

8. HG-JR SERIES

8. HG-JR SERIES

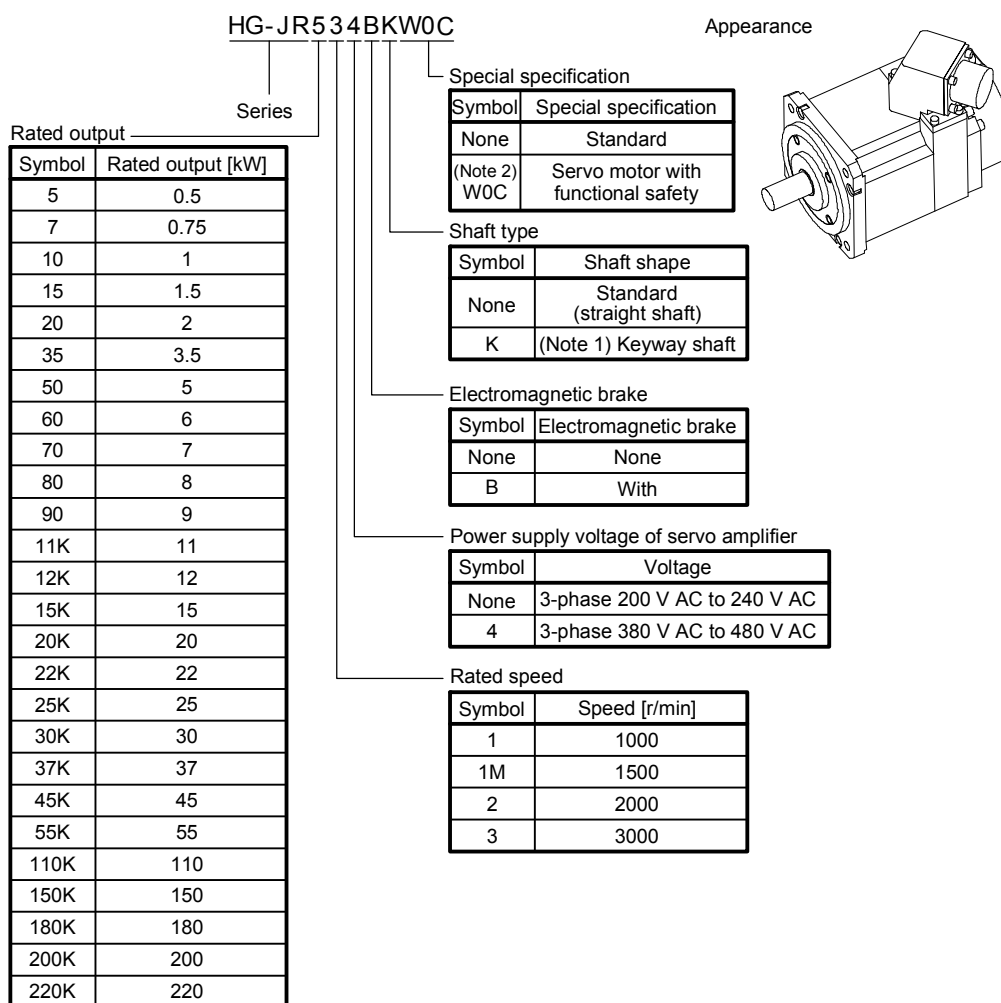
POINT

- The 1500 r/min series of 22 kW or more, 1000 r/min series of 15 kW or more, and 2000 r/min series are not with an electromagnetic brake.

This chapter provides information on the servo motor specifications and characteristics. When using the HG-JR series servo motor, always read the Safety Instructions in the beginning of this manual and chapters 1 to 5, in addition to this chapter.

8.1 Model designation

The following describes model designation. Not all combinations of the symbols are available.



- Note 1. Key is not included.
 2. Refer to section 1.5 for details.

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8.2 Combination list of servo motors and servo amplifiers/drive units

(1) Compatible with 3-phase 200 V AC

(a) 3000 r/min series

Servo motor	Servo amplifiers/Drive units				
	MR-J4 1-axis			MR-J4 2-axis	
	Standard	When the maximum torque is 400% (Note 1)	Maximally increased torque (Note 3)	Standard	When the maximum torque is 400% (Note 1)
HG-JR53 (Note 2)	MR-J4-60A MR-J4-60A-RJ MR-J4-60B MR-J4-60B-RJ MR-J4-60B-RJ010 MR-J4-60B-RJ020 MR-J4-60GF MR-J4-60GF-RJ	MR-J4-100A MR-J4-100A-RJ MR-J4-100B MR-J4-100B-RJ MR-J4-100B-RJ010 MR-J4-100B-RJ020 MR-J4-100GF MR-J4-100GF-RJ		MR-J4W2-77B	MR-J4W2-1010B
HG-JR73 (Note 2)	MR-J4-70A MR-J4-70A-RJ MR-J4-70B MR-J4-70B-RJ MR-J4-70B-RJ010 MR-J4-70B-RJ020 MR-J4-70GF MR-J4-70GF-RJ	MR-J4-200A MR-J4-200A-RJ MR-J4-200B MR-J4-200B-RJ		MR-J4W2-77B MR-J4W2-1010B	
HG-JR103 (Note 2)	MR-J4-100A MR-J4-100A-RJ MR-J4-100B MR-J4-100B-RJ MR-J4-100B-RJ010 MR-J4-100B-RJ020 MR-J4-100GF MR-J4-100GF-RJ	MR-J4-200B-RJ010 MR-J4-200B-RJ020 MR-J4-200GF MR-J4-200GF-RJ		MR-J4W2-1010B	
HG-JR153	MR-J4-200A MR-J4-200A-RJ MR-J4-200B MR-J4-200B-RJ	MR-J4-350A MR-J4-350A-RJ MR-J4-350B-RJ010 MR-J4-350B-RJ020			
HG-JR203	MR-J4-200B-RJ010 MR-J4-200B-RJ020 MR-J4-200GF MR-J4-200GF-RJ	MR-J4-350B MR-J4-350B-RJ MR-J4-350GF MR-J4-350GF-RJ			
HG-JR353	MR-J4-350A MR-J4-350A-RJ MR-J4-350B MR-J4-350B-RJ MR-J4-350B-RJ010 MR-J4-350B-RJ020 MR-J4-350GF MR-J4-350GF-RJ	MR-J4-500A MR-J4-500A-RJ MR-J4-500B MR-J4-500B-RJ MR-J4-500B-RJ010 MR-J4-500B-RJ020 MR-J4-500GF MR-J4-500GF-RJ			
HG-JR503	MR-J4-500A MR-J4-500A-RJ MR-J4-500B MR-J4-500B-RJ MR-J4-500B-RJ010 MR-J4-500B-RJ020 MR-J4-500GF MR-J4-500GF-RJ	MR-J4-700A MR-J4-700A-RJ MR-J4-700B MR-J4-700B-RJ MR-J4-700B-RJ010 MR-J4-700B-RJ020 MR-J4-700GF MR-J4-700GF-RJ MR-J4-DU900B MR-J4-DU900B-RJ			

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Servo motor	Servo amplifiers/Drive units				
	MR-J4 1-axis			MR-J4 2-axis	
	Standard	When the maximum torque is 400% (Note 1)	Maximally increased torque (Note 3)	Standard	When the maximum torque is 400% (Note 1)
HG-JR703	MR-J4-700A MR-J4-700A-RJ MR-J4-700B MR-J4-700B-RJ MR-J4-700B-RJ010 MR-J4-700B-RJ020 MR-J4-700GF MR-J4-700GF-RJ MR-J4-DU900B MR-J4-DU900B-RJ	/	MR-J4-DU900B MR-J4-DU900B-RJ	/	/
HG-JR903	MR-J4-11KA MR-J4-11KA-RJ MR-J4-11KB MR-J4-11KB-RJ MR-J4-11KB-RJ010 MR-J4-11KB-RJ020 MR-J4-11KGF MR-J4-11KGF-RJ MR-J4-DU900B MR-J4-DU900B-RJ		/		

- Note
1. The maximum torque can be increased to 400% of the rated torque.
 2. When a 1-phase 200 V AC input is used, the maximum torque cannot be increased to 400% of the rated torque.
 3. This is applied when the maximum torque is increased by enabling the parameter (maximally increased torque function when drive unit is connected).

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(b) 1500 r/min series

Servo motor	Servo amplifiers/Drive units	
	Standard	Maximally increased torque (Note)
HG-JR701M	MR-J4-700A MR-J4-700A-RJ MR-J4-700B MR-J4-700B-RJ MR-J4-700B-RJ010 MR-J4-700B-RJ020 MR-J4-700GF MR-J4-700GF-RJ MR-J4-DU900B MR-J4-DU900B-RJ	MR-J4-DU900B MR-J4-DU900B-RJ
HG-JR11K1M	MR-J4-11KA MR-J4-11KA-RJ MR-J4-11KB MR-J4-11KB-RJ MR-J4-11KB-RJ010 MR-J4-11KB-RJ020 MR-J4-11KGF MR-J4-11KGF-RJ MR-J4-DU11KB MR-J4-DU11KB-RJ	
HG-JR15K1M	MR-J4-15KA MR-J4-15KA-RJ MR-J4-15KB MR-J4-15KB-RJ MR-J4-15KB-RJ010 MR-J4-15KB-RJ020 MR-J4-15KGF MR-J4-15KGF-RJ MR-J4-DU15KB MR-J4-DU15KB-RJ	
HG-JR22K1M	MR-J4-22KA MR-J4-22KA-RJ MR-J4-22KB MR-J4-22KB-RJ MR-J4-22KB-RJ010 MR-J4-22KB-RJ020 MR-J4-22KGF MR-J4-22KGF-RJ MR-J4-DU22KB MR-J4-DU22KB-RJ	
HG-JR30K1M	MR-J4-DU30KA MR-J4-DU30KA-RJ MR-J4-DU30KB MR-J4-DU30KB-RJ MR-J4-DU30KB-RJ020	
HG-JR37K1M	MR-J4-DU37KA MR-J4-DU37KA-RJ MR-J4-DU37KB MR-J4-DU37KB-RJ MR-J4-DU37KB-RJ020	

Note. This is applied when the maximum torque is increased by enabling the parameter (maximally increased torque function when drive unit is connected).

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(c) 1000 r/min series

Servo motor	Servo amplifiers/ Drive units	Servo motor	Servo amplifiers/ Drive units
HG-JR601	MR-J4-700A	HG-JR15K1	MR-J4-15KA
	MR-J4-700A-RJ		MR-J4-15KA-RJ
	MR-J4-700B		MR-J4-15KB
	MR-J4-700B-RJ		MR-J4-15KB-RJ
	MR-J4-700B-RJ010		MR-J4-15KB-RJ010
	MR-J4-700B-RJ020		MR-J4-15KB-RJ020
	MR-J4-700GF		MR-J4-15KGF
	MR-J4-700GF-RJ		MR-J4-15KGF-RJ
	MR-J4-DU900B		MR-J4-DU15KB
MR-J4-DU900B-RJ	MR-J4-DU15KB-RJ		
HG-JR801	MR-J4-11KA	HG-JR20K1	MR-J4-22KA
	MR-J4-11KA-RJ		MR-J4-22KA-RJ
	MR-J4-11KB		MR-J4-22KB
	MR-J4-11KB-RJ		MR-J4-22KB-RJ
	MR-J4-11KB-RJ010		MR-J4-22KB-RJ010
	MR-J4-11KB-RJ020	MR-J4-22KB-RJ020	
	MR-J4-11KGF	HG-JR25K1	MR-J4-22KGF
	MR-J4-11KGF-RJ		MR-J4-22KGF-RJ
	MR-J4-DU900B		MR-J4-DU22KB
MR-J4-DU900B-RJ	MR-J4-DU22KB-RJ		
HG-JR12K1	MR-J4-11KA	HG-JR30K1	MR-J4-DU30KA
	MR-J4-11KA-RJ		MR-J4-DU30KA-RJ
	MR-J4-11KB		MR-J4-DU30KB
	MR-J4-11KB-RJ		MR-J4-DU30KB-RJ
	MR-J4-11KB-RJ010		MR-J4-DU30KB-RJ020
	MR-J4-11KB-RJ020	HG-JR37K1	MR-J4-DU37KA
	MR-J4-11KGF		MR-J4-DU37KA-RJ
	MR-J4-11KGF-RJ		MR-J4-DU37KB
	MR-J4-DU11KB		MR-J4-DU37KB-RJ
MR-J4-DU11KB-RJ	MR-J4-DU37KB-RJ020		

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(2) Compatible with 3-phase 400 V AC

(a) 3000 r/min series

Servo motor	Servo amplifiers/Drive units			
	Standard	When the maximum torque is 400% (Note 1)	Maximally increased torque (Note 2)	
HG-JR534	MR-J4-60A4 MR-J4-60A4-RJ MR-J4-60B4 MR-J4-60B4-RJ MR-J4-60B4-RJ010 MR-J4-60B4-RJ020 MR-J4-60GF4 MR-J4-60GF4-RJ	MR-J4-100A4 MR-J4-100A4-RJ MR-J4-100B4 MR-J4-100B4-RJ MR-J4-100B4-RJ010 MR-J4-100B4-RJ020 MR-J4-100GF4 MR-J4-100GF4-RJ		
HG-JR734	MR-J4-100A4 MR-J4-100A4-RJ MR-J4-100B4 MR-J4-100B4-RJ	MR-J4-200A4 MR-J4-200A4-RJ MR-J4-200B4 MR-J4-200B4-RJ		
HG-JR1034	MR-J4-100B4-RJ010 MR-J4-100B4-RJ020 MR-J4-100GF4 MR-J4-100GF4-RJ	MR-J4-200B4-RJ010 MR-J4-200B4-RJ020 MR-J4-200GF4 MR-J4-200GF4-RJ		
HG-JR1534	MR-J4-200A4 MR-J4-200A4-RJ MR-J4-200B4 MR-J4-200B4-RJ	MR-J4-350A4 MR-J4-350A4-RJ MR-J4-350B4 MR-J4-350B4-RJ		
HG-JR2034	MR-J4-200B4-RJ010 MR-J4-200B4-RJ020 MR-J4-200GF4 MR-J4-200GF4-RJ	MR-J4-350B4-RJ010 MR-J4-350B4-RJ020 MR-J4-350GF4 MR-J4-350GF4-RJ		
HG-JR3534	MR-J4-350A4 MR-J4-350A4-RJ MR-J4-350B4 MR-J4-350B4-RJ MR-J4-350B4-RJ010 MR-J4-350B4-RJ020 MR-J4-350GF4 MR-J4-350GF4-RJ	MR-J4-500A4 MR-J4-500A4-RJ MR-J4-500B4 MR-J4-500B4-RJ MR-J4-500B4-RJ010 MR-J4-500B4-RJ020 MR-J4-500GF4 MR-J4-500GF4-RJ		
HG-JR5034	MR-J4-500A4 MR-J4-500A4-RJ MR-J4-500B4 MR-J4-500B4-RJ MR-J4-500B4-RJ010 MR-J4-500B4-RJ020 MR-J4-500GF4 MR-J4-500GF4-RJ	MR-J4-700A4 MR-J4-700A4-RJ MR-J4-700B4 MR-J4-700B4-RJ MR-J4-700B4-RJ010 MR-J4-700B4-RJ020 MR-J4-700GF4 MR-J4-700GF4-RJ MR-J4-DU900B4 MR-J4-DU900B4-RJ		
HG-JR7034	MR-J4-700A4 MR-J4-700A4-RJ MR-J4-700B4 MR-J4-700B4-RJ MR-J4-700B4-RJ010 MR-J4-700B4-RJ020 MR-J4-700GF4 MR-J4-700GF4-RJ MR-J4-DU900B4 MR-J4-DU900B4-RJ			MR-J4-DU900B4 MR-J4-DU900B4-RJ

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Servo motor	Servo amplifiers/Drive units		
	Standard	When the maximum torque is 400% (Note 1)	Maximally increased torque (Note 2)
HG-JR9034	MR-J4-11KA4 MR-J4-11KA4-RJ MR-J4-11KB4 MR-J4-11KB4-RJ MR-J4-11KB4-RJ010 MR-J4-11KB4-RJ020 MR-J4-11KGF4 MR-J4-11KGF4-RJ MR-J4-DU900B4 MR-J4-DU900B4-RJ		

Note 1. The maximum torque can be increased to 400% of the rated torque.

2. This is applied when the maximum torque is increased by enabling the parameter (maximally increased torque function when drive unit is connected).

(b) 1500 r/min series

Servo motor	Servo amplifiers/Drive units	
	Standard	Maximally increased torque (Note)
HG-JR701M4	MR-J4-700A4 MR-J4-700A4-RJ MR-J4-700B4 MR-J4-700B4-RJ MR-J4-700B4-RJ010 MR-J4-700B4-RJ020 MR-J4-700GF4 MR-J4-700GF4-RJ MR-J4-DU900B4 MR-J4-DU900B4-RJ	MR-J4-DU900B4 MR-J4-DU900B4-RJ
HG-JR11K1M4	MR-J4-11KA4 MR-J4-11KA4-RJ MR-J4-11KB4 MR-J4-11KB4-RJ MR-J4-11KB4-RJ010 MR-J4-11KB4-RJ020 MR-J4-11KGF4 MR-J4-11KGF4-RJ MR-J4-DU11KB4 MR-J4-DU11KB4-RJ	
HG-JR15K1M4	MR-J4-15KA4 MR-J4-15KA4-RJ MR-J4-15KB4 MR-J4-15KB4-RJ MR-J4-15KB4-RJ010 MR-J4-15KB4-RJ020 MR-J4-15KGF4 MR-J4-15KGF4-RJ MR-J4-DU15KB4 MR-J4-DU15KB4-RJ	

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Servo motor	Servo amplifiers/Drive units	
	Standard	Maximally increased torque (Note)
HG-JR22K1M4	MR-J4-22KA4 MR-J4-22KA4-RJ MR-J4-22KB4 MR-J4-22KB4-RJ MR-J4-22KB4-RJ010 MR-J4-22KB4-RJ020 MR-J4-22KGF4 MR-J4-22KGF4-RJ MR-J4-DU22KB4 MR-J4-DU22KB4-RJ	
HG-JR30K1M4	MR-J4-DU30KA4 MR-J4-DU30KA4-RJ MR-J4-DU30KB4 MR-J4-DU30KB4-RJ MR-J4-DU30KB4-RJ020	
HG-JR37K1M4	MR-J4-DU37KA4 MR-J4-DU37KA4-RJ MR-J4-DU37KB4 MR-J4-DU37KB4-RJ MR-J4-DU37KB4-RJ020	
HG-JR45K1M4	MR-J4-DU45KA4 MR-J4-DU45KA4-RJ MR-J4-DU45KB4 MR-J4-DU45KB4-RJ MR-J4-DU45KB4-RJ020	
HG-JR55K1M4	MR-J4-DU55KA4 MR-J4-DU55KA4-RJ MR-J4-DU55KB4 MR-J4-DU55KB4-RJ MR-J4-DU55KB4-RJ020	

Note. This is applied when the maximum torque is increased by enabling the parameter (maximally increased torque function when drive unit is connected).

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(c) 1000 r/min series

Servo motor	Servo amplifiers/ Drive units	Servo motor	Servo amplifiers/ Drive units
HG-JR6014	MR-J4-700A4	HG-JR15K14	MR-J4-15KA4
	MR-J4-700A4-RJ		MR-J4-15KA4-RJ
	MR-J4-700B4		MR-J4-15KB4
	MR-J4-700B4-RJ		MR-J4-15KB4-RJ
	MR-J4-700B4-RJ010		MR-J4-15KB4-RJ010
	MR-J4-700B4-RJ020		MR-J4-15KB4-RJ020
	MR-J4-700GF4		MR-J4-15KGF4
	MR-J4-700GF4-RJ		MR-J4-15KGF4-RJ
	MR-J4-DU900B4		MR-J4-DU15KB4
MR-J4-DU900B4-RJ	MR-J4-DU15KB4-RJ		
HG-JR8014	MR-J4-11KA4	HG-JR20K14	MR-J4-22KA4
	MR-J4-11KA4-RJ		MR-J4-22KA4-RJ
	MR-J4-11KB4		MR-J4-22KB4
	MR-J4-11KB4-RJ		MR-J4-22KB4-RJ
	MR-J4-11KB4-RJ010		MR-J4-22KB4-RJ010
	MR-J4-11KB4-RJ020	MR-J4-22KB4-RJ020	
	MR-J4-11KGF4	HG-JR25K14	MR-J4-22KGF4
	MR-J4-11KGF4-RJ		MR-J4-22KGF4-RJ
	MR-J4-DU900B4		MR-J4-DU22KB
MR-J4-DU900B4-RJ	MR-J4-DU22KB-RJ		
HG-JR12K14	MR-J4-11KA4	HG-JR30K14	MR-J4-DU30KA4
	MR-J4-11KA4-RJ		MR-J4-DU30KA4-RJ
	MR-J4-11KB4		MR-J4-DU30KB4
	MR-J4-11KB4-RJ		MR-J4-DU30KB4-RJ
	MR-J4-11KB4-RJ010		MR-J4-DU30KB4-RJ020
	MR-J4-11KB4-RJ020	HG-JR37K14	MR-J4-DU37KA4
	MR-J4-11KGF4		MR-J4-DU37KA4-RJ
	MR-J4-11KGF4-RJ		MR-J4-DU37KB4
	MR-J4-DU11KB4		MR-J4-DU37KB4-RJ
MR-J4-DU11KB4-RJ	MR-J4-DU37KB4-RJ020		

(d) 2000 r/min series

Servo motor	Drive units
HG-JR110K24W0C	Two units of MR-J4-DU55KB4-RJ100
HG-JR150K24W0C	Four units of MR-J4-DU45KB4-RJ100
HG-JR180K24W0C	Four units of MR-J4-DU55KB4-RJ100
HG-JR200K24W0C	Four units of MR-J4-DU55KB4-RJ100
HG-JR220K24W0C	Four units of MR-J4-DU55KB4-RJ100

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8.3 Standard specifications

8.3.1 Standard specifications list

Servo motor			HG-JR 3000 r/min series (Compatible with 3-phase 200 V AC, low inertia/medium capacity)								
			53(B)	73(B)	103(B)	153(B)	203(B)	353(B)	503(B)	703(B)	903(B)
Power supply capacity			Refer to "Power supply equipment capacity and generated loss of servo amplifiers" in Servo Amplifier Instruction Manual.								
Continuous running duty (Note 1)	Rated output [kW] (Note 8)		0.5	0.75	1.0	1.5	2.0	3.3 (3.5)	5.0	7.0	9.0
	Rated torque [N·m] (Note 8)		1.6	2.4	3.2	4.8	6.4	10.5 (11.1)	15.9	22.3	28.6
Maximum torque (Note 8)		[N·m]	4.8 (6.4)	7.2 (9.6)	9.6 (12.7)	14.3 (19.1)	19.1 (25.5)	32.0 (44.6)	47.7 (63.7)	66.8 (78.0)	85.8
Rated speed (Note 1)		[r/min]	3000								
Maximum speed		[r/min]	6000						5000		
Instantaneous permissible speed		[r/min]	6900						5750		
Power rate at continuous rated torque	Standard [kW/s]		16.7	27.3	38.2	60.2	82.4	83.5	133	115	147
	With an electromagnetic brake [kW/s]		12.5	22.0	32.2	53.1	74.8	71.6	119	93.9	125
Rated current (Note 8)		[A]	3.0	5.6	5.6	11	11	17 (18)	27	34	41
Maximum current (Note 8)		[A]	9.0 (12)	17 (23)	17 (23)	32 (43)	32 (43)	51 (71)	81 (108)	103 (134)	134
Moment of inertia J	Standard [$\times 10^{-4}$ kg·m ²]		1.52	2.09	2.65	3.79	4.92	13.2	19.0	43.3	55.8
	With an electromagnetic brake [$\times 10^{-4}$ kg·m ²]		2.02	2.59	3.15	4.29	5.42	15.4	21.2	52.9	65.4
Recommended load to motor inertia ratio (Note 2)			10 times or less								
Speed/position detector			22-bit encoder common to absolute position/incremental (resolution per servo motor revolution: 4194304 pulses/rev)								
Oil seal			With								
Thermistor			None								
Insulation class			155 (F)								
Structure			Totally-enclosed, natural-cooling (IP rating: IP67 (Note 3))								
Environment (Note 4)	Ambient temperature	Operation	0 °C to 40 °C (non-freezing)								
		Storage	-15 °C to 70 °C (non-freezing)								
	Ambient humidity	Operation	10 %RH to 80 %RH (non-condensing)								
		Storage	10 %RH to 90 %RH (non-condensing)								
	Ambience		Indoors (no direct sunlight), free from corrosive gas, flammable gas, oil mist, dust, and dirt								
	Altitude		2000 m or less above sea level (Note 9)								
Vibration resistance (Note 5)			X, Y: 24.5 m/s ²						X: 24.5 m/s ² Y: 29.4 m/s ²		
Vibration rank (Note 6)			V10								
Permissible load for the shaft (Note 7)	L [mm]		40				55		79		
	Radial [N]		323				980		2450		
	Thrust [N]		284				490		980		
Mass	Standard [kg]		3.0	3.7	4.5	5.9	7.5	13	18	29	36
	With an electromagnetic brake [kg]		4.4	5.1	5.9	7.3	8.9	15	20	35	42

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Servo motor			HG-JR 1500 r/min series					
			(Compatible with 3-phase 200 V AC, low inertia/large capacity)					
Item			701M(B)	11K1M(B)	15K1M(B)	22K1M	30K1M	37K1M
Power supply capacity			Refer to "Power supply equipment capacity and generated loss of servo amplifiers" in Servo Amplifier Instruction Manual.					
Continuous running duty (Note 1)	Rated output	[kW]	7.0	11	15	22	30	37
	Rated torque	[N•m]	44.6	70.0	95.5	140	191	236
Maximum torque (Note 8)		[N•m]	134 (156)	210	286	420	573	707
Rated speed (Note 1)		[r/min]	1500					
Maximum speed		[r/min]	3000			2500		
Instantaneous permissible speed		[r/min]	3450			2875		
Power rate at continuous rated torque	Standard	[kW/s]	113	223	289	401	582	726
	With an electromagnetic brake	[kW/s]	101	204	271			
Rated current		[A]	34	61	76	99	139	151
Maximum current (Note 8)		[A]	111 (130)	200	246	315	479	561
Moment of inertia J	Standard	[$\times 10^{-4}$ kg•m ²]	176	220	315	489	627	764
	With an electromagnetic brake	[$\times 10^{-4}$ kg•m ²]	196	240	336			
Recommended load to motor inertia ratio (Note 2)			10 times or less					
Speed/position detector			22-bit encoder common to absolute position/incremental (resolution per servo motor revolution: 4194304 pulses/rev)					
Oil seal			With					
Thermistor			None			Built-in		
Insulation class			155 (F)					
Structure			Totally-enclosed, natural-cooling (IP rating: IP67 (Note 3))			Totally-enclosed, force-cooled (IP rating: IP44 (Note 3))		
Environment (Note 4)	Ambient temperature	Operation	0 °C to 40 °C (non-freezing)					
		Storage	-15 °C to 70 °C (non-freezing)					
	Ambient humidity	Operation	10 %RH to 80 %RH (non-condensing)					
		Storage	10 %RH to 90 %RH (non-condensing)					
	Ambience		Indoors (no direct sunlight), free from corrosive gas, flammable gas, oil mist, dust, and dirt					
	Altitude		2000 m or less above sea level (Note 9)					
Vibration resistance (Note 5)		X, Y: 24.5 m/s ²						
Vibration rank (Note 6)			V10					
Permissible load for the shaft (Note 7)	L	[mm]	85	116		140		
	Radial	[N]	2450	2940		3234		
	Thrust	[N]	980			1470		
Mass	Standard	[kg]	53	62	86	120	145	165
	With an electromagnetic brake	[kg]	65	74	97			
Cooling fan	Power supply	Voltage/Frequency	3-phase 200 V AC to 240 V AC 50 Hz/60 Hz					
		Power consumption	65 (50 Hz)/85 (60 Hz)					
	Rated current	[A]	0.20 (50 Hz)/0.22 (60 Hz)					

8. HG-JR SERIES

Servo motor			HG-JR 1000 r/min series							
			(Compatible with 3-phase 200 V AC, low inertia/large capacity)							
Item			601(B)	801(B)	12K1(B)	15K1	20K1	25K1	30K1	37K1
Power supply capacity			Refer to "Power supply equipment capacity and generated loss of servo amplifiers" in Servo Amplifier Instruction Manual.							
Continuous running duty (Note 1)	Rated output	[kW]	6.0	8.0	12	15	20	25	30	37
	Rated torque	[N·m]	57.3	76.4	115	143	191	239	286	353
Maximum torque		[N·m]	172	229	345	429	573	717	858	1059
Rated speed (Note 1)		[r/min]	1000							
Maximum speed		[r/min]	2000			1500				
Instantaneous permissible speed		[r/min]	2300			1725				
Power rate at continuous rated torque	Standard	[kW/s]	187	265	420	418	582	748	594	761
	With an electromagnetic brake	[kW/s]	167	243	394	/	/	/	/	/
Rated current		[A]	31	47	60	67	94	95	121	152
Maximum current		[A]	108	165	208	231	318	313	399	495
Moment of inertia J	Standard	[× 10 ⁻⁴ kg·m ²]	176	220	315	489	627	764	1377	1637
	With an electromagnetic brake	[× 10 ⁻⁴ kg·m ²]	196	240	336	/	/	/	/	/
Recommended load to motor inertia ratio (Note 2)			10 times or less							
Speed/position detector			22-bit encoder common to absolute position/incremental (resolution per servo motor revolution: 4194304 pulses/rev)							
Oil seal			With							
Thermistor			None			Built-in				
Insulation class			155 (F)							
Structure			Totally-enclosed, natural-cooling (IP rating: IP67 (Note 3))			Totally-enclosed, force-cooled (IP rating: IP44 (Note 3))				
Environment (Note 4)	Ambient temperature	Operation	0 °C to 40 °C (non-freezing)							
		Storage	-15 °C to 70 °C (non-freezing)							
	Ambient humidity	Operation	10 %RH to 80 %RH (non-condensing)							
		Storage	10 %RH to 90 %RH (non-condensing)							
	Ambience		Indoors (no direct sunlight), free from corrosive gas, flammable gas, oil mist, dust, and dirt							
	Altitude		2000 m or less above sea level (Note 9)							
Vibration resistance (Note 5)		X, Y: 24.5 m/s ²							X, Y: 9.8 m/s ²	
Vibration rank (Note 6)			V10							
Permissible load for the shaft (Note 7)	L	[mm]	85	116		140		140		
	Radial	[N]	2450	2940		3234		4900		
	Thrust	[N]	980			1470		1960		
Mass	Standard	[kg]	53	62	86	120	145	165	215	240
	With an electromagnetic brake	[kg]	65	74	97	/	/	/	/	/
Cooling fan	Power supply	Voltage/Frequency	3-phase 200 V AC to 240 V AC, 50 Hz/60 Hz							
		Power consumption [W]	/					65 (50 Hz)/85 (60 Hz)		120 (50 Hz)/175 (60 Hz)
	Rated current [A]	/					0.20 (50 Hz)/0.22 (60 Hz)		0.39 (50 Hz)/0.52 (60 Hz)	

8. HG-JR SERIES

Servo motor		HG-JR 3000 r/min series									
		(Compatible with 3-phase 400 V AC, low inertia/medium capacity)									
Item		534(B)	734(B)	1034(B)	1534(B)	2034(B)	3534(B)	5034(B)	7034(B)	9034(B)	
Power supply capacity		Refer to "Power supply equipment capacity and generated loss of servo amplifiers" in Servo Amplifier Instruction Manual.									
Continuous running duty (Note 1)	Rated output (Note 8) [kW]	0.5	0.75	1.0	1.5	2.0	3.3 (3.5)	5.0	7.0	9.0	
	Rated torque (Note 8) [N•m]	1.6	2.4	3.2	4.8	6.4	10.5 (11.1)	15.9	22.3	28.6	
Maximum torque (Note 8) [N•m]		4.8 (6.4)	7.2 (9.6)	9.6 (12.7)	14.3 (19.1)	19.1 (25.5)	32.0 (44.6)	47.7 (63.7)	66.8 (78.0)	85.8	
Rated speed (Note 1) [r/min]		3000									
Maximum speed [r/min]		6000						5000			
Instantaneous permissible speed [r/min]		6900						5750			
Power rate at continuous rated torque	Standard [kW/s]	16.7	27.3	38.2	60.2	82.4	83.5	133	115	147	
	With an electromagnetic brake [kW/s]	12.5	22.0	32.2	53.1	74.8	71.6	119	93.9	125	
Rated current (Note 8) [A]		1.5	2.8	2.8	5.4	5.4	8.3 (8.8)	14	17	21	
Maximum current (Note 8) [A]		4.5 (6.0)	8.4 (12)	8.4 (12)	17 (22)	17 (22)	26 (36)	41 (54)	52 (69)	67	
Moment of inertia J	Standard [$\times 10^{-4}$ kg•m ²]	1.52	2.09	2.65	3.79	4.92	13.2	19.0	43.3	55.8	
	With an electromagnetic brake [$\times 10^{-4}$ kg•m ²]	2.02	2.59	3.15	4.29	5.42	15.4	21.2	52.9	65.4	
Recommended load to motor inertia ratio (Note 2)		10 times or less									
Speed/position detector		22-bit encoder common to absolute position/incremental (resolution per servo motor revolution: 4194304 pulses/rev)									
Oil seal		With									
Thermistor		None									
Insulation class		155 (F)									
Structure		Totally-enclosed, natural-cooling (IP rating: IP67 (Note 3))									
Environment (Note 4)	Ambient temperature	Operation	0 °C to 40 °C (non-freezing)								
		Storage	-15 °C to 70 °C (non-freezing)								
	Ambient humidity	Operation	10 %RH to 80 %RH (non-condensing)								
		Storage	10 %RH to 90 %RH (non-condensing)								
	Ambience		Indoors (no direct sunlight), free from corrosive gas, flammable gas, oil mist, dust, and dirt								
	Altitude		2000 m or less above sea level (Note 9)								
Vibration resistance (Note 5)		X, Y: 24.5 m/s ²							X: 24.5 m/s ² Y: 29.4 m/s ²		
Vibration rank (Note 6)		V10									
Permissible load for the shaft (Note 7)	L [mm]	40				55			79		
	Radial [N]	323				980			2450		
	Thrust [N]	284				490			980		
Mass	Standard [kg]	3.0	3.7	4.5	5.9	7.5	13	18	29	36	
	With an electromagnetic brake [kg]	4.4	5.1	5.9	7.3	8.9	15	20	35	42	

8. HG-JR SERIES

Servo motor			HG-JR 1500 r/min series (Compatible with 3-phase 400 V AC, low inertia/large capacity)							
			701M4 (B)	11K1M4 (B)	15K1M4 (B)	22K1M4	30K1M4	37K1M4	45K1M4	55K1M4
Power supply capacity			Refer to "Power supply equipment capacity and generated loss of servo amplifiers" in Servo Amplifier Instruction Manual.							
Continuous running duty (Note 1)	Rated output	[kW]	7.0	11	15	22	30	37	45	55
	Rated torque	[N·m]	44.6	70.0	95.5	140	191	236	286	350
Maximum torque (Note 8)		[N·m]	134 (156)	210	286	420	573	707	859	1050
Rated speed (Note 1)		[r/min]	1500							
Maximum speed		[r/min]	3000			2500				
Instantaneous permissible speed		[r/min]	3450			2875				
Power rate at continuous rated torque	Standard	[kW/s]	113	223	289	401	582	726	596	749
	With an electromagnetic brake	[kW/s]	101	204	271	/	/	/	/	/
Rated current		[A]	17	31	38	50	68	79	85	110
Maximum current (Note 8)		[A]	56 (65)	100	123	170	235	263	288	357
Moment of inertia J	Standard	[$\times 10^{-4}$ kg·m ²]	176	220	315	489	627	764	1377	1637
	With an electromagnetic brake	[$\times 10^{-4}$ kg·m ²]	196	240	336	/	/	/	/	/
Recommended load to motor inertia ratio (Note 2)			10 times or less							
Speed/position detector			22-bit encoder common to absolute position/incremental (resolution per servo motor revolution: 4194304 pulses/rev)							
Oil seal			With							
Thermistor			None			Built-in				
Insulation class			155 (F)							
Structure			Totally-enclosed, natural-cooling (IP rating: IP67 (Note 3))			Totally-enclosed, force-cooling (IP rating: IP44 (Note 3))				
Environment (Note 4)	Ambient temperature	Operation	0 °C to 40 °C (non-freezing)							
		Storage	-15 °C to 70 °C (non-freezing)							
	Ambient humidity	Operation	10 %RH to 80 %RH (non-condensing)							
		Storage	10 %RH to 90 %RH (non-condensing)							
	Ambience		Indoors (no direct sunlight), free from corrosive gas, flammable gas, oil mist, dust, and dirt							
	Altitude		2000 m or less above sea level (Note 9)							
	Vibration resistance (Note 5)		X, Y: 24.5 m/s ²						X, Y: 9.8 m/s ²	
Vibration rank (Note 6)			V10							
Permissible load for the shaft (Note 7)	L	[mm]	85	116	140			140		
	Radial	[N]	2450	2940	3234			4900		
	Thrust	[N]	980			1470		1960		
Mass	Standard	[kg]	53	62	86	120	145	165	215	240
	With an electromagnetic brake	[kg]	65	74	97	/	/	/	/	/
Cooling fan	Power supply	Voltage/Frequency	/				3-phase 380 V AC to 480 V AC 50 Hz/60 Hz		3-phase 380 V AC to 460 V AC 50 Hz/60 Hz	
		Power consumption	/				65 (50 Hz)/85 (60 Hz)		110 (50 Hz)/150 (60 Hz)	
	Rated current		[A]	/				0.12 (50 Hz)/0.14 (60 Hz)		0.20 (50 Hz)/0.22 (60 Hz)

8. HG-JR SERIES

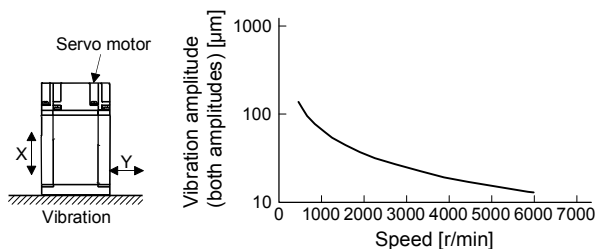
Servo motor			HG-JR 1000 r/min series							
			(Compatible with 3-phase 400 V AC, low inertia/large capacity)							
Item			6014(B)	8014(B)	12K14(B)	15K14	20K14	25K14	30K14	37K14
Power supply capacity			Refer to "Power supply equipment capacity and generated loss of servo amplifiers" in Servo Amplifier Instruction Manual.							
Continuous running duty (Note 1)	Rated output	[kW]	6.0	8.0	12	15	20	25	30	37
	Rated torque	[N·m]	57.3	76.4	115	143	191	239	286	353
Maximum torque		[N·m]	172	229	345	429	573	717	858	1059
Rated speed (Note 1)		[r/min]	1000							
Maximum speed		[r/min]	2000			1500				
Instantaneous permissible speed		[r/min]	2300			1725				
Power rate at continuous rated torque	Standard	[kW/s]	187	265	420	418	582	748	594	761
	With an electromagnetic brake	[kW/s]	167	243	394	/	/	/	/	/
Rated current		[A]	16	23	30	33	47	48	60	76
Maximum current		[A]	54	80	104	114	161	160	202	248
Moment of inertia J	Standard	[× 10 ⁻⁴ kg·m ²]	176	220	315	489	627	764	1377	1637
	With an electromagnetic brake	[× 10 ⁻⁴ kg·m ²]	196	240	336	/	/	/	/	/
Recommended load to motor inertia ratio (Note 2)			10 times or less							
Speed/position detector			22-bit encoder common to absolute position/incremental (resolution per servo motor revolution: 4194304 pulses/rev)							
Oil seal			With							
Thermistor			None			Built-in				
Insulation class			155 (F)							
Structure			Totally-enclosed, natural-cooling (IP rating: IP67 (Note 3))			Totally-enclosed, force-cooling (IP rating: IP44 (Note 3))				
Environment (Note 4)	Ambient temperature	Operation	0 °C to 40 °C (non-freezing)							
		Storage	-15 °C to 70 °C (non-freezing)							
	Ambient humidity	Operation	10 %RH to 80 %RH (non-condensing)							
		Storage	10 %RH to 90 %RH (non-condensing)							
	Ambience		Indoors (no direct sunlight), free from corrosive gas, flammable gas, oil mist, dust, and dirt							
	Altitude		2000 m or less above sea level (Note 9)							
Vibration resistance (Note 5)		X, Y: 24.5 m/s ²							X, Y: 9.8 m/s ²	
Vibration rank (Note 6)			V10							
Permissible load for the shaft (Note 7)	L	[mm]	85	116		140		140		
	Radial	[N]	2450	2940		3234		4900		
	Thrust	[N]	980			1470		1960		
Mass	Standard	[kg]	53	62	86	120	145	165	215	240
	With an electromagnetic brake	[kg]	65	74	97	/	/	/	/	/
Cooling fan	Power supply	Voltage/Frequency	/				3-phase 380 V AC to 480 V AC 50 Hz/60 Hz		3-phase 380 V AC to 460 V AC 50 Hz/60 Hz	
		Power consumption [W]	/				65 (50 Hz)/85 (60 Hz)		110 (50 Hz)/150 (60 Hz)	
	Rated current [A]	/				0.12 (50 Hz)/0.14 (60 Hz)		0.20 (50 Hz)/0.22 (60 Hz)		

8. HG-JR SERIES

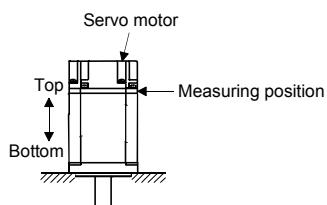
Servo motor		HG-JR 2000 r/min series (Compatible with 3-phase 400 V AC, low inertia/ultra-large capacity)				
		110K24KW0C	150K24KW0C	180K24KW0C	200K24KW0C	220K24KW0C
Item		110K24KW0C	150K24KW0C	180K24KW0C	200K24KW0C	220K24KW0C
Power supply capacity		Refer to "Power supply equipment capacity and generated loss of servo amplifiers" in Servo Amplifier Instruction Manual.				
Continuous running duty (Note 1)	Rated output [kW]	110	150	180	200	220
	Rated torque [N·m]	525	716	859	954	1050
Maximum torque [N·m]		1900	2600	3300	4100	3600
Rated speed (Note 1) [r/min]		2000				
Maximum speed [r/min]		3000				
Permissible instantaneous speed [r/min]		3450				
Power rate at continuous rated torque [kW/s]		804	1184	1361	1334	799
Rated current [A]		170	295	293	357	357
Maximum current [A]		772	1344	1321	1653	1539
Moment of inertia J [$\times 10^{-4}$ kg·m ²]		3430	4330	5420	6820	13800
Recommended load to motor inertia ratio (Note 2)		10 times or less				
Speed/position detector		22-bit encoder common to absolute position/incremental systems (resolution per servo motor revolution: 4194304 pulses/rev)				
Oil seal		Attached				
Thermistor		Built-in				
Insulation class		155 (F)				
Structure		Totally enclosed, force cooling (IP rating: IP44 (Note 3))				
Environment (Note 4)	Ambient temperature	Operation	0 °C to 40 °C (non-freezing)			
		Storage	-15 °C to 70 °C (non-freezing)			
	Ambient humidity	Operation	10 %RH to 80 %RH (non-condensing)			
		Storage	10 %RH to 90 %RH (non-condensing)			
	Ambience		Indoors (no direct sunlight), free from corrosive gas, flammable gas, oil mist, dust, and dirt			
	Altitude		1000 m or less above sea level			
Vibration resistance (Note 5)		X, Y: 9.8 m/s ²				
Vibration rank (Note 6)		V10				
Permissible load for the shaft (Note 7)	L [mm]	175			200	
	Radial [N]	5000			6000	
	Thrust [N]	5000				
Mass [kg]		420	520	730	755	870
Cooling fan	Power supply	Voltage/Frequency	1-phase 200 V AC (50 Hz)/1-phase 200 V AC to 230 V AC (60 Hz)			
		Power consumption [W]	54.5 (50 Hz)/77 (60 Hz)			
	Rated current [A]	0.4 (50 Hz)/0.5 (60 Hz)				

8. HG-JR SERIES

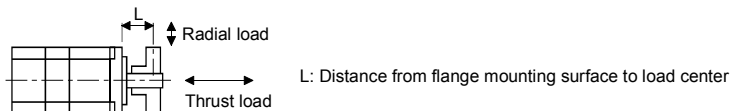
- Note
1. When the power supply voltage drops, the output and the rated speed cannot be guaranteed.
 2. If the load to motor inertia ratio exceeds the indicated value, contact your local sales office.
 3. Except for the shaft-through portion, IP classifies the degrees of protection provided against the intrusion of solid objects and water in electrical enclosures.
 4. In the environment where the servo motor is exposed to oil mist, oil, or water, the servo motor of the standard specifications may not be usable. Please contact your local sales office.
 5. The following figure shows the vibration directions. The value is the one at the part that indicates the maximum value (normally the opposite to load-side bracket). When the servo motor stops, fretting is likely to occur at the bearing. Therefore, suppress the vibration to about half of the permissible value.



6. V10 indicates that the amplitude of a single servo motor is 10 μm or less. The following figure shows the servo motor mounting position for measurement and the measuring position.



7. The following shows permissible load for the shaft. Do not subject the shaft to load greater than the value in the specifications list. The value assumes that the load is applied independently.



8. The value in the parentheses is applied when the maximum torque is increased.
9. Follow the restrictions in section 2.10 when using the servo amplifiers at altitude exceeding 1000 m and up to 2000 m above sea level.

8. HG-JR SERIES

8.3.2 Torque characteristics

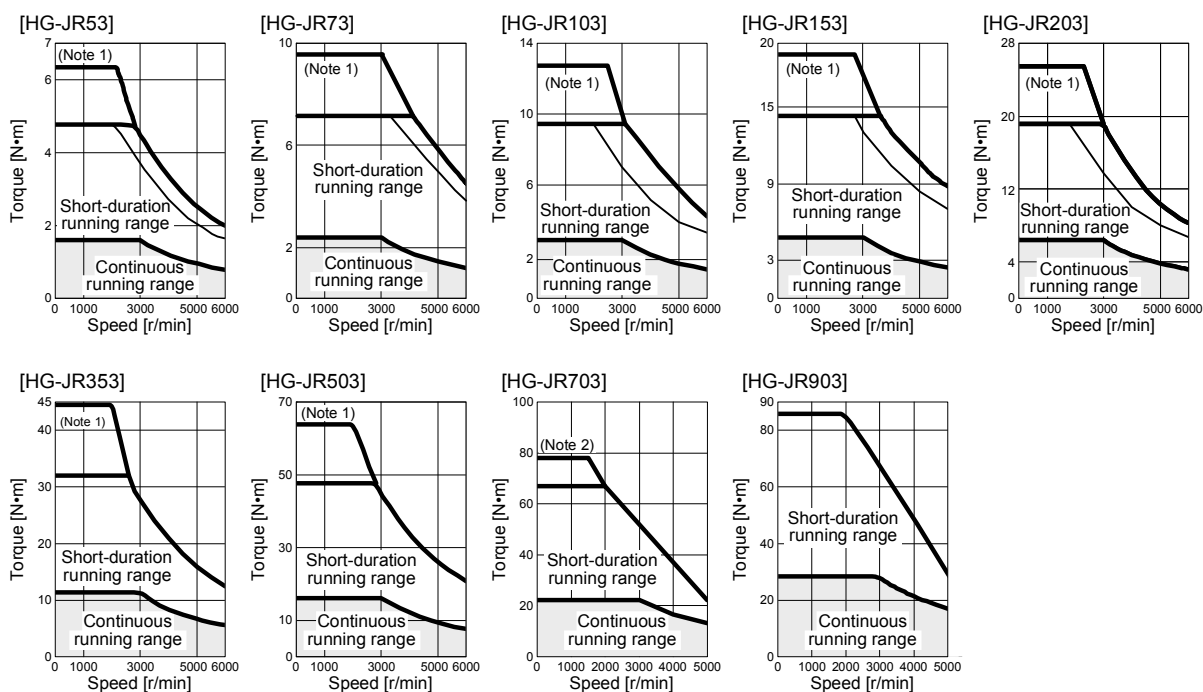
POINT

- For the system where the unbalanced torque occurs, such as a vertical axis system, the unbalanced torque of the machine should be kept at 70% or less of the rated torque.
- An HG-JR series servo motor cannot be used on the assumption that the maximum torque is 400% when you use it with the 1-phase 200 V AC input.
- When using an HG-JR103, HG-JR153, or HG-JR203 with the 1-phase 200 V AC input, contact your local sales office.

(1) 3-phase 200 V AC

When the power supply input of the servo amplifier is 3-phase 200 V AC or 1-phase 230 V AC, the torque characteristic is indicated by the heavy line. For the 1-phase 200 V AC power supply, part of the torque characteristic is indicated by the thin line. HG-JR53, HG-JR73, HG-JR103, HG-JR153, and HG-JR203 support 1-phase power supply input.

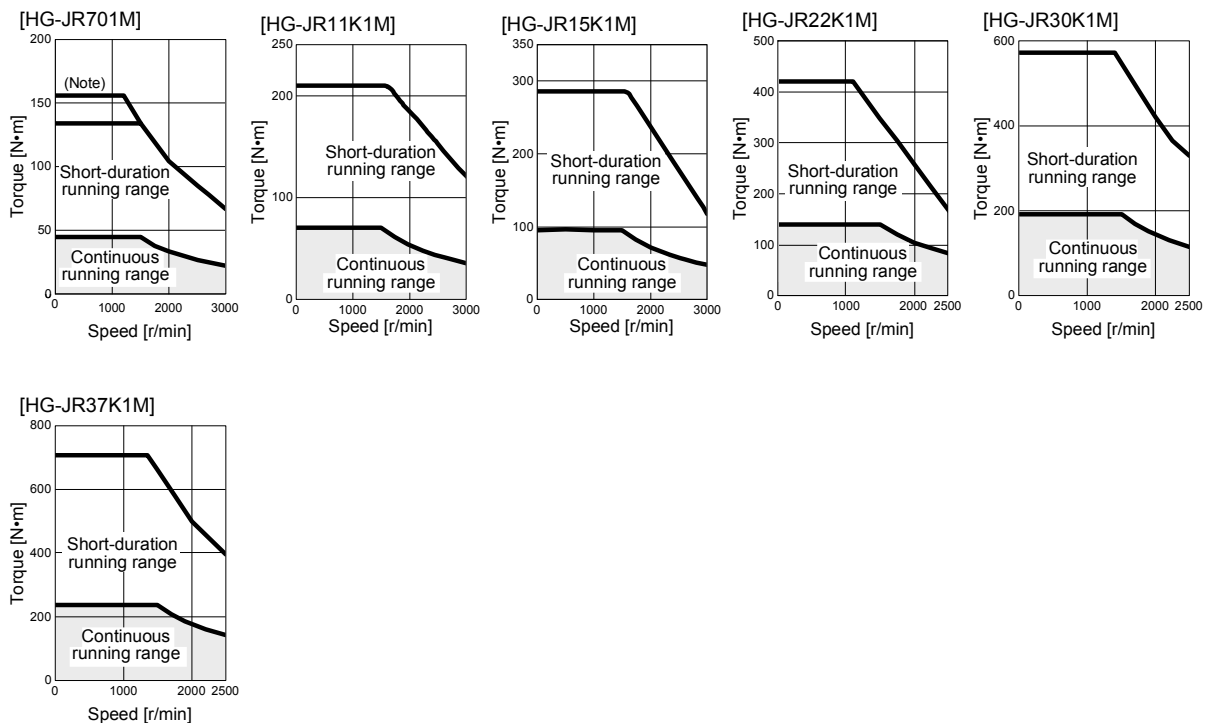
(a) 3000 r/min series



- Note 1. When the servo amplifier is changed and maximum torque is increased. Refer to section 8.2 for the combinations.
- Note 2. The heavy line indicates the torque characteristic when the maximum torque is increased by enabling the parameter (maximally increased torque function when drive unit is connected). Refer to section 8.2 for the combinations.

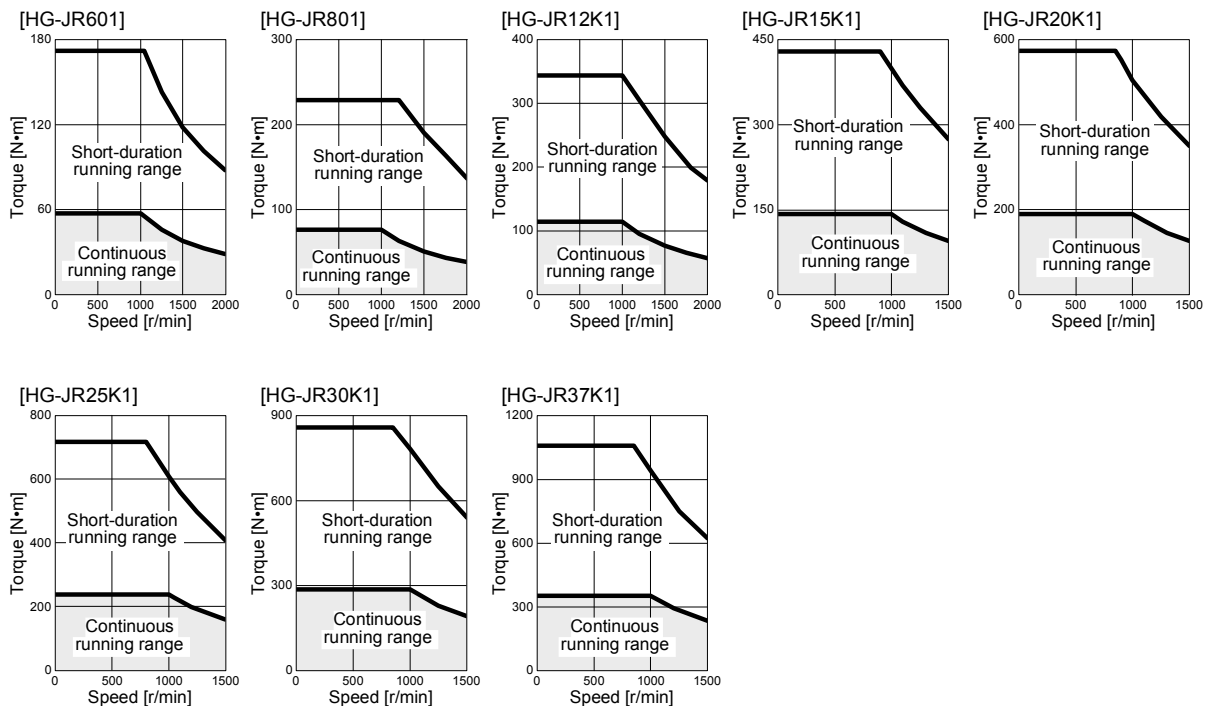
8. HG-JR SERIES

(b) 1500 r/min series



Note. The heavy line indicates the torque characteristic when the maximum torque is increased by enabling the parameter (maximally increased torque function when drive unit is connected). Refer to section 8.2 for the combinations.

(c) 1000 r/min series

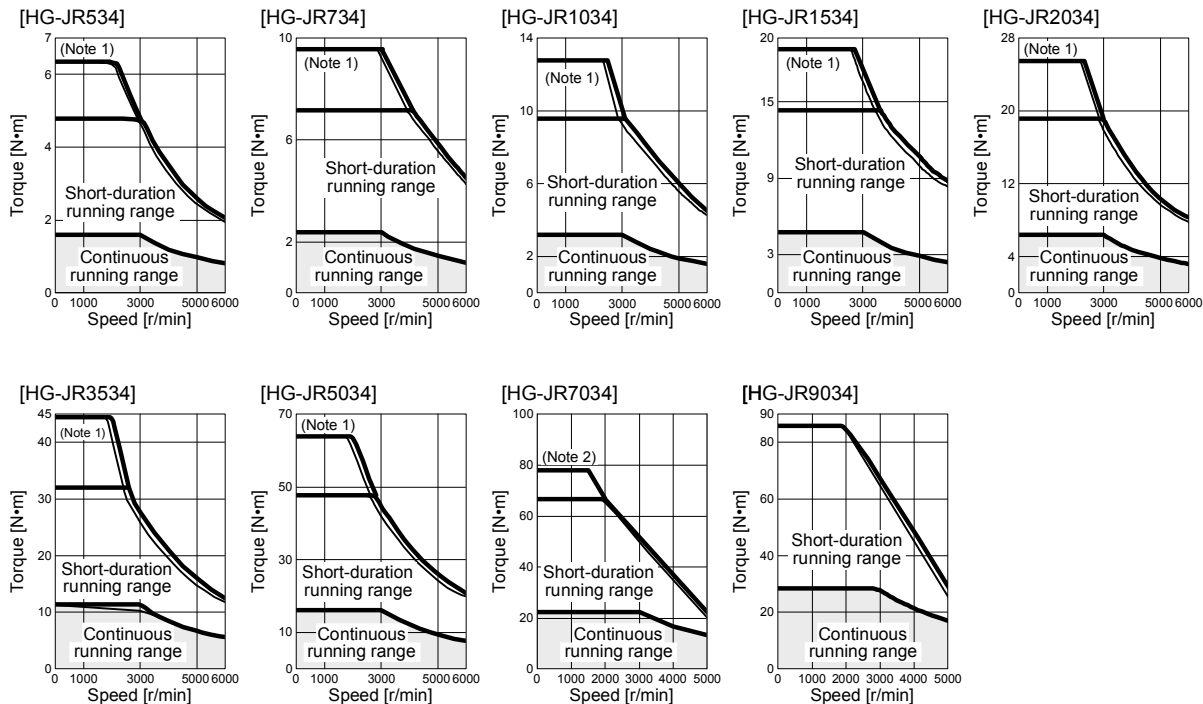


8. HG-JR SERIES

(2) 3-phase 400 V AC

When the power supply input of the servo amplifier is 3-phase 400 V AC, the torque characteristic is indicated by the heavy line. For the 3-phase 380 V AC power supply, part of the torque characteristic is indicated by the thin line.

(a) 3000 r/min series

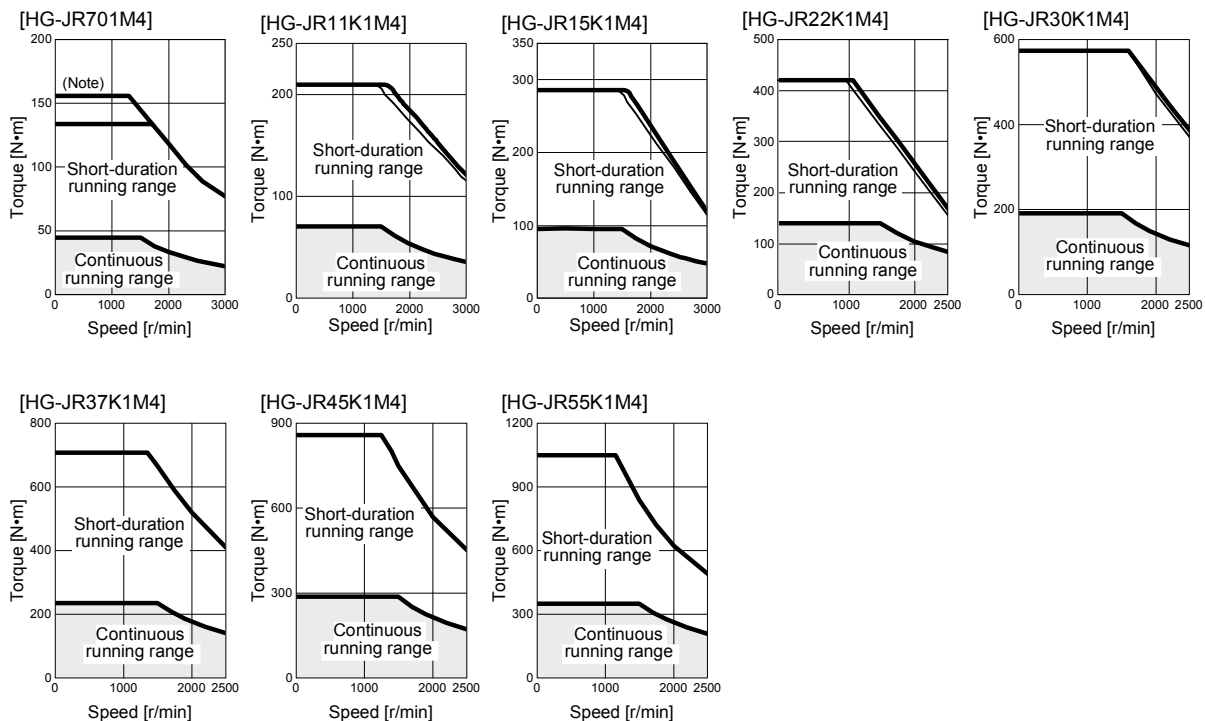


Note 1. When the servo amplifier is changed and maximum torque is increased.

2. The heavy line indicates the torque characteristic when the maximum torque is increased by enabling the parameter (maximally increased torque function when drive unit is connected). Refer to section 8.2 for the combinations.

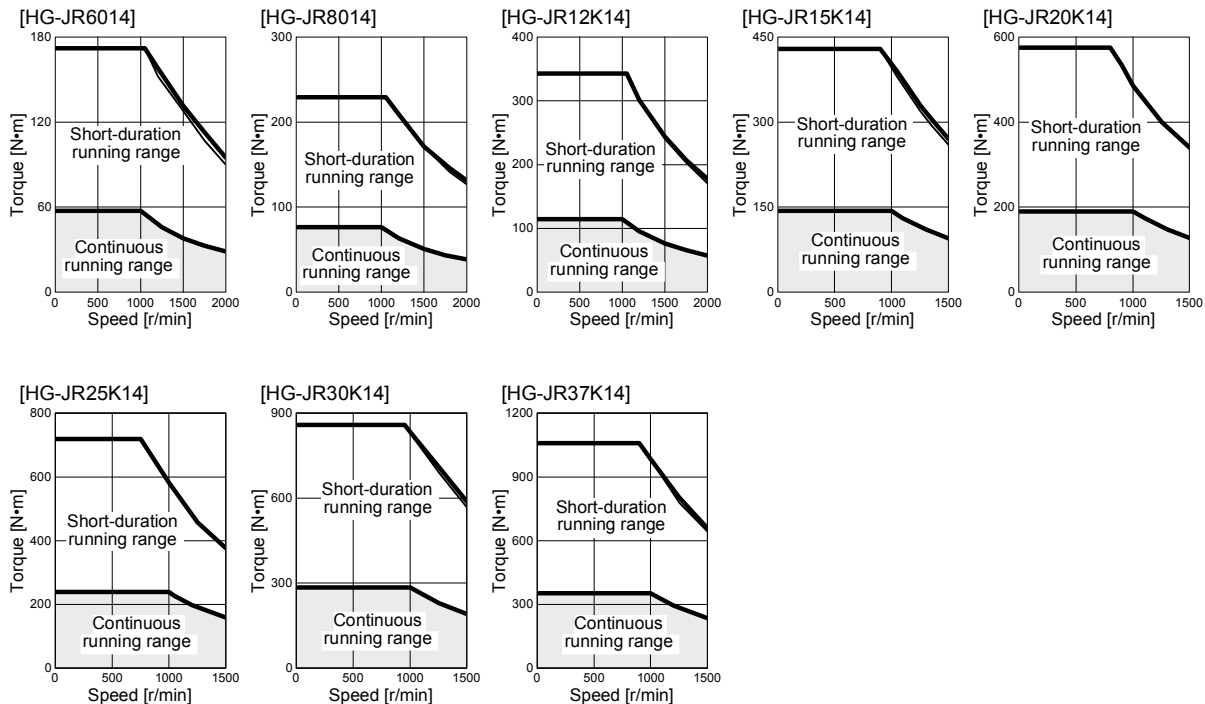
8. HG-JR SERIES

(b) 1500 r/min series



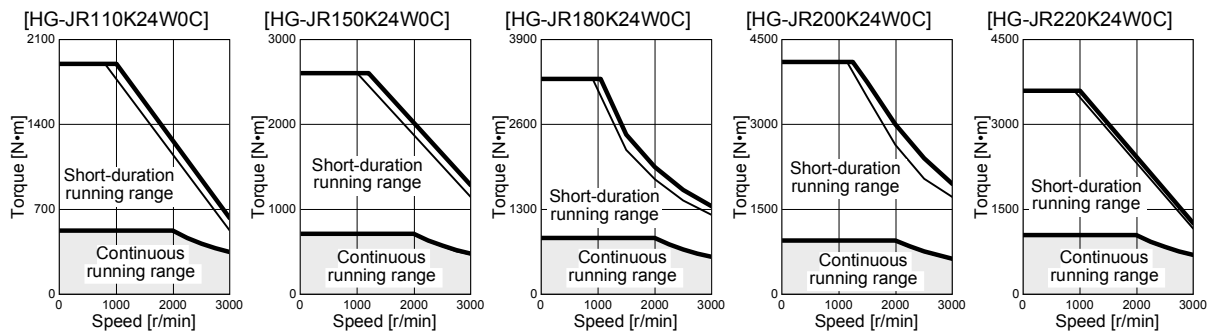
Note. The heavy line indicates the torque characteristic when the maximum torque is increased by enabling the parameter (maximally increased torque function when drive unit is connected). Refer to section 8.2 for the combinations.

(c) 1000 r/min series




8. HG-JR SERIES

(d) 2000 r/min series



8. HG-JR SERIES

8.4 Electromagnetic brake characteristics

 CAUTION	<ul style="list-style-type: none"> ● The electromagnetic brake is provided to prevent a drop at a power failure or alarm occurrence during vertical drive or to hold a shaft at a stop. Do not use it for normal braking (including braking at servo-lock).
	<ul style="list-style-type: none"> ● Before operating the servo motor, be sure to confirm that the electromagnetic brake operates properly.
	<ul style="list-style-type: none"> ● The operation time of the electromagnetic brake differs depending on the power supply circuit you use. Be sure to check the operation delay time with a real machine.

POINT
<ul style="list-style-type: none"> ● The 1500 r/min series of 22 kW or more, 1000 r/min series of 15 kW or more, and 2000 r/min series are not with an electromagnetic brake.

The characteristics of the electromagnetic brake provided for the servo motor with an electromagnetic brake are indicated below.

Item	Servo motor	HG-JR series			
		53(4)B 73(4)B 103(4)B 153(4)B 203(4)B	353(4)B 503(4)B	703(4)B 903(4)B	601(4)B 801(4)B 12K1(4)B 701M(4)B 11K1M(4)B 15K1M(4)B
Type (Note 1)	Spring actuated type safety brake				
Rated voltage (Note 4)	DC 24 V ⁰ / _{-10%}				
Power consumption [W] at 20 °C		11.7	23	34	32
Coil resistance (Note 6) [Ω]		49	25	16.8	18.2
Inductance (Note 6) [H]		0.37	0.25	1.10	0.73
Brake static friction torque [N·m]		6.6	16	44	126
Release delay time (Note 2) [s]		0.09	0.12	0.1	0.5
Braking delay time (Note 2) [s]	DC off	0.03	0.03	0.03	0.2
Permissible braking work	Per braking [J]	64	400	4500	5000
	Per hour [J]	640	4000	45000	45200
Brake looseness at servo motor shaft (Note 5) [degrees]		0.01 to 0.8	0.01 to 0.6	0.2 to 0.6	0.01 to 0.6
Brake life (Note 3)	Number of braking cycles [times]	5000	5000	20000	20000
	Work per braking [J]	64	400	1000	400
Selection example of surge absorbers to be used (Note 7)	For the suppressed voltage 125 V	(Note 8) TND20V-680KB			
	For the suppressed voltage 350 V	(Note 8) TND10V-221KB			

- Note 1. There is no manual release mechanism. When it is necessary to hand-turn the servo motor shaft for machine centering, etc., use a separate 24 V DC power supply to release the brake electrically.
2. The value for initial on gap at 20 °C.
3. The brake gap will increase as the brake lining wears, but the gap is not adjustable.
The brake life indicated is the number of braking cycles after which adjustment will be required.
4. Always prepare a power supply exclusively used for the electromagnetic brake.
5. These are design values. These are not guaranteed values.
6. These are measured values. These are not guaranteed values.
7. Select the electromagnetic brake control relay properly, considering the characteristics of the electromagnetic brake and surge absorber. When a diode is used as a surge absorber, it will take longer to activate the electromagnetic brake.
8. Manufactured by Nippon Chemi-Con Corporation.

8. HG-JR SERIES

8.5 Servo motors with special shafts

The servo motors with special shafts indicated by the symbol (K) in the table are available. K is the symbol attached to the servo motor model names.

Servo motor	Shaft shape
	Key shaft (without key)
HG-JR_(4)(B)K	K

[Unit: mm]

Servo motor	Variable dimensions									Figure
	S	R	Q	W	QK	QL	U	r	Y	
HG-JR53(4)(B)K HG-JR73(4)(B)K HG-JR103(4)(B)K HG-JR153(4)(B)K HG-JR203(4)(B)K	16h6	40	30	$5 \begin{smallmatrix} 0 \\ -0.030 \end{smallmatrix}$	25	2	$3 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$	2.5	M4 screw hole depth 15	A
HG-JR353(4)(B)K HG-JR503(4)(B)K	28h6	55	50	$8 \begin{smallmatrix} 0 \\ -0.036 \end{smallmatrix}$	36	5	$4 \begin{smallmatrix} +0.2 \\ 0 \end{smallmatrix}$	4	M8 screw hole depth 20	
HG-JR703(4)(B)K HG-JR903(4)(B)K	$35 \begin{smallmatrix} +0.010 \\ 0 \end{smallmatrix}$	79	75	$10 \begin{smallmatrix} 0 \\ -0.036 \end{smallmatrix}$	55	5	$5 \begin{smallmatrix} +0.2 \\ 0 \end{smallmatrix}$	5	M8 screw hole depth 20	
HG-JR601(4)(B)K HG-JR701M(4)(B)K	42h6	85	79	$12 \begin{smallmatrix} 0 \\ -0.040 \end{smallmatrix}$	70	5	$5 \begin{smallmatrix} +0.2 \\ 0 \end{smallmatrix}$	6	M8 screw hole depth 19.8	
HG-JR801(4)(B)K HG-JR12K1(4)(B)K HG-JR11K1M(4)(B)K HG-JR15K1M(4)(B)K	55m6	116	110	$16 \begin{smallmatrix} 0 \\ -0.040 \end{smallmatrix}$	90	5	$6 \begin{smallmatrix} +0.2 \\ 0 \end{smallmatrix}$	8	M10 screw hole depth 27	
HG-JR15K1(4)K HG-JR20K1(4)K HG-JR25K1(4)K HG-JR22K1M(4)K HG-JR30K1M(4)K HG-JR37K1M(4)K	65m6	140	130	$18 \begin{smallmatrix} 0 \\ -0.040 \end{smallmatrix}$	120	5	$7 \begin{smallmatrix} +0.2 \\ 0 \end{smallmatrix}$	9	M12 screw hole depth 25	B
HG-JR30K1(4)K HG-JR37K1(4)K HG-JR45K1M4K HG-JR55K1M4K	80m6	140	140	$22 \begin{smallmatrix} 0 \\ -0.040 \end{smallmatrix}$	132	7	$9 \begin{smallmatrix} +0.2 \\ 0 \end{smallmatrix}$	11	M16 screw hole depth 30	
HG-JR110K24W0C HG-JR150K24W0C HG-JR180K24W0C HG-JR200K24W0C	95h6	175	165	$25 \begin{smallmatrix} 0 \\ -0.04 \end{smallmatrix}$	135	5	$9 \begin{smallmatrix} +0.2 \\ 0 \end{smallmatrix}$	12.5	M16 screw hole depth 30	
HG-JR220K24W0C	120h6	200	190	$32 \begin{smallmatrix} 0 \\ -0.06 \end{smallmatrix}$	180	5	$11 \begin{smallmatrix} +0.2 \\ 0 \end{smallmatrix}$	16	M24 screw hole depth 45	

8. HG-JR SERIES

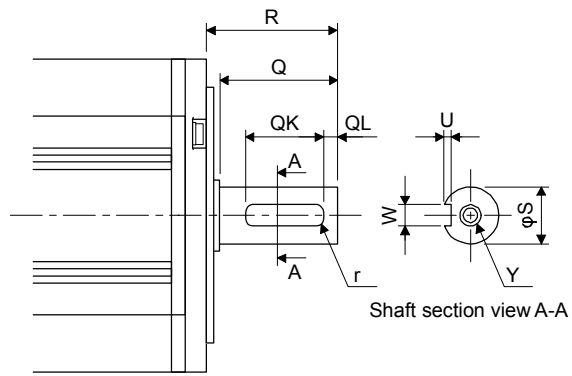


Figure A

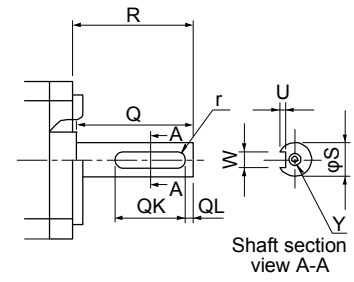


Figure B

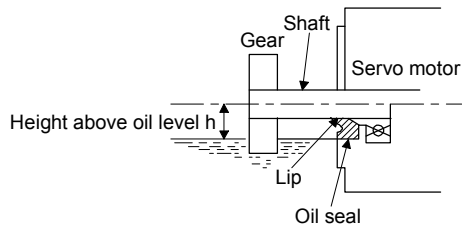
Key shaft (without key)

8. HG-JR SERIES

8.6 Oil seal

The oil seal prevents the entry of oil into the servo motor.

Install the servo motor horizontally, and set the oil level in the gear box to be lower than the oil seal lip always.



Servo motor	Oil level h [mm]
HG-JR53(4)(B) HG-JR73(4)(B) HG-JR103(4)(B) HG-JR153(4)(B) HG-JR203(4)(B)	18
HG-JR353(4)(B) HG-JR503(4)(B)	20
HG-JR703(4)(B) HG-JR903(4)(B) HG-JR601(4)(B) HG-JR801(4)(B) HG-JR12K1(4)(B) HG-JR701M(4)(B)	25
HG-JR11K1M(4)(B) HG-JR15K1M(4)(B)	40
HG-JR15K1(4) HG-JR20K1(4) HG-JR25K1(4) HG-JR22K1M(4) HG-JR30K1M(4) HG-JR37K1M(4)	50
HG-JR30K1(4) HG-JR37K1(4) HG-JR45K1M4 HG-JR55K1M4	55
HG-JR110K24W0C HG-JR150K24W0C HG-JR180K24W0C HG-JR200K24W0C	63
HG-JR220K24W0C	78

8. HG-JR SERIES

8.7 Cooling fan

For the servo motor with a cooling fan, leave the following distance between the servo motor's suction face and the wall.

Servo motor	Distance L [mm]	Figure
HG-JR15K1(4) HG-JR20K1(4) HG-JR25K1(4) HG-JR30K1(4) HG-JR37K1(4) HG-JR22K1M(4) HG-JR30K1M(4) HG-JR37K1M(4) HG-JR45K1M4 HG-JR55K1M4	150	A
HG-JR110K24W0C HG-JR150K24W0C HG-JR180K24W0C HG-JR200K24W0C HG-JR220K24W0C	180	B

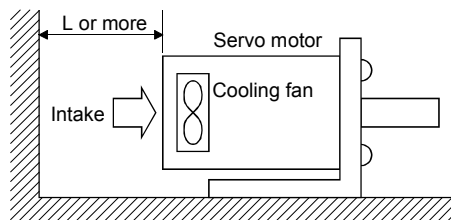


Figure A

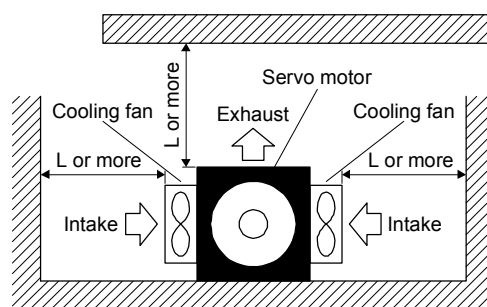


Figure B

8. HG-JR SERIES

8.8 Dimensions

Moment of inertia on the table is the value calculated by converting the total value of moment of inertia for servo motor and electromagnetic brake with servo motor shaft.

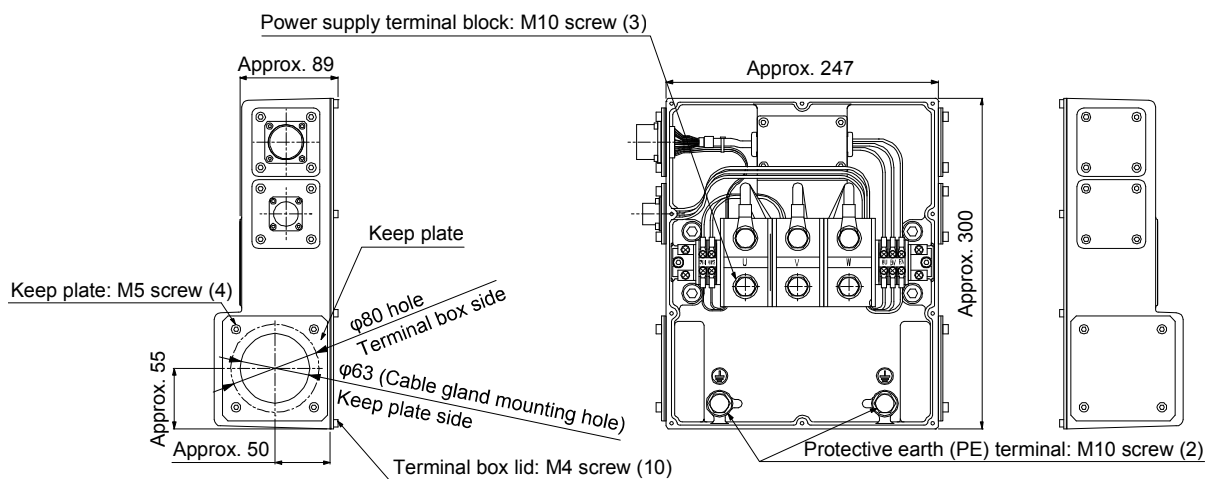
The dimensions without tolerances are general tolerance.

8.8.1 Terminal box detail diagram

(1) HG-JR22K1M(4) to HG-JR37K1M(4)/HG-JR45K1M4/HG-JR55K1M4/HG-JR15K1(4) to HG-JR37K1(4)

POINT
<ul style="list-style-type: none"> The terminal box of the HG-JR22K1M(4) servo motor has been changed since September 2014. Refer to app. 9 for the terminal box detail diagram before change.

[Unit: mm]



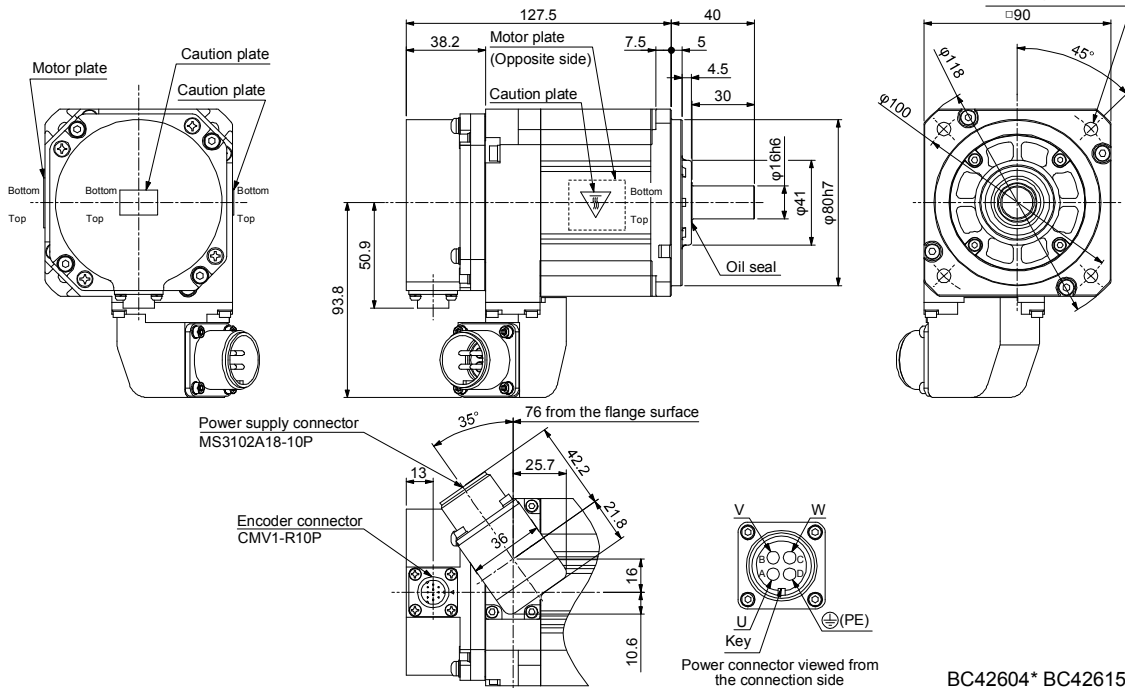
8. HG-JR SERIES

8.8.2 Standard (without an electromagnetic brake)

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR53	0.5	1.52	3.0
HG-JR534			

[Unit: mm]

4- ϕ 6.6 mounting hole
Use hexagon socket
head cap screw.

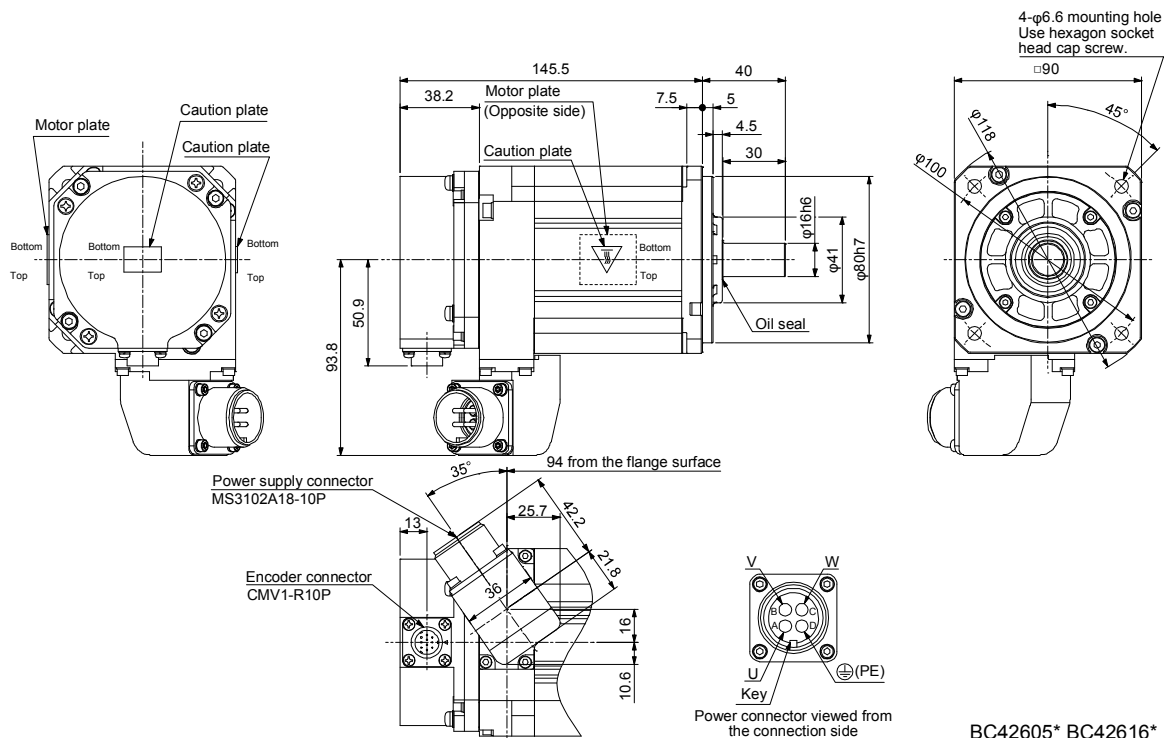


BC42604* BC42615*

8. HG-JR SERIES

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR73	0.75	2.09	3.7
HG-JR734			

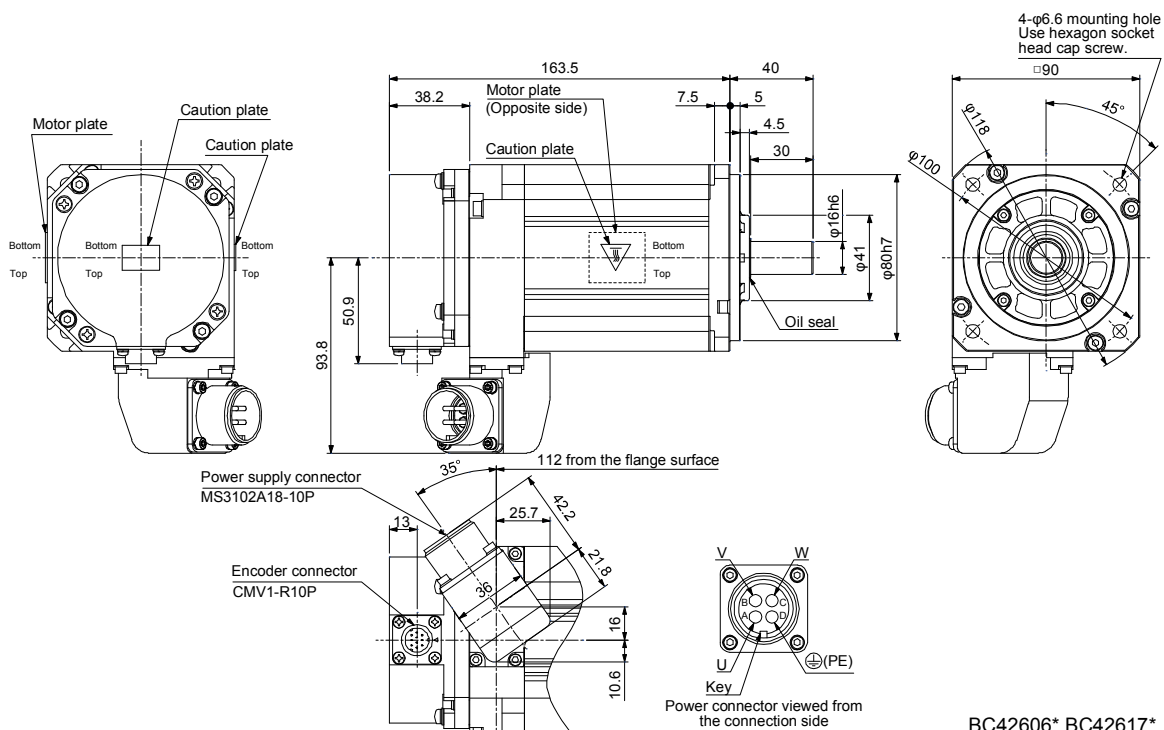
[Unit: mm]



8. HG-JR SERIES

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR103	1.0	2.65	4.5
HG-JR1034			

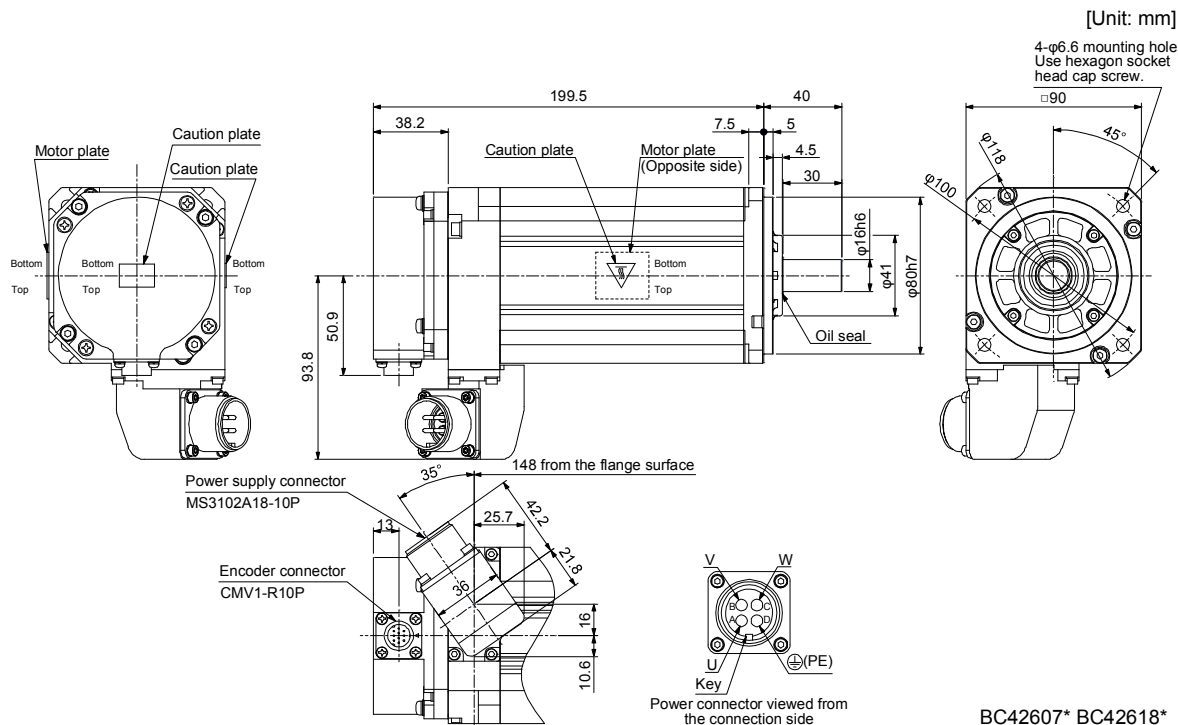
[Unit: mm]



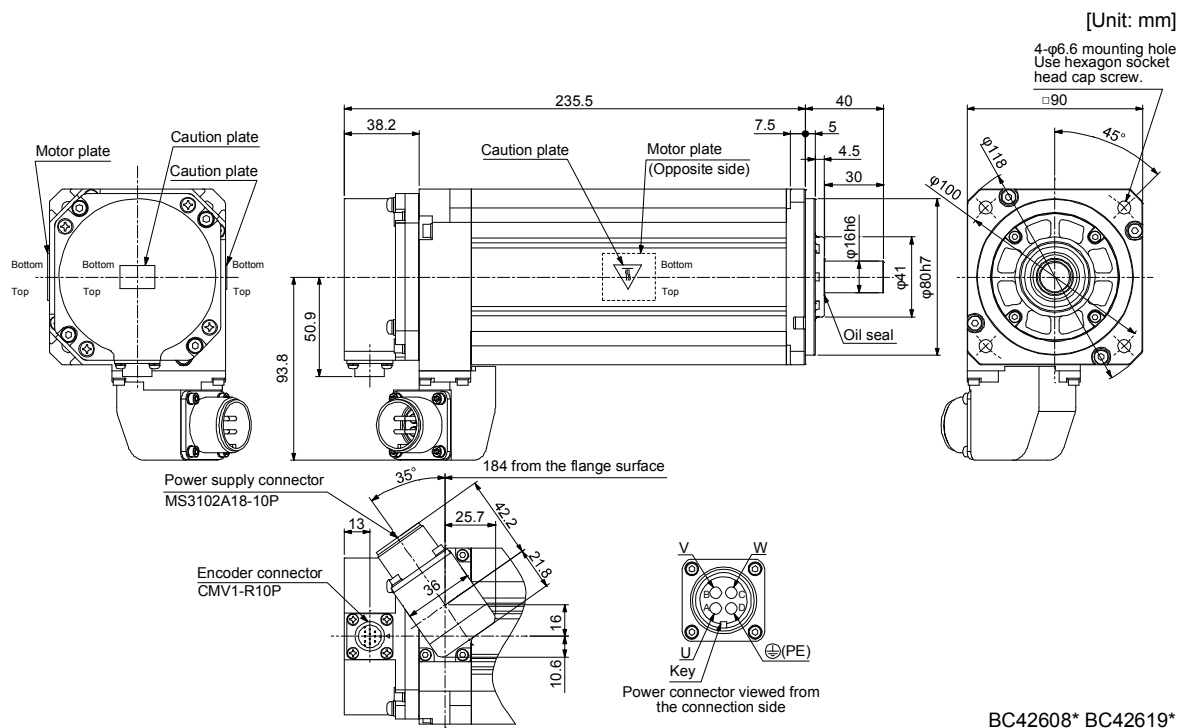
BC42606* BC42617*

8. HG-JR SERIES

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR153	1.5	3.79	5.9
HG-JR1534			



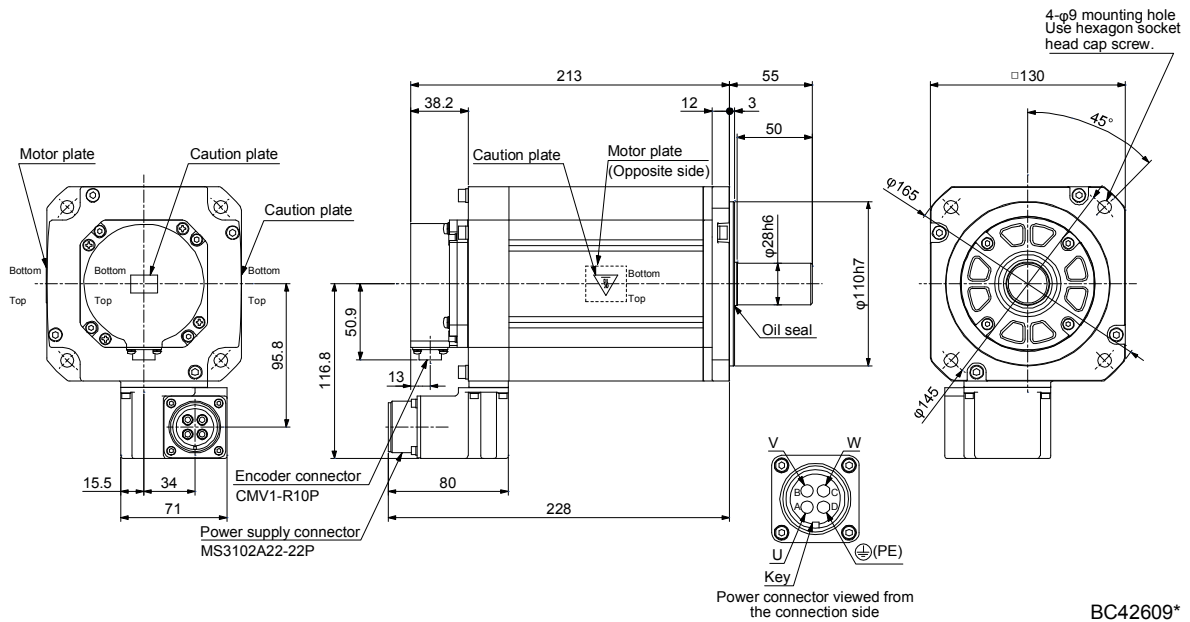
Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR203	2.0	4.92	7.5
HG-JR2034			



8. HG-JR SERIES

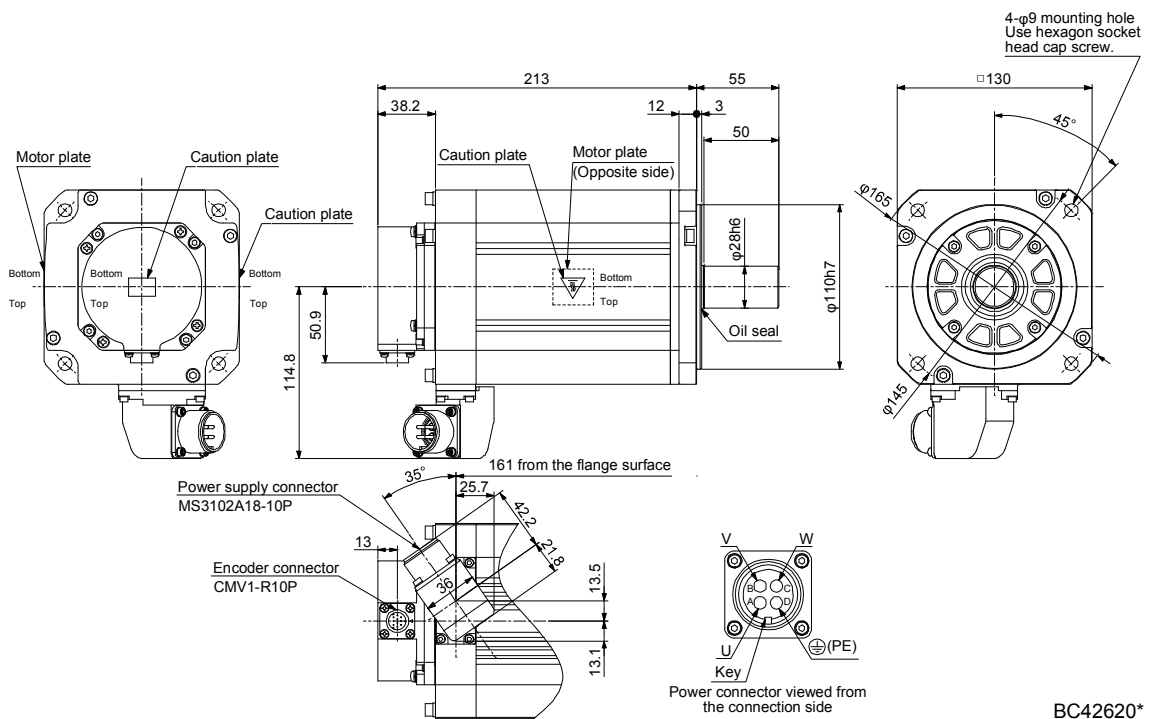
Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR353	3.5	13.2	13

[Unit: mm]



Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR3534	3.5	13.2	13

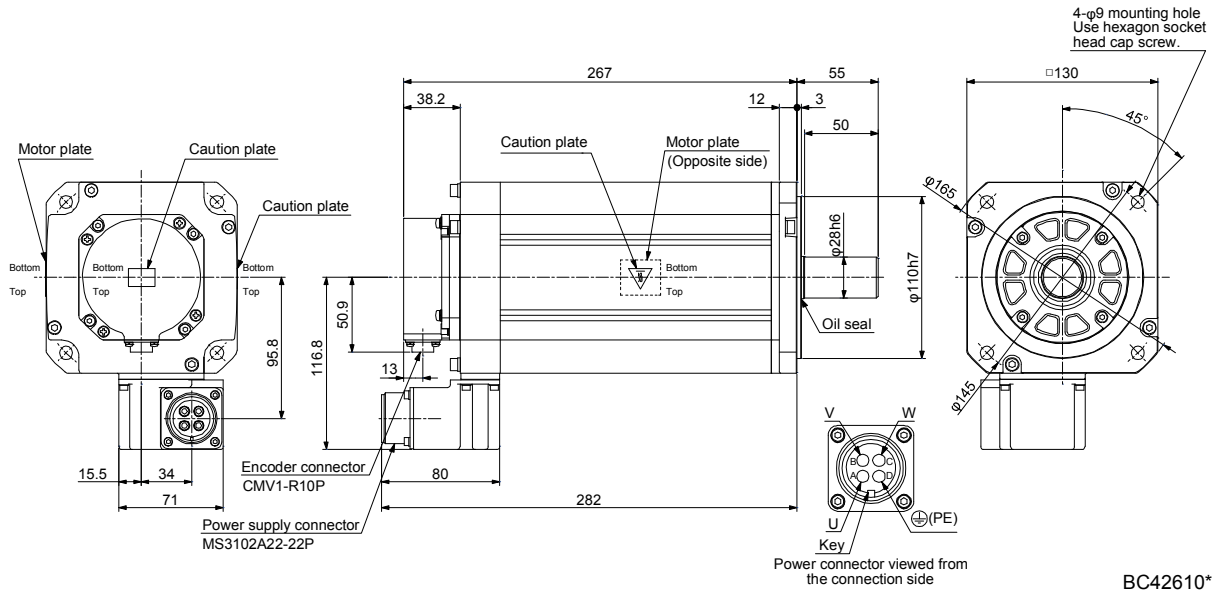
[Unit: mm]



8. HG-JR SERIES

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR503	5.0	19.0	18

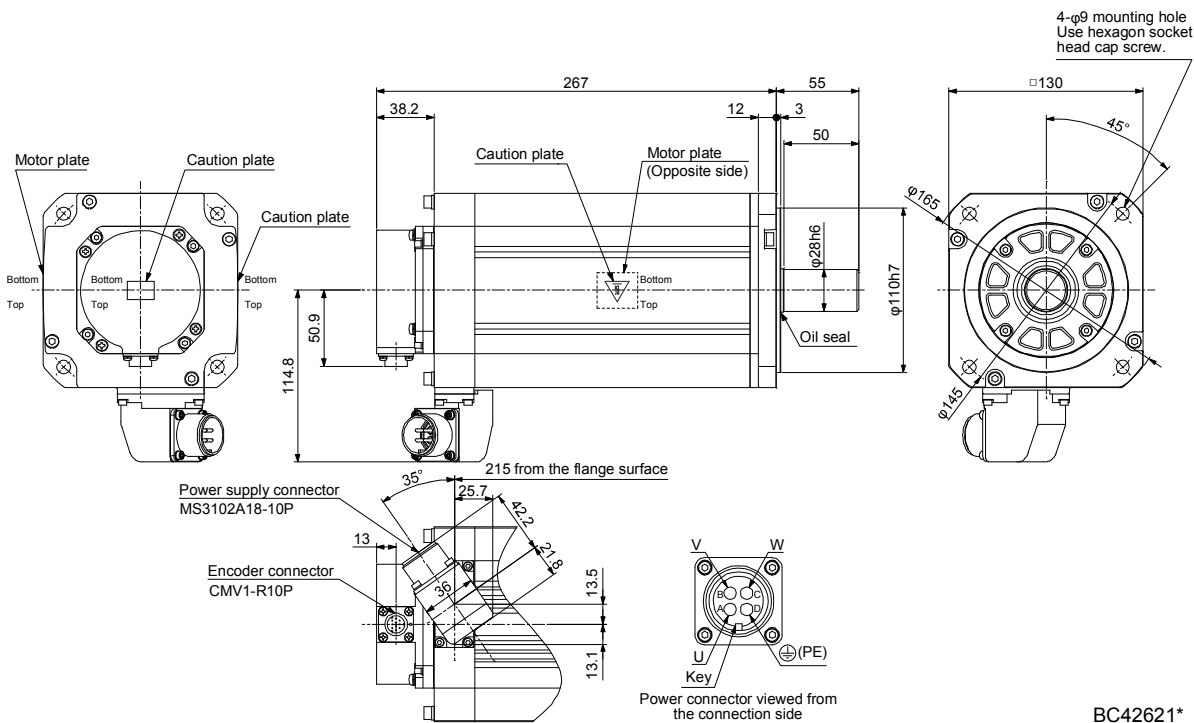
[Unit: mm]



BC42610*

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR5034	5.0	19.0	18

[Unit: mm]

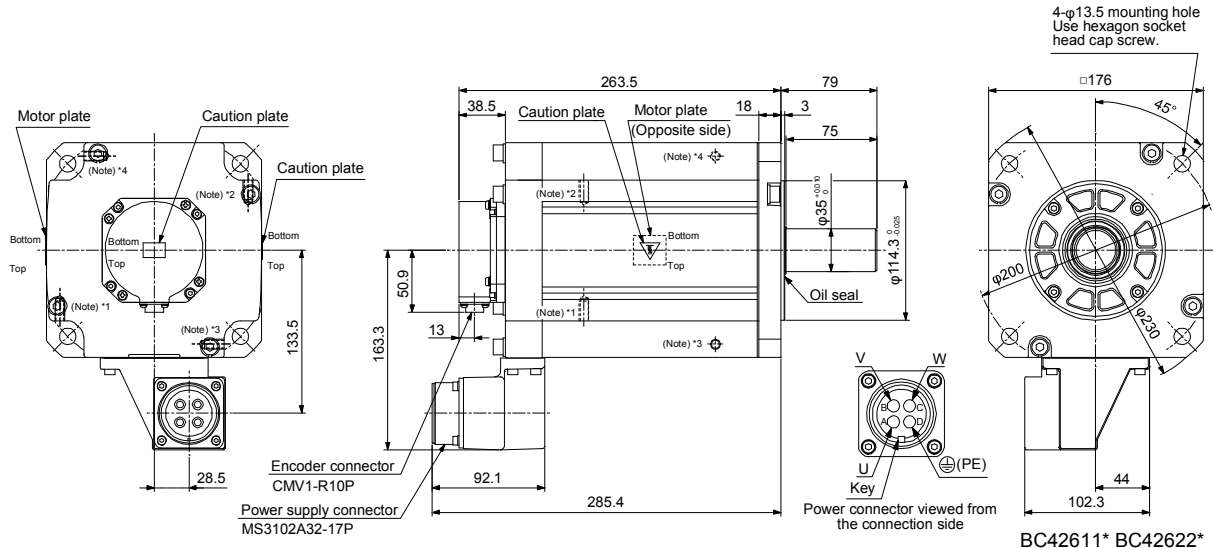


BC42621*

8. HG-JR SERIES

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR703	7.0	43.3	29
HG-JR7034			

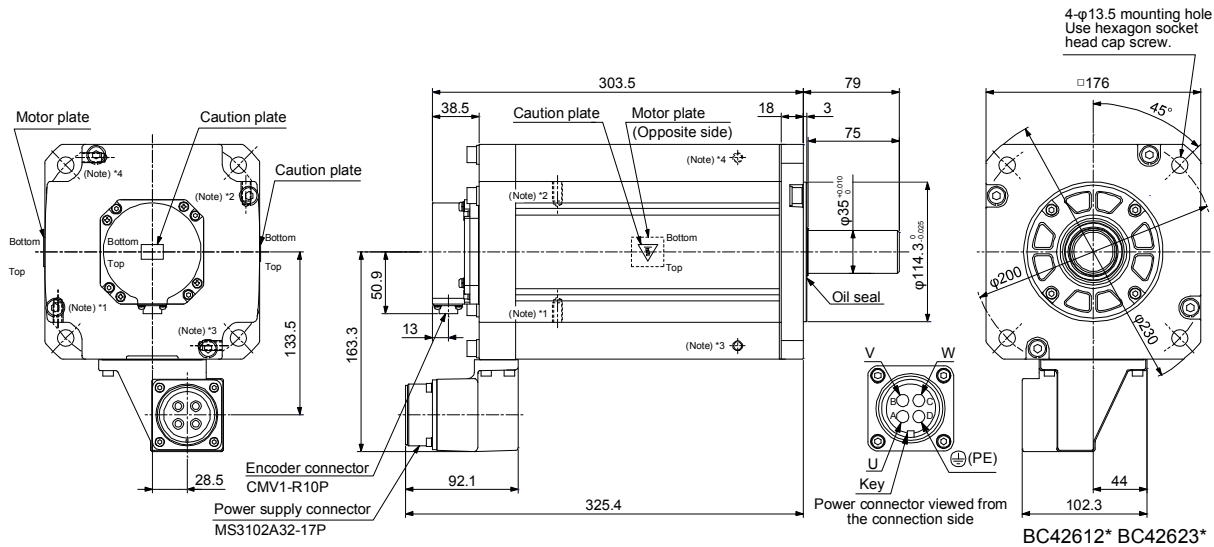
[Unit: mm]



Note. *1, *2, *3, and *4 are screw hole for eyebolt (M8).

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR903	9.0	55.8	36
HG-JR9034			

[Unit: mm]

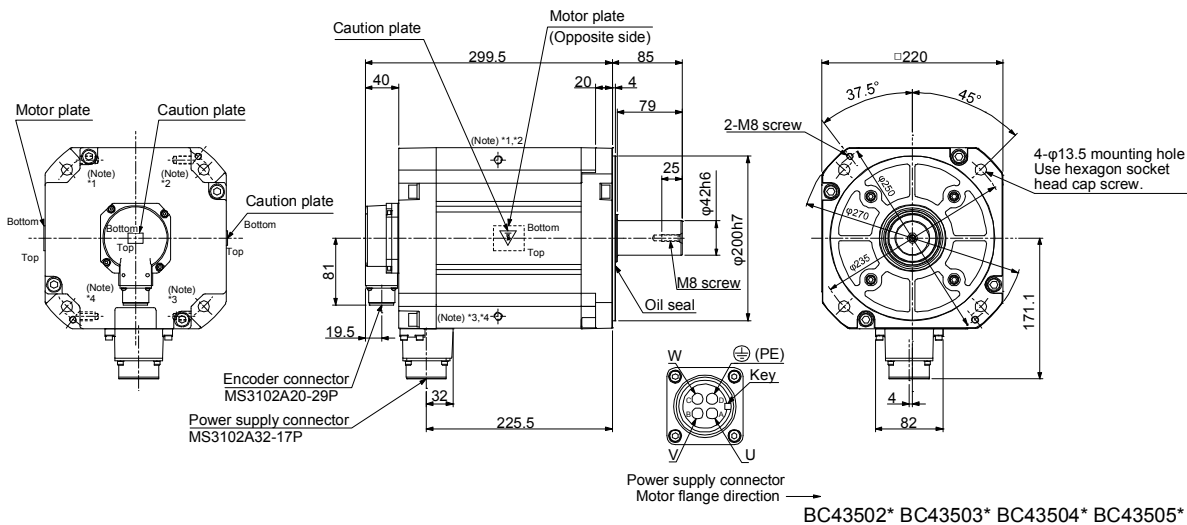


Note. *1, *2, *3, and *4 are screw hole for eyebolt (M8).

8. HG-JR SERIES

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR601	6	176	53
HG-JR6014			
HG-JR701M	7		
HG-JR701M4			

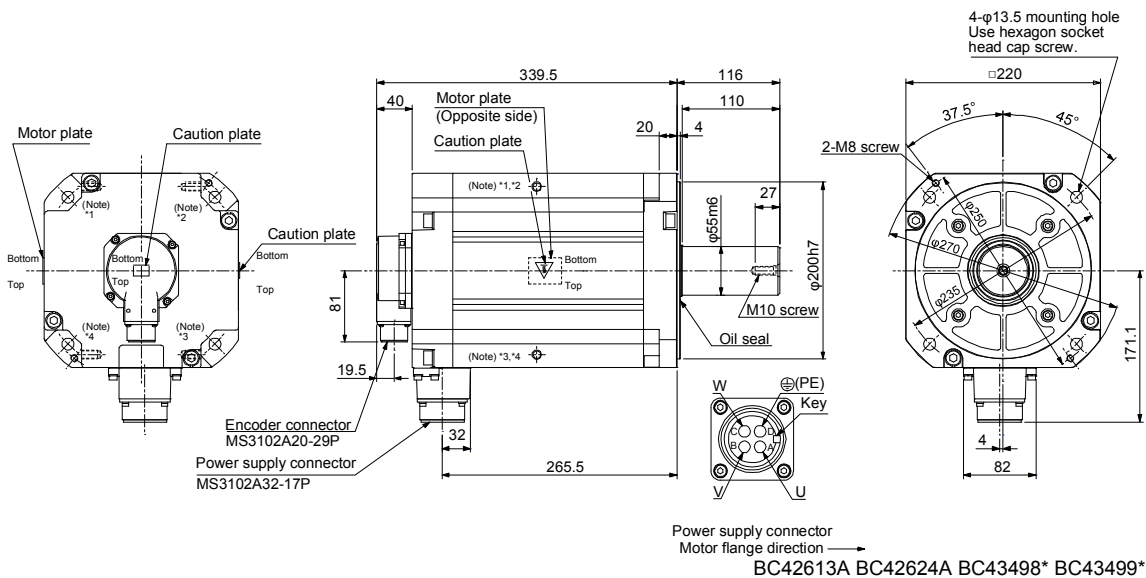
[Unit: mm]



Note. *1, *2, *3, and *4 are screw hole for eyebolt (M10).

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR801	8	220	62
HG-JR8014			
HG-JR11K1M	11		
HG-JR11K1M4			

[Unit: mm]

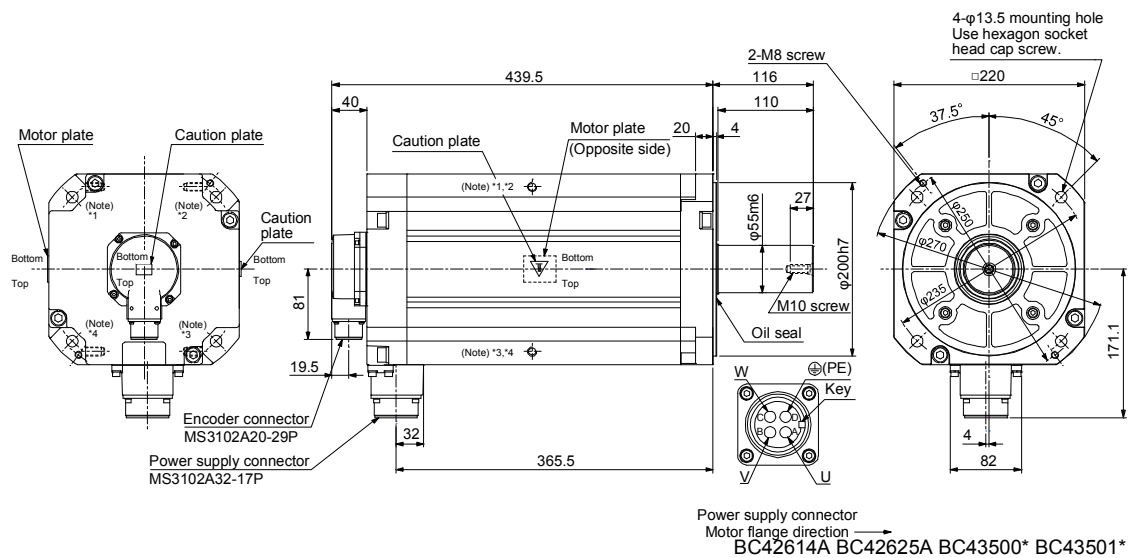


Note. *1, *2, *3, and *4 are screw hole for eyebolt (M10).

8. HG-JR SERIES

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR12K1	12	315	86
HG-JR12K14			
HG-JR15K1M	15		
HG-JR15K1M4			

[Unit: mm]



Note. *1, *2, *3, and *4 are screw hole for eyebolt (M10).

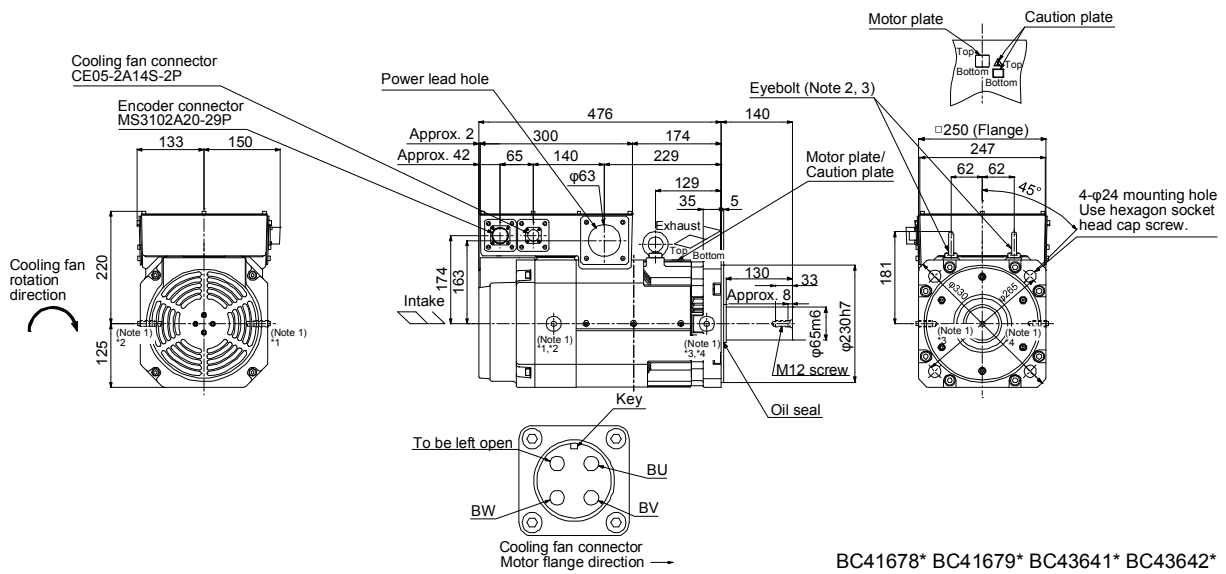
8. HG-JR SERIES

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR15K1	15	489	120
HG-JR15K14			
HG-JR22K1M	22		
HG-JR22K1M4			

POINT

- The appearance of the HG-JR22K1M(4) servo motor has been changed since September 2014. Refer to app. 9 for the dimensions before change.

[Unit: mm]

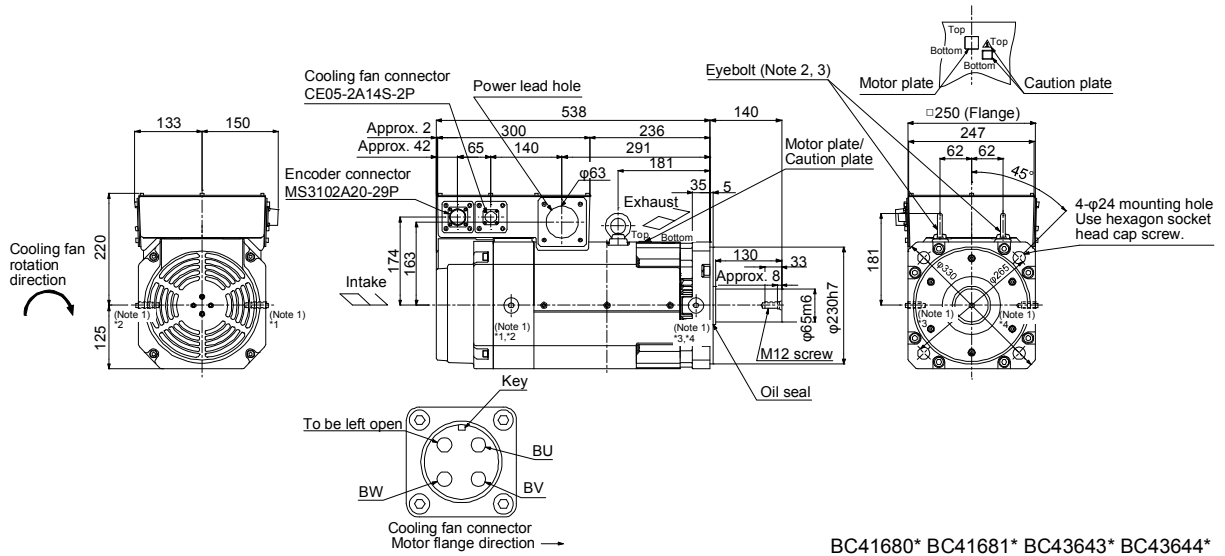


- Note
- *1, *2, *3, and *4 are screw hole for eyebolt (M12).
 - An angle adjusting washer is inserted into the eyebolt.
 - When the motor is used without the eyebolt, plug the threaded hole with a bolt of M12 × 20 or less.

8. HG-JR SERIES

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR20K1	20	627	145
HG-JR20K14			
HG-JR30K1M	30	627	145
HG-JR30K1M4			

[Unit: mm]

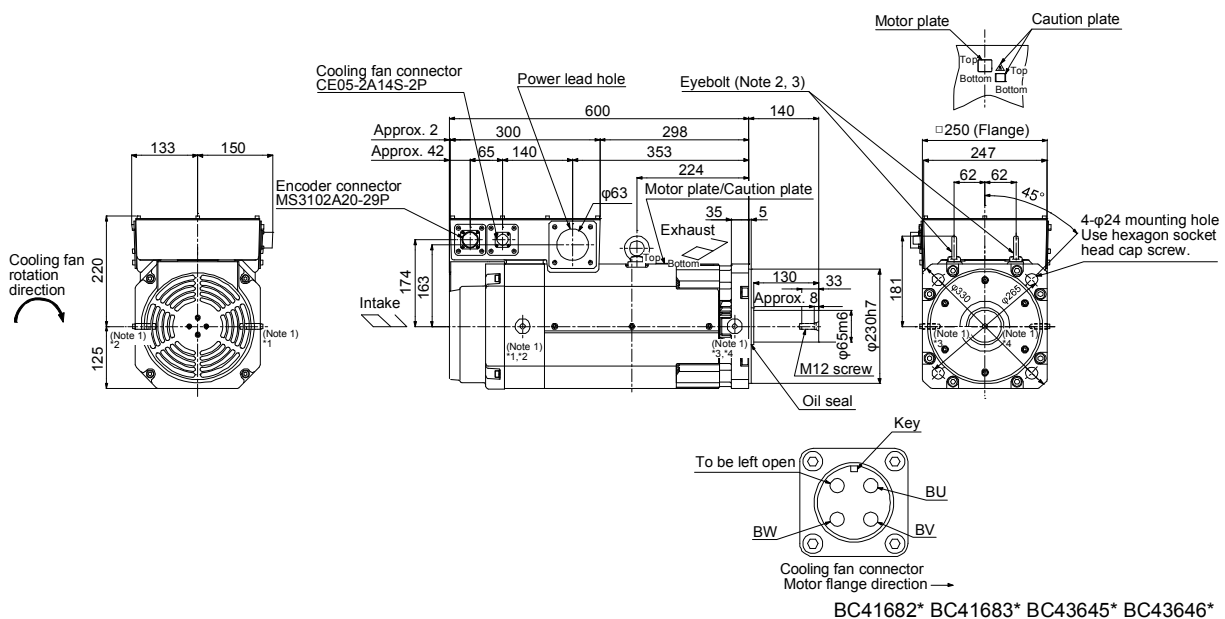


- Note
- *1, *2, *3, and *4 are screw hole for eyebolt (M12).
 - An angle adjusting washer is inserted into the eyebolt.
 - When the motor is used without the eyebolt, plug the threaded hole with a bolt of M12 × 20 or less.

8. HG-JR SERIES

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR25K1	25	764	165
HG-JR25K14			
HG-JR37K1M	37		
HG-JR37K1M4			

[Unit: mm]

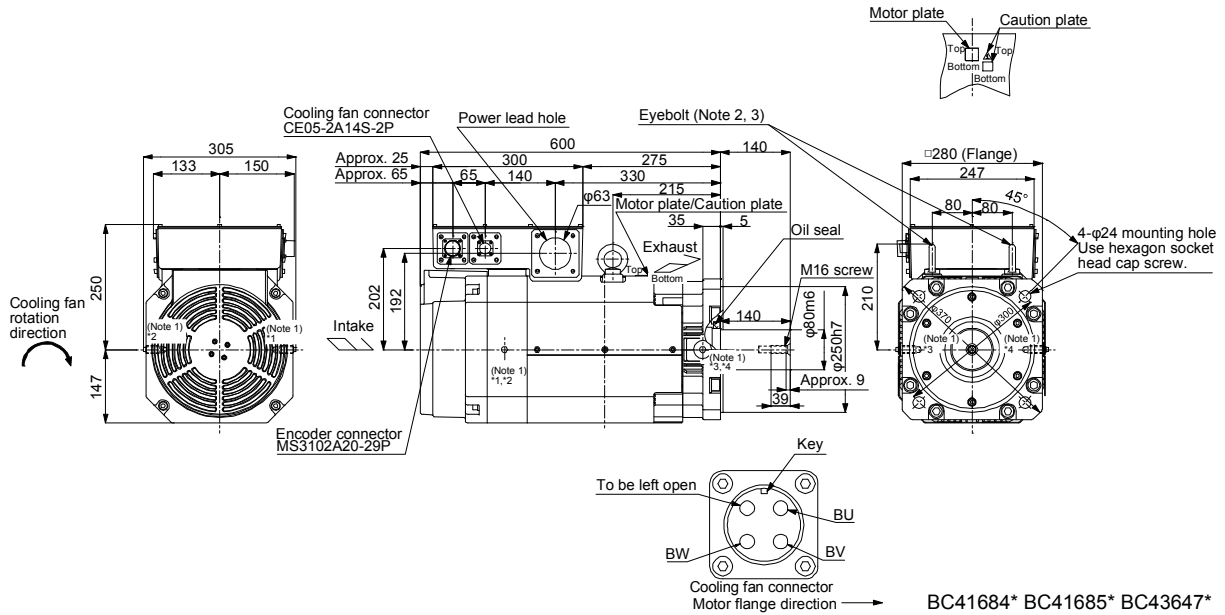


- Note 1. *1, *2, *3, and *4 are screw hole for eyebolt (M12).
 2. An angle adjusting washer is inserted into the eyebolt.
 3. When the motor is used without the eyebolt, plug the threaded hole with a bolt of M12 × 20 or less.

8. HG-JR SERIES

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR30K1	30	1377	215
HG-JR30K14			
HG-JR45K1M4	45		

[Unit: mm]

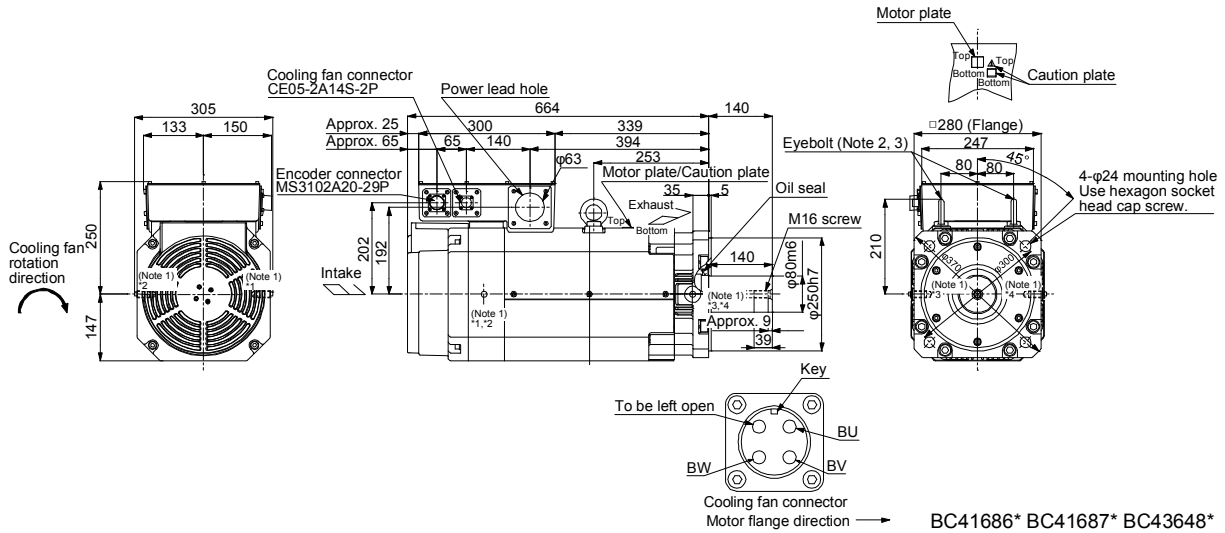


- Note 1. *1, *2, *3, and *4 are screw hole for eyebolt (M16).
 2. An angle adjusting washer is inserted into the eyebolt.
 3. When the motor is used without the eyebolt, plug the threaded hole with a bolt of M16 × 20 or less.

8. HG-JR SERIES

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR37K1	37	1637	240
HG-JR37K14			
HG-JR55K1M4	55		

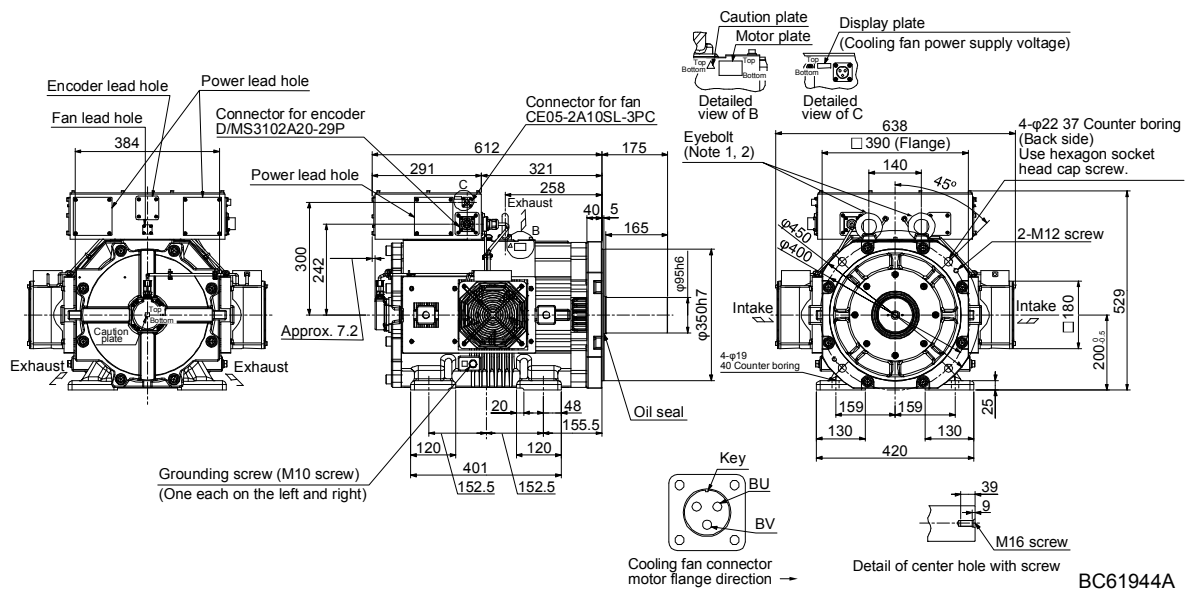
[Unit: mm]



- Note 1. *1, *2, *3, and *4 are screw hole for eyebolt (M16).
 2. An angle adjusting washer is inserted into the eyebolt.
 3. When the motor is used without the eyebolt, plug the threaded hole with a bolt of M16 × 20 or less.

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR110K24W0C	110	3430	420

[Unit: mm]

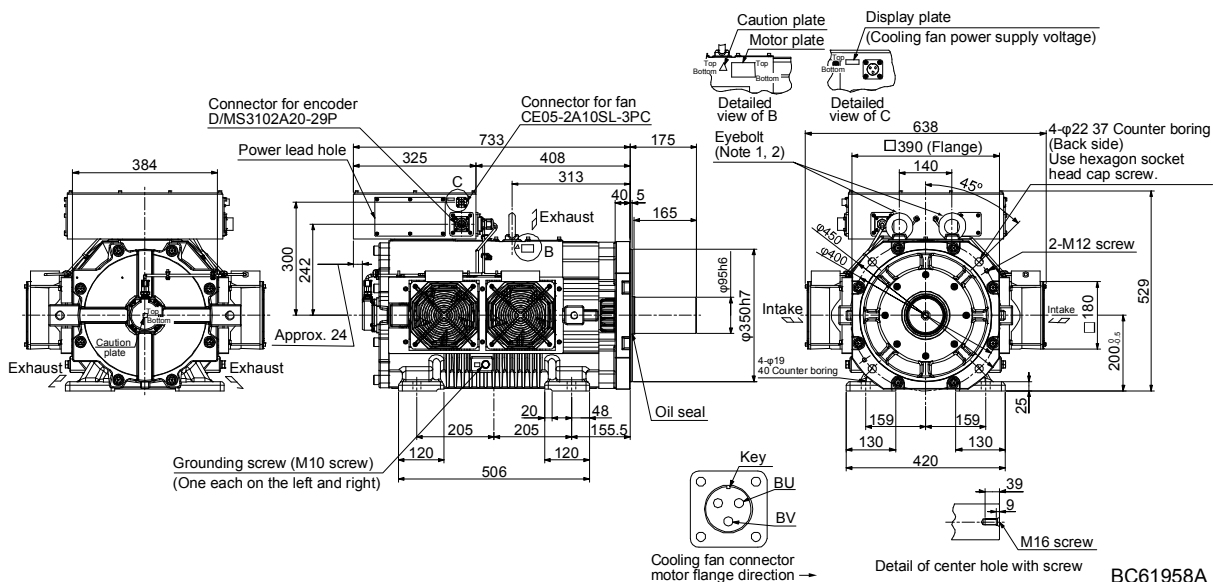


- Note 1. An angle adjusting washer is inserted into the eyebolt.
 2. When the motor is used without the eyebolt, plug the threaded hole with a bolt of M20 × 25 or less.

8. HG-JR SERIES

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR150K24W0C	150	4330	520

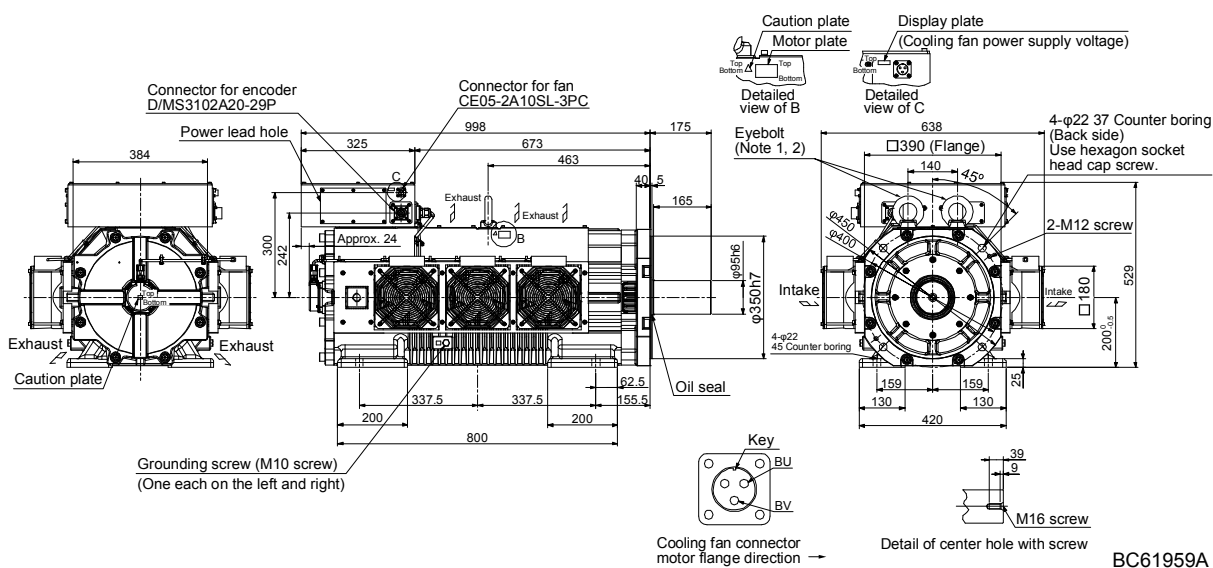
[Unit: mm]



- Note 1. An angle adjusting washer is inserted into the eyebolt.
 Note 2. When the motor is used without the eyebolt, plug the threaded hole with a bolt of M20 \times 25 or less.

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR180K24W0C	180	5420	730
HG-JR200K24W0C	200	6820	755

[Unit: mm]

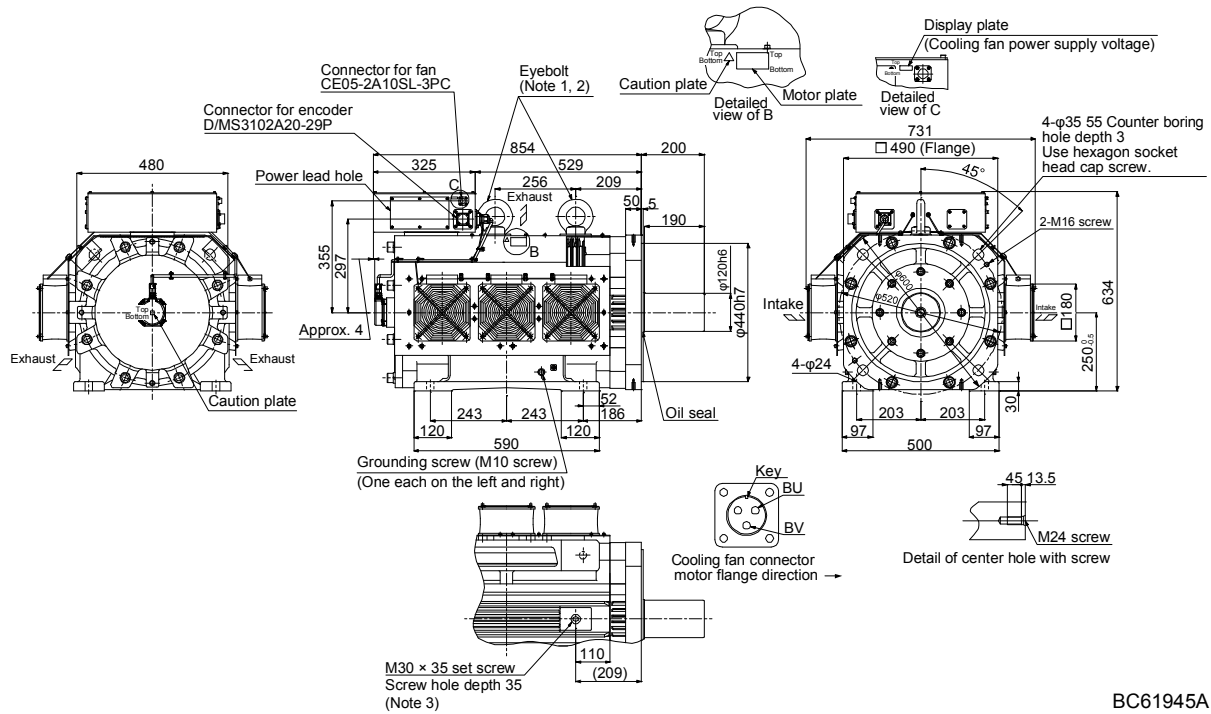


- Note 1. An angle adjusting washer is inserted into the eyebolt.
 Note 2. When the motor is used without the eyebolt, plug the threaded hole with a bolt of M24 \times 35 or less.

8. HG-JR SERIES

Model	Output [kW]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR220K24W0C	220	13800	870

[Unit: mm]



BC61945A

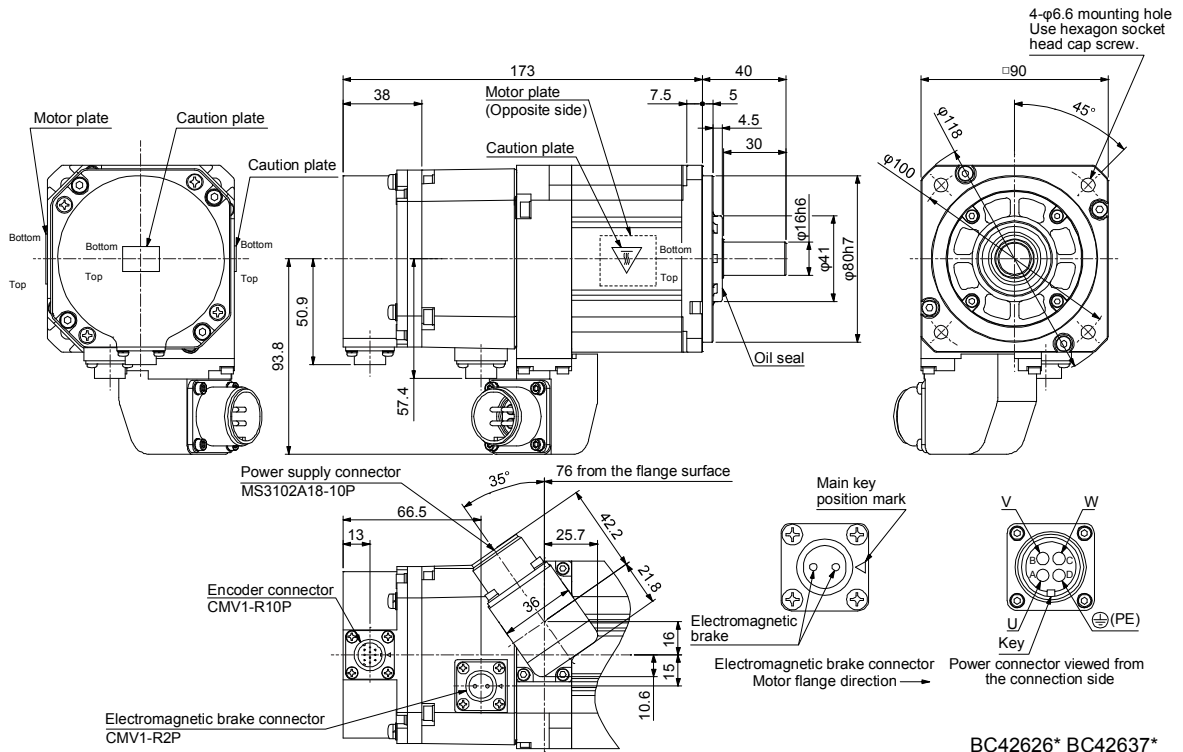
- Note
1. An angle adjusting washer is inserted into the eyebolt.
 2. When the motor is used without the eyebolt, plug the threaded hole with a bolt of M30 × 45 or less.
 3. When using the M30 screw hole, remove the M30 × 35 set screw and install a screw of 35 mm length or less.

8. HG-JR SERIES

8.8.3 With an electromagnetic brake

Model	Output [kW]	Brake static friction torque [N·m]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR53B	0.5	6.6	2.02	4.4
HG-JR534B				

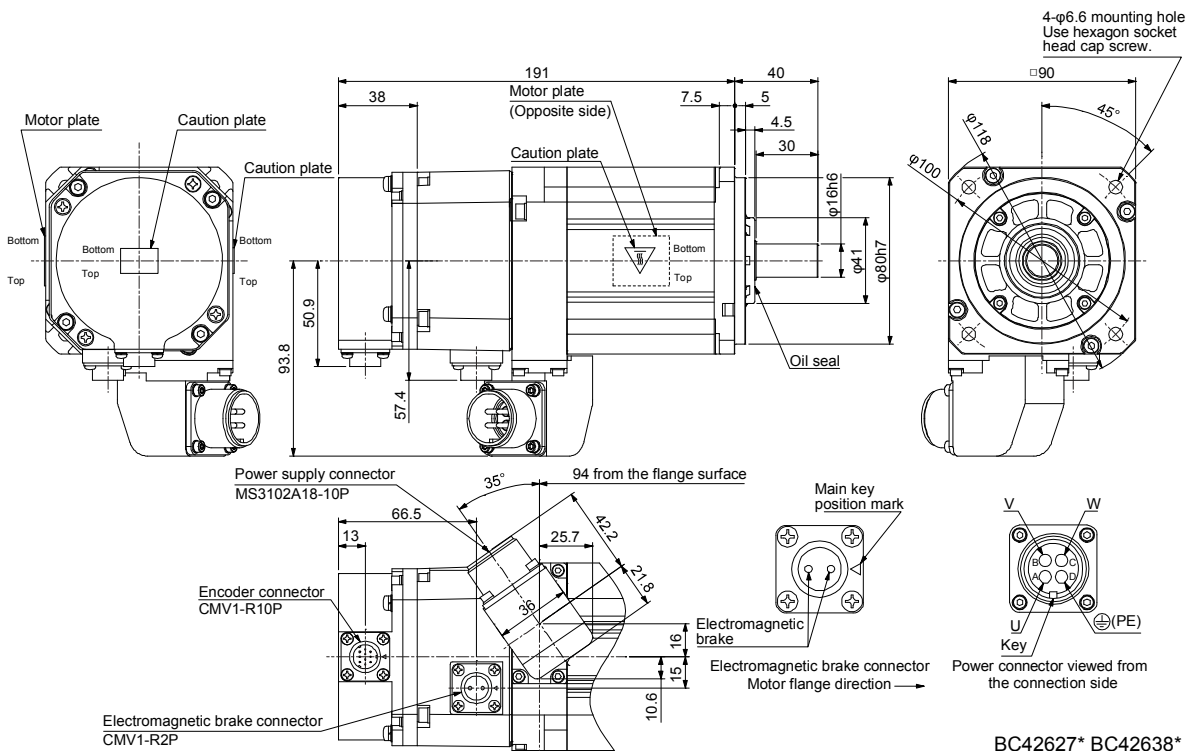
[Unit: mm]



8. HG-JR SERIES

Model	Output [kW]	Brake static friction torque [N•m]	Moment of inertia J [$\times 10^{-4}$ kg•m ²]	Mass [kg]
HG-JR73B	0.75	6.6	2.59	5.1
HG-JR734B				

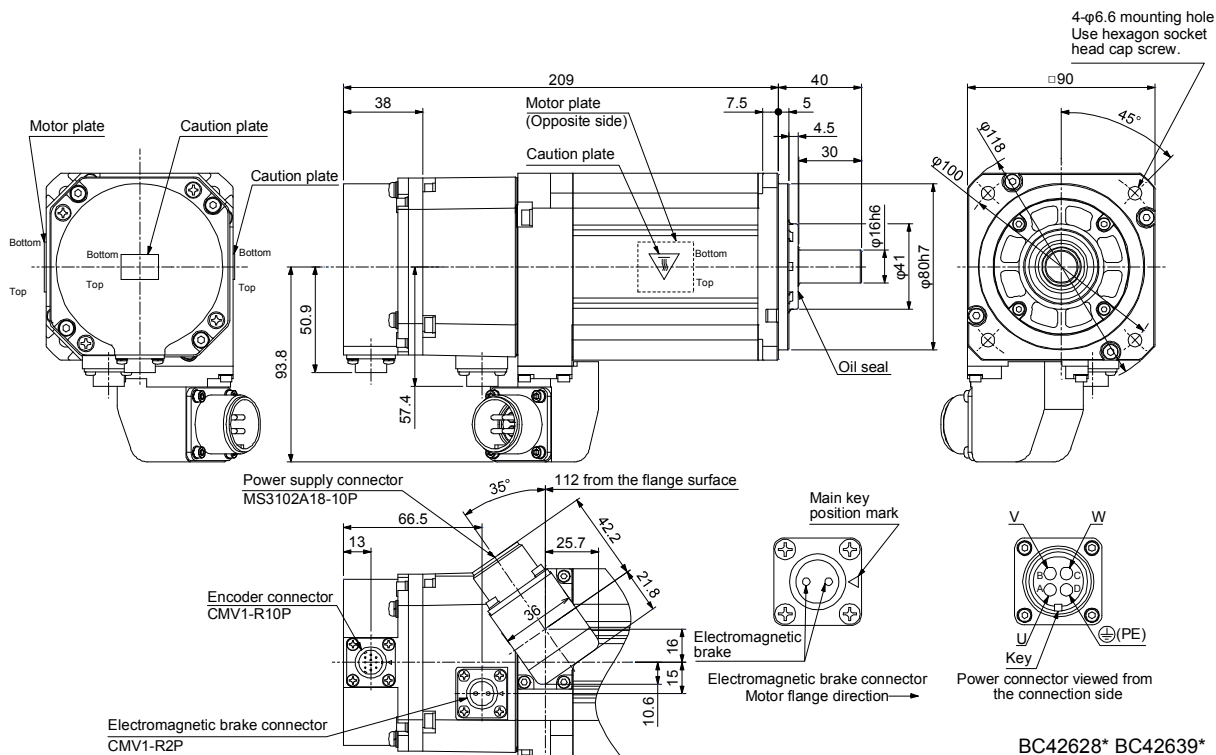
[Unit: mm]



8. HG-JR SERIES

Model	Output [kW]	Brake static friction torque [N·m]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR103B	1.0	6.6	3.15	5.9
HG-JR1034B				

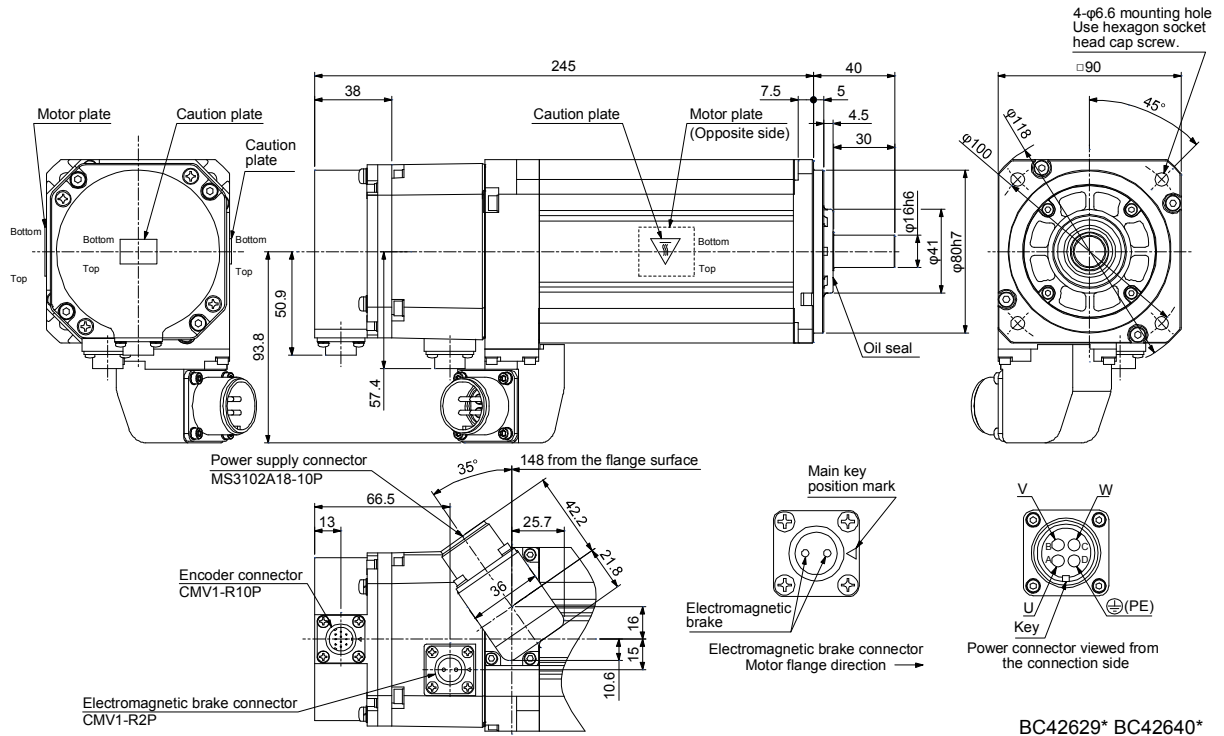
[Unit: mm]



8. HG-JR SERIES

Model	Output [kW]	Brake static friction torque [N•m]	Moment of inertia J [$\times 10^{-4}$ kg•m ²]	Mass [kg]
HG-JR153B	1.5	6.6	4.29	7.3
HG-JR1534B				

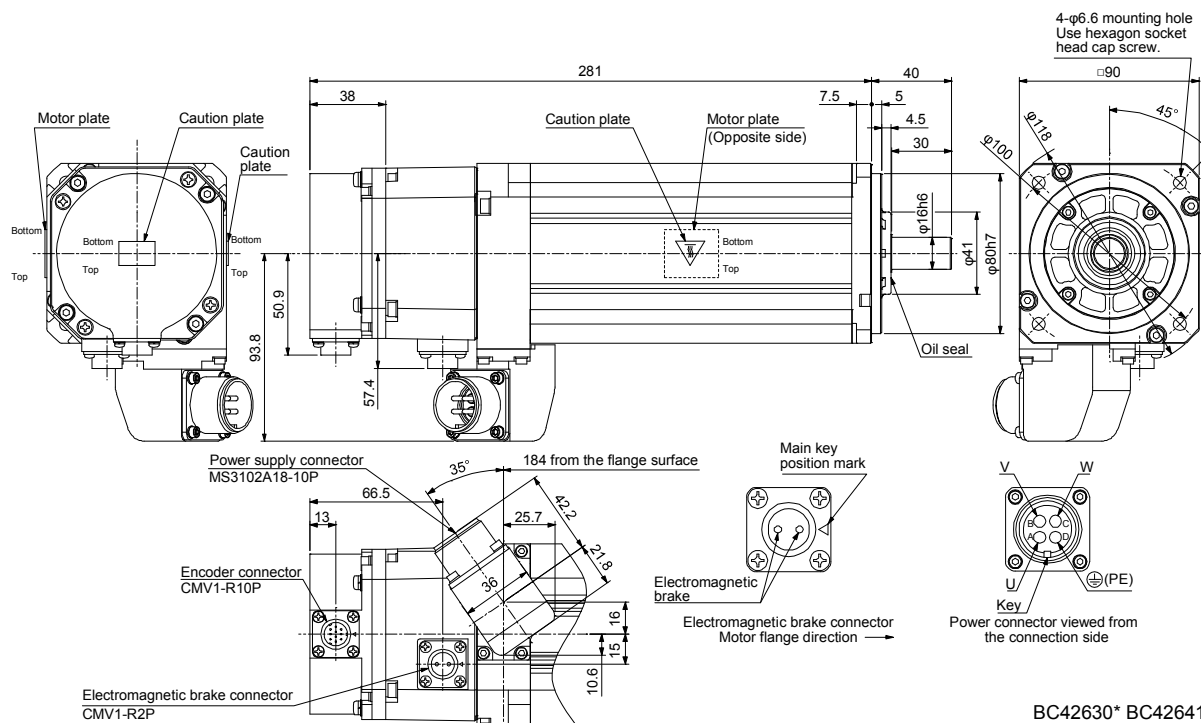
[Unit: mm]



8. HG-JR SERIES

Model	Output [kW]	Brake static friction torque [N·m]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR203B	2.0	6.6	5.42	8.9
HG-JR2034B				

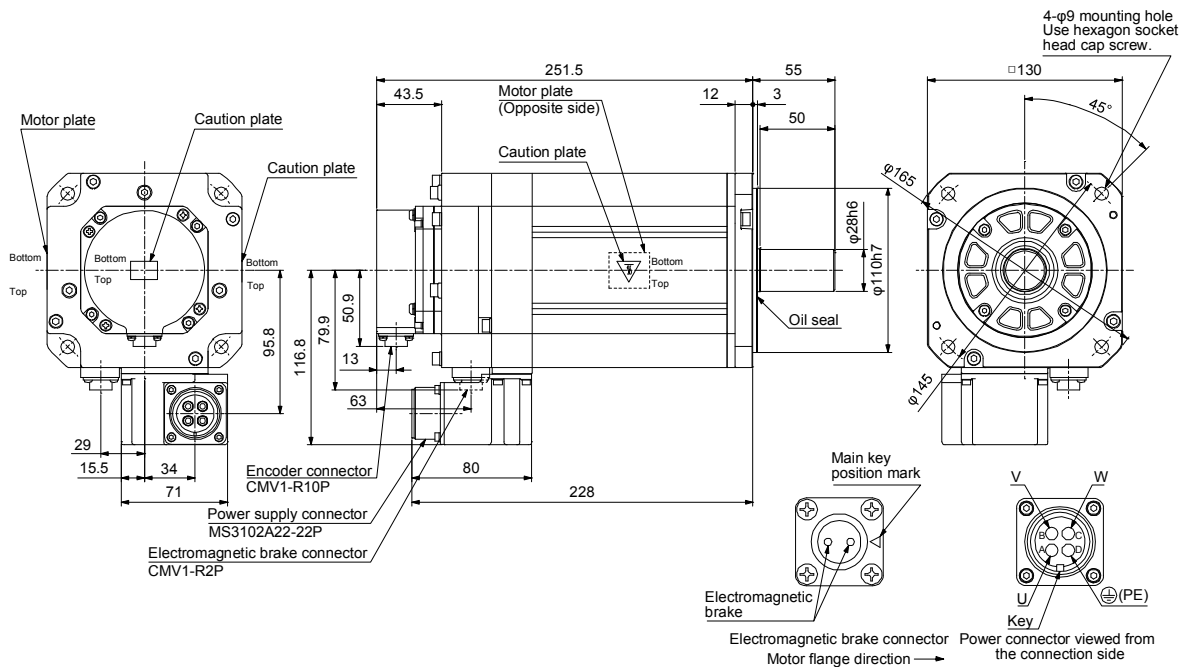
[Unit: mm]



8. HG-JR SERIES

Model	Output [kW]	Brake static friction torque [N·m]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR353B	3.5	16	15.4	15

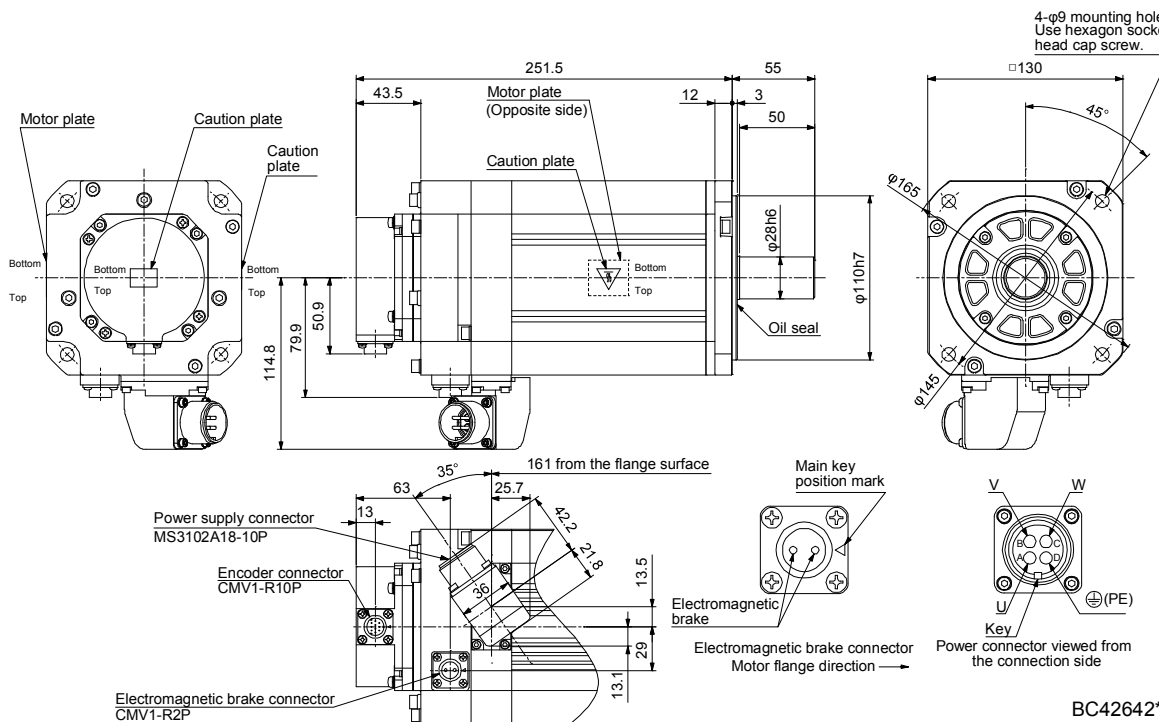
[Unit: mm]



BC42631*

Model	Output [kW]	Brake static friction torque [N·m]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR3534B	3.5	16	15.4	15

[Unit: mm]

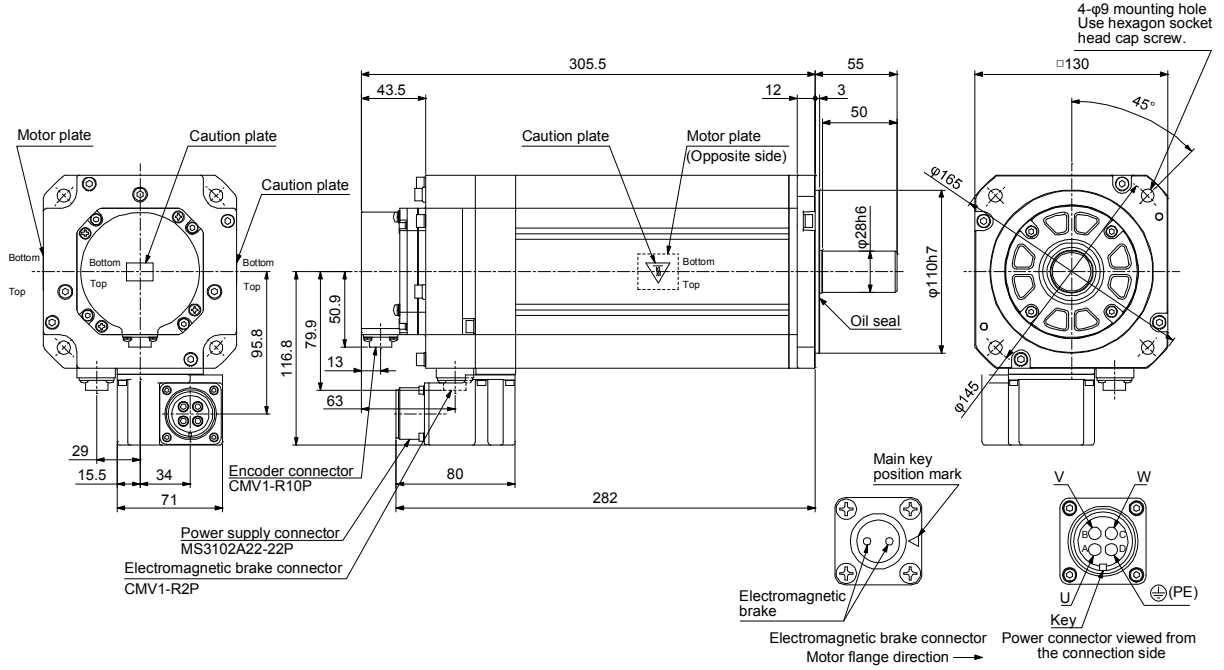


BC42642*

8. HG-JR SERIES

Model	Output [kW]	Brake static friction torque [N·m]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR503B	5.0	16	21.2	20

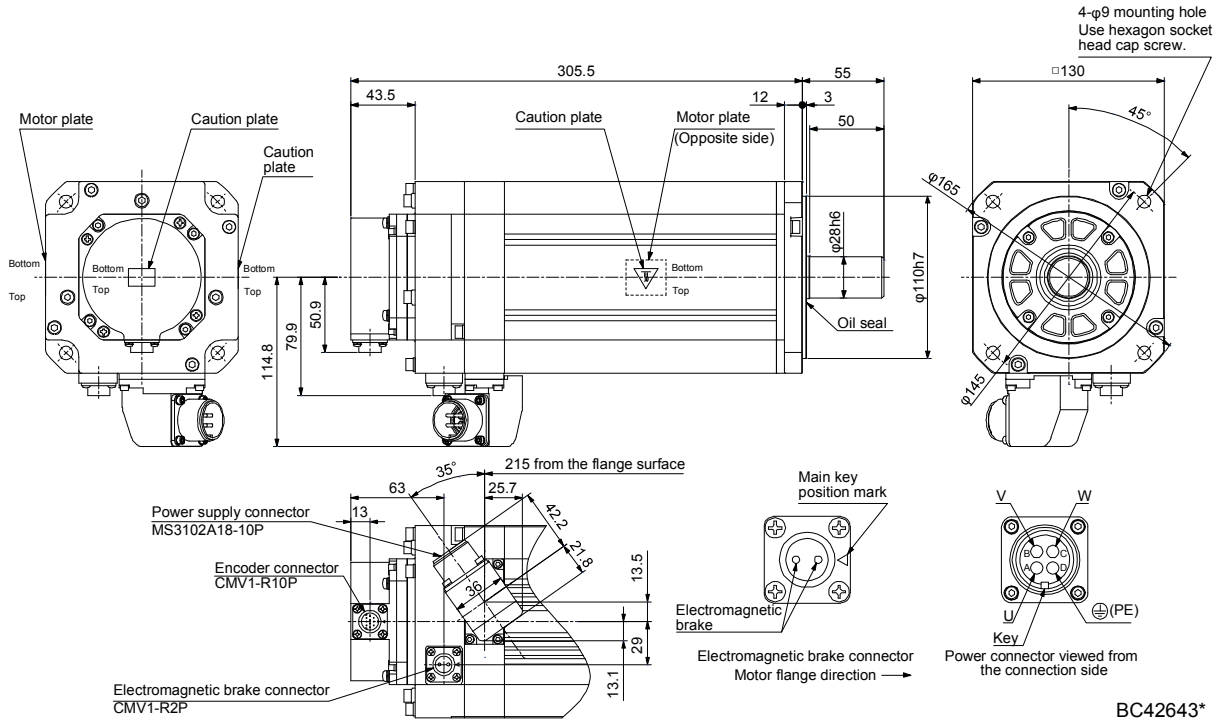
[Unit: mm]



BC42632*

Model	Output [kW]	Brake static friction torque [N·m]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR5034B	5.0	16	21.2	20

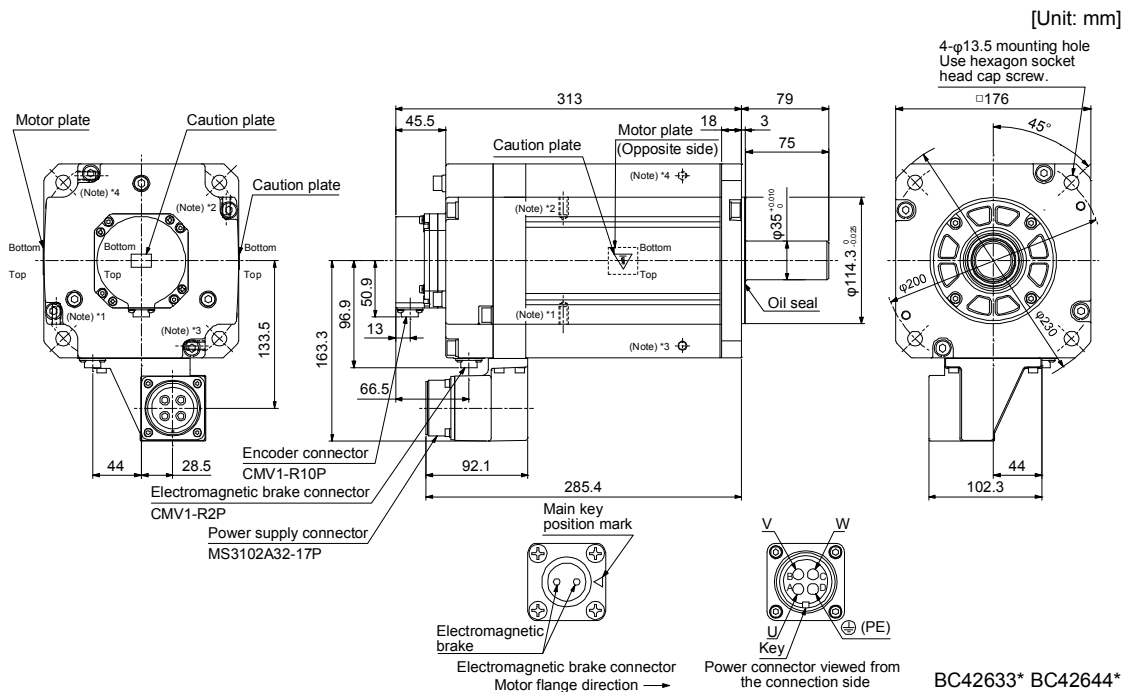
[Unit: mm]



BC42643*

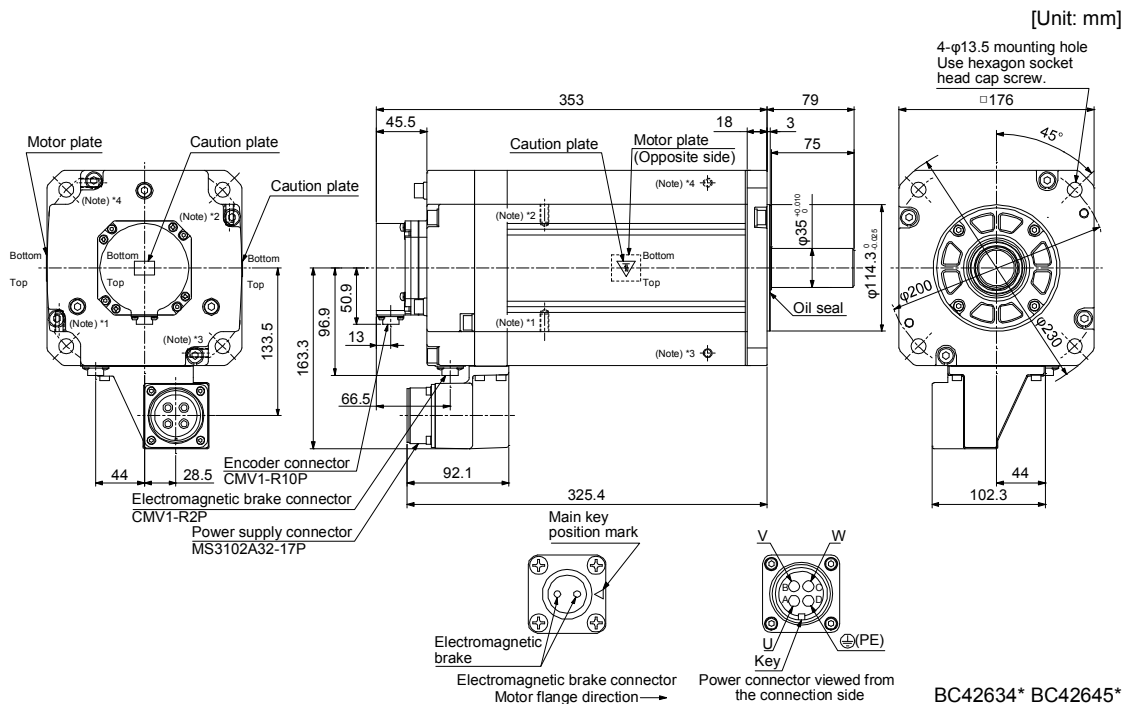
8. HG-JR SERIES

Model	Output [kW]	Brake static friction torque [N·m]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR703B	7.0	44	52.9	35
HG-JR7034B				



Note. *1, *2, *3, and *4 are screw hole for eyebolt (M8).

Model	Output [kW]	Brake static friction torque [N·m]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR903B	9.0	44	65.4	42
HG-JR9034B				

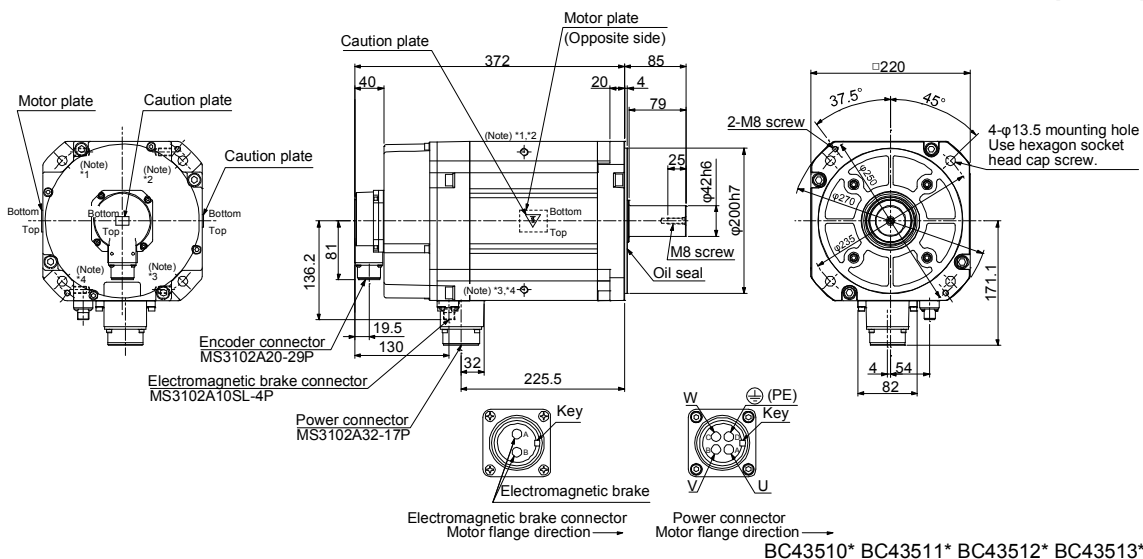


Note. *1, *2, *3, and *4 are screw hole for eyebolt (M8).

8. HG-JR SERIES

Model	Output [kW]	Brake static friction torque [N·m]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR601B	6	126	196	65
HG-JR6014B				
HG-JR701MB	7			
HG-JR701M4B				

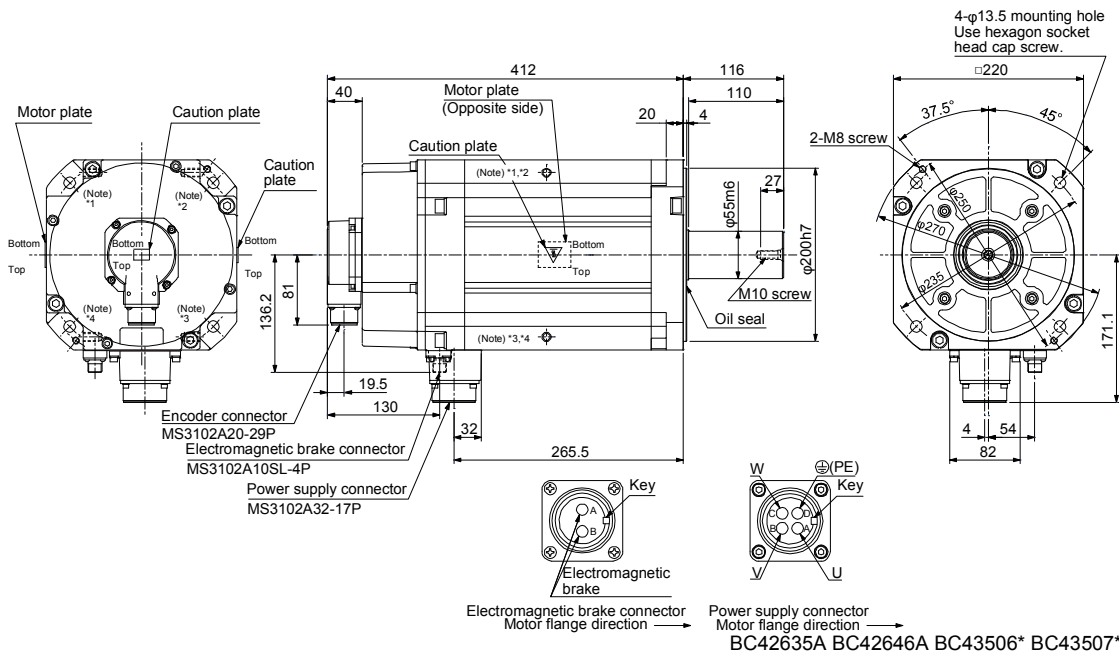
[Unit: mm]



Note. *1, *2, *3, and *4 are screw hole for eyebolt (M10).

Model	Output [kW]	Brake static friction torque [N·m]	Moment of inertia J [$\times 10^{-4}$ kg·m ²]	Mass [kg]
HG-JR801B	8	126	240	74
HG-JR8014B				
HG-JR11K1MB	11			
HG-JR11K1M4B				

[Unit: mm]

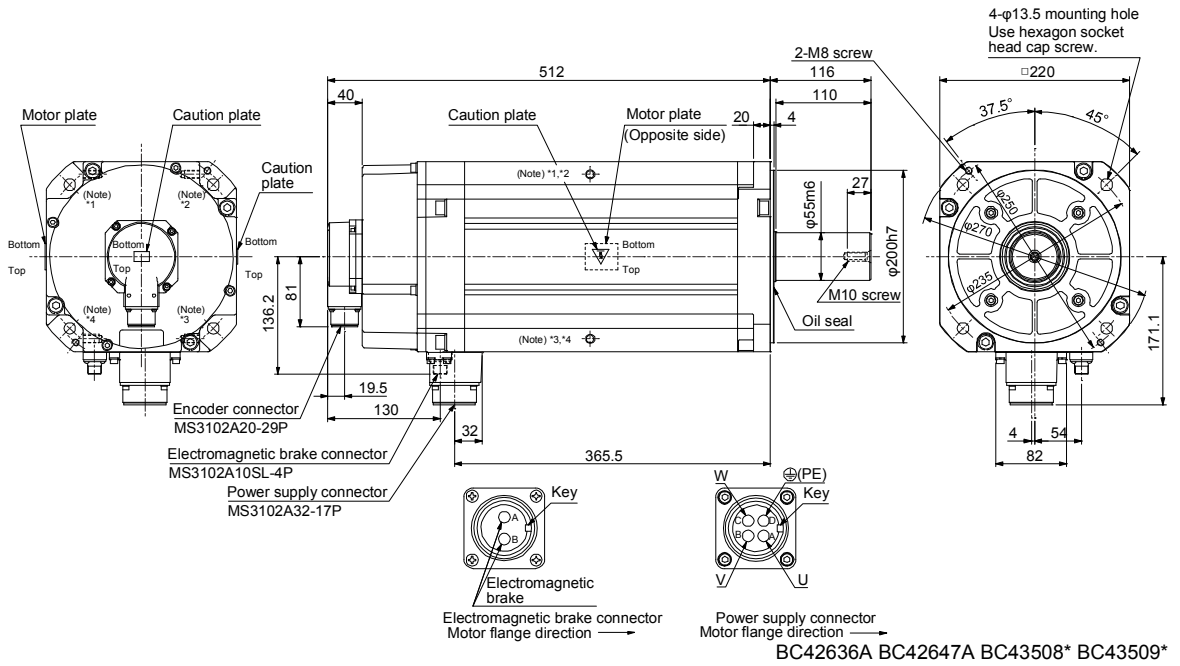


Note. *1, *2, *3, and *4 are screw hole for eyebolt (M10).

8. HG-JR SERIES

Model	Output [kW]	Brake static friction torque [N•m]	Moment of inertia J [$\times 10^{-4} \text{ kg}\cdot\text{m}^2$]	Mass [kg]
HG-JR12K1B	12	126	336	97
HG-JR12K14B				
HG-JR15K1MB	15	126	336	97
HG-JR15K1M4B				

[Unit: mm]



Note. *1, *2, *3, and *4 are screw hole for eyebolt (M10).

MEMO
