

IRB 1660ID

High performance ID robot for arc welding and machine tending



When shorter cycle times, unmatched versatility, and a smaller, more powerful wrist matter - ABB's IRB 1660ID is the robot of choice.

Up to 10% shorter cycle times

IRB 1660ID's new compact wrist with very powerful motors enables fast and reliable movements that do not impede swinging cables and allow maximum acceleration and speed at all times. This combined with ABB's QuickMove™ technology allows the IRB 1660ID to shorten cycle times up to 10% compared to competition.

Outstanding weld quality

The demand for superior and quality in arc welding applications has increased, requiring improved wire feeding control near the arc to guarantee high volume production. The IRB 1660ID has a stronger more rigid upper arm able to lift up to 6 kg to accommodate heavier torches. This, combined with ABB's TrueMove™ technology and the new motion process "Accuracy mode" provides 0.05 mm path repeatability for excellent welding results.

Safe robot movements enable high density cells

The IRB 1660ID with the aid of RobotStudio®, ABB's premier offline robot software programming tool, enables robot programmers to envision high density cells with several robots welding close to each other with a minimum of work piece heat distortions.

RobotStudio simulations help to secure safe robot movements with max speed and accelerations at all

times to provide predictable and shortest possible and cycle times. Such high density cells can maximize your output, provide top quality parts and operate with unmatched reliability.

Fast, agile and reliable for machine tending

The compact and hollow wrist enables fast and reliable movements since the robot can move at maximum acceleration and speed without damaging the Integrated DressPack. The risk of collision in confined spaces is also eliminated. The combined working range of axes 4, 5 and 6 of 1,390° provides outstanding agility inside CNC machines. The IP67 wrist, the protection of the cabling from water and the controlled movements provide up to 50 percent lower maintenance costs and a longer life expectancy.

Simplified online programming

Online programming is further simplified thanks to the full control of the hose packages or cabling, the compact 135 mm size wrist for faster re-orientations and the 0.30 mm TCP reorientation accuracy (absolute accuracy option needed) for highly accurate corner re-orientations.

Main applications

- Arc welding
- Machine tending
- Material handling

Specification

| Robot version | Reach (m) | Payload (kg) | Armload (kg) |
|-------------------|---|--------------|--------------|
| IRB 1660ID-6/1.55 | 1.55 | 6 | 15+15 |
| IRB 1660ID-4/1.55 | 1.55 | 4 | 15+15 |
| Number of axes | 6 | | |
| Protection | IP67 (Axis 4: IP40) | | |
| Mounting | Floor, tilted, inverted | | |
| Controller | IRC5 Single Cabinet/IRC5 PMC Panel Mounted/IRC5 Compact | | |

Performance (according to ISO 9283)

| | IRB 1660ID -6/1.55 | IRB 1660ID -4/1.55 |
|------------------------|-----------------------|-----------------------|
| Path repeatability | 0.05 mm | 0.08 mm |
| Position repeatability | 0.02 mm | 0.02 mm |

Technical information

Electrical Connections

| | |
|-------------------|--|
| Supply voltage | 200-600 V, 50-60 Hz |
| Power consumption | 0.62 kW, ISO-Cube at max. load and speed |

Physical

| | |
|--------------|--------------|
| Robot base | 484 x 648 mm |
| Robot height | 1392 mm |
| Robot weight | 257 kg |

Environment

| | |
|---|---|
| Ambient temperature for mechanical unit | |
| During operation | +5° C (41° F) to +45° C (113° F) |
| During transportation and storage | -25° C (-13° F) to +55° C (131° F) |
| During short periods (max. 24 h) | up to +70° C (158° F) |
| Relative humidity | Max. 95% |
| Noise level | < 70 dB(A) |
| Safety | Double circuits with supervisions, emergency stops and safety functions. 3-position enable device |
| Emission | EMC/EMI shielded |

Data and dimensions may be changed without notice.

Movement

| Axis movement | Working range | Axis max. speed |
|-----------------|---|-----------------|
| Axis 1 rotation | +180° to -180° | 180°/s |
| Axis 2 arm | +150° to -90° | 180°/s |
| Axis 3 arm | +79° to -238° | 180°/s |
| Axis 4 wrist | +175° to -175° | 320°/s |
| Axis 5 bend | +120° to -120° | 360°/s |
| Axis 6 turn | Default: +400° to -400° Max. rev: +191 to -191 | 500°/s |

Working range

