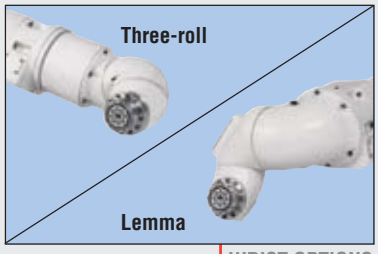
MOTOMAN
a YASKAWA company

AUTOMOTIVE PARTS

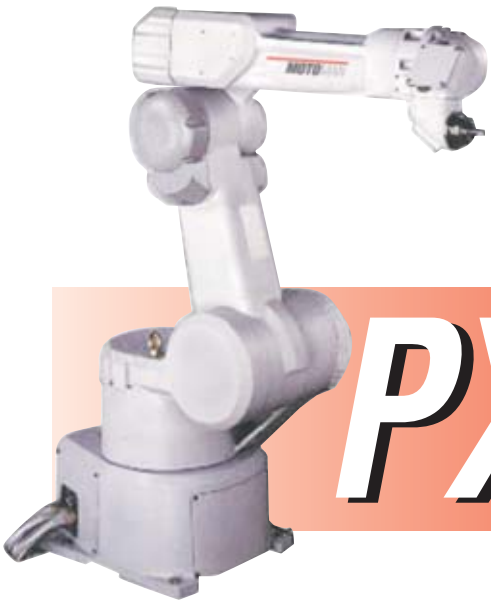


WRIST OPTIONS

MOTOSIM® OFF-LINE PROGRAMMING

FEATURES & OPTIONS

- 1,835 mm reach
- Floor-, wall- or ceiling-mount options
- Three-roll or Lemma style wrist available
- FM rating: Class 1, Div. 1 (explosion-proof)
- Advanced application-specific coating software
- MotoSim® simulation software (optional)
- MotoMax® III warranty (standard)



Motoman's versatile PX1850 robot provides smooth, consistent performance in coating applications

• COATING • DISPENSING

PX1850

Payload: 10 kg

Versatile Coating Robot

The high-speed PX1850 robot is available with either a three-roll or Lemma-style wrist, providing versatility and a smooth, superior performance in standard industrial and automotive coating applications.

The three-roll wrist design is ideal for painting contoured parts such as car bodies and interior/exterior surfaces. The Lemma wrist is well-suited for painting horizontal and vertical planes.

The PX1850 robot is Factory Mutual (FM) approved for Class 1, Div. 1 use in hazardous environments. It features a 10 kg (22.1-lb) payload capacity, a 1,835 mm (72.2") reach, and a ±0.5 mm (±0.02") repeatability. The compact design of the highly flexible, six-axis PX1850 robot makes it easy to mount on the floor, wall or ceiling. The PX1850 is available in a floor mounted configuration.

Optional devices such as 24-color CCU, FGP, washing unit valve and master valve can be mounted on the upper arm resulting in reduced tact time and wasted paint.

Advanced XRC 2001-FM Controller

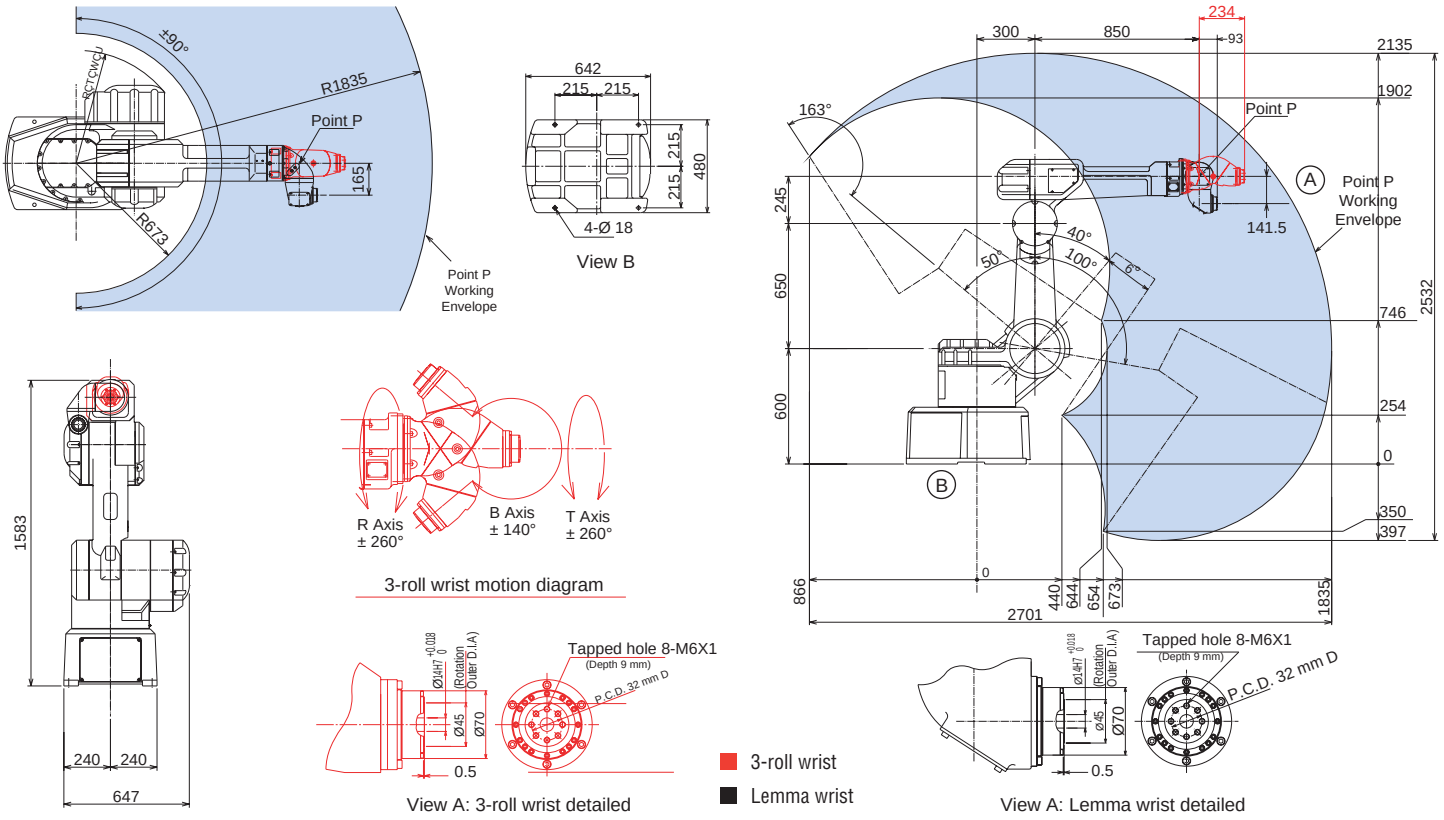
The advanced XRC 2001-FM controller features fast processing, easy-to-use INFORM II programming language, and includes application-specific software for coating.

Two types of programming pendants are available — the standard model for use in non-explosive painting environments and as an option, an intrinsically-safe version for use in hazardous conditions.

The XRC 2001-FM coordinates operation of robot and coating devices, including the gun, to increase productivity by reducing over-spraying and the number of times the spray starts and stops. It supports gun control instructions such as spray start/stop and coating conditions.

The XRC 2001-FM supports standard networks (such as DeviceNet, ControlNet, Profibus-DP, and Interbus-S), enabling connection to paint machine controllers and line controllers.

PX1850 Robot



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

PX1850 SPECIFICATIONS*

Structure		Vertical jointed-arm type
Controlled Axes		6
Payload		10 kg (22.1 lbs.)
Vertical Reach		2,532 mm (99.7")
Horizontal Reach		1,835 mm (72.2")
Repeatability		±0.5 mm (0.02")
Maximum Motion Range	S-Axis (Turning/sweep) L-Axis (Lower Arm) U-Axis (Upper Arm) *(relative angle of lower arm)* R-Axis (Wrist Roll) B-Axis (Bend/Pitch/Yaw) T-Axis (Wrist Twist)	±90° +100°/-50° 6 ~ 163° ±260° 3-Roll: ±140° Lemma: ±270° ±260°
Maximum Speed		2.0 m/s
Approximate Mass		360 kg (794 lbs.)
Brakes		All axes
Power Consumption		5 kVA
Allowable Moment	R-Axis B-Axis T-Axis	3-Roll: 30.1 N • m Lemma: 30.4 N • m 3-Roll: 34.1 N • m Lemma: 19.6 N • m 9.8 N • m
Allowable Moment of Inertia	R-Axis B-Axis T-Axis	3-Roll: 1.21 kg • m^2 Lemma: 0.97 kg • m^2 3-Roll: 1.21 kg • m^2 Lemma: 0.40 kg • m^2 0.10 kg • m^2
Mounting		Floor, wall, ceiling

Specifications are for both 3-roll wrist and Lemma wrist unless otherwise noted

XRC 2001-FM CONTROLLER SPECIFICATIONS

Structure	Free-standing, enclosed type
Dimensions (mm)	800 (w) x 1,300 (h) x 600 (d) (31.5" x 51.2" x 23.6") (Scavenging unit (175 mm width) and protuding portion not included)
Approximate Mass	100 kg (220.5 lbs)
Cooling System	Indirect cooling
Ambient Temperature	During operation: 0° C (32° F) to 45° C (113° F) During transmit and storage: -10° (14° F) C to +60° C (140° F) 0° C (32° F) to 40° C (113° F) for programing pendant
Relative Humidity	90% max. non-condensing (85% or less for pendant)
Primary Power Requirements	3-phase, 200/220 VAC (+10% to -15%) at 50/60 Hz
Grounding	Grounding resistance: ≤100 ohms Separate ground required ≤10 ohms required for intrinsically-safe pendent
Digital I/O	Specialized signals (hardware): 11 inputs/2 outputs General signals (standard max): 40 inputs/40 outputs Expandable to 256 inputs/256 outputs
Position Feedback	By absolute encoder
Drive Units	Servo packs for AC servomotors
Accel/Decel	Software servo control
Program Memory	5,000 steps and 3,000 instructions
Pendant Dim. (mm)	200 (w) x 325 (h) x 77 (d) (7.9" x 12.8" x 3.0")
Pendant Buttons Provided	Teach Play, Remote, Servo On, Start, Hold, Emergency Stop, Edit Lock
Safety	Emergency Stop Pushbuttons, 3-position Deadman, Brake Release Switches Meets ANSI/RIA R15.06-1999 standard Factory Mutual approved, Class 1, Division 1
Scavenging Control	Equipped with scavenging control unit for internal pressure explosion-proof manipulators

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