



IRB 1600

Industrial Robot

MAIN APPLICATIONS

Arc welding
Assembly
Die casting
Injection moulding
Machine tending
Material handling
Packaging



The All-round Winning Athlete

The IRB 1600 is a fast and strong bending backwards robot - the answer to important market demands. Designed to be cost optimal, the IRB 1600 is as masterful in arc welding as in die casting, machine tending, material handling, injection moulding, assembly and packaging. Being a flexible all-rounder, the IRB 1600 is nonetheless a keen specialist with competitive edge in each application.

Reliable – High production up time

The reliable combination of proven technology and well tested innovations equals in high MTBF, low maintenance need, and short repair times, which provide a high production up time.

Fast – Short cycle time

Faster than any other competing robot in its class. With the fastest main axes and high-speed upper arm axes, the IRB 1600 minimizes cycle times.

Accurate – Consistent parts quality

Outstanding position repeatability ($\pm 0.05\text{mm}$) and very good path accuracy gives a consistent parts quality for customer products.

Strong – Maximized utilization

Payload options are 5 or 7 kg (up to 10 kg with “wrist down”). This makes the IRB 1600 the strongest robot in its class, offering maximized utilization.

Robust – Harsh production environment

IP 67 classed, steam washable, and “Foundry Plus” optional, the IRB 1600 is a robust robot, resistant against harsh production environments.

Versatile – Flexible integration and production

Bending backwards concept and different mounting options (wall, floor, inverted or tilted mounting) make the IRB 1600 a versatile robot, ready to meet the highest demands on flexible integration and production.

Controller system IRC5

Easy – Short start up time

The controller IRC5 and the IRB 1600 make a strong and flexible team which is easy to program (on or off-line) via the simple operator interface.

Smart – High production efficiency

Building compact and efficient cells, up to four robots can be independently operated from the same controller. This is called MultiMove.

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TECHNICAL DATA, IRB 1600 INDUSTRIAL ROBOT

SPECIFICATION

Robot versions IRB	Handling capacity	Reach
IRB 1600	5 kg	1.2 m
IRB 1600	5 kg	1.45 m
IRB 1600	7 kg	1.2 m
IRB 1600	7 kg	1.45 m
Number of axes	6	
Protection	IP 54 (standard) Foundry Plus, IP 67, steam washable (optional)	
Mounting	floor, wall, inverted, tilted	
Integrated signal supply	23 signals + 10 power (optional)	
Integrated air supply	max. 8 bar on upper arm (optional)	

PERFORMANCE

Position repeatability	0.05 mm	
Speed axis	7 kg	5 kg
1	180°/s	150°/s
2	180°/s	160°/s
3	180°/s	170°/s
4	320°/s	320°/s
5	400°/s	400°/s
6	460°/s	460°/s
Range of movement	1.2 m reach	1.45 m reach
Axis 1	+180° to -180°	+180° to -180°
Axis 2	+136° to -63°	+150° to -90°
Axis 3	+55° to -235°	+65° to -245°
Axis 4	+200° to -200° Default +190 rev ^a	+200° to -200° Default +190 rev ^a
Axis 5	to -190 rev Max ^b	to -190 rev. Max ^b
Axis 6	+115° to -115° +400° to -400° Default +288 rev ^a	+115° to -115° +400° to -400° Default +288 rev ^a
	to -288 rev Max ^b	to -288 rev Max ^b

a. rev = Revolutions
b. The default working range for axis 4 and axis 6 can be extended by changing parameter values in the software.

POWER SUPPLY

Supply voltage	200 – 600 V, 50/60 Hz
Rated power	
supply transformer	4 kVA/7.8 KVA with external axis

PHYSICAL

Dimensions	
Total height	1.45 m = 1294,5; 1.2 m = 1069,5
Robot base	484 x 648
Weight	
IRB 1600-X/1.2 m	250 kg
IRB 1600-X/1.45 m	250 kg

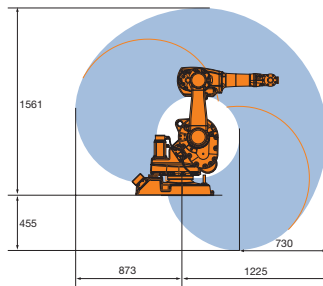
ENVIRONMENT

Temperature	+5 to +45°
Relative humidity	max. 95 %
Noise level	max. 70 dB (A)

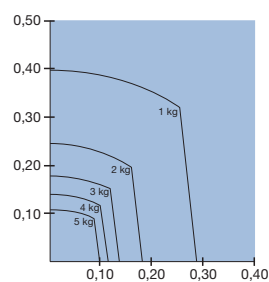
Data and dimensions may be changed without notice.

WORKING RANGE AND LOAD DIAGRAM

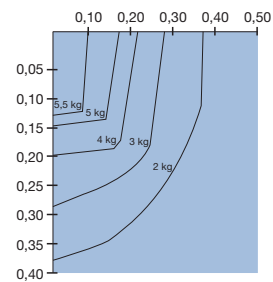
IRB 1600/1.2 m



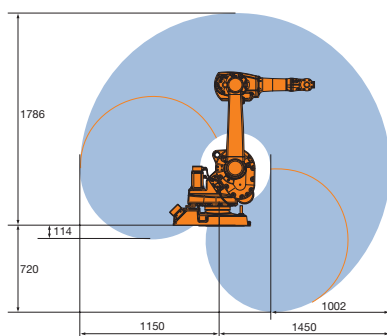
IRB 1600-5/xx Armload 15 kg



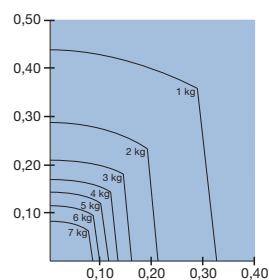
IRB 1600-5/xx with Vertical Wrist



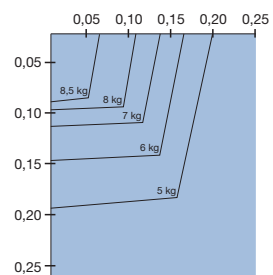
IRB 1600/1.45 m



IRB 1600-7/xx Armload 15 kg



IRB 1600-7/xx with Vertical Wrist



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ABB reserves the right to change specifications without notice.

