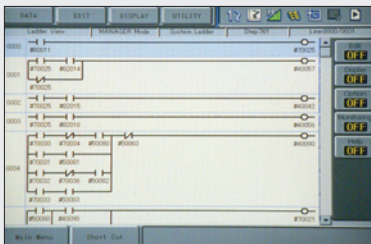


# MOTOMAN

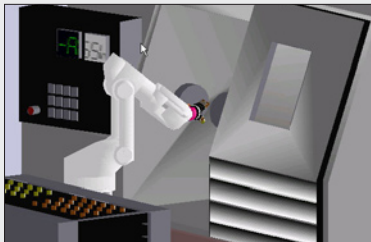
a YASKAWA company



MACHINE TENDING



NX100 LADDER EDITOR



MOTOSIM® EG OFF-LINE PROGRAMMING (optional)

## FEATURES & OPTIONS

- Multiple robot control (up to four robots) simplifies programming
- Highest speed in its class
- Largest working envelope in its class: 701 mm (27.6") reach
- Floor-, wall-, and ceiling-mounting options
- MotoMax® III warranty (standard)
- MotoSim® EG simulation software (optional)
- IP67 rated wrist (standard)
- IP67 rated body (optional on floor-mounted robot)



*Motoman's compact, high-speed HP3 robot provides a high-value solution to meet your automation needs*

ASSEMBLY • DISPENSING • HANDLING  
MACHINE TENDING • PACKAGING

# HP3

**Payload: 3 kg**

Model options: Long (HP3L)  
Extra Fast (HP3XF)

### Compact, Powerful, and Economical

The Motoman HP3 is a small, high-speed robot that requires minimal installation space. The HP3 features a 701 mm (27.6") reach and offers the widest work envelope in its class. Due to its compact design, it can be floor-, wall-, or ceiling-mounted. The HP3XF is an extra high-speed version, while the HP3L features an extended reach.

The HP3 offers superior performance in small part applications such as assembly, dispensing, packaging, material handling and machine tending. The HP3 yields extraordinary production results while requiring minimal capital investment.

The compact design and built-in collision avoidance features with multiple robot control allow up to four robots to be used together to maximize productivity while reducing overall floorspace requirements.

### 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.

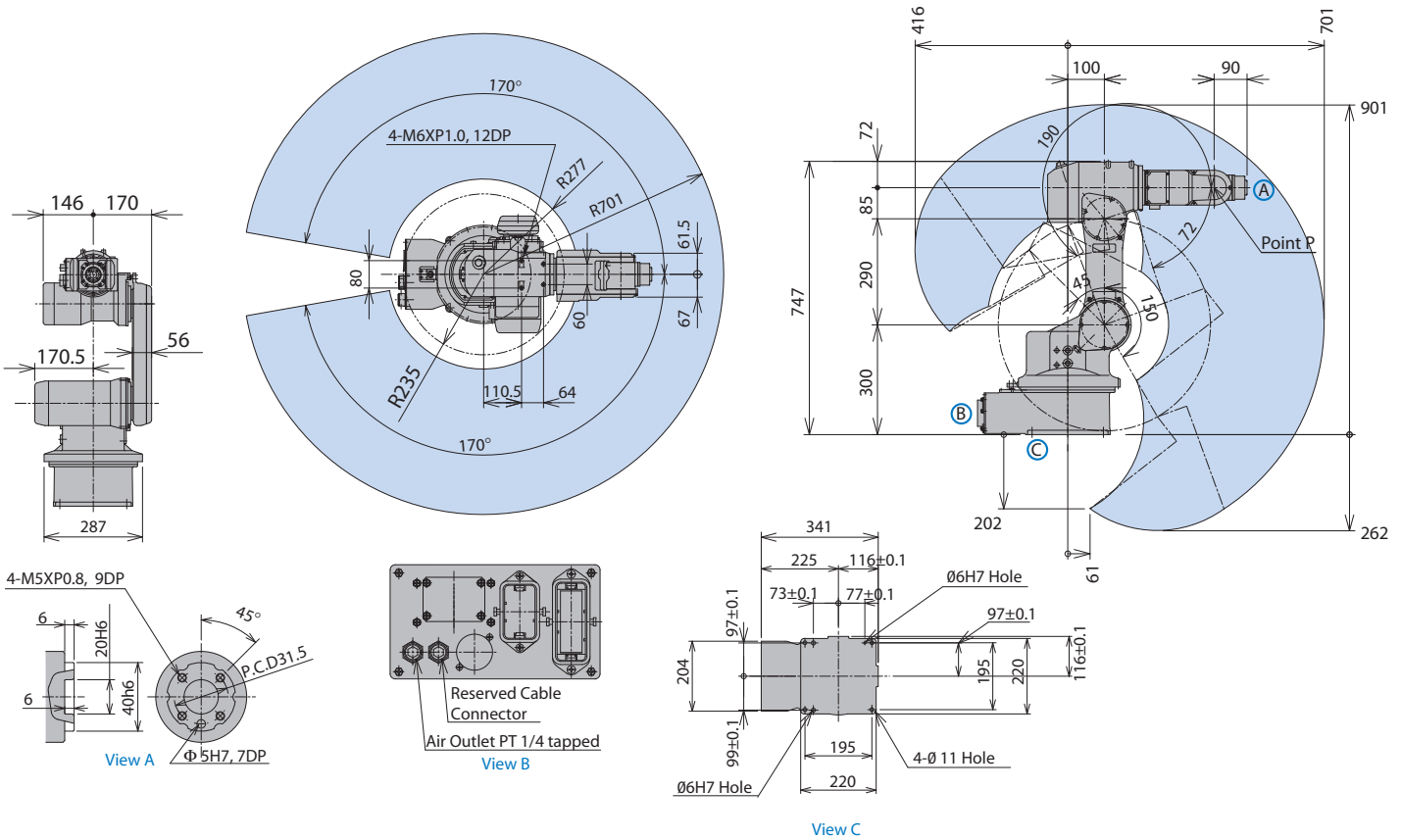
The programming pendant features a color touch-screen display that can be configured as a custom HMI with buttons and status indicators.

Dual-channel safety features include enhanced E-Stop functionality, integrated speed monitoring, manual brake release, 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.

# HP3 Robot

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



## ROBOT SPECIFICATIONS

|                                    |                         | HP3                       | HP3L                      | HP3XF                     |
|------------------------------------|-------------------------|---------------------------|---------------------------|---------------------------|
| <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>                     |                         | 3 kg (6.6 lbs)            | 3 kg (6.6 lbs)            | 3 kg (6.6 lbs)            |
| <b>Vertical Reach</b>              |                         | 1,163 mm (45.8")          | 1,469 mm (57.8")          | 1,163 mm (45.8")          |
| <b>Horizontal Reach</b>            |                         | 701 mm (27.6")            | 859 mm (33.8")            | 701 mm (27.6")            |
| <b>Repeatability</b>               |                         | ±0.03 mm (0.001")         | ±0.04 mm (0.002")         | ±0.03 mm (0.001")         |
| <b>Maximum Motion Range</b>        | S-Axis (Turning/Sweep)  | ±170°                     | ±170°                     | ±170°                     |
|                                    | S-Axis Wall Mount       | ±30°                      | ±30°                      | ±30°                      |
|                                    | L-Axis (Lower Arm)      | +150°/-45°                | +150°/-45°                | +150°/-45°                |
|                                    | U-Axis (Upper Arm)      | +210°/-142°               | +235°/-144°               | +210°/-152°               |
|                                    | R-Axis (Wrist Roll)     | ±190°                     | ±190°                     | ±190°                     |
| <b>Maximum Speed</b>               | B-Axis (Bend/Pitch/Yaw) | ±125°                     | ±125°                     | ±125°                     |
|                                    | T-Axis (Wrist Twist)    | ±360°                     | ±360°                     | ±360°                     |
|                                    | S-Axis                  | 210°/s                    | 250°/s                    | 250°/s                    |
| <b>Approximate Mass</b>            | L-Axis                  | 180°/s                    | 180°/s                    | 180°/s                    |
|                                    | U-Axis                  | 225°/s                    | 225°/s                    | 225°/s                    |
|                                    | R-Axis                  | 375°/s                    | 375°/s                    | 375°/s                    |
|                                    | B-Axis                  | 375°/s                    | 375°/s                    | 375°/s                    |
|                                    | T-Axis                  | 500°/s                    | 500°/s                    | 500°/s                    |
| <b>Brakes</b>                      |                         | All axes                  | All axes                  | All axes                  |
| <b>Power Consumption</b>           |                         | 1 kVA                     | 1 kVA                     | 1 kVA                     |
| <b>Allowable Moment</b>            | R-Axis                  | 7.25 N·m                  | 7.25 N·m                  | 7.25 N·m                  |
|                                    | B-Axis                  | 7.25 N·m                  | 7.25 N·m                  | 7.25 N·m                  |
|                                    | T-Axis                  | 5.21 N·m                  | 5.21 N·m                  | 5.21 N·m                  |
| <b>Allowable Moment of Inertia</b> | R-Axis                  | 0.3 kg·m <sup>2</sup>     | 0.3 kg·m <sup>2</sup>     | 0.3 kg·m <sup>2</sup>     |
|                                    | B-Axis                  | 0.3 kg·m <sup>2</sup>     | 0.3 kg·m <sup>2</sup>     | 0.3 kg·m <sup>2</sup>     |
|                                    | T-Axis                  | 0.1 kg·m <sup>2</sup>     | 0.1 kg·m <sup>2</sup>     | 0.1 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>           | 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)<br>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<br>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<br>NPN-Standard<br>PNP-Optional<br>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<br>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<br>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)

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