

MPX3500

Versatile Coating Robot



Key Benefits

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

High wrist/upper arm payload capacity for mounting paint application equipment

Easy-to-use touch screen teach pendant

MotoSim® EG simulation software (optional)

Specifications

15 kg wrist payload

25 kg upper arm payload

2,700 mm horizontal reach

5,095 mm vertical reach

±0.15 mm repeatability

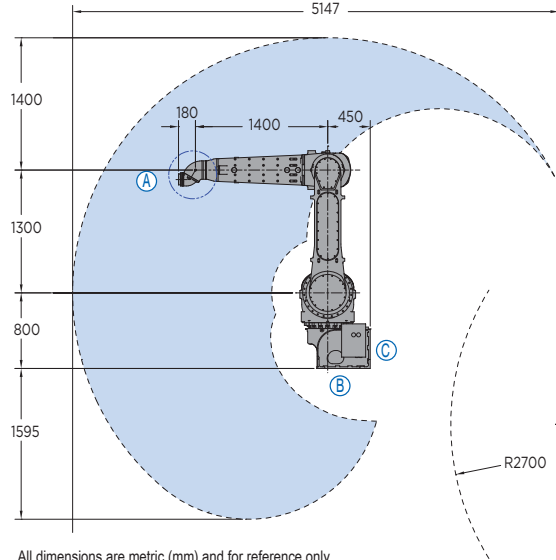
Applications

Coating

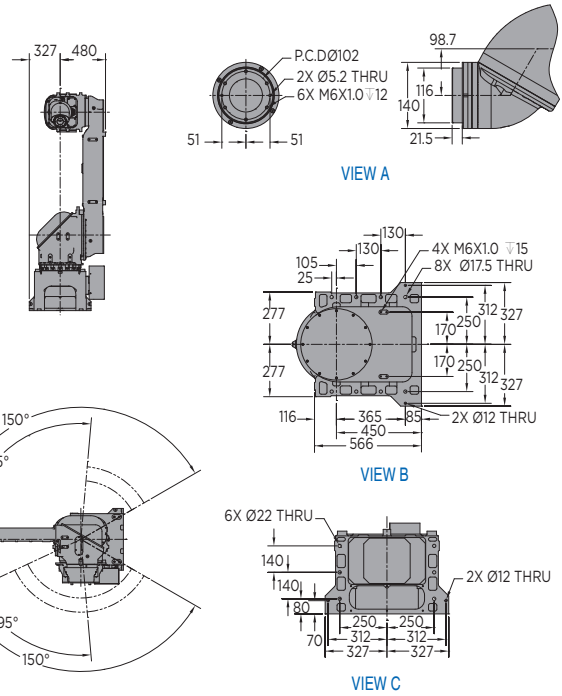
Dispensing

- High-speed, compact six-axis MXP3500 robot is ideal for automotive body and components, as well as other industrial coating applications.
 - Offers superior performance and creates smooth, consistent finish with outstanding efficiency for painting and dispensing applications.
 - Hollow wrist design with inside wrist diameter of 70 mm; well-suited for mounting spray equipment applicators.
 - Ideal for painting contoured parts such as interior/exterior surfaces; interference between the hose and parts/fixtures is avoided which ensures optimum cycle time and robot reach/access.
 - Factory Mutual approved for Class 1, Div. 1 use in hazardous environments.
 - Versatile design can be floor, wall or ceiling mounted for layout flexibility.
- #### DX200-FM Controller
- Includes application-specific software for paint applications.
 - Coordinates operation of robot and painting devices, including spray gun, color changer and gear pump.
 - Supports gun control instructions such as spray start/stop and painting condition files.
 - Supports standard networks (such as EtherNet, EtherNet IP, CC-Link, DeviceNet, EtherCAT and PROFINET), 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 shorter and narrower spray booths with adjacent manual operations, these safety functions can be utilized to save costs and reduce floorspace requirements.

MPX3500 Robot



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



| MPX3500 SPECIFICATIONS | | |
|-----------------------------|--------------------------------------|---------------------------|
| Structure | Vertical jointed-arm type | |
| Controlled Axes | 6 | |
| Payload | 15 kg | |
| Vertical Reach | 5,095 mm | |
| Horizontal Reach | 2,700 mm | |
| Repeatability | ±0.15 mm | |
| Maximum Motion Range | S-Axis (Turning/Sweep) | ±150° |
| | L-Axis (Lower Arm) | +140°/-65° |
| | U-Axis (Upper Arm) | +90°/-65° |
| | <i>(relative angle of lower arm)</i> | |
| | R-Axis (Wrist Roll) | ±720° |
| | B-Axis (Bend/Pitch/Yaw) | ±720° |
| | T-Axis (Wrist Twist) | ±720° |
| Maximum Speed | 2.0 m/s | |
| Approximate Mass | 590 kg | |
| Brakes | All axes | |
| Power Consumption | 3 kVA | |
| Allowable Moment | R-Axis | 93.2 N • m |
| | B-Axis | 58.8 N • m |
| | T-Axis | 19.6 N • m |
| Allowable Moment of Inertia | R-Axis | 3.75 kg • m ² |
| | B-Axis | 2.225 kg • m ² |
| | T-Axis | 0.20 kg • m ² |
| Mounting | Floor, Wall, Ceiling | |

| INTRINSICALLY SAFE PENDANT SPECIFICATIONS (OPTIONAL) | |
|--|--|
| Dimensions (mm) | 235 (w) x 203 (h) x 78 (d) |
| Mass | 1.3 kg |
| Material | Reinforced plastics |
| Operation Device | Select keys, axes keys, numerical/application keys, emergency stop button, enable switch |
| Display | 5.7-inch monochrome LCD, backlit white LED, touch panel 320 x 240 pixels (Alphanumeric characters, Chinese characters, Japanese letters, others) |
| IEC Protection Class | IP54 |
| Cable Length | Standard: 8 m, Optional 20 m Max: 50 m (with optional extension cable) |

| 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 |
| 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. | Motoman Robotics Division

100 Automation Way
Miamisburg, OH 45342
Tel: 937.847.6200 | motoman.com

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