

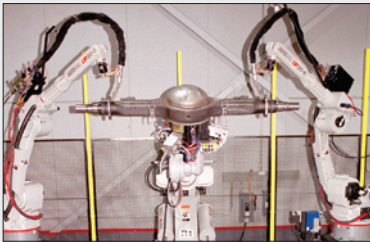
**MOTOMAN**  
a YASKAWA company



MACHINE TENDING



PACKAGING



MULTIPLE ROBOT CONTROL

## FEATURES & BENEFITS

- Multiple robot control (up to four robots) simplifies programming
- Widest working envelope in its class: 1,378 mm (54.3") horizontal reach
- Floor-, wall-, shelf-, and ceiling-mounting options
- Advanced Sigma ( $\Sigma$ ) motors provide powerful, slim design
- MotoSim® EG simulation software (optional)



*Motoman's HP6 provides a compact, powerful solution for increasing your production*

PACKAGING • DISPENSING  
HANDLING • MACHINE TENDING • ARC WELDING

# HP6

**Payload: 6 kg**

**Style option: Short (HP6S)**

**Mounting options: Ceiling and Wall (HP6)  
Shelf (HP6R)**

### Compact, Yet Powerful

The dynamic, high-speed HP6 robot offers superior performance in handling, machine tending, packaging, and dispensing applications.

The versatile HP6 features a 6 kg (13.2 lb) payload and a 1,378 mm (54.25") horizontal reach – the widest working envelope in its class. Vertical reach is 2,403 mm (94.6"), and repeatability is  $\pm 0.08$  mm ( $\pm 0.003$ "). The slim base, waist and arm design allows the robot to be placed close to workpiece holding fixtures to improve part accessibility. Built-in collision avoidance features with multiple robot control allow up to four robots to be used together to maximize productivity

Versatile HP6 robots can be floor-, shelf- or ceiling-mounted. A high-speed, shorter-arm (HP6S) version 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.

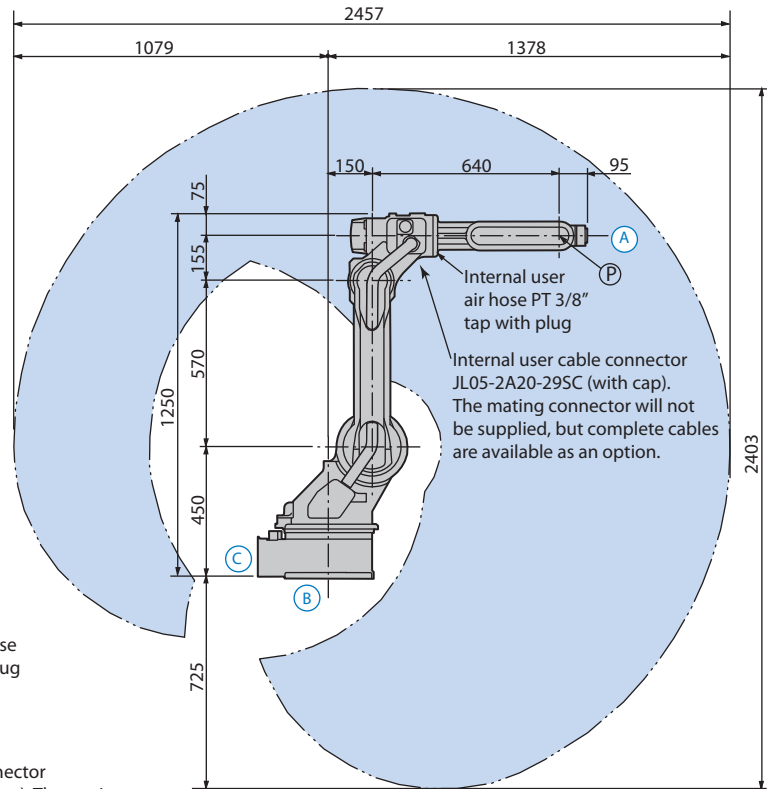
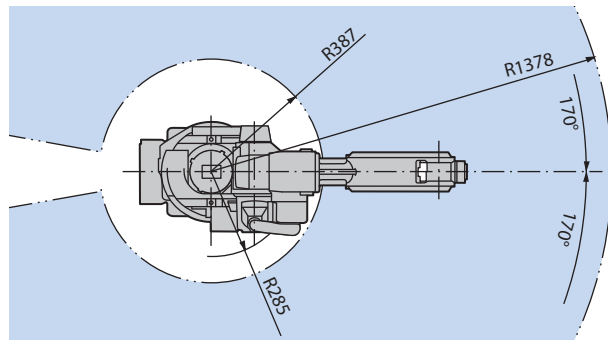
The programming pendant features a color touch-screen display that can be configured as a custom HMI with buttons and status indicators.

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.

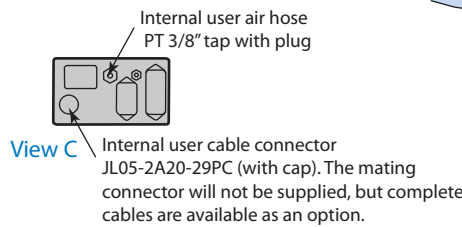
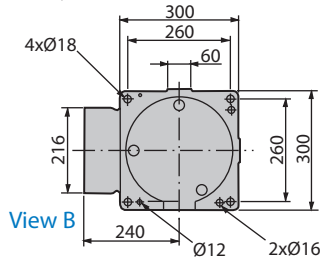
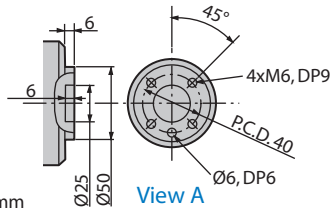
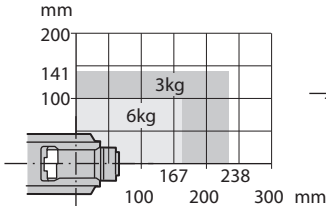
The NX100 offers unmatched connectivity through standard Ethernet and other network options: DeviceNet, ControlNet, Profibus-DP and EtherNet/IP.

# HP6 Robot

HP6 robot shown.  
All dimensions are metric (mm) and for reference only. Please request detail drawings for all design/engineering requirements.



### Arm Moment Rating



## ROBOT SPECIFICATIONS

		HP6 Standard	HP6S Short (High-Speed)	HP6R Shelf-Mount
<b>Structure</b>		Vertical jointed-arm type	Vertical jointed-arm type	Vertical jointed-arm type
<b>Controlled Axes</b>		6	6	6
<b>Payload</b>		6 kg (13.2 lbs.)	6 kg (13.2 lbs.)	6 kg (13.2 lbs.)
<b>Vertical Reach</b>		2,403 mm (94.6")	1,597 mm (62.9")	2,456 mm (96.7")
<b>Horizontal Reach</b>		1,378 mm (54.25")	997 mm (39.3")	1,528 mm (60.2")
<b>Repeatability</b>		±0.08 mm (0.003")	±0.08 mm (0.003")	±0.08 mm (0.003")
<b>Maximum Motion Range</b>	S-Axis (Turning/Sweep)	±170°	±170°	+130°/-105°
	S-Axis (Wall Mount)	±30°	±30°	n/a
	L-Axis (Lower Arm)	+155°/-90°	+133°/-80°	+100°/-120°
	U-Axis (Upper Arm)	+250°/-175°	+165°/-130°	+300°/-115°
	R-Axis (Wrist Roll)	±180°	±180°	±180°
	B-Axis (Bend/Pitch/Yaw)	+225°/-45°	+225°/-45°	±135°
	T-Axis (Wrist Twist)	±360°	±360°	±360°
<b>Maximum Speed</b>	S-Axis	150°/s	180°/s	140°/s
	L-Axis	160°/s	220°/s	160°/s
	U-Axis	170°/s	220°/s	170°/s
	R-Axis	340°/s	340°/s	340°/s
	B-Axis	340°/s	340°/s	340°/s
	T-Axis	520°/s	520°/s	520°/s
<b>Approximate Mass</b>		130 kg (286.7 lbs.)	120 kg (264.6 lbs.)	140 kg (308.7 lbs.)
<b>Brakes</b>		All axes	All axes	All axes
<b>Power Consumption</b>		1.5 kVA	1.5 kVA	1.5 kVA
<b>Allowable Moment</b>	R-Axis	11.8 N • m	11.8 N • m	11.8 N • m
	B-Axis	9.8 N • m	9.8 N • m	9.8 N • m
	T-Axis	5.9 N • m	5.9 N • m	5.9 N • m
<b>Allowable Moment of Inertia</b>	R-Axis	0.24 kg • m <sup>2</sup>	0.24 kg • m <sup>2</sup>	0.24 kg • m <sup>2</sup>
	B-Axis	0.17 kg • m <sup>2</sup>	0.17 kg • m <sup>2</sup>	0.17 kg • m <sup>2</sup>
	T-Axis	0.06 kg • m <sup>2</sup>	0.06 kg • m <sup>2</sup>	0.06 kg • m <sup>2</sup>
<b>Internal User I/O Cable</b>		16 conductors + ground	16 conductors + ground	16 conductors + ground
<b>Internal User Air Line</b>		PT 3/8" connector	PT 3/8" connector	PT 3/8" connector

## 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 NPN-Standard PNP-Optional 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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