Standard AC Motors

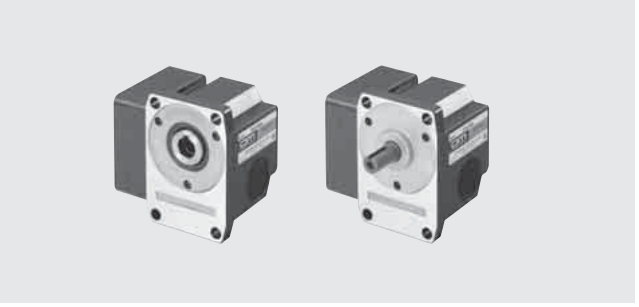
Right-Angle Gearheads

RoHS RoHS-Compliant

Right-Angle Gearheads

●Additional Information●
Technical reference ➜ Page F-1

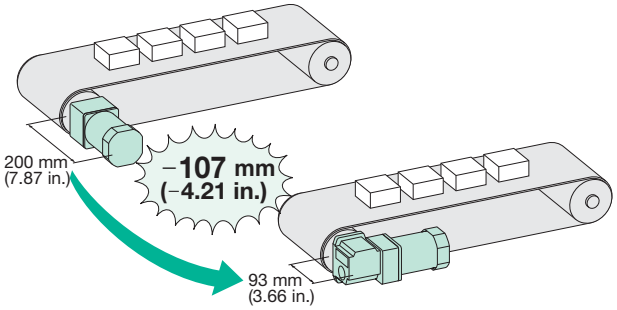
Right-angle gearheads are flange-mounted gearheads that use worm gears and special helical gears. They allow motors to be installed at right angles to the axis of equipment such as belt conveyors. They are available in hollow shaft **RH** and solid shaft **RAA** types and are ideal for keeping equipment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



5IK90GE-AW2U motor and gearhead with a gear ratio of 18:1

Hollow shaft gearheads allow additional space savings and simpler mechanism designs due to the removal of some mechanical parts as they do not require couplings for mounting.

●Mounting Using Torque Arm
Usually, hollow shaft gearheads are locked with a torque arm when mounted so the gearhead does not rotate from the reactive force of the load. The torque arm is available as an accessory for the **5GE□RH** and **5GU□RH**. Torque arm ➜ Page A-291

●Wide Variation

A wide variety of gear ratios (20 types, from **3** to **180**) are available. The proper gear ratio can be selected as the same 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.

●RoHS RoHS-Compliant

Right-Angle Gearheads conform to the RoHS Directive that prohibits the use of six chemical substances including lead and cadmium.

●Details of RoHS Directive ➜ Page G-38

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 **K** Series	25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	A-36, A-42, A-48, A-54
Reversible Motors	World **K** Series	25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	A-92, A-96, A-100, A-104
Electromagnetic Brake Motors	World **K** Series	25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	A-124, A-128, A-133, A-138
Speed Control Systems	**FE100** + World **K** Series Induction Motors	25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	B-156
	ES01/ES02 + World **K** Series Speed Control Motors	25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP)	B-172
	US Series	25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	B-202

●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	**4**: 80 mm (3.15 in.) **5**: 90 mm (3.54 in.)
②	Type of Pinion	**GN**: **GN** Type Pinion **GE**: **GE** Type Pinion **GU**: **GU** Type Pinion
③	Gear Ratio	(Example) **25**: Gear Ratio of 25:1
④	**RH**: Right-Angle, Hollow Shaft Gearhead, RoHS-Compliant **RAA**: Right-Angle, Solid Shaft Gearhead, RoHS-Compliant	

Product Line

Hollow Shaft Type RoHS

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

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

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
4GN□RAA	**3**, **3.6**, **5**, **6**, **7.5**, **9**, **12.5**, **15**, **18**, **25**, **30**, **36**, **50**, **60**, **75**, **90**, **100**, **120**, **150**, **180**
5GN□RAA	
5GE□RAA	
5GU□RAA	

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

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

* With the hollow shaft type, the permissible overhung load is measured from the flange-mounting surface.
● Enter the gear ratio in the box (□) within the model name.

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

Gearmotor – Torque Table

The permissible torque shown on pages A-248 to A-258 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.

Permissible torque ·····$T_G = T_M \times i \times \eta$

T_G : Permissible torque of gearhead
T_M : Motor torque
i : Gearhead gear ratio
η : Gearhead efficiency

Gearhead Efficiency

Gearhead Model \ 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
4GN□RH	Rated	40%				50%		60%													
	Starting	40%				50%		54%													
5GN□RH	Rated	50%				68%					60%										
	Starting	50%				60%					54%										
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%						60%													
	Starting	50%						54%													
5GN□RAA	Rated	68%									60%										
	Starting	60%									54%										
5GE□RAA	Rated	68%										60%							50%		
	Starting	60%										54%							45%		
5GU□RAA	Rated	68%										60%							50%		
	Starting	60%										54%							45%		

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

Note:

● If used with **FE100/FE200**, not all gear ratios are available. Check the list of permissible torque on pages A-251.

Calculating Permissible Overhung Load of Hollow Shaft Types

When the end of the shaft being driven is not supported by a bearing 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

Permissible overhung load $W\,[\mathrm{N\ (lb.)}] = \dfrac{59.5\ \mathrm{mm\ (2.34\ in.)}}{59.5\ \mathrm{mm\ (2.34\ in.)} + Lp} \times 295\ \mathrm{N\ (66\ lb.)}^{*}$

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

●5GN□RH

Permissible overhung load $W\,[\mathrm{N\ (lb.)}] = \dfrac{70\ \mathrm{mm\ (2.76\ in.)}}{70\ \mathrm{mm\ (2.76\ in.)} + Lp} \times 400\ \mathrm{N\ (90\ lb.)}^{*}$

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

●5GE□RH

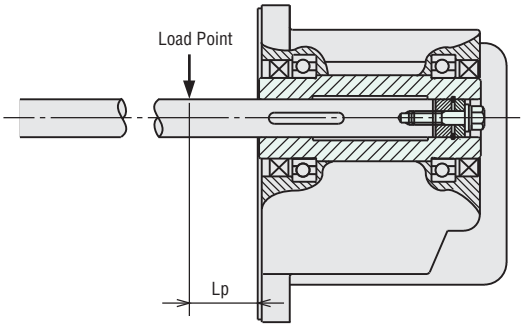
Permissible overhung load $W\,[\mathrm{N\ (lb.)}] = \dfrac{68.5\ \mathrm{mm\ (2.70\ in.)}}{68.5\ \mathrm{mm\ (2.70\ in.)} + Lp} \times 645\ \mathrm{N\ (145\ lb.)}^{*}$

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

●5GU□RH

Permissible overhung load $W\,[\mathrm{N\ (lb.)}] = \dfrac{68.5\ \mathrm{mm\ (2.70\ in.)}}{68.5\ \mathrm{mm\ (2.70\ in.)} + Lp} \times 645\ \mathrm{N\ (145\ lb.)}^{*}$

*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 A-17

Dimensions Unit = mm (in.)

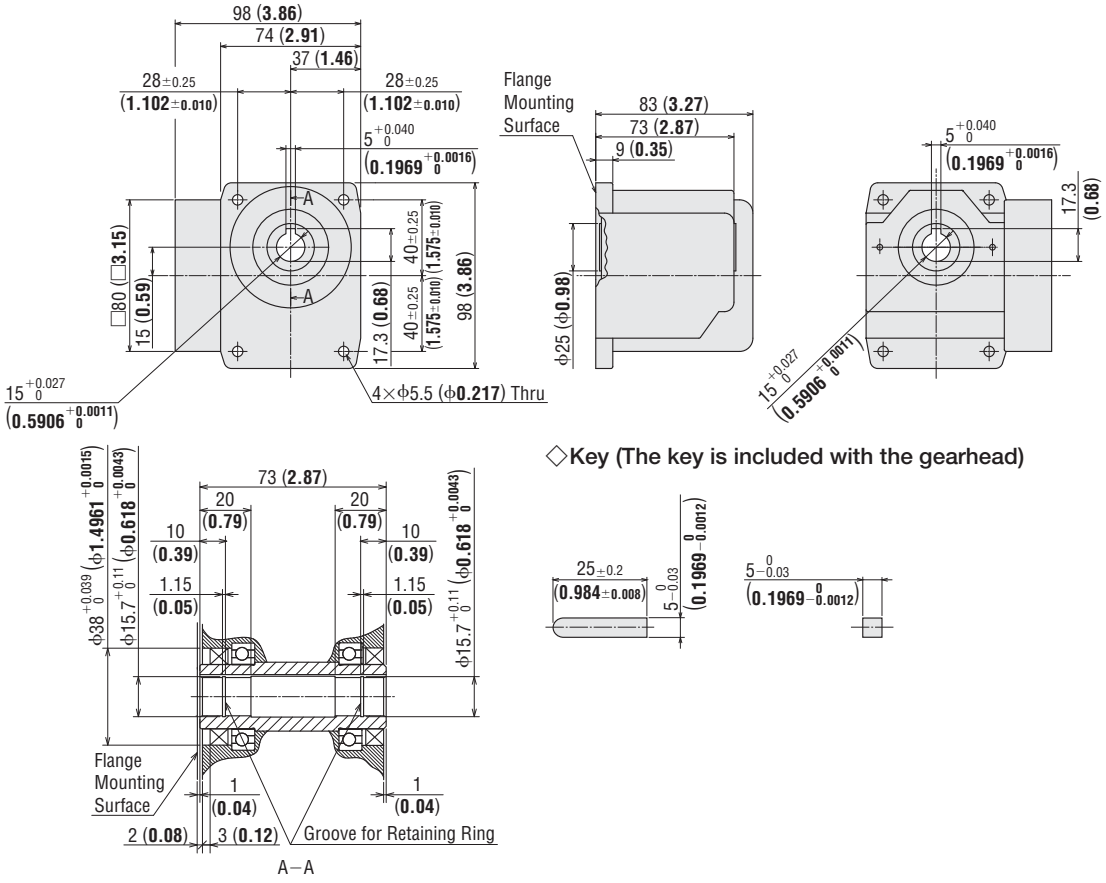
- Mounting screws are included with gearheads. Dimensions for mounting screws ➜ Page A-310
- Enter the gear ratio in the box (□) within the model name.

◇Hollow Shaft Type

4GN□RH

Mass: 1.6 kg (3.5 lb.)

DXF A254



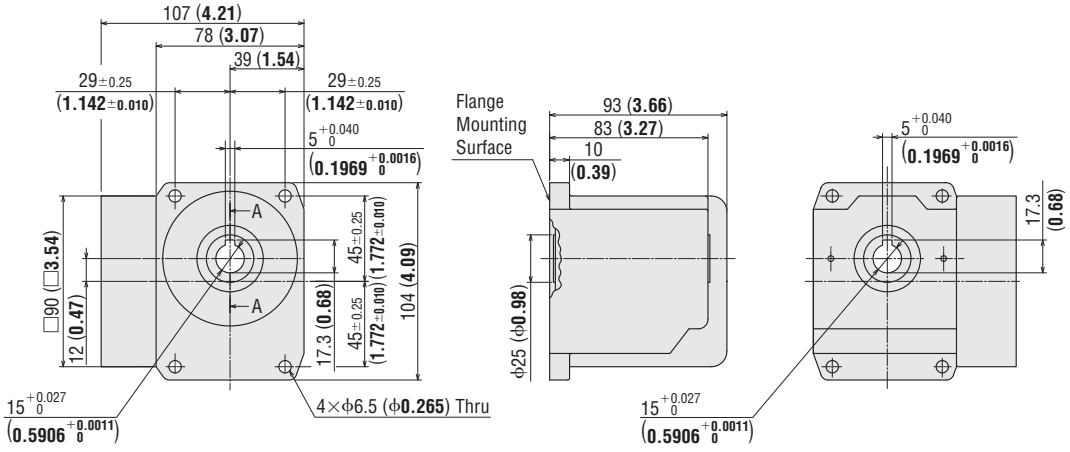
◇Key (The key is included with the gearhead)

◇Hollow Shaft Type

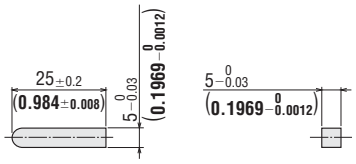
5GN□RH

Mass: 2.0 kg (4.4 lb.)

DXF A229



◇Key (The key is included with the gearhead)

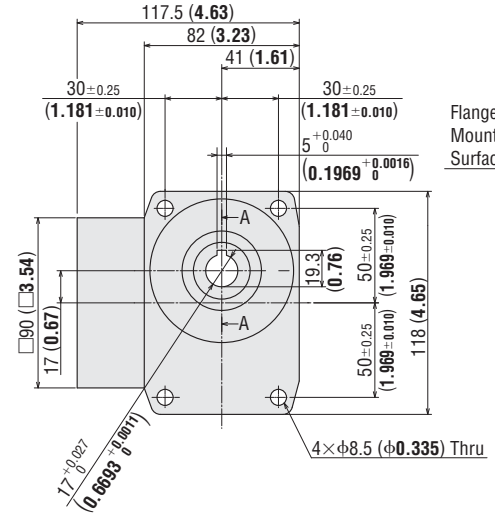


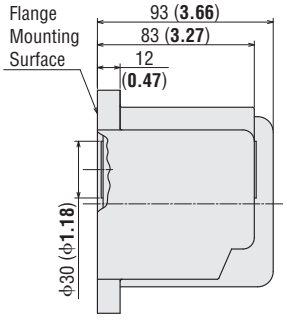
◇Hollow Shaft Type

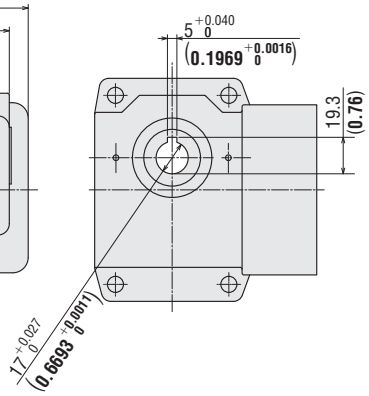
5GE□RH

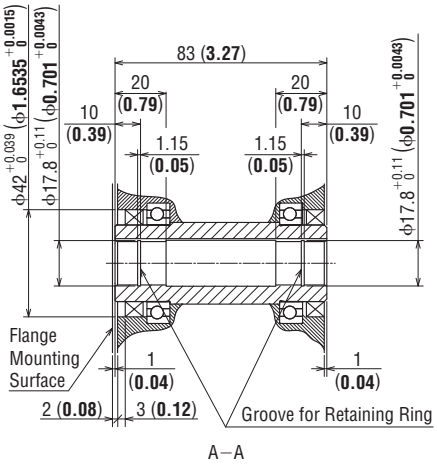
Mass: 2.5 kg (5.5 lb.)

DXF A230

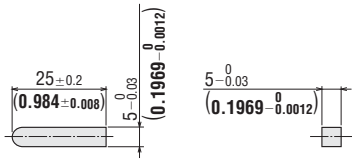








◇Key (The key is included with the gearhead)

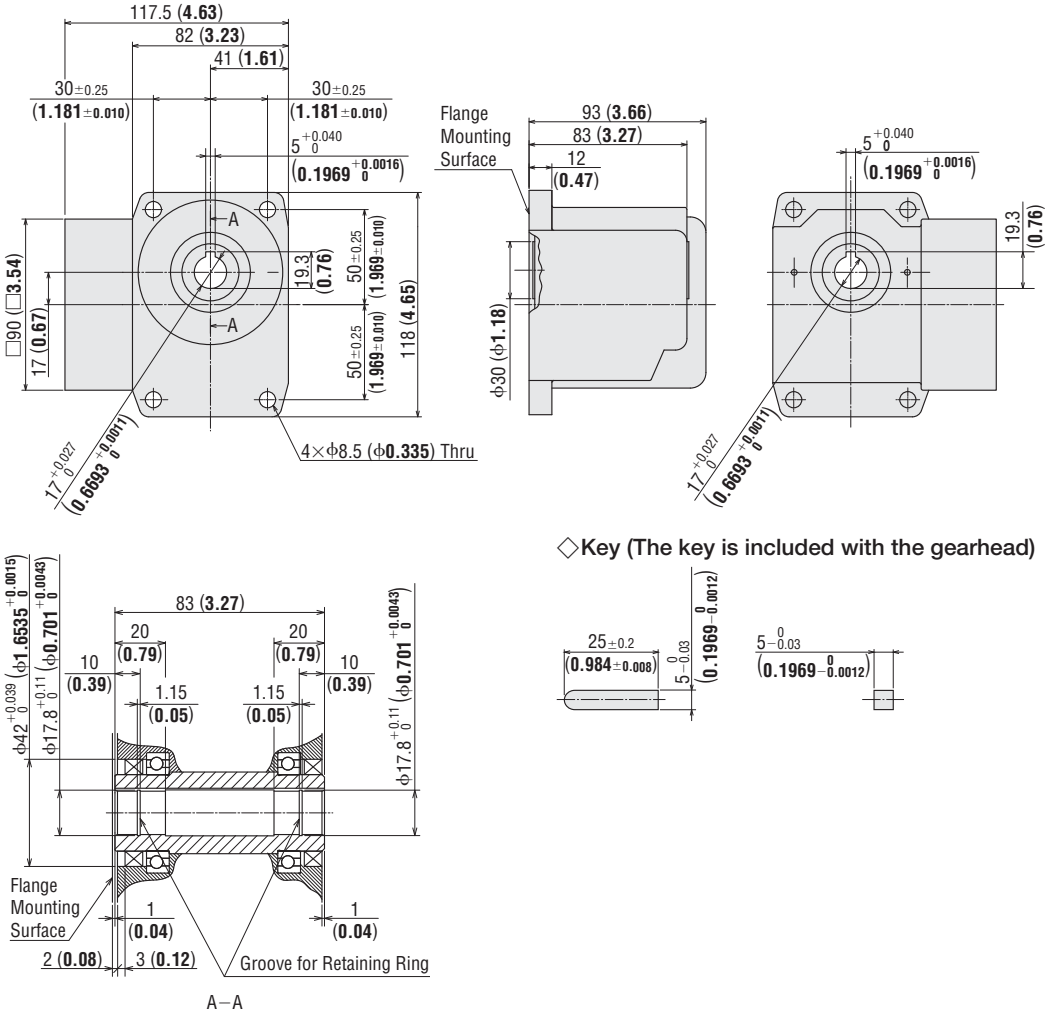


◇Hollow Shaft Type

5GU□RH

Mass: 2.5 kg (5.5 lb.)

DXF A230



A–A

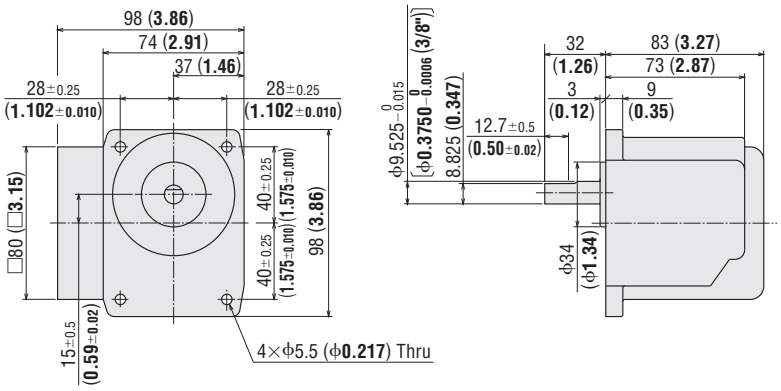
◇Key (The key is included with the gearhead)

◇Solid Shaft Type

4GN□RAA

Mass: 1.6 kg (3.5 lb.)

DXF A255U

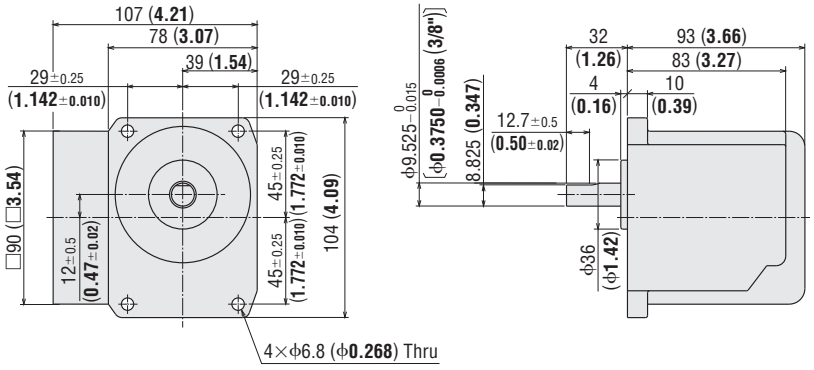


◇Solid Shaft Type

5GN□RAA

Mass: 2.0 kg (4.4 lb.)

DXF A025U

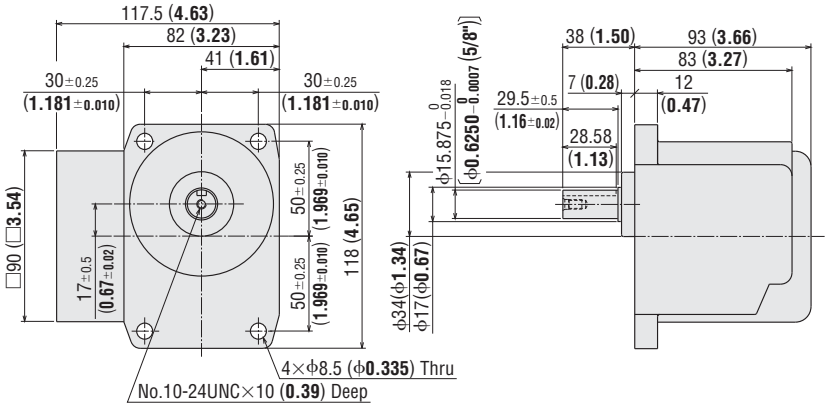


◇Solid Shaft Type

5GE□RAA

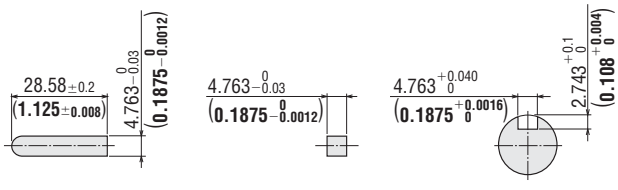
Mass: 2.5 kg (5.5 lb.)

DXF A512U



◇Key and Key Slot

(The key is included with the gearhead)

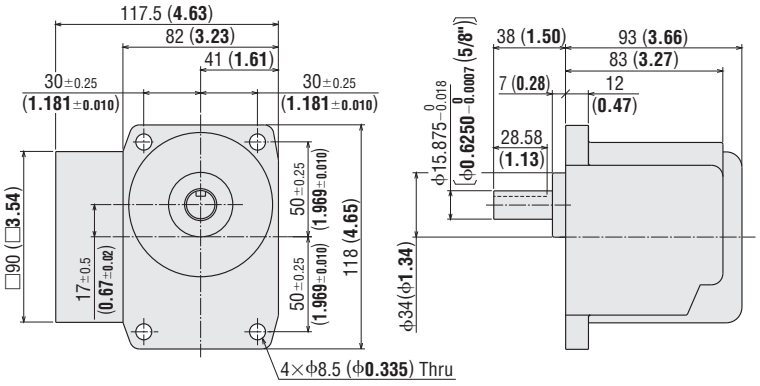


◇Solid Shaft Type

5GU□RAA

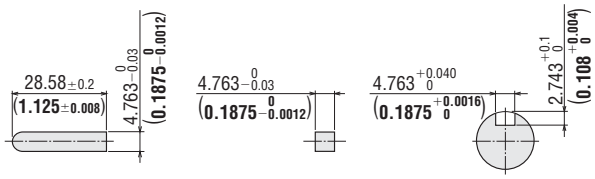
Mass: 2.5 kg (5.5 lb.)

DXF A034U



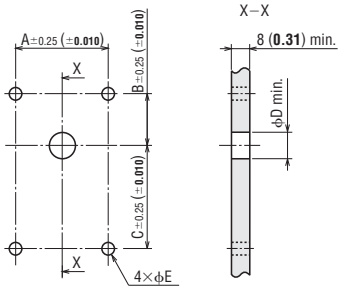
◇Key and Key Slot

(The key is included with the gearhead)



◇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	**4GN□RH**	56 (2.20)	25 (0.98)	55 (2.17)	ϕ15 (ϕ0.59)	ϕ5.5 (ϕ0.22)
	5GN□RH	58 (2.28)	33 (1.30)	57 (2.24)	ϕ15 (ϕ0.59)	ϕ6.5 (ϕ0.26)
	5GE□RH	60 (2.36)	33 (1.30)	67 (2.64)	ϕ17 (ϕ0.67)	ϕ8.5 (ϕ0.33)
	5GU□RH	60 (2.36)	33 (1.30)	67 (2.64)	ϕ17 (ϕ0.67)	ϕ8.5 (ϕ0.33)
Solid Shaft	**4GN□RAA**	56 (2.20)	25 (0.98)	55 (2.17)	ϕ35 (ϕ1.38)	ϕ5.5 (ϕ0.22)
	5GN□RAA	58 (2.28)	33 (1.30)	57 (2.24)	ϕ37 (ϕ1.46)	ϕ6.8 (ϕ0.27)
	5GE□RAA	60 (2.36)	33 (1.30)	67 (2.64)	ϕ35 (ϕ1.38)	ϕ8.5 (ϕ0.33)
	5GU□RAA	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

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

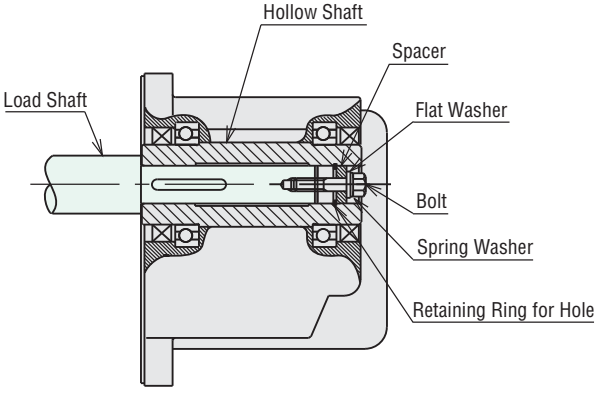
The tolerance of the inner diameter for the hollow shaft is finished as shown in the table on the right, and "key slot" processing is given to mount the load shaft. Use the key provided with the product by fastening it to the shaft. Apply a coating of molybdenum disulfide or similar grease to the surface of the load shaft and to the inner diameter of the hollow shaft to prevent sticking. Recommended load shaft diameter and inner diameter of hollow shaft are shown on the right.

Unit = mm (in.)

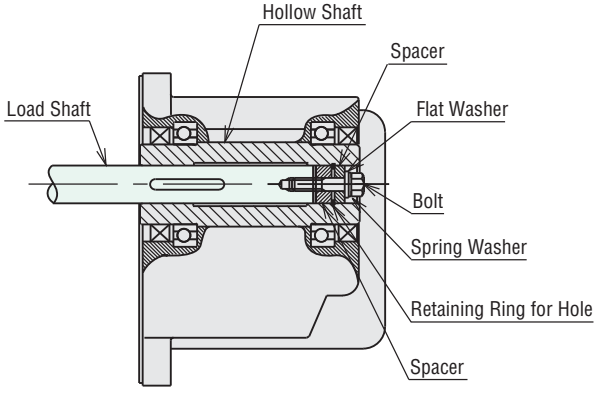
Model	Inner Diameter of Hollow Shaft H8	Recommended Load Shaft Diameter h7
4GN□RH	$\phi15^{+0.027}_{0}$ $\left(\phi0.5906^{+0.0011}_{0}\right)$	$\phi15^{0}_{-0.018}$ $\left(\phi0.5906^{0}_{-0.0007}\right)$
5GN□RH	$\phi15^{+0.027}_{0}$ $\left(\phi0.5906^{+0.0011}_{0}\right)$	$\phi15^{0}_{-0.018}$ $\left(\phi0.5906^{0}_{-0.0007}\right)$
5GE□RH	$\phi17^{+0.027}_{0}$ $\left(\phi0.6693^{+0.0011}_{0}\right)$	$\phi17^{0}_{-0.018}$ $\left(\phi0.6693^{0}_{-0.0007}\right)$
5GU□RH	$\phi17^{+0.027}_{0}$ $\left(\phi0.6693^{+0.0011}_{0}\right)$	$\phi17^{0}_{-0.018}$ $\left(\phi0.6693^{0}_{-0.0007}\right)$

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

◇Stepped Load Shaft



◇Straight Load Shaft



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

Notes:

● Be careful not to apply a shock to the hollow shaft when mounting a load shaft. It may damage the bearing inside the gearhead.

● If the bolt extends out more than 4 mm (0.16 in.) from the end of the hollow shaft, a safety cover can not be installed.

● Bolts or other fasteners used to install the load shaft are not included. These parts must be purchased separately.

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	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	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
4IK25GN-AW2□U **4IK25GN-FCH** **4IK25GN-CW2□E** **4IK25GN-ECH** **/4GN□RH**	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
		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
	Starting	0.14	0.17	0.24	0.29	0.45	0.54	0.81	0.97	1.2	1.6	1.9	2.3	3.2	3.9	4.9	5.8	6.5	7.8	8	8
		1.23	1.50	2.1	2.5	3.9	4.7	7.1	8.5	10.6	14.1	16.8	20	28	34	43	51	57	69	70	70
5IK40GN-AW2□U **5IK40GN-FCH** **5IK40GN-CW2□E** **5IK40GN-ECH** **/5GN□RH**	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
		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
	Starting	0.30	0.36	0.50	0.60	0.90	1.1	1.5	1.8	2.2	2.7	3.2	3.9	5.4	6.5	8.1	9.7	10	10	10	10
		2.6	3.1	4.4	5.3	7.9	9.7	13.2	15.9	19.4	23	28	34	47	57	71	85	88	88	88	88
5IK60GE-AW2□U **5IK60GE-FCH** **5IK60GE-CW2□E** **5IK60GE-ECH** **/5GE□RH**	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
		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
	Starting	0.48	0.58	0.80	0.96	1.4	1.7	2.4	2.9	3.5	4.8	5.2	6.2	8.6	10.4	13.0	15.6	17.3	17.3	20	20
		4.2	5.1	7.0	8.4	12.3	15.0	21	25	30	42	46	54	76	92	115	138	153	153	177	177
5IK90GE-AW2□U **5IK90GE-FCH** **5IK90GE-CW2□E** **5IK90GE-ECH** **/5GE□RH**	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
		7.7	9.7	13.2	15.9	26	31	44	53	63	87	92	111	155	177	177	177	177	177	177	177
	Rated 230 VAC	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
		8.0	9.7	13.2	15.9	27	32	45	54	65	91	96	115	161	177	177	177	177	177	177	177
	Starting	0.68	0.81	1.1	1.4	2.0	2.4	3.4	4.1	4.9	6.8	7.3	8.7	12.2	14.6	18.2	20	20	20	20	20
		6.0	7.1	9.7	12.3	17.7	21	30	36	43	60	64	76	107	129	161	177	177	177	177	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	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
4IK25GN-AW2□U **4IK25GN-FCH** **4IK25GN-CW2□E** **4IK25GN-ECH** **/4GN□RAA**	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
		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
	Starting	0.18	0.22	0.30	0.36	0.45	0.54	0.81	0.97	1.2	1.6	1.9	2.3	3.2	3.9	4.9	5.8	6.5	7.8	8	8
		1.59	1.94	2.6	3.1	3.9	4.7	7.1	8.5	10.6	14.1	16.8	20	28	34	43	51	57	69	70	70
5IK40GN-AW2□U **5IK40GN-FCH** **5IK40GN-CW2□E** **5IK40GN-ECH** **/5GN□RAA**	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
		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
	Starting	0.36	0.43	0.60	0.72	0.90	1.1	1.5	1.8	2.2	2.7	3.2	3.9	5.4	6.5	8.1	9.7	10	10	10	10
		3.1	3.8	5.3	6.3	7.9	9.7	13.2	15.9	19.4	23	28	34	47	57	71	85	88	88	88	88
5IK60GE-AW2□U **5IK60GE-FCH** **5IK60GE-CW2□E** **5IK60GE-ECH** **/5GE□RAA**	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
		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
	Starting	0.58	0.69	0.96	1.2	1.4	1.7	2.4	2.9	3.5	4.8	5.2	6.2	8.6	10.4	13.0	15.6	17.3	17.3	20	20
		5.1	6.1	8.4	10.6	12.3	15.0	21	25	30	42	46	54	76	92	115	138	153	153	177	177
5IK90GE-AW2□U **5IK90GE-FCH** **5IK90GE-CW2□E** **5IK90GE-ECH** **/5GE□RAA**	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
		10.6	12.3	17.7	21	26	31	44	53	63	87	92	111	155	177	177	177	177	177	177	177
	Rated 230 VAC	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
		10.6	13.2	18.5	22	27	32	45	54	65	91	96	115	161	177	177	177	177	177	177	177
	Starting	0.81	0.97	1.4	1.6	2.0	2.4	3.4	4.1	4.9	6.8	7.3	8.7	12.2	14.6	18.2	20	20	20	20	20
		7.1	8.5	12.3	14.1	17.7	21	30	36	43	60	64	76	107	129	161	177	177	177	177	177

●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	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	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
4RK25GN-AW2□U 4RK25GN-CW2□E /4GN□RH	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
		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
	Starting	0.17	0.20	0.28	0.34	0.53	0.63	0.95	1.1	1.4	1.9	2.3	2.7	3.8	4.5	5.7	6.8	7.6	8	8	8
		1.50	1.77	2.4	3.0	4.6	5.5	8.4	9.7	12.3	16.8	20	23	33	39	50	60	67	70	70	70
5RK40GN-AW2□U 5RK40GN-CW2□E /5GN□RH	Rated 115 VAC	0.41	0.49	0.68	0.81	1.4	1.7	2.3	2.8	3.3	4.1	4.9	5.8	8.1	9.7	10	10	10	10	10	10
		3.6	4.3	6.0	7.1	12.3	15.0	20	24	29	36	43	51	71	85	88	88	88	88	88	88
	Rated 230 VAC	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
		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
	Starting	0.39	0.47	0.65	0.78	1.2	1.4	2.0	2.3	2.8	3.5	4.2	5.1	7.0	8.4	10	10	10	10	10	10
		3.4	4.1	5.7	6.9	10.6	12.3	17.7	20	24	30	37	45	61	74	88	88	88	88	88	88
5RK60GE-AW2□U 5RK60GE-CW2□E /5GE□RH	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
		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
	Starting	0.57	0.68	0.95	1.1	1.7	2.1	2.9	3.4	4.1	5.7	6.2	7.4	10.3	12.3	15.4	18.5	20	20	20	20
		5.0	6.0	8.4	9.7	15.0	18.5	25	30	36	50	54	65	91	108	136	163	177	177	177	177
5RK90GE-AW2□U 5RK90GE-CW3□E /5GE□RH	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
		7.7	9.7	13.2	15.9	26	31	44	53	63	87	92	111	155	177	177	177	177	177	177	177
	Rated 230 VAC	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
		8.0	9.7	13.2	15.9	27	32	45	54	65	91	96	115	161	177	177	177	177	177	177	177
	Starting	0.89	1.1	1.5	1.8	2.7	3.2	4.4	5.3	6.4	8.9	9.6	11.5	15.9	19.1	20	20	20	20	20	20
		7.8	9.7	13.2	15.9	23	28	38	46	56	78	84	101	140	169	177	177	177	177	177	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	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
4RK25GN-AW2□U 4RK25GN-CW2□E /4GN□RAA	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
		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
	Starting	0.21	0.25	0.35	0.42	0.53	0.63	0.95	1.1	1.4	1.9	2.3	2.7	3.8	4.5	5.7	6.8	7.6	8	8	8
		1.85	2.2	3.0	3.7	4.6	5.5	8.4	9.7	12.3	16.8	20	23	33	39	50	60	67	70	70	70
5RK40GN-AW2□U 5RK40GN-CW2□E /5GN□RAA	Rated 115 VAC	0.55	0.66	0.92	1.1	1.4	1.7	2.3	2.8	3.3	4.1	4.9	5.8	8.1	9.7	10	10	10	10	10	10
		4.8	5.8	8.1	9.7	12.3	15.0	20	24	29	36	43	51	71	85	88	88	88	88	88	88
	Rated 230 VAC	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
		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
	Starting	0.47	0.56	0.78	0.94	1.2	1.4	2.0	2.3	2.8	3.5	4.2	5.1	7.0	8.4	10	10	10	10	10	10
		4.1	4.9	6.9	8.3	10.6	12.3	17.7	20	24	30	37	45	61	74	88	88	88	88	88	88
5RK60GE-AW2□U 5RK60GE-CW2□E /5GE□RAA	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
		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
	Starting	0.68	0.82	1.1	1.4	1.7	2.1	2.9	3.4	4.1	5.7	6.2	7.4	10.3	12.3	15.4	18.5	20	20	20	20
		6.0	7.2	9.7	12.3	15.0	18.5	25	30	36	50	54	65	91	108	136	163	177	177	177	177
5RK90GE-AW2□U 5RK90GE-CW3□E /5GE□RAA	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
		10.6	12.3	17.7	21	26	31	44	53	63	87	92	111	155	177	177	177	177	177	177	177
	Rated 230 VAC	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
		10.6	13.2	18.5	22	27	32	45	54	65	91	96	115	161	177	177	177	177	177	177	177
	Starting	1.1	1.3	1.8	2.1	2.7	3.2	4.4	5.3	6.4	8.9	9.6	11.5	15.9	19.1	20	20	20	20	20	20
		9.7	11.5	15.9	18.5	23	28	38	46	56	78	84	101	140	169	177	177	177	177	177	177

●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	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
4RK25GN-AW2MU 4RK25GN-CW2ME /4GN□RH	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
		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
	Starting	0.17	0.20	0.28	0.34	0.53	0.63	0.95	1.1	1.4	1.9	2.3	2.7	3.8	4.5	5.7	6.8	7.6	8	8	8
		1.50	1.77	2.4	3.0	4.6	5.5	8.4	9.7	12.3	16.8	20	23	33	39	50	60	67	70	70	70
5RK40GN-AW2MU 5RK40GN-CW2ME /5GN□RH	Rated 115 VAC	0.41	0.49	0.68	0.81	1.4	1.7	2.3	2.8	3.3	4.1	4.9	5.8	8.1	9.7	10	10	10	10	10	10
		3.6	4.3	6.0	7.1	12.3	15.0	20	24	29	36	43	51	71	85	88	88	88	88	88	88
	Rated 230 VAC	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
		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
	Starting	0.39	0.47	0.65	0.78	1.2	1.4	2.0	2.3	2.8	3.5	4.2	5.1	7.0	8.4	10	10	10	10	10	10
		3.4	4.1	5.7	6.9	10.6	12.3	17.7	20	24	30	37	45	61	74	88	88	88	88	88	88
5RK60GE-AW2MU 5RK60GE-CW2ME /5GE□RH	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
		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
	Starting	0.57	0.68	0.95	1.1	1.7	2.1	2.9	3.4	4.1	5.7	6.2	7.4	10.3	12.3	15.4	18.5	20	20	20	20
		5.0	6.0	8.4	9.7	15.0	18.5	25	30	36	50	54	65	91	108	136	163	177	177	177	177
5RK90GE-AW2MU 5RK90GE-CW2ME /5GE□RH	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
		7.7	9.7	13.2	15.9	26	31	44	53	63	87	92	111	155	177	177	177	177	177	177	177
	Rated 230 VAC	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
		8.0	9.7	13.2	15.9	27	32	45	54	65	91	96	115	161	177	177	177	177	177	177	177
	Starting	0.89	1.1	1.5	1.8	2.7	3.2	4.4	5.3	6.4	8.9	9.6	11.5	15.9	19.1	20	20	20	20	20	20
		7.8	9.7	13.2	15.9	23	28	38	46	56	78	84	101	140	169	177	177	177	177	177	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	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
4RK25GN-AW2MU 4RK25GN-CW2ME /4GN□RAA	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
		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
	Starting	0.21	0.25	0.35	0.42	0.53	0.63	0.95	1.1	1.4	1.9	2.3	2.7	3.8	4.5	5.7	6.8	7.6	8	8	8
		1.85	2.2	3.0	3.7	4.6	5.5	8.4	9.7	12.3	16.8	20	23	33	39	50	60	67	70	70	70
5RK40GN-AW2MU 5RK40GN-CW2ME /5GN□RAA	Rated 115 VAC	0.55	0.66	0.92	1.1	1.4	1.7	2.3	2.8	3.3	4.1	4.9	5.8	8.1	9.7	10	10	10	10	10	10
		4.8	5.8	8.1	9.7	12.3	15.0	20	24	29	36	43	51	71	85	88	88	88	88	88	88
	Rated 230 VAC	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
		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
	Starting	0.47	0.56	0.78	0.94	1.2	1.4	2.0	2.3	2.8	3.5	4.2	5.1	7.0	8.4	10	10	10	10	10	10
		4.1	4.9	6.9	8.3	10.6	12.3	17.7	20	24	30	37	45	61	74	88	88	88	88	88	88
5RK60GE-AW2MU 5RK60GE-CW2ME /5GE□RAA	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
		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
	Starting	0.68	0.82	1.1	1.4	1.7	2.1	2.9	3.4	4.1	5.7	6.2	7.4	10.3	12.3	15.4	18.5	20	20	20	20
		6.0	7.2	9.7	12.3	15.0	18.5	25	30	36	50	54	65	91	108	136	163	177	177	177	177
5RK90GE-AW2MU 5RK90GE-CW2ME /5GE□RAA	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
		10.6	12.3	17.7	21	26	31	44	53	63	87	92	111	155	177	177	177	177	177	177	177
	Rated 230 VAC	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
		10.6	13.2	18.5	22	27	32	45	54	65	91	96	115	161	177	177	177	177	177	177	177
	Starting	1.1	1.3	1.8	2.1	2.7	3.2	4.4	5.3	6.4	8.9	9.6	11.5	15.9	19.1	20	20	20	20	20	20
		9.7	11.5	15.9	18.5	23	28	38	46	56	78	84	101	140	169	177	177	177	177	177	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		3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
Motor/Gearhead	Applicable Speed Controllers	Set Frequency Hz (Set Speed r/min)																					
4IK25GN-SW2□ **4IK25GN-SH** **/4GN□RH**	**FE100A** **FE100C** **FE100S**	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	8
									6.6	9.7	11.5	14.1	22	26	32	38	46	58	70	70	70	70	70
			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
									6.6	8.7	10.6	13.2	20	23	29	34	42	53	63	70	70	70	70
		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
									8.4	12.3	15	20	28	34	41	49	59	70	70	70	70	70	70
			Starting	–	–	–	–	–	0.95	1.3	1.5	2.0	2.9	3.5	4.2	5.0	6.0	7.6	8	8	8	8	8
									8.4	11.5	13.2	17.7	25	30	37	44	53	67	70	70	70	70	70
		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
									1.94	5.6	7.2	8.8	13.2	17.7	21	25	30	38	46	52	62	70	70
			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
									1.94	5.1	6.4	8.1	11.5	15.9	18.5	23	27	34	41	46	56	70	70
5IK40GN-SW2□ **5IK40GN-SH** **/5GN□RH**	**FE100A** **FE100C** **FE100S**	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
								11.5	14.1	22	26	31	45	54	65	78	88	88	88	88	88	88	88
			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
								9.7	12.3	19.4	23	28	40	49	59	70	84	88	88	88	88	88	88
		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
								5.1	6.6	9.7	12.3	15	23	28	34	41	49	62	75	84	88	88	88
			Starting	–	–	–	–	0.51	0.66	1.0	1.2	1.5	2.4	2.9	3.5	4.2	5.1	6.4	7.7	8.5	10	10	10
								4.5	5.8	8.8	10.6	13.2	21	25	30	37	45	56	68	75	88	88	88
5IK60GE-SW2□ **5IK60GE-SH** **/5GE□RH**	**FE100A** **FE100C** **FE100S**	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
						7.4	8.8	12.3	15	23	27	33	46	47	57	80	97	122	146	162	162	177	177
			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
						7.4	8.8	10.6	13.2	20	23	29	41	43	52	72	87	109	131	146	146	177	177
		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
						10.6	13.2	18.5	23	32	39	48	68	69	84	117	141	177	177	177	177	177	177
			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
						10.6	13.2	16.8	20	29	35	42	60	62	76	106	127	160	177	177	177	177	177
		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
						4.4	6.1	8.7	11.5	17.7	22	27	38	39	47	67	81	101	123	136	136	170	177
			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
						4.4	6.1	7.6	9.7	15.9	19.4	23	33	35	43	61	73	92	110	123	123	153	177
5IK90GE-SW2□ **5IK90GE-SH** **/5GE□RH**	**FE100A** **FE100C** **FE100S**	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
						11.5	14.1	19.4	23	33	40	48	68	69	84	117	141	177	177	177	177	177	177
			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
						11.5	14.1	16.8	21	29	35	43	60	63	76	106	127	160	177	177	177	177	177
		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
						11.5	15.9	21	25	37	45	53	76	77	93	130	157	177	177	177	177	177	177
			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
						11.5	15.9	18.5	23	32	39	47	67	69	84	118	142	177	177	177	177	177	177
		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
						7.3	9.7	13.2	17.7	25	31	38	53	55	67	93	113	141	170	177	177	177	177
			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
						7.3	9.7	11.5	15.9	23	27	33	47	50	60	84	101	127	153	170	170	177	177

Note:

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

Specifications A-241 / Dimensions A-243

◇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		3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
Motor/Gearhead	Applicable Speed Controllers	Set Frequency Hz (Set Speed r/min)																					
4IK25GN-SW2□ 4IK25GN-SH /4GN□RAA	**FE100A FE100C FE100S**	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
						3.9	4.7	6.4	7.7	10.6	13.2	15.9	23	28	33	39	47	60	70	70	70	70	70
			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
						3.9	4.7	6.4	7.7	9.7	11.5	14.1	21	24	30	36	43	53	64	70	70	70	70
		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
						3.3	6.5	8.2	9.7	13.2	16.8	21	29	35	42	50	60	70	70	70	70	70	70
			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
						3.3	6.5	8.2	9.7	12.3	15.0	19.4	26	31	38	45	54	68	70	70	70	70	70
		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
						1.77	2.1	2.6	3.6	7.1	8.6	10.6	14.1	18.5	22	26	31	39	47	53	63	70	70
			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
						1.77	2.1	2.6	3.6	6.4	7.7	9.7	13.2	16.8	20	23	28	36	43	47	57	70	70
5IK40GN-SW2□ 5IK40GN-SH /5GN□RAA	**FE100A FE100C FE100S**	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	10
						8.6	10.6	13.2	15.9	23	28	33	46	55	67	79	88	88	88	88	88	88	88
			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
						7.6	8.8	11.5	13.2	20	24	29	41	50	60	71	85	88	88	88	88	88	88
		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
						2.8	3.3	6.9	8.3	11.5	14.1	16.8	24	30	35	42	51	63	76	84	88	88	88
			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
						2.4	3.0	6.1	7.3	9.7	12.3	15.0	22	26	31	38	46	57	69	76	88	88	88
5IK60GE-SW2□ 5IK60GE-SH /5GE□RAA	**FE100A FE100C FE100S**	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
						8.8	10.6	13.2	15.9	23	29	34	47	49	59	82	99	123	147	164	164	177	177
			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
						7.8	9.7	11.5	14.1	21	25	30	42	44	53	74	88	111	133	147	147	177	177
		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
						13.2	15.9	21	24	34	41	50	69	71	85	119	143	177	177	177	177	177	177
			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
						11.5	13.2	18.5	22	30	37	44	61	64	76	107	129	161	177	177	177	177	177
		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
						7.5	8.8	11.5	13.2	20	23	29	40	41	49	69	83	103	123	138	138	172	177
			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
						6.6	7.8	9.7	11.5	17.7	21	25	35	37	45	61	74	92	111	123	123	155	177
5IK90GE-SW2□ 5IK90GE-SH /5GE□RAA	**FE100A FE100C FE100S**	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
				7.7	9.7	13.2	15.9	21	24	34	41	50	69	71	85	119	143	177	177	177	177	177	177
			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
				6.8	8.2	11.5	13.2	18.5	22	30	37	44	61	64	76	107	129	161	177	177	177	177	177
		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
				8.6	10.6	14.1	18.5	23	28	38	46	55	77	79	95	132	159	177	177	177	177	177	177
			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
				7.6	8.8	12.3	16.8	20	24	34	40	49	68	71	85	119	143	177	177	177	177	177	177
		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
				6.1	7.4	10.6	12.3	15.9	20	28	33	39	55	57	69	95	115	143	171	177	177	177	177
			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
				5.4	6.5	8.8	10.6	13.2	17.7	24	29	35	49	51	61	85	103	129	154	171	171	177	177

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	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
Motor/ Gearhead	Applicable Speed Controllers	Motor Speed r/min																				
4IK25RGN-AW2U /4GN□RH	**ES01**	1200	0.22	0.27	0.37	0.44	0.69	0.83	1.4	1.7	2.0	2.8	3.3	4.0	5.6	6.7	8	8	8	8	8	8
			1.94	2.3	3.2	3.8	6.1	7.3	12.3	15.0	17.7	24	29	35	49	59	70	70	70	70	70	70
		90	0.060	0.072	0.10	0.12	0.19	0.23	0.38	0.45	0.54	0.75	0.90	1.1	1.5	1.8	2.3	2.7	3.0	3.6	4.5	5.4
			0.53	0.63	0.88	1.06	1.68	2.0	3.3	3.9	4.7	6.6	7.9	9.7	13.2	15.9	20	23	26	31	39	47
		Starting	0.14	0.17	0.24	0.29	0.45	0.54	0.81	0.97	1.2	1.6	1.9	2.3	3.2	3.9	4.9	5.8	6.5	7.8	8	8
			1.23	1.50	2.1	2.5	3.9	4.7	7.1	8.5	10.6	14.1	16.8	20	28	34	43	51	57	69	70	70
5IK40RGN-AW2U /5GN□RH	**ES01**	1200	0.34	0.41	0.56	0.68	1.1	1.4	1.9	2.3	2.8	3.4	4.1	4.9	6.8	8.1	10	10	10	10	10	10
			3.0	3.6	4.9	6.0	9.7	12.3	16.8	20	24	30	36	43	60	71	88	88	88	88	88	88
		90	0.10	0.12	0.17	0.20	0.34	0.41	0.57	0.68	0.82	1.0	1.2	1.4	2.0	2.4	3.0	3.6	4.0	4.8	6.0	7.2
			0.88	1.06	1.50	1.77	3.0	3.6	5.0	6.0	7.2	8.8	10.6	12.3	17.7	21	26	31	35	42	53	63
		Starting	0.30	0.36	0.50	0.60	0.90	1.1	1.5	1.8	2.2	2.7	3.2	3.9	5.4	6.5	8.1	9.7	10	10	10	10
			2.6	3.1	4.4	5.3	7.9	9.7	13.2	15.9	19.4	23	28	34	47	57	71	85	88	88	88	88
5IK60RGU-AWU /5GU□RH	**ES01**	1200	0.74	0.88	1.2	1.5	2.5	3.0	4.2	5.0	6.0	8.3	8.8	10.6	14.7	17.6	20	20	20	20	20	20
			6.5	7.7	10.6	13.2	22	26	37	44	53	73	77	93	130	155	177	177	177	177	177	177
		90	0.32	0.38	0.53	0.63	1.1	1.3	1.8	2.1	2.6	3.6	3.8	4.5	6.3	7.6	9.5	11.3	12.6	12.6	15.8	18.9
			2.8	3.3	4.6	5.5	9.7	11.5	15.9	18.5	23	31	33	39	55	67	84	100	111	111	139	167
		Starting	0.48	0.58	0.80	0.96	1.4	1.7	2.4	2.9	3.5	4.8	5.2	6.2	8.6	10.4	13.0	15.6	17.3	17.3	20	20
			4.2	5.1	7.0	8.4	12.3	15.0	21	25	30	42	46	54	76	92	115	138	153	153	177	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	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
Motor/ Gearhead	Applicable Speed Controllers	Motor Speed r/min																				
4IK25RGN-AW2U /4GN□RAA	**ES01**	1200	0.28	0.33	0.46	0.56	0.69	0.83	1.4	1.7	2.0	2.8	3.3	4.0	5.6	6.7	8	8	8	8	8	8
			2.4	2.9	4.0	4.9	6.1	7.3	12.3	15.0	17.7	24	29	35	49	59	70	70	70	70	70	70
		90	0.075	0.090	0.13	0.15	0.19	0.23	0.38	0.45	0.54	0.75	0.90	1.1	1.5	1.8	2.3	2.7	3.0	3.6	4.5	5.4
			0.66	0.79	1.15	1.32	1.68	2.0	3.3	3.9	4.7	6.6	7.9	9.7	13.2	15.9	20	23	26	31	39	47
		Starting	0.18	0.22	0.30	0.36	0.45	0.54	0.81	0.97	1.2	1.6	1.9	2.3	3.2	3.9	4.9	5.8	6.5	7.8	8	8
			1.59	1.94	2.6	3.1	3.9	4.7	7.1	8.5	10.6	14.1	16.8	20	28	34	43	51	57	69	70	70
5IK40RGN-AW2U /5GN□RAA	**ES01**	1200	0.46	0.55	0.77	0.92	1.1	1.4	1.9	2.3	2.8	3.4	4.1	4.9	6.8	8.1	10	10	10	10	10	10
			4.0	4.8	6.8	8.1	9.7	12.3	16.8	20	24	30	36	43	60	71	88	88	88	88	88	88
		90	0.14	0.16	0.23	0.27	0.34	0.41	0.57	0.68	0.82	1.0	1.2	1.4	2.0	2.4	3.0	3.6	4.0	4.8	6.0	7.2
			1.23	1.41	2.0	2.3	3.0	3.6	5.0	6.0	7.2	8.8	10.6	12.3	17.7	21	26	31	35	42	53	63
		Starting	0.36	0.43	0.60	0.72	0.90	1.1	1.5	1.8	2.2	2.7	3.2	3.9	5.4	6.5	8.1	9.7	10	10	10	10
			3.1	3.8	5.3	6.3	7.9	9.7	13.2	15.9	19.4	23	28	34	47	57	71	85	88	88	88	88
5IK60RGU-AWU /5GU□RAA	**ES01**	1200	1.0	1.2	1.7	2.0	2.5	3.0	4.2	5.0	6.0	8.3	8.8	10.6	14.7	17.6	20	20	20	20	20	20
			8.8	10.6	15.0	17.7	22	26	37	44	53	73	77	93	130	155	177	177	177	177	177	177
		90	0.43	0.51	0.71	0.86	1.1	1.3	1.8	2.1	2.6	3.6	3.8	4.5	6.3	7.6	9.5	11.3	12.6	12.6	15.8	18.9
			3.8	4.5	6.2	7.6	9.7	11.5	15.9	18.5	23	31	33	39	55	67	84	100	111	111	139	167
		Starting	0.58	0.69	0.96	1.2	1.4	1.7	2.4	2.9	3.5	4.8	5.2	6.2	8.6	10.4	13.0	15.6	17.3	17.3	20	20
			5.1	6.1	8.4	10.6	12.3	15.0	21	25	30	42	46	54	76	92	115	138	153	153	177	177

◇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	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
Motor/ Gearhead	Applicable Speed Controllers	Motor Speed r/min																				
4IK25RGN-CW2E /4GN□RH	**ES02**	1200	0.18	0.22	0.30	0.36	0.56	0.68	1.1	1.4	1.6	2.3	2.7	3.2	4.5	5.4	6.8	8	8	8	8	8
			1.59	1.94	2.6	3.1	4.9	6.0	9.7	12.3	14.1	20	23	28	39	47	60	70	70	70	70	70
		90	0.048	0.058	0.080	0.096	0.15	0.18	0.30	0.36	0.43	0.60	0.72	0.86	1.2	1.4	1.8	2.2	2.4	2.9	3.6	4.3
			0.42	0.51	0.70	0.84	1.32	1.59	2.6	3.1	3.8	5.3	6.3	7.6	10.6	12.3	15.9	19.4	21	25	31	38
		Starting	0.14	0.17	0.24	0.29	0.45	0.54	0.81	0.97	1.2	1.6	1.9	2.3	3.2	3.9	4.9	5.8	6.5	7.8	8	8
			1.23	1.50	2.1	2.5	3.9	4.7	7.1	8.5	10.6	14.1	16.8	20	28	34	43	51	57	69	70	70
5IK40RGN-CW2E /5GN□RH	**ES02**	1200	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
			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
		90	0.11	0.13	0.18	0.21	0.36	0.43	0.60	0.71	0.86	1.1	1.3	1.5	2.1	2.5	3.2	3.8	4.2	5.0	6.3	7.6
			0.97	1.15	1.59	1.85	3.1	3.8	5.3	6.2	7.6	9.7	11.5	13.2	18.5	22	28	33	37	44	55	67
		Starting	0.30	0.36	0.50	0.60	0.90	1.1	1.5	1.8	2.2	2.7	3.2	3.9	5.4	6.5	8.1	9.7	10	10	10	10
			2.6	3.1	4.4	5.3	7.9	9.7	13.2	15.9	19.4	23	28	34	47	57	71	85	88	88	88	88
5IK60RGU-CWE /5GU□RH	**ES02**	1200	0.74	0.88	1.2	1.5	2.5	3.0	4.2	5.0	6.0	8.3	8.8	10.6	14.7	17.6	20	20	20	20	20	20
			6.5	7.7	10.6	13.2	22	26	37	44	53	73	77	93	130	155	177	177	177	177	177	177
		90	0.27	0.32	0.45	0.54	0.92	1.1	1.5	1.8	2.2	3.1	3.2	3.9	5.4	6.5	8.1	9.7	10.8	10.8	13.5	16.2
			2.3	2.8	3.9	4.7	8.1	9.7	13.2	15.9	19.4	27	28	34	47	57	71	85	95	95	119	143
		Starting	0.48	0.58	0.80	0.96	1.4	1.7	2.4	2.9	3.5	4.8	5.2	6.2	8.6	10.4	13.0	15.6	17.3	17.3	20	20
			4.2	5.1	7.0	8.4	12.3	15.0	21	25	30	42	46	54	76	92	115	138	153	153	177	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	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
Motor/ Gearhead	Applicable Speed Controllers	Motor Speed r/min																				
4IK25RGN-CW2E /4GN□RAA	**ES02**	1200	0.23	0.27	0.38	0.45	0.56	0.68	1.1	1.4	1.6	2.3	2.7	3.2	4.5	5.4	6.8	8	8	8	8	8
			2.0	2.3	3.3	3.9	4.9	6.0	9.7	12.3	14.1	20	23	28	39	47	60	70	70	70	70	70
		90	0.060	0.072	0.10	0.12	0.15	0.18	0.30	0.36	0.43	0.60	0.72	0.86	1.2	1.4	1.8	2.2	2.4	2.9	3.6	4.3
			0.53	0.63	0.88	1.06	1.32	1.59	2.6	3.1	3.8	5.3	6.3	7.6	10.6	12.3	15.9	19.4	21	25	31	38
		Starting	0.18	0.22	0.30	0.36	0.45	0.54	0.81	0.97	1.2	1.6	1.9	2.3	3.2	3.9	4.9	5.8	6.5	7.8	8	8
			1.59	1.94	2.6	3.1	3.9	4.7	7.1	8.5	10.6	14.1	16.8	20	28	34	43	51	57	69	70	70
5IK40RGN-CW2E /5GN□RAA	**ES02**	1200	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
			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
		90	0.14	0.17	0.24	0.29	0.36	0.43	0.60	0.71	0.86	1.1	1.3	1.5	2.1	2.5	3.2	3.8	4.2	5.0	6.3	7.6
			1.23	1.50	2.1	2.5	3.1	3.8	5.3	6.2	7.6	9.7	11.5	13.2	18.5	22	28	33	37	44	55	67
		Starting	0.36	0.43	0.60	0.72	0.90	1.1	1.5	1.8	2.2	2.7	3.2	3.9	5.4	6.5	8.1	9.7	10	10	10	10
			3.1	3.8	5.3	6.3	7.9	9.7	13.2	15.9	19.4	23	28	34	47	57	71	85	88	88	88	88
5IK60RGU-CWE /5GU□RAA	**ES02**	1200	1.0	1.2	1.7	2.0	2.5	3.0	4.2	5.0	6.0	8.3	8.8	10.6	14.7	17.6	20	20	20	20	20	20
			8.8	10.6	15.0	17.7	22	26	37	44	53	73	77	93	130	155	177	177	177	177	177	177
		90	0.37	0.44	0.61	0.73	0.92	1.1	1.5	1.8	2.2	3.1	3.2	3.9	5.4	6.5	8.1	9.7	10.8	10.8	13.5	16.2
			3.2	3.8	5.3	6.4	8.1	9.7	13.2	15.9	19.4	27	28	34	47	57	71	85	95	95	119	143
		Starting	0.58	0.69	0.96	1.2	1.4	1.7	2.4	2.9	3.5	4.8	5.2	6.2	8.6	10.4	13.0	15.6	17.3	17.3	20	20
			5.1	6.1	8.4	10.6	12.3	15.0	21	25	30	42	46	54	76	92	115	138	153	153	177	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	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
Motor/ Gearhead	Applicable Speed Controllers	Motor Speed r/min																				
4RK25RGN-AW2U /4GN□RH	**ES01**	1200	0.25	0.30	0.41	0.49	0.77	0.92	1.5	1.8	2.2	3.1	3.7	4.4	6.2	7.4	8	8	8	8	8	8
			2.2	2.6	3.6	4.3	6.8	8.1	13.2	15.9	19.4	27	32	38	54	65	70	70	70	70	70	70
		90	0.13	0.16	0.22	0.26	0.41	0.50	0.83	0.99	1.2	1.7	2.0	2.4	3.3	4.0	5.0	5.9	6.6	7.9	8	8
			1.15	1.41	1.94	2.3	3.6	4.4	7.3	8.7	10.6	15.0	17.7	21	29	35	44	52	58	69	70	70
		Starting	0.17	0.20	0.28	0.34	0.53	0.63	0.95	1.1	1.4	1.9	2.3	2.7	3.8	4.5	5.7	6.8	7.6	8	8	8
			1.50	1.77	2.4	3.0	4.6	5.5	8.4	9.7	12.3	16.8	20	23	33	39	50	60	67	70	70	70
5RK40RGN-AW2U /5GN□RH	**ES01**	1200	0.48	0.58	0.80	0.96	1.6	2.0	2.7	3.3	3.9	4.8	5.8	6.9	9.6	10	10	10	10	10	10	10
			4.2	5.1	7.0	8.4	14.1	17.7	23	29	34	42	51	61	84	88	88	88	88	88	88	88
		90	0.23	0.28	0.39	0.47	0.79	0.95	1.3	1.6	1.9	2.3	2.8	3.3	4.7	5.6	7.0	8.4	9.3	10	10	10
			2.0	2.4	3.4	4.1	6.9	8.4	11.5	14.1	16.8	20	24	29	41	49	61	74	82	88	88	88
		Starting	0.39	0.47	0.65	0.78	1.2	1.4	2.0	2.3	2.8	3.5	4.2	5.1	7.0	8.4	10	10	10	10	10	10
			3.4	4.1	5.7	6.9	10.6	12.3	17.7	20	24	30	37	45	61	74	88	88	88	88	88	88
5RK60RGU-AWU /5GU□RH	**ES01**	1200	0.74	0.88	1.2	1.5	2.5	3.0	4.2	5.0	6.0	8.3	8.8	10.6	14.7	17.6	20	20	20	20	20	20
			6.5	7.7	10.6	13.2	22	26	37	44	53	73	77	93	130	155	177	177	177	177	177	177
		90	0.41	0.49	0.68	0.81	1.4	1.7	2.3	2.8	3.3	4.6	4.9	5.8	8.1	9.7	12.2	14.6	16.2	16.2	20	20
			3.6	4.3	6.0	7.1	12.3	15.0	20	24	29	40	43	51	71	85	107	129	143	143	177	177
		Starting	0.57	0.68	0.95	1.1	1.7	2.1	2.9	3.4	4.1	5.7	6.2	7.4	10.3	12.3	15.4	18.5	20	20	20	20
			5.0	6.0	8.4	9.7	15.0	18.5	25	30	36	50	54	65	91	108	136	163	177	177	177	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	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
Motor/ Gearhead	Applicable Speed Controllers	Motor Speed r/min																				
4RK25RGN-AW2U /4GN□RAA	**ES01**	1200	0.31	0.37	0.51	0.62	0.77	0.92	1.5	1.8	2.2	3.1	3.7	4.4	6.2	7.4	8	8	8	8	8	8
			2.7	3.2	4.5	5.4	6.8	8.1	13.2	15.9	19.4	27	32	38	54	65	70	70	70	70	70	70
		90	0.17	0.20	0.28	0.33	0.41	0.50	0.83	0.99	1.2	1.7	2.0	2.4	3.3	4.0	5.0	5.9	6.6	7.9	8	8
			1.50	1.77	2.4	2.9	3.6	4.4	7.3	8.7	10.6	15.0	17.7	21	29	35	44	52	58	69	70	70
		Starting	0.21	0.25	0.35	0.42	0.53	0.63	0.95	1.1	1.4	1.9	2.3	2.7	3.8	4.5	5.7	6.8	7.6	8	8	8
			1.85	2.2	3.0	3.7	4.6	5.5	8.4	9.7	12.3	16.8	20	23	33	39	50	60	67	70	70	70
5RK40RGN-AW2U /5GN□RAA	**ES01**	1200	0.65	0.78	1.1	1.3	1.6	2.0	2.7	3.3	3.9	4.8	5.8	6.9	9.6	10	10	10	10	10	10	10
			5.7	6.9	9.7	11.5	14.1	17.7	23	29	34	42	51	61	84	88	88	88	88	88	88	88
		90	0.32	0.38	0.53	0.63	0.79	0.95	1.3	1.6	1.9	2.3	2.8	3.3	4.7	5.6	7.0	8.4	9.3	10	10	10
			2.8	3.3	4.6	5.5	6.9	8.4	11.5	14.1	16.8	20	24	29	41	49	61	74	82	88	88	88
		Starting	0.47	0.56	0.78	0.94	1.2	1.4	2.0	2.3	2.8	3.5	4.2	5.1	7.0	8.4	10	10	10	10	10	10
			4.1	4.9	6.9	8.3	10.6	12.3	17.7	20	24	30	37	45	61	74	88	88	88	88	88	88
5RK60RGU-AWU /5GU□RAA	**ES01**	1200	1.0	1.2	1.7	2.0	2.5	3.0	4.2	5.0	6.0	8.3	8.8	10.6	14.7	17.6	20	20	20	20	20	20
			8.8	10.6	15.0	17.7	22	26	37	44	53	73	77	93	130	155	177	177	177	177	177	177
		90	0.55	0.66	0.92	1.1	1.4	1.7	2.3	2.8	3.3	4.6	4.9	5.8	8.1	9.7	12.2	14.6	16.2	16.2	20	20
			4.8	5.8	8.1	9.7	12.3	15.0	20	24	29	40	43	51	71	85	107	129	143	143	177	177
		Starting	0.68	0.82	1.1	1.4	1.7	2.1	2.9	3.4	4.1	5.7	6.2	7.4	10.3	12.3	15.4	18.5	20	20	20	20
			6.0	7.2	9.7	12.3	15.0	18.5	25	30	36	50	54	65	91	108	136	163	177	177	177	177

◇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	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
Motor/ Gearhead	Applicable Speed Controllers	Motor Speed r/min																				
4RK25RGN-CW2E /4GN□RH	**ES02**	1200	0.25	0.30	0.41	0.49	0.77	0.92	1.5	1.8	2.2	3.1	3.7	4.4	6.2	7.4	8	8	8	8	8	8
			2.2	2.6	3.6	4.3	6.8	8.1	13.2	15.9	19.4	27	32	38	54	65	70	70	70	70	70	70
		90	0.13	0.16	0.22	0.26	0.41	0.50	0.83	0.99	1.2	1.7	2.0	2.4	3.3	4.0	5.0	5.9	6.6	7.9	8	8
			1.15	1.41	1.94	2.3	3.6	4.4	7.3	8.7	10.6	15.0	17.7	21	29	35	44	52	58	69	70	70
		Starting	0.17	0.20	0.28	0.34	0.53	0.63	0.95	1.1	1.4	1.9	2.3	2.7	3.8	4.5	5.7	6.8	7.6	8	8	8
			1.50	1.77	2.4	3.0	4.6	5.5	8.4	9.7	12.3	16.8	20	23	33	39	50	60	67	70	70	70
5RK40RGN-CW2E /5GN□RH	**ES02**	1200	0.48	0.58	0.80	0.96	1.6	2.0	2.7	3.3	3.9	4.8	5.8	6.9	9.6	10	10	10	10	10	10	10
			4.2	5.1	7.0	8.4	14.1	17.7	23	29	34	42	51	61	84	88	88	88	88	88	88	88
		90	0.26	0.31	0.43	0.51	0.87	1.0	1.4	1.7	2.1	2.6	3.1	3.7	5.1	6.1	7.7	9.2	10	10	10	10
			2.3	2.7	3.8	4.5	7.6	8.8	12.3	15.0	18.5	23	27	32	45	53	68	81	88	88	88	88
		Starting	0.39	0.47	0.65	0.78	1.2	1.4	2.0	2.3	2.8	3.5	4.2	5.1	7.0	8.4	10	10	10	10	10	10
			3.4	4.1	5.7	6.9	10.6	12.3	17.7	20	24	30	37	45	61	74	88	88	88	88	88	88
5RK60RGU-CWE /5GU□RH	**ES02**	1200	0.74	0.88	1.2	1.5	2.5	3.0	4.2	5.0	6.0	8.3	8.8	10.6	14.7	17.6	20	20	20	20	20	20
			6.5	7.7	10.6	13.2	22	26	37	44	53	73	77	93	130	155	177	177	177	177	177	177
		90	0.42	0.50	0.70	0.84	1.4	1.7	2.4	2.9	3.4	4.8	5.0	6.0	8.4	10.1	12.6	15.1	16.8	16.8	20	20
			3.7	4.4	6.1	7.4	12.3	15.0	21	25	30	42	44	53	74	89	111	133	148	148	177	177
		Starting	0.57	0.68	0.95	1.1	1.7	2.1	2.9	3.4	4.1	5.7	6.2	7.4	10.3	12.3	15.4	18.5	20	20	20	20
			5.0	6.0	8.4	9.7	15.0	18.5	25	30	36	50	54	65	91	108	136	163	177	177	177	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	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
Motor/ Gearhead	Applicable Speed Controllers	Motor Speed r/min																				
4RK25RGN-CW2E /4GN□RAA	**ES02**	1200	0.31	0.37	0.51	0.62	0.77	0.92	1.5	1.8	2.2	3.1	3.7	4.4	6.2	7.4	8	8	8	8	8	8
			2.7	3.2	4.5	5.4	6.8	8.1	13.2	15.9	19.4	27	32	38	54	65	70	70	70	70	70	70
		90	0.17	0.20	0.28	0.33	0.41	0.50	0.83	0.99	1.2	1.7	2.0	2.4	3.3	4.0	5.0	5.9	6.6	7.9	8	8
			1.50	1.77	2.4	2.9	3.6	4.4	7.3	8.7	10.6	15.0	17.7	21	29	35	44	52	58	69	70	70
		Starting	0.21	0.25	0.35	0.42	0.53	0.63	0.95	1.1	1.4	1.9	2.3	2.7	3.8	4.5	5.7	6.8	7.6	8	8	8
			1.85	2.2	3.0	3.7	4.6	5.5	8.4	9.7	12.3	16.8	20	23	33	39	50	60	67	70	70	70
5RK40RGN-CW2E /5GN□RAA	**ES02**	1200	0.65	0.78	1.1	1.3	1.6	2.0	2.7	3.3	3.9	4.8	5.8	6.9	9.6	10	10	10	10	10	10	10
			5.7	6.9	9.7	11.5	14.1	17.7	23	29	34	42	51	61	84	88	88	88	88	88	88	88
		90	0.35	0.42	0.58	0.69	0.87	1.0	1.4	1.7	2.1	2.6	3.1	3.7	5.1	6.1	7.7	9.2	10	10	10	10
			3.0	3.7	5.1	6.1	7.6	8.8	12.3	15.0	18.5	23	27	32	45	53	68	81	88	88	88	88
		Starting	0.47	0.56	0.78	0.94	1.2	1.4	2.0	2.3	2.8	3.5	4.2	5.1	7.0	8.4	10	10	10	10	10	10
			4.1	4.9	6.9	8.3	10.6	12.3	17.7	20	24	30	37	45	61	74	88	88	88	88	88	88
5RK60RGU-CWE /5GU□RAA	**ES02**	1200	1.0	1.2	1.7	2.0	2.5	3.0	4.2	5.0	6.0	8.3	8.8	10.6	14.7	17.6	20	20	20	20	20	20
			8.8	10.6	15.0	17.7	22	26	37	44	53	73	77	93	130	155	177	177	177	177	177	177
		90	0.57	0.69	0.95	1.1	1.4	1.7	2.4	2.9	3.4	4.8	5.0	6.0	8.4	10.1	12.6	15.1	16.8	16.8	20	20
			5.0	6.1	8.4	9.7	12.3	15.0	21	25	30	42	44	53	74	89	111	133	148	148	177	177
		Starting	0.68	0.82	1.1	1.4	1.7	2.1	2.9	3.4	4.1	5.7	6.2	7.4	10.3	12.3	15.4	18.5	20	20	20	20
			6.0	7.2	9.7	12.3	15.0	18.5	25	30	36	50	54	65	91	108	136	163	177	177	177	177

●US Series Speed Control System

◇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	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
Motor/Gearhead	Motor Speed r/min																				
US425-401U2 /4GN□RH	1200	0.24	0.29	0.40	0.48	0.75	0.90	1.5	1.8	2.2	3.0	3.6	4.3	6.0	7.2	8	8	8	8	8	8
		2.1	2.5	3.5	4.2	6.6	7.9	13.2	15.9	19.4	26	31	38	53	63	70	70	70	70	70	70
	90	0.060	0.072	0.10	0.12	0.19	0.23	0.38	0.45	0.54	0.75	0.90	1.1	1.5	1.8	2.3	2.7	3.0	3.6	4.5	5.4
		0.53	0.63	0.88	1.06	1.68	2.0	3.3	3.9	4.7	6.6	7.9	9.7	13.2	15.9	20	23	26	31	39	47
	Starting	0.13	0.15	0.21	0.25	0.39	0.47	0.71	0.85	1.0	1.4	1.7	2.0	2.8	3.4	4.3	5.1	5.7	6.8	8	8
		1.15	1.32	1.85	2.2	3.4	4.1	6.2	7.5	8.8	12.3	15.0	17.7	24	30	38	45	50	60	70	70
US540-401U2 /5GN□RH	1200	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
		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
	90	0.11	0.13	0.18	0.21	0.36	0.43	0.60	0.71	0.86	1.1	1.3	1.5	2.1	2.5	3.2	3.8	4.2	5.0	6.3	7.6
		0.97	1.15	1.59	1.85	3.1	3.8	5.3	6.2	7.6	9.7	11.5	13.2	18.5	22	28	33	37	44	55	67
	Starting	0.27	0.32	0.45	0.54	0.81	0.97	1.4	1.6	1.9	2.4	2.9	3.5	4.9	5.8	7.3	8.7	9.7	10	10	10
		2.3	2.8	3.9	4.7	7.1	8.5	12.3	14.1	16.8	21	25	30	43	51	64	76	85	88	88	88
US560-501U2 /5GU□RH	1200	0.74	0.88	1.2	1.5	2.5	3.0	4.2	5.0	6.0	8.3	8.8	10.6	14.7	17.6	20	20	20	20	20	20
		6.5	7.7	10.6	13.2	22	26	37	44	53	73	77	93	130	155	177	177	177	177	177	177
	90	0.30	0.36	0.50	0.60	1.0	1.2	1.7	2.0	2.4	3.4	3.6	4.3	6.0	7.2	9.0	10.8	12.0	12.0	15.0	18.0
		2.6	3.1	4.4	5.3	8.8	10.6	15.0	17.7	21	30	31	38	53	63	79	95	106	106	132	159
	Starting	0.43	0.51	0.71	0.86	1.3	1.5	2.1	2.6	3.1	4.3	4.6	5.5	7.7	9.2	11.5	13.9	15.4	15.4	19.2	20
		3.8	4.5	6.2	7.6	11.5	13.2	18.5	23	27	38	40	48	68	81	101	123	136	136	169	177
US590-501U2 /5GU□RH	1200	1.1	1.3	1.8	2.2	3.7	4.5	6.2	7.4	8.9	12.4	13.1	15.8	20	20	20	20	20	20	20	20
		9.7	11.5	15.9	19.4	32	39	54	65	78	109	115	139	177	177	177	177	177	177	177	177
	90	0.30	0.36	0.50	0.60	1.0	1.2	1.7	2.0	2.4	3.4	3.6	4.3	6.0	7.2	9.0	10.8	12.0	12.0	15.0	18.0
		2.6	3.1	4.4	5.3	8.8	10.6	15.0	17.7	21	30	31	38	53	63	79	95	106	106	132	159
	Starting	0.61	0.73	1.0	1.2	1.8	2.2	3.0	3.6	4.4	6.1	6.6	7.9	10.9	13.1	16.4	19.7	20	20	20	20
		5.3	6.4	8.8	10.6	15.9	19.4	26	31	38	53	58	69	96	115	145	174	177	177	177	177

◇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	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
Motor/Gearhead	Motor Speed r/min																				
US425-401U2 /4GN□RAA	1200	0.30	0.36	0.50	0.60	0.75	0.90	1.5	1.8	2.2	3.0	3.6	4.3	6.0	7.2	8	8	8	8	8	8
		2.6	3.1	4.4	5.3	6.6	7.9	13.2	15.9	19.4	26	31	38	53	63	70	70	70	70	70	70
	90	0.075	0.090	0.13	0.15	0.19	0.23	0.38	0.45	0.54	0.75	0.90	1.1	1.5	1.8	2.3	2.7	3.0	3.6	4.5	5.4
		0.66	0.79	1.15	1.32	1.68	2.0	3.3	3.9	4.7	6.6	7.9	9.7	13.2	15.9	20	23	26	31	39	47
	Starting	0.16	0.19	0.26	0.32	0.39	0.47	0.71	0.85	1.0	1.4	1.7	2.0	2.8	3.4	4.3	5.1	5.7	6.8	8	8
		1.41	1.68	2.3	2.8	3.4	4.1	6.2	7.5	8.8	12.3	15.0	17.7	24	30	38	45	50	60	70	70
US540-401U2 /5GN□RAA	1200	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
		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
	90	0.14	0.17	0.24	0.29	0.36	0.43	0.60	0.71	0.86	1.1	1.3	1.5	2.1	2.5	3.2	3.8	4.2	5.0	6.3	7.6
		1.23	1.50	2.1	2.5	3.1	3.8	5.3	6.2	7.6	9.7	11.5	13.2	18.5	22	28	33	37	44	55	67
	Starting	0.32	0.39	0.54	0.65	0.81	0.97	1.4	1.6	1.9	2.4	2.9	3.5	4.9	5.8	7.3	8.7	9.7	10	10	10
		2.8	3.4	4.7	5.7	7.1	8.5	12.3	14.1	16.8	21	25	30	43	51	64	76	85	88	88	88
US560-501U2 /5GU□RAA	1200	1.0	1.2	1.7	2.0	2.5	3.0	4.2	5.0	6.0	8.3	8.8	10.6	14.7	17.6	20	20	20	20	20	20
		8.8	10.6	15.0	17.7	22	26	37	44	53	73	77	93	130	155	177	177	177	177	177	177
	90	0.41	0.49	0.68	0.82	1.0	1.2	1.7	2.0	2.4	3.4	3.6	4.3	6.0	7.2	9.0	10.8	12.0	12.0	15.0	18.0
		3.6	4.3	6.0	7.2	8.8	10.6	15.0	17.7	21	30	31	38	53	63	79	95	106	106	132	159
	Starting	0.51	0.62	0.86	1.0	1.3	1.5	2.1	2.6	3.1	4.3	4.6	5.5	7.7	9.2	11.5	13.9	15.4	15.4	19.2	20
		4.5	5.4	7.6	8.8	11.5	13.2	18.5	23	27	38	40	48	68	81	101	123	136	136	169	177
US590-501U2 /5GU□RAA	1200	1.5	1.8	2.5	3.0	3.7	4.5	6.2	7.4	8.9	12.4	13.1	15.8	20	20	20	20	20	20	20	20
		13.2	15.9	22	26	32	39	54	65	78	109	115	139	177	177	177	177	177	177	177	177
	90	0.41	0.49	0.68	0.82	1.0	1.2	1.7	2.0	2.4	3.4	3.6	4.3	6.0	7.2	9.0	10.8	12.0	12.0	15.0	18.0
		3.6	4.3	6.0	7.2	8.8	10.6	15.0	17.7	21	30	31	38	53	63	79	95	106	106	132	159
	Starting	0.73	0.87	1.2	1.5	1.8	2.2	3.0	3.6	4.4	6.1	6.6	7.9	10.9	13.1	16.4	19.7	20	20	20	20
		6.4	7.6	10.6	13.2	15.9	19.4	26	31	38	53	58	69	96	115	145	174	177	177	177	177

●US Series Speed Control System

◇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	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
Motor/Gearhead	Motor Speed r/min																				
US425-402E2 /4GN□RH	1200	0.17	0.20	0.28	0.34	0.53	0.63	1.1	1.3	1.5	2.1	2.5	3.0	4.2	5.0	6.3	7.6	8	8	8	8
		1.50	1.77	2.4	3.0	4.6	5.5	9.7	11.5	13.2	18.5	22	26	37	44	55	67	70	70	70	70
	90	0.042	0.050	0.070	0.084	0.13	0.16	0.26	0.32	0.38	0.53	0.63	0.76	1.1	1.3	1.6	1.9	2.1	2.5	3.2	3.8
		0.37	0.44	0.61	0.74	1.15	1.41	2.3	2.8	3.3	4.6	5.5	6.7	9.7	11.5	14.1	16.8	18.5	22	28	33
	Starting	0.13	0.16	0.22	0.26	0.41	0.50	0.74	0.89	1.1	1.5	1.8	2.1	3.0	3.6	4.5	5.3	5.9	7.1	8	8
		1.15	1.41	1.94	2.3	3.6	4.4	6.5	7.8	9.7	13.2	15.9	18.5	26	31	39	46	52	62	70	70
US540-402E2 /5GN□RH	1200	0.35	0.41	0.58	0.69	1.2	1.4	2.0	2.3	2.8	3.5	4.1	5.0	6.9	8.3	10	10	10	10	10	10
		3.0	3.6	5.1	6.1	10.6	12.3	17.7	20	24	30	36	44	61	73	88	88	88	88	88	88
	90	0.095	0.11	0.16	0.19	0.32	0.39	0.54	0.64	0.77	0.95	1.1	1.4	1.9	2.3	2.8	3.4	3.8	4.5	5.7	6.8
		0.84	0.97	1.41	1.68	2.8	3.4	4.7	5.6	6.8	8.4	9.7	12.3	16.8	20	24	30	33	39	50	60
	Starting	0.21	0.25	0.35	0.42	0.63	0.76	1.1	1.3	1.5	1.9	2.3	2.7	3.8	4.5	5.7	6.8	7.6	9.1	10	10
		1.85	2.2	3.0	3.7	5.5	6.7	9.7	11.5	13.2	16.8	20	23	33	39	50	60	67	80	88	88
US560-502E2 /5GU□RH	1200	0.68	0.81	1.1	1.4	2.3	2.8	3.8	4.6	5.5	7.7	8.1	9.7	13.5	16.2	20	20	20	20	20	20
		6.0	7.1	9.7	12.3	20	24	33	40	48	68	71	85	119	143	177	177	177	177	177	177
	90	0.24	0.29	0.40	0.48	0.82	0.98	1.4	1.6	2.0	2.7	2.9	3.5	4.8	5.8	7.2	8.6	9.6	9.6	12.0	14.4
		2.1	2.5	3.5	4.2	7.2	8.6	12.3	14.1	17.7	23	25	30	42	51	63	76	84	84	106	127
	Starting	0.36	0.43	0.60	0.72	1.1	1.3	1.8	2.2	2.6	3.6	3.9	4.7	6.5	7.8	9.7	11.7	13.0	13.0	16.2	19.4
		3.1	3.8	5.3	6.3	9.7	11.5	15.9	19.4	23	31	34	41	57	69	85	103	115	115	143	171
US590-502E2 /5GU□RH	1200	1.1	1.3	1.8	2.2	3.7	4.5	6.2	7.4	8.9	12.4	13.1	15.8	20	20	20	20	20	20	20	20
		9.7	11.5	15.9	19.4	32	39	54	65	78	109	115	139	177	177	177	177	177	177	177	177
	90	0.39	0.47	0.65	0.78	1.3	1.6	2.2	2.7	3.2	4.4	4.7	5.6	7.8	9.4	11.7	14.0	15.6	15.6	19.5	20
		3.4	4.1	5.7	6.9	11.5	14.1	19.4	23	28	38	41	49	69	83	103	123	138	138	172	177
	Starting	0.60	0.72	1.0	1.2	1.8	2.2	3.0	3.6	4.3	6.0	6.5	7.8	10.8	13.0	16.2	19.4	20	20	20	20
		5.3	6.3	8.8	10.6	15.9	19.4	26	31	38	53	57	69	95	115	143	171	177	177	177	177

◇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	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
Motor/Gearhead	Motor Speed r/min																				
US425-402E2 /4GN□RAA	1200	0.21	0.25	0.35	0.42	0.53	0.63	1.1	1.3	1.5	2.1	2.5	3.0	4.2	5.0	6.3	7.6	8	8	8	8
		1.85	2.2	3.0	3.7	4.6	5.5	9.7	11.5	13.2	18.5	22	26	37	44	55	67	70	70	70	70
	90	0.053	0.063	0.088	0.11	0.13	0.16	0.26	0.32	0.38	0.53	0.63	0.76	1.1	1.3	1.6	1.9	2.1	2.5	3.2	3.8
		0.46	0.55	0.77	0.97	1.15	1.41	2.3	2.8	3.3	4.6	5.5	6.7	9.7	11.5	14.1	16.8	18.5	22	28	33
	Starting	0.17	0.20	0.28	0.33	0.41	0.50	0.74	0.89	1.1	1.5	1.8	2.1	3.0	3.6	4.5	5.3	5.9	7.1	8	8
		1.50	1.77	2.4	2.9	3.6	4.4	6.5	7.8	9.7	13.2	15.9	18.5	26	31	39	46	52	62	70	70
US540-402E2 /5GN□RAA	1200	0.47	0.56	0.78	0.94	1.2	1.4	2.0	2.3	2.8	3.5	4.1	5.0	6.9	8.3	10	10	10	10	10	10
		4.1	4.9	6.9	8.3	10.6	12.3	17.7	20	24	30	36	44	61	73	88	88	88	88	88	88
	90	0.13	0.15	0.21	0.26	0.32	0.39	0.54	0.64	0.77	0.95	1.1	1.4	1.9	2.3	2.8	3.4	3.8	4.5	5.7	6.8
		1.15	1.32	1.85	2.3	2.8	3.4	4.7	5.6	6.8	8.4	9.7	12.3	16.8	20	24	30	33	39	50	60
	Starting	0.25	0.30	0.42	0.50	0.63	0.76	1.1	1.3	1.5	1.9	2.3	2.7	3.8	4.5	5.7	6.8	7.6	9.1	10	10
		2.2	2.6	3.7	4.4	5.5	6.7	9.7	11.5	13.2	16.8	20	23	33	39	50	60	67	80	88	88
US560-502E2 /5GU□RAA	1200	0.92	1.1	1.5	1.8	2.3	2.8	3.8	4.6	5.5	7.7	8.1	9.7	13.5	16.2	20	20	20	20	20	20
		8.1	9.7	13.2	15.9	20	24	33	40	48	68	71	85	119	143	177	177	177	177	177	177
	90	0.33	0.39	0.54	0.65	0.82	0.98	1.4	1.6	2.0	2.7	2.9	3.5	4.8	5.8	7.2	8.6	9.6	9.6	12.0	14.4
		2.9	3.4	4.7	5.7	7.2	8.6	12.3	14.1	17.7	23	25	30	42	51	63	76	84	84	106	127
	Starting	0.43	0.52	0.72	0.86	1.1	1.3	1.8	2.2	2.6	3.6	3.9	4.7	6.5	7.8	9.7	11.7	13.0	13.0	16.2	19.4
		3.8	4.6	6.3	7.6	9.7	11.5	15.9	19.4	23	31	34	41	57	69	85	103	115	115	143	171
US590-502E2 /5GU□RAA	1200	1.5	1.8	2.5	3.0	3.7	4.5	6.2	7.4	8.9	12.4	13.1	15.8	20	20	20	20	20	20	20	20
		13.2	15.9	22	26	32	39	54	65	78	109	115	139	177	177	177	177	177	177	177	177
	90	0.53	0.64	0.88	1.1	1.3	1.6	2.2	2.7	3.2	4.4	4.7	5.6	7.8	9.4	11.7	14.0	15.6	15.6	19.5	20
		4.6	5.6	7.7	9.7	11.5	14.1	19.4	23	28	38	41	49	69	83	103	123	138	138	172	177
	Starting	0.72	0.86	1.2	1.4	1.8	2.2	3.0	3.6	4.3	6.0	6.5	7.8	10.8	13.0	16.2	19.4	20	20	20	20
		6.3	7.6	10.6	12.3	15.9	19.4	26	31	38	53	57	69	95	115	143	171	177	177	177	177