

P-200 System

Enhancing Your Painting Process

Basic Description

FANUC Robotics' P-200 System integrates the industry's most advanced process equipment to enhance painting performance and improve our customers' bottom line results.

Paint waste, color change time and cycle time are reduced by integrating the color changer and fluid control valves close to the applicator. This provides increased throughput or increased spraying time which improves transfer efficiency.

A feasible replacement for manual sprayers, the P-200 system easily handles tough applications including interior and exterior cut-ins and fascia painting. Key advantages for interior cut-in painting are the P-200 System's near reach capability and flexibility.

FANUC Robotics is the leader in providing total paint shop automation solutions. Based on experience gained over seven generations of robotic painting designs, the P-200 System delivers a flexible and state-of-the-art painting solution.

Process Advantages

- Color change valves mounted close to the applicator reduce paint waste and color change time. Shortened paint line lengths also permit longer spraying time and higher throughput.
- In-arm hardware and enhanced motion software allow fast "on-the-fly" applicator parameter changes, providing improved paint



quality, film build consistency and less paint overspray. This results in reduced costs and higher profit per vehicle or part.

- Maximized trigger accuracy and repeatability through in-arm trigger valve for fast gun on/off response time.
 - Reduced paint waste
 - Higher film build consistency
 - Accurate path teaching
 - Higher quality
 - Reduced setup and debug time
- Paints entire hood and deck interiors from one body side, which typically reduces number of robots needed.
- Fits into existing booths or greenfield plants, significantly reducing booth construction

and operating expenses including airflow and energy costs.

- User-friendly AccuFlow II™ closed loop fluid delivery system automatically calculates flow rates, providing consistent paint delivery and high finish quality.
- Heavy payload (15kg at wrist, 15kg in outer arm) carries current applicators with flexibility for future applicator technology to provide a longer lasting paint shop solution.
- Enhanced motion software maximizes acceleration and deceleration to improve path accuracy and minimize non-painting time, resulting in reduced cycle and startup/debug time.

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P-200 System

Motion Control Advantages

- Extremely fast acceleration and deceleration motion increases spraying time allowing more area to be covered by the same robot.
- Constant application speed yields consistent film build, providing improved finish appearance.

System Control Advantages

- Easy-to-use PaintWorks software provides a Windows™ graphical interface for system programming, operation and maintenance.
- Process Development Tool (PDT) is a user-friendly Windows-based, graphical programming interface. (option)

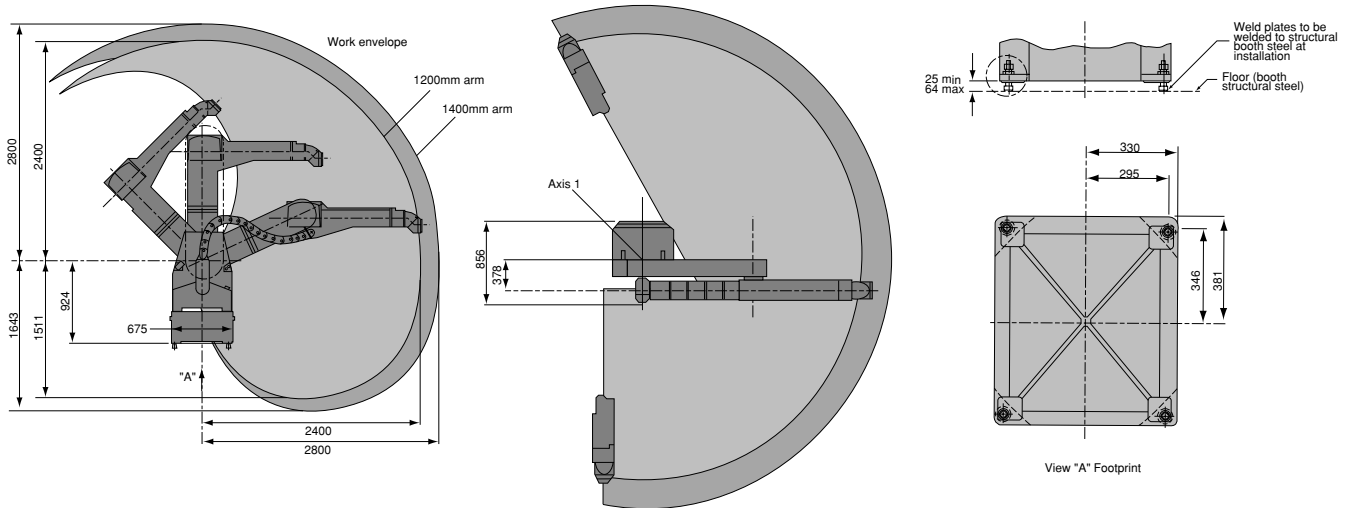
Installation Advantages

- P-200 System standard solution is pre-engineered and pretested reducing startup and debug time.
- P-200 robot ships on rail completely integrated, reducing startup and debug time required.
- Extremely large P-200 work envelope increases booth design flexibility by both effectively painting hood and deck interiors from one side of the vehicle and efficiently painting door interiors.
- Integrated process equipment reduces setup/debug time allowing the automation zone to be up and running faster.

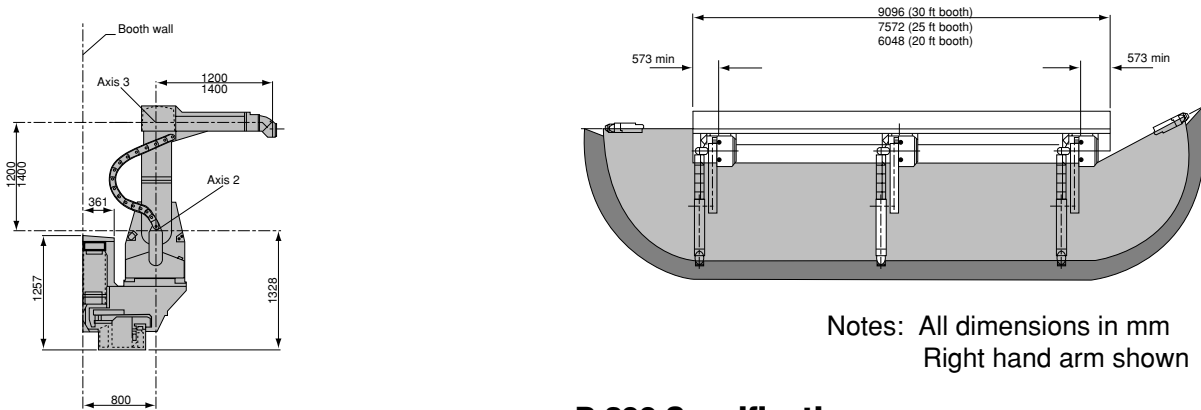


P-200 System

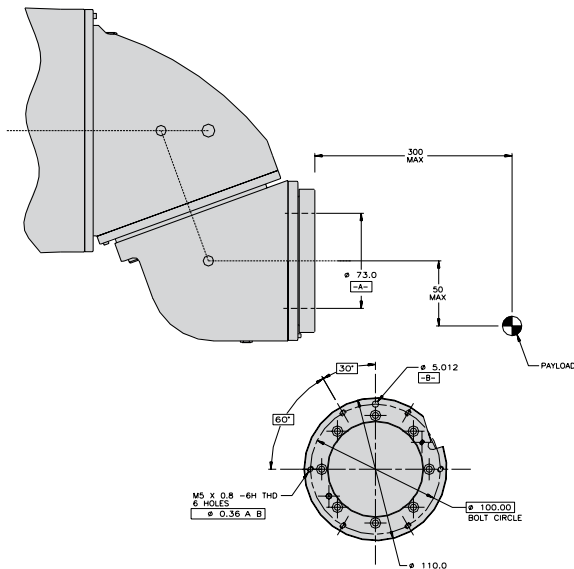
Pedestal Robot Dimensions



Rail Robot Dimensions



Wrist



P-200 Specifications

Items					
Motion range and speed	Axis 1	Range	210°	Speed	96°/sec
	Axis 2	Range	150°	Speed	119°/sec
	Axis 3	Range	160°	Speed	150°/sec
	Axis 4	Range	>360°	Speed	353°/sec
	Axis 5	Range	>360°	Speed	429°/sec
	Axis 6	Range	+/- 720°	Speed	364°/sec
	Axis 7 (optional)	Range	determined by rail length	Speed	1500mm/sec
Painting speed	1500mm/sec				
Wrist payload (1)	15kg				
Outer arm payload (2)	15kg				
Repeatability	+/- 0.5mm				
Integral process equipment	Up to 24 Color Paint System				
Mechanical brakes (3)	Axes 1, 2, 3, 4, 5, 7				
Weight	523kg (pedestal robot)				
Certification	FM Class I, II, III/Div I, II				
Environment	0 - 45° C ambient temperature				

- (1) At 300mm radial 50mm axial offset
- (2) Mounted inside outer arm
- (3) Axis 6 optional

P-200 Solution

Reliability and Maintenance Advantages

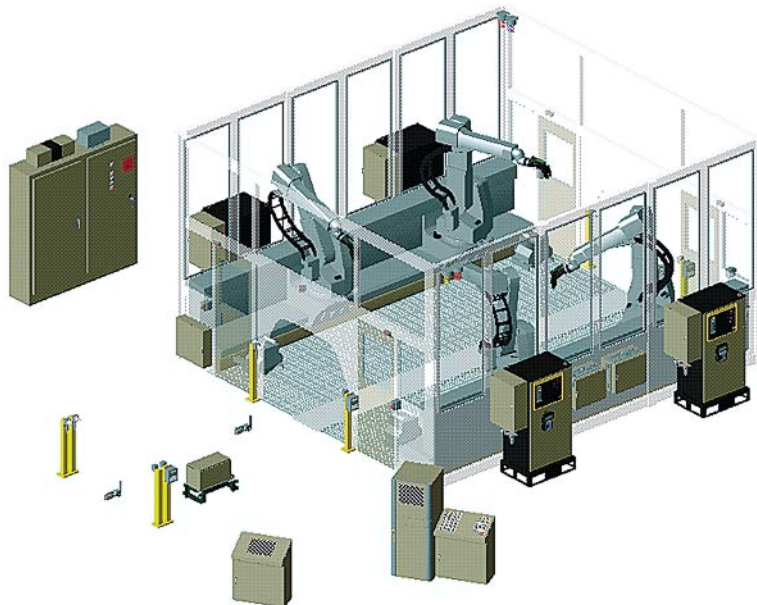
- In-arm color changers provide easy access and lower cat track height improves maintenance access.
- Cast aluminum gear boxes contain sealed lubrication that increases reliability and decreases maintenance cost.
- Patented, hollow, sealed wrist and patented purge system for operation in hazardous environments protect motors and cables from painting environment and are approved for Class I and II, Div. 1, Groups C,D,E,F,G environments.
- Internal paint hose routing reduces dirt and minimizes paint line length.

Integrated Automotive Painting Solution

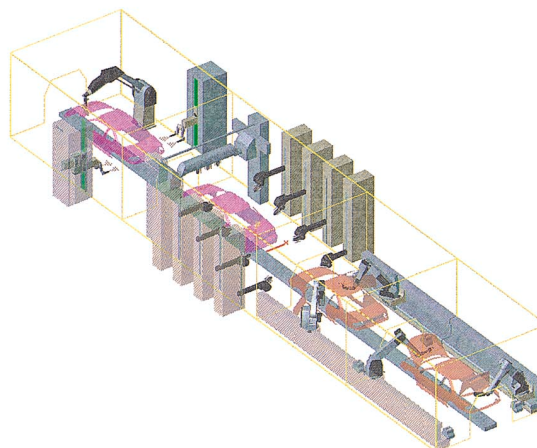
The P-200 System is a key component in FANUC Robotics' total paint shop automation solution that includes P-300 Reciprocators, P-400 Bell Systems and PaintWorks system control. Common technology includes:

- R-J Series Controllers and FANUC AC Servo motors with encoders
- PaintTool, BellTool and RecipTool software packages
- PaintWorks System Control Interface (option)
- PDT graphic programming (option)
- Proven FANUC Robotics process development, system integration and project management

FANUC Robotics is the market leader in providing total paint shop automation solutions.



Pre-tested Standard Shippable System



Total Paint Shop Solution



FANUC Robotics North America
3900 W. Hamlin Road
Rochester Hills, MI 48309-3253
(248) 377-7000
Fax (248) 276-4133

1-800-47-ROBOT

marketing@fanucrobotics.com
www.fanucrobotics.com

Charlotte, NC
(704) 596-5121

Chicago, IL
(847) 898-6000

Cincinnati, OH
(513) 754-2400

Los Angeles, CA
(949) 595-2700

Toledo, OH
(419) 866-0788

Toronto, Canada
(905) 812-2300

Montréal, Québec
(450) 492-9001

Mexico City, Mexico
52 (5) 611-5998

Aguascalientes, Mexico
52 (49) 10-8000

Sao Paulo, Brazil
(55) (11) 3955-0599

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For further information contact Motion Controls Robotics at 419.334.5886