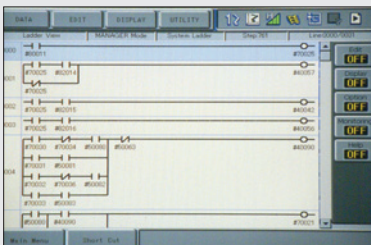


MACHINE TENDING



THRU-ARM CABLE AND HOSE ROUTING



LADDER EDITOR

## TOP REASONS TO BUY

- Dexterity to perform complex tasks; dual 7-axis arms work together or independently
- Slim design optimizes space; provides “human-like” flexibility and range of motion, even in tight spaces
- Simplified tooling reduces cost
- Can be used in environments that are hazardous to humans
- Labor savings justifies capital investment



# SDA5D

ASSEMBLY • PACKAGING • HANDLING • MACHINE TENDING • PART TRANSFER

**Payload: 5 kg/arm**

## Slim, Dual-Arm Robot with “Human-Like” Flexibility

- Powerful actuator-based design provides “human-like” flexibility and fast acceleration.
- Superior dexterity and best-in-class wrist characteristics make slim, dual-arm robot ideally suited for assembly, part transfer, machine tending, packaging and other handling tasks that formerly could only be done by people.
- Highly flexible; 15 axes of motion (7 axes per arm, plus a single axis for base rotation).
- Internally routed cables and hoses (6 - air, 12 - electric) reduce interference and maintenance, and also make programming easier.
- 5 kg (11 lb) payload per arm; 845 mm (33.3") horizontal reach per arm; 1,118 mm (44") vertical reach per arm; ±0.06 mm (±0.003") repeatability.
- Both robot arms can work together on one task to double the payload or handle heavy, unwieldy objects. Two manipulators can perform simultaneous independent operations.

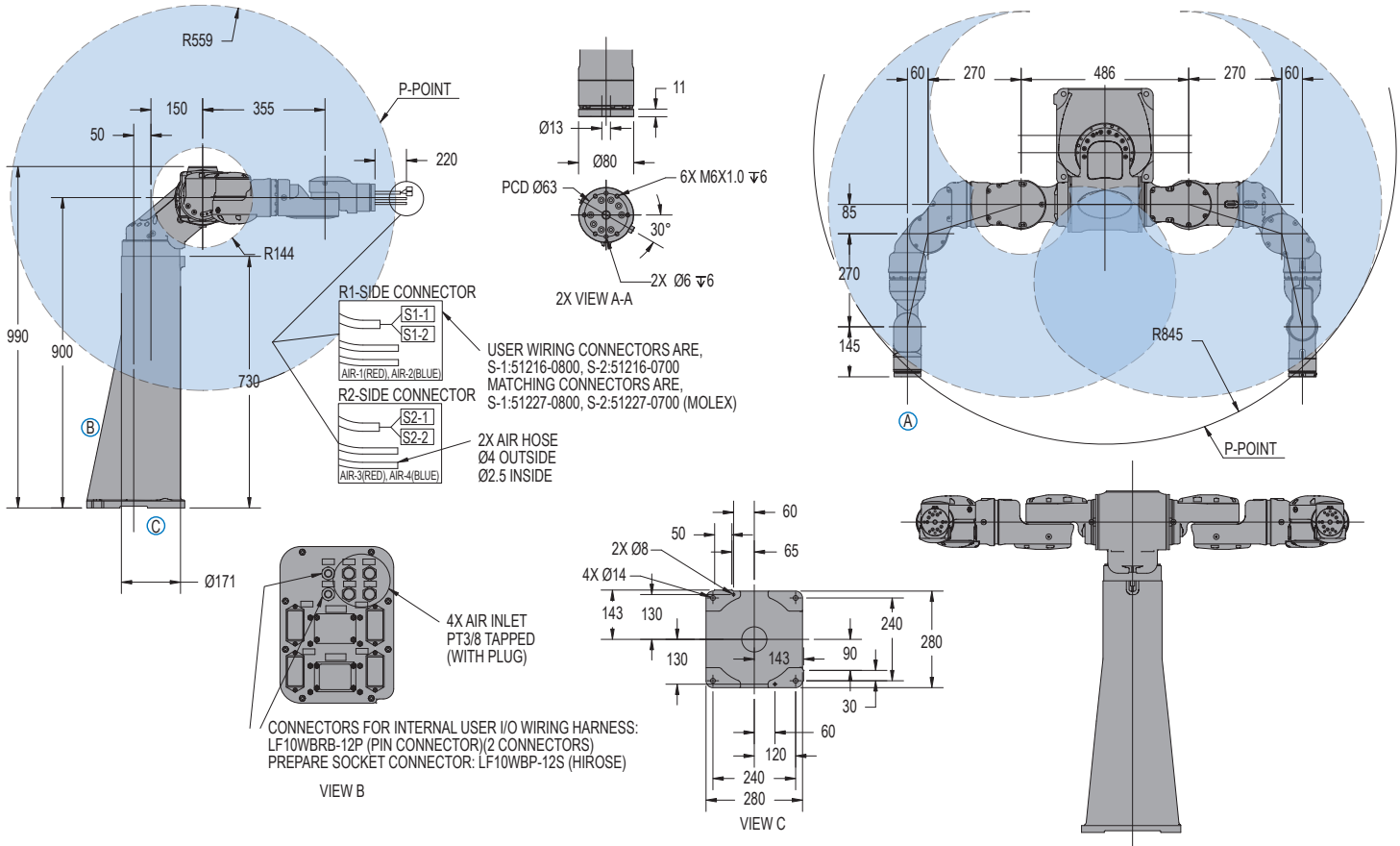
- Ability to hold part with one arm while performing operations on it with other arm. Can transfer a part from one arm to the other with no need to set part down.

## 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.

# SDA5D ROBOT

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



## SDA5D SPECIFICATIONS

<b>Structure</b>	Articulated	
<b>Mounting</b>	Floor	
<b>Controlled Axes</b>	15 (7 axes per arm plus base rotation)	
<b>Payload</b>	5 kg (11 lbs)/arm	
<b>Horizontal Reach per Arm</b>	845 mm (33.3")	
<b>Horizontal Reach (P-point to P-point)</b>	1,690 mm (66.5")	
<b>Vertical Reach</b>	1,118 mm (44")	
<b>Repeatability</b>	±0.06 mm (±0.003")	
<b>Maximum Motion Range</b>	Rotation-Axis (Waist)	±170°
	S-Axis (Lifting)	+90° / -270°
	L-Axis (Lower Arm)	±110°
	E-Axis (Elbow)	±170°
	U-Axis (Upper Arm)	+115° / -90°
	R-Axis (Upper Arm Twist)	±180°
	B-Axis (Wrist Pitch/Yaw)	±110°
<b>Maximum Speed</b>	Rotation-Axis	200°/s
	S-Axis	200°/s
	L-Axis	200°/s
	E-Axis	200°/s
	U-Axis	200°/s
	R-Axis	200°/s
	B-Axis	230°/s
T-Axis	350°/s	
<b>Approximate Mass</b>	110 kg (242.6 lbs)	
<b>Power Consumption</b>	1.4 kVA	
<b>Allowable Moment</b>	R-Axis	14.7 N · m
	B-Axis	14.7 N · m
	T-Axis	7.35 N · m
<b>Allowable Moment of Inertia</b>	R-Axis	0.45 kg · m <sup>2</sup>
	B-Axis	0.45 kg · m <sup>2</sup>
	T-Axis	0.11 kg · m <sup>2</sup>

## DX100 CONTROLLER SPECIFICATIONS\*\*

<b>Dimensions (mm)</b>	1,200 (w) x 1,000 (h) x 650 (d) 47.2" x 39.4" x 25.6"
<b>Approximate Mass</b>	250 kg max. (551.3 lbs)
<b>Cooling System</b>	Indirect cooling
<b>Ambient Temperature</b>	During operation: 0° to 45° C (32° to 113° F) During transit and storage: -10° to 60° C (14° to 140° F)
<b>Relative Humidity</b>	90% max. non-condensing
<b>Primary Power Requirements</b>	3-phase, 240/480/575 VAC at 50/60 Hz
<b>Digital I/O</b>	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
<b>Position Feedback</b>	By absolute encoder
<b>Program Memory</b>	JOB: 200,000 steps, 10,000 instructions CIO Ladder Standard: 15,000 steps Expanded: 20,000 steps
<b>Pendant Dim. (mm)</b>	169 (w) x 314.5 (h) x 50 (d) (6.7" x 12.4" x 2")
<b>Pendant Weight</b>	.998 kg (2.2 lbs)
<b>Interface</b>	One Compact Flash slot; One USB Port (1.1)
<b>Pendant Playback Buttons</b>	Teach/Play/Remote Keyswitch selector Servo On, Start, Hold, and Emergency Stop Buttons
<b>Programming Language</b>	INFORM III, menu-driven programming
<b>Maintenance Functions</b>	Displays troubleshooting for alarms, predicts reducer wear
<b>Number of Robots/Axes</b>	Up to 8 robots, 72 axes
<b>Multi Tasking</b>	Up to 16 concurrent jobs, 4 system jobs
<b>Fieldbus</b>	DeviceNet Master/Slave, AB RIO, Profibus, Interbus-S, M-Net, CC Link, EtherNet IP/Slave
<b>Ethernet</b>	10 Base T/100 Base TX
<b>Safety</b>	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

**YASKAWA**

MOTOMAN ROBOTICS

MOTOMAN ROBOTICS  
 805 LIBERTY LANE, WEST CARROLLTON, OHIO 45449  
 TEL: 937.847.6200 ■ FAX: 937.847.6277

TECHNICAL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE  
 DS-449-B ©2010 YASKAWA AMERICA, INC. OCTOBER 2010

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.