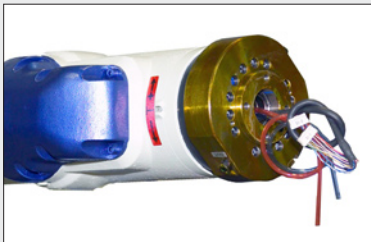
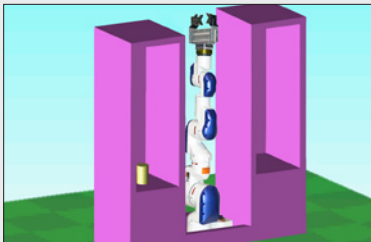




INJECTION MOLDING



THRU-ARM CABLE AND HOSE ROUTING



SMALL FOOTPRINT

## FEATURES & BENEFITS

- Revolutionary 7-axis actuator-driven design with 20 kg (44.1-lb) payload enables amazing freedom of movement, coupled with ability to maneuver in very tight areas.
- Vertical reach 1,598 mm (62.9")
- Best-in-class wrist performance characteristics
- Repeatability:  $\pm 0.1$  mm ( $\pm 0.004$ " )
- Robot can be positioned between machines or out of the normal working area in floor-, ceiling-, or wall-mounting configuration
- Opens up a wide range of applications to be performed by robots



*Motoman's space-saving IA20 robot provides lean, powerful arm for a new era of automation solutions*

ASSEMBLY • PACKAGING • HANDLING  
MACHINE TENDING • PART TRANSFER

# IA20

**Payload: 20 kg**

### Compact, Lean and Powerful Arm

The IA20 robot features a revolutionary 7-axis actuator-driven design that enables amazing freedom of movement, coupled with the ability to maneuver in very tight areas. Its advanced, innovative design opens up a wide range of applications to robots.

Featuring a space-saving design, the IA20 robot can straighten out vertically to take up only one square foot of floor-space or straighten out horizontally at a height of about two feet above the floor. Its minimized footprint and motion flexibility allow the manipulator to be positioned between machines or out of the normal working area in a floor-, ceiling or wall-mounting configuration.

The IA20 robot has a 20 kg (44.1 lb) payload, a 1,598 mm (62.9") vertical reach, and a repeatability of  $\pm 0.1$  mm (0.004").

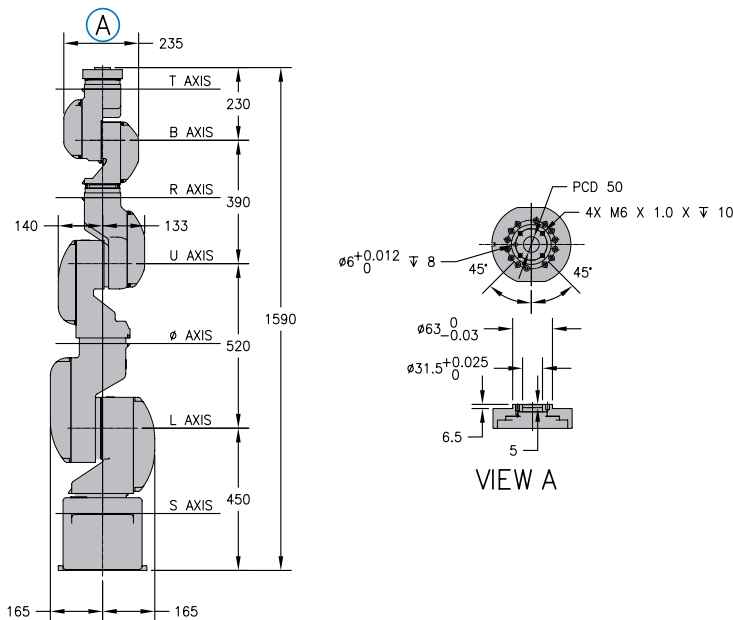
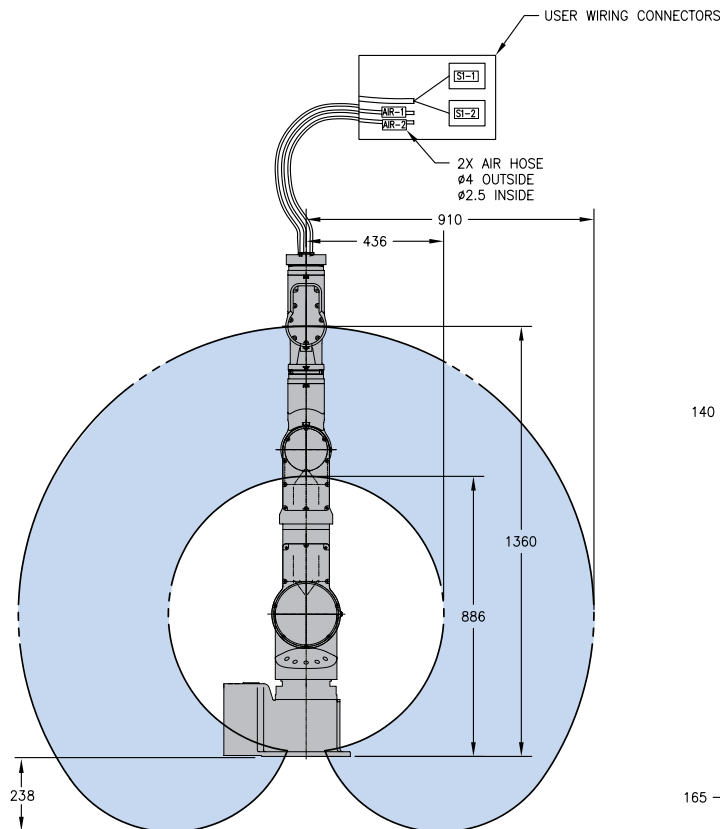
Featuring best-in-class wrist performance characteristics, the IA20 is ideal for your most demanding material handling tasks.

### Advanced NX100 Controller

The IA20 robot is controlled by the Motoman NX100 robot controller that features a robust PC architecture, Windows® CE programming pendant, and easy-to-use INFORM III programming language.

The NX100 offers unmatched multiple axes control capability to maximize flexibility while minimizing cost of integration. Dual-channel safety features include enhanced E-stop functionality, integrated speed monitoring, manual brake release switches, and compliance with both ANSI/RIA R1506-1999 and Canadian safety standards.

The NX100 controller offers unmatched connectivity through standard Ethernet and other network options, including: DeviceNet, ControlNet, Profibus-DP, and EtherNet/IP. The programming pendant features a color touch-screen display that can be configured as a custom HMI (Human Machine Interface) with buttons and status indicators.



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

## IA20 SPECIFICATIONS

<b>Structure</b>	Articulated	
<b>Mounting</b>	Floor, Wall, or Ceiling	
<b>Controlled Axes</b>	7	
<b>Payload</b>	20 kg (44.1 lbs)	
<b>Vertical Reach (base to tool mount surface)</b>	1,598 mm (62.9")	
<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)	±125°
	Ø-Axis	±180°
	U-Axis (Upper Arm)	±125°
	R-Axis	±180°
	B-Axis (Bend/Pitch/Yaw)	±120°
	T-Axis (Wrist Twist)	±180°
<b>Maximum Speed</b>	S-Axis	130°/s
	L-Axis	130°/s
	Ø-Axis	170°/s
	U-Axis	170°/s
	R-Axis	300°/s
	B-Axis	300°/s
	T-Axis	580°/s
<b>Approximate Mass</b>	120 kg (264.6 lbs)	
<b>Power Consumption</b>	3.4 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>

## NX100 CONTROLLER SPECIFICATIONS

<b>Structure</b>	Free-standing, enclosed type
<b>Dimensions (mm)</b>	650 (w) x 1,200 (h) x 650 (d) (25.6" x 47.2" x 25.6")
<b>Approximate Mass</b>	250 kg (551.3 lbs.)
<b>Cooling System</b>	Indirect cooling
<b>Ambient Temperature</b>	During operation: 0° C (32° F) to 45° C (113° F)
	During transmit and storage: -10° C (14° F) to +60° C (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>Grounding</b>	Grounding resistance: ≤100 ohms Separate ground required
<b>Digital I/O</b>	Standard signals: 40 inputs/40 outputs consisting of 16 system inputs/16 system outputs, 24 user inputs/24 user outputs Maximum signals: 1,024 inputs/1,024 outputs
<b>Position Feedback</b>	By absolute encoder
<b>Drive Units</b>	Servo packs for AC servo motors
<b>Accel/Decel</b>	Software servo control
<b>Program Memory</b>	60,000 steps and 10,000 instructions
<b>Pendant Dim. (mm)</b>	199 (w) x 338 (h) x 60 (d) (7.8" x 13.3" x 2.4")
<b>Pendant Playback Buttons</b>	Teach, Play, Remote, Servo On, Start, Hold, Emergency Stop, Edit Lock (Play Mode Enabled on Controller)
<b>Concurrent I/O</b>	10,000 lines
<b>Multi Tasking</b>	8 concurrent 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>E-Stop</b>	Controlled stop
<b>Safety</b>	Emergency Stop Pushbuttons, 3-position Enable Switch, Brake Release Switches Meets ANSI/RIA R15.06-1999 and Canadian safety standards