

Plastics

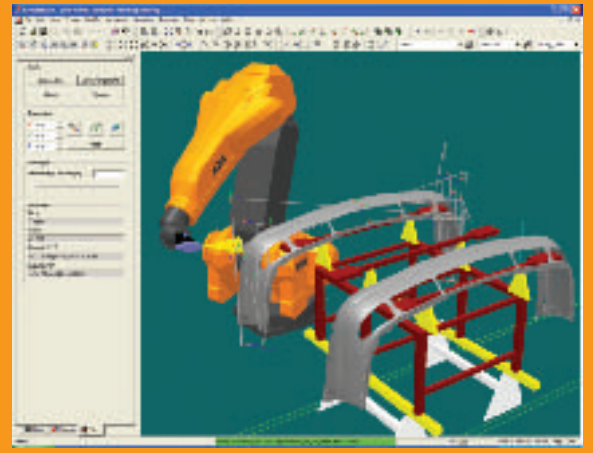
Robot based automation for the plastics industry



The **heart** of Robotics



Flexible 6-axis robots offer you the competitive edge



Easy-to-use, 6-axis robots are more accessible than ever to plastics molders. With their built-in flexibility, these machines are the perfect complement to traditional 3-axis linear gantry automation.

tion of greater operational flexibility is surely the sharpest antidote. At ABB we're convinced that our state-of-the-art robots will become the benchmark in addressing the disparate demands of industrial and consumer goods.

Robot based automation will ensure a host of benefits to the plastics industry, ranging from higher quality parts through improved equipment uptime, faster cycle times, more predictable production flow all the way to reduced employee turnover. In short, flexible automation gives you the edge you need to thrive in today's highly competitive climate.

Lower your fixed costs

Traditional, fixed automation is time-consuming and costly, opening up fresh possibilities for ABB's broad range of 6-axis robots. Catering to every conceivable need, these machines perform a variety of tasks during the production cycle. Which means you can look forward to a far more flexible and cost-efficient operation.

The trend points to 6-axes

We live in a fast world. The automotive, mobile phone, computer and home electronics industries are flooding the market with novelties. Faced with such breathtaking product turnover, the introduc-

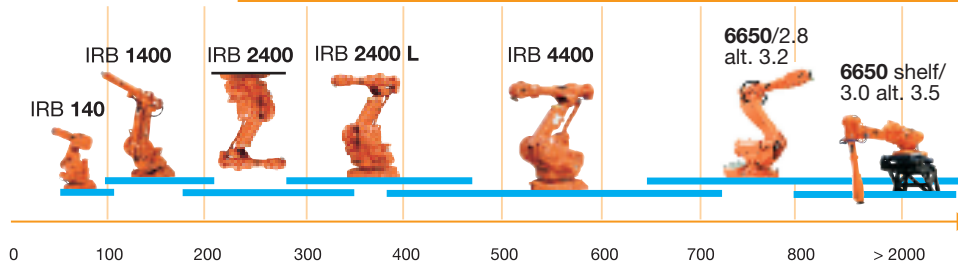




ABB robots are ideal for the assembly of clips onto injection-molded parts. Here the job is carried out on an auto exterior part.

6-axis robots are quickly adapted to different applications and product design variants. These machines are perfect for everything from insert loading to assembly and packaging.

Clamping force Tonne



ABB's wide range of plastics robots can handle many of the tasks involved in and around injection mold machines, regardless of required cycle time or the size of the machine.

–IRB 140 is verified for clean room class 10 US Federal standard or 4 ISO 14644-1. All other robots are verified for clean room class 100 US Federal standard or 5 ISO 14644-1.

ABB robots comply with IP67 in their entirety.

Complete range of robots

ABB's offer includes everything from small, fast and cost-efficient robots for the production of smaller items in large volumes to powerful, shelf-mounted machines with long reach and high handling capacity for heavy parts production.

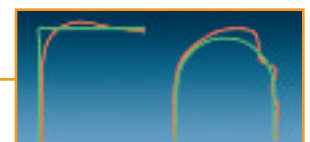
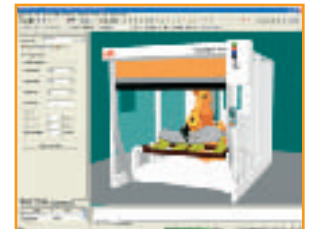


One-stop shopping

ABB has gone to great lengths to secure complete automation solutions for our customers. By developing a global partner network of highly qualified original equipment suppliers and system integrators, coupled with our own system capability, we've made it easier for plastic molders all over the world to get complete shop-floor automation from just the one supplier. One, moreover, that takes turnkey responsibility for the entire installation!

Here's a closer look at some of the technology:

- Easy programming thanks to the new **FlexPendant's** graphical interface.
- **RobotWare Plastics**. The optimal tool to operate and program robots for injection molding applications. Integrated Euromap 12, 67 and the SPI interface.
- **RobotWare Dispense**, our unique feature for programming and achieving optimum bead appearance and cycle time. Gives you the desired result in the shortest possible time.
- **RobotWare Paint**. Helps you optimise programming and operation of painting applications.
- **RobotStudio**, with its PowerPacs for offline simulation of applications such as cutting and painting.
- **MultiMove**. Run 4 robots on one controller!
- The ABB Dynamic Model with **QuickMove** and **TrueMove**. Optimizes robot path accuracy, acceleration and speed. Cuts programming and cycle time.



Solutions for your post processing applications



Part unloading and post processing, including printing, assembly and quality control using a modularized and easily exchangeable set of production cells.

The shelf-robot IRB 6650S in action, inserting metal reinforcements into the mold and extracting a large automotive interior part, while also adding two rivets and two metal clips to the part.

In-mold decoration is increasingly used in injection molding of interior parts. Laser cutting is an excellent trimming method for the part.

Together with our partners, we provide cutting-edge automation solutions for most manufacturing processes in the plastics industry. Today, our 6-axis robots often work together with linear 3-axis gantries to achieve the best results. And thanks to ABB robots, downstream automation really does cover the entire process - all the way from mold machine, via a range of post processing applications, to shipment of the finished part.

Injection molding

Our robots are ideal for the entire spectrum of mold machines - small, medium-size and heavy-duty. A glance at the typical applications reveals true robot versatility: insertion of parts in the mold, extraction as well as a wide variety of post-process applications such as cutting, gluing, assembly and quality control. Since these machines can be floor-mounted, mounted on pedestals or shelf-mounted, you still retain maximum flexibility. You'll also find extended cycle time simply extends the performance of our 6-axis robots - to a perfect blend of accuracy and consistency.

Blow molding

6-axis robots lend themselves superbly to automating a variety of processes around blow molding machines. Examples: part extraction and assembly of automobile gas tanks, extraction and palletizing of PET bottles as well as cutting and finishing.

Cutting and finishing

Yet another area where ABB more than makes the cut. Our 6-axis robots are ideal for complex cutting operations using laser, water-jet, ultrasonic and traditional mechanical equipment. To this end, ABB's Mechanical Cut PowerPac ensures easy program-

ming and great performance. When it comes to finishing, our machines provide the repetitive precision required for consistent parts quality.

Gluing and dispensing

Manual gluing and dispensing is a very sticky operation. Not so with ABB's perfectly coordinated robot motion and adhesive dispensing with conveyor tracking. High precision and consistent robot-based gluing/dispensing not only enhances parts quality, but reduces cycle time, too. To this end, ABB's RobotWare Dispense ensures easy programming and optimal operation.

Flaming and painting

With our robots, designed for a wide variety of painting operations, you can make hazardous manual work a thing of the past, while also reducing paint consumption and increasing quality. In addition,

the Paint PowerPac - our tool for programming painting applications - is all you need for a dramatic reduction in installation and programming time. RobotWare Paint, our dedicated software package ensures optimum painting performance - time after time.

Assembly

ABB's robots are increasingly used for welding of details and clips assembly. The result? High, consistent parts quality and short cycle times.

Packing and palletizing

ABB can draw on extensive experience from a number of industries. Our robots can handle individual parts, packing smaller items into boxes, or palletize larger parts. And thanks to PickMaster's integrated vision system, allowing you to control 8 robots on multiple conveyors, packing has never been swifter.

Service

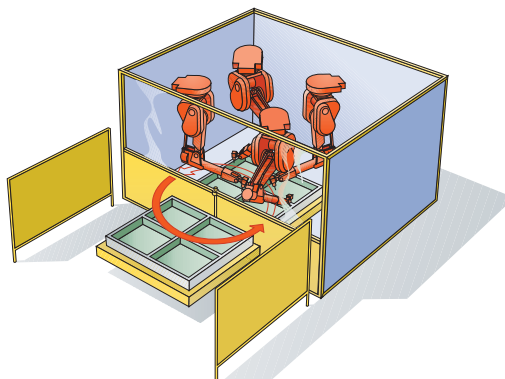
With 24-hour support from a field service network of 1 500 engineers in 35 countries, plus service centers in 25 countries, you could say we're always at your service. On top of that, our Performance Service Contracts prolong the service life of your installation, while our Productivity Improvement Projects constantly keep your installation up-to-date, ensuring that your robot cell operates optimally.



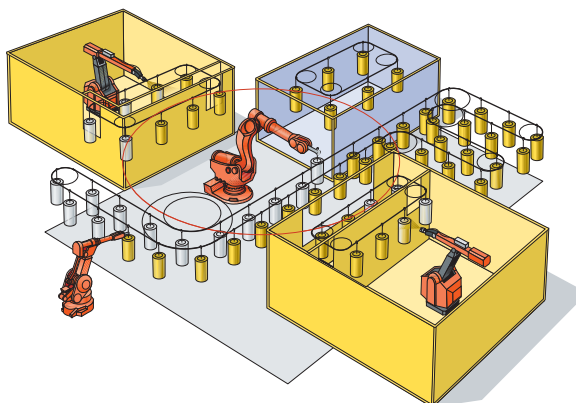
RobotWare Dispense software for gluing and sealing applications speeds up the programming of new parts. Cycle-time and application quality is also optimized.



A fully automated sequence where PET bottles arrive at the robot stations by way of the blow-molding machine. 4,000-60,000 bottles per hour are handled and palletized. The full pallets are then shipped to the filling factories.



Waterjet cutting has obvious advantages in dealing with complex products –for example finishing of thermoformed parts –where speed and path accuracy are required. A cutting box is stable and reliable, providing the basis for the high degree of precision needed.



ABB's new flexible paint line concept consists of two independent booth units, including a paint robot for the core painting operations. Through production batches, several layers –including flash off and oven curing –can be achieved in automatic running mode.

Easy-to-use

At ABB, we funnel considerable resources into creating smart software solutions for easy programming and intuitive operation on the shop floor.

Off-line simulations for plastics

RobotStudio, our advanced simulation software, lets you build and simulate cells on your PC. Visualize and verify solutions, avoid collisions along the programmed path, tailor cycle time to production and, while you're at it, prepare programming for the next part to reduce changeover time. In short, run the entire production on your computer before you go live!

RobotWare Plastics interface

This new graphical interface on the ABB FlexPendant makes working on the shop floor so much smoother. Now you can look forward to greater efficiency in terms of installation, set-up and actual production.

The word to best describe this novel solution is easy. With its colorful screen, logical and simple visual language, the graphical user interface makes programming easy, operation easy, error avoidance easy and information access easy!



Our customized plastics interface on the FlexPendant makes life on the shop floor so much easier, both in terms of programming and operation.





The heart of Robotics

Over the last three decades, ABB has remained committed to building and strengthening relationships with customers, integrators and partners throughout the world.



Underpinning this commitment is our belief that at the heart of innovative robotics lie mutual trust and confidence. This belief has helped us to achieve clear leadership in a demanding field. Today, in the automotive, metal fabrication, foundry, consumer and plastics industries our solutions help to pave the way for optimised production. Across the world, our global network of sales and service centres, and our carefully selected partners, make ABB's products, systems and services available wherever they are needed.

Welcome to ABB – The heart of Robotics



www.abb.com/robotics