

Function Package IRB 6640 Force Control for Machining

The Force Control Function Package IRB 6640 for machining applications enables customers and system integrators to exploit a new dimension of robot intelligence for finishing processes such as deburring, grinding and polishing (e.g. for work pieces made of steel, stainless steel, aluminum, magnesium, wood, plastics, glass, etc.).



New functionality

To activate the new functionality of force control for machining more easily and much faster for users this special Function Package was developed and can be provided for various manipulator types.

Integrated solution

The basic Function Package includes the software FC Base including a dedicated GUI (Graphical User Interface) for machining for the FlexPendant, a special axis computer plus, a DAQ board, the Force-/Torque-Sensor and the sensor cable which is integrated in a hose package.

Ready to use package

With this Function Package main advantages can be obtained, which enables customers to concentrate on the present application and process. By reason that the Function Package is delivered fully assembled, tested and verified – meaning that the basic set-up of the system is already done before delivery – valuable savings of resources like manpower, time and costs are given.

Higher productivity

The revolutionary technology of force control for machining in combination with the Function Package IRB 6640 enables a faster integration (because of minimized programming and optimizing efforts) and a quality improvement (because of reduced risks for damaging tools, workpieces or even the robot) in the production. This leads to fewer costs, higher productivity and better process results due to the fact that not the position but the process itself gets controlled

Function Package IRB 6640

Technical Data

Function Package Elements

Hose Package:	upper hose package The integration of additional media is enabled.
Valve Plate:	The force sensor cable is spread across the valve plate. The assembly of additional components is possible.
Base Cable (Sensor):	7m, 15m, 22m, 30m (= corresponding to manipulator cable length)
Controller Hardware:	738-1 Prepared for Force Control
Controller Software:	661-2 Force Control base 877-1 Machining FC GUI 617-1 FlexPendant Interface
Mechanical assembly of hose package, force sensor, DAQ board and cabling is included if ordered together with a robot system. Equipment is fully tested and verified delivered.	

Application area

Available for manipulator:	IRB 6640 (all versions except ID types)
Available for controller:	IRC5 (RW 5.09 and higher)
Available for:	Single Robots MultiMove Robots (independent)
Not available for:	MultiMove Robots (coordinated) IRB 6640ID

Force Sensor Specification (Metric)

Omega 160 IP65	
Sensor Diameter:	170 mm
Sensor Height:	66 mm
Sensor Weight:	7.26 kg
Degree of protection:	IP65
Max. Force (Fx, Fy):	±2500 N
Max. Force (Fz):	±6250 N
Max. Torque (Tx, Ty, Tz):	±400 Nm
Single Axis Overload (Fx, Fy):	±18000 N
Single Axis Overload (Fz):	±48000 N
Single Axis Overload (Tx, Ty):	±1700 Nm
Single Axis Overload (Tz):	±1900 Nm
Resolution (Fx, Fy):	1/4 N
Resolution (Fz):	1/2 N
Resolution (Tx, Ty):	1/20 Nm
Resolution (Tz):	1/40 Nm

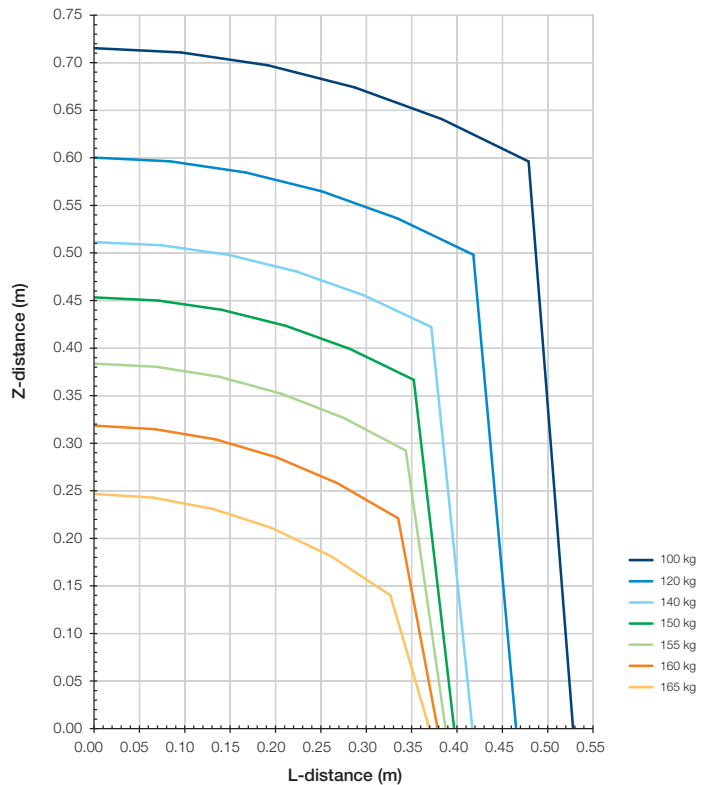
Technical data of the products and contents of this document may be changed without notice. In case of order the respectively agreed constitutions are decisive. ABB AG assumes no responsibility for any errors or eventual incompleteness that may appear in this document. We reserve us all rights on this document and its included objects and illustrations. This document and parts thereof must not be reproduced or copied without ABB's written permission, and contents thereof must not be imparted to a third party nor be used for any unauthorized purpose.

Copyright © 2010 ABB, All rights reserved.

Load diagrams IRB 6640 (including the force sensor)

IRB 6640-185/2.80

Sensor: 18,2kg, Length 107,4mm; Armload: Upperarm 50kg



IRB 6640-235/2.55

Sensor: 18,2kg, Length 107,4mm; Armload: Upperarm 50kg

