5. Coupling with Other Machines

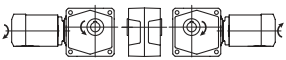
⚠ CAUTION

- Confirm the rotation direction before coupling the unit with the driven machine. Incorrect rotation direction may cause personal injury or damage to the equipment.
- When operating the gearmotor alone (uncoupled), remove the key that is temporarily attached to the output shaft; otherwise, personal injury may result.
- Cover the rotating parts; otherwise, personal injury may result.
- When coupling the gearmotor with a load, check that the centering, the belt tension and parallelism of the pulleys are within the specified limits. When the unit is directly coupled with another machine, check that the direct coupling accuracy is within the specified limits. When a belt is used for coupling the unit with another machine, check the belt tension. Correctly tighten bolts on the pulley and coupling before operation; otherwise, personal injury may result because of misalignment.

5–1) Confirming Rotation Direction

Figure 19–21 shows the rotation direction of the output shaft when wires are connected as shown in Fig. 31–35 on page19–30.

Fig.19 Rotation direction of slow speed shaft

Frame size		Reduction ratio	Frame size		Reduction ratio
03#	07#	5, 80, 100, 120, 160, 200, 240	03#	07#	7.5, 10, 12, 15, 20, 25, 30, 40, 50, 60
17#	—	5, 7.5, 10, 12, 80, 100, 120, 150, 200, 240	17#	—	15, 20, 25, 30, 40, 50, 60
190#	—	5	190#	—	7.5, 10, 12, 15, 20, 25, 30, 40, 50, 60
20#	201#	10, 12, 15, 20, 25, 30, 40, 50, 60	20#	201#	80, 100, 120
23#	231#	10, 12, 15, 20, 25, 30	23#	231#	40, 50, 60
25#	251#	—	25#	251#	150, 200, 240
—	271#	7.5, 10, 12, 15, 20, 25	271#	—	5, 30
30#	301#	—	30#	301#	80, 100, 120
33#	331#	10, 12, 15, 20, 25, 30	33#	331#	40, 50, 60
35#	351#	—	35#	351#	150, 200, 240
—	361#	300, 360, 480, 560, 750, 900, 1200, 1440	—	361#	—
—	371#	7.5, 10, 12, 15, 20, 25	—	371#	5, 30
40#	401#	—	40#	401#	80, 100. 120
43#	431#	10, 12, 15, 20, 25, 30	43#	431#	40, 50, 60
45#	451#	—	45#	451#	150, 200, 240
—	461#	300, 360, 480, 560, 750, 900, 1200, 1440	—	461#	—
—	471#	7.5, 10, 12, 15, 20, 25	—	471#	5, 30
50#	—	—	50#	—	80, 100, 120
53#	—	10, 12, 15, 20, 25, 30	53#	—	40, 50, 60, 80
54#	—	10, 12, 15, 20, 25, 30	54#	—	40, 50, 60
55#	—	—	55#	—	150, 200, 240
56#	—	300, 360, 480, 560, 750, 900, 1200, 1440	56#	—	—
60#	—	—	60#	—	80, 100, 120
63#	—	10, 12, 15, 20, 25, 30	63#	—	40, 50
64#	—	10, 12, 15, 20, 25	64#	—	30, 40
1010#	—	—	1010#	—	5, 7, 10
1110#	—	—	1110#	—	5, 7, 10
1120#	—	5, 7, 10, 12, 15, 20, 25, 30, 40, 50, 60	1120#	—	—
1210#	—		1210#	—	5, 7, 10
1220#	—	5, 7, 10, 12, 15, 20, 25, 30, 40, 50, 60	1220#	—	—
1230#	—	—	1230#	—	80, 100, 120, 150, 200, 240
1310#	—	—	1310#	—	5, 7, 10
1320#	—	5, 7, 10, 12, 15, 20, 25, 30, 40, 50, 60	1320#	—	—
1330#	—	—	1330#	—	80, 100, 120, 150, 200, 240
1410#	—	—	1410#	—	5, 7, 10
1420#	—	5, 7, 10, 12, 15, 20, 25, 30, 40, 50, 60	1420#	—	—
1430#	—	—	1430#	—	80, 100, 120, 150, 200, 240
1510#	—	—	1510#	—	5, 7, 10
1520#	—	5, 7, 10, 12, 15, 20, 25, 30, 40, 50, 60	1520#	—	—
1530#	—	—	1530#	—	80, 100, 120, 150, 200, 240
1531#	—	—	1531#	—	40, 50, 60, 80
RNYM Series 			RNYM Series 		

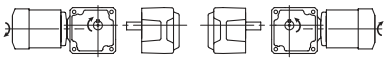
· Change over the SW shown in Fig.29, 30 to reverse the rotation of 15–90W single-phase motors.

· Change the positions of R and T shown in Fig.28, 31 to reverse the rotation of three-phase standard motors.

Fig.20 Rotation direction of slow speed shaft

Frame size				Reduction ratio
01#	03#	05#	07#	5, 80, 100, 120, 160, 200, 240
15#	17#	—	—	5, 7.5, 10, 12, 80, 100, 120, 150, 200, 240
190#	—	—	—	5
20#	—	—	—	10, 15, 20, 25, 30, 40, 50, 60
23#	—	—	—	10, 15, 20, 25, 30
25#	—	—	—	—
270#	—	—	—	5, 7.5, 10, 15, 20
30#	—	—	—	—
33#	—	—	—	10, 15, 20, 25, 30
35#	—	—	—	—
36#	—	—	—	300, 360, 480, 560, 750, 900, 1200, 1440
370#	—	—	—	5, 7.5, 10, 15, 20
40#	—	—	—	—
43#	—	—	—	10, 15, 20, 25, 30
45#	—	—	—	—
46#	—	—	—	300, 360, 480, 560, 750, 900, 1200, 1440
470#	—	—	—	5, 7.5, 10, 15, 20
50#	—	—	—	—
53#	54#	—	—	10, 15, 20, 30
55#	—	—	—	—
56#	—	—	—	300, 360, 480, 560, 750, 900, 1200, 1440

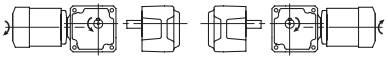
RNFM Series



R Type L Type

Frame size				Reduction ratio
01#	03#	05#	07#	7.5, 10, 12, 15, 20, 25, 30, 40, 50, 60
15#	17#	—	—	15, 20, 25, 30, 40, 50, 60
190#	—	—	—	7.5, 10, 15, 20, 30, 40, 50, 60
20#	—	—	—	80, 100, 120
23#	—	—	—	40, 50, 60
25#	—	—	—	150, 200, 240
270#	—	—	—	30
30#	—	—	—	80, 100, 120
33#	—	—	—	40, 50, 60
35#	—	—	—	150, 200, 240
36#	—	—	—	—
370#	—	—	—	30
40#	—	—	—	80, 100, 120
43#	—	—	—	40, 50, 60
45#	—	—	—	150, 200, 240
46#	—	—	—	—
470#	—	—	—	30
50#	—	—	—	80, 100, 120
53#	54#	—	—	40, 50, 60, 80
55#	—	—	—	150, 200, 240
56#	—	—	—	—

RNFM Series



R Type L Type

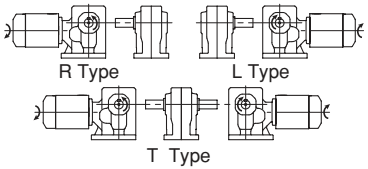
· Change over the SW shown in Fig.29, 30 to reverse the rotation of 15–90W single-phase motors.

· Change the positions of R and T shown in Fig.28, 31 to reverse the rotation of three-phase standard motors.

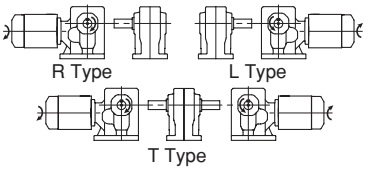
Fig.21 Rotation direction of slow speed shaft

Frame size		Reduction ratio	Frame size		Reduction ratio
190#	—	7.5, 10, 15, 20, 30, 40, 50, 60	190#	—	5
20#	—	10, 15, 20, 25, 30, 40, 50, 60	20#	—	80, 100, 120
23#	—	10, 15, 20, 25, 30	23#	—	40, 50, 60
25#	—	—	25#	—	150, 200, 240
270#	—	5, 7.5, 10, 15, 20	270#	—	30
30#	—	—	30#	—	80, 100, 120
33#	—	10, 15, 20, 25, 30	33#	—	40, 50, 60
35#	—	—	35#	—	150, 200, 240
36#	—	300, 360, 480, 560, 750, 900, 1200, 1440	36#	—	—
370#	—	5, 7.5, 10, 15, 20	37#	—	30
40#	—	—	40#	—	80, 100, 120
43#	—	10, 12, 15, 20, 25, 30	43#	—	40, 50, 60
45#	—	—	45#	—	150, 200, 240
46#	—	300, 360, 480, 560, 750, 900, 1200, 1440	46#	—	—
470#	—	5, 7.5, 10, 15, 20	470#	—	30
50#	—	—	50#	—	80, 100, 120
53#	54#	10, 15, 20, 30	53#	54#	40, 50, 60, 80
55#	—	—	55#	—	150, 200, 240
56#	—	300, 360, 480, 560, 750, 900, 1200, 1440	56#	—	—
60#	—	—	60#	—	80, 100, 120
63#	—	10, 15, 20, 30	63#	—	40, 50
64#	—	10, 15, 20	64#	—	30, 40

RNHM Series



RNHM Series



· Change over the SW shown in Fig.29, 30 to reverse the rotation of 15–90W single-phase motors.

· Change the positions of R and T shown in Fig.28, 31 to reverse the rotation of three-phase standard motors.

5–2) Coupling Installation

· When installing a coupling, do not impact or apply excessive thrust load to the shaft; otherwise, the bearing may be damaged.
· Thermal shrinking or end cap screws are recommended for mounting (Fig.22).

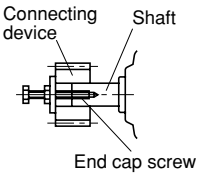


Fig.22

(1) When using a Coupling
The accuracy of the dimensions (A,B,and X) shown in Fig.23 should be within the toleronce shown in Table 5.

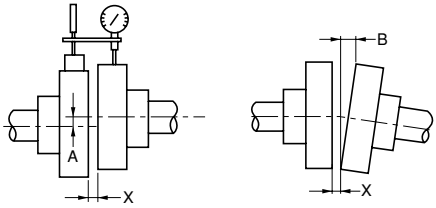


Fig.23

Table 5 Centering accuracy of flexible coupling

A Dimension Tolerance	0.1mm or manufacturer's specification
B Dimension Tolerance	0.1mm or manufacturer's specification
X dimension	manufacturer's specification

(2) When using a Chain Sprocket and Gear
· The chain tension angle should be perpendicular to the shaft.
· Refer to the chain catalog for the chain tension.
· Select sprockets and gears whose pitch diameter are three times the shaft diameter or greater.
· Install sprocket and gears so that their point of load application will be closer to the gearmotor side with respect to the length of the shaft. (Fig.24)

(3) When using a V-belt
· Excessive V-belt tension will damage the shaft and bearing. Refer to the V-belt catalog for proper tension.
· The parallelism and eccentricity (ß) between two pulleys should be within 20'. (Fig25)
· Use a matched set with the same circumferential length when more than one belt is to be installed.

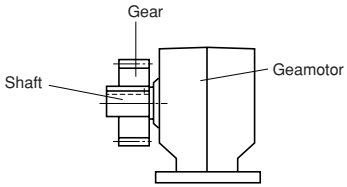


Fig.24

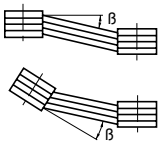


Fig.25