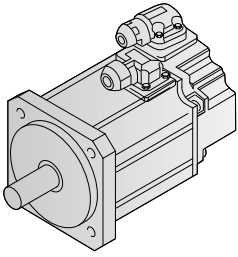
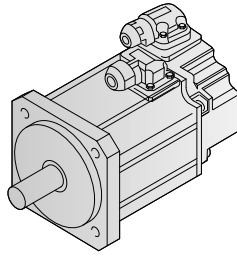


Servo Motors Model Designation

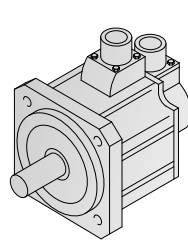
HF-MP series



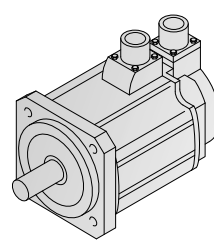
HF-KP series



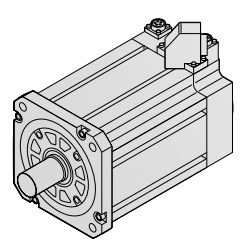
HF-SP series



HC-RP series

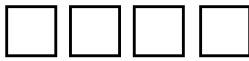


HF-JP series



Servo Motors 200 V

HF-KP



additional coding for HF-KE and HF-SE motors

Symbol	Motor series	Code	Rated output [W]	Code	Rated output [W]	Code	Rated speed [rpm]	Code	Electromagnetic brake
HC-RP	Ultra-low inertia, medium capacity	05	50	10	1000	2	2000	—	None
HF-KE	Low inertia, small capacity	1	100	15	1500	3	3000	B	●
HF-KP	Low inertia, small capacity	4	400	35	3500				
HF-MP	Ultra-low inertia, small capacity	5	500	50	5000				
HF-SE	Medium inertia, medium capacity	7	750	70	7000				
HF-SP	Medium inertia, medium capacity								

All motors conform to the following standards:
CE, UL, cUL

Example: HF-MP 05 3 B = Ultra-low inertia type with small capacity; 0.05 kW; 3000 rpm; 200 V; with electromagnetic brake

Servo Motors 400 V

HF-SP



Symbol	Motor series	Code	Rated output [W]	Code	Rated output [W]	Code	Rated speed [rpm]	Code	Rated speed [rpm]	Code	Electromagnetic brake
HF-JP	Low inertia, medium capacity	5	500	50	5000	1M	1500	4	400 V type	—	None
HF-SP	Medium inertia, medium capacity	10	1000	70	7000	2	2000	B	●		
HA-LP	Medium-inertia, high capacity	15	1500	11k	11000	3	3000				
		20	2000	15k	15000						
		35	3500	22k	22000						

All motors conform to the following standards:
CE, UL, cUL

Example: HF-SP 70 2 4B = Medium inertia type with medium capacity; 7 kW; 2000 rpm; 400 V; with electromagnetic brake

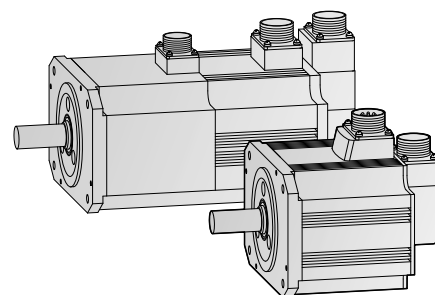
General note: The above tables show the motor model name break-down. Not all combinations are possible. Please refer to the motor specifications table on page 13ff

Servo Motor Features and Typical Applications

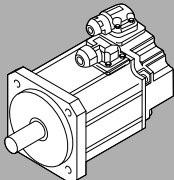
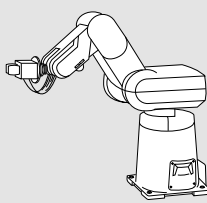
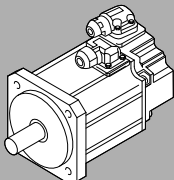
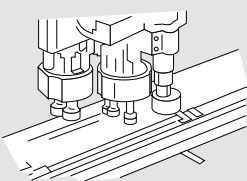
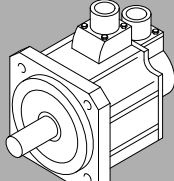
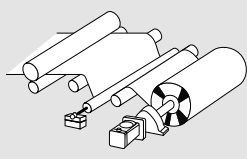
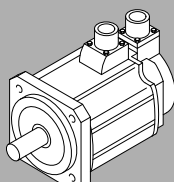
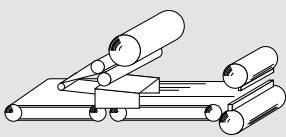
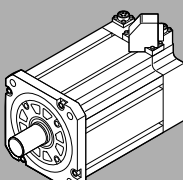
Absolute high-resolution encoder as standard equipment

Inclusion of an absolute position detection system eliminates the need for a homing sequence, approximate DOG and other sensors, helping to reduce time and enhance reliability. With these motors high performance and safety at low speed is ensured.

With Mitsubishi's original absolute mode, an absolute system can be configured using conventional I/O even with pulse-train control.



Overview

Model designation	Features	Application example
K 	Low inertia Larger motor inertia moment makes this unit well suited for machines with fluctuating load inertia moment or machines with low rigidity such as conveyors.	<ul style="list-style-type: none"> ● Conveyors ● Food preparation machinery ● Printers ● Small loaders and unloaders ● Small robots and component assembly devices ● Small X-Y tables ● Small press feeders  Small robots
M 	Ultra low inertia Small motor inertia moment makes this unit well suited for high-dynamic positioning operations with extra small cycle times.	<ul style="list-style-type: none"> ● Inserters, mounters, bonders ● Printed board hole openers ● In-circuit testers ● Label printers ● Knitting and embroidery machinery ● Ultra-small robots and robot tips  Inserters, mounters, bonders
S 	Medium inertia Stable control is performed from low to high speeds, enabling this unit to handle a wide range of applications (e.g. direct connection to ball screw components).	<ul style="list-style-type: none"> ● Conveyor machinery ● Specialised machinery ● Robots ● Loaders and unloaders ● Winders and tension devices ● Turrets ● X-Y tables ● Test devices  Winders and tension devices
R 	Low inertia A compact sized low-inertia moment model with medium capacity. Well suited for high-frequency operation.	<ul style="list-style-type: none"> ● Roll feeders ● Loaders and unloaders ● High-frequency conveyor machinery  Wrapping machinery
J 	Low Inertia (400 V) A 400 V Servo Motor for the MELSERVO-J3 Series for a power range up to 5 kW with low inertia and high speed. It has a compact size, is equipped with high resolution encoder and is compatible to global standards.	<ul style="list-style-type: none"> ● Food and Packaging ● Printing machine ● Pick up robot for Injection molding machine ● Palletizing machine ● General machine which require High speed and High frequency

Note: Other types of motors are available on request.

Servo Motor Specifications and Matching Amplifiers

The possible combinations of servo amplifiers and servo motors are listed in the table below.

Details of the braked version motors is given on page 22. The detailed specifications of all servo motors are listed on the following pages.

Motors for MR-ES series servo amplifiers

Motor series	Rated speed [r/min]	Rated output capacity [kW]	Servo motor model	Servo motor type		Amplifier pairing MR-E						Reference page	
				Voltage	Protective structure	10A 10AG	20A 20AG	40A 40AG	70A 70AG	100A 100AG	200A 200AG		
K	3000	0.1	HF-KE13W1-S100	200 V AC	IP55	●							13
		0.2	HF-KE23KW1-S100				●						
		0.4	HF-KE43KW1-S100					●					
		0.75	HF-KE73KW1-S100						●				
S	2000	0.5	HF-SE2KW1-S100	200 V AC	IP65				●			14	
		1.0	HF-SE102KW1-S100						●				
		1.5	HF-SE152KW1-S100							●			
		2.0	HF-SE202KW1-S100							●			

Motors for MR-J3 series servo amplifiers

Motor series 200 V	Rated speed [r/min]	Rated output capacity [kW]	Servo motor model	Servo motor type		Amplifier pairing MR-J3										Reference page
				Voltage	Protective structure	10A/B 10T	20A/B 20T	40A/B 40T	60A/B 60T	70A/B 70T	100A/B 100T	200A/B 200T	350A/B 350T	500A/B 500T	700A/B 700T	
K	3000	0.05	HF-KP053	200 V AC	IP65	●										15
		0.1	HF-KP13			●										
		0.2	HF-KP23				●									
		0.4	HF-KP43					●								
		0.75	HF-KP73						●							
M	3000	0.05	HF-MP053	200 V AC	IP65	●									16	
		0.1	HF-MP13			●										
		0.2	HF-MP23				●									
		0.4	HF-MP43					●								
		0.75	HF-MP73						●							
R	3000	2.0	HC-RP103	200 V AC	IP65						●			17		
		2.0	HC-RP153							●						
		3.5	HC-RP203								●					
		5.0	HC-RP353									●				
		5.0	HC-RP503									●				
S	2000	0.5	HF-SP52	200 V AC	IP67				●					18		
		1.0	HF-SP102						●							
		1.5	HF-SP152							●						
		2.0	HF-SP202							●						
		3.5	HF-SP352								●					
		5.0	HF-SP502									●				

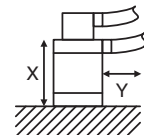
Motor series 400 V	Rated speed [r/min]	Rated output capacity [kW]	Servo motor model	Servo motor type		60A4/B4 60T4	100A4/B4 100T4	200A4/B4 200T4	350A4/B4 350T4	500A4/B4 500T4	700A4/B4 700T4	11KA4/B4 11KT4	15KA4/B4 15KT4	22KA4/B4 22KT4	Reference page
				Voltage	Protective structure										
S	2000	0.5	HF-SP524	400 V AC	IP67	●								19	
		1.0	HF-SP1024				●								
		1.5	HF-SP1524					●							
		2.0	HF-SP2024						●						
		3.5	HF-SP3524							●					
		5.0	HF-SP5024								●				
J	1500	11	HF-JP11K1M4	400 V AC	IP67						● ^①			20	
		15	HF-JP15K1M4								● ^①				
L	2000	0.5	HF-JP534	400 V AC	IP67	●								21	
		0.75	HF-JP734				●								
		1.0	HF-JP1034					●							
		1.5	HF-JP1534						●						
		2.0	HF-JP2034							●					
		3.3<3.5>	HF-JP3534								●				

① Use a dedicated servo amplifier MR-J3-11KA4/B4/T4-LR or MR-J3-15KA4/B4/T4-LR with an enclosed regenerative resistor for HF-JP11K1M4 or HF-JP15K1M4. These servo motors cannot be used with any other servo amplifier without "LR". Note: Other types of motors are available on request.

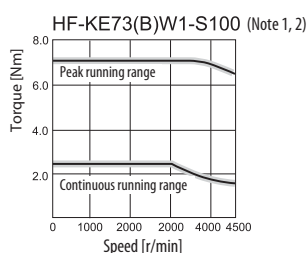
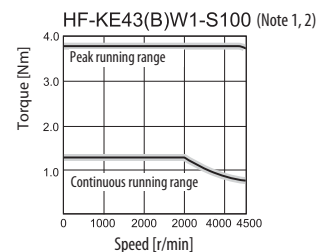
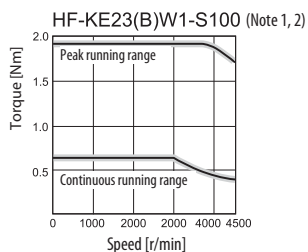
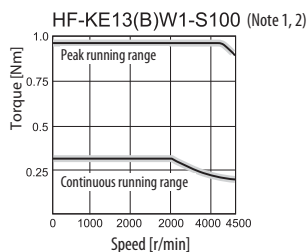
HF-KE(B) Series Servo Motor Specifications (200 V Type)

Servo motor model	HF-KE13(B)W1-S100 ^⑥	HF-KE23(B)KW1-S100 ^⑥	HF-KE43(B)KW1-S100 ^⑥	HF-KE73(B)KW1-S100 ^⑥	
Servo amplifier model	MR-E-10A/AG-QW003	MR-E-20A/AG-QW003	MR-E-40A/AG-QW003	MR-E-70A/AG-QW003	
Power facility capacity [kVA] ^①	0.3	0.5	0.9	1.3	
Continuous characteristics	rated output [kW]	0.1	0.2	0.4	0.75
	rated torque [Nm]	0.32	0.64	1.3	2.4
Maximum torque [Nm]	0.95	1.9	3.8	7.2	
Rated rotation speed [rpm]	3000	3000	3000	3000	
Maximum rotation speed [rpm]	4500	4500	4500	4500	
Permissible instantaneous rotation speed [rpm]	5175	5175	5175	5175	
Power rate at continuous rated torque [kW/s]	11.5	16.9	38.6	39.9	
Rated current [A]	0.8	1.4	2.7	5.2	
Maximum current [A]	2.4	4.2	8.1	15.6	
Moment of inertia J [$\times 10^{-4}$ kg m ²]	standard	0.088	0.24	0.42	1.43
	with electromagnetic brake	0.090	0.31	0.50	1.63
Regeneration braking frequency [1/min] ^{②③}	④	④	249	140	
Recommended load/motor inertia ratio	Less than 15 times the servo motor's inertia moment ^⑤				
Speed/position detector	Incremental encoder (resolution servo motor rotation: 131072 p/rev.)				
Structure	Totally enclosed, non-ventilated (protection rating: IP55) ^⑦				
Environment	ambient temperature	Operation: 0–40 °C (no freezing); Storage: -15–70 °C (no freezing)			
	ambient humidity	Operation: 80 % RH max. (no condensation); Storage: 90 % RH max. (no condensation)			
	atmosphere	Indoors (no direct sunlight); no corrosive gas, no inflammable gas, no oil mist, no dust			
	elevation/vibration ^⑧	1000 m or less above sea level; X: 49 m/s ² , Y: 49 m/s ²			
Weight [kg]	standard motor ^⑥	0.56	0.94	1.5	2.9
Order information	(without brake) Art. no.	210940	213081	213082	213083

- ① The power facility capacity varies depending on the power supply's impedance.
- ② The regenerative braking frequency shown is the permissible frequency for decelerating a stand-alone motor from rated rpm to a stop. When under load, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated rpm is exceeded, the regenerative brake frequency is inversely proportional to the square of (operating speed/rated speed). When the operating speed varies frequently or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating. The heat should not exceed the tolerable regenerative power (W). Refer to the section "OPTIONS AND PERIPHERAL EQUIPMENT" in this catalog for details on the tolerable regenerative power (W). Optimal regenerative resistor varies for each system. Select the most suitable regenerative resistor by using the capacity selection software.
- ③ The regenerative braking frequency of the 600 W or smaller servo amplifier may fluctuate due to the affect of the power voltage since the energy charged by the electrolytic capacitor in the servo amplifier is large.
- ④ There are no limits on regeneration frequency as long as the effective torque is within the rated torque range. However, the load/motor of inertia moment ratio must be 15 times or less.
- ⑤ Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
- ⑥ For servo motors with electromagnetic brake please refer to page 22.
- ⑦ The shaft-through portion and connector for cable terminal are excluded.
- ⑧ The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket in the opposite direction of the motor shaft). Fretting of the bearing occurs easily when the motor stops, so maintain vibration at approximately one-half of the allowable value.



HF-KE Series Servo Motor Torque Characteristics

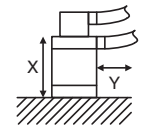


- Notes:
 1. ——— : For 3-phase 200 V AC.
 2. ——— : For 1-phase 230 V AC.

HF-SE(B) Series Servo Motor Specifications (200 V Type)

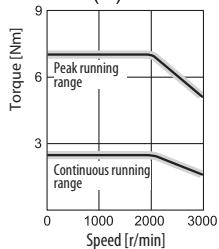
Servo motor model	HF-SE52(B)KW1-S100 ^⑥	HF-SE102(B)KW1-S100 ^⑥	HF-SE152(B)KW1-S100 ^⑥	HF-SE202(B)KW1-S100 ^⑥	
Servo amplifier model	MR-E-70A/AG-QW003	MR-E-100A/AG-QW003	MR-E-200A/AG-QW003	MR-E-200A/AG-QW003	
Power facility capacity [kVA] ^①	1.0	1.7	2.5	3.5	
Continuous characteristics	rated output [kW]	0.5	1.0	1.5	2.0
	rated torque [Nm]	2.39	4.77	7.16	9.55
Maximum torque [Nm]	7.16	14.3	21.5	28.6	
Rated rotation speed [rpm]	2000	2000	2000	2000	
Maximum rotation speed [rpm]	3000	3000	3000	3000	
Permissible instantaneous rotation speed [rpm]	3450	3450	3450	3450	
Power rate at continuous rated torque [kW/s]	9.34	19.2	28.8	23.8	
Rated current [A]	2.9	5.3	8.0	10	
Maximum current [A]	8.7	15.9	24	30	
Moment of inertia J [$\times 10^{-4}$ kg m ²]	standard	6.1	11.9	17.8	38.3
	with electromagnetic brake	8.3	14.0	20.0	47.9
Regeneration braking frequency [1/min] ^{②③}	120	62	152	71	
Recommended load/motor inertia ratio	Less than 15 times the servo motor's inertia moment ^④				
Speed/position detector	Incremental encoder (resolution servo motor rotation: 131072 p/rev.)				
Structure	Totally enclosed, non-ventilated (protection rating: IP65) ^⑤				
Environment	ambient temperature	Operation: 0–40 °C (no freezing); Storage: -15–70 °C (no freezing)			
	ambient humidity	Operation: 80 % RH max. (no condensation); Storage: 90 % RH max. (no condensation)			
	atmosphere	Indoors (no direct sunlight); no corrosive gas, no inflammable gas, no oil mist, no dust			
	elevation/vibration ^⑦	1000 m or less above sea level; X: 24.5 m/s ² , Y: 24.5 m/s ²		1000 m or less above sea level; X: 24.5 m/s ² , Y: 49 m/s ²	
Weight [kg]	standard motor ^⑥	4.8	6.5	8.3	12
Order information	(without brake) Art. no.	213084	213085	213086	213087

- ① The power facility capacity varies depending on the power supply's impedance.
- ② The regenerative braking frequency shown is the permissible frequency for decelerating a stand-alone motor from rated rpm to a stop. When under load, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated rpm is exceeded, the regenerative brake frequency is inversely proportional to the square of (operating speed/rated speed). When the operating speed varies frequently or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating. The heat should not exceed the tolerable regenerative power (W). Refer to the section "OPTIONS AND PERIPHERAL EQUIPMENT" in this catalog for details on the tolerable regenerative power (W). Optimal regenerative resistor varies for each system. Select the most suitable regenerative resistor by using the capacity selection software.
- ③ The regenerative braking frequency of the 600 W or smaller servo amplifier may fluctuate due to the affect of the power voltage since the energy charged by the electrolytic capacitor in the servo amplifier is large.
- ④ Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
- ⑤ The shaft-through portion is excluded.
- ⑥ For servo motors with electromagnetic brake please refer to page 22.
- ⑦ The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket in the opposite direction of the motor shaft). Fretting of the bearing occurs easily when the motor stops, so maintain vibration at approximately one-half of the allowable value.

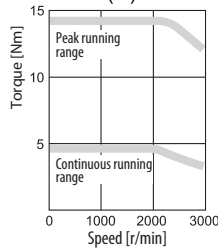


HF-SE Series Servo Motor Torque Characteristics

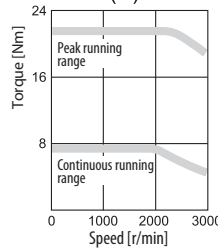
HF-SE52(B)JW1-S100 (Note 1, 2)



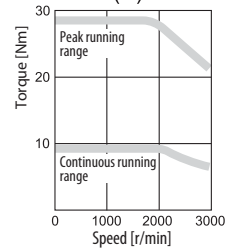
HF-SE102(B)JW1-S100 (Note 1)



HF-SE152(B)JW1-S100 (Note 1)



HF-SE202(B)JW1-S100 (Note 1)

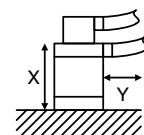


- Notes:
 1. — : For 3-phase 200 V AC.
 2. - - - : For 1-phase 230 V AC.

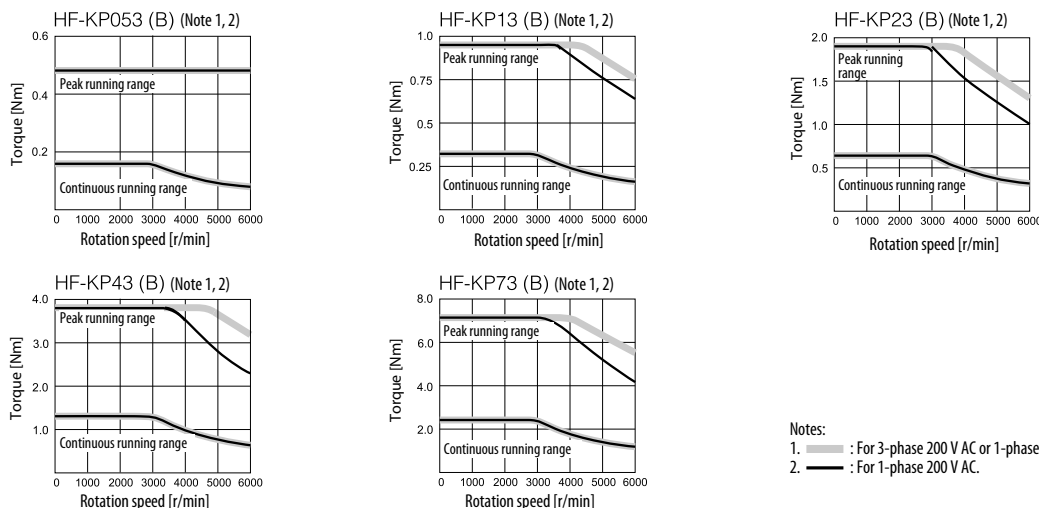
HF-KP(B) Series Servo Motor Specifications (200 V Type)

Servo motor model	HF-KP053(B) ⑥	HF-KP13(B) ⑥	HF-KP23(B) ⑥	HF-KP43(B) ⑥	HF-KP73(B) ⑥	
Servo amplifier model	MR-J3-10A/B/T	MR-J3-10A/B/T	MR-J3-20A/B/T	MR-J3-40A/B/T	MR-J3-70A/B/T	
Power facility capacity [kVA] ①	0.3	0.3	0.5	0.9	1.3	
Continuous characteristics	rated output [kW]	0.05	0.1	0.2	0.4	0.75
	rated torque [Nm]	0.16	0.32	0.64	1.3	2.4
Maximum torque [Nm]	0.48	0.95	1.9	3.8	7.2	
Rated rotation speed [rpm]	3000	3000	3000	3000	3000	
Maximum rotation speed [rpm]	6000	6000	6000	6000	6000	
Permissible instantaneous rotation speed [rpm]	6900	6900	6900	6900	6900	
Power rate at continuous rated torque [kW/s]	4.87	11.5	16.9	38.6	39.9	
Rated current [A]	0.9	0.8	1.4	2.7	5.2	
Maximum current [A]	2.7	2.4	4.2	8.1	15.6	
Moment of inertia J [$\times 10^{-4}$ kg m ²] ②	standard	0.052	0.088	0.24	0.42	1.43
	with electromagnetic brake	0.054	0.090	0.31	0.50	1.63
Regeneration braking frequency [1/min]	② (a)	② (b)	448	249	140	
Recommended load/motor inertia ratio ③	15	15	24	22	15	
Speed/position detector	18-bit encoder (resolution per encoder/servo motor rotation: 262144 p/rev.)					
Structure	Totally enclosed, non-ventilated (protection rating: IP65) ④					
Environment	ambient temperature	Operation: 0–40 °C (no freezing); Storage: -15–70 °C (no freezing)				
	ambient humidity	Operation: 80 % RH max. (no condensation); Storage: 90 % RH max. (no condensation)				
	atmosphere	Indoors (no direct sunlight); no corrosive gas, no inflammable gas, no oil mist, no dust				
	elevation/vibration ⑤	1000 m or less above sea level; X: 49 m/s ² , Y: 49 m/s ²				
Weight [kg]	standard motor ⑥	0.35	0.56	0.94	1.5	2.9
Order information	(without brake) Art. no.	161507	160211	161508	161509	161510

- ① The power facility capacity varies depending on the power supply's impedance.
- ② The regenerative braking frequency shown is the permissible frequency for decelerating a stand-alone motor from rated rpm to a stop. When under load, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated rpm is exceeded, the regenerative brake frequency is inversely proportional to the square of (operating speed/rated speed). When the operating speed varies frequently or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating. The heat should not exceed the tolerable regenerative power (W). Refer to the section "OPTIONS AND PERIPHERAL EQUIPMENT" in this catalog for details on the tolerable regenerative power (W). Optimal regenerative resistor varies for each system. Select the most suitable regenerative resistor by using the capacity selection software.
- (a)/(b) When a motor decelerates to a stop from the rated speed, the regenerative frequency will not be limited if the effective torque is within the rated torque range. When a motor decelerates to a stop from the maximum speed, the regenerative frequency will not be limited if the load inertia moment is (a) 26-fold (b) 15-fold or less and the effective torque is within the rated torque range.
- ③ Please contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table
- ④ The shaft-through portion is excluded.
- ⑤ The vibration direction is shown in the right side diagram. The numeric value indicates the maximum value of the component (commonly the bracket on the antiload side). Fretting of the bearing occurs easily when the motor stops, so please maintain vibration to approximately one-half the allowable value.
- ⑥ For servo motors with electromagnetic brake please refer to page 22.



HF-KP Series Servo Motor Torque Characteristics

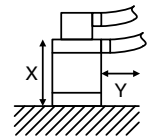


- Notes:
 1. — : For 3-phase 200 V AC or 1-phase 230 V AC.
 2. - - - : For 1-phase 200 V AC.

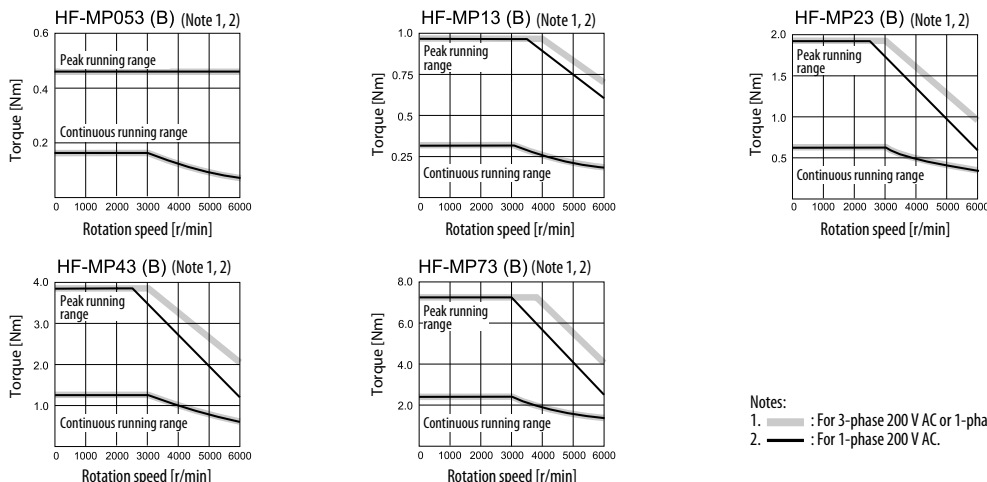
HF-MP(B) Series Servo Motor Specifications (200 V Type)

Servo motor model	HF-MP053(B) ⑥	HF-MP13(B) ⑥	HF-MP23(B) ⑥	HF-MP43(B) ⑥	HF-MP73(B) ⑥	
Servo amplifier model	MR-J3-10A/B/T	MR-J3-10A/B/T	MR-J3-20A/B/T	MR-J3-40A/B/T	MR-J3-70A/B/T	
Power facility capacity [kVA] ①	0.3	0.3	0.5	0.9	1.3	
Continuous characteristics	rated output [kW]	0.05	0.1	0.2	0.4	0.75
	rated torque [Nm]	0.16	0.32	0.64	1.3	2.4
Maximum torque [Nm]	0.48	0.95	1.9	3.8	7.2	
Rated rotation speed [rpm]	3000	3000	3000	3000	3000	
Maximum rotation speed [rpm]	6000	6000	6000	6000	6000	
Permissible instantaneous rotation speed [rpm]	6900	6900	6900	6900	6900	
Power rate at continuous rated torque [kW/s]	13.3	31.7	46.1	111.6	95.5	
Rated current [A]	1.1	0.9	1.6	2.7	5.6	
Maximum current [A]	3.2	2.8	5.0	8.6	16.7	
Moment of inertia J [$\times 10^{-4}$ kg m ²] ②	standard	0.019	0.032	0.088	0.15	0.60
	with electromagnetic brake	0.025	0.039	0.12	0.18	0.70
Regeneration braking frequency [1/min]	② (a)	② (b)	1570	920	420	
Recommended load/motor inertia ratio	Less than 30 times the servo motors inertia moment ③					
Speed/position detector	18-bit encoder (resolution per encoder/servo motor rotation: 262144 p/rev.)					
Structure	Totally enclosed, non-ventilated (protection rating: IP65) ④					
Environment	ambient temperature	Operation: 0–40 °C (no freezing); Storage: -15–70 °C (no freezing)				
	ambient humidity	Operation: 80 % RH max. (no condensation); Storage: 90 % RH max. (no condensation)				
	atmosphere	Indoors (no direct sunlight); no corrosive gas, no inflammable gas, no oil mist, no dust				
	elevation/vibration ⑤	1000 m or less above sea level; X: 49 m/s ² , Y: 49 m/s ²				
Weight [kg]	standard motor ⑥	0.35	0.56	0.94	1.5	2.9
Order information	(without brake) Art. no.	161515	161516	161517	161518	161519

- ① The power facility capacity varies depending on the power supply's impedance.
- ② The regenerative braking frequency shown is the permissible frequency for decelerating a stand-alone motor from rated rpm to a stop. When under load, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated rpm is exceeded, the regenerative brake frequency is inversely proportional to the square of (operating speed/rated speed). When the operating speed varies frequently or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating. The heat should not exceed the tolerable regenerative power (W). Refer to the section "OPTIONS AND PERIPHERAL EQUIPMENT" in this catalog for details on the tolerable regenerative power (W). Optimal regenerative resistor varies for each system. Select the most suitable regenerative resistor by using the capacity selection software.
- (a)/(b) When a motor decelerates to a stop from the rated speed, the regenerative frequency will not be limited if the effective torque is within the rated torque range. When a motor decelerates to a stop from the maximum speed, the regenerative frequency will not be limited if the load inertia moment is (a) 26-fold (b) 15-fold or less and the effective torque is within the rated torque range.
- ③ Please contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table
- ④ The shaft-through portion is excluded.
- ⑤ The vibration direction is shown in the right side diagram. The numeric value indicates the maximum value of the component (commonly the bracket on the antiload side). Fretting of the bearing occurs easily when the motor stops, so please maintain vibration to approximately one-half the allowable value.
- ⑥ For servo motors with electromagnetic brake please refer to page 22.



HF-MP Series Servo Motor Torque Characteristics

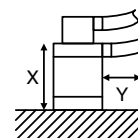


Notes:
 1. — : For 3-phase 200 V AC or 1-phase 230 V AC.
 2. — : For 1-phase 200 V AC.

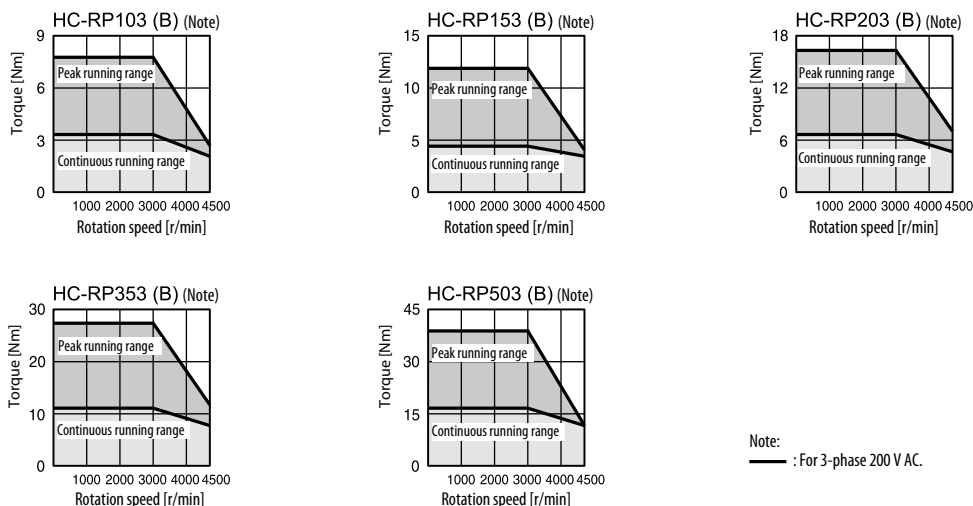
HC-RP(B) Series Servo Motor Specifications (200 V Type)

Servo motor model	HC-RP103(B) ⑥	HC-RP153(B) ⑥	HC-RP203(B) ⑥	HC-RP353(B) ⑥	HC-RP503(B) ⑥		
Servo amplifier model	MR-J3-200A/B/T	MR-J3-200A/B/T	MR-J3-350A/B/T	MR-J3-500A/B/T	MR-J3-500A/B/T		
Power facility capacity [kVA] ①	1.7	2.5	3.5	5.5	7.5		
Continuous characteristics	rated output [kW]	1	1.5	2	3.5	5.0	
	rated torque [Nm]	3.18	4.78	6.37	11.1	15.9	
Maximum torque [Nm]	7.95	11.9	15.9	27.9	39.7		
Rated rotation speed [rpm]	3000	3000	3000	3000	3000		
Maximum rotation speed [rpm]	4500	4500	4500	4500	4500		
Permissible instantaneous rotation speed [rpm]	5175	5175	5175	5175	5175		
Power rate at continuous rated torque [kW/s]	67.4	120	176	150	211		
Rated current [A]	6.1	8.8	14	23	28		
Maximum current [A]	18	23	37	58	70		
Regeneration braking frequency [1/min] ②	1090	860	710	174	125		
Moment of inertia J [$\times 10^{-4}$ kg m ²] ②	1.5	1.9	2.3	8.3	12		
Recommended load/motor inertia ratio	Less than 5 times the servo motors inertia moment ③						
Speed/position detector	Resolution per encoder/servo motor rotation: 262144 p/rev (18-bit)						
Structure	Totally enclosed, non-ventilated (protection degree: IP65) ④						
Environment	ambient temperature	Operation: 0–40 °C (no freezing); Storage: -15–70 °C (no freezing)					
	ambient humidity	Operation: 80 % RH max. (no condensation); Storage: 90 % RH max. (no condensation)					
	atmosphere	Indoors (no direct sunlight); no corrosive gas, no inflammable gas, no oil mist, no dust					
	elevation/ vibration ⑤ ③	1000 m or less above sea level; X: 24.5 m/s ² , Y: 24.5 m/s ²					
Weight [kg]	standard motor ⑥	3.9	5.0	6.2	12	17	
Order information	(without brake)	Art. no.	168667	168668	168669	168670	168671

- ① The power facility capacity varies depending on the power supply's impedance.
- ② The regenerative braking frequency shown is the permissible frequency for decelerating a stand-alone motor from rated rpm to a stop. When under load, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated rpm is exceeded, the regenerative brake frequency is inversely proportional to the square of (operating speed/rated speed). When the operating speed varies frequently or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating. The heat should not exceed the tolerable regenerative power (W). Refer to the section "OPTIONS AND PERIPHERAL EQUIPMENT" in this catalog for details on the tolerable regenerative power (W). Optimal regenerative resistor varies for each system. Select the most suitable regenerative resistor by using the capacity selection software.
- ③ Please contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
- ④ The shaft-through portion is excluded.
- ⑤ The vibration direction is shown in the right side diagram. The numeric value indicates the maximum value of the component (commonly the bracket on the antiload side). Fretting of the bearing occurs easily when the motor stops, so please maintain vibration to approximately one-half the allowable value.
- ⑥ For servo motors with electromagnetic brake please refer to page 22.



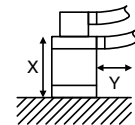
HC-RP Series Servo Motor Torque Characteristics



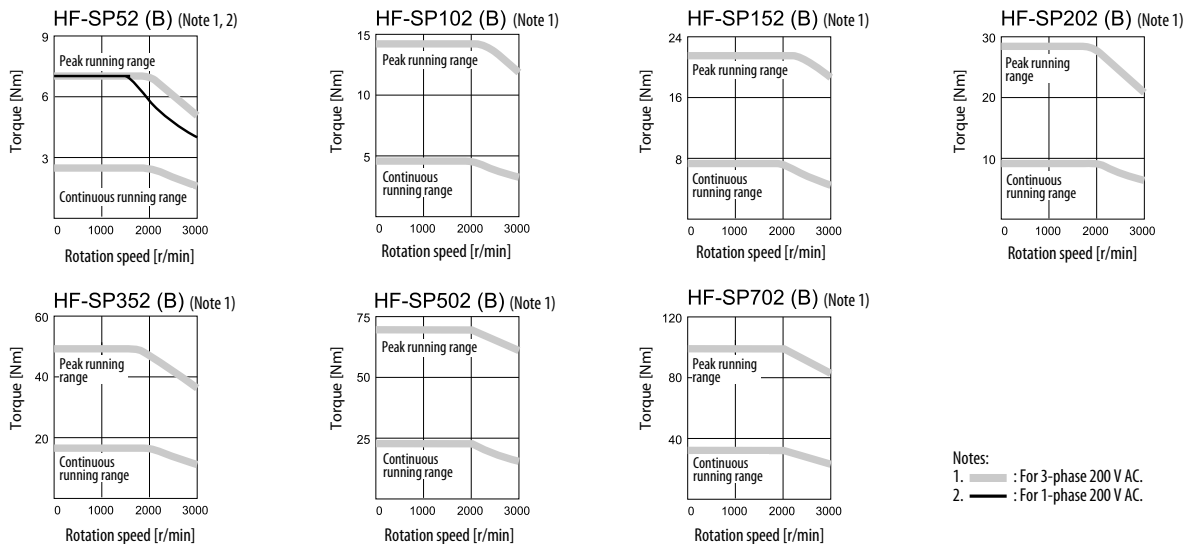
HF-SP(B) Series Servo Motor Specifications (200 V Type)

Servo motor model	HF-SP52(B) ①	HF-SP102(B) ①	HF-SP152(B) ①	HF-SP202(B) ①	HF-SP352(B) ①	HF-SP502(B) ①	HF-SP702(B) ①		
Servo amplifier model	MR-J3-60A/B/T	MR-J3-100A/B/T	MR-J3-200A/B/T	MR-J3-200A/B/T	MR-J3-350A/B/T	MR-J3-500A/B/T	MR-J3-700A/B/T		
Power facility capacity [kVA] ①	1.0	1.7	2.5	3.5	5.5	7.5	10		
Continuous characteristics	rated output [kW]	0.5	1.0	1.5	2.0	3.5	7.0		
	rated torque [Nm]	2.39	4.77	7.16	9.55	16.7	33.4		
Maximum torque [Nm]	7.16	14.3	21.5	28.6	50.1	71.6	100		
Rated rotation speed [rpm]	2000	2000	2000	2000	2000	2000	2000		
Maximum rotation speed [rpm]	3000	3000	3000	3000	3000	3000	3000		
Permissible instantaneous rotation speed [rpm]	3450	3450	3450	3450	3450	3450	3450		
Power rate at continuous rated torque [kW/s]	9.34	19.2	28.8	23.8	37.2	58.8	72.5		
Rated current [A]	2.9	5.3	8.0	10	16	24	33		
Maximum current [A]	8.7	15.9	24	30	48	72	99		
Moment of inertia J [$\times 10^{-4}$ kg m ²] ②	standard	6.1	11.9	17.8	38.3	75.0	154		
	with electromagnetic brake	8.3	14.0	20.0	47.9	84.7	164		
Regeneration braking frequency [1/min]	60	62	152	71	33	37	31		
Recommended load/ motor inertia ratio	Less than 15 times the servo motors inertia moment ③								
Speed/position detector	18-bit encoder (resolution per encoder/servo motor rotation: 262144 p/rev.)								
Structure	Totally enclosed, non-ventilated (protection rating: IP67) ④								
Environment	ambient temperature	Operation: 0–40 °C (no freezing); Storage: -15–70 °C (no freezing)							
	ambient humidity	Operation: 80 % RH max. (no condensation); Storage: 90 % RH max. (no condensation)							
	atmosphere	Indoors (no direct sunlight); no corrosive gas, no inflammable gas, no oil mist, no dust							
	elevation/vibration ⑤	1000 m or less above sea level; X: 24.5 m/s ² , Y: 24.5 m/s ²		1000 m or less above sea level; X: 24.5 m/s ² , Y: 49 m/s ²		1000 m or less above sea level; X: 24.5 m/s ² , Y: 29.4 m/s ²			
Weight [kg]	standard motor ⑥	4.8	6.5	8.3	12	19	22	32	
Order information	(without brake)	Art. no.	161525	161526	161527	161528	161529	161530	161531

- ① The power facility capacity varies depending on the power supply's impedance.
- ② The regenerative braking frequency shown is the permissible frequency for decelerating a stand-alone motor from rated rpm to a stop. When under load, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated rpm is exceeded, the regenerative brake frequency is inversely proportional to the square of (operating speed/rated speed). When the operating speed varies frequently or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating. The heat should not exceed the tolerable regenerative power (W). Refer to the section "OPTIONS AND PERIPHERAL EQUIPMENT" in this catalog for details on the tolerable regenerative power (W). Optimal regenerative resistor varies for each system. Select the most suitable regenerative resistor by using the capacity selection software.
- ③ Please contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table
- ④ The shaft-through portion is excluded.
- ⑤ The vibration direction is shown in the right side diagram. The numeric value indicates the maximum value of the component (commonly the bracket on the antiload side). Fretting of the bearing occurs easily when the motor stops, so please maintain vibration to approximately one-half the allowable value.
- ⑥ For servo motors with electromagnetic brake please refer to page 22.



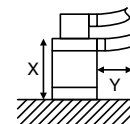
HF-SP Series Servo Motor Torque Characteristics



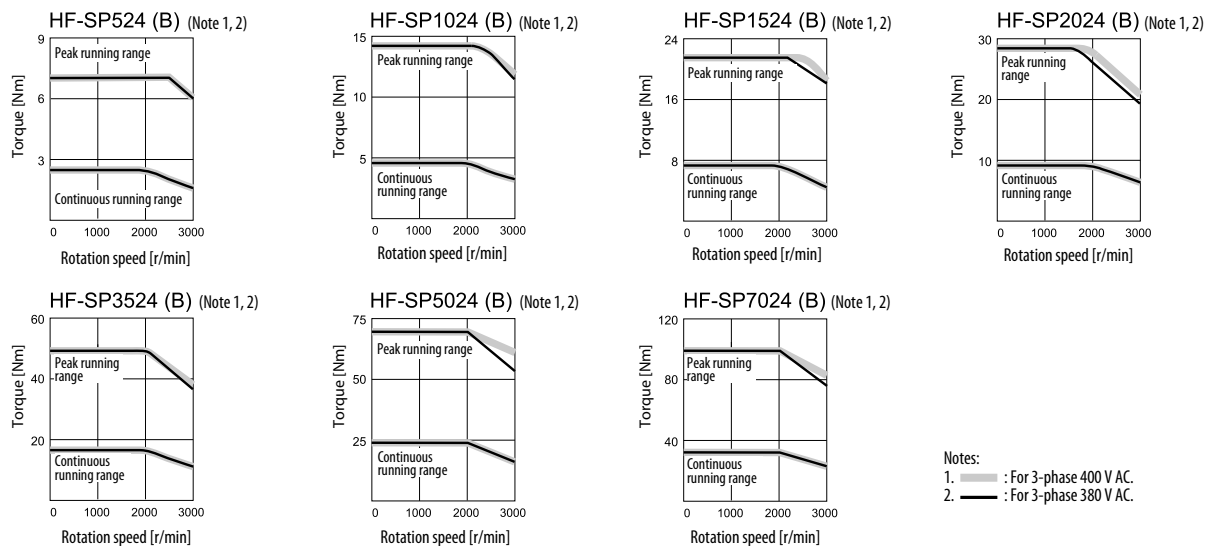
HF-SP(B) Series Servo Motor Specifications (400 V Type)

Servo motor model	HF-SP524(B) ⑥	HF-SP1024(B) ⑥	HF-SP1524(B) ⑥	HF-SP2024(B) ⑥	HF-SP3524(B) ⑥	HF-SP5024(B) ⑥	HF-SP7024(B) ⑥		
Servo amplifier model	MR-J3-60A4/B4/T4	MR-J3-100A4/B4/T4	MR-J3-200A4/B4/T4	MR-J3-200A4/B4/T4	MR-J3-350A4/B4/T4	MR-J3-500A4/B4/T4	MR-J3-700A4/B4/T4		
Power facility capacity [kVA] ①	1.0	1.7	2.5	3.5	5.5	7.5	10		
Continuous characteristics	rated output [kW]	0.5	1.0	1.5	2.0	3.5	5.0		
	rated torque [Nm]	2.39	4.77	7.16	9.55	16.7	23.9		
Maximum torque [Nm]	7.16	14.3	21.5	28.6	50.1	71.6	100		
Rated rotation speed [rpm]	2000	2000	2000	2000	2000	2000	2000		
Maximum rotation speed [rpm]	3000	3000	3000	3000	3000	3000	3000		
Permissible instantaneous rotation speed [rpm]	3450	3450	3450	3450	3450	3450	3450		
Power rate at continuous rated torque [kW/s]	9.34	19.2	28.8	23.8	37.2	58.8	72.5		
Rated current [A]	1.5	2.9	4.1	5	8.4	12	16		
Maximum current [A]	4.5	8.7	12	15	25	36	48		
Moment of inertia J [$\times 10^{-4}$ kg m ²] ②	standard	6.1	11.9	17.8	38.3	75.0	154		
	with electromagnetic brake	8.3	14.0	20.0	47.9	84.7	164		
Regeneration braking frequency [1/min]	90	46	154	72	37	34	28		
Recommended load/ motor inertia ratio	Less than 15 times the servo motors inertia moment ③								
Speed/position detector	18-bit encoder (resolution per encoder/servo motor rotation: 262144 p/rev.)								
Structure	Totally enclosed, non-ventilated (protection rating: IP67) ④								
Environment	ambient temperature	Operation: 0–40 °C (no freezing); Storage: -15–70 °C (no freezing)							
	ambient humidity	Operation: 80 % RH max. (no condensation); Storage: 90 % RH max. (no condensation)							
	atmosphere	Indoors (no direct sunlight); no corrosive gas, no inflammable gas, no oil mist, no dust							
	elevation/vibration ⑤	1000 m or less above sea level; X: 24.5 m/s ² , Y: 24.5 m/s ²		1000 m or less above sea level; X: 24.5 m/s ² , Y: 49 m/s ²		1000 m or less above sea level; X: 24.5 m/s ² , Y: 29.4 m/s ²			
Weight [kg]	standard motor ⑥	4.8	6.7	8.5	13	19	22		
Order information	(without brake)	Art. no.	192042	192043	192054	192055	192056	192057	192058

- ① The power facility capacity varies depending on the power supply's impedance.
- ② The regenerative braking frequency shown is the permissible frequency for decelerating a stand-alone motor from rated rpm to a stop. When under load, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated rpm is exceeded, the regenerative brake frequency is inversely proportional to the square of (operating speed/rated speed). When the operating speed varies frequently or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating. The heat should not exceed the tolerable regenerative power (W). Refer to the section "OPTIONS AND PERIPHERAL EQUIPMENT" in this catalog for details on the tolerable regenerative power (W). Optimal regenerative resistor varies for each system. Select the most suitable regenerative resistor by using the capacity selection software.
- ③ Please contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table
- ④ The shaft-through portion is excluded.
- ⑤ The vibration direction is shown in the right side diagram. The numeric value indicates the maximum value of the component (commonly the bracket on the antiload side). Fretting of the bearing occurs easily when the motor stops, so please maintain vibration to approximately one-half the allowable value.
- ⑥ For servo motors with electromagnetic brake please refer to page 22.



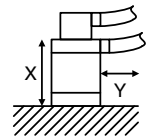
HF-SP Series Servo Motor Torque Characteristics



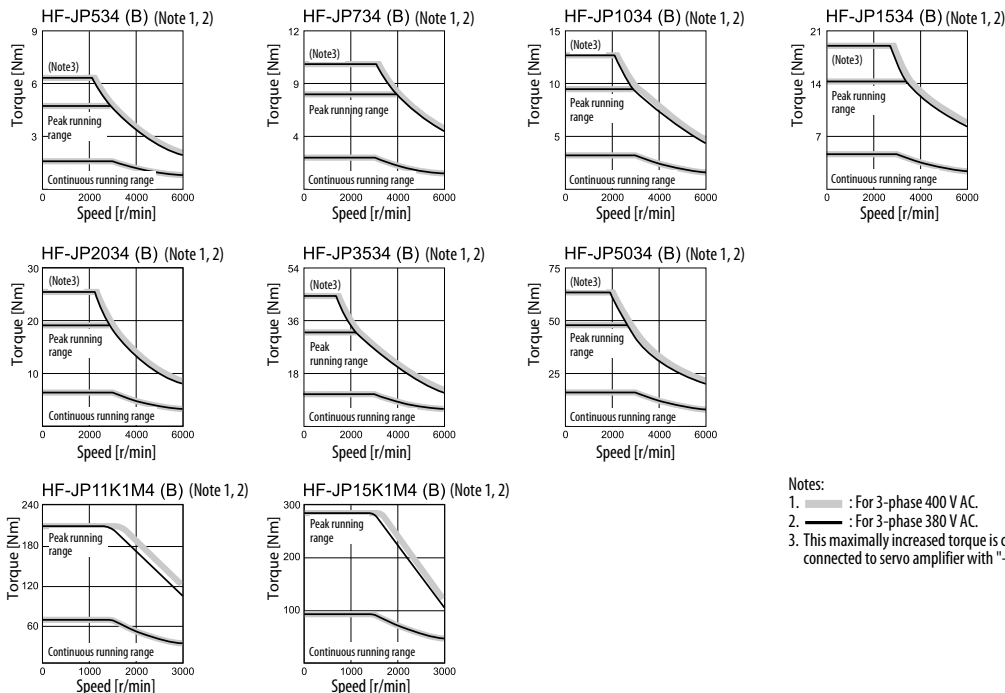
HF-JP(B) Series Servo Motor Specifications (400 V Type)

Servo motor model	HF-JP534(B) ⑥	HF-JP734(B) ⑥	HF-JP1034(B) ⑥	HF-JP1534(B) ⑥	HF-JP2034(B) ⑥	HF-JP3534(B) ⑥	HF-JP5034(B) ⑥	HF-JP11K1M4 (B) ⑥	HF-JP15K1M4 (B) ⑥	
Servo amplifier model	MR-J3-60A4/B4/T4	MR-J3-100A4/B4/T4	MR-J3-100A4/B4/T4	MR-J3-200A4/B4/T4	MR-J3-200A4/B4/T4	MR-J3-350A4/B4/T4	MR-J3-500A4/B4/T4	MR-J3-11KA4/B4/T4-LR	MR-J3-15KA4/B4/T4-LR	
Power facility capacity [kVA] ①	1.0	1.3	1.7	2.5	3.5	5.5	7.5	16	22	
Continuous characteristics ②	rated output [kW]	0.5	0.75	1.0	1.5	2.0	3.3	5.0	11	
	rated torque [Nm]	1.59	2.39	3.18	4.77	6.37	10.5	15.9	70	
Maximum torque [Nm] ②	4.77	7.16	9.55	14.3	19.1	32.0	47.7	210	286	
Rated rotation speed [rpm]	3000	3000	3000	3000	3000	3000	3000	1500	1500	
Maximum rotation speed [rpm]	6000	6000	6000	6000	6000	6000	6000	3000	3000	
Permissible instantaneous rotation speed [rpm]	6900	6900	6900	6900	6900	6900	6900	3450	3450	
Power rate at continuous rated torque [kW/s]	16.7	27.3	38.2	60.2	82.4	83.5	133	223	290	
Rated current [A] ②	1.5	2.8	2.8	5.4	5.4	8.3	14	32	38	
Maximum current [A]	4.5	8.4	8.4	17	17	26	41	100	123	
Moment of inertia J [$\times 10^{-4}$ kg m ²]	standard	1.52	2.09	2.65	3.79	4.92	13.2	19.0	220	
	with electromagnetic brake	2.02	2.59	3.15	4.29	5.42	15.4	21.2	240	
Regenerative braking frequency [1/min] ② ⑦	99	72	56	265	203	75	68	143	162	
Recommended load/motor inertia ratio	Less than 10 times the servo motor's inertia moment ③									
Speed/position detector	18-bit encoder (resolution per encoder/servo motor rotation: 262144 p/rev.)									
Structure	Totally enclosed, non-ventilated (protection rating: IP67) ④									
Environment	ambient temperature	Operation: 0–40 °C (no freezing); Storage: -15–70 °C (no freezing)								
	ambient humidity	Operation: 80 % RH max. (no condensation); Storage: 90 % RH max. (no condensation)								
	atmosphere	Indoors (no direct sunlight); no corrosive gas, no inflammable gas, no oil mist, no dust								
	elevation/vibration ⑤	1000 m or less above sea level; X: 24.5 m/s ² , Y: 24.5 m/s ²								
Weight [kg]	standard motor ⑥	3.0	3.7	4.5	5.9	7.5	13	18	62	86
Order information	(without brake) Art. no.	227015	227016	227017	227018	227019	227020	227021	229565 ⑧	229566 ⑧

- ① The power facility capacity varies depending on the power supply's impedance.
- ② The regenerative braking frequency shown is the permissible frequency for decelerating a stand-alone motor from rated rpm to a stop. When under load, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated rpm is exceeded, the regenerative brake frequency is inversely proportional to the square of (operating speed/rated speed). When the operating speed varies frequently or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating. The heat should not exceed the tolerable regenerative power (W). Refer to the section "OPTIONS AND PERIPHERAL EQUIPMENT" in this catalog for details on the tolerable regenerative power (W). Optimal regenerative resistor varies for each system. Select the most suitable regenerative resistor by using the capacity selection software.
- ③ Please contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
- ④ The shaft-through portion is excluded.
- ⑤ The vibration direction is shown in the right side diagram. The numeric value indicates the maximum value of the component (commonly the bracket on the antiload side). Fretting of the bearing occurs easily when the motor stops, so please maintain vibration to approximately one-half the allowable value.
- ⑥ For servo motors with electromagnetic brake please refer to page 22.
- ⑦ The maximum torque of the HF-JP534(B)–HF-JP5034(B) motors can be increased from 300 % to 400 % by increasing the amplifier capacity by one rank.
- ⑧ The item has longer delivery time. Please contact your Mitsubishi representative.



HF-JP Series Servo Motor Torque Characteristics

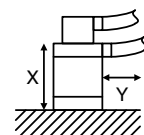


- Notes:
1. : For 3-phase 400 V AC.
 2. : For 3-phase 380 V AC.
 3. This maximally increased torque is calculated value when connected to servo amplifier with "U□".

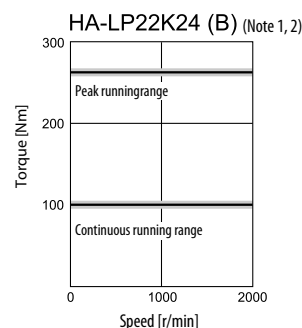
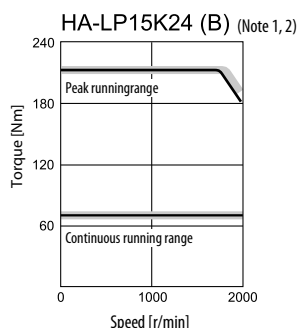
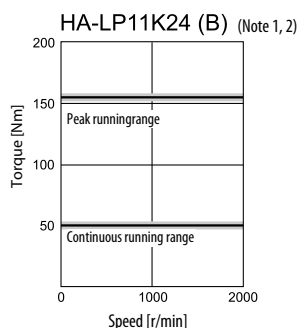
HA-LP(B) Series Servo Motor Specifications (400 V Type)

Servo motor model	HA-LP11K24(B) ⑥	HA-LP15K24(B) ⑥	HA-LP22K24(B) ⑥	
Servo amplifier model	MR-J3-11KA4/B4/T4	MR-J3-15KA4/B4/T4	MR-J3-22KA4/B4/T4	
Power facility capacity [kVA] ①	16	22	33	
Continuous characteristics	rated output [kW]	15	22	
	rated torque [Nm]	52.5	71.6	
Maximum torque [Nm]	158	215	263	
Rated rotation speed [rpm]	2000	2000	2000	
Maximum rotation speed [rpm]	2000	2000	2000	
Permissible instantaneous rotation speed [rpm]	2300	2300	2300	
Power rate at continuous rated torque [kW/s]	263	233	374	
Rated current [A]	32	40	57	
Maximum current [A]	96	120	143	
Moment of inertia J [$\times 10^{-4}$ kg m ²]	standard	105	220	
	with electromagnetic brake	113	293	
Regeneration braking frequency [1/min] ②	186 ⑦	144 ⑦	107 ⑦	
Recommended load/motor inertia ratio	Less than 10 times the servo motor's inertia moment ③			
Speed/position detector	18-bit encoder (resolution per encoder/servo motor rotation: 262144 p/rev.)			
Structure	Totally enclosed, non-ventilated (protection rating: IP44) ④			
Environment	ambient temperature	Operation: 0–40 °C (no freezing); Storage: -15–70 °C (no freezing)		
	ambient humidity	Operation: 80 % RH max. (no condensation); Storage: 90 % RH max. (no condensation)		
	atmosphere	Indoors (no direct sunlight); no corrosive gas, no inflammable gas, no oil mist, no dust		
	elevation/vibration ⑤	1000 m or less above sea level; X: 11.7 m/s ² , Y: 29.4 m/s ²		
Weight [kg]	standard motor	55	95	
Order information	(without brake) Art. no.	200982 ⑥	200983 ⑥	200984 ⑥

- ① The power facility capacity varies depending on the power supply's impedance.
- ② The regenerative braking frequency shown is the permissible frequency for decelerating a stand-alone motor from rated rpm to a stop. When under load, however, the value becomes the table value divided by (m+1) where m is the load inertia moment divided by the motor inertia moment. When the rated rpm is exceeded, the regenerative brake frequency is inversely proportional to the square of (operating speed/rated speed). When the operating speed varies frequently or when regeneration is constant (as with vertical feeds), find the regeneration heat generated (W) while operating. The heat should not exceed the tolerable regenerative power (W). Refer to the section "OPTIONS AND PERIPHERAL EQUIPMENT" in this catalog for details on the tolerable regenerative power (W). Optimal regenerative resistor varies for each system. Select the most suitable regenerative resistor by using the capacity selection software.
- ③ Please contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
- ④ The shaft-through portion is excluded.
- ⑤ The vibration direction is shown in the right side diagram. The numeric value indicates the maximum value of the component (commonly the bracket on the antiload side). Fretting of the bearing occurs easily when the motor stops, so please maintain vibration to approximately one-half the allowable value.
- ⑥ For servo motors with electromagnetic brake please refer to page 22.
- ⑦ The value is applicable when the external regenerative resistors, GRZG400-□□□ (standard accessory) are used with cooling fans (2 units of 92x92mm, minimum air flow: 1.0 m³/min). Note that change in parameter No. PA02 is required.
- ⑧ The item has longer delivery time. Please contact your Mitsubishi representative.

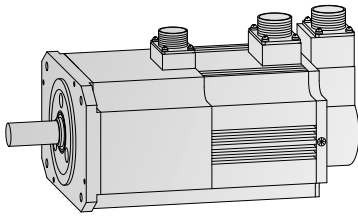


HA-LP Series Servo Motor Torque Characteristics



- Notes:
 1. — : For 3-phase 400 V AC.
 2. — : For 3-phase 380 V AC.

Braked Motor Specifications



For applications requiring the motor shaft to be held in position (e.g. vertical lift applications), all offered motors are available with an electro-

magnetic brake. The wide variety of servo motors allows the user to choose a motor, which suits best according to the task.

Motor model (200 V)	HF-KE□W1-S100				HF-SE□KW1-S100				HF-KP					
	013B	023B	043B	073B	052B	102B	152B	202B	053B	13B	23B	43B	73B	
Type	Spring-loaded safety brake				Spring-loaded safety brake				Spring-loaded safety brake					
Rated voltage	24 V DC				24 V DC				24 V DC					
Static friction torque [Nm]	0.32	1.3	1.3	2.4	8.5	8.5	8.5	44	0.32	0.32	1.3	1.3	2.4	
Rated current at 20 °C [A]	0.26	0.33	0.33	0.42	0.8	0.8	0.8	1.4	0.26	0.26	0.33	0.33	0.42	
Coil resistance at 20 °C [Ω]	91	73	73	57	29	29	29	16.8	91	91	73	73	57	
Power consumption at 20 °C [W]	6.3	7.9	7.9	10	20	20	20	34	6.3	6.3	7.9	7.9	10	
Moment of inertia J [10 ⁻⁴ kg m ²] ^②	0.09	0.31	0.50	1.63	8.3	14	20	47.9	0.054	0.09	0.31	0.50	1.63	
Permissible braking volume [J]/time	5.6	22	22	64	400	400	400	4500	5.6	5.6	22	22	64	
[J]/hour	56	220	220	640	4000	4000	4000	45000	56	56	220	220	640	
Brake life [times] ^③	20000				20000				20000					
Brake volume per brake action [J]	5.6	22	22	64	200	200	200	1000	5.6	5.6	22	22	64	
Weight [kg] ^①	0.86	1.6	2.1	3.9	6.7	8.5	11.0	18.0	0.75	0.86	1.6	2.1	4.0	
Order information	Art. no.	210944	213088	213089	213090	213091	213092	213093	213094	160213	161511	161512	161513	161514

^① Total mass of motor with electromagnetic brake ^② Total moment of inertia of motor with electromagnetic brake ^③ Brake gap cannot be adjusted.

Motor model (200 V)	HF-MP					HC-RP					HF-SP							
	053B	13B	23B	43B	73B	103B	153B	203B	353B	503B	52B	102B	152B	202B	352B	502B	702B	
Type	Spring-loaded safety brake					Spring-loaded safety brake					Spring-loaded safety brake							
Rated voltage	24 V DC					24 V DC					24 V DC							
Static friction torque [Nm]	0.32	0.32	1.3	1.3	2.4	7	7	7	23	23	8.5	8.5	8.5	44	44	44	44	
Rated current at 20 °C [A]	0.26	0.26	0.33	0.33	0.42	0.8	0.8	0.8	0.96	0.96	0.8	0.8	0.8	1.4	1.4	1.4	1.4	
Coil resistance at 20 °C [Ω]	91	91	73	73	57	30	30	30	25	25	29	29	29	16.8	16.8	16.8	16.8	
Power consumption at 20 °C [W]	6.3	6.3	7.9	7.9	10	19	19	19	23	23	20	20	20	34	34	34	34	
Moment of inertia J [10 ⁻⁴ kg m ²] ^②	0.025	0.039	0.12	0.18	0.70	1.85	2.25	2.65	11.8	15.5	8.3	14	20	47.9	84.7	107	164	
Permissible braking volume [J]/time	5.6	5.6	22	22	64	400	400	400	400	400	400	400	400	4500	4500	4500	4500	
[J]/hour	56	56	220	220	640	4000	4000	4000	4000	4000	4000	4000	4000	45000	45000	45000	45000	
Brake life [times] ^③	20000					20000					20000							
Brake volume per brake action [J]	5.6	5.6	22	22	64	200	200	200	200	200	200	200	200	1000	1000	1000	1000	
Weight [kg] ^①	0.75	0.89	1.6	2.1	4.0	6	7	8.3	15	21	7	9	11	18	25	29	38	
Order information	Art. no.	161520	161521	161522	161523	161524	168644	168645	168664	168665	168666	161532	161533	161534	161535	161536	161537	161538

^① Total mass of motor with electromagnetic brake ^② Total moment of inertia of motor with electromagnetic brake ^③ Brake gap cannot be adjusted.

Motor model (400 V)	HF-SP							HF-JP									
	524B	1024B	1524B	2024B	3524B	5024B	7024B	534B	734B	1034B	1534B	2034B	3534B	5034B	11K1M4B	15K1M4B	
Type	Spring-loaded safety brake							Spring-loaded safety brake									
Rated voltage	24 V DC							24 V DC									
Static friction torque [Nm]	8.5	8.5	8.5	44	44	44	44	6.6	6.6	6.6	6.6	6.6	16	16	127	127	
Rated current at 20 °C [A]	0.8	0.8	0.8	1.4	1.4	1.4	1.4	0.5	0.5	0.5	0.5	0.5	1.0	1.0	1.3	1.3	
Coil resistance at 20 °C [Ω]	29	29	29	16.8	16.8	16.8	16.8	49	49	49	49	49	25	25	18	18	
Power consumption at 20 °C [W]	20	20	20	34	34	34	34	11.7	11.7	11.7	11.7	11.7	23	23	32	32	
Moment of inertia J [10^{-4} kg m ²] ^②	8.3	14	20	47.9	84.7	107	164	2.02	2.59	3.15	4.29	5.42	15.4	21.2	240	336	
Permissible braking volume	[J]/time		[J]/hour		[J]/time		[J]/hour		[J]/time		[J]/hour		[J]/time		[J]/hour		
	400	400	400	4500	4500	4500	4500	64	64	64	64	64	400	400	5000	5000	
Brake life [times] ^③	4000	4000	4000	45000	45000	45000	45000	640	640	640	640	640	4000	4000	45200	45200	
Brake volume per brake action [J]	200	200	200	1000	1000	1000	1000	64	64	64	64	64	400	400	400	400	
Weight [kg] ^①	7	9	11	18	25	29	38	4.4	5.1	5.9	7.3	8.9	15	20	74	97	
Order information	Art. no.	200975	200976	200977	200978	200979	200980	200981	227022	227023	227024	227025	227026	227027	227028	229569 ^④	229570 ^④

- ^① Total mass of motor with electromagnetic brake ^② Total moment of inertia of motor with electromagnetic brake ^③ Brake gap cannot be adjusted.
^④ The item has longer delivery time. Please contact your Mitsubishi representative.

Motor model (400 V)	HA-LP			
	11K24B	15K24B	22K24B	
Type	Spring-loaded safety brake			
Rated voltage	24 V DC			
Static friction torque [Nm]	82	160.5	160.5	
Rated current at 20 °C [A]	1.3	1.9	1.9	
Coil resistance at 20 °C [Ω]	19	13	13	
Power consumption at 20 °C [W]	30	46	46	
Moment of inertia J [10^{-4} kg m ²] ^②	113	293	369	
Permissible braking volume	[J]/time		[J]/hour	
	3000	5000	5000	
	30000	50000	50000	
Brake life [times] ^③	20000			
Brake volume per brake action [J]	1000	3000	3000	
Weight [kg] ^①	70	130	150	
Order information	Art. no.	200985 ^④	200986 ^④	200987 ^④

- ^① Total mass of motor with electromagnetic brake ^② Total moment of inertia of motor with electromagnetic brake
^③ Brake gap cannot be adjusted. ^④ The item has longer delivery time. Please contact your Mitsubishi representative.