Picking and Packing Robots

Meeting consumers’ expectations
Take your pick!

You want the best robot there is. But best doesn’t always mean what is best for the rest of the world. You want what’s best for your production needs.
As those of you manufacturing in the consumer industries know only too well, today's customers expect quality, choice and instant availability. The constant demand for more complexity and more variety without increasing inventory can only be met by more flexibility – especially in the assembly and despatch departments.

ABB’s long term involvement in the consumer goods industries has enabled us to develop equipment and software to give you that flexibility; anywhere you need it – handling food in sterile areas, electronic components in a Clean Room or plain old engine components.

Our IRB 340 looks like a sci-fi spider at rest – it’s just a blur when working at 150 picks per minute. The IRB 140 looks like just a miniature robot until you see it picking and placing with cycle times around 0.8 secs! Take a look at them in action.

Our brainy marvel

The IRB 340 is guided by PickMaster™, highly evolved PC application software developed for high-speed picking of random objects from a moving conveyor. Using vision to recognize which objects to pick, PickMaster works through our $4Cplus controller to steer the robot. PickMaster allows exceptionally fast, easy visual GUI-style programming for new types of products to pick. It greatly simplifies and facilitates the operator’s work.

The IRB 340 handles payloads up to 2 kg and is now available in a washdown version.

Small and powerful

And check out our big little powerhouse, the IRB 140. Only 81 cm (just under 32 inches) tall, with an astonishing reach for one so short (81 cm), it can handle a payload of up to 5 kg. It is very fast and accurate with cycle times of 0.85 secs (0.77 secs for the IRB 140T) and consistent placement within 0.03 mm.

Like the IRB 340, the IRB 140 is guided by Pickmaster through the highly configurable $4Cplus robot controller, that you’ll find easy to program and integrate.

Just call. We’re eager to answer any and all of your questions on industrial robots. After all, we sold over 100,000 of them worldwide.
We believe robots are an important ergonomic investment for us. These robots can work continuously in low temperatures, thus freeing people for other tasks. Which improves efficiency as well as quality.

A cold solution
A dairy in Scandinavia installed two IRB 340s for picking and packing cheese. In this solution, ergonomic concerns were among the main reasons for investing in automation. With temperatures inside the packaging area around +5 degrees centigrade, the company’s president had this to say: “We believe robots are an important ergonomic investment for us. These robots can work continuously in low temperatures, thus freeing people for other tasks. Which improves efficiency as well as quality.”

In this installation, one of two robots is mounted in an aseptic area, which makes hygiene a primary concern. Since the manipulator’s detachable gripper comes into direct contact with the cheese, it is thoroughly cleansed at least twice a day. This robot
lifts and packs cheese bits into vacuum-sealed packaging. The other robot packs the vacuum-sealed cheese bits into consumer packages of eight bits each.

**Big little impact**

And our mighty little IRB 140, also available with IP 67 protection and in a Clean Room version, is earning plenty of customer approval and appreciation. Satisfied customers think of it as powerful, fast, adaptable and easy to integrate into the packaging line. As the plant manager in a large US production facility puts it: “This baby is real easy to mount at different angles. And it’s got that neat bend-back action of the upper arm, which gives it its long reach. Nice design, too. Exactly what you think a robot should look like.”

If you opt for investing in one, we’ll make sure you get precisely the right model to suit your specific production needs. Then we’ll guide you all the way to smooth, trouble-free operation.
Technology talking

Speed and performance
The superior performance (speed 10 m/s, acceleration 100 m/s², perfect precision) of the IRB 340 is made possible by the manipulator's light, stiff parallel arm structure and top-of-class motion control by the S4Cplus controller. You'll appreciate the 150 picks per minute (depending on object weight) this robot delivers. TrueMove and QuickMove functions give precise pick-and-place action even at top speeds, allowing you to take advantage of your robot's optimum performance. The robust vision system is indifferent to changing environments, such as lighting conditions, reflections, objects touching. The IRB 340 wash-down version has a special paint finish, corrosion-resistant material, sealed components and a specially designed axis 4 with slide bearings, for easy cleaning with low-pressure water and detergent.

Adaptability
Your PickMaster easily adapts to changing production needs. We're talking minutes for programming a new product. And thanks to vision capability, it can pick any object from a moving conveyor without having to use an inflexible feed solution that prepares products for picking and packing.

IRB 140 can be mounted on floor, wall or overhead at any required angle.

**Ease and flexibility**

PickMaster flexibility allows optimal adaptation to your specific production layout – you can mount the camera wherever you wish object recognition to occur, while the robot can be mounted wherever you wish the actual picking to take place. A single camera can serve more than one robot. For you this means less complex peripherals. And your operator can make quick changeovers from one production sequence to another simply by selecting a different application program.

**Multiple options with superior precision**

As for our little powerhouse, the IRB 140, its QuickMove and TrueMove functions ensure smooth precision all the way. Available with IP 67 protection, the IRB 140 can be mounted on floor, wall or overhead at any desired angle, using a minimum of space at optimum efficiency. The white-finish Clean Room version is especially suited for environments with stringent cleanliness standards. With a cycle time of 0.77 seconds with our IRB 140T, you get outstanding throughput for the high 5 kg payload. All your packaging needs considered, you may find the IRB 140 precisely the type of all-around robot you’re looking for. So, please, call us.
**Products for Picking and Packing**

IRB 140

Compact pick-and-place robot able to place components to within 0.03 mm, with a 5 kg payload capability. Long 810 mm reach of 5th axis, big 5 kg payload capability. Floor, wall, or ceiling mountable at any angle, for optimum reach and efficiency. Available in Clean Room version, and with IP 67 protection.

IRB 340

Industrial picking robot. High pick-and-place speed of more than 150 pieces a minute, with a 2 kg payload capability. The sealed (IP 67), corrosion-resistant wash-down version, designed especially for clean-intensive environments, can be cleaned using detergent, and water at low pressure.

The ABB Robot Range

The versatility built into all ABB robots makes them very suitable for picking and packing operations. This versatility enables them to load, move or stack a wide variety of goods, for example pallets. Depending on model, they have payloads of up to 60 kg and a reach up to 2.7m. And they can place consistently to within 0.1 mm.

Data sheets available for all above products
PickMaster2.0™

A PC-based programming tool, as well as the operator’s tool for running the picking cell, PickMaster integrates any of these robots, the S4Cplus controller, conveyor tracking and vision recognition system in a pre-engineered solution. It includes comprehensive software and hardware kits for fast and easy installation. Instantaneous vision recognition pinpoints randomly arranged objects and ensures precise position processing. PickMaster features intuitive, process-designed visual configuration, calibration and vision modeling wizards. Lines are programmed in a few hours, new products in minutes. Once you’re up and running, you have total application control and information access from a single screen. To get the best, fine-tuned results, override functions are available for online adjustments.

Conveyor tracking

WebWare™

Using your existing plant network, WebWare allows authorized users, local and remote, to receive real time data for plant management. It also allows for remote diagnosis of operating problems and downloading of programs produced elsewhere.

RobotStudio™

A Windows based PC application for programming, simulation and training. New products and new product mixes can be programmed off-line. Programs can be tested and simulated to provide optimum cycles and to minimize downtime.

S4Cplus industrial robot controller

Controls one or more robots. This reliable, market-leading controller features a dynamic, model-based control system, including QuickMove™ for maximum acceleration and short cycle times, and TrueMove™ for precise placement and path-following.

Data sheets available for all above products
We’re close

ABB has comprehensive global presence, so wherever you may be located, we’re close to you. For you, being close to us of course means being close to the products and services we provide. Ultimately what it really means is that your product and service needs can become our most vital concern.

Year-round service
Take service agreements and systems care. Our service agreement portfolio includes complete maintenance (which includes preventive maintenance), service availability, warranty extension, technical support in person and via telephone, system care, plus the zillion extra little things we do to help you make sure your robot system works smoothly. Day in day out. Year-round. So you have peace of mind.

Field assistance
Our field-service engineers are seasoned pros who will help you with things like off-line programming and process validation. They’ll visit you regularly, come to see you whenever you need them. You can count on it.

Hands-on training
The training centers we run worldwide are staffed by full-time professional instructors, offering you and your personnel hands-on training backed by years of know-how and expertise. Contact us and we’ll give you all the details.

A worthy product
We believe if a picture is worth a thousand words, so is the product it depicts. We’ve sold more than 100,000 fully-automated industrial robots worldwide, including the very first one ever. So why not contact us for a closer look and demonstration. And maybe even a few more words about the robot system of your choice.

▶ www.abb.com/robotics

Hands-on training by seasoned professional instructors
Take your pick!
ABB Flexible Automation can significantly improve your manufacturing process through our extensive range of products, systems, and service solutions.