

RH-3SDHR/3SQHR

Industrial Robots

Maximum Speed and Precision

Saves valuable work cell space



COMPACT 

Overhead installation minimises space requirements

PRODUCTIVE 

Three pick-and-place cycles per second

**INTELLIGENT
DESIGN** 

Unpainted die-cast aluminium body

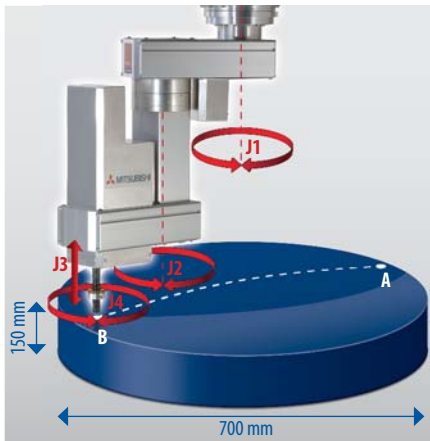
EASY SET-UP 

Powerful software tools for programming, system simulation and integration of visualisation systems

Powerful and Compact



Overhead installation saves space in challenging and cramped workplaces.



Work space of the RH-3SDHR/3SQHR

The Mitsubishi RH-3SDHR and RH-3SQHR SCARA robots are purpose-built for high-speed applications. Their super-fast cycle times speak for themselves – for example as low as 0.32 seconds for the standard 12" test.

With its special compact design and support for overhead installation above the application, this robot doesn't take up any valuable space in the work area next to the installation location, enabling even smaller work cell dimensions. The robot's perfectly circular cylindrical work space is 150 mm high with a diameter of 700 mm. It can access any point in this space with a repeatability of just ± 0.01 mm while manipulating a payload of up to 3 kg.

Fast sorting

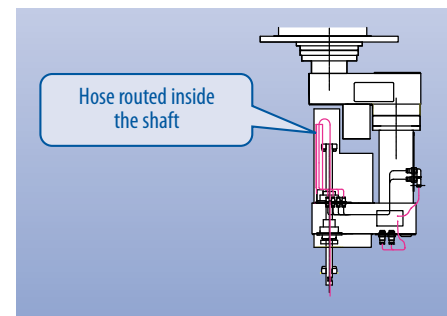
If the robot is installed over a conveyor it can pick and place parts with correct orientation directly from and on the moving belt. You just need to connect an encoder to register the belt speed and a vision system for object identification.

Compact and cost-effective

The comparatively small dimensions and the ability to optimise the work space makes it possible to use a much simpler robot mounting system than for a spider type robot.

Perfect all-round integration

The RH-3S robot is also available as a fully-integrated SQ system (RH-3SQHR) with the robot controller deployed as an iQ Platform module installed on the system backplane. In this configuration, the robot controller has direct access to all the iQ Platform modules, which means that there are almost no interface restrictions. This is the kind of "perfect all-round integration" that you can only get from Mitsubishi Electric.



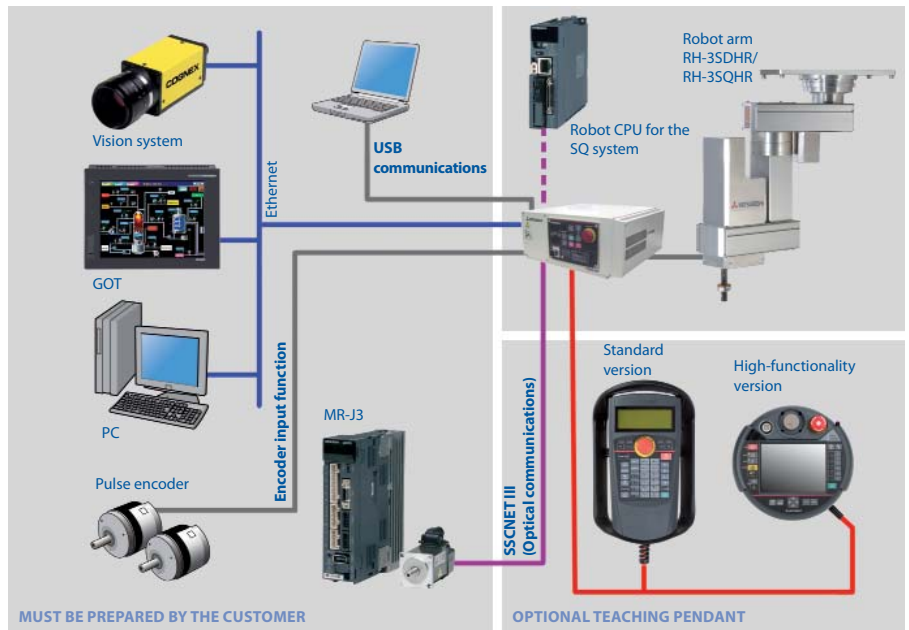
Hose routing in the robot arm and spindle.

Simple system integration

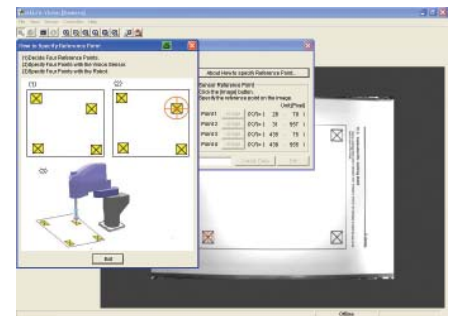
The RH-3SDHR and RH-3SQHR robots can easily be combined with a large range of automation components. For example, the GOT HMI can communicate via an Ethernet link to the robot controller. This allows operation panels to be easily configured using the GOT alone, saving development and system cost. Further, the robot's standard SSCNET III interface allows an MR-J3-B servo axis to be controlled directly over a high performance, noise free optical link. Additionally, the controller's two encoder inputs provide easy tracking of conveyor belts or other moving parts of a work cell.

Powerful software tools

The RH-3SDHR and RH-3SQHR robots are supported by a comprehensive range of programming tools for system development and testing. These tools make developing work routines much faster and more efficient. RT Toolbox 2 provides the main tools for programming the robot system, debugging and planning optimum cycle times for maximum productivity.

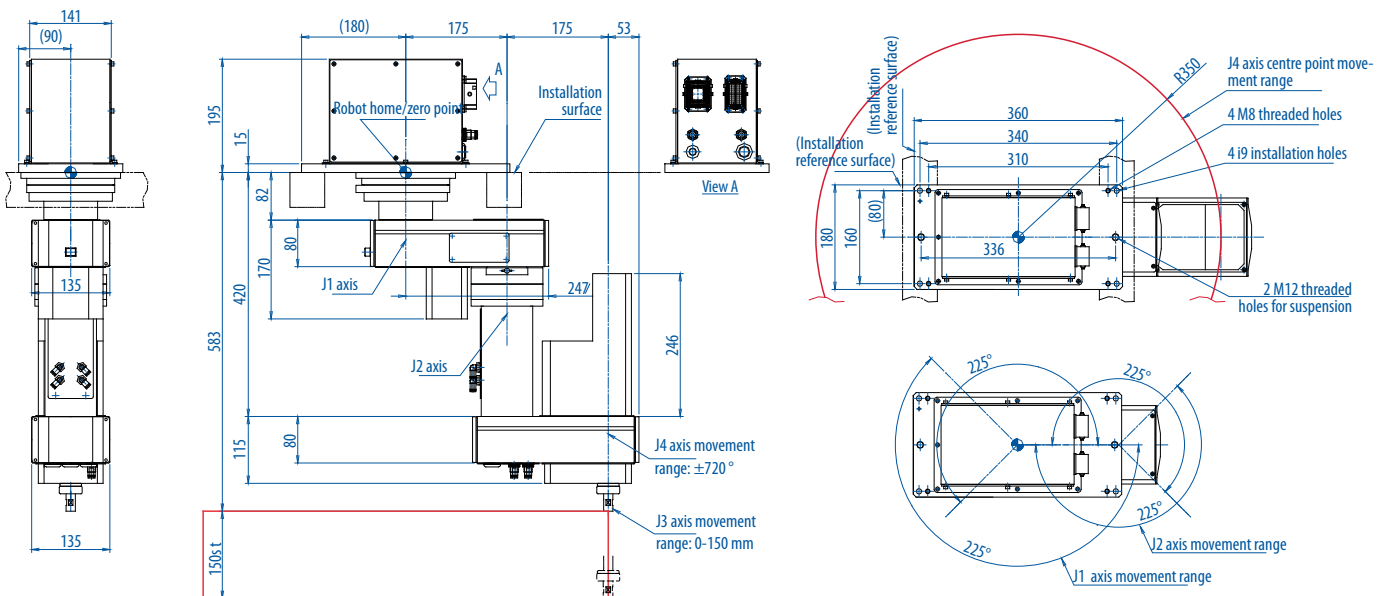


The robot controller's standard interfaces



Powerful software tools reduce engineering and project lead times.

Motion envelope and dimensions



Specifications ///

Controller	CR2QA/CR2DA	
Robot language	MELFA-BASIC V	
Position teaching method	Teaching method, MDI method	
Input/output	max. 256	
	Dedicated input/output	Assigned according to general-purpose I/O
External input/output	Gripper status signal inputs	4 inputs
	External emergency shutdown input	2 (redundant)
	Door switch input	2 (redundant)
	Enabling device input	2
	No. of additional axes	8 ^②
Interfaces	RS-232	1 ^②
	Ethernet	1 ^②
	USB	1 ^②
	Additional-axis I/F	8 ^{①②}
	Conveyor belt tracking encoder	2 ^②
	Extension slot	3 ^②
Power supply	Input voltage range	Single phase 200–230 V AC ±10 % (180–253 V)
	Power capacity	2,0 kVA
	Frequency	50/60 Hz
Environmental temperature	0–40 °C	
Performance Level (PL)	d	
Degree of cleanliness ISO	7	
External dimensions (WxHxD)	467x400x200 mm	
Weight	21 kg	
Structure	Closed body for overhead installation / IP20	

- ① 2 axis linear interpolation
② only with CR2DA control

Robot	RH-3SQRH3515/3SDHR3515	
Installation	Overhead installation	
Degrees of freedom	4	
Structure	Horizontal articulated arm (SCARA)	
Drive system	AC servo motor	
Position detection	Absolute position encoder	
Brakes	Axes J1, J2, J4: no brake Axis J3: with brake	
Arm length	Arm 1	175 mm
	Arm 2	175 mm
Z-axis range	150 mm	
Maximum reach radius (Arm 1 + Arm 2)	350 mm	
Max. speed	J1 axis	672 Deg./s
	J2 axis	708 Deg./s
	J3(Z) axis	1500 mm/s
	J4(θ) axis	3146 Deg./s
Maximum composite speed	6267 mm/s	
Cycle time (w. 1kg payload)	0.32 s	
Mass load capacity	Rated	1 kg
	Maximum	3 kg
Position repeatability	X, Y directions	±0.01 mm
	J3(Z) axis	±0.01 mm
	J4(θ) axis	±0.01 degrees
Working temperature range	0–40 °C	
Mass	24 kg	
Tool wiring	8 inputs (gripper area) / 0 outputs, 8 free cables (8 optional outputs available)	
Pneumatic tubing for tools	Primary: ∅ 6 x 2 (Secondary, optional: ∅ 4 x 8)	
IP Rating	IP20	
Compatible robot controllers	CR2QA/CR2DA	

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