



Automated Cells & Equipment, Inc. (ACE) and FANUC Robotics, North America, welcome you to our Open House and Robotics Technology Showcase.

We appreciate you taking the time to visit us and to participate in the informative technology seminars presented by our industry-leading experts from FANUC Robotics and ACE.

Our demonstration cells have been organized to allow you to tour our facility and explore several application opportunities. A “map” is provided on the back page of this document to guide you through our displays.

Please take your time touring through our facility and feel free to ask any questions regarding the exciting technologies presented here. We will be pleased to discuss your particular interests and provide more in-depth evaluation of potential applications.

Thank you!



If you have any additional questions following your visit, please contact us at ACE:

Jim Morris, President jmorris@autocells.com
Mike Lucey, Powder Metal Business Unit Manager mlucey@autocells.com
Mike Malinowski, Regional Sales Rep mmalinowski@autocells.com
Jeremy Forer, Inside Sales jforer@autocells.com

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November 1 & 2, 2007
Painted Post, NY***





FANUC INFORMATIONAL SEMINARS

Thursday, Nov. 1

10:00 am	Painting Robot Technology
11:00 am	LEAN LR Mate Robot Applications
12:00 noon	Robotic Vision Guidance
1:00 pm	Robotic Vision Guidance
2:00 pm	LEAN LR Mate Robot Applications
3:00 pm	Painting Robot Technology

Friday, Nov. 2

10:00 am	Robotic Vision Guidance
11:00 am	LEAN LR Mate Robot Applications
12:00 noon	Painting Robot Technology
1:00 pm	Robotic Vision Guidance
2:00 pm	LEAN LR Mate Robot Applications
3:00 pm	Painting Robot Technology

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New LR Mate 200iC with iRVision



B

LR Mate 200iC robot with R-30iA Mate controller

- 6-axes; 5-kg payload; +/- 0.02mm repeatability
- Fastest cycle time robot in its class
- Utilizes FANUC HandlingTool Application Software
- Demonstrates 2D iRVision
- Locate – Pick – Pack – Random Parts
- iRVision locates randomly oriented parts for robot picking
- Typical pick/pack applications in food & consumer products
- iRVision easily monitored through color graphic iPendant on the NEW LR Mate 200iC
- Available NOW in 110/220 VAC single phase controllers

Intelligent Force Sensor Cell



C

M-710iC/50 robot with R-30iA controller

- 6-axes; 50-kg payload; +/- 0.07mm repeatability
- Demonstrates FANUC FS-60 Intelligent Force Sensor and 3DL iRVision for complex precision part assembly
- iRVision finds the random location of the part and hole
- FS-60 uses six-degree of freedom force sensing to insert the shaft into the hole
- Demanding assembly applications with as little as 0.010mm (0.0004") clearance are possible
- This cell allows manual interaction to demonstrate the dexterity required to complete this task

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Intelligent Parts Feeder Cell



D

LR Mate 200iC robot with R-30iA Mate controller

- 6-axes; 5-kg payload; +/- 0.02mm repeatability
- FANUC Intelligent Servo Driven Parts Feeder
- Demonstrates 2D iRVision locating and sorting two different sized bolts in parts feeder
- Servo Parts feeder repeatedly re-oriens and mixes parts for next pick cycle
- Supports multiple types of parts within single feeder
- Simple and reliable system without part jams or mechanical set up between parts

Thread Checking Cell



E

Thread Checking Cell

- Fanuc M16iB/20 robot with R-30iA controller.
- 6-axes; 20-kg payload; +/- X.0mm repeatability
- Demonstrates thread verification ability of a robot coupled to a Thread-Verification Unit (TVU). The TVU drives, at high speed, a gaUge probe into a threaded production part; and reverses back out again, providing 100% assurance of thread integrity.
- Robot will pick up multiple thread check tools to verify several threads in a cast intake manifold.

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F**Advanced Motion Systems**

Advanced Motion Systems, provides electronic and mechanical motion control solutions for a wide spectrum of applications. From basic, low cost speed and position control requirements to extremely complex submicron positioning applications.

This booth will feature Cognex® brand vision and lighting systems.

G**ATI Industrial Automation**

ATI Industrial Automation is the leading engineering-based world developer of robotic accessories and robot arm tooling, including Automatic Tool Changers, Multi-axis Force/Torque Sensing Systems, Robotic Deburring Tools, Robotic Collision Sensors, Rotary Joints, and Compliance Devices. Their robot end-effector products are found in thousands of successful applications around the world.

This booth will focus on robotic deburring tools and tool change devices.

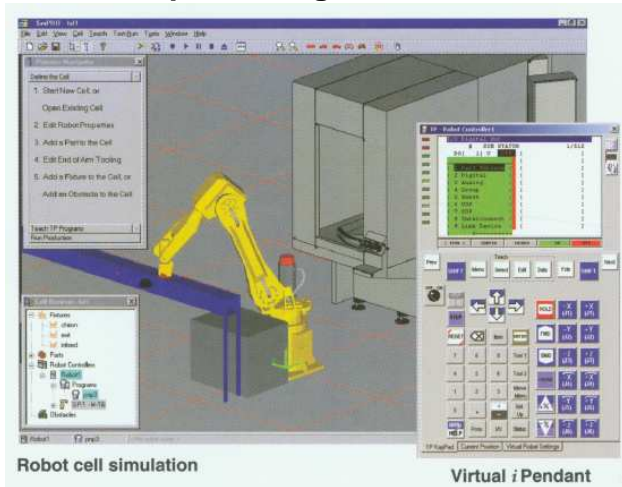
Tray Unload/Load Vision Cell**H****ACE Tray Unload/Load Vision Cell**

- Fanuc Model 16iB/20 robot with R-30iA controller
- 6-axes; 20-kg payload; +/- .08mm repeatability
- Demonstrates 2D vision unload/load of parts and trays using scaling for "3D-like" capability.
- Robot finds height of outbound (finished) tray through use of vision scaling, determines X and Y position of tray and verifies tray orientation of 0 or 180 degrees for part placement onto tray.
- Robot determines the same for inbound (raw parts) tray, but takes picture of each part location prior to picking.

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Simpro/Roboguide Demo

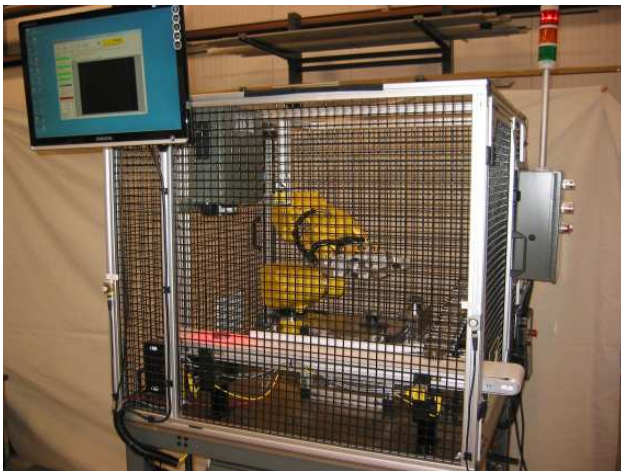


I

Simpro/Roboguide Demo

- SimPRO is a member of FANUC Robotics family of offline robot simulation software and is built on the Virtual Robot Controller.
- SimPRO includes an integrated Virtual Teach Pendant that looks and operates like a real teach pendant.
- A workcell can be created to simulate the operation and performance of a robot application. CAD models can be imported in addition to the standard library of CAD models included.
- SimPRO provides: reach verification, collision detection, accurate cycle time estimates, and other visual system operations all in a graphical virtual environment.

Vision Part ID/Weighing



J

ACE Vision Part ID/Weighing

- Fanuc Model LR Mate 200iB 5P robot with mate controller.
- 6-axes; 3/5-kg payload; +/- .04mm repeatability.
- Demonstrates the use of vision to identify one of two parts (sprocket and tone wheel) and places the appropriate part onto a turntable device or a weigh scale.
- Fixed vision camera also used to determine X and Y position of part for proper pick up.
- Part marking and bar code verification is also simulated within this cell.

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K

Howell Packaging

Howell Packaging provides full-service packaging capabilities to the pharmaceutical, industrial, and consumer products industries. From package design, manufacturing and assembly to distribution and inventory management, they offer a spectrum of innovative products and services to meet your packaging needs.

This booth will show innovative examples of thermoformed packaging solutions.

L

ACE Powder Metal Products



ACE Powder Metal Products

- **Model AT-48** Rotary Accumulation Table for process parts accumulation. CNC laser construction with durable powder coat finish. Unit shown with optional drip tray.
- **Model SA-25-880** Servo-Air press takeout for mid to large-size press application. Servo-Air positioning allows faster processing rates.
- **Model BC5200** modular extruded aluminum belt conveyor. This product provides robust movement of small to medium sized parts offering end and center drive configurations in addition to nose-roller transfer ends.
- **Video presentation** showing additional powder metal products including: robotic and gantry style furnace loaders, micro-air and servo-electric press takeouts, demag conveyors, magnetic furnace unloaders, green part deburring, and sizing press loaders.

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Component Paint Cell



M

P-250iA robot with R-30iA controller (floor/invert mount)

- 6-axes; 15-kg payload; +/- 0.2mm repeatability
- P-50iA robot with R-30iA controller (floor/wall/invert mount)
- 6-axes; 5-kg payload; +/- 0.2mm repeatability
- Robots are Factor Mutual (FM) approved for Class-1, Division-1 hazardous environments
- All motors are totally enclosed and robot incorporates a patented purge system for operation in hazardous environments
- Hollow upper arm and wrist allows internal plumbing of paint lines
- Handles variety of applicators including conventional and electrostatic air spray guns and rotary atomizers

Intelligent Bin-Picking Cell



N

R-2000/B/165F robot with R-30iA controller

- 6-axes; 165-kg payload; +/- 0.2mm repeatability
- Demonstrates robot mounted 2D & 3DL Vision for random bin picking
- 2D rough locates "best found" part inside bin
- 3DL fine locates part orientation, robot picks part and loads re-grip" station
- 2D determines part placement (0-180), robot re-grips part and loads simulated CNC
- Robot unloads simulated CNC and drops part off into process bin

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\$2,500 Value!!

2-yr warranty @ no charge.
To qualify, you *must* register @ front desk
AND
discuss your project w/an ACE rep. Offer
applies to any FANUC robot purchased
11/1/07 thru 10/31/08.

O

Enjoy refreshments in the food tent just outside –

10:00a – 7:00p	Drinks and snacks
11:30a - 1:30p	Lunch
5:00p - 7:00p	Dinner

P

Hughes HiTech

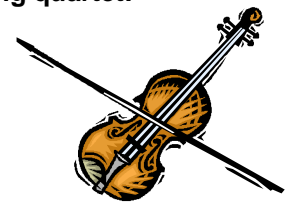
Hughes HiTech has been serving the industrial automation needs of its customers since 1960. Their comprehensive product portfolio and engineering support team enable them to develop solutions that address customer requirements in the most effective way.

This booth will feature Schunk brand grippers and automation products in addition to Mitsubishi PLC's and configurable motion devices.

Q

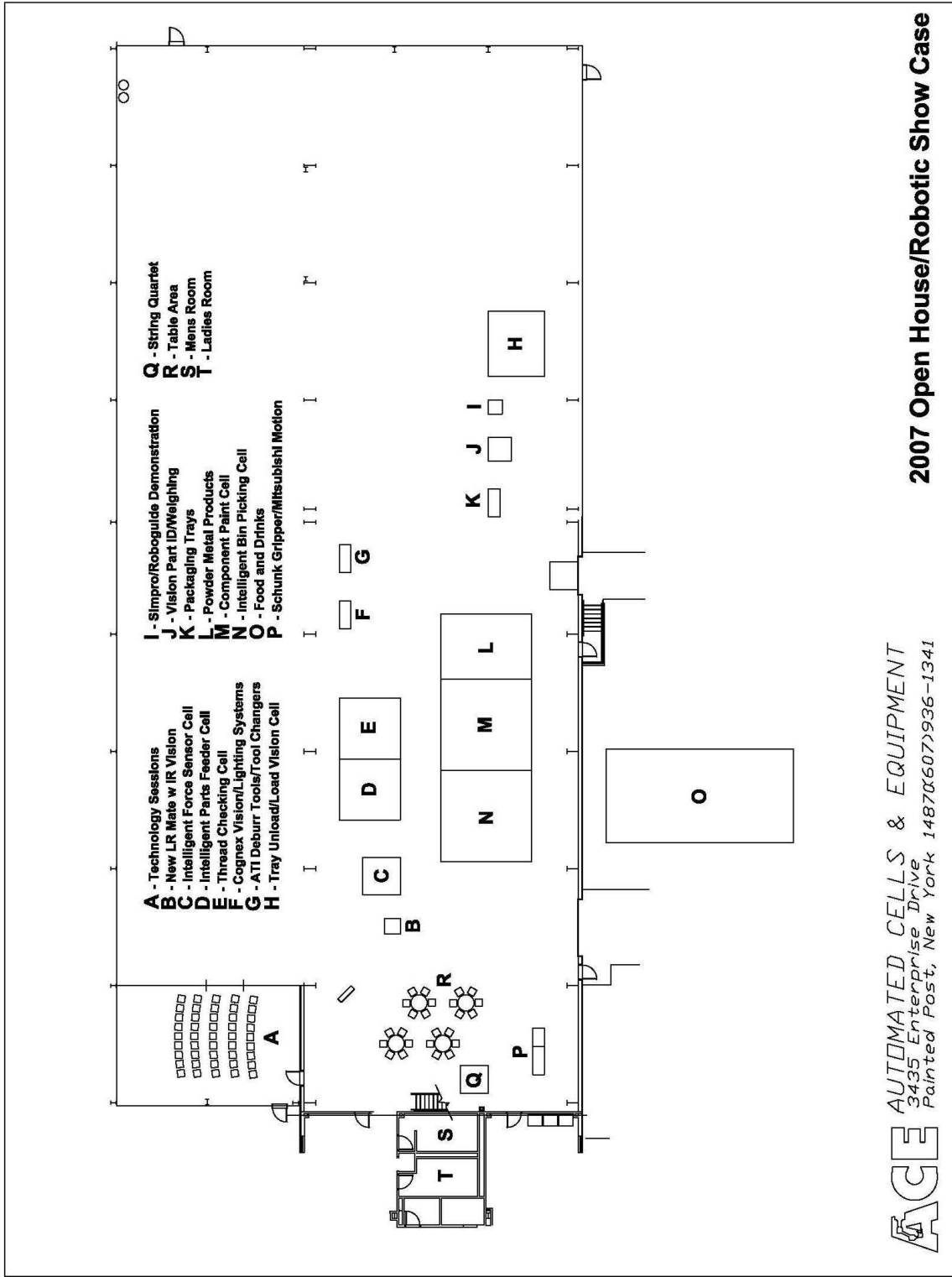
Entertainment by the string quartet:

**Heather Morris
Katie McCann
Sheri Jiang
Steven Leslie**



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ACE AUTOMATED CELLS & EQUIPMENT
 3435 Enterprise Drive
 Painted Post, New York 14870(607)936-1341

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