



**Media Contact:**

Cathy Powell  
Marketing Communications  
FANUC Robotics  
Phone: (248) 377-7570  
cathy.powell@fanucrobotics.com

**FANUC Robotics Demonstrates  
Submerged Arc Welding at 2009 Fabtech  
& AWS Show**

**For Immediate Release**

**ROCHESTER HILLS, Mich., Nov. 15, 2009** – FANUC Robotics America Inc. will demonstrate submerged arc welding featuring its ARC Mate 120iC welding robot with *iR*Vision<sup>®</sup>, Dual Check Safety (DCS) Speed and Position Check Software, and, at the 2009 Fabtech International and AWS Welding Show at McCormick Place, Chicago, Nov. 15-18 in booth #33003.

At the show, the ARC Mate 120iC robot uses *iR*Vision to find the weld joints of three randomly located weld coupons. The robot finds the correct weld joint of the first coupon, and simulates Submerged Arc Welding (SAW). It repeats the process for the second and third coupon. FANUC Robotics' Dual Check Safety (DCS) Speed and Position Check Software allows an operator to step into the cell and reposition the coupons to show how *iR*Vision corrects for changes, and the cycle repeats itself.

"The cell simulates Submerged Arc Welding with the industry's only robotic welding network interface to the Lincoln Electric Power Wave<sup>®</sup> AC/DC1000<sup>®</sup> SD Power Supply, and MAXsa<sup>™</sup> 22 Wire Drive," said Mike Sharpe, Materials Joining Segment, FANUC Robotics. "Intelligent sensing options like *iR*Vision provides customers with enhanced capabilities to process parts that would otherwise be difficult with contemporary hard automation."

**ARC Mate 120iC intelligent welding robot**

FANUC Robotics' ARC Mate 120iC and ARC Mate 120iC/10L are the latest in the popular ARC Mate series of robots featuring a compact design and class-leading reach and load capacity. The robots combined with the ARC Mate100iC, offer customers the broadest family of welding robots available.

The ARC Mate 120iC robot offers a reach of 1811 mm and a 20 kg payload; the ARC Mate 120iC/10L has a 2009 mm reach and a 10 kg payload.

**-more-**

The ARC Mate 120iC is the only welding robot with a 20 kg payload and has the largest hollow wrist, offering multiple functions and eliminating cable management issues. Handling and welding can be accomplished without tool changers, and all cables can be enclosed inside the arm, improving reliability and ease of access.

“Our family of ARC Mate robots offer customers class-leading operation efficiency, reach, speed, load capacity, and enhanced performance for welding parts of all shapes and sizes,” added Sharpe.

Leveraging off the success of the ARC Mate 100iC series robots, the new ARC Mate 120iC integrates the wire feeder and welding torch cable with the same slim profile including the tightly integrated wire feeder (Lincoln AutoDrive 4R90) within the J3 arm.

The ARC Mate 100iC and ARC Mate120iC also support a wide range of intelligent functions such as:

- *iR*Vision® (built-in) a ready-to-use robotic vision package.
- ROBOGUIDE-WeldPRO simulation package easily models the ARC Mate’s dress-out, and downloads programs to the robot, which run without touch-up.
- Vision Shift eliminates the usual touch-ups and verifications associated with off-line programming or fixture and tool changes.
- Collision Guard detects robot collisions with external objects, minimizing damage to the part, robot, and torch.

“ArcLink XT™, the industry’s first Ethernet-based welding network is another feature that provides a single point of control for both the robot and the welders. It is a flexible and powerful welding network that allows the R-30iA Controller to handle up to four welding power supplies (Lincoln i400),” said Sharpe.

ArcLink XT™, developed in partnership with Lincoln Electric, is the next generation in arc welding network communications offering improved performance over existing welding communication methods. The connection to the welder is over the standard R-30iA Ethernet connection.

**-more-**

**Integrated (built-in) Vision**

The FANUC iRVision system is a ready-to-use robotic vision package, available on all FANUC robots, requiring only a camera and cable – no additional processing hardware. It has a 2D robot guidance tool to accomplish part location, error proofing, and other operations that normally require special sensors or custom fixtures. For robotic vision processes that exceed the capability of 2D vision systems, FANUC Robotics offers an integrated 3D vision system.

**Dual Check Safety (DCS) Speed and Position Check Software**

Prior to the application of safety rated robot software, all safeguarding of the robot needed to be external, either as a safety rated limit switch or cam system, safety rated area scanners, or other devices to limit robot travel or enhance protection. DCS safety rated robot software allows the safety design of the robot system to use the robot itself for some of the safety functions.

The most significant benefit of DCS Speed and Position Check is in applications where the travel of the robot needs to be restricted due to floor space or process limits that are less than the full reach of the robot. Restricting the robot motion in Cartesian space means the robot can be restrained to exactly the area in which it works; something that is not possible with the current systems that limit robot motion externally using limit switches.

“By moving some of the safety functions to within the robot, customers will realize significant savings in floor space, flexibility in system layout, reduced hardware costs, and improved reliability,” said Claude Dinsmoor, general manager, controller product development, FANUC Robotics.

In addition, safe "zones" can be enabled and disabled from an external source such as a safety PLC. Designing a system with multiple zones means an operator can safely enter and leave the workspace of the robot.

“This streamlines the design of robot cells because it prevents the robot from entering the load area when an operator is present,” added Dinsmoor. This type of application is possible with existing technology, but it is typically difficult to setup, expensive to implement, and requires more floor space than a system using DCS.”

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FANUC Robotics America, Inc. designs, engineers and manufactures industrial robots and robotic systems for a wide range of applications including arc and spot welding, material handling (machine tending, picking, packing, palletizing), material removal, assembly, paint finishing and dispensing. The company also provides application-specific software, controls, vision products, and complete support services. After 27 years of success, FANUC Robotics maintains its position as the leading robotics company in the Americas. A subsidiary of FANUC LTD in Japan, the company is headquartered in Detroit, and has facilities in Chicago; Los Angeles; Charlotte, N.C.; Cincinnati and Toledo, Ohio; Toronto; Montreal; Aguascalientes, Mexico; and Sao Paulo, Brazil. Over 210,000 FANUC robots are installed worldwide. Contact FANUC Robotics at [www.fanucrobotics.com](http://www.fanucrobotics.com) or by calling 1-800-iQ-ROBOT, option 5.

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