



ABB Robotics, November 2015

IRBT 2005: Medium Track Platform Overview

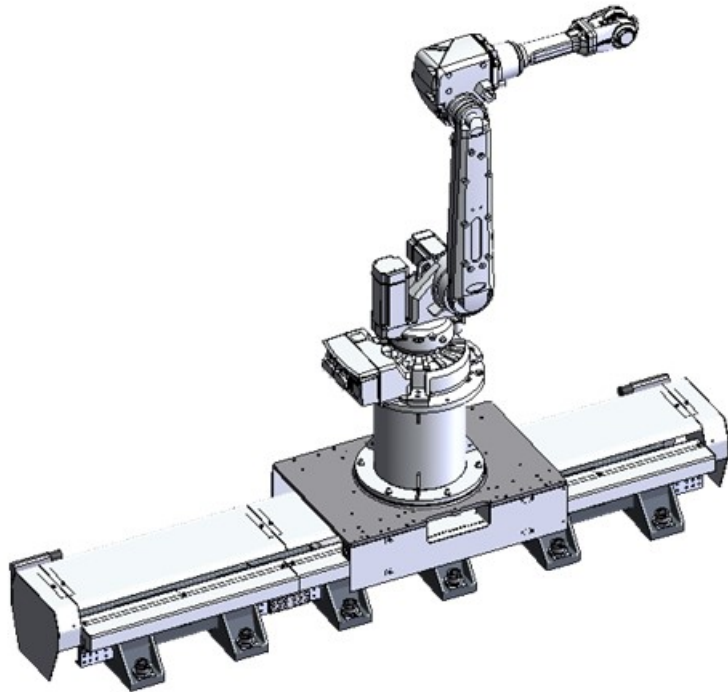
IRBT 2005

Agenda

- Overview
- Differentiated Value Proposition
- Targeted Applications
- Customer Benefits
- Design
- Options
- Technical Features
- Summary

Overview

IRBT 2005: Medium Track Motion



A new modular platform for medium track motion for

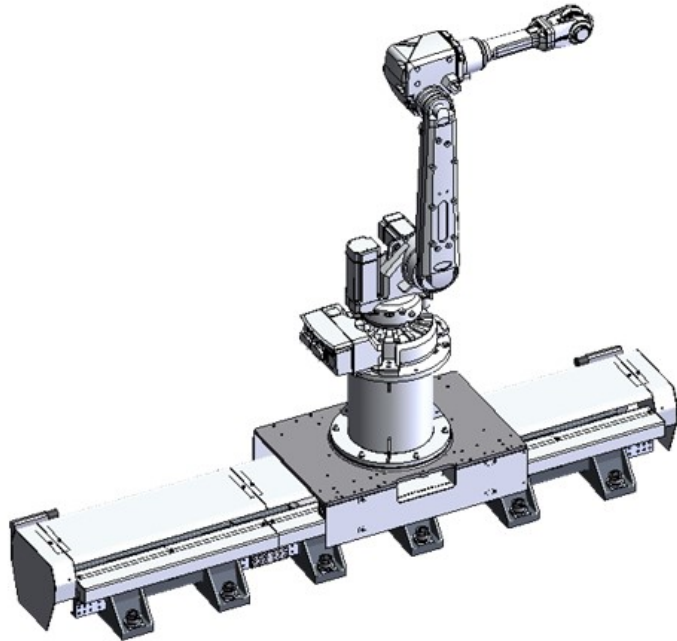
- Medium size robots
- Handling applications (up to 1.2 tons)

High degree of modularity.

- Different process applications
- Different robots or fixture transfer
- Different travel length
- Optimize performance based on actual load via dynamic model
- Flexibility to add functionality or extend working range also at a later stage

Differentiated value proposition

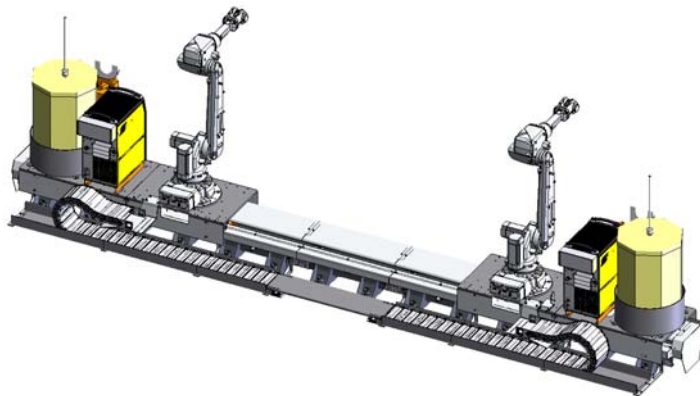
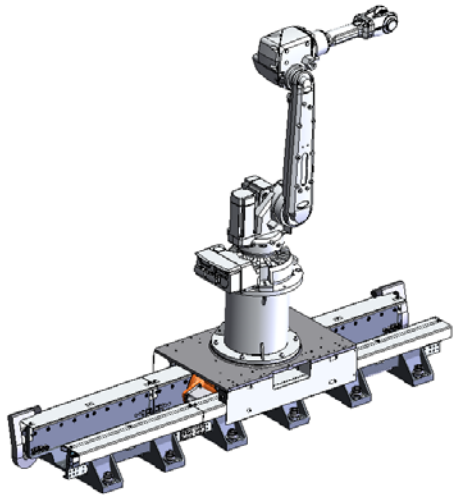
IRBT 2005: Medium Track Motion



The only track motion platform on the market to guarantee high speed and precision accuracy, the IRBT 2005 from ABB offers greater flexibility and up to 50% shorter cycle times.

Targeted applications

Robot solutions



The IRBT 2005 is designed to handle a number of robot applications like:

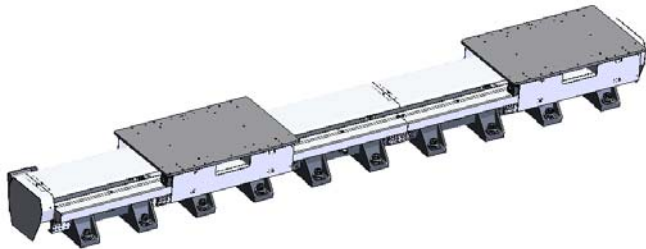
- Material Handling
- Machine Tending
- Arc Welding
- Sealing / Dispensing

Applications that require both speed and/or accuracy will benefit from the system`s design.

The robot system can also be combined with IRBT 2005 and other accessories like positioners

Targeted applications

Transfer solutions



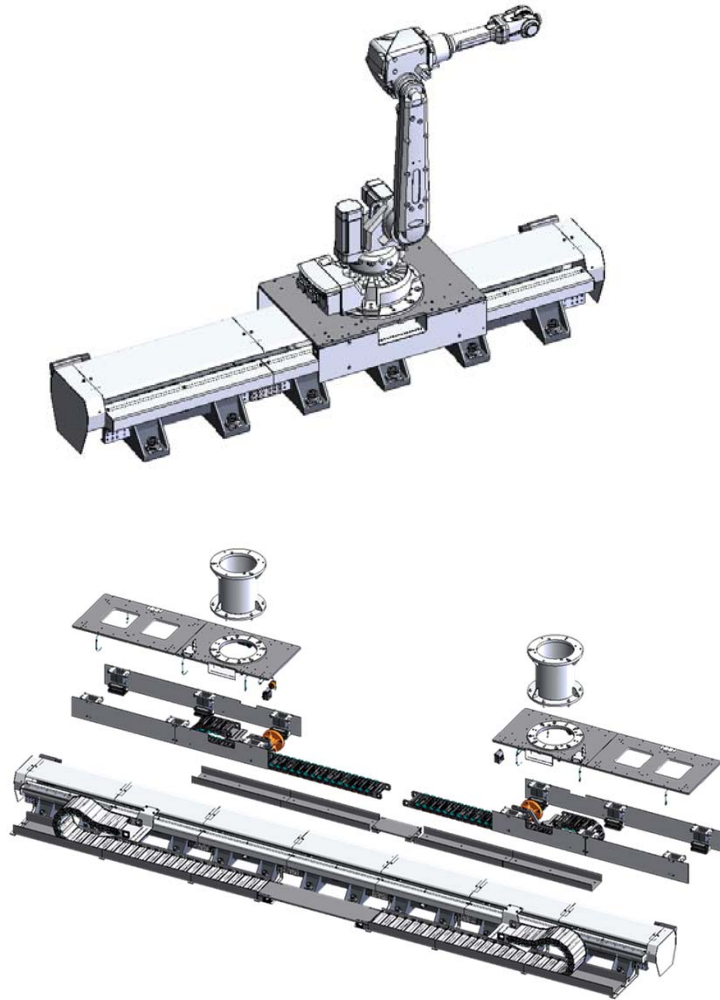
The IRBT 2005 is design to fit a number of transfer applications like:

- Indexing different fixtures into automation cell
- Transfer material, like car bodies between different working stations

The concept is prepared to be modular build up to 100 m long

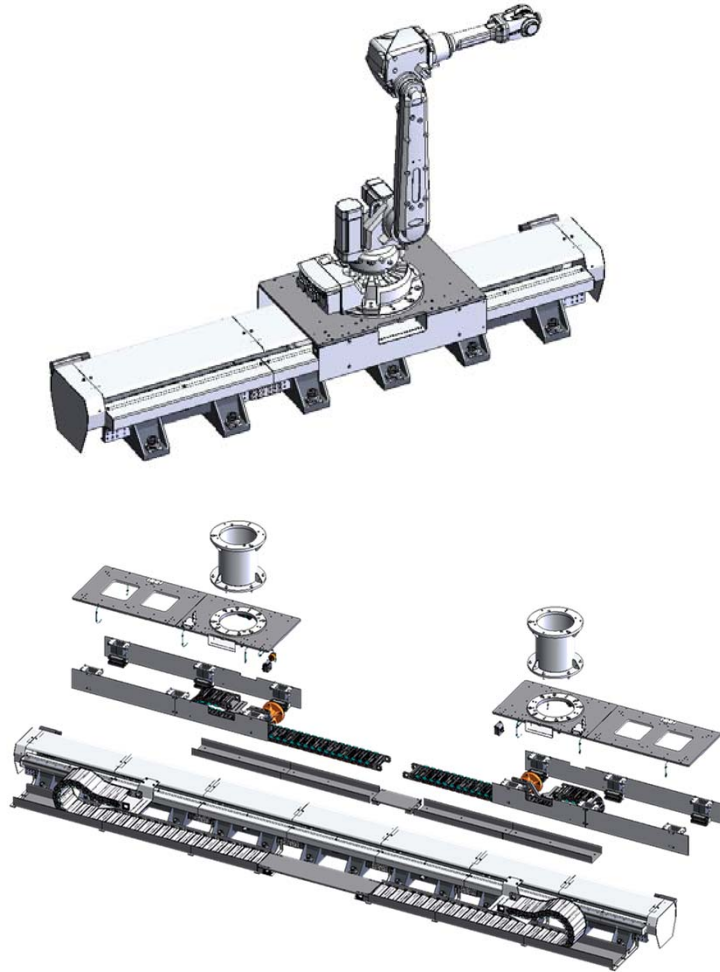
Performance will be optimized based on actual load for each part of the cycle

Customer benefits



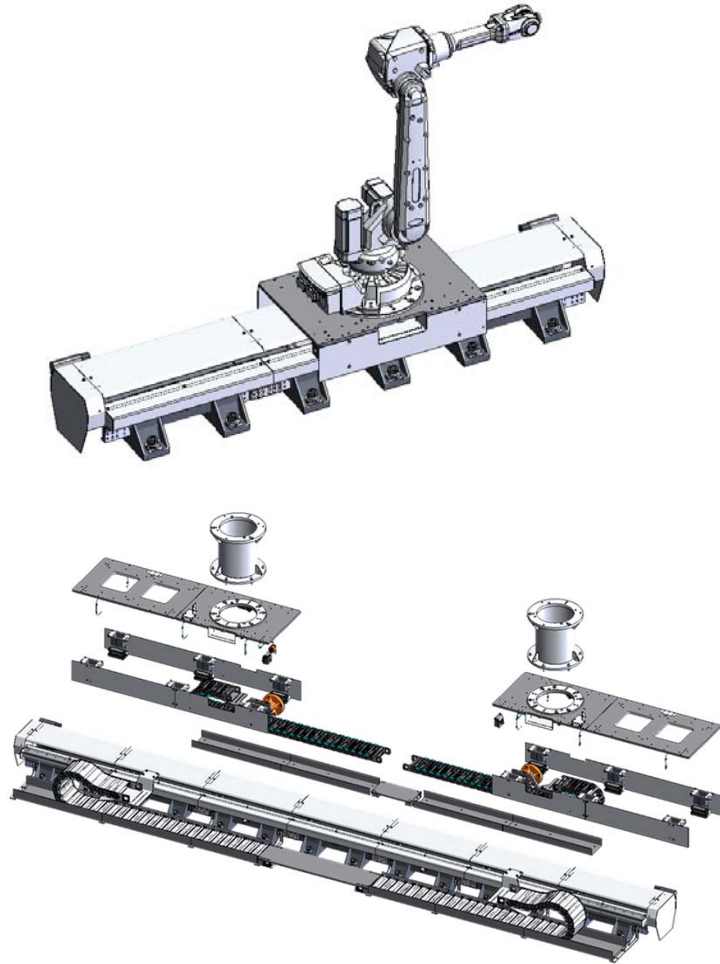
- **Performance**
Unique dynamic model which optimize movement of IRBT2005 according to the payload
- **Modularity**
Fast to produce, easy to transport and prepared for rebuild, each carriage configured separate gives combination possibilities
- **Small foot print**
Minimized “dead zone”, maximize useful travel length
- **Low life cycle cost**
High performance, easy to start up, high reliability

Customer benefits



- Critical building blocks are well protected motor, linear guides, cable connections and the internal built cable chain – empty external cable chain as option.
- Simplified installation
Software and hardware. Includes adjustable feet
- Short delivery time
- Standard product support (One-stop-shop)

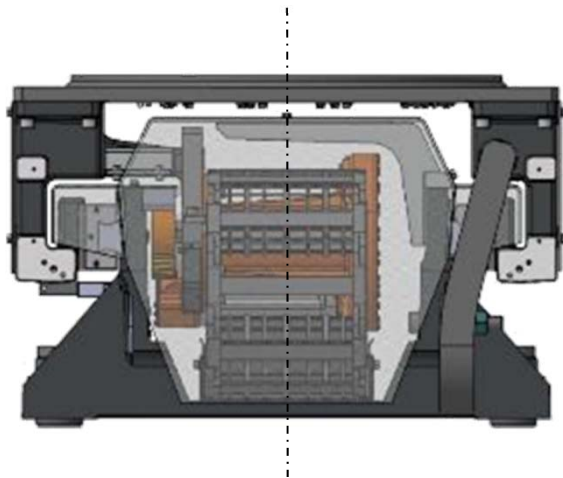
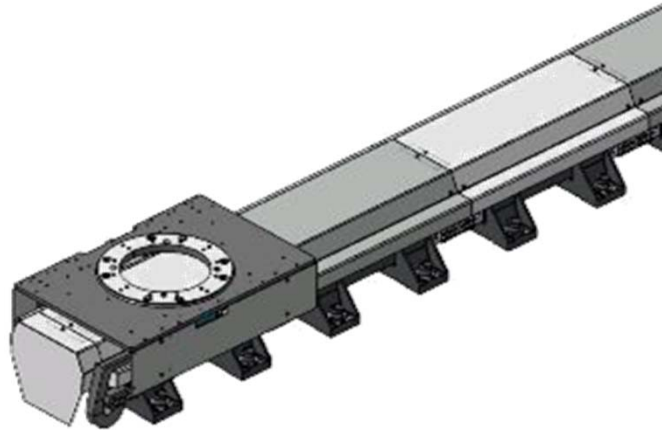
Customer benefits



- Prepared for different applications
- **High reliability**
Low maintenance need thanks to choice of robust components which are build in and well protected, built in lubrication system, easy to repair thanks to modular design
- **Supports different layout needs**
Different length, double carriage, mirrored version, pedestals, transfer solution
- **Common platform** for a medium size robots minimize number of spare parts and improves flexibility for future changes.
- Support offline programming

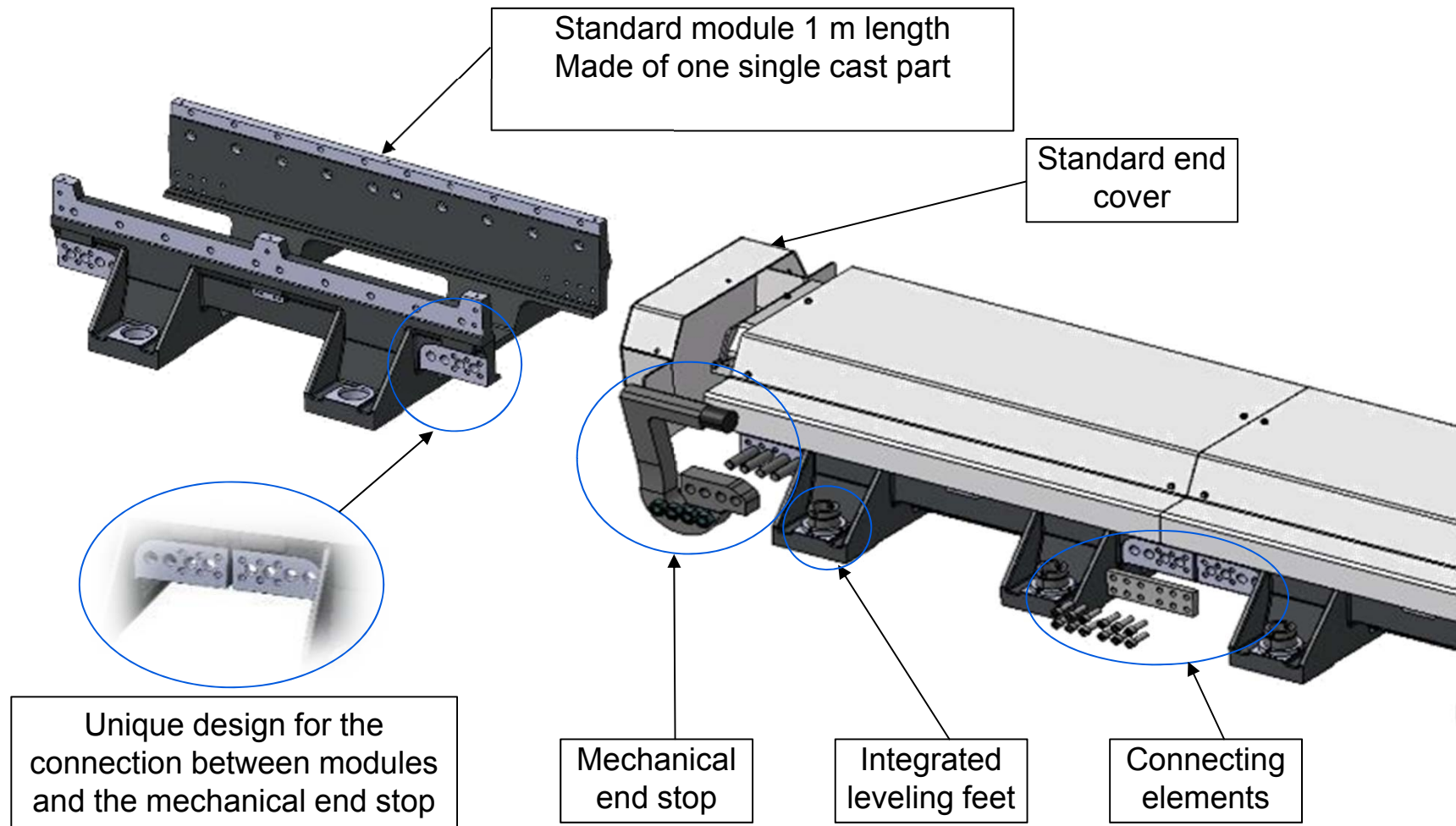
Design

Basic concept



- A smart compact design made of modules of 1 meter length with symmetrical profile
- Characteristics of design are:
 - Integrated motor
 - Integrated cable chain
 - Protected guide rails and rack
 - Centered robot on carriage

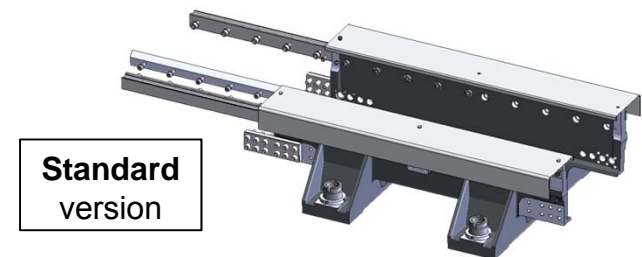
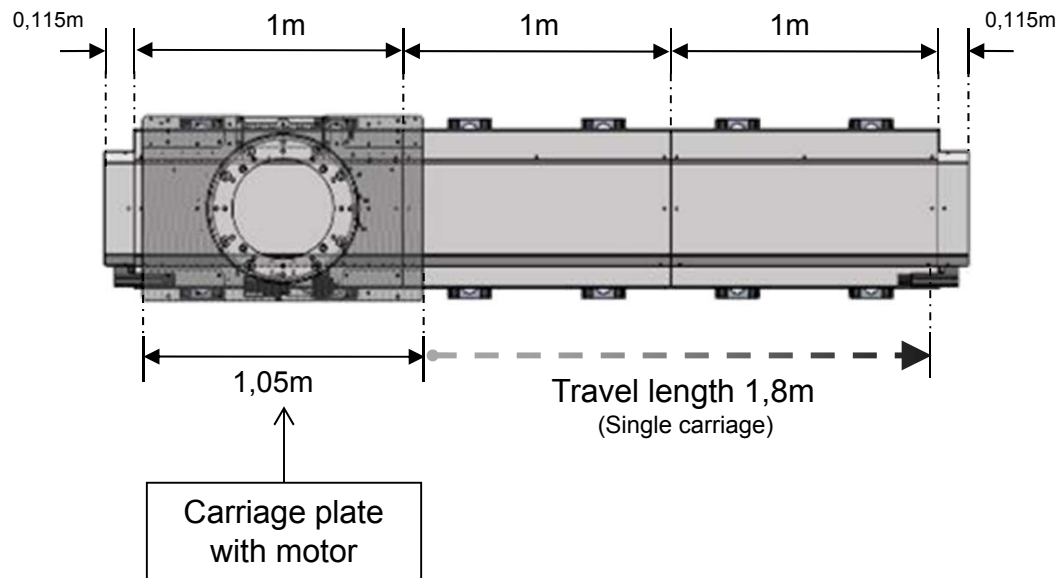
Design Basic Concept



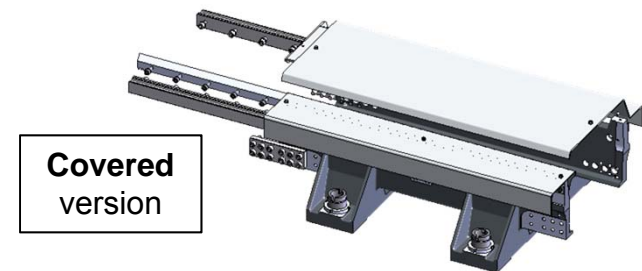
Design Dimensions

- Floor mounted
- Modular concept
 - 1 m sections
 - Standard and covered version
 - Robot and transfer track
- Lengths – Travel length
 - Shortest standard length **2,23m** → **0,8m** Travel length
 - Longest standard length **21,23m** → **19,8m** Travel length
 - (Transfer track up to 100 m, *ordered in sections, each carriage travel max 19,8 m*)

Minimum track length and maximum travel length, are depending the number of carriages



Standard version



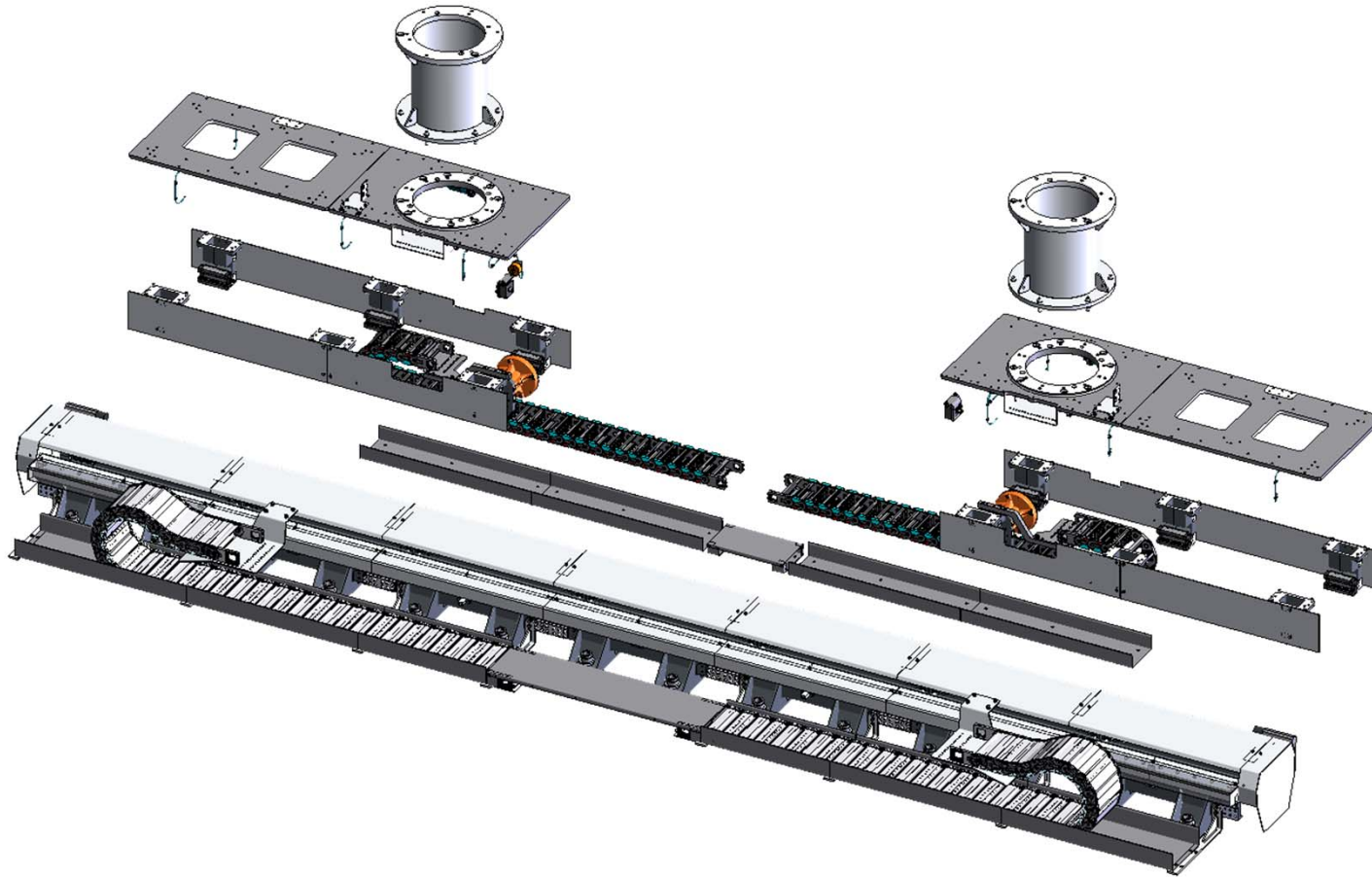
Covered version

Options Supported robots



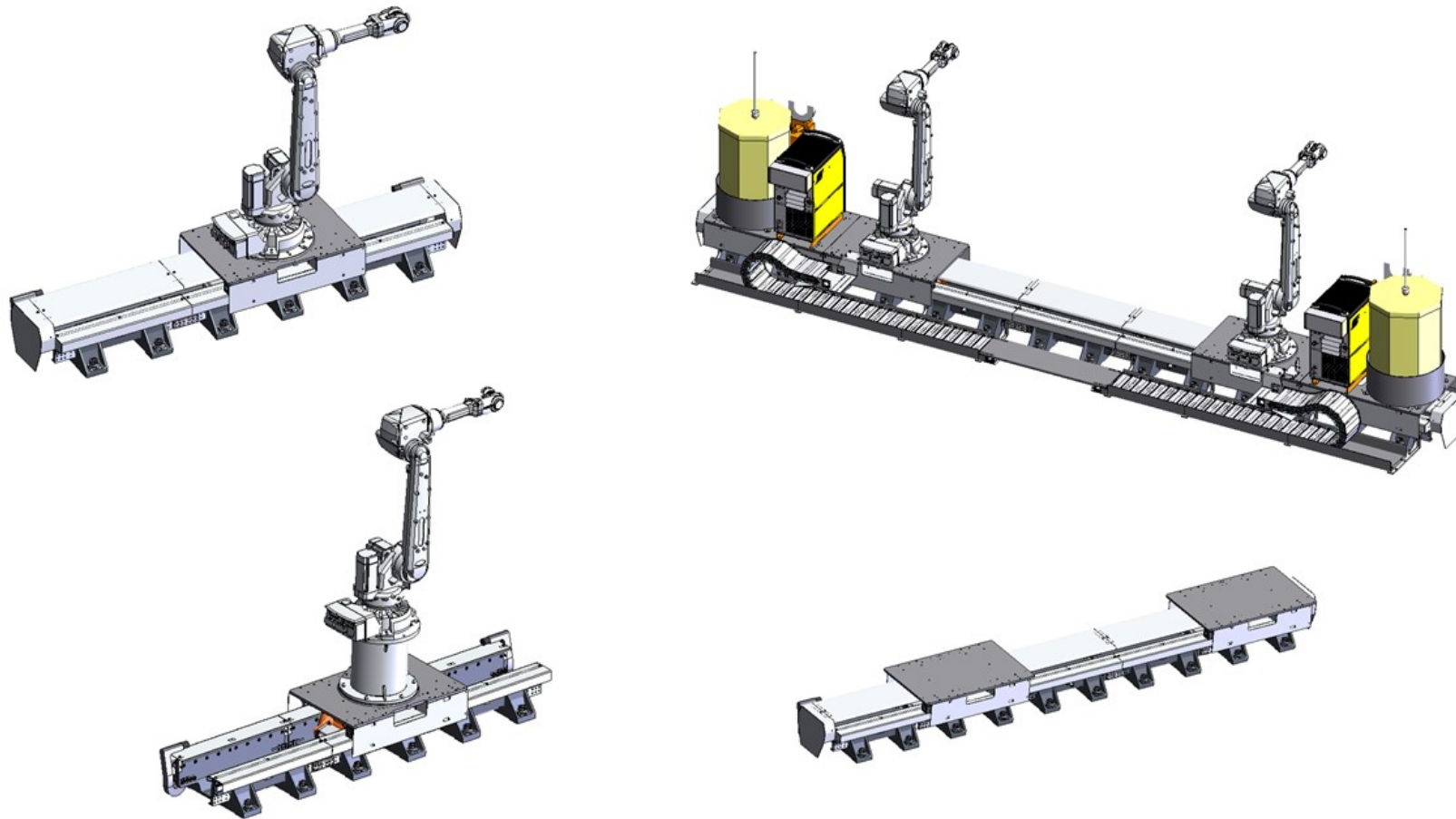
- IRB1520
- IRB1600
- IRB2600
- IRB4600
 - IRB 4600 with restrictions on:
 - Performance
 - Pedestal heights
 - Additional load

Options Modular



Options

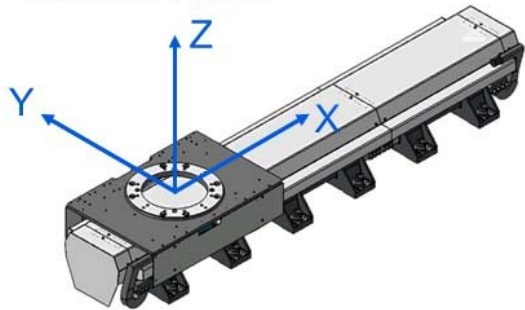
Many combinations possible



Options

Track type: robot or transfer, carriage quantity

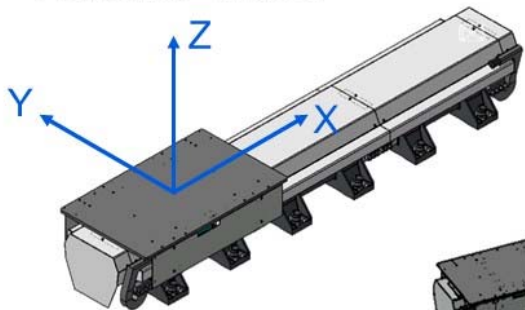
Robot Track



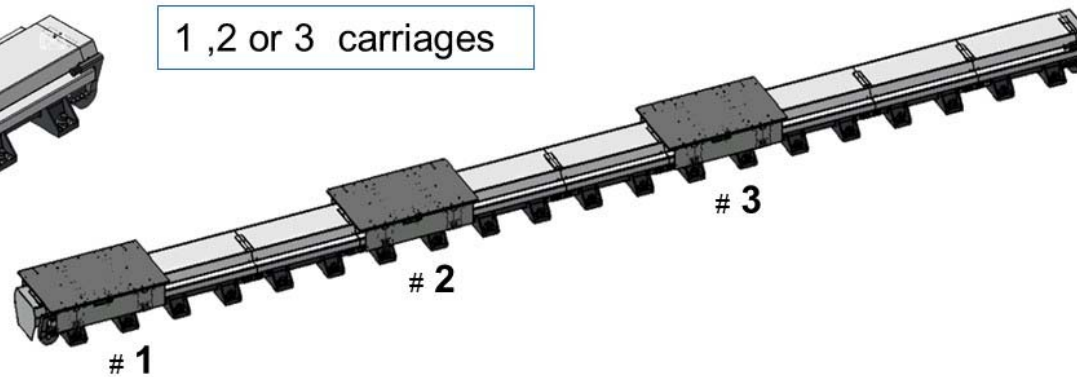
1 or 2 carriages



Transfer Track



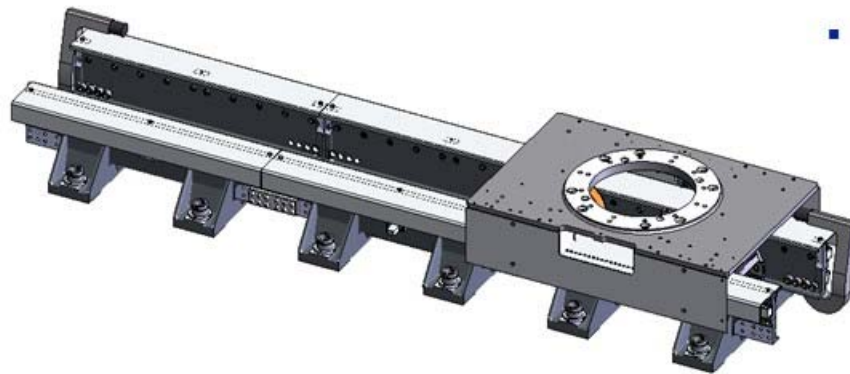
1, 2 or 3 carriages



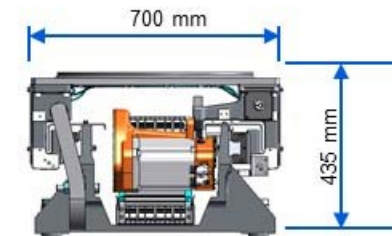
Options

Cover: standard and covered

Standard version



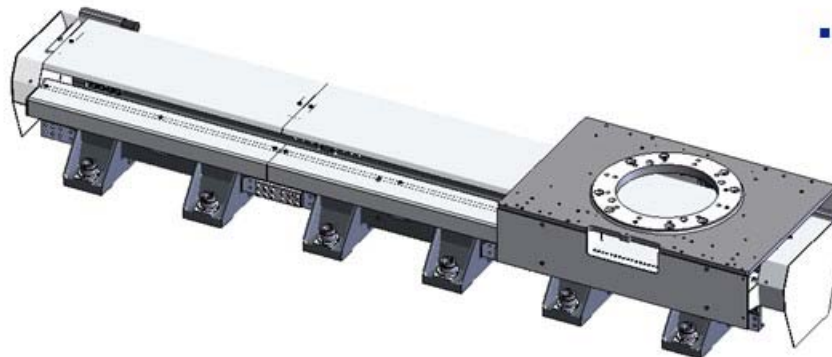
- Rails and rack covered



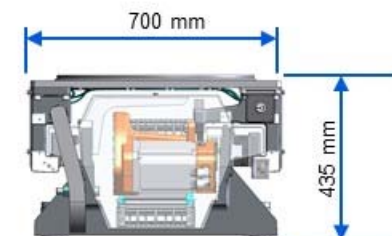
Standard

Similar profile dimensions

Covered version (optional)



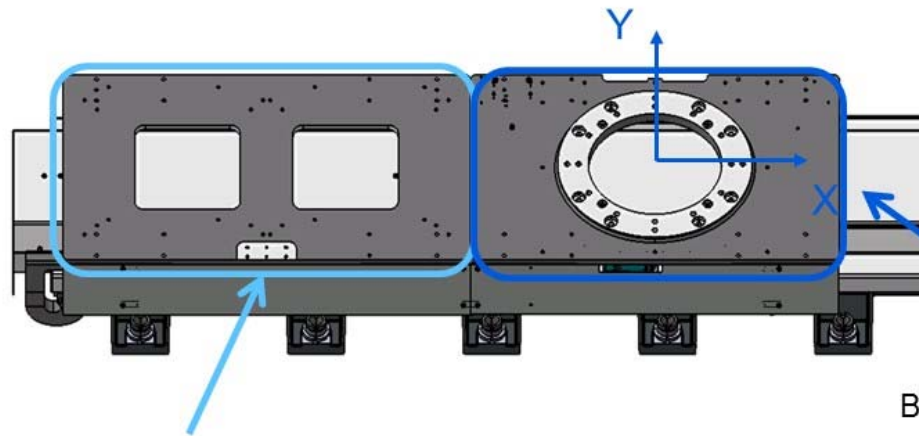
- Rails, rack, cable chain covered



Covered

Options

Additional plate for robot



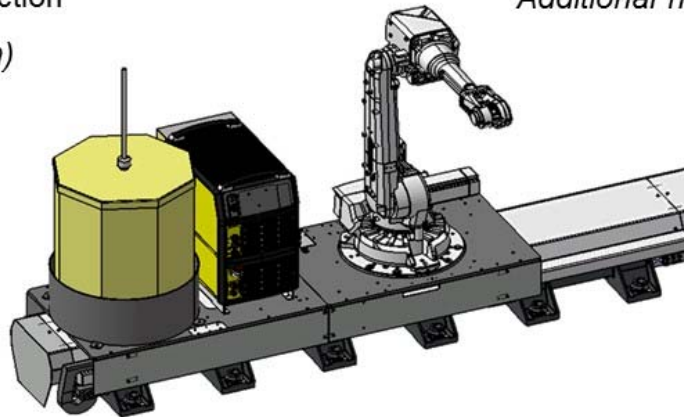
Additional plate

Mounted opposite to travel direction
(For AW or other application)

Basic plate for all robot variants

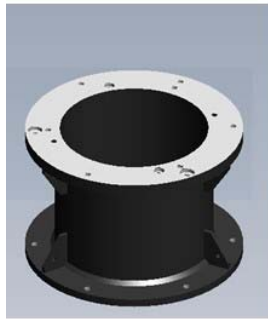
Pedestal could be added

Additional holes for accessories



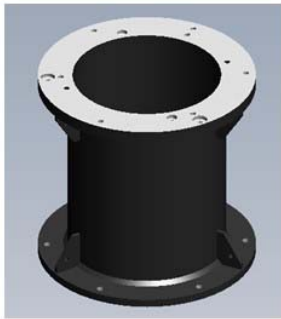
Options

Standard robot pedestals



250 mm pedestal

- IRB 1520
- IRB 1600
- IRB 2600
- IRB 4600



500 mm pedestal

- IRB 1520
- IRB 1600
- IRB 2600



750 mm pedestal

- IRB 1520
- IRB 1600
- IRB 2600



1000 mm pedestal

- IRB 1520
- IRB 1600
- IRB 2600

2 height standard robot pedestals

- 250 mm
- 500 mm

2 combinations

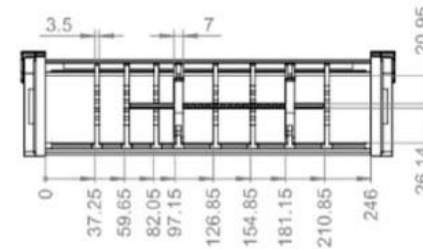
- 750 mm (250 + 500 mm)
- 1000 mm (500 + 500 mm)

Options

External cable chain for robot

External empty cable chain

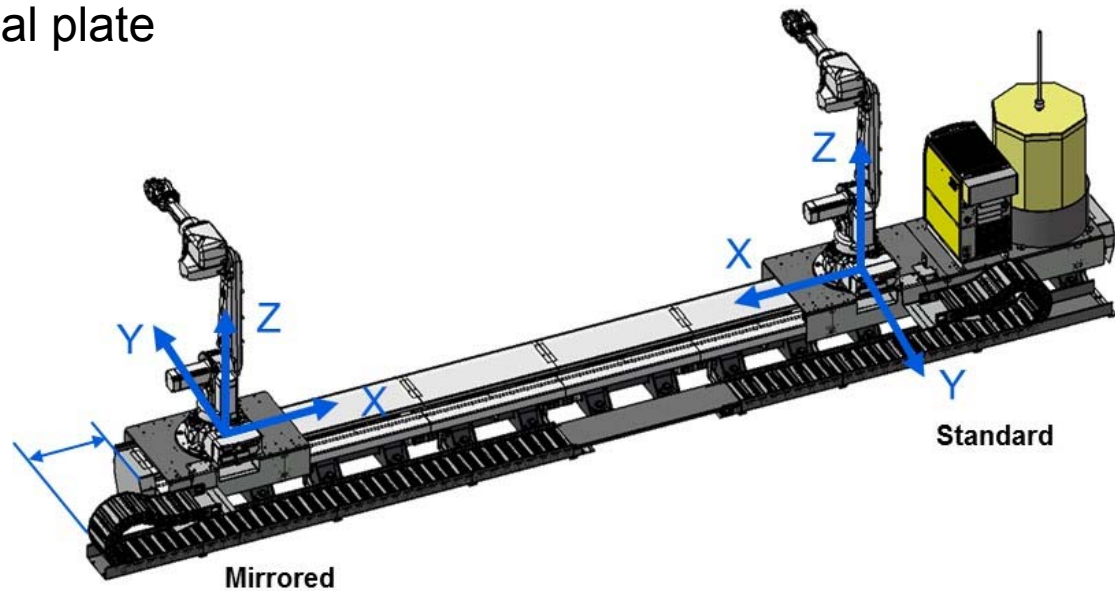
On side of carriage 's openings for cables



246 width x 56 height

Mounting: Standard or Mirrored

Carriage: single or with additional plate



490mm exceeds the end of track with simple carriage plate

Options

Internal cable packages



TC & TSC
2013

Internal cable chain of IRBT 2005 is delivered prepared with the suitable cables for

- Robots IRB 1520 / 1600 / 2600 / 4600
- ABB Torch Service Center: TSC, TS96, Bulls Eye
- Arc Welding Power Source : Interface box / AristoMig 5000i / S-400 / P-250
- Customer Power/Signal cables Parallel / DeviceNet / Profibus / Ethernet/Profinet



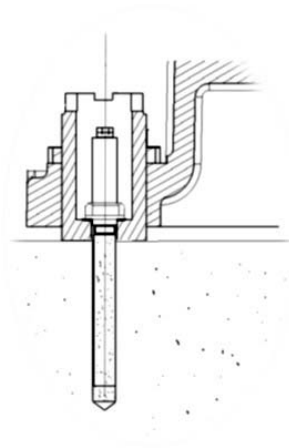
Options Summary

Options	IRBT 2005
Track type	Robot or Transfer
Carriages	1 to 2 for Robot , 1 to 3 for Transfer
Track length	2 to 21 modules of 1m length
Track travel direction	Standard or Mirrored
Track version	Standard or Covered
Extension module for transfer	2 to 21 modules of 1m length , 1 to 3 transfer carriage
Additional carriage plate	For each robot carriage
Robot Orientation Robot Pedestals	0°, 90°, 180° 270° 250mm to 1000mm (limited to 250mm for IRB4600)
External cable chain	For each robot carriage
Internal cables packages	Robot cables , TSC , Arc Welding power source , CP/CS

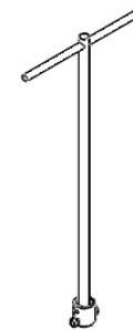
Technical features

Integrated leveraging feet

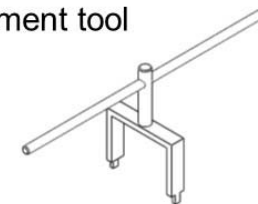
- Ease the levelling adjustment
- Allow to guide when drilling whole
- Avoid moving the whole track to put anchors M16.
- Require specific tools for adjustment.



Leveling tool



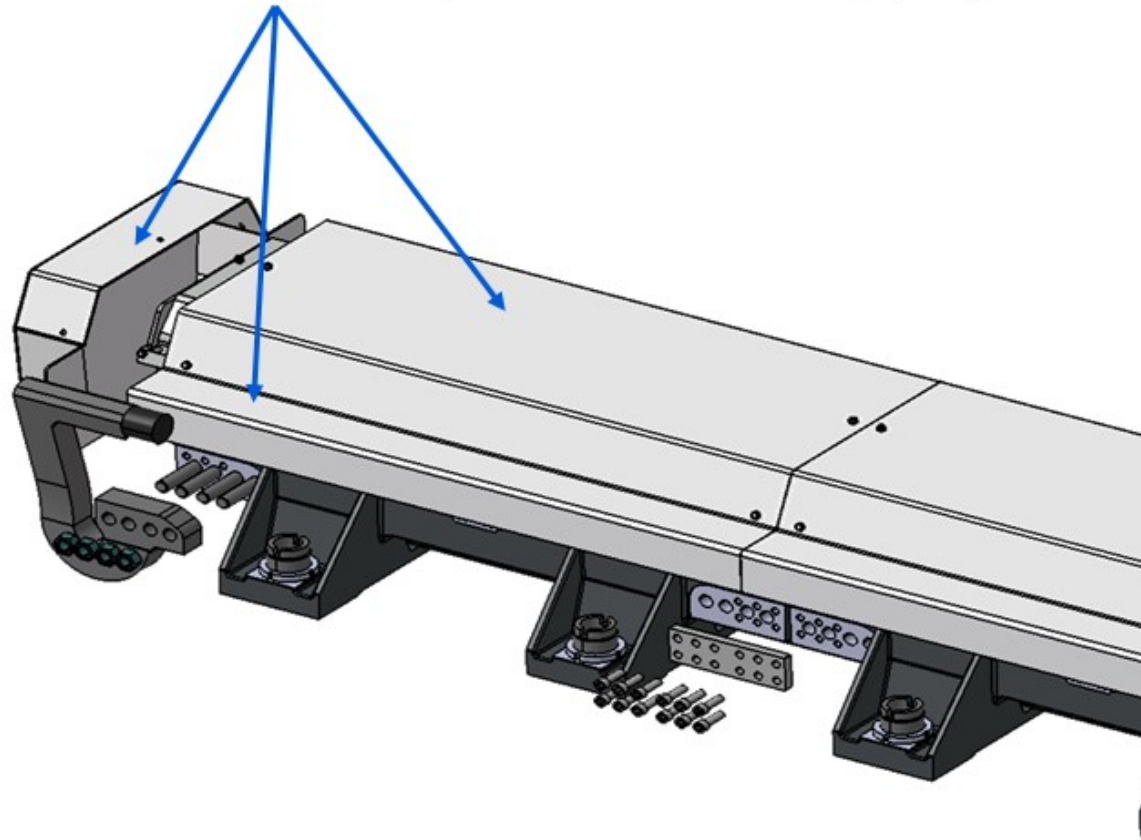
Locking nut adjustment tool



Technical features

Surface treatment on covers

A coarse paint covers the cover plates to avoid slipping

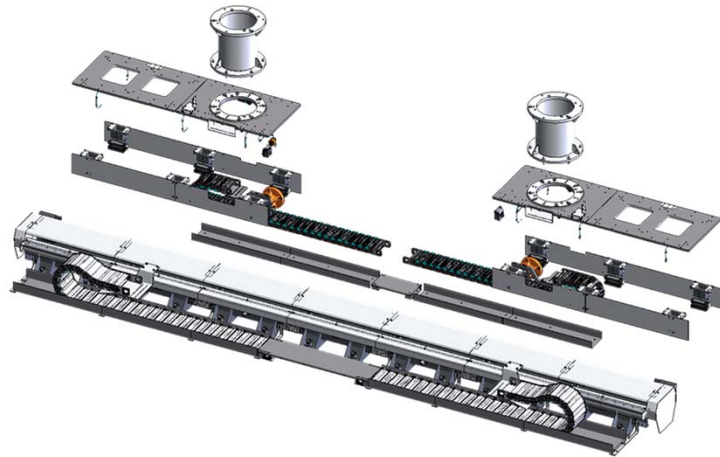
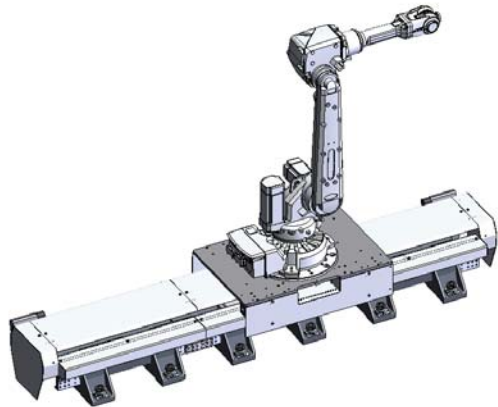


Technical features

Performance

	IRBT 2005
Payload	1200 kg
Speed	2 m/s
Acceleration	2,5 m/s ² → 4 m/s ² payload < 600kg
Repeatability	≤ ± 0.05mm
Width	700mm → 1048mm with external cable chain
Height	435mm → 490mm with external cable chain
Weight	636 kg → 4992 kg
Temperature	+5° C (41°F) to +40° C (122°F)
IP Protection	IP65

Summary



- The IRBT 2005 is a unique platform solution that offers a number of values
 - Unique performance in terms of speed and accuracy adopting to actual payload. Seamless integration with the robot system using the TrueMove and QuickMove features
 - A modularity concept with to give flexibility in all product lifetime stages
 - A high number of standard options to help customizing to each given configuration need
 - Supported via ABB`s global network

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