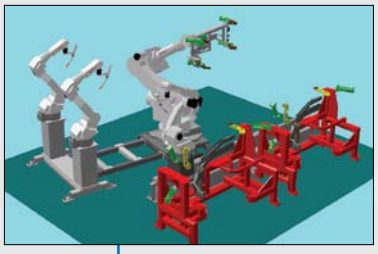
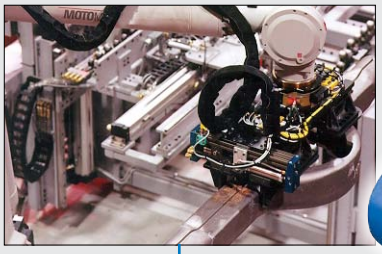
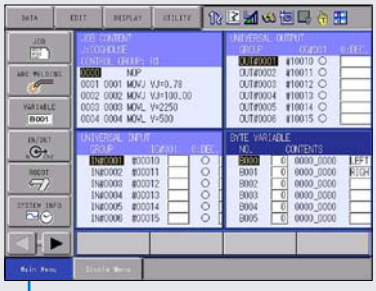
YASKAWA
MOTOMAN ROBOTICS



JIGLESS PART PROCESSING



MATERIAL HANDLING



MULTIPLE WINDOW PENDANT DISPLAY

ES280D
ES280D-230

MATERIAL HANDLING • MACHINE TENDING • JIGLESS WELDING • PRESS TENDING

Payloads:
280 kg; Standard (ES280D)
230 kg; Extended Reach (ES280D-230)

TOP REASONS TO BUY

- Versatile, high-performance robot for heavy-payload machine tending and other handling tasks.
- Powerful DX100 controller provides fast Ethernet communication and can deliver significant cost savings by eliminating costly PLCs or HMIs for cell control.
- Windows® CE programming pendant with full-color touch screen and USB interface.

Fast, Streamlined and Powerful

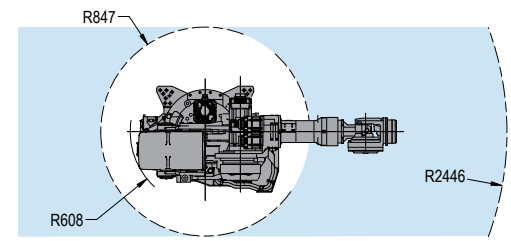
- High-speed, six-axis ES280D and extended-reach ES280D-230 robots are specifically designed to deliver unmatched performance and reliability in heavy-payload handling applications.
- Compact, slim design allows robot to reduce cycle time and reach into confined spaces, improving system productivity.
- The ES280D features a 2,446 mm (96.3") horizontal reach. The ES280D-230 features a 2,651 mm (104.4") horizontal reach. Work envelope easily extends behind body (due to no conuterbalance), allowing a wider range of motion which can increase the number of operations in a single cell.
- Provides superior performance in machine tending, and other heavy-payload applications.

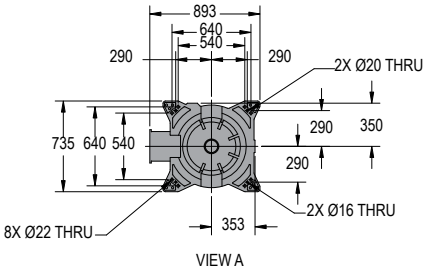
DX100 Controller

- Patented multiple robot control supports up to 8 robots/72 axes.
- Windows® CE programming pendant with color touch screen and USB interface.
- 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.
- Interface panel function allows the programming pendant to be configured as a system HMI.

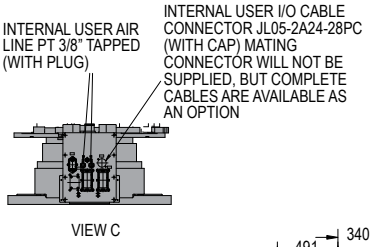
ES280D/ES280D-230 ROBOTS

ES280D robot shown
All dimensions are metric (mm) and for reference only. Please request detail drawings for all design/engineering requirements.

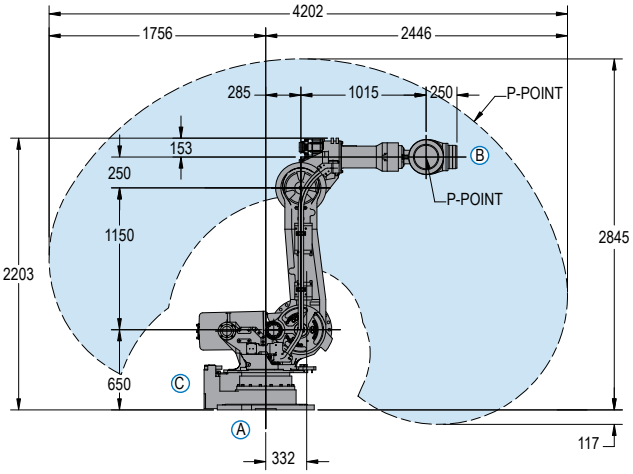


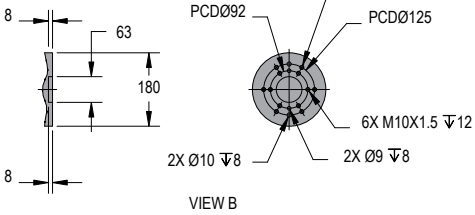


VIEW A

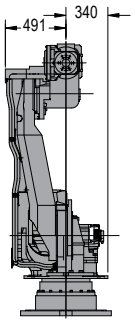


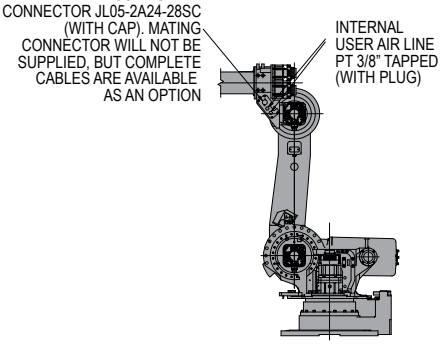
VIEW C





VIEW B





ROBOT SPECIFICATIONS

		ES280D	ES280D-230
Structure		Vertical articulated type	Vertical articulated type
Controlled Axes		6	6
Payload		280 kg (617.4 lbs)	230 kg (507.2 lbs)
Vertical Reach		2,962 mm (116.6")	3,372 mm (132.8")
Horizontal Reach		2,446 mm (96.3")	2,651 mm (104.4")
Repeatability		±0.2 mm (0.008")	±0.2 mm (0.008")
Maximum Motion Range	S-Axis (Turning/Sweep) L-Axis (Lower Arm) U-Axis (Upper Arm) R-Axis (Wrist Roll) B-Axis (Bend/Pitch/Yaw) T-Axis (Wrist Twist)	±180° +76°/-60° +230°/-142.5° ±360° ±125° ±360°	±180° +76°/-60° +230°/-142.5° ±360° ±125° ±360°
Maximum Speed	S-Axis L-Axis U-Axis R-Axis B-Axis T-Axis	90°/s 80°/s 90°/s 115°/s 110°/s 190°/s	80°/s 70°/s 80°/s 115°/s 110°/s 190°/s
Approximate Mass		1,120 kg (2,469.6 lbs)	1,130 kg (2,491.7 lbs)
Brakes		All axes	All axes
Power Consumption		10 kVA	10 kVA
Allowable Moment	R-Axis B-Axis T-Axis	1,333 N • m 1,333 N • m 706 N • m	1,333 N • m 1,333 N • m 706 N • m
Allowable Moment of Inertia	R-Axis B-Axis T-Axis	142 kg • m^2 142 kg • m^2 79 kg • m^2	142 kg • m^2 142 kg • m^2 79 kg • m^2
Internal User I/O Cable		23 conductors + ground	23 conductors + ground
Internal User Air Line		(2) 3/8" PT connections	(2) 3/8" PT connection

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
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

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