

## Reversible Motor 60W(□90mm)

# 60W

Reversible Motor  
60W(□90mm)

### Motor Specification

Model		Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque		Rated Load			Capacitor μF / VAC	
9RDG*-60F(□-T): Gear Type Shaft 9RDD*-60F(-T): D-Cut Type Shaft 9RDK*-60F(-T): Key Type Shaft							kgfcm	N.m	Speed r/min	Current A	Torque kgfcm N.m		
Lead Wire Type	Terminal Box Type												
9RDGA-60F□	9RDGA-60F□-T	60	1φ110	60	4	30min.	5.20	0.520	1600	1.60	5.00	0.500	20.0 / 250
9RDGD-60F□	9RDGD-60F□-T	60	1φ220	60	4	30min.	5.00	0.500	1600	0.75	4.60	0.460	5.0 / 450
9RDGE-60F□	9RDGE-60F□-T	60	1φ220	50	4	30min.	5.40	0.540	1300	0.59	5.00	0.500	5.0 / 450
			1φ240				6.60	0.660		0.64	5.60	0.560	

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	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
		r/min	900	600	500	360	300	240	200	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9RDG□ -60FP	9PBK□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	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
	9PFK□BH	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	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9RDG□ -60FH	9HBK□BH	kgfcm	11.5	13.7	16.7	22.9	27.9	34.9	41.8	52.5	63.0	75.6	76.2	95.2	114.2	137.1	152.3	190.4	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
	9HFK□BH	N.m	1.12	1.35	1.64	2.28	2.73	3.42	4.10	5.15	6.17	7.41	7.46	9.33	11.20	13.43	14.93	18.66	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60

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
9RDG□ -60FW	9WD□BL/ □BR/□BRL	kgfcm	37.7	44.2	53.1	61.3	80.5	91.1	106.0	142.9	122.4
		N.m	3.70	4.33	5.21	6.00	7.89	8.93	10.39	14.00	12.00

Motor Model	Gearbox Model	Gear Ratio	7.5	10	15	20	25	30	40	50	60	80
		r/min	240	180	120	90	72	60	45	36	30	22
9RDG□ -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	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	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
		r/min	750	500	417	300	250	200	167	120	100	83	75	60	50	42	38	30	25	20	17	15	13	10	8	7.5
9RDG□ -60FP	9PBK□BH	kgfcm	9.3	13.9	16.7	23.2	27.9	34.9	41.8	52.5	63.0	75.6	76.2	95.2	114.2	137.1	152.3	190.4	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
	9PFK□BH	N.m	0.91	1.37	1.64	2.28	2.73	3.42	4.10	5.15	6.17	7.41	7.46	9.33	11.20	13.43	14.93	18.66	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9RDG□ -60FH	9HBK□BH	kgfcm	13.9	16.7	19.7	27.9	32.9	40.9	47.8	58.5	69.0	81.6	82.2	101.2	120.2	143.1	158.3	196.4	206.0	206.0	206.0	206.0	206.0	206.0	206.0	206.0
	9HFK□BH	N.m	1.37	1.64	1.93	2.73	3.29	4.09	4.78	5.85	6.90	8.16	8.22	10.12	12.02	14.31	15.83	19.64	20.60	20.60	20.60	20.60	20.60	20.60	20.60	20.60

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
9RDG□ -60FW	9WD□BL/ □BR/□BRL	kgfcm	45.9	53.8	64.7	74.6	98.0	110.9	129.0	142.9	122.4
		N.m	4.50	5.27	6.34	7.31	9.60	10.87	12.64	14.00	12.00

Motor Model	Gearbox Model	Gear Ratio	7.5	10	15	20	25	30	40	50	60	80
		r/min	200	150	100	75	60	50	38	30	25	18
9RDG□ -60FWH	9WHD□ -030	kgfcm	35.3	45.4	63.8	80.6	92.4	107.5	132.2	151.2	163.3	132.7
		N.m	3.46	4.45	6.26	7.90	9.06	10.54	12.95	14.82	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.

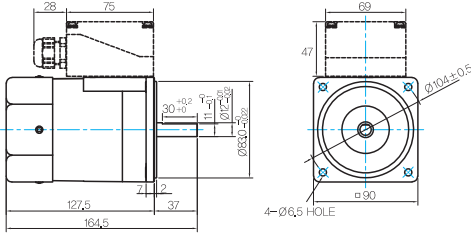
# B AC Motors

## Reversible Motor 60W(□90mm)

### Dimensions

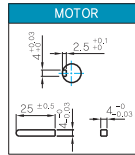
#### MOTOR ONLY

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



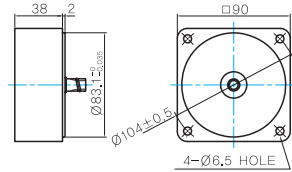
#### MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	37
9RDD□-60F	$30^{+0.2}$ $11^{+0.2}$ $\phi 12.5 \pm 0.03$
KEY TYPE	37
9RDK□-60F	$25^{+0.2}$ $11^{+0.2}$ $\phi 12.5 \pm 0.03$



#### INTER-DECIMAL GEARBOX

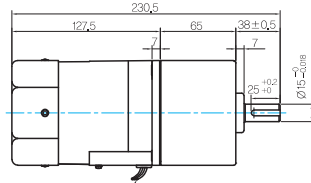
- MODEL: 9XD10□□



### GEARED MOTOR

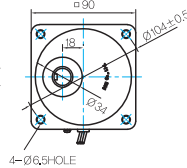
#### P TYPE GEARBOX

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

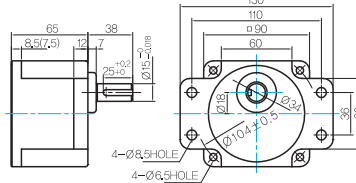


LEAD WIRE 300mm  
UL STYLE NO.3271 AWG NO.22

- GEARBOX MODEL: 9PBK□BH



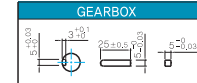
- GEARBOX MODEL: 9PFK□BH



#### GEARBOX OUTPUT SHAFT

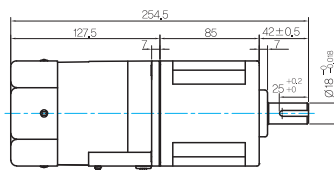
MODEL	SPEC
KEY TYPE	38
9PBK□BH	$25^{+0.2}$ $11^{+0.2}$ $\phi 12.5 \pm 0.03$
9PFK□BH	$25^{+0.2}$ $11^{+0.2}$ $\phi 12.5 \pm 0.03$

#### KEY SPEC



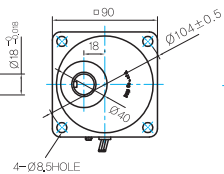
#### H TYPE GEARBOX

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

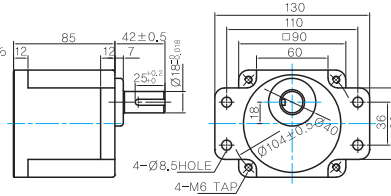


LEAD WIRE 300mm  
UL STYLE NO.3271 AWG NO.22

- GEARBOX MODEL: 9HBK□BH



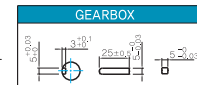
- GEARBOX MODEL: 9HFK□BH



#### GEARBOX OUTPUT SHAFT

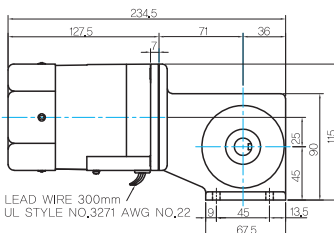
MODEL	SPEC
KEY TYPE	42
9HBK□BH	$25^{+0.2}$ $11^{+0.2}$ $\phi 12.5 \pm 0.03$
9HFK□BH	$25^{+0.2}$ $11^{+0.2}$ $\phi 12.5 \pm 0.03$

#### KEY SPEC



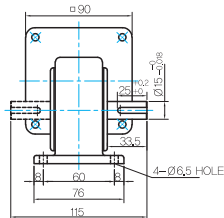
#### W TYPE GEARBOX

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

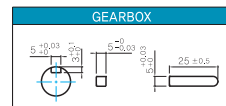


LEAD WIRE 300mm  
UL STYLE NO.3271 AWG NO.22

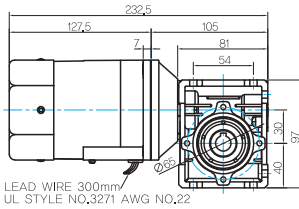
- GEARBOX MODEL: 9WD□BL/BR/BRL



#### KEY SPEC

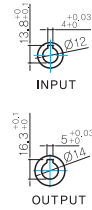
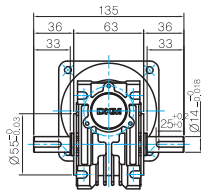


● MOTOR MODEL:  
9RDG□-90FWH (GENERAL FAN)

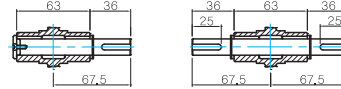


LEAD WIRE 300mm/  
UL STYLE NO,3271 AWG NO,22

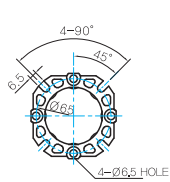
● GEARBOX MODEL:  
9WHD□-030



● SHAFT(Unidirectional, Bi-directional)

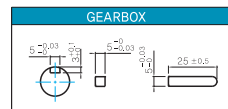


● FLANGE



\* The output flange and shafts are sold separately.

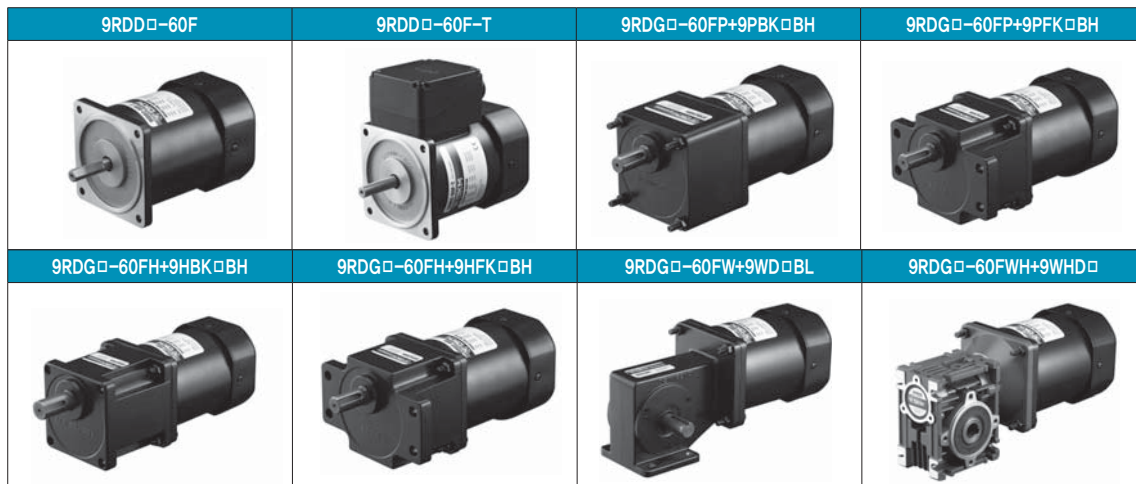
● KEY SPEC



● WEIGHT

PART	WEIGHT(Kg)
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

● Motor Images



# B AC Motors

Reversible Motor 60W(□90mm)

## Connection Diagrams

Lead Wire Type	Terminal Box Type						
	<table border="1"> <thead> <tr> <th style="background-color: #0070C0; color: white;">Code</th> <th style="background-color: #0070C0; color: white;">Contact Capacity</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><b>SW</b></td> <td>AC125V 5A min. or AC250V 5A min. (Inductive load)</td> </tr> <tr> <td style="text-align: center;"><b>R<sub>0</sub>, C<sub>0</sub></b></td> <td>R<sub>0</sub>=5~200Ω C<sub>0</sub>=0.1~0.2μF, 200W (400W)</td> </tr> </tbody> </table> <p>* Connect a CR circuit for surge suppression to protect the contact.</p>	Code	Contact Capacity	<b>SW</b>	AC125V 5A min. or AC250V 5A min. (Inductive load)	<b>R<sub>0</sub>, C<sub>0</sub></b>	R <sub>0</sub> =5~200Ω C <sub>0</sub> =0.1~0.2μF, 200W (400W)
Code	Contact Capacity						
<b>SW</b>	AC125V 5A min. or AC250V 5A min. (Inductive load)						
<b>R<sub>0</sub>, C<sub>0</sub></b>	R <sub>0</sub> =5~200Ω C <sub>0</sub> =0.1~0.2μF, 200W (400W)						

- 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) During operation it is available to change the rotating direction by turning the switch to CW or CCW.