Oriental motor

NEW PRODUCTS

RoHS RoHS Directive-Compliant

Standard AC Motors

World K Series

Conforms to Power Supply Voltages in Asia

Induction Motors, Reversible Motors, and Electromagnetic Brake Motors

New products that conform to power supply voltages in Asia and exhibit excellent cost performance have been added to Oriental Motor World **K** Series, which is widely selected for performance, quality, and ease of use.

RoHS RoHS Directive-Compliant

World K Series

Conforms to Power Supply Voltages in Asia

Induction Motors
Reversible Motors
Electromagnetic Brake Motors

World **K** Series models that conform to power supply voltages in Asia are certified under the CCC System and have built-in overheat protection devices.

These models provide high cost performance with the same functions as World **K** Series models that conform to global power supply voltages.

A lineup that includes single-phase 110 VAC, single-phase 220/230 VAC, and three-phase 200/220 VAC specifications as well as output power of 6 to 90 W is provided.

Features

Conforms to Major Safety Standards

All World **K** Series models have a built-in overheat protection device and conform to various safety standards.

- **Applicable Standards**
  Certified under the China Compulsory Certification System (CCC System)
  CE Marking (Low Voltage Directive)
- **Motor Overheat Protection Device**
  Thermal protector, Impedance protected

RoHS RoHS Directive-Compliant

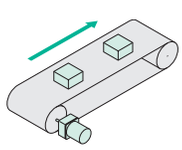
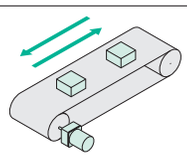
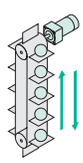
Conforms to the RoHS Directive that prohibits the use of six chemical substances including lead and cadmium.

Twice the Motor Bearing Life (Compared with a conventional model)

A motor's life is determined by its bearing. We adopted high-performance bearing grease to lubricate this important component. Life is twice as long as a conventional model.

Protective Earth Terminal on Motor

Lineup

Types	Features	Frame Size (mm), Output Power			□60	□70	□80	□90		
		Voltage	Frequency	Type	6 W	15 W	25 W	40 W	60 W	90 W
Induction Motors	Suitable for applications where the motor is operated continuously in one direction 	Single-Phase 110 VAC	60 Hz	Lead Wire Type	●	●	●	●	●	●
		Single-Phase 220 VAC	50/60 Hz		●	●	●	●	●	●
		Single-Phase 230 VAC	50 Hz		●	●	●	●	●	●
		Three-Phase 200/220 VAC	60 Hz		●	●	●	●	●	●
Reversible Motors	Suitable for applications where the motor must frequently switch direction 	Single-Phase 110 VAC	60 Hz	Lead Wire Type	●	●	●	●	●	●
		Single-Phase 220 VAC	50/60 Hz		●	●	●	●	●	●
		Single-Phase 230 VAC	50 Hz		●	●	●	●	●	●
Electromagnetic Brake Motors	Suitable for applications in which the load must be held 	Single-Phase 110 VAC	60 Hz	Lead Wire Type	●	●	●	●	●	●
		Single-Phase 220 VAC	50/60 Hz		●	●	●	●	●	●
		Single-Phase 230 VAC	50 Hz		●	●	●	●	●	●
		Three-Phase 200/220 VAC	60 Hz		●	●	●	●	●	●

Features and Types of Gearheads

Easy Speed Reduction and Torque Increase

Combination with a gearhead allows the motor to slow down to a required speed and generate higher torque.

Wide Variety of Products

Gearheads are available with 20 different gear ratios from 1:3 to 1:180. Use together with a decimal gearhead also allows for large gear ratios of 1:180 or more.

Types of Gearheads

Gearheads		Applicable Motor		Rated Life (Hours)
Type of Gearhead	Type of Pinion	Output Power	Type of Pinion	
(RoHS) **GN-K** Gearhead	**GN** Type Pinion	6 W～40 W	**GN** Type Pinion	5000
(RoHS) **GE-KB** Gearhead	**GE** Type Pinion	60 W, 90 W	**GE** Type Pinion	5000

Product Number Code

Motors

5 R K 40 GN - CW 2 M L 2

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

①	Motor Frame Size	**2**: 60mm **3**: 70mm **4**: 80mm **5**: 90mm
②	Motor Type	**I**: Induction Motor **R**: Reversible Motor
③	Series Name	**K**: **K** Series
④	Output Power (W)	(Example) **40**: 40 W
⑤	Motor Shaft Type, Type of Pinion	**A**: Round Shaft **GN**: **GN** Type Pinion **GE**: **GE** Type Pinion
⑥	Power Supply Voltage	**AW**: Single-Phase 110 VAC **CW**: Single-Phase 220/230 VAC **SW**: Three-Phase 200/220 VAC
⑦	**2**, **3**: RoHS Directive-Compliant	
⑧	Blank: Lead Wire Type **M**: Power Off Activated Type Electromagnetic Brake	
⑨	Motor Type	
⑩	Included Capacitor	

● The product name listed on the motor nameplate does not include the code (**1** or **2**) that indicates the type of capacitor.
Certification regarding various safety standards is acquired for the product name on the motor nameplate.
(Example) Product Name: **5RK40GN-CW2ML2** ➜ Motor nameplate and product approved under various safety standards: **5RK40GN-CW2ML**

Gearheads

5 GN 50 K F

① ② ③ ④ ⑤

①	Gearhead Frame Size	**2**: 60mm **3**: 70mm **4**: 80mm **5**: 90mm
②	Type of Pinion	**GN**: **GN** Type Pinion **GE**: **GE** Type Pinion
③	Gear Ratio	(Example) **50**: Gear Ratio of 1:50 **10X** denotes the decimal gearhead of gear ratio 1:10
④	**GN** Type Pinion	**K**: **GN-K** Gearhead, RoHS Directive-Compliant
	GE Type Pinion	**KB**: **GE-KB** Gearhead (Box form type), RoHS Directive-Compliant
⑤	Gearhead Type	

World K Series
Conforms to Power Supply Voltages in Asia

Induction Motors

Gearhead shown in the photograph is sold separately

Product Line

Motors RoHS

Output Power	Power Supply Voltage	Product Name	
		Pinion Shaft Type	Round Shaft Type
6 W	Single-Phase 110 VAC	**2IK6GN-AW2L2**	**2IK6A-AW2L2**
	Single-Phase 220/230 VAC	**2IK6GN-CW2L2**	**2IK6A-CW2L2**
	Three-Phase 200/220 VAC	**2IK6GN-SW2L**	**2IK6A-SW2L**
15 W	Single-Phase 110 VAC	**3IK15GN-AW2L2**	**3IK15A-AW2L2**
	Single-Phase 220/230 VAC	**3IK15GN-CW2L2**	**3IK15A-CW2L2**
	Three-Phase 200/220 VAC	**3IK15GN-SW2L**	**3IK15A-SW2L**
25 W	Single-Phase 110 VAC	**4IK25GN-AW2L2**	**4IK25A-AW2L2**
	Single-Phase 220/230 VAC	**4IK25GN-CW2L2**	**4IK25A-CW2L2**
	Three-Phase 200/220 VAC	**4IK25GN-SW2L**	**4IK25A-SW2L**
40 W	Single-Phase 110 VAC	**5IK40GN-AW2L2**	**5IK40A-AW2L2**
	Single-Phase 220/230 VAC	**5IK40GN-CW2L2**	**5IK40A-CW2L2**
	Three-Phase 200/220 VAC	**5IK40GN-SW2L**	**5IK40A-SW2L**
60 W	Single-Phase 110 VAC	**5IK60GE-AW2L2**	**5IK60A-AW2L2**
	Single-Phase 220/230 VAC	**5IK60GE-CW2L2**	**5IK60A-CW2L2**
	Three-Phase 200/220 VAC	**5IK60GE-SW2L**	**5IK60A-SW2L**
90 W	Single-Phase 110 VAC	**5IK90GE-AW2L2**	**5IK90A-AW2L2**
	Single-Phase 220/230 VAC	**5IK90GE-CW2L2**	**5IK90A-CW2L2**
	Three-Phase 200/220 VAC	**5IK90GE-SW2L**	**5IK90A-SW2L**

The following items are included in each product.
Motor, Capacitor*, Capacitor Cap*, Operating Manual
*Single-phase motors only

Parallel Shaft Gearheads (Sold separately) RoHS

Applicable Motor Output Power (Pinion shaft)	Gearhead Product Name	Gear Ratio
6 W	**2GN□KF**	**3~180**
	2GN10XKF (Decimal gearhead)	
15 W	**3GN□KF**	**3~180**
	3GN10XKF (Decimal gearhead)	
25 W	**4GN□KF**	**3~180**
	4GN10XKF (Decimal gearhead)	
40 W	**5GN□KF**	**3~180**
	5GN10XKF (Decimal gearhead)	
60 W 90 W	**5GE□KBF**	**3~180**
	5GE10XKBF (Decimal gearhead)	

A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.

The following items are included in each product.
Gearhead, Mounting Screws, Parallel Key*, Operating Manual
*Only for products with a key slot on the output shaft

Specifications – Continuous Rating RoHS

6 W to 25 W

Product Name and Type Lead Wire Type		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Pinion Shaft Type	Round Shaft Type	W	VAC	Hz	A	mN·m	mN·m	r/min	μF
(ZP) **2IK6GN-AW2L2**	(ZP) **2IK6A-AW2L2**	6	Single-Phase 110	60	0.178	40	41	1450	2.5
(ZP) **2IK6GN-CW2L2**	(ZP) **2IK6A-CW2L2**	6	Single-Phase 220	50	0.103	38	49	1150	0.6
				60	0.091	40	41	1450	
			Single-Phase 230	50	0.107	45	49	1200	
(ZP) **2IK6GN-SW2L**	(ZP) **2IK6A-SW2L**	6	Three-Phase 200	60	0.072	41	41	1400	–
			Three-Phase 220		0.076			1500	
(TP) **3IK15GN-AW2L2**	(TP) **3IK15A-AW2L2**	15	Single-Phase 110	60	0.33	65	105	1450	4.5
(TP) **3IK15GN-CW2L2**	(TP) **3IK15A-CW2L2**	15	Single-Phase 220	50	0.19	70	125	1200	1.0
				60	0.16	65	105	1450	
			Single-Phase 230	50	0.19	75	125	1200	
(TP) **3IK15GN-SW2L**	(TP) **3IK15A-SW2L**	15	Three-Phase 200	60	0.14	85	100	1600	–
			Three-Phase 220		0.15	100		1650	
(TP) **4IK25GN-AW2L2**	(TP) **4IK25A-AW2L2**	25	Single-Phase 110	60	0.46	120	170	1450	6.5
(TP) **4IK25GN-CW2L2**	(TP) **4IK25A-CW2L2**	25	Single-Phase 220	50	0.27	110	205	1200	1.5
				60	0.23		170	1450	
			Single-Phase 230	50	0.27	120	205	1200	
(TP) **4IK25GN-SW2L**	(TP) **4IK25A-SW2L**	25	Three-Phase 200	60	0.21	160	160	1550	–
			Three-Phase 220					1600	

The product name listed on the motor nameplate does not include the code (**2**) that indicates the type of capacitor.
Certification regarding various safety standards is acquired for the product name on the motor nameplate.

(ZP): These products are impedance protected.

(TP): This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

40 W to 90 W

Product Name and Type Lead Wire Type		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Pinion Shaft Type	Round Shaft Type	W	VAC	Hz	A	mN·m	mN·m	r/min	μF
(TP) 5IK40GN-AW2L2	(TP) 5IK40A-AW2L2	40	Single-Phase 110	60	0.68	200	260	1500	9.0
(TP) 5IK40GN-CW2L2	(TP) 5IK40A-CW2L2	40	Single-Phase 220	50	0.39	200	315	1250	2.3
				60	0.35		260	1500	
			Single-Phase 230	50	0.39		300	1300	
(TP) 5IK40GN-SW2L	(TP) 5IK40A-SW2L	40	Three-Phase 200	60	0.30	260	260	1550	–
			Three-Phase 220					1600	
(TP) 5IK60GE-AW2L2	(TP) 5IK60A-AW2L2	60	Single-Phase 110	60	1.09	320	405	1450	18
(TP) 5IK60GE-CW2L2	(TP) 5IK60A-CW2L2	60	Single-Phase 220	50	0.55	320	490	1200	4.0
				60	0.54		405	1450	
			Single-Phase 230	50	0.57		490	1200	
(TP) 5IK60GE-SW2L	(TP) 5IK60A-SW2L	60	Three-Phase 200	60	0.43	500	380	1550	–
			Three-Phase 220		0.45			1600	
(TP) 5IK90GE-AW2L2	(TP) 5IK90A-AW2L2	90	Single-Phase 110	60	1.45	450	585	1500	20
(TP) 5IK90GE-CW2L2	(TP) 5IK90A-CW2L2	90	Single-Phase 220	50	0.74	450	730	1200	6.0
				60	0.82		605	1450	
			Single-Phase 230	50	0.76		730	1200	
(TP) 5IK90GE-SW2L	(TP) 5IK90A-SW2L	90	Three-Phase 200	60	0.59	700	570	1550	–
			Three-Phase 220		0.60			1600	

●The product name listed on the motor nameplate does not include the code (**2**) that indicates the type of capacitor.
Certification regarding various safety standards is acquired for the product name on the motor nameplate.

(ZP): These products are impedance protected.

(TP): This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

General Specifications

Item	Specifications
Insulation Resistance	The measured value is 100 MΩ or more when a 500 VDC megger is applied between the windings and the case after rated operation under normal ambient temperature and humidity.
Dielectric Strength	No abnormality is judged even with application of 1.5 kVAC at 50 Hz or 60 Hz between the windings and the case for 1 minute after rated operation under normal ambient temperature and humidity.
Temperature Rise	A gearhead or equivalent heat radiation plate* is connected and the winding temperature rise is measured at 80°C or less using the resistance change method after rated operation under normal ambient temperature and humidity. (Three-Phase Type: 70°C or less)
Insulation Class	Class B (130°C)
Overheat Protection	6 W type is impedance protected All other motors have built-in thermal protector (automatic return type) Open: 130±5°C, Close: 85±20°C
Operating Ambient Temperature	Three-Phase 200 VAC: −10～+50°C (non-freezing) Other voltages: −10～+40°C (non-freezing)
Operating Ambient Humidity	85% or less (non-condensing)
Degree of Protection	IP20

*Heat radiation plate size (Material: Aluminum)

Motor Type	Size (mm)	Thickness (mm)
6 W Type	115×115	5
15 W Type	125×125	
25 W Type	135×135	
40 W Type	165×165	
60 W, 90 W Type	200×200	

Permissible Torque When Gearhead is Attached

- A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.
- A colored background ▭ indicates gear shaft rotation in the same direction as the motor shaft. Others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 to 20% less than the displayed value, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor.
  In that case, the permissible torques are as follows:
  2GN□KF: 3N·m, **3GN□KF**: 5N·m, **4GN□KF**: 8N·m (6 N·m when a gearhead of 1/25 to 1/36 is attached)
  5GN□KF: 10 N·m, **5GE□KBF**: 20 N·m

◇50 Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
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**
2IK6GN-CW2L2	**2GN□KF**	0.12	0.14	0.20	0.24	0.30	0.36	0.50	0.60	0.71	0.89	1.1	1.3	1.6	1.9	2.4	2.9	3	3	3	3
3IK15GN-CW2L2	**3GN□KF**	0.30	0.36	0.51	0.61	0.76	0.91	1.3	1.5	1.8	2.3	2.7	3.3	4.1	5	5	5	5	5	5	5
4IK25GN-CW2L2	**4GN□KF**	0.50	0.60	0.83	1.0	1.2	1.5	2.1	2.5	3.0	3.7	4.5	5.4	6.8	8	8	8	8	8	8	8
5IK40GN-CW2L2 (Single-Phase 220 VAC)	**5GN□KF**	0.77	0.92	1.3	1.5	1.9	2.3	3.2	3.8	4.6	5.7	6.9	8.3	10	10	10	10	10	10	10	10
5IK40GN-CW2L2 (Single-Phase 230 VAC)	**5GN□KF**	0.73	0.87	1.2	1.5	1.8	2.2	3.0	3.6	4.4	5.5	6.6	7.9	9.9	10	10	10	10	10	10	10
5IK60GE-CW2L2	**5GE□KBF**	1.2	1.4	2.0	2.4	3.0	3.6	4.5	5.4	6.4	8.1	9.7	11.6	16.2	19.4	20	20	20	20	20	20
5IK90GE-CW2L2	**5GE□KBF**	1.8	2.1	3.0	3.5	4.4	5.3	6.7	8.0	9.6	12.0	14.5	17.3	20	20	20	20	20	20	20	20

◇60 Hz

Unit = N·m

Product Name	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**
2IK6GN-AW2L2 2IK6GN-CW2L2 2IK6GN-SW2L	**2GN□KF**	0.10	0.12	0.17	0.20	0.25	0.30	0.42	0.50	0.60	0.75	0.90	1.1	1.4	1.6	2.0	2.4	2.7	3	3	3
3IK15GN-AW2L2 3IK15GN-CW2L2	**3GN□KF**	0.26	0.31	0.43	0.51	0.64	0.77	1.1	1.3	1.5	1.9	2.3	2.8	3.5	4.2	5	5	5	5	5	5
3IK15GN-SW2L	**3GN□KF**	0.24	0.29	0.41	0.49	0.61	0.73	1.0	1.2	1.5	1.8	2.2	2.6	3.3	4.0	5	5	5	5	5	5
4IK25GN-AW2L2 4IK25GN-CW2L2	**4GN□KF**	0.41	0.50	0.69	0.83	1.0	1.2	1.7	2.1	2.5	3.1	3.7	4.5	5.6	6.7	8	8	8	8	8	8
4IK25GN-SW2L	**4GN□KF**	0.39	0.47	0.65	0.78	0.97	1.2	1.6	1.9	2.3	2.9	3.5	4.2	5.3	6.3	7.9	8	8	8	8	8
5IK40GN-AW2L2 5IK40GN-CW2L2 5IK40GN-SW2L	**5GN□KF**	0.63	0.76	1.1	1.3	1.6	1.9	2.6	3.2	3.8	4.7	5.7	6.8	8.6	10	10	10	10	10	10	10
5IK60GE-AW2L2 5IK60GE-CW2L2	**5GE□KBF**	0.98	1.2	1.6	2.0	2.5	3.0	3.7	4.4	5.3	6.7	8.0	9.6	13.4	16.0	17.9	20	20	20	20	20
5IK60GE-SW2L	**5GE□KBF**	0.92	1.1	1.5	1.8	2.3	2.8	3.5	4.2	5.0	6.3	7.5	9.0	12.5	15.0	16.8	20	20	20	20	20
5IK90GE-AW2L2	**5GE□KBF**	1.4	1.7	2.4	2.8	3.6	4.3	5.3	6.4	7.7	9.7	11.6	13.9	19.3	20	20	20	20	20	20	20
5IK90GE-CW2L2	**5GE□KBF**	1.5	1.8	2.5	2.9	3.7	4.4	5.5	6.6	7.9	10.0	12.0	14.4	20	20	20	20	20	20	20	20
5IK90GE-SW2L	**5GE□KBF**	1.4	1.7	2.3	2.8	3.5	4.2	5.2	6.2	7.5	9.4	11.3	13.5	18.8	20	20	20	20	20	20	20

Dimensions (Unit = mm)

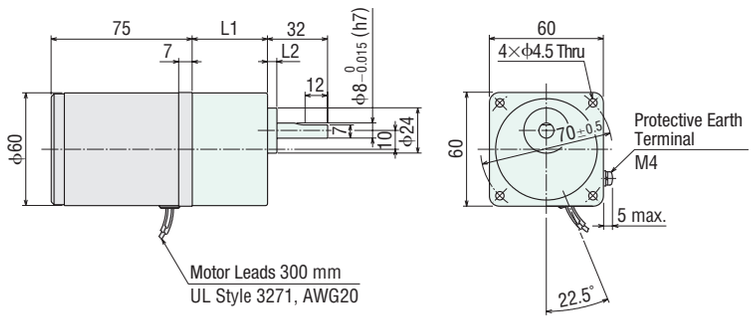
- Mounting screws are included with gearheads.
- A number indicating the gear ratio is entered where the box □ is located within the product name.

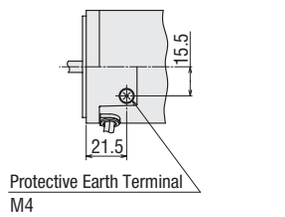
6 W

◇Motor/Gearhead

Mass: Motor 0.7 kg
Gearhead 0.4 kg

Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2	CAD
2IK6GN-AW2L2 **2IK6GN-CW2L2** **2IK6GN-SW2L**	**2GN□KF**	**3~18**	30	3	A586A
		25~180	40		A586B





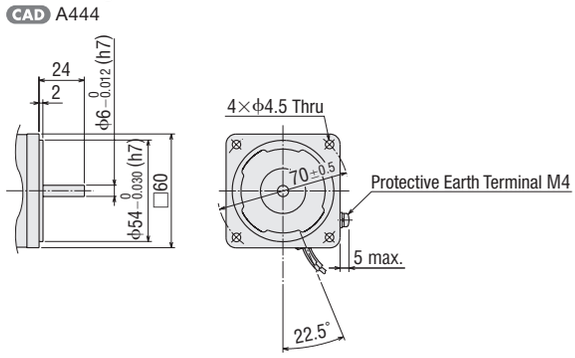
Detail Drawing of Protective Earth Terminal

◇Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 0.7 kg

CAD A444



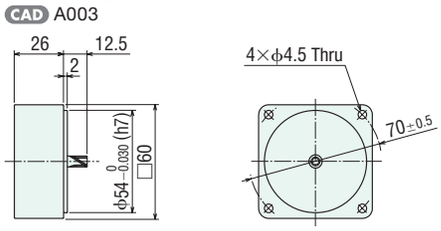
◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

2GN10XKF

Mass: 0.2 kg

CAD A003

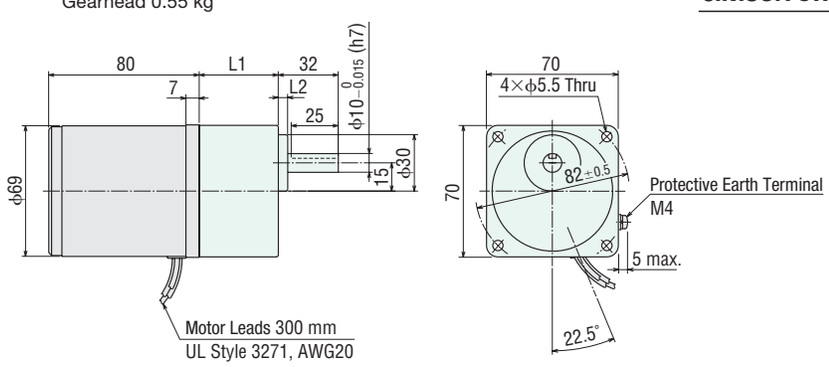


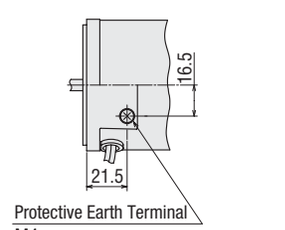
15 W

◇Motor/Gearhead

Mass: Motor 1.1 kg
Gearhead 0.55 kg

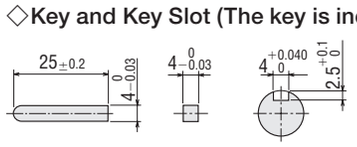
Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2	CAD
3IK15GN-AW2L2 **3IK15GN-CW2L2** **3IK15GN-SW2L**	**3GN□KF**	**3~18**	32	3	A590A
		25~180	42		A590B





Detail Drawing of Protective Earth Terminal

◇Key and Key Slot (The key is included with the gearhead.)

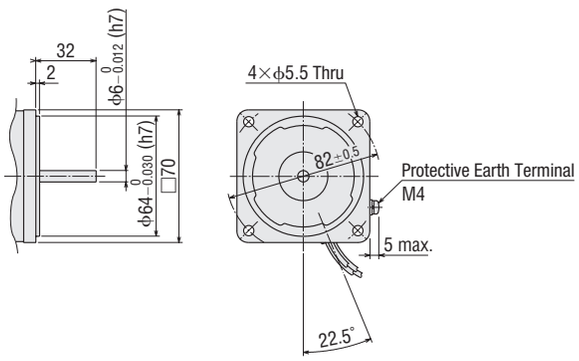


◇Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 1.1 kg

CAD A448



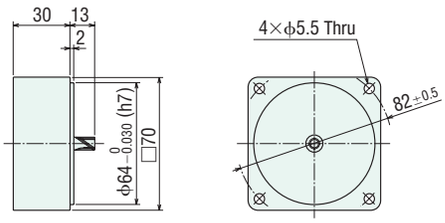
◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

3GN10XKF

Mass: 0.3 kg

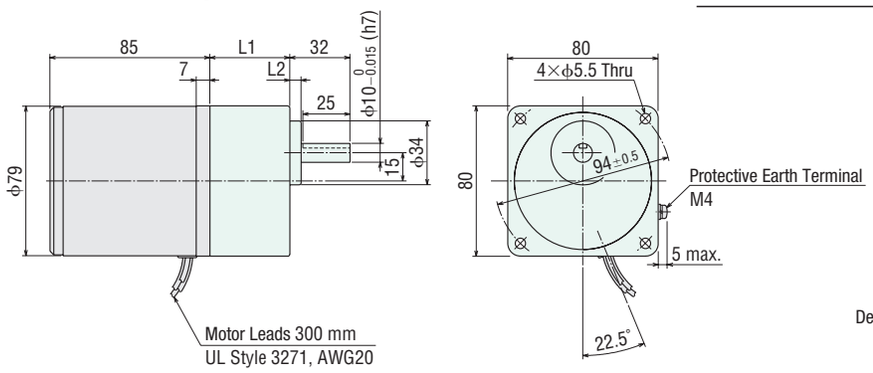
CAD A009



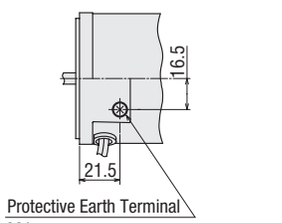
●25 W

◇Motor/Gearhead

Mass: Motor 1.5 kg
Gearhead 0.65 kg

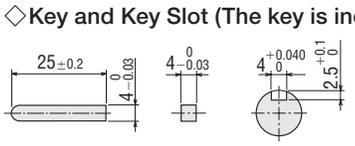


Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2	CAD
4IK25GN-AW2L2 **4IK25GN-CW2L2** **4IK25GN-SW2L**	**4GN□KF**	**3**～**18**	32	3	A592A
		25～**180**	42.5		A592B



Detail Drawing of Protective Earth Terminal

◇Key and Key Slot (The key is included with the gearhead.)

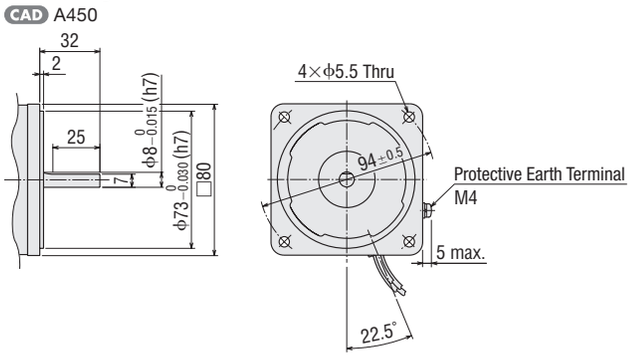


◇Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 1.5 kg

CAD A450



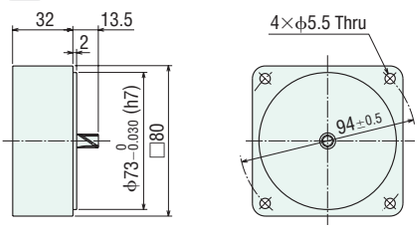
◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

4GN10XKF

Mass: 0.4 kg

CAD A013

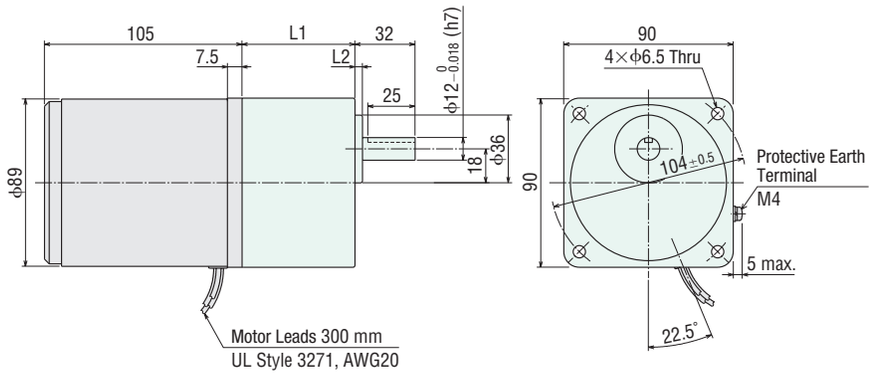


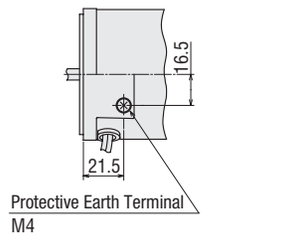
40 W

Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2	CAD
5IK40GN-AW2L2 **5IK40GN-CW2L2** **5IK40GN-SW2L**	**5GN□KF**	**3~18**	42	3	A596A
		25~180	60		A596B

◇Motor/Gearhead

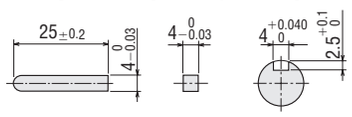
Mass: Motor 2.5 kg
Gearhead 1.5 kg





Detail Drawing of Protective Earth Terminal

◇Key and Key Slot (The key is included with the gearhead.)

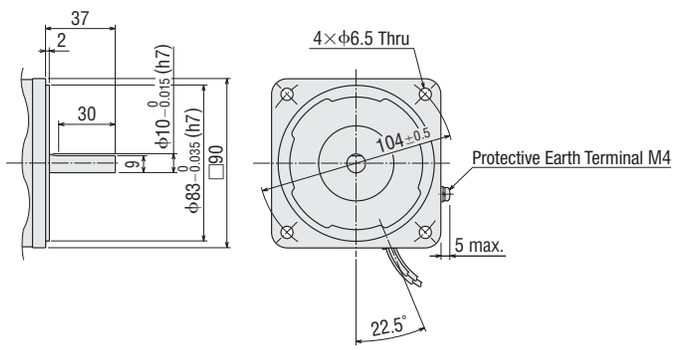


◇Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 2.5 kg

CAD A453



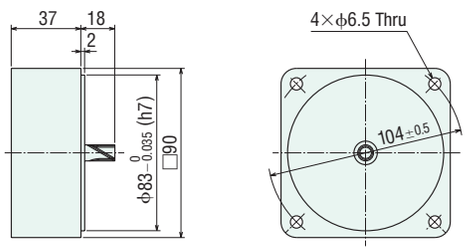
◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

5GN10XKF

Mass: 0.6 kg

CAD A022

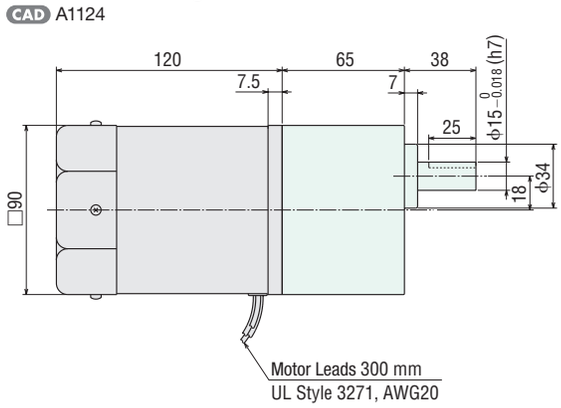


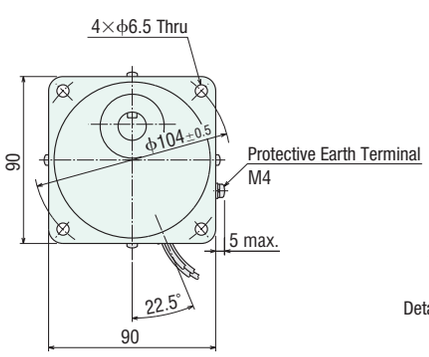
60 W

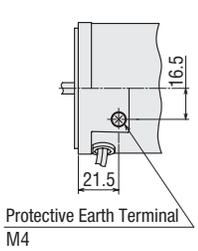
◇Motor/Gearhead

Mass: Motor 2.7 kg
Gearhead 1.5 kg

CAD A1124

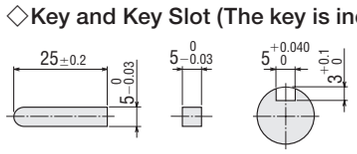






Detail Drawing of Protective Earth Terminal

◇Key and Key Slot (The key is included with the gearhead.)

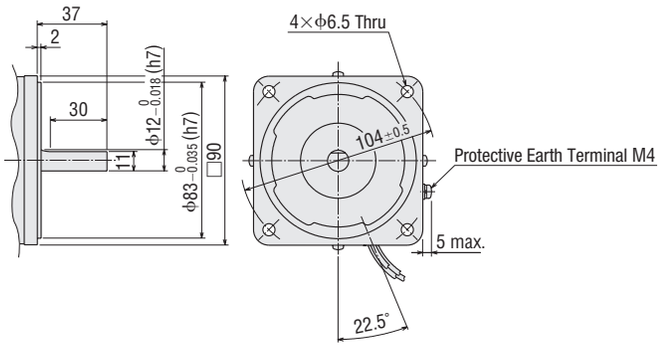


◇Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 2.7 kg

CAD A456



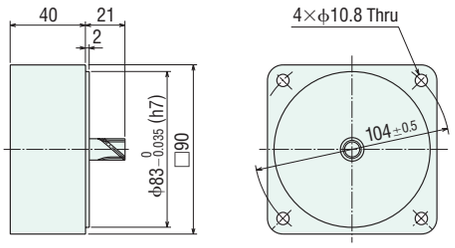
◇Decimal Gearhead

This can be attached to the **GE** pinion shaft type.

5GE10XKBF

Mass: 0.6 kg

CAD A029

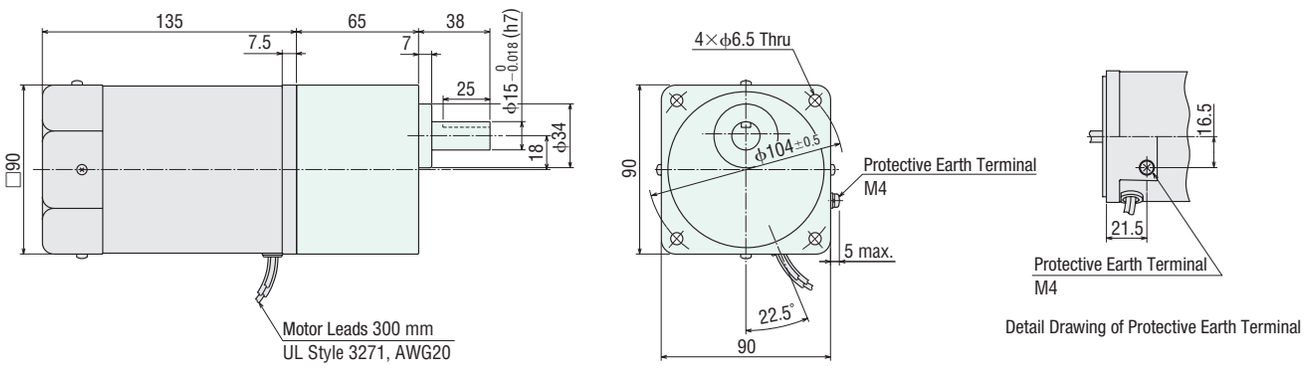


90 W

◇Motor/Gearhead

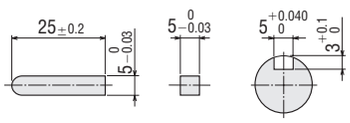
Mass: Motor 3.2 kg
Gearhead 1.5 kg

CAD A1126



Detail Drawing of Protective Earth Terminal

◇Key and Key Slot (The key is included with the gearhead.)

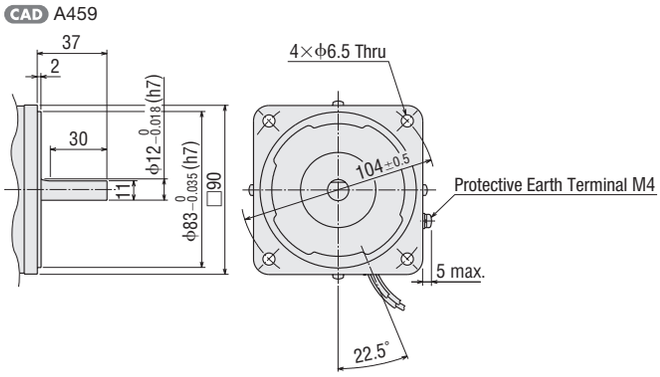


◇Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 3.2 kg

CAD A459



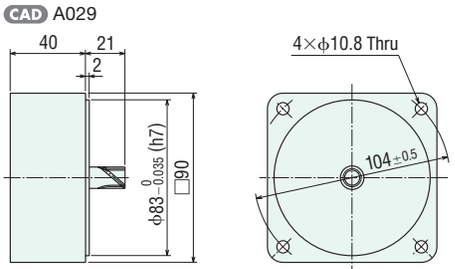
◇Decimal Gearhead

This can be attached to the **GE** pinion shaft type.

5GE10XKBF

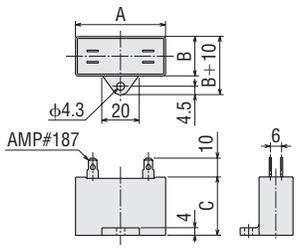
Mass: 0.6 kg

CAD A029

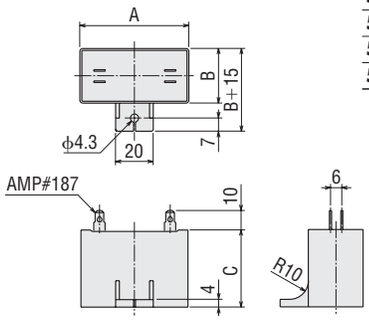


Capacitor (Included)

Dimensions No. ①



Dimensions No. ②

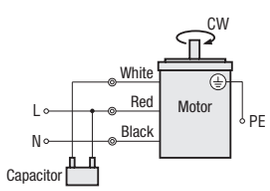
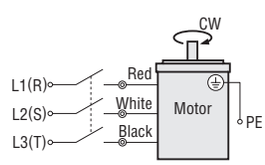
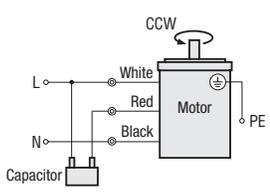


◇Capacitor Dimensions (mm)

Product Name		Capacitor Product Name	A	B	C	Mass (g)	Dimensions No.	Capacitor Cap
Pinion Shaft Type	Round Shaft Type							
2IK6GN-AW2L2	**2IK6A-AW2L2**	CH25FAUL2	31	17	27	21	①	Included
2IK6GN-CW2L2	**2IK6A-CW2L2**	CH06BFAUL	31	14.5	23.5	18	①	
3IK15GN-AW2L2	**3IK15A-AW2L2**	CH45FAUL2	37	18	27	26	①	
3IK15GN-CW2L2	**3IK15A-CW2L2**	CH10BFAUL	37	18	27	27	①	
4IK25GN-AW2L2	**4IK25A-AW2L2**	CH65CFAUL2	48	19	29	35	①	
4IK25GN-CW2L2	**4IK25A-CW2L2**	CH15BFAUL	38	21	31	37	①	
5IK40GN-AW2L2	**5IK40A-AW2L2**	CH90CFAUL2	48	22.5	31.5	45	①	
5IK40GN-CW2L2	**5IK40A-CW2L2**	CH23BFAUL	48	21	31	43	①	
5IK60GE-AW2L2	**5IK60A-AW2L2**	CH180CFAUL2	58	29	41	92	②	
5IK60GE-CW2L2	**5IK60A-CW2L2**	CH40BFAUL	58	23.5	37	73	②	
5IK90GE-AW2L2	**5IK90A-AW2L2**	CH200CFAUL2	58	29	41	91	②	
5IK90GE-CW2L2	**5IK90A-CW2L2**	CH60BFAUL	58	29	41	92	②	

Connection Diagrams

The rotation direction of the motor is as viewed from the output shaft of the motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.

Lead Wire Type Single-Phase 110 VAC, Single-Phase 220/230 VAC	Lead Wire Type Three-Phase 200/220 VAC
Clockwise  	Clockwise 
Counterclockwise  	Counterclockwise To change the rotation direction to counterclockwise, switch any two connections between R, S and T.

Note

- Change the direction of single-phase motor rotation only after bringing the motor to a stop.
  If an attempt is made to change the rotation direction while the motor is rotating, the motor may ignore the reversing command or change its rotation direction after some delay.

World K Series
Conforms to Power Supply Voltages in Asia

Reversible Motors

Gearhead shown in the photograph is sold separately

Product Line

Motors RoHS

Output Power	Power Supply Voltage	Product Name	
		Pinion Shaft Type	Round Shaft Type
6 W	Single-Phase 110 VAC	**2RK6GN-AW2L2**	**2RK6A-AW2L2**
	Single-Phase 220/230 VAC	**2RK6GN-CW2L2**	**2RK6A-CW2L2**
15 W	Single-Phase 110 VAC	**3RK15GN-AW2L2**	**3RK15A-AW2L2**
	Single-Phase 220/230 VAC	**3RK15GN-CW2L2**	**3RK15A-CW2L2**
25 W	Single-Phase 110 VAC	**4RK25GN-AW2L2**	**4RK25A-AW2L2**
	Single-Phase 220/230 VAC	**4RK25GN-CW2L2**	**4RK25A-CW2L2**
40 W	Single-Phase 110 VAC	**5RK40GN-AW2L2**	**5RK40A-AW2L2**
	Single-Phase 220/230 VAC	**5RK40GN-CW2L2**	**5RK40A-CW2L2**
60 W	Single-Phase 110 VAC	**5RK60GE-AW2L2**	**5RK60A-AW2L2**
	Single-Phase 220/230 VAC	**5RK60GE-CW2L2**	**5RK60A-CW2L2**
90 W	Single-Phase 110 VAC	**5RK90GE-AW2L2**	**5RK90A-AW2L2**
	Single-Phase 220/230 VAC	**5RK90GE-CW3L2**	**5RK90A-CW3L2**

The following items are included in each product.
Motor, Capacitor, Capacitor Cap, Operating Manual

Parallel Shaft Gearheads (Sold separately) RoHS

Applicable Motor Output Power (Pinion shaft)	Gearhead Product Name	Gear Ratio
6 W	**2GN□KF**	**3～180**
	2GN10XKF (Decimal gearhead)	
15 W	**3GN□KF**	**3～180**
	3GN10XKF (Decimal gearhead)	
25 W	**4GN□KF**	**3～180**
	4GN10XKF (Decimal gearhead)	
40 W	**5GN□KF**	**3～180**
	5GN10XKF (Decimal gearhead)	
60 W 90 W	**5GE□KBF**	**3～180**
	5GE10XKBF (Decimal gearhead)	

●A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.

The following items are included in each product.
Gearhead, Mounting Screws, Parallel Key*, Operating Manual
*Only for products with a key slot on the output shaft

Specifications – 30 Minutes Rating RoHS

6 W to 25 W

Product Name and Type Lead Wire Type		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Pinion Shaft Type	Round Shaft Type	W	VAC	Hz	A	mN·m	mN·m	r/min	μF
ZP **2RK6GN-AW2L2**	ZP **2RK6A-AW2L2**	6	Single-Phase 110	60	0.251	45	41	1450	3.5
ZP **2RK6GN-CW2L2**	ZP **2RK6A-CW2L2**	6	Single-Phase 220	50	0.113	45	49	1150	0.8
				60	0.117		41	1450	
			Single-Phase 230	50	0.117	50	49	1200	
TP **3RK15GN-AW2L2**	TP **3RK15A-AW2L2**	15	Single-Phase 110	60	0.41	100	105	1450	6.0
TP **3RK15GN-CW2L2**	TP **3RK15A-CW2L2**	15	Single-Phase 220	50	0.20	100	125	1200	1.5
				60	0.21		105	1450	
			Single-Phase 230	50	0.20		125	1200	
TP **4RK25GN-AW2L2**	TP **4RK25A-AW2L2**	25	Single-Phase 110	60	0.56	140	170	1450	8.0
TP **4RK25GN-CW2L2**	TP **4RK25A-CW2L2**	25	Single-Phase 220	50	0.29	140	205	1200	2.5
				60	0.35		170	1450	
			Single-Phase 230	50	0.30	160	205	1200	

●The rated torque and the starting torque of reversible motors are shown without the friction brake installed.
●The product name listed on the motor nameplate does not include the code (**2**) that indicates the type of capacitor.
Certification regarding various safety standards is acquired for the product name on the motor nameplate.

ZP: These products are impedance protected.
TP: This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

40 W to 90 W

Product Name and Type Lead Wire Type		Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Pinion Shaft Type	Round Shaft Type	W	VAC	Hz	A	mN·m	mN·m	r/min	μF
(TP) **5RK40GN-AW2L2**	(TP) **5RK40A-AW2L2**	40	Single-Phase 110	60	0.88	260	270	1450	12
(TP) **5RK40GN-CW2L2**	(TP) **5RK40A-CW2L2**	40	Single-Phase 220	50	0.43	270	315	1250	3.5
				60	0.48	260	260	1500	
			Single-Phase 230	50	0.43	270	315	1250	
(TP) **5RK60GE-AW2L2**	(TP) **5RK60A-AW2L2**	60	Single-Phase 110	60	1.27	380	405	1450	20
(TP) **5RK60GE-CW2L2**	(TP) **5RK60A-CW2L2**	60	Single-Phase 220	50	0.61	420	490	1200	5.0
				60	0.67	380	405	1450	
			Single-Phase 230	50	0.63	470	490	1200	
(TP) **5RK90GE-AW2L2**	(TP) **5RK90A-AW2L2**	90	Single-Phase 110	60	1.87	590	585	1500	30
(TP) **5RK90GE-CW3L2**	(TP) **5RK90A-CW3L2**	90	Single-Phase 220	50	0.83	600	730	1200	7.0
				60	0.96	590	605	1450	
			Single-Phase 230	50	0.83	600	730	1200	

- The rated torque and the starting torque of reversible motors are shown without the friction brake installed.
- The product name listed on the motor nameplate does not include the code (**2**) that indicates the type of capacitor.
  Certification regarding various safety standards is acquired for the product name on the motor nameplate.

(ZP): These products are impedance protected.
(TP): This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

General Specifications

Item	Specifications
Insulation Resistance	The measured value is 100 MΩ or more when a 500 VDC megger is applied between the windings and the case after rated operation under normal ambient temperature and humidity.
Dielectric Strength	No abnormality is judged even with application of 1.5 kVAC at 50 Hz or 60 Hz between the windings and the case for 1 minute after rated operation under normal ambient temperature and humidity.
Temperature Rise	A gearhead or equivalent heat radiation plate* is connected and the winding temperature rise is measured at 80˚C or less using the resistance change method after rated operation under normal ambient temperature and humidity. For the 90 W type, a heat radiation plate that is 200×200 mm with a thickness of 5 mm is necessary even when the gearhead is attached.
Insulation Class	Class B (130˚C)
Overheat Protection	6 W type is impedance protected All other motors have built-in thermal protector (automatic return type) Open: 130±5˚C, Close: 85±20˚C
Operating Ambient Temperature	−10～+40˚C (non-freezing)
Operating Ambient Humidity	85% or less (non-condensing)
Degree of Protection	IP20

*Heat radiation plate size (Material: Aluminum)

Motor Type	Size (mm)	Thickness (mm)
6 W Type	115×115	5
15 W Type	125×125	
25 W Type	135×135	
40 W Type	165×165	
60 W Type	200×200	
90 W Type	200×200	10

Permissible Torque When Gearhead is Attached

- A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.
- A colored background ▭ indicates gear shaft rotation in the same direction as the motor shaft. Others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 to 20% less than the displayed value, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor.
  In that case, the permissible torques are as follows:
  2GN□KF: 3 N·m, **3GN□KF**: 5 N·m, **4GN□KF**: 8 N·m (6 N·m when a gearhead of 1/25 to 1/36 is attached)
  5GN□KF: 10 N·m, **5GE□KBF**: 20 N·m

◇50 Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
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**
2RK6GN-CW2L2	**2GN□KF**	0.12	0.14	0.20	0.24	0.30	0.36	0.50	0.60	0.71	0.89	1.1	1.3	1.6	1.9	2.4	2.9	3	3	3	3
3RK15GN-CW2L2	**3GN□KF**	0.30	0.36	0.51	0.61	0.76	0.91	1.3	1.5	1.8	2.3	2.7	3.3	4.1	5	5	5	5	5	5	5
4RK25GN-CW2L2	**4GN□KF**	0.50	0.60	0.83	1.0	1.2	1.5	2.1	2.5	3.0	3.7	4.5	5.4	6.8	8	8	8	8	8	8	8
5RK40GN-CW2L2	**5GN□KF**	0.77	0.92	1.3	1.5	1.9	2.3	3.2	3.8	4.6	5.7	6.9	8.3	10	10	10	10	10	10	10	10
5RK60GE-CW2L2	**5GE□KBF**	1.2	1.4	2.0	2.4	3.0	3.6	4.5	5.4	6.4	8.1	9.7	11.6	16.2	19.4	20	20	20	20	20	20
5RK90GE-CW3L2	**5GE□KBF**	1.8	2.1	3.0	3.5	4.4	5.3	6.7	8.0	9.6	12.0	14.5	17.3	20	20	20	20	20	20	20	20

◇60 Hz

Unit = N·m

Product Name	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**
2RK6GN-AW2L2 2RK6GN-CW2L2	**2GN□KF**	0.10	0.12	0.17	0.20	0.25	0.30	0.42	0.50	0.60	0.75	0.90	1.1	1.4	1.6	2.0	2.4	2.7	3	3	3
3RK15GN-AW2L2 3RK15GN-CW2L2	**3GN□KF**	0.26	0.31	0.43	0.51	0.64	0.77	1.1	1.3	1.5	1.9	2.3	2.8	3.5	4.2	5	5	5	5	5	5
4RK25GN-AW2L2 4RK25GN-CW2L2	**4GN□KF**	0.41	0.50	0.69	0.83	1.0	1.2	1.7	2.1	2.5	3.1	3.7	4.5	5.6	6.7	8	8	8	8	8	8
5RK40GN-AW2L2	**5GN□KF**	0.66	0.79	1.1	1.3	1.6	2.0	2.7	3.3	3.9	4.9	5.9	7.1	8.9	10	10	10	10	10	10	10
5RK40GN-CW2L2	**5GN□KF**	0.63	0.76	1.1	1.3	1.6	1.9	2.6	3.2	3.8	4.7	5.7	6.8	8.6	10	10	10	10	10	10	10
5RK60GE-AW2L2 5RK60GE-CW2L2	**5GE□KBF**	0.98	1.2	1.6	2.0	2.5	3.0	3.7	4.4	5.3	6.7	8.0	9.6	13.4	16.0	17.9	20	20	20	20	20
5RK90GE-AW2L2	**5GE□KBF**	1.4	1.7	2.4	2.8	3.6	4.3	5.3	6.4	7.7	9.7	11.6	13.9	19.3	20	20	20	20	20	20	20
5RK90GE-CW3L2	**5GE□KBF**	1.5	1.8	2.5	2.9	3.7	4.4	5.5	6.6	7.9	10.0	12.0	14.4	20	20	20	20	20	20	20	20

Dimensions (Unit = mm)

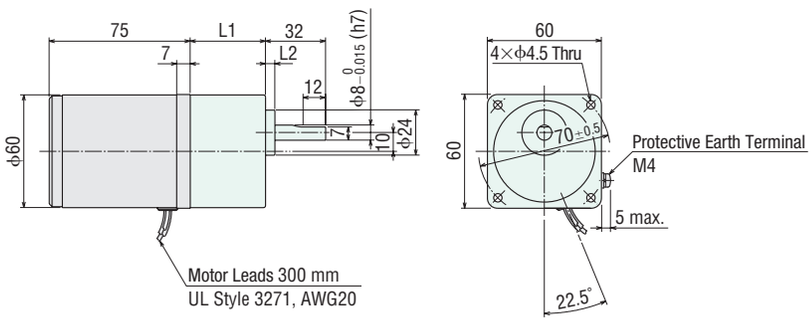
- Mounting screws are included with gearheads.
- A number indicating the gear ratio is entered where the box □ is located within the product name.

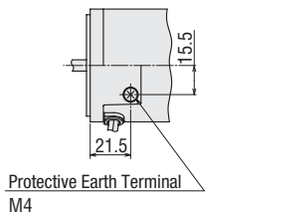
6 W

◇Motor/Gearhead

Mass: Motor 0.7 kg
Gearhead 0.4 kg

Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2	CAD
2RK6GN-AW2L2	**2GN□KF**	**3~18**	30	3	A586A
2RK6GN-CW2L2		**25~180**	40		A586B





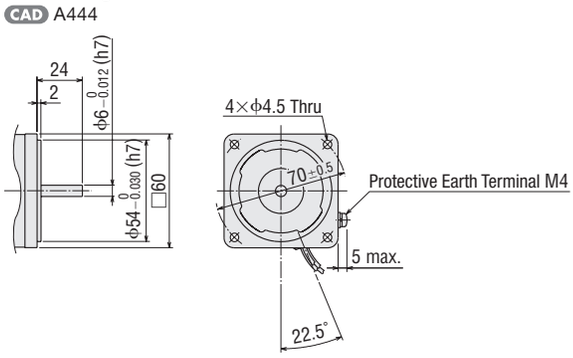
Detail Drawing of Protective Earth Terminal

◇Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 0.7 kg

CAD A444



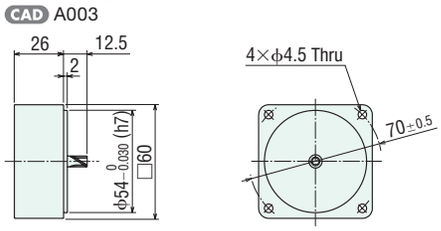
◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

2GN10XKF

Mass: 0.2 kg

CAD A003

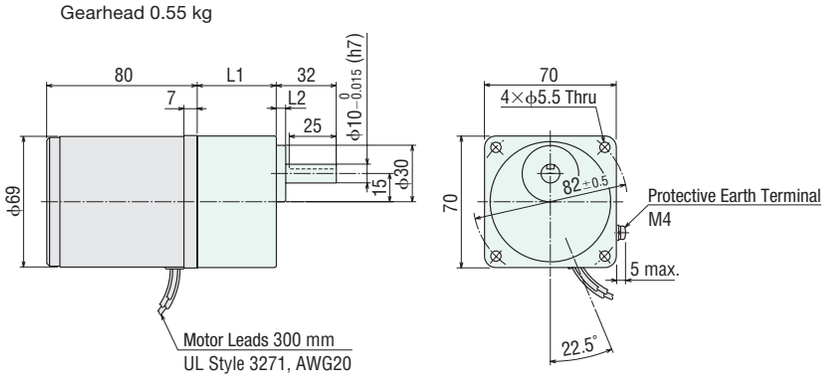


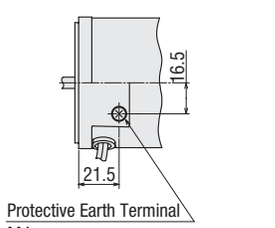
15 W

◇Motor/Gearhead

Mass: Motor 1.1 kg
Gearhead 0.55 kg

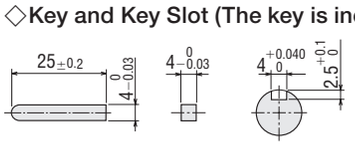
Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2	CAD
3RK15GN-AW2L2	**3GN□KF**	**3~18**	32	3	A590A
3RK15GN-CW2L2		**25~180**	42		A590B





Detail Drawing of Protective Earth Terminal

◇Key and Key Slot (The key is included with the gearhead.)

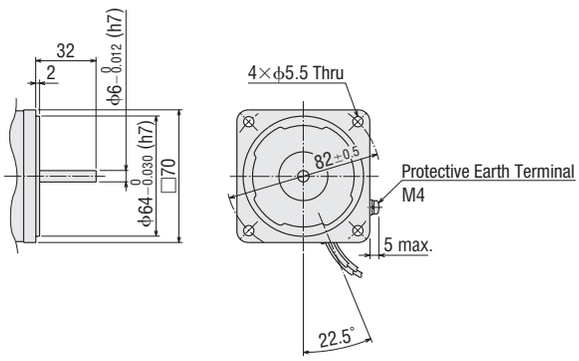


◇Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 1.1 kg

CAD A448



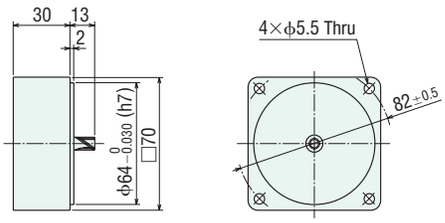
◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

3GN10XKF

Mass: 0.3 kg

CAD A009

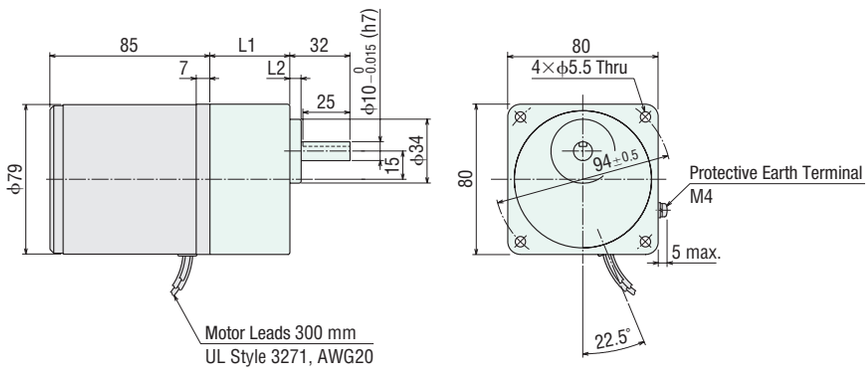


●25 W

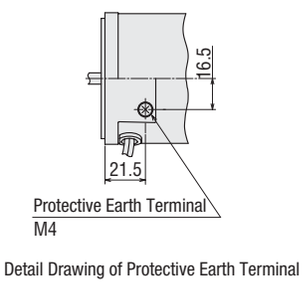
◇Motor/Gearhead

Mass: Motor 1.5 kg

Gearhead 0.65 kg

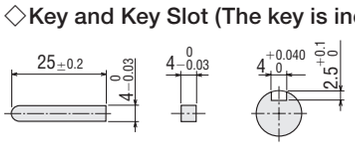


Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2	CAD
4RK25GN-AW2L2	**4GN□KF**	**3~18**	32	3	A592A
4RK25GN-CW2L2		**25~180**	42.5		A592B



Detail Drawing of Protective Earth Terminal

◇Key and Key Slot (The key is included with the gearhead.)

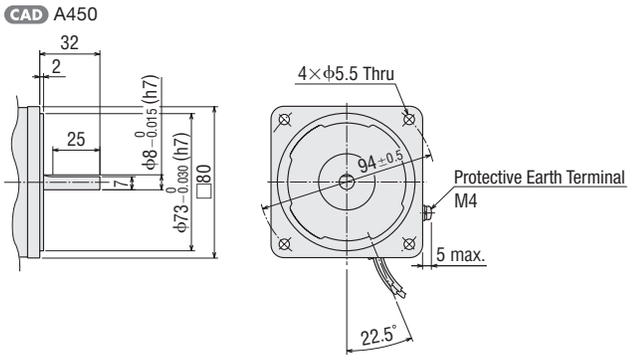


◇Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 1.5 kg

CAD A450



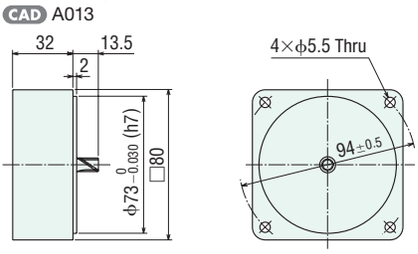
◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

4GN10XKF

Mass: 0.4 kg

CAD A013

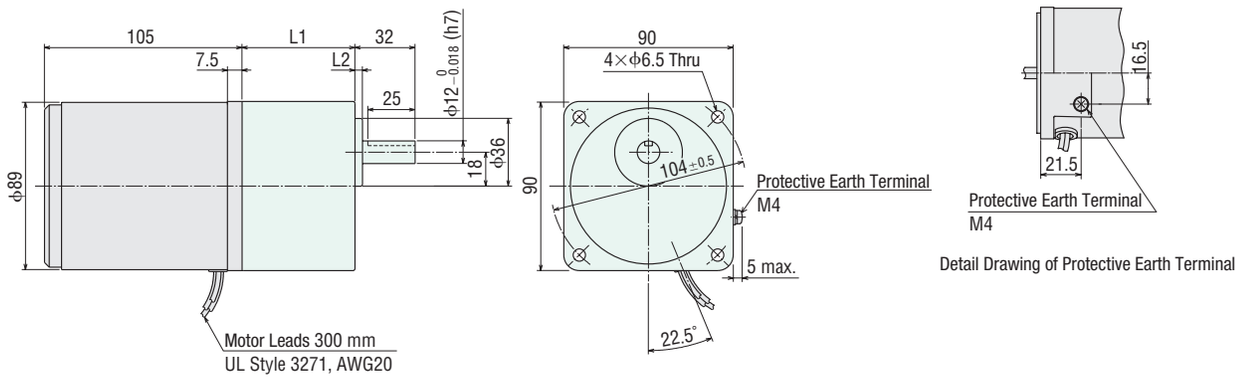


40 W

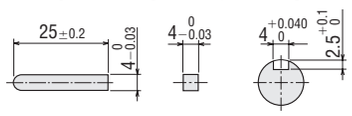
Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2	CAD
5RK40GN-AW2L2	**5GN□KF**	**3~18**	42	3	A596A
5RK40GN-CW2L2		**25~180**	60		A596B

◇Motor/Gearhead

Mass: Motor 2.5 kg
Gearhead 1.5 kg



◇Key and Key Slot (The key is included with the gearhead.)

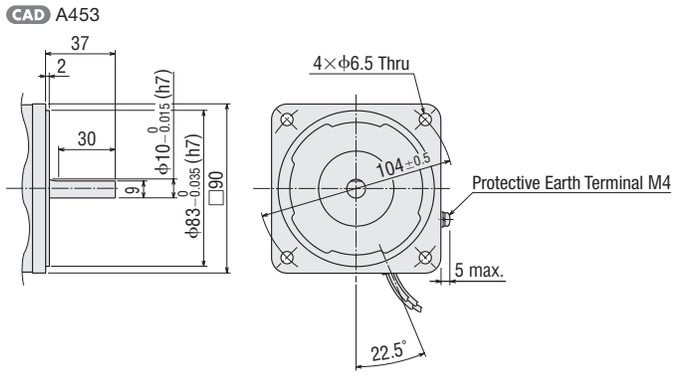


◇Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 2.5 kg

CAD A453



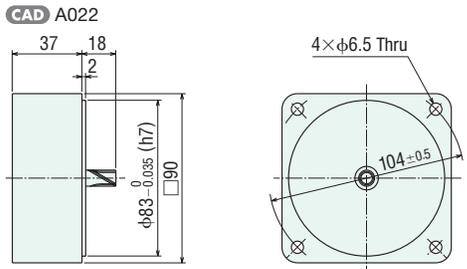
◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

5GN10XKF

Mass: 0.6 kg

CAD A022

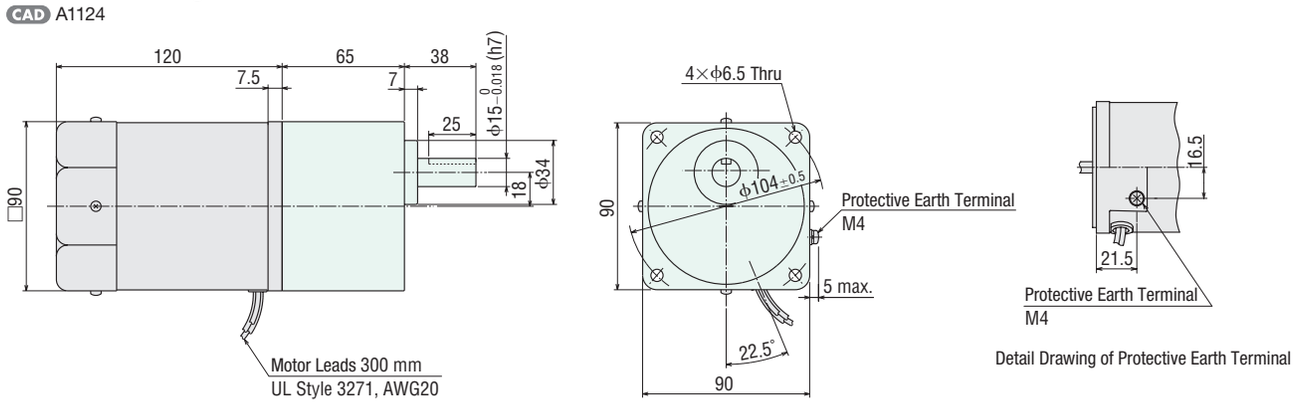


60 W

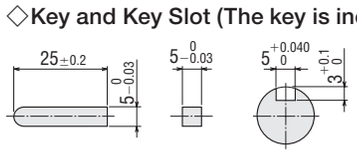
◇Motor/Gearhead

Mass: Motor 2.7 kg
Gearhead 1.5 kg

CAD A1124



◇Key and Key Slot (The key is included with the gearhead.)

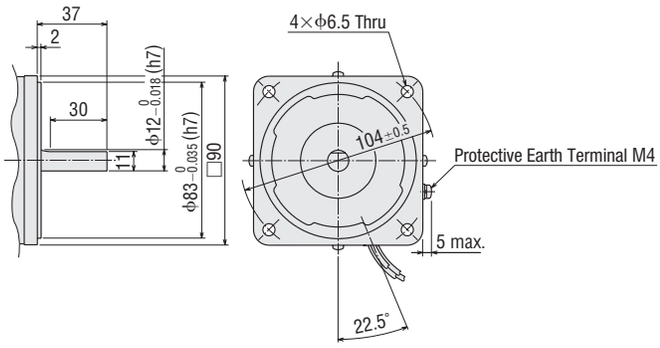


◇Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 2.7 kg

CAD A456



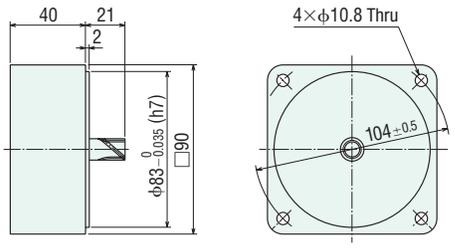
◇Decimal Gearhead

This can be attached to the **GE** pinion shaft type.

5GE10XKBF

Mass: 0.6 kg

CAD A029

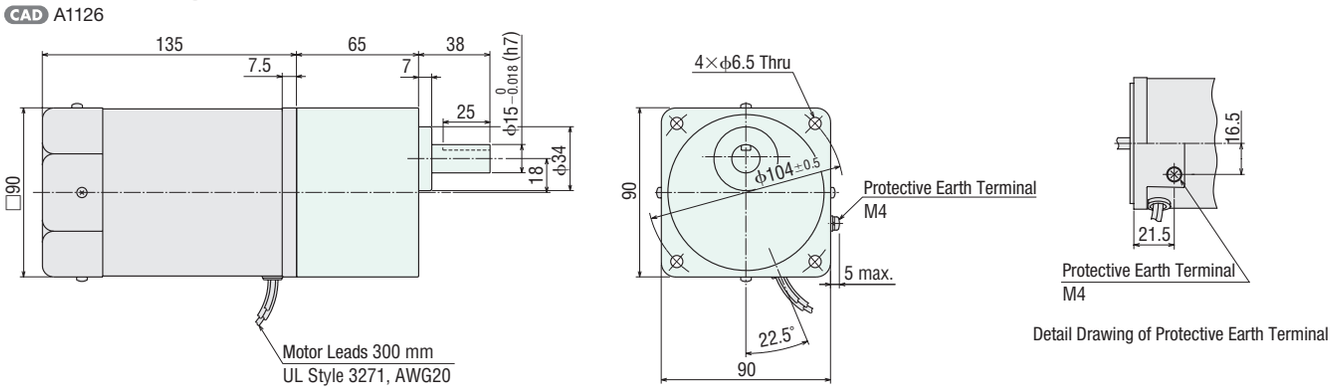


●90 W

◇Motor/Gearhead

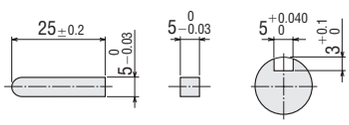
Mass: Motor 3.2 kg
Gearhead 1.5 kg

CAD A1126



Detail Drawing of Protective Earth Terminal

◇Key and Key Slot (The key is included with the gearhead.)

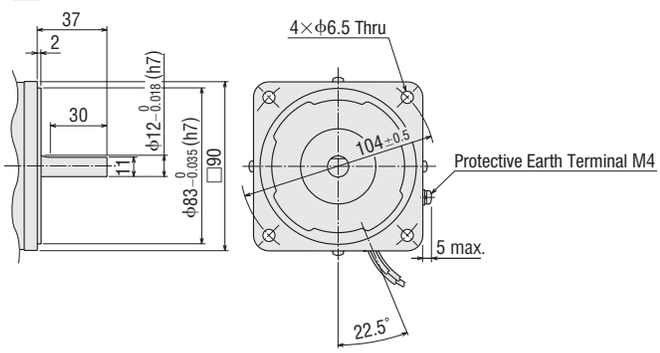


◇Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 3.2 kg

CAD A459



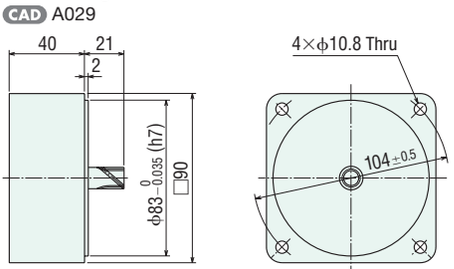
◇Decimal Gearhead

This can be attached to the **GE** pinion shaft type.

5GE10XKBF

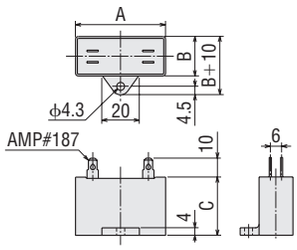
Mass: 0.6 kg

CAD A029

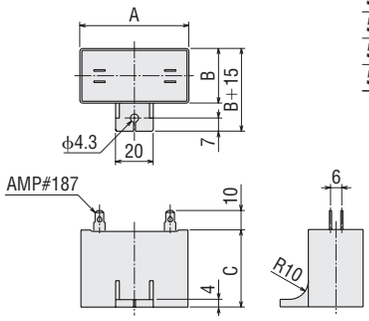


Capacitor (Included)

Dimensions No. ①



Dimensions No. ②



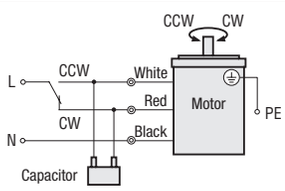
◇Capacitor Dimensions (mm)

Product Name		Capacitor Product Name	A	B	C	Mass (g)	Dimensions No.	Capacitor Cap
Pinion Shaft Type	Round Shaft Type							
2RK6GN-AW2L2	**2RK6A-AW2L2**	CH35FAUL2	31	17	27	22	①	Included
2RK6GN-CW2L2	**2RK6A-CW2L2**	CH08BFAUL	31	17	27	23	①	
3RK15GN-AW2L2	**3RK15A-AW2L2**	CH60CFAUL2	38	21	31	35	①	
3RK15GN-CW2L2	**3RK15A-CW2L2**	CH15BFAUL	38	21	31	37	①	
4RK25GN-AW2L2	**4RK25A-AW2L2**	CH80CFAUL2	48	21	31	41	①	
4RK25GN-CW2L2	**4RK25A-CW2L2**	CH25BFAUL	48	21	31	42	①	
5RK40GN-AW2L2	**5RK40A-AW2L2**	CH120CFAUL2	58	22	35	60	①	
5RK40GN-CW2L2	**5RK40A-CW2L2**	CH35BFAUL	58	22	35	59	①	
5RK60GE-AW2L2	**5RK60A-AW2L2**	CH200CFAUL2	58	29	41	91	②	
5RK60GE-CW2L2	**5RK60A-CW2L2**	CH50BFAUL	58	29	41	93	②	
5RK90GE-AW2L2	**5RK90A-AW2L2**	CH300CFAUL2	58	35	50	140	②	
5RK90GE-CW3L2	**5RK90A-CW3L2**	CH70BFAUL	58	35	50	138	②	

Connection Diagrams

The rotation direction of the motor is as viewed from the output shaft of the motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.

Lead Wire Type
Single-Phase 110 VAC, Single-Phase 220/230 VAC



Clockwise:
To rotate the motor in the clockwise (CW) direction, turn the switch to CW.
Counterclockwise:
To rotate the motor in the counterclockwise (CCW) direction, turn the switch to CCW.

Note

Connect a CR circuit for surge suppression to the forward/reverse select switch to protect the contact.
EPCR1201-2 (sold separately) is available as an accessory. ➜ Page 31

World K Series
Conforms to Power Supply Voltages in Asia

Power Off Activated Type

Electromagnetic Brake Motors

Gearhead shown in the photograph is sold separately

Product Line

Motors RoHS

Output Power	Power Supply Voltage	Product Name	
		Pinion Shaft Type	Round Shaft Type
6 W	Single-Phase 110 VAC	**2RK6GN-AW2ML2**	**2RK6A-AW2ML2**
	Single-Phase 220/230 VAC	**2RK6GN-CW2ML2**	**2RK6A-CW2ML2**
	Three-Phase 200/220 VAC	**2IK6GN-SW2ML**	**2IK6A-SW2ML**
15 W	Single-Phase 110 VAC	**3RK15GN-AW2ML2**	**3RK15A-AW2ML2**
	Single-Phase 220/230 VAC	**3RK15GN-CW2ML2**	**3RK15A-CW2ML2**
	Three-Phase 200/220 VAC	**3IK15GN-SW2ML**	**3IK15A-SW2ML**
25 W	Single-Phase 110 VAC	**4RK25GN-AW2ML2**	**4RK25A-AW2ML2**
	Single-Phase 220 VAC (50 Hz)	**4RK25GN-CW2ML1**	**4RK25A-CW2ML1**
	Single-Phase 220 VAC (60 Hz) Single-Phase 230 VAC (50 Hz)	**4RK25GN-CW2ML2**	**4RK25A-CW2ML2**
	Three-Phase 200/220 VAC	**4IK25GN-SW2ML**	**4IK25A-SW2ML**
40 W	Single-Phase 110 VAC	**5RK40GN-AW2ML2**	**5RK40A-AW2ML2**
	Single-Phase 220 VAC (50 Hz)	**5RK40GN-CW2ML1**	**5RK40A-CW2ML1**
	Single-Phase 220 VAC (60 Hz) Single-Phase 230 VAC (50 Hz)	**5RK40GN-CW2ML2**	**5RK40A-CW2ML2**
	Three-Phase 200/220 VAC	**5IK40GN-SW2ML**	**5IK40A-SW2ML**
60 W	Single-Phase 110 VAC	**5RK60GE-AW2ML2**	**5RK60A-AW2ML2**
	Single-Phase 220 VAC (50 Hz)	**5RK60GE-CW2ML1**	**5RK60A-CW2ML1**
	Single-Phase 220 VAC (60 Hz) Single-Phase 230 VAC (50 Hz)	**5RK60GE-CW2ML2**	**5RK60A-CW2ML2**
	Three-Phase 200/220 VAC	**5IK60GE-SW2ML**	**5IK60A-SW2ML**
90 W	Single-Phase 110 VAC	**5RK90GE-AW2ML2**	**5RK90A-AW2ML2**
	Single-Phase 220 VAC (50 Hz)	**5RK90GE-CW2ML1**	**5RK90A-CW2ML1**
	Single-Phase 220 VAC (60 Hz) Single-Phase 230 VAC (50 Hz)	**5RK90GE-CW2ML2**	**5RK90A-CW2ML2**
	Three-Phase 200/220 VAC	**5IK90GE-SW2ML**	**5IK90A-SW2ML**

The following items are included in each product.

Motor, Capacitor*, Capacitor Cap*, Operating Manual

*Single-phase motors only

Parallel Shaft Gearheads (Sold separately) RoHS

Applicable Motor Output Power (Pinion shaft)	Gearhead Product Name	Gear Ratio
6 W	**2GN□KF**	**3~180**
	2GN10XKF (Decimal gearhead)	
15 W	**3GN□KF**	**3~180**
	3GN10XKF (Decimal gearhead)	
25 W	**4GN□KF**	**3~180**
	4GN10XKF (Decimal gearhead)	
40 W	**5GN□KF**	**3~180**
	5GN10XKF (Decimal gearhead)	
60 W 90 W	**5GE□KBF**	**3~180**
	5GE10XKBF (Decimal gearhead)	

●A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.

The following items are included in each product.

Gearhead, Mounting Screws, Parallel Key*, Operating Manual

*Only for products with a key slot on the output shaft

Specifications RoHS

Motors

Product Name and Type		Rating	Output Power	Voltage	Frequency	Current	Starting Torque	Rated Torque	Rated Speed	Capacitor
Pinion Shaft Type	Round Shaft Type		W	VAC	Hz	A	mN·m	mN·m	r/min	μF
ZP 2RK6GN-AW2ML2	ZP 2RK6A-AW2ML2	30 minutes	6	Single-Phase 110	60	0.235	45	41	1450	3.5
ZP 2RK6GN-CW2ML2	ZP 2RK6A-CW2ML2	30 minutes	6	Single-Phase 220	50	0.107	50	49	1150	0.8
					60	0.109	45	41	1450	
				Single-Phase 230	50	0.112	50	49	1200	
ZP 2IK6GN-SW2ML	ZP 2IK6A-SW2ML	Continuous	6	Three-Phase 200	60	0.072	41	41	1400	–
				Three-Phase 220		0.076			1500	
TP 3RK15GN-AW2ML2	TP 3RK15A-AW2ML2	30 minutes	15	Single-Phase 110	60	0.42	100	105	1450	6.0
TP 3RK15GN-CW2ML2	TP 3RK15A-CW2ML2	30 minutes	15	Single-Phase 220	50	0.18	100	125	1200	1.5
					60	0.20		105	1450	
				Single-Phase 230	50	0.19		125	1200	
TP 3IK15GN-SW2ML	TP 3IK15A-SW2ML2	Continuous	15	Three-Phase 200	60	0.15	85	100	1600	–
				Three-Phase 220		0.16	100		1650	
TP 4RK25GN-AW2ML2	TP 4RK25A-AW2ML2	30 minutes	25	Single-Phase 110	60	0.54	140	170	1450	8.0
TP 4RK25GN-CW2ML1	TP 4RK25A-CW2ML1	30 minutes	25	Single-Phase 220	50	0.27	160	205	1200	2.5
TP 4RK25GN-CW2ML2	TP 4RK25A-CW2ML2	30 minutes	25	Single-Phase 220	60	0.28	140	170	1450	2.0
				Single-Phase 230	50	0.25	160	205	1200	
TP 4IK25GN-SW2ML	TP 4IK25A-SW2ML	Continuous	25	Three-Phase 200	60	0.21	160	160	1550	–
				Three-Phase 220		0.20		150	1600	
TP 5RK40GN-AW2ML2	TP 5RK40A-AW2ML2	30 minutes	40	Single-Phase 110	60	0.81	260	270	1450	12
TP 5RK40GN-CW2ML1	TP 5RK40A-CW2ML1	30 minutes	40	Single-Phase 220	50	0.40	270	315	1250	4.0
TP 5RK40GN-CW2ML2	TP 5RK40A-CW2ML2	30 minutes	40	Single-Phase 220	60	0.43	260	260	1500	3.5
				Single-Phase 230	50	0.38	270	315	1250	
TP 5IK40GN-SW2ML	TP 5IK40A-SW2ML	Continuous	40	Three-Phase 200	60	0.30	260	260	1550	–
				Three-Phase 220					1600	
TP 5RK60GE-AW2ML2	TP 5RK60A-AW2ML2	30 minutes	60	Single-Phase 110	60	1.24	380	405	1450	20
TP 5RK60GE-CW2ML1	TP 5RK60A-CW2ML1	30 minutes	60	Single-Phase 220	50	0.61	470	490	1200	6.0
TP 5RK60GE-CW2ML2	TP 5RK60A-CW2ML2	30 minutes	60	Single-Phase 220	60	0.61	380	405	1450	5.0
				Single-Phase 230	50	0.59	470	490	1200	
TP 5IK60GE-SW2ML	TP 5IK60A-SW2ML	Continuous	60	Three-Phase 200	60	0.43	500	380	1550	–
				Three-Phase 220		0.45			1600	
TP 5RK90GE-AW2ML2	TP 5RK90A-AW2ML2	30 minutes	90	Single-Phase 110	60	1.81	590	585	1500	30
TP 5RK90GE-CW2ML1	TP 5RK90A-CW2ML1	30 minutes	90	Single-Phase 220	50	0.83	600	730	1200	8.0
TP 5RK90GE-CW2ML2	TP 5RK90A-CW2ML2	30 minutes	90	Single-Phase 220	60	0.96	590	605	1450	7.0
				Single-Phase 230	50	0.82	600	730	1200	
TP 5IK90GE-SW2ML	TP 5IK90A-SW2ML	Continuous	90	Three-Phase 200	60	0.59	700	570	1550	–
				Three-Phase 220		0.60			1600	

- The product name listed on the motor nameplate does not include the code (**1** or **2**) that indicates the type of capacitor.
  Certification regarding various safety standards is acquired for the product name on the motor nameplate.
- This type of motor does not contain a built-in friction brake mechanism similar to the reversible motors.

ZP: These products are impedance protected.

TP: This indicates that there is a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped.
(The power supply to the electromagnetic brake is maintained and the brake is released.)
When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

Electromagnetic Brake (Power off activated type)

Motor Product Name	Voltage VAC	Frequency Hz	Current A	Input W	Static Friction Torque mN·m
2RK6GN-AW2ML2 2RK6A-AW2ML2	Single-Phase 110	60	0.03	3	30
2RK6GN-CW2ML2 2RK6A-CW2ML2	Single-Phase 220	50	0.02	3	30
		60			
	Single-Phase 230	50			
2IK6GN-SW2ML 2IK6A-SW2ML	Single-Phase 200	60	0.02	3	30
	Single-Phase 220				
3RK15GN-AW2ML2 3RK15A-AW2ML2	Single-Phase 110	60	0.09	7	80
3RK15GN-CW2ML2 3RK15A-CW2ML2	Single-Phase 220	50	0.05	7	80
		60			
	Single-Phase 230	50			
3IK15GN-SW2ML 3IK15A-SW2ML	Single-Phase 200	60	0.05	7	80
	Single-Phase 220				
4RK25GN-AW2ML2 4RK25A-AW2ML2	Single-Phase 110	60	0.09	6	100
4RK25GN-CW2ML1 4RK25A-CW2ML1	Single-Phase 220	50	0.05	7	100
4RK25GN-CW2ML2 4RK25A-CW2ML2	Single-Phase 220	60	0.05	7	100
	Single-Phase 230	50			
4IK25GN-SW2ML 4IK25A-SW2ML	Single-Phase 200	60	0.05	7	100
	Single-Phase 220				
5RK40GN-AW2ML2 5RK40A-AW2ML2	Single-Phase 110	60	0.09	6	200
5RK40GN-CW2ML1 5RK40A-CW2ML1	Single-Phase 220	50	0.05	7	200
5RK40GN-CW2ML2 5RK40A-CW2ML2	Single-Phase 220	60	0.05	7	200
	Single-Phase 230	50			
5IK40GN-SW2ML 5IK40A-SW2ML	Single-Phase 200	60	0.05	7	200
	Single-Phase 220				
5RK60GE-AW2ML2 5RK60A-AW2ML2	Single-Phase 110	60	0.13	10	500
5RK60GE-CW2ML1 5RK60A-CW2ML1	Single-Phase 220	50	0.07	10	500
5RK60GE-CW2ML2 5RK60A-CW2ML2	Single-Phase 220	60	0.07	10	500
	Single-Phase 230	50			
5IK60GE-SW2ML 5IK60A-SW2ML	Single-Phase 200	60	0.07	10	500
	Single-Phase 220				
5RK90GE-AW2ML2 5RK90A-AW2ML2	Single-Phase 110	60	0.13	10	500
5RK90GE-CW2ML1 5RK90A-CW2ML1	Single-Phase 220	50	0.07	10	500
5RK90GE-CW2ML2 5RK90A-CW2ML2	Single-Phase 220	60	0.07	10	500
	Single-Phase 230	50			
5IK90GE-SW2ML 5IK90A-SW2ML	Single-Phase 200	60	0.07	10	500
	Single-Phase 220				

General Specifications

Item	Specifications
Insulation Resistance	The measured value is 100 MΩ or more when a 500 VDC megger is applied between the windings and the case after rated operation under normal ambient temperature and humidity.
Dielectric Strength	No abnormality is judged even with application of 1.5 kVAC at 50 Hz or 60 Hz between the windings and the case for 1 minute after rated operation under normal ambient temperature and humidity.
Temperature Rise	A gearhead or equivalent heat radiation plate* is connected and the winding temperature rise is measured at 80˚C or less using the resistance change method after rated operation under normal ambient temperature and humidity. (Three-Phase Type: 70˚C or less)
Insulation Class	Class B (130˚C)
Overheat Protection	6 W type is impedance protected All other motors have built-in thermal protector (automatic return type) Open: 130±5˚C, Close: 85±20˚C
Operating Ambient Temperature	Three-Phase 200 VAC: −10～+50˚C (non-freezing) Other voltages: −10～+40˚C (non-freezing)
Operating Ambient Humidity	85% or less (non-condensing)
Degree of Protection	6 W, 15 W, 25 W, 40 W Type: IP20 60 W, 90 W Type: IP40

* Heat radiation plate size (Material: Aluminum)

Motor Type	Size (mm)	Thickness (mm)
6 W Type	115×115	5
15 W Type	125×125	
25 W Type	135×135	
40 W Type	165×165	
60 W, 90 W Type	200×200	

Permissible Torque When Gearhead is Attached

- A number indicating the gear ratio is entered where the box □ is located within the gearhead product name.
- A colored background ▭ indicates gear shaft rotation in the same direction as the motor shaft. Others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 to 20% less than the displayed value, depending on the load.
- To reduce the speed beyond the gear ratio in the table, attach a decimal gearhead of gear ratio 1:10 between the gearhead and the motor.
  In that case, the permissible torques are as follows:
  2GN□KF: 3 N·m, **3GN□KF**: 5 N·m, **4GN□KF**: 8 N·m (6 N·m when a gearhead of 1/25 to 1/36 is attached)
  5GN□KF: 10 N·m, **5GE□KBF**: 20 N·m

◇50 Hz

Unit = N·m

Product Name	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
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**
2RK6GN-CW2ML2	**2GN□KF**	0.12	0.14	0.20	0.24	0.30	0.36	0.50	0.60	0.71	0.89	1.1	1.3	1.6	1.9	2.4	2.9	3	3	3	3
3RK15GN-CW2ML2	**3GN□KF**	0.30	0.36	0.51	0.61	0.76	0.91	1.3	1.5	1.8	2.3	2.7	3.3	4.1	5	5	5	5	5	5	5
4RK25GN-CW2ML1 **4RK25GN-CW2ML2**	**4GN□KF**	0.50	0.60	0.83	1.0	1.2	1.5	2.1	2.5	3.0	3.7	4.5	5.4	6.8	8	8	8	8	8	8	8
5RK40GN-CW2ML1 **5RK40GN-CW2ML2**	**5GN□KF**	0.77	0.92	1.3	1.5	1.9	2.3	3.2	3.8	4.6	5.7	6.9	8.3	10	10	10	10	10	10	10	10
5RK60GE-CW2ML1 **5RK60GE-CW2ML2**	**5GE□KBF**	1.2	1.4	2.0	2.4	3.0	3.6	4.5	5.4	6.4	8.1	9.7	11.6	16.2	19.4	20	20	20	20	20	20
5RK90GE-CW2ML1 **5RK90GE-CW2ML2**	**5GE□KBF**	1.8	2.1	3.0	3.5	4.4	5.3	6.7	8.0	9.6	12.0	14.5	17.3	20	20	20	20	20	20	20	20

◇60 Hz

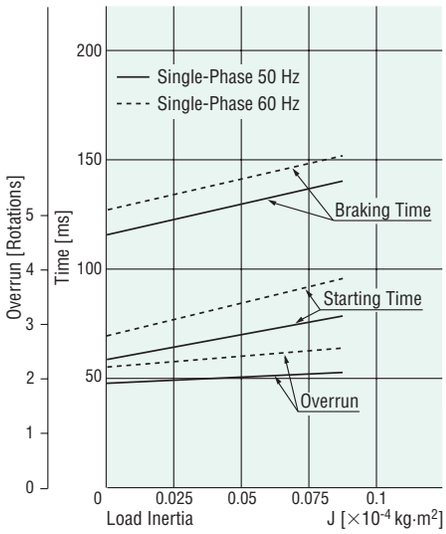
Unit = N·m

Product Name	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**
2RK6GN-AW2ML2 **2RK6GN-CW2ML2** **2IK6GN-SW2ML**	**2GN□KF**	0.10	0.12	0.17	0.20	0.25	0.30	0.42	0.50	0.60	0.75	0.90	1.1	1.4	1.6	2.0	2.4	2.7	3	3	3
3RK15GN-AW2ML2 **3RK15GN-CW2ML2**	**3GN□KF**	0.26	0.31	0.43	0.51	0.64	0.77	1.1	1.3	1.5	1.9	2.3	2.8	3.5	4.2	5	5	5	5	5	5
3IK15GN-SW2ML	**3GN□KF**	0.24	0.29	0.41	0.49	0.61	0.73	1.0	1.2	1.5	1.8	2.2	2.6	3.3	4.0	5	5	5	5	5	5
4RK25GN-AW2ML2 **4RK25GN-CW2ML2**	**4GN□KF**	0.41	0.50	0.69	0.83	1.0	1.2	1.7	2.1	2.5	3.1	3.7	4.5	5.6	6.7	8	8	8	8	8	8
4IK25GN-SW2ML (200 VAC)	**4GN□KF**	0.39	0.47	0.65	0.78	0.97	1.2	1.6	1.9	2.3	2.9	3.5	4.2	5.3	6.3	7.9	8	8	8	8	8
4IK25GN-SW2ML (220 VAC)	**4GN□KF**	0.36	0.44	0.61	0.73	0.91	1.1	1.5	1.8	2.2	2.7	3.3	3.9	5.0	5.9	7.4	8	8	8	8	8
5RK40GN-AW2ML2	**5GN□KF**	0.66	0.79	1.1	1.3	1.6	2.0	2.7	3.3	3.9	4.9	5.9	7.1	8.9	10	10	10	10	10	10	10
5RK40GN-CW2ML2 **5IK40GN-SW2ML**	**5GN□KF**	0.63	0.76	1.1	1.3	1.6	1.9	2.6	3.2	3.8	4.7	5.7	6.8	8.6	10	10	10	10	10	10	10
5RK60GE-AW2ML2 **5RK60GE-CW2ML2**	**5GE□KBF**	0.98	1.2	1.6	2.0	2.5	3.0	3.7	4.4	5.3	6.7	8.0	9.6	13.4	16.0	17.9	20	20	20	20	20
5IK60GE-SW2ML	**5GE□KBF**	0.92	1.1	1.5	1.8	2.3	2.8	3.5	4.2	5.0	6.3	7.5	9.0	12.5	15.0	16.8	20	20	20	20	20
5RK90GE-AW2ML2	**5GE□KBF**	1.4	1.7	2.4	2.8	3.6	4.3	5.3	6.4	7.7	9.7	11.6	13.9	19.3	20	20	20	20	20	20	20
5RK90GE-CW2ML2	**5GE□KBF**	1.5	1.8	2.5	2.9	3.7	4.4	5.5	6.6	7.9	10.0	12.0	14.4	20	20	20	20	20	20	20	20
5IK90GE-SW2ML	**5GE□KBF**	1.4	1.7	2.3	2.8	3.5	4.2	5.2	6.2	7.5	9.4	11.3	13.5	18.8	20	20	20	20	20	20	20

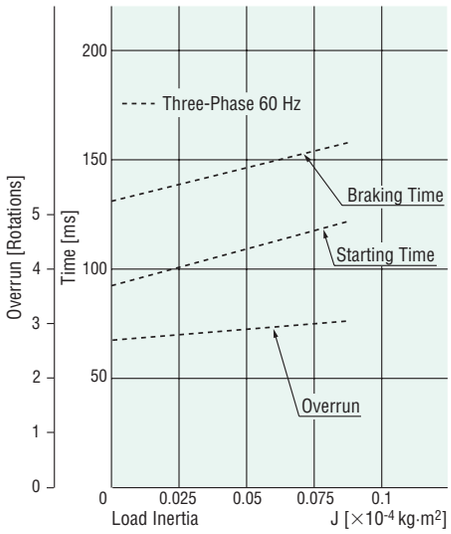
Starting and Braking Characteristics (Reference values)

6 W

◇Single-Phase Motor

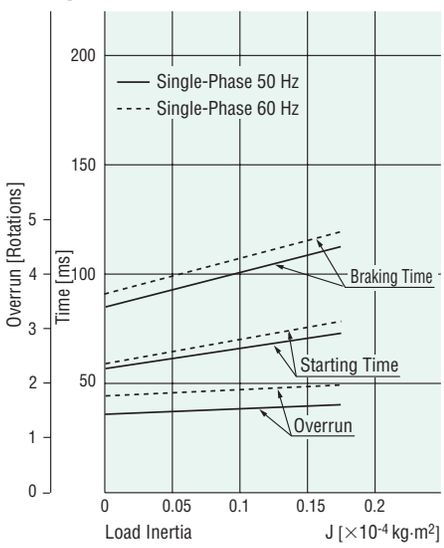


◇Three-Phase Motor

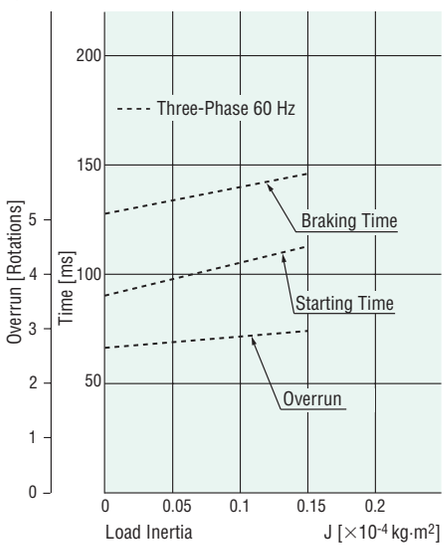


15 W

◇Single-Phase Motor

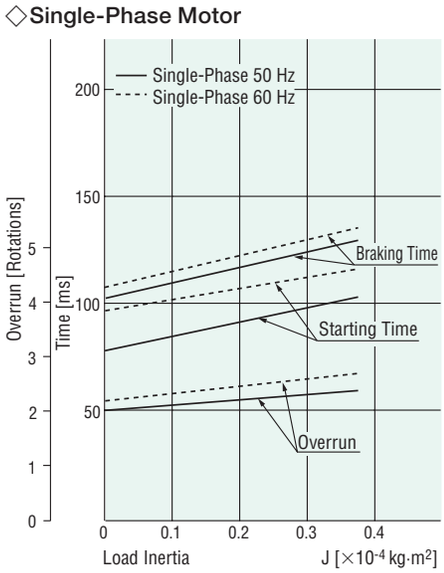


◇Three-Phase Motor

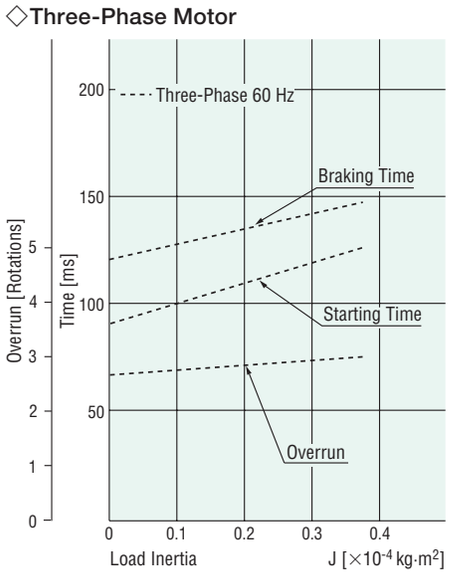


25 W

◇Single-Phase Motor

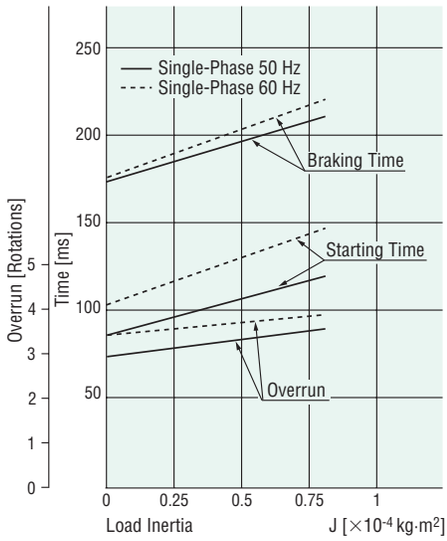


◇Three-Phase Motor

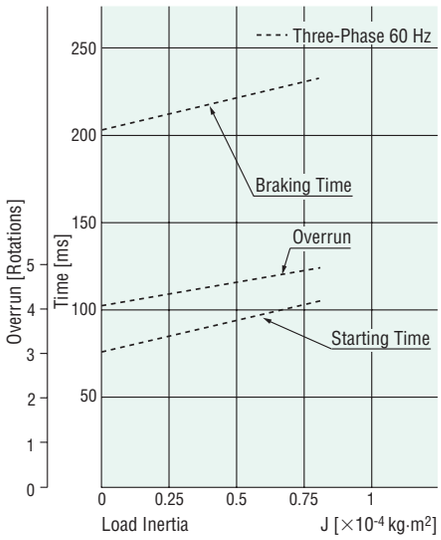


40 W

◇Single-Phase Motor

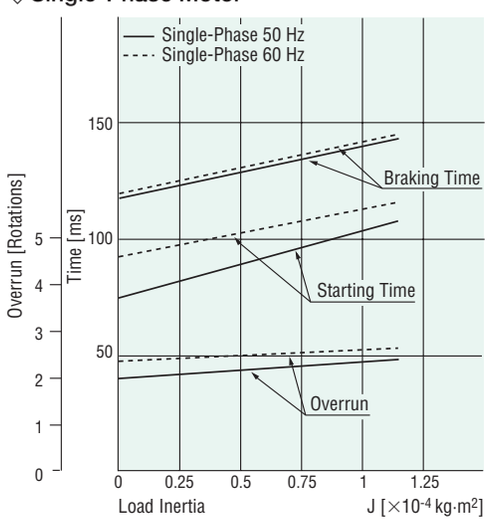


◇Three-Phase Motor

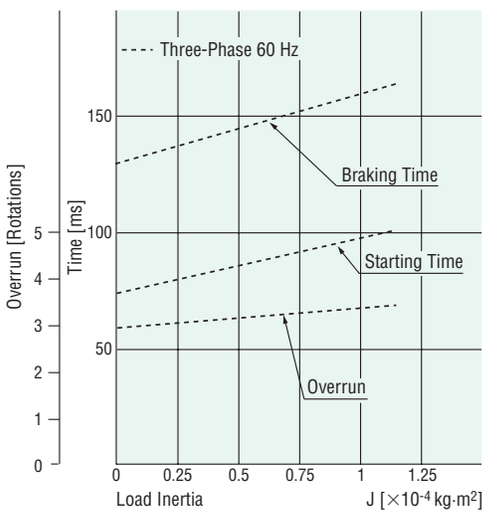


60 W

◇Single-Phase Motor

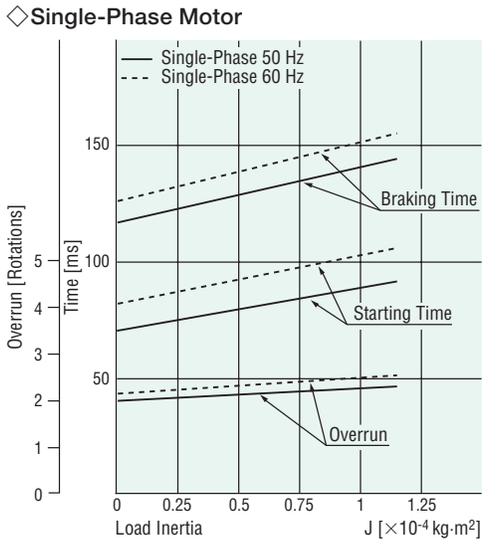


◇Three-Phase Motor

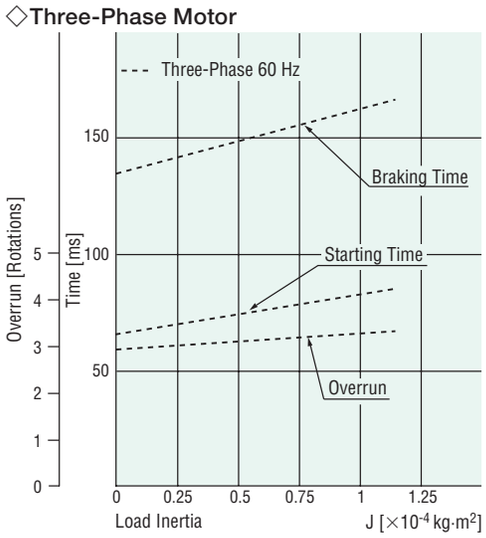


90 W

◇Single-Phase Motor



◇Three-Phase Motor



Dimensions (Unit = mm)

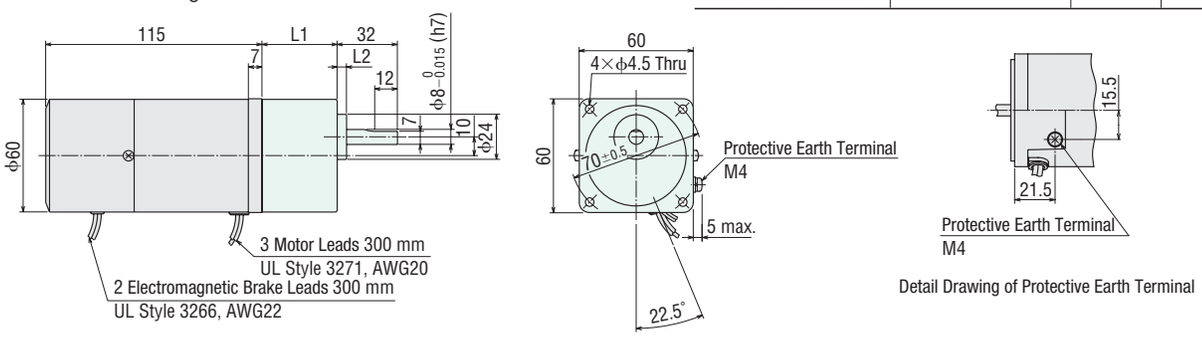
● Mounting screws are included with gearheads.

●6 W

◇Motor/Gearhead

Mass: Motor 0.9 kg
Gearhead 0.4 kg

Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2	CAD
2RK6GN-AW2ML2 **2RK6GN-CW2ML2** **2IK6GN-SW2ML**	**2GN□KF**	**3~18**	30	3	A600A
		25~180	40		A600B



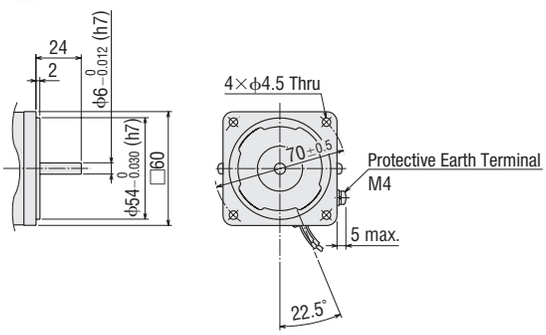
Detail Drawing of Protective Earth Terminal

◇Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 0.9 kg

CAD A463



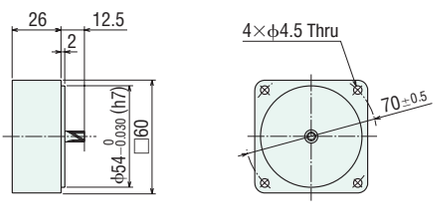
◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

2GN10XKF

Mass: 0.2 kg

CAD A003

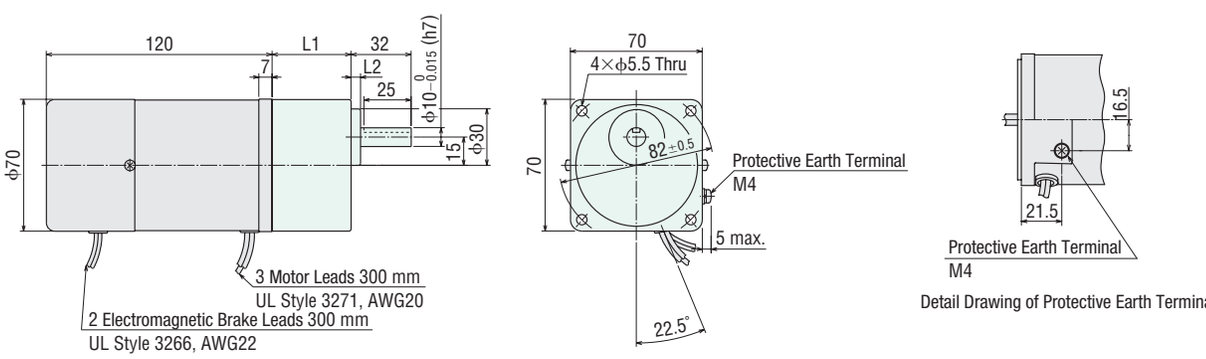


●15 W

◇Motor/Gearhead

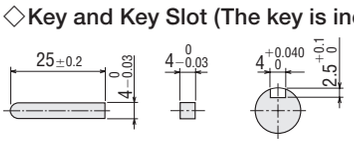
Mass: Motor 1.3 kg
Gearhead 0.55 kg

Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2	CAD
3RK15GN-AW2ML2 **3RK15GN-CW2ML2** **3IK15GN-SW2ML**	**3GN□KF**	**3~18**	32	3	A602A
		25~180	42		A602B



Detail Drawing of Protective Earth Terminal

◇Key and Key Slot (The key is included with the gearhead.)



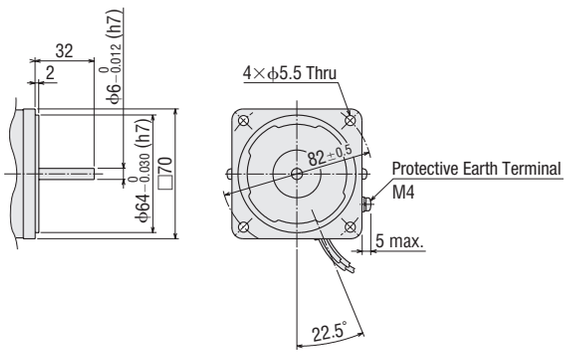
● A number indicating the gear ratio is entered where the box □ is located within the product name.

◇Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 1.3 kg

CAD A465



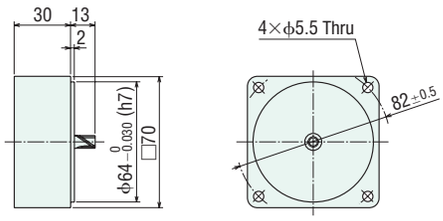
◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

3GN10XKF

Mass: 0.3 kg

CAD A009

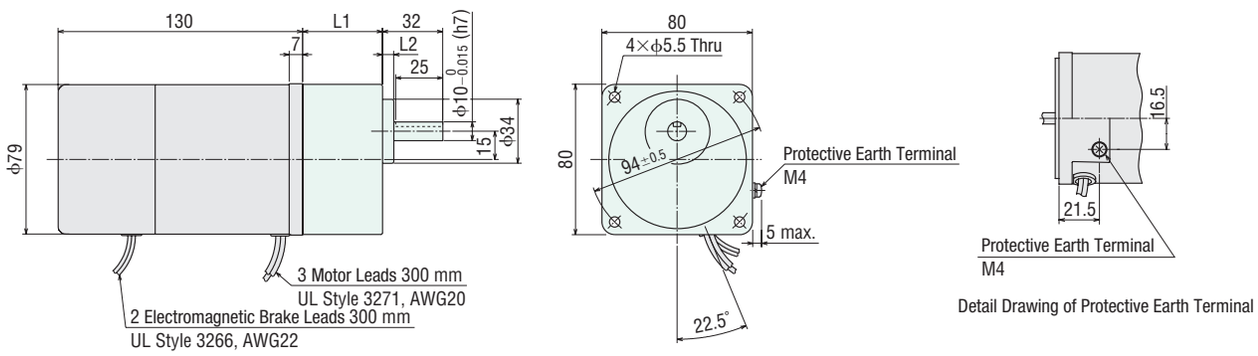


●25 W

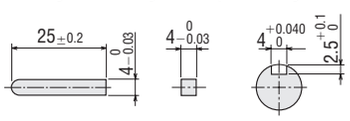
◇Motor/Gearhead

Mass: Motor 2.0 kg
Gearhead 0.65 kg

Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2	CAD
4RK25GN-AW2ML2 **4RK25GN-CW2ML□** **4IK25GN-SW2ML**	**4GN□KF**	**3～18**	32	3	A604A
		25～180	42.5		A604B



◇Key and Key Slot (The key is included with the gearhead.)

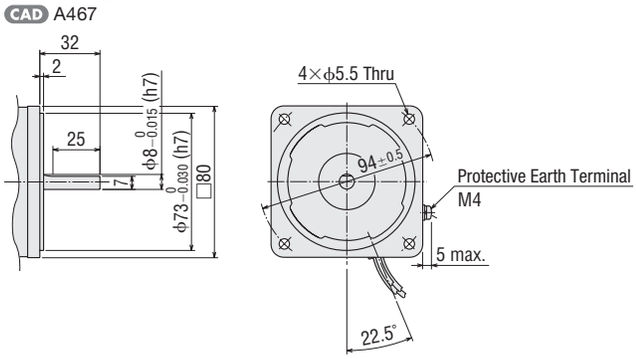


◇Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 2.0 kg

CAD A467



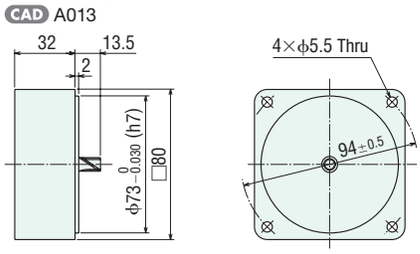
◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

4GN10XKF

Mass: 0.4 kg

CAD A013



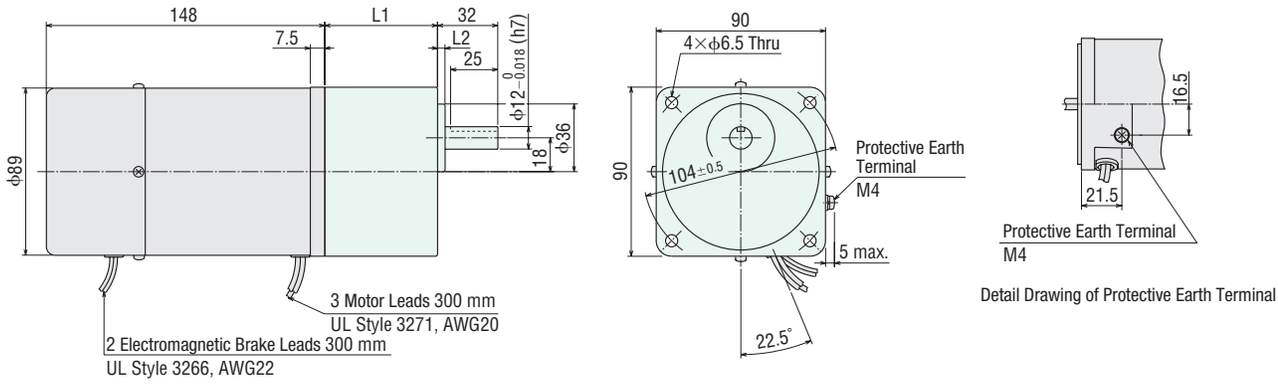
●A **1** or **2** indicating the type of capacitor to be included is entered where the box □ is located within the product name.
A number indicating the gear ratio is entered where the box □ is located within the product name.

●40 W

◇Motor/Gearhead

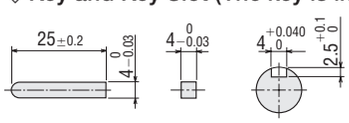
Mass: Motor 2.8 kg
Gearhead 1.5 kg

Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2	CAD
5RK40GN-AW2ML2 **5RK40GN-CW2ML□** **5IK40GN-SW2ML**	**5GN□KF**	**3**~**18**	42	3	A606A
		25~**180**	60		A606B



Detail Drawing of Protective Earth Terminal

◇Key and Key Slot (The key is included with the gearhead.)

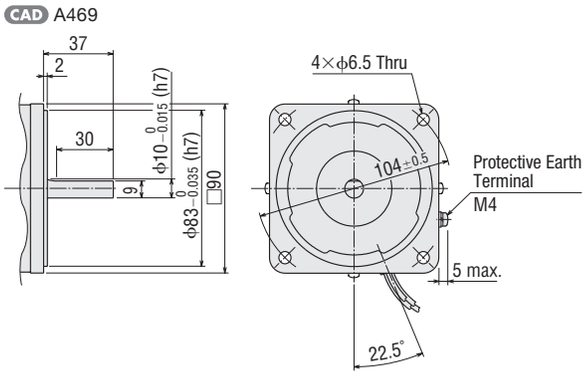


◇Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 2.8 kg

CAD A469



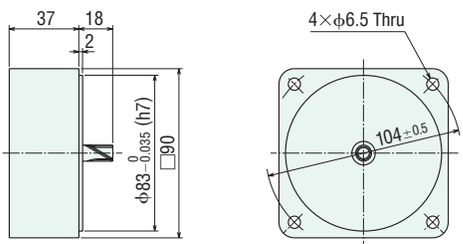
◇Decimal Gearhead

This can be attached to the **GN** pinion shaft type.

5GN10XKF

Mass: 0.6 kg

CAD A022



●60 W

◇Motor/Gearhead

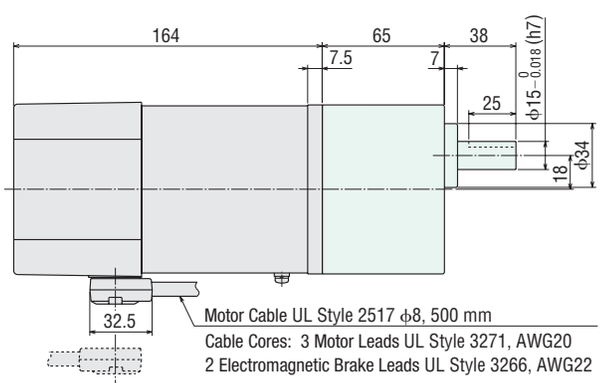
Motor: **5RK60GE-AW2ML2**, **5RK60GE-CW2ML□**
5IK60GE-SW2ML

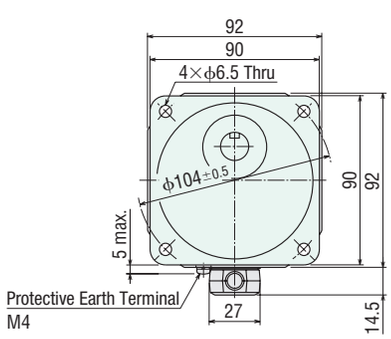
Mass: 3.4 kg

Gearhead: **5GE□KBF**

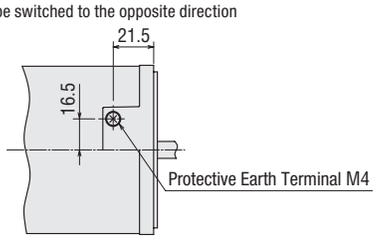
Mass: 1.5 kg

CAD A1128



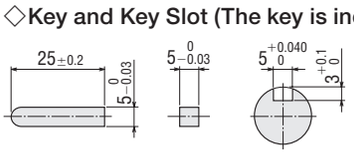


● Cable direction can be switched to the opposite direction



Detail Drawing of Protective Earth Terminal

◇Key and Key Slot (The key is included with the gearhead.)



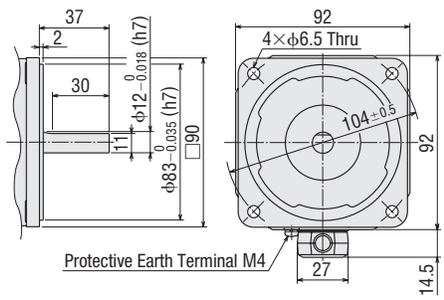
● A **1** or **2** indicating the type of capacitor to be included is entered where the box □ is located within the product name.
A number indicating the gear ratio is entered where the box □ is located within the product name.

◇Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 3.4 kg

CAD A471



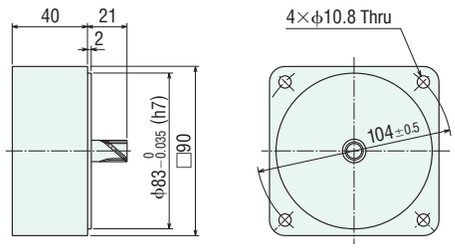
◇Decimal Gearhead

This can be attached to the **GE** pinion shaft type.

5GE10XKBF

Mass: 0.6 kg

CAD A029



●90 W

◇Motor/Gearhead

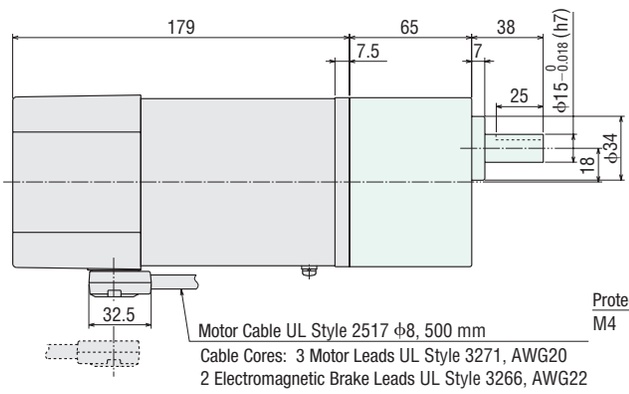
Motor: **5RK90GE-AW2ML2**, **5RK90GE-CW2ML□**
5IK90GE-SW2ML

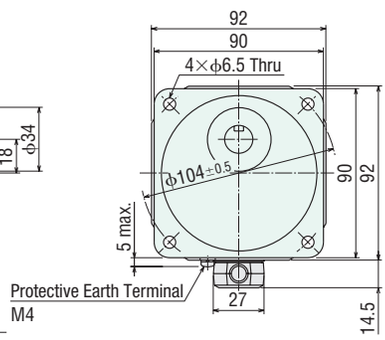
Mass: 3.9 kg

Gearhead: **5GE□KBF**

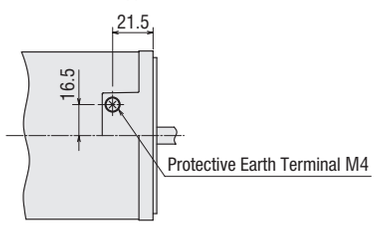
Mass: 1.5 kg

CAD A1129



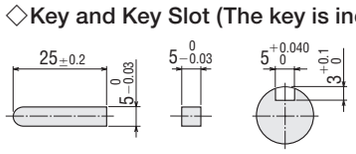


●Cable direction can be switched to the opposite direction



Detail Drawing of Protective Earth Terminal

◇Key and Key Slot (The key is included with the gearhead.)

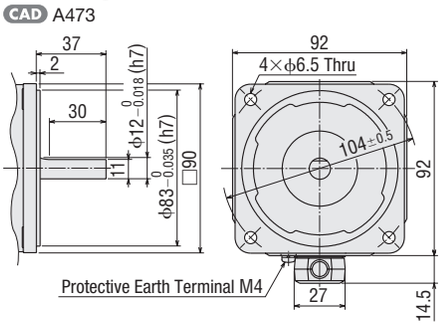


◇Shaft Section of Round Shaft Type

The motor's dimensions (excluding the shaft section) are the same as those of the pinion shaft types.

Mass: 3.9 kg

CAD A473



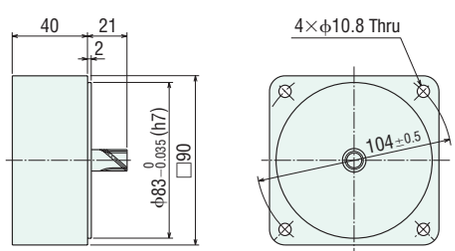
◇Decimal Gearhead

This can be attached to the **GE** pinion shaft type.

5GE10XKBF

Mass: 0.6 kg

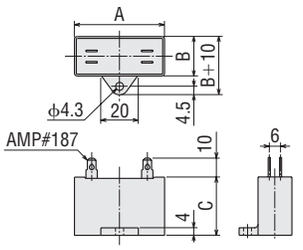
CAD A029



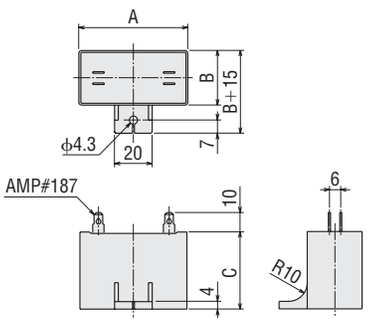
●A **1** or **2** indicating the type of capacitor to be included is entered where the box □ is located within the product name.
A number indicating the gear ratio is entered where the box □ is located within the product name.

Capacitor (Included)

Dimensions No. ①



Dimensions No. ②



◇Capacitor Dimensions (mm)

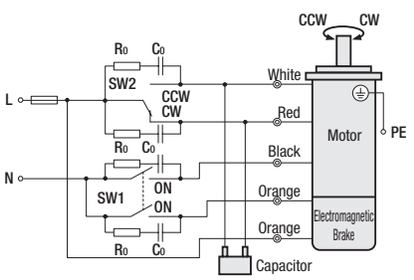
Product Name		Capacitor Product Name	A	B	C	Mass (g)	Dimensions No.	Capacitor Cap
Pinion Shaft Type	Round Shaft Type							
2RK6GN-AW2ML2	**2RK6A-AW2ML2**	CH35FAUL2	31	17	27	22	①	Included
2RK6GN-CW2ML2	**2RK6A-CW2ML2**	CH08BFAUL	31	17	27	23	①	
3RK15GN-AW2ML2	**3RK15A-AW2ML2**	CH60CFAUL2	38	21	31	35	①	
3RK15GN-CW2ML2	**3RK15A-CW2ML2**	CH15BFAUL	38	21	31	37	①	
4RK25GN-AW2ML2	**4RK25A-AW2ML2**	CH80CFAUL2	48	21	31	41	①	
4RK25GN-CW2ML1	**4RK25A-CW2ML1**	CH25BFAUL	48	21	31	42	①	
4RK25GN-CW2ML2	**4RK25A-CW2ML2**	CH20BFAUL	48	19	29	36	①	
5RK40GN-AW2ML2	**5RK40A-AW2ML2**	CH120CFAUL2	58	22	35	60	①	
5RK40GN-CW2ML1	**5RK40A-CW2ML1**	CH40BFAUL	58	23.5	37	73	②	
5RK40GN-CW2ML2	**5RK40A-CW2ML2**	CH35BFAUL	58	22	35	59	①	
5RK60GE-AW2ML2	**5RK60A-AW2ML2**	CH200CFAUL2	58	29	41	91	②	
5RK60GE-CW2ML1	**5RK60A-CW2ML1**	CH60BFAUL	58	29	41	92	②	
5RK60GE-CW2ML2	**5RK60A-CW2ML2**	CH50BFAUL	58	29	41	93	②	
5RK90GE-AW2ML2	**5RK90A-AW2ML2**	CH300CFAUL2	58	35	50	140	②	
5RK90GE-CW2ML1	**5RK90A-CW2ML1**	CH80BFAUL	58	35	50	136	②	
5RK90GE-CW2ML2	**5RK90A-CW2ML2**	CH70BFAUL	58	35	50	138	②	

Connection Diagrams

The rotation direction of the motor is as viewed from the output shaft of the motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.

Single-Phase Motor

Single-Phase 110 VAC
Single-Phase
220/230 VAC



SW1 operates both motor and electromagnetic brake action.
The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON.
When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.

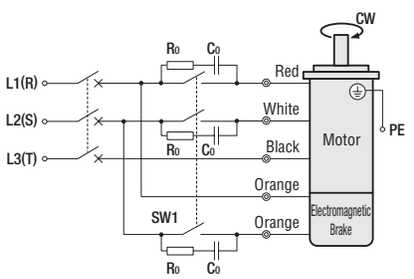
To release the electromagnetic brake while the motor is stopped, keep the SW1 OFF and apply voltage on the orange brake lead wires side only.

Rotation Direction
To rotate the motor in the clockwise (CW) direction, turn SW2 to CW.
To rotate the motor in the counterclockwise (CCW) direction, turn SW2 to CCW.

Switch No.	Contact Capacity of Switch		Remark
	Single-Phase 110 VAC Input	Single-Phase 220/230 VAC Input	
SW1			Switched simultaneously
SW2	125 VAC 3 A min. (40 W min.: 5 A min.) Inductive load	250 VAC 1.5 A min. (40 W min.: 5 A min.) Inductive load	—

Three-Phase Motor

Three-Phase
200/220 VAC



SW1 operates both motor and electromagnetic brake action.
The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON.
When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.

To release the electromagnetic brake while the motor is stopped, keep the SW1 OFF and apply voltage on the orange brake lead wires side only.

Rotation Direction
To change the rotation direction to counterclockwise, change any two connections between R, S and T.

Switch No.	Contact Capacity of Switch	Remark
SW1	250 VAC 1.5 A min. (40 W min.: 5 A min.) Inductive Load	Switched simultaneously

R0 and C0 indicate CR circuit for surge suppression. [R0 = 5~200 Ω, C0 = 0.1~0.2 μF, 200 WV (400 WV)]
EPCR1201-2 (sold separately) is available as an accessory. ➜ Page 31

Accessories

Motor and Gearhead Mounting Brackets RoHS

These dedicated mounting brackets for mounting motors and gearheads are the high-strength type that can be used with high power motors and gearheads.
Material: Aluminum alloy

Product Name	Applicable Products
SOL2M4	**2GN□KF, 2IK6A, 2RK6A**
SOL3M5	**3GN□KF, 3IK15A, 3RK15A**
SOL4M5	**4GN□KF, 4IK25A, 4RK25A**
SOL5M6	**5GN□KF, 5GE□KBF, 5IK40A, 5RK40A 5IK60A, 5RK60A, 5IK90A, 5RK90A**

●A number indicating the gear ratio is entered where the box □ is located within the product name.

Flexible Couplings RoHS

These are clamp type couplings for connecting the gearhead shaft with the driven shaft. Once the gearhead is determined, the coupling can be selected.

Uniform Load	Shock Load	Coupling Type	Shaft Diameter mm	Product Name
2GN□KF	–	**MCL20**	ϕ8	**MCL200508**
				MCL200608
				MCL200808
–	**2GN□KF**	**MCL30**	ϕ8	**MCL300808**
				MCL300810
				MCL300812
3GN□KF 4GN□KF	**3GN□KF**	**MCL30**	ϕ10	**MCL300810**
				MCL301010
				MCL301012
5GN□KF	–	**MCL30**	ϕ12	**MCL300812**
				MCL301012
				MCL301212
–	**4GN□KF**	**MCL40**	ϕ10	**MCL401010**
				MCL401012
				MCL401014
				MCL401015
				MCL401016
–	**5GN□KF**	**MCL40**	ϕ12	**MCL401012**
				MCL401212
				MCL401214
				MCL401215
				MCL401216
5GE□KBF	–	**MCL40**	ϕ15	**MCL401015**
				MCL401215
				MCL401415
				MCL401515
				MCL401516
–	**5GE□KBF**	**MCL55**	ϕ15	**MCL551515**
				MCL551516
				MCL551518
				MCL551520
				MCL551525

●A number indicating the gear ratio is entered where the box □ is located within the product name.

CR Circuit for Surge Suppression RoHS

This is used to protect the contacts of the relay or switch used in the bi-directional circuit or the instantaneous stop circuit of a motor.

●Product Name: **EPCR1201-2**

250 VAC (120 Ω, 0.1 μF)

●Dimensions (Unit = mm)

Mass: 5 g