

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	Product Name	
	Pinion Shaft Type	Round Shaft Type
6 W	2IK6GN-CW2L2	2IK6A-CW2L2
15 W	3IK15GN-CW2L2	3IK15A-CW2L2
25 W	4IK25GN-CW2L2	4IK25A-CW2L2
40 W	5IK40GN-CW2L2	5IK40A-CW2L2
60 W	5IK60GE-CW2L2	5IK60A-CW2L2
90 W	5IK90GE-CW2L2	5IK90A-CW2L2

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 – Continuous Rating (RoHS)



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								
ⓉⓅ 2IK6GN-CW2L2	ⓉⓅ 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	
ⓉⓅ 3IK15GN-CW2L2	ⓉⓅ 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	
ⓉⓅ 4IK25GN-CW2L2	ⓉⓅ 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	
ⓉⓅ 5IK40GN-CW2L2	ⓉⓅ 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	
ⓉⓅ 5IK60GE-CW2L2	ⓉⓅ 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	
ⓉⓅ 5IK90GE-CW2L2	ⓉⓅ 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	

● 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.
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, 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
	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 Motor/ Gearhead	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	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		0.10	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-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
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
5IK40GN-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
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
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

■ Dimensions (Unit = mm)

● Mounting screws are included with gearheads.

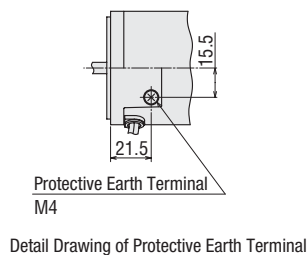
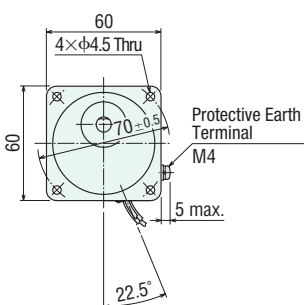
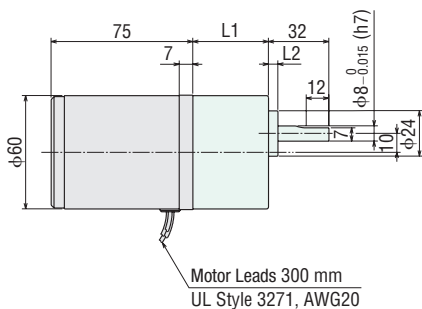
● A number indicating the gear ratio is entered where the box □ is located within the product name.

● 6 W

◇ Motor/Gearhead

Mass: Motor 0.7 kg

Gearhead 0.4 kg



Detail Drawing of Protective Earth Terminal

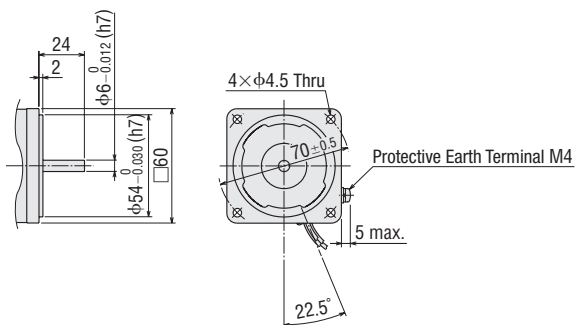
Motor Product Name	Gearhead Product Name	Gear Ratio	L1	L2	CAD
2IK6GN-CW2L2	2GN□KF	3~18	30	3	A586A
		25~180	40		A586B

◇ 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



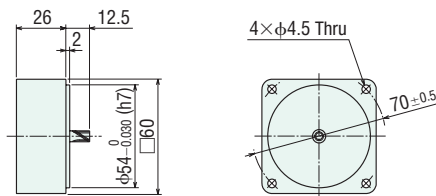
◇ Decimal Gearhead

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

2GN10XKF

Mass: 0.2 kg

CAD A003

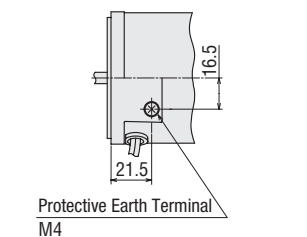
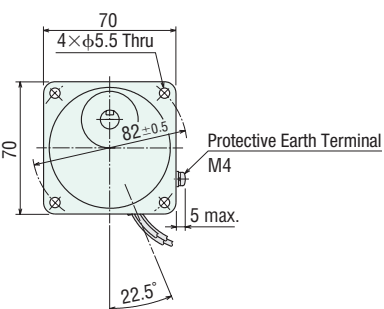
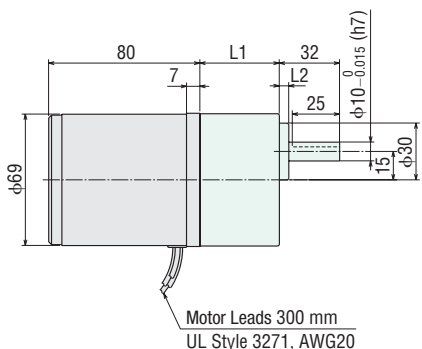


● 15 W

◇ Motor/Gearhead

Mass: Motor 1.1 kg

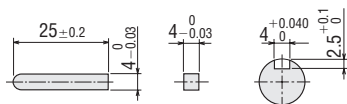
Gearhead 0.55 kg



Detail Drawing of Protective Earth Terminal

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

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

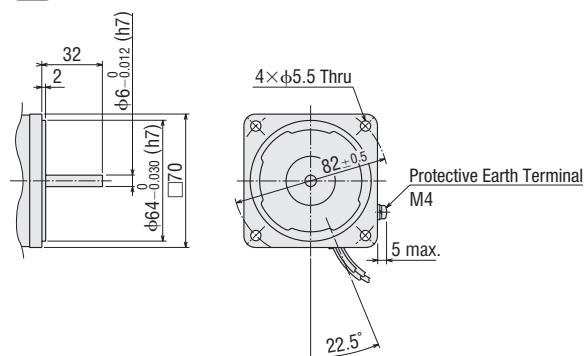


◇ Shaft Section of Round Shaft Type

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

Mass: 1.1 kg

CAD A448

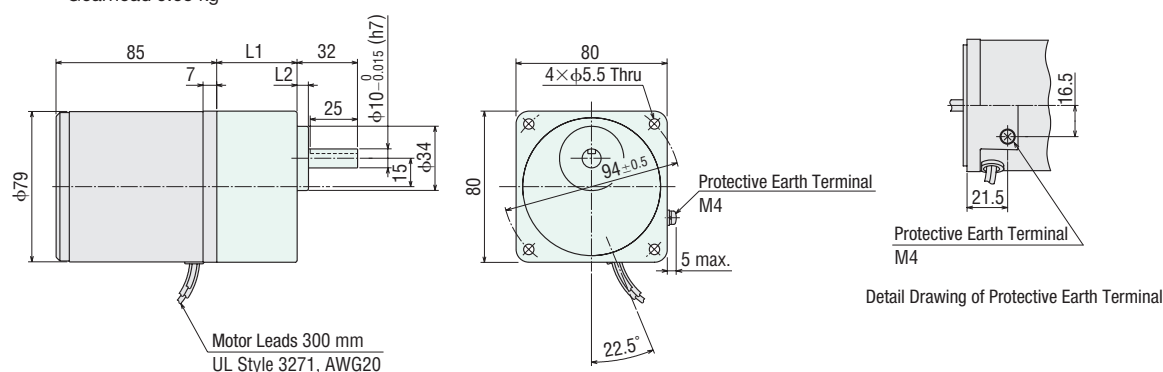


● 25 W

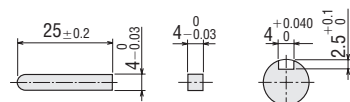
◇ Motor/Gearhead

Mass: Motor 1.5 kg

Gearhead 0.65 kg



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

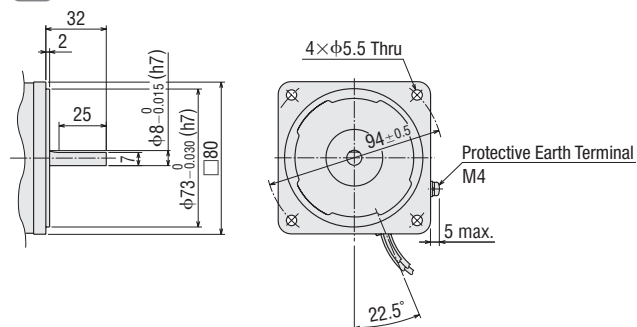


◇ Shaft Section of Round Shaft Type

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

Mass: 1.5 kg

CAD A450



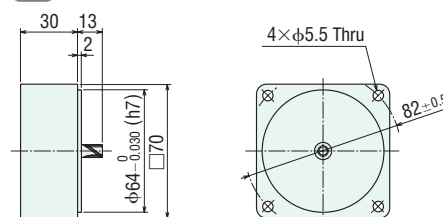
◇ Decimal Gearhead

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

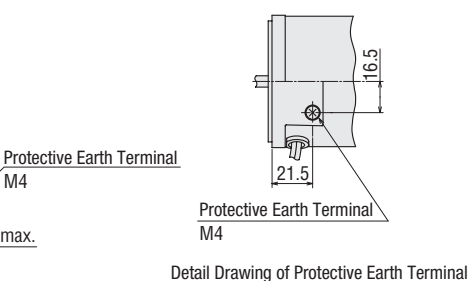
3GN10XKF

Mass: 0.3 kg

CAD A009



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



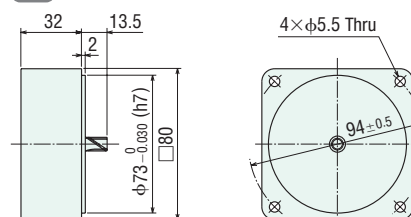
◇ Decimal Gearhead

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

4GN10XKF

Mass: 0.4 kg

CAD A013



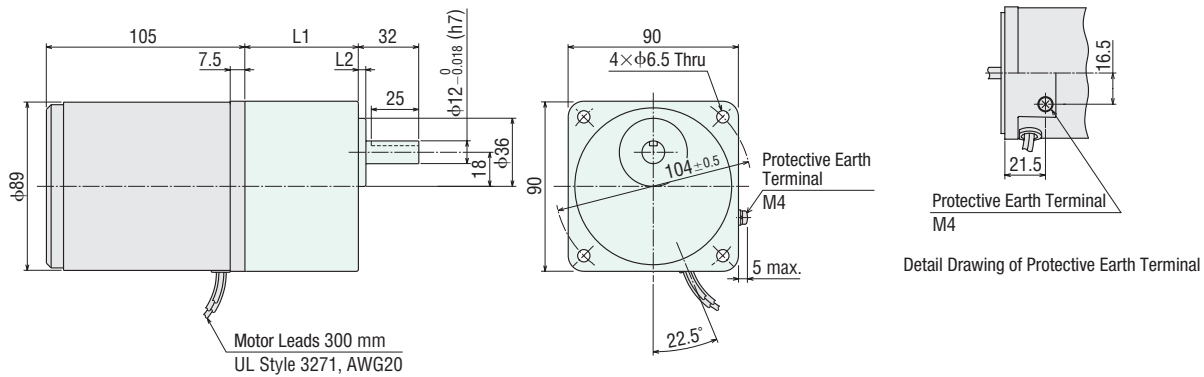
40 W

Motor/Gearhead

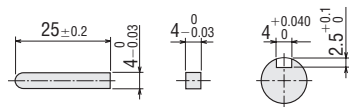
Mass: Motor 2.5 kg

Gearhead 1.5 kg

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



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

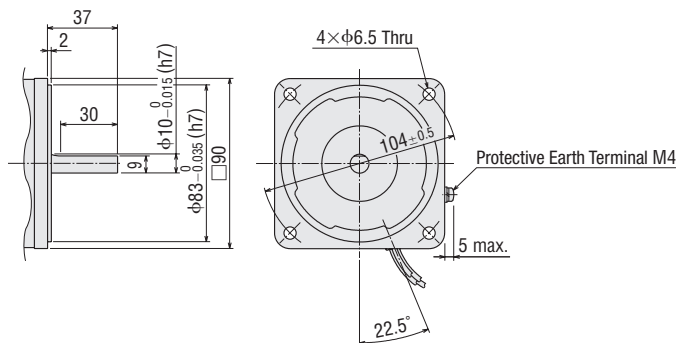


Shaft Section of Round Shaft Type

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

Mass: 2.5 kg

CAD A453



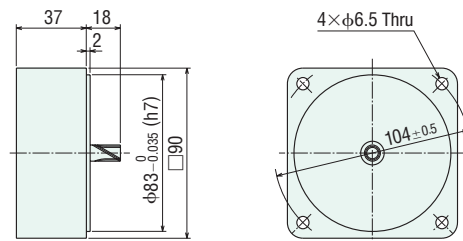
Decimal Gearhead

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

5GN10XKF

Mass: 0.6 kg

CAD A022



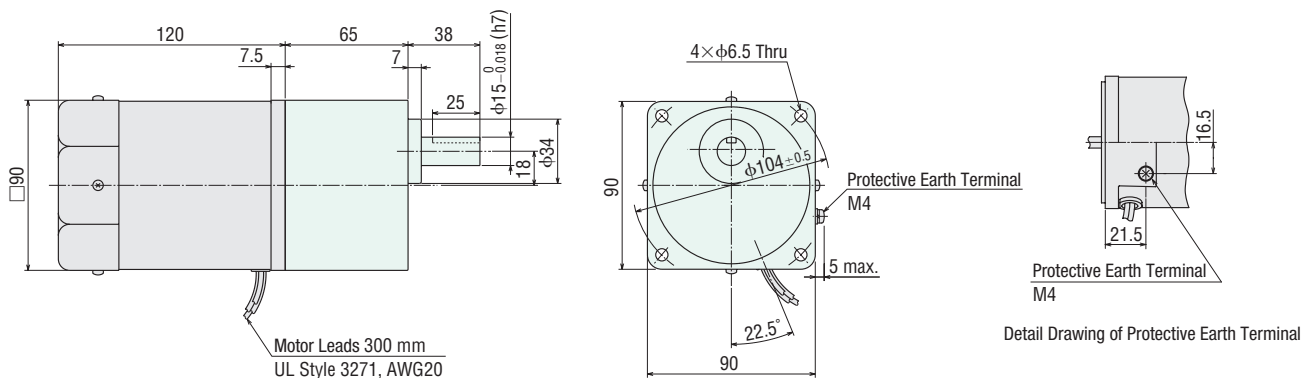
60 W

Motor/Gearhead

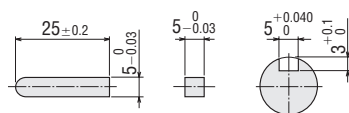
Mass: Motor 2.7 kg

Gearhead 1.5 kg

CAD A1124



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

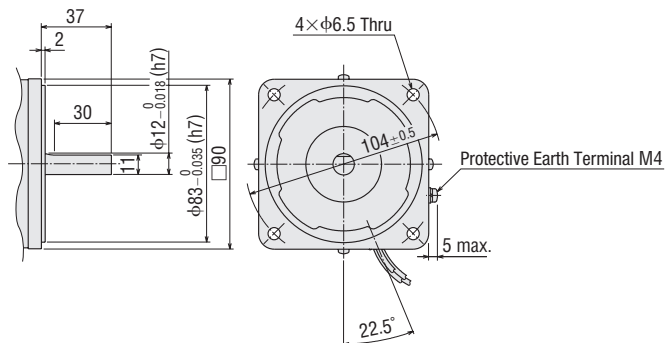


◇ Shaft Section of Round Shaft Type

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

Mass: 2.7 kg

CAD A456



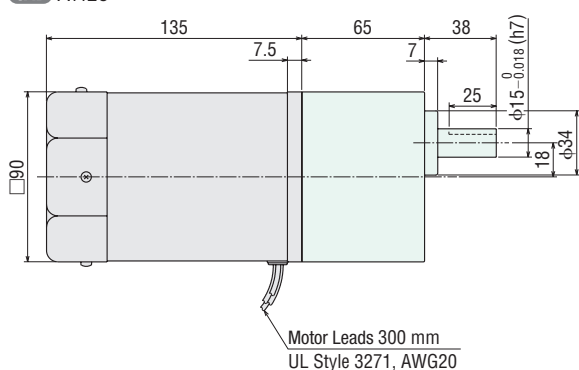
● 90 W

◇ Motor/Gearhead

Mass: Motor 3.2 kg

Gearhead 1.5 kg

CAD A1126



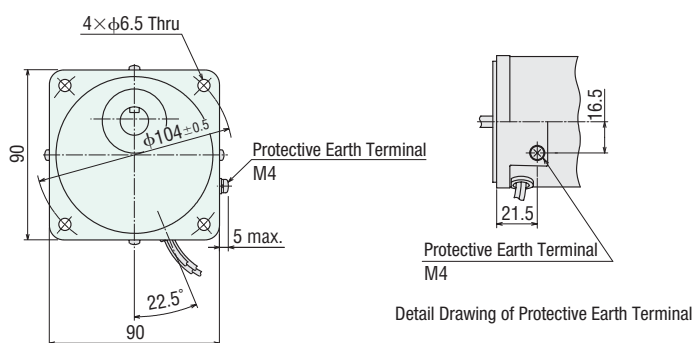
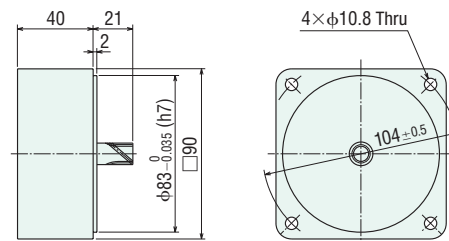
◇ Decimal Gearhead

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

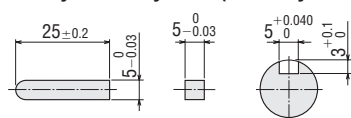
5GE10XKBF

Mass: 0.6 kg

CAD A029



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

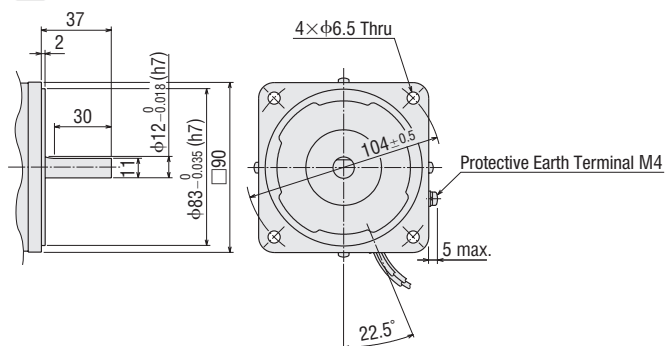


◇ Shaft Section of Round Shaft Type

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

Mass: 3.2 kg

CAD A459



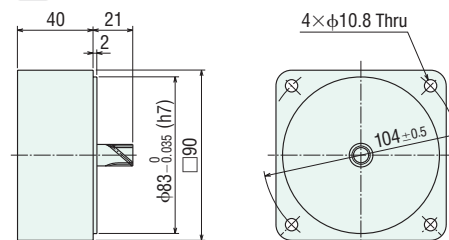
◇ Decimal Gearhead

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

5GE10XKBF

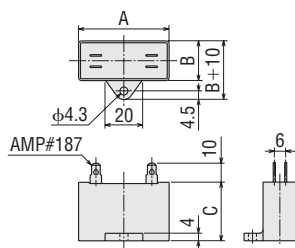
Mass: 0.6 kg

CAD A029

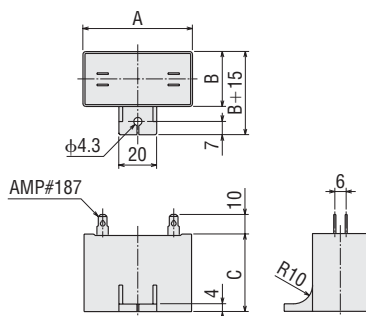


Capacitor (Included)

Dimensions No. ①



Dimensions No. ②



Capacitor Dimensions (mm)

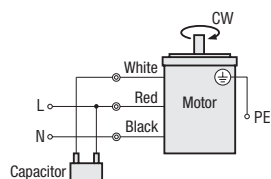
Product Name		Capacitor Product Name	A	B	C	Mass (g)	Dimensions No.	Capacitor Cap
Pinion Shaft Type	Round Shaft Type							
2IK6GN-CW2L2	2IK6A-CW2L2	CH06BFAUL	31	14.5	23.5	18	①	Included
3IK15GN-CW2L2	3IK15A-CW2L2	CH10BFAUL	37	18	27	27	①	
4IK25GN-CW2L2	4IK25A-CW2L2	CH15BFAUL	38	21	31	37	①	
5IK40GN-CW2L2	5IK40A-CW2L2	CH23BFAUL	48	21	31	43	①	
5IK60GE-CW2L2	5IK60A-CW2L2	CH40BFAUL	58	23.5	37	73	②	
5IK90GE-CW2L2	5IK90A-CW2L2	CH60BFAUL	58	29	41	92	②	

Connection Diagrams

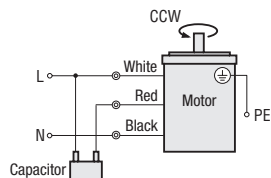
- The rotation direction of the motor is as viewed from the output shaft of the motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.

Lead Wire Type
Single-Phase 220/230 VAC

Clockwise



Counterclockwise



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.