



# Excellent cost performance and a compact and lightweight design!

## Features

### Compact arm for space saving

Overall height: 500 mm and 520 mm (3CRH and 6CRH respectively)

**65% overall height reduction compared to the FR series!**

\* Calculated by comparing the 3CRH with the 3FRH4515 and the 6CRH with the 6FRH5520

### Lightweight robot arms

14 kg, 17 kg, and 18 kg (3CRH, 6CRH6020, and 6CRH7020 respectively)

**50% weight reduction compared to the FR series!**

\* Calculated by comparing the 3CRH with the 3FRH4515 and the 6CRH with the 6FRH5520

### High-speed operation and high performance for productivity

Cycle time<sup>1</sup>: 0.44 s, 0.41 s, and 0.43 s

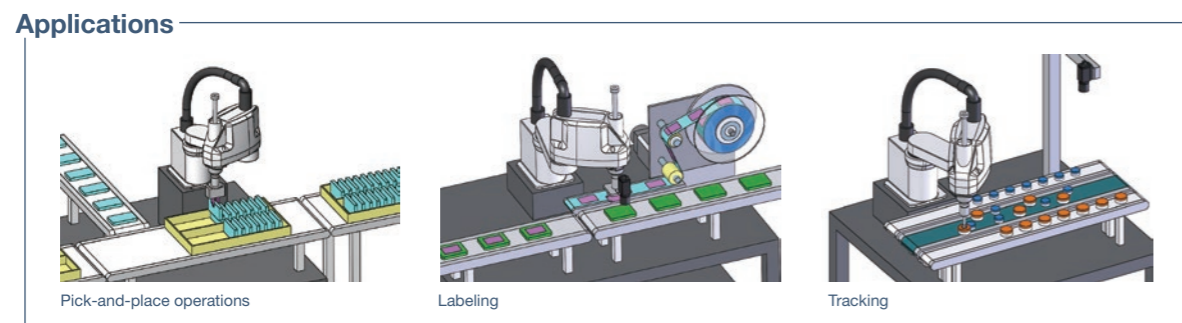
(3CRH, 6CRH6020, and 6CRH7020 respectively)

Standard specifications: 32 input points and 32 output points

In addition to the robot axes, up to eight additional axes can be controlled.

The tracking function is supported as standard.

### CC-Link IE Field Basic as standard



## Applications

## Robot arm specifications

Payload	kg		RH-3CRH4018-D		RH-6CRH6020-D		RH-6CRH7020-D	
	Maximum: 3 (rated: 1)		Maximum: 6 (rated: 2)					
Arm length	Arm No. 1	mm	225		325		425	
	Arm No. 2	mm	175		275			
Maximum reach	mm		400		600		700	
Operating range	J1	deg	264 (±132)		264 (±132)			
	J2	deg	282 (±141)		300 (±150)			
	J3	mm	180		200			
	J4	deg	720 (±360)		720 (±360)			
Position repeatability	XY directions	mm	±0.01		±0.02			
	J3 (Z)	mm	±0.01		±0.01			
	J4 (θ)	deg	±0.01		±0.01			
Maximum speed	J1	deg/sec	720		420		360	
	J2	deg/sec	720		720			
	J3 (Z)	mm/sec	1100		1100			
	J4 (θ)	deg/sec	2600		2500			
Cycle time <sup>2</sup>	sec		0.44		0.41		0.43	
	Rating	kg·m <sup>2</sup>	0.005		0.01			
Permissible inertia	kg·m <sup>2</sup>		0.05 (0.075)		0.12 (0.18)			
	kg		14		17		18	
Hand I/O wires and hoses			D-sub 15 pins / ø6 × 2, ø4 × 1					
Robot controller			CR800-CHD					
IP rating			IP20					

<sup>1</sup> 1, 2: The cycle time was calculated from reciprocating motion of the robot arm 300 mm horizontally and 25 mm vertically with the robot in MvTune2 (high-speed operation mode) while using a 2 kg payload. The cycle time may take longer depending on the position the robot is moving to or if the workpiece needs to be positioned more accurately.

<sup>3</sup> 3: Values in parentheses indicate the maximum permissible inertia for when high inertia mode is enabled.

<sup>4</sup> 4: Flexible machine cables and machine cables of different lengths are also available as options.

<sup>5</sup> 5: HMS EtherNet/IP module (AB6314) to be supplied by customer. HMS PROFINET IO module (AB6489-B) to be supplied by customer.

HMS CC-Link IE Field module (AB6709) to be supplied by customer. HMS EtherCAT module (AB6607) to be supplied by customer.

<sup>6</sup> 6: Recommended USB cable (USB Type-A to Mini USB Type-B): MR-J3USBCBL3M (manufactured by Mitsubishi Electric), GT09-C30USB-5P (Mitsubishi Electric System & Service Co., Ltd.)

<sup>7</sup> 7: For connecting option interfaces. The parallel I/O unit (2D-TZ378) is installed in SLOT1 of the robot controller from the factory.

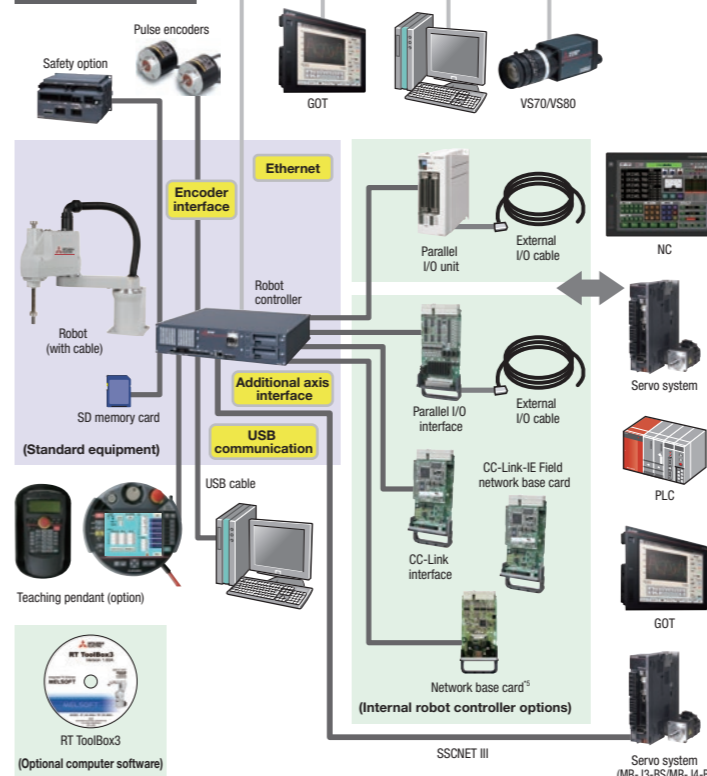
<sup>8</sup> 8: The power voltage fluctuation rate is 10% or less.

<sup>9</sup> 9: Recommended power capacity. Note that power-on current is not included in the power capacity.

The power capacity value is for reference only. The input power voltage will affect whether the robot will operate properly.

## Options

### System architecture



Item	Model	Specification
Machine cable (replacement)	1F-□UCBL-04	Fixed type
	1F-□UCBL-04	Flexible type
Simple teaching pendant	R32TB	Cable length: 7 m
	R32TB-15	Cable length: 15 m
High-performance teaching pendant	R56TB	Cable length: 7 m
	R56TB-15	Cable length: 15 m
Parallel I/O interface	2D-TZ368 (sink type) / 2D-TZ378 (source type)	32 input points and 32 output points Insulated output signal (output signal: 0.1 A/24 V per output point) Insulated input signal (input signal: 7 mA/24 V per input point)
	External I/O cable (for the parallel I/O interface)	2D-CBL05 2D-CBL15
Parallel I/O unit	2A-RZ361 (sink type) / 2A-RZ371 (source type)	32 input points and 32 output points Insulated output signal (output signal: 0.1 A/24 V per output point) Insulated input signal (input signal: 7 mA/24 V per input point)
	External I/O cable (for the parallel I/O unit)	2A-CBL05 2A-CBL15
CC-Link interface	2D-TZ576	Only supported with intelligent device stations and local stations
Network base card (EtherNet/IP interface) <sup>5</sup>	2D-TZ535	HMS Anybus CompactCom Module-connecting communication interface
Network base card (PROFINET interface) <sup>5</sup>	2D-TZ535-PN	HMS Anybus CompactCom Module-connecting communication interface
Network base card (CC-Link IE Field interface) <sup>5</sup>	2F-DQ535	HMS Anybus CompactCom Module-connecting communication interface
Network base card (EtherCAT interface) <sup>5</sup>	2F-DQ535-EC	HMS Anybus CompactCom Module-connecting communication interface
SD memory card	2F-2GBSD	2 GB capacity
Safety option	4F-SF002-01	Safety functions and I/O communication supported
RT Toolbox3	3F-14C-WINJ	CD-ROM
RT Toolbox3 mini	3F-15C-WINJ	CD-ROM
RT Toolbox3 Pro	3F-16D-WINJ	DVD-ROM
Instruction Manual (hard copy)	5F-BN01-PJ01	A set of manuals for the RH-3CRH and 6CRH

## Robot controller specifications

Item	Unit	Specifications
Model		CR800-CHD
Number of axes		Four axes at a time
Memory capacity	Number of teaching positions	Position 39,000
	Number of steps	Step 78,000
	Number of programs	Program 512
Programming language		MELFA-BASIC V, VI
Position teaching method		Teaching or MDI
External I/O	I/O	Point 32 input points and 32 output points
	Dedicated I/O	Assigned to general-purpose I/Os
	Hand I/O	Point 8 input points and 8 output points
	Emergency stop input	Point 1
	Emergency stop output	Point 1
	Mode selector switch input	Point 1
	Mode output	Point 1
	Robot error output	Point 1
	Additional axis synchronization output	Point 1
	Door switch input	Point 1
Interface	Encoder input	Channel 2
	Additional axis, force sense interface	Channel 1
	Robot controller communication interface	Channel 2
	Remote I/O	Channel 1
	USB <sup>6</sup>	Port 1
	Ethernet (CC-Link IE Field Basic)	Port 1
	Option slot <sup>7</sup>	Slot 2
	SD memory card slot	Slot 1
	RS-422	Port 1
	Power supply	Input voltage range <sup>8</sup>
Power capacity <sup>9</sup>		kVA 0.5
Power supply frequency		Hz 50 or 60
External dimensions	mm	430 (width) × 425 (depth) × 98 (height)
Weight	kg	About 12.5
Installation		Freestanding, open structure, vertical/horizontal
Ambient temperature	During operation	°C 0 to 40
	During transportation and storage	-15 to +70
Ambient humidity	During operation	%RH 45 to 85
	During transportation and storage	90 or less
Overvoltage category		II or less
Pollution degree		2 or less
Altitude	m	1000 or less

## CR800-CHD

