ROBOTICS

FlexLoader™ FP 100
Function package for flexible machine tending

FlexLoader FP 100 is a compact and proven function package for machine tending and assembly operations, pre-configured and ready to use for fast integration. The solution is a combination of robust hardware and intelligent vision software. It is an ideal solution to tend small workpieces to transfer machines with short cycle times.

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01 FlexLoader FP 100 with IRB 1200 robot.

ABB's FlexLoader FP 100 capitalizes on ABB's long experience in developing and manufacturing machine tending solutions for integrators and end-users world-wide in machining and injection molding operations. However it can also be used in many other applications as a general feeder in a robot cell.

A pre-engineered function package
The FlexLoader FP 100 is a pre-engineered and proven function package that simplifies the transition from manual to robotic machine tending and handling. The main benefits are the usability, high availability, and small footprint. It replaces manual tending and other feeders when a short cycle time is required. FlexLoader FP 100 is quickly and easily installed or moved. The FP 100 features the powerful built-in vision system, FlexLoader Vision, for robot guidance of complex parts between 5-20 mm. The cycle time is as short as 3 seconds depending on geometry.

Easy to integrate for integrators
No need to spend valuable engineering time to design one-off, customized cells and no need to design a pre-verified, optimal machine tool feeder. The function package comes prepared with robot interface, safety functions and ready to use RAPID application code.

User-friendly interface
The simplicity of FlexLoader Vision lets the operator teaching new workpieces in just a few minutes, and switch between batches is done even faster.

A complete ready-to-use package
To operate the function package, the operator pours the workpieces to be processed on a buffer belt that slowly feeds a bowl feeder, while the robot picks a workpiece from the camera belt and feeds it to one or more processing machines or assembly stations.

Features
- Specifically designed for robot guidance
- Tight integration of control and communication with robot
- High performance FlexLoader Vision algorithms from Matrox Imaging
- Automatic gripping tool collision avoidance
- Identification and discrimination of different workpieces
- Proven and ready-to-use RAPID application code templates
- Effective part separation by bowl feeder
- Graphical user interface for parametrical setup for conveyors for each workpiece
- Configurable graphical presentation of cell information
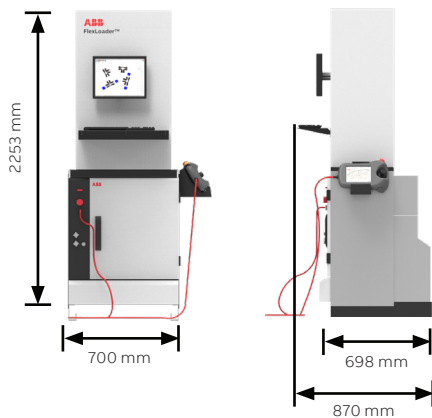- FlexLoader integrates an OPC-UA server for distribution of robot data

Benefits

- Built on a single baseplate
- Small footprint
- Easy to install
- No need for special fixtures
- Suitable for small parts like plastics and metal clipps
- Quick changeover time
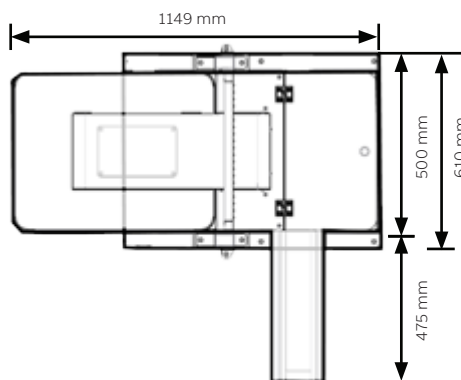- High availability for random feeding of workpieces

Included in FlexLoader FP 100

- FlexLoader Vision for machine tool tending
- Calibration tools
- A suitable ABB robot depending on payload and reach
- Integrated robot controller and electrical equipment
- RAPID code for FlexLoader Vision as well as application code templates.

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Technical information

	Description
Standard robots - payload (kg) /reach (m)	IRB 120 - 3/0.6* IRB 140 - 6/0.8 IRB 1200 - 5/0.7 IRB 1600 - 10/1.45 Other robots available on request.
Buffer belt (mm)	80 x 65 x 480
Height with stand (optional) (mm)	1844
Width (mm)	500 + Buffert
Length (mm)	1149
Certificates	Prep. for CE labelling 2B (Declaration of incorporation according to Machinery directive 2006/42/EG)
Mains voltage	3x400 V, 48.5 - 61.8 Hz 3x480 V, 55-65 Hz
Power consumption	Less than 1 kW depending on IRB selection
Operating temperature	Max 45°C
Airborne noise level	< 74 dB (A) Leq / 1 m

* Not UL/CSA certified

Controller cabinet footprint

FlexLoader FP 100 top view

FlexLoader FP 100 side view