

Oriental motor

Compact Standard AC Motors

KII Series

Induction Motors

Hypoid Right-Angle Hollow Shaft **JH** Gear

Hypoid Right-Angle Solid Shaft **JL** Gear

40 W · 60 W · 90 W

Highly Efficient, Strong

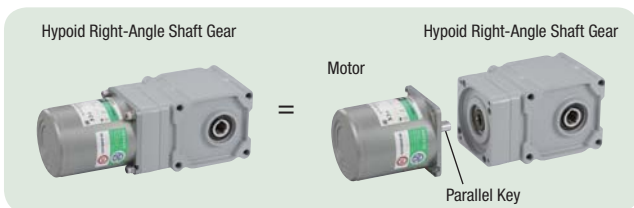
Next-Generation Right-Angle Shaft Geared Motors





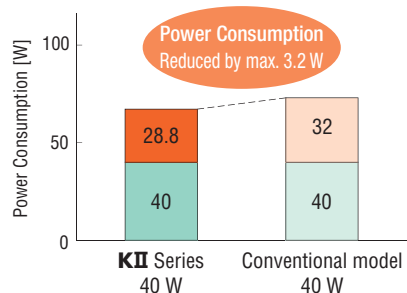
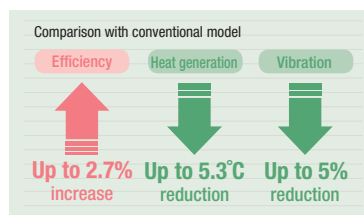
Hypoid Right-Angle Shaft Gear

- The motor and gearhead already pre-assembled prior to delivery.
- The lead wire outlet can be changed either direction by rotating the motor position 90°.



High Performance Motor Installed

Designed specifically for each voltage to optimize the magnetic balance of the motor. The motors comply with China National Standard of Energy Efficiency Grade 1. The efficiency has been drastically improved, motor heat and vibration have been reduced to improved reliability and reduced power consumption of devices.



For 40 W output with Single-Phase 220 VAC 50 Hz at rated output

- Energy Efficiency Regulation in China (only models with Single-Phase 220/230 VAC 50 Hz)
Conforms to the First Grade (GB25958-2010)

Obtained a third-party certification based on China energy-saving product certification system (CQC31-46113-2011).



Best Combination of High Performance Small Motor and High Strength Right-Angle Shaft Gearhead



High Strength Right-Angle Shaft Gearhead

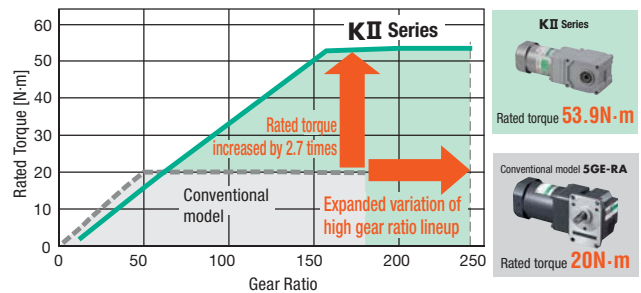


High-precision hypoid gears have been employed. The gearheads offer large increased torque and decreased noise compared with conventional models. The radial and axial loads at the gearhead output shaft have also largely increased, contributing to downsizing and improved reliability of devices.

◇ High Permissible Torque

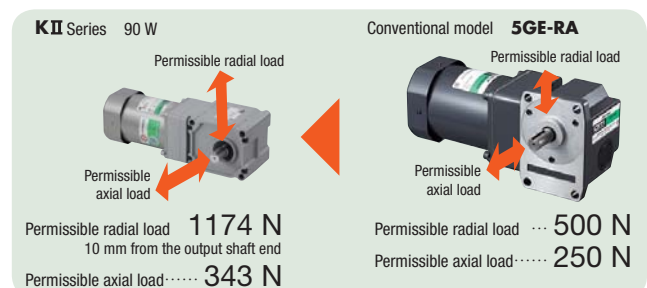
The rated torque has increased a maximum of 2.7 times compare to conventional models.

● Rated Torque of 90 W Hypoid Right-Angle Shaft Gear



◇ High Strength

The permissible radial load increased 2.3 times and the permissible axial load increased 1.3 times compared with conventional models.



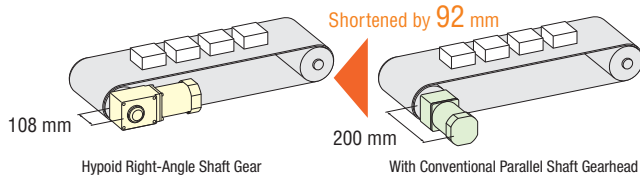
For Right-Angle Solid Shaft Gearheads

Advantages of Hypoid Right-Angle Shaft Gears

Saving the Space and Cost Devices

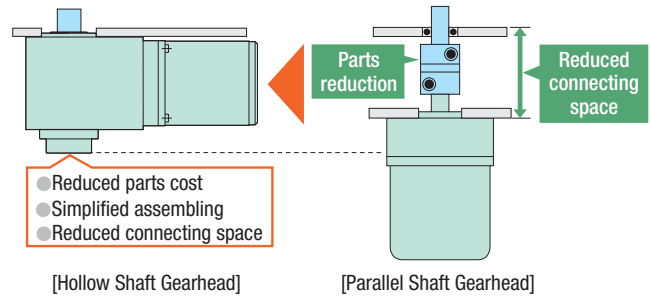
Space Saving

Space saving by placing the motor to the right angle position against the load shaft.



Cost Saving

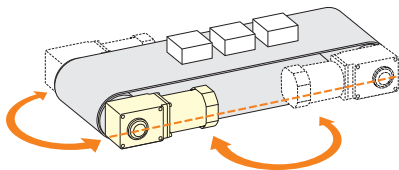
The hollow shaft type reduces parts cost and simplifies assembling steps by reducing fastening parts.



Increased Assembling Flexibility

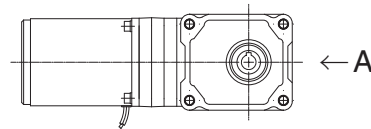
● Horizontal Symmetrical Structure

The output shaft of the gearhead is located in the middle of the installation surface vertically. The motor fits on conveyors or any devices without changing the installation hole position regardless of the horizontal installation direction.



● Selectable Lead Wire Outlet Position

The basic outlet position of the lead wire is facing a downstream direction viewed from A.



For a lead wire outlet position other than A, please specify when ordering.

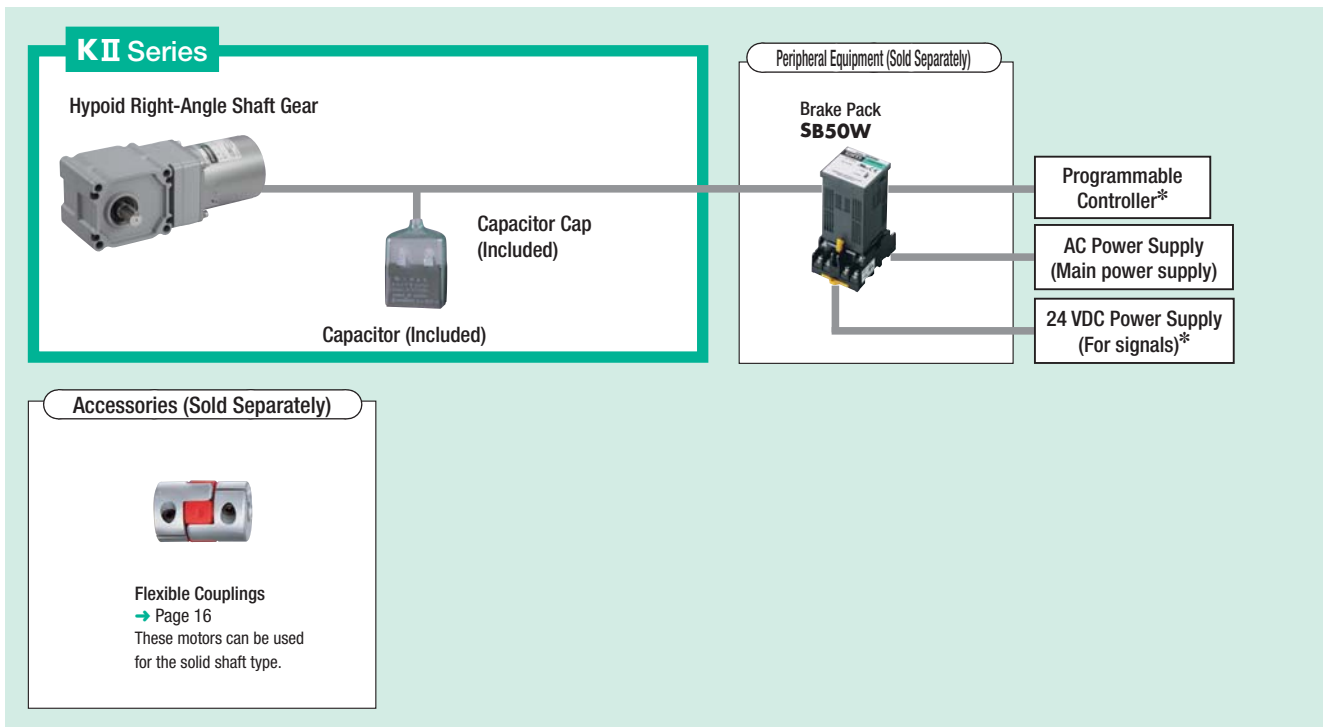
Lineup

Wire Type	Hypoid Right-Angle Hollow Shaft JH Gear	Hypoid Right-Angle Solid Shaft JL Gear
Lead Wire		

Output Power	Power Supply Voltage	Gearhead Ratio													
		10	15	20	25	30	40	50	60	80	100	120	160	200	240
40 W	Single-Phase 110/115 VAC	●	●	●	●	●	●	●	●	●	●	●	●	●	●
60 W	60 Hz Single-Phase	●	●	●	●	●	●	●	●	●	●	●	●	●	●
90 W	220/230 VAC 50/60 Hz	●	●	●	●	●	●	●	●	●	●	●	●	●	●

System Configuration

*Not supplied.



System Configuration Example



● The system configuration shown above is an example. Other combinations are available.

Product Number Code

● Hypoid Right-Angle Shaft Gear

5 I K 90 K G - 5 H 240 B

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

Motor Product Name Gearhead Product Name

Motor Product Name	①	Motor Frame Size	5 : 90 mm
	②	Motor Type	I : Induction Motor
	③	Series Name	K : K II Series
	④	Output Power (W)	(Example) 90 : 90 W
	⑤	Shaft Configuration	K : Round Shaft Type With key
	⑥	Power Supply Voltage	F : Single-Phase 110/115 VAC 60 Hz G : Single-Phase 220/230 VAC 50 Hz R : Single-Phase 220/230 VAC 60 Hz
Gearhead Product Name	⑦	Combination Type Motor	5 : 90 mm
	⑧	Type	H : Hypoid Right-Angle Hollow Shaft JH Gear L : Hypoid Right-Angle Solid Shaft JL Gear
	⑨	Gear Ratio	
	⑩	Identification Part Number	

Induction Motors

40 W

□ 90 mm

KII Series Hypoid Right-Angle Shaft Gear



Hypoid Right-Angle Hollow Shaft
JH Gear



Hypoid Right-Angle Solid Shaft
JL Gear

Specifications Continuous Rating



Product Name Lead Wire Type		Output Power W	Voltage VAC	Frequency Hz	Current A	Capacitor μF	Overheat Protection Device
Hollow Shaft Type	Solid Shaft Type						
5IK40KF-5H □ B	5IK40KF-5L □ B	40	Single-Phase 110	60	0.66	9.0	TP
			Single-Phase 115		0.65		
5IK40KG-5H □ B	5IK40KG-5L □ B		Single-Phase 220	50	0.34	2.5	TP
			Single-Phase 230		0.33		
5IK40KR-5H □ B	5IK40KR-5L □ B		Single-Phase 220	60	0.33	2.0	TP
			Single-Phase 230		0.32		

Gear Ratio		10	15	20	25	30	40	50	60	80	100	120	160	200	240
Speed [r/min]	50 Hz	150	100	75	60	50	37	30	25	18.7	15	12.5	9.3	7.5	6.2
	60 Hz	180	120	90	72	60	45	36	30	22	18	15	11.2	9	7.5
Rated Torque [N·m]	Single-Phase 110/115 VAC 60 Hz	1.3	2.0	2.7	3.3	4.0	5.3	6.7	8.0	11.7	14.7	17.6	23.5	29.3	35.2
	Single-Phase 220/230 VAC 60 Hz	1.6	2.4	3.2	4.0	4.8	6.5	8.1	9.7	14.2	17.8	21.3	28.4	35.5	42.6
	Single-Phase 230 VAC 50 Hz	1.5	2.3	3.1	3.8	4.6	6.2	7.7	9.2	13.5	16.9	20.3	27.1	33.8	40.6
Starting Torque [N·m]	Single-Phase 110/115 VAC 60 Hz	1.0	1.5	2.1	2.6	3.1	4.1	5.1	6.2	9.0	11.3	13.5	18.0	22.6	27.1
	Single-Phase 220/230 VAC 60 Hz	0.87	1.3	1.7	2.2	2.6	3.5	4.4	5.2	7.7	9.6	11.5	15.3	19.2	23.0
	Single-Phase 230 VAC 50 Hz	1.0	1.5	2.0	2.5	3.0	4.0	5.0	6.0	8.8	11.0	13.2	17.6	22.0	26.4
Permissible Load Inertia J [× 10 ⁻⁴ kg·m ²]		200	450	800	1250	1800	3200	5000	7200	12800	20000	28800	51200	80000	115200
	At Instantaneous Stop	66.7	150	267	417	600	1067	1667	2400	4267	6667	9600	17067	26667	38400
Permissible Radial Load [N]	Hollow Shaft*	10 mm from installation surface	415	554	692	831	923	1017	1112	1196				1291	
		20 mm from installation surface	363	484	605	726	806	889	971	1045				1127	
	Solid Shaft	10 mm from output shaft end	378	504	630	756	840	926	1011	1089				1174	
		20 mm from output shaft end	481	641	802	962	1069	1178	1287	1385				1495	
Permissible Axial Load [N]		108	147	186	226	245	275	294	324						343

*The radial load at each distance can also be calculated with a formula → Page 15

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.

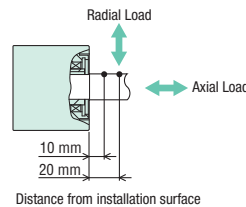
When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

● 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.

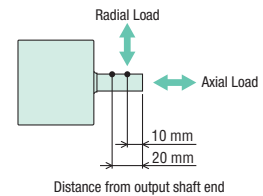
The actual speed is up to 30% less depending on the load.

◇ About Load Position

● Hollow Shaft



● Solid Shaft



Product Line

● Hypoid Right-Angle Hollow Shaft JH Gear

Product Name	Gear Ratio
5IK40KF-5H □ B	10, 15 20, 25, 30 40, 50, 60
	80, 100, 120 160, 200, 240
5IK40KG-5H □ B	10, 15 20, 25, 30 40, 50, 60
	80, 100, 120 160, 200, 240
5IK40KR-5H □ B	10, 15 20, 25, 30 40, 50, 60
	80, 100, 120 160, 200, 240

● Hypoid Right-Angle Solid Shaft JL Gear

Product Name	Gear Ratio
5IK40KF-5L □ B	10, 15 20, 25, 30 40, 50, 60
	80, 100, 120 160, 200, 240
5IK40KG-5L □ B	10, 15 20, 25, 30 40, 50, 60
	80, 100, 120 160, 200, 240
5IK40KR-5L □ B	10, 15 20, 25, 30 40, 50, 60
	80, 100, 120 160, 200, 240

The following items are included in each product.

Motor, Gearhead, Capacitor, Capacitor cap, Installation screws, Parallel key (Stainless steel), Safety cover, Operating manual

The following items are included in each product.

Motor, Gearhead, Capacitor, Capacitor cap, Installation screws, Parallel key (Iron), Operating manual

● A number in the box □ in the product name indicates the gear ratio.

Dimensions (Unit = mm)

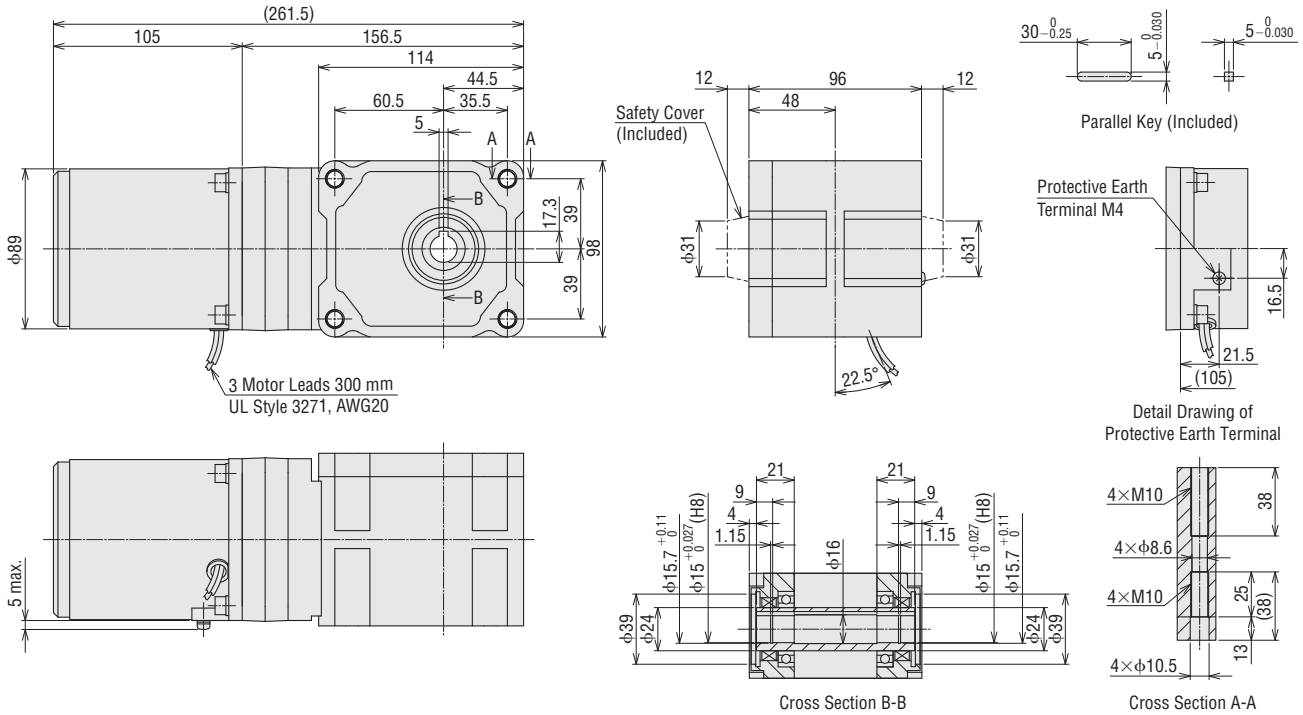
- "Mounting screws" are included. Dimensions of installation screws → Page 13
- A capacitor is included. Dimensions for capacitor → Page 13
- A number in the box □ in the product name indicates the gear ratio.

Lead Wire Type

◇ Hypoid Right-Angle Hollow Shaft **JH** Gear

2D & 3D CAD

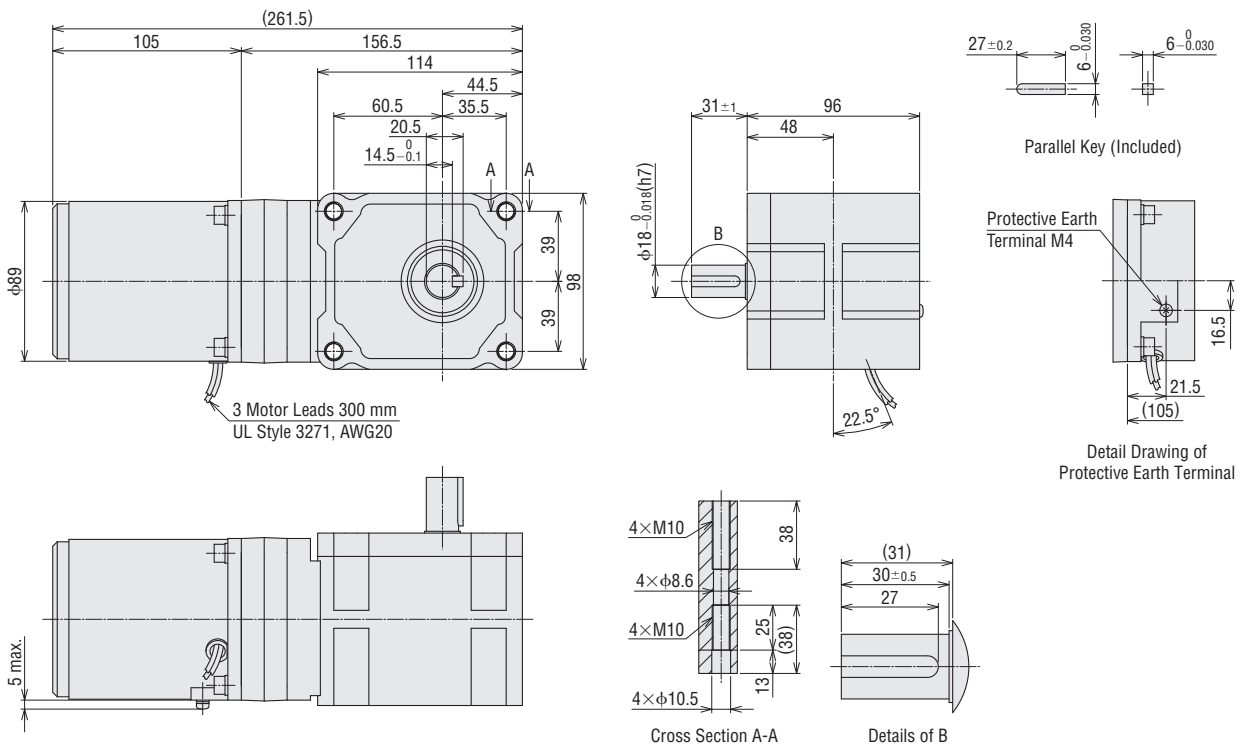
Product Name	Motor Product Name	Gearhead Product Name	Mass kg	2D CAD
5IK40KF-5H□B	5IK40KF	5H□B	5.5	A1509
5IK40KG-5H□B	5IK40KG			
5IK40KR-5H□B	5IK40KR			



◇ Hypoid Right-Angle Solid Shaft **JL** Gear

2D & 3D CAD

Product Name	Motor Product Name	Gearhead Product Name	Mass kg	2D CAD
5IK40KF-5L□B	5IK40KF	5L□B	5.5	A1510
5IK40KG-5L□B	5IK40KG			
5IK40KR-5L□B	5IK40KR			



- At the time of shipment, the parallel key is fixed in the key slot of the gearhead shaft.

Induction Motors

60 W

□ 90 mm

KII Series Hypoid Right-Angle Shaft Gear



Hypoid Right-Angle Hollow Shaft
JH Gear



Hypoid Right-Angle Solid Shaft
JL Gear

Specifications Continuous Rating



Product Name Lead Wire Type		Output Power W	Voltage VAC	Frequency Hz	Current A	Capacitor μF	Overheat Protection Device
Hollow Shaft Type	Solid Shaft Type						
5IK60KF-5H □B	5IK60KF-5L □B	60	Single-Phase 110	60	1.09	16	TP
			Single-Phase 115		1.09		
5IK60KG-5H □B	5IK60KG-5L □B		Single-Phase 220	50	0.49	4.0	TP
			Single-Phase 230		0.49		
5IK60KR-5H □B	5IK60KR-5L □B		Single-Phase 220	60	0.53	4.0	TP
			Single-Phase 230		0.52		

Gear Ratio		10	15	20	25	30	40	50	60	80	100	120	160	200	240
Speed [r/min]	50 Hz	150	100	75	60	50	37	30	25	18.7	15	12.5	9.3	7.5	6.2
	60 Hz	180	120	90	72	60	45	36	30	22	18	15	11.2	9	7.5
Rated Torque [N·m]	Single-Phase 110/115 VAC 60 Hz	2.5	3.7	5.0	6.2	7.5	10.0	12.5	14.9	21.6	27.0	32.4	43.2	53.9	53.9
	Single-Phase 220/230 VAC 60 Hz	3.0	4.5	6.0	7.5	9.0	12.1	15.1	18.1	26.1	32.6	39.2	52.2	53.9	53.9
	Single-Phase 220/230 VAC 50 Hz	2.0	3.0	3.9	4.9	5.9	7.9	9.8	11.8	17.1	21.3	25.6	34.1	42.6	51.2
Starting Torque [N·m]		1.8	2.7	3.6	4.5	5.4	7.1	8.9	10.7	15.5	19.3	23.2	30.9	38.6	46.4
	Single-Phase 220 VAC 50 Hz	2.0	3.0	3.9	4.9	5.9	7.9	9.8	11.8	17.1	21.3	25.6	34.1	42.6	51.2
Permissible Load Inertia J [× 10 ⁻⁴ kg·m ²]		200	450	800	1250	1800	3200	5000	7200	12800	20000	28800	51200	80000	115200
	At Instantaneous Stop	66.7	150	267	417	600	1067	1667	2400	4267	6667	9600	17067	26667	38400
Permissible Radial Load [N]	Hollow Shaft*	10 mm from installation surface	415	554	692	831	923	1017	1112	1196				1291	
		20 mm from installation surface	363	484	605	726	806	889	971	1045				1127	
	Solid Shaft	10 mm from output shaft end	378	504	630	756	840	926	1011	1089				1174	
		20 mm from output shaft end	481	641	802	962	1069	1178	1287	1385				1495	
Permissible Axial Load [N]		108	147	186	226	245	275	294	324				343		

*The radial load at each distance can also be calculated with a formula → Page 15

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.

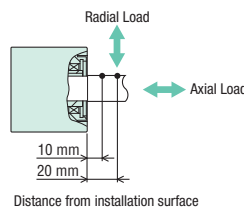
When the motor temperature drops, the thermal protector closes and the motor restarts automatically. Be sure to turn the power supply off before inspecting.

● 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 up to 30% less depending on the load.

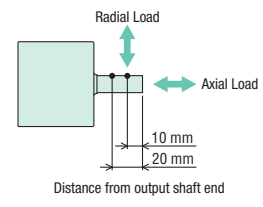
◇ About Load Position

● Hollow Shaft



Distance from installation surface

● Solid Shaft



Distance from output shaft end

Product Line

● Hypoid Right-Angle Hollow Shaft JH Gear

Product Name	Gear Ratio
5IK60KF-5H □B	10, 15 20, 25, 30 40, 50, 60
	80, 100, 120 160, 200, 240
5IK60KG-5H □B	10, 15 20, 25, 30 40, 50, 60
	80, 100, 120 160, 200, 240
5IK60KR-5H □B	10, 15 20, 25, 30 40, 50, 60
	80, 100, 120 160, 200, 240

The following items are included in each product.

Motor, Gearhead, Capacitor, Capacitor cap, Installation screws, Parallel key (Stainless steel), Safety cover, Operating manual

● Hypoid Right-Angle Solid Shaft JL Gear

Product Name	Gear Ratio
5IK60KF-5L □B	10, 15 20, 25, 30 40, 50, 60
	80, 100, 120 160, 200, 240
5IK60KG-5L □B	10, 15 20, 25, 30 40, 50, 60
	80, 100, 120 160, 200, 240
5IK60KR-5L □B	10, 15 20, 25, 30 40, 50, 60
	80, 100, 120 160, 200, 240

The following items are included in each product.

Motor, Gearhead, Capacitor, Capacitor cap, Installation screws, Parallel key (Iron), Operating manual

● A number in the box □ in the product name indicates the gear ratio.

Dimensions (Unit = mm)

- "Mounting screws" are included. Dimensions of installation screws → Page 13
- A capacitor is included. Dimensions for capacitor → Page 13
- A number in the box □ in the product name indicates the gear ratio.

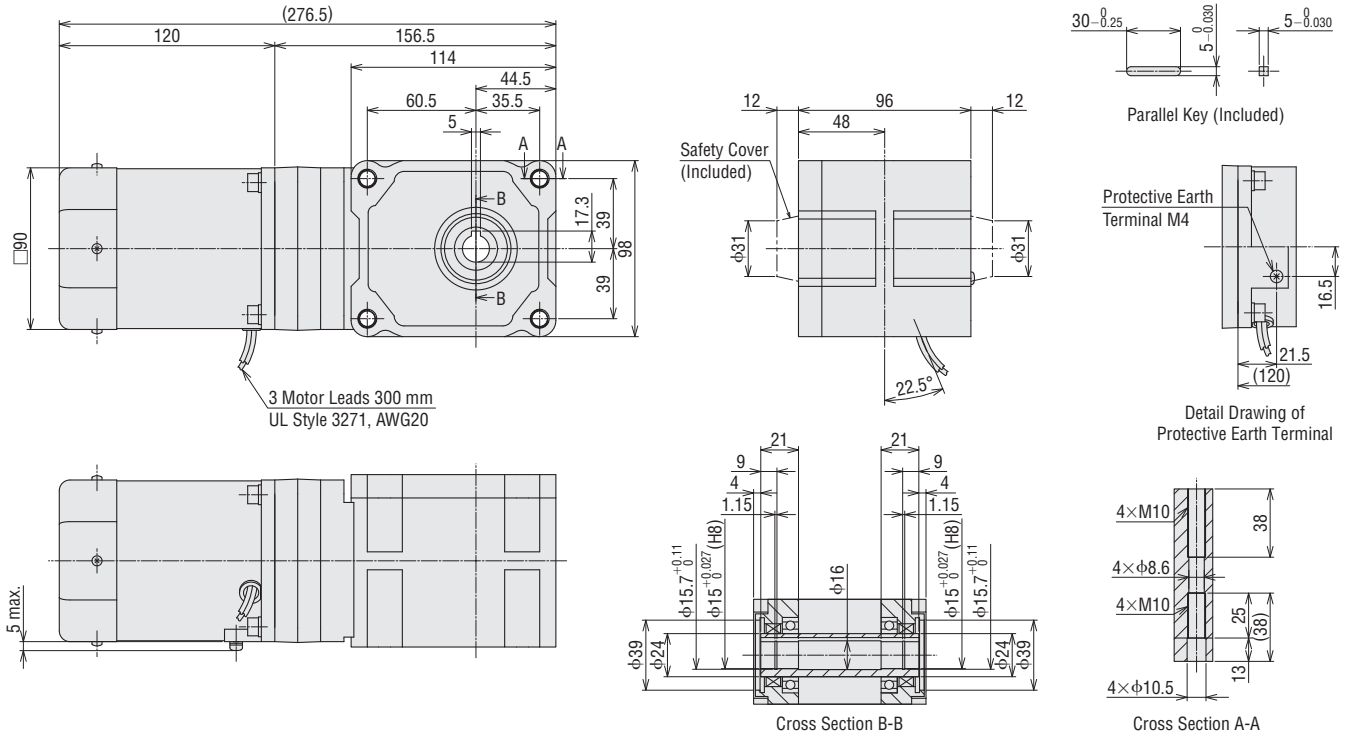
Lead Wire Type

◇ Hypoid Right-Angle Hollow Shaft JH Gear

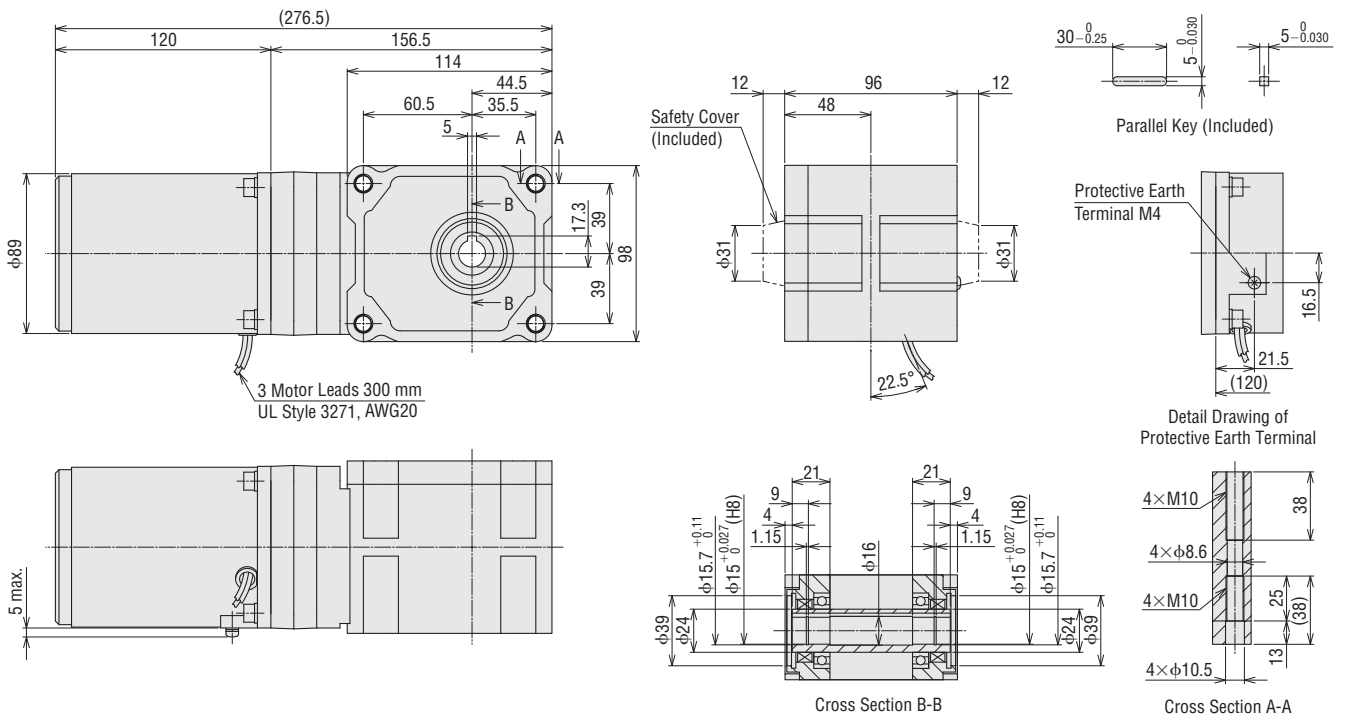
2D & 3D CAD

Dimensions No.	Product Name	Motor Product Name	Gearhead Product Name	Mass kg	2D CAD
①	5IK60KF-5H□B	5IK60KF	5H□B	5.7	A1573
	5IK60KR-5H□B	5IK60KR			
②	5IK60KG-5H□B	5IK60KG		5.9	A1511

● Dimensions ①



● Dimensions ②

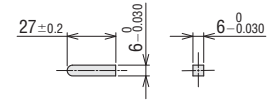
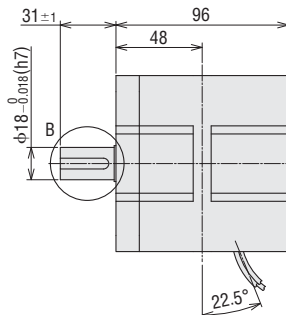
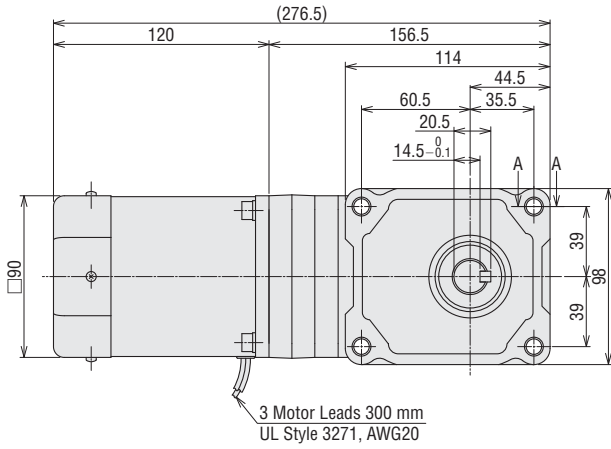


◆ Hypoid Right-Angle Solid Shaft JL Gear

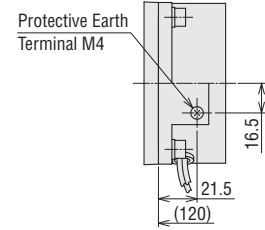
2D & 3D CAD

Dimensions No.	Product Name	Motor Product Name	Gearhead Product Name	Mass kg	2D CAD
①	5IK60KF-5L□B	5IK60KF	5L□B	5.7	A1574
	5IK60KR-5L□B	5IK60KR			
②	5IK60KG-5L□B	5IK60KG		5.9	A1512

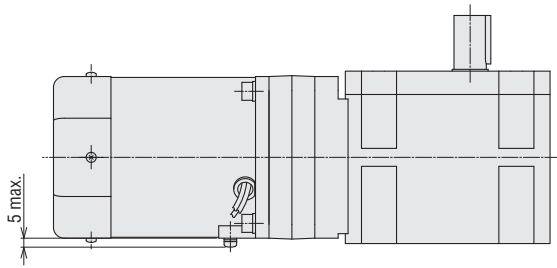
● Dimensions ①



Parallel Key (Included)



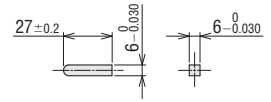
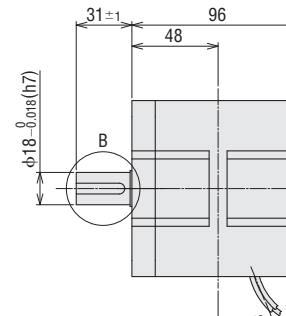
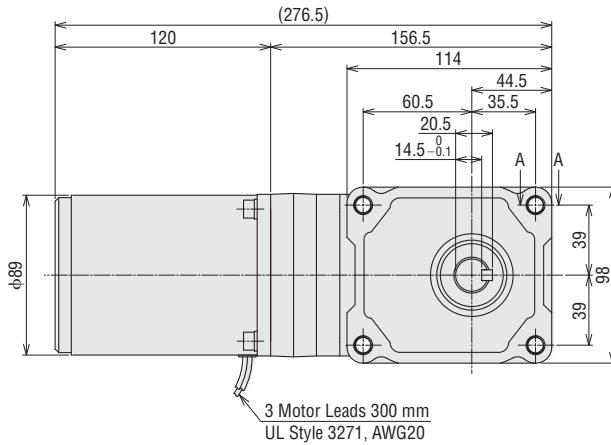
Detail Drawing of Protective Earth Terminal



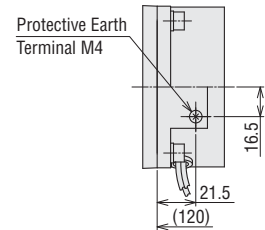
Cross Section A-A

Details of B

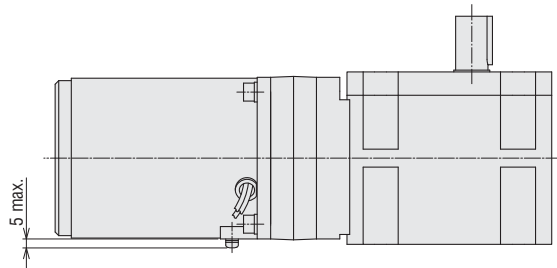
● Dimensions ②



Parallel Key (Included)



Detail Drawing of Protective Earth Terminal



Cross Section A-A

Details of B

● At the time of shipment, the parallel key is fixed in the key slot of the gearhead shaft.

Induction Motors

90 W

□ 90 mm

KII Series Hypoid Right-Angle Shaft Gear



Hypoid Right-Angle Hollow Shaft
JH Gear



Hypoid Right-Angle Solid Shaft
JL Gear

Specifications Continuous Rating



Product Name Lead Wire Type		Output Power W	Voltage VAC	Frequency Hz	Current A	Capacitor μF	Overheat Protection Device
Hollow Shaft Type	Solid Shaft Type						
5IK90KF-5H □B	5IK90KF-5L □B	90	Single-Phase 110	60	1.44	20	TP
			Single-Phase 115		1.44		
5IK90KG-5H □B	5IK90KG-5L □B		Single-Phase 220	50	0.70	6.0	TP
			Single-Phase 230		0.70		
5IK90KR-5H □B	5IK90KR-5L □B		Single-Phase 220	60	0.71	5.0	TP
			Single-Phase 230		0.71		

Gear Ratio		10	15	20	25	30	40	50	60	80	100	120	160	200	240
Speed [r/min]	50 Hz	150	100	75	60	50	37	30	25	18.7	15	12.5	9.3	7.5	6.2
	60 Hz	180	120	90	72	60	45	36	30	22	18	15	11.2	9	7.5
Rated Torque [N·m]	Single-Phase 110/115 VAC 60 Hz	4.1	6.1	8.3	10.5	12.6	16.7	20.6	24.5	31.4	39.2	47.0	53.9	53.9	53.9
	Single-Phase 220/230 VAC	4.1	6.1	8.3	10.8	12.7	16.7	20.6	24.5	31.4	39.2	47.0	53.9	53.9	53.9
Starting Torque [N·m]	Single-Phase 110/115 VAC 60 Hz	3.2	4.8	6.5	8.1	9.7	12.9	16.1	19.4	25.8	32.3	38.7	51.7	53.9	53.9
	Single-Phase 220 VAC 50 Hz	3.4	5.2	6.9	8.6	10.3	13.8	17.2	20.7	27.6	34.4	41.3	53.9	53.9	53.9
	Single-Phase 230 VAC 50 Hz	3.7	5.6	7.5	9.3	11.2	14.9	18.7	22.4	29.8	37.3	44.8	53.9	53.9	53.9
Permissible Load Inertia J [×10 ⁻⁴ kg·m ²]		200	450	800	1250	1800	3200	5000	7200	12800	20000	28800	51200	80000	115200
	At Instantaneous Stop	66.7	150	267	417	600	1067	1667	2400	4267	6667	9600	17067	26667	38400
Permissible Radial Load [N]	Hollow Shaft*	10 mm from installation surface	415	554	692	831	923	1017	1112		1196			1291	
		20 mm from installation surface	363	484	605	726	806	889	971		1045			1127	
	Solid Shaft	10 mm from output shaft end	378	504	630	756	840	926	1011		1089			1174	
		20 mm from output shaft end	481	641	802	962	1069	1178	1287		1385			1495	
Permissible Axial Load [N]		108	147	186	226	245	275	294		324			343		

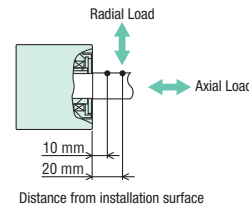
*The radial load at each distance can also be calculated with a formula → Page 15

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.

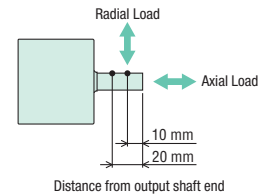
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio.
The actual speed is up to 30% less depending on the load.

◇ About Load Position

● Hollow Shaft



● Solid Shaft



Product Line

● Hypoid Right-Angle Hollow Shaft JH Gear

Product Name	Gear Ratio
5IK90KF-5H □B	10, 15 20, 25, 30 40, 50, 60
	80, 100, 120 160, 200, 240
5IK90KG-5H □B	10, 15 20, 25, 30 40, 50, 60
	80, 100, 120 160, 200, 240
5IK90KR-5H □B	10, 15 20, 25, 30 40, 50, 60
	80, 100, 120 160, 200, 240

The following items are included in each product.
Motor, Gearhead, Capacitor, Capacitor cap, Installation screws, Parallel key (Stainless steel), Safety cover, Operating manual

● Hypoid Right-Angle Solid Shaft JL Gear

Product Name	Gear Ratio
5IK90KF-5L □B	10, 15 20, 25, 30 40, 50, 60
	80, 100, 120 160, 200, 240
5IK90KG-5L □B	10, 15 20, 25, 30 40, 50, 60
	80, 100, 120 160, 200, 240
5IK90KR-5L □B	10, 15 20, 25, 30 40, 50, 60
	80, 100, 120 160, 200, 240

The following items are included in each product.
Motor, Gearhead, Capacitor, Capacitor cap, Installation screws, Parallel key (Iron), Operating manual

- A number in the box □ in the product name indicates the gear ratio.

Dimensions (Unit = mm)

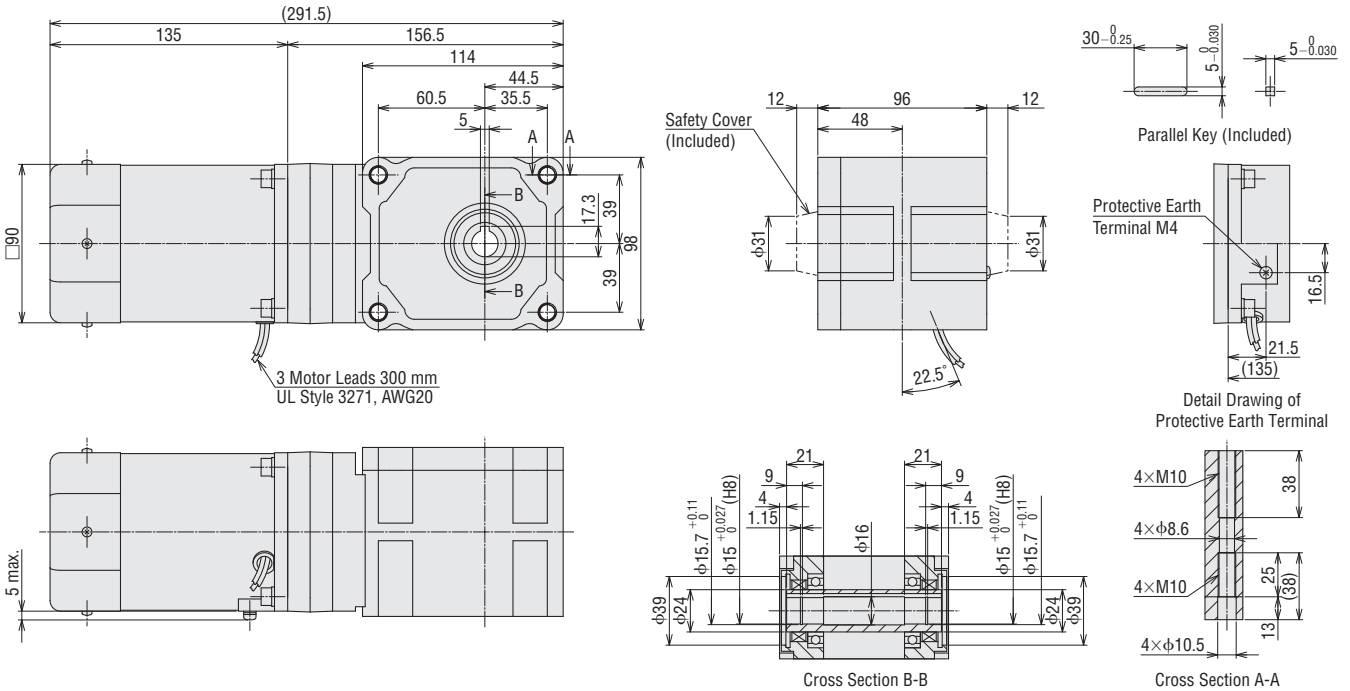
- "Mounting screws" are included. Dimensions of installation screws → Page 13
- A capacitor is included. Dimensions for capacitor → Page 13
- A number in the box □ in the product name indicates the gear ratio.

Lead Wire Type

◇ Hypoid Right-Angle Hollow Shaft JH Gear

2D & 3D CAD

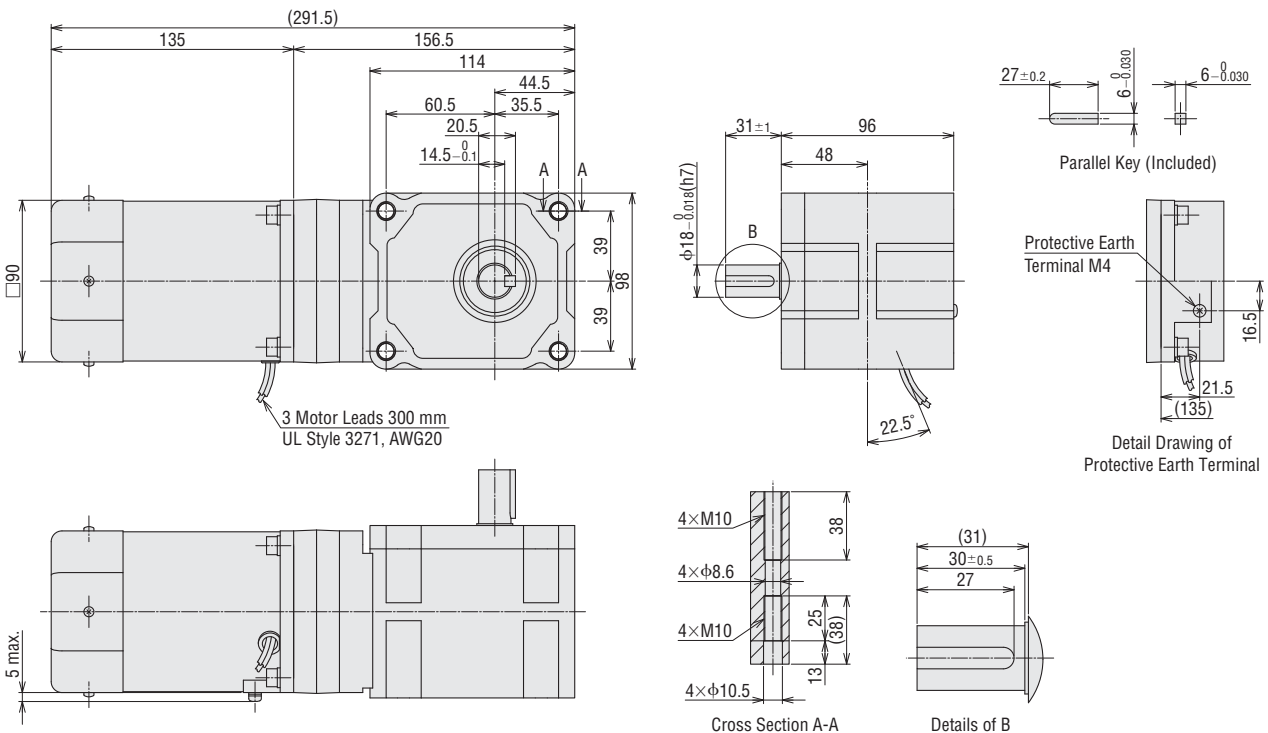
Product Name	Motor Product Name	Gearhead Product Name	Mass kg	2D CAD
5IK90KF-5H□B	5IK90KF	5H□B	6.2	A1513
5IK90KG-5H□B	5IK90KG			
5IK90KR-5H□B	5IK90KR			



◇ Hypoid Right-Angle Solid Shaft JL Gear

2D & 3D CAD

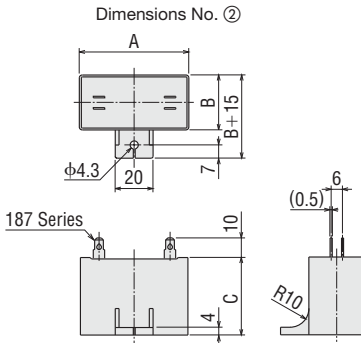
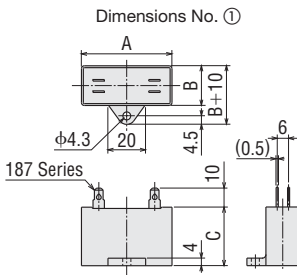
Product Name	Motor Product Name	Gearhead Product Name	Mass kg	2D CAD
5IK90KF-5L□B	5IK90KF	5L□B	6.2	A1514
5IK90KG-5L□B	5IK90KG			
5IK90KR-5L□B	5IK90KR			



- At the time of shipment, the parallel key is fixed in the key slot of the gearhead shaft.

■ Dimensions of Capacitor (Included)

Unit: mm

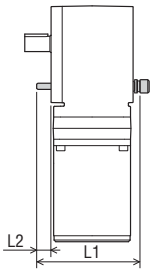


Product Name	Capacitor Product Name	A	B	C	Mass g	Dimensions No.
5IK40KF-5H□B 5IK40KF-5L□B	CH90CFAUL2	48	22.5	31.5	45	①
5IK40KG-5H□B 5IK40KG-5L□B	CH25BFAUL	48	21	31	42	
5IK40KR-5H□B 5IK40KR-5L□B	CH20BFAUL	48	19	29	36	
5IK60KF-5H□B 5IK60KF-5L□B	CH160CFAUL2	58	23.5	37	71	
5IK60KG-5H□B 5IK60KG-5L□B	CH40BFAUL	58	23.5	37	73	②
5IK60KR-5H□B 5IK60KR-5L□B	CH40BFAUL	58	23.5	37	73	
5IK90KF-5H□B 5IK90KF-5L□B	CH200CFAUL2	58	29	41	91	
5IK90KG-5H□B 5IK90KG-5L□B	CH60BFAUL	58	29	41	92	
5IK90KR-5H□B 5IK90KR-5L□B	CH50BFAUL	58	29	41	93	

● A capacitor cap is included with the capacitor.

● A number in the box □ in the product name indicates the gear ratio.

■ Dimensions of Installation Screws



Product Name	Hexagonal Socket Head Screw		
	Nominal	L1 (mm)	L2 (mm)
5IK	M8	110	10

● Installation screws: 4 plain washers and 4 spring washers are included.

● The installation screw material is stainless steel.

■ General Specifications

Item	Specifications
Insulation Resistance	The measured value is 100 MΩ or more when a 500 VDC megger is applied between the motor windings and the case after continuous operation under normal ambient temperature and humidity.
Dielectric Strength Voltage	No abnormality is judged even with application of 1.5 kVAC at 50 Hz or 60 Hz between the motor windings and the case for 1 minute after continuous operation under normal ambient temperature and humidity.
Temperature Rise	Temperature rise of windings are 80°C or less measured by the resistance method after continuous operation under normal ambient temperature and humidity.
Heat-resistant Class	130 (B)
Overheat Protection Device	Built-in thermal protector (Automatic return type) Open: 130±5°C Close: 85±20°C
Operating Ambient Temperature	0~+40°C (Non-freezing)
Operating Ambient Humidity	85% or less (Non-condensing)
Degree of Protection	IP20

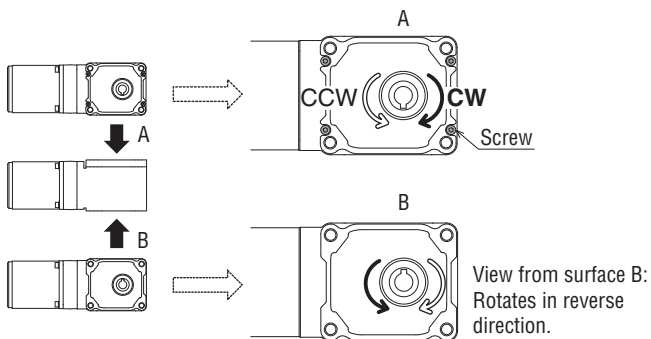
Connection Diagrams

The motor rotation direction varies by gear ratio.

Check the gear ratio of the gearhead to be used before connecting.

Gear Ratio 10~60	CW	CCW
Gear Ratio 80~240	CCW	CW
Connection Diagrams		
With Hollow Shafts		

The motor rotation direction varies by installation surface.

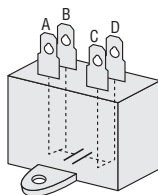


Note

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

How to Connect a Capacitor

The capacitor has four terminals. As shown in the figure, the terminal A is internally connected with the terminal B, and the terminal C with the terminal D. Electrically, these are handled as two terminals.



Inner Wiring Diagram for 4-Terminal Capacitor

Installing a Hollow Shaft Load

Example of Load Shaft Installation Method

The load installation method differs depending on the shape of the load shaft. See the figures below.

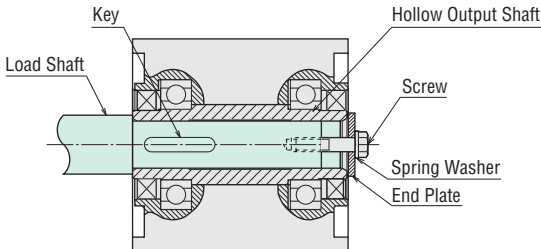
- The hollow output shaft is processed to a tolerance of the inner diameter H8, and incorporates a key slot for load shaft installation.
- The recommended tolerance of the load shaft is h7.
- The load shaft can be attached to the output shaft from either left or right end in the following figure below.

Note

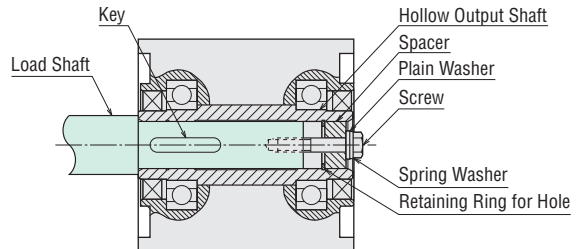
- To prevent sticking, apply a coat of grease on the exterior surface of the load shaft and interior surface of the hollow output shaft.

Stepped Load Shaft

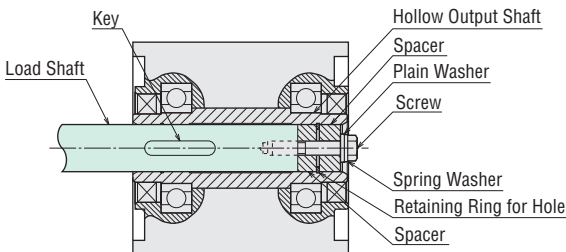
Fixing Method Using the End Plate



Fixing Method Using the Retaining Ring for Hole



For Non-Stepped Load Shaft



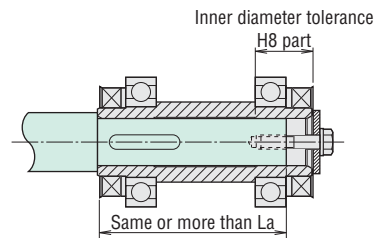
Recommended Load Shaft Installation Method

Unit: mm

Inner Diameter of Hollow Output Shaft (H8)	$\phi 15^{+0.027}_0$	
Recommended Tolerance of Load Shaft (h7)	$\phi 15^{0}_{-0.018}$	
Screw Size	M6	
Stepped Shaft La Length	72	
Spacer Dimensions	Outer Diameter	$\phi 14.5$
	Inner Diameter	$\phi 7$
	Width	3
Nominal Hole Diameter of Retaining Ring	$\phi 15$ C Type Retaining Ring	
End Plate Thickness	3	

- Retaining rings for holes, spacers, screws or other parts used to install the load shaft are not supplied.

Length of Load Shaft



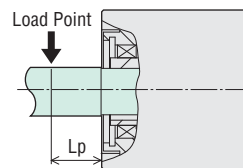
It is recommended that 5 mm or more of the load shaft goes into the inner diameter tolerance H8 part.

Permissible Radial Load Calculation of the Hollow Shaft Type

Formulas to calculate permissible radial loads vary depending on the mechanism.

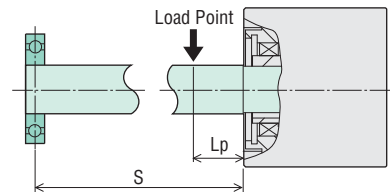
When One End of the Load Shaft is Not Supported by a Bearing Unit

$$\text{Permissible Radial Load } W \text{ [N]} = \frac{69}{59 + L_p} \times F_0$$



When One End of the Load Shaft is Not Supported by a Bearing Unit

$$\text{Permissible Radial Load } W \text{ [N]} = \frac{69(S+4)}{65(S-L_p)} \times F_0$$



F_0 [N]: Permissible radial load when the reference point is at 10 mm from the flange-installation surface.

L_p [mm]: Distance from the flange-installation surface to the load point.

S [mm]: Distance from the flange-installation surface to the bearing unit.

- For permissible radial load at 10 mm from the flange-installation surface, see the specification table for each output. → Page 6, Page 8, Page 11

Accessories (Sold Separately)

Flexible Couplings

This clamping type coupling connects the gearhead shaft and the mating shaft.

Product Line

Coupling Type	During Shock Load	Applicable Products
MCL55	Uniform Load	5IK40K ■-5L□ B 5IK60K ■-5L□ B 5IK90K ■-5L□ B
MCL65	Shock Load	Hypoid Right-Angle Solid Shaft



- **F, G or R** indicating the power voltage is entered where the box ■ is located within the product name.
- A number in the box □ in the product name indicates the gear ratio.

Safety Precautions

- To ensure correct operation, carefully read the Operating Manual before using it.
- The products listed in this catalogue are for industrial use and for built-in component. Do not use for any other applications.

- The factories which manufacture the products listed in this catalogue have obtained Quality Management Systems ISO9001 and Environment Management Systems ISO14001.
- The content listed in this catalogue such as performance and specifications of the products are subject to change without notice for improvements.
- The price of all products listed in this catalogue does not include the consumption tax etc.
- For details of the products, please contact the nearest dealer, sales office or the following "Order Support Center" or "Customer Support Center".
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