

P-200E System

Enhancing The Painting Process

Basic Description

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

Integrating the colour changer and fluid control valves close to the applicator reduces paint waste, color change time and cycle time.

This provides in-creased throughput or increased spraying time that improves transfer efficiency.

A feasible replacement for manual sprayers, the P-200E system easily handles tough applications including interior and exterior cut-ins and fascia painting.

Key advantages for interior cut-in painting are the P-200E 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-200E System delivers a flexible and state-of-the-art painting solution.

Process Advantages

- Colour change valves mounted close to the applicator reduce paint waste and colour 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



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- paint quality, film build consistency and less paint over spray. 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 set-up 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 start-up/ debug time.

Motion and System 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.
- 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)

Reliability and Maintenance Advantages

- In-arm colour changers provide easy access and lower cat track height improves maintenance access.
- Cast aluminium 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.

Installation Advantages

- P-200E System standard solution is pre-engineered and pre-tested reducing start-up and debug time.
- P-200E robot ships on rail completely integrated, reducing start-up and debug time required.
- Extremely large P-200E 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 set-up/debug time allowing the automation zone to be up and running faster.

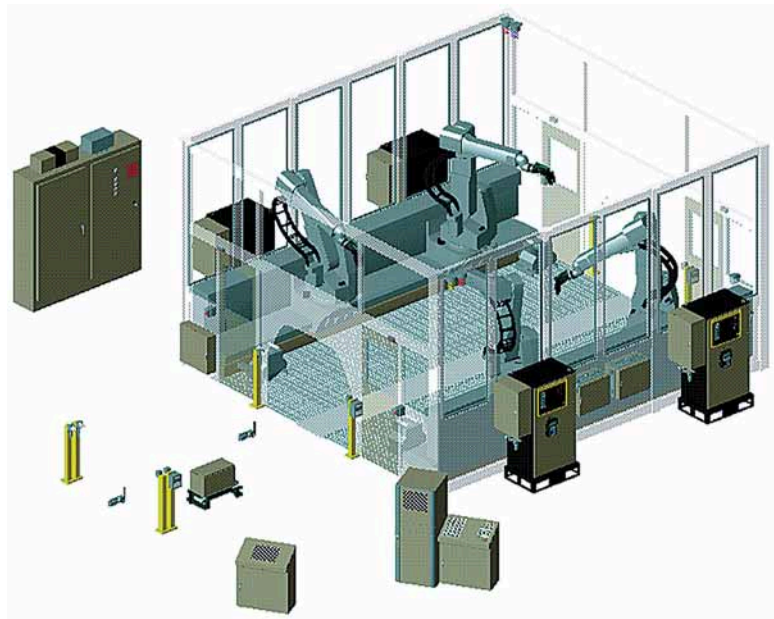


Typical robotic door cut-in applications.

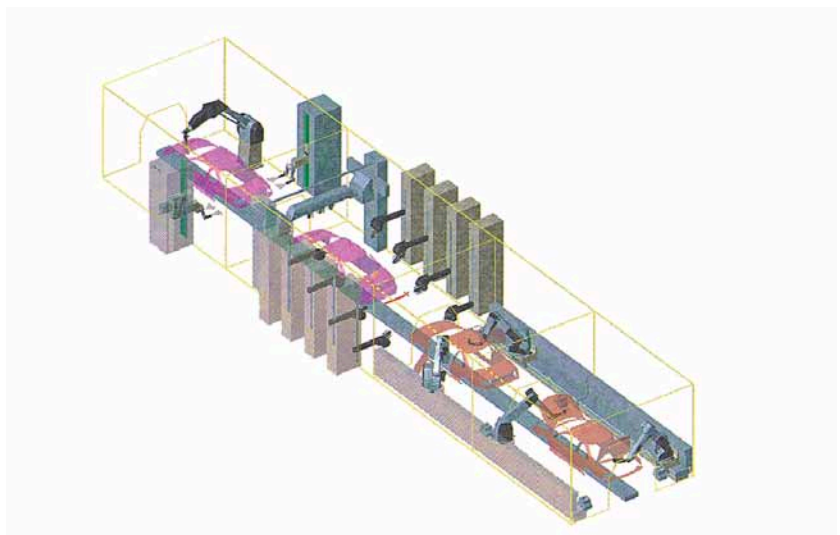
Integrated Automotive Painting Solution

The P-200E 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



Pre-tested Standard Shippable System



Total Paint Shop Solution

Note: Dimensions are shown in millimeters.

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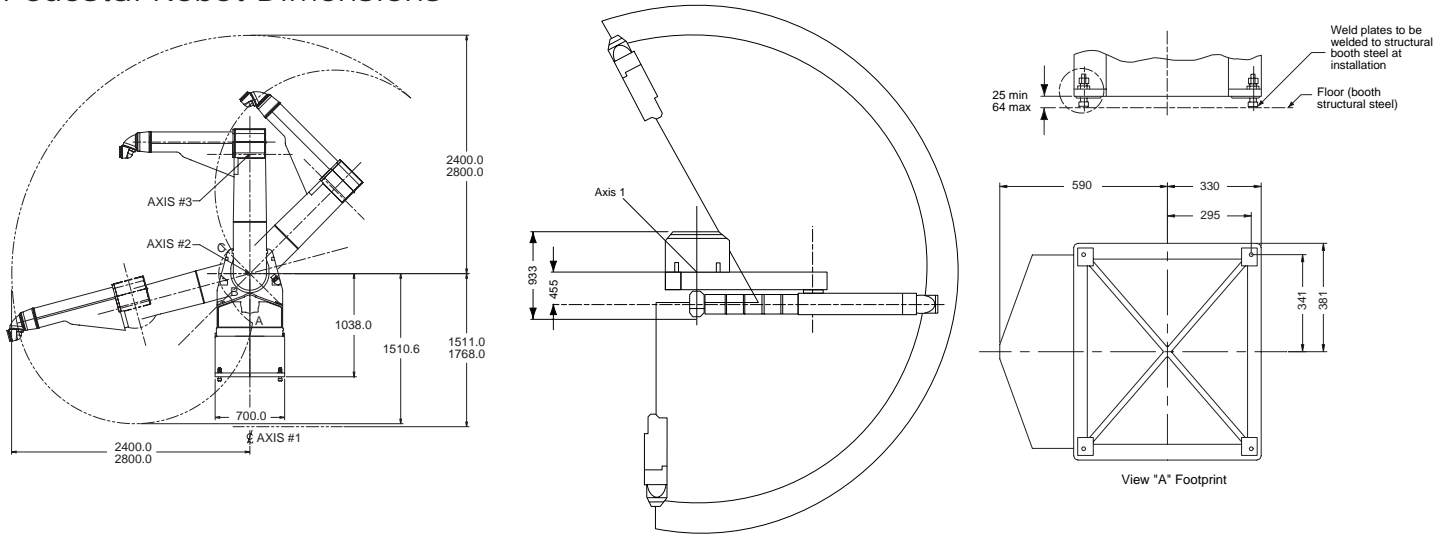
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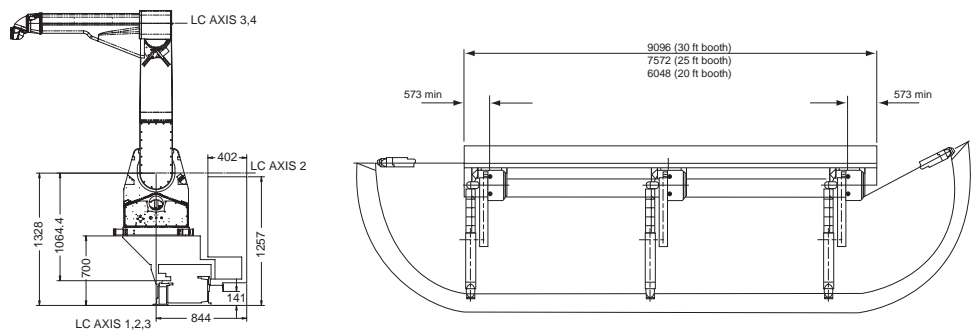
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Pedestal Robot Dimensions

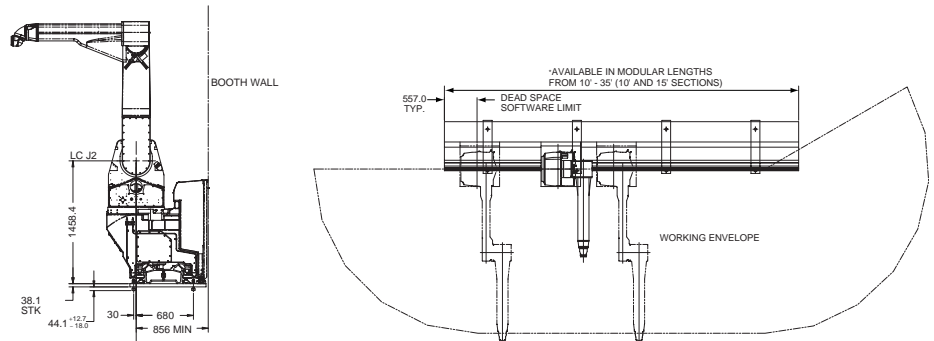


Rail Robot Dimensions

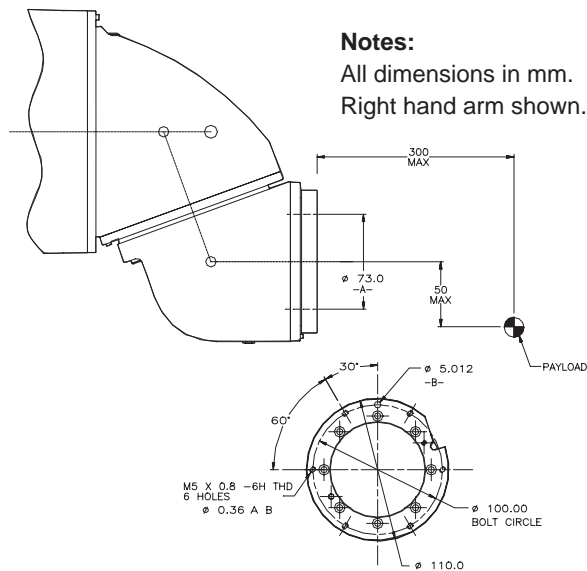
Current in-booth rail



New Modular In-booth rail



Wrist



Notes:
All dimensions in mm.
Right hand arm shown.

P-200E Specifications

Items			
Axis	6	Range	Speed
Motion range and speed	Axis 1	210°	96°/sec
	Axis 2	150°	119°/sec
	Axis 3	160°	150°/sec
	Axis 4	>360°	353°/sec
	Axis 5	>360°	429°/sec
	Axis 6	+/- 720°	364°/sec
	Axis 7 (optional)	determined by rail length	1500mm/sec
Painting speed	1500mm/sec		
Maximum Payload	15kg		
Maximum Reach	2800 mm		
Repeatability	+/- 0.5mm		
Integral process equipment	Up to 24 color paint system		
Mechanical brakes (1)	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) Axis 6 optional			