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**FANUC Robotics Demonstrates
Intelligent Welding at 2009
Robots and Vision Show**

For Immediate Release

ROCHESTER HILLS, Mich., June 9, 2009— FANUC Robotics America Inc. FANUC Robotics America Inc. will showcase its ARC Mate 100*i*C welding robot and M-20*i*A material handling robot in a fabrication system demonstration at the 2009 International Robots & Vision Motion Control Show at the Donald E. Stephens Convention Center in Rosemont (Chicago) IL, June 9-11, booth #1411.

At the show, an ARC Mate 100*i*C with *i*RVision 2D[®] locates inlet and outlet exhaust muffler tubes from two bins. Two M-20*i*A robots with *i*RVision 3DL pick tubes from each bin and load them into an exhaust muffler. The ARC Mate 100*i*C with *i*RVision Bar-Code then checks the bent tube for the correct configuration of the muffler assembly. The M-20*i*A robots move to the infeed tube hanger and pick the appropriate bent tubes from each hanger.

The ARC Mate 100*i*C uses *i*RVision 2D to check the location of the inlet and outlet tubes of the exhaust muffler and the M-20*i*A robots then load the bent tubes into the exhaust muffler. The M-20*i*A robots pick the muffler assembly and coordinate welding with the ARC Mate 100*i*C. The robots end the cycle and return parts to their respective locations, and the cycle repeats with four assembly combinations.

ARC Mate 100*i*C intelligent welding robot

FANUC Robotics' six-axis, ARC Mate 100*i*C intelligent welding robot features a compact design, class-leading operation efficiency, speed, load capacity, and enhanced performance for welding parts of all shapes and sizes.

Compared to traditional dress packages, which are mounted externally on the robot's arm, the ARC Mate 100*i*C's internal routing allows the dress package to follow the motion range of the robot, simplifying programming and eliminating the worries of bending, snagging or breaking cables.

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“The ARC Mate 100*i*C is the highest performance arc welding robot in its class,” said Mike Sharpe, FANUC Robotics’ materials joining. “The internal dress package also makes it extremely easy to operate and maintain, and ensures a longer cable life.”

The ARC Mate 100*i*C and R-30*i*A Controller can be integrated in a welding system that includes the weld torch cable, wire feeder, and welding power supply.

A variety of system features include:

- Cantilevered forearm is inherently rigid, simplifying cable management and maintenance.
- Integrated wire feed control cable, with shielding gas hose and welding power cables.
- ServoTorch, integrated pull torch with touch retract-start
- Integrated weld ground, pneumatic gripper controls and vacuum cup grippers
- All mounting position with no working envelope limitations
- ArcLink XT™, the industry’s first Ethernet-based welding network
- Lincoln Electric *i*400 integrated welding power source
- Advanced waveform control
- Multiple mounting positions include floor, invert and angle.
- High motion range including ‘best in class’ reach versus stroke.

The R-30*i*A Controller uses high-performance hardware and the latest advances in network, integrated *i*Rvision, and motion control functions, providing a level of intelligence never offered before, including the ability to control 40 axes with one controller (4 robots plus other equipment).

“In a welding cell, multi-arm control allows customers to achieve maximum utilization of their robots. Using one or two robots for material handling while other robots perform welding maximizes flexibility,” said Sharpe. “By simply changing the end-of-arm-tooling (EOAT) on the material handling robots, a wide variety of parts can be welded within a single work cell.”

FANUC Robotics Intelligent M-20*i*A Robot

FANUC Robotics’ M-20*i*A material handling robot features a compact design and class-leading reach and load capacity.

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The M-20*i*A robot offers a reach of 1811 mm and a 20 kg payload; the M-20*i*/10L has a 2009 mm reach and a 10 kg payload. A large hollow wrist offers multiple functions and eliminates 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.

The M-20*i*A and ARC Mate 100*i*C support a wide range of intelligent functions such as:

- *i*RVision® (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.

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.

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“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 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 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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