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PRODUCT BULLETIN

Product: **MotoPick**

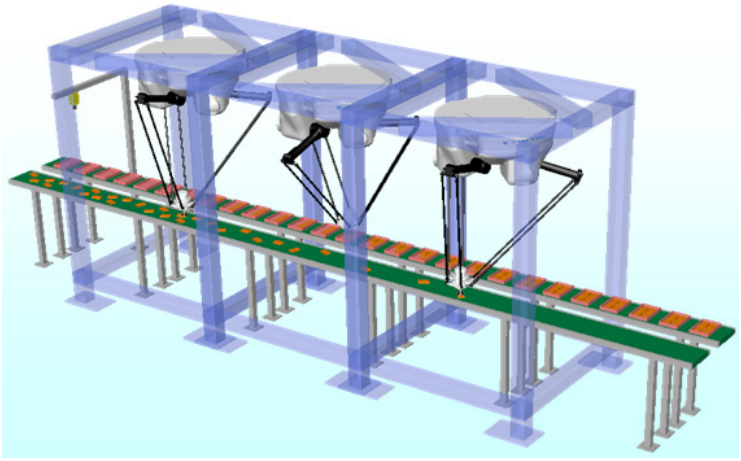
Release Date: ***9/4/15***

Part Number:	***Description:***
174335-1	Accessory, MotoPick Package, FS100
174354-1	Interface Kit, MPP3, MotoPick, FS100
174354-2	Interface Kit, Non-MPP3, MotoPick, FS100

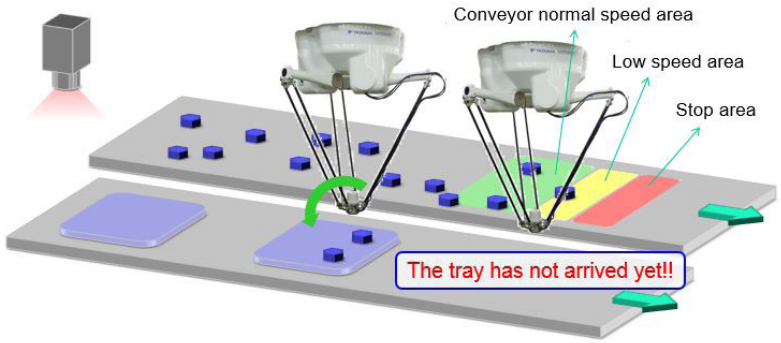
MOTOPICK

Description:

MotoPick™ is a user-friendly, highly advanced software solution that allows for the development of machine-based, high-speed picking solutions. This package provides building blocks to create optimal picking and placing solutions for up to 10 robots and 11 conveyors. The powerful MotoPick software can synchronize multiple robots equipped with vision to pick fast moving product off a conveyor and place it on an outfeed tray or box in an organized arrangement. MotoPick provides pattern-based distribution of product and dynamic load balancing among multiple robots.



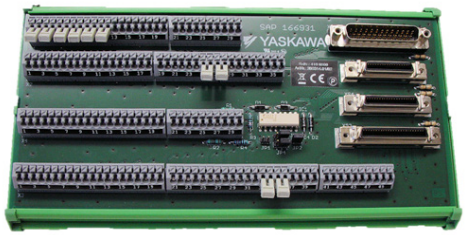
MotoPick software has precise control and coordination of infeed and outfeed conveyors. If the advancement of either the infeed or outfeed conveyor falls behind, the speed of the opposite conveyor can be automatically decreased and even stopped until the operation is equalized (see figure below).



MotoPick

Easy Integration of the MotoPick System:

A robot interface board, developed specifically for MotoPick, greatly reduces the integration wiring and panel size requirements for a multiple robot cell. The robot interface board replaces the three standard breakout boards required for each robot to interface safety I/O, dedicated I/O and standard I/O. The board also provides connections for a camera and two encoders. For each conveyor that is shared with multiple robots, an encoder splitter board will be supplied.



MotoPick Robot Interface Board

Encoder Splitter Board

The standard MPP3 robot comes with a conveyor tracking board; all other robots (non-MPP3) do not. The corresponding interface kit will provide all necessary components to complete the package.

Basic guidelines for camera selection are based on the conveyor width. Additional factors, such as workpiece size, target accuracy, production volume (parts/hr) and conveyor speed, should be considered when making the final selection.

CONVEYOR WIDTH	CAMERA OPTION *	CAMERA RESOLUTION	CAMERA SPEED
< 500 mm	MS200, equivalent to In-Sight 7200-11	800 x 600	102 frames / sec
500 mm – 800 mm	MS300, equivalent to In-Sight 7402-11	1280 x 1024	60 frames / sec
> 800 mm	Investigate other Cognex options		

* Camera options shown in the table are for reference; final camera selection is based on each specific application.

Components Included with MotoPick:

- MotoPick software
- Interface terminal strip with 24V, 2.5A power supply and 8-port Ethernet switch
- MotoPick robot interface board with four 5-M cables per robot
- Conveyor tracking interfaces
- Encoder splitter board for each shared conveyor
- Infeed camera and interface (lens and lighting not included)

Components Not Included:

(Some items can be provided by Yaskawa Motoman as options)

- Conveyors, encoders and interface cables
- Gripper and valve pack components
- Enclosure to host MotoPick components
- Camera lens and lighting
- Outfeed conveyor tray sensor or choose optional camera
- Extra terminals and connectors for additional robots and conveyors
- PC for system setup only (Windows® XP, Windows 7, Windows 8)

NOTE: All wiring (including MotoPick interface components) must be completed by integrator or end user

MotoPick

Documentation:

The drawing package includes guidelines for wiring any configuration of MotoPick. The basic drawings include interface wiring for one robot with a camera and two conveyors. It also includes instructions on how to connect I/O power and cameras to multiple robots, and how to share a conveyor encoder signal with multiple robots using a splitter board.

Features:

- Conveyor tracking speeds of up to 1-M/sec
- 10 robots can be synchronized to one infeed and one camera
- Multi-picking of up to four parts with multiple placements per cycle
- Different part types can be picked and sorted (five max)
- Parts can be stacked on outfeed tray
- Pick zones can be dedicated or shared between robots
- Unacceptable parts can be moved to a reject bin
- Infeed / outfeed conveyors can be configured in any orientation
  - Parallel (same or opposite direction)
  - Perpendicular
- Wizard provided to step through the setup process

System Design Notes:

- Each robot can track two conveyors max
- Only one camera can be used on each conveyor
- Each FS100 can master one camera, but all robots can share the vision data
- The number of cameras cannot exceed the number of robots
- Standard I/O interfacing is NPN, but PNP is an option
- Ethernet switch provided can connect up to six robot controllers
- Package includes a 24V, 2.5A power supply for robot I/O, encoder and camera power
- As robots, cameras and encoders are added to the system, the total power requirements must be calculated, and the power supply re-sized appropriately

Required Package Selections:

PART NUMBER	DESCRIPTION
168495-1 168496-1	Camera,Vision,Yaskawa, MS200, In-Sight Camera,Vision,Yaskawa, MS300, In-Sight
705724-12, -7, -6	Cable, Ethernet, Camera, (5 M, 10 M, 15 M)
158543-5, -3, -1	Cable, Euro, Camera Power, (5 M, 10 M, 15 M)
157947-3,-5,-7	Cable, Ethernet, CAT5E, FS100 (1 M, 2 M, 3 M)
159805-1,-2,-3	Cable Assy, 24VDC Power, FS100 (1 M, 2 M, 3 M)
174188-1 174188-2	Board, PC, Encoder Buffer, 4 Outputs Board, PC, Encoder Buffer, 8 Outputs

Optional Equipment: (which could be provided by customer)

PART NUMBER	DESCRIPTION
700997-4	Encoder, Conveyor Tracking, 24V
172591-1,-2,-3	Cable Assy, Encoder, Conveyor Tracking, Soc (5 M, 10 M, 15 M)