

Rotary Servo Motors

HG-SR 2000 r/min Series (Medium Inertia, Medium Capacity) (200 V Class) Specifications

| Rotary servo motor model | | HG-SR | 52(B) | 102(B) | 152(B) | 202(B) | 352(B) | 502(B) | 702(B) |
|---|----------------------------------|---|--|------------------|--------|---|--------|---|----------------------------------|
| Compatible servo amplifier model | | MR-J4- MR-J4W_- | Refer to "Combinations of Rotary Servo Motor and Servo Amplifier" on p. 2-4 in this catalog. | | | | | | |
| Power supply capacity ¹ | | [kVA] | 1.0 | 1.7 | 2.5 | 3.5 | 5.5 | 7.5 | 10 |
| Continuous running duty | Rated output | [kW] | 0.5 | 1.0 | 1.5 | 2.0 | 3.5 | 5.0 | 7.0 |
| | Rated torque ^(Note 3) | [N·m] | 2.4 | 4.8 | 7.2 | 9.5 | 16.7 | 23.9 | 33.4 |
| Maximum torque | | [N·m] | 7.2 | 14.3 | 21.5 | 28.6 | 50.1 | 71.6 | 100 <134> ^(Note 5) |
| Rated speed | | [r/min] | 2000 | | | | | | |
| Maximum speed | | [r/min] | 3000 | | | | | | |
| Permissible instantaneous speed | | [r/min] | 3450 | | | | | | |
| Power rate at continuous rated torque | Standard | [kW/s] | 7.85 | 19.7 | 32.1 | 19.5 | 35.5 | 57.2 | 74.0 |
| | With electromagnetic brake | [kW/s] | 6.01 | 16.5 | 28.2 | 16.1 | 31.7 | 52.3 | 69.4 |
| Rated current | | [A] | 2.9 | 5.6 | 9.4 | 9.6 | 14 | 22 | 26 |
| Maximum current | | [A] | 9.0 | 17 | 29 | 31 | 45 | 70 | 83 <116> ^(Note 5) |
| Regenerative braking frequency ² | MR-J4- | [times/min] | 31 | 38 | 139 | 47 | 28 | 29 | 25 ^(Note 6) |
| | MR-J4W_- | [times/min] | 154 | 96 | - | - | - | - | - |
| Moment of inertia J | Standard | [× 10 ⁻⁴ kg·m ²] | 7.26 | 11.6 | 16.0 | 46.8 | 78.6 | 99.7 | 151 |
| | With electromagnetic brake | [× 10 ⁻⁴ kg·m ²] | 9.48 | 13.8 | 18.2 | 56.5 | 88.2 | 109 | 161 |
| Recommended load to motor inertia ratio ^(Note 1) | | | 15 times or less | 17 times or less | | 15 times or less | | | |
| Speed/position detector | | | Absolute/incremental 22-bit encoder (resolution: 4194304 pulses/rev) | | | | | | |
| Oil seal | | | None (Servo motors with oil seal are available. (HG-SR_J)) | | | | | | |
| Thermistor | | | None | | | | | | |
| Insulation class | | | 155 (F) | | | | | | |
| Structure | | | Totally enclosed, natural cooling (IP rating: IP67) ^(Note 2) | | | | | | |
| Environment ³ | Ambient temperature | | Operation: 0 °C to 40 °C (non-freezing), storage: -15 °C to 70 °C (non-freezing) | | | | | | |
| | Ambient humidity | | Operation: 10 %RH to 80 %RH (non-condensing), storage: 10 %RH to 90 %RH (non-condensing) | | | | | | |
| | Ambience | | Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust | | | | | | |
| | Altitude | | 2000 m or less above sea level ^(Note 4) | | | | | | |
| Vibration resistance ⁴ | | | X: 24.5 m/s ² Y: 24.5 m/s ² | | | X: 24.5 m/s ² Y: 49 m/s ² | | X: 24.5 m/s ² Y: 29.4 m/s ² | |
| Vibration rank | | | V10 ⁶ | | | | | | |
| Compliance with global standards | | | Refer to "Compliance with Global Standards and Regulations" on p. 55 in this catalog. | | | | | | |
| Permissible load for the shaft ⁵ | L | [mm] | 55 | 55 | 55 | 79 | 79 | 79 | 79 |
| | Radial | [N] | 980 | 980 | 980 | 2058 | 2058 | 2058 | 2058 |
| | Thrust | [N] | 490 | 490 | 490 | 980 | 980 | 980 | 980 |
| Mass | Standard | [kg] | 4.8 | 6.2 | 7.3 | 11 | 16 | 20 | 27 |
| | With electromagnetic brake | [kg] | 6.7 | 8.2 | 9.3 | 17 | 22 | 26 | 33 |

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. The servo motor with oil seal is rated IP67 as well (excluding the shaft-through portion), and for geared servo motor, IP rating of the gear reducer portion is equivalent to IP44. Refer to the asterisk 7 of "Annotations for Rotary Servo Motor Specifications" on p. 2-39 in this catalog 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. Refer to "Servo Motor Instruction Manual (Vol. 3)" for the restrictions when using the servo motors at altitude exceeding 1000 m and up to 2000 m above sea level.

5. The value in angle brackets is applicable when the servo motor is combined with MR-J4-DU900B(-RJ) drive unit, and the maximum torque is increased with a parameter setting.

6. This value is applicable when the servo motor is combined with MR-J4-700GF(-RJ)/MR-J4-700B(-RJ)/MR-J4-700A(-RJ) servo amplifier. Contact your local sales office for the regenerative braking frequency with MR-J4-DU900B(-RJ) drive unit.

Refer to "Annotations for Rotary Servo Motor Specifications" on p. 2-39 in this catalog for the asterisks 1 to 6.

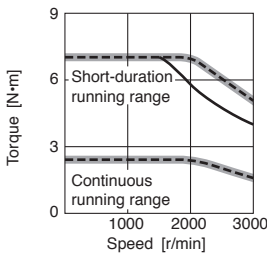
HG-SR 2000 r/min Series (200 V Class) Electromagnetic Brake Specifications (Note 1)

| Model | HG-SR | 52B | 102B | 152B | 202B | 352B | 502B | 702B |
|--|-----------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Type | Spring actuated type safety brake | | | | | | | |
| Rated voltage | 24 V DC _{-10%} | | | | | | | |
| Power consumption [W] at 20 °C | 20 | 20 | 20 | 34 | 34 | 34 | 34 | 34 |
| Electromagnetic brake static friction torque [N·m] | 8.5 | 8.5 | 8.5 | 44 | 44 | 44 | 44 | 44 |
| Permissible braking work | Per braking [J] | 400 | 400 | 400 | 4500 | 4500 | 4500 | 4500 |
| | Per hour [J] | 4000 | 4000 | 4000 | 45000 | 45000 | 45000 | 45000 |
| Electromagnetic brake life (Note 2) | Number of braking times | 20000 | 20000 | 20000 | 20000 | 20000 | 20000 | 20000 |
| | Work per braking [J] | 200 | 200 | 200 | 1000 | 1000 | 1000 | 1000 |

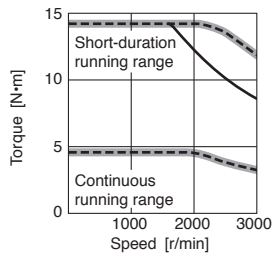
Notes: 1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
 2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.

HG-SR 2000 r/min Series (200 V Class) Torque Characteristics

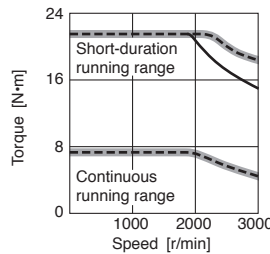
HG-SR52(B) (Note 1, 2, 3, 4)



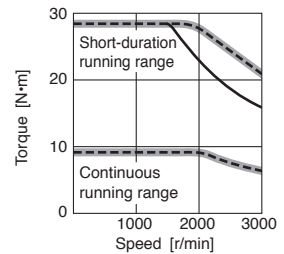
HG-SR102(B) (Note 1, 2, 3, 4)



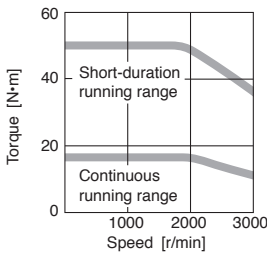
HG-SR152(B) (Note 1, 2, 3, 4)



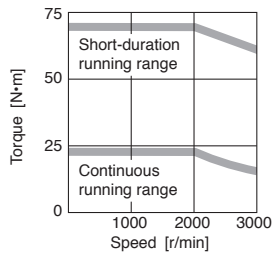
HG-SR202(B) (Note 1, 2, 3, 4)



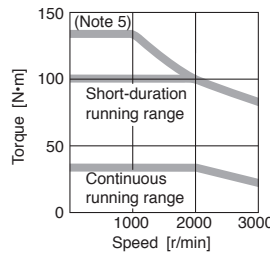
HG-SR352(B) (Note 1, 4)



HG-SR502(B) (Note 1, 4)



HG-SR702(B) (Note 1, 4)



Notes: 1. — : For 3-phase 200 V AC.
 2. - - - : For 1-phase 230 V AC.
 3. — : For 1-phase 200 V AC. This line is drawn only where differs from the other two lines.
 4. Torque drops when the power supply voltage is below the specified value.
 5. This value is applicable when the servo motor is combined with MR-J4-DU900B(-RJ) drive unit, and the maximum torque is increased with a parameter setting.

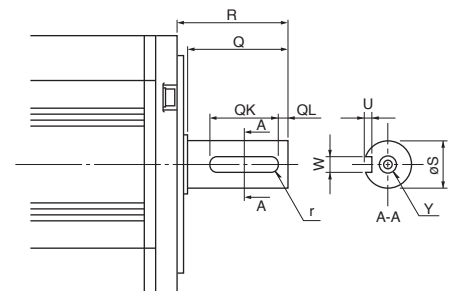
HG-SR 2000 r/min Series (200 V Class) Special Shaft End Specifications

Motors with the following specifications are also available.

Key shaft (without key) (Note 1, 2)

| Model | Variable dimensions | | | | | | | | |
|---|-----------------------------------|----|----|-----------------------------------|----|----|--------------------------------|---|-----------------------|
| | S | R | Q | W | QK | QL | U | r | Y |
| HG-SR52(B)K, 102(B)K, 152(B)K | 24h6 | 55 | 50 | 8 ⁰ _{-0.036} | 36 | 5 | 4 ^{+0.2} ₀ | 4 | M8 screw Depth: 20 |
| HG-SR202(B)K, 352(B)K, 502(B)K, 702(B)K | 35 ^{+0.010} ₀ | 79 | 75 | 10 ⁰ _{-0.036} | 55 | 5 | 5 ^{+0.2} ₀ | 5 | |

Notes: 1. The servo motors with special shaft end are not suitable for frequent start/stop applications.
 2. A key is not supplied with the servo motor. The key shall be installed by the user.



[Unit: mm]

Rotary Servo Motors

HG-JR 3000 r/min Series (Low Inertia, Medium Capacity) (200 V Class) Specifications

| Rotary servo motor model | | HG-JR | 53(B) | 73(B) | 103(B) | 153(B) | 203(B) | 353(B) | 503(B) | 703(B) | 903(B) | |
|--|----------------------------|---|---|-----------------------|------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--|--------------------|--|
| Compatible servo amplifier model | | MR-J4- MR-J4W_ | Refer to "Combinations of Rotary Servo Motor and Servo Amplifier" on pp. 2-4 and 2-5 in this catalog. | | | | | | | | | |
| Power supply capacity ^{*1} | | [kVA] | 1.0 | 1.3 | 1.7 | 2.5 | 3.5 | 5.5 | 7.5 | 10 | 13 | |
| Continuous running duty | Rated output | [kW] | 0.5 | 0.75 | 1.0 | 1.5 | 2.0 | 3.3 <3.5> (Note 4) | 5.0 | 7.0 | 9.0 | |
| | Rated torque (Note 3) | [N·m] | 1.6 | 2.4 | 3.2 | 4.8 | 6.4 | 10.5 <11.1> (Note 4) | 15.9 | 22.3 | 28.6 | |
| Maximum torque | | [N·m] | 4.8 <6.4> (Note 5) | 7.2 <9.6> (Note 5) | 9.6 <12.7> (Note 5) | 14.3 <19.1> (Note 5) | 19.1 <25.5> (Note 5) | 32.0 <44.6> (Note 5) | 47.7 <63.7> (Note 5) | 66.8 <78.0> (Note 8) | 85.8 | |
| Rated speed | | [r/min] | 3000 | | | | | | | | | |
| Maximum speed | | [r/min] | 6000 | | | | | | 5000 | | | |
| Permissible instantaneous speed | | [r/min] | 6900 | | | | | | 5750 | | | |
| Power rate at continuous rated torque | Standard | [kW/s] | 16.7 | 27.3 | 38.2 | 60.2 | 82.4 | 83.5 | 133 | 115 | 147 | |
| | With electromagnetic brake | [kW/s] | 12.5 | 22.0 | 32.2 | 53.1 | 74.8 | 71.6 | 119 | 93.9 | 125 | |
| Rated current | | [A] | 3.0 | 5.6 | 5.6 | 11 | 11 | 17 <18> (Note 4) | 27 | 34 | 41 | |
| Maximum current | | [A] | 9.0 <12> (Note 5) | 17 <23> (Note 5) | 17 <23> (Note 5) | 32 <43> (Note 5) | 32 <43> (Note 5) | 51 <71> (Note 5) | 81 <108> (Note 5) | 103 <134> (Note 8) | 134 | |
| Regenerative braking frequency ^{*2} | MR-J4- | [times/min] | 67 <137> (Note 5) | 98 <511> (Note 5) | 76 <396> (Note 5) | 271 <271> (Note 5) | 206 <206> (Note 5) | 73 <98> (Note 5) | 68 <89> (Note 5, 9) | 56 (Note 9) | 204 (Note 6, 9) | |
| | MR-J4W_ | [times/min] | 328 <328> (Note 5) | 237 | 186 | - | - | - | - | - | - | |
| Moment of inertia J | Standard | [× 10 ⁻⁴ kg·m ²] | 1.52 | 2.09 | 2.65 | 3.79 | 4.92 | 13.2 | 19.0 | 43.3 | 55.8 | |
| | With electromagnetic brake | [× 10 ⁻⁴ kg·m ²] | 2.02 | 2.59 | 3.15 | 4.29 | 5.42 | 15.4 | 21.2 | 52.9 | 65.4 | |
| Recommended load to motor inertia ratio (Note 1) | | | 10 times or less | | | | | | | | | |
| Speed/position detector | | | Absolute/incremental 22-bit encoder (resolution: 4194304 pulses/rev) | | | | | | | | | |
| Oil seal | | | Attached | | | | | | | | | |
| Thermistor | | | None | | | | | | | | | |
| Insulation class | | | 155 (F) | | | | | | | | | |
| Structure | | | Totally enclosed, natural cooling (IP rating: IP67) (Note 2) | | | | | | | | | |
| Environment ^{*3} | Ambient temperature | | Operation: 0 °C to 40 °C (non-freezing), storage: -15 °C to 70 °C (non-freezing) | | | | | | | | | |
| | Ambient humidity | | Operation: 10 %RH to 80 %RH (non-condensing), storage: 10 %RH to 90 %RH (non-condensing) | | | | | | | | | |
| | Ambience | | Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust | | | | | | | | | |
| | Altitude | | 2000 m or less above sea level (Note 7) | | | | | | | | | |
| Vibration resistance ^{*4} | | | X: 24.5 m/s ² Y: 24.5 m/s ² | | | | | | | X: 24.5 m/s ² Y: 29.4 m/s ² | | |
| Vibration rank | | | V10 ^{*6} | | | | | | | | | |
| Compliance with global standards | | | Refer to "Compliance with Global Standards and Regulations" on p. 55 in this catalog. | | | | | | | | | |
| Permissible load for the shaft ^{*5} | L | [mm] | 40 | 40 | 40 | 40 | 40 | 55 | 55 | 79 | 79 | |
| | Radial | [N] | 323 | 323 | 323 | 323 | 323 | 980 | 980 | 2450 | 2450 | |
| | Thrust | [N] | 284 | 284 | 284 | 284 | 284 | 490 | 490 | 980 | 980 | |
| Mass | Standard | [kg] | 3.0 | 3.7 | 4.5 | 5.9 | 7.5 | 13 | 18 | 29 | 36 | |
| | With electromagnetic brake | [kg] | 4.4 | 5.1 | 5.9 | 7.3 | 8.9 | 15 | 20 | 35 | 42 | |

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. Refer to the asterisk 7 of "Annotations for Rotary Servo Motor Specifications" on p. 2-39 in this catalog 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. The value in angle brackets is applicable when the servo motor is combined with MR-J4-500GF(-RJ)/MR-J4-500B(-RJ)/MR-J4-500A(-RJ) servo amplifier.

5. The value in angle brackets is applicable when the maximum torque is increased with a combination with a larger-capacity servo amplifier. Refer to "Combinations of HG-JR Servo Motor Series and Servo Amplifier (200 V/400 V Class) for Increasing the Maximum Torque to 400% of the Rated Torque" on p. 2-7 in this catalog for the available combinations.

6. This value is applicable when the external regenerative resistors, GRZG400-Ω (standard accessory) are used with cooling fans (two units of 92 mm × 92 mm, minimum airflow: 1.0 m³/min). Note that [Pr. PA02] must be changed.

7. Refer to "Servo Motor Instruction Manual (Vol. 3)" for the restrictions when using the servo motors at altitude exceeding 1000 m and up to 2000 m above sea level.

8. The value in angle brackets is applicable when the servo motor is combined with MR-J4-DU900B(-RJ) drive unit, and the maximum torque is increased with a parameter setting.

9. This value is applicable when the servo motor is combined with MR-J4-_GF(-RJ)/MR-J4-_B(-RJ)/MR-J4-_A(-RJ) servo amplifier. Contact your local sales office for the regenerative braking frequency with MR-J4-DU900B(-RJ) drive unit.

Refer to "Annotations for Rotary Servo Motor Specifications" on p. 2-39 in this catalog for the asterisks 1 to 6.

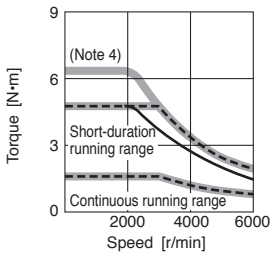
HG-JR 3000 r/min Series (200 V Class) Electromagnetic Brake Specifications (Note 1)

| Model | HG-JR | 53B | 73B | 103B | 153B | 203B | 353B | 503B | 703B | 903B |
|--|-----------------------------------|------|------|------|------|------|------|------|-------|-------|
| Type | Spring actuated type safety brake | | | | | | | | | |
| Rated voltage | 24 V DC _{-10%} | | | | | | | | | |
| Power consumption [W] at 20 °C | | 11.7 | 11.7 | 11.7 | 11.7 | 11.7 | 23 | 23 | 34 | 34 |
| Electromagnetic brake static friction torque [N·m] | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 16 | 16 | 44 | 44 |
| Permissible braking work | Per braking [J] | 64 | 64 | 64 | 64 | 64 | 400 | 400 | 4500 | 4500 |
| | Per hour [J] | 640 | 640 | 640 | 640 | 640 | 4000 | 4000 | 45000 | 45000 |
| Electromagnetic brake life (Note 2) | Number of braking times | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 20000 | 20000 |
| | Work per braking [J] | 64 | 64 | 64 | 64 | 64 | 400 | 400 | 1000 | 1000 |

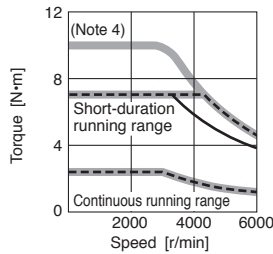
Notes: 1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
 2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.

HG-JR 3000 r/min Series (200 V Class) Torque Characteristics

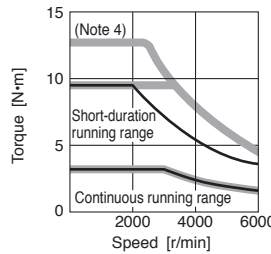
HG-JR53(B) (Note 1, 2, 3, 5, 6)



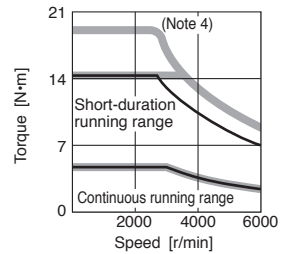
HG-JR73(B) (Note 1, 2, 3, 5, 6)



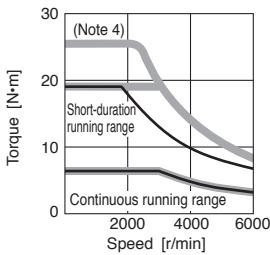
HG-JR103(B) (Note 1, 3, 5, 6, 7)



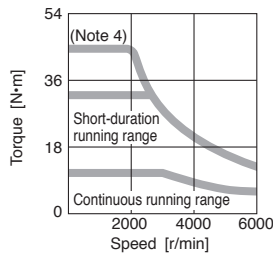
HG-JR153(B) (Note 1, 3, 5, 6, 7)



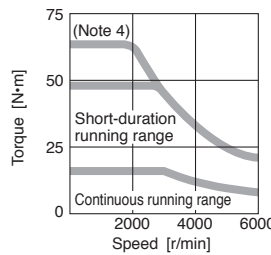
HG-JR203(B) (Note 1, 3, 5, 6, 7)



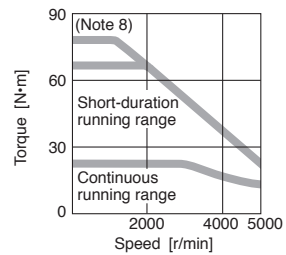
HG-JR353(B) (Note 1, 5)



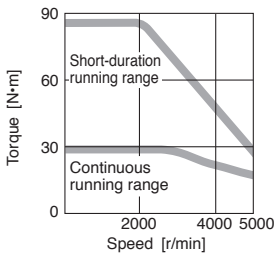
HG-JR503(B) (Note 1, 5)



HG-JR703(B) (Note 1, 5)



HG-JR903(B) (Note 1, 5)



- Notes: 1. — : For 3-phase 200 V AC.
 2. - - - : For 1-phase 230 V AC.
 3. — : For 1-phase 200 V AC. This line is drawn only where it differs from the other two lines.
 4. This value is applicable when the maximum torque is increased with a combination with a larger-capacity servo amplifier. Refer to "Combinations of HG-JR Servo Motor Series and Servo Amplifier (200 V/400 V Class) for Increasing the Maximum Torque to 400% of the Rated Torque" on p. 2-7 in this catalog.
 5. Torque drops when the power supply voltage is below the specified value.
 6. When a 1-phase 200 V AC input is used, increasing the maximum torque to 400% is not possible with HG-JR servo motor series.
 7. Contact your local sales office for the torque characteristics when using the servo amplifier with 1-phase 200 V AC input.
 8. This value is applicable when the servo motor is combined with MR-J4-DU900B(-RJ) drive unit, and the maximum torque is increased with a parameter setting.

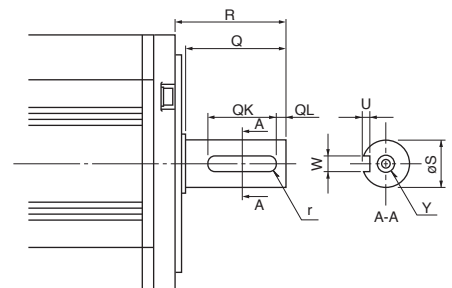
HG-JR 3000 r/min Series (200 V Class) Special Shaft End Specifications

Motors with the following specifications are also available.

Key shaft (without key) (Note 1, 2)

| Model | Variable dimensions | | | | | | | | |
|--|-----------------------------------|----|----|-----------------------------------|----|----|--------------------------------|-----|--------------------|
| | S | R | Q | W | QK | QL | U | r | Y |
| HG-JR53(B)K, 73(B)K, 103(B)K, 153(B)K, 203(B)K | 16h6 | 40 | 30 | 5 ⁰ _{-0.030} | 25 | 2 | 3 ^{+0.1} ₀ | 2.5 | M4 screw Depth: 15 |
| HG-JR353(B)K, 503(B)K | 28h6 | 55 | 50 | 8 ⁰ _{-0.036} | 36 | 5 | 4 ^{+0.2} ₀ | 4 | M8 screw Depth: 20 |
| HG-JR703(B)K, 903(B)K | 35 ^{+0.010} ₀ | 79 | 75 | 10 ⁰ _{-0.036} | 55 | 5 | 5 ^{+0.2} ₀ | 5 | M8 screw Depth: 20 |

Notes: 1. The servo motors with special shaft end are not suitable for frequent start/stop applications.
 2. A key is not supplied with the servo motor. The key shall be installed by the user.



[Unit: mm]

Rotary Servo Motors

HG-RR Series (Ultra-low Inertia, Medium Capacity) Specifications

| Rotary servo motor model | | HG-RR | 103(B) | 153(B) | 203(B) | 353(B) | 503(B) |
|--|---|--|--|--------|--------|--------|--------|
| Compatible servo amplifier model | | MR-J4- | Refer to "Combinations of Rotary Servo Motor and Servo Amplifier" on p. 2-5 in this catalog. | | | | |
| Power supply capacity ^{*1} | | [kVA] | 1.7 | 2.5 | 3.5 | 5.5 | 7.5 |
| Continuous running duty | Rated output | [kW] | 1.0 | 1.5 | 2.0 | 3.5 | 5.0 |
| | Rated torque ^(Note 3) | [N·m] | 3.2 | 4.8 | 6.4 | 11.1 | 15.9 |
| Maximum torque | | [N·m] | 8.0 | 11.9 | 15.9 | 27.9 | 39.8 |
| Rated speed | | [r/min] | 3000 | | | | |
| Maximum speed | | [r/min] | 4500 | | | | |
| Permissible instantaneous speed | | [r/min] | 5175 | | | | |
| Power rate at continuous rated torque | Standard | [kW/s] | 67.4 | 120 | 176 | 150 | 211 |
| | With electromagnetic brake | [kW/s] | 54.8 | 101 | 153 | 105 | 163 |
| Rated current | | [A] | 6.1 | 8.8 | 14 | 23 | 28 |
| Maximum current | | [A] | 18 | 23 | 37 | 58 | 70 |
| Regenerative braking frequency ^{*2} | MR-J4- | [times/min] | 1090 | 860 | 710 | 174 | 125 |
| | Standard | [× 10 ⁻⁴ kg·m ²] | 1.50 | 1.90 | 2.30 | 8.30 | 12.0 |
| Moment of inertia J | With electromagnetic brake | [× 10 ⁻⁴ kg·m ²] | 1.85 | 2.25 | 2.65 | 11.8 | 15.5 |
| | Recommended load to motor inertia ratio ^(Note 1) | | 5 times or less | | | | |
| Speed/position detector | | Absolute/incremental 22-bit encoder (resolution: 4194304 pulses/rev) | | | | | |
| Oil seal | | Attached | | | | | |
| Thermistor | | None | | | | | |
| Insulation class | | 155 (F) | | | | | |
| Structure | | Totally enclosed, natural cooling (IP rating: IP65) ^(Note 2) | | | | | |
| Environment ^{*3} | Ambient temperature | Operation: 0 °C to 40 °C (non-freezing), storage: -15 °C to 70 °C (non-freezing) | | | | | |
| | Ambient humidity | Operation: 10 %RH to 80 %RH (non-condensing), storage: 10 %RH to 90 %RH (non-condensing) | | | | | |
| | Ambience | Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust | | | | | |
| | Altitude | 2000 m or less above sea level ^(Note 4) | | | | | |
| Vibration resistance ^{*4} | | X: 24.5 m/s ² Y: 24.5 m/s ² | | | | | |
| Vibration rank | | V10 ^{*6} | | | | | |
| Compliance with global standards | | Refer to "Compliance with Global Standards and Regulations" on p. 55 in this catalog. | | | | | |
| Permissible load for the shaft ^{*5} | L | [mm] | 45 | 45 | 45 | 63 | 63 |
| | Radial | [N] | 686 | 686 | 686 | 980 | 980 |
| | Thrust | [N] | 196 | 196 | 196 | 392 | 392 |
| Mass | Standard | [kg] | 3.9 | 5.0 | 6.2 | 12 | 17 |
| | With electromagnetic brake | [kg] | 6.0 | 7.0 | 8.3 | 15 | 21 |

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. Refer to the asterisk 7 of "Annotations for Rotary Servo Motor Specifications" on p. 2-39 in this catalog 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. Refer to "Servo Motor Instruction Manual (Vol. 3)" for the restrictions when using the servo motors at altitude exceeding 1000 m and up to 2000 m above sea level.

Refer to "Annotations for Rotary Servo Motor Specifications" on p. 2-39 in this catalog for the asterisks 1 to 6.

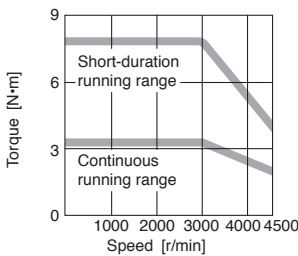
HG-RR Series Electromagnetic Brake Specifications (Note 1)

| Model | HG-RR | 103B | 153B | 203B | 353B | 503B |
|--|-----------------------------------|-------|-------|-------|-------|-------|
| Type | Spring actuated type safety brake | | | | | |
| Rated voltage | 24 V DC _{-10%} | | | | | |
| Power consumption [W] at 20 °C | | 19 | 19 | 19 | 23 | 23 |
| Electromagnetic brake static friction torque [N·m] | | 7.0 | 7.0 | 7.0 | 17 | 17 |
| Permissible braking work | Per braking [J] | 400 | 400 | 400 | 400 | 400 |
| | Per hour [J] | 4000 | 4000 | 4000 | 4000 | 4000 |
| Electromagnetic brake life (Note 2) | Number of braking times | 20000 | 20000 | 20000 | 20000 | 20000 |
| | Work per braking [J] | 200 | 200 | 200 | 200 | 200 |

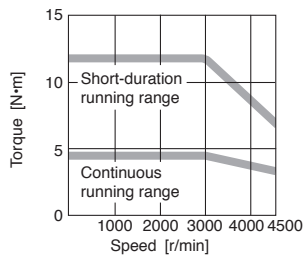
Notes: 1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
 2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.

HG-RR Series Torque Characteristics

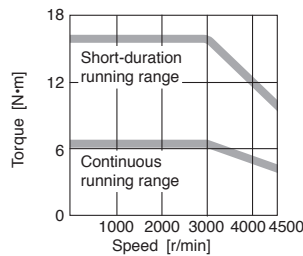
HG-RR103(B) (Note 1, 2, 3)



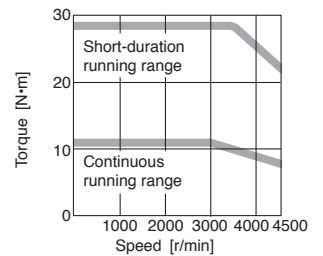
HG-RR153(B) (Note 1, 2, 3)



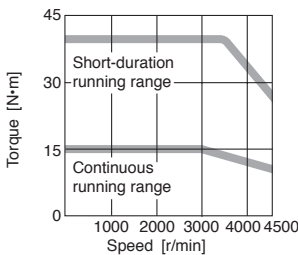
HG-RR203(B) (Note 1, 2)



HG-RR353(B) (Note 1, 2)



HG-RR503(B) (Note 1, 2)



Notes: 1. : For 3-phase 200 V AC.
 2. Torque drops when the power supply voltage is below the specified value.
 3. Contact your local sales office for the torque characteristics when using the servo amplifier with 1-phase 200 V AC input.

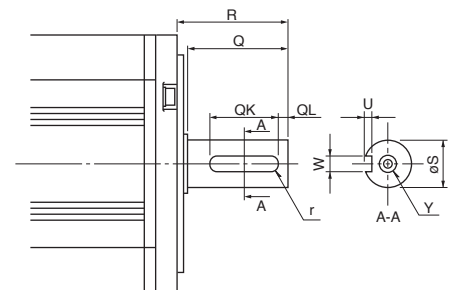
HG-RR Series Special Shaft End Specifications

Motors with the following specifications are also available.

Key shaft (without key) (Note 1, 2)

| Model | Variable dimensions | | | | | | | | |
|--------------------------------|---------------------|----|----|----------------------------------|----|----|--------------------------------|---|-----------|
| | S | R | Q | W | QK | QL | U | r | Y |
| HG-RR103(B)K, 153(B)K, 203(B)K | 24h6 | 45 | 40 | 8 ⁰ _{-0.036} | 25 | 5 | 4 ^{+0.2} ₀ | 4 | M8 screw |
| HG-RR353(B)K, 503(B)K | 28h6 | 63 | 58 | 8 ⁰ _{-0.036} | 53 | 3 | 4 ^{+0.2} ₀ | 4 | Depth: 20 |

Notes: 1. The servo motors with special shaft end are not suitable for frequent start/stop applications.
 2. A key is not supplied with the servo motor. The key shall be installed by the user.



[Unit: mm]