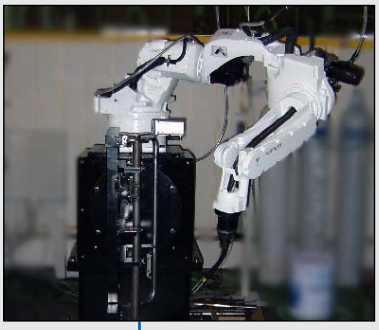
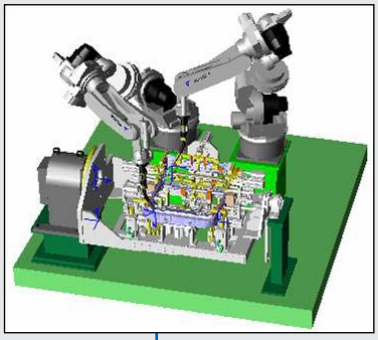
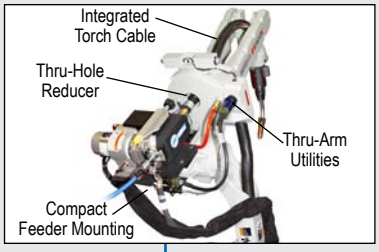
YASKAWA
MOTOMAN ROBOTICS



IMPROVED PART ACCESS



PATENTED ARM DESIGN



INTEGRATED UTILITIES

TOP REASONS TO BUY

- 7-axis robot can reduce floor-space by providing high-density robot spacing
- Versatile robot can improve joint access when mounted in wall- or ceiling-orientation
- Streamlined design with seventh axis ("elbow") improves torch access into tight spaces or reaches around both sides of part
- Industry's first two-year torch cable warranty

VA1400

• ARC WELDING •

Payload: 3 kg

Mounting options: Ceiling/Wall (VA1400T)

"Versatile Arc" Welding Robot Ideal for High-Density Layouts

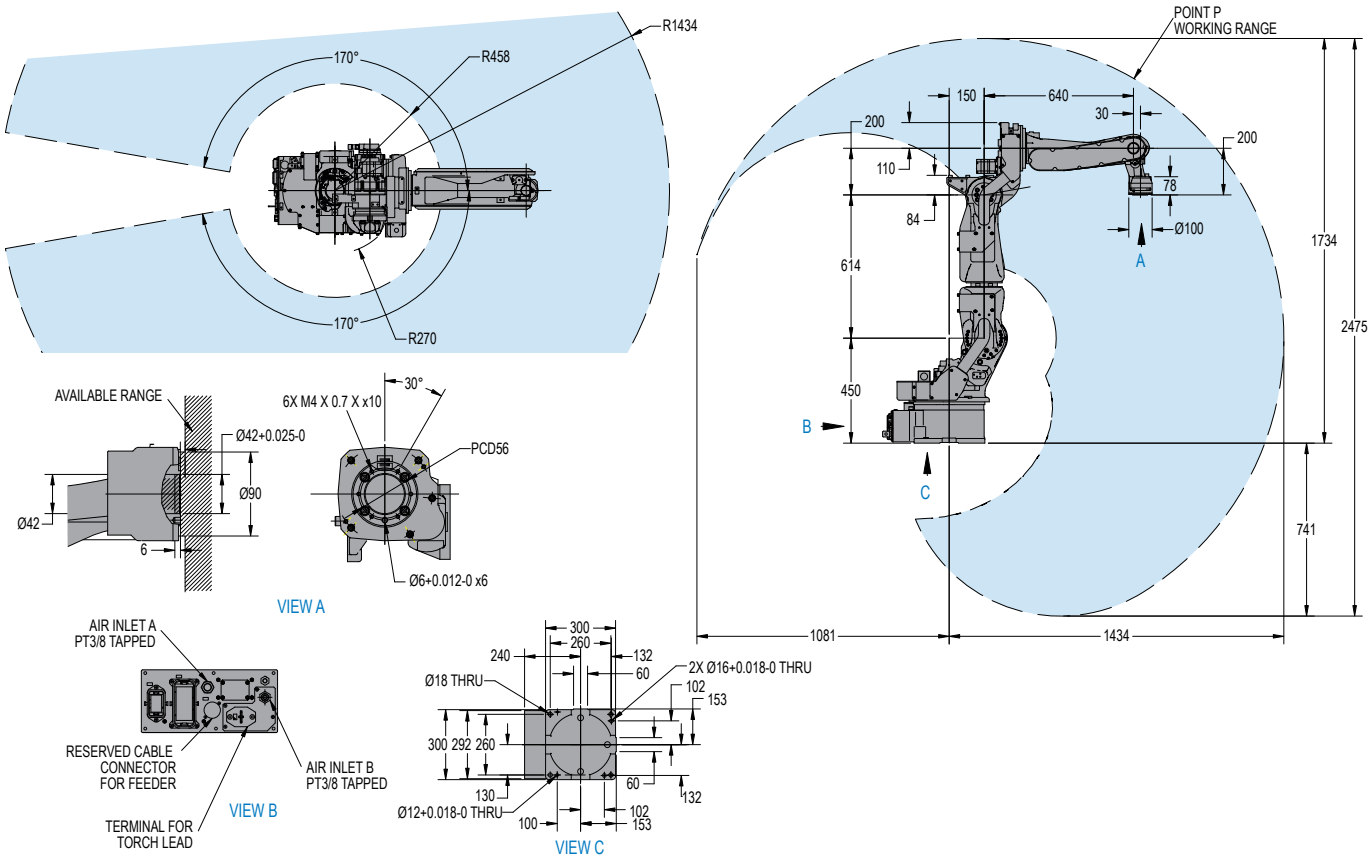
- Innovative 7-axis design dramatically increases freedom of movement and maintains proper welding posture at all times. Located in lower arm, seventh axis (E-axis) acts as elbow, providing tremendous additional flexibility.
- Space-saving VA1400 increases productivity and achieves highest welding performance.
- 3 kg (6.6-lb) payload; 1,434 mm (56.5") horizontal reach; ±0.08 mm (±0.003") repeatability.
- Integrated through-the-arm torch cabling eliminates cable interference, simplifies programming and reduces cable wear.
- Power cable and welding utilities (gas and air hoses) can be routed through robot base.
- Ideally suited for use in high-density workcells with multiple robots working in close proximity, as well as for applications that require access to parts in tight spots or those with potential interference from fixtures.
- Superior welding access provided by seventh axis often makes it possible to consolidate cells and simplify equipment, by eliminating need for part positioner.

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.

VA1400 ROBOT

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



VA1400 SPECIFICATIONS

Structure		Vertical articulated type
Controlled Axes		7
Payload		3 kg (6.6 lb)
Vertical Reach		2,475 mm (97.4")
Horizontal Reach		1,434 mm (56.5")
Repeatability		±0.08 mm (0.003")
Maximum Motion Range	S-Axis (Turning/Sweep) L-Axis (Lower Arm) E-Axis (Elbow) U-Axis (Upper Arm) R-Axis (Wrist Roll) B-Axis (Bend/Pitch/Yaw) T-Axis (Wrist Twist)	±170° +148°/-70° ±90° +150°/-175° ±150° +180°/-45° ±200°
Maximum Speed	S-Axis L-Axis E-Axis U-Axis R-Axis B-Axis T-Axis	220°/s 200°/s 220°/s 220°/s 410°/s 410°/s 610°/s
Approximate Mass		150 kg (330.8 lb)
Brakes		All axes
Power Consumption		1.5 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

MOTOMAN ROBOTICS
100 AUTOMATION WAY, MIAMISBURG, OHIO 45342
TEL: 937.847.6200 ■ FAX: 937.847.6277

YASKAWA
MOTOMAN ROBOTICS

MOTOMAN IS A REGISTERED TRADEMARK
WINDOWS IS A REGISTERED TRADEMARK OF MICROSOFT
ALL OTHER MARKS ARE THE TRADEMARKS AND
REGISTERED TRADEMARKS OF YASKAWA AMERICA, INC.

TECHNICAL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE
DS-398-C ©2011 YASKAWA AMERICA, INC. JUNE 2011