

Robotics

# Product Range

## Improving productivity, quality and workplace safety

Power and productivity  
for a better world™

**ABB**

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# 10 Good reasons to invest in robots

Manufacturers are under increasing pressure as a result of low-cost competition, stricter environmental legislation and falling skill levels within industry. The need to improve productivity levels, quality and safety for better business, and adopting sustainable manufacturing practices presents a cost-effective route to boost economic, environmental and general plant performance.

## 10 Good reasons to invest in robots

1. Reduce operating costs
  2. Improve product quality and consistency
  3. Improve quality of work for employees
  4. Increase production output rates
  5. Increase product manufacturing flexibility
  6. Reduce material waste and increase yield
  7. Comply with safety rules and improve workplace Health & Safety
  8. Reduce labor turnover and difficulty of recruiting workers
  9. Reduce capital costs (inventory, work in progress)
  10. Save space in high value manufacturing areas



# Improving productivity, quality and workplace safety



In today's highly competitive world markets industrializing economies are having to grow fast to meet their own market demands. This means that manufacturing industries are under increasing pressure not only from lower cost competitors, but also from competitors in the developed world that have invested more in their manufacturing sectors and productive capacity, to sharpen their competitiveness.

A vibrant manufacturing sector has the potential to grow a nation's gross domestic product and increase its gross value-add to benefit all citizens, not just those working in the sector.

To succeed on world markets, manufacturers have to build product and process competitiveness through their technological strengths. They achieve this by investing in manufacturing systems, the benefits of which more than offset the four or five-to-one labor cost advantage typically held by the lower cost economies. Investment in robot-based automation is proven to deliver many benefits and enable manufacturers to compete more successfully in world markets.

## Benefits of automation

Robot-based automation delivers a whole series of proven benefits. (see **10 Good reasons to invest in robots**). Many industries, in particular the more traditional sectors such as engineering and food, face the problem of an aging work force and the difficulties of attracting new, younger employees. The increased use of robotics provides a solution by reducing the numbers of people required with traditional skills and harnessing the skills, such as IT and computer operation, that are commonly found among the younger generation.

## Increased productivity

Robots allow you to reduce your unit manufacturing cost by producing more while using less. Increased yield produced for a given resource input is achieved by ensuring consistency of process and quality. Automation removes the need for humans in the more mundane and repetitive tasks in manufacturing – freeing them to work on other tasks where their decision making skills and flexibility will provide a better return against their costs.



### Consistently high product and process quality

The flexibility of robot automation allows output to increase and decrease as demand fluctuates, for example, by running lights-out shifts during weekends for limited additional cost. Robot-based automation speeds up switchover between products allowing consistent quality, shorter runs and quicker, more frequent deliveries which ultimately results in better customer service. The repeatability and consistency of automation allows control of processes, through tighter tolerances, keeping product quality levels high and costs minimised.

### Energy efficiency

Unlike their human counterparts, robots can operate in unpredictable environments and in extreme temperatures. Reducing the need to condition operating environments lowers energy costs. Robot-based automation often requires less manufacturing space, which can expand compact facilities and produce more output from existing resources, eliminating the need to expand. Robots are proven to reduce scrap and rework and improve yield, consequently reducing energy bills.

### Improved workplace conditions and safety

Automated systems can replace humans in hazardous areas and dangerous operations. Highly repetitive tasks, where a lapse in concentration affects costs and quality can be automated leaving the more skilled activities to humans and improving their job satisfaction at the same time. Some processes require skills which can be difficult to find and retain, particularly as the workforce ages. Robots can be treated as an added resource, particularly for the more repetitive tasks.

Source: The above text is adapted from a report by The Engineering and Machinery Alliance published on September 27, 2010

# Customer Service

## Providing you with peace of mind

ABB's global service presence is unmatched with more than 100 service locations spread across 53 countries. More than 1,300 dedicated specialists are on hand to provide service and support for you and your robots 24 hours a day, seven days a week, 365 days a year. Anytime and anywhere you need us, ABB will be there. Have a closer look at our services and contact our local and experienced staff at your leisure.

### Securing your productivity

#### Service agreements



No production plants are identical and neither are their service requirements. It is why we have built in full flexibility into ABB Robot Care, where you make your own choices from a variety of available services. Naturally there is always an expert ABB advisor ready to help you select.

### Boosting your performance and productivity

#### Installation and commissioning



Installation and commissioning of ABB products and systems on-site is one of our core competencies. Our simulation tool, RobotStudio®, helps reduce start-up time and provides high-performance programs that pay off during the entire lifecycle of your robots.

### Helping you utilize your robot's full potential

#### Training



The ease of use of ABB robots is unmatched and still there are many benefits when using advanced functions. To use your robots to their full potential it is important to keep your skilled personnel up-to-date on the latest developments. We offer your operators specialized training that help reduce production costs and exploit the full potential of your systems.

### The right part, at the right time, in the right place

#### Spares and consumables



ABB provides original spares and consumables which will maintain your robot in top condition during its entire lifecycle, keeping your operation running. As your global one-stop supplier of high-quality new, repaired and exchange parts and spare part kits with guaranteed availability, we are by your side ready to deliver at all times.



To contact your local ABB Service Center visit [www.abb.com/robotics](http://www.abb.com/robotics) and select your country.

### Supporting your maintenance needs throughout the robot lifecycle

#### Maintenance

Scheduled preventive maintenance reduces the likelihood of a failure or component deterioration. Maintenance is carried out regularly or based on robot condition. Preventive maintenance consists of regular inspections and maintenance plus predefined component replacements.



### Our service teams are on call 24/7 providing the support you need

#### Repairs

With an installed base of more than 250,000, we know ABB robots and are able to help you no matter the type, model or age of the robots. We will help you maximize your productivity, and that is why ABB Robotics Customer Service is shifting to predictive services like remote services. Remote Service is changing the world from "break and fix" services into extremely fast, professional and predictive service.



### Getting more from your robot investment

#### Extensions, upgrades and retrofits

An ABB robot's lifecycle sometimes exceed 20 years. Lifecycles can be extended through service retrofits and reconditioning activities. Product and process equipment upgrades also improve the performance of older equipment. The result is a significant improvement in safety, reliability, quality and performance.



### Count on ABB to quickly revitalize your robot system

#### Replacements

ABB provides fast and reliable solutions when your robot controller or robot arm needs to be replaced or when you prefer to standardize your installed systems. Replacement is done with proper preparation, pre-programming and program simulation. All our robots are delivered painted in ABB Graphite White but we can, of course, deliver your robot in whatever color you prefer.



Not all services may be available in your region, please contact your local ABB Service Center.

# Robots

## IRB 120

### IRB 120 and IRB 120T

Certified by IPA



<b>Main applications</b>	<b>Load (kg)</b>	3
Assembly	<b>Reach (m)</b>	0.58
Machine Tending	<b>Protection available</b>	IP30, Cleanroom class 5 certified by IPA
Material Handling		
Packing/Dispensing		
<b>Mounting</b>	Floor, wall, inverted and any tilted angle	
<b>Position repeatability (RP) (mm)</b>	0.01	

#### Working range



## IRB 1200

### IRB 1200-7/0.7 and IRB 1200-5/0.9



<b>Main applications</b>	<b>Load (kg)</b>	7	5
Material Handling	<b>Reach (m)</b>	0.7	0.9
Machine Tending	<b>Protection available</b>	IP40, IP67	IP40, IP67
	<b>Mounting</b>	Any angle	Any angle
	<b>Position repeatability (RP) (mm)</b>	0.02	0.025

#### Working range 1200-7/0.7



#### Working range 1200-5/0.9



## IRB 140

### IRB 140 and IRB 140T

Certified by IPA



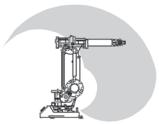
<b>Main applications</b>	<b>Load (kg)</b>	6
Arc Welding	<b>Reach (m)</b>	0.81
Assembly	<b>Protection available</b>	IP67, Cleanroom class 6 certified by IPA, Foundry Plus 2, SteamWash
Cleaning/Spraying		
Deburring	<b>Mounting</b>	Floor, wall, inverted and any tilted angle
Machine Tending		
Material Handling	<b>Position repeatability (RP) (mm)</b>	0.03
Packing		

#### Working range



## IRB 1410

### IRB 1410

<b>Main applications</b>	<b>Load (kg)</b>	5
Arc Welding	<b>Reach (m)</b>	1.44
	<b>Protection available</b>	
	<b>Mounting</b>	Floor
	<b>Position repeatability (RP) (mm)</b>	0.02
	<b>Working range</b>	
		



## IRB 1520

### IRB 1520ID

<b>Main applications</b>	<b>Load (kg)</b>	4
Arc Welding	<b>Reach (m)</b>	1.50
	<b>Protection available</b>	IP40
	<b>Mounting</b>	Floor, inverted
	<b>Position repeatability (RP) (mm)</b>	0.05
	<b>Working range</b>	
		



## IRB 1600

### IRB 1600-6/1.2 and 10/1.2

<b>Main applications</b>	<b>Load (kg)</b>	6/10
Arc Welding	<b>Reach (m)</b>	1.2
Assembly	<b>Protection available</b>	IP54/IP67 (option), Foundry Plus 2
Cleaning/Spraying	<b>Mounting</b>	Floor, wall, tilted, inverted, shelf
Extraction	<b>Position repeatability (RP) (mm)</b>	0.02/0.02
Machine Tending		
Material Handling		
Packing		
	<b>Working range</b>	
		



# Robots

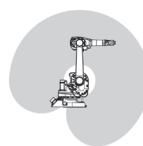
## IRB 1600

IRB 1600-6/1.45 and 10/1.45



<b>Main applications</b>	<b>Load (kg)</b>	6/10
Arc Welding	<b>Reach (m)</b>	1.45
Assembly	<b>Protection available</b>	IP54/IP67 (option), Foundry Plus 2
Cleaning/Spraying	<b>Mounting</b>	Floor, wall, tilted, inverted, shelf
Cutting	<b>Position repeatability (RP) (mm)</b>	0.02/0.05
Extraction		
Machine Tending		
Material Handling		
Packing		

### Working range



## IRB 1600

IRB 1600ID



<b>Main applications</b>	<b>Load (kg)</b>	4
Arc Welding	<b>Reach (m)</b>	1.5
	<b>Protection available</b>	IP40
	<b>Mounting</b>	Floor, wall, inverted
	<b>Position repeatability (RP) (mm)</b>	0.02

### Working range



## IRB 2400

IRB 2400-10/16



<b>Main applications</b>	<b>Load (kg)</b>	12/20
Cutting/Deburring	<b>Reach (m)</b>	1.55
Grinding/Polishing	<b>Protection available</b>	IP54/IP67 (option), Foundry Plus
	<b>Mounting</b>	Floor, inverted, wall (10kg)
	<b>Position repeatability (RP) (mm)</b>	0.03

### Working range



## IRB 2600

IRB 2600-12/1.65 and 20/1.65

<b>Main applications</b>	<b>Load (kg)</b>	12/20
Arc Welding	<b>Reach (m)</b>	1.65
Assembly	<b>Protection available</b>	IP67, Foundry Plus 2
Cutting	<b>Mounting</b>	Floor, wall, tilted, inverted
Dispensing	<b>Position repeatability (RP) (mm)</b>	0.04/0.04
Machine Tending		
Material Handling		

### Working range



## IRB 2600

IRB 2600-12/1.85

<b>Main applications</b>	<b>Load (kg)</b>	12
Arc Welding	<b>Reach (m)</b>	1.85
Assembly	<b>Protection available</b>	IP67, Foundry Plus 2
Cutting	<b>Mounting</b>	Floor, wall, tilted, inverted
Dispensing	<b>Position repeatability (RP) (mm)</b>	0.04
Machine Tending		
Material Handling		

### Working range



## IRB 2600

IRB 2600ID-8/2.00

<b>Main applications</b>	<b>Load (kg)</b>	8
Arc Welding	<b>Reach (m)</b>	2.00
Dispensing	<b>Protection available</b>	IP67 (base, lower arm and wrist) IP54 (axis 4)
Machine Tending		
Material Handling	<b>Mounting</b>	Floor, wall, tilted, inverted
	<b>Position repeatability (RP) (mm)</b>	0.02

### Working range



# Robots

## IRB 2600

IRB 2600-15/1.85



<b>Main applications</b>	<b>Load (kg)</b>	15
Arc Welding	<b>Reach (m)</b>	1.85
Assembly	<b>Protection available</b>	IP67 (base, lower arm and wrist)
Dispensing		IP54 (axis 4)
Machine Tending	<b>Mounting</b>	Floor, wall, tilted, inverted
Material Handling	<b>Position repeatability (RP) (mm)</b>	0.03

### Working range



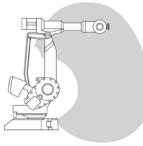
## IRB 4400

IRB 4400-60 and 4400L-10



<b>Main applications 4400-60</b>	<b>Load (kg)</b>	60	10
	<b>Reach (m)</b>	1.96	2.55
Cutting/Deburring	<b>Protection available</b>	IP54 (std), IP67, steam washable (Foundry Plus)	IP54 (std), IP67, Foundry Plus
Glueing/Sealing			
Grinding/Polishing	<b>Mounting</b>	Floor	Floor
<b>Main applications 4400L-10</b>	<b>Position repeatability (RP) (mm)</b>	0.19	0.05
Cutting/Deburring			
Die Spraying			
Glueing/Sealing			
Grinding/Polishing			
Machine Tending			
Material Handling			

### Working range 4400-60



## IRB 4600

IRB 4600-20/2.50



<b>Main applications</b>	<b>Load (kg)</b>	20
Arc Welding	<b>Reach (m)</b>	2.50
Assembly	<b>Protection available</b>	IP67, Foundry Plus 2
Dispensing	<b>Mounting</b>	Floor, tilted, inverted
Laser Welding	<b>Position repeatability (RP) (mm)</b>	0.05
Machine Tending		
Material Handling		
Measuring		
Packing/Palletizing		
Press brake tending		

### Working range



## IRB 4600

### IRB 4600-40/2.55

<b>Main applications</b>	<b>Load (kg)</b>	40
Assembly	<b>Reach (m)</b>	2.55
Dispensing	<b>Protection available</b>	IP67, Foundry Plus 2
Extraction	<b>Mounting</b>	Floor, tilted, inverted
Laser Welding	<b>Position repeatability (RP) (mm)</b>	0.06
Machine Tending		
Material Handling		
Measuring		
Packing/Palletizing		
<b>Working range</b>		
		



## IRB 4600

### IRB 4600-45(60)/2.05

<b>Main applications</b>	<b>Load (kg)</b>	45/60
Assembly	<b>Reach (m)</b>	2.05
Deburring	<b>Protection available</b>	IP67
Dispensing	<b>Foundry Plus 2, Foundry Prime 2, (valid for 60 kg variant)</b>	
Extraction		
Machine Tending	<b>Mounting</b>	Floor, tilted, inverted
Material Handling	<b>Position repeatability (RP) (mm)</b>	0.05/0.06
Measuring		
Packing/Palletizing		
<b>Working range</b>		
		



## IRB 6620

### IRB 6620

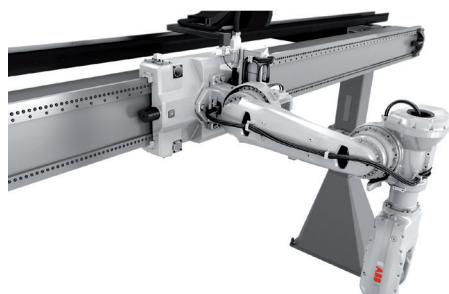
<b>Main applications</b>	<b>Load (kg)</b>	150
Assembly	<b>Reach (m)</b>	2.2
Cleaning/Spraying	<b>Protection available</b>	IP54, IP67, Foundry Plus 2
Cutting/Deburring		High pressure steam washable
Glueing/Sealing	<b>Mounting</b>	Floor, tilted, inverted
Grinding/Polishing	<b>Position repeatability (RP) (mm)</b>	0.03
Machine Tending		
Material Handling		
Packing/Palletizing		
Press Brake Tending		
Spot Welding	<b>Working range</b>	
		



# Robots

## IRB 6620

### IRB 6620LX

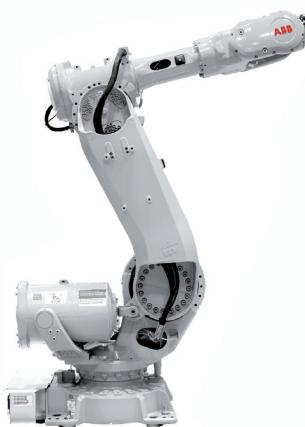


<b>Main applications</b>	<b>Load (kg)</b>	150
Machine Tending	<b>Reach (m)</b>	1.9
Material Handling		Linear axis IP66
Powertrain Assembly		5-axis robot arm Standard IP54
		Foundry Plus 2: IP67
<b>Protection available</b>		
<b>Mounting</b>		Wall, inverted
<b>Position repeatability (RP) (mm)</b>		0.05
<b>Working range</b>		

## IRB 6640

### IRB 6640-180/2.55

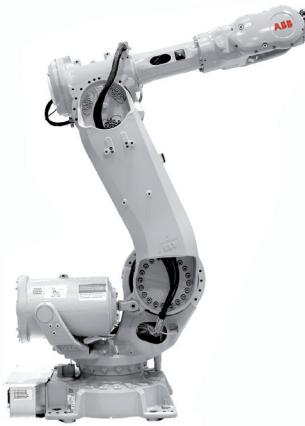
Certified by IPA



<b>Main applications</b>	<b>Load (kg)</b>	180
Cutting/Deburring	<b>Reach (m)</b>	2.55
Grinding/Polishing		IP67, Foundry Plus 2
Machine Tending		Clean room class 5 certified by IPA
Material Handling		
Spot Welding		
<b>Protection available</b>		
<b>Mounting</b>		Floor
<b>Position repeatability (RP) (mm)</b>		0.07
*LeanID option, see page 16		
<b>Working range</b>		

## IRB 6640

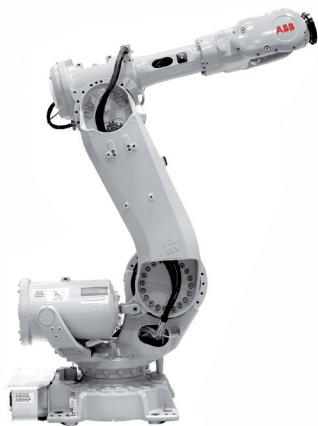
### IRB 6640-235/2.55



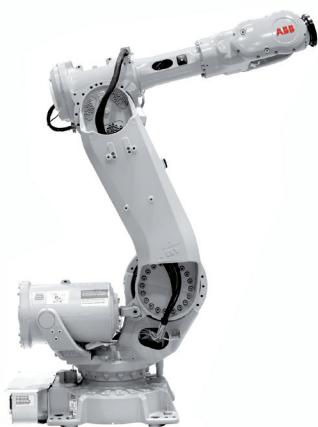
<b>Main applications</b>	<b>Load (kg)</b>	235
Cutting/Deburring	<b>Reach (m)</b>	2.55
Grinding/Polishing		IP67, Clean room class 5
Machine Tending		Foundry Plus 2, Foundry Prime 2
Material Handling		
Spot Welding		
<b>Protection available</b>		
<b>Mounting</b>		Floor
<b>Position repeatability (RP) (mm)</b>		0.05
*LeanID option, see page 16		
<b>Working range</b>		

**IRB 6640****IRB 6640-205/2.75**

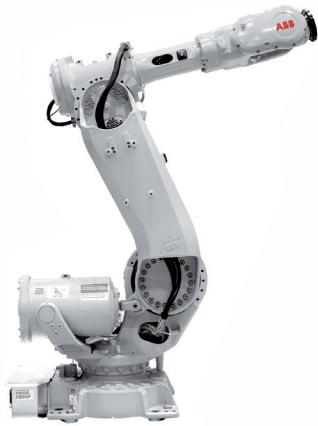
<b>Main applications</b>	<b>Load (kg)</b>	205
Cutting/Deburring	<b>Reach (m)</b>	2.75
Grinding/Polishing	<b>Protection available</b>	IP67, Clean room class 5
Machine Tending		Foundry Plus 2
Material Handling	<b>Mounting</b>	Floor
Spot Welding	<b>Position repeatability (RP) (mm)</b>	0.04
	*LeanID option, see page 16	
	<b>Working range</b>	
		

**IRB 6640****IRB 6640-185/2.8**

<b>Main applications</b>	<b>Load (kg)</b>	185
Cutting/Deburring	<b>Reach (m)</b>	2.8
Grinding/Polishing	<b>Protection available</b>	IP67, Clean room class 5
Machine Tending		Foundry Plus 2, Foundry Prime 2
Material Handling	<b>Mounting</b>	Floor
Spot Welding	<b>Position repeatability (RP) (mm)</b>	0.05
	*LeanID option, see page 16	
	<b>Working range</b>	
		

**IRB 6640****IRB 6640-130/3.2**

<b>Main applications</b>	<b>Load (kg)</b>	130
Cutting/Deburring	<b>Reach (m)</b>	3.2
Grinding/Polishing	<b>Protection available</b>	IP67, Clean room class 5
Machine Tending		Foundry Plus 2
Material Handling	<b>Mounting</b>	Floor
Spot Welding	<b>Position repeatability (RP) (mm)</b>	0.05
	*LeanID option, see page 16	
	<b>Working range</b>	
		



# Robots

## IRB 6640

IRB 6640ID-200/2.55



<b>Main applications</b>	<b>Load (kg)</b>	200
Cutting/Deburring	<b>Reach (m)</b>	2.55
Grinding/Polishing	<b>Protection available</b>	IP67
Machine Tending	<b>Mounting</b>	Floor
Material Handling	<b>Position repeatability (RP) (mm)</b>	0.07
Spot Welding		
	<b>Working range</b>	
		A circular diagram showing the working range of the robot arm, centered on the base.

## IRB 6640

IRB 6640ID-170/2.75



<b>Main applications</b>	<b>Load (kg)</b>	170
Assembly	<b>Reach (m)</b>	2.75
Cutting/Deburring	<b>Protection available</b>	IP67
Grinding/Polishing	<b>Mounting</b>	Floor
Machine Tending	<b>Position repeatability (RP) (mm)</b>	0.06
Material Handling		
Spraying		
	<b>Working range</b>	
		A circular diagram showing the working range of the robot arm, centered on the base.

## IRB 6640

IRB 6640 LeanID



\* LeanID is a special option for IRB 6640 with the DressPack partly integrated into the robot's upper arm. LeanID is intended for production with many complex wrist movements and where the need for flexibility in changing products is high. For LeanID payload decreases. See production specification for more details.

**IRB 6650****IRB 6650S-90/3.9**

<b>Main applications</b>	<b>Load (kg)</b>	90
Assembly	<b>Reach (m)</b>	3.9
Cutting/Deburring	<b>Protection available</b>	IP67, Foundry Plus 2
Grinding/Polishing		High pressure steam washable
Machine Tending	<b>Mounting</b>	Shelf
Material Handling	<b>Position repeatability (RP) (mm)</b>	n.a.
Spraying		

**Working range****IRB 6650****IRB 6650S-125/3.5**

<b>Main applications</b>	<b>Load (kg)</b>	125
Assembly	<b>Reach (m)</b>	3.5
Cutting/Deburring	<b>Protection available</b>	IP67, Foundry Plus 2
Grinding/Polishing		High pressure steam washable
Machine Tending	<b>Mounting</b>	Shelf
Material Handling	<b>Position repeatability (RP) (mm)</b>	0.13
Spraying		

**Working range****IRB 6650****IRB 6650S-200/3.0**

<b>Main applications</b>	<b>Load (kg)</b>	200
Assembly	<b>Reach (m)</b>	3.0
Cutting/Deburring	<b>Protection available</b>	IP67, Foundry Plus 2
Grinding/Polishing		High pressure steam washable
Machine Tending	<b>Mounting</b>	Shelf
Material Handling	<b>Position repeatability (RP) (mm)</b>	0.14
Spraying		

**Working range**

# Robots

IRB 6660

IRB 6660-100/3.3



<b>Main applications</b>	<b>Load (kg)</b>	100
Material Handling	<b>Reach (m)</b>	3.3
Machine Tending	<b>Protection available</b>	IP67
Press Tending	<b>Mounting</b>	Floor
	<b>Position repeatability (RP) (mm)</b>	0.10
	<b>Working range</b>	
	A schematic diagram showing the working range of the robot arm. It consists of a vertical line representing the vertical reach and a circular arc representing the horizontal reach, both originating from the floor base.	

IRB 6660

IRB 6660-130/3.1



<b>Main applications</b>	<b>Load (kg)</b>	130
Material Handling	<b>Reach (m)</b>	3.1
Machine Tending	<b>Protection available</b>	IP67
Press Tending	<b>Mounting</b>	Floor
	<b>Position repeatability (RP) (mm)</b>	0.11
	<b>Working range</b>	
	A schematic diagram showing the working range of the robot arm. It consists of a vertical line representing the vertical reach and a circular arc representing the horizontal reach, both originating from the floor base.	

IRB 6660

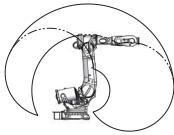
IRB 6660-205/1.9



<b>Main applications</b>	<b>Load (kg)</b>	205
Cutting	<b>Reach (m)</b>	1.9
Grinding	<b>Protection available</b>	IP67
Machining		Foundry Plus 2, incl Chip Protection
Milling	<b>Mounting</b>	Floor
Sawing	<b>Position repeatability (RP) (mm)</b>	0.07
	<b>Working range</b>	
	A schematic diagram showing the working range of the robot arm. It consists of a vertical line representing the vertical reach and a circular arc representing the horizontal reach, both originating from the floor base.	

## IRB 6700

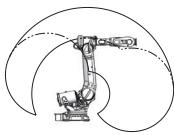
### IRB 6700-235/2.65

Main applications	Load (kg)	235
Cutting/Deburring	Reach (m)	2.65
Grinding/Polishing	Protection available	IP67
Machine Tending	Foundry Plus 2	
Material Handling	Mounting	Floor
Spot Welding	Position repeatability (RP) (mm)	0.05
Working range		
		



## IRB 6700

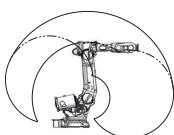
### IRB 6700-205/2.80

Main applications	Load (kg)	205
Cutting/Deburring	Reach (m)	2.80
Grinding/Polishing	Protection available	IP67, Foundry Plus 2
Machine Tending	Mounting	Floor
Material Handling	Position repeatability (RP) (mm)	0.05
Working range		
		



## IRB 6700

### IRB 6700-200/2.60

Main applications	Load (kg)	200
Cutting/Deburring	Reach (m)	2.60
Grinding/Polishing	Protection available	IP67
Machine Tending	Foundry Plus 2	
Material hH	Mounting	Floor
Spot Welding	Position repeatability (RP) (mm)	0.05
	*LeanID option, see page 21	
Working range		
		

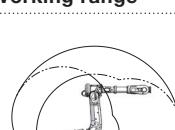


## Robots

IRB 6700

IRB 6700-175/3.05

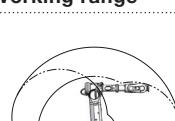


<b>Main applications</b>	<b>Load (kg)</b>	175
Assembly	<b>Reach (m)</b>	3.05
Cutting/Deburring	<b>Protection available</b>	IP67, Foundry Plus 2
Grinding/Polishing	<b>Mounting</b>	Floor
Machine Tending	<b>Position repeatability (RP) (mm)</b>	0.05
Material Handling		
Spraying		
<b>Working range</b>		
		

IRB 6700

IRB 6700-155/2.85

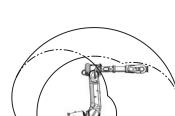


<b>Main applications</b>	<b>Load (kg)</b>	155		
Cutting/Deburring	<b>Reach (m)</b>	2.85		
Grinding/Polishing	<b>Protection available</b>	IP67		
Machine Tending		Foundry Plus 2		
Material Handling	<b>Mounting</b>	Floor		
Spot Welding	<b>Position repeatability (RP) (mm)</b>	0.05		
	*LeanID option, see page 21			
<b>Working range</b>				
				

IRB 6700

IRB 6700-150/3-20



<b>Main applications</b>	<b>Load (kg)</b>	150		
Cutting/Deburring	<b>Reach (m)</b>	3.20		
Grinding/Polishing	<b>Protection available</b>	IP67		
Machine Tending	<b>Mounting</b>	Foundry Plus 2		
Material Handling	<b>Position repeatability (RP) (mm)</b>	Floor 0.06		
Spot Welding	*LeanID option, see page 21			
<b>Working range</b>				
				

## IRB 6700

### IRB 6700 LeanID

\* LeanID is a special option for IRB 6700 with the DressPack partly integrated into the robot's upper arm. LeanID is intended for production with many complex wrist movements and where the need for flexibility in changing products is high. For LeanID payload decreases. See production specification for more details.

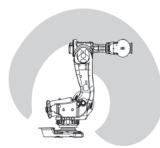


## IRB 7600

### IRB 7600-500/2.55

Main applications	Load (kg)	500
Assembly	Reach (m)	2.55
Cutting/Deburring	Protection available	IP67
Grinding/Polishing		Foundry Plus 2
Machine Tending	Mounting	Floor
Material Handling	Position repeatability (RP) (mm)	0.08
Press Brake Tending		
Spot Welding		

#### Working range

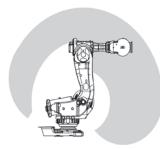


## IRB 7600

### IRB 7600-400/2.55

Main applications	Load (kg)	400
Assembly	Reach (m)	2.55
Cutting/Deburring	Protection available	IP67
Grinding/Polishing		Foundry Plus 2
Machine Tending	Mounting	Floor
Material Handling	Position repeatability (RP) (mm)	0.19
Press Brake Tending		
Spot Welding		

#### Working range



# Robots

IRB 7600

IRB 7600-340/2.8



<b>Main applications</b>	<b>Load (kg)</b>	340
Assembly	<b>Reach (m)</b>	2.8
Cutting/Deburring	<b>Protection available</b>	IP67, Foundry Plus 2
Grinding/Polishing	<b>Mounting</b>	Floor
Machine Tending	<b>Position repeatability (RP) (mm)</b>	0.27
Material Handling		
Press Brake Tending		
Spot Welding		

**Working range**



IRB 7600

IRB 7600-325/3.1



<b>Main applications</b>	<b>Load (kg)</b>	325
Assembly	<b>Reach (m)</b>	3.1
Cutting/Deburring	<b>Protection available</b>	IP67, Foundry Plus 2
Grinding/Polishing	<b>Mounting</b>	Floor
Machine Tending	<b>Position repeatability (RP) (mm)</b>	0.10
Material Handling		
Press Brake Tending		
Spot Welding		

**Working range**



IRB 7600

IRB 7600-150/3.50



<b>Main applications</b>	<b>Load (kg)</b>	150
Assembly	<b>Reach (m)</b>	3.50
Cutting/Deburring	<b>Protection available</b>	IP67, Foundry Plus 2
Grinding/Polishing	<b>Mounting</b>	Floor
Machine Tending	<b>Position repeatability (RP) (mm)</b>	0.19
Material Handling		
Press Brake Tending		

**Working range**



## IRB 260

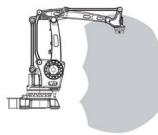
### IRB 260

<b>Main applications</b>	<b>Load (kg)</b>	30
Packing	<b>Reach (m)</b>	1.5
	<b>Protection available</b>	IP67
	<b>Mounting</b>	Floor
	<b>Position repeatability (RP) (mm)</b>	0.03
<b>Working range</b>		
		



## IRB 460

### IRB 460-110/2.4

<b>Main applications</b>	<b>Load (kg)</b>	110
Depalletizing	<b>Reach (m)</b>	2.4
Material Handling	<b>Protection available</b>	IP67
Palletizing	<b>Mounting</b>	Floor
	<b>Position repeatability (RP) (mm)</b>	0.20
<b>Working range</b>		
		



## IRB 660

### IRB 660

<b>Main applications</b>	<b>Load (kg)</b>	180/250
Material Handling	<b>Reach (m)</b>	3.15
Palletizing	<b>Protection available</b>	IP67
	<b>Mounting</b>	Floor
	<b>Position repeatability (RP) (mm)</b>	0.05
<b>Working range</b>		
		



# Robots

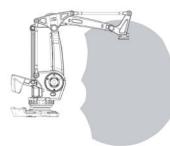
IRB 760

IRB 760-450/3.2



<b>Main applications</b>	<b>Load (kg)</b>	450
Depalletizing	<b>Reach (m)</b>	3.18
Full Layer Palletizing	<b>Protection available</b>	IP67
Material Handling	<b>Mounting</b>	Floor
Palletizing	<b>Position repeatability (RP) (mm)</b>	0.05

## Working range



IRB 360

IRB 360-1/800



<b>Main applications</b>	<b>Load (kg)</b>	1
Assembly	<b>Work envelope (ø mm)</b>	800
Material Handling	<b>Protection available</b>	Standard, IP54
Packing		Wash down
Picking	<b>Position repeatability (RP) (mm)</b>	0.04

## Working range



IRB 360

IRB 360-1/1130

Certified by IPA



<b>Main applications</b>	<b>Load (kg)</b>	1
Assembly	<b>Work envelope (ø mm)</b>	1130
Material Handling	<b>Protection available</b>	Standard, IP54/67/IP69K
Packing		Stainless Clean room ISO class 5–7 depending on arm configuration
Picking		Certified by IPA
		Wash down
	<b>Position repeatability (RP) (mm)</b>	0.09

## Working range



## IRB 360

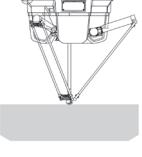
### IRB 360-3/1130

<b>Main applications</b>	<b>Load (kg)</b>	3
Assembly	<b>Work envelope (ø mm)</b>	1130
Material Handling		Standard, IP54/67/IP69K
Packing	<b>Protection available</b>	Stainless Clean room ISO class 5-7 depending on arm configuration
Picking		Wash down
	<b>Position repeatability (RP) (mm)</b>	0.06
	<b>Working range</b>	
		



## IRB 360

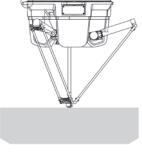
### IRB 360-8/1130

<b>Main applications</b>	<b>Load (kg)</b>	8
Assembly	<b>Work envelope (ø mm)</b>	1130
Material Handling		Standard, IP54
Packing	<b>Protection available</b>	Stainless Clean room ISO class 5-7 depending on arm configuration
Picking	<b>Position repeatability (RP) (mm)</b>	0.03
	<b>Working range</b>	
		



## IRB 360

### IRB 360-1/1600

<b>Main applications</b>	<b>Load (kg)</b>	1
Assembly	<b>Work envelope (ø mm)</b>	1600
Material Handling		Standard, IP54/67/IP69K
Packing	<b>Protection available</b>	Clean room ISO class 5-7 depending on arm configuration
Picking	<b>Position repeatability (RP) (mm)</b>	0.03
	<b>Working range</b>	
		



# Robots

IRB 360

IRB 360-6/1600



Main applications	Load (kg)	6
Assembly	Work envelope (ø mm)	1600
Material Handling	Protection available	Standard, IP54
Packing	Position repeatability (RP) (mm)	0.03
Picking		
Working range		



## Protection levels

### IP classification

ABB uses IP classification to ensure that you select the right robot for the job. A clearly defined standard helps users ensure work place safety, correct assessment of life expectancy and high productivity when investing in a robot. Robots are often asked to work in harsh environments, putting greater demand on their ability to withstand harmful substances from penetrating the mechanics.

IP stands for Ingress Protection and is combined with a numerical code that shows how well the electrical compartments of a machine are protected against ingress of solid particles/dust or water from the surrounding environment. The first figure of the two digit code specifies the level of protection against solid particles/dust, and the second, the ingress of water. The higher the figure the greater the protection.

### Further protection classifications:

For specific applications, ABB uses other classifications of protection targeting the specific environment and conditions which the robot is exposed to.

**Foundry Plus 2** – for harsh environments and exposure to spray of coolants, lubricants and metal spits. Typical applications are part extraction of die casting machines and cast cleaning.

**Foundry Prime 2** – for very harsh environments and exposure to solvent-based detergents and indirect spray from jet pressure. Typical for washing applications such as water jet cleaning of castings and machined parts.

**Chip protection** – for applications such as Deburring, Sawing and Milling. It ensures that metal chips created during operation do not collect on the robot.

**Clean room** – international standard to ensure that robot components do not contaminate the sensitive products being handled inside the clean room.

**Wash-down and stainless wash-down** – for cleaning of robots working in contact with open food products. It is also for use on smooth surfaces, materials that withstand aggressive detergents and tight sealings.



# Controllers

## IRC5 Single cabinet controller



<b>Size H x W x D</b>	970 x 725 x 710 mm
<b>Electrical connections</b>	200–600 V, 50–60 Hz
<b>Protection</b>	IP54 (IP33 in rear compartment)
<b>IRB Support</b>	All robots
Based on advanced dynamic modelling, the IRC5 optimizes the performance of the robot for the physically shortest possible cycle time (QuickMove™) and precise path accuracy (TrueMove™). What you program is what you get.	

## IRC5 Compact controller



<b>Size H x W x D</b>	258 x 450 x 585 mm
<b>Electrical connections</b>	220–230 V, 50–60 Hz, single phase
<b>Protection</b>	IP20
<b>IRB Support</b>	IRB 120, IRB 140, IRB 260, IRB 360, IRB 1200, IRB 1410, IRB 1600

## IRC5 Panel mounted controller



<b>Size H x W x D</b>	375 x 498 x 271 mm
<b>Electrical connections</b>	200–600 V, 50–60 Hz
<b>Protection</b>	IP20
<b>IRB Support</b>	IRB 140, IRB 260, IRB 360, IRB 1200, IRB 1600 (small drive unit) IRB 2400, IRB 2600, IRB 4400, IRB 4600, IRB 6620, IRB 6640, IRB 6650S, IRB 7600, IRB 460, IRB 660, IRB 760 (large drive unit)

## Process module



<b>Size H x W x D</b>	720 x 725 x 710 mm (small) 970 x 725 x 710 mm (large)
<b>Electrical connections</b>	Empty cabinet
<b>Protection</b>	IP54 (IP33 in rear compartment)

## IRC5P Paint robot controller



<b>Size H x W x D</b>	1450 x 725 x 710 mm
<b>Electrical connections</b>	200–600 V, 50–60 Hz
<b>Protection</b>	IP54 (IP33 in rear compartment)
<b>IRB Support</b>	Paint robots

## FlexPendant



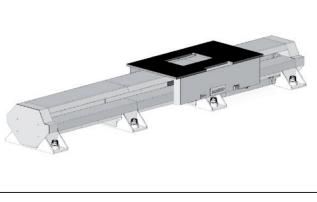
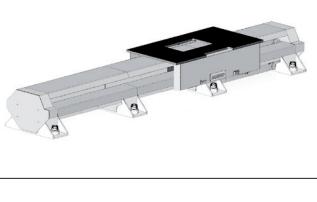
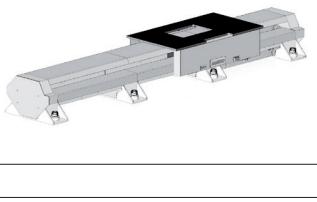
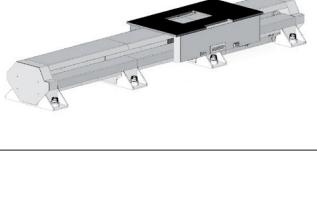
<b>Size</b>	6.5" color touch screen / 1.0 kg
<b>Protection</b>	IP54
<b>IRB Support</b>	Non-paint robots

## FlexPaint Pendant



<b>Protection</b>	IP54, EX protected
<b>IRB Support</b>	Paint robots

# Track Motions

RTT					
RTT					
<b>Robot model</b>	<b>Max Speed</b>	<b>Protection available</b>	<b>Mounting position</b>	<b>Travel length</b>	<b>Acc/Ret</b>
IRB 1600	1.06 m/s	Standard	Floor	1.7–11.7m (in steps of 1m)	1.5m/s <sup>2</sup> Maraton-Pac
IRB 2400					2.5m/s <sup>2</sup> Bobin
					
IRBT					
IRBT 4004					
<b>Robot model</b>	<b>Max Speed</b>	<b>Protection available</b>	<b>Mounting position</b>	<b>Travel length</b>	<b>Acc/Ret</b>
IRB 4400-60	2.0 m/s	Foundry, IP65	Floor	1.9–19.9m (in steps of 1m)	2.5m/s <sup>2</sup>
IRB 4600					
					
IRBT 6004					
<b>Robot model</b>	<b>Max Speed</b>	<b>Protection available</b>	<b>Mounting position</b>	<b>Travel length</b>	<b>Acc/Ret</b>
IRB 6620	1.6 m/s	Foundry, IP65	Floor	1.7–19.7m (in steps of 1m)	2.0m/s <sup>2</sup>
IRB 6640					
IRB 6650S					
					
IRBT 7004					
<b>Robot model</b>	<b>Max Speed</b>	<b>Protection available</b>	<b>Mounting position</b>	<b>Travel length</b>	<b>Acc/Ret</b>
IRB 7600	1.2 m/s	Foundry, IP65	Floor	1.7–19.7m (in steps of 1m)	1.8m/s <sup>2</sup>
					
FlexTrack					
IRT501-66					
<b>Robot model</b>	<b>Max speed (m/s)</b>	2.0	<b>Track length (m)</b>	2.1–105	
None (material handling track motion)	<b>Load (kg)</b>	900	<b>Width (m)</b>	0.66	
	<b>Travel length (m)</b>	25	<b>Acc/Ret (m/s<sup>2</sup>)</b>	2	
					
IRT501-66R					
<b>Robot model</b>	<b>Max speed (m/s)</b>	1.5	<b>Track length (m)</b>	2.1–105	
None (material handling track motion)	<b>Load (kg)</b>	2000	<b>Width (m)</b>	0.66	
	<b>Travel length (m)</b>	1–25	<b>Acc/Ret (m/s<sup>2</sup>)</b>	1.2	
					
IRT501-90					
<b>Robot model</b>	<b>Max speed (m/s)</b>	1.5	<b>Track length (m)</b>	2.1–105	
None (material handling track motion)	<b>Load (kg)</b>	2000	<b>Width (m)</b>	0.90	
	<b>Travel length (m)</b>	1–25	<b>Acc/Ret (m/s<sup>2</sup>)</b>	1.2	
					
IRT501-90R					
<b>Robot model</b>	<b>Max speed (m/s)</b>	1.2	<b>Track length (m)</b>	2.1–105	
None (material handling track motion)	<b>Load (kg)</b>	2950	<b>Width (m)</b>	0.90	
	<b>Travel length (m)</b>	1–25	<b>Acc/Ret (m/s<sup>2</sup>)</b>	1	
					

# Positioners

IRBP L			
<b>IRBP L-300</b>			
	<b>Max handling capacity (kg)</b> 300	<b>Max working envelope (mm)</b> ø 1500	<b>Max available length (mm)</b> 4000
<b>IRBP L-600</b>			
	<b>Max handling capacity (kg)</b> 600	<b>Max working envelope (mm)</b> ø 1500	<b>Max available length (mm)</b> 4000
<b>IRBP L-1000</b>			
	<b>Max handling capacity (kg)</b> 1000	<b>Max working envelope (mm)</b> ø 1500	<b>Max available length (mm)</b> 4000
<b>IRBP L-2000</b>			
	<b>Max handling capacity (kg)</b> 2000	<b>Max working envelope (mm)</b> ø 1500	<b>Max available length (mm)</b> 4000
<b>IRBP L-5000</b>			
	<b>Max handling capacity (kg)</b> 5000	<b>Max working envelope (mm)</b> ø 2200	<b>Max available length (mm)</b> 5000
IRBP C			
<b>IRBP C-500</b>			
	<b>Max handling capacity (kg)</b> 500 (each side)	<b>Max capacity (mm)</b> -	<b>Max length (mm)</b> -
<b>IRBP C-1000</b>			
	<b>Max handling capacity (kg)</b> 1000 (each side)	<b>Max capacity (mm)</b> -	<b>Max length (mm)</b> -

## IRBP R

### IRBP R-300

Max handling capacity (kg)	Max working envelope (mm)	Max length (mm)	
300 (each side)	ø 1000	1600	

### IRBP R-600

Max handling capacity (kg)	Max working envelope (mm)	Max length (mm)	
600 (each side)	ø 1200	2000	

### IRBP R-1000

Max handling capacity (kg)	Max working envelope (mm)	Max length (mm)	
1000 (each side)	ø 1200	2000	

## IRBP K

### IRBP K-300

Max handling capacity (kg)	Max working envelope (mm)	Max length (mm)	
300 (each side)	ø 1200	4000	

### IRBP K-600

Max handling capacity (kg)	Max working envelope (mm)	Max length (mm)	
600 (each side)	ø 1400	4000	

### IRBP K-1000

Max handling capacity (kg)	Max working envelope (mm)	Max length (mm)	
1000 (each side)	ø 1400	4000	

# Positioners

## IRBP A

### IRBP A-250



<b>Max handling capacity (kg)</b>	<b>Max working envelope (mm)</b>	<b>Max loading height (mm)</b>
250	ø 1000	900

### IRBP A-500



<b>Max handling capacity (kg)</b>	<b>Max working envelope (mm)</b>	<b>Max loading height (mm)</b>
500	ø 1450	950

### IRBP A-750



<b>Max handling capacity (kg)</b>	<b>Max working envelope (mm)</b>	<b>Max loading height (mm)</b>
750	ø 1450	950

## IRBP B

### IRBP B-250



<b>Max handling capacity (kg)</b>	<b>Max working envelope (mm)</b>	<b>Max loading height (mm)</b>
250 (each side)	ø 1000	900

### IRBP B-500



<b>Max handling capacity (kg)</b>	<b>Max working envelope (mm)</b>	<b>Max loading height (mm)</b>
500 (each side)	ø 1450	1000

### IRBP B-750



<b>Max handling capacity (kg)</b>	<b>Max working envelope (mm)</b>	<b>Max loading height (mm)</b>
750 (each side)	ø 1450	1000

## IRBP D

### IRBP D-300



<b>Max handling capacity (kg)</b>	<b>Max working envelope (mm)</b>	<b>Max length (mm)</b>
300 (each side)	ø 1000	1600

## IRBP D

### IRBP D-600

Max handling capacity (kg)	Max working envelope (mm)	Max available length (mm)
600 (each side)	ø 1200	2000



## FlexLifter

### IRL 100

Load (kg)	Lifting height (m)	Speed (mm/s)	Lift time (sec)	Rotation	Mounting
1000	100	40	2,5	Optional 360° rotation	Floor or FlexTrack IRT501-66,66R,90,90R



### IRL 190

Load (kg)	Lifting height (m)	Speed (mm/s)	Lift time (sec)	Rotation	Mounting
500	190	76	2,5	Optional 360° rotation	Floor or FlexTrack IRT501-66,66R,90,90R



### IRL 600

Load (kg)	Lifting height (m)	Speed (mm/s)	Lift time (sec)	Rotation	Mounting
600	600	200	3		Floor or FlexTrack IRT501-66,66R



## FlexPLP

### IRPLP - X, Y and Z axis

Axis	Static load (kg)	Dynamic load (kg)	Travel length (mm)	Speed (mm/s)
3	150	30	X=300 or 400	100
			Y=300 or 400	
			Z=200	



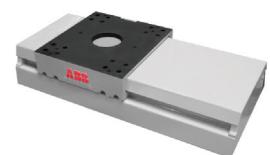
### IRPLP - Z axis

Axis	Static load (kg)	Dynamic load (kg)	Lift height (mm)	Speed (mm/s)
1	150	50	200	100



### IRPLP - X and Y axis

Axis	Static load (kg)	Dynamic load (kg)	Travel length (mm)	Speed (mm/s)
1 or 2	150	50	300 or 400	200



# Application equipment

## Material Handling

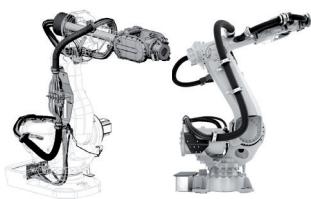
### DressPack

To support different production needs a family of DressPacks has been developed for Material Handling.

#### Common features:

- Well documented solutions including training material, circuit diagram and CAD models.
- Easy to maintain including spare part support.
- Supports parallel signals as well as common fieldbus communication.

#### Integrated DressPack – ID and LeanID



This type of DressPack creates flexibility for a variety of production demands. It is intended for production where there are high demands on flexibility and accessibility. For operations with many complex wrist movements and where the need for flexibility in changing products is high. No individual adjustment are needed for DressPack.

#### External with retract arm function



External DressPack with a retract arm pulling the cables away from the wrist. Minor individual adjustment needed for DressPack.

#### External



External DressPack targeting production with basic needs for robot handled tool. Individual adjustment needed for DressPack.

## Spot Welding

### Spot Welding DressPack

To support different production needs a family of DressPacks has been developed for Spot Welding applications or when they are combined with Material Handling.

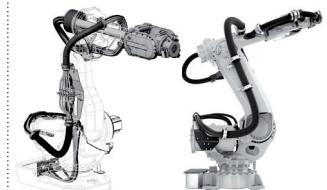
#### Common features:

- Well documented solutions including training material, circuit diagram and CAD models.
- Easy to maintain including spare part support.
- Supports parallel signals as well as common fieldbus communication.
- Supports pneumatic or servo welding guns.
- Supports AC or MFDC welding application.

## Spot Welding

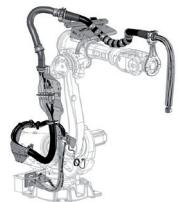
### Integrated DressPack – ID and LeanID

This type of DressPack creates flexibility for a variety of production demands. It is intended for production where there are high demands on flexibility and accessibility. For operations with many complex wrist movements and where the need for flexibility in changing products is high. No individual adjustment is needed for DressPack.



### External with retract arm function

External DressPack with a retract arm pulling the cables away from the wrist. Minor individual adjustment needed for DressPack.



### Spot Welding cabinet

Dedicated controller cabinet for spot welding processes, including spot welding timer.

The cabinet supports different process needs, like:

- AC or MFDC welding technique.
- Robot handled or stationary welding guns.
- Pneumatic or servo controlled welding guns.



### Water and Air Unit

A fully integrated water and air unit for spot welding processes.

The unit supports different process needs like:

- Robot handled or stationary welding guns.
- Pneumatic or servo controlled welding guns.



### FlexGun IRG X-Gun

Type	X-Gun	Arm length (mm)	227–977
Transformer	MFDC or AC	Weight (kg)	100–150
Max Stroke (mm)	245	Key feature	Same body for both X and C gun
Max Force (daN)	757 (gun body capability)		



### FlexGun IRG C-Gun

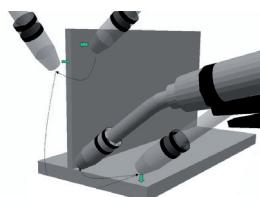
Type	C-Gun	Arm length (mm)	0–250
Transformer	MFDC or AC	Weight (kg)	100–150
Max Stroke (mm)	245	Key feature	Same body for both X and C gun
Max Force (daN)	1000 (gun body capability)		



# Application equipment

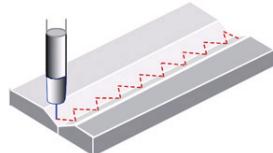
## Arc Welding

### Seam finder SmarTac



Search Speed (mm/s)	Search time per point/one dimension (sec)	Accuracy (mm)
20–50 (depending on position accuracy required)	2–6 (depending on workpiece complexity)	+/- 0.25 (with search speed 20 mm/sec)

### Seam tracker WeldGuide III



WeldGuide III is a robotic thru-the-arc joint tracking using two sensor inputs – the welding current and the arc voltage, which means that we both “look and listen” for better welding results. The WeldGuide III sensor reads the real values from the welding arc 25,000 times per second, which means it is up to 25 times faster than traditional tracking methods.

## Welding torches



We offer a wide range of welding torches from the leading brands for local installation. For delivery with the Esab AristoMig 5000i process equipment we offer the Binzel ABIROB A and ABIROB W torch packages with air and water cooling. For delivery with the RPC process equipment we offer the Binzel ABIROB A torch package (air cooling) for IRB 1520ID and the Esab PSF315 welding torch kit (air cooling) for IRB 1410.

## TSC Torch Service Center



Torch cleaner unit TC 96 (gas nozzle cleaning).  
Tool Centre Point gauging and calibrating system.  
Wire cutter (Max. wire diameter to be cut: 1.6 mm steel and aluminium).  
Anti-spatter spraying unit.

## Bull's Eye



The Bull's Eye provides the user with a fully automated tool center point calibration giving the highest possible level of utilization, quality and productivity from your robot station.  
  
Customised pre-defined programs enable fully automatic tool centre point calibration during production execution, reducing down time to almost zero.

## Power Source Fronius



TransSteel	TransPulse Synergic	CMT
3500/5000	TPS 4000/5000	CMT 3200R/4200R
Fronius CMT, TPS and TransSteel standard power source packages with the Fronius TPS Integrated Power Source graphical user interface. Available for IRB 1520ID, IRB 1600, IRB 1600ID, IRB 2600 and IRB 2600ID.		

## Arc Welding

### Esab AristoMig 5000i

Voltage range	Current range	Permissible load at MIG/MAG	Process methods MIG/MAG	
8–60 V	16–500 A	60 % duty cycle: 500A / 40V	Short arc, Spray arc	
		100 % duty cycle: 400A / 36V	Rapid arc, Pulse arc	

Esab AristoMig 5000i process equipment standard packages with the Esab AristoMig Integrated graphical user interface. Available for IRB 1600, IRB 1600ID, IRB 2600 and IRB 2600ID.

### Power Source RPC S-400

Connection voltage	Output current	Welding mode	
400V (-15%... + 20%)	400A 80% duty cycle	Synergic MIG/MAG	

Only for the Asian market.

ABB RPC S-400 process equipment standard packages with the ABB RPC S Integrated graphical user interface. Available for IRB 1410 and IRB 1520ID.

## Graphical user interfaces

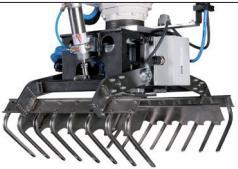
Available for Fronius, RPC, Esab, Lincoln and Miller power source packages.

The easy-to-use FlexPendant graphical user interface provides operators with a single point of programming, an overview of cell status and a display of important quality and production data. With just a few buttons, an intuitive and PC-like, multilingual interface, the operator can organize the welding operation with a minimum of training. By integrating the power source interface on the FlexPendant the operator can have full control over voltage, current, speed, gas flow, etc.



## Palletizing

### FlexGripper – Claw

Handled products	Max. weight per lift	Gripper weight	Finger pitch	Bag dimensions (LxWxH range)	
1	50 kg	70 kg	75 mm	(300-750)x(300-550)x(120-250)mm	

Main application: Bag palletizing

### FlexGripper – Clamp

Handled products	Max. weight per lift	Gripper weight	Version	Case dimensions (LxWxH range)	
1–2	40 kg	45 kg	1-zone	(200-650)x(200-500)x(150-330)mm	
1–5	60 kg	80 kg	2-zone	(200-1200)x(200-500)x(150-330)mm	

Main application: Case palletizing

### FlexGripper – Vacuum

Handled products	Max. weight per lift	Gripper weight	Nr of zones	Case dimensions (LxWxH range)	
1–5	40 kg	75 kg	10	Max 1200x500x300 mm Min 240x240x100 mm	

Main application: Case palletizing

Handled pallet types: GMA/AUS/EUR/ISO

# Application equipment

## Machining

### ForceControl



Enables easy teaching and automatic path generation of complex part surfaces and edges for machining processes like polishing, deburring, grinding. Forces are also controlled during the processing instead of the conventional position control of the robot which makes it more sensitive and increases the quality of the finished parts. Suitable function packages are available for various machining robots of ABB.

## Motors and Gear units

### Gear Units MTD / MID



Product/MTD and MID	Max handling capacity	Max continous torque	Max bend. moment
MTD 250	300 kg	350 Nm	650 Nm
MTD 500	600 kg	650 Nm	3300 Nm
MTD 750	1000 kg	900 Nm	5000 Nm
MTD 2000	2000 kg	3800 Nm	15000 Nm
MTD 5000	5000 kg	9000 Nm	60000 Nm
MID 500	1300 kg	1400 Nm	5000 Nm
MID 1000	3300 kg	3800 Nm	15000 Nm

## Motor Units MU



Product/MU	Rated speed	Max dynamic torque
MU 100	3300 rpm	4.8 Nm
MU 200	5000 rpm	14.0 Nm
MU 300	4500 rpm	35.0 Nm
MU 400	4700 rpm	50.0 Nm

## Press Automation

### Dynamic Drive Chain (DDC)



DDC allows new and existing presses to take full advantage of servotechnology with limited peak power, using a servomotor to open and close the press faster while performing the stamping process with the energy accumulated in the flywheel. It consists of a servo kit (Gear motor plus drive) that is integrated in the same master control as the automation. The DDC line is capable to run at till 30% faster than common lines.

Energy losses are reduced thanks to regenerative speed reduction and synchronized clutching.

## IRB 6660RX (7-axis robot)



Main applications	Load (kg)	Reach (m)
Press automation	75/50	
Machine tending	3.1 + 1.3/1.45	
Material handling	Offset 6th–7th axis: 1.3/1.45 m 7th axis rotational	Height: 127 mm

## IRB 7600RX (7-axis robot)



Main applications	Load (kg)	Reach (m)
Press automation	85/80	
Machine tending	3.5 + 1.3/1.45	
Material handling	Offset 6th–7th axis: 1.3/1.45 m 7th axis rotational	Height: 127 mm

## Press Automation

### IRB 6660FX (7-axis robot)

#### Main applications

Press automation	<b>Load (kg)</b>	50
Machine tending	<b>Reach (m)</b>	3.1 + 1.4
Material handling		Stroke (m): ± 1.4
	<b>Linear 7th axis</b>	Height: 130 mm
		Max. Speed (m): 5
		Max. Acceleration (m/s <sup>2</sup> ): 20



### IRB 7600FX (7-axis robot)

#### Main applications

Press automation	<b>Load (kg)</b>	100
Machine tending	<b>Reach (m)</b>	3.1 + 1.75
Material handling		Stroke (m): ± 1.75
	<b>Linear 7th axis</b>	Height: 130 mm
		Max. Speed (m): 5
		Max. Acceleration (m/s <sup>2</sup> ): 18



## TRX - Twin robot Xbar

### IRB 760 Twin XB

#### Main applications

Press automation	<b>Load (kg)</b>	150 (Crossbar, tooling and part)
Material handling	<b>Reach (m)</b>	3.1 + 1.75



## Robot tooling

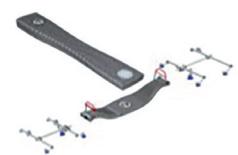
### Modular tooling

Main applications	Components	Diameter (mm)	Lenght (mm)
Press Automation	Main boom	76	500-2150
Material handling	Cross tubes	38	500-1500
Angle mounts, Swivel arms, Ball joints, Vacuum cups etc.		Light, robust and modular components to be adapted to multiple configurations. For vacuum applications as well as mechanical clamps and fixtures.	



### Carbon Fiber tooling

Main applications	Components	Weight (kg)	Lenght (mm)
Press Automation	Carbon Fiber boom 1.45	12	1450
Material handling	Carbon Fiber arm 1.0	7,5	1000
	Carbon Fiber arm 1.4	8	1400



# Application equipment

## Dispensing

### Doser (single or double, heated or not heated)



Gross volume	Nominal flow	Peak flow	Nominal flow / peak pressure	Dimensions*
1,2 cm <sup>3</sup>	0,8 ml/s	1 ml/s	150/250 bar	240x40x470 mm
80,0 cm <sup>3</sup>	24,0 ml/s	28 ml/s	150/250 bar	170x460x950 mm
155,0 cm <sup>3</sup>	37,5 ml/s	44 ml/s	150/250 bar	180x470x960 mm
560,0 cm <sup>3</sup>	80,0 ml/s	96 ml/s	150/250 bar	200x510x1390 mm

\* Max. envelope volume; not heated single doser, incl. inlet and outlet valves; no cabling.

### Pump (single or double barrel, heated or not heated)



Barrel size	Follower plate	Pressure ratio	Delivery volume per double stroke	Dimensions*
30 l	280 mm ø	65:1	150 cm <sup>3</sup>	1070x700x2350 mm
50 l	355 mm ø	65:1	150 cm <sup>3</sup>	1070x700x2350 mm
200 l	571 mm ø	65:1	150 cm <sup>3</sup>	1070x700x2350 mm

\*Width, depth, maximum height.

## Applicator

### Material Temperature Conditioning

Gluing	SPA470 Sealing 1 Nozzle*	SPA410 Sealing 3 Nozzles	Peltier 600W**	Peltier 800W**

\*Optional with nozzle changer. \*\* Air- or watercooled.

## Integrated Force Control

### Integrated Force Control



Conventional robotic solutions are controlled by predefined paths and speeds. However, with ABB Integrated Force Control, the robot reacts to its surrounding and can deviate from its programmed path or speed based on feedback from the force sensor. It is possible to automate complex tasks which previously required skilled personnel and advanced fixed automation.



## Integrated Vision

### Integrated Vision



ABB Integrated Vision represents a true revolution in machine vision featuring powerful vision tools, autofocus, integrated lighting and optics, faster image capture, capability to power and control a range of external lighting and enough input/output capacity for virtually any inspection scenario - all in a compact, industrial IP67 package that makes the system ideal for more applications than ever before.

# Modular solutions

## FlexMT™

### FlexMT™

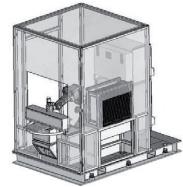
A leader in the development of automation solutions, ABB's FlexMT sets the standard in flexible machine tool tending. This robotic solution increases machine utilization by as much as 60 percent. Available in two variants, the FlexMT 20 (20kg/1.65m reach) and the FlexMT 60 (60kg/2.05m reach), the FlexMT comes complete with a robot controller inside its fully integrated control cabinet. The FlexMT is a pre-engineered, well-tested and reliable automation solution.



## Machining

### FlexFinishing cell

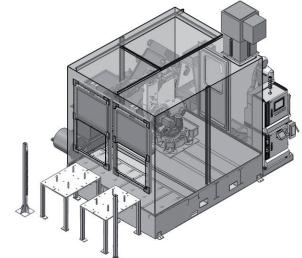
This standardized and turnkey finishing cell represents a verified solution in form of a robotized system which can be programmed for different tools and adapted to different components and work objects. It facilitates the integration at customer site and is a cost efficient system including Force Control technology for improved machining of small and medium sized parts.



## FlexWasher™

### 2-in-1 process

ABB FlexWasher technology combines high pressure water de-burring (HPWD) and parts washing into one system. This system removes eyelash burrs and other foreign materials without removing parent material.



## Green technology

ABB FlexWasher technology is differentiated by not using heated water or cleaning chemicals to remove burrs and debris. This results in significant lower energy consumption and operating costs. The patented closed loop water filtration system with best-in-class low water consumption also reduces waste handling costs.

## Palletizing

### PalletPack 460

PalletPack 460 is a package of pre-engineered products designed to make robotic end-of-line and bag palletizing solutions more accessible and easier to use.



## Packing

### RacerPack

RacerPack is a robot function package for packing of flow wrapped products. Receiving flow wraps on a high speed in feed conveyor, RacerPack distributes the products into an indexing belt from which the IRB 360 robot picks up the products and pack them into boxes. The product is modular and can be ordered with full configuration or modules depending on the need.



# Paint robots

IRB 52

IRB 52



## Main applications

Painting

## Load (kg)

7

## Reach (m)

1.2–1.45

## Protection available

IP67, Ex

## Specific

Floor mounted, tilted,  
wall mounted, inverted mounting

## Pose repeatability (RP) (mm)

0.15

## Working range



IRB 580

IRB 580-12/16, 1220 mm



## Main applications

Painting

## Load (kg)

10

## Reach (m)

2.2

## Protection available

IP67, Ex

## Specific

Floor mounted, inverted mounting

## Pose repeatability (RP) (mm)

0.3

## Working range



IRB 580

IRB 580-12/16, 1620 mm



## Main applications

Painting

## Load (kg)

10

## Reach (m)

2.6

## Protection available

IP67, Ex

## Specific

Floor mounted, inverted mounting

## Pose repeatability (RP) (mm)

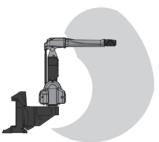
0.3

## Working range



## IRB 580

IRB 580-13/14, 1220-1620 mm

<b>Main applications</b>	<b>Load (kg)</b>	10
Painting	<b>Reach (m)</b>	2.2-19
	<b>Protection available</b>	IP67, Ex
	<b>Specific</b>	Clean wall rail, In-booth rail
	<b>Pose repeatability (RP) (mm)</b>	0.3
<b>Working range</b>		
		



## IRB 5400

IRB 5400-12 Slim arm

<b>Main applications</b>	<b>Load (kg)</b>	25
Painting	<b>Reach (m)</b>	3.1
	<b>Protection available</b>	IP67, Ex
	<b>Specific</b>	Floor mounted
	<b>Pose repeatability (RP) (mm)</b>	0.15
<b>Working range</b>		
		



## IRB 5400

IRB 5400-13/14 Slim arm

<b>Main applications</b>	<b>Load (kg)</b>	25
Painting	<b>Reach (m)</b>	3.1-20
	<b>Protection available</b>	IP67, Ex
	<b>Specific</b>	Clean wall rail, In-booth rail
	<b>Pose repeatability (RP) (mm)</b>	0.15
<b>Working range</b>		
		



# Paint robots

IRB 5400

IRB 5400-22 Process arm



<b>Main applications</b>	<b>Load (kg)</b>	25
Painting	<b>Reach (m)</b>	3.1
	<b>Protection available</b>	IP67, Ex
	<b>Specific</b>	Floor mounted
	<b>Pose repeatability (RP) (mm)</b>	0.15
<b>Working range</b>		
A circular diagram showing the working range of the IRB 5400-22 Process arm. The arm is depicted in the center, and a shaded gray circle indicates the area it can reach.		

IRB 5400

IRB 5400-23/24 Process arm



<b>Main applications</b>	<b>Load (kg)</b>	25
Painting	<b>Reach (m)</b>	3.1-20
	<b>Protection available</b>	IP67, Ex
	<b>Specific</b>	Clean wall rail, In-booth rail
	<b>Pose repeatability (RP) (mm)</b>	0.15
<b>Working range</b>		
A circular diagram showing the working range of the IRB 5400-23/24 Process arm. The arm is shown in the center, and a shaded gray circle indicates its reach.		

IRB 5500

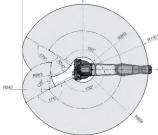
IRB 5500



<b>Main applications</b>	<b>Load (kg)</b>	13
Painting	<b>Reach (m)</b>	3-5.8
	<b>Protection available</b>	IP67, Ex
	<b>Specific</b>	Wall mounted – axis 1 “horizontal” Wall mounted – axis 1 “vertical”
		Bending backwards possibility on axis 3 (may be limited by the hose guiding on the robot)
	<b>Pose repeatability (RP) (mm)</b>	0.15
<b>Working range</b>		
A semi-circular diagram showing the working range of the IRB 5500. The robot is shown in the center, and a shaded gray sector indicates the area it can reach, extending from the left side.		

## IRB 5350 Door Opener

### IRB 5350 3-axis/4-axis

<b>Main applications</b>	<b>Load (kg)</b>	7
Door Opening	<b>Reach (m)</b>	
	<b>Protection available</b>	IP66, Ex
	<b>Specific</b>	Floor mounted, rail mounted
	<b>Pose repeatability (RP) (mm)</b>	0.02
<b>Working range</b>		
		
		

# Painting equipment

## Color Change Unit

### Color Change Unit



ABB's color change units are specifically designed for fast color change. The internal bores of the color change unit are without "dead-ends," reducing the cleaning cycle to a minimum. Both plastic and steel versions are available, with or without recirculation. The ABB color change units are compatible with solvent based and water borne paint materials used in 1K and 2K systems.

## 2K Mixer Unit

### 2K Mixer Unit



ABB's 2K mixers are specifically designed for precise mixing of two component fluids and optimized for fast material change. The 2K mixer unit is using the same fluid valves as in the color change unit (common parts). 2K mixer unit is designed and optimized to be used in combination with ABB's gear pumps (and IPS software).

## GearPump Unit

### GearPump Unit



ABB's precision paint pump provides constant and consistent fluid regulation for automatic coating applications. It is specifically designed for fast color change. The ABB gear pumps can be used for paint, catalyst and clear coat and are available in sizes: 1.2 cc/rev, 3 cc/rev, 6 cc/rev and 9 cc/rev. The compact design uses light weight materials and is optimized for low material waste and color change time.

## M-PAC Color Change Module & Gear Pump Module

### M-PAC Color Change Module



The modular concept of the new M-PAC paint application equipment makes it easy to combine the various components to build compact and light units for integration on the robot arms. This enables for the robots to use high acceleration and the application solution to have minimum material waste. The color change module can be mounted directly on a gear pump module for maximum paint savings and minimum color change time. This complete assembly is designed to be integrated in the robot with the shortest possible supply line to the atomizer (typically less than 650 mm).

## Compact CBS Unit

### Compact CBS Unit



The compact CBS is an optimized solution for internal charge waterborne materials. This CBS unit is used to prepare and change the paint cartridges in the CBS bell atomizer which is handled and controlled by the ABB paint robot. It is a cost effective solution, and contains up to six stations. It can use both dedicated and flushable cartridges. Dedicated cartridges are in most cases used for high-runners and offer minimum color change waste (typically less than 5 ml). Flushable cartridges are used when the cartridges are connected to a color change unit for changing the paint material in the same cartridge. Color change waste in a flushable cartridge is slightly more than with dedicated cartridges (< 30 ml).

## IRB 5320 Workpiece Positioner

### IRB 5320 Workpiece Positioner



The IRB 5320 Workpiece Positioner is a manipulator that is integrated with a six-axis paint robot, simplifying the painting process. It operates with either one or three axes. The three-axis version of the IRB 5320 is used to precisely position workpieces for painting. The turntables are controlled by the fully-integrated robot servo unit alternating as the loading/unloading station and as the place where the robot paints the workpieces. This single-axis positioner is built, with precision and reliability, on the proven ABB robotics gear box and delivered in several thousand units prior to this introduction.

## IRB 5330 Paint External Axis Kit

### Paint External Axis Kit



ABB's pre-engineered Paint External Axis Kit is for the control and positioning of ABB paint robots on linear or vertical axes solutions. This ex-certified servo unit is specially designed to be used, together with customized track motion systems, as an engineering building block for paint application, extending possibilities for large object painting with the use of a standardized external axis solution.

## Air Control Unit

### Air Control Unit

The ABB Air Control Unit (ACU) is a high performance, cost-efficient air flow controller typically used for high volume paint applications. This extremely accurate and reliable unit controls the air flow destined to a paint gun or paint bell and contains three different channels that control spray patterns, bell rotation and even paint flow for some applications.



## Atomizers (RB1000-SAD, -SSD)

### RB1000-SAD, -SSD

The Robobel family of internal charged bells consist of highly efficient, high performance rotary atomizers for solvent borne paint, providing high finish quality and high transfer efficiency. It includes the popular 926 atomizer, the 951 with pattern control function, and the RB1000 high performance atomizer with up to 1000cc/min paint flow capacity.



## CBS Atomizers

### RB1000-WSC

ABB's Cartridge Bell System (CBS) is the optimal solution for saving paint, both for water borne and solvent borne paints. Color changing is done by changing the paint cartridge, resulting in near zero paint-loss for dedicated color-cartridges. For efficient use of space and cost a flushable version is also available. Key features are: Pattern Control for high transfer efficiency, and High Flow capacity for high acceleration robots.



## Atomizers

### RB1000-EXT

ABB's external charged bell is a highly efficient atomizer designed for waterborne paint. By utilizing the same air motor as the RB1000 series, the rotation speed performance is up to max 80,000 rpm with a paint flow of 700cc/min in primer. The atomizer is designed with an air heater-free system and has an newly designed electrodes, providing high transfer efficiency.



## Atomizers

### ROBOBEL031-PC

The 031-PC bell is easiest way for general industry customers to gain access to ABB's bell atomizer technology. The circle spray pattern and variable pattern control of ROBOBEL031-PC bring a lot of benefits to users that normally use spray gun. Since the 031-PC uses no high-voltage, not only both water-borne and solvent-borne but also coating materials can be used. There are widely line-up bell cup and selectable for suitable size.



## Application package

### Paint Application Packages (PAP)

ABB's standardized paint application packages are complete solution designed to have your system up and running very quickly. They are pre-engineered and pre-connected to enable fast installation. They require less field tuning and come documented with standardized interfaces. The packages are flexible. You can choose between gun or bell, select the number of colors, pump sizes, cable length, etc.



# FlexArc® Standard Arc Welding cells

## Complete plug n' produce solution

**FlexArc cells deliver maximum performance while making optimum use of available space.**

All equipment is installed on the common platform which provides for easy relocation within the production facilities. Complete cell is tested in production including welding test,

therefore, customers obtains fully functioning solution without need for additional on-site commissioning. FlexArc features the FlexPendant graphical user interface, which not only provides operators with an overview of the status of the cell, but also important quality and production data.

### Cells based on A-type positioners

#### FlexArc A



<b>Robot</b>	IRB 1520ID, IRB 1600(ID), IRB 2600(ID), IRB 4600
<b>Number of robots</b>	1–2
<b>Positioners</b>	IRBP A-250, IRBP A-500, IRBP A-750
<b>Handling capacity</b>	Max 750 kg
<b>Process equipment package</b>	Fronius, SKS, ESAB, Kemppi
<b>Welding torch</b>	Fronius, Dinse, Binzel, SKS
<b>Safety equipment</b>	Complete system of safety features – safety fencing, light curtains, laser scanner, roll doors, safety locks, safety PLC

### Cells based on B-type positioners

#### FlexArc B



<b>Robot</b>	IRB 1520ID, IRB 1600(ID), IRB 2600(ID), IRB 4600
<b>Number of robots</b>	1–2
<b>Positioners</b>	IRBP B-250, IRBP B-500, IRBP B-750
<b>Handling capacity</b>	Max 750 kg
<b>Process equipment package</b>	Fronius, SKS, ESAB, Kemppi
<b>Welding torch</b>	Fronius, Dinse, Binzel, SKS
<b>Safety equipment</b>	Complete system of safety features – safety fencing, light curtains, laser scanner, roll doors, safety locks, safety PLC

### Cells based on C-type positioners

#### FlexArc C



<b>Robot</b>	IRB 1520ID, IRB 1600(ID), IRB 2600(ID), IRB 4600
<b>Number of robots</b>	1–2 (up to 3 on request)
<b>Positioners</b>	IRBP C-500, IRBP C-1000
<b>Handling capacity</b>	Max 1000 kg
<b>Process equipment package</b>	Fronius, SKS, ESAB, Kemppi
<b>Welding torch</b>	Fronius, Dinse, Binzel, SKS
<b>Safety equipment</b>	Complete system of safety features – safety fencing, light curtains, laser scanner, roll doors, safety locks, safety PLC

### Cells based on D-type positioners

#### FlexArc D



<b>Robot</b>	IRB 1520ID, IRB 1600(ID), IRB 2600(ID), IRB 4600
<b>Number of robots</b>	1–2 (up to 3 on request)
<b>Positioners</b>	IRBP D-300, IRBP D-600
<b>Handling capacity</b>	Max 600 kg
<b>Process equipment package</b>	Fronius, SKS, ESAB, Kemppi
<b>Welding torch</b>	Fronius, Dinse, Binzel, SKS
<b>Safety equipment</b>	Complete system of safety features – safety fencing, light curtains, laser scanner, roll doors, safety locks, safety PLC

## Cells based on K-type positioners

### FlexArc K

<b>Robot</b>	IRB 1520ID, IRB 1600(ID), IRB 2600(ID), IRB 4600		
<b>Number of robots</b>	1–2 (up to 4 on request)		
<b>Positioners</b>	IRBP K-300, IRBP K-600, IRBP K-1000		
<b>Handling capacity</b>	Max 1000 kg		
<b>Process equipment package</b>	Fronius, SKS, ESAB, Kemppi		
<b>Welding torch</b>	Fronius, Dinse, Binzel, SKS		
<b>Safety equipment</b>	Complete system of safety features – safety fencing, light curtains, laser scanner, roll doors, safety locks, safety PLC		

## Cells based on R-type positioners

### FlexArc R

<b>Robot</b>	IRB 1520ID, IRB 1600(ID), IRB 2600(ID), IRB 4600		
<b>Number of robots</b>	1–2 (up to 4 on request)		
<b>Positioners</b>	IRBP R-300, IRBP R-600, IRBP R-1000		
<b>Handling capacity</b>	Max 1000 kg		
<b>Process equipment package</b>	Fronius, SKS, ESAB, Kemppi		
<b>Welding torch</b>	Fronius, Dinse, Binzel, SKS		
<b>Safety equipment</b>	Complete system of safety features – safety fencing, light curtains, laser scanner, roll doors, safety locks, safety PLC		

## Cells based on 2 L-type positioners or fixed tables

### FlexArc 2L

<b>Robot</b>	IRB 1520ID, IRB 1600(ID), IRB 2600(ID), IRB 4600		
<b>Number of robots</b>	2		
<b>Positioners</b>	2 IRBP L or 2 fixed tables		
<b>Handling capacity</b>	Max 300 kg		
<b>Process equipment package</b>	Fronius, SKS, ESAB, Kemppi		
<b>Welding torch</b>	Fronius, Dinse, Binzel, SKS		
<b>Safety equipment</b>	Complete system of safety features – safety fencing, light curtains, laser scanner, roll doors, safety locks, safety PLC		

## Cells based on 2 L-type positioners

### FlexArc 2L

<b>Robot</b>	IRB 1520ID, IRB 1600(ID), IRB 2600(ID), IRB 4600		
<b>Number of robots</b>	2		
<b>Positioners</b>	2 fixed tables IRBP L		
<b>Handling capacity</b>	Max 300 kg		
<b>Process equipment package</b>	Fronius, SKS, ESAB, Kemppi		
<b>Welding torch</b>	Fronius, Dinse, Binzel, SKS		
<b>Safety equipment</b>	Complete system of safety features – safety fencing, light curtains, laser scanner, roll doors, safety locks, safety PLC		

# Software products

## RobotWare

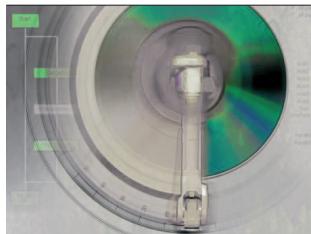
To boost your productivity and decrease your total cost of owning and operating a robot-based solution, ABB has developed a family of software products to support every stage of the robot lifecycle.

**RobotWare is a collection of robot software, which offers in its basic design – superior motion control and enable quick integration of additional hardware.**

For RobotWare there are a number of options and specific application software available. These products run on top of the basic software. They represent software tools for robot users who need additional functionality, for example running multiple tasks, transfer information from file to robot, communicating with a PC and performing advanced motion tasks, etc.

### RobotWare – Options

#### AbsAcc



Absolute Accuracy (AbsAcc) is a calibration concept which ensures a TCP absolute accuracy of better than  $\pm 1\text{mm}$  in the entire working range with some limitation for "bending backwards" robots. The user is supplied with robot calibration data (compensation parameters saved on the manipulator SMB) and a certificate that shows the performance ("birth certificate"). The difference between an ideal robot and a real robot can typically be up to 10mm, resulting from mechanical tolerances and deflection in the robot structure. The Absolute Accuracy option is integrated in the controller algorithms for compensation of this difference, and does not require external position recalculation.

#### MultiMove



The option **MultiMove – Independent** makes a robot system a MultiMove system with independent robots functionality. A MultiMove system is a system where a common controller controls up to four robots, each equipped with its own drive module. MultiMove system exists in two different modes – Independent and Coordinated. With MultiMove Independent, the robots run independently of each other, i.e. controlled by separate RAPID tasks. It is also possible to run positioners independently (controlled by separate RAPID tasks).

The option **MultiMove – Coordinated** makes a robot system a MultiMove system with coordinated robots functionality. A MultiMove system is a system where a common controller controls up to four robots, each equipped with its own drive module. MultiMove exists in two different modes – Independent and Coordinated. With the MultiMove Coordinated option, a MultiMove system is able to work together on a common work piece and coordinated in a common workobject. MultiMove Coordinated also includes all MultiMove Independent functionality.

#### Conveyor Tracking



Conveyor Tracking (also called line tracking) is the function which makes the robot follow a work object on a moving conveyor. While tracking the conveyor, the programmed TCP speed, relative to the work object, will be maintained even when the conveyor speed is changing slowly.

#### SafeMove

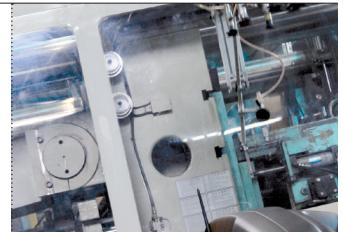


SafeMove™ builds on the latest developments in robotic safety and modernization in safety regulations (ISO 10218). It performs safety classified monitoring of robot motion, covering complex position zones, speed limitation, standstill supervision, tool orientation etc. If a safety hazard is detected, SafeMove executes an emergency stop or alerts a superior PLC within fractions of a second. With SafeMove, it is possible to restrict the cell size to precisely what is needed, saving valuable floor space. It is also possible to create production concepts where robot and operator interact more closely, without compromising safety. For limited needs Electronic Position Switches is available, building on the same principles as SafeMove, but limited to monitoring of joint level zones.

## RobotWare – Options

### SoftMove™

SoftMove is a cartesian soft servo option that allows the robot to be compliant or floating to adjust to external forces or variations in work objects. SoftMove can lower the stiffness of the robot in a pre-defined cartesian direction (in relation to either the tool or the work object) while keeping the original behavior in the other directions. The basic behavior of the softness is mainly controlled by stiffness and damping parameters. With SoftMove, the robot is compliant in one direction only which facilitates high accuracy and reliability. The option reduces robot programming time and enables effective interaction between robot and machine, which reduces cycle time.



### Communications

Several optional RobotWare functions are available for communication to and from the robot such as:

- FTP Client
- NFS Client
- PC Interface
- FlexPendant Interface
- Field bus Command Interface
- Socket Messaging
- File and Serial Channel Handling
- EtherNet/IP m/s
- PROFINET SW, master/slave and slave only



### QuickMove™ and TrueMove™

Based on advanced dynamic modelling, the IRC5 optimizes the performance of the robot for the physically shortest possible cycle time (QuickMove) and precise path accuracy (TrueMove). Together with a speed-independent path, predictable and high-performance behavior is delivered automatically, with no tuning required by the programmer. What you program is what you get.



### Collision Detection

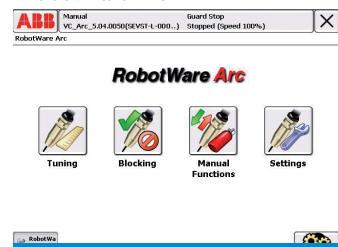
Collision Detection is a software option, which reduces collision impact forces on the robot. In this way, the robot and external equipment can be protected from severe damage.

# Application software

ABB offers a full range of easy-to-use software tools to help you to improve your process, optimize your production, increase productivity, reduce risks and maximize the return of investment of your robot systems.

**Arc Welding**

**RobotWare Arc**



RobotWare Arc comprises a large number of dedicated arc welding functions. It is a simple yet powerful program since both the positioning of the robot and the process control and monitoring are handled in one instruction.

**Spot Welding**

**RobotWare Spot**



Dedicated software that simplifies the Spot Welding application. Advanced motion control for an electrical servo gun are built in features. RobotWare Spot is designed to be a general and flexible software platform offering both standard configurations as well as giving possibility to create customized solutions. All with the target to give easy to use function packages for different types of spot welding systems.

**Cutting**

**RobotWare Cutting**



Modern ABB robots are used for high precision laser cutting. This is possible through a combination of ABB robot features and advanced cutting software products, RobotStudio Cutting PowerPac and RobotWare Cutting, developed specifically for robotic laser cutting. Using robots for laser cutting offers substantial cost benefits compared to using laser cutting machines. Robotic laser cutting reduces capital investment by up to 35 percent\* and uses less floor space.

\* A ABB robot based standard function package compared to a dedicated cutting machine.

**Dispensing**

**RobotWare Dispense**



RobotWare-Dispense can be used for different types of dispensing processes. It is a software option typically used for gluing, sealing, spraying and other similar processes, but can also be useful in a wide spectrum of other applications.

## Picking and Packing

### PickMaster 3

PickMaster is the tool for guiding robots in the packaging process. The PC based software product uses comprehensive graphical interfaces to configure powerful applications where up to eight robots may work in a team along conveying belts. PickMaster 3 includes advanced vision technique and tightly integrated conveyor tracking capability. The integrated vision system is advanced, however PickMaster 3 is also open to communicate with any external sensor. (line scanners, color vision, 3D, etc.).



## Machine Tending

### RobotWare Machine Tending

An integrated set of software tools that uses ABB's extensive experience in machine tending to reduce operational expenditure and increase productivity through easy and flexible programming, straightforward configuration and trouble free operation of ABB robots.

RobotWare Machine Tending is a flexible controller software for deployment and operation of ABB robots. It provides configurable and powerful tools, including an intuitive graphical user interface, that facilitates trouble-free and safe operation for everyone.



## Assembly

### RobotWare Force Control

RobotWare Force Control will greatly facilitate the use of robots for tasks that needs "touch sensing", like assembly, fixturing, product testing etc. The option is based on the force control concept, i.e. a robot control strategy where the robot movements are adapted to the feedback from a force sensor. Thus the robot can automatically search for the correct location, and assemble parts using intelligent Force/Torque motion without the risk for jamming or part damage.



## RobView

### RobView

With RobView 5 you can manage your paint installation, whether it is one or many robots, visualize the complete paint process, and operate and supervise your paint robot cell. A basic version of RobView 5 is bundled with all IRC5P paint robots, free of charge\*. It is an affordable graphical user interface for low budget installations. However, it is scalable and expandable with plug-in options for large and advanced installations.

\* Requires activation.



# Software products

## RobotStudio®

**Computer-based programming is the best way to maximize return on investment for robotic systems, resulting in lower costs, faster time to market and superior end products. ABB RobotStudio® allows programming to be done on a computer without committing to construction or disturbing existing production.**

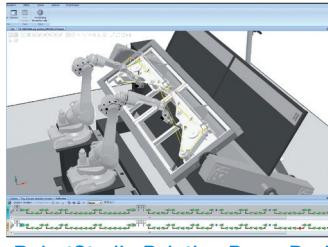
The computer-based system design in RobotStudio ensures you do it right the first time, with the ability to verify tooling,

cycle times, work envelopes and product throughput before any construction begins in the real world.

Achieving perfectly optimized solutions is made possible because you can quickly and easily try multiple configurations on your PC. You can be certain your system will work properly in the real world after seeing it work in the virtual world. The end result is greatly reduced risk.

### RobotStudio – PowerPacks

#### RobotStudio ArcWelding PowerPac™



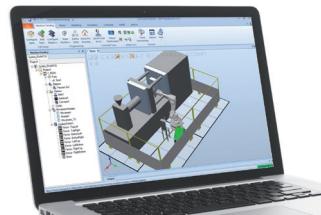
ArcWelding PowerPac is an add-in to RobotStudio that makes it fast and easy to program arc-welding applications. It includes VirtualArc™, an expert system that makes it possible to determine the process parameters necessary to achieve a particular welding result. Use of ArcWelding PowerPac makes it easy to make sure that the optimum tool angles are always used, resulting in higher quality welds and shorter cycle-times.

#### RobotStudio Painting PowerPac™



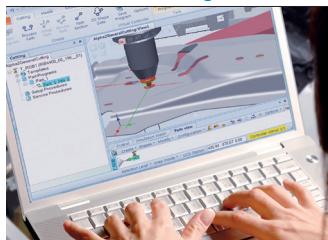
The Painting PowerPac integrates paint programming knowledge and paint process tools into RobotStudio. It will speed up your programming and simulation of painting robots and painting equipment, and is a faster and more intuitive way to create paint programs. Paint strokes are easy to create and edit. Instructions for paint events are automatically added to your program and the event trigger axis automatically selected. Robot positions for the acceleration and deceleration distances are calculated automatically. Paint process performance parameters can be predicted off-line.

#### RobotStudio Machine Tending PowerPac™



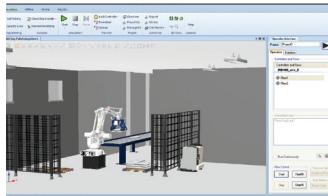
RobotStudio Machine Tending PowerPac – an add-on for RobotStudio, ABB's powerful PC-based programming tool – provides a platform for quick, easy creation and editing of machine tending robot cells in a 3D virtual environment. RobotStudio Machine Tending PowerPac is seamlessly integrated with RobotWare Machine Tending.

#### RobotStudio Cutting PowerPac™



RobotStudio Cutting PowerPac is an offline programming tool that allows operators to create, modify and verify cutting programs in an offline 3D simulation instead of on the factory floor. RobotStudio Cutting PowerPac is seamlessly integrated with RobotWare Cutting.

#### RobotStudio Palletizing PowerPac™



RobotStudio Palletizing PowerPac makes programming robot palletizing systems easier than ever before. As no programming skills are required, RobotStudio Palletizing PowerPac software radically reduces programming times and creates fully tested simulations, and real robot system programs, in minutes.

#### RobotStudio Picking PowerPac™



Picking PowerPac is an offline tool that simulates PickMaster 3 in picking applications. The PowerPac offers ease of use configuration of a picking application which can be simulated and fully optimized before being downloaded into PickMaster 3 for real production.



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