

Robotics

# Product Range

Improving productivity,  
quality and workplace safety

Power and productivity  
for a better world™

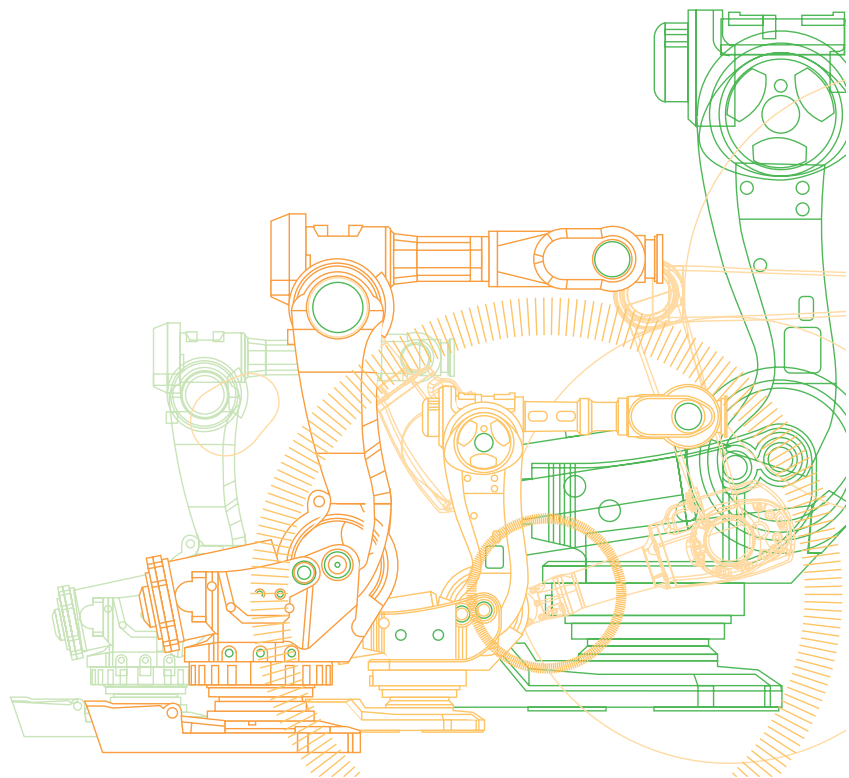


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# 10 Good Reasons to invest in robots

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

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## 10 Good reasons to invest in robots

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1. Reduce operating costs
  2. Improve product quality & 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
- 



# Robots

## IRB 120

### IRB 120



#### Main applications

Assembly  
Material handling  
Packing & dispensing

**Load (kg):** 3  
**Reach (m):** 0.58  
**Protection available:** IP30  
**Mounting:** Floor, Wall, Inverted  
and any forward tilted angle

**Pose repeatability (RP) (mm):** 0.01

## IRB 140

### IRB 140 and IRB 140T



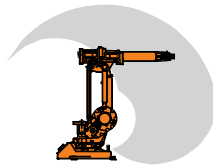
#### Main applications

Arc welding  
Assembly  
Cleaning/Spraying  
Deburring  
Machine tending  
Material handling  
Packing

**Load (kg):** 6  
**Reach (m):** 0.81  
**Protection available:** IP67, Foundry Plus 2, Wash  
Clean room class 6 certified by IPA  
**Mounting:** Floor, Tilted, Wall, Inverted  
**Pose repeatability (RP) (mm):** 0.03

## IRB 1410

### IRB 1410



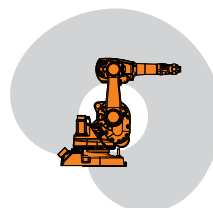
#### Main applications

Arc welding

**Load (kg):** 5  
**Reach (m):** 1.44  
**Protection available:** Clean room ISO class 5  
**Mounting:** Floor  
**Pose repeatability (RP) (mm):** 0.025

## IRB 1600

### IRB 1600-6/1.2 and 8/1.2

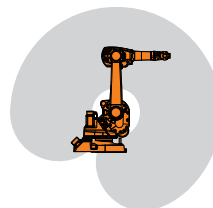


#### Main applications

Arc welding  
Assembly  
Cleaning/Spraying  
Extraction  
Machine tending  
Material handling  
Packing

**Load (kg):** 6/8  
**Reach (m):** 1.2  
**Protection available:** IP54-67  
Foundry Plus 2  
**Mounting:** Floor, Tilted, Wall, Inverted, Shelf  
**Pose repeatability (RP) (mm):** 0.02/0.04

### IRB 1600-6/1.45 and 8/1.45

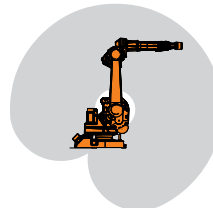


#### Main applications

Arc welding  
Assembly  
Cleaning/Spraying  
Extraction  
Machine tending  
Material handling  
Packing

**Load (kg):** 6/8  
**Reach (m):** 1.45  
**Protection available:** IP54-67  
Foundry Plus 2  
**Mounting:** Floor, Tilted, Wall, Inverted, Shelf  
**Pose repeatability (RP) (mm):** 0.02/0.05

### IRB 1600ID

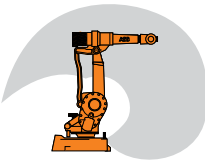



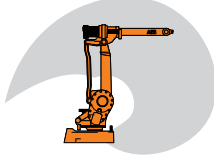

#### Main applications

Arc welding

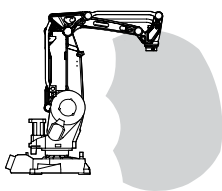
**Load (kg):** 4  
**Reach (m):** 1.5  
**Protection available:** IP40  
**Mounting:** Floor, Inverted  
**Pose repeatability (RP) (mm):** 0.02

## IRB 2400

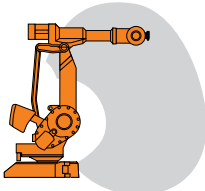

Main applications			IRB 2400-10/16	
Arc welding	<b>Load (kg):</b>	12/20		
Assembly	<b>Reach (m):</b>	1.55		
Cleaning/Spraying	<b>Protection available:</b>	IP54-67		
Cutting/Deburring		Foundry Plus		
Gluing/Sealing	<b>Mounting:</b>	Floor, Inverted		
Grinding/Polishing	<b>Pose repeatability</b>			
Machine tending	<b>(RP) (mm):</b>	0.03		
Material handling				
Packing				
Press brake tending				

Main applications			IRB 2400L	
Arc welding	<b>Load (kg):</b>	7		
Assembly	<b>Reach (m):</b>	1.8		
Cleaning/Spraying	<b>Protection available:</b>	IP54-67		
Cutting/Deburring		Foundry Plus		
Gluing/Sealing	<b>Mounting:</b>	Floor, Inverted		
Grinding/Polishing	<b>Pose repeatability</b>			
Machine tending	<b>(RP) (mm):</b>	0.07		
Material handling				
Packing				
Press brake tending				

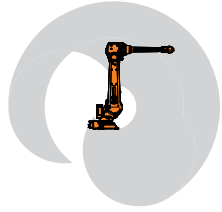

## IRB 260

Main applications			IRB 260	
Packing	<b>Load (kg):</b>	30		
	<b>Reach (m):</b>	1.5		
	<b>Protection available:</b>	IP67		
	<b>Mounting:</b>	Floor		
	<b>Pose repeatability</b>			
	<b>(RP) (mm):</b>	0.03		

## IRB 4400

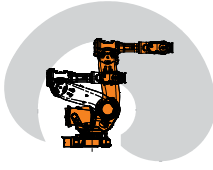


Main applications			IRB 4400-60	
Arc welding	<b>Load (kg):</b>	60		
Assembly	<b>Reach (m):</b>	1.95		
Cleaning/Spraying	<b>Protection available:</b>	IP54-67		
Cutting/Deburring		Foundry Plus 2, Foundry Prime 2		
Gluing/Sealing	<b>Mounting:</b>	Floor		
Grinding/Polishing	<b>Pose repeatability</b>			
Machine tending	<b>(RP) (mm):</b>	0.19		
Material handling				
Packing/Palletizing				
Press brake tending				

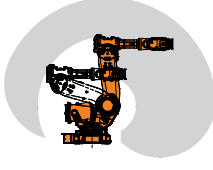

## IRB 4600

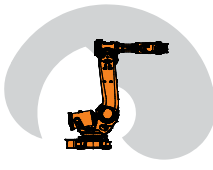

Main applications			IRB 4600-20	
Arc welding	<b>Load (kg):</b>	20		
Assembly	<b>Reach (m):</b>	2.50		
Cutting/Deburring	<b>Protection available:</b>	IP67		
Polishing		Foundry Plus 2		
Machine tending	<b>Mounting:</b>	Floor, Tilted, Inverted		
Material handling	<b>Pose repeatability</b>			
Packing/Palletizing	<b>(RP) (mm):</b>	0.05		
Dispensing				
Measuring				

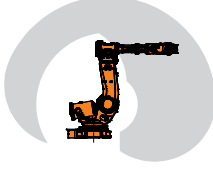

# Robots

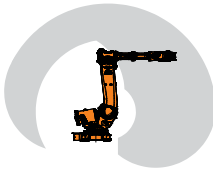

<b>IRB 4600-40</b>		<b>Main applications</b>	
		Arc welding	<b>Load (kg):</b> 40
		Assembly	<b>Reach (m):</b> 2.55
		Extraction	<b>Protection available:</b> IP67
		Machine tending	Foundry Plus 2
		Material handling	<b>Mounting:</b> Floor, Tilted, Inverted
		Packing/Palletizing	<b>Pose repeatability</b>
		Dispensing	<b>(RP) (mm):</b> 0.06
		Measuring	
<b>IRB 4600-45/60</b>		<b>Main applications</b>	
		Arc welding	<b>Load (kg):</b> 45/60
		Assembly	<b>Reach (m):</b> 2.05
		Extraction	<b>Protection available:</b> IP67
		Machine tending	Foundry Plus 2
		Material handling	<b>Mounting:</b> Floor, Tilted, Inverted
		Packing/Palletizing	<b>Pose repeatability</b>
		Dispensing	<b>(RP) (mm):</b> 0.05/0.06
		Measuring	
<b>IRB 660</b>		<b>Main applications</b>	
<b>IRB 660</b>			
		Palletizing	<b>Load (kg):</b> 180/250
		Material handling	<b>Reach (m):</b> 3.15
			<b>Protection available:</b> IP67
			<b>Mounting:</b> Floor
			<b>Pose repeatability</b>
			<b>(RP) (mm):</b> 0.05
<b>IRB 6620</b>		<b>Main applications</b>	
<b>IRB 6620</b>			
		Assembly	<b>Load (kg):</b> 150
		Cleaning/Spraying	<b>Reach (m):</b> 2.2
		Cutting/Deburring	<b>Protection available:</b> IP54, IP67
		Gluing/Sealing	Foundry Plus 2
		Grinding/Polishing	High pressure steam washable
		Machine tending	<b>Mounting:</b> Floor, Tilted, Inverted
		Material handling	<b>Pose repeatability</b>
		Packing/Palletizing	<b>(RP) (mm):</b> 0.03
		Press brake tending	
Spot welding			
<b>IRB 6620LX</b>		<b>Main applications</b>	
<b>IRB 6620</b>			
   	Grinding	<b>Load (kg):</b> 150	
	Heavy arc welding	<b>Reach (m):</b> 1.9	
	Machine tending	<b>Protection available:</b> Linear axis IP66	
	Material handling	5-axis robot arm:	
	Powertrain assembly	Standard-IP54	
		Foundry Plus 2: IP67	
		<b>Mounting:</b> Wall, Inverted	
		<b>Pose repeatability</b>	
		<b>(RP) (mm):</b> 0.04	

Main applications		IRB 6640-180/2.55	
Machine tending	<b>Load (kg):</b>	180	  
Material handling	<b>Reach (m):</b>	2.55	
Spot welding	<b>Protection available:</b>	IP67, Foundry Plus 2 Clean room class 5 certified by IPA	
	<b>Mounting:</b>	Floor	
	<b>Pose repeatability (RP) (mm):</b>	0.07	

Main applications		IRB 6640-235/2.55	
Machine tending	<b>Load (kg):</b>	235	 
Material handling	<b>Reach (m):</b>	2.55	
Spot welding	<b>Protection available:</b>	IP67, Clean room class 5 Foundry Plus 2, Foundry Prime 2	
	<b>Mounting:</b>	Floor	
	<b>Pose repeatability (RP) (mm):</b>	0.05	





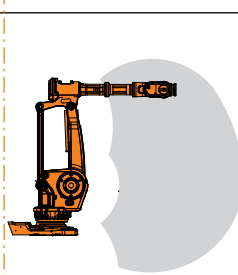
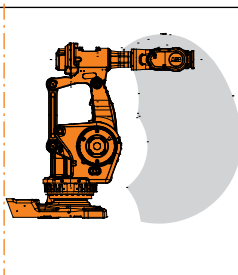
Main applications		IRB 6640-205/2.75	
Machine tending	<b>Load (kg):</b>	205	 
Material handling	<b>Reach (m):</b>	2.75	
Spot welding	<b>Protection available:</b>	IP67, Clean room class 5 Foundry Plus 2	
	<b>Mounting:</b>	Floor	
	<b>Pose repeatability (RP) (mm):</b>	0.04	

Main applications		IRB 6640-185/2.8	
Machine tending	<b>Load (kg):</b>	185	 
Material handling	<b>Reach (m):</b>	2.8	
Spot welding	<b>Protection available:</b>	IP67, Clean room class 5 Foundry Plus 2, Foundry Prime 2	
	<b>Mounting:</b>	Floor	
	<b>Pose repeatability (RP) (mm):</b>	0.05	

Main applications		IRB 6640-130/3.2	
Machine tending	<b>Load (kg):</b>	130	 
Material handling	<b>Reach (m):</b>	3.2	
Spot welding	<b>Protection available:</b>	IP67, Clean room class 5 Foundry Plus 2	
	<b>Mounting:</b>	Floor	
	<b>Pose repeatability (RP) (mm):</b>	0.05	

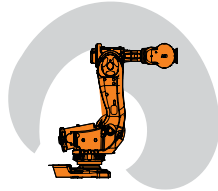

Main applications		IRB 6640ID-200/2.55	
Machine tending	<b>Load (kg):</b>	200	 
Material handling	<b>Reach (m):</b>	2.55	
Spot welding	<b>Protection available:</b>	IP67	
	<b>Mounting:</b>	Floor	
	<b>Pose repeatability (RP) (mm):</b>	0.07	

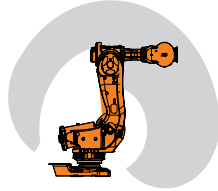

# Robots

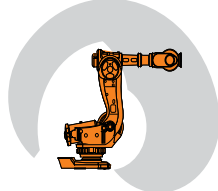

IRB 6640ID-170/2.75		<b>Main applications</b>	
		Spraying	<b>Load (kg):</b> 170
		Cutting/Deburring	<b>Reach (m):</b> 2.75
		Grinding/Polishing	<b>Protection available:</b> IP67
		Machine tending	<b>Mounting:</b> Floor
		Material handling	<b>Pose repeatability</b>
		Assembly	<b>(RP) (mm):</b> 0.06
IRB 6650			
IRB 6650S-90/3.9		<b>Main applications</b>	
		Spraying	<b>Load (kg):</b> 90
		Cutting/Deburring	<b>Reach (m):</b> 3.9
		Grinding/Polishing	<b>Protection available:</b> IP67
		Machine tending	Foundry Plus 2
		Material handling	High pressure steam washable
		Assembly	<b>Mounting:</b> Shelf
			<b>Pose repeatability</b>
	<b>(RP) (mm):</b> n.a.		
IRB 6650S-125/3.5		<b>Main applications</b>	
		Spraying	<b>Load (kg):</b> 125
		Cutting/Deburring	<b>Reach (m):</b> 3.5
		Grinding/Polishing	<b>Protection available:</b> IP67
		Machine tending	Foundry Plus 2
		Material handling	High pressure steam washable
		Assembly	<b>Mounting:</b> Shelf
			<b>Pose repeatability</b>
	<b>(RP) (mm):</b> 0.13		
IRB 6650S-200/3.0		<b>Main applications</b>	
		Spraying	<b>Load (kg):</b> 200
		Cutting/Deburring	<b>Reach (m):</b> 3.0
		Grinding/Polishing	<b>Protection available:</b> IP67
		Machine tending	Foundry Plus 2
		Material handling	High pressure steam washable
		Assembly	<b>Mounting:</b> Shelf
			<b>Pose repeatability</b>
	<b>(RP) (mm):</b> 0.14		
IRB 6660			
IRB 6660-130/3.1		<b>Main applications</b>	
		Press tending	<b>Load (kg):</b> 130
		Material handling	<b>Reach (m):</b> 3.1
		Machine tending	<b>Protection available:</b> IP67
		Machining	<b>Mounting:</b> Floor
		Milling	<b>Pose repeatability</b>
		Grinding	<b>(RP) (mm):</b> 0.11
		Cutting	
		Sawing	
IRB 6660-205/1.9		<b>Main applications</b>	
		Press tending	<b>Load (kg):</b> 205
		Material handling	<b>Reach (m):</b> 1.9
		Machine tending	<b>Protection available:</b> Chip protection, IP67
		Machining	Foundry Plus 2
		Milling	<b>Mounting:</b> Floor
		Grinding	<b>Pose repeatability</b>
		Cutting	<b>(RP) (mm):</b> 0.07
		Sawing	

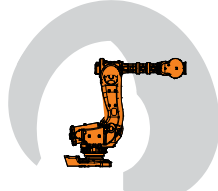



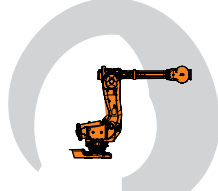

**IRB 7600**

<b>Main applications</b>		<b>IRB 7600-500/2.55</b>	
Assembly	<b>Load (kg):</b>	500	 
Cast cleaning	<b>Reach (m):</b>	2.55	
Machine tending	<b>Protection available:</b>	IP67	
Material handling		Foundry Plus 2	
Press brake tending	<b>Mounting:</b>	Floor	
Spot welding	<b>Pose repeatability (RP) (mm):</b>	0.08	

<b>Main applications</b>		<b>IRB 7600-400/2.55</b>	
Assembly	<b>Load (kg):</b>	400	 
Cast cleaning	<b>Reach (m):</b>	2.55	
Machine tending	<b>Protection available:</b>	IP67	
Material handling		Foundry Plus 2	
Press brake tending	<b>Mounting:</b>	Floor	
Spot welding	<b>Pose repeatability (RP) (mm):</b>	0.19	

<b>Main applications</b>		<b>IRB 7600-340/2.8</b>	
Assembly	<b>Load (kg):</b>	340	 
Cast cleaning	<b>Reach (m):</b>	2.8	
Machine tending	<b>Protection available:</b>	IP67	
Material handling		Foundry Plus 2	
Press brake tending	<b>Mounting:</b>	Floor	
Spot welding	<b>Pose repeatability (RP) (mm):</b>	0.27	

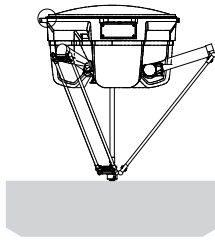
<b>Main applications</b>		<b>IRB 7600-325/3.1</b>	
Assembly	<b>Load (kg):</b>	325	 
Cast cleaning	<b>Reach (m):</b>	3.1	
Machine tending	<b>Protection available:</b>	IP67	
Material handling		Foundry Plus 2	
Press brake tending	<b>Mounting:</b>	Floor	
Spot welding	<b>Pose repeatability (RP) (mm):</b>	0.10	

<b>Main applications</b>		<b>IRB 7600-150/3.50</b>	
Assembly	<b>Load (kg):</b>	150	 
Cast cleaning	<b>Reach (m):</b>	3.50	
Machine tending	<b>Protection available:</b>	IP67	
Material handling		Foundry Plus 2	
Press brake tending	<b>Mounting:</b>	Floor	
Spot welding	<b>Pose repeatability (RP) (mm):</b>	0.19	

# Robots

## IRB 360

### IRB 360-1/800



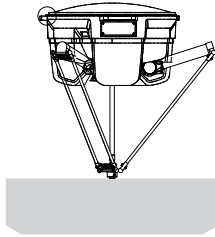
#### Main applications

Assembly  
Material handling  
Packing  
Picking

**Load (kg):** 1  
**Work Envelope (ø mm):** 800  
**Protection available:** Standard, IP55/67  
Stainless Clean room ISO class 5-7  
depending on arm configuration  
Wash down

**Pose repeatability (RP) (mm):** 0.04

### IRB 360-1/1130



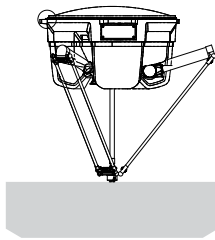
#### Main applications

Assembly  
Material handling  
Packing  
Picking

**Load (kg):** 1  
**Work Envelope (ø mm):** 1130  
**Protection available:** Standard, IP55/67  
Stainless Clean room ISO class 5-7  
depending on arm configuration  
Certified by IPA  
Wash down

**Pose repeatability (RP) (mm):** 0.09

### IRB 360-3/1130



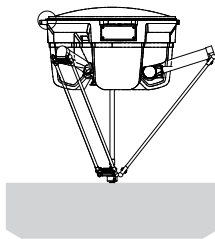
#### Main applications

Assembly  
Material handling  
Packing  
Picking

**Load (kg):** 3  
**Work Envelope (ø mm):** 1130  
**Protection available:** Standard, IP55/67  
Stainless Clean room ISO class 5-7  
depending on arm configuration  
Wash down

**Pose repeatability (RP) (mm):** 0.06

### IRB 360-1/1600



#### Main applications

Assembly  
Material handling  
Packing  
Picking

**Load (kg):** 1  
**Work Envelope (ø mm):** 1600  
**Protection available:** Standard, IP55/67  
Stainless Clean room ISO class 5-7  
depending on arm configuration  
Wash down

**Pose repeatability (RP) (mm):** 0.04

# Controllers

## RobotWare

RobotWare is the name of the embedded software of the IRC5 controller, designed to make robot users more productive and lower the cost of owning and operating a robot. The heart of this powerful and configurable software is ABB's robot language, RAPID, a highly flexible and powerful tool for creating well structured solutions for all kinds of applications. Furthermore, RobotWare ensures optimal performance through ABB's advanced motion technology which offers the most accurate path following as well as the shortest cycle time on the market.

In addition to all the powerful base functions of RobotWare, there are a number of powerful options for specific needs, e.g. MultiMove for multi robot control; SafeMove for new generation cell safety; and comprehensive support for many different process applications.

## 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



## IRC5 Dual cabinet controller

<b>Size H x W x D</b>	1370 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 except IRB 120



## 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, Will be available on other lower capacity robots in the future.



## 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>	Up to IRB 2400



## 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



# Controllers

## FlexPendant



<b>Size</b>	6.5" 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



Robot model	Max Speed	Protection available	Mounting position	Travel length	Acc/Ret
IRB 1600	1.06 m/s	Standard	Floor	1.7–11.7m (in steps of 1m)	1.5m/s <sup>2</sup> (maratonpac) 2.5m/s <sup>2</sup> (bobin)

### RTT 2400



Robot model	Max Speed	Protection available	Mounting position	Travel length	Acc/Ret
IRB 2400	1.06 m/s	Standard	Floor	1.7–11.7m (in steps of 1m)	1.5m/s <sup>2</sup> (maratonpac) 2.5m/s <sup>2</sup> (bobin)

## IRBT

### IRBT 4004



Robot model	Max Speed	Protection available	Mounting position	Travel length	Acc/Ret
IRB 4400-60	2.0 m/s	Foundry	Floor	1.9–19.9m	2.5m/s <sup>2</sup>
IRB 4600				(in steps of 1m)	

### IRBT 6004



Robot model	Max Speed	Protection available	Mounting position	Travel length	Acc/Ret
IRB 6620	1.6 m/s	Foundry	Floor	1.7–19.7m	2.0m/s <sup>2</sup>
IRB 6640				(in steps of 1m)	
IRB 6650S					

### IRBT 7004



Robot model	Max Speed	Protection available	Mounting position	Travel length	Acc/Ret
IRB 7600	1.2 m/s	Foundry	Floor	1.7–19.7m (in steps of 1m)	1.8m/s <sup>2</sup>

# Application Equipment I

## Spot welding cabinet

Dedicated controller cabinet for spot welding processes.

## Spot welding cabinet



## Water and Air Unit

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

## Water and Air Unit



## Material Handling

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 full integrated in the robot upper arm. This solution gives full possibility for production system with many different products running parallel, full offline capability and well protected cable package. No individual adjustment needed for DressPack.

### External with retract arm function

External DressPack with a retract arm pulling the cables away from the wrist. This solution gives less possibility for production system with many different products and reduced offline capability. Individual adjustment needed for DressPack.

### External

External DressPack targeting production with less demands on flexibility and focus on basic needs for robot handled tool. This means in functionality less signals, harder to adjust the DressPack to fit a production system with many different products and limited offline capability. Individual adjustment needed for DressPack.

## Material Handling



## Spot Welding

To support the different production needs a family of DressPacks has been developed for the spot welding application or when spot welding is 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

### Integrated

DressPack full integrated in the robot upper arm. This solution gives full possibility for production system with many different products running parallel, full offline capability and well protected cable package. No individual adjustment needed for DressPack.

### External with retract arm function

External DressPack with a retract arm pulling the cables away from the wrist. This solution gives less possibility for production system with many different products and reduced offline capability. Individual adjustment needed for DressPack.


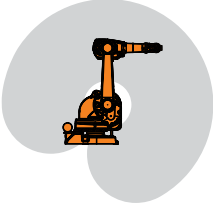

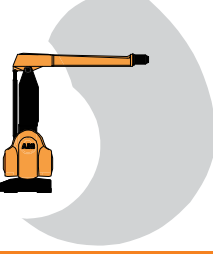
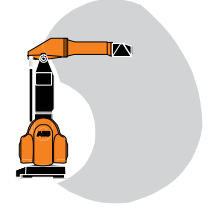

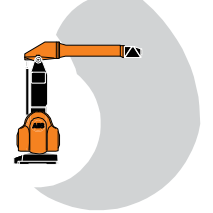

### External

External DressPack targeting production with less demands on flexibility and focus on basic needs for robot handled tool. This means in functionality less signals, harder to adjust the DressPack to fit a production system with many different products and limited offline capability. Individual adjustment needed for DressPack.

## Spot Welding

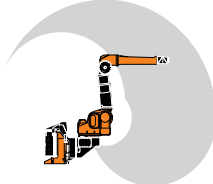



# Paint Robots

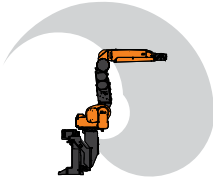

IRB 52		Main applications	
IRB 52			<p>Painting</p> <p><b>Load (kg):</b> 7</p> <p><b>Reach (m):</b> 1.2–1.45</p> <p><b>Protection available:</b> IP67, Ex</p> <p><b>Specific:</b> Floor mounted, tilted, wall mounted, inverted mounting</p> <p><b>Pose repeatability (RP) (mm):</b> 0.15</p>
IRB 540		Main applications	
IRB 540-12/16, 1000-1620 mm			<p>Painting</p> <p><b>Load (kg):</b> 5</p> <p><b>Reach (m):</b> 2–2.6</p> <p><b>Protection available:</b> IP67, Ex</p> <p><b>Specific:</b> Floor mounted, inverted mounting</p> <p><b>Pose repeatability (RP) (mm):</b> 2.0</p>
IRB 580		Main applications	
IRB 580-12/16, 1220 mm			<p>Painting</p> <p><b>Load (kg):</b> 10</p> <p><b>Reach (m):</b> 2.2</p> <p><b>Protection available:</b> IP67, Ex</p> <p><b>Specific:</b> Floor mounted, inverted mounting</p> <p><b>Pose repeatability (RP) (mm):</b> 0.3</p>
IRB 580-12/16, 1620 mm			<p>Painting</p> <p><b>Load (kg):</b> 10</p> <p><b>Reach (m):</b> 2.6</p> <p><b>Protection available:</b> IP67, Ex</p> <p><b>Specific:</b> Floor mounted, inverted mounting</p> <p><b>Pose repeatability (RP) (mm):</b> 0.3</p>
IRB 580-13/14, 1220-1620 mm			<p>Painting</p> <p><b>Load (kg):</b> 10</p> <p><b>Reach (m):</b> 2.2-19</p> <p><b>Protection available:</b> IP67, Ex</p> <p><b>Specific:</b> Clean wall rail, In-booth rail</p> <p><b>Pose repeatability (RP) (mm):</b> 0.3</p>

**IRB 5400**

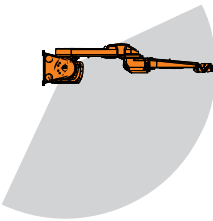

<b>Main applications</b>		<b>IRB 5400-12 Slim arm</b>	
Painting	<b>Load (kg):</b>	25	 
	<b>Reach (m):</b>	3.1	
	<b>Protection available:</b>	IP67, Ex	
	<b>Specific:</b>	Floor mounted	
	<b>Pose repeatability (RP) (mm):</b>	0.15	

<b>Main applications</b>		<b>IRB 5400-13/14 Slim arm</b>	
Painting	<b>Load (kg):</b>	25	 
	<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>Main applications</b>		<b>IRB 5400-22 Process arm</b>	
Painting	<b>Load (kg):</b>	25	 
	<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>Main applications</b>		<b>IRB 5400-23/24 Process arm</b>	
Painting	<b>Load (kg):</b>	25	 
	<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	

**IRB 5500**

<b>Main applications</b>		<b>IRB 5500</b>	
Painting	<b>Load (kg):</b>	13	 
	<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"	
	<b>Pose repeatability (RP) (mm):</b>	0.15	
		Bending backwards possibility on axis 3 (may be limited by the hose guiding on the robot)	

# Painting Equipment

## Color Change Unit

### Color Change Unit



### Information

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 solventborne and waterborne paint materials used in 1K and 2K systems.

## 2K Mixer Unit

### 2K Mixer Unit



### Information

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).

## Gear Pump Unit

### Gear Pump Unit



### Information

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



### Information

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 picture shows a color change module 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



### Information

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).

## FlexShield Unit

### FlexShield Unit



### Information

The FlexShield is a voltage block solution, optimized for direct charge continuous painting with waterborne paint materials. It provides electrostatic spraying with one- or two-component paint material and can be integrated directly on the robot arm to save paint during color change. The FlexShield is designed for working with 90kV and color change time as low as 10 sec.



**Atomizers (RB1000-SAD, -SSD)**

**Information**

The Robobel family of internal charged bells consist of highly efficient, high performance rotary atomizers for solventborne 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.

**RB1000-SAD, -SSD**



**CBS Atomizers (RB1000-WSC)**

**Information**

ABB's Cartridge Bell System (CBS) is the optimal solution for saving paint, both for waterborne and solventborne 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.

**RB1000-WSC**



**Atomizers (RB1000-EXT)**

**Information**

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 a double shaping air nozzle, providing pattern control functionality to increase transfer efficiency.

**RB1000-EXT**



**Atomizers (ROBOBEL021-MINI)**

**Information**

The "MINI" bell is the easiest way for General Industry customers to gain access to ABB's bell atomizer technology. The excellent atomizing performance and the circle spray pattern of the Robobel021-Mini bring a lot of benefits to users that normally use spray guns. Since the MINI-bell uses no high-voltage, both waterborne and solventborne paint can be used. The air motor technology is exactly the same as the renowned ROBOBEL926 atomizer.


**ROBOBEL021-MINI**




# Positioners


IRBP A			
IRBP 250 A	Max handling capacity (kg)	Max capacity (mm)	Max height (mm)
	250	ø 1000	900
<hr/>			
IRBP 500 A	Max handling capacity (kg)	Max capacity (mm)	Max height (mm)
	500	ø 1450	950
<hr/>			
IRBP 750 A	Max handling capacity (kg)	Max capacity (mm)	Max height (mm)
	750	ø 1450	950
<hr/>			
IRBP B			
IRBP 250 B	Max handling capacity (kg)	Max capacity (mm)	Max length (mm)
	250 (each side)	ø 1000	900
<hr/>			
IRBP 500 B	Max Handling capacity (kg)	Max capacity (mm)	Max height (mm)
	500 (each side)	ø 1450	1000
<hr/>			
IRBP 750 B	Max Handling capacity (kg)	Max capacity (mm)	Max height (mm)
	750 (each side)	ø 1450	1000
<hr/>			
IRBP C			
IRBP 500 C	Max handling capacity (kg)	Max capacity (mm)	Max length (mm)
	500 (each side)	–	–
<hr/>			
IRBP 1000 C	Max handling capacity (kg)	Max capacity (mm)	Max length (mm)
	1000 (each side)	–	–


**IRBP D**


Max Handling capacity (kg)	Max capacity (mm)	Max length (mm)	IRBP 250 D
250 (each side)	ø 1000	1600	

Max Handling capacity (kg)	Max capacity (mm)	Max length (mm)	IRBP 500 D
500 (each side)	ø 1200	2000	


**IRBP K**


Max handling capacity (kg)	Max capacity (mm)	Max length (mm)	IRBP 250 K
250 (each side)	ø 1200	4000	


Max handling capacity (kg)	Max capacity (mm)	Max length (mm)	IRBP 500 K
500 (each side)	ø 1400	4000	

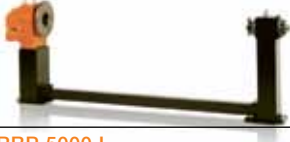
Max handling capacity (kg)	Max capacity (mm)	Max length (mm)	IRBP 750 K
750 (each side)	ø 1400	4000	

**IRBP L**

Max handling capacity (kg)	Max capacity (mm)	Max length (mm)	IRBP 250 L
250	ø 1600	4000	

Max handling capacity (kg)	Max capacity (mm)	Max length (mm)	IRBP 500 L
500	ø 1600	4000	

Max handling capacity (kg)	Max capacity (mm)	Max length (mm)	IRBP 750 L
750	ø 1600	4000	

Max handling capacity (kg)	Max capacity (mm)	Max length (mm)	IRBP 2000 L
2000	ø 1600	4000	

Max handling capacity (kg)	Max capacity (mm)	Max length (mm)	IRBP 5000 L
5000	ø 1600	5000	

# Positioners

IRBP R			
IRBP 250 R	Max handling capacity (kg)	Max capacity (mm)	Max length (mm)
	500 (each side)	ø 1000	1600
IRBP 500 R			
IRBP 500 R	Max handling capacity (kg)	Max capacity (mm)	Max length (mm)
	500 (each side)	ø 1200	2000
IRBP 750 R			
IRBP 750 R	Max handling capacity (kg)	Max capacity (mm)	Max length (mm)
	750 (each side)	ø 1200	2000
IRBP X			
IRBP 750 X	Max Handling capacity (kg)	Max capacity (mm)	Max length (mm)
	750 (each side)	ø 1500 ø 1200	2200 2000
IRBP 1000 X			
IRBP 1000 X	Max Handling capacity (kg)	Max capacity (mm)	Max length (mm)
	1000 (each side)	ø 1500 ø 1200	2200 2000
IRBP Y			
IRBP 750 Y	Max Handling capacity (kg)	Max capacity (mm)	Max length (mm)
	750 (each side)	ø 1500 ø 1200	2200 2000
IRBP 1000 Y			
IRBP 1000 Y	Max Handling capacity (kg)	Max capacity (mm)	Max length (mm)
	1000 (each side)	ø 1500 ø 1200	2200 2000
Rotary unit MTC			
Rotary unit MTC	Max Handling capacity (kg)	MTC 250, MTC 500, MTC 750, MTC 2000, MTC 5000	
	250–5000 kg		

# Application Equipment II

## Seam finder SmarTac

Search Speed	Search time per point/one dimension	Accuracy
20–50 mm/s (depending on position accuracy required)	2–6 sec (depending on workplace complexity)	+0.25 mm (with search speed 20 mm/sec)
* Only for IRB 1410.		

### Seam finder SmarTac



## Torch system PKI-S & PKI-D

PKI	Length mm	Bend	Amp. 100%	Wire mm
500	169	22	400	0.8–1.6

### Torch system PKI-S & PKI-D



\* Only for IRB 1410.  
\* Amp. at 100% duty cycle with mixed gas. Other torch neck configurations are available on request.

## Torch PSF 315 M

PSF	Length mm	Bend	Amp. 100%	Wire mm
315	1.5	25	170	0.8–1.2

### Torch PSF 315 M



\* Only for IRB 1410.  
\* Amp. at 100% duty cycle with mixed gas.

## Motor Units MU

Product	Rated speed	Rated torque
MU 10	3300	1.5
MU 20	3300	6.8
MU 30	3300	19

### Motor Units MU







## TSC Torch Service Center

Torch cleaner unit TC 96 (gas nozzle cleaning)  
Tool Center Point gauging and calibrating system  
Wire cutter (Max. wire diameter to be cut: 1.6 mm steel and aluminium)  
Robot home position switch (optional) mounted on an adjustable stand  
Oil injection

### TSC Torch Service Center



# Application Equipment

AristoMig				
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
Power Source RPB				
Power Source RPB 320	Voltage range	Current range	Permissible load at MIG/MAG	Process methods MIG/MAG
	10–36 V	10–320 A	60 % duty cycle: 320 A / 32.8 V	Short arc, Spray arc, Rapid arc
			100 % duty cycle: 320 A / 32.8 V	
* Only for the Asian market and IRB 1410.				
Power Source RPB 420	Voltage range	Current range	Permissible load at MIG/MAG	Process methods MIG/MAG
	10–41 V	10–420 A	60 % duty cycle: 420 A / 36.8 V	Short arc, Spray arc, Rapid arc
			100 % duty cycle: 400 A / 36.0 V	
* Only for the Asian market and IRB 1410.				
Wire feed system				
Wire feed system	Product	Robot model	Wire feed speed range	Wire diameters (Standard)
	A314EB	IRB 1410	0.5–30 m/min	1.0 and 1.2 mm
* Only for the Asian market and IRB 1410.				

# Function Packages

## Function Packages

Enables easy teaching and automatic path generation of complex part surfaces and edges for machining processes like polishing, deburring, grinding. Furthermore, forces are 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.

### ForceControl for Machining Applications



This standardized and turnkey finishing cell represents a verified solution in form of a robotic 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 ForceControl technology for improved machining of small and medium sized parts.

### FlexFinishing Cell



Engineered to make ABB robot guidance and inspection easy to configure and operate, TrueView function packages offer a complete solution for 2D, 2.5D and 3D applications. Patented single camera technology provides for the location of objects in six degrees of freedom without a laser sensor or specialized hardware. TrueView function packages include analog controlled LED lights, optics kit, robo-flex cables, robot-mounted brackets for camera and lights, a powerful vision PC capable of serving multiple ABB robots, and TrueView Rapid modules for easy to build robot programs. Unique to TrueView is the easy to use calibration process which provides factory operators and technicians with the ability to calibrate the vision system in less than five minutes from the TrueView GUI which runs on the ABB FlexPendant. TrueView provides manufacturers with new possibilities to further enhance the business case for robot automation by eliminating costly precision fixturing, mechanical part crowding and dunnage.

### TrueView™



### 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.

### Robotic Agility

ABB FlexWashers take advantage of the robot's agility to move the part around stationary HPWD tools or the HPWD tool around the part in a fixture. The result is a uniform and unsurpassed cleanliness of parts with simple as well as complex geometries.

### 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.

### FlexWasher™



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.

### Paint Application Packages (PAP)



# Standard arc welding cells

FlexArc® robotic welding cells consist of complete range of standardized flexible production solutions ready to use for production.

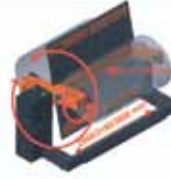
Each of ABB's FlexArc® Cells are available as virtual cells in RobotStudio and can be used for simulation, offline programming, training and optimization.

FlexArc® cells are designed to bring competitive advantages to markets where just-in-time production, exceptional product quality, process reliability and manufacturing flexibility, are crucial.

250			
250K			
		<b>Robot:</b>	IRB 1600
		<b>Positioner:</b>	IRBP 250K
		<b>Handling capacity:</b>	250 Kg
		<b>Station footprint (L x W x H) with light curtains:</b>	5500 x 4300 x 2500
		<b>Station footprint (L x W x H) with roll-down door:</b>	4300 x 4300 x 2700
250R			
		<b>Robot:</b>	IRB 1600
		<b>Positioner:</b>	IRBP 250R
		<b>Handling capacity:</b>	250 Kg
		<b>Station footprint (L x W x H) with light curtains:</b>	5300 x 3600 x 2500
		<b>Station footprint (L x W x H) with roll-down door:</b>	4000 x 3700 x 2700
500			
500C			
		<b>Robot:</b>	IRB 1600
		<b>Positioner:</b>	IRBP 500C
		<b>Handling capacity:</b>	500 Kg
		<b>Station footprint (L x W x H) with light curtains:</b>	5300 x 3600 x 2500
		<b>Station footprint (L x W x H) with roll-down door:</b>	4000 x 3600 x 2700
500K			
		<b>Robot:</b>	IRB 1600
		<b>Positioner:</b>	IRBP 500K
		<b>Handling capacity:</b>	500 Kg
		<b>Station footprint (L x W x H) with light curtains:</b>	6000 x 5300 x 3000
		<b>Station footprint (L x W x H) with roll-down door:</b>	4800 x 5300 x 3000
500R			
		<b>Robot:</b>	IRB 1600
		<b>Positioner:</b>	IRBP 500R
		<b>Handling capacity:</b>	500 Kg
		<b>Station footprint (L x W x H) with light curtains:</b>	6700 x 3700 x 2500
		<b>Station footprint (L x W x H) with roll-down door:</b>	5600 x 3700 x 2700



<b>Robot:</b>	IRB 1600
<b>Positioner:</b>	IRBP 750K
<b>Handling capacity:</b>	750 Kg
<b>Station footprint (L x W x H) with light curtains:</b>	6000 x 5300 x 3000
<b>Station footprint (L x W x H) with roll-down door:</b>	4800 x 5300 x 3000



750K



<b>Robot:</b>	IRB 1600
<b>Positioner:</b>	IRBP 750R
<b>Handling capacity:</b>	750 Kg
<b>Station footprint (L x W x H) with light curtains:</b>	4800 x 5300 x 3000
<b>Station footprint (L x W x H) with roll-down door:</b>	5600 x 3700 x 2700



750R



# Software Products

## Software

### RobotStudio®



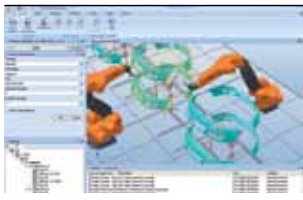
RobotStudio is a software product that makes manufacturing engineering more efficient throughout the lifecycle of a robot system. In the concept stage of a project, RobotStudio makes it possible to visualize and evaluate several alternative solutions. In the design stage, fixtures and tooling can be verified in RobotStudio before they are manufactured. Robot programs can be prepared and tested in RobotStudio ahead of the arrival of the robots and other equipment. In the commissioning phase, RobotStudio can be used to tune the programs on the real robots, allowing the technicians to work with the same powerful editor and debugger that was used offline. And when production has started, RobotStudio can be used to create or modify programs for new or changed parts with minimum interruption of production.

### ArcWelding PowerPac™



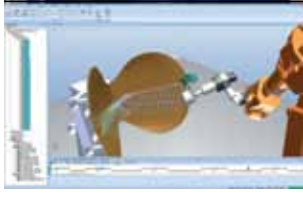
ArcWelding PowerPac™ is an add-in to RobotStudio that makes it fast and easy to program arc-welding applications. It includes VirtualArc™, an expert system that makes it possible to determine the process parameters necessary to achieve a particular welding result. Use of ArcWelding PowerPac™ makes it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

### Painting PowerPac™



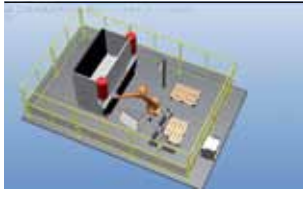
The Painting PowerPac™ integrates paint programming knowledge and paint process tools into RobotStudio. It will speed up your programming and simulation of painting robots and painting equipment, and is a faster and more intuitive way to create paint programs. Paint strokes are easy to create and edit. 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.

### Machining PowerPac™



Machining PowerPac™ is an add-in to RobotStudio that makes it possible to create robot programs with hundreds of paths and thousands of targets for milling, grinding, or polishing applications in a few simple steps. An intuitive wizard guides users in creating robot targets from surfaces and edges in an imported CAD model. Templates with process parameters for machining applications using position or force control make it easy to achieve high quality results quickly.

### Bending PowerPac™



The Bending PowerPac™ add-in makes it possible for non-programmers to utilize the power of RobotStudio to create robot programs for press-brake tending applications. It guides the user in the complex task of finding feasible bending sequences and choosing the best solution. Potential areas of interference can be detected before the program is applied to the real robot system.

### 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.

### PickMaster 3 & Pickmaster 5



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. PickMaster 5 is the software for palletizing applications. It contains all the features necessary to create a robust palletizing application.

# Service offer overview

## A partnership for productivity improvement

ABB's global customer service organization offers a complete portfolio of services designed to increase productivity and performance.

We understand well that business profitability is often built on the back of demanding production schedules. ABB has over 1,150 fully trained service engineers and process experts in 53 countries in over 100 locations, ready to provide service and support for your robots and robot systems.

Portfolio of Services		
<b>Offer</b>	<b>Information</b>	<b>Parts and Logistics</b>
Spare Parts	ABB offers original parts of highest quality with fast global distribution service including new, exchange and repair parts. Our goal is to ensure you have the right part in the right place at the right time.	
Global distribution services		
Inventory Management		
Refurbished robots		
Parts Repair	The ABB reconditioning robot program delivers used robots that have undergone a rigorous reconditioning process using original spare parts and are covered by a full 12 months warranty.	
<b>Offer</b>	<b>Information</b>	<b>Field Services</b>
Service Contracts	ABB offers a comprehensive range of Service Agreements including Remote Service. This powerful technology combined with the global presence of our fully trained service engineers contribute to immediate fault analysis and fast assistance to ensure your robot systems are kept fully productive.	
Helpdesk & Remote services		
Field Operations		
Installation & Commissioning		
<b>Offer</b>	<b>Information</b>	<b>Training</b>
Product and System Training	Our product and system training is available in ABB Robotics Training centers in over 30 countries in your local language. Onsite training with ABB supplied loan equipment is also available.	
Documentation		
<b>Offer</b>	<b>Information</b>	<b>Productivity Improvement</b>
Process & productivity improvement	With global resources and experience in all major applications, processes and systems, ABB is able to offer system upgrades and modifications, cell relocation, consultancy to improved performance and availability of your robot equipment.	
Application upgrades & modification		
Asset re-utilization and relocation		
<b>Offer</b>	<b>Information</b>	<b>Performance Services</b>
Installation and commissioning	ABB can take full responsibility for your robot manufacturing equipment and provide a long-term collaboration where ABB proactively manages your maintenance operations.	
Consulting services		
Performance benchmarking		
Robot application care		

# Contact us