

MYSynergy line-solutions



MYDATA
automation
WORLDWIDE

SWEDEN
MYDATA automation AB
Adolfsbergsvägen 11
168 66 Bromma
Sweden
Tel: +46 8 475 55 00
Fax: +46 8 475 55 01

SINGAPORE
MYDATA Asia Pte Ltd.
Asiawide Industrial Building
5 Pereira Road, #01-01
Singapore 368 025
Tel: +65 281 7997
Fax: +65 281 7667

FRANCE
MYDATA automation S.A.
13 Rue de Norvège BP122
91944 Courtaboeuf Cedex
France
Tel: +33 1 69 59 24 34
Fax: +33 1 69 28 71 00

BENELUX
MYDATA automation B.V.
Schakelplein 10
5651 GR Eindhoven
Netherlands
Tel: +31 40 262 06 67
Fax: +31 40 262 06 68

UK
MYDATA automation Ltd.
14 Wessex Trade Centre
Ringwood Road
Poole, BH123 3PQ
England
Tel: +44 1202 723 585
Fax: +44 1202 723 269

JAPAN
MYDATA automation K.K.
Okura bldg., No. 3, 1st floor
2-17-7, Nihonbashi Kayabacho,
Chuo-ku, Tokyo 103-0025
Japan
Tel: +81 3 3661 7714
Fax: +81 3 3661 7715

USA
MYDATA automation, Inc.
320 Newburyport Turnpike
Rowley, MA 01969-2002
USA
Tel: +1 978 948 6919
Fax: +1 978 948 6915

www.mydata.com
info@mydata.se

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MYSynergy™

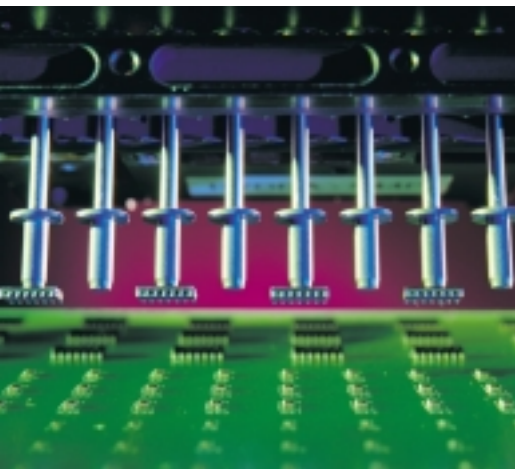


**The answer to true synergy –
where one plus one equals three**

The revolutionary MY-Series placement machine product line – known as the most flexible modular platform in the industry has been extended to include MYSynergy Systems - I and II.

The MYSynergy System is our new generation of a two-machine in-line concept that provides our customers with the latest automation technologies available from MYDATA, that seamlessly increase production runs regardless of lot size or PCB complexity.

For a fast changing world **MYDATA**



The HYDRA Speedmount boosts placement speed with its eight separate nozzles. It can pick as many as eight different components, either simultaneously or sequentially, and then place them one at a time.



Line balancing and optimal kitting with MYSpeed work together to really maximize throughput. You get exact balancing between a chipshooter and fine-pitch placer in MYSynergy, something otherwise unknown in the industry.



Removal and refill of feeders is possible while the machine is placing components. If a magazine runs out of one component, production doesn't stop. Instead, the machine alerts the operator, re-optimizes and continues to mount the remaining components.

MYSynergy

MYSynergy is a system that can grow with your company, with easy upgradeability. Two solutions are available.

The MYSynergy I offers a unique combination of high-speed, highly accurate and flexible component placement. All of this is accomplished with a fine pitch MY9 placement machine and a MY9 HYDRA for high-speed placement, which together provide a placement rate of 27,500 CPH.

However, our MYSynergy II offers our customers a benchmark placement rate of 42,000 CPH while maintaining feeder counts of 192 x 8 mm tape feeders. This feeder count on a two-machine concept is unsurpassed in the industry. With this package, both MY9 machines are equipped with the HYDRA Speedmount feature combining both speed and flexibility.

Both MYSynergy Systems are complete with full conveyerization in and out of the line to your printer and oven.

To further complement the MYSynergy Systems, an optimization and line balancing software tool, MYSpeed 2.2, is included to increase machine uptime, minimize changeovers, and increase productivity.

Should your production requirements change, you can easily reconfigure your MYSynergy System into two stand-alone MY9 machines without additional investment. This is made possible because MYSynergy Systems are modular. Furthermore, these machines have common spare parts, operator training, and preventative maintenance as well as key features shared with all MYDATA machines such as programming, databases, and feeders.

On the other hand, should your production requirements change again, the two machines can be seamlessly reconfigured into the MYSynergy System Line providing overall production modularity for in-line configurations and productivity.

MY-Series placement machines

The MY-Series machines were designed as a platform for future technologies and built upon the stable and accurate split-axis concept. The placement machines combine speed and fine pitch/ BGA capability with a large feeder capacity. The feeder capacity and ability to place complex components, provide the ideal assembly machines for high-mix production of any volume. They can handle virtually all packages, such as BGAs, QFPs, Chip Scale BGAs, CSPs, and Flip Chips.

Fast and fine placement

The Midas™ fine pitch mounthead is designed for long-term accuracy. It places components with extreme accuracy and can mount all surface mount components from ultra-fine pitch components to the most complex CSPs.

To increase throughput, the optional high-speed assembly head the HYDRA Speedmount® can be added to the machine.

HYDRA handles eight components simultaneously at a speed up to 21,000 CPH. When combined with Midas, the MYDATA machine can perform both high-speed mounting and fine pitch placement on a single platform. The HYDRA Speedmount can be field retrofitted to MY-Series machines at any time.

Fast changeovers with Linux

MYDATA's own Linux-based system software, TPSys®, provides multi-user, multi-tasking, and multi-board production features. With the machines connected directly to your network as a seamless linkup, information can be retrieved about the next batch prepared elsewhere - everything from converted CAD files and mount data to optimal magazine kitting information for line balancing and bill-of-materials information.

Non-stop production

MYDATA's intelligent magazines provide a wide variety of intelligent tape, vibratory, and matrix tray feeders, all designed for convenient and easy operation. The magazines hold up to 16 reels of tape or component sticks, allowing multiple feeder changes simultaneously. Each magazine has a unique identity which is recognized by the system software. This feature enables the right components to be picked wherever the magazines are inserted. Pick positions never have to be reprogrammed.

The magazines are also linked with interrelated databases in TPSys, enabling the machine to recognize the presence, absence, and location of the components, reducing setup and changeover times.

Vision

Standard on all MY-machines, the MYDATA® Dual Vision System (DVS) allows placement of all fine pitch components including complex packages. The DVS is made up of two cameras which offer centering, inspection, and best-fit placement of components to the pads on the PCB. The DVS can inspect both large and small components without loss of detail. With programmable lighting, optimal illumination is ensured for all package types.

The MYDATA® Linescan Vision System (LVS) is an optional high-speed positioning system that inspects and aligns fine pitch components "on-the-fly" at a top speed of 6,100 CPH. It ensures placement of all leaded and BGA-type components and is best suited when mount speed is critical.

The MYDATA® Communication Solution (MCS) can be used to fully automate the process of building a PCB, from CAD drawing to assembly. Linking your machines together in a MYDATA network and integrating with the existing network at your production plant creates benefits that extend beyond the production floor and spread throughout the company.

Feeder capacity

MYSynergy I	192 x 8 mm tapes or 160 x 8 mm tapes and 32 JEDEC trays with TEX
MYSynergy II	192 x 8 mm tapes or 160 x 8 mm tapes and 32 JEDEC trays with TEX

Placement rate

MYSynergy I	27,500 CPH (tact time 0.13 s)
MYSynergy II	42,000 CPH (tact time 0.09 s)

Board handling

General features		
Automatic board and component height detection.		
Fiducials supported with auto teach of any pattern.		
Adapter to convert from conveyor to stand-alone configuration available as an accessory.		
Large board customizations available on request.		
PCB dimensions		
Type	Board handling	Width (x) x Length (y) x Thickness
Conveyor (standard)	Tee Style (500 T2)	Max: 440 x 500 x 3.2 mm (17.32" x 19.69" x 0.13")
		Min: 50 x 50 x 0.8 mm (2" x 2" x 0.03")
Top side clearance, (max)		15 mm (0.59")
Bottom side clearance, (max)		15 mm (0.59")
Board edge clearance, (min)		4 mm (0.157")
Board thickness		0.5 - 7.0 mm (0.012" - 0.27")
Special board handling system to increase capability is available on request.		

Programming

Operating system	Linux
System software	TPSys
System security	Hierarchical user access system and automatic data back-up
Logging of production data	TPSys Event Log
Interfaces	RS-232/TCP/IP Network
Programming methods	Converted CAD file download
	Manual entry (X, Y, Z)
	Teach mode with graphical overlay
	Off-line programming
	Digitizer (available as an accessory)
MYSpeed 2.2	Optimizer and line balancing software
MYDATA Shared Databases	Allows MYDATA machines to link together and share common databases.

Upgradeability

All MYDATA machines can be upgraded with the latest system software and most of the new enhancements in accordance with our machine design policy.

Specifications

Component handling

General features					
Programmable placement force					
Electrical verification "on-the-fly"(option)					
Centering by vision and/ or servo-controlled programmable force					
Grayscale, optical and servo-controlled lighting with 32 programmable groups					
Component range					
All common components such as	Chips, SOIC, PLCC, TSOP, QFP, BGA, flip chip, odd-form, direct chip attach, sur face mount connectors, some through-hole components, CSP. 0201 capability is available on request.				
Midas		Min: 1 x 0.5 x 0.5 mm (0.04" x 0.02" x 0.02") (0402) (0201 is available on request)			
		Max: 56 x 56 x 15 mm (2.20" x 2.20" x 0.59")			
HYDRA Speedmount		Min: 1 x 0.5 x 0.5 mm (0.04" x 0.02" x 0.02") (0402)			
		Max: 6.35 x 8.35 x 6.35 mm (0.25" x 0.34" x 0.25") (SO14)			
Vision capability					
Component type	Camera	Max active field of view	Min pitch	Min lead width	Max number of leads
Leaded components	SVC*	51.9 x 51.9 mm ⁽¹⁾ (2.04" x 2.04") ⁽¹⁾ (with dual shot)	0.4 mm (15 mil)	0.2 mm (8 mil)	700
	HRC*	15.0 x 15.0 mm ⁽²⁾ (0.59" x 0.59") ⁽²⁾ (with dual shot)	0.10 mm (4 mil)	0.05 mm (2 mil)	700
	LVC*	80 x 80 mm (3.15" x 3.15")	0.25 mm (10 mil)	0.12 mm (5 mil)	No limit
Bumped components	SVC*	39.0 x 39.0 mm ⁽¹⁾ (1.56" x 1.56") ⁽¹⁾ 51.9 x 39.0 mm ⁽²⁾ (2.06" x 1.54") ⁽²⁾	0.5 mm (20 mil)	0.25 mm (10 mil)	Physical limitation of 10,000 balls
	HRC*	11.0 x 11.0 mm ⁽¹⁾ (0.43" x 0.43") ⁽¹⁾ 15.0 x 11.0 mm ⁽²⁾ (0.59" x 0.43") ⁽²⁾	0.16 mm (6 mil)	0.08 mm (3 mil)	
	LVC*	80 x 80 mm (3.15" x 3.15")	0.30 mm(12 mil)	0.15 mm (6 mil)	No limit
* SVC: Standard Vision Camera in DVS. * HRC: High Resolution Camera in DVS. * LVC: Linescan Vision Camera.					
(1) If component is not mounted in the same orientation as the camera aperture. (2) If component is mounted in the same orientation as the camera aperture. (3) If dual shot mode is used.					

Specifications are subject to change without notice. Linux is a registered trademark of Linus Torvalds.

