



Patric Hed, Product Manager, 2010-06-24

ABB Arc Welding Products New Generation Positioners

4th Generation Positioners



1st Generation
1982
S2/S3



2nd Generation
1995
S3/S4/S4C



3rd Generation
2002
S4C/ IRC 5



4th Generation
2010
IRC 5

Product Improvements



New generation motor & gearbox

- Higher capacity and dynamic response
- Up to 1000 kg payload

Modularized structure

- Easier customization
- Late order changes possible

Reduced loading height K/L/R

- Improved ergonomics
- Load height 950 mm

Prepared for HV-drive system

- Easy to integrate with any ABB robot

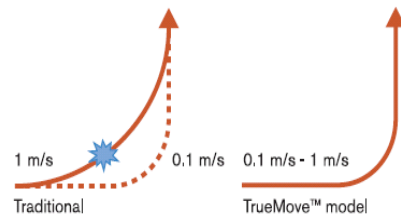
Improved Mechanical Design

- Increased life span and robustness

New Generation Positioners Best-in-class Motion Control

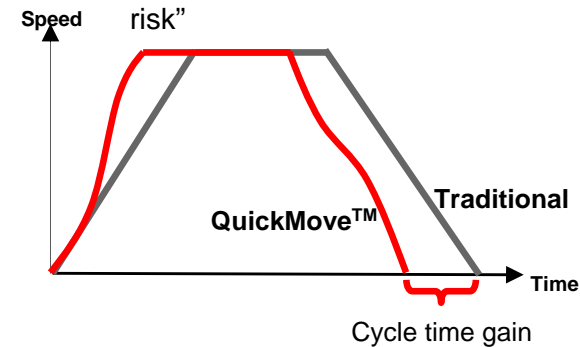
- **TrueMove™**

“What you program is what you get”



- **QuickMove™**

“Minimum cycle time without effort or risk”



Motion Control Example

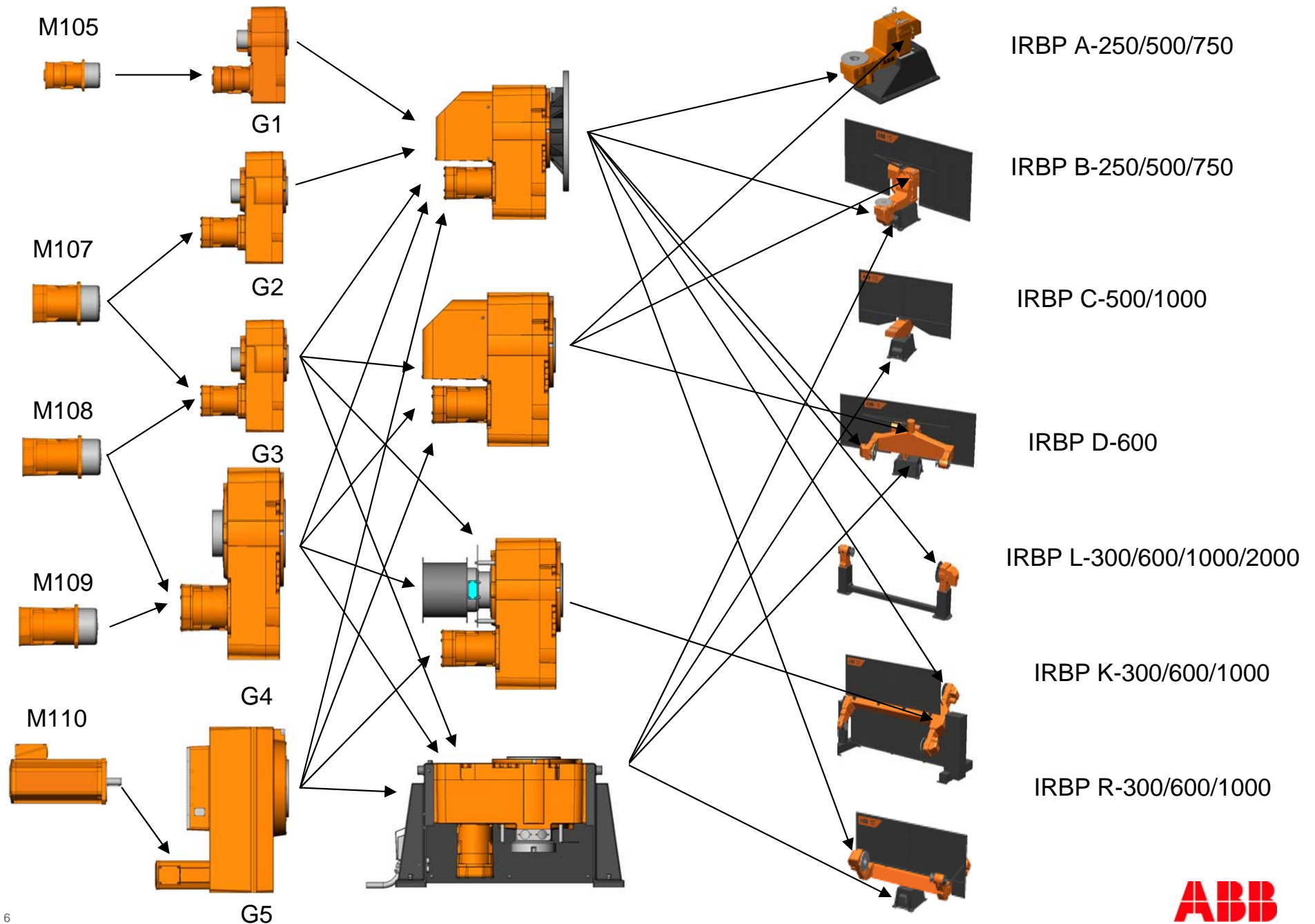


Normal Motion Control



TrueMove / QuickMove

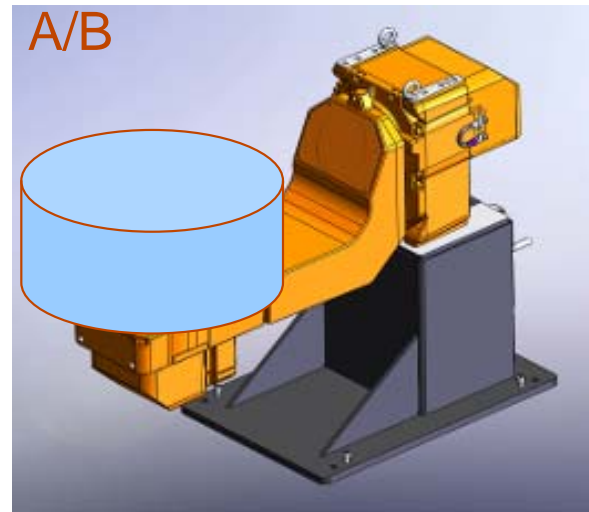
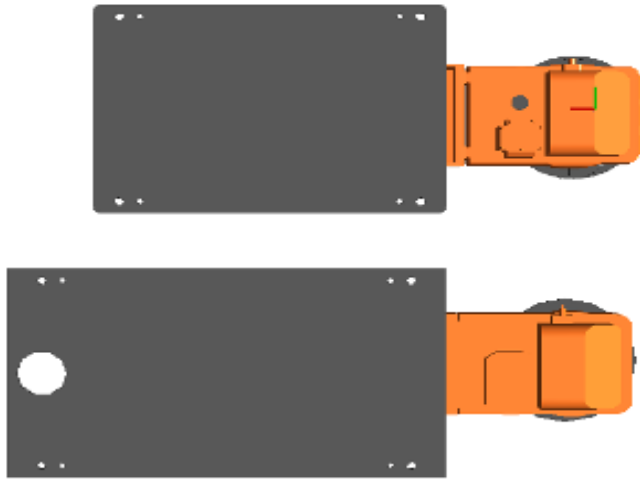
IRBP Module System



IRBP A-250/500/750

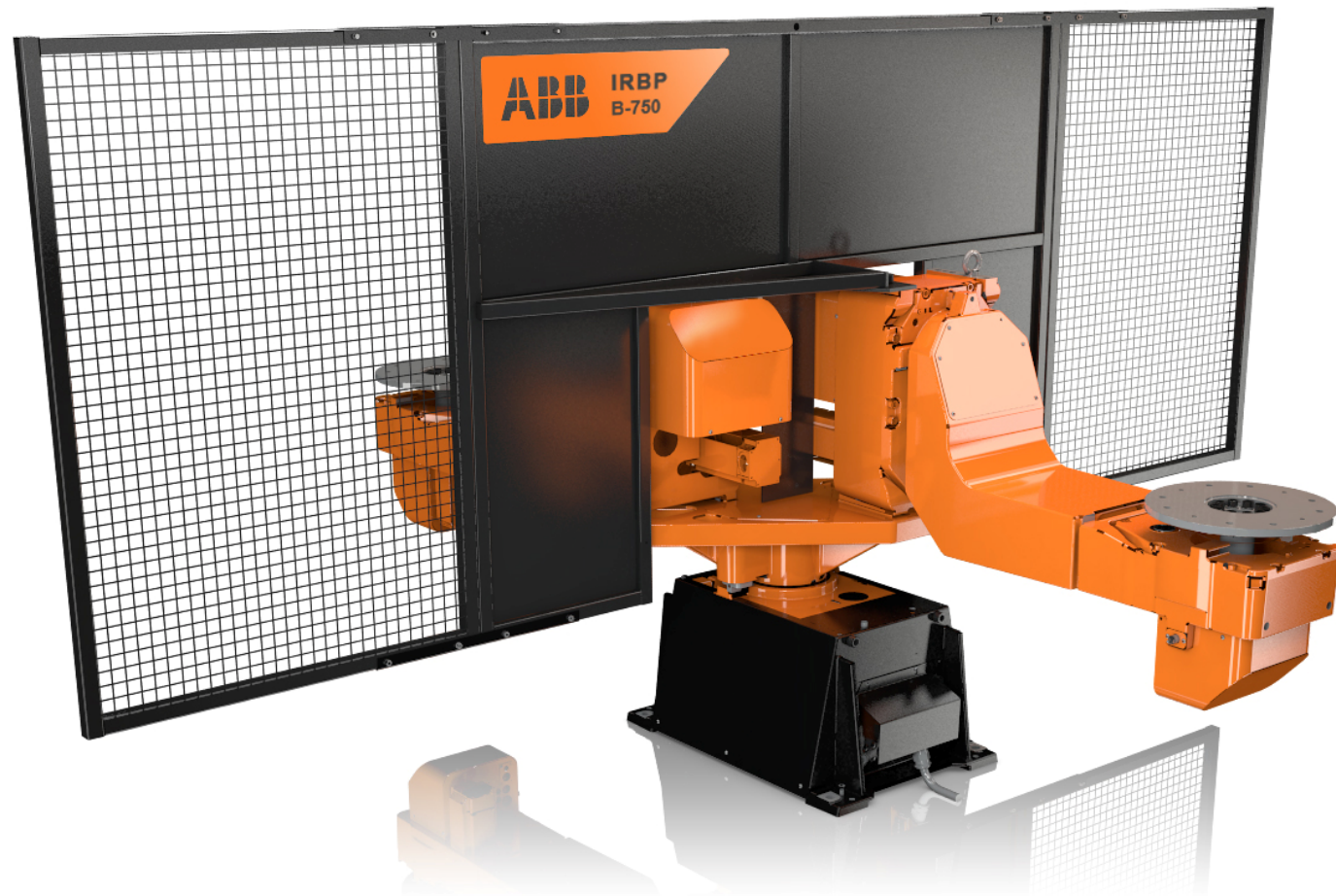


IRBP A-250/500/750 Changes

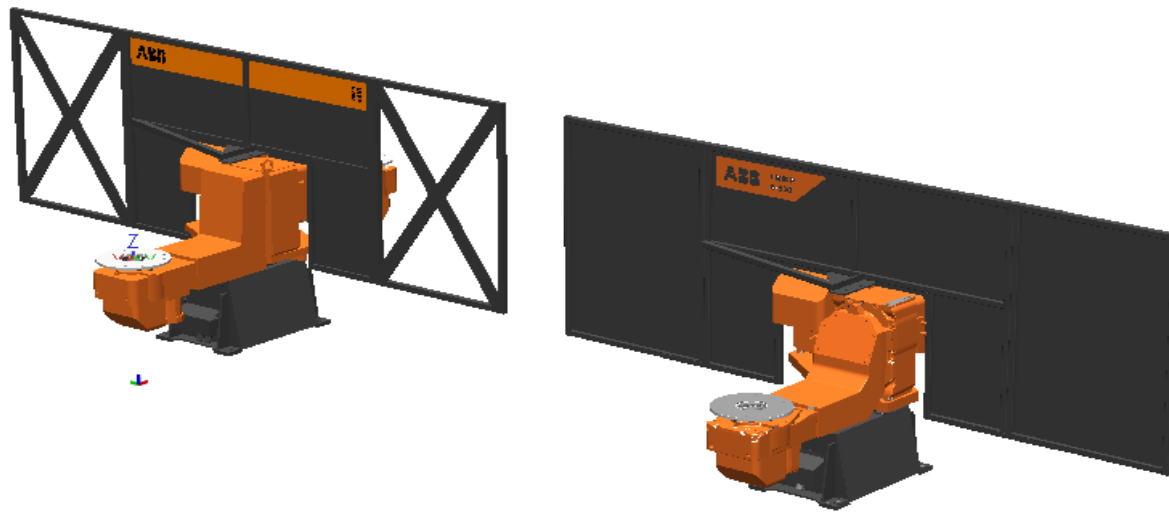


- Smaller footprint
- Improved repetition accuracy
 - from ± 0.1 to ± 0.05
- Faster positioning time axis by axis
- Reduced overall weight

IRBP B-250/500/750



IRBP B-250/500/750 Changes

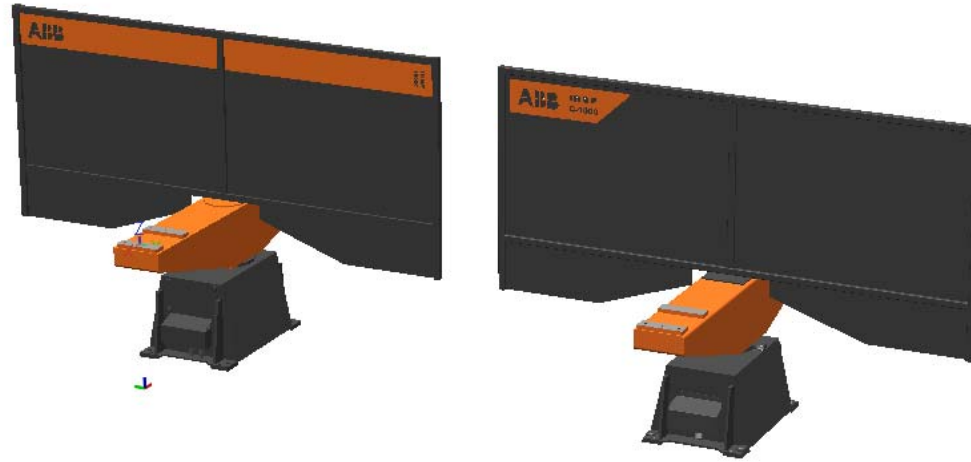


- Improved maximum load difference between sides 1 and 2
- Improved repetition accuracy
 - from ± 0.1 to ± 0.05
- Faster positioning time axis by axis
- Faster station interchange time
- Reduced overall weight

IRBP C-500/1000

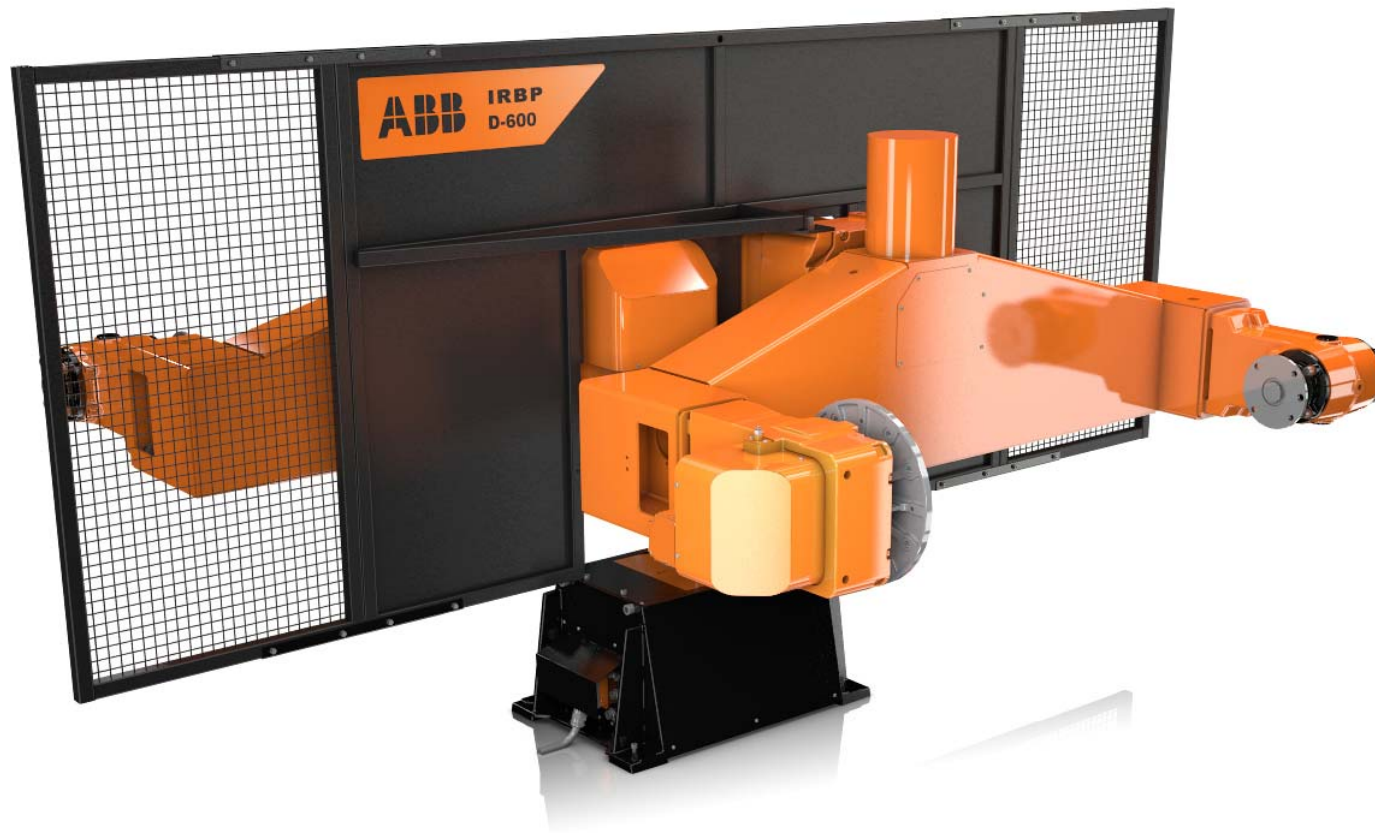


IRBP C-500/1000 Changes



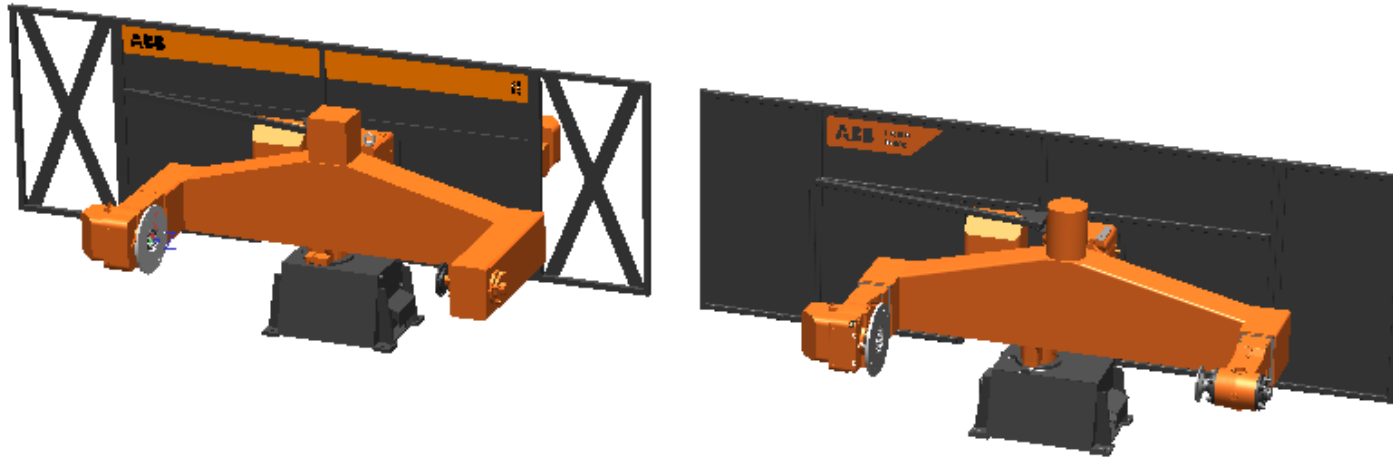
- Improved repetition accuracy
 - From ± 0.1 to ± 0.05
- Faster station interchange time

IRBP D-600



IRBP D-600

Changes

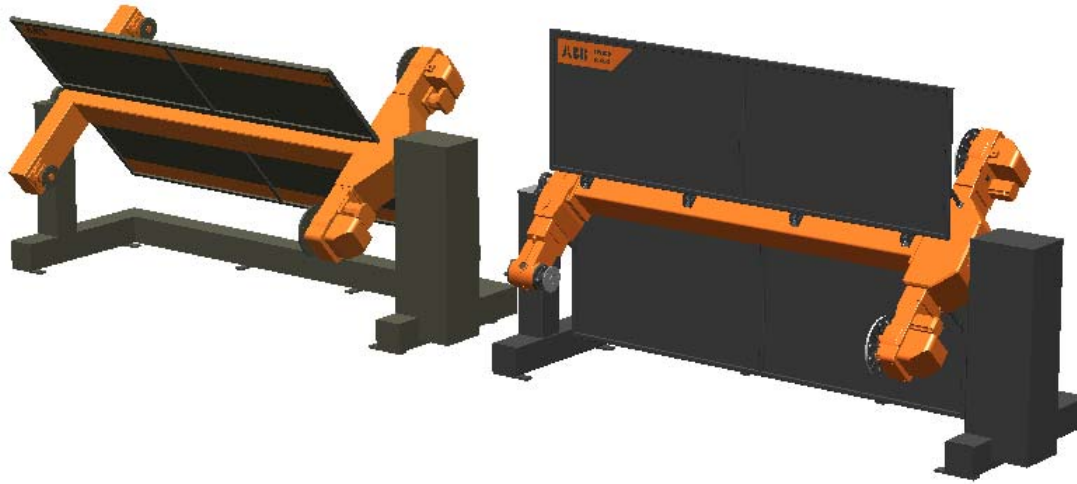


- Improved load capacity
 - to 600 kg
- Improved repetition accuracy
 - from ± 0.1 to ± 0.05
- Faster station interchange time
- Faster positioning time axis by axis
- Reduced overall weight

IRBP K-300/600/1000



IRBP K-300/600/1000 Changes

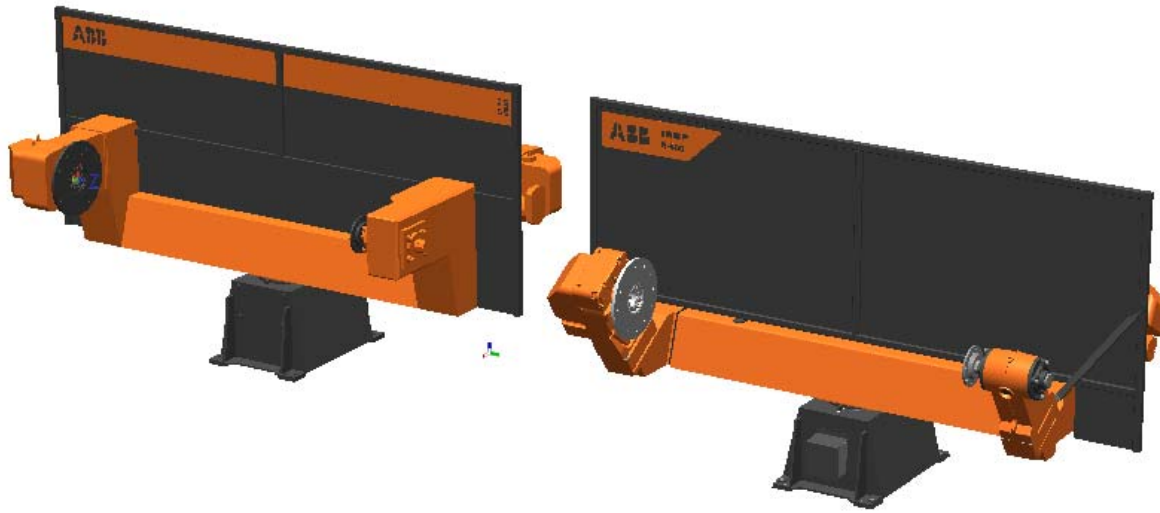


- Improved load capacity to 300, 600 and 1,000 kg
- Improved maximum load difference between sides 1 and 2
- Improved repetition accuracy
 - from ± 0.1 to ± 0.05
- Faster station interchange and positioning time axis by axis
- Reduced loading height 950 mm
- New vertical weld screens

IRBP R-300/600/1000



IRBP R-300/600/1000 Changes

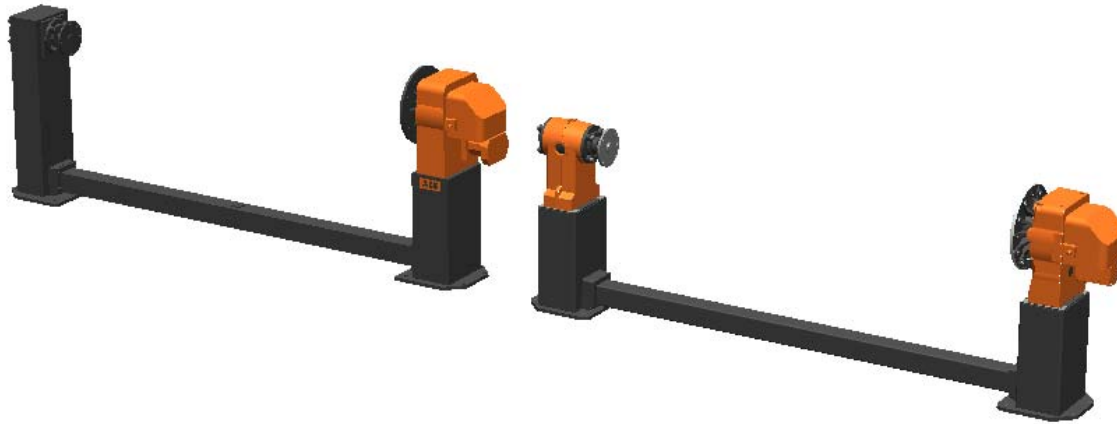


- Improved load capacity
 - to 300, 600 and 1.000 kg
- Improved maximum load difference between sides 1 and 2
- Improved repetition accuracy
 - from ± 0.1 to ± 0.05
- Faster station interchange and positioning time axis by axis
- Reduced loading height 950 mm

IRBP L-300/600/1000/2000/5000



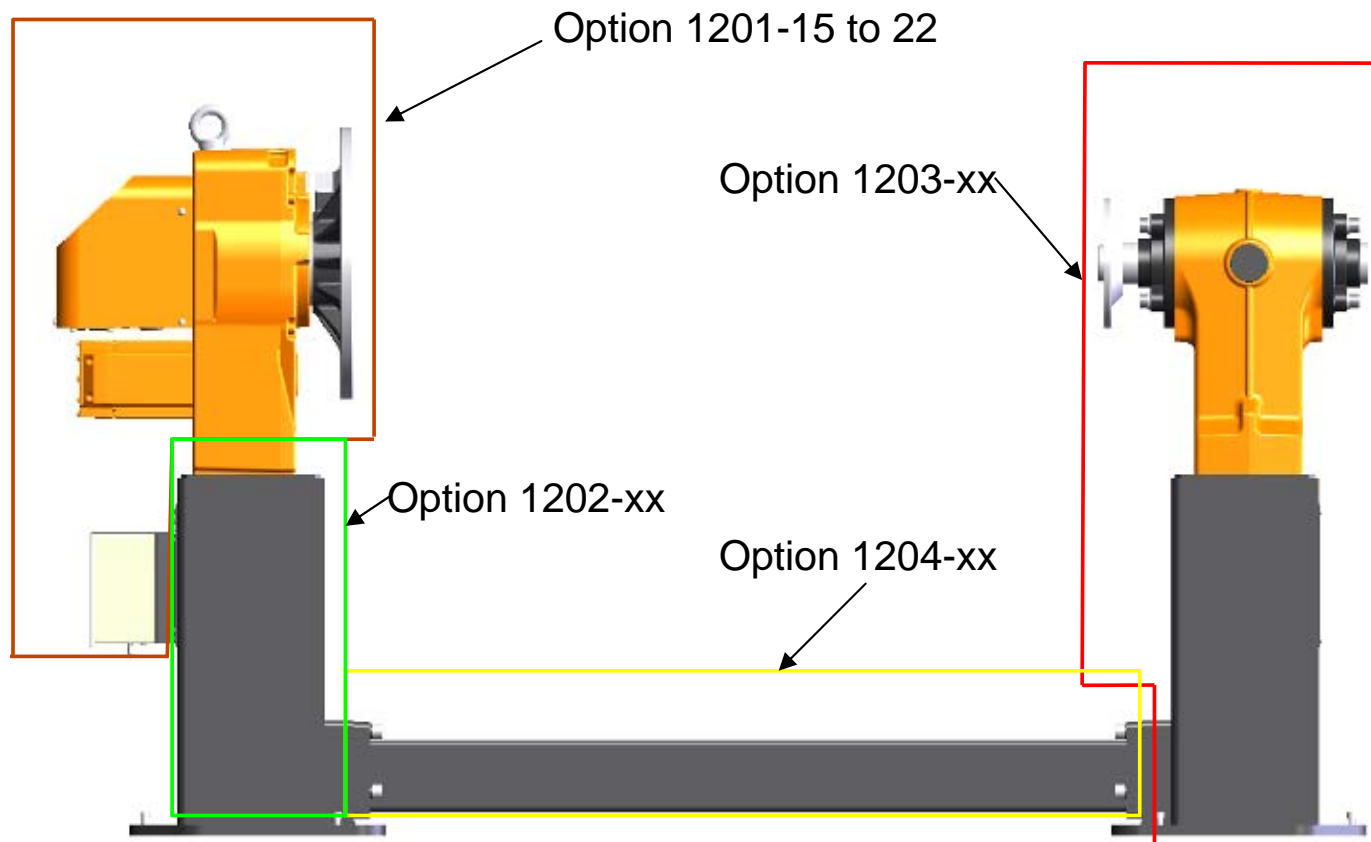
IRBP L-300/600/1000/2000/5000 Changes



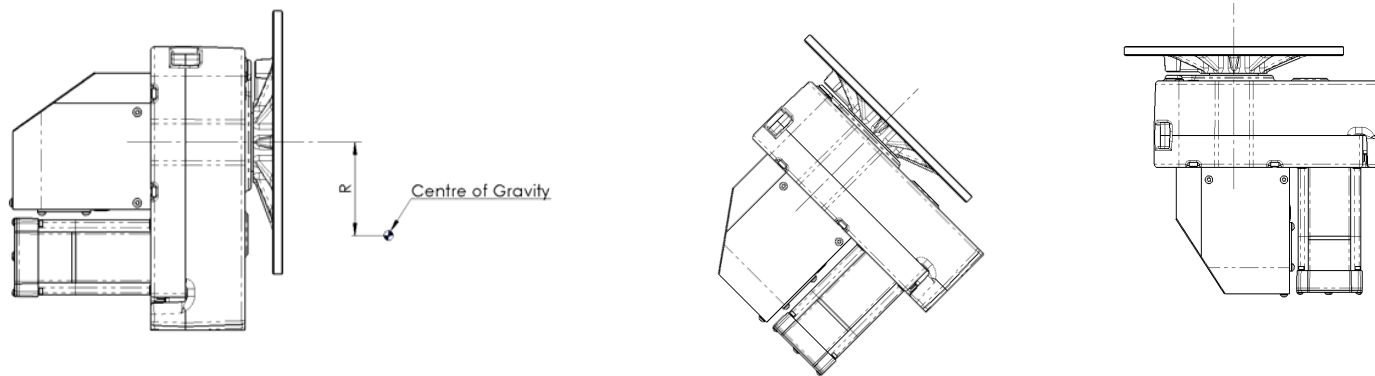
- Improved load capacity
 - to 300, 600 and 1.000 kg (with tailstock)
- Improved repetition accuracy
 - from ± 0.1 to ± 0.05
- Faster positioning time 90, 180, 360 degrees
- Reduced loading height 950 mm
- Smaller foot print

IRBP L

New order structure



MTD with Dynamic Model

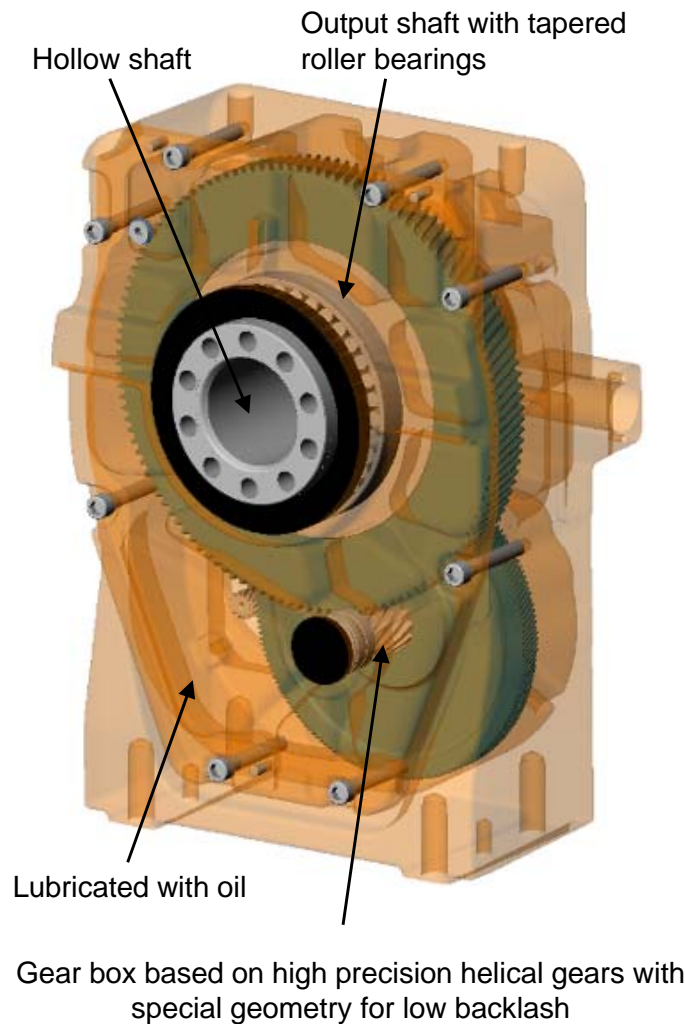


The new MTD-unit can be mounted in all possible directions

The Dynamic Model gives improved performance

- Better pos-to-pos time
- Better path following

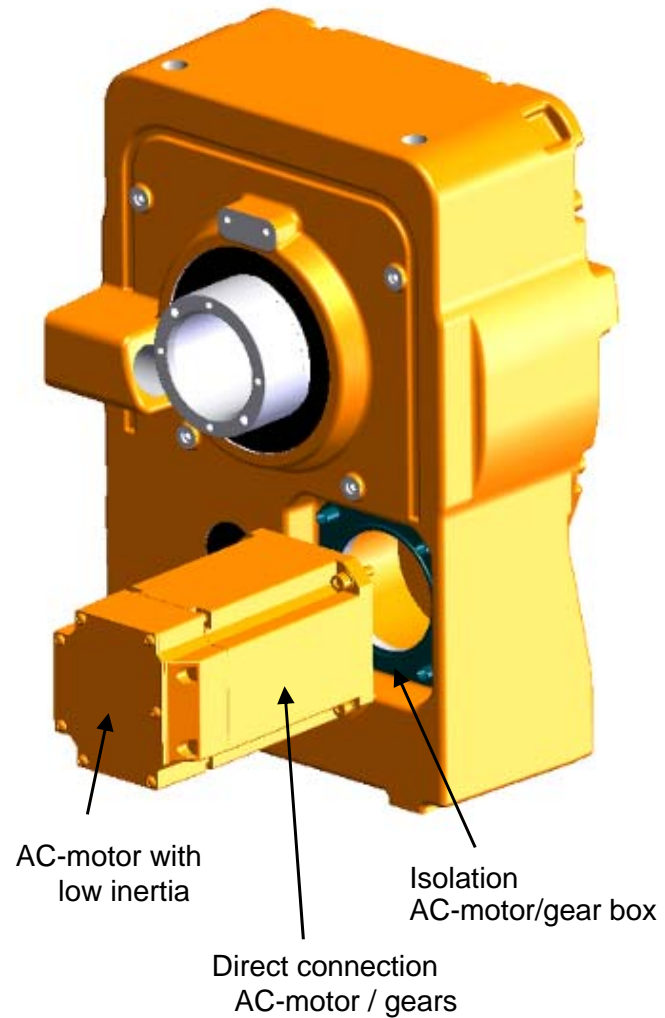
MTD-unit Gears



Benefits

- High position accuracy
- High efficiency
- Low vibration
- Low noise
- High resistance to shock loads
- Easy to add media support for fixture
- Maintenance free

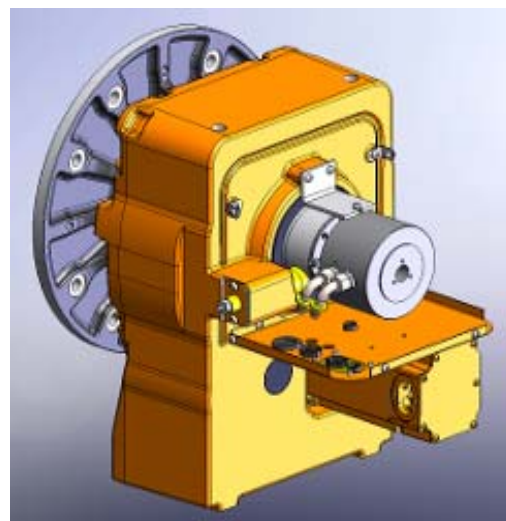
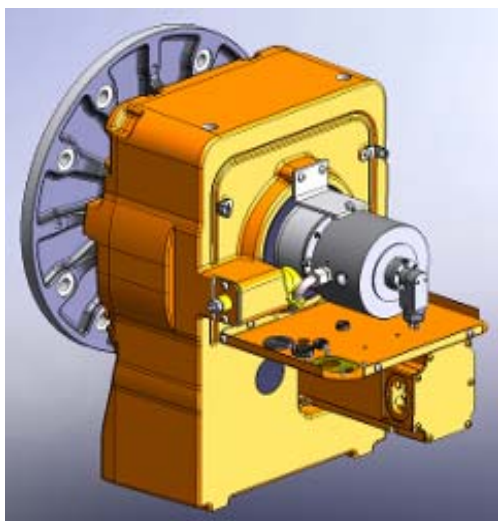
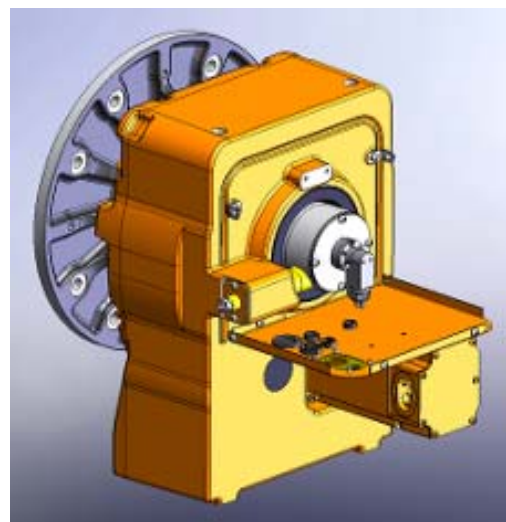
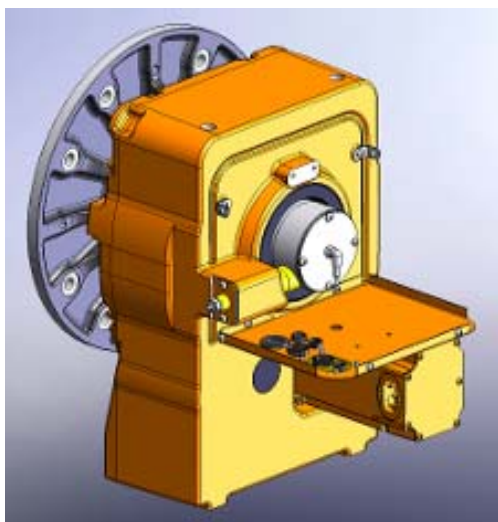
MTD-unit AC-motor



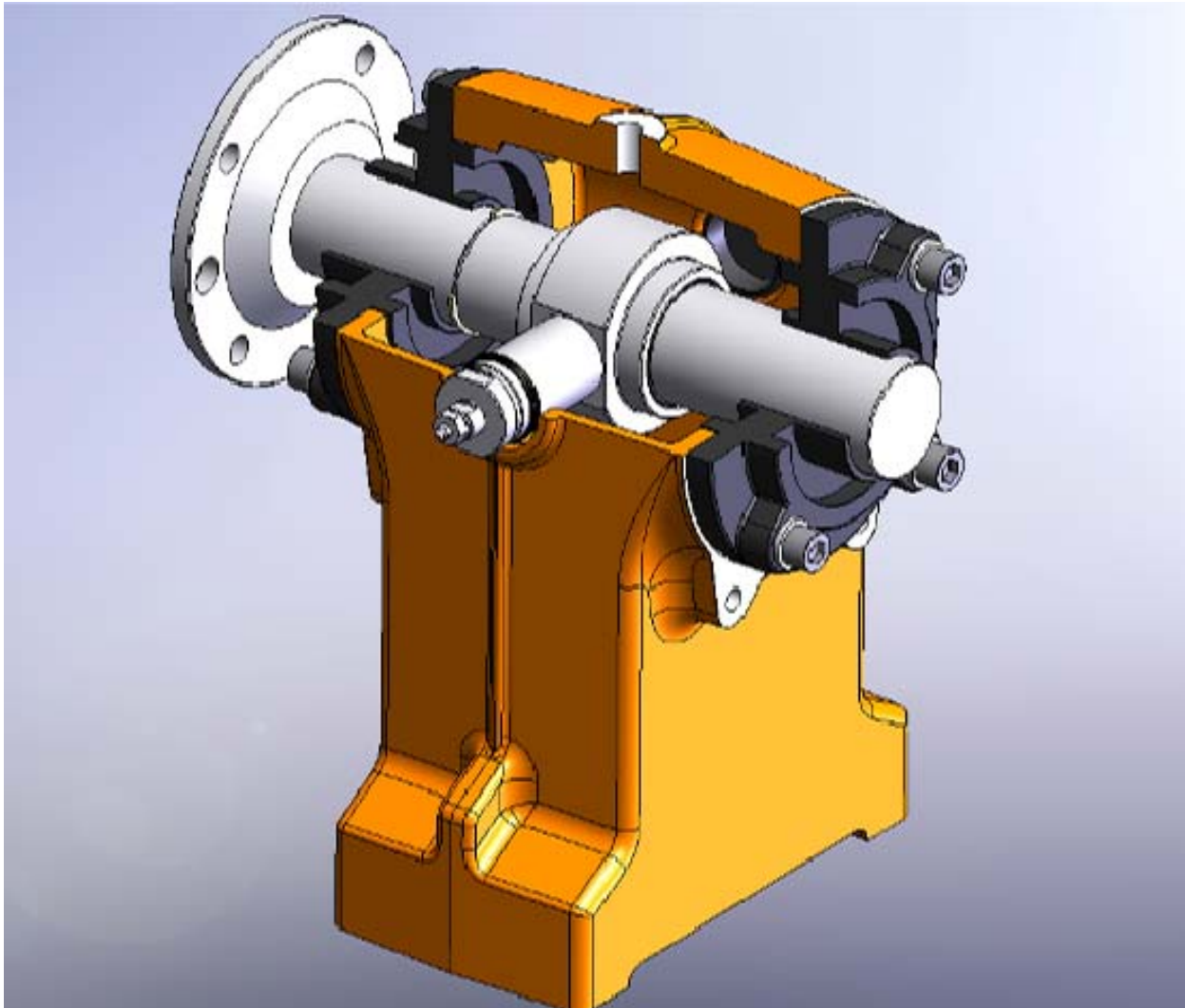
Benefits

- High performance Motion Control
- Low risk of disturbance
- Low motor torques ripple
- Robust design – high MTBF
- Maintenance free

Swivels



Tailstock



For more information ...

Robotics

IRBP R Positioner

The ABB positioners are optimized to be used for manipulating of work pieces in arc welding, thermal cutting and other applications. All axes can be fully coordinated with the robot when programming as well as during operation.



IRBP R

This positioner features a twin station solution where the robot works on one side and the operator loads and unloads on the other side. A screen is fitted between the two stations, which protects the operator from arc-eye.

The positioner IRBP R, which comes in three versions, is designed to handle workpieces including fixture of a weight up to 1000 kg

The modular design, low and heavy-duty moving parts as well as minimal maintenance demands make the positioner service friendly.

Dynamically adaptive software plus high speed drives result in fast changeovers and high productivity.

General positioner features

All ABB positioners offer users a complete and efficient solution. They are of a robust design to ensure excellent stability and are well protected for operation in harsh production environments. All positioners can be combined with any ABB six axis robots except the small IRB 120.

The positioners are easy to use with clear, simple instructions for programming. The control equipment is located in the robot controller and uses the same drive system and software as the robots.

ABB's positioners are designed to be highly functional yet compact to make maximum use of available floor space. Standardised dimensions for all rotating plates greatly simplify the exchange of fixtures.

Dynamic modelling allows rapid acceleration, fast movements and re-orientation so that cycle times are kept to a minimum. The dynamic model automatically compensates for the effects of gravity, inertia and friction to provide fast movements (QuickMove™) and accurate following of the programmed path (TrueMove™).

The Load ID-function is used to calculate the centre of gravity and the inertia of the workpiece and of the fixture.

To meet requirements from our users the positioners can be supplied, or retrofitted, with a comprehensive range of pneumatic swivels (1 and 2 channels) and slip-rings (10 power signals and Profibus).

ABB positioner systems can be supplied with all necessary safety equipment.

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The heart
of Robotics

Product specification

Positioner IRBP Function Package

IRBP A / B / C / D / K / L / R 250, 300, 500, 600, 750, 1000, 2000, 5000
D 2009



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