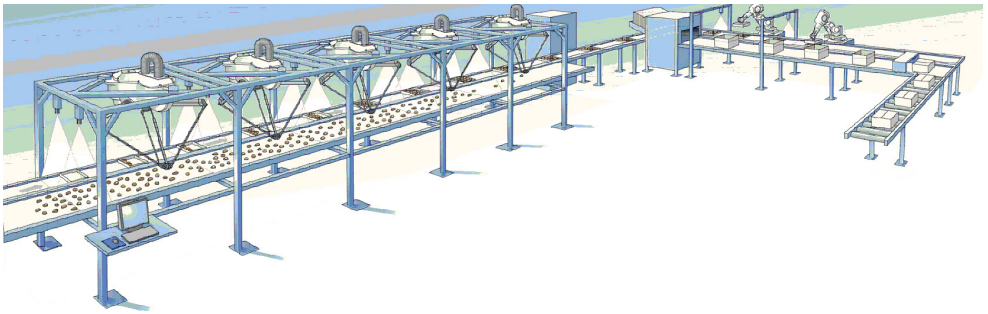
Robotics

PickMaster™
Industrial software product

PickMaster is the ABB Packaging software that simplifies the robot integration in picking, packing, palletizing and material handling.



Packaging the easy way
The main benefit is to save time in the engineering phase where the need of robot programming is reduced to a minimum. The software is loaded with application tools that make it easy to meet the customer requirements.

There are two PickMaster products to choose from, PickMaster 3 and PickMaster 5. Both are using the same graphical design concept and software structure so that users easily can understand both products.

PickMaster 3
The PickMaster 3 includes advanced vision technique and tightly integrated conveyor tracking capability. The integrated vision system is advanced and open to communicate with any external sensor (line scanners, color vision, 3D etc.)

PickMaster 3 has been used in the market for more than ten years to reduce programming time and deliver highly reliable High Speed Picking applications.

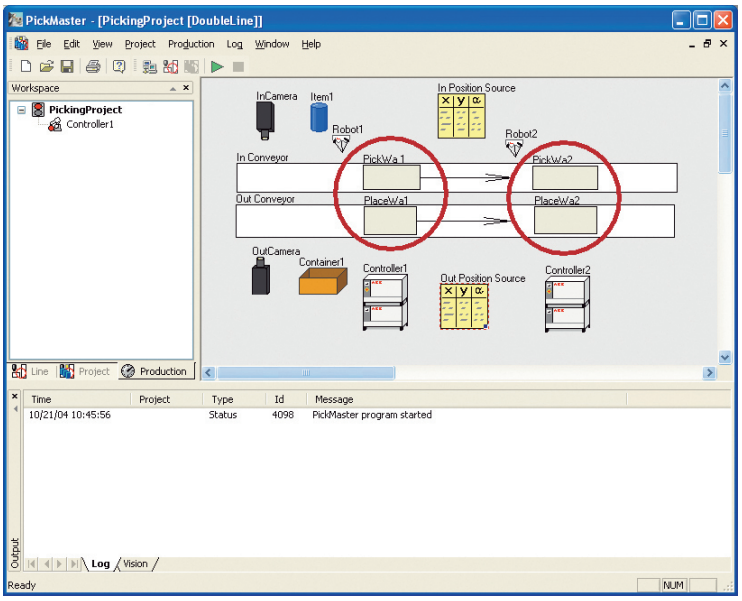
PickMaster 5
The PickMaster 5 is the software for palletizing applications. built on more than 10 years of palletizing experience, combining experience with modern highly flexible software.

It contains all the features necessary to create a robust palletizing application and offers flexibility in generous measures. No robot programming is required even if the software is open and accessible for highest flexibility. The design of the software allows late changes in the application, without causing re-programming.

PickMaster™

PickMaster™ 3 for high speed picking

The brain behind picking
Take advantage of the scalable design of PickMaster 3. It is your fastest way to a successful packaging installation, no matter if your products come in at random, on guided conveyors or placed on indexed carriers for highest precision. Or just use PickMaster as your standard tool for vision guidance of ABB robots.



Tightly integrated with the IRC5 robot control system, PickMaster is the best tool for guiding robots in the packaging process. With PickMaster™, the shortest cycle times polssible can be achieved in real applications.

To pinpoint random objects, the PC-based software uses a high performance robust vision system. It identifies and transfers 360 degree random objects in 50 to 200 ms. The vision system is available in monochrome or colour.

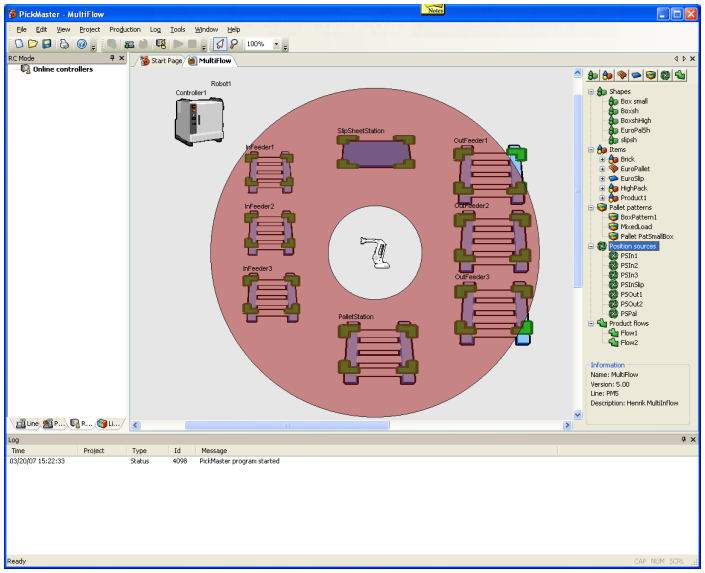
Powerful quality inspection tools let you categorize your products and make sure the defect ones are sorted out. Application projects are configured and calibrated with high precision using comprehensive graphical configurators.

PickMaster can control up to ten robots and ten cameras, working together in one application or in multiple independent processes. The work load can be distributed evenly between all robots and it is even possible for the fellow robots to take over the work of others which they may have missed.

A complete line can be operated from a remote panel, PLC or PC, through field buses or any other communication link.

PickMaster™ 5 for rapid palletizing

Time saving and flexible
PickMaster 5.0 is the palletizing software that offers the fastest way to a successful installation without any robot programming.



PickMaster applications are configured off-line on your standard laptop with application specific data. The configuration file is transferred to the IRC5 robot control over Ethernet.

Once configured and transferred, PickMaster runs independently of the PC on the IRC5 controller, using the FlexPendant as comprehensive operator's panel. With the operator's panel, the palletizing process is easily started, stopped and supervised. The controller is integrated with the line control system via a generic communication interface.

The PickMaster 5.0 is designed to allow the highest degree of flexibility over the whole product life cycle. In the palletizing system design phase, the user can fully focus on the how to achieve the highest productivity.

It breaks down the configuration information and generates all necessary information the controller needs to run the application. Since no programming is required, late changes can be done without causing any re-programming.

Flexibility in the production phase is that incoming products no longer must be assigned to one specific in-feed/out-feed over the time. PickMaster 5.0 easily and directly adapts to changes in how the products are fed and also where they should be palletized, without any re-programming.

PickMaster 5.0 can handle multiple in-feeders and multiple out-feeders in simultaneous production. Mixing different products from many stations to one pallet is as easy as distributing loads to several palletizing stations. A powerful pallet-pattern generator is included involving multi-drop movements with multi-zone vacuum tools or mechanical grippers.

PickMaster™

TECHNICAL DATA PICKMASTER 3

Product content

PickMaster™ 3 Software package

PickMaster™ 3 Hardware

PickMaster™ 3 User's Guide

PC operating systm: Windows XP, VISTA

Hardware

Gigabit Ethernet Vision:

Vision PCI board Cognex MVS-8100D/1/2/3 (Alt. 1-3 camera boards)

Digital CMOS CDC-200 high resolution cameras (without lenses) and camera cables

Monochrome Gigabil Ethernet camera 1390x1040, Ethernet cables, Trig/strobe cables, network interface card, switches and vision licenses on USB stick.

Colour Ethernet camera 1296x966

Required equipment

M2004 IRC5 controller (all IRB types)

At least one 24 V Digital I/O board

BaseWare 4.0.113/5.06 or later with option 'Prepared for PickMaster'

Additional equipment

PC: Recommended Pentium VI 2 GHz

One Ethernet network card is required for communication with robot controller

17'' 1024x768 screen

Vision

Search tools PatMax™/Blob

Inspection (multiple feature evaluations: size, shape, rel. positions,histogram, e.a.)

External Model and Sensor SDK

Linear and non-linear calibration with perspective compensation

Camera acquisition time and transfer rates: typically 50-200 ms on a high performance PC. Complex models can affect performance.

Up to 10 simultaneous camera acquisitions

Monochrome or colour vision

Features

Easy to Use graphical Line and project configurator

GUI's and Documentation in five languages

Immediate task change-over and fully automatic one button production start

Line PLC and custom operator's panel connectivity through TCP/IP, fieldbuses, serial port or discrete I/O

Remote operator's panel connectivity (TCP/IP, field-buses, serial, I/O)

Concurrent control of both S4Cplus and IRC5 robot controllers

Status control of processes as well as individual robots

Runtime Process tuning

Advanced sorting and mixing capability

Process load balancing of products between robots

Progressive picking and case filling (ATC)

Digital high resolution cameras

High performance vision search and quality inspection

Inspection of untaught features and defects

Integration of custom vision algorithms and external sensors

Customization through .NET Interfaces

Camera distribution to multiple robots

Sensor-less automatic camera

2.5 D vision

TECHNICAL DATA PICKMASTER 5

Product content

PickMaster™ 5 Software package

Required equipment

M2004 IRC5 controller

FlexPendant

BaseWare 5.08 or later with option 'Prepared for PickMaster – PickMaster 5'

PC Operating System: Windows XP Professional, VISTA

Communication: TCP/IP on Ethernet

Features

Easy to use graphical Line and Project configurator

Automatic pattern layer calculation

Library and import function for patterns

Automatic generation of optimized robot movements

Stack height search

Collision avoidance

Speed and acceleration control

Built in gripper configuration

Generic station signal interface

Integrated station sequence logics

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