

DESMA[®]

TEC



*formica***Plast**[®]

Micro injection *with one and two components (10 – 400 mg)*



formicaPlast®

formicaPlast® 1K formicaPlast® 2K

Precision for the smallest shot weights

- » 2-phase piston injection unit
- » User-friendly visual touch system
- » Precise process control
- » Master mould concept
- » High dynamic and precise servo injection drive

- » Smallest incremental adjustments possible
- » Suitable for standard granulates
- » Suitable for special injection processes (CIM, PIM, MIM)
- » Variable mould sizes
- » Short runners
- » Toggle lever clamping unit
- » Possibility for variothermic process control
- » 2 or 3 plate tools

formicaPlast® 2K For 2 component injection

- » Based on formicaPlast® technology 1K
- » Two independent machines on one unit
- » Automatic turning device for mould units
 - Change time approx. 0.2 seconds
- » Highly precise mould unit placement
- » Use as 1 x 2K machine or 2 x 1K machines

Options:

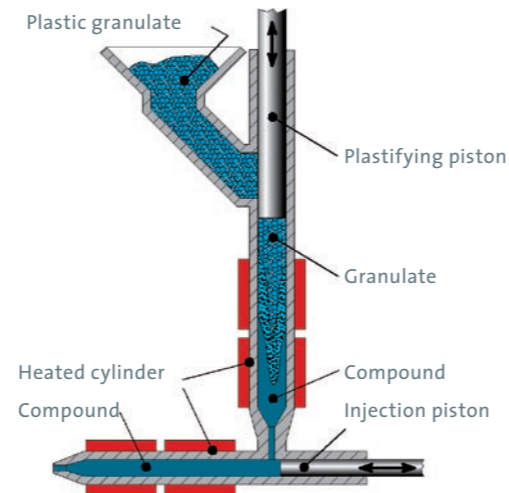
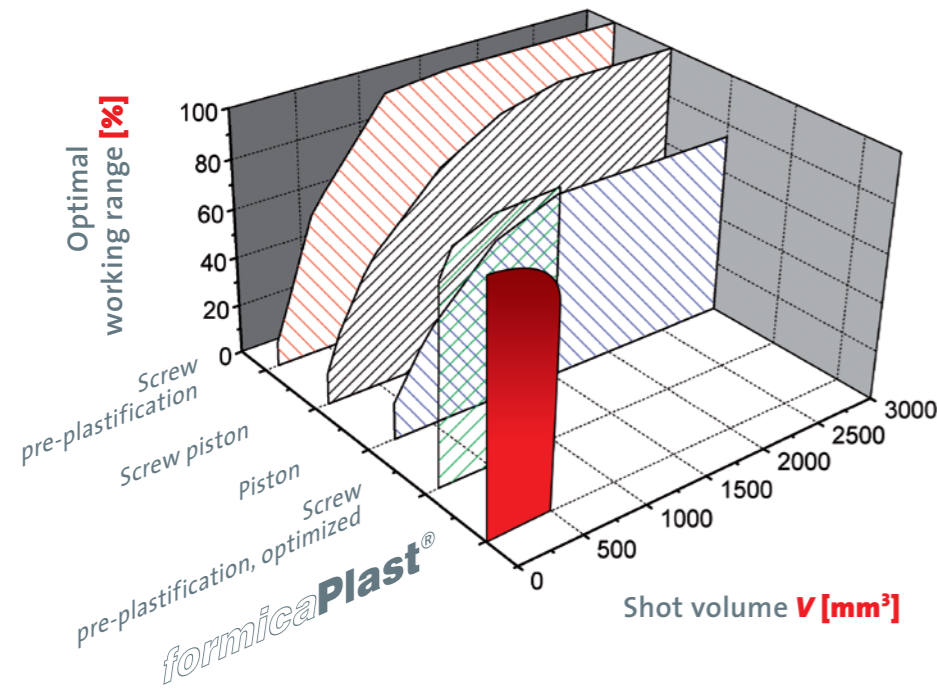
- » Automation equipment
- » Handling robots
- » Quality monitoring
- » Clean room module
- » LSR module
- » Material drying and vacuum preparation



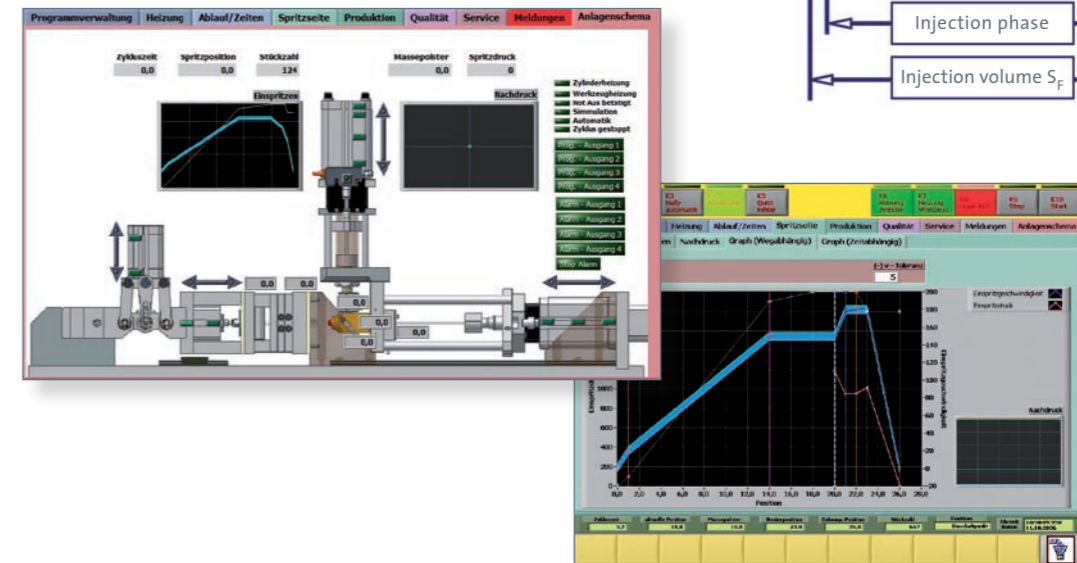
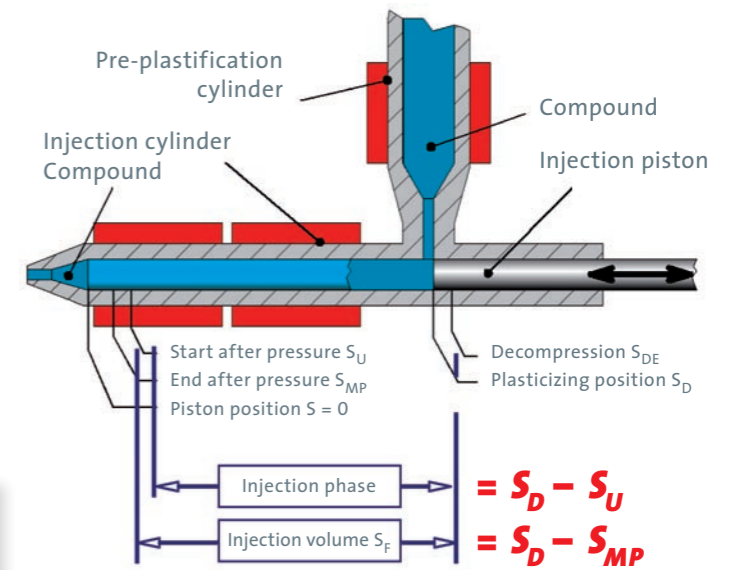
» Clamping unit	
Clamping force	10 kN
Max. mould installation height	135 mm
Opening stroke	40 mm
Ejection force	300 N
Ejection stroke	10 mm

» Injection unit	
Pre-plastification piston	Ø 6 mm
Injection piston	Ø 3 mm
Maximum injection pressure	3000 bar
Maximum injection volume	150 mm ³
Maximum injection speed	1000 mm/s





- Injection process**
- » First in – first out material processing
 - » Short cycle times
 - » High flexibility
 - » Direct power gear ratio
 - » Servo electric injection drive
 - » Highest precision at injection
 - » Optimal process control
 - » Economical material preparation
 - » Precise decompression

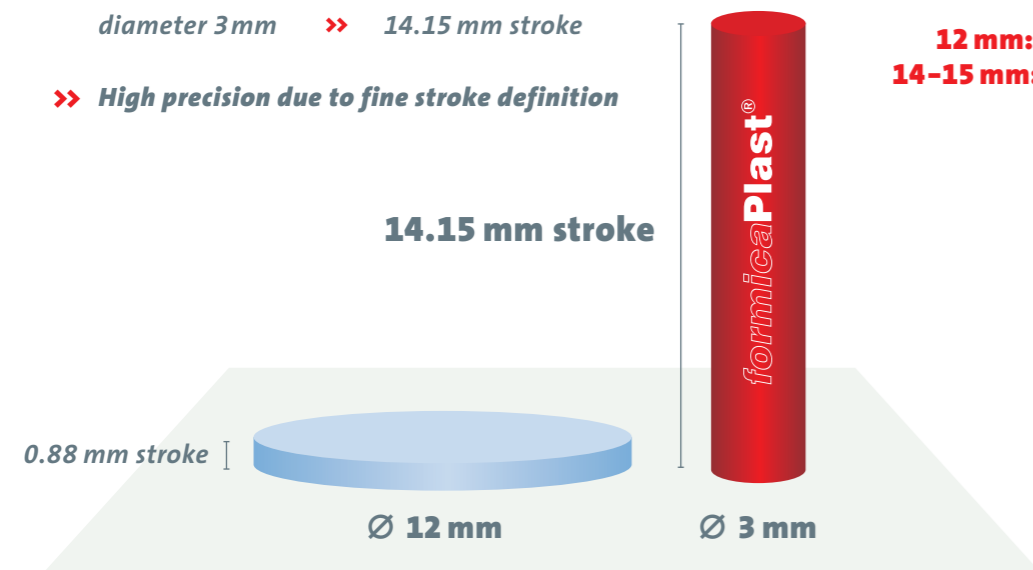


Injection system

- » Piston injection with piston pre-plastification
- » Basic injection piston $D = 3 \text{ mm}$
- » Pre-plastification piston $D = 6 \text{ mm}$
- » Injection stroke 23 mm
- » Maximum shot volume (basic) 150 mm^3
- » Processing of all popular plastic granulates
- » 4 heating zones in plastification unit
- » Granulate container evacuably
- » Temperature controlled intake zone
- » Changeable nozzles for various applications

Comparison screw piston vs formicaPlast®

- » 100 mm³ yield:
 - diameter 12 mm » 0.88 mm stroke
 - diameter 3 mm » 14.15 mm stroke
- » High precision due to fine stroke definition



Pistons-Ø D_K [mm]

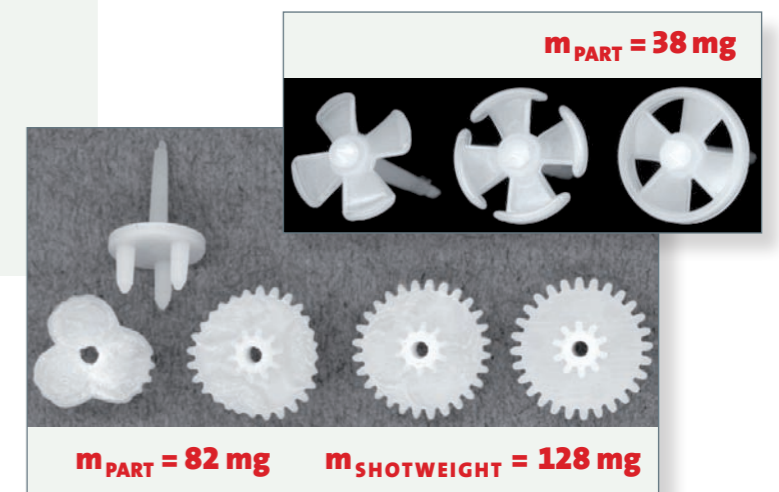
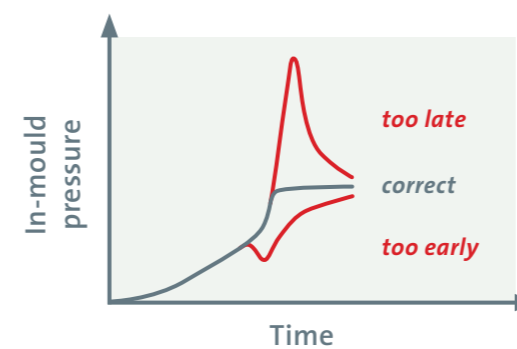
- 3 mm:** formicaPlast®
- 4-11 mm:** Screw pre-plastification with piston injection
- 12 mm:** Smallest screw for micro injection
- 14-15 mm:** Screw piston general

$$V = \frac{D_K^2 \cdot \pi}{4} \cdot S_E$$

V = Volume
D_K = diameter injection piston
S_E = injection stroke

Mould filling studies

- » Partial mould filling
- » Stroke point setting
 - Material filling runner
 - Material filling cavity
 - Within cavity area
 - Stroke and pressure regulation

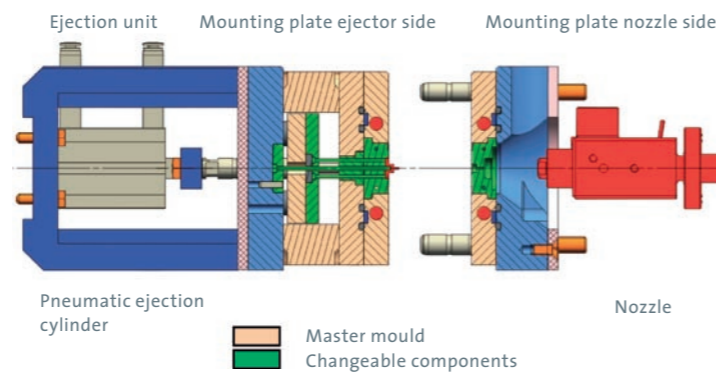
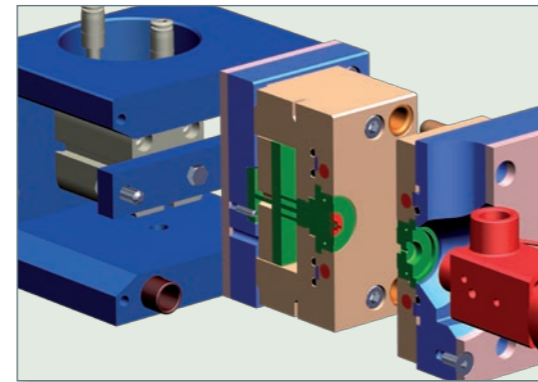


2-plate master mould

- » Master mould with changeable mould units
- » Integrated pneumatic ejection unit
 - Ejection stroke 10mm
 - Ejection force 295 N (at 6 bar pneumatic pressure)
- » Heating by electric heating cartridges
- » Liquid temperature control possible
- » Tool temperature sensor on mould unit
- » Temperature concept enables variothermic process control for micro structure surfaces

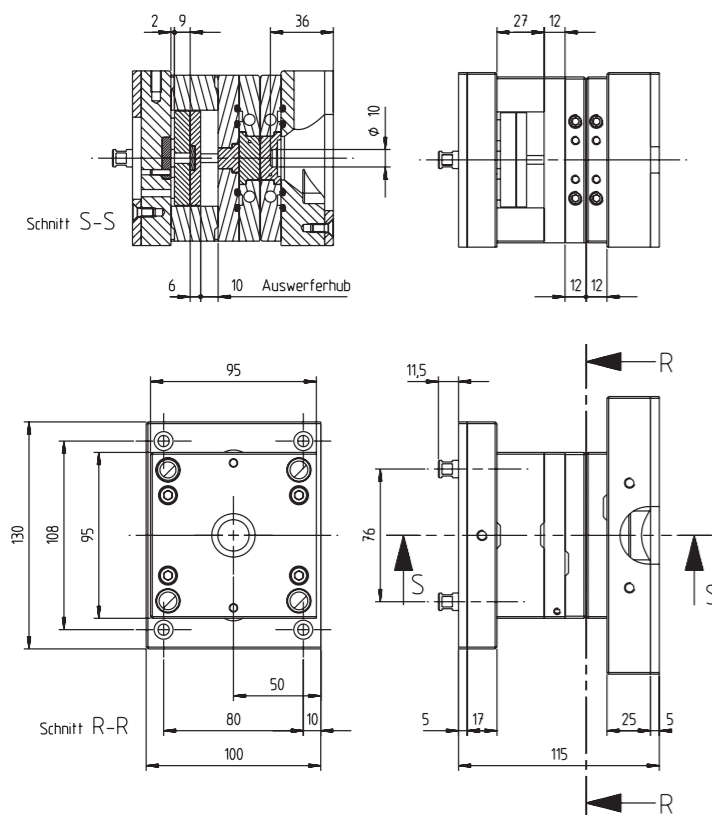
Option:

- » 3 plate master tool with automatic separation of the cold runner distribution and mould

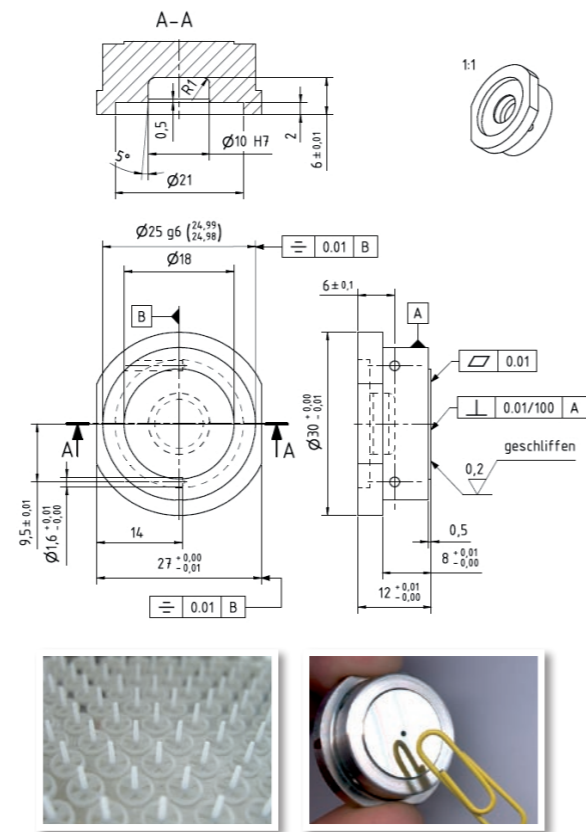


Dimensions

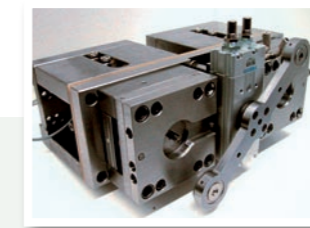
Tool



Mould insert

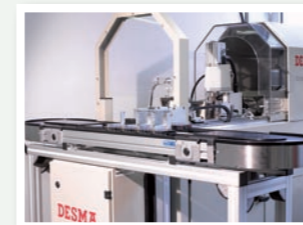


Modular construction

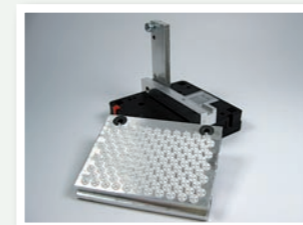


Clamping unit with fully automatic turning device for mould units using 2 component injection.

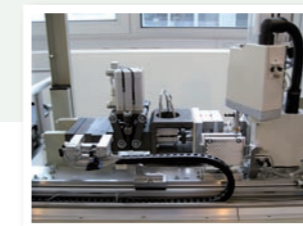
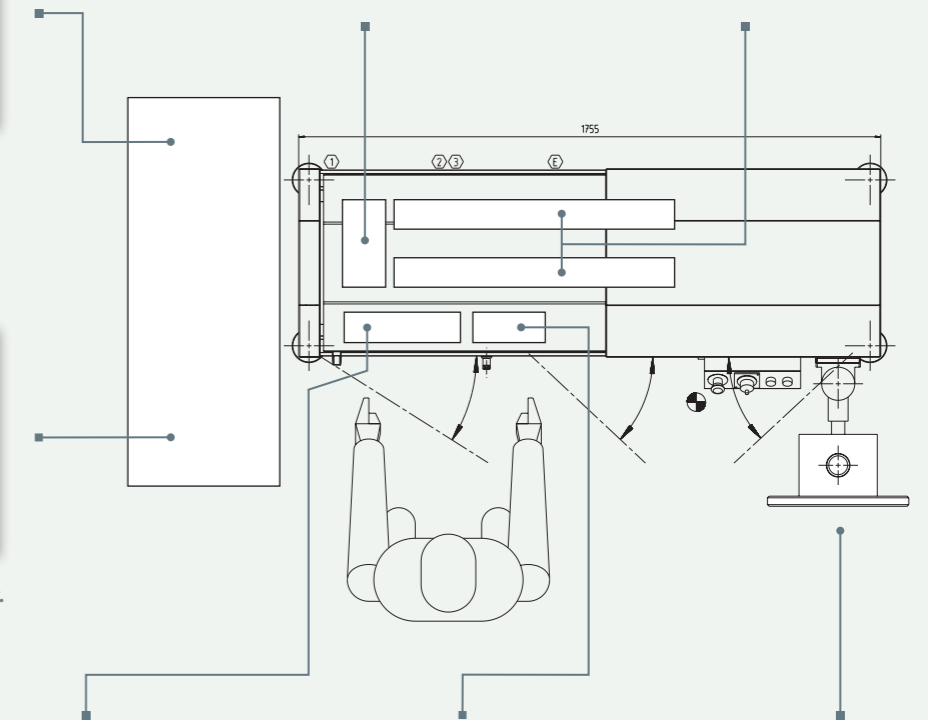
- Parallel injection units
- 2 component machine
- For use individually or combined



Automation line integrated pre- or post production processes, such as handling, assembly or fitting.



Pallet with individual tool tray.



Transfer and turning devices convey trays to automation line.



Handling robot for inserts, part removal or fixation.



Touchscreen for visualisation and control.



DESMA TEC: your leading technological partner worldwide in the areas of

>> Micro injection technology

Efficient production of highly precise micro parts with shot weights in milligrams is the key technology of the 21st century. DESMA is proud to be at the forefront of this trend. We offer our customers professional micro-injection machines for the production of one and/or two component parts.



>> Robot technology

DESMA: robot specialists for decades. Industrial robots are especially suitable in polyurethane processing in the areas of release agent application, handling and complex contour work.



>> Automation technology

DESMA's unique automation department designs and realizes tailor-made solutions for our customers.



>> Mould shop

DESMA has always placed especial emphasis on a highly professional mould shop; our customers receive complete solutions.



>> Polyurethane mixing technology and rotary tables

Manual, automatic and robot guided polyurethane mixing heads – self-cleaning – are characterised by convenient operation and high reliability. Our programme ranges from 6 station to 60 station rotary tables for cost-efficient production of diverse technical articles.



>> Technikum

DESMA TEC engineers work in closest co-operation with customers and material suppliers to achieve the best solutions using DESMA machinery.



Safe in DESMA's hands

>> Worldwide service

An export rate of over 90% means that it is self-understood for us here at DESMA to offer customers our first class service – worldwide. Global service is ensured not only by our HQ in Germany but also countless representatives in Europe, the USA, Latin America and Asia. DESMA guarantees our customers a fast spare parts service worldwide: longer downtime is avoided. DESMA has a comprehensive parts stock in Achim.

>> Highest quality demands

The name DESMA has been synonymous with highest quality demands for more than 60 years. Our most modern production technologies, combined with rigorous quality control of all parts ensures the customers' demands are always met.

>> Longlife products ensure safe investment

DESMA products are characterised by an above average lifetime; our customers' investment is safe.