

## Elite Dispenser for multiple applications

### Elite Dispenser DR-060

The Elite Dispenser is combining flexibility with high speed and accuracy. This is opening doors when large production volumes are required. The Elite Dispenser is designed to be fast in the first place, without ignoring the need for flexibility. The Elite Dispenser provides both flexibility and speed by being able to mount up to three valves. Many different dispense applications can be handled with the Elite. In case of **Dam & Fill** at least two valves are needed. One for the high viscosity dam material and the second for the lower viscosity fill material. In case of a **Glob-Top** only one dispenser is required. With a maximum speed of 1000 mm per second and an overall accuracy of 50 micron at 3 sigma, the machine is also ideal for high speed and high accuracy applications like dispensing **dots of solder paste or SMD adhesives**. This performance is made possible by utilizing linear encoders for all movements within the machine. Like in all DIMA machines a camera is part of the standard package, as well as the unique off-line programming software. You can work with component, package and fiducial libraries and DIMA also created a dispensing library to store all available information about different materials, dispense valves and all necessary parameters needed for a repeatable production. The standard package even includes the ESI fiducial alignment software making the Elite Dispenser into an ideal dispensing platform for various different applications. The Elite can be equipped with **all DIMA dispense valves** whether it is pneumatic or electrical driven. Even the piezo actuated **jet valves** and the **progressive cavity pumps (PCP)** can be used. A standard feature within the Elite is that all air pressures used in the Elite (main air pressure and tank pressure) are being monitored in order to control the process and with that guarantee the process repeatability. The Elite is modular build, so options can be added to the machine on a later date.

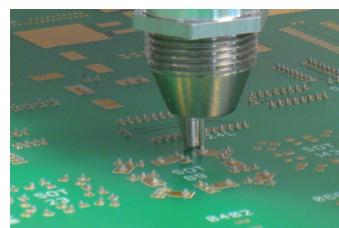
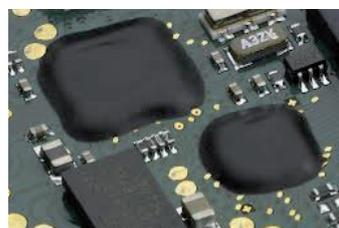
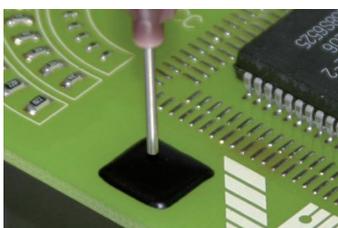


### Main Features

- High speed (up to 1000 mm/s)
- High accuracy (50  $\mu\text{m}$  @ 3 sigma)
- Teaching camera standard
- Advanced monitoring for process control
- Linear encoders
- Easy track© off-line programming software
- Wide range of valves
- Standard up to 3 heads
- Modular system free to configure
- Automatic fiducial alignment



### Applications



### Detailed information

#### Machine Configuration

The Elite Dispenser is configured with a camera, computer with DIMAsoft user software, a base for up to 3 dispense valves, one electronic pressure sensor for the main air supply and one sensor and regulator for material pressure. The Elite platform comes as a batch machine but can be upgraded to an in-line machine. Together with the unbeatable DIMA Easy track® offline programming software and the DIMAsoft User interface DIMA has created the ultimate dispensing machine.

#### Options

Available options for the Elite Dispenser are a.o.: multiple heads, pin chain conveyor, automatic XYZ nozzle calibration, flow monitoring, dynamic flow adjustment, touchless valve cleaning, laser height detection, reservoir empty detection, and barcode and track & trace software. Detailed information can be found in our Dispensing Option brochure.

#### Dispensing Valves

The following valves are available for a variety of different dispense applications

DD-5100	Archimedes screw valve
DD-5130	Stainless front closing needle valve (low volume)
DD-5131	Stainless front closing needle valve (medium volume)
DD-5161	Jet valve (max. 2500 cps)
DD-5162	Jet valve (max. 100.000 cps)
DD-5140	PCP pump



DR-5100



DR-5130  
DR-5131



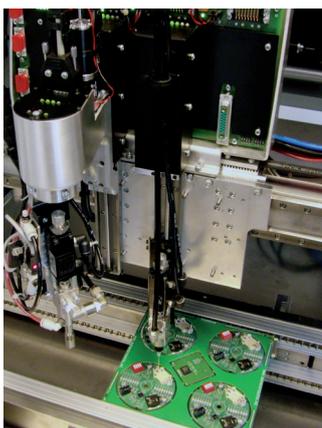
DR-5161  
DR-5162



DR-5150

#### Valve Mount Assembly

Valve mount assemblies are available in several different models depending on your requirements. Standard the Elite Dispenser is equipped with a XY-axis and 1 Z-slide module. On this Z-slide module any of the DIMA dispense valves can be mounted. If rotation and tilt is required the Z-slide can be upgraded to Z-slide with rotation and tilt (even as a field upgrade). The Elite Dispenser has two free slots left to install two extra Z-slides, with or without rotation and tilt. If installing three slides, only 2 can be Z-slides with rotation and tilt (Z-RT).



Head with Z-RT-slide and Z-slide



DR-2010 Z-Slide with integrated rotation and tilt function



DR-2000 Z-Slide

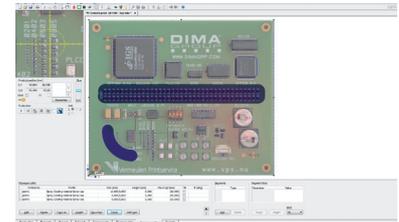
#### Z-Movement

One important feature of the DR series is that all valves can move independently up and down with a stroke of 105 mm. In this case programming a board is easier than when valves only have a 50 mm height difference between each other (like with other machines).

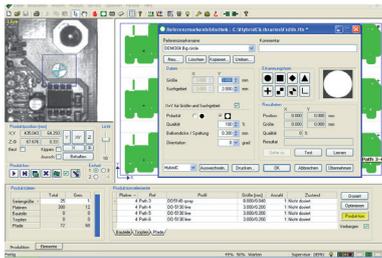
### Detailed information

#### DIMASOFT®

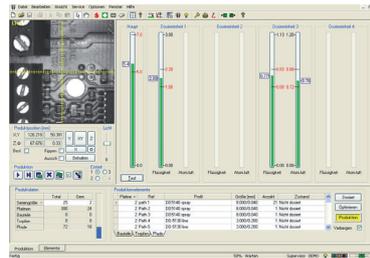
The Elite series of machines come with the unique DIMASoft user interface. In combination with the standard CCD camera this Windows based software is a very powerful and user friendly tool. The DIMASoft provides libraries to store all available information like, different type of materials, dispense valves, fiducials, material pressure, atomizing air pressure, line speeds, line widths, dot sizes etc. This information can differ for each individual program and parameter setting are being monitored during production for process reliability.



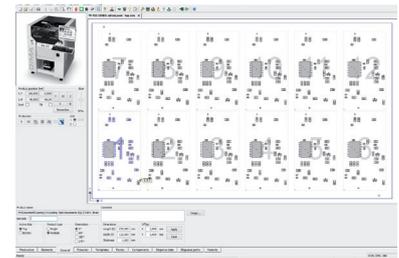
Offline programming



Fiducial screen



Pressure screen



Dispense screen dot dispensing



Selective coated board under UV light

#### Easy track off-line software

DIMA is the first company that has succeeded in providing true off-line programming software. In order to use it correctly a top view picture of the product is needed together with at least two reference co-ordinates. Through these co-ordinates the product can be scaled within the software and the off-line camera image that includes scales images of all available nozzles it becomes child splay to off-line program the product using the available dispensing library information. The Easy track software even provides an off-line cycle time calculation of the program. This software ensures the highest level of productivity for the DIMA machines.

#### CAD-Conversion Software

In case dots of solder paste, or SMD-adhesive need to be dispensed on a printed circuit board, DIMA can supply CAD-conversion software called CAD4DIMA. With this software a CAD-file (file containing pick & place coordinates, package information, component information etc.) can easily and offline be converted into a file that can be used on the Elite Dispenser. Through this software the position and size of each dot is automatically generated.

#### Pressure Reducing Valve and Sensors

The Elite platform is standard equipped with three electronic pressure sensors. One for the main air supply, one for material supply and one for the atomizing air supply.



Three electronic pressure sensors

#### Product Handling

To handle your products a variety of systems can be offered from a static fixture up to an automatic in-line transport. The Elite Dispenser comes standard with a static work holder but can easily be upgraded to a machine with in-line chain pin conveyor, or belt conveyor with product clamping. Other conveyors are available as well.



Pin chain conveyor DR-2150(-3)



10 liter material tank

#### Material Handling and Features

For each type of material that needs to be processed, a separate material reservoir/tank is required. In most cases the material is transferred from the reservoir/tank by compressed air. Optionally a pump can be used. Material reservoirs and tanks come in a large variety of sizes and can be chosen depending on the demand per day. All reservoirs and tanks can optionally be equipped with low level detection. This prevents the machine from running dry.



Small material tanks

Elite Dispenser DR-060	
Type	Dispensing machine
<b>Dimensions (LxWxH)</b>	
Stand-alone	1330 x 970 x 1470 mm (+500 mm for signal light)
In-line	1330 x 1430 x 1470 mm (+500 mm for signal light)
Three stages	1330 x 1790 x 1470 mm (+500 mm for signal light)
<b>Motion</b>	
Type:	Close loop servo drive with linear encoder 1000 mm/s.
XY velocity	1000 mm/s <sup>2</sup>
XY acceleration	1 g
Z-axis velocity	0.25 m/s
XYZ resolution	1 µm
Positional accuracy	50 µm @ 3σ (sigma)
Rotation	370 degrees (with DR-2010 only)
<b>Work area (based on one valve on Z-slide)</b>	
Stand alone	525 x 420 mm – Z-movement 105 mm
In-line chain conveyor	525 x 410 mm – Z-movement 105 mm
In-line belt conveyor with clamping	525 x 420 mm – Z-movement 105 mm
<b>Conveyor systems (without option that can cause restrictions)</b>	
Min./Max. conveyor width (chain)	32mm / 410 mm (manual adjustable)
	32mm / 410 mm (automatic adjustable)
Min./Max. conveyor width (belt)	32mm / 420 mm (manual adjustable)
	32mm / 420 mm (automatic adjustable)
Board Clearance Top- & Bottom side	100 mm
<b>Interface</b>	
Controller	Integrated microprocessor controllers
User Interface	PC controlled running on Windows™ with DIMASOFT® user interface
<b>Facility requirements</b>	
Power Requirement	220-240 VAC, 50 - 60Hz, 2500 Watt
Air Requirement	6 bar, 85 PSI, 100 L/min
Extraction (when required)	250 m <sup>3</sup> /h
Noise:	Noise emission during operation < 70 dB(A)
Weight	510 kg without tanks

Standard features
General machine and material pressures are software-controlled
PC with LCD monitor, key board and trackball
1 Teaching / fiducial alignment camera
ESI fiducial alignment software
1x Z-slides (2x open position for optional 3 valve)
Easy track off-line programming software
Static PCB holder
Stainless steel interior
Solvent-purge station with cup

Optional features
Z-slide with 4th axis and tilt
Low level detection for material reservoirs and tanks
Automatic nozzle calibration unit
Automatic touch less nozzle cleaning unit
Dynamic flow adjustment system (mass flow principle without moving parts)
Dot size and position inspection software
Valve and/or material heating
Automatic conveyor width adjustment
Material changeover system (manual or automatic)
Bar code recognition system, 1D or 2D
Traceability and information log-software
Signal light tower

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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