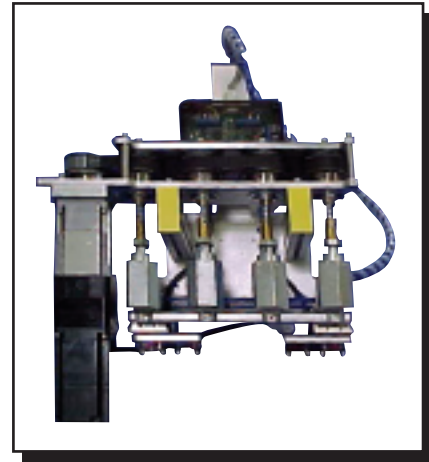




AUTOMATE

AUTOMATION SOLUTIONS



Workcell Solutions

AEC has standardized workcell solutions that increase the value of molded parts at the point of manufacture, the injection molding machine. Maintaining part integrity and orientation through the beside-the-press operations increases yields, minimizes inventories, assures part quality, and reduces direct labor and facility costs. AEC specializes in beside-the-press injection molding workcell solutions for the following applications:

- *Integrated Vision Inspection*
- *Primary Packaging*
- *Insert Molding*
- *In-Mold Decorating*
- *Assembly*
- *Application Specific Tooling*

Benefits

- *Lower operating costs, increased molding stability, and higher productivity*
- *Application-specific robotic solutions*

Application Specific Tooling

Tooling is an integral component of every robotic solution. From complex insert loading end-of-arm tools to shuttles and degators designed for specific parts, AEC applies strict engineering design guidelines and practices.



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**SYSTEMS
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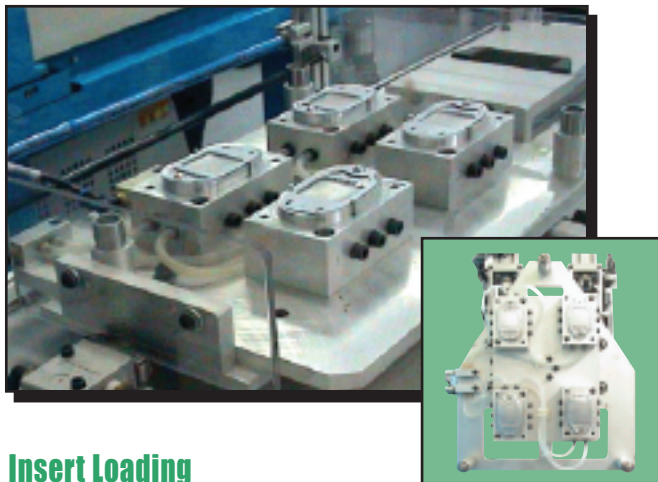


SERVICE



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Insert Loading

Manually placing mechanical inserts, such as fasteners, clips, rods, and electrical contacts into horizontal and vertical molds, is often dangerous and cycle-time prohibitive. Automatically presenting the inserts and coordinating their placement into the mold with the part removal robot saves valuable time and reduces the potential for expensive mold damage.



In-Mold Decorating

The automatic introduction of pre-formed appliqué, pre-printed labels, and films directly into the mold increases the overall part yield when compared to secondary printing and labeling operations. Model and color variations are possible without costly changeover time or interruption to the overall molding process. AEC can provide the complete solution including materials and equipment, assuring the product integrity and a seamless process.



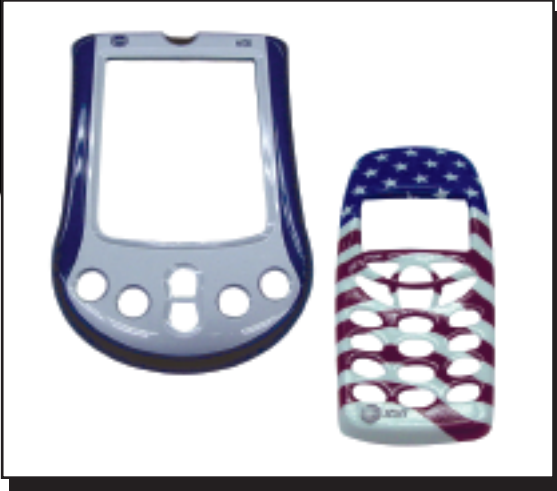
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Primary Packaging

Box and tray loading, part stacking, and bagging can be expensive secondary operations. Introducing the parts directly to their primary packaging at the molding operation reduces this need for secondary part orientation and handling.

Integrated Vision Inspection

Cosmetic defects, dimensional attributes, and key part features are detected before advancing from the molding process to the next operation, eliminating the buildup of "bad part" inventories. Consistent and reliable process verification is achieved without the introduction of non-value added labor.

Features

- Integrated robot/workcell vision inspection
- Compact, smart cameras and lighting
- Plastics processing solutions
- Expandable to multiple cameras



Vision Inspection: Insert Molding

- Verification of insert presence in part
- Inspection of critical part features
 - Diameter of through hole
 - Snap and support bosses
- Measurement of insert position
- Verification of insert type



Vision Inspection: Cell Phone IMD

- Verification of over-molded appliqué
- Dimensional inspection of window
- Visual inspection of lens area
 - Inspect for contaminates
 - Inspect for over-mold
- Verification of pre-printed logo/position



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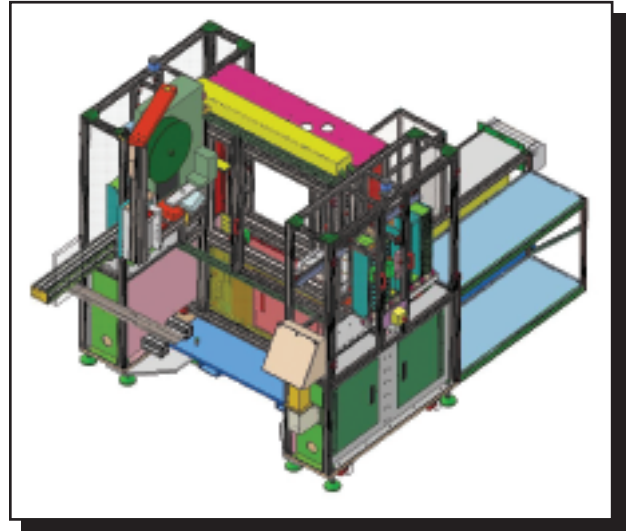


Articulating Robots

AEC is a certified partner integrator of ABB articulating robots. ABB leads in articulating robot-based automation with more than 100,000 robots supplied worldwide. ABB robots are known for superior performance in terms of speed, accuracy, repeatability, reliability, flexibility, reach and payload. Available in many configurations including: floor mounted, wall mounted and ceiling mounted, robots from ABB promote optimum productivity. Whatever the application, whether machine tending, picking, palletizing, simple assembly or a combination of these, ABB is equal to the challenge.

Applications

- Simple assembly
- Multi-station machine tending
- Trimming/Deburring
- Low overhead obstruction applications



Assembly

Pre-engineered assembly modules are integrated into the workcell to perform value-added tasks such as flex-and-close operations, small part assembly, ultrasonic welding, degating, and heat staking. Increasing the utilization of the part removal robot with integrated controls during the molding cycle improves operation efficiency and process stability.

Integrated workcell controls and modular application solutions provide ease of use and maximum equipment utilization. We have the experience and skills to create turnkey workcell solutions that help plastic processors excel in their markets.



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