Changes for the Better

MITSUBISHI ELECTRIC

General-Purpose AC Servo MELSERVO-J3

MODEL

Servo Motor HF-JP Series <7kW and 9kW>

March 2011

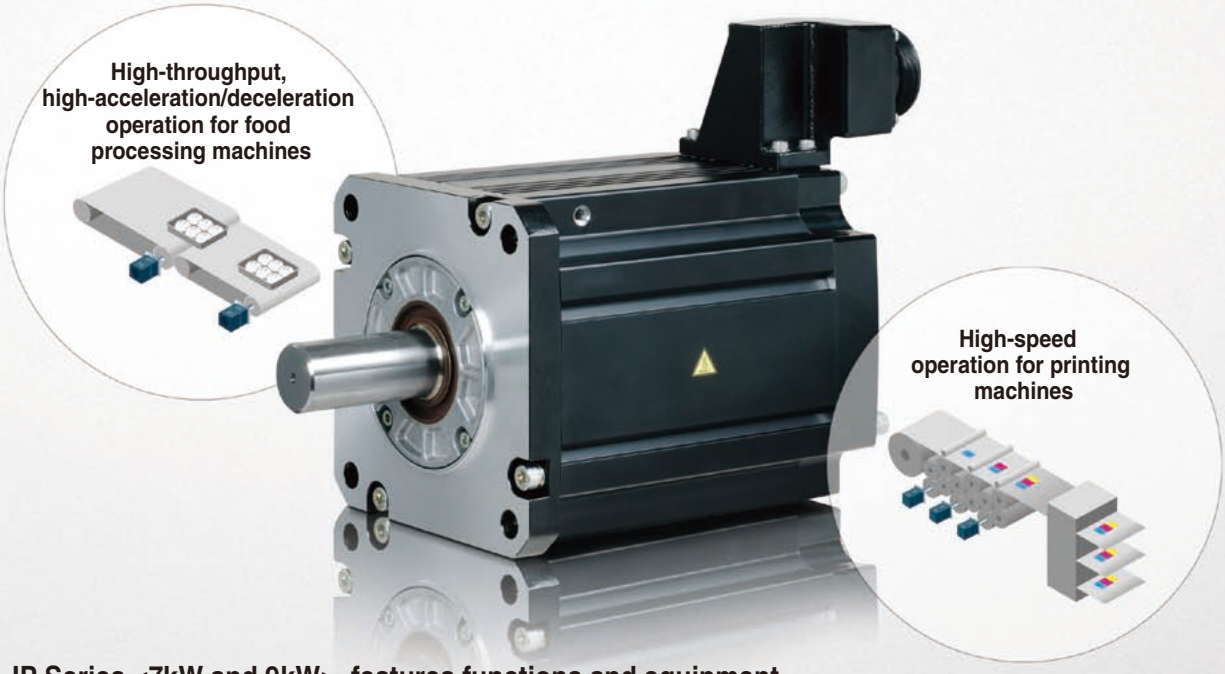
New Product Release

SV1103-4E

Improvement of productivity and energy efficiency

High-speed, low-inertia 7kW and 9kW servo motors are introduced to product lines.

HF-JP series supports high-throughput, high-acceleration/deceleration positioning operation. This series also enables high-speed operation with maximum speed of 5,000 r/min (rated speed: 3,000 r/min).
The 7kW and 9kW servo motors achieve energy saving and high-performance system.



HF-JP Series <7kW and 9kW> features functions and equipment originating from the site.

- Models compatible with 200 V/400 V are available.
- 262144 p/rev high-resolution encoder achieves smooth operation.
- Compact and light body. Rated IP67.
- High-performance, high-function control is enabled by MR-J3 servo amplifier.
- Models from 500 W to 11 kW are introduced to product lines.
- HF-JP series will be compatible with global standards (EN, UL and cUL).

Mitsubishi Electric Corporation Nagoya Works is a factory certified for ISO14001 (standards for environmental management systems) and ISO9001(standards for quality assurance management systems)

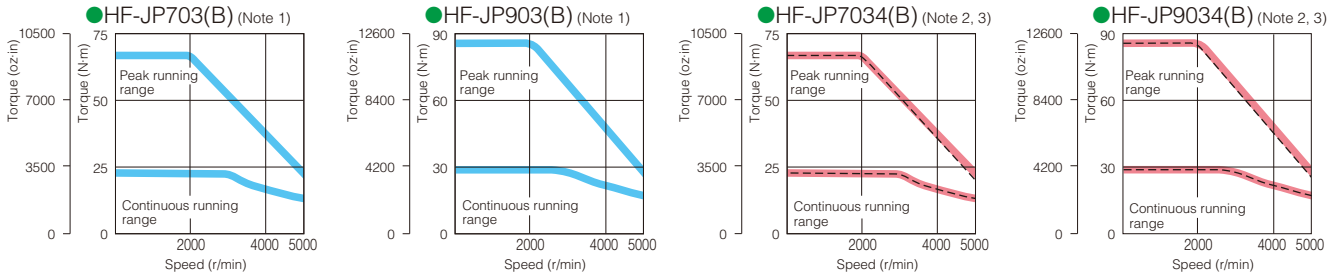
for a greener tomorrow

Specification

Servo motor series		HF-JP 3000r/min series (Low inertia, medium capacity)			
Power supply class		200V		400V	
Servo motor model	HF-JP	703 (B)	903 (B)	7034 (B)	9034 (B)
Compatible servo amplifier model	MR-J3-	700A/B (-RJ006)/T	11KA/B (-RJ006)/T	700A4/B4 (-RJ006)/T4	11KA4/B4 (-RJ006)/T4
Power supply capacity (Note 1)	(kVA)	10	13	10	13
Continuous running duty: Rated output	(kW)	7.0	9.0	7.0	9.0
Continuous running duty: Rated torque (Note 7)	(N·m [oz·in])	22.3 (3160)	28.6 (4050)	22.3 (3160)	28.6 (4050)
Maximum torque	(N·m [oz·in])	66.8 (9460)	85.8 (12100)	66.8 (9460)	85.8 (12100)
Rated speed	(r/min)	3000			
Maximum speed	(r/min)	5000			
Permissible instantaneous speed	(r/min)	5750			
Power rate at continuous rated torque	(kW/s)	115	147	115	147
Rated current	(A)	34	41	17	21
Maximum current	(A)	103	134	52	67
Regenerative braking frequency	(times/min)	56	204 (Note 6)	56	205 (Note 6)
Moment of inertia J ($\times 10^{-4}$kg·m^2) [J (oz·in^2)]	Standard	43.3 (237)	55.8 (305)	43.3 (237)	55.8 (305)
	With electromagnetic brake	52.9 (289)	65.4 (358)	52.9 (289)	65.4 (358)
Recommended load to motor inertia moment ratio		Maximum of 10 times the servo motor's inertia moment (Note 2)			
Speed/position detector		18-bit encoder (resolution: 262144 p/rev)			
Attachments		Oil seal			
Insulation class		Class F			
Structure		Totally enclosed non ventilated (IP rating: IP67) (Note 3)			
Environment (Note 5)	Ambient temperature	0 to 40°C (32 to 104°F) (non freezing), storage: –15 to 70°C (5 to 158°F) (non freezing)			
	Ambient humidity	80% RH maximum (non condensing), storage: 90% RH maximum (non condensing)			
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust			
	Elevation	1000m or less above sea level			
	Vibration (Note 4)	X : 24.5m/s^2 Y : 29.4m/s^2			
Mass (kg [lb])	Standard	29 (64)	36 (80)	29 (64)	36 (80)
	With electromagnetic brake	35 (78)	42 (93)	35 (78)	42 (93)

Notes: 1. The power supply capacity varies depending on the power supply's impedance.
2. Contact your local sales office if the load to motor inertia moment ratio exceeds the value in the table.
3. The shaft-through portion is excluded.
4. The vibration direction is shown in the diagram to the right. 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 to approximately one-half of the allowable value.
5. In the environment where the servo motor is exposed to oil mist, oil and/or water, a standard specification servo motor may not be usable. Contact your local sales office for more details.
6. The value is applicable when the external regenerative resistors, GRZG400-□Ω (standard accessory) are used with cooling fans (2 units of 92 × 92mm, minimum air flow: 1.0m^3/min). Note that change in parameter No. PA02 is required.
7. When unbalanced torque is generated, such as in a vertical lift machine, it is recommended that the unbalanced torque of the machine be kept under 70% of the motor's rated torque.

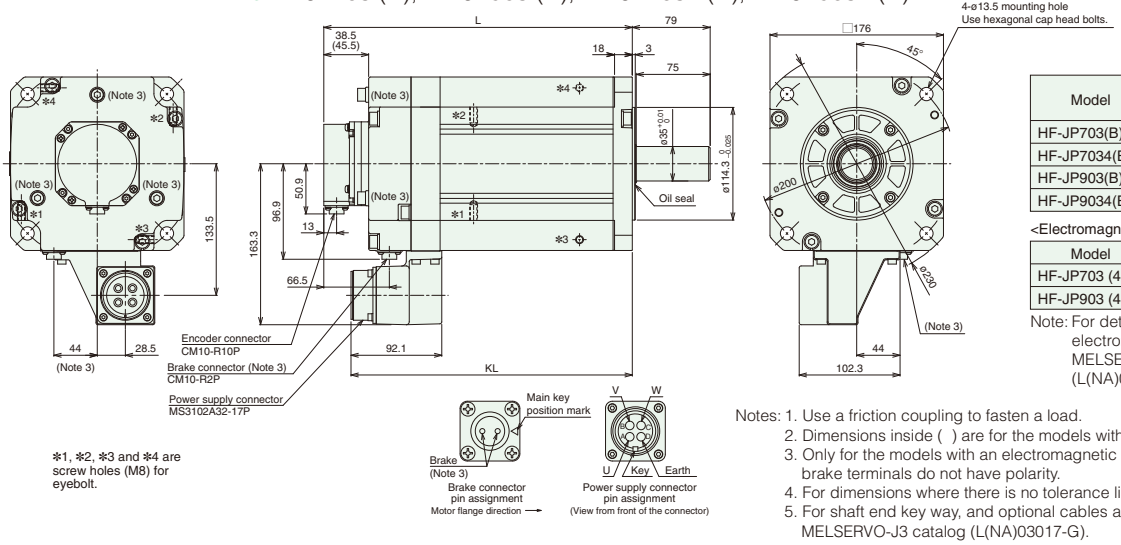
Torque Characteristics



Note) 1. ▬ : For 3-phase 200VAC
2. ▬ : For 3-phase 400VAC
3. - - - - : For 3-phase 380VAC

Dimensions

●HF-JP703 (B), HF-JP903 (B), HF-JP7034 (B), HF-JP9034 (B)



Model	Variable dimensions	
	L	KL
HF-JP703(B)	263.5 (313)	285.4
HF-JP7034(B)		
HF-JP903(B)	303.5 (353)	325.4
HF-JP9034(B)		

<Electromagnetic brake static friction torque>

Model	Brake static friction torque (N·m [oz·in])
HF-JP703 (4) B	44 (6230)
HF-JP903 (4) B	

Note: For detailed specification of the electromagnetic brake, refer to MELSERVO-J3 catalog (L(NA)03017-G).

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

Notes: 1. Use a friction coupling to fasten a load.
2. Dimensions inside ( ) are for the models with an electromagnetic brake.
3. Only for the models with an electromagnetic brake. The electromagnetic brake terminals do not have polarity.
4. For dimensions where there is no tolerance listed, use general tolerance.
5. For shaft end key way, and optional cables and connectors, refer to MELSERVO-J3 catalog (L(NA)03017-G).

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⚠ Safety Warning

To ensure proper use of the products listed in this catalog, please be sure to read the instruction manual prior to use.

MDOC (1103)

New publication, effective March 2011
Specifications subject to change without notice.