

# MHP45L

## HANDLING ROBOT FOR USE IN HAZARDOUS ENVIRONMENTS

### KEY BENEFITS

Large global install base backed by Yaskawa's experience and reliability

Handles parts for a variety of tasks performed in hazardous environments

High wrist payload capacity for large, heavy parts

Easy-to-use touch screen teach pendant

MotoSim® EG-VRC 2020 (or later) simulation software (optional)

### SPECIFICATIONS

45 kg wrist payload

2,850 mm horizontal reach

5,373 mm vertical reach

±0.07 mm repeatability

### APPLICATION

Material Handling

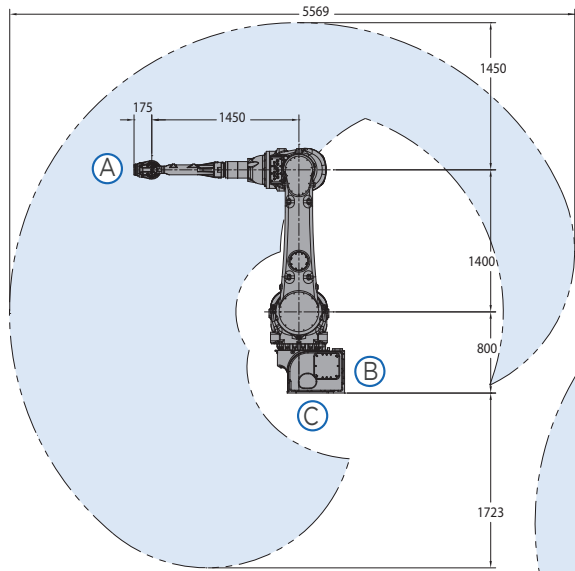


- High-speed, six-axis MHP45L handling robot streamlines automated paint line layouts by eliminating the need for dedicated part transfer equipment.
- Highly flexible range of motion enables transfer of large workpieces, such as automotive bodies and components, while avoiding interference with paint robots and other peripheral equipment.
- High payload capacity, and high moment and inertia ratings provide superior performance for large and heavy handling applications.
- Factory Mutual approved for Class 1, Div. 1 use in hazardous environments.
- Multiple manipulator cable connection options (left, right, back) enable flexible installation.
- Cables and air lines are routed through robot base to upper arm to increase cable life, enhance safety and reduce teaching time.
- This model is available in left or right arm configurations.

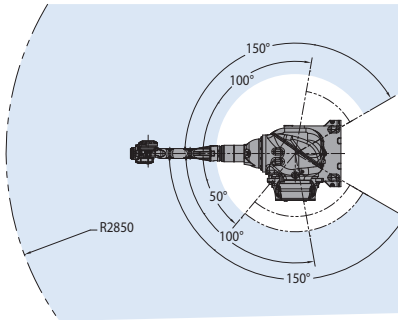
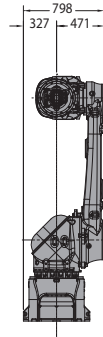
### DX200-FM CONTROLLER

- Supports standard networks (such as EtherNet, EtherNet IP, CC-Link, and DeviceNet), enabling connection to paint equipment controllers and production line controllers.
- Intrinsically safe pendant (optional).
- The DX200-FM is available with Category 3 Performance Level d (PLd) Functional Safety Unit (FSU), which supports safety-rated speed control, safety-rated soft axis and space limiting, and safety-rated monitor stop. In addition to enabling safe operation in smaller spray booths with adjacent manual operations, these safety functions can be utilized to save costs and reduce floorspace requirements.

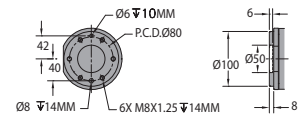
# MHP45L ROBOT



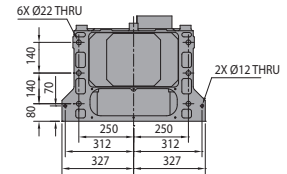
MHP45L (left arm configuration) shown.  
All dimensions are metric (mm) and for reference only.  
Request detailed drawings for all design/engineering requirements.



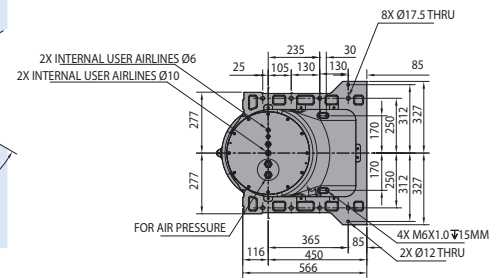
VIEW A



VIEW B



VIEW C



## SPECIFICATIONS

MHP45L SPECIFICATIONS		
Structure		Vertical jointed-arm type
Controlled Axes		6
Payload		45 kg
Vertical Reach		5,373 mm
Horizontal Reach		2,850 mm
Repeatability		±0.07 mm
Maximum Motion Range	S-Axis (Turning/Sweep)	±150°
	L-Axis (Lower Arm)	+140°/-65°
	U-Axis (Upper Arm) (relative angle of lower arm)	+180°/-65°
	R-Axis (Wrist Roll)	±360°
	B-Axis (Bend/Pitch/Yaw)	±125°
	T-Axis (Wrist Twist)	±360°
Maximum Speed		1.6 m/s
Approximate Mass		650 kg
Brakes		All axes
Power Consumption		3 kVA
Allowable Moment	R-Axis	252.8 N · m
	B-Axis	252.8 N · m
	T-Axis	117.6 N · m
Allowable Moment of Inertia	R-Axis	13.9 kg · m <sup>2</sup>
	B-Axis	13.9 kg · m <sup>2</sup>
	T-Axis	3.2 kg · m <sup>2</sup>
Mounting		Floor, Wall, Ceiling, Shelf

## OPTIONS

- Wide variety of fieldbus cards
- Intrinsically safe cable connection for hazardous area tooling needs

DX200-FM CONTROLLER SPECIFICATIONS (WITH STANDARD PENDANT)	
Structure	Free-standing, enclosed type
Dimensions (mm)	600 (w) x 1349 (h) x 520 (d) with transformer
Approximate Mass	250 kg with transformer
Cooling System	Indirect cooling
Ambient Temperature	During operation: 0° C to 40° C During transit and storage: -10° C to +45° C
Relative Humidity	90% max. non-condensing
Primary Power Requirements	3-phase, 240/480/575 VAC at 50/60 Hz Optional external transformer allows 240/480/575 VAC at 50/60 Hz
Grounding	Grounding resistance: ≤100 ohms Separate ground required
Digital I/O	Specialized signals: 28 inputs and 7 outputs General signals: 40 inputs and 40 outputs (Specialized allocation: 24 inputs and 4 outputs; General allocation: 16 inputs and 16 outputs) Max. I/O (optional): 4,096 inputs and 4,096 outputs
Position Feedback	By absolute encoder
Drive Units	Servo packs for AC servo motors
Accel/Decel	Software servo control
Program Capacity	JOB: 200,000 steps; 10,000 instructions Concurrent I/O ladder: 20,000 steps
Fieldbus Options	CC Link, DeviceNet, Ethernet, EtherNet/IP, EtherCAT, PROFINET
Ethernet	10 Base T/100 Base TX
E-Stop	Controlled stop
Safety	Dual-channel Emergency Stop Pushbuttons, 3-position Enable Switch, Meets ANSI/RIA R15.06-1999 and Canadian safety standards
Pendant Dim. (mm)	169 (w) x 314.5 (h) x 50 (d)
Pendant Mass	0.99 kg
Pendant Playback Buttons	Teach, Play, Remote, Servo On, Start, Hold, Emergency Stop, Edit Lock (Play Mode enabled on controller)

YASKAWA AMERICA, INC. 100 Automation Way | Miamisburg, OH 45342  
937.847.6200 | motoman.com

# YASKAWA

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