

RHF Series

Part Number Configuration

RH 1 FH 2 3 4 5 6

Must select items 1–6.

1 Load Capacity

| Symbol | Maximum Load Capacity |
|--------|-----------------------|
| 3 | 3kg |
| 6 | 6kg |
| 12 | 12kg |
| 20 | 20kg |

2 Arm Length

| Symbol | Arm Length |
|--------|----------------------------|
| 35 | 350mm (3kg/6kg only) |
| 45 | 450mm (3kg/6kg only) |
| 55 | 550mm (3kg/ 6kg/12kg only) |
| 70 | 700mm (12kg only) |
| 85 | 850mm (12kg/ 20kg only) |
| 100 | 1000mm (20kg only) |

3 Vertical Stroke

| Symbol | Vertical Stroke |
|--------|---------------------------------|
| 12 | 120mm (3kg Cleanroom spec only) |
| 15 | 150mm (3kg only) |
| 20 | 200mm (6kg only) |
| 34 | 340mm (6kg only) |
| 35 | 350mm (12kg/20kg only) |
| 45 | 450mm (12kg/20kg only) |

4 Environment

| Symbol | Environment |
|--------|---|
| Blank | Standard specifications |
| M | Oil mist specifications (IP65) (Excludes 3kg. Must use for SE01/02 specification) |
| N | Oil mist specifications (IP54). (Excludes 3kg, 6kg. For 6kg IP54 select S15 in Compliance Specifications) |
| C | Cleanroom specifications |

5 Controller

| Symbol | Controller Type |
|--------|----------------------|
| D1 | CR750-D (For CE) |
| Q1 | CR750-Q (For CE) |
| 1D1 | CR751-D (For CE) |
| 1Q1 | CR751-Q (For CE) |
| 1D | CR751-D (For Non-CE) |
| 1Q | CR751-Q (For Non-CE) |

Select only one from table below:

6 Compliance Specification or Special Environmental Protection

| S1_ | Compliance Specification |
|-----|--|
| 5 | CE specification for CR750, CR751 controllers and IP54 6kg |
| 3 | CE specification for CR-750 (6kg IP40 only) |
| 1 | Non-CE specification for CR751 controller |

OR

| X5_ | Special Environmental Protection for CE only (Optional, excludes RH3) |
|-----|---|
| 1 | Chemical specification |
| 2 | Food grade grease for NSF H1 specification |

Note: Special Environmental Protection selection requires the "M" oil mist Environment specification.

RH3FH

| Model Number | RH3FH3515 • RH3FH3512C | RH3FH4515 • RH3FH4512C | RH3FH5515 • RH3FH5512C | |
|---------------------------------------|--|--|------------------------|--------|
| Machine Class | Standard / Cleanroom | | | |
| Protection Degree (*1) | IP20 / ISO class3 (*5) | | | |
| Installation | Floor type | | | |
| Structure | Horizontal, multiple-joint type | | | |
| Degrees of Freedom | 4 | | | |
| Drive System | AC servo motor | | | |
| Position Detection Method | Absolute encoder | | | |
| Maximum Load Capacity (Rating) kg | Maximum 3 (rating 1) | | | |
| Arm Length (mm) | N01 Arm | 125 | 225 | 325 |
| | N02 Arm | 225 | | |
| Maximum Reach Radius (N01 + N02) (mm) | 350 | 450 | 550 | |
| Operating Range (deg) | J1 Deg. | 340 (±170) | | |
| | J2 Deg. | 290 (±145) | | |
| | J3 (Z) mm | 150 (Cleanroom specification : 120) (*1) | | |
| | J4 (ø) Deg | 720 (±360) | | |
| Maximum Speed (deg/sec) | J1 Deg/sec | 420 | | |
| | J2 Deg/sec | 720 | | |
| | J3 mm/sec | 1100 | | |
| | J4 Deg/sec | 3000 | | |
| Maximum Composite Speed (*2) | 6800 | 7500 | 8300 | |
| Cycle Time (*3) | | 0.41 | 0.46 | 0.51 |
| | X-Y Composite mm | ±0.010 | ±0.010 | ±0.012 |
| | J3 (Z) mm | ±0.01 | | |
| Position Repeatability (mm) | J4 (ø) Deg | ±0.004 | | |
| | | 0 to 40 | | |
| Ambient Temperature (°C) | 0 to 40 | | | |
| Weight (kg) | 29 | 29 | 32 | |
| Tolerable Amount of Inertia | Rating (kg) | 0.005 | | |
| | Maximum (kgm ²) | 0.06 | | |
| Tool Wiring | Hand: 8 input points/8 output points (20 pins total); Serial signal cable for parallel I/O (2-pin + 2-pin power line); LAN X 1 <100 BASE-TX> (8-pin)) (*4) | | | |
| Tool Pneumatic Pipes | Primary: ø6 x 2 Secondary: ø4 x 8 | | | |
| Machine Cable | 5m (connector on both ends) | | | |
| Connected Controller (*5) | CR751-D/Q; CR750-D/Q; CR750-MB IP54 controller protection box available | | | |

Notes:

- The range for vertical movement listed in the environmental resistance specifications (C: Cleanroom specifications) for the RH3FH is narrower than for the standard model. Keep this in mind when working with the RH3FH. The environment-resistant specifications are factory-set custom specifications.
- The value assumes composition of J1, J2, and J4.
- Value for a maximum load capacity of 2 kg. The cycle time may increase if specific requirements apply such as high work positioning accuracy, or depending on the operating position. (The cycle time is based on back-and-forth movement over a vertical distance of 25 mm and horizontal distance of 300 mm.)
- Can also be used as a spare line (0.2 sq. mm, 4-pair cable) for conventional models.
- Preservation of cleanliness levels depends on conditions of a downstream flow of 0.3 m/s in the cleanroom and internal robot suctioning. A ø8-mm coupler for suctioning is provided at the back of the base.

F Series Robots

RH6FH

| Model Number | RH6FH35XX/M/C | | RH6FH45XX/M/C | RH6FH55XX/M/C | |
|---------------------------------------|---|------------------------------|---------------|---------------|--|
| Machine Class | Standard / Oil Mist / Cleanroom | | | | |
| Protection Degree (*1) | IP20 / IP65 (*5) / ISO3 (*6) | | | | |
| Installation | Floor type | | | | |
| Structure | Horizontal, multiple-joint type | | | | |
| Degrees of Freedom | 4 | | | | |
| Drive System | AC servo motor | | | | |
| Position Detection Method | Absolute encoder | | | | |
| Maximum Load Capacity (Rating) kg | Maximum 6 (rating 3) | | | | |
| Arm Length (mm) | N01 Arm | 125 | 225 | 325 | |
| | N02 Arm | 225 | | | |
| Maximum Reach Radius (N01 + N02) (mm) | 350 | 450 | 550 | | |
| Operating Range (deg) | J1 Deg. | 340 (±170) | | | |
| | J2 Deg. | 290 (±145) | | | |
| | J3 (Z) mm | xx = 20 : 200/ xx = 34 : 340 | | | |
| | J4 (θ) Deg | 720 (±360) | | | |
| Maximum Speed (deg/sec) | J1 Deg/sec | 400 | | | |
| | J2 Deg/sec | 670 | | | |
| | J3 mm/sec | 2400 | | | |
| | J4 Deg/sec | 2500 | | | |
| Maximum Composite Speed (*2) | 6900 | 7600 | 8300 | | |
| Cycle Time (*3) | 0.29 | | | | |
| Position Repeatability (mm) | X-Y Composite mm | ±0.010 | ±0.010 | ±0.012 | |
| | J3 (Z) mm | ±0.01 | | | |
| | J4 (θ) Deg | ±0.004 | | | |
| Ambient Temperature (°C) | 0 to 40 | | | | |
| Weight (kg) | 36 | 36 | 37 | | |
| Tolerable Amount of Inertia | Rating (kg) | 0.01 | | | |
| | Maximum (kgm ²) | 0.12 | | | |
| Tool Wiring | Hand: 8 input points/8 output points (20 pins total); Serial signal cable for parallel I/O (2-pin + 2-pin power line); LAN X 1 <100 BASE-TX> (8-pin) (*4) | | | | |
| Tool Pneumatic Pipes | Primary: ø6 x 2 Secondary: ø4 x 8 | | | | |
| Machine Cable | 5m (connector on both ends) | | | | |
| Connected Controller | CR751-D/Q; CR750-D/Q; CR750-MB IP54 controller protection box available | | | | |

See notes below.

RH12FH / 20FH

| Model Number | RH12FH55XX/M/C | | RH12FH70XX/M/C | RH12FH85XX/M/C | RH20FH85XX/M/C | RH20FH100XX/M/C | |
|---------------------------------------|---|------------------------------|----------------|-----------------------|----------------|-----------------|--|
| Machine Class | Standard / Oil Mist / Cleanroom | | | | | | |
| Protection Degree (*1) | IP20 / IP65 (*5) / ISO3 (*6) | | | | | | |
| Installation | Floor type | | | | | | |
| Structure | Horizontal, multiple-joint type | | | | | | |
| Degrees of Freedom | 4 | | | | | | |
| Drive System | AC servo motor | | | | | | |
| Position Detection Method | Absolute encoder | | | | | | |
| Maximum Load Capacity (Rating) kg | Maximum 12 (rating 3) | | | Maximum 20 (rating 5) | | | |
| Arm Length (mm) | N01 Arm | 225 | 375 | 525 | 525 | 525 | |
| | N02 Arm | 325 | | 325 | 325 | 475 | |
| Maximum Reach Radius (N01 + N02) (mm) | 550 | 700 | 850 | 850 | 1000 | | |
| Operating Range (deg) | J1 Deg. | 340 (±170) | | | | | |
| | J2 Deg. | 290 (±145) | | | 306 (±153) | | |
| | J3 (Z) mm | xx = 35 : 350/ xx = 45 : 450 | | | | | |
| | J4 (θ) Deg | 720 (±360) | | | | | |
| Maximum Speed (deg/sec) | J1 Deg/sec | 420 | | 280 | 280 | | |
| | J2 Deg/sec | 450 | | | | | |
| | J3 mm/sec | 2800 | | | 2400 | | |
| | J4 Deg/sec | 2400 | | | | | |
| Maximum Composite Speed (*2) | 11435 | 12535 | 11350 | 11372 | 13283 | | |
| Cycle Time (*3) | 0.30 | | | | | | |
| Position Repeatability (mm) | X-Y Composite mm | ±0.012 | ±0.015 | ±0.015 | ±0.015 | ±0.02 | |
| | J3 (Z) mm | ±0.01 | | | | | |
| | J4 (θ) Deg | ±0.005 | | | | | |
| Ambient Temperature (°C) | 0 to 40 | | | | | | |
| Weight (kg) | 65 | 67 | 69 | 75 | 77 | | |
| Tolerable Amount of Inertia | Rating (kg) | 0.025 | | | 0.065 | | |
| | Maximum (kgm ²) | 0.3 | | | 1.05 | | |
| Tool Wiring | Hand: 8 input points/8 output points (20 pins total); Serial signal cable for parallel I/O (2-pin + 2-pin power line); LAN X 1 <100 BASE-TX> (8-pin) (*4) | | | | | | |
| Tool Pneumatic Pipes | Primary: ø6 x 2; Secondary: ø6 x 8 | | | | | | |
| Machine Cable | 5m (connector on both ends) | | | | | | |
| Connected Controller | CR751-D/Q; CR750-D/Q; CR750-MB IP54 controller protection box available | | | | | | |

Notes:

- The environment-resistant specifications (C: Cleanroom specification, M: Mist specification) are factory-set custom specifications.
- The value assumes composition of J1, J2, and J4.
- Value for a maximum load capacity of 2 kg. The cycle time may increase if specific requirements apply such as high work positioning accuracy, or depending on the operating position. (The cycle time is based on back-and-forth movement over a vertical distance of 25 mm and horizontal distance of 300 mm.)
- Can also be used as a spare line (0.2 sq. mm, 4-pair cable) for conventional models.
- Please contact Mitsubishi Electric dealer since the environmental resistance may not be secured depending on the characteristics of oil you use. Direct jet to the bellows is excluded.
- Preservation of cleanliness levels depends on conditions of a downstream flow of 0.3 m/s in the cleanroom and internal robot suctioning. A Ø-mm coupler for suctioning is provided at the back of the base.