

ATOZ - Pick and Place machine

ATOZ PP-050

The ATOZ is a fully automated pick & place machine for the starting OEM manufacturer and OEM- & CM-multinationals producing prototypes, developed by DIMA Group. This unique, highly flexible and compact modular pick & place machine provides in the need for a machine that produces small to medium batches & prototypes for the SMT industry. Being exceptionally fast, built for growth and being prepared for several options, the ATOZ stand out in its class.

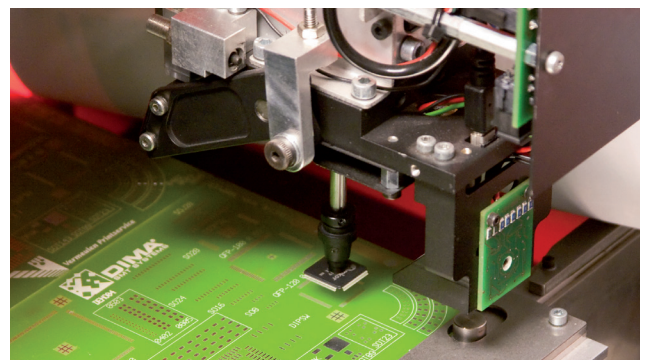
By being a modular machine, the ATOZ is future-proof and expandable to whatever your needs might be. Accessories like a large component camera, a large reel holder, extra feeder banks, a tape strip feeder and tray sequenser with up to 6 jedex size trays makes it being built for growth.

The ATOZ is developed to produce small to medium series with zero change over time in a high standard quality. The ATOZ is suitable for a very wide spectrum. In combination with the optional CAD conversion software, the ATOZ can prepare the step between proto- and high volume production.

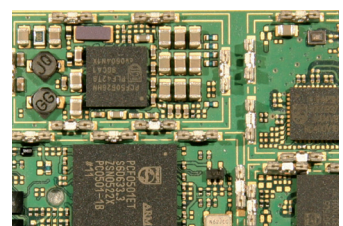
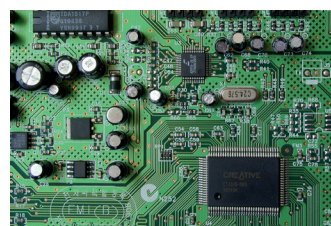
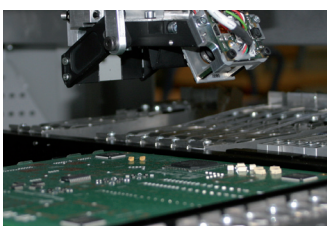


Main Features

- Suitable for small to medium batches and prototypes
- Output 4.500 cph (tact time) / 3.200 IPC 9850
- Up to 120 positions for 8 or 12 mm feeders (both have the same width, using one slot each)
- SQL-database environment
- Modular built for growth
- Vision-on-the-fly
- Optional tray sequencer for 6 Jeduc trays
- Optional adapter for Hover-Davis® label feeder
- Capable of placing conventional LED's



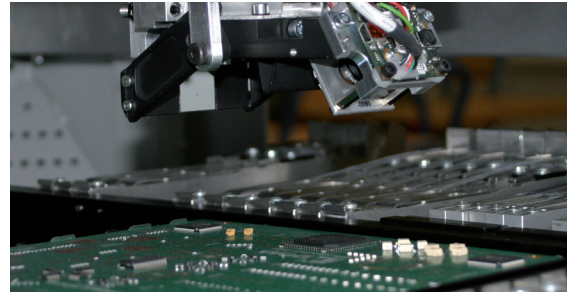
Applications



Detailed information

High-quality precision with Vision-on-the-fly camera

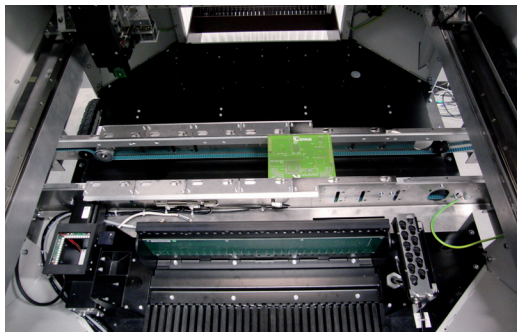
Already in 1994 DIMA introduced her first generation Vision-on-the-Fly cameras. The ATOZ is standard equipped with the latest generation Vision-on-the-Fly, which gives you optimal precision by a camera that controls every leg and ball in comparison to the less accurate systems of Laser and camera systems that work with templates. The ESI®-vision system Correct Place™ controls full vision analysis and alignment. Flexible part models have the ability to handle new packages without software changes and new models are easily defined with vision-assisted teaching.



Vision-on-the-fly camera

Single Placement Head

Placement head with 1 individual Z-axis controlled and programmable nozzle for single use, with full vision alignment for all components. A small camera for chip components down to 0201 is standard. A large CMOS camera for placement of large fine pitch components is optional. The vision system checks all components on dimensions, number of leads, tolerance of lead space, and coplanarity.



Belt conveyor for inline version PP-1200

Quick Feeder Change

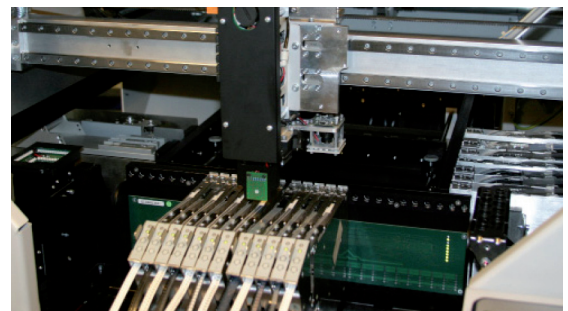
All feeders are easy to access, reducing feeder change-over-time. Feeders can be prepared prior to loading and exchanged on-the-fly. Empty feeder pre-warning indication is highlighted on the monitor, warning the operator in advance. An off-line programming station is available for programming the feeders outside the machine.

PCB Transport Unit

The in-line machine fully complies with the SMEMA standard. Dual direction of transport is available enabling integration with global peripheral equipment. Stand-alone units have the added facility for IN/OUT at the same side if required.

Real Intelligent Feeders

DIMA is now offering her fourth generation tape feeders. The feeders contain a fully programmable micro processor offering a high level of management information, component counting, part number information, component name, component value, pitch requirements, operator warning for component depletion. Unlike other systems this information is stored into the feeder so that the machine database is not required to determine what product is in the feeder. The DIMA feeders are equipped with the unique quick loading mechanism allowing you to change tapes within 40 seconds.

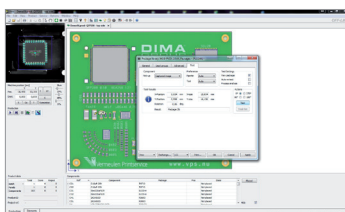


ATOZ inside with 4 feeder banks

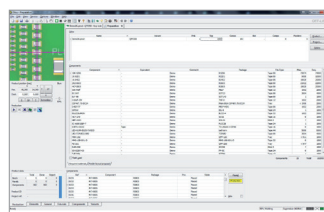
DIMAsoft® Windows®

Be flexible is the keyword for DIMA software making DIMAsoft one of the most advanced easy to use interfaces available in the market today. Its unique capabilities offer quick, informative one key operations, drastically reducing programming time. Material planning, management information, remote diagnostics, output analysis and optimization are together with loads of other features standard available in the software. Software for CAD conversion, stock control and batch traceability are optional available at DIMA. For off-line programming or diagnosis of management information you can install the pick & place software free of charge on a desktop PC.

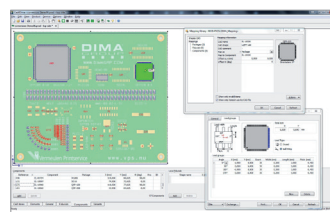
ATOZ Vision



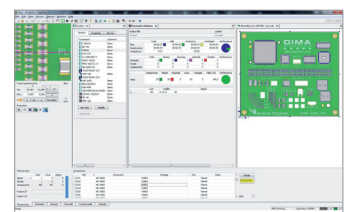
ATOZ Material planning



ATOZ CAD4DIMA



ATOZ Production



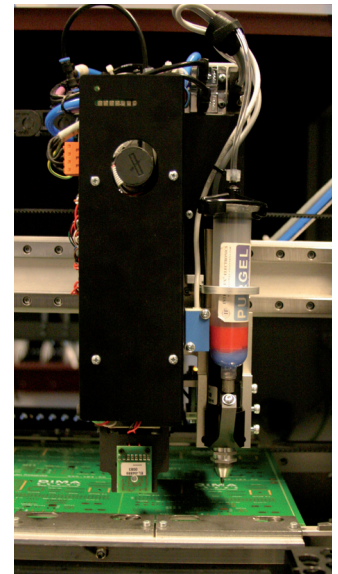
Detailed information

Machine configuration

The ATOZ basic configuration consists of a single placement head (for 1 nozzle), 1 fiducial camera, 1 tool changer, 1 set of tools (see list below), 1 trash bin, 1 feeder-bank (for 30 8/12 feeders) and all software with controls necessary to run the machine. To start you need to add: a PCB fixture (static or inline) and feeders. You can add more useful accessories like a large component camera (LCC), a large reel holder, extra feeder banks, a tape strip feeder and tray holders.

Dispense option PP-2000

Dispense option for the ATOZ for applying solder paste or SMD-glue, controlled by the ATOZ software! The PCB's CAD-file can be converted into a product file providing all dispense positions for both materials through the package library link. Dispensing can be done either directly from the syringe by time pressure or for repeatability it is better to use the included rotary valve. A Jet valve is an option.



Dispense unit for ATOZ

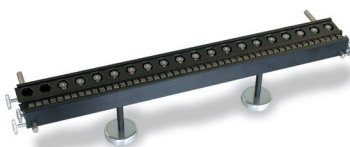
Overview standard tools/nozzles in ATOZ PP-050

Article number	Description	Pieces
HP-2700	Height Calibration tool	1
CS-2705-SS-01	Nozzle 0.5 mm	1
CS-2710-SS-01	Nozzle 1.0 mm	1
CS-2715-SS-01	Nozzle 1.5 mm	1
CS-2720-SS-01	Nozzle 2.0 mm	1
HP-2730-SS-01	Nozzle 3.0 mm	1
(HP-2750-SS-01	Nozzle 5.0 mm	1*

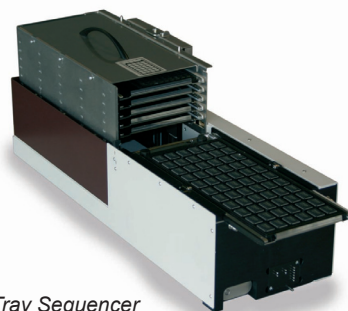
* only if LCC is ordered)

Tape strip feeder

For small strips of SMD tape DIMA offers a tape strip feeder that can be adjusted to any width of tape. The feet of the tape strip feeder are magnetic for easy placement within the machine.



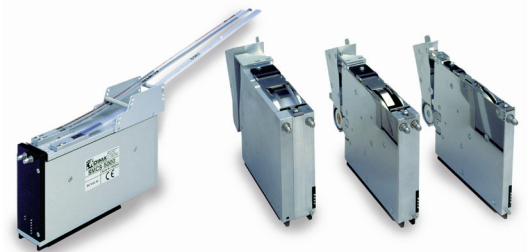
Tape strip feeder SMCS-400x



Tray Sequencer HP-2200

Tray Sequencer

DIMA Group also offers a broad selection of feeders for tray components. A tray sequencer using a magazine up to 6 tray's can be mounted on the machine, with loss of only 15 feeder positions. Including tray detection. Optional an extra tray magazine for fast changeover can be ordered.



Vibration/stick and tape feeders

Vibration/Stick feeders

For plastic sticks up to 50 mm wide. Max. 6 (small) lanes of components in one feeder.

Life time warranty

The contacts on the feeder interface PCB are of outstanding quality, so that DIMA gives lifetime warranty on these contacts.



Light tower HP-3050



Large reel holder MP-3250

ATOZ PP-050	
Type	Pick and Place machine
Dimension (L x W x H)	950 x 1000 x 1360 mm (+500 mm for signal light), without reel holder + 340 mm for each side where a feeder bank is installed + 130 mm for the left and right side if in-line.
Board thickness	Off-line: min. 0.5 mm - max. 3.2 mm (static with pcb holder) In-line: min 0.8 mm - max. 4 mm (on conveyor)
Board size	Off-line: min. 30 x 30 mm - max. 350 x 450 mm In-line: min. 60 x 30 mm - max. 310 x 535 mm Optional extension up to: 550 x 520 mm.
Maximum Warpage	0.5 mm up - 1 mm down
Component Height	10 mm for inflight, 20 mm optional camera
Placement Accuracy	16.7 μm @ 1σ 50 μm @ 3σ , using 1 μm encoders
Placement Rate	3.685 cph (IPC rated), 4.500 cph (tact time)
Components (size)	Standaard: 0201 - Chip, MELF, SOT, SOIC, TNT, PLCC32 (11.5 x 14 mm), SSOP28, Fine pitch down tot 0.5 mm (20 mil.). Field of view: 15x15 mm Optional: TSOP, TNT, PLC, QFP, BGA2025, BGA, LCC. Field of view: 50x50 mm Fine pitch dow to 0.3 mm. Optional size: 01005
Motion	X and Y, DC servo motors with linear encoder (1 μm) and digital motion controller.
Increment Axis	X: 0.001 mm, Y: 0.001 mm, Z 0.02 mm, Theta: 0.0225 degr.
Control	Integrated microprocessor controller with CAN interface combined with PC running on Windows® 7
Interface	Fully SMEMA compatible as option, conveyer height 865 to 970 mm.
Feeder Characteristics	Intelligent feeders, in-line 30 expandable to 60 - 8 or 12 mm tape feeders off-line 30 expandable to 120 - 8 or 12 mm tape feeders Available feeders: tape feeders from 8 mm to 44 mm. Vibration feeders for plastic sticks up to 50 mm wide, tray sequencer for 6 trays 145 x 355mm, LED feeder for wired LED's and Hover-Davis® adapter for Label feeder.
Alignment System	Camera 1: Inflight component alignment with CMOS chip and illumination, utilising the ESI® Correctplace™ Camera 2: Attached to P&P head for fiducial recognition and feeder alignment, utilising the ESI® Correctplace™ Camera 3: optional large component camera (LCC), utilising the ESI® Correctplace™
Power Requirement	230 Vac / 50 - 60Hz / 1500 Watt
Air Requirement	5-6 Bar / 72.5 - 87.5 PSI
Operating Temperature	18 - 30° Celsius / 40 to 60% Humidity
Noise Level	Noise emission during operation < 70 dB(A)
Weight	210 kg without cabinet and feeders (one feeder bank), 370 kg with cabinet (4 feeder banks) without feeders
Dispense option	
Dispense speed	Dispense speed 10.000 dots per hour, 1 mm dot pitch, 30 ms dispense and 100 ms hold time, 4 mm dispense height.

For more detailed information, please contact our Sales Representatives. We are very willing to explain you the product application opportunities, all the available system configurations as well as our customized turn-key automation facilities. We are pleased to serve you with the best process technologies and going for the best system fit into your manufacturing processes. Your success is ours too!

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