

Single (F4-1)	

## Advantages of Taylor Communications Custom Automation Solutions

- Custom-designed for your specific product and production needs
- Turnkey solutions with technical support throughout the entire design and build process and beyond into production
- Precision placement repeatability to within 50µm with proprietary evenly dispersing static charging technology
  - Reduce scrap
  - Decrease cycle/Increase productivity
  - Decrease production cost
- Multi-functional
  - Place label(s)
  - Pick product
  - Use on numerous products and molds
- Proven reliability – over 65,000hrs MTBF (mean-time between failure)
- Cost effective – redeploy resources to other projects



## In-Mold Labeling Solutions Robotics and Automation

- IML Overview
- Grafilm®/Grafilm® Ultra
- 7-Axis Mobile Robot



*"Taylor Communications offered us a turnkey solution including labels, end of arm tooling, a dispensing station and automation assistance. Their expertise has helped us launch an important program with a key customer under a tight timeline with no delays, surprises or problems. They are a valuable partner as we look to increase our value-added capabilities for in-mold product decoration."*

*David Ertl, Engineering Manager  
Guttenberg Industries Inc.*

## Technical Support

We offer a complete suite of technical services to support your robotics and automation needs, including design, programming, installation and after-sale support. Taylor Communications is the one-stop shop for all your robotics and automation needs.

Taylor Communications Technical Services include:

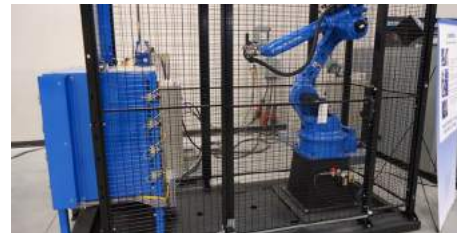
- In-mold label tooling and robotics evaluation
- Label and processing consultation
- Installation assistance
- Remote system diagnostics
- Automatic label reordering
- Replacement high-flex, high-voltage cables

# In-Mold Labeling Solutions Robotics and Automation

Taylor Communications offers a full line of turnkey tooling and automation equipment solutions that improve in-mold label placement, cycle time and scrap rate. Whether you chose to use existing robotics or invest in new equipment, Taylor Communications will deliver a custom automation solution for your specific label application, including design, programming, installation and after-sale support.

## Complete Robotics and Automation Solutions

Taylor Communications offers a complete line of robotics to meet every IML production need. From light to heavy payloads, these durable, industrial robots will optimize your production, enabling cost reduction, manufacturing efficiency and the reallocation of resources.



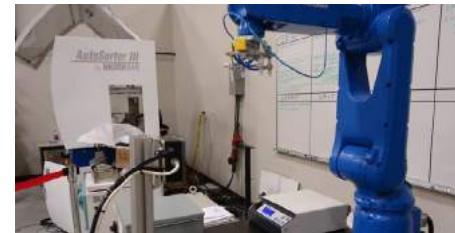
### Heavy Payload Applications (20, 35 and 50 kg)

- Choice of Motoman MH20D, MH50-35 or MH50 robot platforms
- Side entry with up to 100-inch horizontal reach,  $\pm 0.003$ -inch taught point repeatability
- Fixed plate or optional "four drawer part stacker" label dispensing system
- SPI Interface, Guarding, Pneumatic Solenoid Valve Package, Integrated HV HF Static Label Charging, Robotics Training Module, System Documentation and Manuals
- Optional automated EOAT tool changing capability
- 6-axis



### Medium Payload Applications (12 kg)

- Mitsubishi RV-12SDL Vertically Articulated Robot
- Side entry with up to 85-inch horizontal reach,  $\pm 0.002$ -inch taught point repeatability
- Fixed plate label dispensing system
- SPI Interface, Pneumatic Solenoid Valve Package, Integrated HV HF Static Label Charging, Robotics Training Module, System Documentation and Manuals
- Compact Footprint (only 36 x 60-inches)
- Mobile support stand protects the system, robot and static controls from water and debris
- 7-Axis Mobile Robot



### Light-to-Medium Payload Applications (3-12 kg)

- Choice of either Mitsubishi or Motoman VAR model platforms
- Works with most Cartesian robot makes and models
- Table-Type IML Presentation System uniquely developed to decorate Cartesian robot label end-effectors
- Capable of placing labels between multi-cavity end-effectors and difficult or otherwise impossible to reach end-effector surfaces
- Operates during injection, hold and mold cooling cycle sequences, with no additional cycle time
- 6-axis

## Programming

The Human-Machine Interface (HMI) allows operators to choose the appropriate robot program for the application. The user friendly HMI, keeps the operator current on system functions and controls, allowing real time adjustments to fine-tune and perfect automation cycle time.

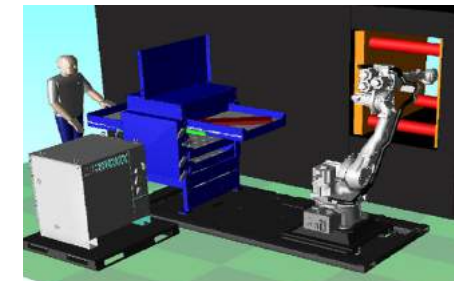
Flexible robot programming options provide easy change-over from mold-to-mold, or label-to-label. Each system holds eighty-eight unique robot programs. If more are needed, eighty-eight new programs can easily be downloaded.

The turn-key system is equipped with an SPI interface cable and connector to provide quick connectivity to robot enabled injection molding machines and complies with all US Federal Safety Standards.



## Advanced Tooling for Robotics

Taylor Communications advanced tooling is custom-designed to work with new or existing robotics and molding machinery. No off-the-shelf solution can provide the high-performance these custom-designed end-effectors offer. Our advanced tooling is designed for your specific application and reliably places labels on contoured molding surfaces using proprietary, evenly dispersing static charging technology.



### End-of-Arm Tooling

In-mold labeling benefits significantly from the use of end of arm tooling. Hand held, or installed on the wrist of the robot arm, our end of arm tooling is custom designed for your specific application and will increase speed and accuracy.

The quality of end-of-arm tooling (EOAT) is closely tied to the performance of your robotic system. Taylor Communications EOAT is robustly engineered and made of high quality components ensuring long life and low maintenance. Advanced use of vacuum-blow and high-voltage label static charging provides safe, reliable, proven performance. Made with reliable high-voltage high-flex cable in 80 MegaOhm resistors and holders, 2, 4 or 6 voltage line splitters and our perfected label end-effector technology. Taylor Communications technology is adaptable to most robot or operator assisted IML applications.

### High-Voltage/High-Flex Static Charging Accessories

Taylor Communications offers a full line of charging accessories: from reliable high-voltage high-flex cable, & 80 MegaOhm resistors and holders, to 2, 4 or 6 position high-voltage splitters.



*"Most suppliers send sales reps out who can quote prices and negotiate agreements. Taylor Communications's salesperson came to us with in-depth knowledge of in-mold product decoration, automation, and our own injection molding environment that truly helped us launch our IML programs quickly and effectively. They have helped us deliver on the promise of this technology, making it practical and effective in our business at Ames."*

*-Eric McClintic, Plant Manager  
Ames True Temper, Harrisburg, PA*

### End-Effector Technology

The Taylor Communications pick and place label end-effector technology leads the industry in safe, reliable high-voltage static charging. The proprietary design creates uniform ion displacement without preferential charging tool-to-cavity static arching. The reliable high-voltage static charging creates label affinity to the molding surface on every cycle. This technology is adaptable to most IML applications in both simple and complex surface geometry molded shapes.

The piece part end-effector engages molded plastic parts with label from the mold's ejector system, removes it from the mold, then places it on a customer supplied take-away conveyor. The system is equipped with the Taylor Communications "Micro-Jog" capability providing 1.0, 0.1 and even 0.01mm incremental movements for "precision" taught points.

Multiple piece part retrieving end-effectors may be fitted to the system to serve multi-cavity molds.

### Label Dispensing Stations

Label dispensing is easy and efficient with the flat plate crowder design. The robot quickly finds the top label, remembers that position to replenish the label end-effector, and does not compress the labels.

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