

# Robot for Biomedical Applications MOTOMAN-MH3BM

Bottom with power cable exit

Application: Handling Payload: 3 kg

# Ideal for Conveying Inside Medical Installations

This is a robot suited to the hygienic environments required for the development of new drugs, clinical testing, and pharmaceutical dispensing work.

### **Features**

# Compact and Lightweight, with a Maximum Payload of 3 kg

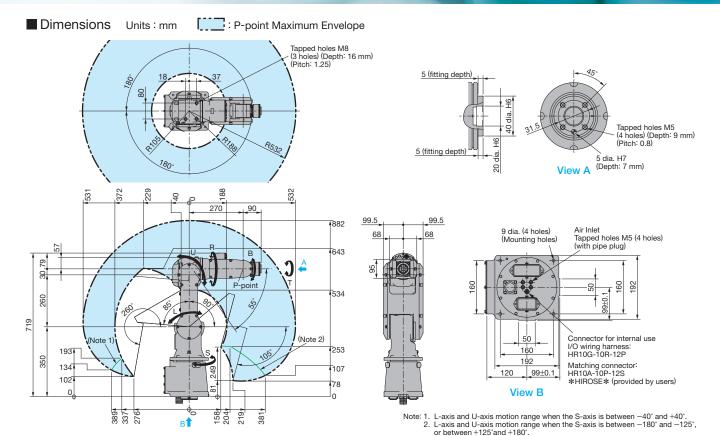
- · Highest payload in its class.
- · Largest motion range of S-axis (Turning) in its class: -180° to +180°

# **Designed for Excellent Hygiene Management**

- Special coating and surface treatment of the robot enables cleaning with hydrogen peroxide.
- The enclosed structure is sealed to provide ingress protection conforming to IP67 for the wrist axis and to IP65 for main axes.
- The robot conforms to ISO cleanroom class 5, which does not allow dust to be generated or to adhere.

#### Design Allows Power Cable to Exit from the Bottom

· Can be installed inside equipment providing a sealed environment.



# MOTOMAN-MH3BM

#### ■ Manipulator Specifications

	Items	Specifications
Model		MOTOMAN-MH3BM
Type		YR-MH003BM-A00
Controlled Axis		6 (Vertically articulated)
Payload		3 kg
Repeatability*1		±0.03 mm
Range of Motion	S-axis (turning)	-180°-+180°
	L-axis (lower Arm)	-85°-+90°
	U-axis (upper arm)	-105°-+260°
	R-axis (wrist roll)	-170°-+170°
	B-axis (wrist pich/yaw)	-120°-+120°
	T-axis (wrist twist)	-360°-+360°
	S-axis (turning)	5.41 rad/s, 310°/s
	L-axis (lower Arm)	2.62 rad/s, 160°/s
Maximum	U-axis (upper arm)	3.32 rad/s, 190°/s
Speed	R-axis (wrist roll)	5.24 rad/s, 300°/s
	B-axis (wrist pich/yaw)	5.24 rad/s, 300°/s
	T-axis (wrist twist)	7.33 rad/s, 420°/s
Allowable Moment	R-axis (wrist roll)	5.39 N·m
	B-axis (wrist pich/yaw)	5.39 N·m
	T-axis (wrist twist)	2.94 N·m
Allowable Inertia (GD <sup>2</sup> /4)	R-axis (wrist roll)	0.10 kg·m²
	B-axis (wrist pich/yaw)	0.10 kg·m²
	T-axis (wrist twist)	0.03 kg·m²
Mass		27 kg
Ambient Conditions	Ambient	During operation: 0 to +40°C,
	Temperature	During storage : −10 to +60°C
	Relative Humidity	20 to 80% max. (non-condensing)
	Vibration Acceleration	4.9 m/s <sup>2</sup> or less
	Mounting	Floor or ceiling
	Others	Free from corrosive gasses or liquids,
		or explosive gasses
		Free from exposure to water, oil, or dust
		Free from excessive electrical noise (plasma)
Power Requirements*2		0.5 kVA

\*1: Conforms to ISO 9283.

\*2: Varies in accordance with applications and motion patterns.

Note: SI units are used for specifications.

#### ■ FS100 Controller Specifications

Items	Specifications
	Standard: IP20 (open structure)
Configuration	Option : IP54 (dustproof housing)
B1 1	470 (W)×420 (D)×200 (H) mm
Dimensions	(Does not include protruding parts.)
Mass	20 kg
Cooling System	Direct cooling
Ambient	During operation: 0°C to +40°C
Temperature	During storage : −10°C to +60°C
Relative Humidity	90% max. (non-condensing)
Power Supply	Three-phase 200/220 VAC (+10% to -15%), 50/60 Hz
Grounding	Grounding resistance: 100 $\Omega$ or less
Digital I/Os	Specialized signals: 10 inputs and 1 output
	General signals : 28 inputs and 28 outputs
	Max. I/O (optional): 1,024 inputs and 1,024 outputs
Positioning System	By serial encoder
Programming	JOB: 10,000 steps, 1,000 instructions
Capacity	CIO ladder: 1,500 steps
Expansion Slots	MP2000 bus × 5 slots
LAN (Connection to Host)	1 (10BASE-T/100BASE-TX)
Interface	RS-232C: 1ch
Control Method	Software servo control
Drive Units	Six axes for robots two more axes can be added as
Drive Offics	external axes. (Can be installed in the controller.)
Painting Color	Munsell notation 5Y7/1 (reference value)

#### ■ Programming Pendant Specifications

Specifications	
JZRCR-YPP03-1	
169 (W)×314.5 (H)×50 (D) mm	
(Does not include protruding parts.)	
990 g	
Reinforced plastics	
Select keys, axis keys, numerical/application keys,	
Mode switch with key (mode: teach, play, and remote),	
emergency stop button, enable switch, compact flash	
card interface device (compact flash is optional.), USB	
port (1 port)	
640×480 pixels color LCD, touch panel	
(Alphanumeric characters, Chinese characters,	
Japanese letters, Others)	
IP65	
Standard: 8 m, Max. : 20 m (optional)	
General-purpose key sheet only	

Note: 1. A dummy connector is required if no programming pendant is connected. Sold separately.

2. The pendant (YPP01-1) for a DX100 controller cannot be connected to an FS100 because of specification differences.

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