

Brake Motor 60W (□90mm)

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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.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio r/min	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	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	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	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	20.82	24.75	27.50	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio r/min	10	12	15	18	25	30	36	50	60	Motor Model	Gearbox Model	Gear Ratio r/min	7.5	10	15	20	25	30	40	50	60	80
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	kgfcm	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			N.m	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	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	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	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	10	12	15	18	25	30	36	50	60	Motor Model	Gearbox Model	Gear Ratio r/min	7.5	10	15	20	25	30	40	50	60	80
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	kgfcm	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	12.64	14.00	12.00			N.m	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.

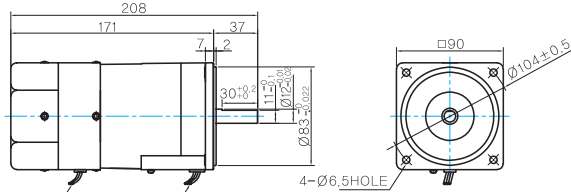
B AC Motors

Brake Motor 60W (□90mm)

Dimensions

MOTOR ONLY

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



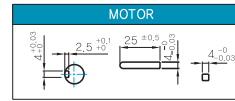
LEAD WIRE (Yellow) 300mm
UL STYLE NO.3398 AWG NO.22
380V OVER NO.3613 AWG NO.22

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

MOTOR OUTPUT SHAFT

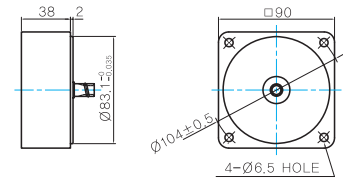
MODEL	SPEC
D-CUT TYPE	
9BDD□-60F	
KEY TYPE	
9BDK□-60F	

KEY SPEC



INTER-DECIMAL GEARBOX

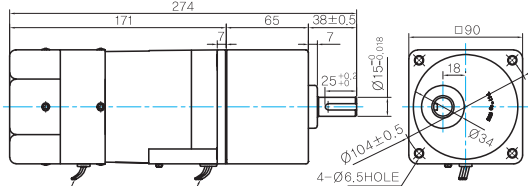
- MODEL:
9XD10□□



GEARED MOTOR

P TYPE GEARBOX

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

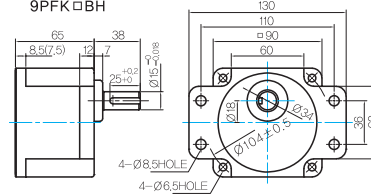


LEAD WIRE (Yellow) 300mm
UL STYLE NO.3398 AWG NO.22
380V OVER NO.3613 AWG NO.22

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

- GEARBOX MODEL:
9PBK□BH

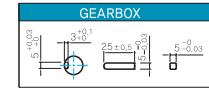
- GEARBOX MODEL:
9PFK□BH



GEARBOX OUTPUT SHAFT

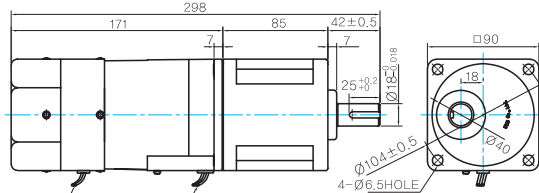
MODEL	SPEC
KEY TYPE	
9PBK□BH	
9PFK□BH	

KEY SPEC



H TYPE GEARBOX

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

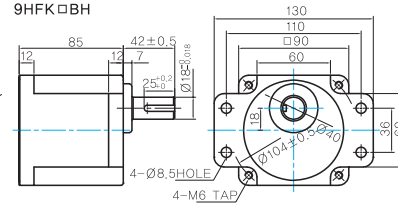


LEAD WIRE (Yellow) 300mm
UL STYLE NO.3398 AWG NO.22
380V OVER NO.3613 AWG NO.22

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

- GEARBOX MODEL:
9HBK□BH

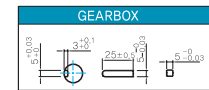
- GEARBOX MODEL:
9HFK□BH



GEARBOX OUTPUT SHAFT

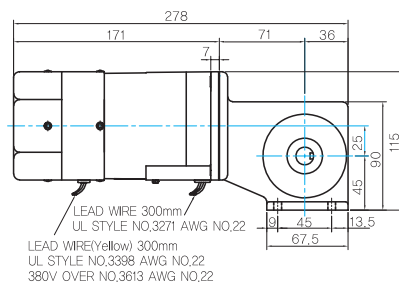
MODEL	SPEC
KEY TYPE	
9HBK□BH	
9HFK□BH	

KEY SPEC



W TYPE GEARBOX

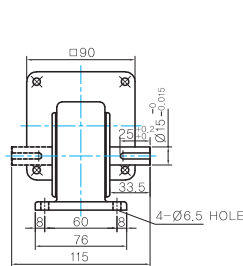
- MOTOR MODEL:
9BDG□-60FW (GENERAL FAN)



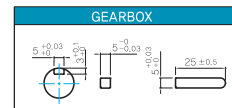
LEAD WIRE 300mm
UL STYLE NO.3271 AWG NO.22

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

- GEARBOX MODEL:
9WD□BL/BR/BRL

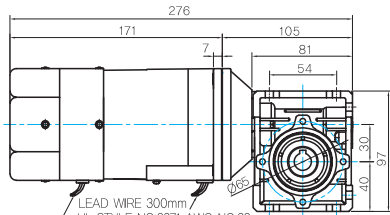


KEY SPEC



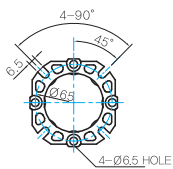
WH TYPE GEARBOX

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

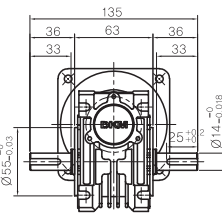


LEAD WIRE 300mm,
UL STYLE NO.3271 AWG NO.22
LEAD WIRE(Yellow) 300mm
UL STYLE NO.3398 AWG NO.22
380V OVER NO.3613 AWG NO.22

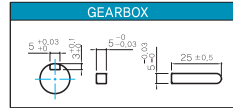
- FLANGE



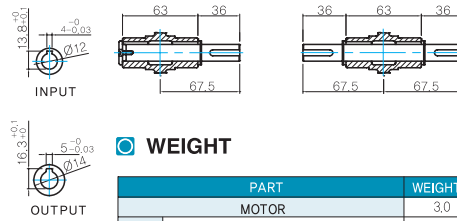
- GEARBOX MODEL:
9WHD□-030



- KEY SPEC



- SHAFT(Unidirectional, Bi-directional)



- WEIGHT

PART	WEIGHT(Kg)	
MOTOR	3.0	
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.

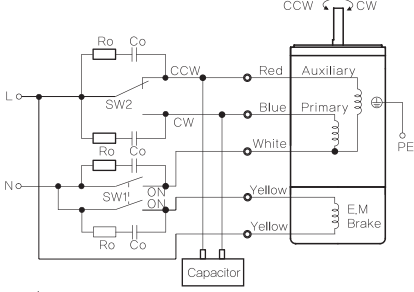
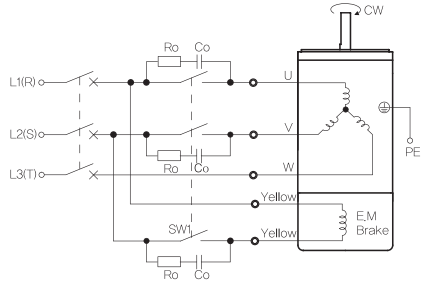
Motor Images



B AC Motors

Brake Motor 60W (□90mm)

Connection Diagrams

Single Phase	Three Phase																				
 <p>The diagram shows a single-phase AC input (L and N) connected to a motor. 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, are used to control the motor. SW1 is connected to the Primary winding and the Brake winding. SW2 is connected to the Auxiliary winding and the Brake winding. Surge suppression components (Ro and Co) are connected in parallel 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. The motor has three main windings: U, V, and W. A capacitor is connected between the V and W windings. A switch SW1 is connected to the V and W windings. Surge suppression components (Ro and Co) are connected in parallel 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
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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, 200W (400W)]