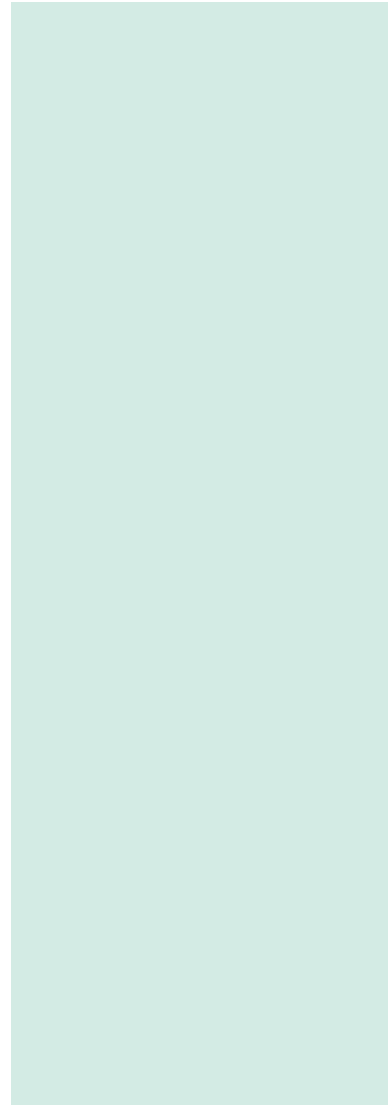
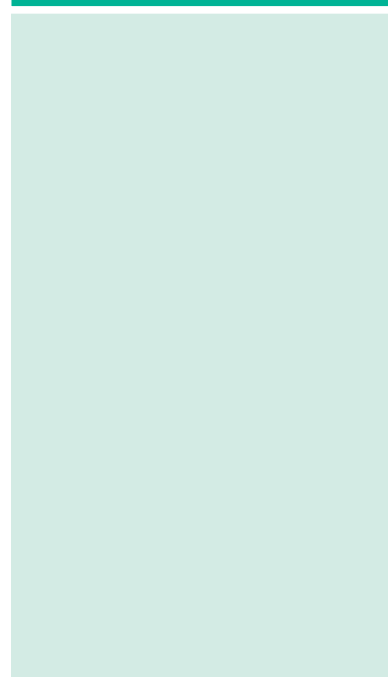


Standard AC Motors

# Right-Angle Gearheads



## Right-Angle Gearheads



Introduction

Induction Motors

Reversible Motors

Electromagnetic Brake Motors

V Series

Clutch & Brake Motors

Synchronous Motors

Low-Speed Synchronous Motors

Waterright Dust-Resistant Motors

Torque Motors

Right-Angle Gearheads

Linear Heads

Brake Pack

Accessories

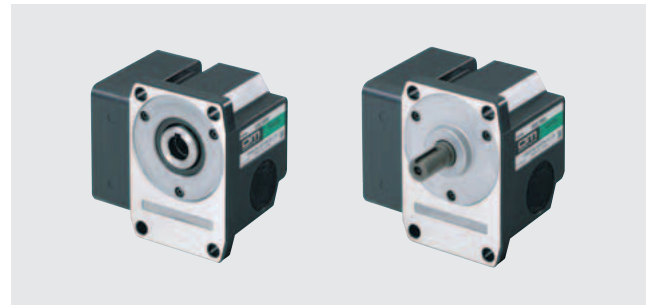
Installation

# Right-Angle Gearheads

● Additional Information ●  
 Technical reference → Page G-1

RoHS

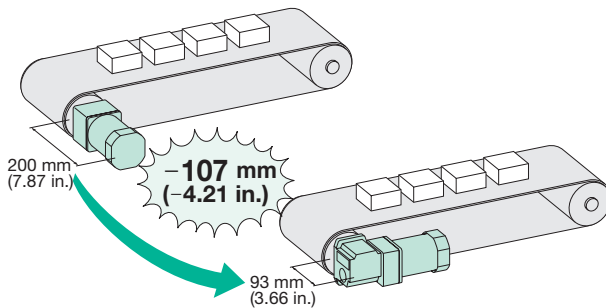
Right-angle gearheads are flange-mounted gearheads that use worm gears and special helical gears. They allow motors to be installed at right angles to the axis of equipment such as belt conveyors. They are available in hollow shaft **RH** and solid shaft **RAA** types and are ideal for keeping equipment compact.



## Features

### ● Ideal for Space-Saving Solution

The output shaft is perpendicular to the motor shaft, so the motor can be installed perpendicularly to the axis being driven, enabling space-saving.



51K90GE-AW2U motor and gearhead with a gear ratio of 18:1

### ● Mounting Using Torque Arm (Sold separately)

Hollow shaft gearheads (**5GE□RH**, **5GU□RH**) are locked with a torque arm (sold separately) when mounted so the gearhead does not rotate from the reactive force of the load. When the torque arm is used, centering becomes unnecessary, so equipment mounting time can be reduced.

● Torque arm → Page C-268

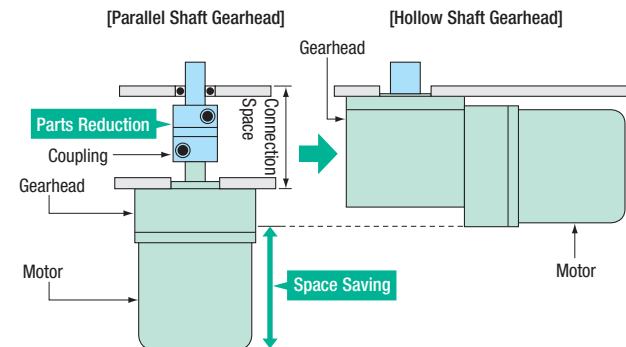
### ● Wide Variation

A wide variety of gear ratios (20 types, from **3** to **180**) are available. The proper gear ratio can be selected just as with ordinary gearheads. The maximum permissible torques are also the same as for ordinary gearheads.

● Solid shaft of **GE** pinion gearheads come with a tapped hole at the tip of the shaft.

### ● Low Cost

With hollow shaft gearheads, the parts cost and labor will decrease since no connecting parts are needed.



## Applicable Products

The right-angle gearheads can be used with pinion shaft type motors listed below.

Applicable Products	Series	Output Power	Pages
Induction Motors	World <b>K</b> Series	25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	C-36, C-41, C-46, C-52
Reversible Motors	World <b>K</b> Series	25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	C-90, C-94, C-98, C-102
Electromagnetic Brake Motors	World <b>K</b> Series	25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	C-124, C-128, C-132, C-136
AC Speed Control Motors	<b>FE100</b> + World <b>K</b> Series Induction Motors	25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	D-178
	<b>ES01/ES02</b> + World <b>K</b> Series Speed Control Motors	25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP)	D-192

### Note

● The right-angle gearheads cannot be used with synchronous motors and torque motors.

## Product Number Code

# 5 GE 25 RH

① ② ③ ④

①	Gearhead Frame Size	<b>4</b> : 80 mm (3.15 in.) <b>5</b> : 90 mm (3.54 in.)
②	Type of Pinion	<b>GN</b> : GN Type Pinion <b>GE</b> : GE Type Pinion <b>GU</b> : GU Type Pinion
③	Gear Ratio	(Example) <b>25</b> : Gear Ratio of 25:1
④		<b>RH</b> : Right-Angle, Hollow Shaft Gearhead <b>RAA</b> : Right-Angle, Solid Shaft Gearhead

## Product Line

### ● Hollow Shaft Type (RoHS)

Gearhead Model	Gear Ratio
<b>4GN</b> □RH	<b>3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180</b>
<b>5GN</b> □RH	
<b>5GE</b> □RH	
<b>5GU</b> □RH	

The following items are included in each product.  
Gearhead, Mounting Screws, Parallel Key, Safety Cover (with screws), Gasket, Operating Manual

### ● Solid Shaft Type (RoHS)

Gearhead Model	Gear Ratio
<b>4GN</b> □RAA	<b>3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180</b>
<b>5GN</b> □RAA	
<b>5GE</b> □RAA	
<b>5GU</b> □RAA	

The following items are included in each product.  
Gearhead, Mounting Screws, Parallel Key\*, Gasket, Operating Manual  
\* Only for **5GE**□RAA and **5GU**□RAA

## Specifications

Gearhead Model	Gear Ratio	Maximum Permissible Torque		Permissible Overhung Load				Permissible Thrust Load	
		N·m	lb·in	10 mm (0.39 in.) from Shaft End		20 mm (0.79 in.) from Shaft End		N	lb.
<b>4GN</b> □RH	<b>3~180</b>	8	70	250*	56*	220*	49*	100	22
<b>5GN</b> □RH	<b>3~180</b>	10	88	350*	78*	310*	69*	200	45
<b>5GE</b> □RH	<b>3~180</b>	20	177	560*	126*	500*	112*	250	56
<b>5GU</b> □RH	<b>3~180</b>	20	177	560*	126*	500*	112*	250	56
<b>4GN</b> □RAA	<b>3~18</b>	8	70	100	22	150	33	100	22
	<b>25~180</b>			200	45	300	67		
<b>5GN</b> □RAA	<b>3~18</b>	10	88	250	56	350	78	200	45
	<b>25~180</b>			300	67	450	101		
<b>5GE</b> □RAA	<b>3~9</b>	20	177	400	90	500	112	250	56
	<b>12.5~25</b>			450	101	600	135		
	<b>30~180</b>			500	112	700	157		
<b>5GU</b> □RAA	<b>3~9</b>	20	177	400	90	500	112	250	56
	<b>12.5~25</b>			450	101	600	135		
	<b>30~180</b>			500	112	700	157		

\*With the hollow shaft type, the permissible overhung load is measured from the flange-mounting surface.

### Note

- The right-angle gearhead does not have self-locking capabilities.

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

## Gearmotor – Torque Table

The permissible torque shown on pages C-238 to C-246 cover most motor combinations. For motor combinations not covered, use the efficiency value in the table below for your calculations. When making a selection, remember that the efficiency at starting is lower than at the rated speed.

$$\text{Permissible torque } \dots\dots T_G = T_M \times i \times \eta$$

$T_G$  : Permissible torque of gearhead  
 $T_M$  : Motor torque  
 $i$  : Gearhead gear ratio  
 $\eta$  : Gearhead efficiency

### Gearhead Efficiency

Gearhead Model	Gear Ratio	Efficiency (%)																	
		3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120
4GN□RH	Rated	40%			50%			60%											
	Starting	40%			50%			54%											
5GN□RH	Rated	50%			68%			60%						54%					
	Starting	50%			60%			54%						45%					
5GE□RH	Rated	50%			68%			60%						50%					
	Starting	50%			60%			54%						45%					
5GU□RH	Rated	50%			68%			60%						50%					
	Starting	50%			60%			54%						45%					
4GN□RAA	Rated	50%			68%			60%						54%					
	Starting	50%			60%			54%						45%					
5GN□RAA	Rated	68%			60%			60%						54%					
	Starting	60%			54%			54%						45%					
5GE□RAA	Rated	68%			60%			60%						50%					
	Starting	60%			54%			54%						45%					
5GU□RAA	Rated	68%			60%			60%						50%					
	Starting	60%			54%			54%						45%					

#### Notes

- If used with **FE100/FE200**, not all gear ratios are available. Check the list of permissible torque on pages C-241.
- The transmission efficiency in the table above is the value at room temperature. The transmission efficiency of the gear head varies according to the ambient temperature. Care should be taken when using in a low-temperature environment as the transmission efficiency will drop along with the output torque.

## Calculating Permissible Overhung Load of Hollow Shaft Types

When the end of the shaft being driven is not supported by a bearing as shown in the figure shown below, calculate the permissible overhung load using the following formula.

(This mechanism is the most demanding in terms of overhung load.)

### ◇ 4GN□RH

$$\text{Permissible overhung load } W [\text{N (lb.)}] = \frac{59.5 \text{ mm (2.34 in.)}}{59.5 \text{ mm (2.34 in.)} + L_p} \times 295 \text{ N (66 lb.)}^*$$

\* 295 N (66 lb.): Permissible overhung load at the flange mounting surface

### ◇ 5GN□RH

$$\text{Permissible overhung load } W [\text{N (lb.)}] = \frac{70 \text{ mm (2.76 in.)}}{70 \text{ mm (2.76 in.)} + L_p} \times 400 \text{ N (90 lb.)}^*$$

\* 400 N (90 lb.): Permissible overhung load at the flange mounting surface

### ◇ 5GE□RH

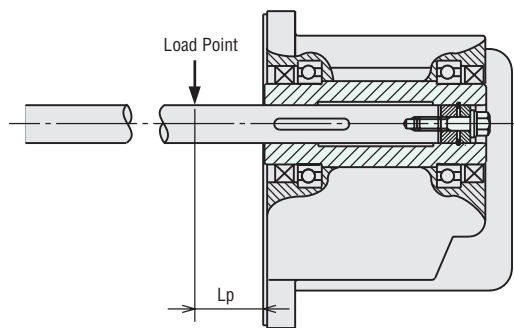
$$\text{Permissible overhung load } W [\text{N (lb.)}] = \frac{68.5 \text{ mm (2.70 in.)}}{68.5 \text{ mm (2.70 in.)} + L_p} \times 645 \text{ N (145 lb.)}^*$$

\* 645 N (145 lb.): Permissible overhung load at the flange mounting surface

### ◇ 5GU□RH

$$\text{Permissible overhung load } W [\text{N (lb.)}] = \frac{68.5 \text{ mm (2.70 in.)}}{68.5 \text{ mm (2.70 in.)} + L_p} \times 645 \text{ N (145 lb.)}^*$$

\* 645 N (145 lb.): Permissible overhung load at the flange mounting surface



Lp [mm (in.)]: Distance from flange mounting surface to overhung load point

## Permissible Load Inertia J of Gearhead

→ Page C-18

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

## Dimensions Unit = mm (in.)

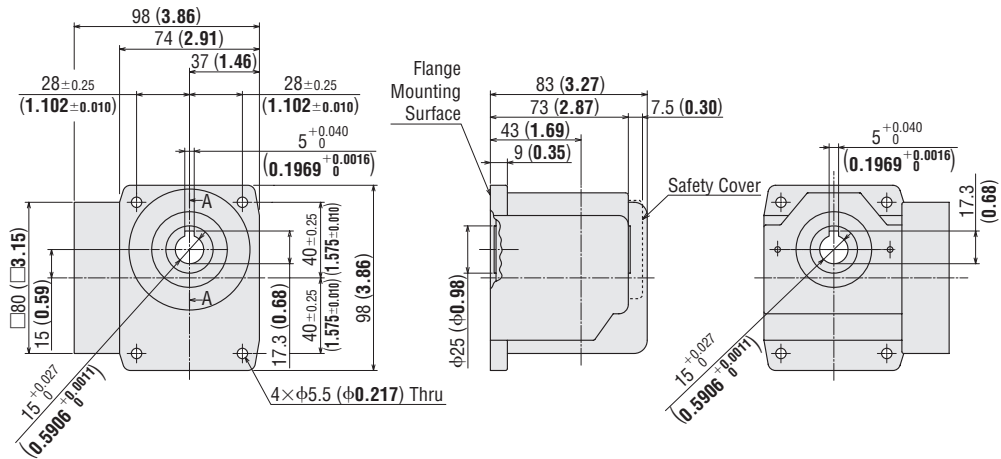
- Mounting screws are included with gearheads. Dimensions for mounting screws → Page C-280
- Enter the gear ratio in the box (□) within the model name.
- Key grooves are formed along the entire length of the shaft.
- An accessory safety cover is included.

### ◇ Hollow Shaft Type

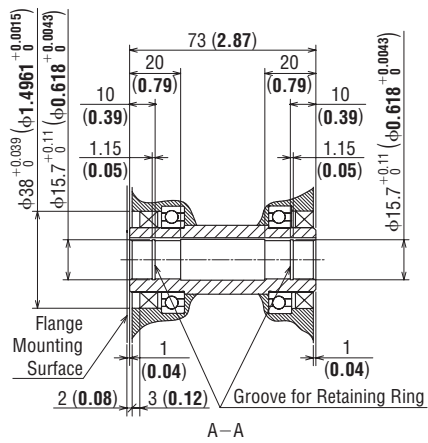
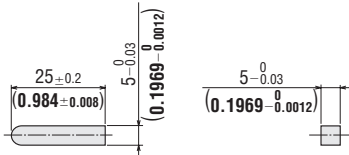
#### 4GN□RH

Mass: 1.6 kg (3.5 lb.)

DXF A254



### ◇ Key(Included)



Introduction
Induction Motors
Reversible Motors
Electromagnetic Brake Motors
V Series
Clutch & Brake Motors
Synchronous Motors
Low-Speed Synchronous Motors
Water-tight Dust-Resistant Motors
Torque Motors
Right-Angle Gearheads
Linear Heads
Brake Pack
Accessories
Installation

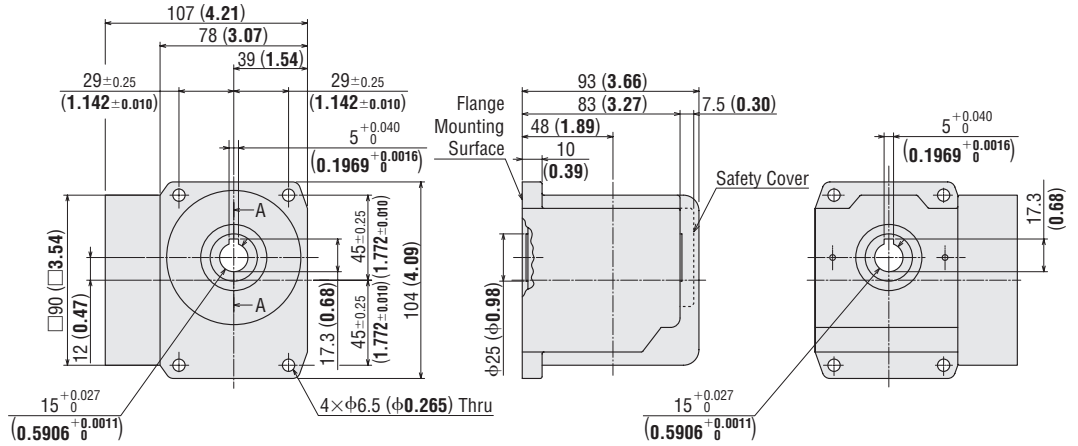
# Right-Angle Gearheads

## ◇ Hollow Shaft Type

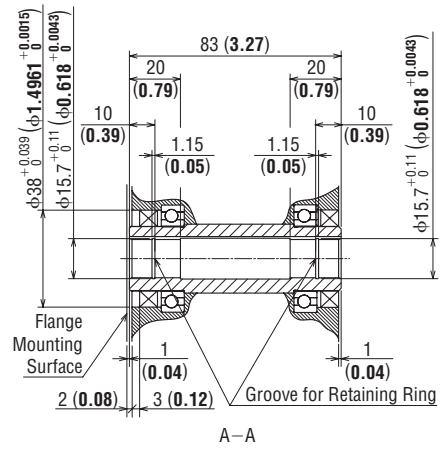
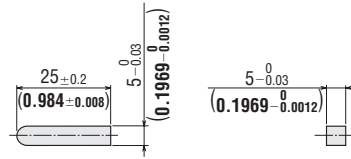
**5GN□RH**

Mass: 2.0 kg (4.4 lb.)

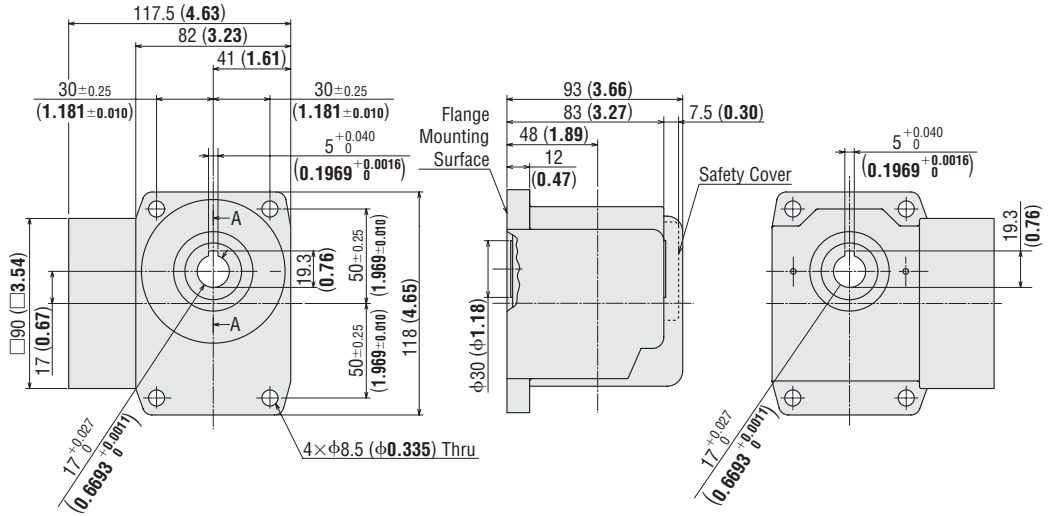
**DXF** A229



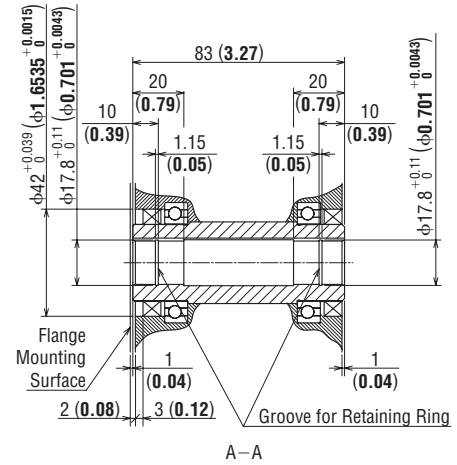
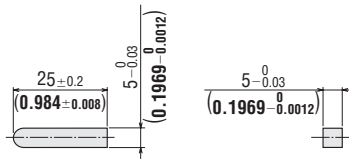
### ◇ Key(Included)



◇ Hollow Shaft Type  
**5GE□RH**  
 Mass: 2.5 kg (5.5 lb.)  
**DXF** A230



◇ Key(Included)



- Introduction
- Induction Motors
- Reversible Motors
- Electromagnetic Brake Motors
- V Series
- Clutch & Brake Motors
- Synchronous Motors
- Low-Speed Synchronous Motors
- Waterright Dust-Resistant Motors
- Torque Motors
- Right-Angle Gearheads
- Linear Heads
- Brake Pack
- Accessories
- Installation

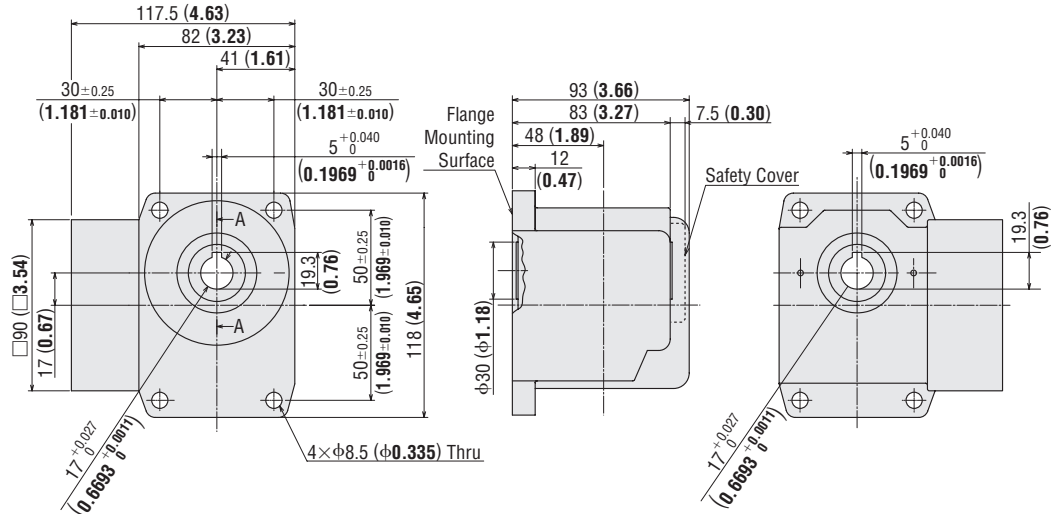
# Right-Angle Gearheads

## ◇ Hollow Shaft Type

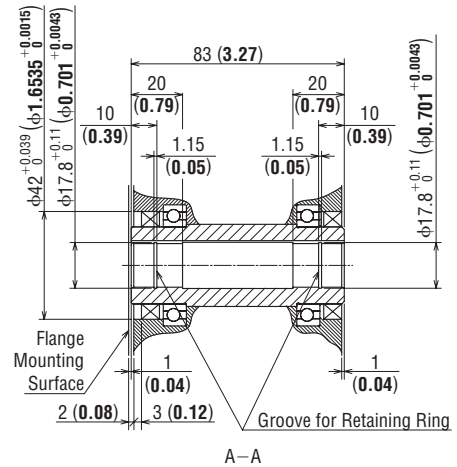
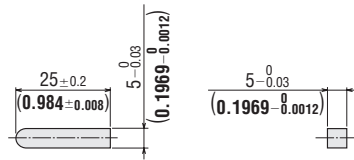
### 5GU□RH

Mass: 2.5 kg (5.5 lb.)

**DXF** A230



## ◇ Key(Included)



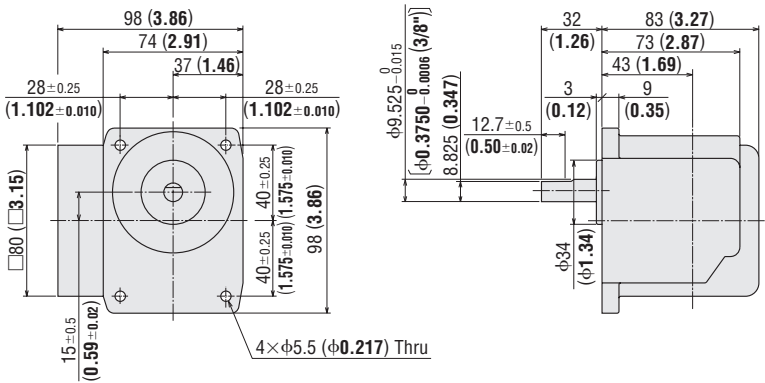


## ◇ Solid Shaft Type

### 4GN□RAA

Mass: 1.6 kg (3.5 lb.)

DXF A255U

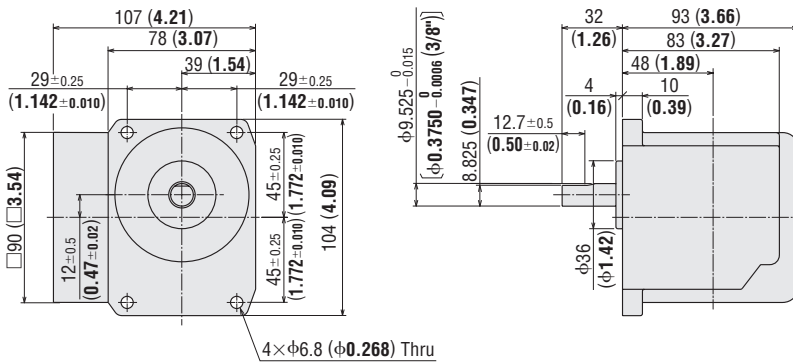


## ◇ Solid Shaft Type

### 5GN□RAA

Mass: 2.0 kg (4.4 lb.)

DXF A025U

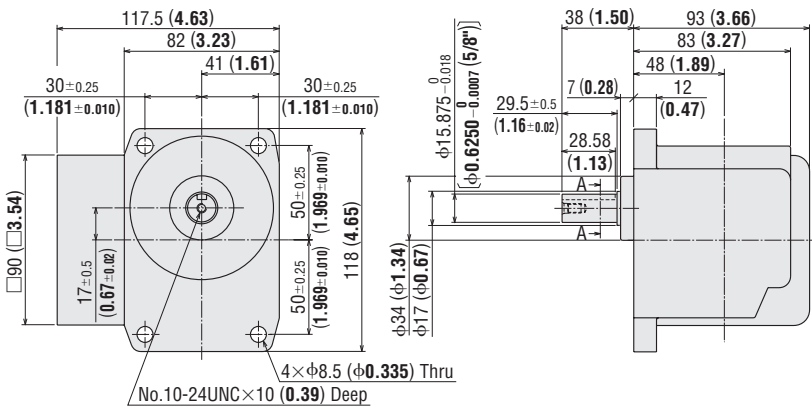


## ◇ Solid Shaft Type

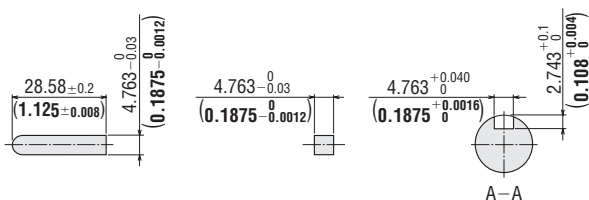
### 5GE□RAA

Mass: 2.5 kg (5.5 lb.)

DXF A512U



## ◇ Key and Key Slot (Included)



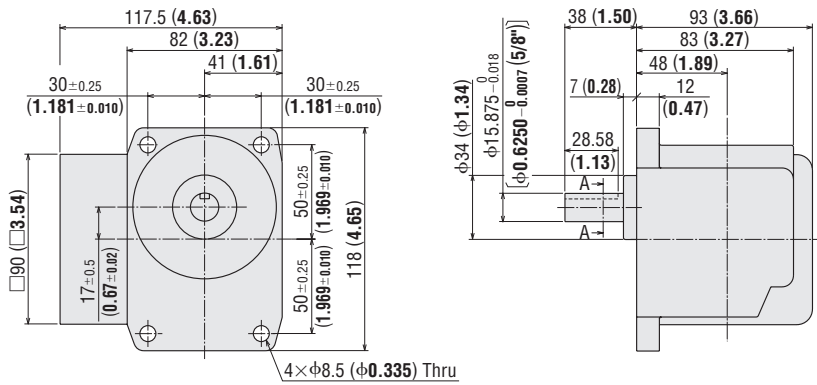
- Introduction
- Induction Motors
- Reversible Motors
- Electromagnetic Brake Motors
- V Series
- Clutch & Brake Motors
- Synchronous Motors
- Low-Speed Synchronous Motors
- Waterright Dust-Resistant Motors
- Torque Motors
- Right-Angle Gearheads
- Linear Heads
- Brake Pack
- Accessories
- Installation

## ◇ Solid Shaft Type

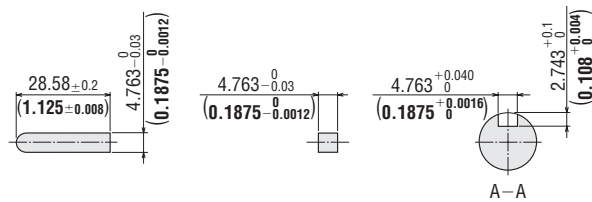
### 5GU□RAA

Mass: 2.5 kg (5.5 lb.)

DXF A034U

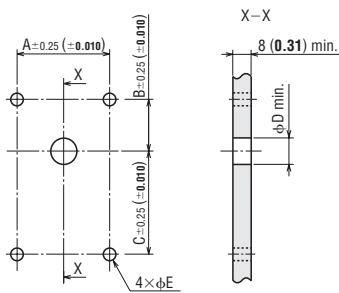


## ◇ Key and Key Slot (Included)



## ◇ Dimensions of the Gearhead Mounting Surface

Allow at least 8 mm (0.31 in.) for the thickness of the mounting plate and use screws of the appropriate length.



Unit = mm (in.)

Type	Model	A	B	C	φD	φE
Hollow Shaft	<b>4GN□RH</b>	56 (2.20)	25 (0.98)	55 (2.17)	φ15 (φ0.59)	φ5.5 (φ0.22)
	<b>5GN□RH</b>	58 (2.28)	33 (1.30)	57 (2.24)	φ15 (φ0.59)	φ6.5 (φ0.26)
	<b>5GE□RH</b>	60 (2.36)	33 (1.30)	67 (2.64)	φ17 (φ0.67)	φ8.5 (φ0.33)
Solid Shaft	<b>5GU□RH</b>	60 (2.36)	33 (1.30)	67 (2.64)	φ17 (φ0.67)	φ8.5 (φ0.33)
	<b>4GN□RAA</b>	56 (2.20)	25 (0.98)	55 (2.17)	φ35 (φ1.38)	φ5.5 (φ0.22)
	<b>5GN□RAA</b>	58 (2.28)	33 (1.30)	57 (2.24)	φ37 (φ1.46)	φ6.8 (φ0.27)
	<b>5GE□RAA</b>	60 (2.36)	33 (1.30)	67 (2.64)	φ35 (φ1.38)	φ8.5 (φ0.33)
	<b>5GU□RAA</b>	60 (2.36)	33 (1.30)	67 (2.64)	φ35 (φ1.38)	φ8.5 (φ0.33)

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

## Mounting Method for Right-Angle, Hollow Shaft Types

### Example of Load Mounting Method

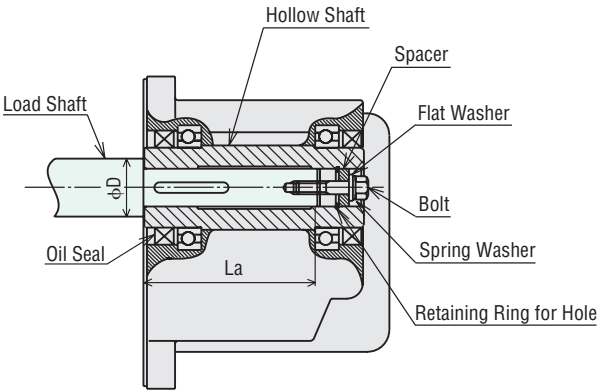
These figures below show how to install loads depending on the shape of the shaft.

- Install the load shaft to the hollow output shaft by aligning the center of the hollow shaft with that of the load shaft.
- The hollow output shaft has a key slot. Machine a matching key slot on the load shaft and use the supplied key to fix the two shafts across the slots.
- The recommended tolerance of the load shaft is h7.
- If the motor is intended to receive large shocks due to frequent instantaneous stops or carry a large overhung load, use a stepped load shaft.

### Notes

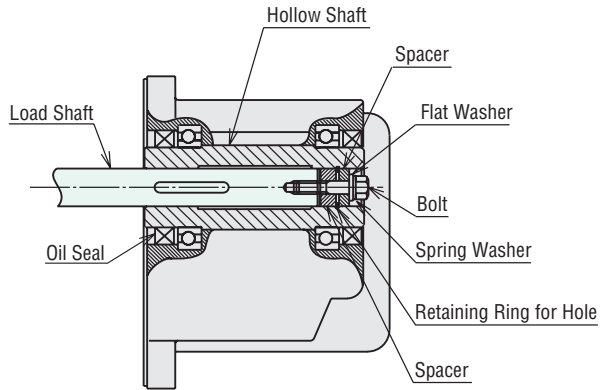
- When installing the load shaft to the hollow output shaft, be careful not to damage the hollow output shaft or bearing.
- To prevent sticking, apply a coat of molybdenum disulfide grease on the exterior surface of the load shaft and interior surface of the hollow output shaft.
- Do not attempt to modify or machine the hollow output shaft. It may damage the bearing and cause the hollow shaft type gearhead to break.

### ◇ Stepped Load Shaft



- After securing a load, attach the safety cover included.

### ◇ Straight Load Shaft



### Recommended Load Shaft Installation Dimensions

Unit = mm (in.)

Model	4GN□RH	5GN□RH	5GE□RH 5GU□RH	BH Series, BHF Series BH6G2-□RH
Inner Diameter of Hollow Shaft	$\phi 15^{+0.027}_0$ ( $\phi 0.5906^{+0.0011}_0$ )	$\phi 15^{+0.027}_0$ ( $\phi 0.5906^{+0.0011}_0$ )	$\phi 17^{+0.027}_0$ ( $\phi 0.6693^{+0.0011}_0$ )	$\phi 25^{+0.033}_0$ ( $\phi 0.9843^{+0.0013}_0$ )
Recommended Tolerance of Load Shaft	$\phi 15^0_{-0.018}$ ( $\phi 0.5906^0_{-0.0007}$ )	$\phi 15^0_{-0.018}$ ( $\phi 0.5906^0_{-0.0007}$ )	$\phi 17^0_{-0.018}$ ( $\phi 0.6693^0_{-0.0007}$ )	$\phi 25^0_{-0.021}$ ( $\phi 0.9843^0_{-0.0008}$ )
Nominal Diameter of Retaining Ring	$\phi 15$ ( $\phi 0.59$ ) C-shaped	$\phi 15$ ( $\phi 0.59$ ) C-shaped	$\phi 17$ ( $\phi 0.67$ ) C-shaped	$\phi 25$ ( $\phi 0.98$ ) C-shaped
Applicable Screw	M5	M5	M5	M8
Spacer Thickness*	4 (0.16)	4 (0.16)	4 (0.16)	6 (0.24)
Outer Diameter of Step Part $\phi D$	$\phi 25$ ( $\phi 0.98$ )	$\phi 25$ ( $\phi 0.98$ )	$\phi 30$ ( $\phi 1.18$ )	$\phi 40$ ( $\phi 1.57$ )
Length of Stepped Shaft $L_a$	58~60 (2.28~2.36)	68~70 (2.68~2.76)	68~70 (2.68~2.76)	86~90 (3.39~3.54)

\* Determine the spacer thickness according to the dimensions in the table. If the spacer is thicker than the specified dimension, the screw will project from the surface and prevent connection of the safety cover.

- Retaining rings for holes, spacers, screws or other parts used to install the load shaft are not included. These parts must be purchased separately.

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

## Gearmotor – Torque Table

- Enter the code that represents the terminal box type "T" in the box (□) within the model name.  
Enter the gear ratio in the box (□) within the model name.
- The speed is calculated by dividing the motor's synchronous speed by the gear ratio.  
The actual speed is 2~20% less than the displayed value, depending on the load.
- The transfer efficiency at starting is lower than at the rated speed, so output torque is lower.

### World K Series Induction Motors

#### ◇ Hollow Shaft Type Single-Phase 115 VAC 60 Hz / 230 VAC 60 Hz

- All output shafts rotate opposite to the direction of motor shaft rotation.

Unit = Upper values: N·m/Lower values: lb-in

Model Motor/Gearhead	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10	
	Gear Ratio	<b>3</b>	<b>3.6</b>	<b>5</b>	<b>6</b>	<b>7.5</b>	<b>9</b>	<b>12.5</b>	<b>15</b>	<b>18</b>	<b>25</b>	<b>30</b>	<b>36</b>	<b>50</b>	<b>60</b>	<b>75</b>	<b>90</b>	<b>100</b>	<b>120</b>	<b>150</b>	<b>180</b>	
<b>41K25GN-AW2□□U</b> <b>41K25GN-FCH</b> <b>41K25GN-CW2□□E</b> <b>41K25GN-ECH</b> <b>/4GN□□RH</b>	Rated	0.20	0.24	0.34	0.41	0.64	0.77	1.3	1.5	1.8	2.6	3.1	3.7	5.1	6.1	7.7	8	8	8	8	8	
	Starting	1.77	2.1	3.0	3.6	5.6	6.8	11.5	13.2	15.9	23	27	32	45	53	68	70	70	70	70	70	70
<b>51K40GN-AW2□□U</b> <b>51K40GN-FCH</b> <b>51K40GN-CW2□□E</b> <b>51K40GN-ECH</b> <b>/5GN□□RH</b>	Rated	0.39	0.47	0.65	0.78	1.3	1.6	2.2	2.7	3.2	3.9	4.7	5.6	7.8	9.4	10	10	10	10	10	10	
	Starting	3.4	4.1	5.7	6.9	11.5	14.1	19.4	23	28	34	41	49	69	83	88	88	88	88	88	88	88
<b>51K60GE-AW2□□U</b> <b>51K60GE-FCH</b> <b>51K60GE-CW2□□E</b> <b>51K60GE-ECH</b> <b>/5GE□□RH</b>	Rated	0.61	0.73	1.0	1.2	2.1	2.5	3.4	4.1	5.0	6.9	7.3	8.7	12.2	14.6	18.2	20	20	20	20	20	
	Starting	5.3	6.4	8.8	10.6	18.5	22	30	36	44	61	64	76	107	129	161	177	177	177	177	177	177
<b>51K90GE-AW2□□U</b> <b>51K90GE-FCH</b> <b>51K90GE-CW2□□E</b> <b>51K90GE-ECH</b> <b>/5GE□□RH</b>	Rated 115 VAC	0.88	1.1	1.5	1.8	3.0	3.6	5.0	6.0	7.2	9.9	10.5	12.6	17.6	20	20	20	20	20	20	20	
	Rated 230 VAC	7.7	9.7	13.2	15.9	26	31	44	53	63	87	92	111	155	177	177	177	177	177	177	177	177
	Starting	0.91	1.1	1.5	1.8	3.1	3.7	5.1	6.2	7.4	10.3	10.9	13.1	18.2	20	20	20	20	20	20	20	20

#### ◇ Solid Shaft Type Single-Phase 115 VAC 60 Hz / 230 VAC 60 Hz

- All output shafts rotate opposite to the direction of motor shaft rotation.

Unit = Upper values: N·m/Lower values: lb-in

Model Motor/Gearhead	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10	
	Gear Ratio	<b>3</b>	<b>3.6</b>	<b>5</b>	<b>6</b>	<b>7.5</b>	<b>9</b>	<b>12.5</b>	<b>15</b>	<b>18</b>	<b>25</b>	<b>30</b>	<b>36</b>	<b>50</b>	<b>60</b>	<b>75</b>	<b>90</b>	<b>100</b>	<b>120</b>	<b>150</b>	<b>180</b>	
<b>41K25GN-AW2□□U</b> <b>41K25GN-FCH</b> <b>41K25GN-CW2□□E</b> <b>41K25GN-ECH</b> <b>/4GN□□RAA</b>	Rated	0.26	0.31	0.43	0.51	0.64	0.77	1.3	1.5	1.8	2.6	3.1	3.7	5.1	6.1	7.7	8	8	8	8	8	
	Starting	2.3	2.7	3.8	4.5	5.6	6.8	11.5	13.2	15.9	23	27	32	45	53	68	70	70	70	70	70	70
<b>51K40GN-AW2□□U</b> <b>51K40GN-FCH</b> <b>51K40GN-CW2□□E</b> <b>51K40GN-ECH</b> <b>/5GN□□RAA</b>	Rated	0.53	0.64	0.88	1.1	1.3	1.6	2.2	2.7	3.2	3.9	4.7	5.6	7.8	9.4	10	10	10	10	10	10	
	Starting	4.6	5.6	7.7	9.7	11.5	14.1	19.4	23	28	34	41	49	69	83	88	88	88	88	88	88	88
<b>51K60GE-AW2□□U</b> <b>51K60GE-FCH</b> <b>51K60GE-CW2□□E</b> <b>51K60GE-ECH</b> <b>/5GE□□RAA</b>	Rated	0.83	0.99	1.4	1.7	2.1	2.5	3.4	4.1	5.0	6.9	7.3	8.7	12.2	14.6	18.2	20	20	20	20	20	
	Starting	7.3	8.7	12.3	15.0	18.5	22	30	36	44	61	64	76	107	129	161	177	177	177	177	177	177
<b>51K90GE-AW2□□U</b> <b>51K90GE-FCH</b> <b>51K90GE-CW2□□E</b> <b>51K90GE-ECH</b> <b>/5GE□□RAA</b>	Rated 115 VAC	1.2	1.4	2.0	2.4	3.0	3.6	5.0	6.0	7.2	9.9	10.5	12.6	17.6	20	20	20	20	20	20	20	
	Rated 230 VAC	10.6	12.3	17.7	21	26	31	44	53	63	87	92	111	155	177	177	177	177	177	177	177	177
	Starting	1.2	1.5	2.1	2.5	3.1	3.7	5.1	6.2	7.4	10.3	10.9	13.1	18.2	20	20	20	20	20	20	20	20

## World K Series Reversible Motors

◇ Hollow Shaft Type Single-Phase 115 VAC 60 Hz / 230 VAC 60 Hz

● All output shafts rotate opposite to the direction of motor shaft rotation.

Unit = Upper values: N·m/Lower values: lb-in

Model Motor/Gearhead	Speed r/min Gear Ratio	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10	
		<b>3</b>	<b>3.6</b>	<b>5</b>	<b>6</b>	<b>7.5</b>	<b>9</b>	<b>12.5</b>	<b>15</b>	<b>18</b>	<b>25</b>	<b>30</b>	<b>36</b>	<b>50</b>	<b>60</b>	<b>75</b>	<b>90</b>	<b>100</b>	<b>120</b>	<b>150</b>	<b>180</b>	
<b>4RK25GN-AW2</b> □□U <b>4RK25GN-CW2</b> □□E <b>/4GN</b> □RH	Rated	0.20 1.77	0.24 2.1	0.34 3.0	0.41 3.6	0.64 5.6	0.77 6.8	1.3 11.5	1.5 13.2	1.8 15.9	2.6 23	3.1 27	3.7 32	5.1 45	6.1 53	7.7 68	8 70	8 70	8 70	8 70	8 70	
	Starting	0.17 1.50	0.20 1.77	0.28 2.4	0.34 3.0	0.53 4.6	0.63 5.5	0.95 8.4	1.1 9.7	1.4 12.3	1.9 16.8	2.3 20	2.7 23	3.8 33	4.5 39	5.7 50	6.8 60	7.6 67	8 70	8 70	8 70	8 70
<b>5RK40GN-AW2</b> □□U <b>5RK40GN-CW2</b> □□E <b>/5GN</b> □RH	Rated 115 VAC	0.41 3.6	0.49 4.3	0.68 6.0	0.81 7.1	1.4 12.3	1.7 15.0	2.3 20	2.8 24	3.3 29	4.1 36	4.9 43	5.8 51	8.1 71	9.7 85	10 88	10 88	10 88	10 88	10 88	10 88	
	Rated 230 VAC	0.39 3.4	0.47 4.1	0.65 5.7	0.78 6.9	1.3 11.5	1.6 14.1	2.2 19.4	2.7 23	3.2 28	3.9 34	4.7 41	5.6 49	7.8 69	9.4 83	10 88	10 88	10 88	10 88	10 88	10 88	
	Starting	0.39 3.4	0.47 4.1	0.65 5.7	0.78 6.9	1.2 10.6	1.4 12.3	2.0 17.7	2.3 20	2.8 24	3.5 30	4.2 37	5.1 45	7.0 61	8.4 74	10 88	10 88	10 88	10 88	10 88	10 88	10 88
<b>5RK60GE-AW2</b> □□U <b>5RK60GE-CW2</b> □□E <b>/5GE</b> □RH	Rated	0.61 5.3	0.73 6.4	1.0 8.8	1.2 10.6	2.1 18.5	2.5 22	3.4 30	4.1 36	5.0 44	6.9 61	7.3 64	8.7 76	12.2 107	14.6 129	18.2 161	20 177	20 177	20 177	20 177	20 177	
	Starting	0.57 5.0	0.68 6.0	0.95 8.4	1.1 9.7	1.7 15.0	2.1 18.5	2.9 25	3.4 30	4.1 36	5.7 50	6.2 54	7.4 65	10.3 91	12.3 108	15.4 136	18.5 163	20 177	20 177	20 177	20 177	20 177
<b>5RK90GE-AW2</b> □□U <b>5RK90GE-CW3</b> □□E <b>/5GE</b> □RH	Rated 115 VAC	0.88 7.7	1.1 9.7	1.5 13.2	1.8 15.9	3.0 26	3.6 31	5.0 44	6.0 53	7.2 63	9.9 87	10.5 92	12.6 111	17.6 155	20 177	20 177	20 177	20 177	20 177	20 177	20 177	
	Rated 230 VAC	0.91 8.0	1.1 9.7	1.5 13.2	1.8 15.9	3.1 27	3.7 32	5.1 45	6.2 54	7.4 65	10.3 91	10.9 96	13.1 115	18.2 161	20 177	20 177	20 177	20 177	20 177	20 177	20 177	20 177
	Starting	0.89 7.8	1.1 9.7	1.5 13.2	1.8 15.9	2.7 23	3.2 28	4.4 38	5.3 46	6.4 56	8.9 78	9.6 84	11.5 101	15.9 140	19.1 169	20 177	20 177	20 177	20 177	20 177	20 177	20 177

◇ Solid Shaft Type Single-Phase 115 VAC 60 Hz / 230 VAC 60 Hz

● All output shafts rotate opposite to the direction of motor shaft rotation.

Unit = Upper values: N·m/Lower values: lb-in

Model Motor/Gearhead	Speed r/min Gear Ratio	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10	
		<b>3</b>	<b>3.6</b>	<b>5</b>	<b>6</b>	<b>7.5</b>	<b>9</b>	<b>12.5</b>	<b>15</b>	<b>18</b>	<b>25</b>	<b>30</b>	<b>36</b>	<b>50</b>	<b>60</b>	<b>75</b>	<b>90</b>	<b>100</b>	<b>120</b>	<b>150</b>	<b>180</b>	
<b>4RK25GN-AW2</b> □□U <b>4RK25GN-CW2</b> □□E <b>/4GN</b> □RAA	Rated	0.26 2.3	0.31 2.7	0.43 3.8	0.51 4.5	0.64 5.6	0.77 6.8	1.3 11.5	1.5 13.2	1.8 15.9	2.6 23	3.1 27	3.7 32	5.1 45	6.1 53	7.7 68	8 70	8 70	8 70	8 70	8 70	
	Starting	0.21 1.85	0.25 2.2	0.35 3.0	0.42 3.7	0.53 4.6	0.63 5.5	0.95 8.4	1.1 9.7	1.4 12.3	1.9 16.8	2.3 20	2.7 23	3.8 33	4.5 39	5.7 50	6.8 60	7.6 67	8 70	8 70	8 70	8 70
<b>5RK40GN-AW2</b> □□U <b>5RK40GN-CW2</b> □□E <b>/5GN</b> □RAA	Rated 115 VAC	0.55 4.8	0.66 5.8	0.92 8.1	1.1 9.7	1.4 12.3	1.7 15.0	2.3 20	2.8 24	3.3 29	4.1 36	4.9 43	5.8 51	8.1 71	9.7 85	10 88	10 88	10 88	10 88	10 88	10 88	
	Rated 230 VAC	0.53 4.6	0.64 5.6	0.88 7.7	1.1 9.7	1.3 11.5	1.6 14.1	2.2 19.4	2.7 23	3.2 28	3.9 34	4.7 41	5.6 49	7.8 69	9.4 83	10 88	10 88	10 88	10 88	10 88	10 88	
	Starting	0.47 4.1	0.56 4.9	0.78 6.9	0.94 8.3	1.2 10.6	1.4 12.3	2.0 17.7	2.3 20	2.8 24	3.5 30	4.2 37	5.1 45	7.0 61	8.4 74	10 88	10 88	10 88	10 88	10 88	10 88	10 88
<b>5RK60GE-AW2</b> □□U <b>5RK60GE-CW2</b> □□E <b>/5GE</b> □RAA	Rated	0.83 7.3	0.99 8.7	1.4 12.3	1.7 15.0	2.1 18.5	2.5 22	3.4 30	4.1 36	5.0 44	6.9 61	7.3 64	8.7 76	12.2 107	14.6 129	18.2 161	20 177	20 177	20 177	20 177	20 177	
	Starting	0.68 6.0	0.82 7.2	1.1 9.7	1.4 12.3	1.7 15.0	2.1 18.5	2.9 25	3.4 30	4.1 36	5.7 50	6.2 54	7.4 65	10.3 91	12.3 108	15.4 136	18.5 163	20 177	20 177	20 177	20 177	20 177
<b>5RK90GE-AW2</b> □□U <b>5RK90GE-CW3</b> □□E <b>/5GE</b> □RAA	Rated 115 VAC	1.2 10.6	1.4 12.3	2.0 17.7	2.4 21	3.0 26	3.6 31	5.0 44	6.0 53	7.2 63	9.9 87	10.5 92	12.6 111	17.6 155	20 177	20 177	20 177	20 177	20 177	20 177	20 177	
	Rated 230 VAC	1.2 10.6	1.5 13.2	2.1 18.5	2.5 22	3.1 27	3.7 32	5.1 45	6.2 54	7.4 65	10.3 91	10.9 96	13.1 115	18.2 161	20 177	20 177	20 177	20 177	20 177	20 177	20 177	20 177
	Starting	1.1 9.7	1.3 11.5	1.8 15.9	2.1 18.5	2.7 23	3.2 28	4.4 38	5.3 46	6.4 56	8.9 78	9.6 84	11.5 101	15.9 140	19.1 169	20 177	20 177	20 177	20 177	20 177	20 177	20 177

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Installation

## ● World K Series Electromagnetic Brake Motors

◇ Hollow Shaft Type Single-Phase 115 VAC 60 Hz / 230 VAC 60 Hz

● All output shafts rotate opposite to the direction of motor shaft rotation.

Unit = Upper values: N·m/Lower values: lb-in

Model	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
Motor/Gearhead	Gear Ratio	<b>3</b>	<b>3.6</b>	<b>5</b>	<b>6</b>	<b>7.5</b>	<b>9</b>	<b>12.5</b>	<b>15</b>	<b>18</b>	<b>25</b>	<b>30</b>	<b>36</b>	<b>50</b>	<b>60</b>	<b>75</b>	<b>90</b>	<b>100</b>	<b>120</b>	<b>150</b>	<b>180</b>
<b>4RK25GN-AW2MU</b> <b>4RK25GN-CW2ME</b> <b>/4GN□RH</b>	Rated	0.20 1.77	0.24 2.1	0.34 3.0	0.41 3.6	0.64 5.6	0.77 6.8	1.3 11.5	1.5 13.2	1.8 15.9	2.6 23	3.1 27	3.7 32	5.1 45	6.1 53	7.7 68	8 70	8 70	8 70	8 70	8 70
	Starting	0.17 1.50	0.20 1.77	0.28 2.4	0.34 3.0	0.53 4.6	0.63 5.5	0.95 8.4	1.1 9.7	1.4 12.3	1.9 16.8	2.3 20	2.7 23	3.8 33	4.5 39	5.7 50	6.8 60	7.6 67	8 70	8 70	8 70
<b>5RK40GN-AW2MU</b> <b>5RK40GN-CW2ME</b> <b>/5GN□RH</b>	Rated 115 VAC	0.41 3.6	0.49 4.3	0.68 6.0	0.81 7.1	1.4 12.3	1.7 15.0	2.3 20	2.8 24	3.3 29	4.1 36	4.9 43	5.8 51	8.1 71	9.7 85	10 88	10 88	10 88	10 88	10 88	10 88
	Rated 230 VAC	0.39 3.4	0.47 4.1	0.65 5.7	0.78 6.9	1.3 11.5	1.6 14.1	2.2 19.4	2.7 23	3.2 28	3.9 34	4.7 41	5.6 49	7.8 69	9.4 83	10 88	10 88	10 88	10 88	10 88	10 88
	Starting	0.39 3.4	0.47 4.1	0.65 5.7	0.78 6.9	1.2 10.6	1.4 12.3	2.0 17.7	2.3 20	2.8 24	3.5 30	4.2 37	5.1 45	7.0 61	8.4 74	10 88	10 88	10 88	10 88	10 88	10 88
<b>5RK60GE-AW2MU</b> <b>5RK60GE-CW2ME</b> <b>/5GE□RH</b>	Rated	0.61 5.3	0.73 6.4	1.0 8.8	1.2 10.6	2.1 18.5	2.5 22	3.4 30	4.1 36	5.0 44	6.9 61	7.3 64	8.7 76	12.2 107	14.6 129	18.2 161	20 177	20 177	20 177	20 177	20 177
	Starting	0.57 5.0	0.68 6.0	0.95 8.4	1.1 9.7	1.7 15.0	2.1 18.5	2.9 25	3.4 30	4.1 36	5.7 50	6.2 54	7.4 65	10.3 91	12.3 108	15.4 136	18.5 163	20 177	20 177	20 177	20 177
<b>5RK90GE-AW2MU</b> <b>5RK90GE-CW2ME</b> <b>/5GE□RH</b>	Rated 115 VAC	0.88 7.7	1.1 9.7	1.5 13.2	1.8 15.9	3.0 26	3.6 31	5.0 44	6.0 53	7.2 63	9.9 87	10.5 92	12.6 111	17.6 155	20 177	20 177	20 177	20 177	20 177	20 177	20 177
	Rated 230 VAC	0.91 8.0	1.1 9.7	1.5 13.2	1.8 15.9	3.1 27	3.7 32	5.1 45	6.2 54	7.4 65	10.3 91	10.9 96	13.1 115	18.2 161	20 177	20 177	20 177	20 177	20 177	20 177	20 177
	Starting	0.89 7.8	1.1 9.7	1.5 13.2	1.8 15.9	2.7 23	3.2 28	4.4 38	5.3 46	6.4 56	8.9 78	9.6 84	11.5 101	15.9 140	19.1 169	20 177	20 177	20 177	20 177	20 177	20 177

◇ Solid Shaft Type Single-Phase 115 VAC 60 Hz / 230 VAC 60 Hz

● All output shafts rotate opposite to the direction of motor shaft rotation.

Unit = Upper values: N·m/Lower values: lb-in

Model	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
Motor/Gearhead	Gear Ratio	<b>3</b>	<b>3.6</b>	<b>5</b>	<b>6</b>	<b>7.5</b>	<b>9</b>	<b>12.5</b>	<b>15</b>	<b>18</b>	<b>25</b>	<b>30</b>	<b>36</b>	<b>50</b>	<b>60</b>	<b>75</b>	<b>90</b>	<b>100</b>	<b>120</b>	<b>150</b>	<b>180</b>
<b>4RK25GN-AW2MU</b> <b>4RK25GN-CW2ME</b> <b>/4GN□RAA</b>	Rated	0.26 2.3	0.31 2.7	0.43 3.8	0.51 4.5	0.64 5.6	0.77 6.8	1.3 11.5	1.5 13.2	1.8 15.9	2.6 23	3.1 27	3.7 32	5.1 45	6.1 53	7.7 68	8 70	8 70	8 70	8 70	8 70
	Starting	0.21 1.85	0.25 2.2	0.35 3.0	0.42 3.7	0.53 4.6	0.63 5.5	0.95 8.4	1.1 9.7	1.4 12.3	1.9 16.8	2.3 20	2.7 23	3.8 33	4.5 39	5.7 50	6.8 60	7.6 67	8 70	8 70	8 70
<b>5RK40GN-AW2MU</b> <b>5RK40GN-CW2ME</b> <b>/5GN□RAA</b>	Rated 115 VAC	0.55 4.8	0.66 5.8	0.92 8.1	1.1 9.7	1.4 12.3	1.7 15.0	2.3 20	2.8 24	3.3 29	4.1 36	4.9 43	5.8 51	8.1 71	9.7 85	10 88	10 88	10 88	10 88	10 88	10 88
	Rated 230 VAC	0.53 4.6	0.64 5.6	0.88 7.7	1.1 9.7	1.3 11.5	1.6 14.1	2.2 19.4	2.7 23	3.2 28	3.9 34	4.7 41	5.6 49	7.8 69	9.4 83	10 88	10 88	10 88	10 88	10 88	10 88
	Starting	0.47 4.1	0.56 4.9	0.78 6.9	0.94 8.3	1.2 10.6	1.4 12.3	2.0 17.7	2.3 20	2.8 24	3.5 30	4.2 37	5.1 45	7.0 61	8.4 74	10 88	10 88	10 88	10 88	10 88	10 88
<b>5RK60GE-AW2MU</b> <b>5RK60GE-CW2ME</b> <b>/5GE□RAA</b>	Rated	0.83 7.3	0.99 8.7	1.4 12.3	1.7 15.0	2.1 18.5	2.5 22	3.4 30	4.1 36	5.0 44	6.9 61	7.3 64	8.7 76	12.2 107	14.6 129	18.2 161	20 177	20 177	20 177	20 177	20 177
	Starting	0.68 6.0	0.82 7.2	1.1 9.7	1.4 12.3	1.7 15.0	2.1 18.5	2.9 25	3.4 30	4.1 36	5.7 50	6.2 54	7.4 65	10.3 91	12.3 108	15.4 136	18.5 163	20 177	20 177	20 177	20 177
<b>5RK90GE-AW2MU</b> <b>5RK90GE-CW2ME</b> <b>/5GE□RAA</b>	Rated 115 VAC	1.2 10.6	1.4 12.3	2.0 17.7	2.4 21	3.0 26	3.6 31	5.0 44	6.0 53	7.2 63	9.9 87	10.5 92	12.6 111	17.6 155	20 177	20 177	20 177	20 177	20 177	20 177	20 177
	Rated 230 VAC	1.2 10.6	1.5 13.2	2.1 18.5	2.5 22	3.1 27	3.7 32	5.1 45	6.2 54	7.4 65	10.3 91	10.9 96	13.1 115	18.2 161	20 177	20 177	20 177	20 177	20 177	20 177	20 177
	Starting	1.1 9.7	1.3 11.5	1.8 15.9	2.1 18.5	2.7 23	3.2 28	4.4 38	5.3 46	6.4 56	8.9 78	9.6 84	11.5 101	15.9 140	19.1 169	20 177	20 177	20 177	20 177	20 177	20 177

● Speed Controller **FE100** + World **K** Series Induction Motors

◇ Hollow Shaft Type

● All output shafts rotate opposite to the direction of motor shaft rotation.

Unit = Upper values: N·m/Lower values: lb-in

Model		Gear Ratio																								
Motor/Gearhead	Applicable Speed Controllers	Set Frequency Hz (Set Speed r/min)		3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180			
				<b>4IK25GN-SW2</b> □ <b>4IK25GN-SH</b> <b>/4GN</b> □RH	<b>FE100A</b> <b>FE100C</b> <b>FE100S</b>	6.6 (200)	Rated	-	-	-	-	-	0.75	1.1	1.3	1.6	2.5	3.0	3.7	4.4	5.3	6.6	8	8	8	8
Starting	-	-	-				-	-	0.75	0.99	1.2	1.5	2.3	2.7	3.3	3.9	4.8	6.0	7.2	8	8	8	8	8		
10~50 (300~1500)	Rated	-	-			-	-	-	0.95	1.4	1.7	2.3	3.2	3.9	4.7	5.6	6.7	8	8	8	8	8	8	8		
	Starting	-	-			-	-	-	0.95	1.3	1.5	2.0	2.8	3.5	4.2	5.0	6.0	7.6	8	8	8	8	8	8		
80 (2400)	Rated	-	-			-	-	-	0.22	0.64	0.82	1.0	1.5	2.0	2.4	2.9	3.5	4.4	5.3	5.9	7.1	8	8	8		
	Starting	-	-			-	-	-	0.22	0.58	0.73	0.92	1.3	1.8	2.1	2.6	3.1	3.9	4.7	5.3	6.4	8	8	8		
<b>5IK40GN-SW2</b> □ <b>5IK40GN-SH</b> <b>/5GN</b> □RH	<b>FE100A</b> <b>FE100C</b> <b>FE100S</b>	6.6~50 (200~1500)	Rated			-	-	-	-	1.3	1.6	2.5	3.0	3.6	5.1	6.2	7.4	8.9	10	10	10	10	10	10	10	
			Starting			-	-	-	-	1.1	1.4	2.2	2.7	3.2	4.6	5.6	6.7	8.0	9.6	10	10	10	10	10	10	10
		80 (2400)	Rated	-	-	-	-	0.58	0.75	1.1	1.4	1.7	2.7	3.2	3.9	4.7	5.6	7.1	8.5	9.5	10	10	10	10		
			Starting	-	-	-	-	0.51	0.66	1.0	1.2	1.5	2.3	2.9	3.5	4.2	5.1	6.4	7.7	8.5	10	10	10	10		
		<b>5IK60GE-SW2</b> □ <b>5IK60GE-SH</b> <b>/5GE</b> □RH	<b>FE100A</b> <b>FE100C</b> <b>FE100S</b>	6.6 (200)	Rated	-	-	0.84	1.0	1.4	1.7	2.6	3.1	3.8	5.3	5.4	6.5	9.1	11.0	13.8	16.6	18.4	18.4	20	20	
					Starting	-	-	0.84	1.0	1.2	1.5	2.3	2.7	3.3	4.7	4.9	5.9	8.2	9.9	12.4	14.9	16.6	16.6	20	20	20
				10~50 (300~1500)	Rated	-	-	1.2	1.5	2.1	2.6	3.7	4.5	5.5	7.7	7.9	9.6	13.3	16.0	20	20	20	20	20	20	20
					Starting	-	-	1.2	1.5	1.9	2.3	3.3	4.0	4.8	6.8	7.1	8.6	12.0	14.4	18.1	20	20	20	20	20	20
80 (2400)	Rated			-	-	0.50	0.70	0.99	1.3	2.0	2.5	3.1	4.4	4.5	5.4	7.6	9.2	11.5	13.9	15.4	15.4	19.3	20	20		
	Starting			-	-	0.50	0.70	0.87	1.1	1.8	2.2	2.7	3.8	4.0	4.9	6.9	8.3	10.4	12.5	13.9	13.9	17.4	20	20		
<b>5IK90GE-SW2</b> □ <b>5IK90GE-SH</b> <b>/5GE</b> □RH	<b>FE100A</b> <b>FE100C</b> <b>FE100S</b>			6.6 (200)	Rated	-	-	1.3	1.6	2.2	2.7	3.8	4.6	5.5	7.7	7.9	9.6	13.3	16.0	20	20	20	20	20	20	
					Starting	-	-	1.3	1.6	1.9	2.4	3.3	4.0	4.9	6.8	7.2	8.6	12.0	14.4	18.1	20	20	20	20	20	20
		10~60 (300~1800)	Rated	-	-	1.3	1.8	2.4	2.9	4.2	5.1	6.1	8.6	8.8	10.6	14.8	17.8	20	20	20	20	20	20	20		
			Starting	-	-	1.3	1.8	2.1	2.6	3.7	4.5	5.4	7.6	7.9	9.6	13.4	16.1	20	20	20	20	20	20	20		
		80 (2400)	Rated	-	-	0.83	1.1	1.5	2.0	2.9	3.6	4.3	6.1	6.3	7.6	10.6	12.8	16.0	19.3	20	20	20	20	20		
			Starting	-	-	0.83	1.1	1.3	1.8	2.6	3.1	3.8	5.4	5.7	6.8	9.6	11.5	14.4	17.4	19.3	19.3	20	20	20		

**Note**

● Gear ratios not shown in the list of permissible torque are not available.

Introduction  
Induction Motors  
Reversible Motors  
Electronic Brake Motors  
V Series  
Clutch & Brake Motors  
Synchronous Motors  
Low-Speed Synchronous Motors  
Water-tight Dust-Resistant Motors  
Torque Motors  
Right-Angle Gearheads  
Linear Heads  
Brake Pack  
Accessories  
Installation

# Right-Angle Gearheads

## ◇ Solid Shaft Type

● All output shafts rotate opposite to the direction of motor shaft rotation.

Unit = Upper values: N-m/Lower values: lb-in

Model		Gear Ratio		Unit = Upper values: N-m/Lower values: lb-in																				
Motor/Gearhead	Applicable Speed Controllers	Set Frequency Hz (Set Speed r/min)		Gear Ratio																				
				3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	
<b>4IK25GN-SW2</b> □ <b>4IK25GN-SH</b> <b>/4GN</b> □RAA	<b>FE100A</b> <b>FE100C</b> <b>FE100S</b>	6.6 (200)	Rated	-	-	0.45	0.54	0.73	0.88	1.2	1.5	1.8	2.6	3.2	3.8	4.5	5.4	6.8	8	8	8	8	8	
			Starting	-	-	0.45	0.54	0.73	0.88	1.1	1.3	1.6	2.4	2.8	3.4	4.1	4.9	6.1	7.3	8	8	8	8	8
		10~50 (300~1500)	Rated	-	-	0.38	0.74	0.93	1.1	1.5	1.9	2.4	3.3	4.0	4.8	5.7	6.8	8	8	8	8	8	8	8
			Starting	-	-	0.38	0.74	0.93	1.1	1.4	1.7	2.2	3.0	3.6	4.3	5.1	6.2	7.7	8	8	8	8	8	8
		80 (2400)	Rated	-	-	0.20	0.24	0.30	0.41	0.81	0.98	1.2	1.6	2.1	2.5	3.0	3.6	4.5	5.4	6.0	7.2	8	8	8
			Starting	-	-	0.20	0.24	0.30	0.41	0.73	0.88	1.1	1.5	1.9	2.3	2.7	3.2	4.1	4.9	5.4	6.5	8	8	8
<b>5IK40GN-SW2</b> □ <b>5IK40GN-SH</b> <b>/5GN</b> □RAA	<b>FE100A</b> <b>FE100C</b> <b>FE100S</b>	6.6~50 (200~1500)	Rated	-	-	0.98	1.2	1.5	1.8	2.6	3.2	3.8	5.3	6.3	7.6	9.0	10	10	10	10	10	10		
			Starting	-	-	0.86	1.0	1.3	1.5	2.3	2.8	3.3	4.7	5.7	6.8	8.1	9.7	10	10	10	10	10	10	
		80 (2400)	Rated	-	-	0.32	0.38	0.78	0.94	1.3	1.6	1.9	2.8	3.4	4.0	4.8	5.8	7.2	8.6	9.6	10	10	10	10
			Starting	-	-	0.28	0.34	0.69	0.83	1.1	1.4	1.7	2.5	3.0	3.6	4.3	5.2	6.5	7.8	8.6	10	10	10	10
<b>5IK60GE-SW2</b> □ <b>5IK60GE-SH</b> <b>/5GE</b> □RAA	<b>FE100A</b> <b>FE100C</b> <b>FE100S</b>	6.6 (200)	Rated	-	-	1.0	1.2	1.5	1.8	2.7	3.3	3.9	5.4	5.6	6.7	9.3	11.2	14.0	16.7	18.6	18.6	20	20	
			Starting	-	-	0.89	1.1	1.3	1.6	2.4	2.9	3.4	4.8	5.0	6.0	8.4	10.0	12.6	15.1	16.7	16.7	20	20	
		10~50 (300~1500)	Rated	-	-	1.5	1.8	2.4	2.8	3.9	4.7	5.7	7.9	8.1	9.7	13.5	16.2	20	20	20	20	20	20	20
			Starting	-	-	1.3	1.5	2.1	2.5	3.5	4.2	5.0	6.9	7.3	8.7	12.2	14.6	18.2	20	20	20	20	20	20
		80 (2400)	Rated	-	-	0.85	1.0	1.3	1.5	2.3	2.7	3.3	4.6	4.7	5.6	7.8	9.4	11.7	14.0	15.6	15.6	19.5	20	20
			Starting	-	-	0.75	0.89	1.1	1.3	2.0	2.4	2.9	4.0	4.2	5.1	7.0	8.4	10.5	12.6	14.0	14.0	17.6	20	20
<b>5IK90GE-SW2</b> □ <b>5IK90GE-SH</b> <b>/5GE</b> □RAA	<b>FE100A</b> <b>FE100C</b> <b>FE100S</b>	6.6 (200)	Rated	0.88	1.1	1.5	1.8	2.4	2.8	3.9	4.7	5.7	7.9	8.1	9.7	13.5	16.2	20	20	20	20	20	20	
			Starting	0.77	0.93	1.3	1.5	2.1	2.5	3.5	4.2	5.0	6.9	7.3	8.7	12.2	14.6	18.2	20	20	20	20	20	20
		10~60 (300~1800)	Rated	0.98	1.2	1.6	2.1	2.6	3.2	4.4	5.3	6.3	8.8	9.0	10.8	15.0	18.0	20	20	20	20	20	20	20
			Starting	0.86	1.0	1.4	1.9	2.3	2.8	3.9	4.6	5.6	7.7	8.1	9.7	13.5	16.2	20	20	20	20	20	20	20
		80 (2400)	Rated	0.70	0.84	1.2	1.4	1.8	2.3	3.2	3.8	4.5	6.3	6.5	7.8	10.8	13.0	16.2	19.4	20	20	20	20	20
			Starting	0.62	0.74	1.0	1.2	1.5	2.0	2.8	3.3	4.0	5.6	5.8	7.0	9.7	11.7	14.6	17.5	19.4	19.4	20	20	20

### Note

● Gear ratios not shown in the list of permissible torque are not available.



● Speed Controller **ES01/ES02** + World K Series Speed Control Motors

◇ Induction Motors Hollow Shaft Type Single-Phase 115 VAC 60 Hz

● All output shafts rotate opposite to the direction of motor shaft rotation.

Unit = Upper values: N-m/Lower values: lb-in

Model		Gear Ratio																				
Motor/ Gearhead	Applicable Speed Controllers	Motor Speed r/min	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
			<b>4IK25RGN-AW2U /4GN□RH</b>	<b>ES01</b>	1200	0.22 1.94	0.27 2.3	0.37 3.2	0.44 3.8	0.69 6.1	0.83 7.3	1.4 12.3	1.7 15.0	2.0 17.7	2.8 24	3.3 29	4.0 35	5.6 49	6.7 59	8 70	8 70	8 70
90	0.060 0.53	0.072 0.63			0.10 0.88	0.12 1.06	0.19 1.68	0.23 2.0	0.38 3.3	0.45 3.9	0.54 4.7	0.75 6.6	0.90 7.9	1.1 9.7	1.5 13.2	1.8 15.9	2.3 20	2.7 23	3.0 26	3.6 31	4.5 39	5.4 47
Starting	0.14 1.23	0.17 1.50			0.24 2.1	0.29 2.5	0.45 3.9	0.54 4.7	0.81 7.1	0.97 8.5	1.2 10.6	1.6 14.1	1.9 16.8	2.3 20	3.2 28	3.9 34	4.9 43	5.8 51	6.5 57	7.8 69	8 70	8 70
<b>5IK40RGN-AW2U /5GN□RH</b>	<b>ES01</b>	1200	0.34 3.0	0.41 3.6	0.56 4.9	0.68 6.0	1.1 9.7	1.4 12.3	1.9 16.8	2.3 20	2.8 24	3.4 30	4.1 36	4.9 43	6.8 60	8.1 71	10 88	10 88	10 88	10 88	10 88	10 88
		90	0.10 0.88	0.12 1.06	0.17 1.50	0.20 1.77	0.34 3.0	0.41 3.6	0.57 5.0	0.68 6.0	0.82 7.2	1.0 8.8	1.2 10.6	1.4 12.3	2.0 17.7	2.4 21	3.0 26	3.6 31	4.0 35	4.8 42	6.0 53	7.2 63
		Starting	0.30 2.6	0.36 3.1	0.50 4.4	0.60 5.3	0.90 7.9	1.1 9.7	1.5 13.2	1.8 15.9	2.2 19.4	2.7 23	3.2 28	3.9 34	4.7 41	5.4 47	6.5 57	8.1 71	9.7 85	10 88	10 88	10 88
<b>5IK60RGU-AWU /5GU□RH</b>	<b>ES01</b>	1200	0.74 6.5	0.88 7.7	1.2 10.6	1.5 13.2	2.5 22	3.0 26	4.2 37	5.0 44	6.0 53	8.3 73	8.8 77	10.6 93	14.7 130	17.6 155	20 177	20 177	20 177	20 177	20 177	20 177
		90	0.32 2.8	0.38 3.3	0.53 4.6	0.63 5.5	1.1 9.7	1.3 11.5	1.8 15.9	2.1 18.5	2.6 23	3.6 31	3.8 33	4.5 39	6.3 55	7.6 67	9.5 84	11.3 100	12.6 111	12.6 111	15.8 139	18.9 167
		Starting	0.48 4.2	0.58 5.1	0.80 7.0	0.96 8.4	1.4 12.3	1.7 15.0	2.4 21	2.9 25	3.5 30	4.8 42	5.2 46	6.2 54	8.6 76	10.4 92	13.0 115	15.6 138	17.3 153	17.3 153	20 177	20 177

◇ Induction Motors Solid Shaft Type Single-Phase 115 VAC 60 Hz

● All output shafts rotate opposite to the direction of motor shaft rotation.

Unit = Upper values: N-m/Lower values: lb-in

Model		Gear Ratio																				
Motor/ Gearhead	Applicable Speed Controllers	Motor Speed r/min	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
			<b>4IK25RGN-AW2U /4GN□RAA</b>	<b>ES01</b>	1200	0.28 2.4	0.33 2.9	0.46 4.0	0.56 4.9	0.69 6.1	0.83 7.3	1.4 12.3	1.7 15.0	2.0 17.7	2.8 24	3.3 29	4.0 35	5.6 49	6.7 59	8 70	8 70	8 70
90	0.075 0.66	0.090 0.79			0.13 1.15	0.15 1.32	0.19 1.68	0.23 2.0	0.38 3.3	0.45 3.9	0.54 4.7	0.75 6.6	0.90 7.9	1.1 9.7	1.5 13.2	1.8 15.9	2.3 20	2.7 23	3.0 26	3.6 31	4.5 39	5.4 47
Starting	0.18 1.59	0.22 1.94			0.30 2.6	0.36 3.1	0.45 3.9	0.54 4.7	0.81 7.1	0.97 8.5	1.2 10.6	1.6 14.1	1.9 16.8	2.3 20	3.2 28	3.9 34	4.9 43	5.8 51	6.5 57	7.8 69	8 70	8 70
<b>5IK40RGN-AW2U /5GN□RAA</b>	<b>ES01</b>	1200	0.46 4.0	0.55 4.8	0.77 6.8	0.92 8.1	1.1 9.7	1.4 12.3	1.9 16.8	2.3 20	2.8 24	3.4 30	4.1 36	4.9 43	6.8 60	8.1 71	10 88	10 88	10 88	10 88	10 88	10 88
		90	0.14 1.23	0.16 1.41	0.23 2.0	0.27 2.3	0.34 3.0	0.41 3.6	0.57 5.0	0.68 6.0	0.82 7.2	1.0 8.8	1.2 10.6	1.4 12.3	2.0 17.7	2.4 21	3.0 26	3.6 31	4.0 35	4.8 42	6.0 53	7.2 63
		Starting	0.36 3.1	0.43 3.8	0.60 5.3	0.72 6.3	0.90 7.9	1.1 9.7	1.5 13.2	1.8 15.9	2.2 19.4	2.7 23	3.2 28	3.9 34	4.7 41	5.4 47	6.5 57	8.1 71	9.7 85	10 88	10 88	10 88
<b>5IK60RGU-AWU /5GU□RAA</b>	<b>ES01</b>	1200	1.0 8.8	1.2 10.6	1.7 15.0	2.0 17.7	2.5 22	3.0 26	4.2 37	5.0 44	6.0 53	8.3 73	8.8 77	10.6 93	14.7 130	17.6 155	20 177	20 177	20 177	20 177	20 177	20 177
		90	0.43 3.8	0.51 4.5	0.71 6.2	0.86 7.6	1.1 9.7	1.3 11.5	1.8 15.9	2.1 18.5	2.6 23	3.6 31	3.8 33	4.5 39	6.3 55	7.6 67	9.5 84	11.3 100	12.6 111	12.6 111	15.8 139	18.9 167
		Starting	0.58 5.1	0.69 6.1	0.96 8.4	1.2 10.6	1.4 12.3	1.7 15.0	2.4 21	2.9 25	3.5 30	4.8 42	5.2 46	6.2 54	8.6 76	10.4 92	13.0 115	15.6 138	17.3 153	17.3 153	20 177	20 177

Introduction  
Induction Motors  
Reversible Motors  
Electromagnetic Brake Motors  
V Series  
Clutch & Brake Motors  
Synchronous Motors  
Low-Speed Synchronous Motors  
Waterlight Dust-Resistant Motors  
Torque Motors  
Right-Angle Gearheads  
Linear Heads  
Brake Pack  
Accessories  
Installation

# Right-Angle Gearheads

## ◇ Induction Motors Hollow Shaft Type Single-Phase 230 VAC 60 Hz

● All output shafts rotate opposite to the direction of motor shaft rotation.

Unit = Upper values: N-m/Lower values: lb-in

Model		Gear Ratio																				
Motor/ Gearhead	Applicable Speed Controllers	Motor Speed r/min	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
<b>4IK25RGN-CW2E /4GN□RH</b>	<b>E502</b>	1200	0.18 1.59	0.22 1.94	0.30 2.6	0.36 3.1	0.56 4.9	0.68 6.0	1.1 9.7	1.4 12.3	1.6 14.1	2.3 20	2.7 23	3.2 28	4.5 39	5.4 47	6.8 60	8 70	8 70	8 70	8 70	8 70
		90	0.048 0.42	0.058 0.51	0.080 0.70	0.096 0.84	0.15 1.32	0.18 1.59	0.30 2.6	0.36 3.1	0.43 3.8	0.60 5.3	0.72 6.3	0.86 7.6	1.2 10.6	1.4 12.3	1.8 15.9	2.2 19.4	2.4 21	2.9 25	3.6 31	4.3 38
		Starting	0.14 1.23	0.17 1.50	0.24 2.1	0.29 2.5	0.45 3.9	0.54 4.7	0.81 7.1	0.97 8.5	1.2 10.6	1.6 14.1	2.3 20	2.7 23	3.2 28	4.5 39	5.4 47	6.8 60	8 70	8 70	8 70	8 70
<b>5IK40RGN-CW2E /5GN□RH</b>	<b>E502</b>	1200	0.39 3.4	0.47 4.1	0.65 5.7	0.78 6.9	1.3 11.5	1.6 14.1	2.2 19.4	2.7 23	3.2 28	3.9 34	4.7 41	5.6 49	7.8 69	9.4 83	10 88	10 88	10 88	10 88	10 88	10 88
		90	0.11 0.97	0.13 1.15	0.18 1.59	0.21 1.85	0.36 3.1	0.43 3.8	0.60 5.3	0.71 6.2	0.86 7.6	1.1 9.7	1.3 11.5	1.5 13.2	2.1 18.5	2.5 22	3.2 28	3.8 33	4.2 37	5.0 44	6.3 55	7.6 67
		Starting	0.30 2.6	0.36 3.1	0.50 4.4	0.60 5.3	0.90 7.9	1.1 9.7	1.5 13.2	1.8 15.9	2.2 19.4	2.7 23	3.2 28	3.9 34	4.7 47	5.6 57	7.8 71	9.4 85	10 88	10 88	10 88	10 88
<b>5IK60RGU-CWE /5GU□RH</b>	<b>E502</b>	1200	0.74 6.5	0.88 7.7	1.2 10.6	1.5 13.2	2.5 22	3.0 26	4.2 37	5.0 44	6.0 53	8.3 73	8.8 77	10.6 93	14.7 130	17.6 155	20 177	20 177	20 177	20 177	20 177	20 177
		90	0.27 2.3	0.32 2.8	0.45 3.9	0.54 4.7	0.92 8.1	1.1 9.7	1.5 13.2	1.8 15.9	2.2 19.4	2.7 23	3.2 28	3.9 34	4.7 47	5.6 57	8.1 71	9.7 85	10.8 95	10.8 95	13.5 119	16.2 143
		Starting	0.48 4.2	0.58 5.1	0.80 7.0	0.96 8.4	1.4 12.3	1.7 15.0	2.4 21	2.9 25	3.5 30	4.8 42	5.2 46	6.2 54	8.6 76	10.4 92	13.0 115	15.6 138	17.3 153	17.3 153	20 177	20 177

## ◇ Induction Motors Solid Shaft Type Single-Phase 230 VAC 60 Hz

● All output shafts rotate opposite to the direction of motor shaft rotation.

Unit = Upper values: N-m/Lower values: lb-in

Model		Gear Ratio																				
Motor/ Gearhead	Applicable Speed Controllers	Motor Speed r/min	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
<b>4IK25RGN-CW2E /4GN□RAA</b>	<b>E502</b>	1200	0.23 2.0	0.27 2.3	0.38 3.3	0.45 3.9	0.56 4.9	0.68 6.0	1.1 9.7	1.4 12.3	1.6 14.1	2.3 20	2.7 23	3.2 28	4.5 39	5.4 47	6.8 60	8 70	8 70	8 70	8 70	8 70
		90	0.060 0.53	0.072 0.63	0.10 0.88	0.12 1.06	0.15 1.32	0.18 1.59	0.30 2.6	0.36 3.1	0.43 3.8	0.60 5.3	0.72 6.3	0.86 7.6	1.2 10.6	1.4 12.3	1.8 15.9	2.2 19.4	2.4 21	2.9 25	3.6 31	4.3 38
		Starting	0.18 1.59	0.22 1.94	0.30 2.6	0.36 3.1	0.45 3.9	0.54 4.7	0.81 7.1	0.97 8.5	1.2 10.6	1.6 14.1	2.3 20	2.7 23	3.2 28	4.5 39	5.4 47	6.8 60	8 70	8 70	8 70	8 70
<b>5IK40RGN-CW2E /5GN□RAA</b>	<b>E502</b>	1200	0.53 4.6	0.64 5.6	0.88 7.7	1.1 9.7	1.3 11.5	1.6 14.1	2.2 19.4	2.7 23	3.2 28	3.9 34	4.7 41	5.6 49	7.8 69	9.4 83	10 88	10 88	10 88	10 88	10 88	10 88
		90	0.14 1.23	0.17 1.50	0.24 2.1	0.29 2.5	0.36 3.1	0.43 3.8	0.60 5.3	0.71 6.2	0.86 7.6	1.1 9.7	1.3 11.5	1.5 13.2	2.1 18.5	2.5 22	3.2 28	3.8 33	4.2 37	5.0 44	6.3 55	7.6 67
		Starting	0.36 3.1	0.43 3.8	0.60 5.3	0.72 6.3	0.90 7.9	1.1 9.7	1.5 13.2	1.8 15.9	2.2 19.4	2.7 23	3.2 28	3.9 34	4.7 47	5.6 57	8.1 71	9.7 85	10.8 88	10.8 88	13.5 88	16.2 88
<b>5IK60RGU-CWE /5GU□RAA</b>	<b>E502</b>	1200	1.0 8.8	1.2 10.6	1.7 15.0	2.0 17.7	2.5 22	3.0 26	4.2 37	5.0 44	6.0 53	8.3 73	8.8 77	10.6 93	14.7 130	17.6 155	20 177	20 177	20 177	20 177	20 177	20 177
		90	0.37 3.2	0.44 3.8	0.61 5.3	0.73 6.4	0.92 8.1	1.1 9.7	1.5 13.2	1.8 15.9	2.2 19.4	2.7 23	3.2 28	3.9 34	4.7 47	5.6 57	8.1 71	9.7 85	10.8 95	10.8 95	13.5 119	16.2 143
		Starting	0.58 5.1	0.69 6.1	0.96 8.4	1.2 10.6	1.4 12.3	1.7 15.0	2.4 21	2.9 25	3.5 30	4.8 42	5.2 46	6.2 54	8.6 76	10.4 92	13.0 115	15.6 138	17.3 153	17.3 153	20 177	20 177

## ◇ Reversible Motors Hollow Shaft Type Single-Phase 115 VAC 60 Hz

● All output shafts rotate opposite to the direction of motor shaft rotation.

Unit = Upper values: N-m/Lower values: lb-in

Model		Gear Ratio																					
Motor/ Gearhead	Applicable Speed Controllers	Motor Speed r/min	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	
			<b>4RK25RGN-AW2U /4GN□RH</b>	<b>ES01</b>	1200	0.25 2.2	0.30 2.6	0.41 3.6	0.49 4.3	0.77 6.8	0.92 8.1	1.5 13.2	1.8 15.9	2.2 19.4	3.1 27	3.7 32	4.4 38	6.2 54	7.4 65	8 70	8 70	8 70	8 70
90	0.13 1.15	0.16 1.41			0.22 1.94	0.26 2.3	0.41 3.6	0.50 4.4	0.83 7.3	0.99 8.7	1.2 10.6	1.7 15.0	2.0 17.7	2.4 21	3.3 29	4.0 35	5.0 44	5.9 52	6.6 58	7.9 69	8 70	8 70	8 70
Starting	0.17 1.50	0.20 1.77			0.28 2.4	0.34 3.0	0.53 4.6	0.63 5.5	0.95 8.4	1.1 9.7	1.4 12.3	1.9 16.8	2.3 20	2.7 23	3.8 33	4.5 39	5.7 50	6.8 60	7.6 67	8 70	8 70	8 70	8 70
<b>5RK40RGN-AW2U /5GN□RH</b>	<b>ES01</b>	1200	0.48 4.2	0.58 5.1	0.80 7.0	0.96 8.4	1.6 14.1	2.0 17.7	2.7 23	3.3 29	4.8 34	5.8 42	6.9 51	8.8 61	9.6 84	10 88	10 88	10 88	10 88	10 88	10 88	10 88	
		90	0.23 2.0	0.28 2.4	0.39 3.4	0.47 4.1	0.79 6.9	0.95 8.4	1.3 11.5	1.6 14.1	1.9 16.8	2.3 20	2.8 24	3.3 29	4.7 41	5.6 49	7.0 61	8.4 74	9.3 82	10 88	10 88	10 88	10 88
		Starting	0.39 3.4	0.47 4.1	0.65 5.7	0.78 6.9	1.2 10.6	1.4 12.3	2.0 17.7	2.3 20	2.8 24	3.5 30	4.2 37	5.1 45	7.0 61	8.4 74	10 88	10 88	10 88	10 88	10 88	10 88	10 88
<b>5RK60RGU-AWU /5GU□RH</b>	<b>ES01</b>	1200	0.74 6.5	0.88 7.7	1.2 10.6	1.5 13.2	2.5 22	3.0 26	4.2 37	5.0 44	6.0 53	8.3 73	8.8 77	10.6 93	14.7 130	17.6 155	20 177	20 177	20 177	20 177	20 177	20 177	
		90	0.41 3.6	0.49 4.3	0.68 6.0	0.81 7.1	1.4 12.3	1.7 15.0	2.3 20	2.8 24	3.3 29	4.6 40	4.9 43	5.8 51	8.1 71	9.7 85	12.2 107	14.6 129	16.2 143	16.2 143	20 177	20 177	20 177
		Starting	0.57 5.0	0.68 6.0	0.95 8.4	1.1 9.7	1.7 15.0	2.1 18.5	2.9 25	3.4 30	4.1 36	5.7 54	6.2 54	7.4 65	10.3 91	12.3 108	15.4 136	18.5 163	20 177	20 177	20 177	20 177	20 177

## ◇ Reversible Motors Solid Shaft Type Single-Phase 115 VAC 60 Hz

● All output shafts rotate opposite to the direction of motor shaft rotation.

Unit = Upper values: N-m/Lower values: lb-in

Model		Gear Ratio																					
Motor/ Gearhead	Applicable Speed Controllers	Motor Speed r/min	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	
			<b>4RK25RGN-AW2U /4GN□RAA</b>	<b>ES01</b>	1200	0.31 2.7	0.37 3.2	0.51 4.5	0.62 5.4	0.77 6.8	0.92 8.1	1.5 13.2	1.8 15.9	2.2 19.4	3.1 27	3.7 32	4.4 38	6.2 54	7.4 65	8 70	8 70	8 70	8 70
90	0.17 1.50	0.20 1.77			0.28 2.4	0.33 2.9	0.41 3.6	0.50 4.4	0.83 7.3	0.99 8.7	1.2 10.6	1.7 15.0	2.0 17.7	2.4 21	3.3 29	4.0 35	5.0 44	5.9 52	6.6 58	7.9 69	8 70	8 70	8 70
Starting	0.21 1.85	0.25 2.2			0.35 3.0	0.42 3.7	0.53 4.6	0.63 5.5	0.95 8.4	1.1 9.7	1.4 12.3	1.9 16.8	2.3 20	2.7 23	3.8 33	4.5 39	5.7 50	6.8 60	7.6 67	8 70	8 70	8 70	8 70
<b>5RK40RGN-AW2U /5GN□RAA</b>	<b>ES01</b>	1200	0.65 5.7	0.78 6.9	1.1 9.7	1.3 11.5	1.6 14.1	2.0 17.7	2.7 23	3.3 29	3.9 34	4.8 42	5.8 51	6.9 61	9.6 84	10 88	10 88	10 88	10 88	10 88	10 88	10 88	
		90	0.32 2.8	0.38 3.3	0.53 4.6	0.63 5.5	0.79 6.9	0.95 8.4	1.3 11.5	1.6 14.1	1.9 16.8	2.3 20	2.8 24	3.3 29	4.7 41	5.6 49	7.0 61	8.4 74	9.3 82	10 88	10 88	10 88	10 88
		Starting	0.47 4.1	0.56 4.9	0.78 6.9	0.94 8.3	1.2 10.6	1.4 12.3	2.0 17.7	2.3 20	2.8 24	3.5 30	4.2 37	5.1 45	7.0 61	8.4 74	10 88	10 88	10 88	10 88	10 88	10 88	10 88
<b>5RK60RGU-AWU /5GU□RAA</b>	<b>ES01</b>	1200	1.0 8.8	1.2 10.6	1.7 15.0	2.0 17.7	2.5 22	3.0 26	4.2 37	5.0 44	6.0 53	8.3 73	8.8 77	10.6 93	14.7 130	17.6 155	20 177	20 177	20 177	20 177	20 177	20 177	
		90	0.55 4.8	0.66 5.8	0.92 8.1	1.1 9.7	1.4 12.3	1.7 15.0	2.3 20	2.8 24	3.3 29	4.6 40	4.9 43	5.8 51	8.1 71	9.7 85	12.2 107	14.6 129	16.2 143	16.2 143	20 177	20 177	20 177
		Starting	0.68 6.0	0.82 7.2	1.1 9.7	1.4 12.3	1.7 15.0	2.1 18.5	2.9 25	3.4 30	4.1 36	5.7 54	6.2 54	7.4 65	10.3 91	12.3 108	15.4 136	18.5 163	20 177	20 177	20 177	20 177	20 177

# Right-Angle Gearheads

## ◇ Reversible Motors Hollow Shaft Type Single-Phase 230 VAC 60 Hz

● All output shafts rotate opposite to the direction of motor shaft rotation.

Unit = Upper values: N-m/Lower values: lb-in

Model		Gear Ratio																				
Motor/ Gearhead	Applicable Speed Controllers	Motor Speed r/min	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
			<b>4RK25RGN-CW2E /4GN□RH</b>	<b>E502</b>	1200	0.25 2.2	0.30 2.6	0.41 3.6	0.49 4.3	0.77 6.8	0.92 8.1	1.5 13.2	1.8 15.9	2.2 19.4	3.1 27	3.7 32	4.4 38	6.2 54	7.4 65	8 70	8 70	8 70
90	0.13 1.15	0.16 1.41			0.22 1.94	0.26 2.3	0.41 3.6	0.50 4.4	0.83 7.3	0.99 8.7	1.2 10.6	1.7 15.0	2.0 17.7	2.4 21	3.3 29	4.0 35	5.0 44	5.9 52	6.6 58	7.9 69	8 70	8 70
Starting	0.17 1.50	0.20 1.77			0.28 2.4	0.34 3.0	0.53 4.6	0.63 5.5	0.95 8.4	1.1 9.7	1.4 12.3	1.9 16.8	2.3 20	2.7 23	3.8 33	4.5 39	5.7 50	6.8 60	7.6 67	8 70	8 70	8 70
<b>5RK40RGN-CW2E /5GN□RH</b>	<b>E502</b>	1200	0.48 4.2	0.58 5.1	0.80 7.0	0.96 8.4	1.6 14.1	2.0 17.7	2.7 23	3.3 29	3.9 34	4.8 42	5.8 51	6.9 61	9.6 84	10 88	10 88	10 88	10 88	10 88	10 88	
		90	0.26 2.3	0.31 2.7	0.43 3.8	0.51 4.5	0.87 7.6	1.0 8.8	1.4 12.3	1.7 15.0	2.1 18.5	2.6 23	3.1 27	3.7 32	5.1 45	6.1 53	7.7 68	9.2 81	10 88	10 88	10 88	10 88
		Starting	0.39 3.4	0.47 4.1	0.65 5.7	0.78 6.9	1.2 10.6	1.4 12.3	2.0 17.7	2.3 20	2.8 24	3.5 30	4.2 37	5.1 45	6.1 53	7.0 61	8.4 74	10 88	10 88	10 88	10 88	10 88
<b>5RK60RGU-CWE /5GU□RH</b>	<b>E502</b>	1200	0.74 6.5	0.88 7.7	1.2 10.6	1.5 13.2	2.5 22	3.0 26	4.2 37	5.0 44	6.0 53	8.0 73	8.8 77	10.6 93	14.7 130	17.6 155	20 177	20 177	20 177	20 177	20 177	
		90	0.42 3.7	0.50 4.4	0.70 6.1	0.84 7.4	1.4 12.3	1.7 15.0	2.4 21	2.9 25	3.4 30	4.8 42	5.0 44	6.0 53	8.4 74	10.1 89	12.6 111	15.1 133	16.8 148	16.8 148	20 177	20 177
		Starting	0.57 5.0	0.68 6.0	0.95 8.4	1.1 9.7	1.7 15.0	2.1 18.5	2.9 25	3.4 30	4.1 36	5.7 50	6.2 54	7.4 65	10.3 91	12.3 108	15.4 136	18.5 163	20 177	20 177	20 177	20 177

## ◇ Reversible Motors Solid Shaft Type Single-Phase 230 VAC 60 Hz

● All output shafts rotate opposite to the direction of motor shaft rotation.

Unit = Upper values: N-m/Lower values: lb-in

Model		Gear Ratio																				
Motor/ Gearhead	Applicable Speed Controllers	Motor Speed r/min	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
			<b>4RK25RGN-CW2E /4GN□RAA</b>	<b>E502</b>	1200	0.31 2.7	0.37 3.2	0.51 4.5	0.62 5.4	0.77 6.8	0.92 8.1	1.5 13.2	1.8 15.9	2.2 19.4	3.1 27	3.7 32	4.4 38	6.2 54	7.4 65	8 70	8 70	8 70
90	0.17 1.50	0.20 1.77			0.28 2.4	0.33 2.9	0.41 3.6	0.50 4.4	0.83 7.3	0.99 8.7	1.2 10.6	1.7 15.0	2.0 17.7	2.4 21	3.3 29	4.0 35	5.0 44	5.9 52	6.6 58	7.9 69	8 70	8 70
Starting	0.21 1.85	0.25 2.2			0.35 3.0	0.42 3.7	0.53 4.6	0.63 5.5	0.95 8.4	1.1 9.7	1.4 12.3	1.9 16.8	2.3 20	2.7 23	3.8 33	4.5 39	5.7 50	6.8 60	7.6 67	8 70	8 70	8 70
<b>5RK40RGN-CW2E /5GN□RAA</b>	<b>E502</b>	1200	0.65 5.7	0.78 6.9	1.1 9.7	1.3 11.5	1.6 14.1	2.0 17.7	2.7 23	3.3 29	3.9 34	4.8 42	5.8 51	6.9 61	9.6 84	10 88	10 88	10 88	10 88	10 88	10 88	
		90	0.35 3.0	0.42 3.7	0.58 5.1	0.69 6.1	0.87 7.6	1.0 8.8	1.4 12.3	1.7 15.0	2.1 18.5	2.6 23	3.1 27	3.7 32	5.1 45	6.1 53	7.7 68	9.2 81	10 88	10 88	10 88	10 88
		Starting	0.47 4.1	0.56 4.9	0.78 6.9	0.94 8.3	1.2 10.6	1.4 12.3	2.0 17.7	2.3 20	2.8 24	3.5 30	4.2 37	5.1 45	6.1 53	7.0 61	8.4 74	10 88	10 88	10 88	10 88	10 88
<b>5RK60RGU-CWE /5GU□RAA</b>	<b>E502</b>	1200	1.0 8.8	1.2 10.6	1.7 15.0	2.0 17.7	2.5 22	3.0 26	4.2 37	5.0 44	6.0 53	8.0 73	8.8 77	10.6 93	14.7 130	17.6 155	20 177	20 177	20 177	20 177	20 177	
		90	0.57 5.0	0.69 6.1	0.95 8.4	1.1 9.7	1.4 12.3	1.7 15.0	2.4 21	2.9 25	3.4 30	4.8 42	5.0 44	6.0 53	8.4 74	10.1 89	12.6 111	15.1 133	16.8 148	16.8 148	20 177	20 177
		Starting	0.68 6.0	0.82 7.2	1.1 9.7	1.4 12.3	1.7 15.0	2.1 18.5	2.9 25	3.4 30	4.1 36	5.7 50	6.2 54	7.4 65	10.3 91	12.3 108	15.4 136	18.5 163	20 177	20 177	20 177	20 177