9BDG*~40□: Gear Type Shaft 9BDD*~40: D-Cut Type Shaft 9BDK*~40: Key Type Shaft	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque		Rated Load			Capacitor μF / VAC	
						kgfcm	N.m	Speed r/min	Current A	Torque kgfcm N.m		
9BDGA~40□	40	1∅110	60	4	30min.	4.20	0.420	1600	1.25	2.60	0.260	16.0 / 250
9BDGD~40□	40	1∅220	60	4	30min.	4.20	0.420	1600	0.61	2.60	0.260	4.0 / 450
9BDGE~40□	40	1∅220	50	4	30min.	3.00	0.300	1350	0.36	3.00	0.300	3.0 / 450
		1∅240				3.60	0.360		0.39	3.40	0.340	
9BDGG~40□	40	3∅220	50	4	Cont.	9.00	0.900	1300	0.31	3.20	0.320	-
			60			7.40	0.740	1600	0.27	2.45	0.245	
9BDGK~40□	40	3∅380	50	4	Cont.	9.00	0.900	1300	0.20	3.20	0.320	-
			60			7.20	0.720	1550	0.18	2.80	0.280	
		3∅400	50	4	Cont.	10.00	1.000	1300	0.20	3.40	0.340	
			60			7.80	0.780	1550	0.18	3.00	0.300	
		3∅415	50	4	Cont.	11.00	1.100	1350	0.20	3.00	0.300	
			60			8.60	0.860	1600	0.18	2.80	0.280	
		3∅440	50	4	Cont.	12.00	1.200	1350	0.21	3.40	0.340	
			60			9.80	0.980	1600	0.19	3.00	0.300	

1) Enter the phase & voltage code in the place * and enter the model type of attaching Gearbox in the box (□) within the motor model name.

2) All models contain a built-in thermal protector.

3) Gear Type Shaft is for attaching Gearbox and D-Cut & Key Type Shafts are for using motor only.

※ It is not possible to use inverter for three phase 380~440V motor. When inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	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	200
		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	9
9BDG□~40G	9GBK□ BMH	kgfcm	4.6	7.0	8.4	11.6	13.9	17.4	20.9	23.2	29.1	34.9	37.8	52.5	63.0	68.5	76.2	95.2	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		N.m	0.46	0.68	0.82	1.14	1.37	1.71	2.05	2.28	2.85	3.42	3.70	5.15	6.17	6.72	7.46	9.33	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
9BDG□~40W	9WD□BL/□BR/ □BRL	kgfcm	21.3	25.0	30.0	34.6	45.5	51.5	59.9	78.0	85.8
		N.m	2.09	2.45	2.94	3.39	4.46	5.05	5.87	7.64	8.41

50Hz

Motor Model	Gearbox Model	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	200
		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	7.5
9BDG□~40G	9GBK□ BMH	kgfcm	5.6	8.5	10.2	14.1	16.9	21.2	25.4	28.2	35.3	42.3	45.9	63.8	76.5	83.2	92.5	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
		N.m	0.55	0.83	1.00	1.38	1.66	2.07	2.49	2.77	3.46	4.15	4.50	6.25	7.50	8.16	9.06	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
9BDG□~40W	9WD□BL/□BR/ □BRL	kgfcm	27.9	32.6	39.3	45.3	59.5	67.3	78.3	102.0	112.2
		N.m	2.73	3.20	3.85	4.44	5.83	6.60	7.68	10.00	11.00

1) Enter the phase & voltage code in the box (□) within the motor model name.

2) Enter the gear ratio in the box (□) within the Gearbox model name.

3) A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.

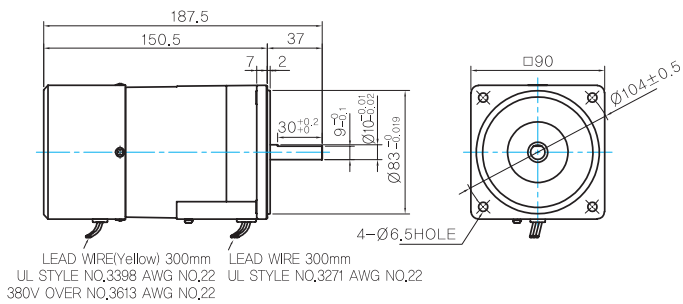
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio.

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

Dimensions

MOTOR ONLY

- MOTOR MODEL: 9BDD□-40 (NO FAN)

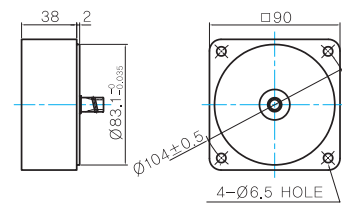


MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	
9BDD□-40	
KEY TYPE	
9BDK□-40	

INTER-DECIMAL GEARBOX

- MODEL: 9XD10□□

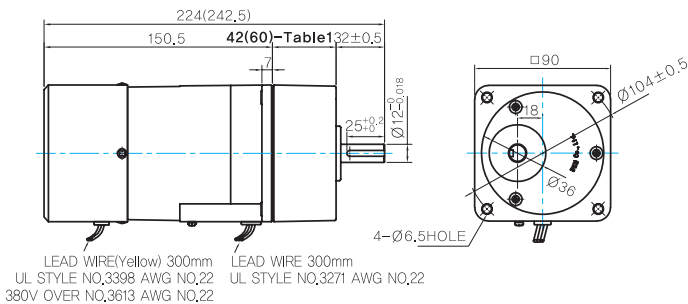


GEARED MOTOR

G TYPE GEARBOX

- MOTOR MODEL: 9BDG□-40G (NO FAN)

- GEARBOX MODEL: 9GBK□BMH



GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

- 42(60)-Table1

SIZE(mm)	GEAR RATIO
42	9GBK2BMH - 9GBK18BMH
60	9GBK25BMH - 9GBK200BMH

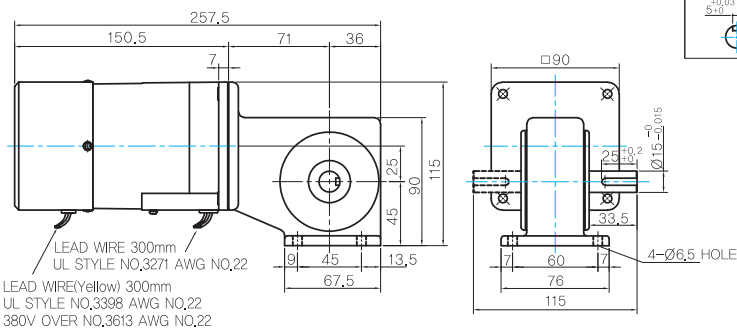
KEY SPEC

GEARBOX

W TYPE GEARBOX

- MOTOR MODEL: 9BDG□-40W (NO FAN)

- GEARBOX MODEL: 9WD□BL/BR/BRL



KEY SPEC

GEARBOX

WEIGHT

PART	WEIGHT(Kg)
MOTOR	3.0
9GBK2BMH - 9GBK15BMH	0.67
9GBK18BMH - 9GBK30BMH	0.96
9GBK36BMH - 9GBK200BMH	1.07
9WD□BL/BR/BRL	1.0
9XD10□□	0.5

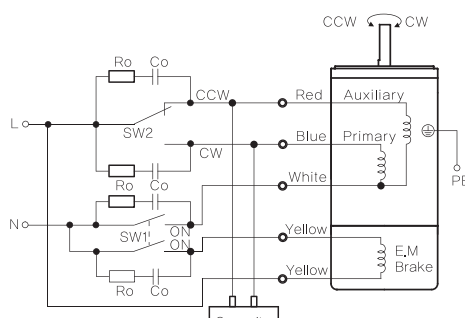
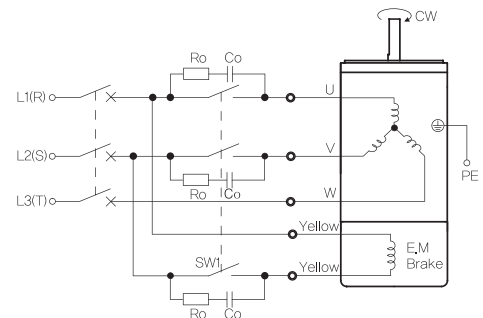
Motor Images



B AC Motors

Brake Motor 40W (□90mm)

Connection Diagrams

Single Phase	Three Phase																				
 <p>The diagram shows a single-phase AC input (L, N) connected to a motor. The motor has a primary winding (Blue, White) and an auxiliary winding (Red, Yellow). A capacitor is connected between the primary and auxiliary windings. Two switches, SW1 and SW2, control the motor. SW1 is a double-throw switch that controls both the motor and the electromagnetic brake (E.M. Brake). SW2 is a selector switch for rotation direction (CW or CCW). Surge suppression components (Ro, Co) are connected to the input lines.</p> <p>* Rotation Direction: To rotate the motor in a clockwise (CW) direction, turn SW2 to CW. To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr style="background-color: #0070C0; color: white;"> <th rowspan="2">Switch No.</th> <th colspan="2">Specifications</th> <th rowspan="2">Note</th> </tr> <tr style="background-color: #0070C0; color: white;"> <th>Single Phase 110V/115V Input</th> <th>Single Phase 220V/230V Input</th> </tr> </thead> <tbody> <tr> <td>SW1</td> <td>AC 125V 3A minimum (Inductive load)</td> <td>AC 250V 1.5A minimum (Inductive load)</td> <td>Switched Simultaneously</td> </tr> <tr> <td>SW2</td> <td></td> <td></td> <td>—</td> </tr> </tbody> </table>	Switch No.	Specifications		Note	Single Phase 110V/115V Input	Single Phase 220V/230V Input	SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously	SW2			—	 <p>The diagram shows a three-phase AC input (L1(R), L2(S), L3(T)) connected to a motor. The motor has three main windings (U, V, W) and an electromagnetic brake (E.M. Brake). A switch SW1 controls the motor and brake. Surge suppression components (Ro, Co) are connected to the input lines.</p> <p>* CCW Direction: Change any two connections among R, S and T.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr style="background-color: #0070C0; color: white;"> <th>Switch No.</th> <th>Specifications</th> <th>Note</th> </tr> </thead> <tbody> <tr> <td>SW1</td> <td>AC 250V 1.5A minimum (Inductive load)</td> <td>Switched Simultaneously</td> </tr> </tbody> </table>	Switch No.	Specifications	Note	SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
Switch No.		Specifications			Note																
	Single Phase 110V/115V Input	Single Phase 220V/230V Input																			
SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously																		
SW2			—																		
Switch No.	Specifications	Note																			
SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously																			

- 1) The direction of motor rotation is as viewed from the shaft end of the motor.
- 2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- 3) SW1 operates both motor and electromagnetic brake action.
- 4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
- 5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
- 6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

Brake Motor 60W (□90mm)

60W Brake Motor
60W(□90mm)

Brake Motor 60W (□90mm)

Motor Specification

Model 9BDG*-60F□: Gear Type Shaft 9BDD*-60F: D-Cut Type Shaft 9BDK*-60F: Key Type Shaft	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque		Rated Load				Capacitor μF / VAC
						kgfcm	N.m	Speed r/min	Current A	Torque kgfcm N.m		
9BDGA-60F□	60	1∅110	60	4	30min.	5.20	0.520	1600	1.60	5.00	0.500	20.0 / 250
9BDGD-60F□	60	1∅220	60	4	30min.	5.00	0.500	1600	0.75	4.60	0.460	5.0 / 450
9BDGE-60F□	60	1∅220	50	4	30min.	5.40	0.540	1300	0.59	5.00	0.500	5.0 / 450
		1∅240				6.60	0.660		0.64	5.60	0.560	
9BDGG-60F□	60	3∅220	50	4	Cont.	15.00	1.500	1350	0.59	4.60	0.460	-
			60			12.80	1.280	1600	0.49	4.20	0.420	
9BDGK-60F□	60	3∅380	50	4	Cont.	17.00	1.700	1350	0.33	4.80	0.480	-
			60			13.80	1.380	1600	0.29	4.60	0.460	
		3∅400	50	4	Cont.	18.60	1.860	1350	0.36	5.20	0.520	
			60			15.20	1.520	1600	0.30	5.00	0.500	
		3∅415	50	4	Cont.	20.00	2.000	1350	0.40	5.60	0.560	
			60			16.20	1.620	1600	0.33	5.20	0.520	
		3∅440	50	4	Cont.	22.00	2.200	1350	0.44	6.00	0.600	
			60			18.20	1.820	1600	0.36	5.80	0.580	

- 1) Enter the phase & voltage code in the place * and enter the model type of attaching Gearbox in the box (□) within the motor model name.
 2) All models contain a built-in thermal protector. 3) Gear Type Shaft is for attaching Gearbox and D-Cut & Key Type Shafts are for using motor only.
 ※ It is not possible to use inverter for three phase 380~440V motor. When inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio r/min	Gear Ratios																							
			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	200
9BDG□ -60FP	9PBK□BH 9PFK□BH	kgfcm	7.6	11.5	13.7	19.1	22.9	28.6	34.4	43.1	51.8	62.1	62.6	78.2	93.8	112.6	125.1	156.4	187.7	200.0	200.0	200.0	200.0	200.0	200.0	200.0
		N.m	0.75	1.12	1.35	1.87	2.24	2.81	3.37	4.23	5.07	6.09	6.13	7.66	9.20	11.04	12.26	15.33	18.39	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9BDG□ -60FH	9HBK□BH 9HFK□BH	kgfcm	-	11.5	13.7	-	22.9	-	34.4	43.1	51.8	62.1	62.6	78.2	93.8	112.6	-	156.4	187.7	210.5	252.5	280.6	300.0	300.0	300.0	300.0
		N.m	-	1.12	1.35	-	2.24	-	3.37	4.23	5.07	6.09	6.13	7.66	9.20	11.04	-	15.33	18.39	20.62	24.75	27.50	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio r/min	Gear Ratios								Motor Model	Gearbox Model	Gear Ratio r/min	Gear Ratios									
			10	12	15	18	25	30	36	50				60	9BDG□ -60FWH	9WHD□ -030	7.5	10	15	20	25	30	40
9BDG□ -60FW	9WD□BL/ □BR/□BRL	kgfcm	41.0	48.0	57.8	66.6	87.5	99.0	115.2	142.9	122.4	9BDG□ -60FWH	9WHD□ -030	29.0	37.3	52.4	66.2	75.9	88.3	108.6	124.2	138.0	132.7
		N.m	4.02	4.70	5.66	6.53	8.58	9.70	11.29	14.00	12.00	2.84	3.65	5.14	6.49	7.44	8.66	10.64	12.17	13.52	13.00		

50Hz

Motor Model	Gearbox Model	Gear Ratio r/min	Gear Ratios																							
			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	200
9BDG□ -60FP	9PBK□BH 9PFK□BH	kgfcm	8.3	12.5	14.9	20.8	24.9	31.1	37.4	46.9	56.3	67.5	68.0	85.0	102.0	122.4	136.0	170.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
		N.m	0.81	1.22	1.46	2.03	2.44	3.05	3.66	4.59	5.51	6.62	6.66	8.33	10.00	12.00	13.33	16.66	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9BDG□ -60FH	9HBK□BH 9HFK□BH	kgfcm	-	12.5	14.9	-	24.9	-	37.4	46.9	56.3	67.5	68.0	85.0	102.0	122.4	-	170.0	204.0	228.8	274.5	300.0	300.0	300.0	300.0	300.0
		N.m	-	1.22	1.46	-	2.44	-	3.66	4.59	5.51	6.62	6.66	8.33	10.00	12.00	-	16.66	19.99	22.42	26.90	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio r/min	Gear Ratios								Motor Model	Gearbox Model	Gear Ratio r/min	Gear Ratios									
			10	12	15	18	25	30	36	50				60	9BDG□ -60FWH	9WHD□ -030	7.5	10	15	20	25	30	40
9BDG□ -60FW	9WD□BL/ □BR/□BRL	kgfcm	45.9	53.8	64.7	74.6	98.0	110.9	129.0	142.9	122.4	9BDG□ -60FWH	9WHD□ -030	31.5	40.5	57.0	72.0	82.5	96.0	118.0	135.0	150.0	132.7
		N.m	4.50	5.27	6.34	7.31	9.60	10.87	12.84	14.00	12.00	3.09	3.97	5.59	7.06	8.09	9.41	11.56	13.23	14.70	13.00		

- 1) Enter the phase & voltage code in the box (□) within the motor model name. 2) Enter the gear ratio in the box (□) within the Gearbox model name.
 3) A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
 4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio.
 The actual speed is 2~20% less than the displayed value, depending on the size of the load.

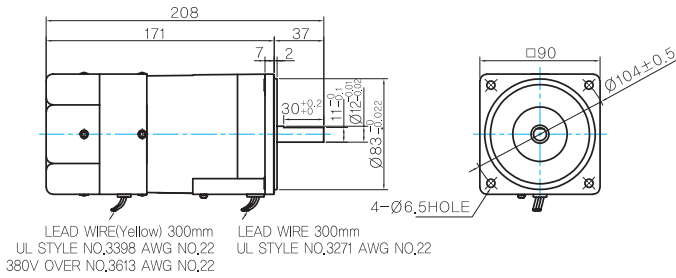
B AC Motors

Brake Motor 60W (□90mm)

Dimensions

MOTOR ONLY

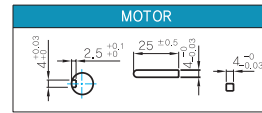
- MOTOR MODEL:
9BDD□-60F (GENERAL FAN)



MOTOR OUTPUT SHAFT

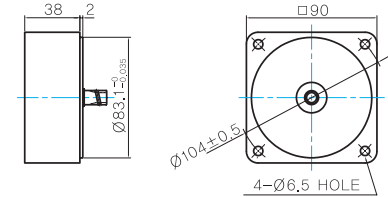
MODEL	SPEC
D-CUT TYPE	
9BDD□-60F	
KEY TYPE	
9BDK□-60F	

KEY SPEC



INTER-DECIMAL GEARBOX

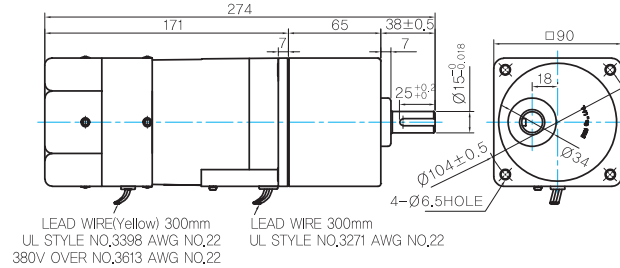
- MODEL:
9XD10□□



GEARED MOTOR

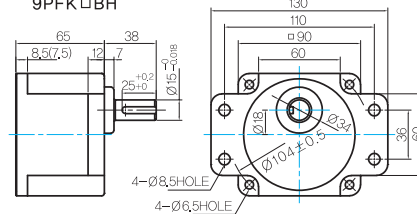
P TYPE GEARBOX

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



- GEARBOX MODEL:
9PBK□BH

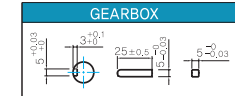
- GEARBOX MODEL:
9PFK□BH



GEARBOX OUTPUT SHAFT

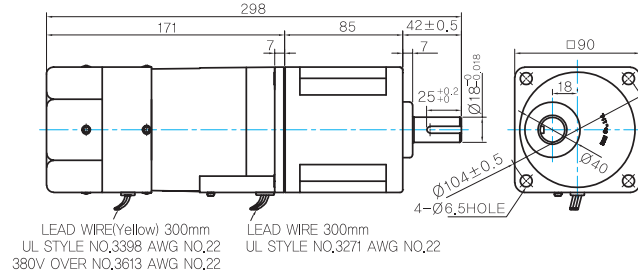
MODEL	SPEC
KEY TYPE	
9PBK□BH 9PFK□BH	

KEY SPEC



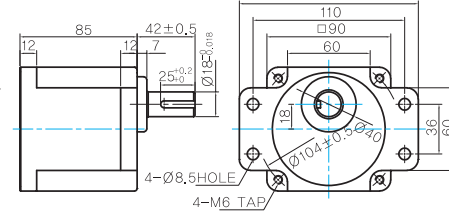
H TYPE GEARBOX

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



- GEARBOX MODEL:
9HBK□BH

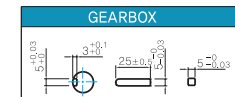
- GEARBOX MODEL:
9HFK□BH



GEARBOX OUTPUT SHAFT

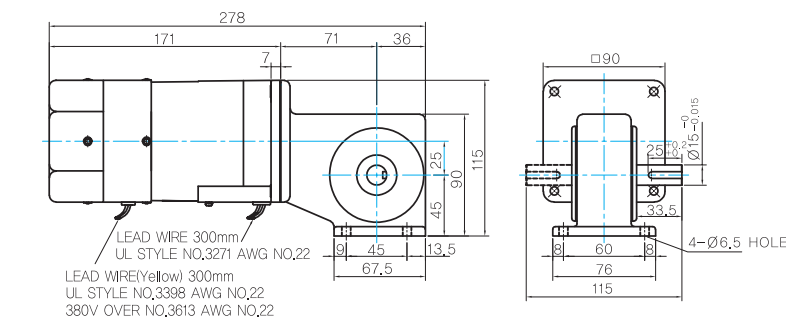
MODEL	SPEC
KEY TYPE	
9HBK□BH 9HFK□BH	

KEY SPEC



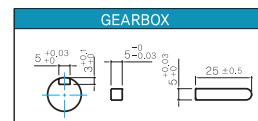
W TYPE GEARBOX

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



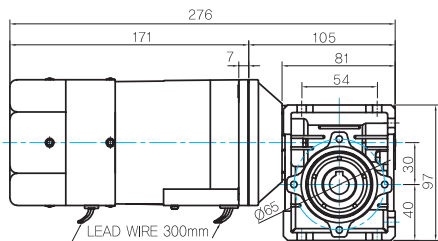
- GEARBOX MODEL:
9WD□BL/BR/BRL

KEY SPEC



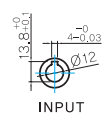
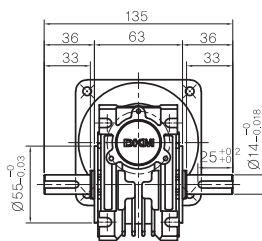
WH TYPE GEARBOX

● MOTOR MODEL:
9BDG□-60FWH (GENERAL FAN)

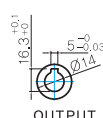
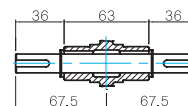
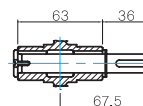


LEAD WIRE 300mm
UL STYLE NO,3271 AWG NO,22
LEAD WIRE(Yellow) 300mm
UL STYLE NO,3398 AWG NO,22
380V OVER NO,3613 AWG NO,22

● GEARBOX MODEL:
9WHD□-030



INPUT

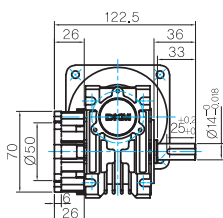
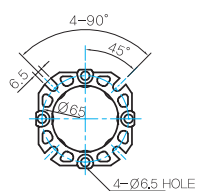


OUTPUT

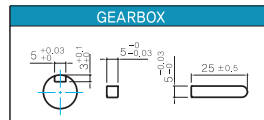
WEIGHT

	PART	WEIGHT(Kg)
GEAR BOX	MOTOR	3,0
	9PB(F)K2BH ~ 9PB(F)K18BH	1,3
	9PB(F)K20BH ~ 9PB(F)K200BH	1,4
	9HB(F)K3BH ~ 9HB(F)K9BH	1,45
	9HB(F)K12.5BH ~ 9HB(F)K18BH	1,5
	9HB(F)K20BH ~ 9HB(F)K60BH	1,7
	9HB(F)K75BH ~ 9HB(F)K200BH	1,8
	9WD□BL/BR/BRL	1,0
	9WHD□-030	1,13
	9XD10□□	0,5

● FLANGE



● KEY SPEC



* The output flange and shafts are sold separately.

Motor Images



B AC Motors

Brake Motor 60W (□90mm)

Connection Diagrams

Single Phase		Three Phase																					
<p>The diagram shows a single-phase AC supply (L, N) connected to a motor with an electromagnetic brake. The motor has four main terminals: Red (Auxiliary), Blue (Primary), White (Common), and Yellow (E.M. Brake). A capacitor is connected between the Yellow and White terminals. Two switches, SW1 and SW2, are used for control. SW1 is a double-throw switch that controls both the motor and the brake. SW2 is a selector switch for rotation direction (CW or CCW). Surge suppression components (Ro, Co) are connected to the supply lines.</p> <p>* Rotation Direction: To rotate the motor in a clockwise (CW) direction, turn SW2 to CW. To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.</p> <table border="1"> <thead> <tr> <th rowspan="2">Switch No.</th> <th colspan="2">Specifications</th> <th rowspan="2">Note</th> </tr> <tr> <th>Single Phase 110V/115V Input</th> <th>Single Phase 220V/230V Input</th> </tr> </thead> <tbody> <tr> <td>SW1</td> <td>AC 125V 3A minimum (Inductive load)</td> <td>AC 250V 1.5A minimum (Inductive load)</td> <td>Switched Simultaneously</td> </tr> <tr> <td>SW2</td> <td></td> <td></td> <td>-</td> </tr> </tbody> </table>		Switch No.	Specifications		Note	Single Phase 110V/115V Input	Single Phase 220V/230V Input	SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously	SW2			-	<p>The diagram shows a three-phase AC supply (L1(R), L2(S), L3(T)) connected to a motor with an electromagnetic brake. The motor has three main terminals: U, V, and W. A fourth terminal is Yellow (E.M. Brake). A capacitor is connected between the Yellow and White terminals. A switch SW1 is used for control. Surge suppression components (Ro, Co) are connected to the supply lines.</p> <p>* CCW Direction: Change any two connections among R, S and T.</p> <table border="1"> <thead> <tr> <th>Switch No.</th> <th>Specifications</th> <th>Note</th> </tr> </thead> <tbody> <tr> <td>SW1</td> <td>AC 250V 1.5A minimum (Inductive load)</td> <td>Switched Simultaneously</td> </tr> </tbody> </table>		Switch No.	Specifications	Note	SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
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SW2			-																				
Switch No.	Specifications	Note																					
SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously																					

- 1) The direction of motor rotation is as viewed from the shaft end of the motor.
- 2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- 3) SW1 operates both motor and electromagnetic brake action.
- 4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
- 5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
- 6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

Brake Motor 90W (□90mm)

Brake Motor 90W (□90mm)

90W Brake Motor 90W(□90mm)

Motor Specification

Model 9BDG*-90F□: Gear Type Shaft 9BDD*-90F: D-Cut Type Shaft 9BDK*-90F: Key Type Shaft	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque		Rated Load				Capacitor μF / VAC
						kgfcm	N.m	Speed r/min	Current A	Torque kgfcm N.m		
9BDGA-90F□	90	1∅110	60	4	30min.	6.60	0.660	1600	2.00	6.40	0.640	25.0 / 250
9BDGD-90F□	90	1∅220	60	4	30min.	6.00	0.600	1600	0.97	6.60	0.660	6.0 / 450
9BDGE-90F□	90	1∅220	50	4	30min.	6.40	0.640	1250	0.90	7.80	0.780	6.0 / 450
		1∅240				7.80	0.780		1.00	8.90	0.890	
9BDGG-90F□	90	3∅220	50	4	Cont.	20.00	2.000	1300	0.66	7.80	0.780	-
			60			16.60	1.660	1600	0.55	5.80	0.580	
9BDGK-90F□	90	3∅380	50	4	Cont.	21.80	2.180	1300	0.40	7.80	0.780	-
			60			17.20	1.720	1600	0.33	5.80	0.580	
		3∅400	50	4	Cont.	24.00	2.400	1300	0.43	8.60	0.860	
			60			19.20	1.920	1600	0.36	6.20	0.620	
		3∅415	50	4	Cont.	26.00	2.600	1350	0.43	7.40	0.740	
			60			20.20	2.020	1600	0.37	6.80	0.680	
		3∅440	50	4	Cont.	29.00	2.900	1350	0.48	8.00	0.800	
			60			23.80	2.380	1650	0.37	6.00	0.600	

1) Enter the phase & voltage code in the place * and enter the model type of attaching Gearbox in the box (□) within the motor model name.
 2) All models contain a built-in thermal protector. 3) Gear Type Shaft is for attaching Gearbox and D-Cut & Key Type Shafts are for using motor only.
 * It is not possible to use inverter for three phase 380-440V motor. When inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	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	200	
9BDG□ -90FP	9PBK□BH 9PFB□BH	kgfcm	11.5	17.2	20.6	28.6	34.4	43.0	51.5	64.7	77.6	93.2	93.8	117.3	140.8	168.9	187.7	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
		N.m	1.12	1.68	2.02	2.81	3.37	4.21	5.05	6.34	7.61	9.13	9.20	11.50	13.79	16.55	18.39	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9BDG□ -90FH	9HBK□BH 9HFK□BH	kgfcm	-	17.2	20.6	-	34.4	-	51.5	64.7	77.6	93.2	93.8	117.3	140.8	168.9	-	234.6	281.5	300.0	300.0	300.0	300.0	300.0	300.0	300.0	
		N.m	-	1.68	2.02	-	3.37	-	5.05	6.34	7.61	9.13	9.20	11.50	13.79	16.55	-	22.99	27.59	29.40	29.40	29.40	29.40	29.40	29.40	29.40	

Motor Model	Gearbox Model	Gear Ratio	Gear Ratio								Motor Model	Gearbox Model	Gear Ratio	Gear Ratio										
			10	12	15	18	25	30	36	50				60	7.5	10	15	20	25	30	40	50	60	80
9BDG□ -90FW	9WD□BL/ □BR/□BRL	kgfcm	56.6	66.2	79.7	91.9	120.8	136.6	153.1	142.9	122.4	9BDG□ -90FWH	9WHD□ -030	kgfcm	43.5	55.9	78.7	99.4	113.9	132.5	162.8	173.5	163.3	132.7
		N.m	5.54	6.49	7.81	9.01	11.83	13.39	15.00	14.00	12.00			N.m	4.26	5.48	7.71	9.74	11.16	12.98	15.96	17.00	16.00	13.00

50Hz

Motor Model	Gearbox Model	Gear Ratio	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	200
9BDG□ -90FP	9PBK□BH 9PFB□BH	kgfcm	12.9	19.4	23.3	32.4	38.8	48.6	58.3	73.1	87.8	105.3	106.1	132.6	159.1	190.9	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
		N.m	1.27	1.90	2.28	3.17	3.81	4.76	5.71	7.17	8.60	10.32	10.40	12.99	15.59	18.71	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9BDG□ -90FH	9HBK□BH 9HFK□BH	kgfcm	-	19.4	23.3	-	38.8	-	58.3	73.1	87.8	105.3	106.1	132.6	159.1	190.9	-	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	
		N.m	-	1.90	2.28	-	3.81	-	5.71	7.17	8.60	10.32	10.40	12.99	15.59	18.71	-	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	

Motor Model	Gearbox Model	Gear Ratio	Gear Ratio								Motor Model	Gearbox Model	Gear Ratio	Gear Ratio										
			10	12	15	18	25	30	36	50				60	7.5	10	15	20	25	30	40	50	60	80
9BDG□ -90FW	9WD□BL/ □BR/□BRL	kgfcm	64.0	74.9	90.1	103.9	136.5	154.4	153.1	142.9	122.4	9BDG□ -90FWH	9WHD□ -030	kgfcm	49.1	63.2	88.9	112.3	128.7	149.8	183.7	173.5	163.3	132.7
		N.m	6.27	7.34	8.83	10.18	13.38	15.14	15.00	14.00	12.00			N.m	4.82	6.19	8.71	11.01	12.61	14.68	18.00	17.00	16.00	13.00

1) Enter the phase & voltage code in the box (□) within the motor model name. 2) Enter the gear ratio in the box (□) within the Gearbox model name.
 3) A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
 4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio.
 The actual speed is 2-20% less than the displayed value, depending on the size of the load.

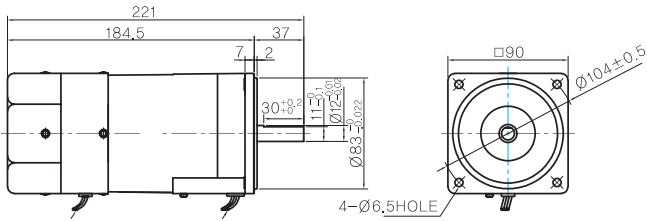
B AC Motors

Brake Motor 90W (□90mm)

Dimensions

MOTOR ONLY

- MOTOR MODEL: 9BDD□-90F (GENERAL FAN)



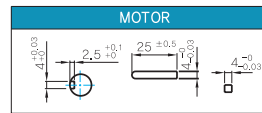
LEAD WIRE (Yellow) 300mm
UL STYLE NO.3398 AWG NO.22
380V OVER NO.3613 AWG NO.22

LEAD WIRE 300mm
UL STYLE NO.3271 AWG NO.22

MOTOR OUTPUT SHAFT

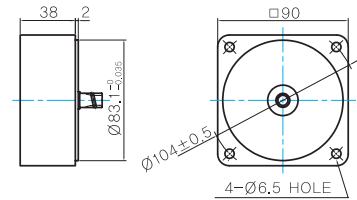
MODEL	SPEC
D-CUT TYPE	37 30±0.2 11±0.1 Ø125±0.02
9BDD□-90F	
KEY TYPE	37 25±0.2 Ø125±0.02
9BDD□-90F	

KEY SPEC



INTER-DECIMAL GEARBOX

- MODEL: 9XD10□□



GEARED MOTOR

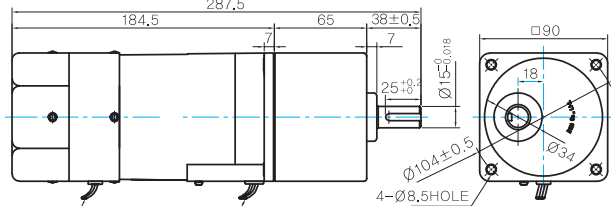
P TYPE GEARBOX

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

- GEARBOX MODEL: 9PBK□BH

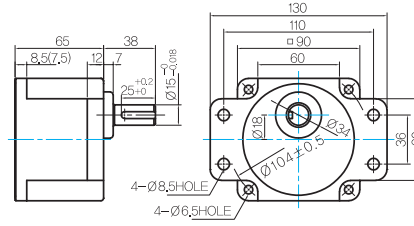
- GEARBOX MODEL: 9PFK□BH

GEARBOX OUTPUT SHAFT



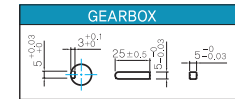
LEAD WIRE (Yellow) 300mm
UL STYLE NO.3398 AWG NO.22
380V OVER NO.3613 AWG NO.22

LEAD WIRE 300mm
UL STYLE NO.3271 AWG NO.22



MODEL	SPEC
KEY TYPE	38 25±0.2 Ø115±0.018
9PBK□BH	
9PFK□BH	

KEY SPEC



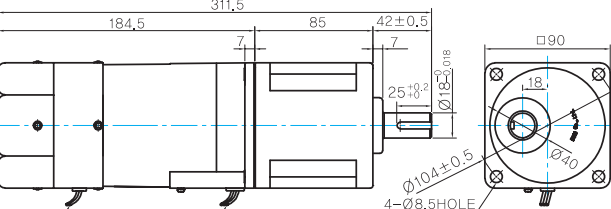
H TYPE GEARBOX

- MOTOR MODEL: 9BDG□-90FH (GENERAL FAN)

- GEARBOX MODEL: 9HBK□BH

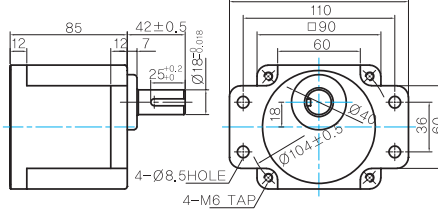
- GEARBOX MODEL: 9HFK□BH

GEARBOX OUTPUT SHAFT



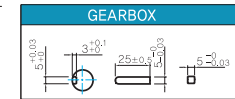
LEAD WIRE (Yellow) 300mm
UL STYLE NO.3398 AWG NO.22
380V OVER NO.3613 AWG NO.22

LEAD WIRE 300mm
UL STYLE NO.3271 AWG NO.22



MODEL	SPEC
KEY TYPE	42 25±0.2 Ø115±0.018
9HBK□BH	
9HFK□BH	

KEY SPEC

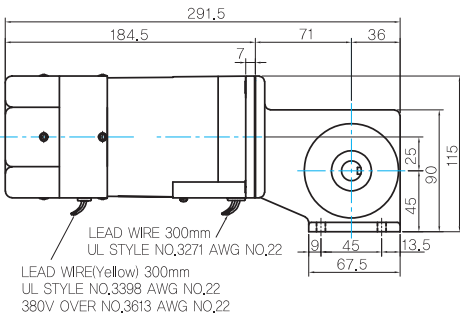


W TYPE GEARBOX

- MOTOR MODEL: 9BDG□-90FW (GENERAL FAN)

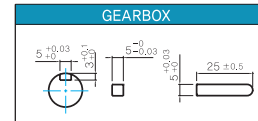
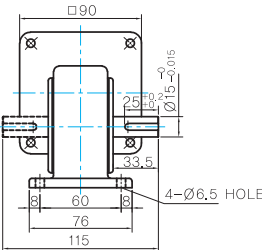
- GEARBOX MODEL: 9WD□BL/BR/BRL

KEY SPEC



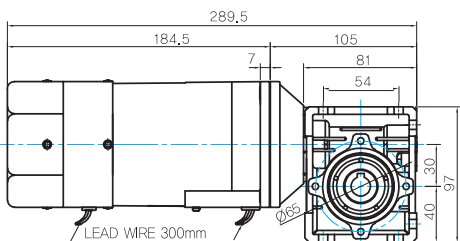
LEAD WIRE 300mm
UL STYLE NO.3271 AWG NO.22

LEAD WIRE (Yellow) 300mm
UL STYLE NO.3398 AWG NO.22
380V OVER NO.3613 AWG NO.22



WH TYPE GEARBOX

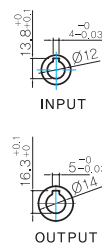
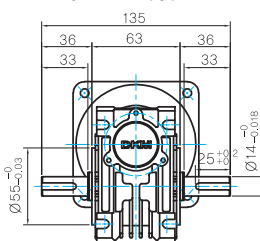
● MOTOR MODEL:
9BDG□-90FWH (GENERAL FAN)



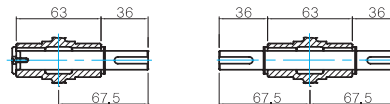
LEAD WIRE 300mm
UL STYLE NO.3271 AWG NO.22

LEAD WIRE(Yellow) 300mm
UL STYLE NO.3398 AWG NO.22
380V OVER NO.3613 AWG NO.22

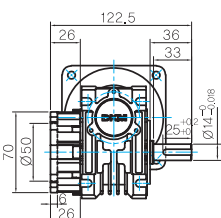
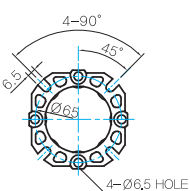
● GEARBOX MODEL:
9WHD□-030



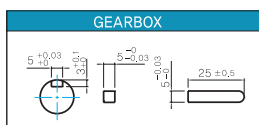
● SHAFT(Unidirectional, Bi-directional)



● FLANGE



● KEY SPEC



WEIGHT

	PART	WEIGHT(Kg)
	MOTOR	3,5
GEAR BOX	9PB(F)K2BH ~ 9PB(F)K18BH	1,3
	9PB(F)K20BH ~ 9PB(F)K200BH	1,4
	9HB(F)K3BH ~ 9HB(F)K9BH	1,45
	9HB(F)K12,5BH ~ 9HB(F)K18BH	1,5
	9HB(F)K20BH ~ 9HB(F)K60BH	1,7
	9HB(F)K75BH ~ 9HB(F)K200BH	1,8
	9WD□BL/BR/BRL	1,0
	9WHD□-030	1,13
	9XD10□	0,5

* The output flange and shafts are sold separately.

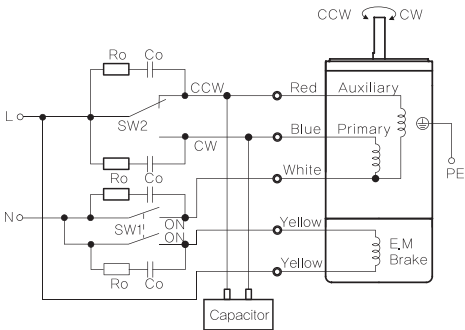
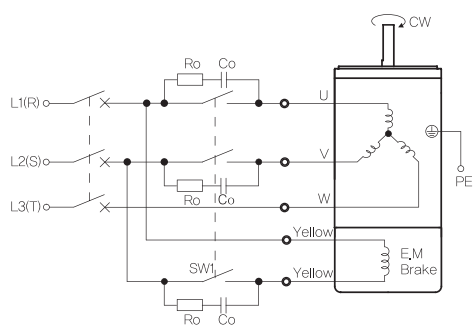
Motor Images



B AC Motors

Brake Motor 90W (□90mm)

Connection Diagrams

Single Phase	Three Phase																				
 <p>The diagram shows a single-phase AC input (L, N) connected to a motor with an electromagnetic brake. The motor has three main windings: Auxiliary (Red), Primary (Blue), and E.M. Brake (Yellow). A capacitor is connected between the Primary and Brake windings. Two switches, SW1 and SW2, control the motor and brake. SW2 is used to select rotation direction (CW or CCW). SW1 is used to switch the motor and brake simultaneously. Surge suppression components (Ro, Co) are shown on the input lines.</p> <p>* Rotation Direction: To rotate the motor in a clockwise (CW) direction, turn SW2 to CW. To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr style="background-color: #0070C0; color: white;"> <th rowspan="2">Switch No.</th> <th colspan="2">Specifications</th> <th rowspan="2">Note</th> </tr> <tr style="background-color: #0070C0; color: white;"> <th>Single Phase 110V/115V Input</th> <th>Single Phase 220V/230V Input</th> </tr> </thead> <tbody> <tr> <td>SW1</td> <td>AC 125V 3A minimum (Inductive load)</td> <td>AC 250V 1.5A minimum (Inductive load)</td> <td>Switched Simultaneously</td> </tr> <tr> <td>SW2</td> <td></td> <td></td> <td>-</td> </tr> </tbody> </table>	Switch No.	Specifications		Note	Single Phase 110V/115V Input	Single Phase 220V/230V Input	SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously	SW2			-	 <p>The diagram shows a three-phase AC input (L1(R), L2(S), L3(T)) connected to a motor with an electromagnetic brake. The motor has three main windings: U, V, and W. A capacitor is connected between the U and W windings. A switch SW1 controls the motor and brake simultaneously. Surge suppression components (Ro, Co) are shown on the input lines.</p> <p>* CCW Direction: Change any two connections among R, S and T.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr style="background-color: #0070C0; color: white;"> <th>Switch No.</th> <th>Specifications</th> <th>Note</th> </tr> </thead> <tbody> <tr> <td>SW1</td> <td>AC 250V 1.5A minimum (Inductive load)</td> <td>Switched Simultaneously</td> </tr> </tbody> </table>	Switch No.	Specifications	Note	SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
Switch No.		Specifications			Note																
	Single Phase 110V/115V Input	Single Phase 220V/230V Input																			
SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously																		
SW2			-																		
Switch No.	Specifications	Note																			
SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously																			

- 1) The direction of motor rotation is as viewed from the shaft end of the motor.
- 2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- 3) SW1 operates both motor and electromagnetic brake action.
- 4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
- 5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
- 6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

Brake Motor 120W (□90mm)

120W Brake Motor 120W(□90mm)

Brake Motor 120W (□90mm)

Motor Specification

Model 9BDG*-120F□: Gear Type Shaft 9BDD*-120F: D-Cut Type Shaft 9BDK*-120F: Key Type Shaft	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm N.m		Rated Load				Capacitor μF / VAC
								Speed r/min	Current A	Torque kgfcm N.m		
9BDGA-120F□	120	1∅110	60	4	30min.	7.60	0.760	1550	2.50	7.60	0.760	30.0 / 250
9BDGD-120F□	120	1∅220	60	4	30min.	6.60	0.660	1600	1.10	7.40	0.740	6.5 / 450
9BDGE-120F□	120	1∅220	50	4	30min.	6.40	0.640	1250	1.00	9.40	0.940	6.5 / 450
		1∅240				7.80	0.780		1.10	10.20	1.020	
9BDGG-120F□	120	3∅220	50	4	Cont.	22.00	2.200	1300	0.82	9.20	0.920	-
			60			20.00	2.000		1550	0.78	7.80	
9BDGK-120F□	120	3∅380	50	4	Cont.	25.00	2.500	1300	0.48	9.00	0.900	-
			60			20.00	2.000		1550	0.43	8.00	
		3∅400	50	4	Cont.	27.40	2.740	1300	0.53	9.80	0.980	
			60			21.80	2.180		1550	0.45	8.60	
		3∅415	50	4	Cont.	29.80	2.980	1300	0.57	10.00	1.000	
			60			23.80	2.380		1600	0.44	7.80	
		3∅440	50	4	Cont.	32.00	3.200	1350	0.64	8.80	0.880	
			60			26.80	2.680		1600	0.48	8.60	

1) Enter the phase & voltage code in the place * and enter the model type of attaching Gearbox in the box (□) within the motor model name.
 2) All models contain a built-in thermal protector. 3) Gear Type Shaft is for attaching Gearbox and D-Cut & Key Type Shafts are for using motor only.
 * It is not possible to use inverter for three phase 380-440V motor. When inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	Gear Ratio																		Motor Model	Gearbox Model	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
9BDG□ -120FP	9PBK□BH 9PFK□BH	kgfcm	12.9	19.4	23.3	32.4	38.8	48.6	58.3	73.1	87.8	105.3	106.1	132.6	159.1	190.9	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
		N.m	1.27	1.90	2.28	3.17	3.81	4.76	5.71	7.17	8.60	10.32	10.40	12.99	15.59	18.71	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9BDG□ -120FH	9HBK□BH 9HFK□BH	kgfcm	-	19.4	23.3	-	38.8	-	58.3	73.1	87.8	105.3	106.1	132.6	159.1	190.9	-	265.2	300.0	300.0	300.0	300.0	300.0	300.0	300.0	
		N.m	-	1.90	2.28	-	3.81	-	5.71	7.17	8.60	10.32	10.40	12.99	15.59	18.71	-	25.99	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	Gear Ratio						Motor Model	Gearbox Model	Gear Ratio													
			10	12	15	18	25	30				36	50	60										
9BDG□ -120FW	9WD□BL/ □BR/□BRL	kgfcm	60.7	71.0	85.5	98.6	129.5	146.5	153.1	142.9	122.4	9BDG□ -120FWH	9WHD□ -030	kgfcm	49.1	63.2	88.9	112.3	128.7	149.8	183.7	173.5	163.3	132.7
		N.m	5.95	6.96	8.38	9.66	12.69	14.36	15.00	14.00	12.00			N.m	4.82	6.19	8.71	11.01	12.61	14.68	18.00	17.00	16.00	13.00

50Hz

Motor Model	Gearbox Model	Gear Ratio	Gear Ratio																		Motor Model	Gearbox Model	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
9BDG□ -120FP	9PBK□BH 9PFK□BH	kgfcm	15.6	23.4	28.1	39.0	46.8	58.5	70.2	88.1	105.8	126.9	127.8	159.8	191.8	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
		N.m	1.53	2.29	2.75	3.82	4.59	5.73	6.88	8.64	10.36	12.44	12.53	15.66	18.79	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9BDG□ -120FH	9HBK□BH 9HFK□BH	kgfcm	-	23.4	28.1	-	46.8	-	70.2	88.1	105.8	126.9	127.8	159.8	191.8	230.1	-	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
		N.m	-	2.29	2.75	-	4.59	-	6.88	8.64	10.36	12.44	12.53	15.66	18.79	22.55	-	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	Gear Ratio						Motor Model	Gearbox Model	Gear Ratio													
			10	12	15	18	25	30				36	50	60										
9BDG□ -120FW	9WD□BL/ □BR/□BRL	kgfcm	77.1	90.2	108.6	125.2	142.9	163.3	153.1	142.9	122.4	9BDG□ -120FWH	9WHD□ -030	kgfcm	59.2	76.1	107.2	135.4	155.1	180.5	183.7	173.5	163.3	132.7
		N.m	7.55	8.84	10.64	12.27	14.00	16.00	15.00	14.00	12.00			N.m	5.80	7.46	10.50	13.27	15.20	17.69	18.00	17.00	16.00	13.00

1) Enter the phase & voltage code in the box (□) within the motor model name. 2) Enter the gear ratio in the box (□) within the Gearbox model name.
 3) A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
 4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio.
 The actual speed is 2-20% less than the displayed value, depending on the size of the load.

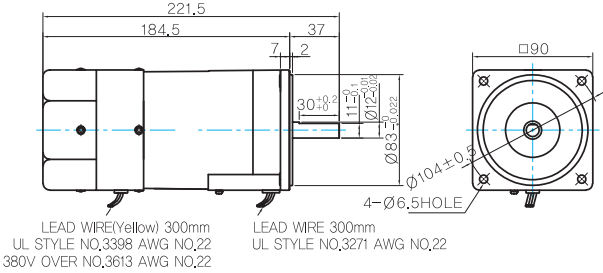
B AC Motors

Brake Motor 120W (□90mm)

Dimensions

MOTOR ONLY

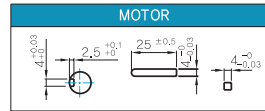
- MOTOR MODEL: 9BDD□-120F (GENERAL FAN)



MOTOR OUTPUT SHAFT

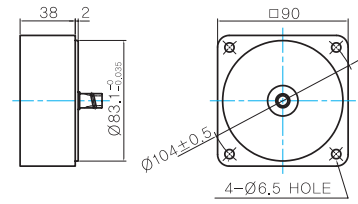
MODEL	SPEC
D-CUT TYPE	
9BDD□-120F	
KEY TYPE	
9BDK□-120F	

KEY SPEC



INTER-DECIMAL GEARBOX

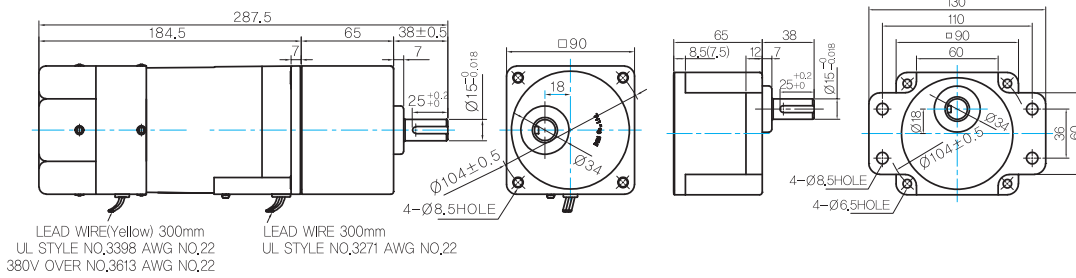
- MODEL: 9XD10□



GEARED MOTOR

P TYPE GEARBOX

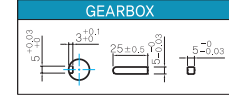
- MOTOR MODEL: 9BDG□-120FP (GENERAL FAN)
- GEARBOX MODEL: 9PBK□BH
- GEARBOX MODEL: 9PFK□BH



GEARBOX OUTPUT SHAFT

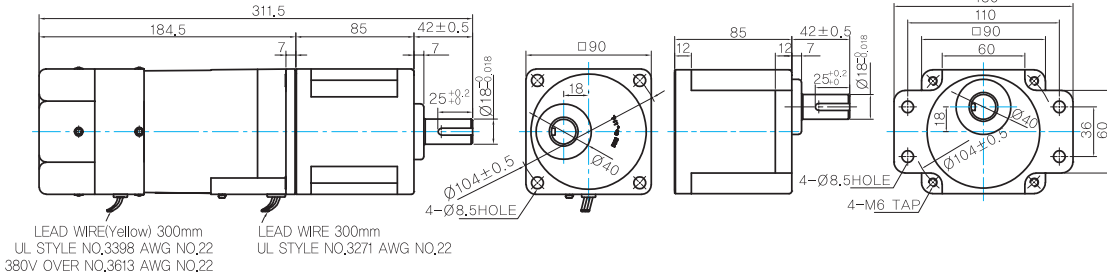
MODEL	SPEC
KEY TYPE	
9PBK□BH	
9PFK□BH	

KEY SPEC



H TYPE GEARHEAD

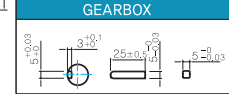
- MOTOR MODEL: 9BDG□-120FH (GENERAL FAN)
- GEARBOX MODEL: 9HBK□BH
- GEARBOX MODEL: 9HFK□BH



GEARBOX OUTPUT SHAFT

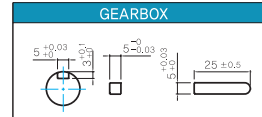
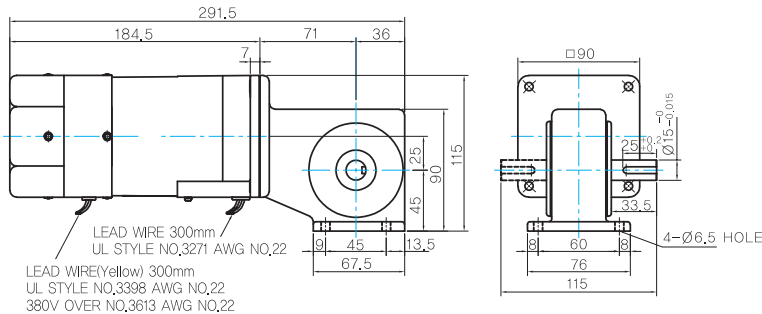
MODEL	SPEC
KEY TYPE	
9HBK□BH	
9HFK□BH	

KEY SPEC



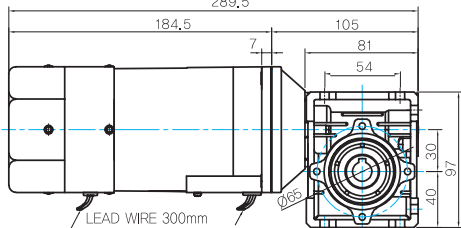
W TYPE GEARBOX

- MOTOR MODEL: 9BDG□-120FW (GENERAL FAN)
- GEARBOX MODEL: 9WD□BL/BR/BRL
- KEY SPEC

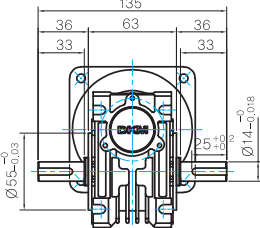


WH TYPE GEARBOX

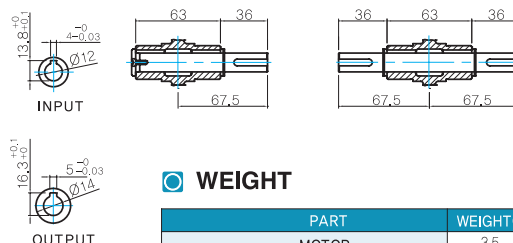
MOTOR MODEL:
9BDG□-120FWH (GENERAL FAN)
289,5



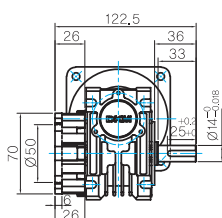
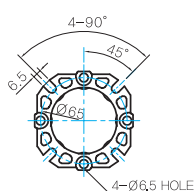
GEARBOX MODEL:
9WHD□-030
135



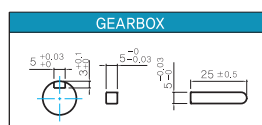
SHAFT(Unidirectional, Bi-directional)



FLANGE



KEY SPEC



WEIGHT

PART	WEIGHT(Kg)
MOTOR	3,5
9PB(F)K2BH ~ 9PB(F)K18BH	1,3
9PB(F)K20BH ~ 9PB(F)K200BH	1,4
9HB(F)K3BH ~ 9HB(F)K9BH	1,45
9HB(F)K12.5BH ~ 9HB(F)K18BH	1,5
9HB(F)K20BH ~ 9HB(F)K60BH	1,7
9HB(F)K75BH ~ 9HB(F)K200BH	1,8
9WD□BL/BR/BRL	1,0
9WHD□-030	1,13
9XD10□	0,5

* The output flange and shafts are sold separately.

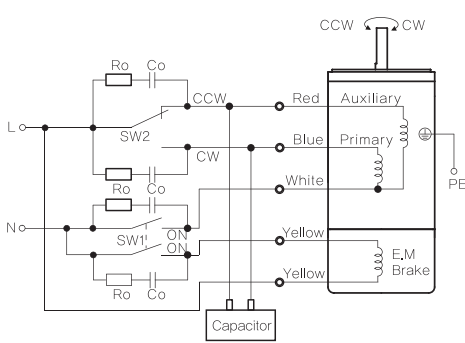
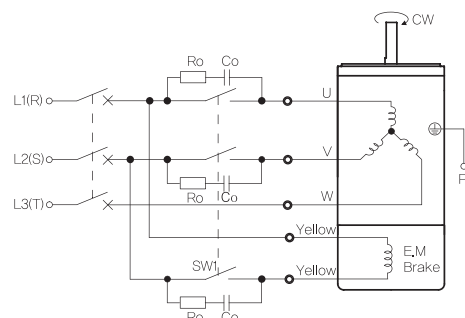
Motor Images



B AC Motors

Brake Motor 120W (□90mm)

Connection Diagrams

Single Phase	Three Phase																				
 <p>The diagram shows a single-phase AC input (L, N) connected to a motor with an electromagnetic brake. Two switches, SW1 and SW2, control the motor and brake. SW1 is a double-throw switch that can connect the motor to either the CW or CCW winding. SW2 is a selector switch for the motor's rotation direction. The motor has a primary winding (Blue, White) and an auxiliary winding (Red, Yellow). The brake is connected to two yellow wires. A capacitor is connected to the motor's terminals. Surge suppression components (Ro, Co) are shown in series with the motor windings.</p> <p>* Rotation Direction: To rotate the motor in a clockwise (CW) direction, turn SW2 to CW. To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr style="background-color: #0070C0; color: white;"> <th rowspan="2">Switch No.</th> <th colspan="2">Specifications</th> <th rowspan="2">Note</th> </tr> <tr style="background-color: #0070C0; color: white;"> <th>Single Phase 110V/115V Input</th> <th>Single Phase 220V/230V Input</th> </tr> </thead> <tbody> <tr> <td>SW1</td> <td>AC 125V 3A minimum (Inductive load)</td> <td>AC 250V 1.5A minimum (Inductive load)</td> <td>Switched Simultaneously</td> </tr> <tr> <td>SW2</td> <td></td> <td></td> <td>-</td> </tr> </tbody> </table>	Switch No.	Specifications		Note	Single Phase 110V/115V Input	Single Phase 220V/230V Input	SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously	SW2			-	 <p>The diagram shows a three-phase AC input (L1(R), L2(S), L3(T)) connected to a motor with an electromagnetic brake. A single switch SW1 controls the motor and brake. The motor has three main windings (U, V, W) and an auxiliary winding (Yellow). The brake is connected to two yellow wires. Surge suppression components (Ro, Co) are shown in series with the motor windings.</p> <p>* CCW Direction: Change any two connections among R, S and T.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr style="background-color: #0070C0; color: white;"> <th>Switch No.</th> <th>Specifications</th> <th>Note</th> </tr> </thead> <tbody> <tr> <td>SW1</td> <td>AC 250V 1.5A minimum (Inductive load)</td> <td>Switched Simultaneously</td> </tr> </tbody> </table>	Switch No.	Specifications	Note	SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
Switch No.		Specifications			Note																
	Single Phase 110V/115V Input	Single Phase 220V/230V Input																			
SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously																		
SW2			-																		
Switch No.	Specifications	Note																			
SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously																			

- 1) The direction of motor rotation is as viewed from the shaft end of the motor.
- 2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- 3) SW1 operates both motor and electromagnetic brake action.
- 4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
- 5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
- 6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

Brake Motor 150W (□90mm)

Brake Motor 150W (□90mm)

150W Brake Motor 150W(□90mm)

Motor Specification

Model 9BDG*-150F□: Gear Type Shaft 9BDD*-150F: D-Cut Type Shaft 9BDK*-150F: Key Type Shaft	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque		Rated Load			Capacitor μF / VAC	
						kgfcm	N.m	Speed r/min	Current A	Torque kgfcm N.m		
9BDGG-150F□	150	3φ220	50	4	Cont.	22.00	2.200	1300	1.00	11.30	1.130	-
			60			19.00	1.900	1550	0.90	9.40	0.940	
9BDGK-150F□	150	3φ380	50	4	Cont.	18.00	1.800	1250	0.46	11.70	1.170	-
			60			15.00	1.500	1500	0.42	9.70	0.970	
		3φ400	50	4	Cont.	19.00	1.900	1250	0.49	11.70	1.170	
			60			16.00	1.600	1500	0.43	9.70	0.970	

- 1) Enter the phase & voltage code in the place * and enter the model type of attaching Gearbox in the box (□) within the motor model name.
 - 2) All models contain a built-in thermal protector.
 - 3) Gear Type Shaft is for attaching Gearbox and D-Cut & Key Type Shafts are for using motor only.
- ※ It is not possible to use inverter for three phase 380~440V motor. When inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	6	9	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200	
			r/min	600	500	300	200	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
9BDG□ -150FH	9HBK□BH 9HFK□BH	kgfcm	24.2	29.0	48.3	72.5	90.9	109.1	131.0	131.9	164.9	197.9	237.5	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
		N.m	2.37	2.84	4.73	7.10	8.91	10.69	12.83	12.93	16.16	19.39	23.27	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	7.5	10	15	20	25	30	40	50	60	80	100
			r/min	240	180	120	90	72	60	45	36	30	22.5
9BDG□ -150FWH	9WHD□-030 9WHD□-040	kgfcm	61.1	78.6	110.6	139.7	160.1	186.2	183.7	173.5	163.3	132.7	-
		N.m	5.99	7.70	10.84	13.69	15.68	18.25	18.00	17.00	16.00	13.00	-
		kgfcm	-	-	-	-	-	-	-	230.0	255.0	295.0	270.0
		N.m	-	-	-	-	-	-	-	22.55	25.00	28.92	26.47

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	6	9	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
			r/min	500	417	250	167	120	100	83	75	60	50	42	30	25	20	17	15	13	10	8
9BDG□ -150FH	9HBK□BH 9HFK□BH	kgfcm	28.1	33.8	56.3	84.4	105.9	127.1	152.6	153.7	192.1	230.5	276.6	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
		N.m	2.76	3.31	5.51	8.27	10.38	12.46	14.95	15.06	18.83	22.59	27.11	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	7.5	10	15	20	25	30	40	50	60	80	100
			r/min	200	150	100	75	60	50	37.5	30	25	18.75
9BDG□ -150FWH	9WHD□-030 9WHD□-040	kgfcm	71.2	91.5	128.8	162.7	186.5	204.1	183.7	173.5	163.3	132.7	-
		N.m	6.98	8.97	12.62	15.95	18.28	20.00	18.00	17.00	16.00	13.00	-
		kgfcm	-	-	-	-	-	-	-	275.0	305.0	295.0	270.0
		N.m	-	-	-	-	-	-	-	26.96	29.90	28.92	26.47

- 1) Enter the phase & voltage code in the box (□) within the motor model name.
- 2) Enter the gear ratio in the box (□) within the Gearbox model name.
- 3) A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
- 4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio.
The actual speed is 2~20% less than the displayed value, depending on the size of the load.

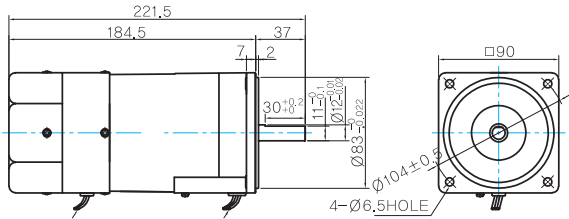
B AC Motors

Brake Motor 150W (□90mm)

Dimensions

MOTOR ONLY

- MOTOR MODEL: 9BDD□-150F (GENERAL FAN)



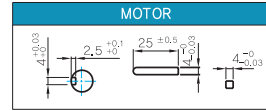
LEAD WIRE(Yellow) 300mm
UL STYLE NO,3398 AWG NO,22
380V OVER NO,3613 AWG NO,22

LEAD WIRE 300mm
UL STYLE NO,3271 AWG NO,22

MOTOR OUTPUT SHAFT

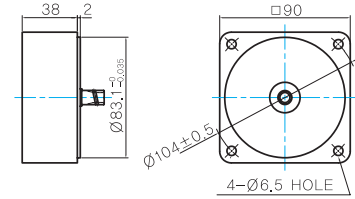
MODEL	SPEC
D-CUT TYPE	
9BDD□-150F	
KEY TYPE	
9BDK□-150F	

KEY SPEC



INTER-DECIMAL GEARBOX

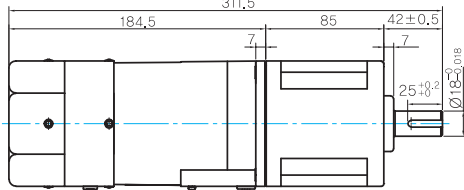
- MODEL: 9XD10□□



GEARED MOTOR

H TYPE GEARBOX

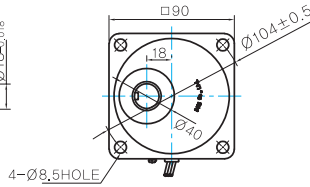
- MOTOR MODEL: 9BDG□-150FH (GENERAL FAN)



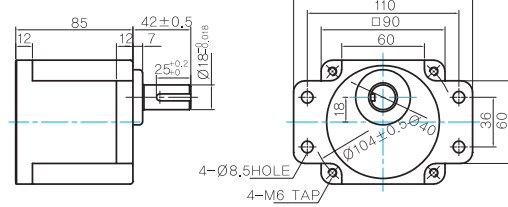
LEAD WIRE(Yellow) 300mm
UL STYLE NO,3398 AWG NO,22
380V OVER NO,3398 AWG NO,22

LEAD WIRE 300mm
UL STYLE NO,3271 AWG NO,22

- GEARBOX MODEL: 9HBK□BH



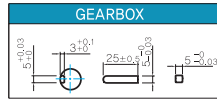
- GEARBOX MODEL: 9HFK□BH



GEARBOX OUTPUT SHAFT

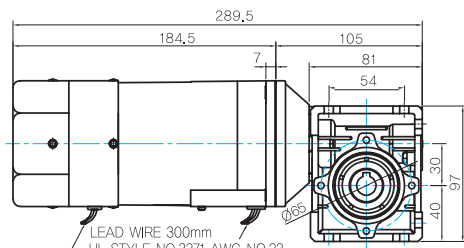
MODEL	SPEC
KEY TYPE	
9HBK□BH	
9HFK□BH	

KEY SPEC



WH TYPE GEARBOX

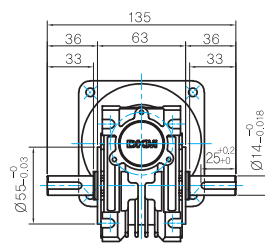
- MOTOR MODEL: 9BDG□-150FWH (GENERAL FAN)



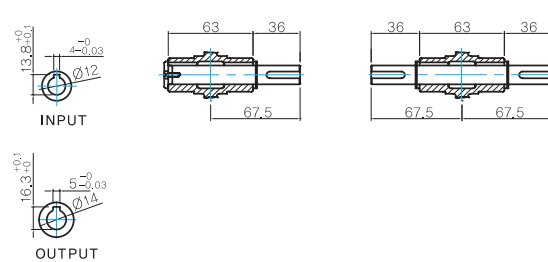
LEAD WIRE 300mm
UL STYLE NO,3271 AWG NO,22

LEAD WIRE(Yellow) 300mm
UL STYLE NO,3398 AWG NO,22
380V OVER NO,3613 AWG NO,22

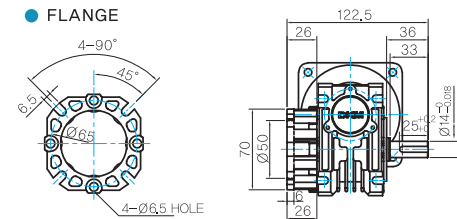
- GEARBOX MODEL: 9WHD□-030



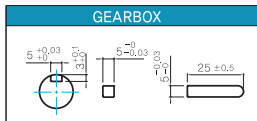
- SHAFT(Unidirectional, Bi-directional)



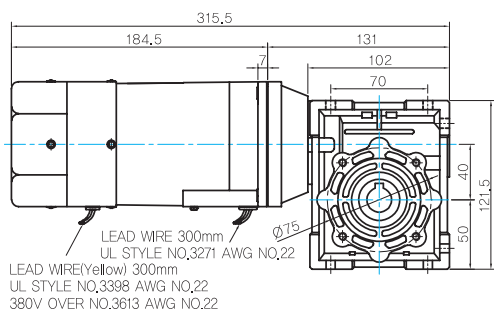
FLANGE



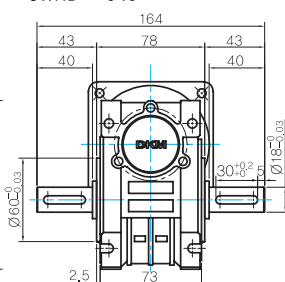
KEY SPEC



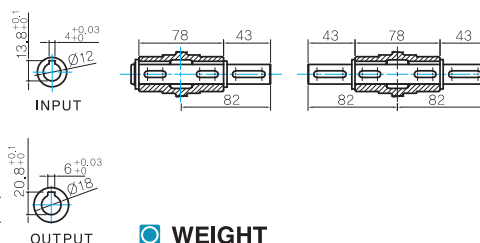
● MOTOR MODEL:
9IDG□-150FWH (GENERAL FAN)



● GEARBOX MODEL:
9WHD□-040



● SHAFT(Unidirectional, Bi-directional)

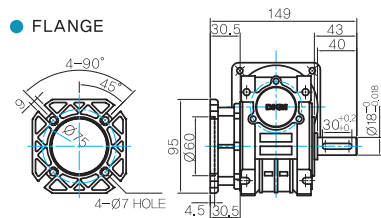


● WEIGHT

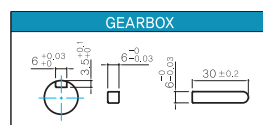
PART	WEIGHT(Kg)	
MOTOR	3,5	
GEAR BOX	9HB(F)K3BH ~ 9HB(F)K9BH	1,45
	9HB(F)K12.5BH ~ 9HB(F)K18BH	1,5
	9HB(F)K20BH ~ 9HB(F)K60BH	1,7
	9HB(F)K75BH ~ 9HB(F)K180BH	1,8
9WHD□-030	1,13	
9WHD□-040	2,2	
9XD10□	0,5	

* The output flange and shafts are sold separately.

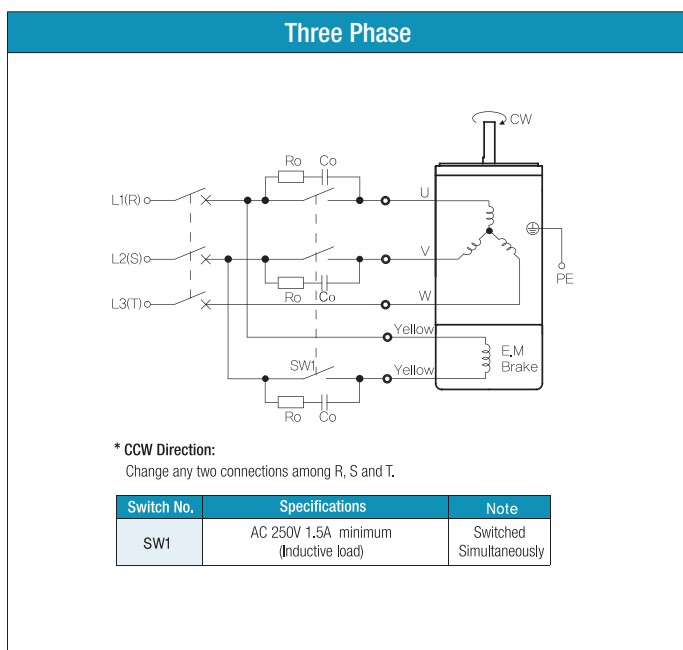
● FLANGE



● KEY SPEC



Connection Diagrams



Motor Images



- 1) The direction of motor rotation is as viewed from the shaft end of the motor.
- 2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- 3) SW1 operates both motor and electromagnetic brake action.
- 4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON.
When SW1 is switched simultaneously to OFF,
the motor stops immediately with the electromagnetic brake and holds the load.
- 5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
- 6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

B AC Motors

Brake Motor 180W (□90mm)

180W Brake Motor 180W(□90mm)

Motor Specification

Model 9BDG*-180F□: Gear Type Shaft 9BDD*-180F: D-Cut Type Shaft 9BDK*-180F: Key Type Shaft	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque		Rated Load			Capacitor μF / VAC	
						kgfcm	N.m	Speed r/min	Current A	Torque kgfcm N.m		
9BDGD-180F□	180	1ø220	60	4	30min.	7.40	0.740	1550	1.60	11.40	1,140	8.0 / 450
9BDGE-180F□	180	1ø220	50	4	30min.	7.00	0.700	1250	1.50	14.00	1,400	8.0 / 450
		1ø240				7.80	0.780		1.60	14.80	1,480	

- 1) Enter the phase & voltage code in the place * and enter the model type of attaching Gearbox in the box (□) within the motor model name.
- 2) All models contain a built-in thermal protector.
- 3) Gear Type Shaft is for attaching Gearbox and D-Cut & Key Type Shafts are for using motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio r/min	3	3.6	6	9	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
			600	500	300	200	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
9BDG□ -180FH	9HBK□BH 9HFK□BH	kgfcm	28.4	34.1	56.8	85.2	106.9	128.3	153.9	155.0	193.8	232.6	279.1	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
		N.m	2.78	3.34	5.56	8.35	10.47	12.57	15.08	15.19	18.99	22.79	27.35	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio r/min	7.5	10	15	20	25	30	40	50	60	80	100
			240	180	120	90	72	60	45	36	30	22.5	18
9BDG□ -180FWH	9WHD□-030 9WHD□-040	kgfcm	69.3	89.1	125.4	158.4	181.5	204.1	183.7	173.5	163.3	132.7	-
		N.m	6.79	8.73	12.29	15.52	17.79	20.00	18.00	17.00	16.00	13.00	-
		kgfcm	-	-	-	-	-	-	-	265.0	300.0	295.0	270.0
		N.m	-	-	-	-	-	-	-	25.98	29.41	28.92	26.47

50Hz

Motor Model	Gearbox Model	Gear Ratio r/min	3	3.6	6	9	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
			500	417	250	167	120	100	83	75	60	50	42	30	25	20	17	15	13	10	8	7.5
9BDG□ -180FH	9HBK□BH 9HFK□BH	kgfcm	36.9	44.2	73.7	110.6	138.8	166.5	199.8	201.3	251.6	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
		N.m	3.61	4.33	7.22	10.83	13.60	16.32	19.58	19.73	24.66	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

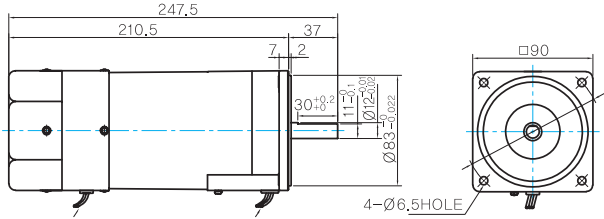
Motor Model	Gearbox Model	Gear Ratio r/min	7.5	10	15	20	25	30	40	50	60	80	100
			200	150	100	75	60	50	37.5	30	25	18.75	15
9BDG□ -180FWH	9WHD□-030 9WHD□-040	kgfcm	88.2	113.4	159.6	183.7	214.3	204.1	183.7	173.5	163.3	132.7	-
		N.m	6.98	8.97	12.62	15.95	18.28	20.00	18.00	17.00	16.00	13.00	-
		kgfcm	-	-	-	-	-	-	-	340.0	330.0	295.0	270.0
		N.m	-	-	-	-	-	-	-	33.33	32.35	28.92	26.47

- 1) Enter the phase & voltage code in the box (□) within the motor model name.
- 2) Enter the gear ratio in the box (□) within the Gearbox model name.
- 3) A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
- 4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio.
The actual speed is 2~20% less than the displayed value, depending on the size of the load.

Dimensions

MOTOR ONLY

- MOTOR MODEL:
9BDD□-180F (GENERAL FAN)



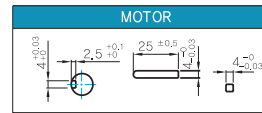
LEAD WIRE(Yellow) 300mm
UL STYLE NO,3398 AWG NO,22
380V OVER NO,3613 AWG NO,22

LEAD WIRE 300mm
UL STYLE NO,3271 AWG NO,22

MOTOR OUTPUT SHAFT

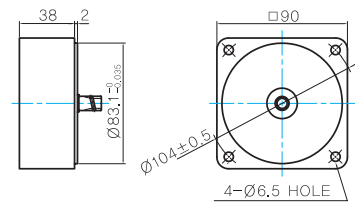
MODEL	SPEC
D-CUT TYPE	
9BDD□-180F	
KEY TYPE	
9BDK□-180F	

KEY SPEC



INTER-DECIMAL GEARBOX

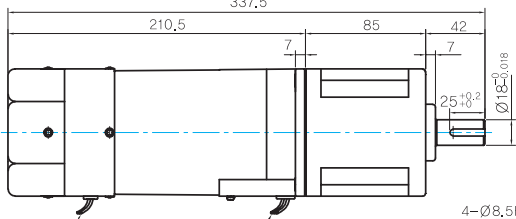
- MODEL:
9XD10□□



GEARED MOTOR

H TYPE GEARBOX

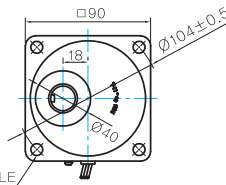
- MOTOR MODEL:
9BDG□-180FH (GENERAL FAN)



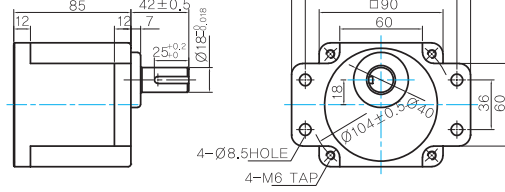
LEAD WIRE(Yellow) 300mm
UL STYLE NO,3398 AWG NO,22
380V OVER NO,3613 AWG NO,22

LEAD WIRE 300mm
UL STYLE NO,3271 AWG NO,22

- GEARBOX MODEL:
9HBK□BH



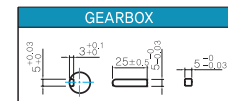
- GEARBOX MODEL:
9HFK□BH



GEARBOX OUTPUT SHAFT

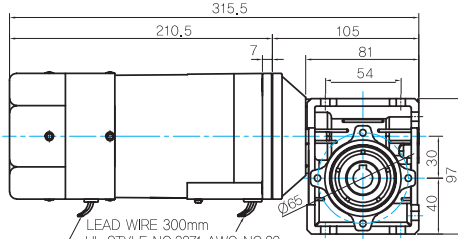
MODEL	SPEC
KEY TYPE	
9HBK□BH	
9HFK□BH	

KEY SPEC



WH TYPE GEARBOX

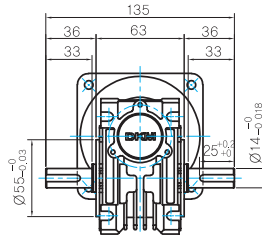
- MOTOR MODEL:
9BDG□-180FWH (GENERAL FAN)



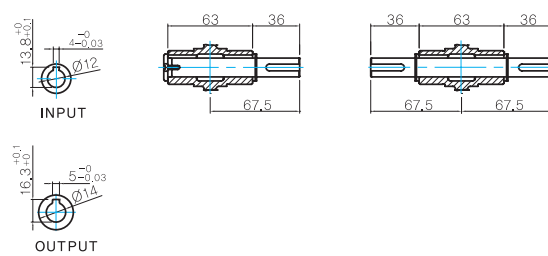
LEAD WIRE 300mm
UL STYLE NO,3271 AWG NO,22

LEAD WIRE(Yellow) 300mm
UL STYLE NO,3398 AWG NO,22
380V OVER NO,3613 AWG NO,22

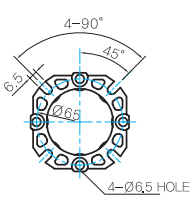
- GEARBOX MODEL:
9WHD□-030



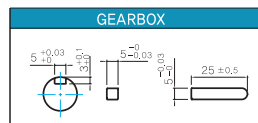
- SHAFT(Unidirectional, Bi-directional)



FLANGE



KEY SPEC



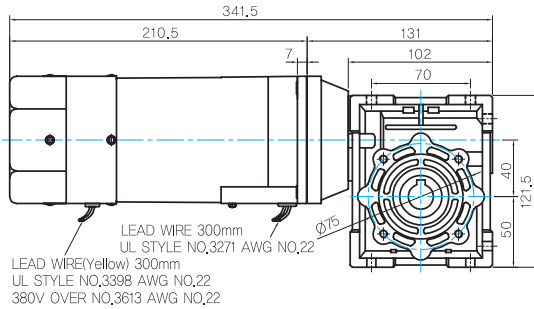
* The output flange and shafts are sold separately.

B AC Motors

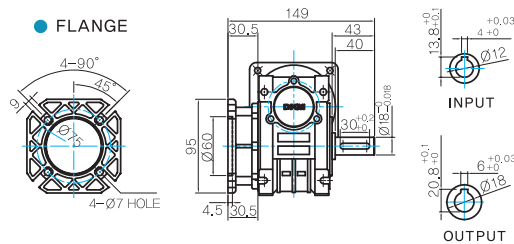
Brake Motor 180W (□90mm)

Dimensions

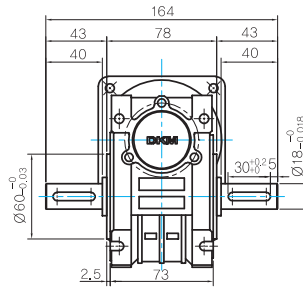
● MOTOR MODEL:
9BDG□-180FWH (GENERAL FAN)



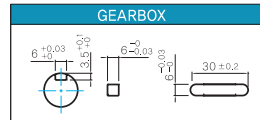
● FLANGE



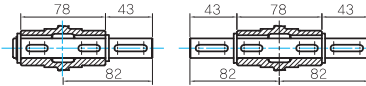
● GEARBOX MODEL:
9WHD□-040



● KEY SPEC



● SHAFT (Unidirectional, Bi-directional)



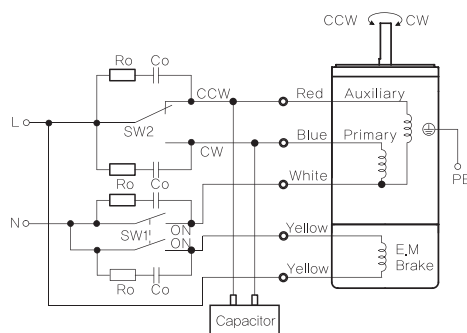
WEIGHT

PART		WEIGHT(Kg)
MOTOR		3,5
GEAR BOX	9HB(F)K3BH ~ 9HB(F)K9BH	1,45
	9HB(F)K12.5BH ~ 9HB(F)K18BH	1,5
	9HB(F)K20BH ~ 9HB(F)K60BH	1,7
	9HB(F)K75BH ~ 9HB(F)K200BH	1,8
	9WHD□-030	1,13
	9WHD□-040	2,2
9XD10□□		0,5

* The output flange and shafts are sold separately.

Connection Diagrams

Single Phase



* Rotation Direction:

To rotate the motor in a clockwise (CW) direction, turn SW2 to CW.
To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.

Switch No.	Specifications		Note
	Single Phase 110V/115V Input	Single Phase 220V/230V Input	
SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
SW2			-

- 1) The direction of motor rotation is as viewed from the shaft end of the motor.
- 2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- 3) SW1 operates both motor and electromagnetic brake action.
- 4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
- 5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
- 6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400VW)]

Motor Images



Brake Motor 200W (□90mm)

200W Brake Motor 200W(□90mm)

Brake Motor 200W (□90mm)

Motor Specification

Model 9BDG*-200F□: Gear Type Shaft 9BDD*-200F: D-Cut Type Shaft 9BDK*-200F: Key Type Shaft	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque		Rated Load			Capacitor μF / VAC	
						kgfcm	N.m	Speed r/min	Current A	Torque kgfcm N.m		
9BDGG-200F□	200	3∅220	50	4	Cont.	38.00	3.800	1300	1.40	15.00	1.500	-
			60			30.00	3.000	1550	1.20	13.00	1.300	
9BDGK-200F□	200	3∅380	50	4	Cont.	26.00	2.600	1300	0.69	15.00	1.500	-
			60			22.00	2.200	1550	0.61	12.80	1.280	
		3∅400	50	4	Cont.	30.00	3.000	1300	0.75	15.00	1.500	
			60			25.00	2.500	1600	0.60	12.20	1.220	

1) Enter the phase & voltage code in the place * and enter the model type of attaching Gearbox in the box (□) within the motor model name.

2) All models contain a built-in thermal protector.

3) Gear Type Shaft is for attaching Gearbox and D-Cut & Key Type Shafts are for using motor only.

※ It is not possible to use inverter for three phase 380~440V motor. When inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio r/min	3	3.6	6	9	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200	
			kgfcm	32.4	38.8	64.7	97.1	121.9	146.3	175.5	176.8	221.0	265.2	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
9BDG□ -200FH	9HBK□BH 9HFK□BH	kgfcm	3.17	3.81	6.34	9.52	11.94	14.33	17.20	17.33	21.66	25.99	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40
		N.m	3.17	3.81	6.34	9.52	11.94	14.33	17.20	17.33	21.66	25.99	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio r/min	7.5	10	15	20	25	30	40	50	60	80	100
			kgfcm	81.9	105.3	148.2	183.7	214.3	204.1	183.7	173.5	163.3	132.7
9BDG□ -200FWH	9WHD□-030	kgfcm	8.02	10.32	14.52	18.00	21.00	20.00	18.00	17.00	16.00	13.00	-
		N.m	8.02	10.32	14.52	18.00	21.00	20.00	18.00	17.00	16.00	13.00	-
	9WHD□-040	kgfcm	-	-	-	-	-	-	-	315.0	330.0	295.0	270.0
		N.m	-	-	-	-	-	-	-	30.88	32.35	28.92	26.47

50Hz

Motor Model	Gearbox Model	Gear Ratio r/min	3	3.6	6	9	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
			kgfcm	37.4	44.8	74.7	112.1	140.6	168.8	202.5	204.0	255.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
9BDG□ -200FH	9HBK□BH 9HFK□BH	kgfcm	3.66	4.39	7.32	10.98	13.78	16.54	19.85	19.99	24.99	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40
		N.m	3.66	4.39	7.32	10.98	13.78	16.54	19.85	19.99	24.99	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio r/min	7.5	10	15	20	25	30	40	50	60	80	100
			kgfcm	94.5	121.5	171.0	183.7	214.3	204.1	183.7	173.5	163.3	132.7
9BDG□ -200FWH	9WHD□-030	kgfcm	9.26	11.91	16.76	18.00	21.00	20.00	18.00	17.00	16.00	13.00	-
		N.m	9.26	11.91	16.76	18.00	21.00	20.00	18.00	17.00	16.00	13.00	-
	9WHD□-040	kgfcm	-	-	-	-	-	-	-	350.0	330.0	295.0	270.0
		N.m	-	-	-	-	-	-	-	34.31	32.35	28.92	26.47

1) Enter the phase & voltage code in the box (□) within the motor model name.

2) Enter the gear ratio in the box (□) within the Gearbox model name.

3) A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.

4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio.

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

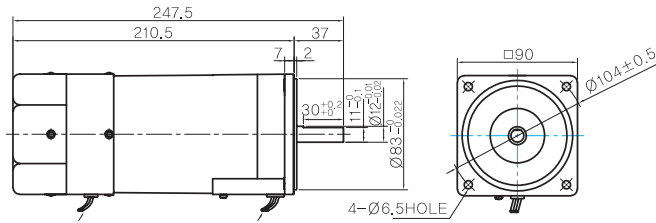
B AC Motors

Brake Motor 200W (□90mm)

Dimensions

MOTOR ONLY

- MOTOR MODEL:
9BDD□-180F (GENERAL FAN)



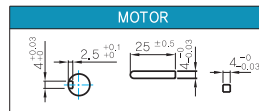
LEAD WIRE(Yellow) 300mm
UL STYLE NO,3398 AWG NO,22
380V OVER NO,3613 AWG NO,22

LEAD WIRE 300mm
UL STYLE NO,3271 AWG NO,22

MOTOR OUTPUT SHAFT

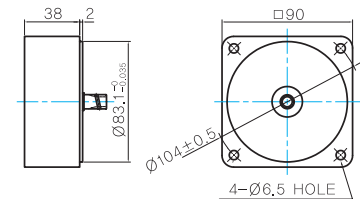
MODEL	SPEC
D-CUT TYPE	37 30±0.2 11±0.1 Ø12±0.03
9BDD□-200F	
KEY TYPE	37 25±0.2 Ø12±0.03
9BDK□-200F	

KEY SPEC



INTER-DECIMAL GEARBOX

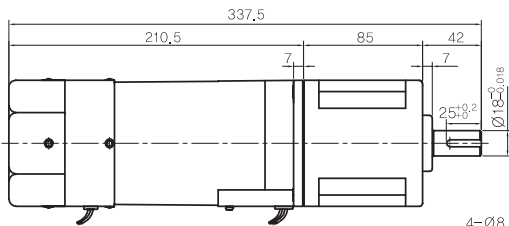
- MODEL:
9XD10□□



GEARED MOTOR

H TYPE GEARBOX

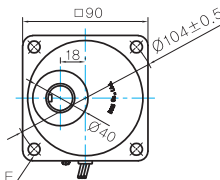
- MOTOR MODEL:
9BDG□-200FH (GENERAL FAN)



LEAD WIRE(Yellow) 300mm
UL STYLE NO,3398 AWG NO,22
380V OVER NO,3613 AWG NO,22

LEAD WIRE 300mm
UL STYLE NO,3271 AWG NO,22

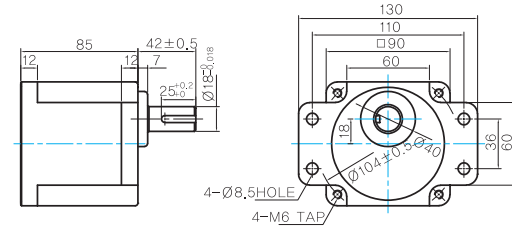
- GEARBOX MODEL:
9HBK□BH



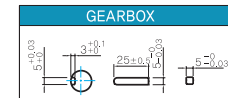
GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	42 25±0.2 Ø18±0.08
9HBK□BH	
9HFK□BH	

- GEARBOX MODEL:
9HFK□BH

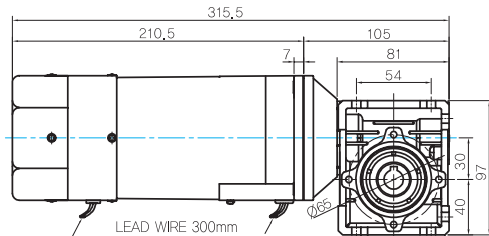


KEY SPEC



WH TYPE GEARBOX

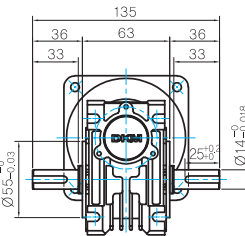
- MOTOR MODEL:
9BDG□-200FWH (GENERAL FAN)



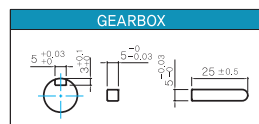
LEAD WIRE 300mm
UL STYLE NO,3271 AWG NO,22

LEAD WIRE(Yellow) 300mm
UL STYLE NO,3398 AWG NO,22
380V OVER NO,3613 AWG NO,22

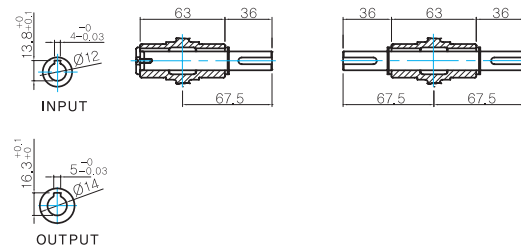
- GEARBOX MODEL:
9WHD□-030



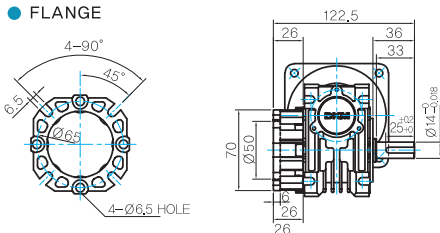
KEY SPEC



- SHAFT(Unidirectional, Bi-directional)

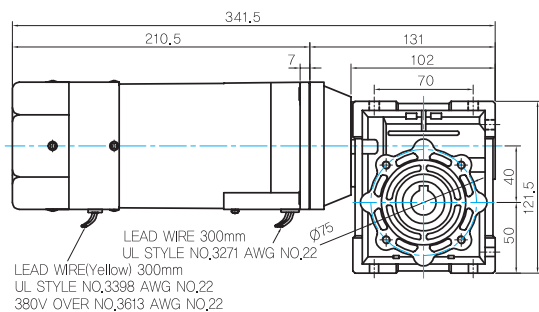


FLANGE

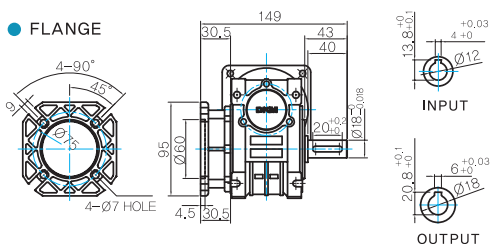


* The output flange and shafts are sold separately.

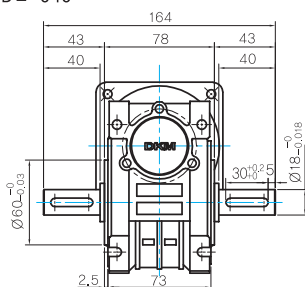
● MOTOR MODEL:
9BDG□-200FWH (GENERAL FAN)



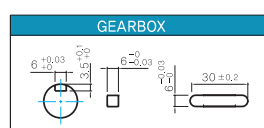
● FLANGE



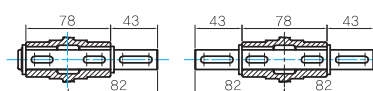
● GEARBOX MODEL:
9WHD□-040



● KEY SPEC



● SHAFT(Unidirectional, Bi-directional)

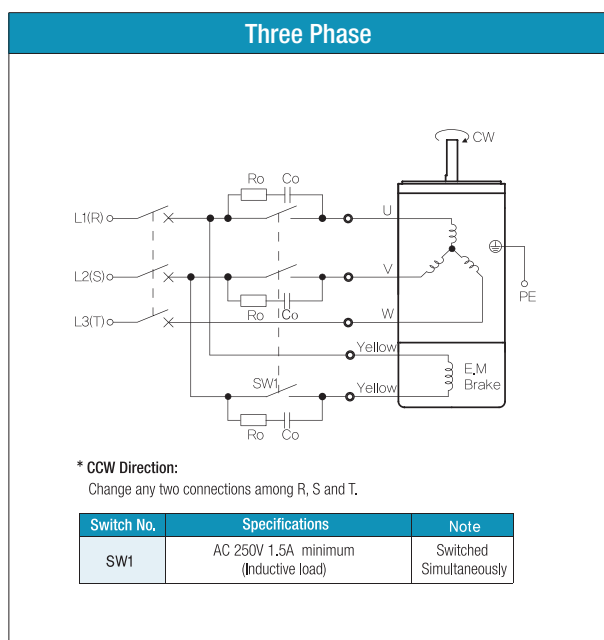


● WEIGHT

PART	WEIGHT(kg)	
MOTOR	3,5	
GEAR BOX	9HB(F)K3BH ~ 9HB(F)K9BH	1,45
	9HB(F)K12.5BH ~ 9HB(F)K18BH	1,5
	9HB(F)K20BH ~ 9HB(F)K60BH	1,7
	9HB(F)K75BH ~ 9HB(F)K200BH	1,8
	9WHD□-030	1,13
	9WHD□-040	2,2
9XD10□□	0,5	

* The output flange and shafts are sold separately.

Connection Diagrams



- 1) The direction of motor rotation is as viewed from the shaft end of the motor.
- 2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- 3) SW1 operates both motor and electromagnetic brake action.
- 4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
- 5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
- 6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

Motor Images

