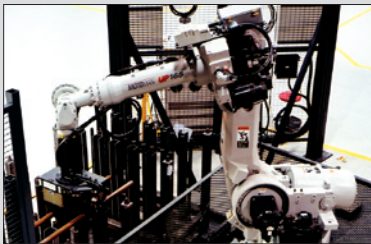


**MOTOMAN**  
a YASKAWA company



MATERIAL HANDLING



MACHINE TENDING



MATERIAL HANDLING



Motoman's HP165-100 robot provides a robust, extended-reach solution for your automation needs

MACHINE TENDING • MATERIAL HANDLING

# HP165-100

**Payload: 100 kg**

**Mounting option: Shelf (HP165R)**

## FEATURES & OPTIONS

- Widest working envelope in its class: 3,010 mm (118.5") reach
- Highest repeatability in its class:  $\pm 0.2$  mm ( $\pm 0.008$ "")
- Multiple robot control (up to four robots) simplifies programming
- IP67 wrist rating
- Life program (optional)
- MotoSim® EG simulation software (optional)

### Fast, Flexible and Powerful

The Motoman HP165-100 sets the standard for versatility in the large robot market. This high-speed robot offers minimal footprint and superior performance in both machine tending, press tending and other material handling applications.

The HP165-100 features the longest horizontal reach (3,010 mm/118.5") and the highest repeatability in its class ( $\pm 0.2$  mm/ $\pm 0.008$ ""). The work envelope extends behind the body, allowing space behind the robot for robot tool storage or maintenance.

The HP165-100's powerful design, together with Motoman's patented multiple robot control capability, allows the robot to be used as a 6-axis part positioner to achieve unmatched automation flexibility.

### Advanced NX100 Controller

The NX100 high-performance controller features a Windows® CE programming pendant, fast processing, easy-to-use

INFORM III programming language, and robust PC architecture.

The NX100 offers unmatched multiple robot control capability (up to four robots) to minimize cost of integration and eliminate risk of robot collisions.

The NX100 includes four security levels of password protection (user, editor, maintenance and supervisor) for up to 100 individual users. Password use restricts access to the production programs and the controller logs any changes.

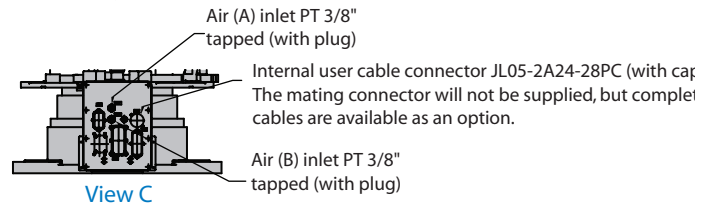
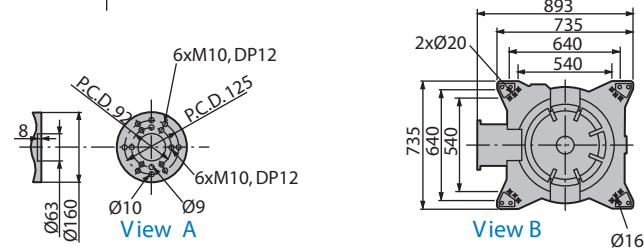
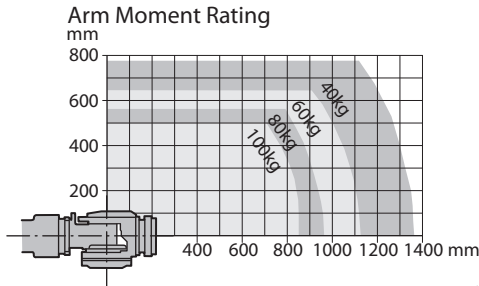
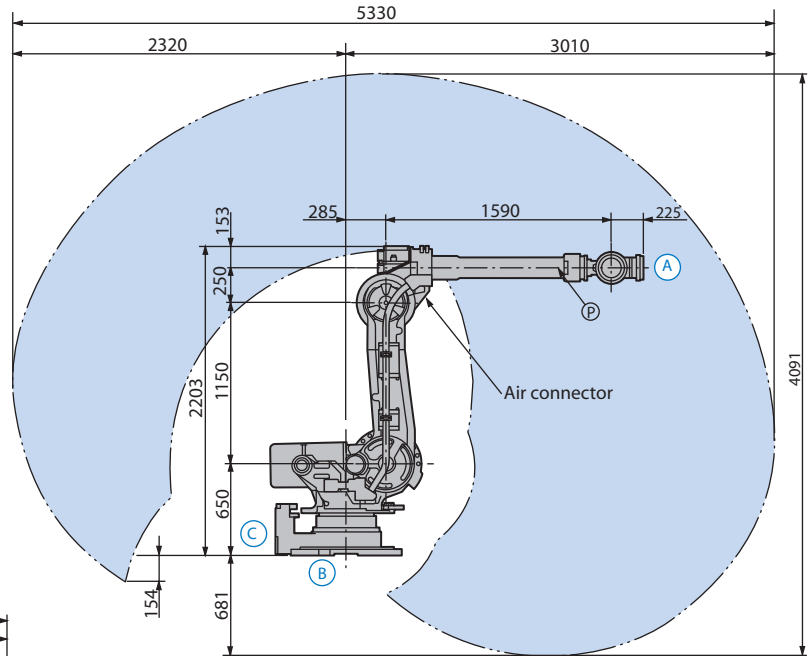
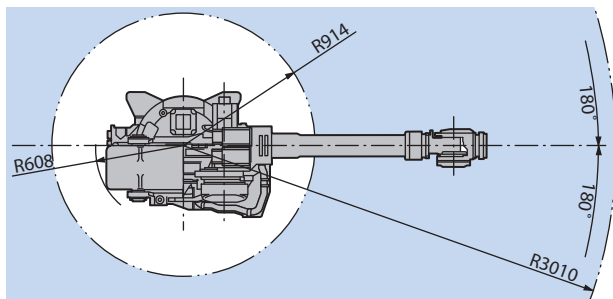
The programming pendant features a color touch-screen display that can be configured as a custom HMI with buttons and status indicators.

Dual-channel safety features include enhanced E-Stop functionality, integrated speed monitoring, manual brake release switch, and compliance with both ANSI/RIA R15.06-1999 and Canadian safety standards.

The NX100 offers unmatched connectivity through standard Ethernet and other network options: DeviceNet, ControlNet, Profibus-DP and EtherNet/IP.

# HP165-100 Robot

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



## HP165-100 SPECIFICATIONS

<b>Structure</b>	Vertical jointed-arm type	
<b>Controlled Axes</b>	6	
<b>Payload</b>	100 kg (220.5 lbs.)	
<b>Vertical Reach</b>	4,091 mm (161.1")	
<b>Horizontal Reach</b>	3,010 mm (118.5")	
<b>Repeatability</b>	±0.2 mm (0.008")	
<b>Maximum Motion Range</b>	S-Axis (Turning/Sweep)	±180°
	L-Axis (Lower Arm)	+76°/-60°
	U-Axis (Upper Arm)	+230°/-142.5°
	R-Axis (Wrist Roll)	±360°
	B-Axis (Bend/Pitch/Yaw)	±130°
	T-Axis (Wrist Twist)	±360°
<b>Maximum Speed</b>	S-Axis	110°/s
	L-Axis	110°/s
	U-Axis	110°/s
	R-Axis	175°/s
	B-Axis	145°/s
	T-Axis	240°/s
<b>Approximate Mass</b>	1,120 kg (2,469.6 lbs.)	
<b>Brakes</b>	All axes	
<b>Power Consumption</b>	7.5 kVA	
<b>Allowable Moment</b>	R-Axis	833 N • m
	B-Axis	833 N • m
	T-Axis	490 N • m
<b>Allowable Moment of Inertia</b>	R-Axis	75 kg • m <sup>2</sup>
	B-Axis	75 kg • m <sup>2</sup>
	T-Axis	25 kg • m <sup>2</sup>
<b>Internal User I/O Cable</b>	23 conductors + ground	
<b>Internal User Air Line</b>	2-PT 3/8" connectors	

## 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>	150-250 kg (330.8-551.3 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 I/O: 40 inputs/40 outputs consisting of 16 system inputs/16 system outputs, 24 user inputs/24 user outputs Enabled to 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 10,000 ladder 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 Ladder</b>	10,000 Instructions
<b>Multi Tasking</b>	Up to 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>	Dual-channel Emergency Stop Pushbuttons, 3-position Enable Switch, Manual Brake Release Meets ANSI/RIA R15.06-1999 and Canadian safety standards

\*See NX100 Controller data sheet (DS-232) for complete specifications

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