

## High Path Accuracy Robot MOTOMAN-MC2000II

Application: Laser cutting and welding  
30 kg (50 kg max.\*) payload, 6-axis vertically articulated

Robot Controller DX200

**New robot optimized for high-speed and high-accuracy laser cutting and welding applications compatible with the new DX200 controller**

Powerful performance in 3D laser cutting with six controlled axes

### High performance

- With the high payload, MOTOMAN-MC2000II can easily be used with a variety of laser heads.
- With the maximum reach of 2038 mm, the robot can cut and weld various automobile parts.

### New functions & design

- Preventive maintenance function for speed reducer, preventive maintenance function for hardware, JOB line comment-out function, JOB line edit-protect function, JOB folder function, Welding Line Coordinate System Jog Operation Function etc.
- Space-saving controller design

### Enhanced safety function (optional)

- Monitors robot and tool positions to limit movements
- Monitors positions with the functional safety module



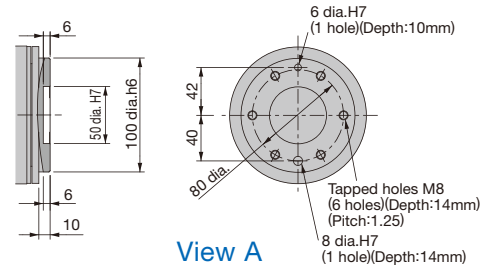
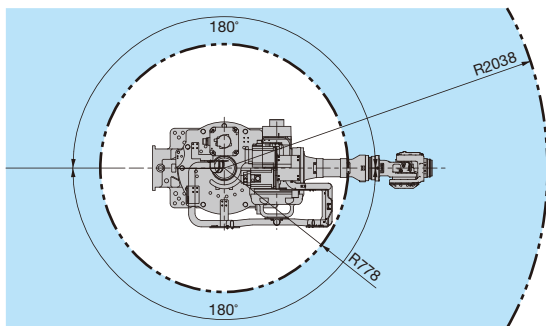
DX200



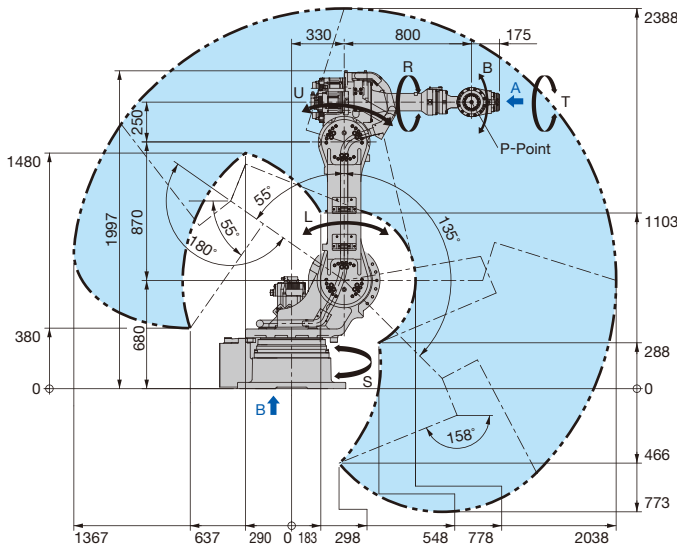
MOTOMAN-MC2000II

### Dimensions Units : mm [ ] : P-point Maximum Envelope

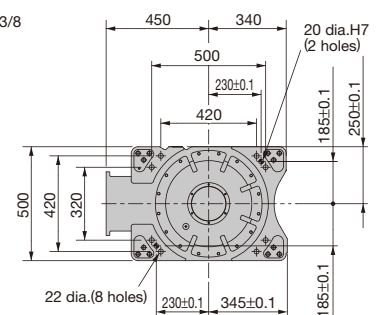
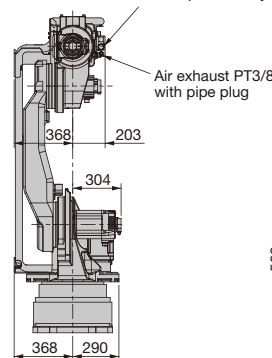
\* : In the case of the high accuracy type, 30 kg or less is recommended.



View A



Connector for internal user  
I/O wiring harness :  
JL05-2A24-28SC(with cap)  
Matching connector :  
JL05-6A24-28P(provided by users)



View B

# MOTOMAN-MC2000 II

## ■ Manipulator Specifications

Items	Specifications	
Model	MOTOMAN-MC2000 II	
Type	YR-MC02000-J00	
Controlled Axis	6 (Vertically articulated)	
Payload	30 kg (50 kg max.*3)	
Repeatability*1	±0.07 mm	
Range of Motion	S-axis (turning)	-180°~+180°
	L-axis (lower arm)	-90° ~+135°
	U-axis (upper arm)	-158°~+235°
	R-axis (wrist roll)	-360°~+360°
	B-axis (wrist pitch/yaw)	-125°~+125°
	T-axis (wrist twist)	-360°~+360°
Maximum Speed	S-axis (turning)	2.62 rad/s, 150°/s
	L-axis (lower arm)	2.62 rad/s, 150°/s
	U-axis (upper arm)	2.62 rad/s, 150°/s
	R-axis (wrist roll)	4.36 rad/s, 250°/s
	B-axis (wrist pitch/yaw)	4.36 rad/s, 250°/s
	T-axis (wrist twist)	4.36 rad/s, 250°/s
Allowable Moment	R-axis (wrist roll)	110 N·m
	B-axis (wrist pitch/yaw)	110 N·m
	T-axis (wrist twist)	55 N·m
Allowable Inertia (GD <sup>2</sup> /4)	R-axis (wrist roll)	7 kg·m <sup>2</sup>
	B-axis (wrist pitch/yaw)	7 kg·m <sup>2</sup>
	T-axis (wrist twist)	1 kg·m <sup>2</sup>
Approx. Mass	845 kg	
Ambient Conditions	Temperature	0°C to +45°C
	Humidity	20% to 80%RH (non-condensing)
	Vibration	4.9 m/s <sup>2</sup> or less
	Others	<ul style="list-style-type: none"> <li>Free from corrosive gas or liquid, or explosive gas or liquid</li> <li>Free from exposure to water, oil, or dust</li> <li>Free from excessive electrical noise (plasma)</li> </ul>
Power Requirements*2	3.5 kVA	

\*1 : Conforms to ISO 9283.

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

\*3 : In the case of the high accuracy type, 30 kg or less is recommended.

Note : SI units are used for specifications.

## ■ DX200 Controller Specifications

Items	Specifications
Configuration	Dust proof
Dimensions	600 (W) × 520 (D) × 730 (H) mm (Possible to control three external axes)
Mass	100 kg max.
Cooling System	Indirect cooling
Ambient Temperature	During operation : 0°C to +45°C 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 (±2%)
Grounding	Grounding resistance : 100 Ω or less
Digital I/Os	Specialized signals : 23 inputs and 5 outputs
	General signals : 40 inputs and 40 outputs Max. I/O (optional) : 4096 inputs and 4096 outputs
Positioning System	Serial communications (absolute encoder)
Programming Capacity	JOB : 200,000 steps, 10,000 instructions CIO ladder : 20,000 steps
Expansion Slots	PCI : 2 slots
LAN (Connection to Host)	1 (10BASE-T/100BASE-TX)
Interface	RS-232C : 1ch
Control Method	Software servo control
Drive Units	SERVOPACK for AC servomotors (can control up to 9 axes)
Painting Color	Front panel :
	Light gray (Munsell notation N7.7 or equivalent)
	Body except front panel : Dark gray (Munsell notation N3 or equivalent)

## ■ Programming Pendant Specifications

Items	Specifications
Dimensions	169 (W) × 50 (D) × 314.5 (H) mm
Mass	0.998 kg
Material	Reinforced plastics
Operation Device	Select keys, axis keys, numerical/application keys, mode selector switch with keys (mode : teach, play, and remote), emergency stop button, enable switch, compact flash card interface device (compact flash is optional.)
Display	5.7-inch color LCD, touch panel 640×480 pixels (Alphanumeric characters, Chinese characters, Japanese letters, Others)
IEC Protection Class	IP65
Cable Length	Standard : 8 m, Max. : 36 m (with optional extension cable)

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# YASKAWA

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In the event that the end user of this product is to be the military and said product is to be employed in any weapons systems or the manufacture thereof, the export will fall under the relevant regulations as stipulated in the Foreign Exchange and Foreign Trade Regulations. Therefore, be sure to follow all procedures and submit all relevant documentation according to any and all rules, regulations and laws that may apply. Specifications are subject to change without notice for ongoing product modifications and improvements.

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