



for a greener tomorrow

FACTORY AUTOMATION

RV-35F / 50F / 70F

Big capacity robots



- Compact and powerful
- Fully compatibility
- Dedicated for end of line packaging, palletizing, material handling

Higher payloads and longer reaches



The F series – designed for automation with high payloads and long reaches

Large capacity 6-axis robots

Addressing the need for higher capacity robots to meet the demands of today's advanced automated manufacturing process, Mitsubishi Electric introduces the latest in its line of RV-F series 6-axis robots in 35, 50 and 70 kg payloads.

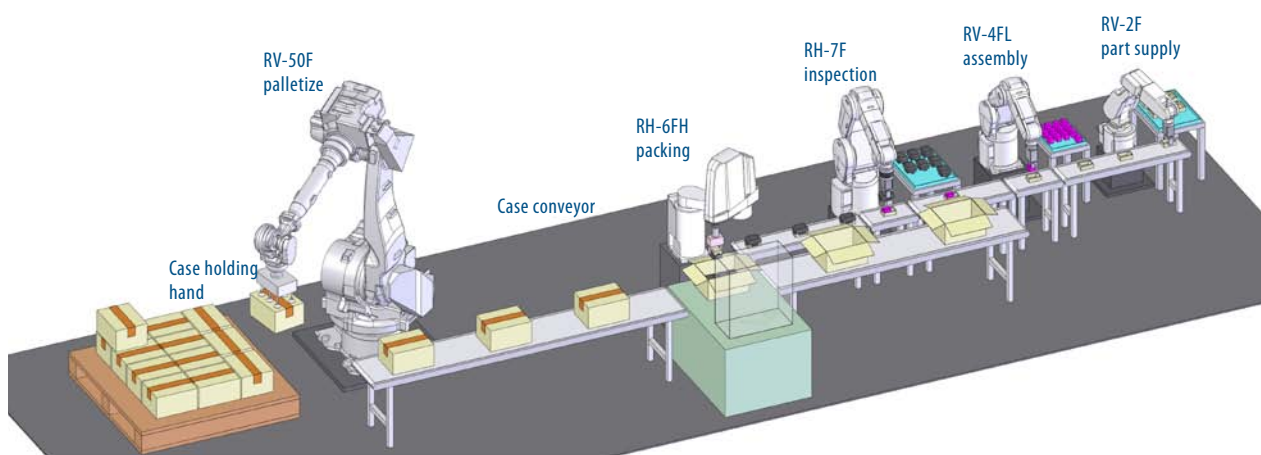
These new robots extend the Mitsubishi Electric RV-F series product line to address applications that require higher payloads and longer reaches, including CNC machine tending, large material handling and assembly applications. The RV-35F, RV-50F and RV-70F robots are especially well suited to the automotive, food and beverage, as well as electronic manufacturing industries.

Key benefits of the RV-35F, RV-50F and RV-70F robots include:

- Higher payloads – allows applications that require heavier parts and tooling to be robotically automated
- Long reach arm – tasks can be spread farther apart and can accommodate larger parts and processes with the ability to extend up to 2050 mm
- Seamless integration with the Mitsubishi Electric Factory Automation (MELFA) hardware ecosystem – easily connects to MELFA's extensive offering of integrated automation products
- Multiple environmental protection ratings – available in IP40 and IP67 protection ratings to conform to various application requirements

Commanded by the MELFA Basic V programming language and coupled with the optional iQ control platform, these high capacity robots are as intelligent as they are strong. They easily automate production or processes in complex manufacturing applications that require large robots.

There is no difference for the user to program a small 2 kg robot or the big capacity 70 kg robot, only one programming tool for all robots.



Performance combined with accuracy

The RV-F series offers many features as standard, which are usually available as optional extras. Every model has connections for pneumatic grippers, Ethernet, USB, tracking functions, camera interface, hand I/O and an interface for up to 8 additional axes.

Improved trajectory accuracy and optimal motor control tuning is achieved by an operation mode setting function which matches all customer system requirements. This is effective for standard operations and tooling work requiring high accuracy.

Intuitive programming and operation

The robots of the RV-F series allow simple automatic operation from the teaching box or direct control via a Mitsubishi Electric GOT. This enables the robot controller status to be uploaded and operations to be controlled directly.

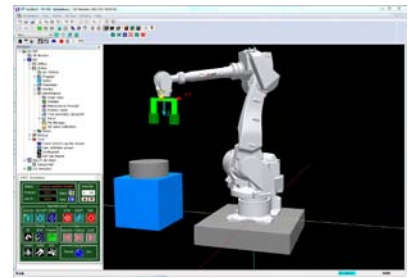
Monitoring screens can be set up individually to match the needs of user debugging conditions.

Versatile connection possibilities

The RV-F series includes a number of user interfaces straight from the factory. These enable image processing systems to be connected directly to the controller and initiated via the standard programming language. Simple parameter structures even enable known systems to be set up in advance with a single mouse click.

Two encoder interfaces enable the robot to track two conveyors freely in space and move with them in absolute synchronism. This saves additional costs for positioning units and, above all, time, as the robot is able to fetch, position and machine workpieces while the process is running.

In addition, up to 8 additional axes can be connected directly to the controller. Two of these can be used as additional interpolating axes of the robot. The special feature compared with other systems is that all additionally connected axes can be programmed in exactly the same way as the robot, using the same Teach-Box or the standard RT ToolBox2 software. This avoids the additional expense of software, training and programming.

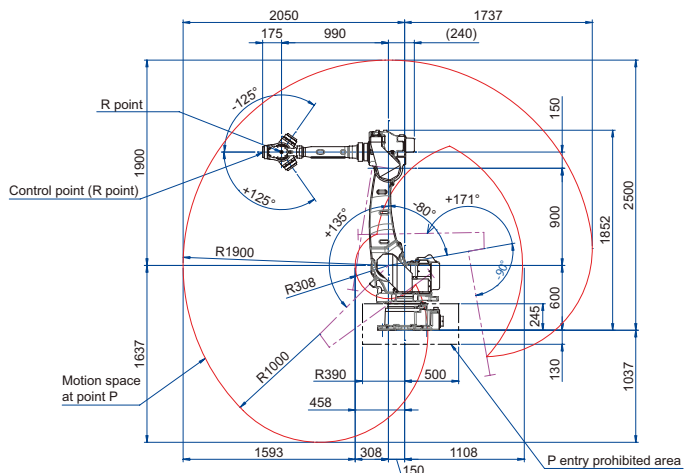
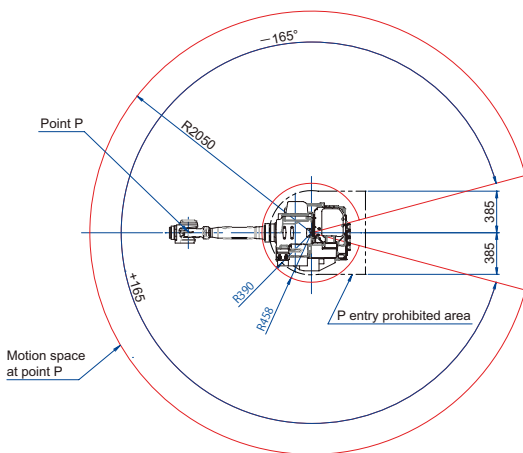


Simulation in RT ToolBox2 integrated



Controlling the robot

Movement range and dimensions



RV-35F/50F/70F / Big capacity robots

Specifications

| ROBOT | | RV-35F | RV-50F | RV-70F |
|-------------------------------|----------------------|------------------|--------|--------|
| Payload | kg | 35 | 50 | 70 |
| Reach | mm | 2050 | | |
| Operating range | J1-axis deg/s | ±165 (330) | | |
| | J2-axis deg/s | -80 – +135 (215) | | |
| | J3-axis deg/s | -90 – +171 (261) | | |
| | J4-axis deg/s | ±360 (720) | | |
| | J5-axis deg/s | ±125 (250) | | |
| Allowable moment | J4-axis Nm | 160 | 210 | 300 |
| | J5-axis Nm | 160 | 210 | 300 |
| | J6-axis Nm | 90 | 130 | 150 |
| Maximum speed | mm/s | 13,400 | 13,000 | 11,500 |
| Position repeatability | mm | ±0.07 | | |
| Protection rating | | IP40/IP67 | | |

| ROBOT CONTROLLER | | CR760-Q | CR760-D | |
|---------------------------------|---------------------------------------|---|--|--|
| Programming language | | MELFA-BASIC V | | |
| Position determination | | Teaching, manual data input (MDI) | | |
| External I/O | General-purpose I/O | up to 8192 inputs | up to 256 outputs | |
| | Dedicated I/O | Common I/O for multiple CPU | User-defined | |
| | Gripper status signal inputs | 16 input / 16 output | | |
| | External emergency stop | 1 (redundant) | | |
| | Door closed contact | 1 (redundant) | | |
| | Enabling switch | 1 (redundant) | | |
| | Emergency stop additional axes | 1 (redundant) | | |
| | RS422 | 1 (Teaching Box) | | |
| | Ethernet | 1 (Teaching Box) | 1 (Teaching Box) 1 (spare) 10BASE-T/100BASE-TX | |
| | USB | Use the function of the programmable controller | 1 | |
| Inter-faces | Additional axis | up to 8 (SSCNETIII) | | |
| | Conveyor belt tracking encoder | Q173DPX (optional) | 2 | |
| | Expansion slot | Use the function of the programmable controller | 3 | |
| | Power supply | Input voltage | Three-phase AC 400 V ^① | |
| | | Power consumption ^② kVA | 0.5–2.0 | |
| | Ambient temperature | °C | 0–40 | |
| Dimensions (WxHxD) | mm | 700 x 1115 x 535 | | |
| Weight | kg | approx. 296 | | |
| Housing/protection class | | Self-contained floor type/sealed structure – IP54 | | |

^① The supply voltage should not vary by more than 10 %.

^② Without switch-on current. The power consumption depends on the robot arm model.

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Version check



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