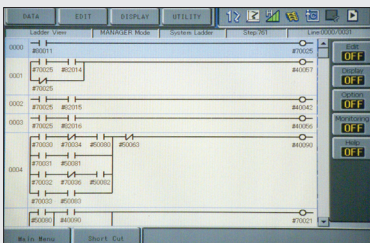
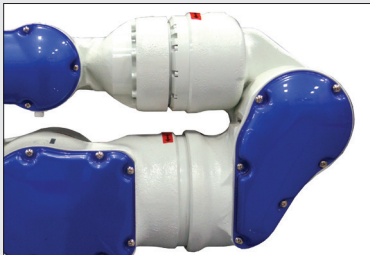


THRU-ARM CABLE AND HOSE ROUTING



LADDER EDITOR



OFFSET ELBOW EXPANDS WORK ENVELOPE

## TOP REASONS TO BUY

- Slim, 7-axis design optimizes space; provides “human-like” flexibility and range of motion, even in tight spaces
- Mounts virtually anywhere in any orientation
- Can be used in environments that are hazardous to humans
- Labor savings justifies capital investment



# SIA5D

ASSEMBLY • INJECTION MOLDING • INSPECTION  
MACHINE TENDING • PACKAGING • PART TRANSFER

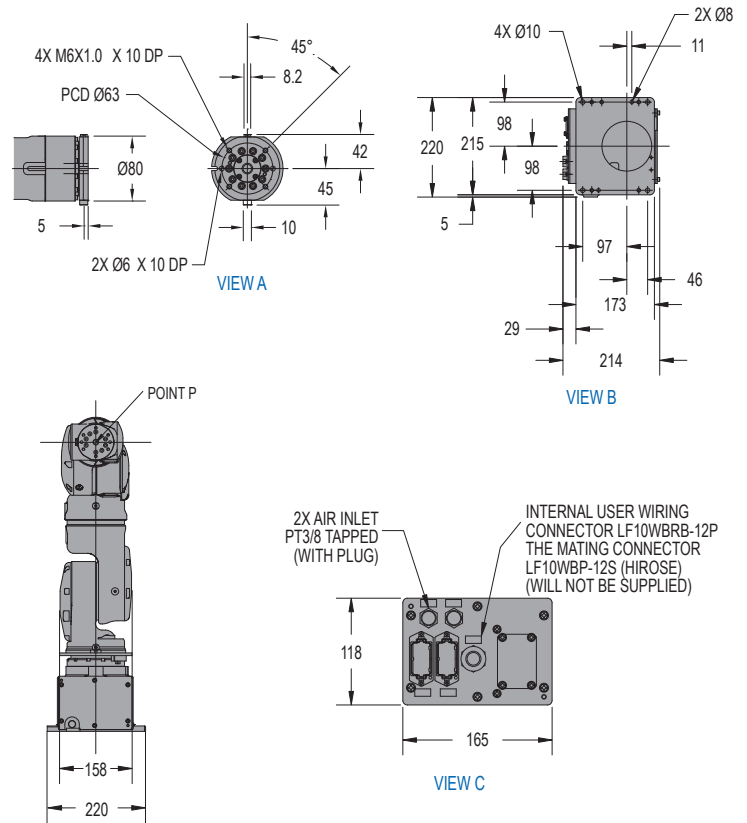
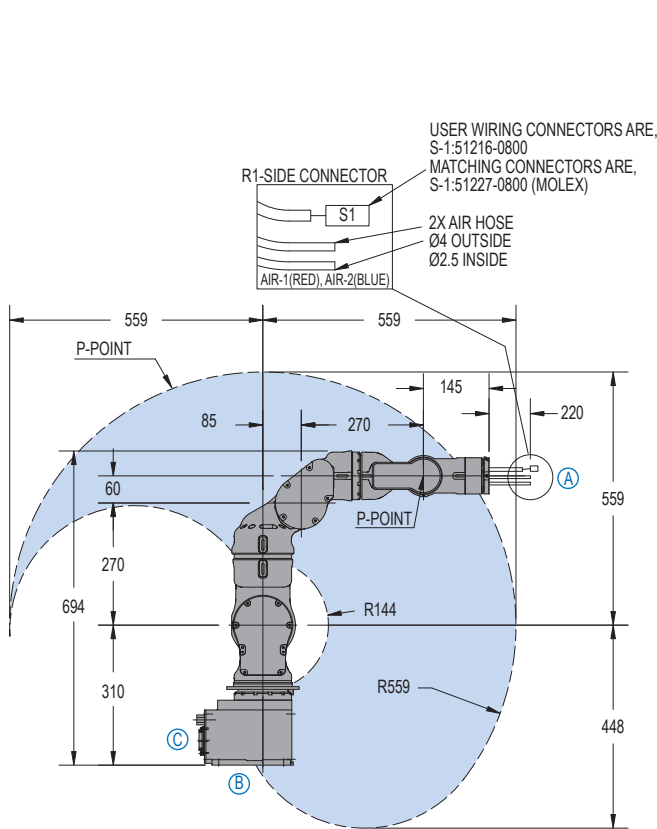
Payload: 5 kg

## Compact, Lean and Powerful Arm

- 7-axis actuator-based design and best-in-class wrist performance characteristics provide amazing freedom of movement, coupled with ability to maneuver in very tight areas.
- Superior dexterity enables robot to reorient elbow(s) without affecting hand position or causing self-interference.
- Agile, versatile robot opens up a wide range of industrial applications to robots; ideal for assembly, injection molding, inspection, machine tending and a host of other operations.
- 5 kg payload; 1,007 mm vertical reach; 559 mm horizontal reach;  $\pm 0.05$  mm repeatability.
- Slim, compact and powerful – robot can straighten vertically to take up only one square foot of floorspace and is less than 220 mm wide at widest point.
- Short axis lengths and extreme motion flexibility allow slim manipulator to be positioned out of normal working area (i.e. floor-, ceiling-, wall-, incline- or machine-mounted) without limiting motion range of any axis.

## 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.



## SIA5D SPECIFICATIONS

<b>Structure</b>	Articulated	
<b>Mounting</b>	Floor, Wall or Ceiling	
<b>Controlled Axes</b>	7	
<b>Payload</b>	5 kg (11 lb)	
<b>Vertical Reach</b>	1,007 mm (39.6")	
<b>Horizontal Reach</b>	559 mm (22")	
<b>Repeatability</b>	±0.06 mm (±0.002")	
<b>Maximum Motion Range</b>	S-Axis (Turning/Sweep)	±180°
	L-Axis (Lower Arm)	±110°
	E-Axis (Elbow)	±170°
	U-Axis (Upper Arm)	+115 / -90°
	R-Axis (Wrist Roll)	±180°
	B-Axis (Bend/Pitch/Yaw)	±110°
	T-Axis (Wrist Twist)	±180°
<b>Maximum Speed</b>	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>	30 kg (66.2 lb)	
<b>Power Rating</b>	1 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>
<b>Protection Class</b>	Standard	Not rated
	XP Version* (option)	N/A

\* XP Version: Yaskawa Motoman's eXtra Protection package

## DX100 CONTROLLER SPECIFICATIONS\*\*

<b>Dimensions (mm)</b>	800 (w) x 1,000 (h) x 650 (d) (31.5" 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/ NPN-Standard 16 system outputs, 24 user inputs/24 user outputs PNP-Optional 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



# SIA5F

ASSEMBLY | INJECTION MOLDING | INSPECTION  
MACHINE TENDING | PACKAGING | PART TRANSFER

### KEY BENEFITS

Slim, 7-axis design optimizes space; provides “human-like” flexibility and range of motion, even in tight spaces

Mounts virtually anywhere in any orientation

Can be used in environments that are hazardous to humans

Labor savings justifies capital investment

Controlled by the small FS100 controller that can operate on single- or three-phase power

### SPECIFICATIONS

5 kg maximum payload

1,007 mm vertical reach

559 mm horizontal reach

±0.05 mm repeatability

### CONTROLLERS



DX200



FS100



MLX200

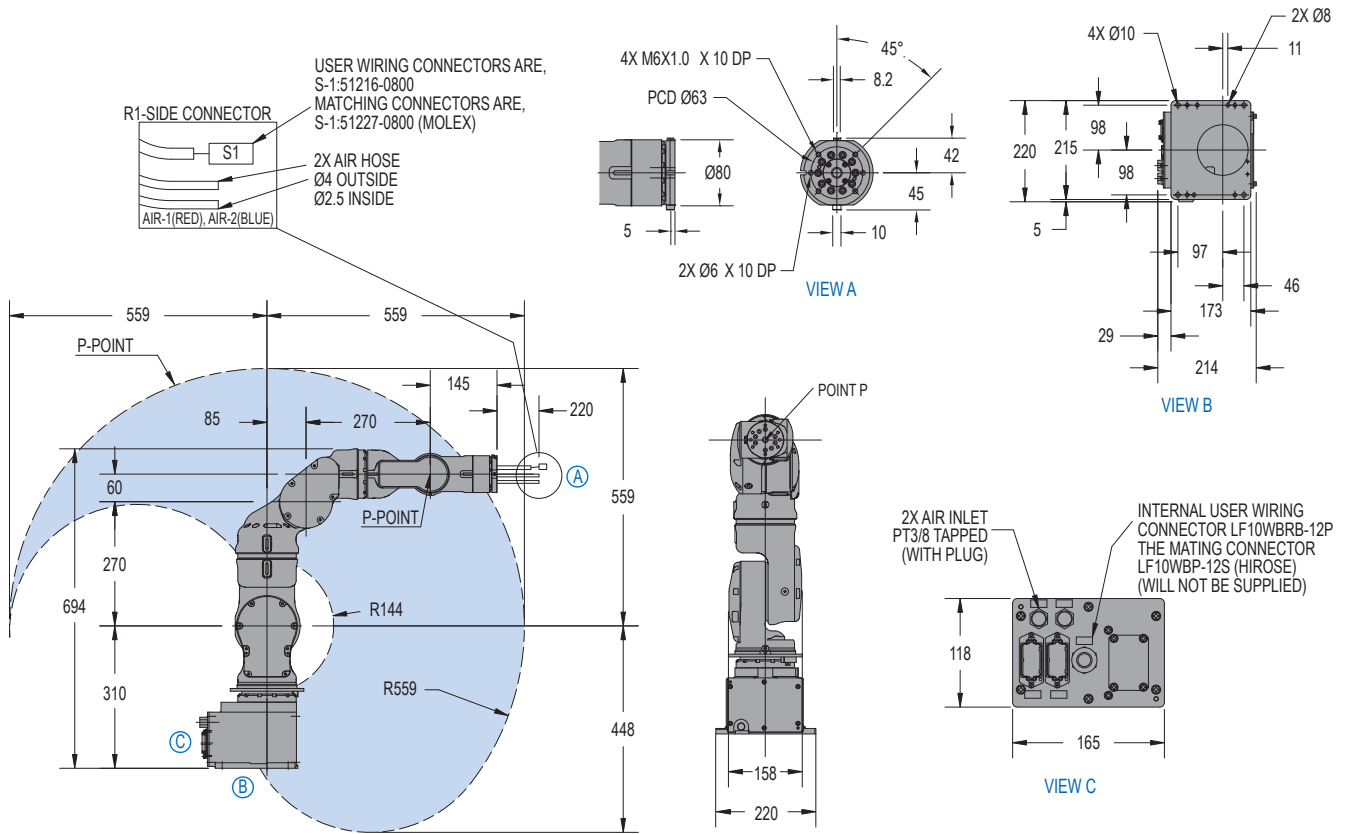
### COMPACT, LEAN AND POWERFUL ARM

- 7-axis actuator-based design and best-in-class wrist performance characteristics provide amazing freedom of movement, coupled with ability to maneuver in very tight areas.
- Superior dexterity enables robot to reorient elbow(s) without affecting hand position or causing self-interference.
- Agile, versatile robot opens up a wide range of industrial applications to robots; ideal for assembly, injection molding, inspection, machine tending and a host of other operations.
- 5 kg payload; 1,007 mm vertical reach; 559 mm horizontal reach; ±0.05 mm repeatability.
- Slim, compact and powerful – robot can straighten vertically to take up only one square foot of floorspace and is less than 220 mm wide at widest point.
- Short axis lengths and extreme motion flexibility allow slim manipulator to be positioned out of normal working area (i.e. floor-, ceiling-, wall-, incline- or machine-mounted) without limiting motion range of any axis.

### FS100 CONTROLLER

- Small, compact controller.
- 470 mm wide, 200 mm high, 420 mm deep.
- Designed for packaging and small parts handling robots with payloads of 20 kg and under.
- Compatible with integrated MotoSight™ 2D vision (optional).
- Improved communication speeds and functionality.
- High-speed I/O response and high-resolution timers.
- Open architecture enables software customization in widely accepted environments such as C, C++, C# and .NET.
- Uses similar programming pendant hardware as DX200 controller, providing a consistent programming interface.

# SIA5F ROBOT



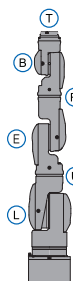
All dimensions are metric (mm) and for reference only.  
Request detailed drawings for all design/engineering requirements.

## SPECIFICATIONS

Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [N•m]	Allowable moment of inertia [kg•m <sup>2</sup> ]	Controlled axes	7
S	±180	200	-	-	Maximum payload [kg]	5
L	±110	200	-	-	Repeatability [mm]	±0.05
E	±170	200	-	-	Horizontal reach [mm]	559
U	+115 / -90	200	-	-	Vertical reach [mm]	1,007
R	±180	200	14.7	0.45	Weight [kg]	30
B	±110	230	14.7	0.45	Power requirements	1- or 3-phase; 200/230 VAC at 50/60 Hz
T	±180	350	7.35	0.11	Power rating [kVA]	1

## OPTIONS

- Wide variety of fieldbus cards
- Vision systems
- Robot base I/O cables
- External axis kit
- Material handling software package
- Conveyor tracking
- MotoFit™ force sensing package



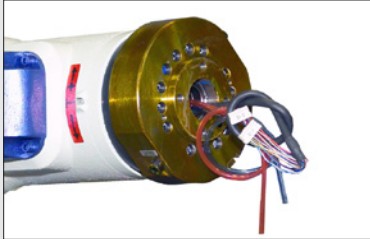
### AXES LEGEND

- 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

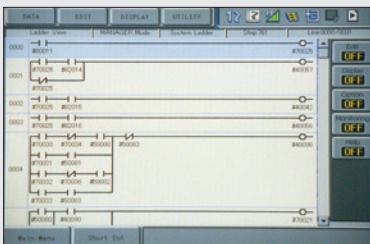
**Yaskawa America, Inc.**  
**Motoman Robotics Division**

100 Automation Way  
Miamisburg, OH 45342  
Tel: 937.847.6200  
Fax: 937.847.6277

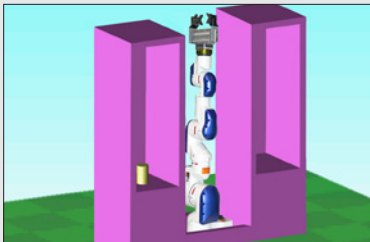
[motoman.com](http://motoman.com)



THRU-ARM CABLE AND HOSE ROUTING



LADDER EDITOR



SMALL FOOTPRINT

## TOP REASONS TO BUY

- Slim, 7-axis design optimizes space; provides “human-like” flexibility and range of motion, even in tight spaces
- Mounts virtually anywhere in any orientation
- Can be used in environments that are hazardous to humans
- Labor savings justifies capital investment

# SIA10D

ASSEMBLY • INJECTION MOLDING • INSPECTION  
MACHINE TENDING • PACKAGING • PART TRANSFER

**Payload: 10 kg**



## Compact, Lean and Powerful Arm

- 7-axis actuator-based design and best-in-class wrist performance characteristics provide amazing freedom of movement, coupled with ability to maneuver in very tight areas.
- Superior dexterity enables robot to reorient elbow(s) without affecting hand position or causing self-interference.
- Agile, versatile robot opens up a wide range of industrial applications to robots: ideal for assembly, injection molding, inspection, machine tending and a host of other operations.
- 10 kg payload; 1,203 mm vertical reach; 720 mm horizontal reach;  $\pm 0.1$  mm repeatability.
- Slim, compact and powerful – robot can straighten vertically to take up only one square foot of floorspace and is only 264 mm (10.4") wide at widest point.
- Short axis lengths and extreme motion flexibility allow slim manipulator to be positioned out of normal working area (i.e. floor-, ceiling-, wall-, incline- or machine-mounted) without limiting motion range of any axis.

- Mounting SIA10D robot between two machine tools provides open access to machines for fixture maintenance, adjustment or testing.
- Operator has clear access to machine operator station for entering offsets, maintenance or other operations.

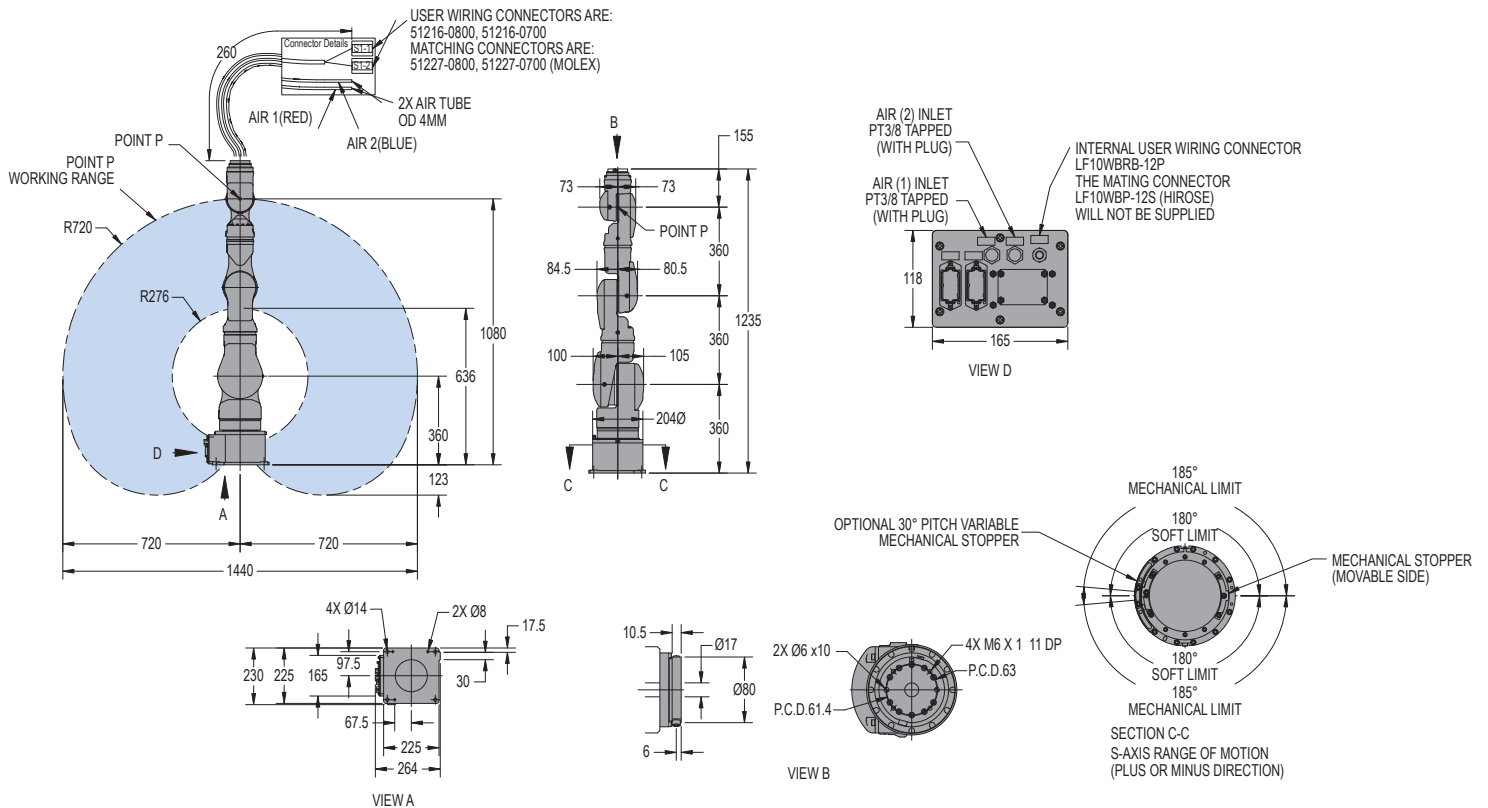
## DX100 Controller

- 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.



# SIA10D ROBOT

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



## SIA10D SPECIFICATIONS

<b>Structure</b>	Articulated	
<b>Mounting</b>	Floor, Wall or Ceiling	
<b>Controlled Axes</b>	7	
<b>Payload</b>	10 kg (22.1 lbs)	
<b>Vertical Reach</b>	1,203 mm (47.4")	
<b>Horizontal Reach</b>	720 mm (28.3")	
<b>Repeatability</b>	±0.1 mm (±0.004")	
<b>Maximum Motion Range</b>	S-Axis (Turning/Sweep)	±180°
	L-Axis (Lower Arm)	±110°
	E-Axis (Elbow)	±170°
	U-Axis (Upper Arm)	±135°
	R-Axis	±180°
	B-Axis (Bend/Pitch/Yaw)	±110°
	T-Axis (Wrist Twist)	±180°
<b>Maximum Speed</b>	S-Axis	170°/s
	L-Axis	170°/s
	E-Axis	170°/s
	U-Axis	170°/s
	R-Axis	200°/s
	B-Axis	200°/s
	T-Axis	400°/s
<b>Approximate Mass</b>	60 kg (132.3 lb)	
<b>Power Rating</b>	1.5 kVA	
<b>Allowable Moment</b>	R-Axis	31.4 N · m
	B-Axis	31.4 N · m
	T-Axis	19.6 N · m
<b>Allowable Moment of Inertia</b>	R-Axis	1 kg · m <sup>2</sup>
	B-Axis	1 kg · m <sup>2</sup>
	T-Axis	0.4 kg · m <sup>2</sup>
<b>Protection Class</b>	Standard	Not rated
	XP Version* (option)	IP50 base; IP64 body; IP67 wrist**

\* XP Version: Yaskawa Motoman's eXtra Protection package  
\*\* Through-hole wrist must be sealed

## DX100 CONTROLLER SPECIFICATIONS†

<b>Dimensions (mm)</b>	800 (w) x 1,000 (h) x 650 (d) (31.5" 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/ NPN-Standard 16 system outputs, 24 user inputs/24 user outputs PNP-Optional 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

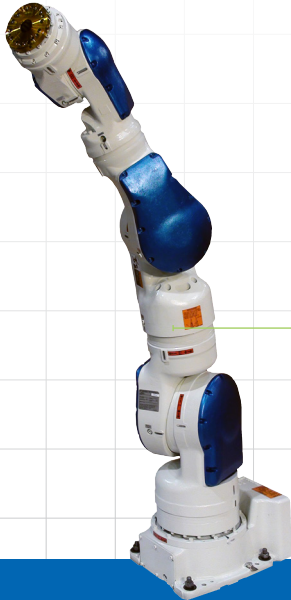
www.motoman.com

YASKAWA AMERICA, INC. ■ MOTOMAN ROBOTICS DIVISION  
100 AUTOMATION WAY, MIAMISBURG, OHIO 45342  
TEL: 937.847.6200 ■ FAX: 937.847.6277

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# SIA10F

ASSEMBLY | INJECTION MOLDING | INSPECTION  
MACHINE TENDING | PACKAGING | PART TRANSFER

## KEY BENEFITS

Slim, 7-axis design optimizes space; provides “human-like” flexibility and range of motion, even in tight spaces

Mounts virtually anywhere in any orientation

Can be used in environments that are hazardous to humans

Labor savings justifies capital investment

## SPECIFICATIONS

10 kg maximum payload  
1,203 mm vertical reach  
720 mm horizontal reach  
±0.1 mm repeatability

## CONTROLLERS

DX200    FS100    MLX200

## COMPACT, LEAN AND POWERFUL ARM

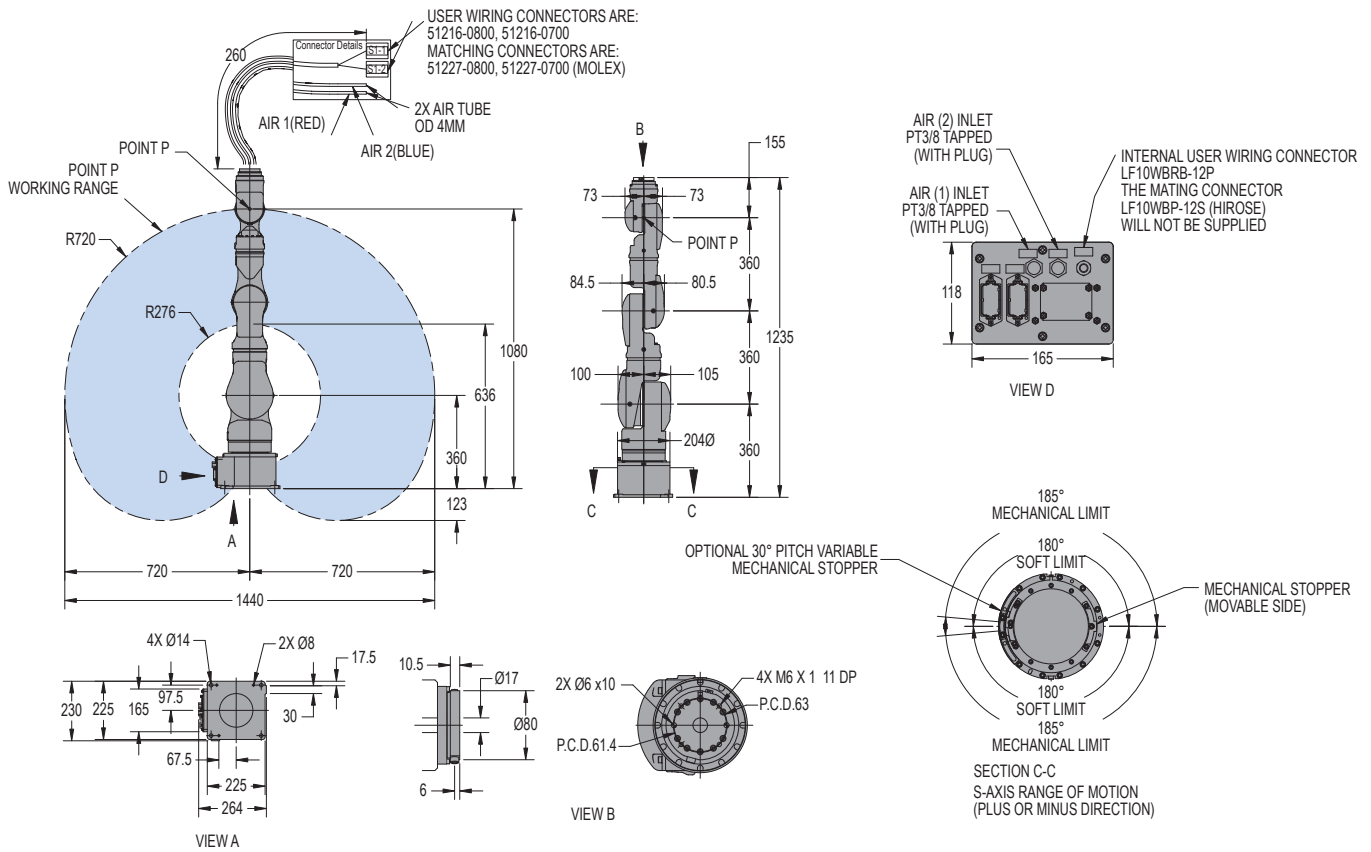
- Superior dexterity enables robot to reorient elbow(s) without affecting hand position or causing self-interference.
- Agile, versatile robot opens up a wide range of industrial applications to robots: ideal for assembly, injection molding, inspection, machine tending and a host of other operations.
- 10 kg payload; 1,203 mm vertical reach; 720 mm horizontal reach; ±0.1 mm repeatability.
- Slim, compact and powerful – robot can straighten vertically to take up only one square foot of floorspace and is only 264 mm wide at widest point.
- Short axis lengths and extreme motion flexibility allow slim manipulator to be positioned out of normal working area (i.e. floor-, ceiling-, wall-, incline- or machine-mounted) without limiting motion range of any axis.
- Mounting SIA10F robot between two machine tools provides open access to machines for fixture maintenance, adjustment or testing.

- Operator has clear access to machine operator station for entering offsets, maintenance or other operations.

## FS100 CONTROLLER

- Small, compact controller.
- 470 mm wide, 200 mm high, 420 mm deep.
- Designed for packaging and small parts handling robots with payloads of 20 kg and under.
- Compatible with integrated MotoSight™ 2D vision (optional).
- Improved communication speeds and functionality.
- High-speed I/O response and high-resolution timers.
- Open architecture enables software customization in widely accepted environments such as C, C++, C# and .NET.
- Uses similar programming pendant hardware as DX200 controller, providing a consistent programming interface.

# SIA10F ROBOT



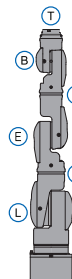
All dimensions are metric (mm) and for reference only.  
Request detailed drawings for all design/engineering requirements.

## SPECIFICATIONS

Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [N·m]	Allowable moment of inertia [kg·m <sup>2</sup> ]	Controlled axes	
S	±180	170	-	-	Controlled axes	7
L	±110	170	-	-	Maximum payload [kg]	10
E	±170	170	-	-	Repeatability [mm]	±0.1
U	±135	170	-	-	Horizontal reach [mm]	720
R	±180	200	31.4	1	Vertical reach [mm]	1,203
B	±110	200	31.4	1	Protection - IP rating XP Package (optional)	IP50 Base; IP64 Body; IP67 Wrist
T	±180	400	19.6	0.4	Weight [kg]	60
					Power requirements	1- or 3-phase; 200/230 VAC at 50/60 Hz
					Power rating [kVA]	1.5

## OPTIONS

- Wide variety of fieldbus cards
- Vision systems
- Robot base I/O cables
- External axis kit
- Material handling software package
- Conveyor tracking
- MotoFit™ force sensing package



### AXES LEGEND

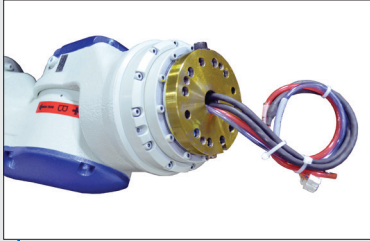
- S-Axis: Turning/Sweep
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- T-Axis: Wrist Twist

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Motoman Robotics Division

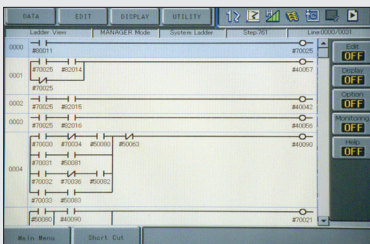
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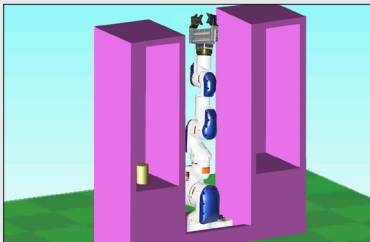




THRU-ARM CABLE AND HOSE ROUTING



LADDER EDITOR



SMALL FOOTPRINT

## TOP REASONS TO BUY

- Slim, 7-axis design optimizes space; provides “human-like” flexibility and range of motion, even in tight spaces
- Mounts virtually anywhere in any orientation
- Can be used in environments that are hazardous to humans
- Labor savings justifies capital investment

# SIA20D

MACHINE TENDING • PART TRANSFER • INJECTION MOLDING  
ASSEMBLY • PACKAGING • INSPECTION

Payload: 20 kg



## Compact, Lean and Powerful Arm

- 7-axis actuator-based design and best-in-class wrist performance characteristics provide amazing freedom of movement, coupled with ability to maneuver in very tight areas.
- Superior dexterity enables robot to reorient elbow(s) without affecting hand position or causing self-interference.
- Agile, versatile robot opens up a wide range of industrial applications to robots; ideal for assembly, injection molding, inspection, machine tending and a host of other operations.
- 20 kg payload; 1,498 mm vertical reach; 910 mm horizontal reach;  $\pm 0.1$  mm repeatability.
- Slim, compact and powerful – robot can straighten vertically to take up only one square foot of floorspace and is only 330 mm wide at widest point.
- Short axis lengths and extreme motion flexibility allow slim manipulator to be positioned out of normal working area (i.e. floor-, ceiling-, wall-, incline- or machine-mounted) without limiting motion range of any axis.

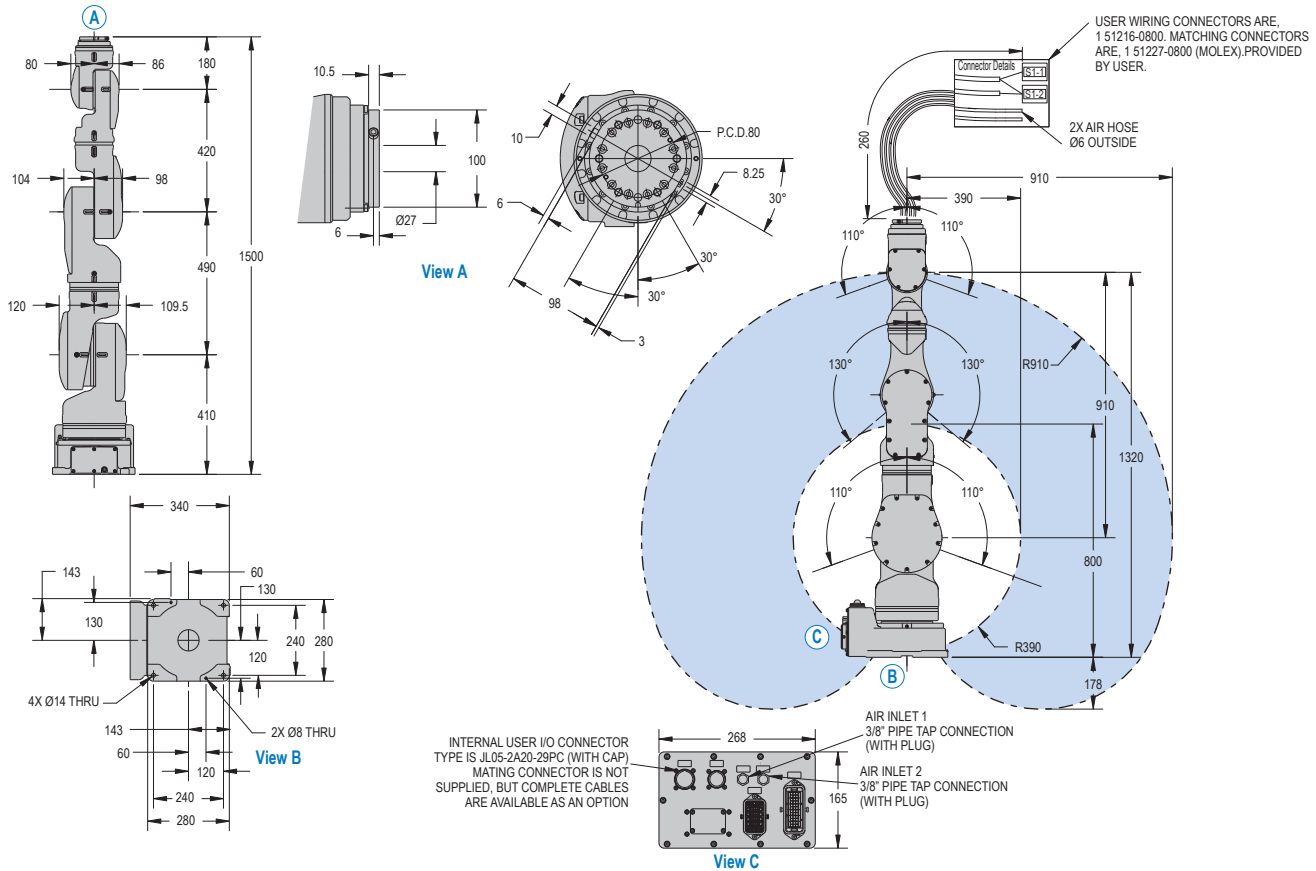
- Mounting SIA20D robot between two machine tools provides open access to machines for fixture maintenance, adjustment or testing.
- Operator has clear access to machine operator station for entering offsets, maintenance or other operations.

## 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 15.06-1999 and other relevant ISO and CSA safety standards. Optional Category 3 functional safety unit.

# SIA20D ROBOT

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



## SIA20D SPECIFICATIONS

<b>Structure</b>	Articulated	
<b>Mounting</b>	Floor, Wall or Ceiling	
<b>Controlled Axes</b>	7	
<b>Payload</b>	20 kg (44.1 lb)	
<b>Vertical Reach</b>	1,498 mm (59")	
<b>Horizontal Reach</b>	910 mm (35.8")	
<b>Repeatability</b>	±0.1 mm (±0.004")	
<b>Maximum Motion Range</b>	S-Axis (Turning/Sweep)	±180°
	L-Axis (Lower Arm)	±110°
	E-Axis (Elbow)	±170°
	U-Axis (Upper Arm)	±130°
	R-Axis	±180°
	B-Axis (Bend/Pitch/Yaw)	±110°
	T-Axis (Wrist Twist)	±180°
<b>Maximum Speed</b>	S-Axis	130°/s
	L-Axis	130°/s
	E-Axis	170°/s
	U-Axis	170°/s
	R-Axis	200°/s
	B-Axis	200°/s
	T-Axis	400°/s
<b>Approximate Mass</b>	120 kg (264.6 lb)	
<b>Power Rating</b>	2.2 kVA	
<b>Allowable Moment</b>	R-Axis	58.8 N · m
	B-Axis	58.8 N · m
	T-Axis	29.4 N · m
<b>Allowable Moment of Inertia</b>	R-Axis	4 kg · m <sup>2</sup>
	B-Axis	4 kg · m <sup>2</sup>
	T-Axis	2 kg · m <sup>2</sup>
<b>Protection Class</b>	Standard	Not rated
	XP Version* (option)	IP54 base; IP65 body; IP67 wrist**

\* XP Version: Yaskawa Motoman's eXtra Protection package  
 \*\* Through-hole wrist must be sealed

## DX100 CONTROLLER SPECIFICATIONS<sup>†</sup>

<b>Dimensions (mm)</b>	800 (w) x 1,000 (h) x 650 (d) (31.5" 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 C/O 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 Keypress 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

<sup>†</sup> See DX100 Controller data sheet (DS-399) for complete specifications

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# SIA20F

MACHINE TENDING | PART TRANSFER | INJECTION MOLDING  
ASSEMBLY | PACKAGING | INSPECTION

## KEY BENEFITS

Slim, 7-axis design optimizes space; provides “human-like” flexibility and range of motion, even in tight spaces

Mounts virtually anywhere in any orientation

Can be used in environments that are hazardous to humans

Labor savings justifies capital investment

## SPECIFICATIONS

20 kg maximum payload

1,498 mm vertical reach

910 mm horizontal reach

±0.1 mm repeatability

## CONTROLLERS



DX200



FS100



MLX200

## COMPACT, LEAN AND POWERFUL ARM

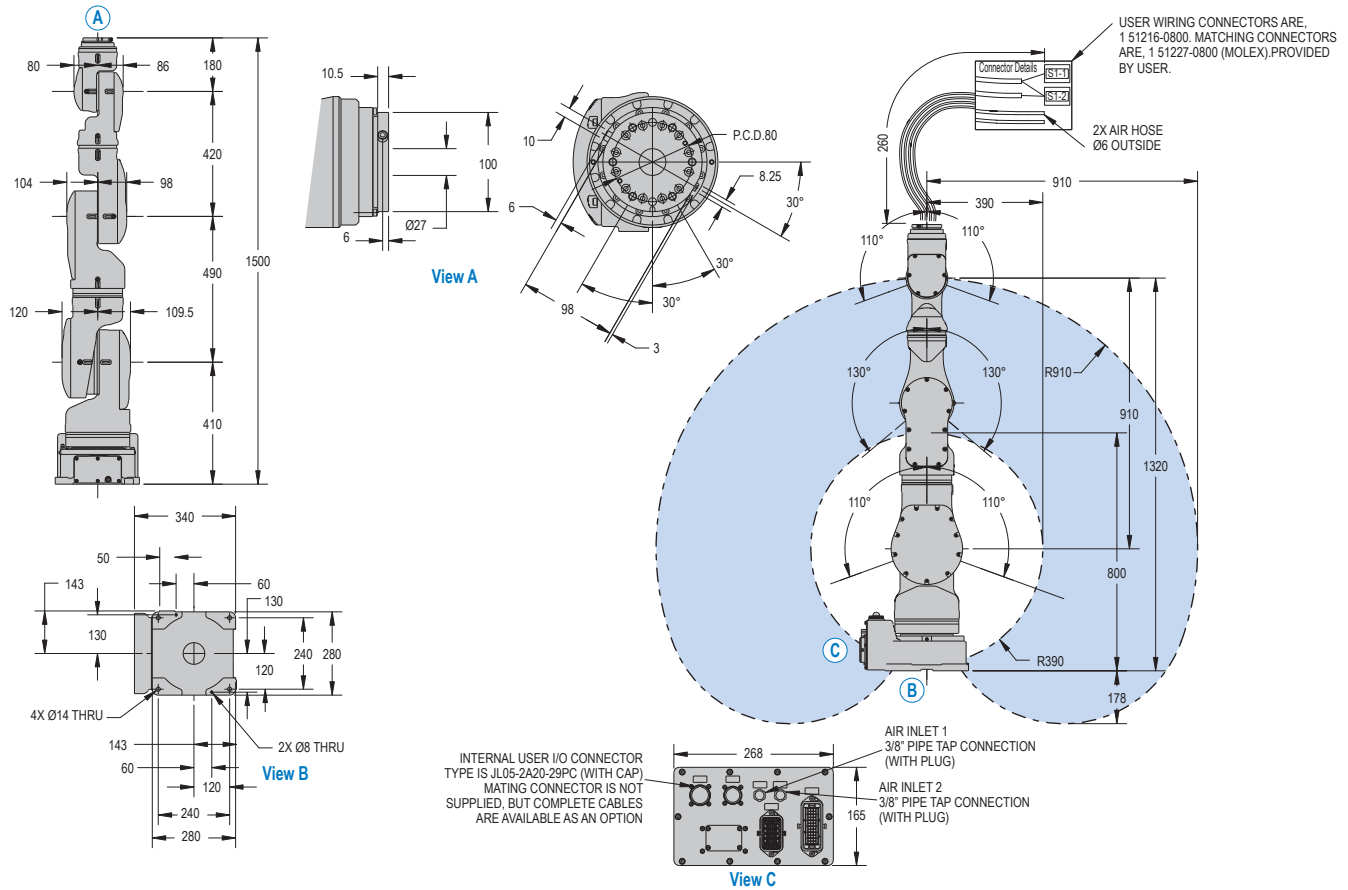
- 7-axis actuator-based design and best-in-class wrist performance characteristics provide amazing freedom of movement, coupled with ability to maneuver in very tight areas.
- Superior dexterity enables robot to reorient elbow(s) without affecting hand position or causing self-interference.
- Agile, versatile robot opens up a wide range of industrial applications to robots; ideal for assembly, injection molding, inspection, machine tending and a host of other operations.
- 20 kg payload; 1,498 mm vertical reach; 910 mm horizontal reach; ±0.1 mm repeatability.
- Slim, compact and powerful – robot can straighten vertically to take up only one square foot of floorspace and is only 330 mm wide at widest point.
- Short axis lengths and extreme motion flexibility allow slim manipulator to be positioned out of normal working area (i.e. floor-, ceiling-, wall-, incline- or machine-mounted) without limiting motion range of any axis.

- Mounting SIA20F robot between two machine tools provides open access to machines for fixture maintenance, adjustment or testing.
- Operator has clear access to machine operator station for entering offsets, maintenance or other operations.

## FS100 CONTROLLER

- Small, compact controller.
- 470 mm wide, 200 mm high, 420 mm deep.
- Designed for packaging and small parts handling robots with payloads of 20 kg and under.
- Compatible with integrated MotoSight™ 2D vision (optional).
- Improved communication speeds and functionality.
- High-speed I/O response and high-resolution timers.
- Open architecture enables software customization in widely accepted environments such as C, C++, C# and .NET.
- Uses similar programming pendant hardware as DX200 controller, providing a consistent programming interface.

# SIA20F ROBOT



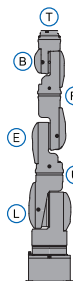
All dimensions are metric (mm) and for reference only.  
Request detailed drawings for all design/engineering requirements.

## SPECIFICATIONS

Axes	Maximum motion range [°]	Maximum speed [°/sec.]	Allowable moment [N·m]	Allowable moment of inertia [kg·m <sup>2</sup> ]	Controlled axes	
S	±180	130	-	-	Maximum payload [kg]	7
L	±110	130	-	-	Repeatability [mm]	20
E	±170	170	-	-	Horizontal reach [mm]	±0.1
U	±130	170	-	-	Vertical reach [mm]	910
R	±180	200	58.8	4	Protection - IP rating XP Package (optional)	1,498
B	±110	200	58.8	4	Weight [kg]	IP54 Base; IP64 Body; IP67 Wrist
T	±180	400	29.4	2	Power requirements	120
					Power rating [kVA]	1- or 3-phase; 200/230 VAC at 50/60 Hz
						2.2

## OPTIONS

- Wide variety of fieldbus cards
- Vision systems
- Robot base I/O cables
- External axis kit
- Material handling software package
- Conveyor tracking
- MotoFit™ force sensing package



### AXES LEGEND

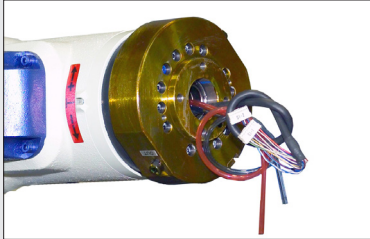
- S-Axis: Turning/Sweep
- L-Axis: Lower Arm
- E-Axis: Elbow
- U-Axis: Upper Arm
- R-Axis: Wrist Roll
- B-Axis: Bend / Pitch / Yaw
- T-Axis: Wrist Twist

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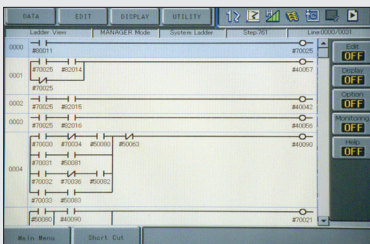
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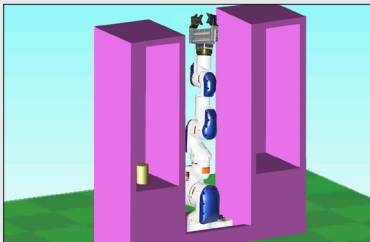




THRU-ARM CABLE AND HOSE ROUTING



LADDER EDITOR



SMALL FOOTPRINT

## TOP REASONS TO BUY

- Slim, 7-axis design optimizes space; provides “human-like” flexibility and range of motion, even in tight spaces
- Mounts virtually anywhere in any orientation
- Can be used in environments that are hazardous to humans
- Labor savings justifies capital investment



# SIA30D

MACHINE TENDING • PART TRANSFER • INJECTION MOLDING  
ASSEMBLY • PACKAGING • INSPECTION

**Payload: 30 kg**

## Compact, Lean and Powerful Arm

- 7-axis actuator-based design and best-in-class wrist performance characteristics provide amazing freedom of movement, coupled with ability to maneuver in very tight areas.
- Superior dexterity enables robot to reorient elbow(s) without affecting hand position or causing self-interference.
- Agile, versatile robot opens up a wide range of industrial applications to robots: ideal for assembly, injection molding, inspection, machine tending and a host of other operations.
- 30 kg payload; 2,597 mm vertical reach; 1,485 mm horizontal reach; ±0.1 mm repeatability.
- Slim, compact and powerful – robot can straighten vertically to take up a very small footprint and is only 365.5 mm wide at widest point.
- Short axis lengths and extreme motion flexibility allow slim manipulator to be positioned out of normal working area (floor-, ceiling-, wall-, incline- or machine-mounted).

- Mounting SIA30D robot between two machine tools provides open access to machines for fixture maintenance, adjustment or testing.
- Operator has clear access to machine operator station for entering offsets, maintenance or other operations.

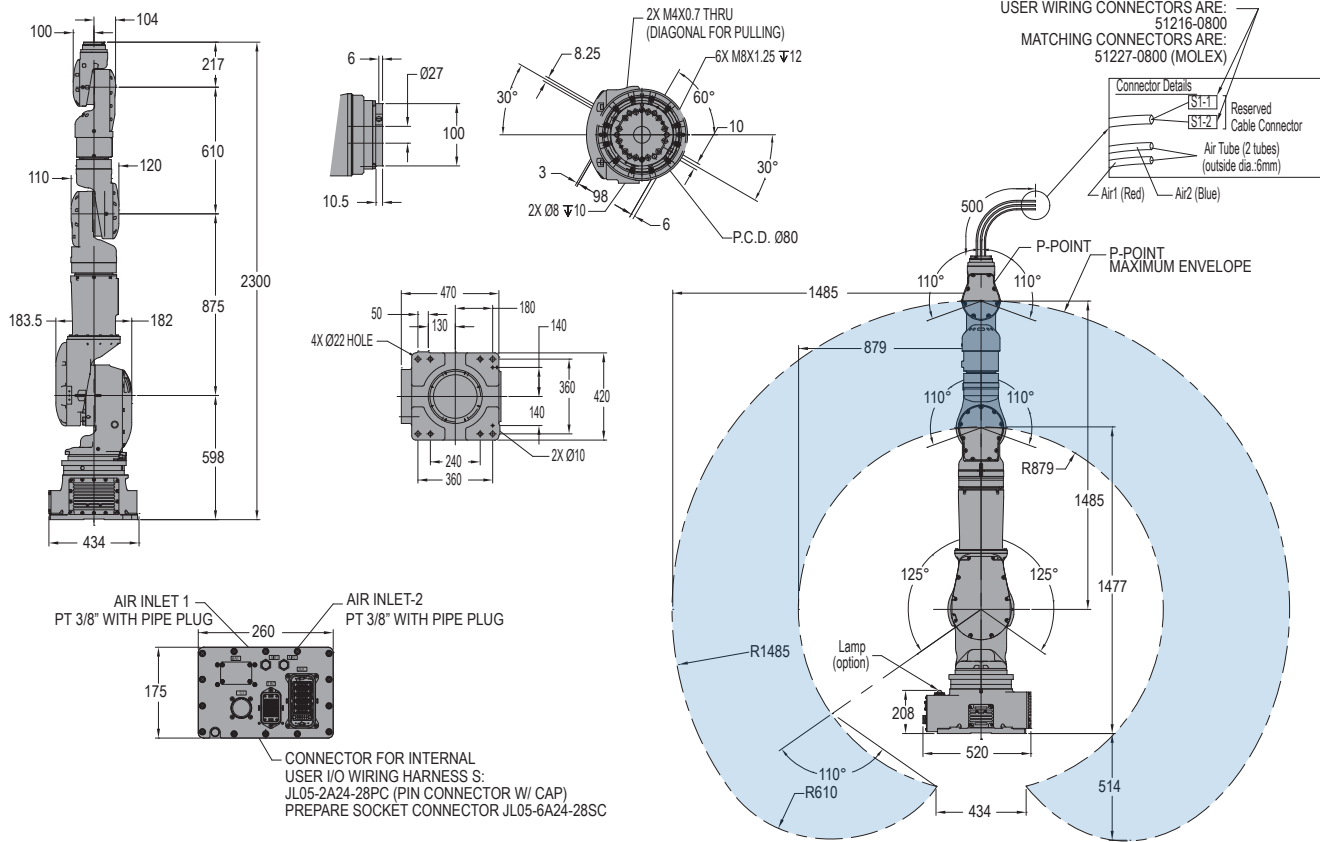
## DX100 Controller

- 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.



# SIA30D ROBOT

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



SIA30D SPECIFICATIONS		
<b>Structure</b>	Articulated	
<b>Mounting</b>	Floor, Wall, Ceiling	
<b>Controlled Axes</b>	7	
<b>Payload</b>	30 kg (66.2 lb)	
<b>Vertical Reach</b>	2,597 mm (102.2")	
<b>Horizontal Reach</b>	1,485 mm (58.5")	
<b>Repeatability</b>	$\pm 0.1$ mm ( $\pm 0.004$ ")	
<b>Maximum Motion Range</b>	S-Axis (Turning/Sweep) L-Axis (Lower Arm) E-Axis (Elbow) U-Axis (Upper Arm) R-Axis B-Axis (Bend/Pitch/Yaw) T-Axis (Wrist Twist)	$\pm 180^\circ$ $\pm 125^\circ$ $\pm 170^\circ$ $\pm 110^\circ$ $\pm 170^\circ$ $\pm 110^\circ$ $\pm 180^\circ$
<b>Maximum Speed</b>	S-Axis L-Axis E-Axis U-Axis R-Axis B-Axis T-Axis	130°/s 130°/s 130°/s 130°/s 170°/s 170°/s 200°/s
<b>Approximate Mass</b>	345 kg (760.7 lb)	
<b>Power Rating</b>	3.0 kVA	
<b>Allowable Moment</b>	R-Axis B-Axis T-Axis	117.6 N • m 117.6 N • m 58.8 N • m
<b>Allowable Moment of Inertia</b>	R-Axis B-Axis T-Axis	6 kg • m <sup>2</sup> 6 kg • m <sup>2</sup> 3 kg • m <sup>2</sup>

DX100 CONTROLLER SPECIFICATIONS**	
<b>Dimensions (mm)</b>	800 (w) x 1,000 (h) x 650 (d) (31.5" 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 C/O 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

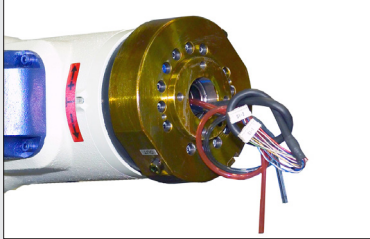
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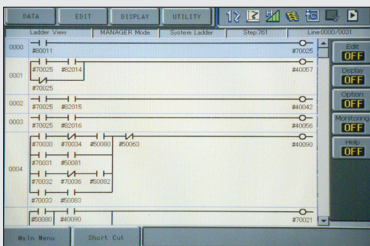
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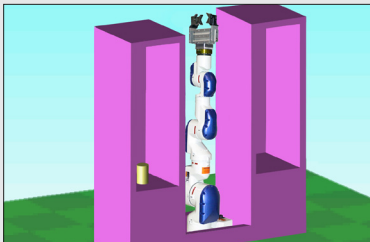
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THRU-ARM CABLE AND HOSE ROUTING



LADDER EDITOR



SMALL FOOTPRINT

## TOP REASONS TO BUY

- Slim, 7-axis design optimizes space; provides “human-like” flexibility and range of motion, even in tight spaces
- Can be used in environments that are hazardous to humans
- Labor savings justifies capital investment
- Internal utilities and through-hole wrist minimizes integration time and maximizes uptime



# SIA50D

MACHINE TENDING • PART TRANSFER • INJECTION MOLDING  
ASSEMBLY • PACKAGING • INSPECTION

**Payload: 50 kg**

## Compact, Lean and Powerful Arm

- 7-axis actuator-based design and best-in-class wrist performance characteristics provide amazing freedom of movement, coupled with ability to maneuver in very tight areas.
- Superior dexterity enables robot to reorient elbow(s) without affecting hand position or causing self-interference.
- Agile, versatile robot opens up a wide range of industrial applications to robots: ideal for assembly, injection molding, inspection, machine tending and a host of other operations.
- 50 kg payload; 2,597 mm vertical reach; 1,630 mm horizontal reach; ±0.1 mm repeatability.
- Slim, compact and powerful – robot can straighten vertically to take up a minimal amount of floorspace and is just 633 mm wide at widest point.
- Short axis lengths provide extreme motion flexibility.
- Mounting SIA50D robot between two machine tools provides open access to machines for fixture maintenance, adjustment or testing.

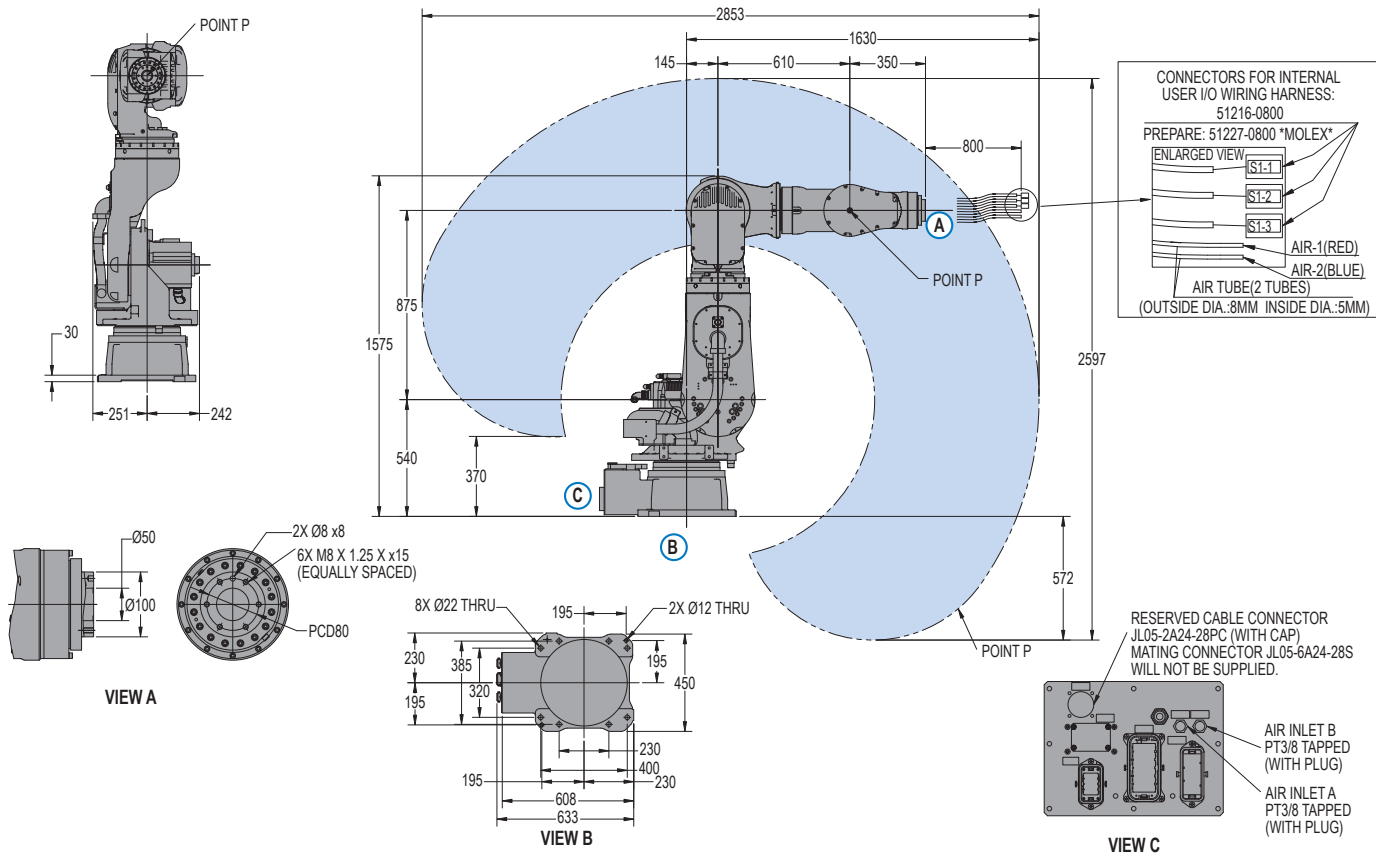
- Operator has clear access to machine operator station for entering offsets, maintenance or other operations.

## 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.

# SIA50D ROBOT

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



SIA50D SPECIFICATIONS		
<b>Structure</b>	Articulated	
<b>Mounting</b>	Floor	
<b>Controlled Axes</b>	7	
<b>Payload</b>	50 kg (110.3 lbs)	
<b>Vertical Reach</b>	2,597 mm (102.2")	
<b>Horizontal Reach</b>	1,630 mm (64.2")	
<b>Repeatability</b>	±0.1 mm (±0.004")	
<b>Maximum Motion Range</b>	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)	±180° +125°/-60° ±170° +215°/-35° ±170° ±125° ±180°
<b>Maximum Speed</b>	S-Axis L-Axis E-Axis U-Axis R-Axis B-Axis T-Axis	170°/s 130°/s 130°/s 130°/s 130°/s 130°/s 200°/s
<b>Approximate Mass</b>	640 kg (1,411.2 lbs)	
<b>Power Rating</b>	8.7 kVA	
<b>Allowable Moment</b>	R-Axis B-Axis T-Axis	377 N • m 377 N • m 147 N • m
<b>Allowable Moment of Inertia</b>	R-Axis B-Axis T-Axis	29.6 kg • m <sup>2</sup> 29.6 kg • m <sup>2</sup> 12.5 kg • m <sup>2</sup>

DX100 CONTROLLER SPECIFICATIONS*	
<b>Dimensions (mm)</b>	800 (w) x 1,000 (h) x 650 (d) (31.5" 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> 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
<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

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