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**FANUC Robotics' New ARC Mate 50iC/5L
'LEAN' Arc Welding Robot Demonstrates
Intelligent Arc Welding at the
2008 FABTECH International
and AWS Welding Show**

For Immediate Release

ROCHESTER HILLS, Mich., Oct. 6, 2008 – FANUC Robotics America, Inc. has introduced the ARC Mate 50iC/5L robot, the company's next generation mini-robot for arc welding, offering maximum performance in a light, efficient, accurate and nimble (LEAN) package. The ARC Mate 50iC/5L robot with *iR*Vision® (built-in vision), will demonstrate arc welding in a compact education cell during the FABTECH International & AWS Welding Show, at The Las Vegas Convention Center in Las Vegas, Oct. 6-8, booth #10012.

At the show, an operator will stop the robot in safe position and open the side door of the Lincoln Electric Education Cell. The cell's part clamps will hold loosely arranged coupons in front of the robot. The operator then closes the door and enables the fume extraction and arc light safety screen. The ARC Mate 50iC/5L uses *iR*Vision® error proofing to locate the coupons and part clamps, ensuring they are engaged correctly. The robot will then use *iR*vision to locate the weld seam and weld the coupons together. After the cycle is complete, the robot returns to a safe position, the operator opens the cell door, and the cycle repeats itself. The robot will also use FANUC Dual Check Safety Speed and Position Check software.

The six-axis, ARC Mate 50iC/5L robot is extremely light and compact, and rates 'best in class' for its wrist load capacity, repeatability, work envelope, and speed.

The intelligent ARC Mate 50iC/5L is designed to meet the materials joining application needs of a variety of industries including automotive, agricultural, furniture, recreational, and many more. Its design enhancements and flexibility to quickly adapt to small lot sizes, new styles, and other modifications provides manufacturers an affordable solution for small part, flexible production.

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Ideal for high volume applications or small batch production, the new slim and lightweight robot can be mounted in a variety of positions including floor, tabletop, inside machines, angle and invert, which maximizes flexibility for small and narrow workspaces.

“The ARC Mate 50iC/5L offers high-speed operation with optimum path performance and wrist load capacity, making it ideal for most robotic welding torches,” said Mike Sharpe, director of materials joining, FANUC Robotics America, Inc. “These and other features make it the most powerful mini-robot in its class.”

“We’re working with our integration partner Lincoln Electric to promote the benefits of the ARC Mate 50iC/5L compact Education Cell,” added Sharpe. “Compared with typical systems, this offers the ability for users to approach tooling at a new level because *iR*vision replaces proximity sensors, improves operator efficiency, and part quality.”

The ARC Mate 50iC/5L robot offers a wide range of benefits, including:

- Greatest reach and stroke in class
- High wrist load capacity – utilizes standard robotic welding torches
- Higher rigidity for smooth motion and improved weld quality
- Slim arm to allow operation in narrow spaces
- Enhanced motion performance for ‘best in class’ speed
- ‘Best in class’ work envelope
- Slim wrist allows for improved motion range and torch accessibility
- Single-phase power input with an available 115 VAC option

The ARC Mate 50iC/5L also supports a wide range of intelligent functions such as:

- *iR*Vision, a ready-to-use, built-in robotic vision package.
- An internal programmable controller (PMC) simplifies cell control
- Ethernet I/O including EGD and EIP
- ROBOGUIDE-WeldPRO simulation package easily models the system, 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.

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“ArcLink XT™, the industry’s first Ethernet-based welding network is another feature that provides a high performing welding interface. It is a flexible and powerful welding network that allows the R-30iA Mate Controller to easily integrate to the Lincoln Electric *i*400 welding power supply,” 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 Mate Ethernet connection.

Integrated (built-in) Vision

The FANUC *i*RVision 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.”

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 25 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 200,000 FANUC robots are installed worldwide. Contact FANUC Robotics at www.fanucrobotics.com or by calling 1-800-iQ-ROBOT, option 5.

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