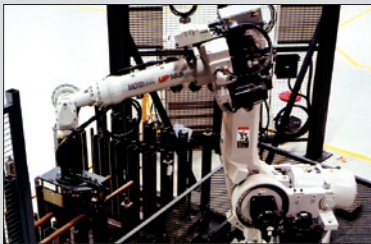


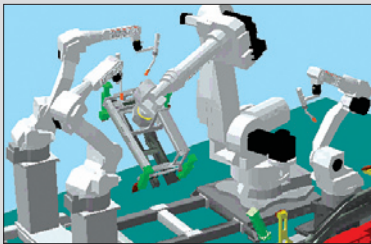
**MOTOMAN**  
a YASKAWA company



MATERIAL HANDLING



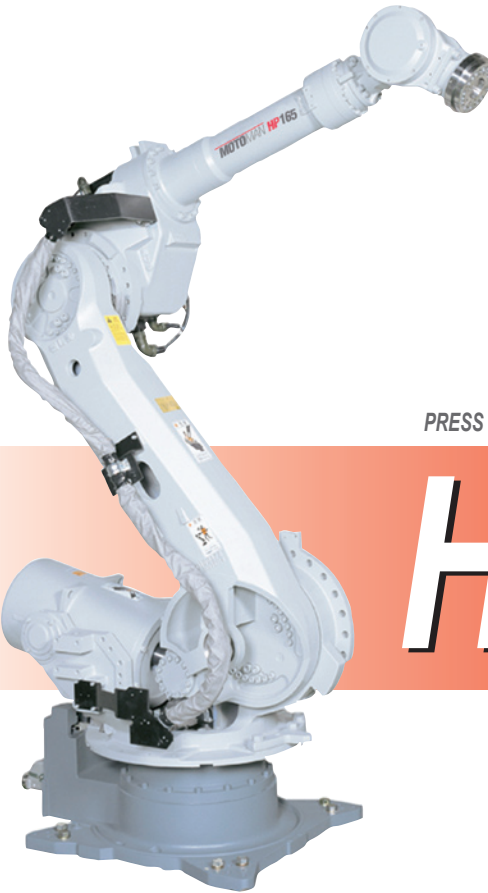
HANDLING



"JIGLESS" FIXTURING

## FEATURES & OPTIONS

- Multiple robot control (up to four robots) simplifies programming
- Advanced Sigma III ( $\Sigma$ ) motors provide powerful, slim design
- Widest working envelope: 2,651 mm (104.4") horizontal reach
- Highest repeatability in its class:  $\pm 0.2$  mm ( $\pm 0.008$ ")
- IP67 wrist rating
- IP65 body rating (optional)
- LIFE program (optional)
- Application-specific software
- MotoSim® EG simulation software (optional)



*Motoman's HP165 robot provides a high-speed, robust solution for your automation needs*

PRESS TENDING • MACHINE TENDING • MATERIAL HANDLING

# HP165

**Payload: 165 kg**

**Mounting option: Shelf (HP165R)**

### Fast, Flexible and Powerful

The HP165 robot sets the standard for versatility in the large robot market. This high-speed robot provides superior performance in both machine and press tending and other heavy-payload applications.

The HP165 features a 165 kg (363.8 lb) payload, a 3,372 mm (132.8") vertical reach, 2,651 mm (104.4") horizontal reach. Repeatability is  $\pm 0.2$  mm ( $\pm 0.008$ ") – the highest in its class. The work envelope extends behind the body, allowing space for robot tool storage or maintenance.

The HP165'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.

The standard HP165 robot is floor-mounted, but a shelf-mounted version (HP165R) is available.

### 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.

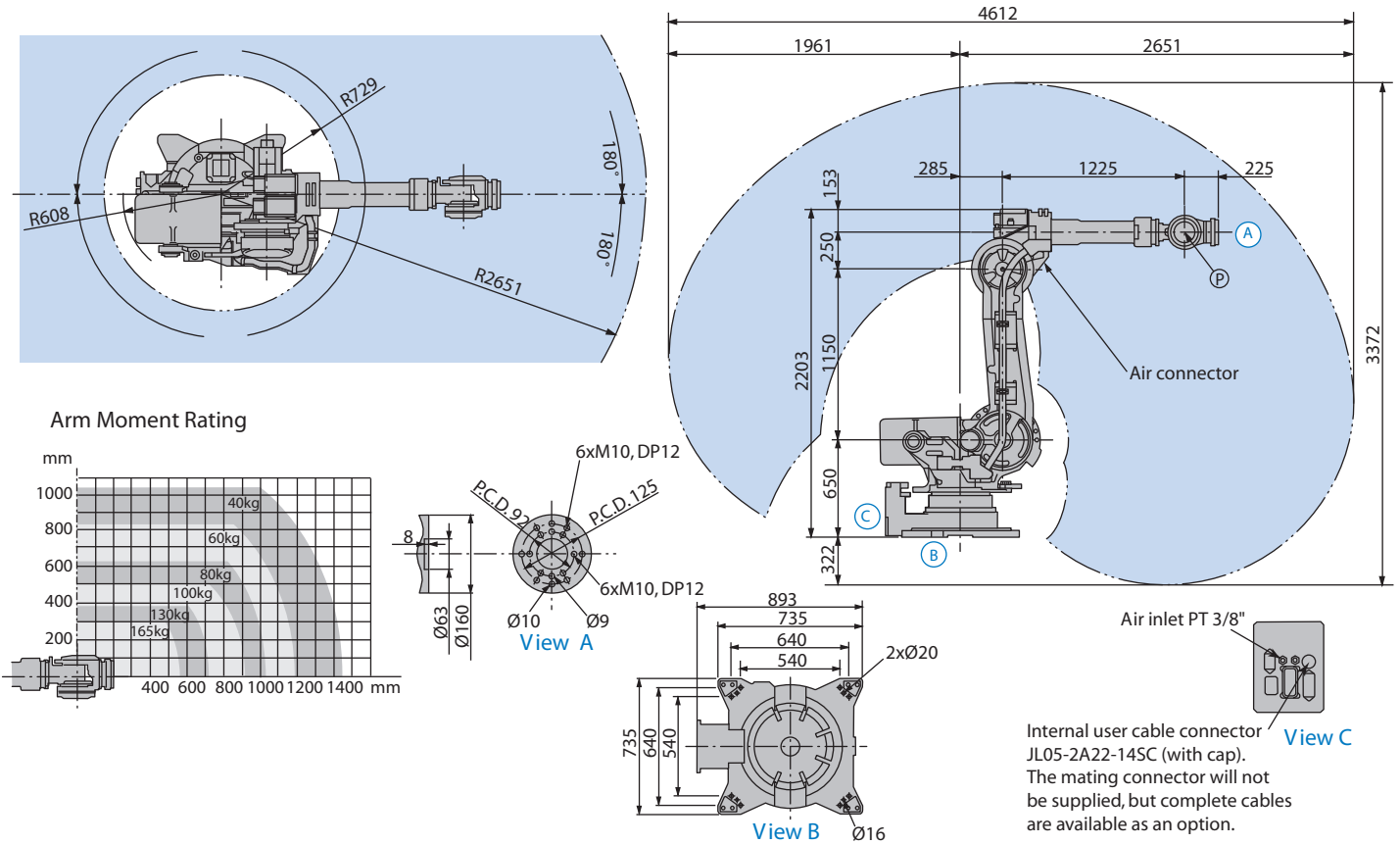
The programming pendant features a color touch-screen display that can be configured as a custom HMI with buttons and status indicators.

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 Robot

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



## ROBOT SPECIFICATIONS

	HP165 Floor-Mounted	HP165R Shelf-Mounted
<b>Structure</b>	Vertical jointed-arm type	Vertical jointed-arm type
<b>Controlled Axes</b>	6	6
<b>Payload</b>	165 kg (363.8 lbs.)	165 kg (363.8 lbs.)
<b>Vertical Reach</b>	3,372 mm (132.8")	4,782 mm (188.3")
<b>Horizontal Reach</b>	2,651 mm (104.4")	3,140 mm (123.6")
<b>Repeatability</b>	±0.2 mm (0.008")	±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>	1,100 kg (2,425.5 lbs.)	1,540 kg (3,395.7 lbs.)
<b>Brakes</b>	All axes	All axes
<b>Power Consumption</b>	7.5 kVA	10 kVA
<b>Allowable Moment</b>	R-Axis	921 N • m
	B-Axis	921 N • m
	T-Axis	490 N • m
<b>Allowable Moment of Inertia</b>	R-Axis	85 kg • m <sup>2</sup>
	B-Axis	85 kg • m <sup>2</sup>
	T-Axis	45 kg • m <sup>2</sup>
<b>Internal User I/O Cable</b>	18 conductors + ground	23 conductors + ground
<b>Internal User Air Line</b>	1 - PT 3/8" connector	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

MOTOMAN CORPORATE HEADQUARTERS  
805 LIBERTY LANE, WEST CARROLLTON, OHIO 45449  
TEL: 937.847.6200 • FAX: 937.847.6277  
WEB SITE: [www.motoman.com](http://www.motoman.com)

**MOTOMAN**  
a YASKAWA company

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