Precautions for transition from MR-J3 series to MR-J4 series

1. Overview

The functions and performance of MR-J4 series has greatly improved compared with MR-J3 series, and MR-J4 series basically has mounting compatibility with MR-J3 series. However, note that the position of mounting screws (distance between mounting screws) is different for the 5kW (200V), 3.5kW (400V), 11kW, and 15kW capacities because these capacities of MR-J4 series are smaller in size. Also, when replacing MR-J3 to MR-J4, the parameters of A type (general-purpose interface) need changing although both MR-J3-A and MR-J4-A are compatible with the same controllers, while the parameters of B type (SSCNET III/H) do not need changing because MR-J4 series is provided with “J3 compatibility mode”.

2. Models for replacement

- This section shows the basic models recommended for replacing the amplifier and motor as a set.

■ Servo amplifier

Series	Model	Example of replacement model	Mounting Compatibility (○: Compatible)	Precautions
200 VAC general-purpose interface	MR-J3-10A	MR-J4-10A	○	Refer to section 3 or later for detailed specifications and function differences.
	MR-J3-20A	MR-J4-20A	○	
	MR-J3-40A	MR-J4-40A	○	
	MR-J3-60A	MR-J4-60A	○	
	MR-J3-70A	MR-J4-70A	○	
	MR-J3-100A	MR-J4-100A	○	
	MR-J3-200A	MR-J4-200A	○	
	MR-J3-350A	MR-J4-350A	○	
	MR-J3-500A	MR-J4-500A	Note 1	
	MR-J3-700A	MR-J4-700A	○	
	MR-J3-11KA	MR-J4-11KA	Note 1	
	MR-J3-15KA	MR-J4-15KA	Note 1	
	MR-J3-22KA	MR-J4-22KA	○	

Note 1. See “Comparison of servo amplifier dimensions” (page 3) for the mounting hole dimensions.

Series	Model	Example of replacement model	Mounting Compatibility (○: Compatible)	Precautions
200 VAC SSCNET interface	MR-J3-10B	MR-J4-10B	○	Refer to section 3 or later for detailed specifications and function differences.
	MR-J3-20B	MR-J4-20B	○	
	MR-J3-40B	MR-J4-40B	○	
	MR-J3-60B	MR-J4-60B	○	
	MR-J3-70B	MR-J4-70B	○	
	MR-J3-100B	MR-J4-100B	○	
	MR-J3-200B	MR-J4-200B	○	
	MR-J3-350B	MR-J4-350B	○	
	MR-J3-500B	MR-J4-500B	Note 1	
	MR-J3-700B	MR-J4-700B	○	
	MR-J3-11KB	MR-J4-11KB	Note 1	
	MR-J3-15KB	MR-J4-15KB	Note 1	
	MR-J3-22KB	MR-J4-22KB	○	

Note 1. See “Comparison of servo amplifier dimensions” (page 3) for the mounting hole dimensions.

Series	Model	Example of replacement model	Mounting Compatibility (○: Compatible)	Precautions
400 VAC general-purpose interface	MR-J3-60A4	MR-J4-60A4	○	Refer to section 3 or later for detailed specifications and function differences.
	MR-J3-100A4	MR-J4-100A4	○	
	MR-J3-200A4	MR-J4-200A4	○	
	MR-J3-350A4	MR-J4-350A4	Note 1	
	MR-J3-500A4	MR-J4-500A4	○	
	MR-J3-700A4	MR-J4-700A4	○	
	MR-J3-11KA4	MR-J4-11KA4	Note 1	
	MR-J3-15KA4	MR-J4-15KA4	Note 1	
	MR-J3-22KA4	MR-J4-22KA4	○	

Note 1. See “Comparison of servo amplifier dimensions” (page 3) for the mounting hole dimensions.

Series	Model	Example of replacement model	Mounting Compatibility (○: Compatible)	Precautions
400 VAC SSCNET interface	MR-J3-60B4	MR-J4-60B4	○	Refer to section 3 or later for detailed specifications and function differences.
	MR-J3-100B4	MR-J4-100B4	○	
	MR-J3-200B4	MR-J4-200B4	○	
	MR-J3-350B4	MR-J4-350B4	Note 1	
	MR-J3-500B4	MR-J4-500B4	○	
	MR-J3-700B4	MR-J4-700B4	○	
	MR-J3-11KB4	MR-J4-11KB4	Note 1	
	MR-J3-15KB4	MR-J4-15KB4	Note 1	
	MR-J3-22KB4	MR-J4-22KB4	○	

Note 1. See “Comparison of servo amplifier dimensions” (page 3) for the mounting hole dimensions.

[Comparison of servo amplifier dimensions]

■ 200 V class

The following table shows the comparison of dimensions between MR-J3 series and MR-J4 series. Please note the following when replacing: For the 3.5kW or less, 7kW, and 22kW capacities, their dimensions are same. For the 5kW capacities, the width and the horizontal distance between mounting screws are different. For the 11kW and 15kW capacities, the size of screws and the horizontal and vertical distances between mounting screws are different.

Comparison of dimensions (comparison between the same capacity types) Unit: mm

Model MR-3 series	Model MR-J4 series	Height		Width		Depth		Mounting screw distance	
		MR-J3	MR-J4	MR-J3	MR-J4	MR-J3	MR-J4	MR-J3	MR-J4
MR-J3-10(A/B)	MR-J4-10(A/B)	168	168	40	40	135	135	156 (Vertical) (2 screws)	156 (Vertical) (2 screws)
MR-J3-20(A/B)	MR-J4-20(A/B)								
MR-J3-40(A/B)	MR-J4-40(A/B)					170	170		
MR-J3-60(A/B)	MR-J4-60(A/B)								
MR-J3-70(A/B)	MR-J4-70(A/B)			60	60	185	185	156 (Vertical)/ 42 (Horizontal) (3 screws)	156 (Vertical)/ 42 (Horizontal) (3 screws)
MR-J3-100(A/B)	MR-J4-100(A/B)								
MR-J3-200(A/B)	MR-J4-200(A/B)			90	90	195	195	156(Vertical)/ 78(Horizontal) (3 screws)	156(Vertical)/ 78(Horizontal) (3 screws)
MR-J3-350(A/B)	MR-J4-350(A/B)								
MR-J3-500(A/B)	MR-J4-500(A/B)	250	250	130	**105**	200	200	235 (Vertical)/ 118 (Horizontal) (4 screws)	235(Vertical)/ **93**(Horizontal) (4 screws)
MR-J3-700(A/B)	MR-J4-700(A/B)	300	300	172	172			285(Vertical)/ 160 (Horizontal) (4 screws)	285(Vertical)/ 160(Horizontal) (4 screws)
MR-J3-11K(A/B)	MR-J4-11K(A/B)	400	400	260	**220**	260	260	376(Vertical)/ 236 (Horizontal) (4 screws)	**380**(Vertical)/ **196**(Horizontal) (4 screws)
MR-J3-15K(A/B)	MR-J4-15K(A/B)								
MR-J3-22K(A/B)	MR-J4-22K(A/B)				260				376(Vertical)/ (Horizontal)236 (4 screws)

● Dimensions that differ from MR-J3 series are shown with **shading**

■ 400 V class

The following table shows the comparison of dimensions between MR-J3 series and MR-J4 series. Please note the following when replacing: For the 2kW or less, 5kW, 7kW and 22kW capacities, their dimensions are same. For 3.5kW capacities, the width and the horizontal distance between mounting screws are different. For 11kW and 15kW capacities, the size of screws and the horizontal and vertical distances between mounting screws are different.

Comparison of dimensions (comparison between the same capacity types) Unit: mm

Model MR-3 series	Model MR-J4 series	Height		Width		Depth		Mounting screw distance	
		MR-J3	MR-J4	MR-J3	MR-J4			MR-J3	MR-J4
MR-J3-60(A4/B4)	MR-J4-60(A4/B4)	168	168	60	60	195	195	156(Vertical)/ 42 (Horizontal) (3 screws)	156(Vertical) /42 (Horizontal) (3 screws)
MR-J3-100(A4/B4)	MR-J4-100(A4/B4)								
MR-J3-200(A4/B4)	MR-J4-200(A4/B4)			90	90			156(Vertical)/ 78 (Horizontal) (3 screws)	156(Vertical) /78 (Horizontal) (3 screws)
MR-J3-350(A4/B4)	MR-J4-350(A4/B4)	250	250	130	**105**	200	200	235(Vertical)/ 118 (Horizontal) (4 screws)	235(Vertical) /**93** (Horizontal) (4 screws)
MR-J3-500(A4/B4)	MR-J4-500(A4/B4)				130				235(Vertical)/ 118 (Horizontal) (4 screws)
MR-J3-700(A4/B4)	MR-J4-700(A4/B4)	300	300	172	172			285(Vertical)/ 160 (Horizontal) (4 screws)	285(Vertical)/ 160 (Horizontal) (4 screws)
MR-J3-11K(A4/B4)	MR-J4-11K(A4/B4)	400	400	260	**220**	260	260	376(Vertical)/ 236 (Horizontal) (4 screws)	**380**(Vertical)/ **196** (Horizontal) (4 screws)
MR-J3-15K(A4/B4)	MR-J4-15K(A4/B4)								
MR-J3-22K(A4/B4)	MR-J4-22K(A4/B4)				260				376(Vertical)/ 236 (Horizontal) (4 screws)

● Dimensions that differ from MR-J3 series are shown with **shading**

■ Servo motor

2.1 Servo Motor Replacement Model and Compatibility

“Compatibility” here means the mounting compatibility. For details on the compatibility of servo motor dimensions, reducer specifications, moment of inertia, connector specifications, and torque characteristics, see “2.2 COMPARISON OF SERVO MOTOR SPECIFICATIONS”.

Series	Model	Example of replacement model	Compatibility (○: Compatible)	Precautions
Small capacity, low inertia HF-KP series Standard/With brake (B): With brake	HF-KP053(B)	HG-KR053(B)	○	
	HF-KP13(B)	HG-KR13(B)		
	HF-KP23(B)	HG-KR23(B)		
	HF-KP43(B)	HG-KR43(B)		
	HF-KP73(B)	HG-KR73(B)		
Small capacity, low inertia HF-KP series with general reducer (G1) (B): With brake	HF-KP053(B)G1 1/5	HG-KR053(B)G1 1/5	○	● Because the reduction gears of models marked with ◆ are different from the actual reduction ratio, it is required that an electronic gear be set up. For details, see “2.2.4 Comparison of Actual Reduction Ratios for Geared Servo Motors".
	HF-KP053(B)G1 1/12	HG-KR053(B)G1 1/12		
	HF-KP053(B)G1 1/20	HG-KR053(B)G1 1/20		
	HF-KP13(B)G1 1/5	HG-KR13(B)G1 1/5		
	HF-KP13(B)G1 1/12	HG-KR13(B)G1 1/12		
	HF-KP13(B)G1 1/20	HG-KR13(B)G1 1/20		
	HF-KP23(B)G1 1/5	HG-KR23(B)G1 1/5		
	HF-KP23(B)G1 1/12	HG-KR23(B)G1 1/12 ◆		
	HF-KP23(B)G1 1/20	HG-KR23(B)G1 1/20 ◆		
	HF-KP43(B)G1 1/5	HG-KR43(B)G1 1/5		
	HF-KP43(B)G1 1/12	HG-KR43(B)G1 1/12 ◆		
	HF-KP43(B)G1 1/20	HG-KR43(B)G1 1/20 ◆		
	HF-KP73(B)G1 1/5	HG-KR73(B)G1 1/5		
	HF-KP73(B)G1 1/12	HG-KR73(B)G1 1/12 ◆		
	HF-KP73(B)G1 1/20	HG-KR73(B)G1 1/20		
Small capacity, low Inertia HF-KP series with high precision reducer Flange output type (G5) (B): With brake	HF-KP053(B)G5 1/5	HG-KR053(B)G5 1/5	○	
	HF-KP053(B)G5 1/11	HG-KR053(B)G5 1/11		
	HF-KP053(B)G5 1/21	HG-KR053(B)G5 1/21		
	HF-KP053(B)G5 1/33	HG-KR053(B)G5 1/33		
	HF-KP053(B)G5 1/45	HG-KR053(B)G5 1/45		
	HF-KP13(B)G5 1/5	HG-KR13(B)G5 1/5		
	HF-KP13(B)G5 1/11	HG-KR13(B)G5 1/11		
	HF-KP13(B)G5 1/21	HG-KR13(B)G5 1/21		
	HF-KP13(B)G5 1/33	HG-KR13(B)G5 1/33		
	HF-KP13(B)G5 1/45	HG-KR13(B)G5 1/45		
	HF-KP23(B)G5 1/5	HG-KR23(B)G5 1/5		
	HF-KP23(B)G5 1/11	HG-KR23(B)G5 1/11		
	HF-KP23(B)G5 1/21	HG-KR23(B)G5 1/21		
	HF-KP23(B)G5 1/33	HG-KR23(B)G5 1/33		
	HF-KP23(B)G5 1/45	HG-KR23(B)G5 1/45		
	HF-KP43(B)G5 1/5	HG-KR43(B)G5 1/5		
	HF-KP43(B)G5 1/11	HG-KR43(B)G5 1/11		
	HF-KP43(B)G5 1/21	HG-KR43(B)G5 1/21		
	HF-KP43(B)G5 1/33	HG-KR43(B)G5 1/33		
	HF-KP43(B)G5 1/45	HG-KR43(B)G5 1/45		
	HF-KP73(B)G5 1/5	HG-KR73(B)G5 1/5		
	HF-KP73(B)G5 1/11	HG-KR73(B)G5 1/11		
	HF-KP73(B)G5 1/21	HG-KR73(B)G5 1/21		
	HF-KP73(B)G5 1/33	HG-KR73(B)G5 1/33		
	HF-KP73(B)G5 1/45	HG-KR73(B)G5 1/45		

Series	Model	Example of replacement model	Compatibility (○: Compatible)	Precautions
Small capacity, low Inertia HF-KP series with high precision reducer Shaft output type (G7) (B): With brake	HF-KP053(B)G7 1/5	HG-KR053(B)G7 1/5	○	
	HF-KP053(B)G7 1/11	HG-KR053(B)G7 1/11		
	HF-KP053(B)G7 1/21	HG-KR053(B)G7 1/21		
	HF-KP053(B)G7 1/33	HG-KR053(B)G7 1/33		
	HF-KP053(B)G7 1/45	HG-KR053(B)G7 1/45		
	HF-KP13(B)G7 1/5	HG-KR13(B)G7 1/5		
	HF-KP13(B)G7 1/11	HG-KR13(B)G7 1/11		
	HF-KP13(B)G7 1/21	HG-KR13(B)G7 1/21		
	HF-KP13(B)G7 1/33	HG-KR13(B)G7 1/33		
	HF-KP13(B)G7 1/45	HG-KR13(B)G7 1/45		
	HF-KP23(B)G7 1/5	HG-KR23(B)G7 1/5		
	HF-KP23(B)G7 1/11	HG-KR23(B)G7 1/11		
	HF-KP23(B)G7 1/21	HG-KR23(B)G7 1/21		
	HF-KP23(B)G7 1/33	HG-KR23(B)G7 1/33		
	HF-KP23(B)G7 1/45	HG-KR23(B)G7 1/45		
	HF-KP43(B)G7 1/5	HG-KR43(B)G7 1/5		
	HF-KP43(B)G7 1/11	HG-KR43(B)G7 1/11		
	HF-KP43(B)G7 1/21	HG-KR43(B)G7 1/21		
	HF-KP43(B)G7 1/33	HG-KR43(B)G7 1/33		
	HF-KP43(B)G7 1/45	HG-KR43(B)G7 1/45		
	HF-KP73(B)G7 1/5	HG-KR73(B)G7 1/5		
	HF-KP73(B)G7 1/11	HG-KR73(B)G7 1/11		
	HF-KP73(B)G7 1/21	HG-KR73(B)G7 1/21		
	HF-KP73(B)G7 1/33	HG-KR73(B)G7 1/33		
	HF-KP73(B)G7 1/45	HG-KR73(B)G7 1/45		
Small capacity, ultra-low inertia HF-MP series Standard/With brake (B): With brake	HF-MP053(B)	HG-MR053(B)	○	
	HF-MP13(B)	HG-MR13(B)		
	HF-MP23(B)	HG-MR23(B)		
	HF-MP43(B)	HG-MR43(B)		
	HF-MP73(B)	HG-MR73(B)		
Small capacity, ultra-low inertia HF-MP series with general reducer (G1) (B): With brake	HF-MP053(B)G1 1/5	HG-KR053(B)G1 1/5	○	● HG-MR series does not support the geared model. The geared model is supported with the HG-KR series. ● Because the reduction gears of models marked with ◆ are different from the actual reduction ratio, it is required that an electronic gear be set up. For details, see "2.2.4 Comparison of Actual Reduction Ratios for Geared Servo Motors".
	HF-MP053(B)G1 1/12	HG-KR053(B)G1 1/12		
	HF-MP053(B)G1 1/20	HG-KR053(B)G1 1/20		
	HF-MP13(B)G1 1/5	HG-KR13(B)G1 1/5		
	HF-MP13(B)G1 1/12	HG-KR13(B)G1 1/12		
	HF-MP13(B)G1 1/20	HG-KR13(B)G1 1/20		
	HF-MP23(B)G1 1/5	HG-KR23(B)G1 1/5		
	HF-MP23(B)G1 1/12	HG-KR23(B)G1 1/12 ◆		
	HF-MP23(B)G1 1/20	HG-KR23(B)G1 1/20 ◆		
	HF-MP43(B)G1 1/5	HG-KR43(B)G1 1/5		
	HF-MP43(B)G1 1/12	HG-KR43(B)G1 1/12 ◆		
	HF-MP43(B)G1 1/20	HG-KR43(B)G1 1/20 ◆		
	HF-MP73(B)G1 1/5	HG-KR73(B)G1 1/5		
	HF-MP73(B)G1 1/12	HG-KR73(B)G1 1/12 ◆		
	HF-MP73(B)G1 1/20	HG-KR73(B)G1 1/20		

Series	Model	Example of replacement model	Compatibility (○: Compatible)	Precautions
Small capacity, ultra-low inertia HF-MP series with high precision reducer Flange output type (G5) (B): With brake	HF-MP053(B)G5 1/5	HG-KR053(B)G5 1/5	○	● HG-MR series does not support the geared model. The geared model is supported with the HG-KR series.
	HF-MP053(B)G5 1/11	HG-KR053(B)G5 1/11		
	HF-MP053(B)G5 1/21	HG-KR053(B)G5 1/21		
	HF-MP053(B)G5 1/33	HG-KR053(B)G5 1/33		
	HF-MP053(B)G5 1/45	HG-KR053(B)G5 1/45		
	HF-MP13(B)G5 1/5	HG-KR13(B)G5 1/5		
	HF-MP13(B)G5 1/11	HG-KR13(B)G5 1/11		
	HF-MP13(B)G5 1/21	HG-KR13(B)G5 1/21		
	HF-MP13(B)G5 1/33	HG-KR13(B)G5 1/33		
	HF-MP13(B)G5 1/45	HG-KR13(B)G5 1/45		
	HF-MP23(B)G5 1/5	HG-KR23(B)G5 1/5		
	HF-MP23(B)G5 1/11	HG-KR23(B)G5 1/11		
	HF-MP23(B)G5 1/21	HG-KR23(B)G5 1/21		
	HF-MP23(B)G5 1/33	HG-KR23(B)G5 1/33		
	HF-MP23(B)G5 1/45	HG-KR23(B)G5 1/45		
	HF-MP43(B)G5 1/5	HG-KR43(B)G5 1/5		
	HF-MP43(B)G5 1/11	HG-KR43(B)G5 1/11		
	HF-MP43(B)G5 1/21	HG-KR43(B)G5 1/21		
	HF-MP43(B)G5 1/33	HG-KR43(B)G5 1/33		
	HF-MP43(B)G5 1/45	HG-KR43(B)G5 1/45		
	HF-MP73(B)G5 1/5	HG-KR73(B)G5 1/5		
	HF-MP73(B)G5 1/11	HG-KR73(B)G5 1/11		
	HF-MP73(B)G5 1/21	HG-KR73(B)G5 1/21		
	HF-MP73(B)G5 1/33	HG-KR73(B)G5 1/33		
	HF-MP73(B)G5 1/45	HG-KR73(B)G5 1/45		
Small capacity, ultra-low inertia HF-MP series with high precision reducer Shaft output type (G7) (B): With brake	HF-MP053(B)G7 1/5	HG-KR053(B)G7 1/5	○	● HG-MR series does not support the geared model. The geared model is supported with the HG-KR series.
	HF-MP053(B)G7 1/11	HG-KR053(B)G7 1/11		
	HF-MP053(B)G7 1/21	HG-KR053(B)G7 1/21		
	HF-MP053(B)G7 1/33	HG-KR053(B)G7 1/33		
	HF-MP053(B)G7 1/45	HG-KR053(B)G7 1/45		
	HF-MP13(B)G7 1/5	HG-KR13(B)G7 1/5		
	HF-MP13(B)G7 1/11	HG-KR13(B)G7 1/11		
	HF-MP13(B)G7 1/21	HG-KR13(B)G7 1/21		
	HF-MP13(B)G7 1/33	HG-KR13(B)G7 1/33		
	HF-MP13(B)G7 1/45	HG-KR13(B)G7 1/45		
	HF-MP23(B)G7 1/5	HG-KR23(B)G7 1/5		
	HF-MP23(B)G7 1/11	HG-KR23(B)G7 1/11		
	HF-MP23(B)G7 1/21	HG-KR23(B)G7 1/21		
	HF-MP23(B)G7 1/33	HG-KR23(B)G7 1/33		
	HF-MP23(B)G7 1/45	HG-KR23(B)G7 1/45		
	HF-MP43(B)G7 1/5	HG-KR43(B)G7 1/5		
	HF-MP43(B)G7 1/11	HG-KR43(B)G7 1/11		
	HF-MP43(B)G7 1/21	HG-KR43(B)G7 1/21		
	HF-MP43(B)G7 1/33	HG-KR43(B)G7 1/33		
	HF-MP43(B)G7 1/45	HG-KR43(B)G7 1/45		
	HF-MP73(B)G7 1/5	HG-KR73(B)G7 1/5		
	HF-MP73(B)G7 1/11	HG-KR73(B)G7 1/11		
	HF-MP73(B)G7 1/21	HG-KR73(B)G7 1/21		
	HF-MP73(B)G7 1/33	HG-KR73(B)G7 1/33		
	HF-MP73(B)G7 1/45	HG-KR73(B)G7 1/45		

Series	Model	Example of replacement model	Compatibility (○: Compatible)	Precautions
Medium capacity, medium inertia HF-SP series Standard/With brake (4): 400 V specifications (B): With brake	HF-SP51(B)	HG-SR51(B)	○	● The total length of the motor will be shorter, so confirm that the motor connector does not interfere with the device side.
	HF-SP81(B)	HG-SR81(B)		
	HF-SP121(B)	HG-SR121(B)		
	HF-SP201(B)	HG-SR201(B)		
	HF-SP301(B)	HG-SR301(B)		
	HF-SP421(B)	HG-SR421(B)		
	HF-SP52(4)(B)	HG-SR52(4)(B)		
	HF-SP102(4)(B)	HG-SR102(4)(B)		
	HF-SP152(4)(B)	HG-SR152(4)(B)		
	HF-SP202(4)(B)	HG-SR202(4)(B)		
	HF-SP352(4)(B)	HG-SR352(4)(B)		
	HF-SP502(4)(B)	HG-SR502(4)(B)		
	HF-SP702(4)(B)	HG-SR702(4)(B)		
Medium capacity, medium inertia HF-SP series with general reducer (4): 400 V Specifications (B): With brake G1: Flange-mounting G1H: Foot-mounting	HF-SP52(4)(B)G1(H) 1/6	HG-SR52(4)(B)G1(H) 1/6	○	● The total length of the motor will be shorter, so confirm that the motor connector does not interfere with the device side.
	HF-SP52(4)(B)G1(H) 1/11	HG-SR52(4)(B)G1(H) 1/11		
	HF-SP52(4)(B)G1(H) 1/17	HG-SR52(4)(B)G1(H) 1/17		
	HF-SP52(4)(B)G1(H) 1/29	HG-SR52(4)(B)G1(H) 1/29		
	HF-SP52(4)(B)G1(H) 1/35	HG-SR52(4)(B)G1(H) 1/35		
	HF-SP52(4)(B)G1(H) 1/43	HG-SR52(4)(B)G1(H) 1/43		
	HF-SP52(4)(B)G1(H) 1/59	HG-SR52(4)(B)G1(H) 1/59		
	HF-SP102(4)(B)G1(H) 1/6	HG-SR102(4)(B)G1(H) 1/6		
	HF-SP102(4)(B)G1(H) 1/11	HG-SR102(4)(B)G1(H) 1/11		
	HF-SP102(4)(B)G1(H) 1/17	HG-SR102(4)(B)G1(H) 1/17		
	HF-SP102(4)(B)G1(H) 1/29	HG-SR102(4)(B)G1(H) 1/29		
	HF-SP102(4)(B)G1(H) 1/35	HG-SR102(4)(B)G1(H) 1/35		
	HF-SP102(4)(B)G1(H) 1/43	HG-SR102(4)(B)G1(H) 1/43		
	HF-SP102(4)(B)G1(H) 1/59	HG-SR102(4)(B)G1(H) 1/59		
	HF-SP152(4)(B)G1(H) 1/6	HG-SR152(4)(B)G1(H) 1/6		
	HF-SP152(4)(B)G1(H) 1/11	HG-SR152(4)(B)G1(H) 1/11		
	HF-SP152(4)(B)G1(H) 1/17	HG-SR152(4)(B)G1(H) 1/17		
	HF-SP152(4)(B)G1(H) 1/29	HG-SR152(4)(B)G1(H) 1/29		
	HF-SP152(4)(B)G1(H) 1/35	HG-SR152(4)(B)G1(H) 1/35		
	HF-SP152(4)(B)G1(H) 1/43	HG-SR152(4)(B)G1(H) 1/43		
	HF-SP152(4)(B)G1(H) 1/59	HG-SR152(4)(B)G1(H) 1/59		
	HF-SP202(4)(B)G1(H) 1/6	HG-SR202(4)(B)G1(H) 1/6		
	HF-SP202(4)(B)G1(H) 1/11	HG-SR202(4)(B)G1(H) 1/11		
	HF-SP202(4)(B)G1(H) 1/17	HG-SR202(4)(B)G1(H) 1/17		
	HF-SP202(4)(B)G1(H) 1/29	HG-SR202(4)(B)G1(H) 1/29		
	HF-SP202(4)(B)G1(H) 1/35	HG-SR202(4)(B)G1(H) 1/35		
	HF-SP202(4)(B)G1(H) 1/43	HG-SR202(4)(B)G1(H) 1/43		
	HF-SP202(4)(B)G1(H) 1/59	HG-SR202(4)(B)G1(H) 1/59		
	HF-SP352(4)(B)G1(H) 1/6	HG-SR352(4)(B)G1(H) 1/6		
	HF-SP352(4)(B)G1(H) 1/11	HG-SR352(4)(B)G1(H) 1/11		
	HF-SP352(4)(B)G1(H) 1/17	HG-SR352(4)(B)G1(H) 1/17		
	HF-SP352(4)(B)G1(H) 1/29	HG-SR352(4)(B)G1(H) 1/29		
	HF-SP352(4)(B)G1(H) 1/35	HG-SR352(4)(B)G1(H) 1/35		
	HF-SP352(4)(B)G1(H) 1/43	HG-SR352(4)(B)G1(H) 1/43		
	HF-SP352(4)(B)G1(H) 1/59	HG-SR352(4)(B)G1(H) 1/59		

Series	Model	Example of replacement model	Compatibility (○: Compatible)	Precautions
Medium capacity, medium inertia HF-SP series with general reducer (4): 400 V specifications (B): With brake G1: Flange-mounting G1H: Foot-mounting	HF-SP502(4)(B)G1(H) 1/6	HG-SR502(4)(B)G1(H) 1/6	○	● The total length of the motor will be shorter, so confirm that the motor connector does not interfere with the device side.
	HF-SP502(4)(B)G1(H) 1/11	HG-SR502(4)(B)G1(H) 1/11		
	HF-SP502(4)(B)G1(H) 1/17	HG-SR502(4)(B)G1(H) 1/17		
	HF-SP502(4)(B)G1(H) 1/29	HG-SR502(4)(B)G1(H) 1/29		
	HF-SP502(4)(B)G1(H) 1/35	HG-SR502(4)(B)G1(H) 1/35		
	HF-SP502(4)(B)G1(H) 1/43	HG-SR502(4)(B)G1(H) 1/43		
	HF-SP502(4)(B)G1(H) 1/59	HG-SR502(4)(B)G1(H) 1/59		
	HF-SP702(4)(B)G1(H) 1/6	HG-SR702(4)(B)G1(H) 1/6		
	HF-SP702(4)(B)G1(H) 1/11	HG-SR702(4)(B)G1(H) 1/11		
	HF-SP702(4)(B)G1(H) 1/17	HG-SR702(4)(B)G1(H) 1/17		
	HF-SP702(4)(B)G1(H) 1/29	HG-SR702(4)(B)G1(H) 1/29		
	HF-SP702(4)(B)G1(H) 1/35	HG-SR702(4)(B)G1(H) 1/35		
	HF-SP702(4)(B)G1(H) 1/43	HG-SR702(4)(B)G1(H) 1/43		
	HF-SP702(4)(B)G1(H) 1/59	HG-SR702(4)(B)G1(H) 1/59		
Medium capacity, medium inertia HF-SP series with high precision reducer Flange output type(G5) (4): 400 V specifications (B): With brake	HF-SP52(4)(B)G5 1/5	HG-SR52(4)(B)G5 1/5	○	● The total length of the motor will be shorter, so confirm that the motor connector does not interfere with the device side.
	HF-SP52(4)(B)G5 1/11	HG-SR52(4)(B)G5 1/11		
	HF-SP52(4)(B)G5 1/21	HG-SR52(4)(B)G5 1/21		
	HF-SP52(4)(B)G5 1/33	HG-SR52(4)(B)G5 1/33		
	HF-SP52(4)(B)G5 1/45	HG-SR52(4)(B)G5 1/45		
	HF-SP102(4)(B)G5 1/5	HG-SR102(4)(B)G5 1/5		
	HF-SP102(4)(B)G5 1/11	HG-SR102(4)(B)G5 1/11		
	HF-SP102(4)(B)G5 1/21	HG-SR102(4)(B)G5 1/21		
	HF-SP102(4)(B)G5 1/33	HG-SR102(4)(B)G5 1/33		
	HF-SP102(4)(B)G5 1/45	HG-SR102(4)(B)G5 1/45		
	HF-SP152(4)(B)G5 1/5	HG-SR152(4)(B)G5 1/5		
	HF-SP152(4)(B)G5 1/11	HG-SR152(4)(B)G5 1/11		
	HF-SP152(4)(B)G5 1/21	HG-SR152(4)(B)G5 1/21		
	HF-SP152(4)(B)G5 1/33	HG-SR152(4)(B)G5 1/33		
	HF-SP152(4)(B)G5 1/45	HG-SR152(4)(B)G5 1/45		
	HF-SP202(4)(B)G5 1/5	HG-SR202(4)(B)G5 1/5		
	HF-SP202(4)(B)G5 1/11	HG-SR202(4)(B)G5 1/11		
	HF-SP202(4)(B)G5 1/21	HG-SR202(4)(B)G5 1/21		
	HF-SP202(4)(B)G5 1/33	HG-SR202(4)(B)G5 1/33		
	HF-SP202(4)(B)G5 1/45	HG-SR202(4)(B)G5 1/45		
	HF-SP352(4)(B)G5 1/5	HG-SR352(4)(B)G5 1/5		
	HF-SP352(4)(B)G5 1/11	HG-SR352(4)(B)G5 1/11		
	HF-SP352(4)(B)G5 1/21	HG-SR352(4)(B)G5 1/21		
	HF-SP502(4)(B)G5 1/5	HG-SR502(4)(B)G5 1/5		
	HF-SP502(4)(B)G5 1/11	HG-SR502(4)(B)G5 1/11		
	HF-SP702(4)(B)G5 1/5	HG-SR702(4)(B)G5 1/5		
Medium capacity, medium inertia HF-SP series with high precision reducer Shaft output type(G7) (4): 400 V specifications (B): With brake	HF-SP52(4)(B)G7 1/5	HG-SR52(4)(B)G7 1/5	○	● The total length of the motor will be shorter, so confirm that the motor connector does not interfere with the device side.
	HF-SP52(4)(B)G7 1/11	HG-SR52(4)(B)G7 1/11		
	HF-SP52(4)(B)G7 1/21	HG-SR52(4)(B)G7 1/21		
	HF-SP52(4)(B)G7 1/33	HG-SR52(4)(B)G7 1/33		
	HF-SP52(4)(B)G7 1/45	HG-SR52(4)(B)G7 1/45		
	HF-SP102(4)(B)G7 1/5	HG-SR102(4)(B)G7 1/5		
	HF-SP102(4)(B)G7 1/11	HG-SR102(4)(B)G7 1/11		
	HF-SP102(4)(B)G7 1/21	HG-SR102(4)(B)G7 1/21		
	HF-SP102(4)(B)G7 1/33	HG-SR102(4)(B)G7 1/33		
	HF-SP102(4)(B)G7 1/45	HG-SR102(4)(B)G7 1/45		

Series	Model	Example of replacement model	Compatibility (○: Compatible)	Precautions
Medium capacity, medium inertia HF-SP series with high precision reducer Shaft output type(G7) (4): 400 V specifications (B): With brake	HF-SP152(4)(B)G7 1/5	HG-SR152(4)(B)G7 1/5	○	● The total length of the motor will be shorter, so confirm that the motor connector does not interfere with the device side.
	HF-SP152(4)(B)G7 1/11	HG-SR152(4)(B)G7 1/11		
	HF-SP152(4)(B)G7 1/21	HG-SR152(4)(B)G7 1/21		
	HF-SP152(4)(B)G7 1/33	HG-SR152(4)(B)G7 1/33		
	HF-SP152(4)(B)G7 1/45	HG-SR152(4)(B)G7 1/45		
	HF-SP202(4)(B)G7 1/5	HG-SR202(4)(B)G7 1/5		
	HF-SP202(4)(B)G7 1/11	HG-SR202(4)(B)G7 1/11		
	HF-SP202(4)(B)G7 1/21	HG-SR202(4)(B)G7 1/21		
	HF-SP202(4)(B)G7 1/33	HG-SR202(4)(B)G7 1/33		
	HF-SP202(4)(B)G7 1/45	HG-SR202(4)(B)G7 1/45		
	HF-SP352(4)(B)G7 1/5	HG-SR352(4)(B)G7 1/5		
	HF-SP352(4)(B)G7 1/11	HG-SR352(4)(B)G7 1/11		
	HF-SP352(4)(B)G7 1/21	HG-SR352(4)(B)G7 1/21		
	HF-SP502(4)(B)G7 1/5	HG-SR502(4)(B)G7 1/5		
	HF-SP502(4)(B)G7 1/11	HG-SR502(4)(B)G7 1/11		
	HF-SP702(4)(B)G7 1/5	HG-SR702(4)(B)G7 1/5		
Medium capacity, ultra-low inertia HC-RP series (B): With brake	HC-RP103(B)	HG-RR103(B)	○	
	HC-RP153(B)	HG-RR153(B)		
	HC-RP203(B)	HG-RR203(B)		
	HC-RP353(B)	HG-RR353(B)		
	HC-RP503(B)	HG-RR503(B)		
Medium capacity, ultra-low inertia HC-RP series with high precision reducer Flange output type(G5) (B): With brake	HC-RP103(B)G5 1/5 ◇	HG-SR102(B)G5 1/5	(Note 1)	● HG-RR series does not support the geared model. The geared model is supported with the HG-SR series. ● Check the output torque because the reduction ratio of models marked with ◆ is greatly different. ● The capacity of the corresponding servo amplifier will be different if a model marked with ◇ is replaced. The corresponding servo amplifier for HG-SR102 is MR-J4-100_, for HG-SR202 is MR-J4-200_, and for HG-SR352 is MRJ4-350_.
	HC-RP103(B)G5 1/11 ◇	HG-SR102(B)G5 1/11		
	HC-RP103(B)G5 1/21 ◇	HG-SR102(B)G5 1/21		
	HC-RP103(B)G5 1/33 ◇	HG-SR102(B)G5 1/33		
	HC-RP103(B)G5 1/45 ◇	HG-SR102(B)G5 1/45		
	HC-RP153(B)G5 1/5	HG-SR152(B)G5 1/5		
	HC-RP153(B)G5 1/11	HG-SR152(B)G5 1/11		
	HC-RP153(B)G5 1/21	HG-SR152(B)G5 1/21		
	HC-RP153(B)G5 1/33	HG-SR152(B)G5 1/33		
	HC-RP153(B)G5 1/45	HG-SR152(B)G5 1/45		
	HC-RP203(B)G5 1/5 ◇	HG-SR202(B)G5 1/5		
	HC-RP203(B)G5 1/11 ◇	HG-SR202(B)G5 1/11		
	HC-RP203(B)G5 1/21 ◇	HG-SR202(B)G5 1/21		
	HC-RP203(B)G5 1/33 ◇	HG-SR202(B)G5 1/33		
	HC-RP203(B)G5 1/45 ◇	HG-SR202(B)G5 1/45		
	HC-RP353(B)G5 1/5 ◇	HG-SR352(B)G5 1/5		
	HC-RP353(B)G5 1/11 ◇	HG-SR352(B)G5 1/11		
	HC-RP353(B)G5 1/21 ◇	HG-SR352(B)G5 1/21		
	HC-RP353(B)G5 1/33 ◇	HG-SR352(B)G5 1/21 ◆		
	HC-RP503(B)G5 1/5	HG-SR502(B)G5 1/5		
	HC-RP503(B)G5 1/11	HG-SR502(B)G5 1/11		
	HC-RP503(B)G5 1/21	HG-SR502(B)G5 1/11 ◆		

Note 1. For mounting dimensions, see "2.2.3 Comparison of Mounting Dimensions for Geared Servo Motors".

Series	Model	Example of replacement model	Compatibility (○: Compatible)	Precautions
Medium capacity, ultra-low inertia HC-RP series with high precision reducer Flange output type(G7) (B): With brake	HC-RP103(B)G7 1/5 ◇	HG-SR102(B)G7 1/5	(Note 1)	● HG-RR series does not support the geared model. The geared model is supported with the HG-SR series. ● The capacity of the corresponding servo amplifier will be different if a model marked with ◇ is replaced. The corresponding servo amplifier for HG-SR102 is MR-J4-100_.
	HC-RP103(B)G7 1/11 ◇	HG-SR102(B)G7 1/11		
	HC-RP103(B)G7 1/21 ◇	HG-SR102(B)G7 1/21		
	HC-RP103(B)G7 1/33 ◇	HG-SR102(B)G7 1/33		
	HC-RP103(B)G7 1/45 ◇	HG-SR102(B)G7 1/45		

Note 1. For mounting dimensions, see "2.2.3 Comparison of Mounting Dimensions for Geared Servo Motors".

Series	Model	Example of replacement model	Compatibility (○: Compatible)	Precautions
Medium capacity, ultra-low inertia HC-RP series with high precision reducer Flange output type(G7) (B): With brake	HC-RP153(B)G7 1/5	HG-SR152(B)G7 1/5	(Note 1)	● HG-RR series does not support the geared model. The geared model is supported with the HG-SR series. ● Check the output torque because the reduction ratio of the models marked with ◆ is greatly different. ● The capacity of the corresponding servo amplifiers will be different if a model marked with ◇ is replaced. The corresponding servo amplifier for HG-SR202 is MR-J4-200_, for HG-SR352 is MR-J4-350_.
	HC-RP153(B)G7 1/11	HG-SR152(B)G7 1/11		
	HC-RP153(B)G7 1/21	HG-SR152(B)G7 1/21		
	HC-RP153(B)G7 1/33	HG-SR152(B)G7 1/33		
	HC-RP153(B)G7 1/45	HG-SR152(B)G7 1/45		
	HC-RP203(B)G7 1/5 ◇	HG-SR202(B)G7 1/5		
	HC-RP203(B)G7 1/11 ◇	HG-SR202(B)G7 1/11		
	HC-RP203(B)G7 1/21 ◇	HG-SR202(B)G7 1/21		
	HC-RP203(B)G7 1/33 ◇	HG-SR202(B)G7 1/33		
	HC-RP203(B)G7 1/45 ◇	HG-SR202(B)G7 1/45		
	HC-RP353(B)G7 1/5 ◇	HG-SR352(B)G7 1/5		
	HC-RP353(B)G7 1/11 ◇	HG-SR352(B)G7 1/11		
	HC-RP353(B)G7 1/21 ◇	HG-SR352(B)G7 1/21		
	HC-RP353(B)G7 1/33 ◇	HG-SR352(B)G7 1/21 ◆		
	HC-RP503(B)G7 1/5	HG-SR502(B)G7 1/5		
	HC-RP503(B)G7 1/11	HG-SR502(B)G7 1/11		
	HC-RP503(B)G7 1/21	HG-SR502(B)G7 1/11 ◆		
Medium/large capacity, low-inertia HF-JP series (4): 400 V specifications (B): With brake	HF-JP53(4)(B)	HG-JR53(4)(B)	○	
	HF-JP73(4)(B)	HG-JR73(4)(B)		
	HF-JP103(4)(B)	HG-JR103(4)(B)		
	HF-JP153(4)(B)	HG-JR153(4)(B)		
	HF-JP203(4)(B)	HG-JR203(4)(B)		
	HF-JP353(4)(B)	HG-JR353(4)(B)		
	HF-JP503(4)(B)	HG-JR503(4)(B)		
	HF-JP703(4)(B)	HG-JR703(4)(B)		
	HF-JP903(4)(B)	HG-JR903(4)(B)		
	HF-JP11K1M(4)(B)	HG-JR11K1M(4)(B)		
	HF-JP15K1M(4)(B)	HG-JR15K1M(4)(B)		
Medium capacity, low Inertia HC-LP series (B): With brake	HC-LP52(B) ◇	HG-JR73(B)	(Note 1) (Note 2)	● The capacity of the corresponding servo amplifier will be different if a model marked with ◇ is replaced. The corresponding servo amplifier for HG-JR73 is MR-J4-70_, for HG-JR153 is MR-J4-200_, and for HG-SR353 is MRJ4-350_.
	HC-LP102(B) ◇	HG-JR153(B)		
	HC-LP152(B) ◇	HG-JR353(B)		
	HC-LP202(B)	HG-JR353(B)		
	HC-LP302(B)	HG-JR503(B)		
Medium capacity, flat type HC-UP series (B): With brake	HC-UP72(B)	HG-UR72(B)	○	
	HC-UP152(B)	HG-UR152(B)		
	HC-UP202(B)	HG-UR202(B)		
	HC-UP352(B)	HG-UR352(B)		
	HC-UP502(B)	HG-UR502(B)		

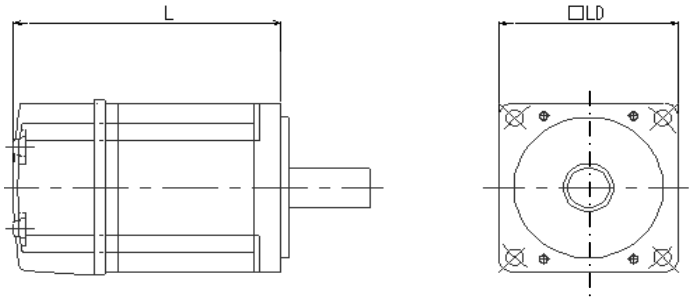
Note 1. For mounting dimensions, see “2.2.2 Detailed Comparison of Servo Motor Mounting Dimensions” and "2.2.3 Comparison of Mounting Dimensions for Geared Servo Motors".
2. The power supply and encoder connector will be changed. For further details, see "2.2.6 Comparison of Servo Motor Connector Specifications".

Series	Model	Example of replacement model	Compatibility (○: Compatible)	Precautions
Large capacity, low-inertia HA-LP series (4): 400 V specifications (B): With brake	HA-LP502	HG-SR502	(Note 1) (Note 2) (Note 3)	● Oil seals are not installed in the HG-SR servo motors. If you need servo motors with oil seals, select HG-SR_J.
	HA-LP702	HG-SR702		
	HA-LP11K1M(4)(B)	HG-JR11K1M(4)(B)		
	HA-LP15K2(4)(B)			
	HA-LP15K1M(4)(B)	HG-JR15K1M(4)(B)		
	HA-LP22K2(4)(B)			
	HA-LP22K1M(4)	HG-JR22K1M(4)		
	HA-LP30K2(4)			

Note 1. For mounting dimensions, see “2.2.2 Detailed Comparison of Servo Motor Mounting Dimensions” and "2.2.3 Comparison of Mounting Dimensions for Geared Servo Motors".
2. The power supply and encoder connector will be changed. For further details, see "2.2.6 Comparison of Servo Motor Connector Specifications".
3. HG-JR 11 kW and higher have different motor thermal wiring from HA-LP 11 kW and higher. If using existing encoder cables, contact your local sales office.

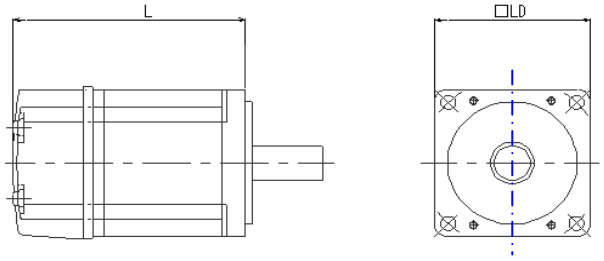
2.2 COMPARISON OF SERVO MOTOR SPECIFICATIONS

2.2.1 Comparison of Servo Motor Mounting Dimensions



Target product			Replacement product			Precautions
Model	L	LD	Model	L	LD	
HF-KP053 (B) HF-MP053 (B)	66.4 (107.5)	40	HG-KR053(B) HG-MR053(B)	66.4(107)	40	
HF-KP13 (B) HF-MP13 (B)	82.4 (123.5)		HG-KR13(B) HG-MR13(B)	82.4(123)		
HF-KP23 (B) HF-MP23 (B)	76.6 (116.1)	60	HG-KR23(B) HG-MR23(B)	76.6(113.4)	60	
HF-KP43 (B) HF-MP43 (B)	98.5 (138)		HG-KR43(B) HG-MR43(B)	98.3(135.1)		
HF-KP73 (B) HF-MP73 (B)	113.8 (157)	80	HG-KR73(B) HG-MR73(B)	112(152.3)	80	
HF-SP51 (B)	140.5 (175)	130	HG-SR51(B)	132.5(167)	130	
HF-SP81 (B)	162.5 (197)		HG-SR81(B)	146.5(181)		
HF-SP121 (B)	143.5 (193)	176	HG-SR121(B)	138.5(188)	176	
HF-SP201 (B)	183.5 (233)		HG-SR201(B)	162.5(212)		
HF-SP301 (B)	203.5 (253)		HG-SR301(B)	178.5(228)		
HF-SP421 (B)	263.5 (313)		HG-SR421(B)	218.5(268)		
HF-SP52 (B) HF-SP524 (B)	118.5 (153)	130	HG-SR52(B) HG-SR524(B)	118.5(153)	130	
HF-SP102 (B) HF-SP1024 (B)	140.5(175)		HG-SR102(B) HG-SR1024(B)	132.5(167)		
HF-SP152 (B) HF-SP1524 (B)	162.5(197)		HG-SR152(B) HG-SR1524(B)	146.5(181)		
HF-SP202 (B) HF-SP2024 (B)	143.5(193)	176	HG-SR202(B) HG-SR2024(B)	138.5(188)	176	
HF-SP352 (B) HF-SP3524 (B)	183.5(233)		HG-SR352(B) HG-SR3524(B)	162.5(212)		
HF-SP502 (B) HF-SP5024 (B)	203.5(253)		HG-SR502(B) HG-SR5024(B)	178.5(228)		
HF-SP702 (B) HF-SP7024 (B)	263.5(313)		HG-SR702(B) HG-SR7024(B)	218.5(268)		
HC-RP103 (B)	145.5(183.5)	100	HG-RR103(B)	145.5(183)	100	
HC-RP153 (B)	170.5(208.5)		HG-RR153(B)	170.5(208)		
HC-RP203 (B)	195.5(233.5)		HG-RR203(B)	195.5(233)		
HC-RP353 (B)	215.5(252.5)	130	HG-RR353(B)	215.5(252)	130	
HC-RP503 (B)	272.5(309.5)		HG-RR503(B)	272.5(309)		

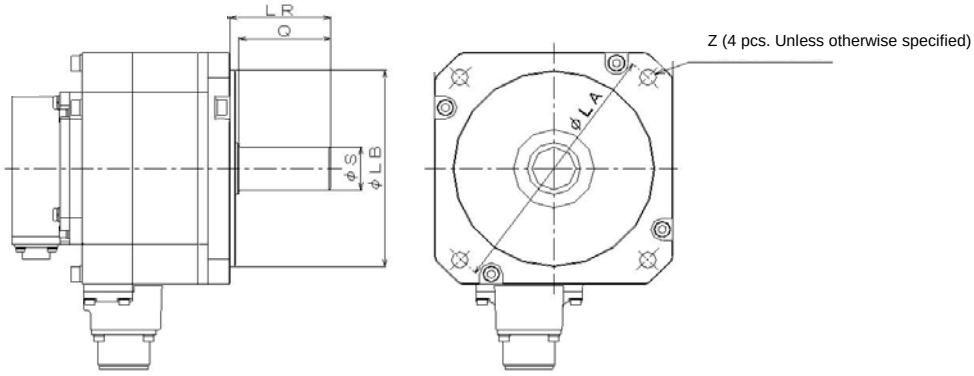
Note 1. As for the dimensions not listed here, refer to the catalog or Instruction Manual. ( ): With brake [Unit: mm]



Target product			Replacement product			Precautions
Model	L	LD	Model	L	LD	
HF-JP53(B) HF-JP534(B)	127.5(173)	90	HG-JR53(B) HG-JR534(B)	127.5(173)	90	
HF-JP73(B) HF-JP734(B)	145.5(191)		HG-JR73(B) HG-JR734(B)	145.5(191)		
HF-JP103(B) HF-JP1034(B)	163.5(209)		HG-JR103(B) HG-JR1034(B)	163.5(209)		
HF-JP153(B) HF-JP1534(B)	199.5(245)		HG-JR153(B) HG-JR1534(B)	199.5(245)		
HF-JP203(B) HF-JP2034(B)	235.5(281)		HG-JR203(B) HG-JR2034(B)	235.5(281)		
HF-JP353(B) HF-JP3534(B)	213(251.5)	130	HG-JR353(B) HG-JR3534(B)	213(251.5)	130	
HF-JP503(B) HF-JP5034(B)	267(305.5)		HG-JR503(B) HG-JR5034(B)	267(305.5)		
HF-JP703(B) HF-JP7034(B)	263.5(313)	176	HG-JR703(B) HG-JR7034(B)	263.5(313)	176	
HF-JP903(B) HF-JP9034(B)	303.5(353)		HG-JR903(B) HG-JR9034(B)	303.5(353)		
HF-JP11K1M(B) HF-JP11K1M4(B)	339.5(412)	220	HG-JR11K1M(B) HG-JR11K1M4(B)	339.5(412)	220	
HF-JP15K1M(B) HF-JP15K1M4(B)	439.5(512)		HG-JR15K1M(B) HG-JR15K1M4(B)	439.5(512)		
HC-LP52(B)	144(177)	130	HG-JR73(B)	145.5(191)	90	No mounting compatibility. For details about dimensions, see "2.2.2 Detailed Comparison of Servo Motor Mounting Dimensions".
HC-LP102(B)	164(197)		HG-JR153(B)	199.5(245)		
HC-LP152(B)	191.5(224.5)		HG-JR353(B)	213(251.5)	130	
HC-LP202(B)	198.5(246.5)	176	HG-JR353(B)	213(251.5)		
HC-LP302(B)	248.5(296.5)		HG-JR503(B)	267(305.5)		
HC-UP72(B)	109(142.5)	176	HG-UR72(B)	109(142.5)	176	
HC-UP152(B)	118.5(152)		HG-UR152(B)	118.5(152)		
HC-UP202(B)	116.5(159.5)	220	HG-UR202(B)	116.5(159.5)	220	
HC-UP352(B)	140.5(183.5)		HG-UR352(B)	140.5(183.5)		
HC-UP502(B)	164.5(207.5)		HG-UR502(B)	164.5(207.5)		
HA-LP502	298	200	HG-SR502	178.5	176	No mounting compatibility. For details about dimensions, see "2.2.2 Detailed Comparison of Servo Motor Mounting Dimensions".
HA-LP702	340		HG-SR702	218.5		
HA-LP11K1M(B) HA-LP11K1M4(B)	495(610)	250	HG-JR11K1M(B) HG-JR11K1M4(B)	339.5(412)	220	
HA-LP15K2(B) HA-LP15K24(B)						
HA-LP15K1M(B) HA-LP15K1M4(B)	555(670)		HG-JR15K1M(B) HG-JR15K1M4(B)	439.5(512)		
HA-LP22K2(B) HA-LP22K24(B)						
HA-LP22K1M HA-LP22K1M4	605	280	HG-JR22K1M HG-JR22K1M4	476	250	
HA-LP30K2 HA-LP30K24	615 605					

Note 1. As for the dimensions not listed here, refer to the catalog or Instruction Manual. ( ): With brake [Unit: mm]

2.2.2 Motor Mounting Dimensions

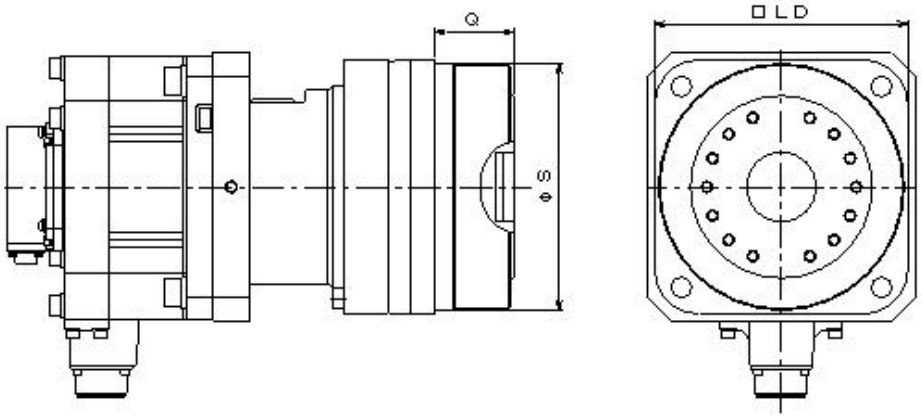


Target product							Replacement product						
Model	LA	LB	LR	Q	S	Z	Model	LA	LB	LR	Q	S	Z
HC-LP52(B)	145	110	55	50	24	9	HG-JR73(B)	100	80	40	30	16	6.6
HC-LP102(B)	145	110	55	50	24	9	HG-JR153(B)	100	80	40	30	16	6.6
HC-LP152(B)	145	110	55	50	24	9	HG-JR353(B)	145	110	55	50	28	9
HC-LP202(B)	200	114.3	79	75	35	13.5	HG-JR353(B)	145	110	55	50	28	9
HC-LP302(B)	200	114.3	79	75	35	13.5	HG-JR503(B)	145	110	55	50	28	9
HA-LP502	215	180	85	80	42	14.5	HG-SR502	200	114.3	79	75	35	13.5
HA-LP702	215	180	85	80	42	14.5	HG-SR702	200	114.3	79	75	35	13.5
HA-LP11K1M(B) HA-LP11K1M4(B) HA-LP15K2(B) HA-LP15K24(B)	265	230	110	100	55	14.5	HG-JR11K1M(B) HG-JR11K1M4(B)	235	200	116	110	55	13.5
HA-LP15K1M(B) HA-LP15K1M4(B) HA-LP22K2(B) HA-LP22K24(B)	265	230	110	100	55	14.5	HG-JR15K1M(B) HG-JR15K1M4(B)	235	200	116	110	55	13.5
HA-LP22K1M HA-LP22K1M4 HA-LP30K2 HA-LP30K24	300	250	140	-	60	19	HG-JR22K1M HG-JR22K1M4	265	230	140	130	65	24

Note 1. As for the dimensions not listed here, refer to the catalog or Instruction Manual. ( ): With brake [Unit: mm]

2. Dimensions with differences are shown with shading.

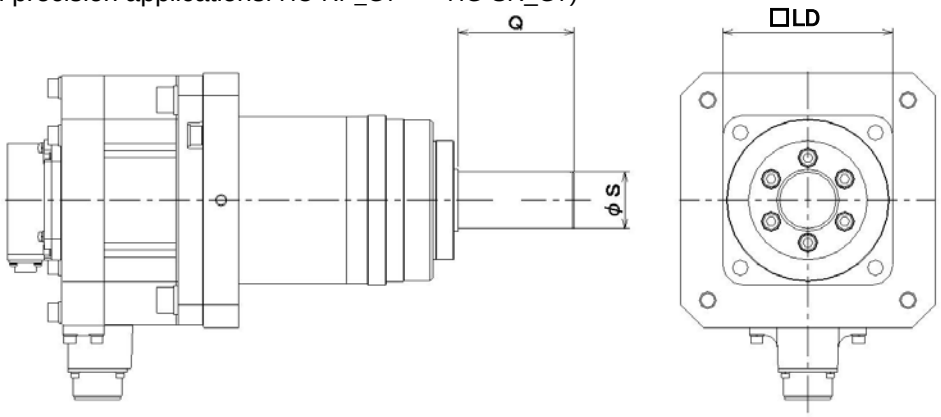
2.2.3 Comparison of Mounting Dimensions for Geared Servo Motors
(For high precision applications: HC-RP_G5 → HG-SR_G5)



Output (kW)	HC-RP series (G5)				HG-SR series (G5)			
	Reduction ratio	Q	S	Flange LD	Reduction ratio	Q	S	Flange LD
1.0	1/5	27	85	90	1/5	27	85	90
	1/11	27	85	90	1/11	35	115	120
	1/21	35	115	120	1/21	35	115	120
	1/33	35	115	120	1/33	53	165	170
	1/45	53	165	170	1/45	53	165	170
1.5	1/5	27	85	90	1/5	27	85	90
	1/11	35	115	120	1/11	35	115	120
	1/21	35	115	120	1/21	53	165	170
	1/33	53	165	170	1/33	53	165	170
	1/45	53	165	170	1/45	53	165	170
2.0	1/5	27	85	90	1/5	35	115	120
	1/11	35	115	120	1/11	35	115	120
	1/21	53	165	170	1/21	53	165	170
	1/33	53	165	170	1/33	53	165	170
	1/45	53	165	170	1/45	53	165	170
3.5	1/5	35	115	120	1/5	35	115	120
	1/11	35	115	120	1/11	53	165	170
	1/21	53	165	170	1/21	53	165	170
	1/33	53	165	170	-	-	-	-
5.0	1/5	35	115	120	1/5	53	165	170
	1/11	53	165	170	1/11	53	165	170
	1/21	53	165	170	-	-	-	-

Note 1. As for the dimensions not listed here, refer to the catalog or Instruction Manual. [Unit: mm]

(For high precision applications: HC-RP_G7 → HG-SR_G7)



Output (kW)	HC-RP series (G7)				HG-SR series (G7)			
	Reduction ratio	Shaft length Q	Shaft diameter S	Flange LD	Reduction ratio	Shaft length Q	Shaft diameter S	Flange LD
1.0	1/5	42	25	90	1/5	42	25	90
	1/11	42	25	90	1/11	82	40	120
	1/21	82	40	120	1/21	82	40	120
	1/33	82	40	120	1/33	82	50	170
	1/45	82	50	170	1/45	82	50	170
1.5	1/5	42	25	90	1/5	42	25	90
	1/11	82	40	120	1/11	82	40	120
	1/21	82	40	120	1/21	82	50	170
	1/33	82	50	170	1/33	82	50	170
	1/45	82	50	170	1/45	82	50	170
2.0	1/5	42	25	90	1/5	82	40	120
	1/11	82	40	120	1/11	82	40	120
	1/21	82	50	170	1/21	82	50	170
	1/33	82	50	170	1/33	82	50	170
	1/45	82	50	170	1/45	82	50	170
3.5	1/5	82	40	120	1/5	82	40	120
	1/11	82	40	120	1/11	82	50	170
	1/21	82	50	170	1/21	82	50	170
	1/33	82	50	170	-	-	-	-
5.0	1/5	82	40	120	1/5	82	50	170
	1/11	82	50	170	1/11	82	50	170
	1/21	82	50	170	-	-	-	-

Note 1. As for the dimensions not listed here, refer to the catalog or Instruction Manual. [Unit: mm]

2.2.4 Comparison of Actual Reduction Ratios for Geared Servo Motors

Because the actual reduction ratio for some models is different, it is required that an electronic gear be set up when replacing HF-KP and MP_G1 with HG-KR_G1.

(For general industrial machines: HF-KP, MP_G1 → HG-KR_G1)

Output (W)	Reduction ration	Actual reduction ratio	
		HF-KP, HF-MP series	HG-KR series
50	1/5	9/44	9/44
	1/12	49/576	49/576
	1/20	25/484	25/484
100	1/5	9/44	9/44
	1/12	49/576	49/576
	1/20	25/484	25/484
200	1/5	19/96	19/96
	1/12	25/288	961/11664
	1/20	253/5000	513/9984
400	1/5	19/96	19/96
	1/12	25/288	961/11664
	1/20	253/5000	7/135
750	1/5	1/5	1/5
	1/12	525/6048	7/87
	1/20	625/12544	625/12544

Note.1 Actual reduction ratio with difference are shown with shading.

2.2.5 Comparison of Moment of Inertia

Series	Target product			Replacement product		
	Model	Moment of inertia $\times 10^{-4}$kg•m^2	Recommended load moment of inertia ratio	Model	Moment of inertia $\times 10^{-4}$kg•m^2	Recommended load moment of inertia ratio
Small capacity, low inertia	HF-KP053(B)	0.052(0.054)	15 times or less	HG-KR053(B)	0.0450(0.0472)	17 times or less
	HF-KP13(B)	0.088(0.090)		HG-KR13(B)	0.0777(0.0837)	
	HF-KP23(B)	0.24(0.31)	24 times or less	HG-KR23(B)	0.221(0.243)	26 times or less
	HF-KP43(B)	0.42(0.50)	22 times or less	HG-KR43(B)	0.371(0.393)	25 times or less
	HF-KP73(B)	1.43(1.63)	15 times or less	HG-KR73(B)	1.26(1.37)	17 times or less
Small capacity, ultra-low inertia	HF-MP053(B)	0.019(0.025)	30 times or less	HG-MR053(B)	0.0162(0.0224)	35 times or less
	HF-MP13(B)	0.032(0.039)		HG-MR13(B)	0.0300(0.0362)	32 times or less
	HF-MP23(B)	0.088(0.12)		HG-MR23(B)	0.0865(0.109)	
	HF-MP43(B)	0.15(0.18)		HG-MR43(B)	0.142(0.164)	
	HF-MP73(B)	0.60(0.70)		HG-MR73(B)	0.586(0.694)	
Medium capacity, medium inertia	HF-SP51(B)	11.9(14.0)	15 times or less	HG-SR51(B)	11.6(13.8)	17 times or less
	HF-SP81(B)	17.8(20.0)		HG-SR81(B)	16.0(18.2)	
	HF-SP121(B)	38.3(47.9)		HG-SR121(B)	46.8(56.5)	15 times or less
	HF-SP201(B)	75.0(84.7)		HG-SR201(B)	78.6(88.2)	
	HF-SP301(B)	97.0(107)		HG-SR301(B)	99.7(109)	
	HF-SP421(B)	154(164)		HG-SR421(B)	151(161)	
	HF-SP52(B) HF-SP524(B)	6.1(8.3)		HG-SR52(B) HG-SR524(B)	7.26(9.48)	
	HF-SP102(B) HF-SP1024(B)	11.9(14.0)		HG-SR102(B) HG-SR1024(B)	11.6(13.8)	17 times or less
	HF-SP152(B) HF-SP1524(B)	17.8(20.0)		HG-SR152(B) HG-SR1524(B)	16.0(18.2)	
	HF-SP202(B) HF-SP2024(B)	38.3(47.9)		HG-SR202(B) HG-SR2024(B)	46.8(56.5)	15 times or less
	HF-SP352(B) HF-SP3524(B)	75.0(84.7)		HG-SR352(B) HG-SR3524(B)	78.6(88.2)	
	HF-SP502(B) HF-SP5024(B)	97(107)		HG-SR502(B) HG-SR5024(B)	99.7(109)	
	HF-SP702(B) HF-SP7024(B)	154(164)		HG-SR702(B) HG-SR7024(B)	151(161)	
Medium capacity, ultra-low inertia	HC-RP103(B)	1.50(1.85)	5 times or less	HG-RR103(B)	1.50(1.85)	5 times or less
	HC-RP153(B)	1.90(2.25)		HG-RR153(B)	1.90(2.25)	
	HC-RP203(B)	2.30(2.65)		HG-RR203(B)	2.30(2.65)	
	HC-RP353(B)	8.30(11.8)		HG-RR353(B)	8.30(11.8)	
	HC-RP503(B)	12.0(15.5)		HG-RR503(B)	12.0(15.5)	

Note 1. As for the motor specifications not listed here, refer to the catalog or Instruction Manual. ( ): With brake

Series	Target product			Replacement product		
	Model	Moment of inertia $\times 10^{-4}$kg•m^2	Recommended load moment of inertia ratio	Model	Moment of inertia $\times 10^{-4}$kg•m^2	Recommended load moment of inertia ratio
Medium/large Capacity, low inertia	HF-JP53(B) HF-JP534(B)	1.52(2.02)	10 times or less	HG-JR53(B) HG-JR534(B)	1.52(2.02)	10 times or less
	HF-JP73(B) HF-JP734(B)	2.09(2.59)		HG-JR73(B) HG-JR734(B)	2.09(2.59)	
	HF-JP103(B) HF-JP1034(B)	2.65(3.15)		HG-JR103(B) HG-JR1034(B)	2.65(3.15)	
	HF-JP153(B) HF-JP1534(B)	3.79(4.29)		HG-JR153(B) HG-JR1534(B)	3.79(4.29)	
	HF-JP203(B) HF-JP2034(B)	4.92(5.42)		HG-JR203(B) HG-JR2034(B)	4.92(5.42)	
	HF-JP353(B) HF-JP3534(B)	13.2(15.4)		HG-JR353(B) HG-JR3534(B)	13.2(15.4)	
	HF-JP503(B) HF-JP5034(B)	19.0(21.2)		HG-JR503(B) HG-JR5034(B)	19.0(21.2)	
	HF-JP703(B) HF-JP7034(B)	43.3(52.9)		HG-JR703(B) HG-JR7034(B)	43.3(52.9)	
	HF-JP903(B) HF-JP9034(B)	55.8(65.4)		HG-JR903(B) HG-JR9034(B)	55.8(65.4)	
	HF-JP11K1M(B) HF-JP11K1M4(B)	220(240)		HG-JR11K1M(B) HG-JR11K1M4(B)	220(240)	
	HF-JP15K1M(B) HF-JP15K1M4(B)	315(336)		HG-JR15K1M(B) HG-JR15K1M4(B)	315(336)	
Medium capacity, low inertia	HC-LP52(B)	3.10(5.20)	10 times or less	HG-JR73(B)	2.09(2.59)	10 times or less
	HC-LP102(B)	4.62(6.72)		HG-JR153(B)	3.79(4.29)	
	HC-LP152(B)	6.42(8.52)		HG-JR353(B)	13.2(15.4)	
	HC-LP202(B)	22.0(32.0)		HG-JR353(B)	13.2(15.4)	
	HC-LP302(B)	36.0(46.0)		HG-JR503(B)	19.0(21.2)	
Medium capacity, Flat type	HC-UP72(B)	10.4(12.5)	15 times or less	HG-UR72(B)	10.4(12.5)	15 times or less
	HC-UP152(B)	22.1(24.2)		HG-UR152(B)	22.1(24.2)	
	HC-UP202(B)	38.2(46.8)		HG-UR202(B)	38.2(46.8)	
	HC-UP352(B)	76.5(85.1)		HG-UR352(B)	76.5(85.1)	
	HC-UP502(B)	115(124)		HG-UR502(B)	115(124)	
Large capacity, low inertia	HA-LP502	74.0	10 times or less	HG-SR502	99.7	15 times or less
	HA-LP702	94.2		HG-SR702	151	
	HA-LP11K1M(B) HA-LP11K1M4(B)	220(293)		HG-JR11K1M(B) HG-JR11K1M4(B)	220(240)	10 times or less
	HA-LP15K2(B) HA-LP15K24(B)					
	HA-LP15K1M(B) HA-LP15K1M4(B)	295(369)		HG-JR15K1M(B) HG-JR15K1M4(B)	315(336)	
	HA-LP22K2(B) HA-LP22K24(B)					
	HA-LP22K1M HA-LP22K1M4	550		HG-JR22K1M HG-JR22K1M4	489	
	HA-LP30K2 HA-LP30K24					

Note 1. As for the motor specifications not listed here, refer to the catalog or Instruction Manual. ( ): With brake

2.2.6 Comparison of Servo Motor Connector Specifications

(1) HC-LP motor

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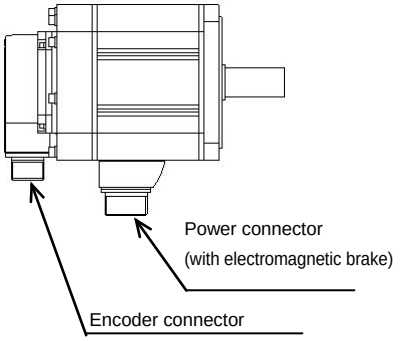
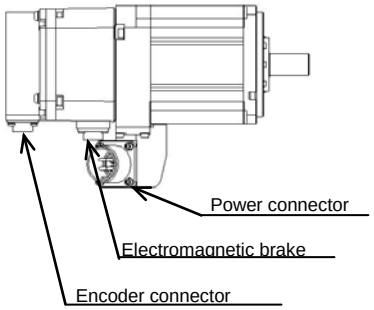
Target models: HC-LP52(B),LP102(B),LP152(B)</td><td>MR-J4 series (HG-JR)
Target models: HG-JR73(B),JR153(B)</td></tr>
<tr><td>Motor appearance</td><td> 
</td><td> 
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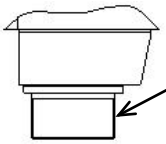
<tr><td>Power connector</td><td> 
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 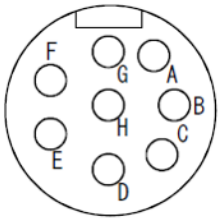

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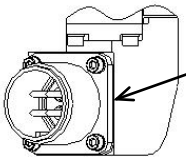
</table></td><td> 
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 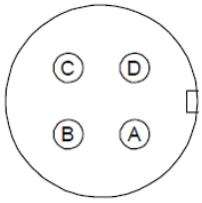

Power connector
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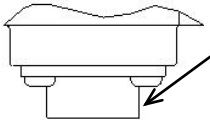
<tr><td>Encoder connector</td><td> 
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 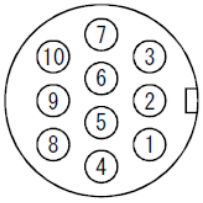

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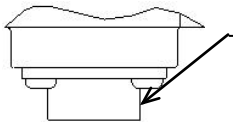
</table></td><td> 
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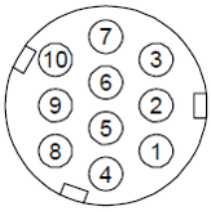
CMV1-R10P
Encoder connector
pin assignment
 

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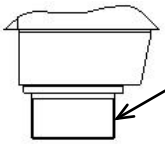
(Power connector)</td><td> 
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Power connector (with brake)
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 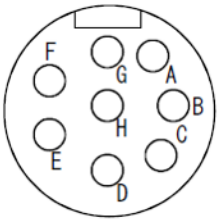

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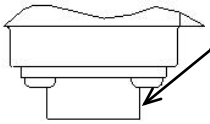
</table></td><td> 
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 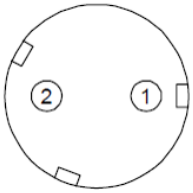

Electromagnetic brake
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 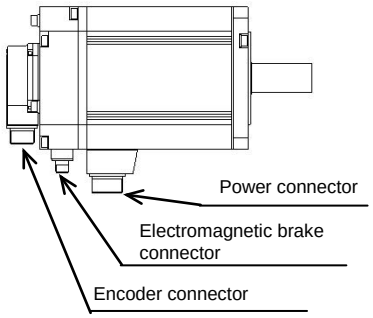
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 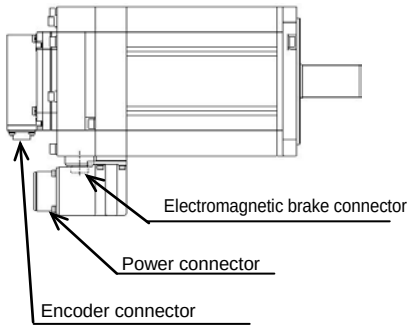
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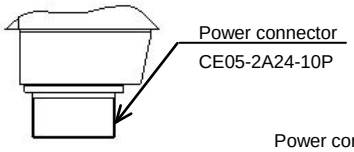
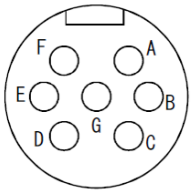
<tr><td>Power connector</td><td> 

Power connector
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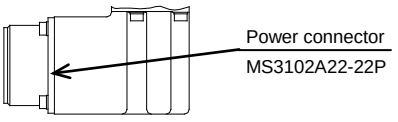
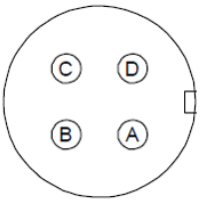
<table><tr><th>Pin number</th><th>Signal name</th></tr><tr><td>A</td><td>U</td></tr><tr><td>B</td><td>V</td></tr><tr><td>C</td><td>W</td></tr><tr><td>D</td><td>Earth</td></tr><tr><td>E</td><td></td></tr><tr><td>F</td><td></td></tr><tr><td>G</td><td></td></tr><tr><td>H</td><td></td></tr></table></td><td> 

Power connector
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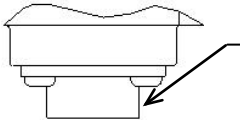
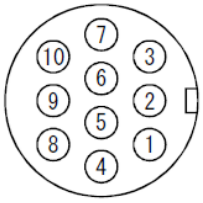
<tr><td>Encoder connector</td><td> 

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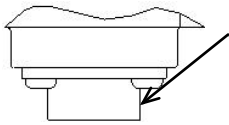
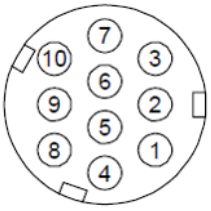
<table><tr><th>Pin number</th><th>Signal name</th></tr><tr><td>1</td><td>MR</td></tr><tr><td>2</td><td>MRR</td></tr><tr><td>3</td><td></td></tr><tr><td>4</td><td>BAT</td></tr><tr><td>5</td><td>LG</td></tr><tr><td>6</td><td></td></tr><tr><td>7</td><td></td></tr><tr><td>8</td><td>P5</td></tr><tr><td>9</td><td></td></tr><tr><td>10</td><td>SHD</td></tr></table></td><td> 

Encoder connector
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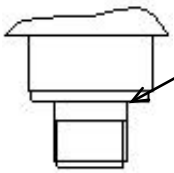
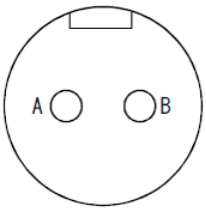
<tr><td>Electromagnetic brake connector</td><td> 

Electromagnetic brake
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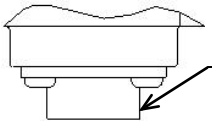
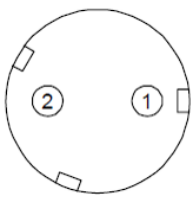
<table><tr><th>Pin number</th><th>Signal name</th></tr><tr><td>A</td><td>B1</td></tr><tr><td>B</td><td>B2</td></tr></table></td><td> 

Electromagnetic brake
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pin assignment
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(2) HA-LP motor

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 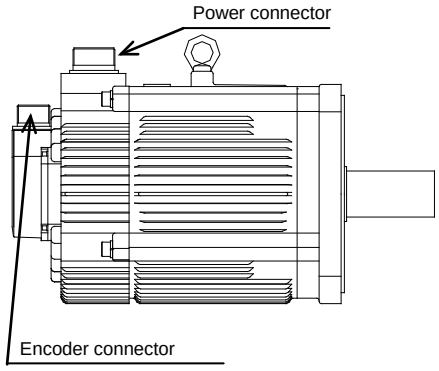
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 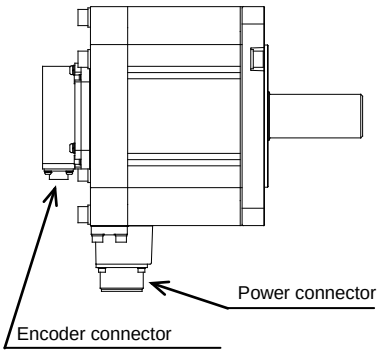
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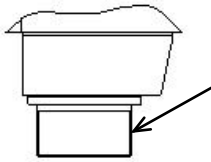
<tr><td>Power connector</td><td> 

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 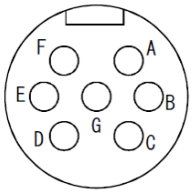

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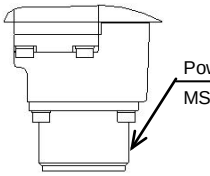
</table></td><td> 

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 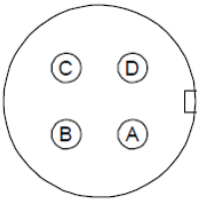

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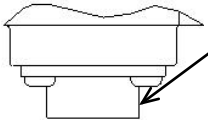
<tr><td>Encoder connector</td><td> 

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 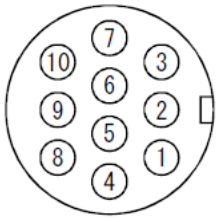

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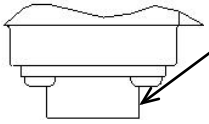
</table></td><td> 

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 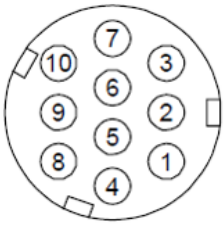

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 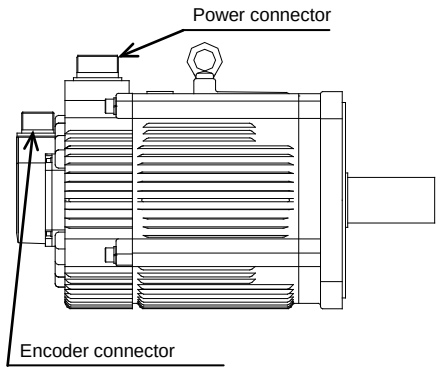
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 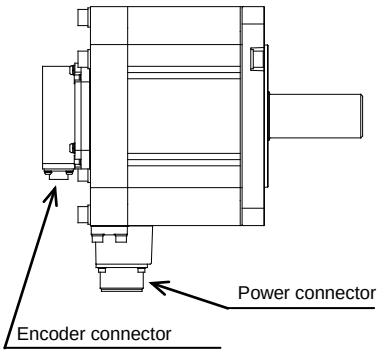
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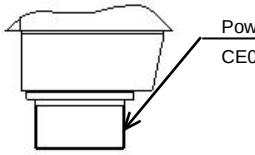
<tr><td>Power connector</td><td> 

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 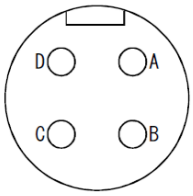

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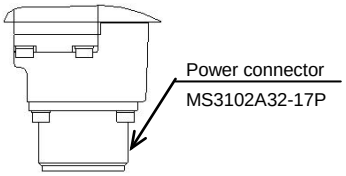
</table></td><td> 

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 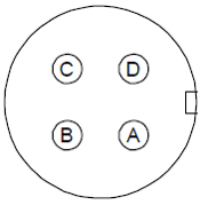

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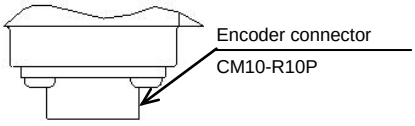
<tr><td>Encoder connector</td><td> 

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 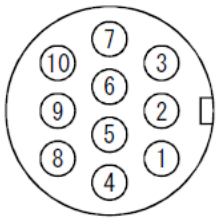

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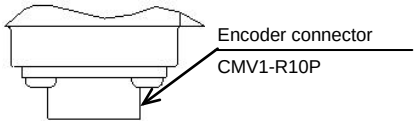
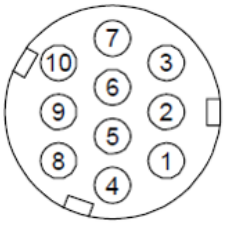
</table></td><td> 

Encoder connector
pin assignment
 

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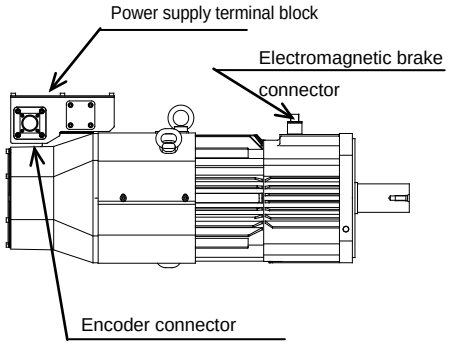
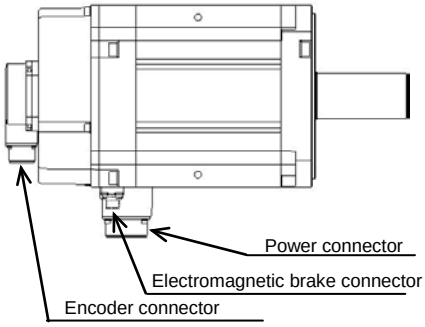
<tr><td>3</td><td></td></tr>
<tr><td>4</td><td>BAT</td></tr>
<tr><td>5</td><td>LG</td></tr>
<tr><td>6</td><td></td></tr>
<tr><td>7</td><td></td></tr>
<tr><td>8</td><td>P5</td></tr>
<tr><td>9</td><td></td></tr>
<tr><td>10</td><td>SHD</td></tr>
</table></td></tr>
</table>

<table>
<tr><td></td><td>MR-J3 series (HA-LP)
Target models:
HA-LP11K1M(4)(B), LP15K1M(4)(B)
HA-LP15K2 (4)(B), LP22K2 (4)(B)</td><td>MR-J4 series (HG-JR)
Target models: HG-JR11K1M (4)(B),
JR15K1M (4)(B)</td></tr>
<tr><td>Motor appearance</td><td> 
</td><td> 
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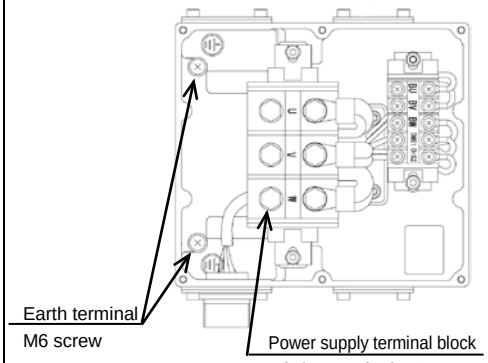
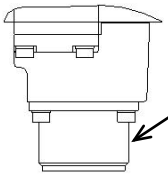
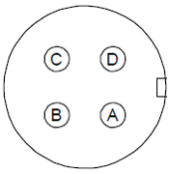
(power supply terminal block)</td><td> 
</td><td> 



Power connector
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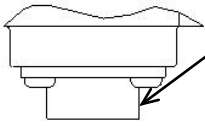
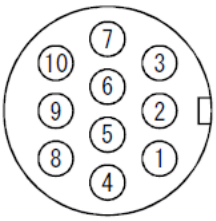
<tr><td>Encoder connector</td><td> 



Encoder connector
pin assignment
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<tr><td>2</td><td>MRR</td></tr>
<tr><td>3</td><td></td></tr>
<tr><td>4</td><td>BAT</td></tr>
<tr><td>5</td><td>LG</td></tr>
<tr><td>6</td><td></td></tr>
<tr><td>7</td><td></td></tr>
<tr><td>8</td><td>P5</td></tr>
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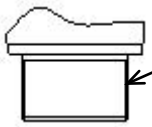
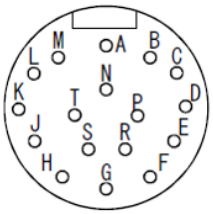
</table></td><td> 



Encoder connector
pin assignment
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<tr><td>D</td><td>MRR</td></tr>
<tr><td>E</td><td></td></tr>
<tr><td>F</td><td>BAT</td></tr>
<tr><td>G</td><td>LG</td></tr>
<tr><td>H</td><td></td></tr>
<tr><td>J</td><td></td></tr>
<tr><td>K</td><td></td></tr>
<tr><td>L</td><td></td></tr>
<tr><td>M</td><td></td></tr>
<tr><td>N</td><td>SHD</td></tr>
<tr><td>P</td><td></td></tr>
<tr><td>R</td><td>LG</td></tr>
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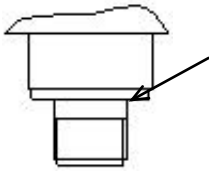
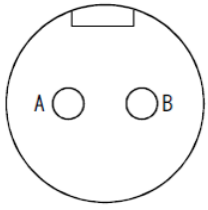
connector</td><td> 



Electromagnetic brake
connector
pin assignment
<table>
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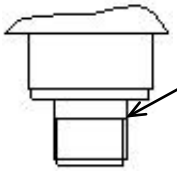
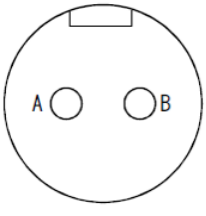
</table></td><td> 



Electromagnetic brake
connector
pin assignment
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<tr><th>Pin number</th><th>Signal name</th></tr>
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 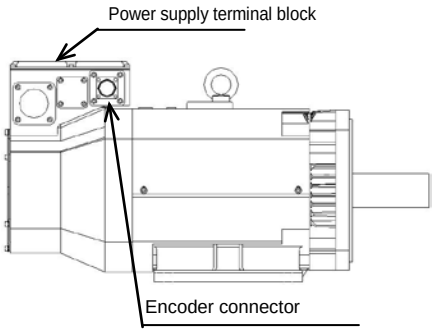
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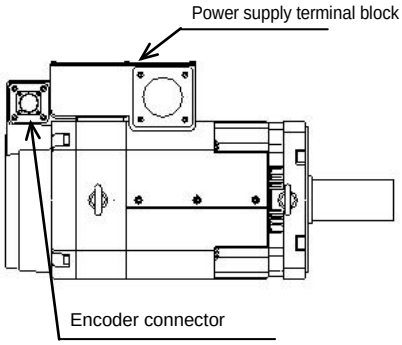
<td>MR-J4 series (HG-JR)
Target models: HG-JR22K1M (4)
 
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<tr>
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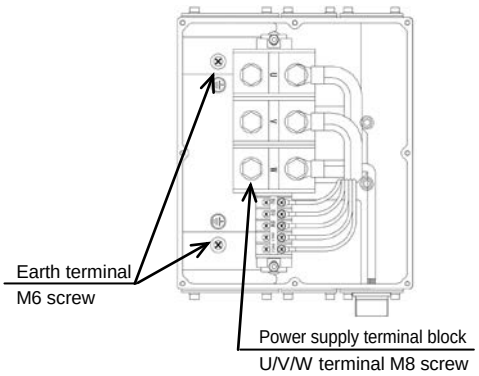
(power supply terminal block)</td>
<td> 
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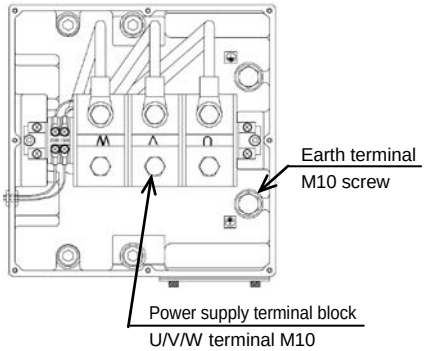
<td> 
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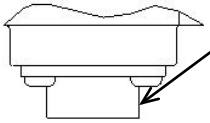
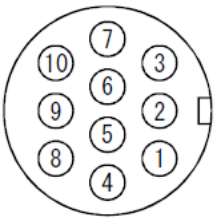
<td> 

Encoder connector
pin assignment
 

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<tr><td>2</td><td>MRR</td></tr>
<tr><td>3</td><td></td></tr>
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<tr><td>5</td><td>LG</td></tr>
<tr><td>6</td><td></td></tr>
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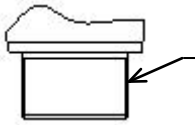
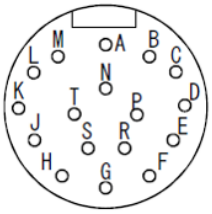
<td> 

Encoder connector
pin assignment
 

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<tr><td>C</td><td>MR</td></tr>
<tr><td>D</td><td>MRR</td></tr>
<tr><td>E</td><td></td></tr>
<tr><td>F</td><td>BAT</td></tr>
<tr><td>G</td><td>LG</td></tr>
<tr><td>H</td><td></td></tr>
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<tr><td>L</td><td>THM1</td></tr>
<tr><td>M</td><td></td></tr>
<tr><td>N</td><td>SHD</td></tr>
<tr><td>P</td><td></td></tr>
<tr><td>R</td><td>LG</td></tr>
<tr><td>S</td><td>P5</td></tr>
<tr><td>T</td><td></td></tr>
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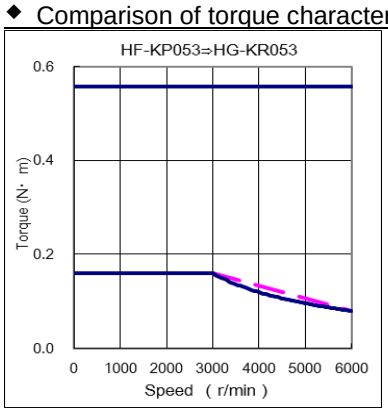
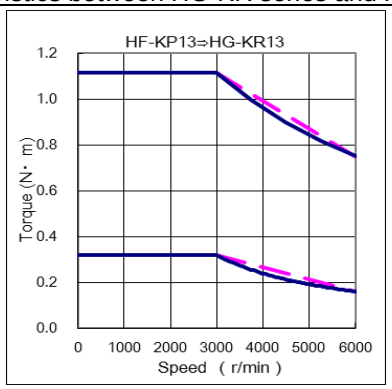
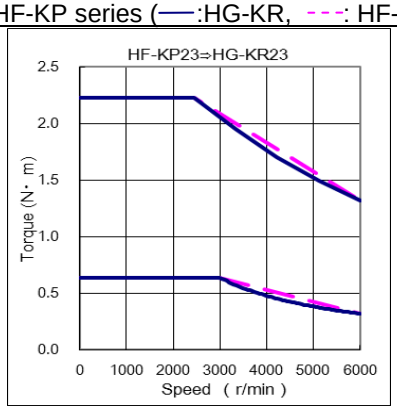
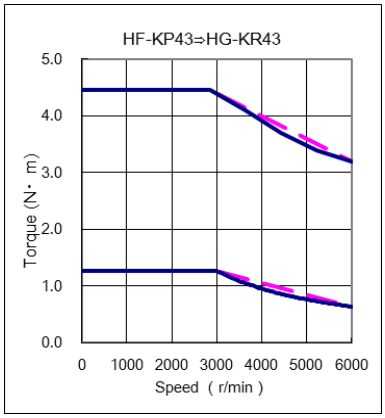
2.2.7 Comparison of Servo Motor Torque Characteristics

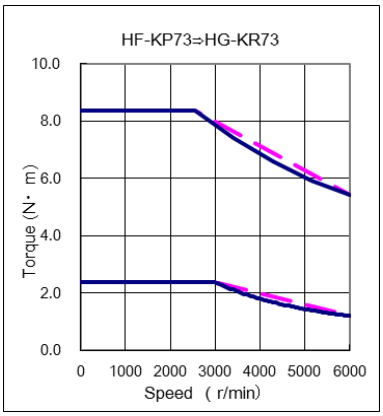
◆ Comparison of torque characteristics between HG-KR series and HF-KP series (——:HG-KR, - - -: HF-KP)



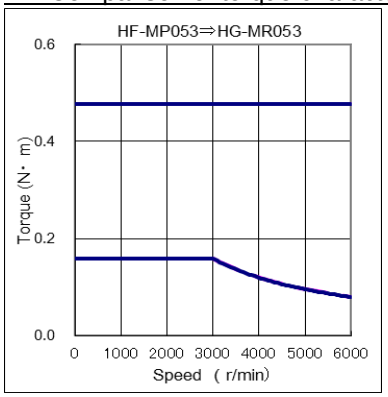


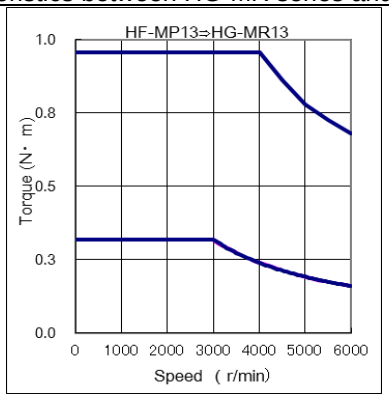


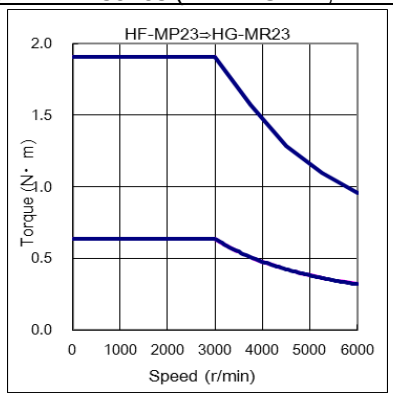


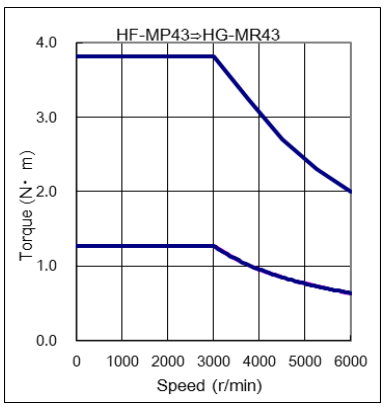


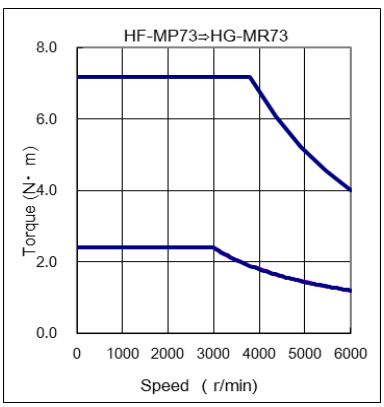
◆ Comparison of torque characteristics between HG-MR series and HF-MP series (——:HG-MR, - - -: HF-MP)









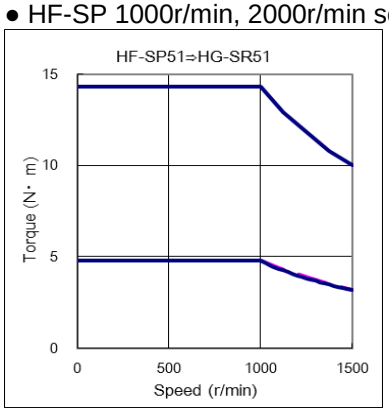


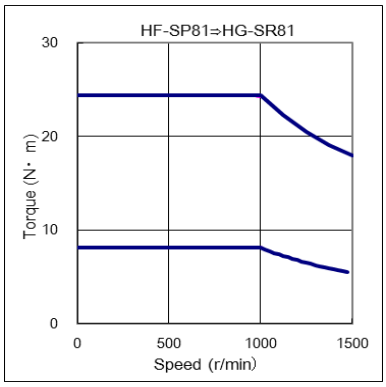
Note 1. The above torque characteristics are for three-phase 200 VAC.

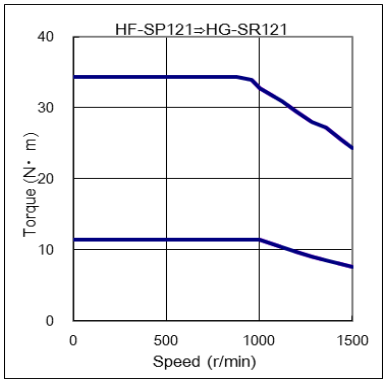
Note.2 The torque characteristics of HF-KP series are the value when the torque is increased maximally.

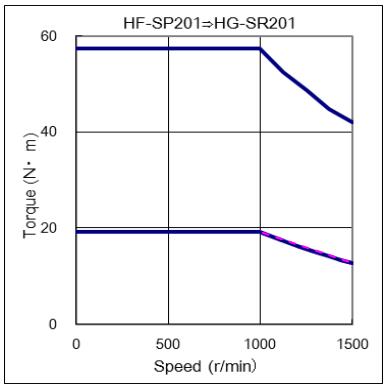
◆ Comparison of torque characteristics between the HG-SR series and HF-SP series (——:HG-SR, - - - :HF-SP)

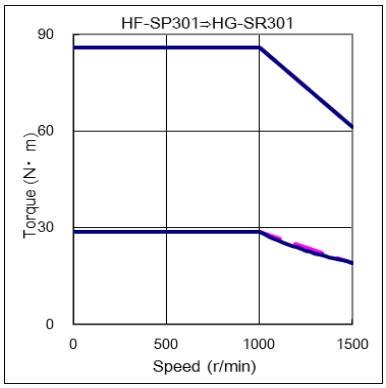
● HF-SP 1000r/min, 2000r/min series 200V class

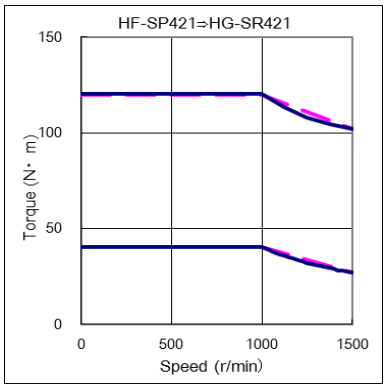


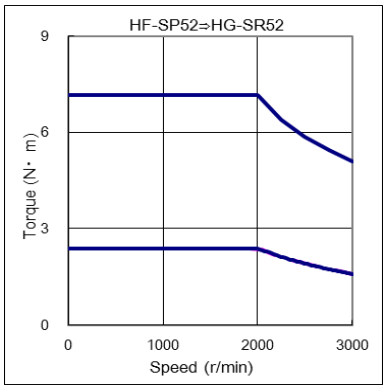


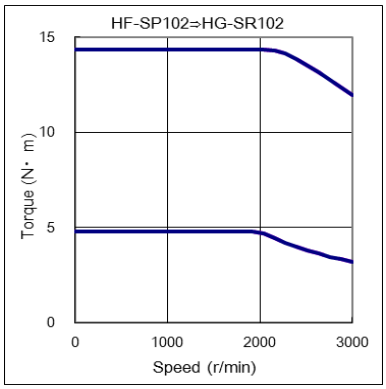


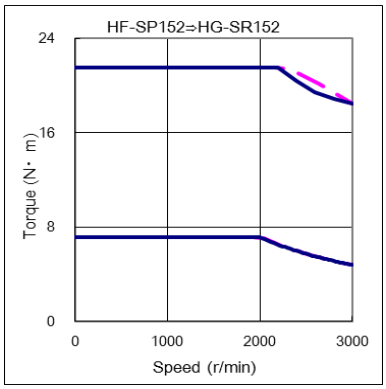


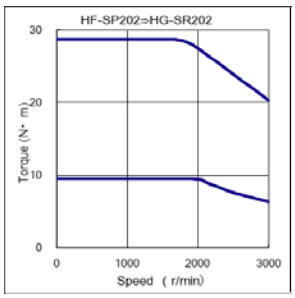


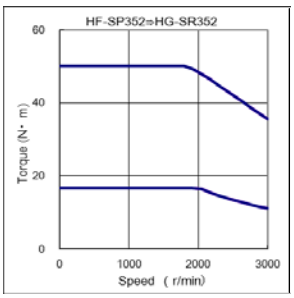


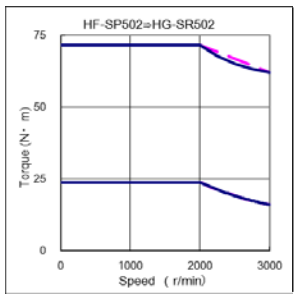


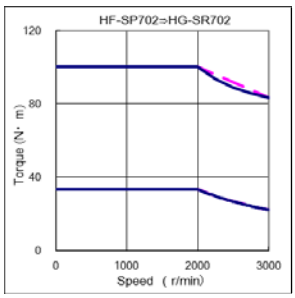








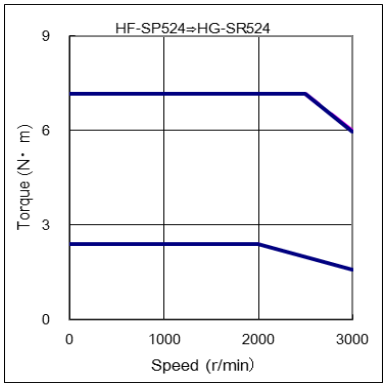


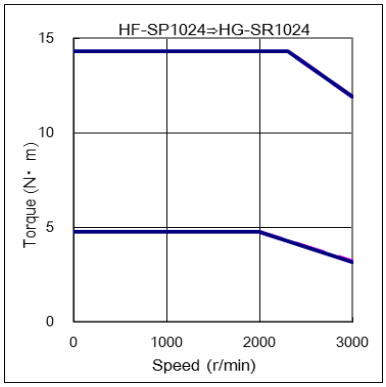


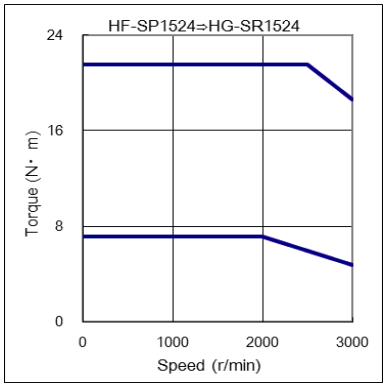
Note 1. The above torque characteristics are for three-phase 200 VAC.

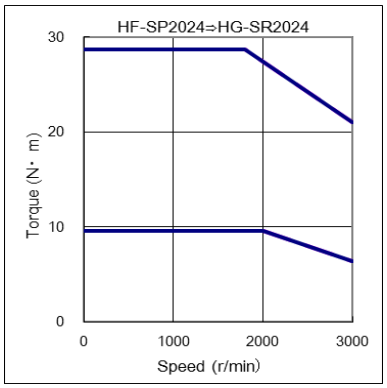
◆ Comparison of torque characteristics between the HG-SR series and HF-SP series (——:HG-SR, - - -:HF-SP)

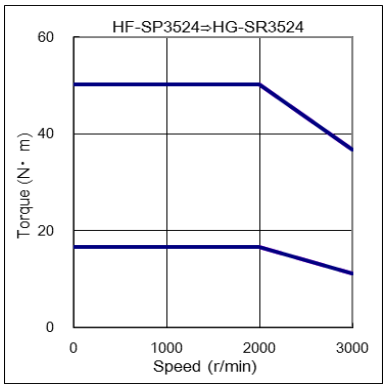
● HF-SP 2000r/min series 400V class

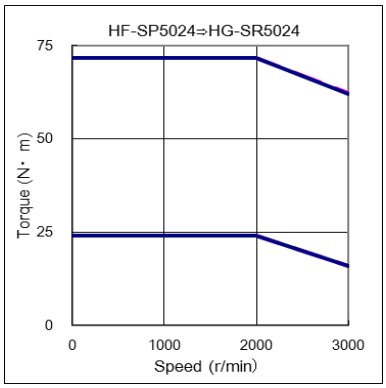


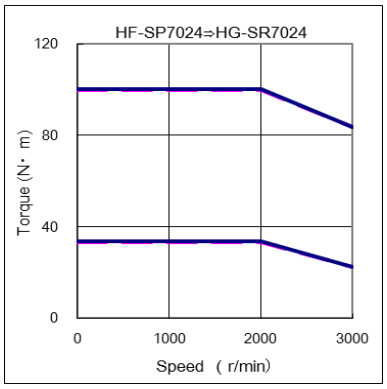






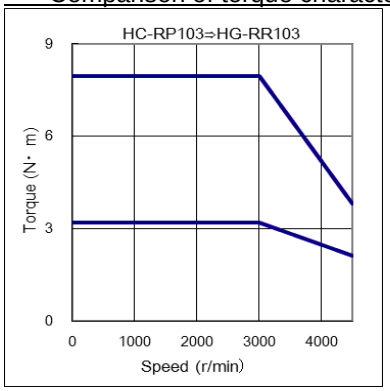


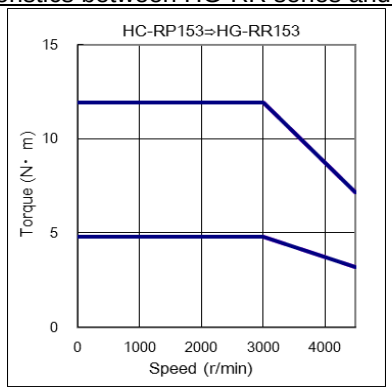


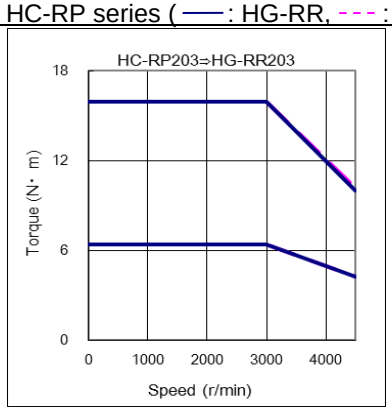


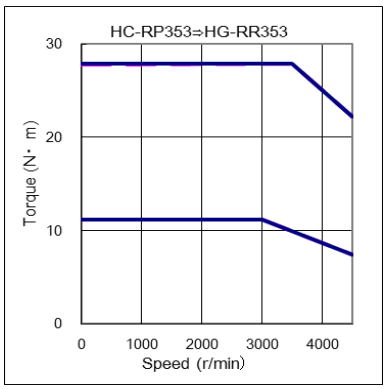
Note 1. The above torque characteristics are for three-phase 400 VAC.

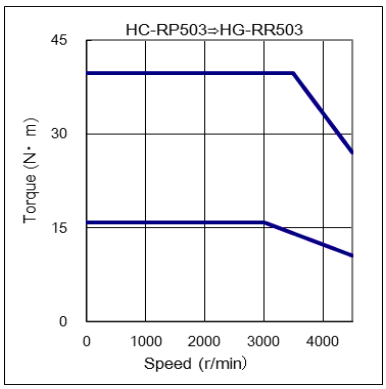
◆ Comparison of torque characteristics between HG-RR series and HC-RP series (——: HG-RR, - - - : HC-RP)



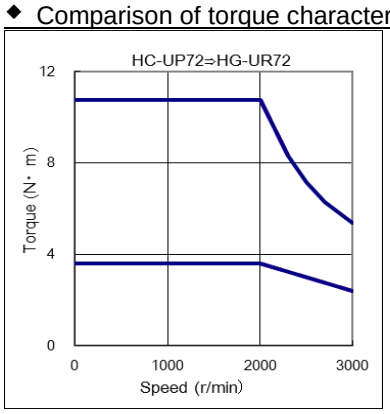


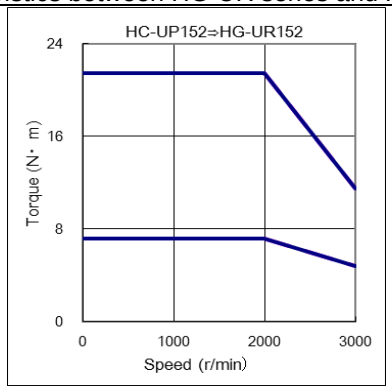


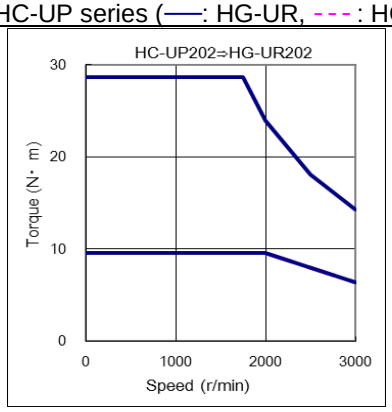


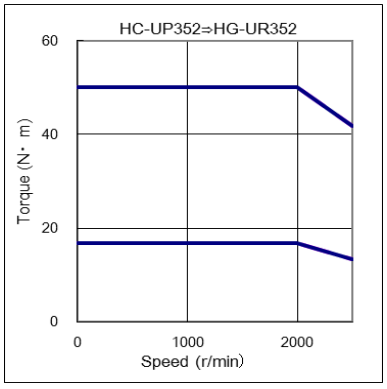


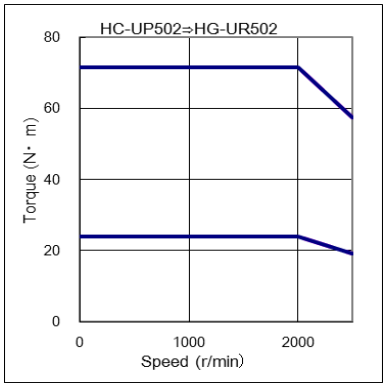
◆ Comparison of torque characteristics between HG-UR series and HC-UP series (——: HG-UR, - - - : HC-UP)







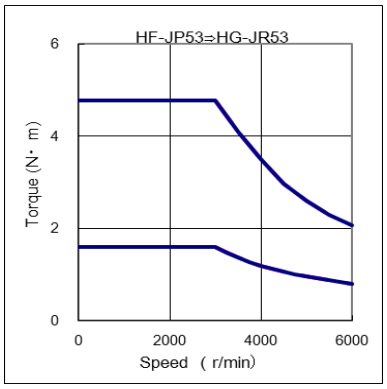


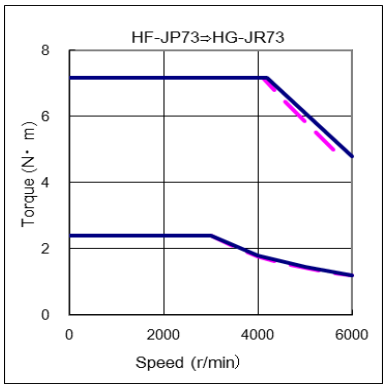


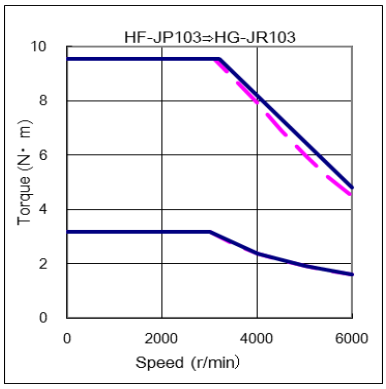
Note 1. The above torque characteristics are for three-phase 200 VAC.

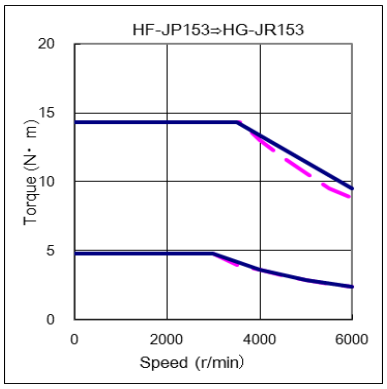
◆ Comparison of torque characteristics between HG-JR series and HF-JP series (——: HG-JR, - - - -: HF-JP)

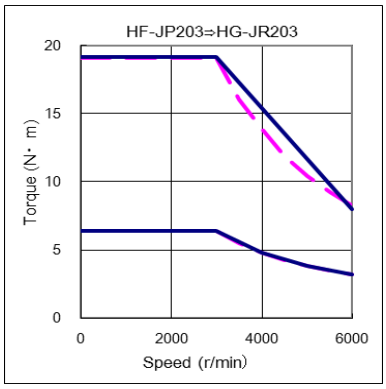
● HF-JP 3000r/min series 200V class

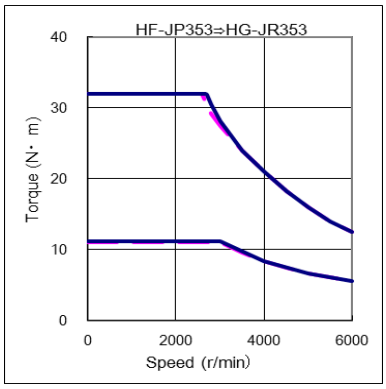


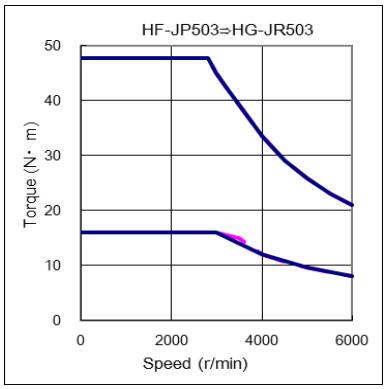


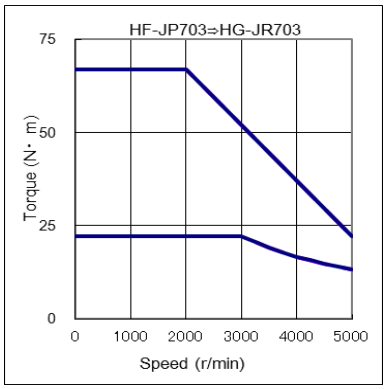


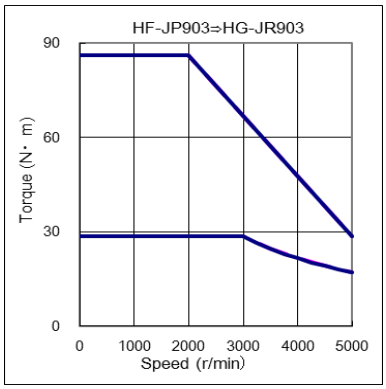




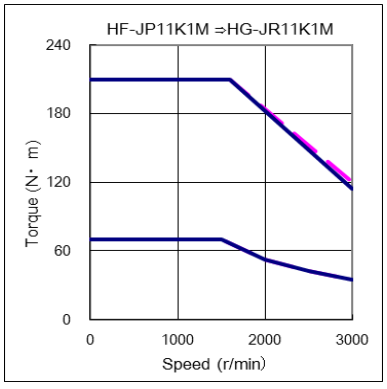


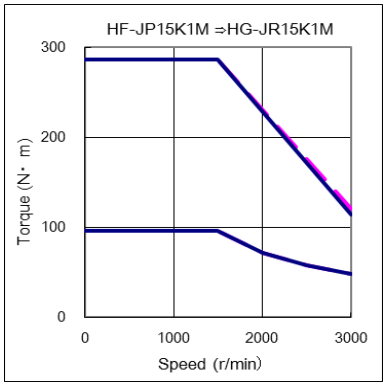






● HF-JP 1500r/min series 200V class

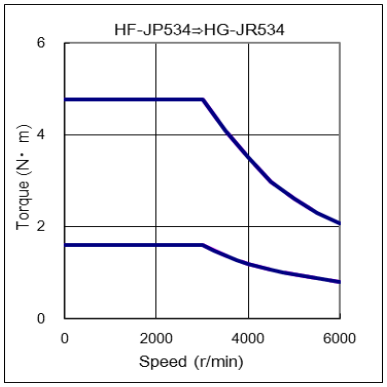


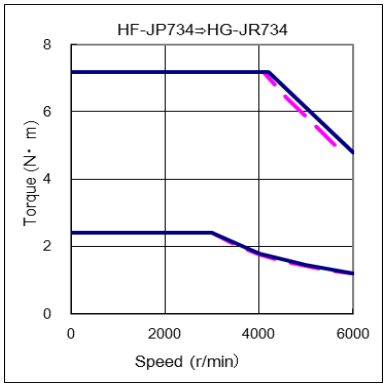


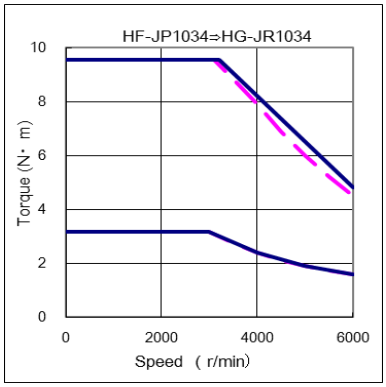
Note 1. The above torque characteristics are for three-phase 200 VAC.

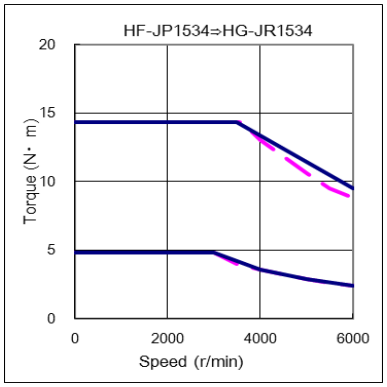
◆ Comparison of torque characteristics between HG-JR series and HF-JP series (——: HG-JR, - - - -: HF-JP)

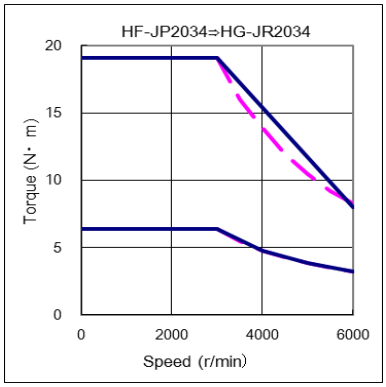
● HF-JP 3000r/min series 400V class

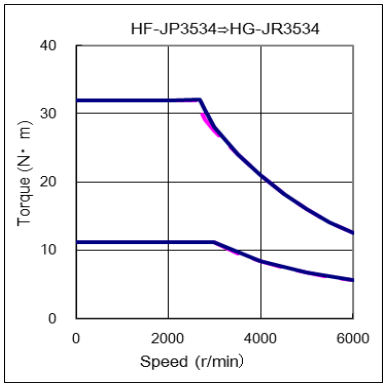


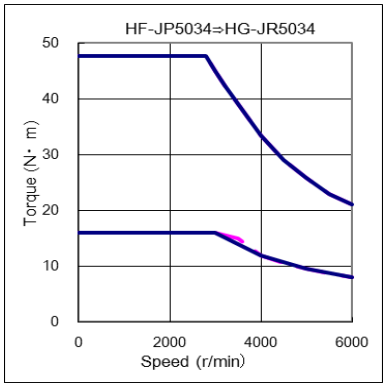


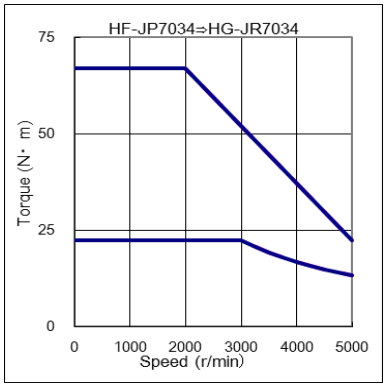


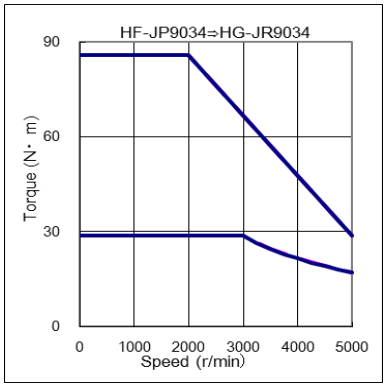




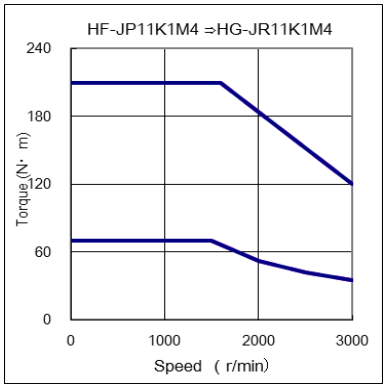


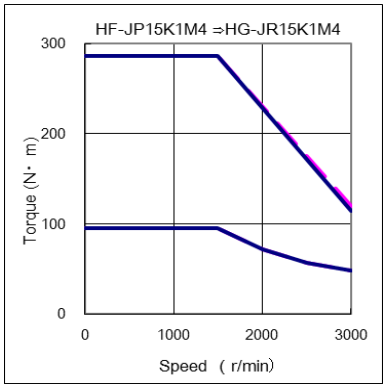






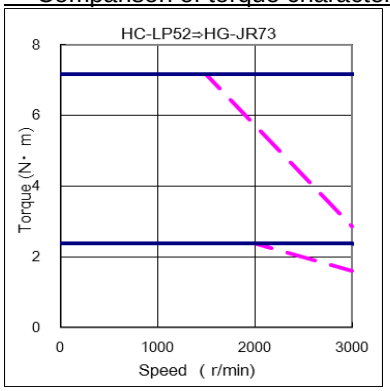
● HF-JP 1500r/min series 400V class

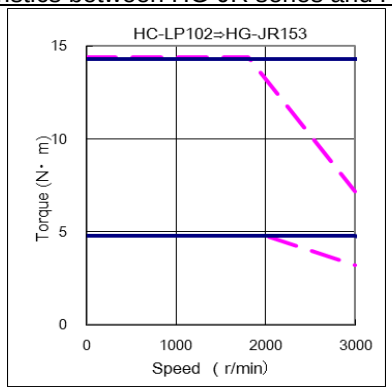


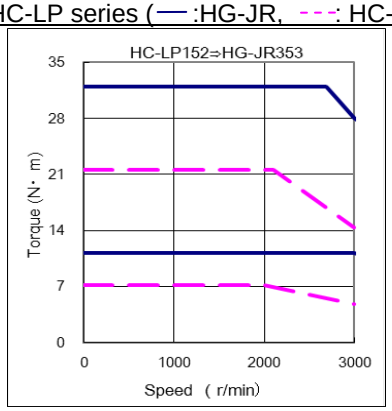


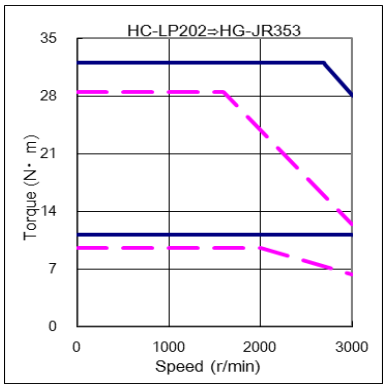
Note 1. The above torque characteristics are for three-phase 400 VAC.

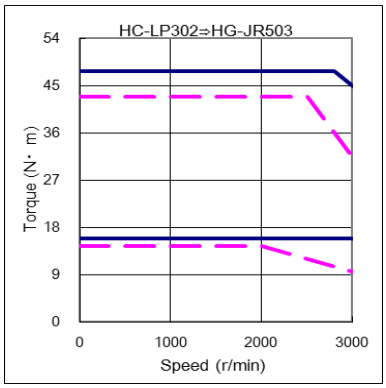
◆ Comparison of torque characteristics between HG-JR series and HC-LP series (— :HG-JR, - - - : HC-LP)





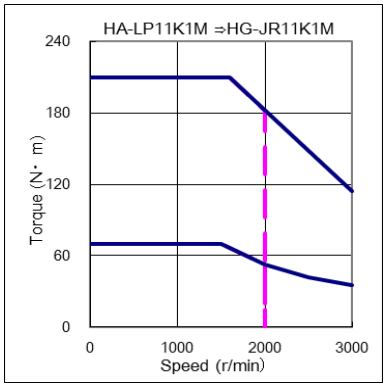


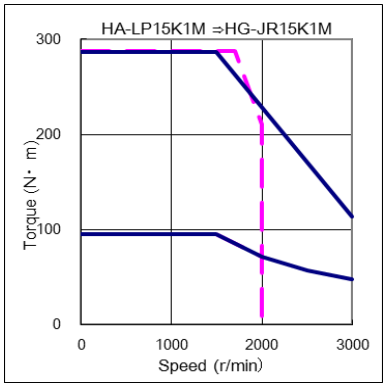


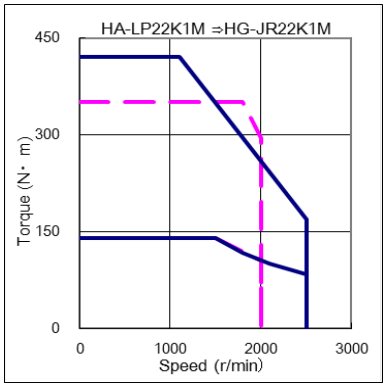


◆ Comparison of torque characteristics between HG-JR series and HA-LP series (— :HG-JR, - - - : HA-LP)

● HA-LP 1500r/min series 200V class

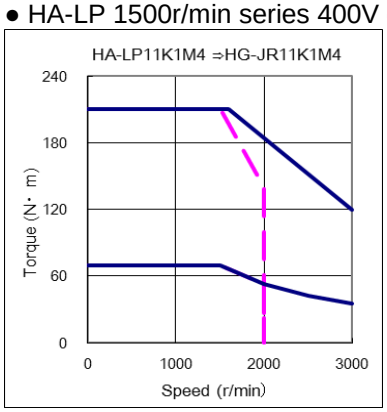


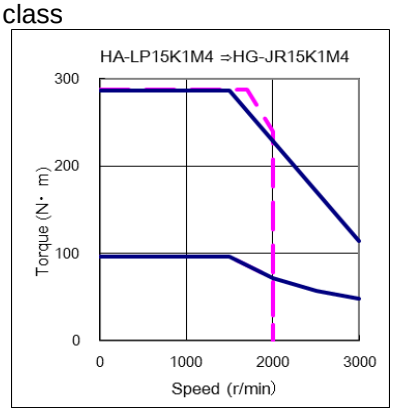


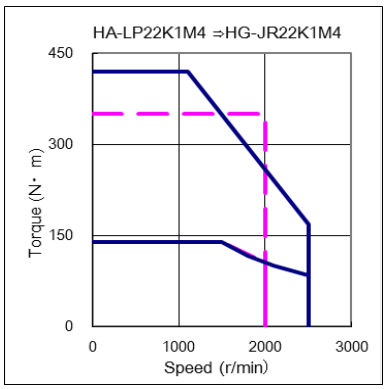


Note 1. The above torque characteristics are for three-phase 200 VAC.

● HA-LP 1500r/min series 400V class





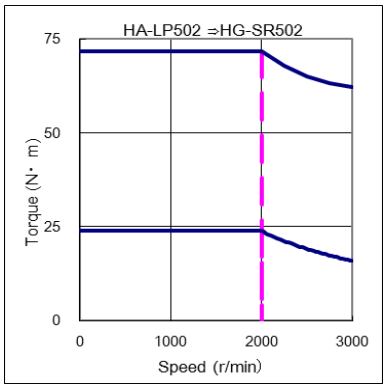


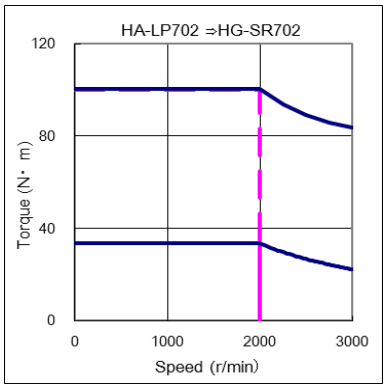
Note 1. The above torque characteristics are for three-phase 400 VAC.

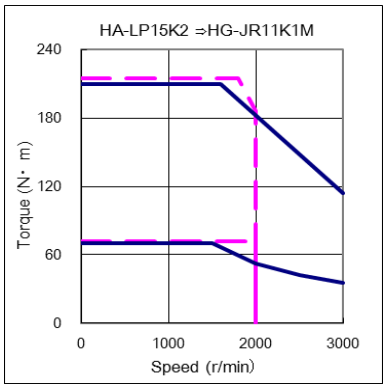
◆ Comparison of torque characteristics between HG-JR, HG-SR series and HA-LP series

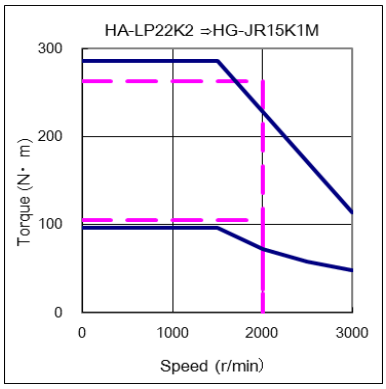
(—:HG-JR, HG-SR, - - -:HA-LP)

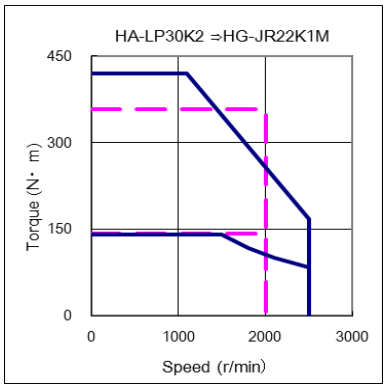
● HA-LP 2000r/min series 200V class





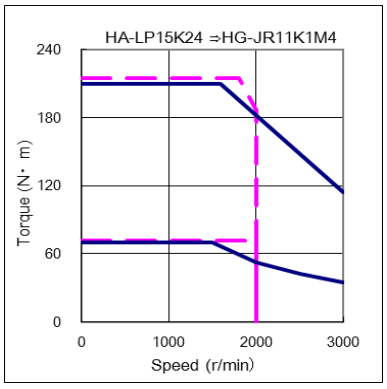


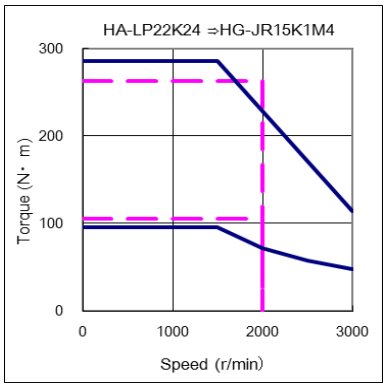


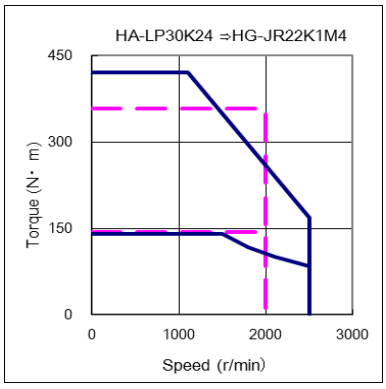


Note 1. The above torque characteristics are for three-phase 200 VAC.

● HA-LP 2000r/min series 400V class







Note 1. The above torque characteristics are for three-phase 400 VAC.

■ Regenerative Options (for 200 V)

[Combination and regenerative power for the J3 series]

Servo amplifier model MR-J3-	Built-in regenera-tive resistor [W]	Permissible regenerative power of regenerative option [W] MR-RB								
		032 [40Ω]	12 [40Ω]	30 [13Ω]	3N [9Ω]	31 [6.7Ω]	32 [40Ω]	(Note 1) 50 [13Ω]	(Note 1) 5N [9Ω]	(Note 1) 51 [6.7Ω]
10A/B		30								
20A/B	10	30	100							
40A/B	10	30	100							
60A/B	10	30	100							
70A/B	20	30	100				300			
100A/B	20	30	100				300			
200A/B	100			300				500		
350A/B	100			300				500		
500A/B	130					300				500
700A/B	170					300				500
11KA/B										
11KA/B -LR										
15KA/B										
15KA/B -LR										
22KA/B										

Servo amplifier model MR-J3-	Built-in regenera-tive resistor [W]	(Note 2) Standard accessories [External]	Permissible regenerative power of regenerative option [W] MR-RB				
			(Note 2) 5E [6Ω]	(Note 2) 5R [3.2Ω]	(Note 2) 9P [4.5Ω]	(Note 2) 9F [3Ω]	(Note 2) 9T [2.5Ω]
10A/B							
20A/B	10						
40A/B	10						
60A/B	10						
70A/B	20						
100A/B	20						
200A/B	100						
350A/B	100						
500A/B	130						
700A/B	170						
11KA/B		GRZG400 -1.5Ω×4 500 (800)	500 (800)				
11KA/B -LR		GRZG400 -0.8Ω×4 500 (800)		500 (800)			
15KA/B		GRZG400 -0.9Ω×5 850 (1300)			850 (1300)		
15KA/B -LR		GRZG400 -0.6Ω×5 850 (1300)				850 (1300)	
22KA/B						850 (1300)	

Note 1. Be sure to install a cooling fan.
2. The values in the parentheses are applied to when a cooling fan is installed.

[Combination and regenerative power for the J4 series (replacement model)]

Servo amplifier model MR-J4-	Built-in regenera-tive resistor [W]	Permissible regenerative power of regenerative option [W] MR-RB								
		032 [40Ω]	12 [40Ω]	30 [13Ω]	3N [9Ω]	31 [6.7Ω]	32 [40Ω]	(Note 1) 50 [13Ω]	(Note 1) 5N [9Ω]	(Note 1) 51 [6.7Ω]
10A/B		30								
20A/B	10	30	100							
40A/B	10	30	100							
60A/B	10	30	100							
70A/B	20	30	100				300			
100A/B	20	30	100				300			
200A/B	100			300				500		
350A/B	100				**300**				**500**	
500A/B	130					300				500
700A/B	170					300				500
11KA/B										
15KA/B										
22KA/B										

Servo amplifier model MR-J4-	Built-in regenera-tive resistor [W]	(Note 2) Standard accessories [External]	Permissible regenerative power of regenerative option [W] MR-RB				
			(Note 2) 5E [6Ω]	(Note 2) 5R [3.2Ω]	(Note 2) 9P [4.5Ω]	(Note 2) 9F [3Ω]	(Note 2) 9T [2.5Ω]
10A/B							
20A/B	10						
40A/B	10						
60A/B	10						
70A/B	20						
100A/B	20						
200A/B	100						
350A/B	100						
500A/B	130						
700A/B	170						
11KA/B		GRZG400 -0.8Ω×4 500 (800)		**500 (800)**			
15KA/B		GRZG400 -0.6Ω×5 850 (1300)				**850 (1300)**	
22KA/B		GRZG400 -0.5Ω×5 850 (1300)					**850 (1300)**

Note 1. Be sure to install a cooling fan.

2. The values in the parentheses are applied to when a cooling fan is installed.

- **Shaded cells** in the list are the items that differ from the MR-J3 series.
- Parameter settings (PA02 for J4) are required depending on the regenerative option model. Refer to Instruction Manuals.

■ Regenerative Options (for 400V)

[Combination and regenerative power for the J3 series]

Servo amplifier model MR-J3-	Built-in regenera-tive resistor [W]	Permissible regenerative power of regenerative option [W] MR-RB							
		1H-4 [82Ω]	(Note 1) 3M-4 [120Ω]	(Note 1) 3G-4 [47Ω]	(Note 1) 34-4 [26Ω]	(Note 1) 3U-4 [22Ω]	(Note 1) 5G-4 [47Ω]	(Note 1) 54-4 [26Ω]	(Note 1) 5U-4 [22Ω]
60A4/B4	15	100	300						
100A4/B4	15	100	300						
200A4/B4	100			300			500		
350A4/B4	100			300			500		
500A4/B4	130				300			500	
700A4/B4	170				300			500	
11KA4/B4									
11KA4/B4 -LR									
15KA4/B4									
15KA4/B4 -LR									
22KA4/B4									

Servo amplifier model MR-J3-	Built-in regenera-tive resistor [W]	(Note 2) Standard accessories [External]	Permissible regenerative power of regenerative option[W] MR-RB			
			(Note 2) 5K-4 [10Ω]	(Note 2) 6B-4 [20Ω]	(Note 2) 60-4 [12.5Ω]	(Note 2) 6K-4 [10Ω]
60A4/B4	15					
100A4/B4	15					
200A4/B4	100					
350A4/B4	100					
500A4/B4	130					
700A4/B4	170					
11KA4/B4		GRZG400 -5Ω×4 500 (800)		500 (800)		
11KA4/B4 -LR		GRZG400 -2.5Ω×4 500 (800)	500 (800)			
15KA4/B4		GRZG400 -2.5Ω×5 850 (1300)			850 (1300)	
15KA4/B4 -LR		GRZG400 -2Ω×5 850 (1300)				850 (1300)
22KA4/B4						850 (1300)

Note 1. Be sure to install a cooling fan.

2. The values in the parentheses are applied to when a cooling fan is installed.

[Combination and regenerative power for the J4 series (replacement models)]

Servo amplifier model MR-J4-	Built-in regenera-tive resistor [W]	Permissible regenerative power of regenerative option[W] MR-RB							
		1H-4 [82Ω]	(Note 1) 3M-4 [120Ω]	(Note 1) 3G-4 [47Ω]	(Note 1) 34-4 [26Ω]	(Note 1) 3U-4 [22Ω]	(Note 1) 5G-4 [47Ω]	(Note 1) 54-4 [26Ω]	(Note 1) 5U-4 [22Ω]
60A4/B4	15	100	300						
100A4/B4	15	100	300						
200A4/B4	100			300			500		
350A4/B4	100			300			500		
500A4/B4	130				300			500	
700A4/B4	170					**300**			**500**
11KA4/B4									
15KA4/B4									
22KA4/B4									

Servo amplifier model MR-J3-	Built-in regenera-tive resistor [W]	(Note 2) Standard accessories [External]	Permissible regenerative power of regenerative option [W] MR-RB			
			(Note 2) 5K-4 [10Ω]	(Note 2) 6B-4 [20Ω]	(Note 2) 60-4 [12.5Ω]	(Note 2) 6K-4 [10Ω]
60A4/B4	15					
100A4/B4	15					
200A4/B4	100					
350A4/B4	100					
500A4/B4	130					
700A4/B4	170					
11KA4/B4		**GRZG400 -2.5Ω×4 500 (800)**	**500 (800)**			
15KA4/B4		**GRZG400 -2.0Ω×5 850 (1300)**				**850 (1300)**
22KA4/B4		GRZG400 -2.0Ω×5 850 (1300)				850 (1300)

Note 1. Be sure to install a cooling fan.

2. The values in the parentheses are applied to when a cooling fan is installed.

- **Shaded cells** in the list are the items that differ from the MR-J3 series.
- Parameter settings (PA02 for J4) are required depending on the regenerative option model. Refer to Instruction Manuals.

■ Dynamic brakes

Model	Applicable servo amplifier°	
DBU-11K	MR-J3-11KA/B	MR-J4-11KA/B
DBU-15K	MR-J3-15KA/B	MR-J4-15KA/B
DBU-22K	MR-J3-22KA/B	-
DBU-22K-R1	-	**MR-J4-22KA/B**
DBU-11K-4	MR-J3-11KA4/B4	MR-J4-11KA4/B4
DBU-22K-4	MR-J3-15KA4/B4 MR-J3-22KA4/B4	MR-J4-15KA4/B4 MR-J4-22KA4/B4

- **Shaded cells** in the list are the items that differ from the MR-J3 series.

■ Cable option

Application		MR-J3 series	MR-J4 series	Compatibility (Compatible: ○)	Precautions
Encoder cable		MR-J3ENCBL_M-A_-_	(Note)	-	No difference. _M: Cable length A_: Leading direction -_: Bending life
		MR-J3JCBL03M-A_-L	(Note)	-	
		MR-EKCBL_M-_	(Note)	-	
		MR-J3JSCBL03M-A_-L	(Note)	-	
		MR-J3ENSCBL_M-_	(Note)	-	
		MR-J3ENECBL_M-H	MR-J3ENECBL_M-H-(MTH)	-	(MTH) is required when using MR-J4-22K_. _: Cable length
Encoder connector set		MR-ECNM	(Note)	-	No difference.
		MR-J3SCNS	(Note)	-	No difference
			MR-ENCNS2	○	Screw type is newly available.
		MR-J3SCNSA	(Note)	-	No difference
			MR-ENCNS2A	○	Screw type is newly available.
		MR-ENECNS	(Note)	-	No difference
SSCNET III cable		MR-J3BUS_M	(Note)	-	No difference. _M: Cable length -_: Bending life
		MR-J3BUS_M-_	(Note)	-	
SSCNET III connector set		MR-J3BCN1	(Note)	-	No difference.
Junction terminal block cable	A type for CN1	MR-J2M-CN1TBL_M	(Note)	-	No difference _: Cable length
Connector set		MR-J3CN1	(Note)	-	No difference
Junction terminal block		MR-TB50	(Note)	-	No difference
Junction terminal block cable	B type for CN3	MR-J2HBUS_M	(Note)	-	No difference _: Cable length
Connector set		MR-CCN1	(Note)	-	No difference
Servo motor power cable		MR-PWS1CBL_M-A_-_	(Note)	-	No difference _M: Cable length A_: Leading direction -_: Bending life
		MR-PWS2CBL03M-A_-L	(Note)	-	
Power connector set (Power connector on servo motor side)		MR-PWCNS4	(Note)	-	No difference
		MR-PWCNS5	(Note)	-	
		MR-PWCNS3	(Note)	-	
Electromagnetic brake cable		MR-BKS1CBL_M-A_-_	(Note)	-	No difference. _M: Cable length A_: Leading direction -_: Bending life
		MR-BKS2CBL03M-A_-L	(Note)	-	
Electromagnetic brake cable connector set		MR-BKCNS1	(Note)	-	No difference.
			MR-BKCNS2	○	Screw type is newly available.
		MR-BKCNS1A	(Note)	-	No difference.
			MR-BKCNS2A	○	Screw type is newly available.
		MR-BKCN	(Note)	-	No difference.

Note: The same option as MR-J3 series can be used.

Application		MR-J3 series	MR-J4 series	Compatibility (Compatible: ○)	Precautions
Servo amplifier power connector (to 1kW)	CNP1	54928-0670	06JFAT-SAXGDK-H7.5	(Note 1)	The connector shape has been changed since the connector manufacturer has been changed.
	CNP2	54927-0520	05JFAT-SAXGDK-H5.0	(Note 1)	
	CNP3	54928-0370	03JFAT-SAXGDK-H7.5	(Note 1)	
Servo amplifier power connector (2kW)	CNP1	721-207/026-000	06JFAT-SAXGFK-XL	(Note 1)	
	CNP2	721-205/026-000	05JFAT-SAXGDK-H5.0	(Note 1)	
	CNP3	721-203/026-000	03JFAT-SAXGFK-XL	(Note 1)	
Servo amplifier power connector (3.5kW)	CNP1	P/C 4/6-STF-7, 62-CRWH	06JFAT-SAXGFK-XL	(Note 1)	
	CNP2	54927-0520	05JFAT-SAXGDK-H5.0	(Note 1)	
	CNP3	P/C 4/3-STF-7, 62-CRWH	03JFAT-SAXGFK-XL	(Note 1)	
Communication cable for CN5		MR-J3USBCBL3M	(Note 2)	-	No difference.

Note 1. These replacement models do not have compatibility in mounting. The power connector is included in the package.

Note 2: The same option as MR-J3 series can be used.

3. Function comparison

[Comparison of 200 V Class]

Item		MR-J3 series	MR-J4 series
1	Capacity range	0.1k to 22kW/200V	0.1k to 22kW/200V
2	Internal regenerative resistor	Built-in(0.2k to 7kW) External (11k to 22kW)	Built-in (0.2k to 7kW) External (11k to 22kW)
3	Dynamic brakes	Built-in (0.1k to 7kW) External (11k to 22kW)	Built-in (0.1k to 7kW) External (11k to 22kW) **Coasting distance is different.** **(Note 1)**
4	Control circuit power supply	Single-phase AC200 to 230V	Single-phase AC200 to **240V**
5	Main circuit power	Single-phase/3-phase AC200 to 230V (to 750W) 3-phase AC200 to 230V (1k to 22kW)	Single-phase/3-phase AC200 to **240V** (to 750W) 3-phase AC200 to **240V** (1k to 22kW)
6	24 V DC power supply	External supply required	External supply required
7	Auto tuning	Real-time auto tuning section: 32 steps Advanced Gain search	Real-time auto tuning section: **40 steps** **One-touch tuning**
8	Control mode	(A) General-purpose interface ● Position control mode (pulse command) ● Speed control mode (analog command) ● Torque control mode (analog command) (B) SSCNET III interface (50Mbps) ● Position control mode ● Speed control mode	(A) General-purpose interface ● Position control mode (pulse command) ● Speed control mode (analog command) ● Torque control mode (analog command) (B) **SSCNET III/H interface (150Mbps)** ● Position control mode ● Speed control mode ● **Torque control mode**
9	Maximum input pulses	Differential pulse 1Mpps Command pulse: Sink	Differential pulse **4Mpps** Command pulse: Sink
10	The number of DIO points (excluding EM1)	(A) General-purpose interface DI:9 points, DO:6 points (B) SSCNET III interface DI: 3 points, DO: 3 points	(A) General-purpose interface DI: 9 points , DO: 6 points (B) SSCNET III/H interface DI: 3 points, DO: 3 points
11	Encoder pulse output	ABZ-phase (differential) (A) General-purpose interface Z-phase (open-collector)	ABZ-phase (differential) (A) General-purpose interface Z-phase (open-collector)
12	DIO interface	Input/output: Sink/Source	Input/output: Sink/Source
13	Analog input/output	(A) General-purpose interface (Input) 2ch Torque: 10-bit, Speed: 14-bit or equivalent (Output) 10-bit or equivalent × 2 ch (B) SSCNET III interface (Output) 10-bit or equivalent × 2 ch	(A) General-purpose interface (Input) 2ch Torque: 10-bit; Speed: 14-bit or equivalent (Output) 10-bit or equivalent × 2 ch (B) SSCNET III/H interface (Output) 10-bit or equivalent × 2 ch
14	The number of internal speed commands (Type A)	7 points	7 points
15	Parameter setting method	MR Configurator (SETUP221) MR Configurator2 Push buttons (type A)	MR Configurator2 Push buttons (type A)
16	Setup S/W communication	USB	USB
17	Servo motor (Encoder resolution)	HF series (18 bits ABS) HA series (18 bits ABS)	HG series (**22** bits ABS)
18	Motor maximum torque	HF-KP 350%	HG-KR 350%
		HF-MP 300%	HG-MR 300%
		HF-SP 300%	HG-SR 300%
		HF-JP 300%	HG-JR 300%
		HA-LP 250%	**HG-JR 300%**
19	Push buttons (type A)	4 buttons	4 buttons
20	LED display	(A type) 7-segment 5-digit (B type) 7-segment 3-digit	(A type) 7-segment 5-digit (B type) 7-segment 3-digit

(Note 1) Refer to dynamic characteristics in manual for Coasting distance.

(Note 2) Changed items are shown **with shading**.

Item		MR-J3 series	MR-J4 series
21	Advanced suppression control	Provided	Provided **(Ⅱ vibration suppression for three inertia system3**
22	Adaptive filter II	Provided	Provided
23	Notch filter	Provided (2 pcs.)	Provided (**5** pcs.)
24	Tough drive function	Unprovided	**Provided**
25	Drive recorder function	Unprovided	**Provided**
26	Forced stop	EM1 (DB stop)	**Select EM1 (DB stop) or EM2 (deceleration to a stop)**
Note:	Changed items are shown **with shading**.		

[Comparison of 400 V Class]

Item		MR-J3 series	MR-J4 series
1	Capacity range	0.6k to 22kW/400V	0.6k to 22kW/400V
2	Internal regenerative resistor	Built-in (0.6k to 7kW) External (11k to 22kW)	Built-in (0.6k to 7kW) External (11k to 22kW)
3	Dynamic brakes	Built-in (0.6k to 7kW) External (11k to 22kW)	Built-in(0.6k to 7kW) External (11k to 22kW) **Coasting distance is different.** **(Note 1)**
4	Control circuit power supply	Single-phase AC380 to 480V	Single-phase AC380 to 480V
5	Main circuit power	3-phase AC380 to 480V	3-phase AC380 to 480V
6	24 V DC power supply	External supply required	External supply required
7	Auto tuning	Real-time auto tuning section: 32 steps Advanced gain search	Real-time auto tuning section:**40 steps** **One touch tuning**
8	Control mode	(A) General-purpose interface ● Position control mode (pulse command) ● Speed control mode (analog command) ● Torque control mode (analog command) (B)SSCNET III interface (50Mbps) ● Position control mode ● Speed control mode	(A) General-purpose interface ● Position control mode (pulse command) ● Speed control mode (analog command) ● Torque control mode (analog command) (B) **SSCNET III/H interface (150Mbps)** ● Position control mode ● Speed control mode ● **Torque control mode**
9	Maximum input pulses	Differential pulse 1Mpps Command pulse: Sink	Differential pulse **4Mpps** Command pulse: Sink
10	The number of DIO points (excluding EM1)	(A) General-purpose interface DI:9 points , DO:6 points (B) SSCNET III interface DI:3 points, DO:3 points	(A) General-purpose interface DI:9 points , DO:6 points (B) SSCNET III/H interface DI:3 points, DO:3 points
11	Encoder pulse output	ABZ-phase (differential) (A) General-purpose interface Z-phase (open-collector)	ABZ-phase (differential) (A) General-purpose interface Z-phase (open-collector)
12	DIO interface	Input/output: Sink/Source	Input/output: Sink/Source
13	Analog input/output	(A) General-purpose interface (Input) 2ch Torque: 10-bit; Speed: 14-bit or equivalent (Output) 10-bit or equivalent × 2 ch (B) SSCNET III interface (Output) 10-bit or equivalent × 2 ch	(A) General-purpose interface (Input) 2ch Torque: 10-bit; Speed: 14-bit or equivalent (Output) 10-bit or equivalent × 2 ch (B)SSCNET III/H interface (Output) 10-bit or equivalent × 2 ch
14	The number of internal speed commands (Type A)	7 points	7 points
15	Parameter setting method	MR Configurator (SETUP221) MR Configurator2 Push buttons (type A)	MR Configurator2 Push buttons (type A)
16	Setup S/W communication	USB	USB
17	Servo motor (Encoder resolution)	HF series (18 bits ABS) HA series (18 bits ABS)	HG series (**22** bits ABS)
18	Motor maximum torque	HF-KP 350%	HG-KR 350%
		HF-MP 300%	HG-MR 300%
		HF-SP 300%	HG-SR 300%
		HF-JP 300%	HG-JR 300%
		HA-LP 250%	**HG-JR 300%**
19	Push buttons (type A)	4 buttons	4 buttons
20	LED display	(A type) 7-segment 5-digit (B type) 7-segment 3-digit	(A type) 7-segment 5-digit (B type) 7-segment 3-digit
21	Advanced vibration suppression control II	Provided	Provided **(Ⅱ vibration suppression for three inertia system)**
22	Adaptive filter II	Provided	Provided

(Note 1) Refer to dynamic characteristics in manual for Coasting distance.

(Note 2) Changed items are shown **with shading**.

Item		MR-J3 series	MR-J4 series
23	Notch filter	Provided (2 pcs.)	Provided (**5** pcs.)
24	Tough drive function	Unprovided	**Provided**
25	Drive recorder function	Unprovided	**Provided**
26	Forced stop	EM1 (DB stop)	**Select EM1 (DB stop) or EM2 (deceleration to a stop)**
Note	Changed items are shown **with shading**.		

4. Comparison of Networks

[Comparison of servo system network specifications]

<table>
<tr><td rowspan="2">Item</td><td>MR-J3 series</td><td rowspan="8">→</td><td colspan="2">MR-J4 series (Note 1)</td></tr>
<tr><td>SSCNET III</td><td>SSCNET III</td><td>SSCNET III/H</td></tr>
<tr><td>Communication media</td><td>Optical-fiber cable</td><td colspan="2">Optical-fiber cable</td></tr>
<tr><td>Communication speed</td><td>50Mbps</td><td>50Mbps</td><td>150Mbps</td></tr>
<tr><td rowspan="3">Transmission distance</td><td rowspan="2">[Standard cord inside cabinet/standard cable outside cabinet]
Maximum distance between stations: 20 m
Maximum overall distance: 320 m (20 m × 16 axes)</td><td colspan="2">[Standard cord inside cabinet/standard cable outside cabinet]
Maximum distance between stations: 20 m
Maximum overall distance: 320 m (20 m × 16 axes)</td></tr>
<tr><td>[Long distance cable]
Maximum distance between stations: 50 m
Maximum overall distance: 800 m (50 m ×16 axes)</td><td>[Long distance cable]
Maximum distance between stations: 50 m
Maximum overall distance: 800 m (50 m × 16 axes)</td><td>[Long distance cable]
Maximum distance between stations: 100 m
Maximum overall distance: 1600 m (100 m × 16 axes)</td></tr>
</table>

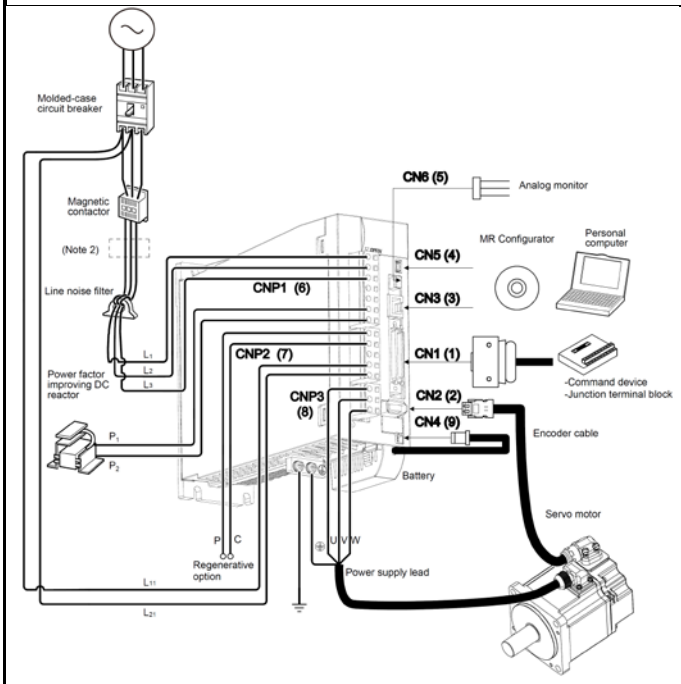
Note 1. When SSCNET III/H communication is used to receive a command sent for the first time from the controller in the factory setting, the operation mode is fixed to"J4 mode", and when SSCNET III is used for the first time, the operation mode is fixed to “J3 compatibility mode”. To return to the factory setting or to select an arbitrary mode, change the setting with the application "MR-J4(W)-B mode selection". The application "MR-J4(W)-B mode selection" is available with MR Configurator2 Version 1.12N and later. When a version older than 1.12N is used, download an update version from the MITSUBISHI ELECTRIC FA Global Website.

5. Wiring example for replacement

Comparison of MR-J3-A and MR-J4-A

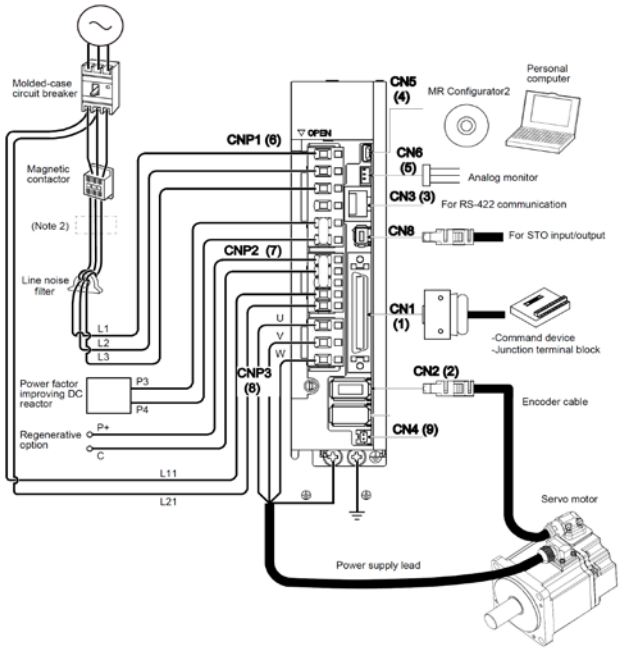
An example of connections with the peripheral equipment is shown below. Refer to the respective Instruction Manuals for details on the signals.

MR-J3-A



(Note 1) The above configuration example is applied to the MR-J3-100A or less capacities.
(Note 2) The power factor improving AC reactor can also be used. In this case, the power factor improving DC reactor cannot be used.

MR-J4-A



(Note 1) The above configuration example is applied to the MR-J4-200A or less capacities.
(Note 2) The power factor improving AC reactor can also be used. In this case, the power factor improving DC reactor cannot be used.

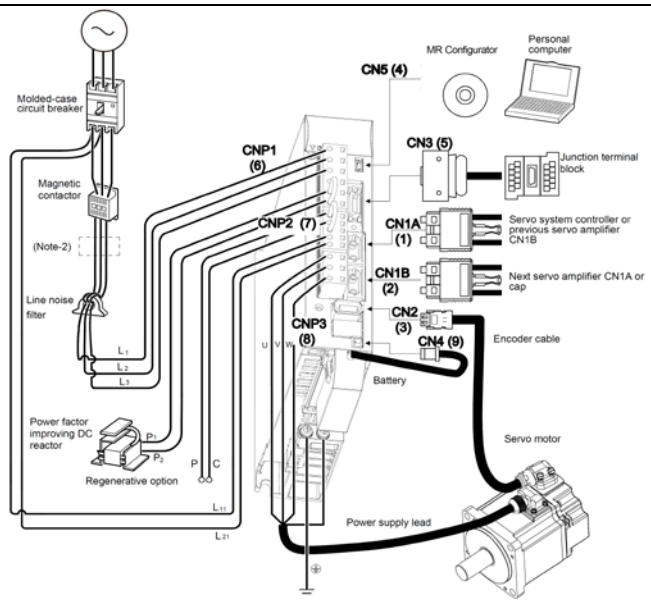
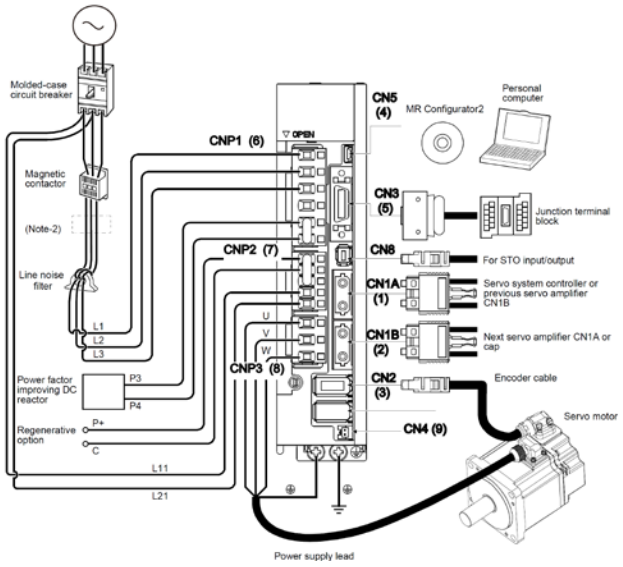
List of connector and terminal block correspondence

	MR-J3-A		MR-J4-A	Precautions
(1)	I/O signal connector CN1		I/O signal connector CN1	
(2)	Encoder connector CN2		Encoder connector CN2	
(3)	RS-422 communication connector CN3		RS-422 connector CN3	
(4)	USB communication connector CN5		USB communication connector CN5	
(5)	Analog monitor connector CN6	→	Analog monitor connector CN6	
(6)	Main circuit power connector CNP1		Main circuit power connector CNP1	Must switch to the power connectors enclosed with amplifier as accessories.
(7)	Control circuit power connector CNP2		Control circuit power connector CNP2	
(8)	Servo motor power supply connector CNP3		Servo motor power connector CNP3	
(9)	Battery connector CN4		Battery connector CN4	Must prepare a new battery.

Note. When not using the STO function, attach a short-circuit connector supplied with a servo amplifier onto CN8 (STO input signal connector).

Comparison of MR-J3-B and MR-J4-B

An example of connections with the peripheral equipment is shown below. Refer to the respective Instruction Manuals for details on the signals.

MR-J3-B	MR-J4-B
	
(Note 1) The above configuration example is applied to the MR-J3-100A or less capacities. (Note 2) The power factor improving AC reactor can also be used. In this case, the power factor improving DC reactor cannot be used.	(Note 1) The above configuration example is applied to the MR-J4-200B or less capacities. (Note 2) The power factor improving AC reactor can also be used. In this case, the power factor improving DC reactor cannot be used.

List of connector and terminal block correspondence

	MR-J3-B		MR-J4-B	Precautions
(1)	SSCNET III cable connector CN1A		SSCNET III cable connector CN1A	
(2)	SSCNET III cable connector CN1B		SSCNET III cable connector CN1B	
(3)	Encoder connector CN2		Encoder connector CN2	
(4)	USB communication connector CN5		USB communication connector CN5	
(5)	I/O signal connector CN3	→	I/O signal connector CN3	
(6)	Main circuit power connector CNP1		Main circuit power connector CNP1	Must switch to the power connectors enclosed with amplifier as accessories.
(7)	Control circuit power connector CNP2		Control circuit power connector CNP2	
(8)	Servo motor power supply connector CNP3		Servo motor power connector CNP3	
(9)	Battery connector CN4		Battery connector CN4	Must prepare a new battery.

Note. When not using the STO function, attach a short-circuit connector supplied with a servo amplifier onto CN8 (STO input signal connector).

6. Parameter comparison

For replacement from MR-J3 series to MR-J4 series, the table below shows the parameters that changed the parameter No. and setting values, and need some precautions. The other parameters except below did not change the No. and setting values. Refer to relevant instruction manuals for each parameter details.

Comparison of MR-J3-A and MR-J4-A parameters

For MR-J4-A, the “deceleration to a stop function” is enabled at factory shipment. If the function is not to be used, set PA04 to “0_ _ _”.

MR-J3-A		MR-J4-A		Precaution
No.	Name	No.	Name	
PA02	Regenerative option	PA02	Regenerative option	When using the newly added regenerative options of MR-J4, change the setting value.
PA04	CN1-23 pin function selection			There is no corresponding parameter for MR-J4-A. (PD23 to PD26, PD28 can be used as substitutes)
PA05	Number of command input pulses per revolution	PA05	Number of command input pulses per revolution	Change the setting value based on the resolution of the encoder. When the PA05 setting value of J3A is 0, set PA21 of J4A (electric gear compatibility mode) to 2_ _ _ (Also, set PA06 and PA07 to the same values as MR-J3) When the PA05 setting value of J3A is not 0, set PA21 of J4A to 1_ _ _.
PA06	Electronic gear numerator	PA06	Electronic gear numerator	
PA07	Electronic gear denominator	PA07	Electronic gear denominator	
PA09	Auto tuning response	PA09	Auto tuning response	Change the setting value based on the machine resonance frequency.
PB06	Load to motor inertia ratio/load to motor mass ratio	PB06	Load to motor inertia ratio/load to motor mass ratio	The unit of this parameter is changed. (×0.1→ ×0.01) Note this change when setting values.
PB07	Model loop gain	PB07	Model loop gain	The unit of this parameter is changed. (rad/s→0.1rad/s)
PB08	Position loop gain	PB08	Position loop gain	The unit of this parameter is changed. (rad/s→0.1rad/s)
PB29	Load to motor inertia ratio/load to motor mass ratio after gain switching	PB29	Load to motor inertia ratio/load to motor mass ratio after gain switching	The unit of this parameter is changed. (×0.1→ ×0.01) Note this change when setting values.
PB30	Gain changing position loop gain	PB30	Gain changing position loop gain	The unit of this parameter is changed. (rad/s→0.1rad/s)
PC14	Analog monitor 1 output	PC14	Analog monitor 1 output	When the command pulse frequency is selected (±10V/1Mpps→ ±10V/4Mpps)
PC15	Analog monitor 2 output	PC15	Analog monitor 2 output	When the command pulse frequency is selected (±10V/1Mpps→ ±10V/4Mpps)

MR-J3-A		MR-J4-A		Precaution
No.	Name	No.	Name	
PC22	Restart after instantaneous power failure selection			Available in the future.
PC37	Analog speed command offset /Analog speed limit offset	PC37	Analog speed command offset /Analog speed limit offset	Depends on H/W. Required to change the setting value.
PC38	Analog torque command off-set/Analog torque limit offset	PC38	Analog torque command offset /Analog torque limit offset	Depends on H/W. Required to change the setting value.
PC39	Analog monitor 1 offset	PC39	Analog monitor 1 offset	Depends on H/W. Required to change the setting value.
PC40	Analog monitor 2 offset	PC40	Analog monitor 2 offset	Depends on H/W. Required to change the setting value.

MR-J3-A		MR-J4-A		Precaution
No.	Name	No.	Name	
PD03	Input signal device selection 1 (CN1-15)	PD03	Input device selection 1L	
		PD04	Input device selection 1H	
PD04	Input signal device selection 2 (CN1-16)	PD05	Input device selection 2L	
		PD06	Input device selection 2H	
PD05	Input signal device selection 3 (CN1-17)	PD07	Input device selection 3L	
		PD08	Input device selection 3H	
PD06	Input signal device selection 4 (CN1-18)	PD09	Input device selection 4L	
		PD10	Input device selection 4H	
PD07	Input signal device selection 5 (CN1-19)	PD11	Input device selection 5L	
		PD12	Input device selection 5H	
PD08	Input signal device selection 6 (CN1-41)	PD13	Input device selection 6L	
		PD14	Input device selection 6H	
PD10	Input signal device selection 8 (CN1-43)	PD17	Input device selection 8L	
		PD18	Input device selection 8H	
PD11	Input signal device selection 9 (CN1-44)	PD19	Input device selection 9L	
		PD20	Input device selection 9H	
PD12	Input signal device selection 10 (CN1-45)	PD21	Input device selection 10L	
		PD22	Input device selection 10H	
PD13	Output signal device selection 1 (CN1-22)	PD23	Output device selection 1	Setting value of 06 (DB) is added.
PD14	Output signal device selection 2 (CN1-23)	PD24	Output device selection 2	Setting value of 06 (DB) is added.
PD15	Output signal device selection 3 (CN1-24)	PD25	Output device selection 3	Setting value of 06 (DB) is added.
PD16	Output signal device selection 4 (CN1-25)	PD26	Output device selection 4	Setting value of 06 (DB) is added.
PD18	Output signal device selection 6 (CN1-49)	PD28	Output device selection 6	Setting value of 06 (DB) is added.
PD19	Input filter setting	PD29	Input filter setting	The setting values of filter are different.
PD20	Function selection D-1	PD30	Function selection D-1	
PD22	Function selection D-3	PD32	Function selection D-3	
PD24	Function selection D-5	PD34	Function selection D-5	

Comparison of MR-J3-B and MR-J4-B

For MR-J4-B, the “deceleration to a stop function” is enabled at factory shipment. If the function is not to be used, set PA04 to “0_ _ _”.

MR-J3-B		MR-J4-B		Precaution
No.	Name	No.	Name	
PA01	Control mode			J4 default: 350% enabled
PA02	Regenerative option	PA02	Regenerative option	When using the newly added regenerative options of MR-J4B, change the setting value.
PA09	Auto tuning response	PA09	Auto tuning response	Change the setting value based to the machine resonance frequency.
PB06	Load to motor inertia ratio/load to motor mass ratio	PB06	Load to motor inertia ratio/load to motor mass ratio	The unit of this parameter is changed. (×0.1→×0.01)
PB07	Model loop gain	PB07	Model loop gain	The unit of this parameter is changed. (rad/s→0.1rad/s)
PB08	Position loop gain	PB08	Position loop gain	The unit of this parameter is changed. (rad/s→0.1rad/s)
PB29	Load to motor inertia ratio/load to motor mass ratio after gain switching	PB29	Load to motor inertia ratio/load to motor mass ratio after gain switching	The unit of this parameter is changed. (×0.1→×0.01)
PB30	Position loop gain after gain switching	PB30	Position loop gain after gain switching	The unit of this parameter is changed. (rad/s→0.1rad/s)
PC11	Analog monitor 1 offset	PC11	Analog monitor 1 offset	Depends on H/W. Required to change the setting value.
PC12	Analog monitor 2 offset	PC12	Analog monitor 2 offset	Depends on H/W. Required to change the setting value.
PD15	Driver communication setting	PD15	Driver communication setting	
PD16	Driver communication setting - Master - Transmit data selection 1	PD16	Driver communication setting - Master - Transmit data selection 1	
PD17	Driver communication setting - Master - Transmit data selection 2	PD17	Driver communication setting - Master - Transmit data selection 2	
PD20	Driver communication setting - Slave - Master axis No. selection 1	PD20	Driver communication setting - Slave - Master axis No. selection 1	
PD30	Master-slave operation - Torque command coefficient on slave	PD30	Master-slave operation - Torque command coefficient on slave	
PD31	Master-slave operation - Speed limit coefficient on slave	PD31	Master-slave operation - Speed limit coefficient on slave	
PD32	Master-slave operation - Speed limit adjusted value on slave	PD32	Master-slave operation - Speed limit adjusted value on slave	