### MR-J4 Rotary Servo Motors

<table>
<thead>
<tr>
<th>Rotary Servo Motor Series</th>
<th>Rated Speed (Max. r/min)</th>
<th>Rated Output Capacity (kW)</th>
<th>Servo Motor Type</th>
<th>Protective Degree (*3)</th>
<th>Compatible Series</th>
<th>Features</th>
<th>Application Examples</th>
</tr>
</thead>
</table>
| HG-KR                     | 3000 (6000)              | 5 Types 0.05, 0.1, 0.2, 0.4, 0.75 | X                | IP65                   | HF-KP             | Low inertia, perfect for general industrial machines | • Belt Drive  
• Robots  
• Mounters  
• Sewing Machines  
• X-Y Tables  
• Food Processing Machines  
• Semiconductor manufacturing devices  
• Knitting and embroidery machines |
| HG-MR                     | 3000 (6000)              | 5 Types 0.05, 0.1, 0.2, 0.4, 0.75 | X                | IP65                   | HF-MP             | Ultra-low inertia Well suited for high-throughput operations | • Inserters  
• Mounters |
| HG-SR                     | 1000 (1500)              | 6 Types 0.5, 0.85, 1.2, 2.0, 3.0, 4.2 | X                | IP67                   | HF-SP             | Medium inertia This series is available with two rated speeds | • Material handling systems  
• Robots  
• X-Y tables |
| HG-JR                     | 3000 (6000: 0.5~5 kW 2000: 7, 9 kW) | 16 types 0.5, 0.75, 1.0, 1.5, 2.0, 3.5, 5.0, 7.0, 9.0 | X                | IP67                   | HF-JP             | Low inertia Well suited for high-throughput and high-acceleration/ deceleration operations | • Food packaging machines  
• Printing machines |
| HG-RR                     | 3000 (4500)              | 5 Types 1.0, 1.5, 2.0, 3.5, 5.0 | X                | IP65                   | HC-RP             | Ultra-low inertia Well suited for high-throughput material handling systems | • Ultra-high-throughput material handling systems |
| HG-UR                     | 2000 (3000: 0.75~2 kW 2500: 3.5, 5 kW) | 5 types 0.75, 1.5, 2.0, 3.5, 5.0 | X                | IP65                   | HC-UP             | Flat type The flat design makes this unit well suited for situations where the installation space is limited | • Robots  
• Food processing machines |
| HG-AK                     | 6000                     | 3 types 10W, 20W, 30W | X                | IP55                   | -                 | Ultra compact | • Assembly  
• Robots  
• Positioning |

### Notes:

1. For 400 V.
2. G1 for general industrial machines. GS and G7 for high precision applications.
3. The shaft-through portion is excluded. Refer to the asterisk 7 of ‘Annotations for Rotary Servo Motor Specifications’ in the MR-J4 Brochure. For geared Servo Motor, IP rating of the reducer portion is equivalent to IP44.
4. For HG-JR1500 r/min series, 15 kW or smaller is rated IP67, and 22 kW or larger is rated IP44. For HG-JR 1000 r/min series, 12 kW or smaller is rated IP67, and 15 kW or larger is rated IP44.
5. The Servo Motor with electromagnetic brake is not available for HG-JR 1500 r/min series 22 kW or larger, and 1000 r/min series 15 kW or larger.
For HG-JR353(B), the rated output varies depending on the servo amplifier to be combined. Refer to electromagnetic brake specifications of each Servo Motor series in this catalog for the available models and detailed specifications.

Oil seal is installed in HG-JR, HG-RR, and HG-UR series as a standard.

Oil seal is not installed in the geared Servo Motor.

Refer to special shaft end specifications of each Servo Motor series in this catalog for the available models and detailed specifications.

Not all options available for every motor.

### Stocked Motors

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Model Number</th>
<th>Model Number</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>HG-JR53KK</td>
<td>HG-SR51K</td>
<td>HG-KR053D</td>
<td>HG-UR72K</td>
</tr>
<tr>
<td>HG-JR73BK</td>
<td>HG-SR52K</td>
<td>HG-KR053B</td>
<td>HG-UH332K</td>
</tr>
</tbody>
</table>

### Notes:

1. Refer to electromagnetic brake specifications of each Servo Motor series in this catalog for the available models and detailed specifications.
3. Oil seal is not installed in the geared Servo Motor.
4. Dimensions for HG-KR/HG-MR series with oil seal are different from those for the standard models. Contact your local sales office for more details.
5. Refer to ‘Geared Servo Motor Specifications’ in this catalog for the available models and detailed specifications.
6. Standard HG-SR G1/G1H has a key shaft (with key).
7. Refer to special shaft end specifications of each Servo Motor series in this catalog for the available models and detailed specifications.
8. Oil seal is installed in HG-JR, HG-RR, and HG-UR series as a standard.
9. For HG-JR353(B), the rated output varies depending on the servo amplifier to be combined. Refer to ‘HG-JR 3000 n/min Series (Low Inertia, Medium Capacity) (200 V Class) Specifications’ for details.
SERVO MOTORS AND AMPLIFIERS

HG -4

400V

Symbol | Oil Seal
--- | ---
None | None
J | Installed (*2, *3, *4)

Symbol | Reducer (*5)
--- | ---
None | None

Symbol | Shaft End
--- | ---
None | Standard (Straight shaft) (*6)
K | Key shaft (with/without key) (*7)

Servo Motor Selection 400V (Example Part No. = HG-SR524B)

Not all options available for every motor.

HG -4

Symbol | Special Specification
--- | ---
None | Standard

Symbol | Power Supply
--- | ---
B | 48 VDC/24 VDC

Symbol | Rated Speed (r/min)
--- | ---
1 | 1000
1M | 1500
2 | 2000
3 | 3000

Model Number | Model Number
--- | ---
HG-JR534K | HG-SR524K
HG-JR534BK | HG-SR524BK
HG-JR734K | HG-SR734K
HG-JR734BK | HG-SR734BK
HG-JR1034K | HG-SR1024K
HG-JR1034BK | HG-SR1024BK
HG-JR1534K | HG-SR1524K
HG-JR1534BK | HG-SR1524BK
HG-JR2034K | HG-SR2024K
HG-JR2034BK | HG-SR2024BK
HG-JR3534K | HG-SR3524
HG-JR3534BK | HG-SR3524BK
HG-JR5034K | HG-SR5024K
HG-JR5034BK | HG-SR5024BK
HG-JR6014K | HG-SR6014K
HG-JR6014BK | HG-SR6014BK
HG-JR7034K | HG-JR7034K
HG-JR7034BK | HG-JR7034BK
HG-JR9034K | HG-JR9034K
HG-JR9034BK | HG-JR9034BK
HG-JR11K1M4K | HG-JR11K1M4BK

Notes:
1. Refer to electromagnetic brake specifications of each Servo Motor series in this catalog for the available models and detailed specifications.
3. Oil seal is not installed in the geared Servo Motor.
4. Refer to "Geared Servo Motor Specifications" in this catalog for the available models and detailed specifications.
5. Standard HG-SR G1/G1H has a key shaft (with key).
6. Refer to special shaft end specifications of each Servo Motor series in this catalog for the available models and detailed specifications.
7. For HG-JR3534(B), the rated output varies depending on the servo amplifier to be combined. Refer to "HG-JR 3000 r/min Series (Low Inertia, Medium Capacity) (400 V Class) Specifications" for details.

HG -A K

3 6

Ultra-compact size, ultra-small capacity

Symbol | Special Specification
--- | ---
None | Standard
S100 | Vertical encoder cable lead

Symbol | Shaft End
--- | ---
None | Standard (Straight shaft)
K | Key shaft (with/without key) (*8)

Symbol | Electromagnetic Brake
--- | ---
None | None
B | Installed (*9)

Symbol | Power Supply
--- | ---
B | 48 VDC/24 VDC

Symbol | Rated Speed (r/min)
--- | ---
3 | 3000

Model Number | Model Number
--- | ---
HG-AK0136 | HG-SR524K
HG-AK0236 | HG-SR624BK
HG-AK0336 | HG-SR1024K
HG-AK0236 | HG-SR1024BK
HG-AK0236 | HG-SR1524K
HG-AK0236 | HG-SR1524BK
HG-AK0236 | HG-SR2024K
HG-AK0236 | HG-SR2024BK
HG-AK0236 | HG-SR3524
HG-AK0236 | HG-SR3524BK
HG-AK0236 | HG-SR5024K
HG-AK0236 | HG-SR5024BK
HG-AK0236 | HG-SR6014K
HG-AK0236 | HG-SR6014BK
HG-AK0236 | HG-JR701M4K
HG-AK0236 | HG-JR7034K
HG-AK0236 | HG-JR7034BK
HG-AK0236 | HG-JR7034K
HG-AK0236 | HG-JR7034BK
HG-AK0236 | HG-JR9034K
HG-AK0236 | HG-JR9034BK
HG-AK0236 | HG-JR11K1M4K
HG-AK0236 | HG-JR11K1M4BK
HG-AK0236 | HG-JR11K1M4K
HG-AK0236 | HG-JR11K1M4BK

Notes:
1. Refer to "HG-AK Series Electromagnetic Brake Specifications" in this guide for the available models and detailed specifications.
2. Refer to "HG-AK Series Special Shaft End Specifications" in the User Manual.
### Combinations of Rotary Servo Motor and Servo Amplifier (200V/100V Class)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>MR-J4</th>
<th>MR-J4W2 (*1)</th>
<th>MR-J4W3 (*1)</th>
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<tr>
<td>HG-KR05(B)</td>
<td>MR-J4-10GF(-RJ), MR-J4-10B(-RJ), MR-J4-10B1(-RJ), MR-J4-10A(-RJ), MR-J4-10A1(-RJ), MR-J4-10TM, MR-J4-10TM1</td>
<td>MR-J4W2-22B, MR-J4W2-44B</td>
<td>MR-J4W3-222B, MR-J4W3-444B</td>
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<tr>
<td>HG-KR13(B)</td>
<td>MR-J4-10GF(-RJ), MR-J4-10B(-RJ), MR-J4-10B1(-RJ), MR-J4-10A(-RJ), MR-J4-10A1(-RJ), MR-J4-10TM, MR-J4-10TM1</td>
<td>MR-J4W2-22B, MR-J4W2-44B</td>
<td>MR-J4W3-222B, MR-J4W3-444B</td>
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<tr>
<td>HG-KR73(B)</td>
<td>MR-J4-70GF(-RJ), MR-J4-70B(-RJ), MR-J4-70B1(-RJ), MR-J4-70A(-RJ), MR-J4-70TM</td>
<td>MR-J4W2-77B, MR-J4W2-1010B</td>
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<td>HG-MR05(B)</td>
<td>MR-J4-10GF(-RJ), MR-J4-10B(-RJ), MR-J4-10B1(-RJ), MR-J4-10A(-RJ), MR-J4-10A1(-RJ), MR-J4-10TM, MR-J4-10TM1</td>
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<td>MR-J4W3-222B, MR-J4W3-444B</td>
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<td>MR-J4W2-22B, MR-J4W2-44B</td>
<td>MR-J4W3-222B, MR-J4W3-444B</td>
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<td>HG-MR73(B)</td>
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<td>MR-J4W2-77B, MR-J4W2-1010B</td>
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<td>HG-SR51(B)</td>
<td>MR-J4-60GF(-RJ), MR-J4-60B(-RJ), MR-J4-60A(-RJ), MR-J4-60TM</td>
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<tr>
<td>HG-SR81(B)</td>
<td>MR-J4-100GF(-RJ), MR-J4-100B(-RJ), MR-J4-100A(-RJ), MR-J4-100TM</td>
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<td>HG-SR201(B)</td>
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<td>HG-SR301(B)</td>
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<tr>
<td>HG-SR421(B)</td>
<td>MR-J4-500GF(-RJ), MR-J4-500B(-RJ), MR-J4-500A(-RJ), MR-J4-500TM</td>
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<td>HG-SR52(B)</td>
<td>MR-J4-60GF(-RJ), MR-J4-60B(-RJ), MR-J4-60A(-RJ), MR-J4-60TM</td>
<td>MR-J4W2-77B, MR-J4W2-1010B</td>
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<tr>
<td>HG-SR102(B)</td>
<td>MR-J4-100GF(-RJ), MR-J4-100B(-RJ), MR-J4-100A(-RJ), MR-J4-100TM</td>
<td>MR-J4W2-1010B</td>
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<tr>
<td>HG-SR152(B)</td>
<td>MR-J4-200GF(-RJ), MR-J4-200B(-RJ), MR-J4-200A(-RJ), MR-J4-200TM</td>
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<tr>
<td>HG-SR202(B)</td>
<td>MR-J4-200GF(-RJ), MR-J4-200B(-RJ), MR-J4-200A(-RJ), MR-J4-200TM</td>
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<tr>
<td>HG-SR352(B)</td>
<td>MR-J4-350GF(-RJ), MR-J4-350B(-RJ), MR-J4-350A(-RJ), MR-J4-350TM</td>
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<td>HG-SR502(B)</td>
<td>MR-J4-500GF(-RJ), MR-J4-500B(-RJ), MR-J4-500A(-RJ), MR-J4-500TM</td>
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<td>HG-JR53(B)</td>
<td>MR-J4-60GF(-RJ), MR-J4-60B(-RJ), MR-J4-60A(-RJ), MR-J4-60TM</td>
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<tr>
<td>HG-JR73(B)</td>
<td>MR-J4-70GF(-RJ), MR-J4-70B(-RJ), MR-J4-70A(-RJ), MR-J4-70TM</td>
<td>MR-J4W2-77B, MR-J4W2-1010B</td>
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<tr>
<td>HG-JR103(B)</td>
<td>MR-J4-100GF(-RJ), MR-J4-100B(-RJ), MR-J4-100A(-RJ), MR-J4-100TM</td>
<td>MR-J4W2-1010B</td>
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</tbody>
</table>

Note 1: Any combination of the servo motors is possible as long as the servo motors are compatible with the servo amplifier. Refer to "Combinations of Multi-Axis Servo Amplifier and Servo Motors"Servo Motors" in this guide.
### Combinations of Rotary Servo Motor and Servo Amplifier (200V Class)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>MR-J4</th>
<th>MR-J4W2 (*1)</th>
<th>MR-J4W3 (*1)</th>
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<td>HG-JR153(B)</td>
<td>MR-J4-200GF(-RJ), MR-J4-200B(-RJ), MR-J4-200A(-RJ), MR-J4-200TM</td>
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<td>HG-JR203(B)</td>
<td>MR-J4-200GF(-RJ), MR-J4-200B(-RJ), MR-J4-200A(-RJ), MR-J4-200TM</td>
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<td>HG-JR353(B)</td>
<td>MR-J4-350GF(-RJ), MR-J4-350B(-RJ), MR-J4-350A(-RJ), MR-J4-350TM</td>
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<td>HG-JR503(B)</td>
<td>MR-J4-500GF(-RJ), MR-J4-500B(-RJ), MR-J4-500A(-RJ), MR-J4-500TM</td>
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<td>HG-JR703(B)</td>
<td>MR-J4-700GF(-RJ), MR-J4-700B(-RJ), MR-J4-DU900B(-RJ), MR-J4-700A(-RJ), MR-J4-700TM</td>
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<td>HG-JR903(B)</td>
<td>MR-J4-11KGf(-RJ), MR-J4-11KB(-RJ), MR-J4-DU900B(-RJ), MR-J4-11KA(-RJ), MR-J4-11KTM</td>
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<td>HG-JR601(B)</td>
<td>MR-J4-700GF(-RJ), MR-J4-700B(-RJ), MR-J4-DU900B(-RJ), MR-J4-700A(-RJ), MR-J4-700TM</td>
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<td>HG-JR801(B)</td>
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<td>HG-JR12K1(B)</td>
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<td>HG-JR15K1(B)</td>
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<td>HG-JR20K1</td>
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<td>HG-JR25K1</td>
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<td>HG-JR30K1</td>
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<td>HG-JR701M(B)</td>
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<td>HG-JR15K1M(B)</td>
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<td>HG-RR353(B)</td>
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<td>HG-RR503(B)</td>
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<td>HG-UR72(B)</td>
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*Note 1: Any combination of the servo motors is possible as long as the servo motors are compatible with the servo amplifier. Refer to "Combinations of Multi-Axis Servo Amplifier and Servo Motors" in this guide.*
<table>
<thead>
<tr>
<th>Model Combination</th>
<th>MR-J4</th>
<th>MR-J4W2</th>
<th>MR-J4W3</th>
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<td>HG-SR3534(B)</td>
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<td>HG-SR5534(B)</td>
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Combinations of HG-AK Rotary Servo Motor and Servo Amplifier (48 VDC/24 VDC Class)

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Combinations of HG-JR Servo Motor Series and Servo Amplifier (200V Class) for Increasing the Maximum Torque to 400% of the Rated Torque

The following combination of the HG-JR servo motor and the servo amplifier increases the maximum torque from 300% to 400% of the rated torque.

<table>
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<tr>
<th>Model Number</th>
<th>MR-J4</th>
<th>MR-J4W2 (*1)</th>
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<td>HG-JR53(B) (*2)</td>
<td>MR-J4-100GF(-RJ), MR-J4-100B(-RJ), MR-J4-100A(-RJ), MR-J4-100TM</td>
<td>MR-J4W2-1010B</td>
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<td>HG-JR73(B) (*2)</td>
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<td>HG-JR103(B) (*2)</td>
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<td>HG-JR203(B)</td>
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<td>HG-JR353(B)</td>
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<tr>
<td>HG-JR503(B)</td>
<td>MR-J4-700GF(-RJ), MR-J4-700B(-RJ), MR-J4-700A(-RJ), MR-J4-700TM</td>
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Notes:
1. Any combination of the servo motors is possible as long as the servo motors are compatible with the servo amplifier. Refer to "Combinations of Multi-Axis Servo Amplifier and Servo Motors".
2. When 1-phase 200 VAC input is used, increasing the maximum torque to 400% is not possible with HG-JR servo motor series.

Combinations of HG-JR Servo Motor Series and Servo Amplifier (400 V Class) for Increasing the Maximum Torque to 400% of the Rated Torque

The following combination of the HG-JR servo motor and the servo amplifier increases the maximum torque from 300% to 400% of the rated torque.

<table>
<thead>
<tr>
<th>Model Number</th>
<th>MR-J4</th>
<th>MR-J4W2 (*1)</th>
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<tr>
<td>HG-JR734(B)</td>
<td>MR-J4-200GF4(-RJ), MR-J4-200B4(-RJ), MR-J4-200A4(-RJ), MR-J4-200TM4</td>
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<tr>
<td>HG-JR1034(B)</td>
<td>MR-J4-350GF4(-RJ), MR-J4-350B4(-RJ), MR-J4-350A4(-RJ), MR-J4-350TM4</td>
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<td>HG-JR1534(B)</td>
<td>MR-J4-350GF4(-RJ), MR-J4-350B4(-RJ), MR-J4-350A4(-RJ), MR-J4-350TM4</td>
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<td>HG-JR2034(B)</td>
<td>MR-J4-500GF4(-RJ), MR-J4-500B4(-RJ), MR-J4-500A4(-RJ), MR-J4-500TM4</td>
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<td>HG-JR3534(B)</td>
<td>MR-J4-500GF4(-RJ), MR-J4-700B(-RJ), MR-J4-700A(-RJ), MR-J4-700TM</td>
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<td>HG-JR5034(B)</td>
<td>MR-J4-700GF4(-RJ), MR-J4-700B(-RJ), MR-J4-700A(-RJ), MR-J4-700TM</td>
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</table>

Note 1: Any combination of the servo motors is possible as long as the servo motors are compatible with the servo amplifier. Refer to "Combinations of Multi-Axis Servo Amplifier and Servo Motors".
Combinations of Servo Motor with Functional Safety and Servo Amplifier (200V Class)
The safety observation function can be expanded with the combination of the servo motor with functional safety, MR-J4-B/RJ/MR-J4-A-RJ servo amplifier, and MR-D30 functional safety unit. The servo motors with functional safety are available in HG-KR/HG-SR/HG-JR series. The specifications and dimensions of the servo motors with functional safety are the same as the standard. Combine MR-D30 with the following servo amplifiers to expand the safety observation function by using the servo motors with functional safety.

<table>
<thead>
<tr>
<th>Model Number</th>
<th>MR-J4</th>
<th>MR-J4W2</th>
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<tr>
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<td>MR-J4-10GF-RJ, MR-J4-10B-RJ, MR-J4-10B1-RJ, MR-J4-10A-RJ, MR-J4-10A1-RJ, MR-J4-10TM, MR-J4-10TM1 - -</td>
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<tr>
<td>HG-SR81WOC</td>
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<td>HG-SR121WOC</td>
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<td>HG-SR421WOC</td>
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<td>HG-SR52WOC</td>
<td>MR-J4-60GF-RJ, MR-J4-60B-RJ, MR-J4-60A-RJ, MR-J4-60TM - -</td>
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<td>HG-SR102WOC</td>
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<td>HG-SR152WOC</td>
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<td>HG-JR503WOC</td>
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</table>

Notes:
1. This combination increases the maximum torque from 300% to 400% of the rated torque.
2. When a 1-phase 200 VAC input is used, increasing the maximum torque to 400% is not possible with HG-JR servo motor series.
3. The maximum torque can be increased when the "Selection of maximally increasing torque function with drive unit" is enabled with a parameter.
### Combinations of Servo Motors with Functional Safety and Servo Amplifier (400V Class)

<table>
<thead>
<tr>
<th>Model Number</th>
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<td>HG-SR5024W0C</td>
<td>MR-J4-500GF4-RJ, MR-J4-500B4-RJ, MR-J4-500A4-RJ, MR-J4-500TM4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>HG-SR7024W0C</td>
<td>MR-J4-700GF4-RJ, MR-J4-700B4-RJ, MR-J4-DU900B4-RJ (2), MR-J4-700A4-RJ, MR-J4-700TM4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>HG-JR534W0C</td>
<td>MR-J4-60GF4-RJ, MR-J4-100GF4-RJ (1), MR-J4-60B4-RJ, MR-J4-100B4-RJ (1), MR-J4-60A4-RJ, MR-J4-100A4-RJ (1), MR-J4-60TM4, MR-J4-100TM4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>HG-JR734W0C</td>
<td>MR-J4-100GF4-RJ, MR-J4-200GF4-RJ (1), MR-J4-100B4-RJ, MR-J4-200B4-RJ (1), MR-J4-100A4-RJ, MR-J4-200A4-RJ (1), MR-J4-100TM4, MR-J4-200TM4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>HG-JR1034W0C</td>
<td>MR-J4-200GF4-RJ, MR-J4-350GF4-RJ (1), MR-J4-200B4-RJ, MR-J4-350B4-RJ (1), MR-J4-200A4-RJ, MR-J4-350A4-RJ (1), MR-J4-200TM4, MR-J4-350TM4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>HG-JR1534W0C</td>
<td>MR-J4-350GF4-RJ, MR-J4-500GF4-RJ (1), MR-J4-350B4-RJ, MR-J4-500B4-RJ (1), MR-J4-350A4-RJ, MR-J4-500A4-RJ (1), MR-J4-350TM4, MR-J4-500TM4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>HG-JR2034W0C</td>
<td>MR-J4-500GF4-RJ, MR-J4-700GF4-RJ (1), MR-J4-500B4-RJ, MR-J4-700B4-RJ (1), MR-J4-500A4-RJ, MR-J4-700A4-RJ (1), MR-J4-500TM4, MR-J4-700TM4</td>
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<td>-</td>
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<tr>
<td>HG-JR3534W0C</td>
<td>MR-J4-700GF4-RJ, MR-J4-700B4-RJ, MR-J4-DU900B4-RJ (2), MR-J4-700A4-RJ, MR-J4-700TM4</td>
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<td>-</td>
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<tr>
<td>HG-JR5034W0C</td>
<td>MR-J4-11KGF4-RJ, MR-J4-11KB4-RJ, MR-J4-DU11KB4-RJ, MR-J4-11KA4-RJ, MR-J4-11KTM4</td>
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<td>-</td>
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<tr>
<td>HG-JR7034W0C</td>
<td>MR-J4-15KGF4-RJ, MR-J4-15KB4-RJ, MR-J4-DU15KB4-RJ, MR-J4-15KA4-RJ, MR-J4-15KTM4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>HG-JR9034W0C</td>
<td>MR-J4-22KGF4-RJ, MR-J4-22KB4-RJ, MR-J4-DU22KB4-RJ, MR-J4-22KA4-RJ, MR-J4-22KTM4</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Notes:**
1. This combination increases the maximum torque from 300% to 400% of the rated torque.
2. The maximum torque can be increased when the "Selection of maximally increasing torque function with drive unit" is enabled with a parameter.
HG-KR Series 3000 r/min (Low Inertia, Small Capacity) Specifications 200V

<table>
<thead>
<tr>
<th>Servo Motor Model</th>
<th>HG-KR_</th>
<th>053(B)</th>
<th>13(B)</th>
<th>23(B)</th>
<th>43(B)</th>
<th>73(B)</th>
</tr>
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<tbody>
<tr>
<td>Servo Amplifier Model</td>
<td>MR-J4_</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>MR-JAW_</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Power Supply Capacity (kVA) (*1)</td>
<td>0.3</td>
<td>0.3</td>
<td>0.5</td>
<td>0.9</td>
<td>1.3</td>
<td>2.0</td>
</tr>
<tr>
<td>Continuous Running Duty</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated Output (W)</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>750</td>
<td></td>
</tr>
<tr>
<td>Rated Torque (N•m) (Note 3)</td>
<td>0.16</td>
<td>0.32</td>
<td>0.64</td>
<td>1.3</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>Maximum Torque (N•m)</td>
<td>0.56</td>
<td>1.1</td>
<td>2.2</td>
<td>4.5</td>
<td>8.4</td>
<td></td>
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<tr>
<td>Rated Speed (r/min)</td>
<td>3000</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Speed (r/min)</td>
<td>6000</td>
<td></td>
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</tr>
</tbody>
</table>

Permissible Instantaneous Speed (r/min)

Power Rate Continuous Rated Torque

<table>
<thead>
<tr>
<th>Type</th>
<th>Standard (kW/s)</th>
<th>With Electromagnetic Brake (kW/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.9</td>
<td>5.63</td>
<td>13.0</td>
</tr>
<tr>
<td>0.8</td>
<td>12.1</td>
<td>18.3</td>
</tr>
<tr>
<td>1.3</td>
<td>16.7</td>
<td>43.7</td>
</tr>
<tr>
<td>2.6</td>
<td>41.3</td>
<td>45.2</td>
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<tr>
<td>4.8</td>
<td>41.6</td>
<td></td>
</tr>
</tbody>
</table>

Regenerative Braking Frequency (*2)

| MR-J4_- (times/min) | 453 | 268 |
| MR-JAW_- (times/min) | 157 | 393 |

Moment of Inertia (x10^-4kg•m²)

| Standard | 0.0450 | 0.0777 |
| With Electromagnetic Brake | 0.0472 | 0.0837 |

Recommanded Load/Motor Inertia Ratio (Note 1)

| 17 times or less | 26 times or less | 25 times or less |
| 17 times or less | |

Speed/Position Detector

Absolute/incremental 22-bit encoder (resolution: 4194304 pulses/rev)

Insulation Class

130 (B)

Structure

Totally enclosed, natural cooling (IP rating: IP65) (Note 2)

Environment (*3)

| Ambient Temperature | 0°C to 40°C (non-freezing), storage: -15°C to 70°C (non-freezing) |
| Ambienl 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 / Vibration (*4) | 1000 m or less above sea level; X: 49 m/s² Y: 49 m/s² |

Vibration Rank

V10 (*6)

Permissible Load for the Shaft (*5)

| L (mm) | 25 | 25 |
| Radial (N) | 88 | 88 |
| Thrust (N) | 59 | 59 |
| Weight (kg) | 0.34 | 0.54 |

Notes:

1. For MR-J4 Servo Motors notes, please go to page 283

HG-KR 3000 Series Electromagnetic Brake Specifications (*1)

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Spring actuated type safety brake</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated Voltage</td>
<td>24 VDC, 10%</td>
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<tr>
<td>Power Consumption (W) at 20 °C</td>
<td>6.3</td>
<td>6.3</td>
<td>7.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electromagnetic Brake Static Friction Torque (N•m)</td>
<td>0.32</td>
<td>0.32</td>
<td>1.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permissible Braking Work</td>
<td>5.6</td>
<td>5.6</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Hour (J)</td>
<td>56</td>
<td>56</td>
<td>220</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Electromagnetic Brake Life (*2)</td>
<td>20000</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Work Per Braking (J)</td>
<td>5.6</td>
<td>5.6</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:

1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.

Notes:

1. For 3-phase 200 VAC or 1-phase 230 VAC
2. For 1-phase 200 VAC
3. Torque drops when the power supply voltage is below the specified value.
## HG-MR Series 3000 r/min (Ultra Low Inertia, Small Capacity) Specifications 200V

<table>
<thead>
<tr>
<th>Servo Motor Model HG-MR_</th>
<th>053(B)</th>
<th>13(B)</th>
<th>23(B)</th>
<th>43(B)</th>
<th>73(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Servo Amplifier Model</strong></td>
<td>MR-J4-</td>
<td>MR-J4W-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Power Supply Capacity (kVA)</strong></td>
<td>0.3</td>
<td>0.3</td>
<td>0.5</td>
<td>0.9</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Continuous Running Duty</strong></td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>750</td>
</tr>
<tr>
<td><strong>Rated Output (W)</strong></td>
<td>0.16</td>
<td>0.32</td>
<td>0.64</td>
<td>1.3</td>
<td>2.4</td>
</tr>
<tr>
<td><strong>Maximum Torque (N•m)</strong></td>
<td>0.48</td>
<td>0.95</td>
<td>1.9</td>
<td>3.8</td>
<td>7.2</td>
</tr>
<tr>
<td><strong>Rated Speed (r/min)</strong></td>
<td>3000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maximum Speed (r/min)</strong></td>
<td>6000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Permissible Instantaneous Speed (r/min)</strong></td>
<td>6900</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Power Rate Continuous Rated Torque (KW/s)</strong></td>
<td>15.6</td>
<td>33.8</td>
<td>46.9</td>
<td>114.2</td>
<td>97.3</td>
</tr>
<tr>
<td><strong>With Electromagnetic Brake (KW/s)</strong></td>
<td>11.3</td>
<td>28.0</td>
<td>37.2</td>
<td>98.8</td>
<td>82.1</td>
</tr>
<tr>
<td><strong>Rated Current (A)</strong></td>
<td>1.0</td>
<td>0.9</td>
<td>1.5</td>
<td>2.6</td>
<td>5.8</td>
</tr>
<tr>
<td><strong>Maximum Current (A)</strong></td>
<td>3.1</td>
<td>2.5</td>
<td>5.3</td>
<td>9.0</td>
<td>20.0</td>
</tr>
<tr>
<td><strong>Regenerative Braking Frequency (times/min)</strong></td>
<td>MR-J4- (Note 4)</td>
<td>1180</td>
<td>713</td>
<td>338</td>
<td></td>
</tr>
<tr>
<td><strong>MR-J4W- (times/min)</strong></td>
<td>7310</td>
<td>3640</td>
<td>1170</td>
<td>710</td>
<td>846</td>
</tr>
<tr>
<td><strong>Moment of Inertia J (x10-4kg•m²)</strong></td>
<td>Standard</td>
<td>0.0162</td>
<td>0.0300</td>
<td>0.0865</td>
<td>0.142</td>
</tr>
<tr>
<td><strong>With Electromagnetic Brake</strong></td>
<td>0.0224</td>
<td>0.0382</td>
<td>0.109</td>
<td>0.164</td>
<td>0.694</td>
</tr>
<tr>
<td><strong>Recommended Load/Motor Inertia Ratio</strong></td>
<td>35 times or less</td>
<td>32 times or less</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Speed/Position Detector</strong></td>
<td>Absolute/incremental 22-bit encoder (resolution: 4194304 pulses/rev)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Oil Seal</strong></td>
<td>None</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Insulation Class</strong></td>
<td>130 (B)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Structure</strong></td>
<td>Totally enclosed, natural cooling (IP rating: IP65) (Note 2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Environment (°C)</strong></td>
<td>Ambient Temperature</td>
<td>0°C to 40°C (non-freezing), storage: -15°C to 70°C (non-freezing)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td>Ambient Humidity</td>
<td>80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Atmosphere</strong></td>
<td>Atmosphere</td>
<td>Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Vibration Rank</strong></td>
<td>V10 (Note 6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Permissible Load for the Shaft (L (mm))</strong></td>
<td>L (mm)</td>
<td>25</td>
<td>25</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td><strong>Radial (N)</strong></td>
<td>88</td>
<td>88</td>
<td>245</td>
<td>245</td>
<td>392</td>
</tr>
<tr>
<td><strong>Thrust (N)</strong></td>
<td>59</td>
<td>59</td>
<td>98</td>
<td>98</td>
<td>147</td>
</tr>
<tr>
<td><strong>Weight (kg)</strong></td>
<td>Standard</td>
<td>0.34</td>
<td>0.54</td>
<td>0.91</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>With Electromagnetic Brake</strong></td>
<td>0.54</td>
<td>0.74</td>
<td>1.3</td>
<td>1.8</td>
<td>3.8</td>
</tr>
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### Notes:
1. For MR-J4 Servo Motor notes, please go to page 283
HG-SR 1000 r/min Series (Medium Inertia, Medium Capacity) Specifications 200V

<table>
<thead>
<tr>
<th>Servo Motor Model HG-SR_</th>
<th>51(B)</th>
<th>81(B)</th>
<th>121(B)</th>
<th>201(B)</th>
<th>301(B)</th>
<th>421(B)</th>
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<tbody>
<tr>
<td>Servo Amplifier Model MR-J4-</td>
<td>MR-J4W-</td>
<td>Refer to “Combinations of Servo Motor and Servo Amplifier” in this selection guide</td>
<td></td>
<td></td>
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<tr>
<td>Power Supply Capacity (kVA) (*1)</td>
<td>1.0</td>
<td>1.5</td>
<td>2.1</td>
<td>3.5</td>
<td>4.8</td>
<td>6.3</td>
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<tr>
<td>Continuous Running Duty Rated Output (kW)</td>
<td>0.5</td>
<td>0.85</td>
<td>1.2</td>
<td>2.0</td>
<td>3.0</td>
<td>4.2</td>
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<tr>
<td></td>
<td>Rated Torque (N•m) (Note 3)</td>
<td>4.8</td>
<td>8.1</td>
<td>11.5</td>
<td>19.1</td>
<td>28.6</td>
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<tr>
<td>Maximum Torque (N•m)</td>
<td>14.3</td>
<td>24.4</td>
<td>34.4</td>
<td>57.3</td>
<td>85.9</td>
<td>120</td>
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<tr>
<td>Rated Speed (r/min)</td>
<td>1000</td>
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<tr>
<td>Maximum Speed (r/min)</td>
<td>1500</td>
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<tr>
<td>Permissible Instantaneous Speed (r/min)</td>
<td>1725</td>
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</tr>
<tr>
<td>Power Rate Continuous Rated Torque Standard (kW/s)</td>
<td>19.7</td>
<td>41.2</td>
<td>28.1</td>
<td>46.4</td>
<td>82.3</td>
<td>107</td>
</tr>
<tr>
<td></td>
<td>With Electromagnetic Brake (kW/s)</td>
<td>16.5</td>
<td>36.2</td>
<td>23.2</td>
<td>41.4</td>
<td>75.3</td>
</tr>
<tr>
<td>Rated Current (A)</td>
<td>2.8</td>
<td>5.2</td>
<td>7.1</td>
<td>9.4</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td>Maximum Current (A)</td>
<td>9.0</td>
<td>17</td>
<td>23</td>
<td>30</td>
<td>42</td>
<td>61</td>
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<tr>
<td>Regenerative Braking Frequency (*2) MR-J4- (times/min)</td>
<td>77</td>
<td>114</td>
<td>191</td>
<td>113</td>
<td>89</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>MR-J4W- (times/min)</td>
<td>392</td>
<td>286</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Moment of Inertia J (x10^-4kg•m²) Standard</td>
<td>11.6</td>
<td>16.0</td>
<td>46.8</td>
<td>78.6</td>
<td>99.7</td>
<td>151</td>
</tr>
<tr>
<td></td>
<td>With Electromagnetic Brake</td>
<td>13.8</td>
<td>18.2</td>
<td>56.5</td>
<td>88.2</td>
<td>109</td>
</tr>
<tr>
<td>Recommended Load/Motor Inertia Ratio (Note 1)</td>
<td>17 times or less</td>
<td>15 times or less</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Speed/Position Detector</td>
<td>Absolute/Incremental 22-bit encoder (resolution: 4194304 pulses/rev)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil Seal</td>
<td>None (Servo Motors with oil seal are available. (HG-SR_J))</td>
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<tr>
<td>Insulation Class</td>
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<td>Structure</td>
<td>Totally enclosed, natural cooling (IP rating: IP67) (Note 2)</td>
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<tr>
<td>Environment (*3) Ambient Temperature</td>
<td>0°C to 40°C (non-freezing), storage: -15°C to 70°C (non-freezing)</td>
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<tr>
<td></td>
<td>Ambient Humidity</td>
<td>80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)</td>
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<td>Atmosphere</td>
<td>Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust</td>
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<tr>
<td></td>
<td>Elevation</td>
<td>1000 m or less above sea level</td>
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<tr>
<td>Vibration (*4) X: 24.5 m/s² Y: 24.5 m/s² X: 24.5 m/s² Y: 24.5 m/s²</td>
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<tr>
<td>Vibration Rank</td>
<td>V10 (*6)</td>
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<td>Permissible Load for the Shaft (*5) L (mm)</td>
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<td>980</td>
<td>980</td>
<td>2058</td>
<td>2058</td>
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<td>Thrust (N)</td>
<td>490</td>
<td>490</td>
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<td>Weight (kg) Standard</td>
<td>6.2</td>
<td>7.3</td>
<td>11</td>
<td>16</td>
<td>20</td>
<td>27</td>
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<tr>
<td></td>
<td>With Electromagnetic Brake</td>
<td>8.2</td>
<td>9.3</td>
<td>17</td>
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<tr>
<td>Notes:</td>
<td>1. For MR-J4 Servo Motor notes, please go to page 283</td>
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HG-SR 1000 Series Electromagnetic Brake Specifications (*1)

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<th>Servo Motor Model HG-SR_</th>
<th>51B</th>
<th>81B</th>
<th>121B</th>
<th>201B</th>
<th>301B</th>
<th>421B</th>
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<td>Rated Voltage</td>
<td>24 VDC, %</td>
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<td>Power Consumption (W) at 20°C</td>
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<td>20</td>
<td>34</td>
<td>34</td>
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<tr>
<td>Electric Brake Static Friction Torque (N•m)</td>
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<td>8.5</td>
<td>44</td>
<td>44</td>
<td>44</td>
<td>44</td>
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<tr>
<td>Permissible Braking Work Per Braking (J)</td>
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<td>400</td>
<td>4500</td>
<td>4500</td>
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<td>Per Hour (J)</td>
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<td>4000</td>
<td>45000</td>
<td>45000</td>
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<td>Electromagnetic Brake Life (*2) Number of Times (Times)</td>
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<td>1000</td>
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<td>Notes:</td>
<td>1. The electromagnetic brake is for holding. It should not be used for deceleration applications.</td>
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<tr>
<td></td>
<td>2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.</td>
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Notes: For MR-J4 Servo Motor notes, please go to page 283
**HG-SR 2000 r/min Series (Medium Inertia, Medium Capacity) Specifications 200V**

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<th>Servo Motor Model</th>
<th>HG-SR_</th>
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<th>102(B)</th>
<th>152(B)</th>
<th>202(B)</th>
<th>352(B)</th>
<th>502(B)</th>
<th>702(B)</th>
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<td>Refer to ‘Combinations of Servo Motor and Servo Amplifier’ in this guide.</td>
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<td>5.0</td>
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<td>Rated Torque (N•m) (Note 3)</td>
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<td>4.8</td>
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<td>16.7</td>
<td>23.9</td>
<td>33.4</td>
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<td>Maximum Torque (N•m)</td>
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<td>14.3</td>
<td>21.5</td>
<td>28.6</td>
<td>50.1</td>
<td>71.6</td>
<td>100</td>
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<td>Rated speed (r/min)</td>
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<td>Permissible Instantaneous Speed (r/min)</td>
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<td>Power Rate Continuous Rated Torque (kW/s)</td>
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<td>19.7</td>
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<td>35.5</td>
<td>57.2</td>
<td>74.0</td>
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<tr>
<td>With Electromagnetic Brake (kW/s)</td>
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<td>28.2</td>
<td>16.1</td>
<td>31.7</td>
<td>52.3</td>
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<td>9.6</td>
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<tr>
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<td>29</td>
<td>31</td>
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<td>Regenerative Braking Frequency (°/min)</td>
<td>MR-J4- (times/min)</td>
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<td>38</td>
<td>139</td>
<td>47</td>
<td>28</td>
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<td>25</td>
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<td>MR-J4W_- (times/min)</td>
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<td>96</td>
<td>-</td>
<td>-</td>
<td>28</td>
<td>29</td>
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<td>Moment of Inertia J (x10^-4kg•m²)</td>
<td>7.26</td>
<td>11.6</td>
<td>16.0</td>
<td>46.8</td>
<td>78.6</td>
<td>99.7</td>
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<td>With Electromagnetic Brake</td>
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<td>18.2</td>
<td>56.5</td>
<td>88.2</td>
<td>109</td>
<td>161</td>
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<td>Recommended Load/Motor Inertia Ratio (Note 1)</td>
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<td>17 times or less</td>
<td>15 times or less</td>
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<tr>
<td>Speed/Position Detector</td>
<td>Absolute/incremental 22-bit encoder (resolution: 4194304 pulses/rev)</td>
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<tr>
<td>Oil Seal</td>
<td>None (Servo Motors with oil seal are available. (HG-SR_J))</td>
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<td>Insulation Class</td>
<td>155 (F)</td>
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<tr>
<td>Structure</td>
<td>Totally enclosed, natural cooling (IP rating: IP67) (Note 2)</td>
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<tr>
<td>Environment (*3)</td>
<td>Ambient Temperature</td>
<td>0°C to 40°C (non-freezing), storage: -15°C to 70°C (non-freezing)</td>
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<tr>
<td>Ambient Humidity</td>
<td>80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)</td>
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</tr>
<tr>
<td>Atmosphere</td>
<td>Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Elevation</td>
<td>1000 m or less above sea level</td>
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<td></td>
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</tr>
<tr>
<td>Vibration (°/s)</td>
<td>X: 24.5 m/s² Y: 24.5 m/s² X: 24.5 m/s² Y: 49 m/s² X: 24.5 m/s² Y: 29.4 m/s²</td>
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<tr>
<td>Vibration Rank</td>
<td>V10 (*5)</td>
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<tr>
<td>Permissible Load for the Shaft (*5)</td>
<td>L (mm)</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>79</td>
<td>79</td>
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<tr>
<td>Radial (N)</td>
<td>980</td>
<td>980</td>
<td>980</td>
<td>2058</td>
<td>2058</td>
<td>2058</td>
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<tr>
<td>Thrust (N)</td>
<td>490</td>
<td>490</td>
<td>490</td>
<td>980</td>
<td>980</td>
<td>980</td>
<td>980</td>
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</tr>
<tr>
<td>Weight (kg)</td>
<td>Standard</td>
<td>4.8</td>
<td>6.2</td>
<td>7.3</td>
<td>11</td>
<td>16</td>
<td>20</td>
<td>27</td>
</tr>
<tr>
<td>With Electromagnetic Brake</td>
<td>6.7</td>
<td>8.2</td>
<td>9.3</td>
<td>17</td>
<td>22</td>
<td>26</td>
<td>33</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. For MR-J4 Servo Motor notes, please go to page 283
2. Oil seal is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.
3. Oil seal is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.
4. Oil seal is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.

---

**HG-SR 2000 Series Electromagnetic Brake Specifications (*1)**

<table>
<thead>
<tr>
<th>Servo Motor Model</th>
<th>HG-SR_</th>
<th>52B</th>
<th>102B</th>
<th>152B</th>
<th>202B</th>
<th>352B</th>
<th>502B</th>
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<tr>
<td><strong>Type</strong></td>
<td>Spring actuated type safety brake</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td><strong>Rated Voltage</strong></td>
<td>24 VDC, ±1 %</td>
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<td></td>
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<td></td>
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<tr>
<td><strong>Power Consumption (W) at 20 °C</strong></td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>34</td>
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</tr>
<tr>
<td><strong>Electromagnetic Brake Static Friction Torque (N•m)</strong></td>
<td>8.5</td>
<td>8.5</td>
<td>8.5</td>
<td>44</td>
<td>44</td>
<td>44</td>
<td>44</td>
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</tr>
<tr>
<td><strong>Permissible Braking Work</strong></td>
<td>Per Braking (J)</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>4500</td>
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<td>Per Hour (J)</td>
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<td>4000</td>
<td>4000</td>
<td>45000</td>
<td>45000</td>
<td>45000</td>
<td>45000</td>
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<tr>
<td>*<em>Electromagnetic Brake Life (<em>2)</em></em></td>
<td>Number of Times (Times)</td>
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<tr>
<td>Work Per Braking (J)</td>
<td>200</td>
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<td>200</td>
<td>1000</td>
<td>1000</td>
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<td>1000</td>
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</tbody>
</table>

Notes:
1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.
### HG-SR 2000 r/min Series (Medium Inertia, Medium Capacity) Specifications 400V

<table>
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<tr>
<th>Servo Motor Model HG-SR</th>
<th>524(B)</th>
<th>1024(B)</th>
<th>1524(B)</th>
<th>2024(B)</th>
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<tr>
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<td>1.7</td>
<td>2.5</td>
<td>3.5</td>
<td>5.5</td>
<td>7.5</td>
<td>10</td>
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<tr>
<td>Continuous Running Duty</td>
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<td>2.0</td>
<td>3.5</td>
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<tr>
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<td>7.2</td>
<td>9.5</td>
<td>16.7</td>
<td>23.9</td>
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<tr>
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<td>7.2</td>
<td>14.3</td>
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<td>Maximum Speed (r/min)</td>
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<tr>
<td>Power Supply Capacity (kVA) (*1)</td>
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<td>Permissible Instantaneous Speed (r/min)</td>
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### HG-SR 2000 Series (400V) Electromagnetic Brake Specifications (*1)

<table>
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<tr>
<th>Servo Motor Model HG-SR</th>
<th>524(B)</th>
<th>1024(B)</th>
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<th>2024(B)</th>
<th>3524(B)</th>
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<tr>
<td>Rated Voltage</td>
<td>24 VDC, 0.5 %</td>
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<td>8.5</td>
<td>44</td>
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<tr>
<td>Permissible Braking Work</td>
<td>Per Braking (J)</td>
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<td>400</td>
<td>400</td>
<td>4500</td>
<td>4500</td>
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<tr>
<td>Per Hour (J)</td>
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<td>45000</td>
<td>45000</td>
<td>45000</td>
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<td>Electromagnetic Brake Life (°2)</td>
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<td>Work Per Braking (J)</td>
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<td>200</td>
<td>1000</td>
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### Notes:
1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.
HG-JR 3000 r/min Series (Low Inertia, Medium Capacity) Specifications 200V

<table>
<thead>
<tr>
<th>Servo Motor Model HG-JR_</th>
<th>5S(B)</th>
<th>73(B)</th>
<th>103(B)</th>
<th>153(B)</th>
<th>203(B)</th>
<th>353(B)</th>
<th>503(B)</th>
<th>703(B)</th>
<th>903(B)</th>
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<td>MR-J4-</td>
<td>MR-J4-</td>
<td>MR-J4-</td>
<td>MR-J4-</td>
<td>MR-J4-</td>
<td>MR-J4-</td>
<td>MR-J4-</td>
<td>MR-J4-</td>
<td>MR-J4-</td>
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<td>0.75</td>
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<td>1.5</td>
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<td>2.4</td>
<td>3.2</td>
<td>4.8</td>
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<td>10.5 &lt;11.1&gt; (Note 5)</td>
<td>15.9</td>
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<td>Maximum Torque (N•m) (Note 6)</td>
<td>4.8 &lt;6.4&gt;</td>
<td>7.2 &lt;9.6&gt;</td>
<td>9.6 &lt;12.7&gt;</td>
<td>14.3 &lt;19.1&gt;</td>
<td>19.1 &lt;25.5&gt;</td>
<td>32.0 &lt;44.6&gt;</td>
<td>44.7 &lt;63.7&gt;</td>
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<td>5000</td>
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<td>Power Rate Continuous Rated Torque (kW/s)</td>
<td>Standard (kW/s) With Electromagnetic Brake (kW/s)</td>
<td>16.7</td>
<td>27.3</td>
<td>38.2</td>
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<td>71.6</td>
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<td>93.9</td>
<td>125</td>
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<td>5.6</td>
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<td>Maximum Current (A) (Note 5)</td>
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<td>17 &lt;23&gt;</td>
<td>17 &lt;23&gt;</td>
<td>32 &lt;43&gt;</td>
<td>32 &lt;43&gt;</td>
<td>51 &lt;71&gt;</td>
<td>81 &lt;108&gt;</td>
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<td>Regenerative Braking Frequency (*2, Note 5)</td>
<td>MR-J4- (times/min) MR-J4W_- (times/min)</td>
<td>67 &lt;137&gt;</td>
<td>98 &lt;511&gt;</td>
<td>98 &lt;511&gt;</td>
<td>271 &lt;271&gt;</td>
<td>206 &lt;206&gt;</td>
<td>206 &lt;206&gt;</td>
<td>73 &lt;98&gt;</td>
<td>68 &lt;89&gt;</td>
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<td>Moment of Inertia J (x10 kg•m²)</td>
<td>Standard</td>
<td>1.52</td>
<td>2.09</td>
<td>2.65</td>
<td>3.79</td>
<td>4.92</td>
<td>13.2</td>
<td>19.0</td>
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<td>With Electromagnetic Brake</td>
<td>2.02</td>
<td>2.59</td>
<td>3.15</td>
<td>4.29</td>
<td>5.42</td>
<td>15.4</td>
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<td>52.9</td>
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<td>Recommended Load/Motor Inertia Ratio (Note 1)</td>
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<td>Absolute/incremental 22-bit encoder (resolution: 4194304 pulses/rev)</td>
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<td>Structure</td>
<td>Totally enclosed, natural cooling (IP rating: IP67) (Note 2)</td>
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<td>Environment (*3)</td>
<td>Ambient Temperature 0°C to 40°C (non-freezing), storage: -15°C to 70°C (non-freezing)</td>
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<td>Ambient Humidity 80% RH maximum (non-condensing), storage: 95% RH maximum (non-condensing)</td>
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<td>Atmosphere Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust</td>
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<td>Elevation 1000 m or less above sea level</td>
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<td>Vibration Rank</td>
<td>X: 24.5 m/s² Y: 24.5 m/s²</td>
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<td>Vibration Range</td>
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<td>Permissible Load for the Shaft (*5)</td>
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<td>490</td>
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<tr>
<td>Weight (kg)</td>
<td>Standard</td>
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<td>4.5</td>
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<td>13</td>
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<td>29</td>
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<tr>
<td></td>
<td>With Electromagnetic Brake</td>
<td>4.4</td>
<td>5.1</td>
<td>5.9</td>
<td>7.3</td>
<td>8.9</td>
<td>15</td>
<td>20</td>
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</table>

Notes: 1. For MR-J4 Servo Motor notes, please go to page 283

HG-JR 3000 Series (200V) Electromagnetic Brake Specifications (*1)

<table>
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<tr>
<th>Servo Motor Model HG-JR_</th>
<th>5S(B)</th>
<th>73(B)</th>
<th>103(B)</th>
<th>153(B)</th>
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<th>703(B)</th>
<th>903(B)</th>
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<tr>
<td>Type</td>
<td>Spring actuated type safety brake</td>
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<tr>
<td>Rated Voltage</td>
<td>24 VDC, 10%</td>
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<tr>
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<td>11.7</td>
<td>11.7</td>
<td>11.7</td>
<td>11.7</td>
<td>23</td>
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<tr>
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<td>6.6</td>
<td>6.6</td>
<td>6.6</td>
<td>6.6</td>
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<td>Permissible Braking Work</td>
<td>Per Braking (J)</td>
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<td>64</td>
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<td>64</td>
<td>400</td>
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<td>4500</td>
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<td>Per Hour (J)</td>
<td>640</td>
<td>640</td>
<td>640</td>
<td>640</td>
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<td>4000</td>
<td>4000</td>
<td>45000</td>
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<td>Electromagnetic Brake Life (*2)</td>
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<tr>
<td>Work Per Braking (J)</td>
<td>64</td>
<td>64</td>
<td>64</td>
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<td>400</td>
<td>400</td>
<td>1000</td>
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</tbody>
</table>

Notes: 1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.
Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed. The electromagnetic brake is for holding. It should not be used for deceleration applications.

For 3-phase 380 V AC.

### HG-JR 3000 Series (Low Inertia, Medium Capacity) Specifications 400V

<table>
<thead>
<tr>
<th>Servo Motor Model</th>
<th>Servo Amplifier Model</th>
<th>MR-J4-</th>
<th>534(B)</th>
<th>734(B)</th>
<th>1034(B)</th>
<th>1534(B)</th>
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<th>3534(B)</th>
<th>5034(B)</th>
<th>7034(B)</th>
<th>9034(B)</th>
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<tbody>
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<td>1.3</td>
<td>1.7</td>
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<td>7.5</td>
<td>10</td>
<td>13</td>
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</tr>
<tr>
<td>Continuous Running Duty</td>
<td>Rated Output (kW)</td>
<td>0.5</td>
<td>0.75</td>
<td>1.0</td>
<td>1.5</td>
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<td>3.3</td>
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<td>7.0</td>
<td>9.0</td>
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<td>2.4</td>
<td>3.2</td>
<td>4.8</td>
<td>6.4</td>
<td>10.5</td>
<td>11.1</td>
<td>(Note 5)</td>
<td>15.9</td>
<td>22.3</td>
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<tr>
<td>Maximum Torque (N*m) (Note 6)</td>
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<tr>
<td>Power Rate Continuous Torque (kW/s)</td>
<td>Standard (kW/s)</td>
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<td>27.3</td>
<td>38.2</td>
<td>60.2</td>
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<td>With Electromagnetic Brake (kW/s)</td>
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<td>22.0</td>
<td>32.2</td>
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<td>71.8</td>
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<td>8.6</td>
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<td>72</td>
<td>89</td>
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<td>275</td>
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<tr>
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<td>Moment of Inertia (x10^-4kg*m²)</td>
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<td>2.09</td>
<td>2.65</td>
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<td>19.0</td>
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<td>With Electromagnetic Brake</td>
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<td>21.2</td>
<td>52.9</td>
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<td>Recommended Load/Motor Inertia Ratio (Note 1)</td>
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<tr>
<td>Speed/Position Detector</td>
<td>Absolute/incremental 22-bit encoder (resolution: 4194304 pulses/rev)</td>
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<td>Oil Seal</td>
<td>Attached</td>
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<td>Structure</td>
<td>Totally enclosed, natural cooling (IP rating: IP67) (Note 2)</td>
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<tr>
<td>Environment (*3)</td>
<td>Ambient Temperature</td>
<td>0°C to 40°C (non-freezing), storage: -15°C to 70°C (non-freezing)</td>
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<td>Ambient Humidity</td>
<td>80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)</td>
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<td>Atmosphere</td>
<td>Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust</td>
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<td></td>
<td>Vibration (*4)</td>
<td>X: 24.5 m/s² Y: 24.5 m/s²</td>
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<td></td>
<td>X: 24.5 m/s² Y: 29.4 m/s²</td>
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<td>Vibration Rank</td>
<td>V10 (*6)</td>
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<td>Permissible Load for the Shaft (*5)</td>
<td>L (mm)</td>
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<td>40</td>
<td>40</td>
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<td>Radial (N)</td>
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<td>323</td>
<td>323</td>
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<td>980</td>
<td>2450</td>
<td>2450</td>
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<td>Thrust (N)</td>
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<td>284</td>
<td>284</td>
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<td>490</td>
<td>490</td>
<td>980</td>
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<td>Weight (kg)</td>
<td>Standard</td>
<td>3.0</td>
<td>3.7</td>
<td>4.5</td>
<td>5.9</td>
<td>7.5</td>
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<td>With Electromagnetic Brake</td>
<td>4.4</td>
<td>5.1</td>
<td>5.9</td>
<td>7.3</td>
<td>8.9</td>
<td>15</td>
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Notes: For MR-J4 Servo Motor notes, please go to page 283

### HG-JR 3000 Series (400V) Electromagnetic Brake Specifications (*1)

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<thead>
<tr>
<th>Servo Motor Model</th>
<th>HG-JR_</th>
<th>534(B)</th>
<th>734(B)</th>
<th>1034(B)</th>
<th>1534(B)</th>
<th>2034(A)</th>
<th>3534(B)</th>
<th>5034(B)</th>
<th>7034(B)</th>
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<td>Type</td>
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<tr>
<td>Rated Voltage</td>
<td>24 VDC ±1 %</td>
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<td></td>
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<tr>
<td>Power Consumption (W) at 20°C</td>
<td>11.7</td>
<td>11.7</td>
<td>11.7</td>
<td>11.7</td>
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<tr>
<td>Electromagnetic Brake Static Friction Torque (N*m)</td>
<td>6.6</td>
<td>6.6</td>
<td>6.6</td>
<td>6.6</td>
<td>6.6</td>
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<td>16</td>
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<tr>
<td>Permissible Braking Work</td>
<td>Per Braking (J)</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
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<td></td>
<td>Per Hour (J)</td>
<td>640</td>
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<td>Electric Brake Life (*2)</td>
<td>Number of Times (Times)</td>
<td>5000</td>
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<td></td>
<td></td>
<td>Work Per Braking (J)</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
<td>64</td>
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</tbody>
</table>

Notes:
1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.

References:
- Notes 1, 2, 3, 4, 5, 6, 7
- For 3-phase 400 V AC.
HG-JR 1000 r/min Series (Low Inertia, Medium/Large Capacity) Specifications 200V

<table>
<thead>
<tr>
<th>Servo Motor Model</th>
<th>HG-JR_</th>
<th>601(B)</th>
<th>801(B)</th>
<th>12K1(B)</th>
<th>15K1</th>
<th>20K1</th>
<th>25K1</th>
<th>30K1</th>
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<tr>
<td>Servo Amplifier Model</td>
<td>MR-J4</td>
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<tr>
<td>Power Supply Capacity (kVA) (*1)</td>
<td>8.0</td>
<td>12</td>
<td>18</td>
<td>22</td>
<td>30</td>
<td>38</td>
<td>48</td>
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<tr>
<td>Continuous Running Duty</td>
<td>6.0</td>
<td>8.0</td>
<td>12</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>37</td>
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<tr>
<td>Maximum Torque (N•m)</td>
<td>172</td>
<td>229</td>
<td>345</td>
<td>429</td>
<td>573</td>
<td>573</td>
<td>717</td>
<td>858</td>
<td>1059</td>
</tr>
</tbody>
</table>

**Notes:**
1. For 3-phase 200 V AC.
2. The electromagnetic brake is for holding. It should not be used for deceleration applications.
3. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.

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HG-JR 1000 r/min Series (200 V Class) Electromagnetic Brake Specifications (*1)

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<thead>
<tr>
<th>Servo Motor Model</th>
<th>HG-JR_</th>
<th>601B</th>
<th>801B</th>
<th>12K1B</th>
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<tr>
<td>Type</td>
<td>Spring actuated type safety brake</td>
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<tr>
<td>Rated Voltage</td>
<td>24 VDC</td>
<td>24 VDC</td>
<td>24 VDC</td>
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<tr>
<td>Power Consumption (W) at 28°C</td>
<td>32</td>
<td>32</td>
<td>32</td>
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</tr>
<tr>
<td>Electromagnetic Brake Static Friction Torque (N•m)</td>
<td>126</td>
<td>126</td>
<td>126</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.
### HG-JR 1000 r/min Series (Low Inertia, Medium/Large Capacity) Specifications 400V

<table>
<thead>
<tr>
<th>Servo Motor Model HG-JR...</th>
<th>6014(B)</th>
<th>8014(B)</th>
<th>12K14(B)</th>
<th>15K14</th>
<th>20K14</th>
<th>25K14</th>
<th>30K14</th>
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<tr>
<td>Power Supply Capacity (kVA) (<strong>1</strong>)</td>
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<td>18</td>
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<td>Continuous Running Duty Rate (kW)</td>
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<td>8.0</td>
<td>12</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>37</td>
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<tr>
<td>Maximum Torque (N•m)</td>
<td>172</td>
<td>229</td>
<td>345</td>
<td>429</td>
<td>573</td>
<td>717</td>
<td>858</td>
<td>1059</td>
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<tr>
<td>Rated Speed (r/min)</td>
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<td>Maximum Speed (r/min)</td>
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<td>Permissible Instantaneous Speed (r/min)</td>
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<td>1725</td>
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<tr>
<td>Power Rate at Continuous Rated Torque (kW/kA)</td>
<td>167</td>
<td>234</td>
<td>30</td>
<td>33</td>
<td>47</td>
<td>48</td>
<td>60</td>
<td>76</td>
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<tr>
<td>Maximum Current (A)</td>
<td>54</td>
<td>80</td>
<td>104</td>
<td>114</td>
<td>161</td>
<td>160</td>
<td>202</td>
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<tr>
<td>Regenerative Braking Frequency (<strong>2</strong>)</td>
<td>83</td>
<td>331 (Note 7)</td>
<td>229 (Note 7)</td>
<td>239 (Note 7)</td>
<td>187 (Note 7)</td>
<td>152 (Note 7)</td>
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<tr>
<td>Moment of Inertia J (x10^-9 kg•m²)</td>
<td>176</td>
<td>220</td>
<td>315</td>
<td>489</td>
<td>827</td>
<td>764</td>
<td>1377</td>
<td>1637</td>
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<td>Electromagnetic Brake</td>
<td>196</td>
<td>240</td>
<td>336</td>
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<td>Recommended Load/Motor Inertia Ratio (Note 3)</td>
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<td>Speed/Position Detector</td>
<td>Absolute/Incremental 22-bit encoder (resolution: 4194304 pulses/rev)</td>
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<td>Oil Seal</td>
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<td>Structure (Note 2)</td>
<td>Totally enclosed, natural cooling (IP rating: IP67)</td>
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<td>Environment (<strong>3</strong>)</td>
<td>Ambient Temperature 0°C to 40°C (non-freezing), storage: -15°C to 70°C (non-freezing)</td>
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<tr>
<td>Maximum Humidity</td>
<td>80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)</td>
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<td>Atmospheric Environment</td>
<td>Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust</td>
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<tr>
<td>Ambient Humidity</td>
<td>80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)</td>
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<tr>
<td>Vibration (<strong>4</strong>)</td>
<td>X: 24.5 m/s² Y: 24.5 m/s²</td>
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<td>Vibration Rank</td>
<td>V10 (<strong>6</strong>)</td>
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<tr>
<td>Permissible Load for the Shaft (<strong>5</strong>)</td>
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<td>116</td>
<td>116</td>
<td>140</td>
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<td>Radial (N)</td>
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<td>120</td>
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<td>Weight with Electromagnetic Brake</td>
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<td>74</td>
<td>97</td>
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<tr>
<td>Power Supply Voltage/Frequency</td>
<td>3-phase 200 V AC to 240 VAC, 50 Hz/60 Hz</td>
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<tr>
<td>Input (W)</td>
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<td>65 (50 Hz)/85 (60 Hz)</td>
<td>110 (50 Hz)/150 (60 Hz)</td>
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<tr>
<td>Rated Current (A)</td>
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<td>0.12 (50 Hz)/0.14 (60 Hz)</td>
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<td>Recommended Motor Inertia (kg•m²)</td>
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<td>Torque Per Braking (N•m)</td>
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<tr>
<td>Power Consumption (W)</td>
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<tr>
<td>Voltage/Frequency</td>
<td>3-phase 200 V AC to 240 VAC, 50 Hz/60 Hz</td>
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<td></td>
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<tr>
<td>Power Rate at Continuous Rated Torque (kW/kA)</td>
<td>167</td>
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<td></td>
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</tbody>
</table>

**Notes:**

1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.

---

### HG-JR 1000 r/min Series (400 V Class) Electromagnetic Brake Specifications (**1**)

<table>
<thead>
<tr>
<th>Servo Motor Model HG-JR...</th>
<th>6014(B)</th>
<th>8014(B)</th>
<th>12K14(B)</th>
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<tbody>
<tr>
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<td>Spring actuated type safety brake</td>
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<tr>
<td>Rated Voltage</td>
<td>24 VDC ±1%</td>
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<tr>
<td>Power Consumption (W) at 25°C</td>
<td>32</td>
<td>32</td>
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<tr>
<td>Electromagnetic Brake Static Friction Torque (N•m)</td>
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<td>126</td>
<td></td>
</tr>
<tr>
<td>Permissible Braking Work</td>
<td>Per Braking (J) 5000</td>
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<td></td>
</tr>
<tr>
<td>Per Hour (J) 45200</td>
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<tr>
<td>Electromagnetic Brake Life (<strong>2</strong>)</td>
<td>Number of Times (Times) 20000</td>
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</tr>
<tr>
<td>Work Per Braking (J) 400</td>
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</table>

**Notes:**

1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.
### HG-JR 1500 r/min Series (Low Inertia, Large Capacity) Specifications 200V

<table>
<thead>
<tr>
<th>Servo Motor Model HG-JR_</th>
<th>701M(B)</th>
<th>11K1M(B)</th>
<th>15K1M(B)</th>
<th>22K1M</th>
<th>30K1M</th>
<th>37K1M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Servo Amplifier Model MR-J4-</td>
<td>Refer to “Combinations of Servo Motor and Servo Amplifier” in this guide.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Supply Capacity (kVA) (*1)</td>
<td>10</td>
<td>16</td>
<td>22</td>
<td>33</td>
<td>48</td>
<td>59</td>
</tr>
<tr>
<td>Continuous Running Duty</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated Output (kW)</td>
<td>7.0</td>
<td>11</td>
<td>15</td>
<td>22</td>
<td>30</td>
<td>37</td>
</tr>
<tr>
<td>Rated Torque (N•m) (Note 3)</td>
<td>44.6</td>
<td>70.0</td>
<td>95.5</td>
<td>140</td>
<td>191</td>
<td>236</td>
</tr>
<tr>
<td>Maximum Torque (N•m)</td>
<td>134</td>
<td>210</td>
<td>286</td>
<td>420</td>
<td>573</td>
<td>707</td>
</tr>
<tr>
<td>Rated Speed (r/min)</td>
<td>1500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Speed (r/min)</td>
<td></td>
<td>3000</td>
<td></td>
<td>2500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permissible Instantaneous Speed (r/min)</td>
<td></td>
<td>2450</td>
<td></td>
<td>2875</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Rate Continuous Rated Torque (kW/s)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard (kW/s)</td>
<td>113</td>
<td>223</td>
<td>289</td>
<td>401</td>
<td>582</td>
<td>726</td>
</tr>
<tr>
<td>With Electromagnetic Brake (kW/s)</td>
<td></td>
<td>101</td>
<td>204</td>
<td>271</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Rated Current (A)</td>
<td>34</td>
<td>61</td>
<td>76</td>
<td>99</td>
<td>139</td>
<td>151</td>
</tr>
<tr>
<td>Maximum Current (A)</td>
<td></td>
<td>111</td>
<td>200</td>
<td>246</td>
<td>315</td>
<td>479</td>
</tr>
<tr>
<td>Regenerative Braking Frequency (*2) MR-J4- (times/min)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>143 (Note 7)</td>
<td>162 (Note 7)</td>
<td>104 (Note 7)</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Moment of Inertia J (x10^-4kg•m²)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>176</td>
<td>220</td>
<td>315</td>
<td>489</td>
<td>627</td>
<td>764</td>
</tr>
<tr>
<td>With Electromagnetic Brake</td>
<td>196</td>
<td>240</td>
<td>336</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Recommended Load/Motor Inertia Ratio (Note 1)</td>
<td>10 times or less</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed/Position Detector</td>
<td>Absolute/incremental 22-bit encoder (resolution: 4194304 pulses/rev)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil Seal</td>
<td>Attached</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insulation Class</td>
<td>155 (F)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure (Note 2)</td>
<td>Totally enclosed, natural cooling (IP rating: IP67)</td>
<td>Totally enclosed, force cooling (IP rating: IP44)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environment (*3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature 0°C to 40°C (non-freezing), storage: -15°C to 70°C (non-freezing)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient Humidity 80% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atmosphere Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elevation 1000 m or less above sea level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vibration (V<strong>4</strong></td>
<td>X: 24.5 m/s²</td>
<td>Y: 24.5 m/s²</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vibration Rank V10 (*6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permissible Load for the Shaft (L:mm)</td>
<td>116</td>
<td>116</td>
<td>116</td>
<td>140</td>
<td>140</td>
<td>140</td>
</tr>
<tr>
<td>Radial (N)</td>
<td>2940</td>
<td>2940</td>
<td>2940</td>
<td>3234</td>
<td>3234</td>
<td>3234</td>
</tr>
<tr>
<td>Thrust (N)</td>
<td>980</td>
<td>980</td>
<td>980</td>
<td>1470</td>
<td>1470</td>
<td>1470</td>
</tr>
<tr>
<td>Weight (kg) Standard</td>
<td>65</td>
<td>74</td>
<td>97</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>With Electromagnetic Brake</td>
<td>53</td>
<td>62</td>
<td>86</td>
<td>120</td>
<td>145</td>
<td>165</td>
</tr>
<tr>
<td>Cooling Fan</td>
<td>Voltage/Frequency</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3-phase 200 VAC to 240 VAC, 50 Hz/60 Hz</td>
<td></td>
</tr>
<tr>
<td>Input</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>65 (50 Hz)/85 (60 Hz)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated Current</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.20 (50 Hz)/0.22 (60 Hz)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notes: For MR-J4 Servo Motor notes, please go to page 283</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### HG-JR 1500 Series Electromagnetic Brake Specifications (*1)

<table>
<thead>
<tr>
<th>Servo Motor Model HG-JR_</th>
<th>701MB</th>
<th>11K1MB</th>
<th>15K1MB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Spring actuated type safety brake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated Voltage</td>
<td>24 VDC, -10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Consumption (W) at 20°C</td>
<td>32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electromagnetic Brake Static Friction Torque (N•m)</td>
<td>126</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permissible Braking Work Per Braking (J)</td>
<td>5000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Hour (J)</td>
<td>45200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electromagnetic Brake Life (*2)</td>
<td>20000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work Per Braking (J)</td>
<td>400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notes: 1. The electromagnetic brake is for holding. It should not be used for deceleration applications. 2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### HG-JR 701MB (F1, F2)

<table>
<thead>
<tr>
<th>Torque [N•m]</th>
<th>Short-duration running range</th>
<th>Continuous running range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed [r/min]</td>
<td>2000</td>
<td>3000</td>
</tr>
</tbody>
</table>

### HG-JR11K1MB (F1, F2)

<table>
<thead>
<tr>
<th>Torque [N•m]</th>
<th>Short-duration running range</th>
<th>Continuous running range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed [r/min]</td>
<td>2000</td>
<td>3000</td>
</tr>
</tbody>
</table>

### HG-JR15K1MB (F1, F2)

<table>
<thead>
<tr>
<th>Torque [N•m]</th>
<th>Short-duration running range</th>
<th>Continuous running range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed [r/min]</td>
<td>2000</td>
<td>3000</td>
</tr>
</tbody>
</table>

### HG-JR22K1MB (F1, F2)

<table>
<thead>
<tr>
<th>Torque [N•m]</th>
<th>Short-duration running range</th>
<th>Continuous running range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed [r/min]</td>
<td>2000</td>
<td>3000</td>
</tr>
</tbody>
</table>

### HG-JR30K1MB (F1, F2)

<table>
<thead>
<tr>
<th>Torque [N•m]</th>
<th>Short-duration running range</th>
<th>Continuous running range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed [r/min]</td>
<td>2000</td>
<td>3000</td>
</tr>
</tbody>
</table>

### HG-JR37K1MB (F1, F2)

<table>
<thead>
<tr>
<th>Torque [N•m]</th>
<th>Short-duration running range</th>
<th>Continuous running range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed [r/min]</td>
<td>2000</td>
<td>3000</td>
</tr>
</tbody>
</table>

Notes: 1. For 2-phase 200 V AC. 2. Torque drops when the power supply voltage is below the specified value.
ASSEMBLY FOR MR-J4 Servo Motor notes, please go to page 283

HG-JR 1500 r/min Series (Low Inertia, Medium/Large Capacity) Specifications 400V

<table>
<thead>
<tr>
<th>Servo Motor Model</th>
<th>HG-JR11K1M4(B)</th>
<th>HG-JR15K1M4(B)</th>
<th>HG-JR22K1M4(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>115 VDC, 85 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated Voltage</td>
<td>24 VDC, 85 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Consumption</td>
<td>32 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous Running Duty</td>
<td>20°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous Rated Torque (N•m)</td>
<td>126</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electromagnetic Brake Static Friction Torque (N•m)</td>
<td>126</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permissible Braking Work Per Braking (J)</td>
<td>5000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Hour (J)</td>
<td>45200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Times (Times)</td>
<td>20000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work Per Braking (J)</td>
<td>400</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.
3. To torque drops when the power supply voltage is below the specified value.

HG-JR 1500 Series Electromagnetic Brake Specifications (*1)

<table>
<thead>
<tr>
<th>Servo Motor Model</th>
<th>HG-JR11K1M4(B)</th>
<th>HG-JR15K1M4(B)</th>
<th>HG-JR22K1M4(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Spring actuated type safety brake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated Voltage</td>
<td>24 VDC, 85 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Consumption</td>
<td>32 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous Running Duty</td>
<td>20°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous Rated Torque (N•m)</td>
<td>126</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electromagnetic Brake Static Friction Torque (N•m)</td>
<td>126</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permissible Braking Work Per Braking (J)</td>
<td>5000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Hour (J)</td>
<td>45200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Times (Times)</td>
<td>20000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work Per Braking (J)</td>
<td>400</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.
3. To torque drops when the power supply voltage is below the specified value.
### HG-RR Series 3000 r/min (Ultra-Low Inertia, Medium Capacity) Specifications 200V

<table>
<thead>
<tr>
<th>Servo Motor Model HG-RR</th>
<th>103(B)</th>
<th>153(B)</th>
<th>203(B)</th>
<th>353(B)</th>
<th>503(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>SPRING ACTUATED TYPE SAFETY BRAKE</td>
<td>SPRING ACTUATED TYPE SAFETY BRAKE</td>
<td>SPRING ACTUATED TYPE SAFETY BRAKE</td>
<td>SPRING ACTUATED TYPE SAFETY BRAKE</td>
<td>SPRING ACTUATED TYPE SAFETY BRAKE</td>
</tr>
<tr>
<td>Rated Voltage</td>
<td>24 VDC</td>
<td>24 VDC</td>
<td>24 VDC</td>
<td>24 VDC</td>
<td>24 VDC</td>
</tr>
<tr>
<td>Power Consumption (W)</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>Electromagnetic Brake Static Friction Torque (N•m)</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
</tr>
<tr>
<td>Permissible Braking Work Per Hour (J)</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>Electromagnetic Brake Life (times)</td>
<td>20000</td>
<td>20000</td>
<td>20000</td>
<td>20000</td>
<td>20000</td>
</tr>
</tbody>
</table>
| Notes:                  | 1. The electromagnetic brake is for holding. It should not be used for deceleration applications. 2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.

---

### HG-RR Series Electromagnetic Brake Specifications (*1)

<table>
<thead>
<tr>
<th>Servo Motor Model HG-RR</th>
<th>103(B)</th>
<th>153(B)</th>
<th>203(B)</th>
<th>353(B)</th>
<th>503(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>SPRING ACTUATED TYPE SAFETY BRAKE</td>
<td>SPRING ACTUATED TYPE SAFETY BRAKE</td>
<td>SPRING ACTUATED TYPE SAFETY BRAKE</td>
<td>SPRING ACTUATED TYPE SAFETY BRAKE</td>
<td>SPRING ACTUATED TYPE SAFETY BRAKE</td>
</tr>
<tr>
<td>Rated Voltage</td>
<td>24 VDC</td>
<td>24 VDC</td>
<td>24 VDC</td>
<td>24 VDC</td>
<td>24 VDC</td>
</tr>
<tr>
<td>Power Consumption (W)</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>Electromagnetic Brake Static Friction Torque (N•m)</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
</tr>
<tr>
<td>Permissible Braking Work Per Hour (J)</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>Electromagnetic Brake Life (times)</td>
<td>20000</td>
<td>20000</td>
<td>20000</td>
<td>20000</td>
<td>20000</td>
</tr>
</tbody>
</table>
| Notes:                  | 1. The electromagnetic brake is for holding. It should not be used for deceleration applications. 2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.

---

### HG-RR103(B) (Note 1)

<table>
<thead>
<tr>
<th>Torque [N•m]</th>
<th>Speed [r/min]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-duration running range</td>
<td>1000-2000</td>
</tr>
<tr>
<td>Continuous running range</td>
<td>2000-3000</td>
</tr>
</tbody>
</table>

Notes: 1. For 3-phase 200 V AC. 2. Torque drops when the power supply voltage is below the specified value.
### HG-UR 2000 r/min Series (Flat Type, Medium Capacity) Specifications 200V

<table>
<thead>
<tr>
<th>Servo Motor Model HG-UR_</th>
<th>72(B)</th>
<th>152(B)</th>
<th>202(B)</th>
<th>352(B)</th>
<th>502(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Servo Amplifier Model MR-J4-_</td>
<td>MR-J4W-_</td>
<td>Refer to &quot;Combinations of Servo Motor and Servo Amplifier&quot; in this selection guide</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Supply Capacity (kVA) (*1)</td>
<td>1.3</td>
<td>2.5</td>
<td>3.5</td>
<td>5.5</td>
<td>7.5</td>
</tr>
<tr>
<td>Continuous Running Duty Rated Output (kW)</td>
<td>0.75</td>
<td>1.5</td>
<td>2.0</td>
<td>3.5</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td>Rated Torque (N•m) (Note 3)</td>
<td>3.6</td>
<td>7.2</td>
<td>9.5</td>
<td>16.7</td>
</tr>
<tr>
<td>Maximum Torque (N•m)</td>
<td>10.7</td>
<td>21.5</td>
<td>28.6</td>
<td>50.1</td>
<td>71.6</td>
</tr>
<tr>
<td>Rated Speed (r/min)</td>
<td>2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Speed (r/min)</td>
<td>3000</td>
<td>2500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permissible Instantaneous Speed (r/min)</td>
<td>3450</td>
<td>2875</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Rate Continuous Rated Torque Standard (kW/s)</td>
<td>12.3</td>
<td>23.2</td>
<td>23.9</td>
<td>36.5</td>
<td>49.6</td>
</tr>
<tr>
<td></td>
<td>With Electromagnetic Brake (kW/s)</td>
<td>10.3</td>
<td>21.2</td>
<td>19.5</td>
<td>32.8</td>
</tr>
<tr>
<td>Rated Current (A)</td>
<td>5.4</td>
<td>9.7</td>
<td>14</td>
<td>23</td>
<td>28</td>
</tr>
<tr>
<td>Maximum Current (A)</td>
<td>16</td>
<td>29</td>
<td>42</td>
<td>59</td>
<td>84</td>
</tr>
<tr>
<td>Regenerative Braking Frequency (*2) MR-J4- (times/min)</td>
<td>53</td>
<td>124</td>
<td>68</td>
<td>44</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>MR-J4W- (times/min)</td>
<td>107</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Moment of Inertia J (x10^-4kg•m²) Standard</td>
<td>10.4</td>
<td>22.1</td>
<td>38.2</td>
<td>76.5</td>
<td>115</td>
</tr>
<tr>
<td></td>
<td>With Electromagnetic Brake</td>
<td>12.5</td>
<td>24.2</td>
<td>46.8</td>
<td>85.1</td>
</tr>
<tr>
<td>Recommended Load/Motor Inertia Ratio (Note 1)</td>
<td>15 times or less</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed/Position Detector</td>
<td>Absolute/incremental 22-bit encoder (resolution: 4194304 pulses/rev)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil Seal</td>
<td>Attached</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insulation Class</td>
<td>155 (F)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure</td>
<td>Totally enclosed, natural cooling (IP rating: IP65) (Note 2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>U°C to 40°C (non-freezing), storage: -15°C to 70°C (non-freezing)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient Humidity</td>
<td>90% RH maximum (non-condensing), storage: 90% RH maximum (non-condensing)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atmosphere</td>
<td>Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elevation</td>
<td>1000 m or less above sea level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vibration Rank</td>
<td>V10 (*6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permissible Load for the Shaft (*5) L (mm)</td>
<td>55</td>
<td>55</td>
<td>65</td>
<td>85</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>Radial (N)</td>
<td>637</td>
<td>637</td>
<td>882</td>
<td>1176</td>
</tr>
<tr>
<td></td>
<td>Thrust (N)</td>
<td>490</td>
<td>490</td>
<td>784</td>
<td>784</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>Standard</td>
<td>5.0</td>
<td>11</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>With Electromagnetic Brake</td>
<td>10</td>
<td>13</td>
<td>22</td>
<td>26</td>
</tr>
</tbody>
</table>

### Notes:
1. For MR-J4 Servo Motor notes, please go to page 283

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### HG-UR 2000 Series Electromagnetic Brake Specifications (*1)

<table>
<thead>
<tr>
<th>Servo Motor Model HG-UR_</th>
<th>72B</th>
<th>152B</th>
<th>202B</th>
<th>352B</th>
<th>502B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Spring actuated type safety brake</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated Voltage</td>
<td>24 VDC, 3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Consumption (W) at 20°C</td>
<td>19</td>
<td>19</td>
<td>34</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>Electromagnetic Brake Static Friction Torque (N•m)</td>
<td>8.5</td>
<td>8.5</td>
<td>44</td>
<td>44</td>
<td>44</td>
</tr>
<tr>
<td>Permissible Braking Work Per Hour (J)</td>
<td>4000</td>
<td>4000</td>
<td>45000</td>
<td>45000</td>
<td>45000</td>
</tr>
<tr>
<td>Electromagnetic Brake Life (*2) Number of Times (Times)</td>
<td>20000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work Per Braking (J)</td>
<td>200</td>
<td>200</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
</tr>
</tbody>
</table>

### Notes:
1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.

---

### HG-UR72(B) (Note 1, 2, 3)

<table>
<thead>
<tr>
<th>Torque [N•m]</th>
<th>Continuous running range</th>
<th>Short-duration running range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed (r/min)</td>
<td>1000</td>
<td>2000</td>
</tr>
<tr>
<td>Speed (mm/min)</td>
<td>1000</td>
<td>2000</td>
</tr>
</tbody>
</table>

### HG-UR152(B) (Note 1)

<table>
<thead>
<tr>
<th>Torque [N•m]</th>
<th>Continuous running range</th>
<th>Short-duration running range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed (r/min)</td>
<td>1000</td>
<td>2000</td>
</tr>
<tr>
<td>Speed (mm/min)</td>
<td>1000</td>
<td>2000</td>
</tr>
</tbody>
</table>

### HG-UR202(B) (Note 1)

<table>
<thead>
<tr>
<th>Torque [N•m]</th>
<th>Continuous running range</th>
<th>Short-duration running range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed (r/min)</td>
<td>1000</td>
<td>2000</td>
</tr>
<tr>
<td>Speed (mm/min)</td>
<td>1000</td>
<td>2000</td>
</tr>
</tbody>
</table>

### HG-UR352(B) (Note 1)

<table>
<thead>
<tr>
<th>Torque [N•m]</th>
<th>Continuous running range</th>
<th>Short-duration running range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed (r/min)</td>
<td>1000</td>
<td>2000</td>
</tr>
<tr>
<td>Speed (mm/min)</td>
<td>1000</td>
<td>2000</td>
</tr>
</tbody>
</table>

### HG-UR502(B) (Note 1)

<table>
<thead>
<tr>
<th>Torque [N•m]</th>
<th>Continuous running range</th>
<th>Short-duration running range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed (r/min)</td>
<td>1000</td>
<td>2000</td>
</tr>
<tr>
<td>Speed (mm/min)</td>
<td>1000</td>
<td>2000</td>
</tr>
</tbody>
</table>

Notes:
1. For 3-phase 200 V AC.
2. For 1-phase 230 V AC.
3. For 1-phase 200 V AC.
4. Torque drops when the power supply voltage is below the specified value.
### HG-AK Series (Ultra-compact Size, Ultra-small Capacity) Specifications (*4)

<table>
<thead>
<tr>
<th>Servo Motor Model HG-AK</th>
<th>0136B</th>
<th>0236B</th>
<th>0336B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Servo Amplifier Model</td>
<td>Refer to &quot;Combinations of Servo Motor and Servo Amplifier&quot; in this selection guide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Supply Capacity (kVA) (*1)</td>
<td>230</td>
<td>360</td>
<td>480</td>
</tr>
<tr>
<td>Continuous Running Duty</td>
<td>Rated Output (W)</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Rated Torque (N•m) (*3)</td>
<td>0.032</td>
<td>0.064</td>
</tr>
<tr>
<td></td>
<td>Maximum Torque (N•m)</td>
<td>0.095</td>
<td>0.191</td>
</tr>
<tr>
<td></td>
<td>Rated Speed (r/min)</td>
<td>3000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maximum Speed (r/min)</td>
<td>6000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Permissible Instantaneous Speed (r/min)</td>
<td>6900</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Power Rate Continuous Rated Torque</td>
<td>Standard (kW/s) 3.54</td>
<td>9.01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>With Electromagnetic Brake (kW/s) 2.41</td>
<td>6.99</td>
</tr>
<tr>
<td></td>
<td>Rated Current (A)</td>
<td>2.1</td>
<td>2.1</td>
</tr>
<tr>
<td></td>
<td>Maximum Current (A)</td>
<td>6.3</td>
<td>6.3</td>
</tr>
<tr>
<td>Regenerative Braking Frequency (times/min) (*2)</td>
<td>1700</td>
<td>1200</td>
<td>900</td>
</tr>
<tr>
<td>Moment of Inertia J (x10^-4kg•m²)</td>
<td>Standard</td>
<td>0.0029</td>
<td>0.0045</td>
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<tr>
<td></td>
<td>With Electromagnetic Brake</td>
<td>0.0042</td>
<td>0.0058</td>
</tr>
<tr>
<td>Recommended Load/Motor Inertia Ratio (Note 1)</td>
<td>30 times or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed/Position Detector</td>
<td>Absolute/incremental 18-bit encoder (resolution: 262144 pulses/rev)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil Seal</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insulation Class</td>
<td>130 (B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure</td>
<td>Totally enclosed, natural cooling (IP rating: IP55) (Note 2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environment (*3)</td>
<td>Ambient Temperature</td>
<td>Operation: 0°C to 40°C (non-freezing), storage: -15°C to 70°C (non-freezing)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ambient Humidity</td>
<td>Operation: 80%RH maximum (non-condensing), storage: 90%RH maximum (non-condensing)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Atmosphere</td>
<td>Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elevation</td>
<td>1000 m or less above sea level</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vibration (*4)</td>
<td>X: 49 m/s² Y: 49 m/s²</td>
<td></td>
</tr>
<tr>
<td>Vibration Rank</td>
<td>V10 (*6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permissible Load for the Shaft (*5)</td>
<td>L (mm)</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Radial (N)</td>
<td>34</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>Thrust (N)</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>Standard</td>
<td>0.12</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td>With Electromagnetic Brake</td>
<td>0.22</td>
<td>0.24</td>
</tr>
</tbody>
</table>

**Notes:**
1. For MR-J4 Servo Motor notes, please go to page 283

### HG-AK Series Electromagnetic Brake Specifications (*1)

<table>
<thead>
<tr>
<th>Servo Motor Model HG-AK</th>
<th>0136B</th>
<th>0236B</th>
<th>0336B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Spring actuated type safety brake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated Voltage</td>
<td>24 VDC, 15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Consumption (W) at 20°C</td>
<td>1.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electromagnetic Brake Static Friction Torque (N•m)</td>
<td>0.095</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permissible Braking Work</td>
<td>Per Braking (J) 4.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Per Hour (J) 46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electromagnetic Brake Life (*2)</td>
<td>Number of Times (Times) 20000</td>
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</tr>
<tr>
<td></td>
<td>Work Per Braking (J) 1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.
Servo Motor Notes:

1. Contact your local sales office if the load to motor inertia ratio exceeds the value in the table.
2. The shaft-through portion is excluded. For geared Servo Motor, IP rating of the reducer portion is equivalent to IP44. Refer to the “7 below for the shaft-through portion.
3. When unbalanced torque is generated, such as in a vertical lift machine, keep the unbalanced torque of the machine under 70% of the Servo Motor rated torque.
4. When the Servo 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 the Servo Motor decelerates to a stop from the maximum speed, the regenerative frequency will not be limited if the following requirements are met.
   - HG-KR053(B): The load to motor inertia ratio is 8 times or less, and the effective torque is within the rated torque range.
   - HG-KR13(B): The load to motor inertia ratio is 4 times or less, and the effective torque is within the rated torque range.
   - HG-MR053(B): The load to motor inertia ratio is 24 times or less, and the effective torque is within the rated torque range.
   - HG-MR13(B): The load to motor inertia ratio is 12 times or less, and the effective torque is within the rated torque range.
5. The value in angle brackets is applicable when the Servo Motor is used with MR-J4-500B/MR-J4-500B-RJ/MR-J4-500B-RJ010/MR-J4-500A/MR-J4-500A-RJ.
6. The value in angle brackets is applicable when the maximum torque is increased. The maximum torque will be increased by changing the servo amplifier to be combined. Refer to "Combinations of HG-JR Servo Motor Series and Servo Amplifier (200 V Class) for Increasing the Maximum Torque to 400% of the Rated Torque" in the User’s Guide for the available combinations.
7. The value is applicable when the external regenerative resistors, GRZG400-Ω (standard accessory) are used with cooling fans (2 units of 92 mm x 92 mm, minimum airflow: 1.0 m³/min). Note that [Pr. PA02] must be changed.

Annotations (*) for Servo Motor Specifications

1. The power supply capacity varies depending on the power supply impedance.
2. The regenerative braking frequency shows the permissible frequency when the Servo Motor, without a load and a regenerative option, decelerates from the rated speed to a stop. When a load is connected; however, the value will be the table value/(m+1), where m = Moment of inertia of load/Moment of inertia of Servo Motor. When the operating speed exceeds the rated speed, the regenerative braking frequency is inversely proportional to the square of (operating speed/rated speed). Take measures to keep the regenerative power [W] during operation below the tolerable regenerative power [W]. Use caution, especially when the operating speed changes frequently or when the regeneration is constant (as with vertical feeds). Select the most suitable regenerative option for your system with our capacity selection software. Refer to "Regenerative Option" in this catalog for the tolerable regenerative power [W] when regenerative option is used.
3. 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.
4. The vibration direction is shown in the diagram below. The numerical value indicates the maximum value of the component (commonly the bracket in the opposite direction of the Servo Motor shaft).

   \[ \text{Fretting more likely occurs on the bearing when the Servo Motor stops. Thus, maintain vibration level at approximately one-half of the allowable value.} \]

5. Refer to the diagram below for the permissible load for the shaft. Do not apply a load exceeding the value specified in the table on the shaft. The values in the table are applicable when each load is applied singly.

   \[ \text{L: Distance between the flange mounting surface and the center of load.} \]

6. V10 indicates that the amplitude of the Servo Motor itself is 10 μm or less. The following shows mounting posture and measuring position of the Servo Motor during the measurement:

7. Refer to the diagram below for shaft-through portion.