YASKAWA
MOTOMAN ROBOTICS

SOLUTIONS IN MOTION®

MA3100

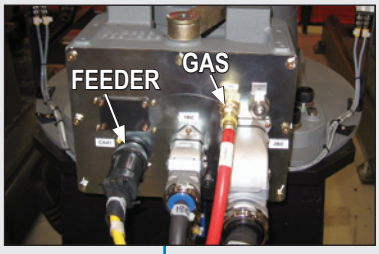
• ARC WELDING •

Payload: 3 kg

Mounting Options: Ceiling/Wall (MA3100T)

PATENTED ARM DESIGN

IMPROVED PART ACCESS



INTEGRATED UTILITIES

TOP REASONS TO BUY

- Longest-reach arc welding robot with integrated torch cable
- Streamlined design improves torch access into tight spaces
- Patented multiple robot control allows more arms to be combined in workcell
- Extra-long arm reduces need for tracks

The MA3100 "Master Arc" welding robot features an integrated torch cable and offers the longest reach in its class. It is ideally suited for use in workcells with larger workpieces, as well as for applications that require access to parts in tight spots or those with potential interference from fixtures.

"Master Arc" Welding Robot Extra-Long, Streamlined and Powerful

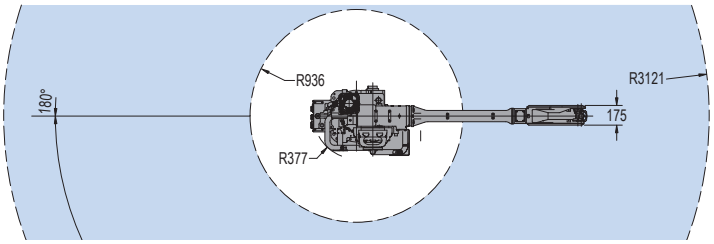
- Reduces welding cycle time due to cutting-edge Sigma-5 AC servo motor control technology and new ARM (Advanced Robot Motion) control.
- 3,121 mm reach; ±0.15 mm repeatability.
- Integrated through-the-arm torch cabling eliminates cable interference, simplifies programming and reduces cable wear.
- Feeder cable and welding utilities (gas and air hoses) can be routed through robot base to upper arm.
- Hollow upper arm maintains optimum bend radius of welding torch cable, maximizing weld performance. T-axis can rotate torch ±200 degrees without cable interference.
- Arm design prevents bent, pinched or stretched cables regardless of torch orientation or part size or shape; minimizes wire feed problems and optimizes weld performance.
- Floor-mounted model is standard. Ceiling- or wall-mounted versions (MA3100T) available.
- Backed by industry's first two-year torch cable warranty.

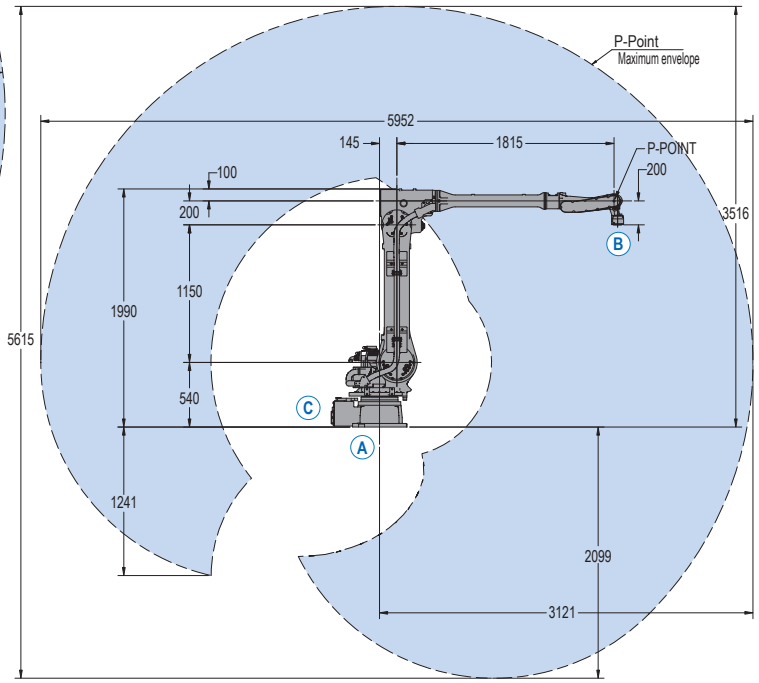
DX100 Controller

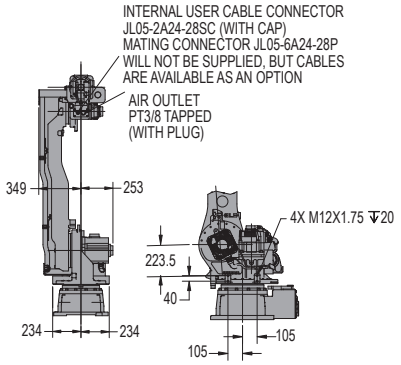
- Patented multiple robot control supports up to 8 robots/72 axes.
- Windows® CE programming pendant with color touch screen and USB interface.
- DX100 welding full function arc welding software including graphics-based weld file settings.
- Faster processing speeds for smoother interpolation. Quicker I/O response. Accelerated Ethernet communication.
- Extensive I/O suite includes integral PLC and touch screen HMI, 2,048 I/O and graphical ladder editor.
- Supports all major fieldbus networks, including EtherNet/IP, DeviceNet, Profibus-DP and many others.
- Compliant to ANSI/RIA R15.06-1999 and other relevant ISO and CSA safety standards. Optional Category 3 functional safety unit.

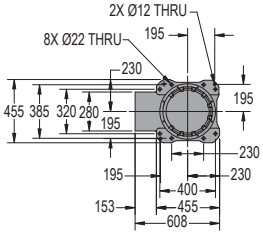
MA3100 ROBOT

All dimensions are metric (mm) and for reference only. Please request detail drawings for all design/engineering requirements.

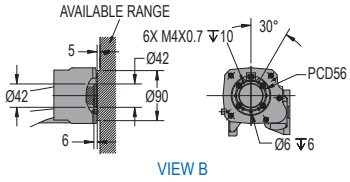




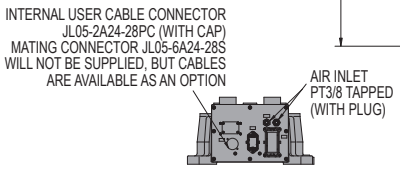




VIEW A



VIEW B



VIEW C

MA3100 SPECIFICATIONS

Structure		Vertical jointed-arm type
Controlled Axes		6
Payload		3 kg (6.6 lbs)
Vertical Reach		5,615 mm (221.1")
Horizontal Reach		3,121 mm (122.9")
Repeatability		±0.15 mm (±0.006")
Maximum Motion Range	S-Axis (Turning) L-Axis (Lower Arm) U-Axis (Upper Arm) R-Axis (Upper Arm Twist) B-Axis (Pitch/Yaw) T-Axis (Twist)	±180° +135°/-90° +251°/-160° ±150° +180°/-45° ±200°
Maximum Speed	S-Axis L-Axis U-Axis R-Axis B-Axis T-Axis	180°/s 178°/s 178°/s 400°/s 410°/s 610°/s
Approximate Mass		501 kg (1,104.7 lbs)
Brakes		All axes
Power Consumption		2.5 kVA
Allowable Moment	R-Axis B-Axis T-Axis	8.8 N • m 8.8 N • m 2.9 N • m
Allowable Moment of Inertia	R-Axis B-Axis T-Axis	0.27 kg • m^2 0.27 kg • m^2 0.03 kg • m^2

DX100 CONTROLLER SPECIFICATIONS**

Dimensions (mm)	800 (w) x 1,000 (h) x 650 (d) (31.5" x 39.4" x 25.6")
Approximate Mass	250 kg max. (551.3 lbs)
Cooling System	Indirect cooling
Ambient Temperature	During operation: 0° to 45° C (32° to 113° F) During transit and storage: -10° to 60° C (14° to 140° F)
Relative Humidity	90% max. non-condensing
Primary Power Requirements	3-phase, 240/480/575 VAC at 50/60 Hz
Digital I/O NPN-Standard PNP-Optional	Standard I/O: 40 inputs/40 outputs consisting of 16 system inputs/ 16 system outputs, 24 user inputs/24 user outputs 32 Transistor Outputs; 8 Relay Outputs Max. I/O (optional): 2,048 inputs and 2,048 outputs
Position Feedback	By absolute encoder
Program Memory	JOB: 200,000 steps, 10,000 instructions CIO Ladder Standard: 15,000 steps Expanded: 20,000 steps
Pendant Dim. (mm)	169 (w) x 314.5 (h) x 50 (d) (6.7" x 12.4" x 2")
Pendant Weight	.998 kg (2.2 lbs)
Interface	One Compact Flash slot; One USB port (1.1)
Pendant Playback Buttons	Teach/Play/Remote Keyswitch selector Servo On, Start, Hold, and Emergency Stop Buttons
Programming Language	INFORM III, menu-driven programming
Maintenance Functions	Displays troubleshooting for alarms, predicts reducer wear
Number of Robots/Axes	Up to 8 robots, 72 axes
Multi Tasking	Up to 16 concurrent jobs, 4 system jobs
Fieldbus	DeviceNet Master/Slave, AB RIO, Profibus, Interbus-S, M-Net, CC Link, EtherNet IP/Slave
Ethernet	10 Base T/100 Base TX
Safety	Dual-channel Emergency Stop Pushbuttons, 3-position Enable Switch, Manual Brake Release Meets ANSI/RIA R15.06-1999, ANSI/RIA/ISO 10218-1-2007 and CSA Z434-03

**See DX100 Controller data sheet (DS-399) for complete specifications

www.motoman.com

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