



microPrint
made in switzerland

MAXIMUM VERSATILITY IN PRECISION



Up to 7 ink cups
or transverse
doctoring units



Max. cup size
160 mm



X-Y position
electrically
adjustable



Electric rotation
on 2 axes



Automatic
viscosity control



Camera control
& positioning

ML Line

ML350 | ML350E | ML500 | ML500E

ML Line

ML350 | ML350E | ML500 | ML500E

The ML line features multicoloured pad printing machines with electric positioning and an optional pneumatic or electric pad stroke. The printing positions are adjusted through the graphic, multicoloured touchscreen display. The printing procedure can be programmed as desired. It is possible to position many different print images on a single printing cliché. These can be individually controlled, so that complex composite images or different variations can be printed. The data belonging to each order are saved and can be recalled for repeat orders any time, which significantly decreases the required adjustment time.

Printing positions can be corrected in real time by camera or through the interface of a superordinate system. There are many options available for parts handling: from pneumatic shuttle, electric rotation on two axes using vacuum clamps and parts sensors, to correcting the position of individual parts by camera.

OUR ADVANTAGE:

Programmable

Camera positioning

Cliché cooling

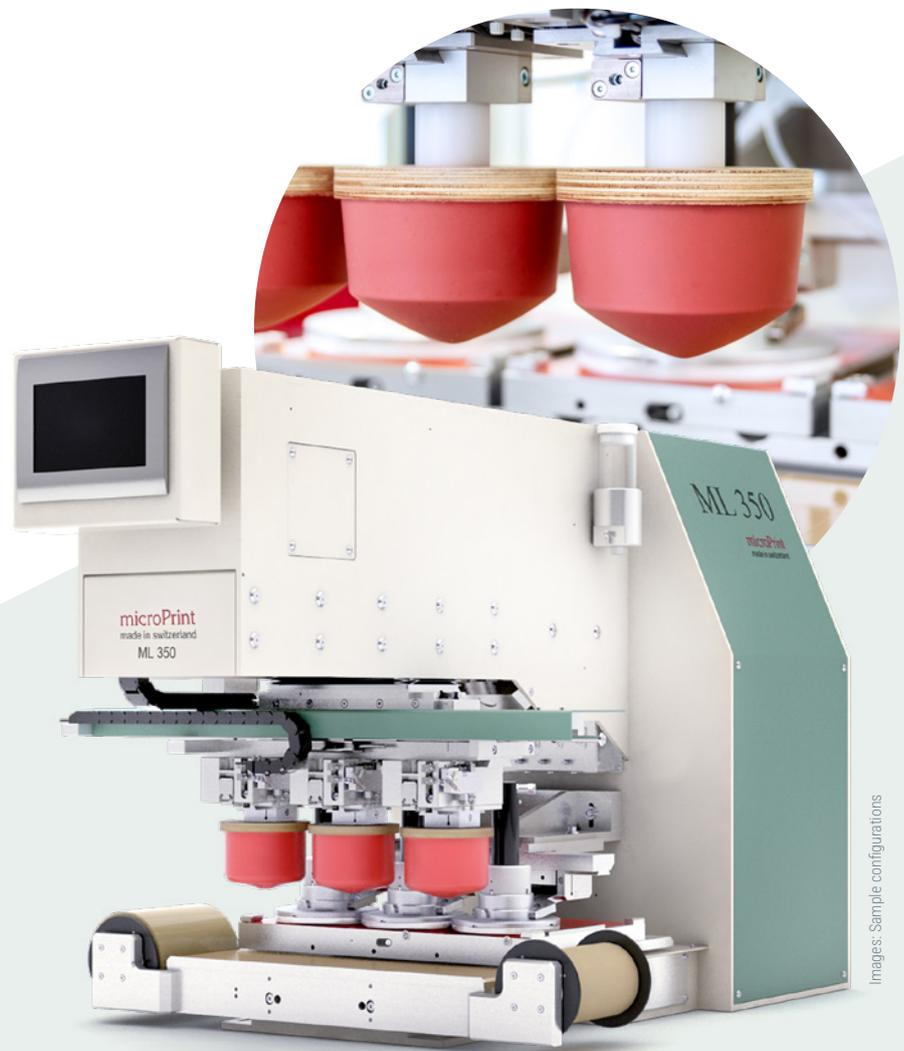
Laminar flow

Pad cleaning

Viscosity control

Interfaces

OPC UA



Images: Sample configurations

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Applications

The ML line is versatile and can be used as a manual workstation with a security cell or integrated into a system. It is suitable for complicated parts with multiple images printed in various positions as well as for applications which require a high degree of precision throughout the entire printing process (e.g. for multicoloured images with fine structures or screen printing). It's also ideal for parallel printing on multiple parts within an injection moulding machine. The electrically powered stroke ensures optimal performance for sensitive printing processes (including printed electronics, opaque or translucent printing and printing on rough surfaces or glass).



Pad positioning

The X and Y position of the pad is adjusted in 0.01 mm increments through the display and controlled by linear motors. The pad stroke can either be executed pneumatically or electrically using a servomotor and spindles. In the case of a pneumatic stroke, the speed is controlled by a throttle. The electric pad stroke offers different speeds on the up and down stroke for every single step – up to and including setting the length of time the pad remains in contact with the print object. It is possible to use up to five selective pads. The angle is set mechanically at the cliché holder.



Operation, software and interface

Operation is performed through the graphic, multicoloured touchscreen display. Printing procedures can be programmed in simple steps with the help of a user-friendly visual representation. The ML line features a galvanically isolated digital interface and an Ethernet connection for updates and back-ups of order data. Optional system communication enhancements include Profinet, Ethernet/IP or EtherCAT. To integrate operational data recording, an optional OPC UA interface is available.



Inkwell

Capable of printing up to seven colours using 56 mm doctoring cups, the ML line can also handle up to three colours with a maximum cup size of 160 mm. Various intermediate sizes and different cup combinations are available. The surface pressure of the magnetic doctoring cups can be increased by a pneumatic holder on request. The variant with transverse doctoring unit is used for very long print images, or for the unwinding device. If the optional microPrint Viscomat is installed, ink viscosity inside the cup is regulated automatically.



Parts handling

Standard models feature two toolport interfaces for connecting simple handling devices (such as vacuum boxes, parts sensors, clamps, pneumatic shuttle or rotation, or controlled jets of ionised air). The ML line can be optionally fitted with rotation on one or two axes or a simple shuttle for integrating any pre- or post-treatment devices, camera controls or robotic loaders.



Accessories

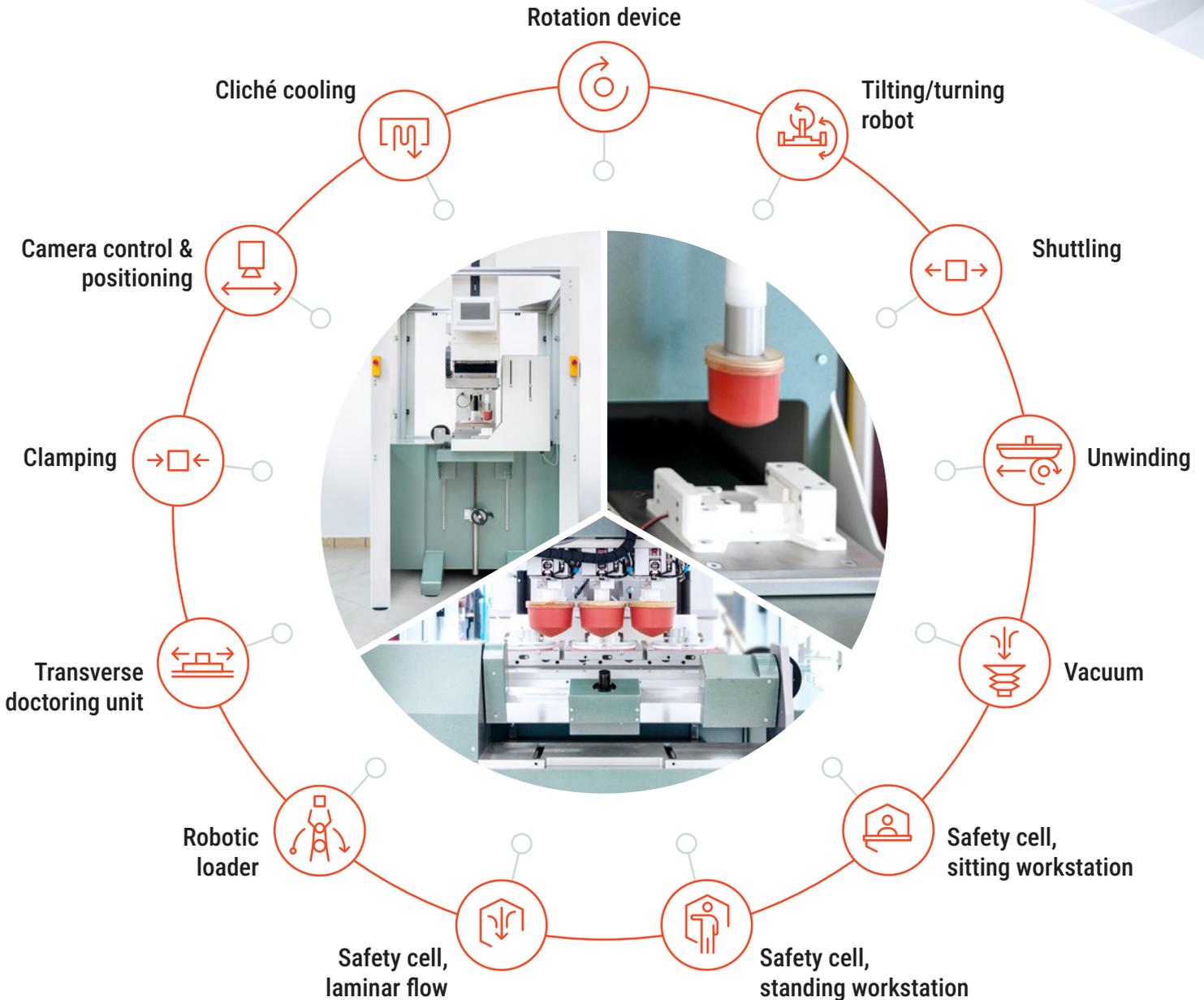
For standalone operation within a system, we recommend at least pad cleaning control and the Viscomat. For top requirements regarding product safety, filling level gauges for both units may be added, as well as additional sensors for temperature and humidity. Cliché cooling is available to minimise temperature effects on colour transfer time and on the ink's pot life. Safety cells can be specially designed for sitting or standing workstations. These can be equipped with an additional rotary indexing table and a laminar flow to minimise dust.

ONE SOLUTION – ENDLESS POSSIBILITIES

Are you looking for a tailored solution to meet your needs?
The ML line offers a broad range of configurations to meet your specific needs, ensuring maximum precision, flexibility and versatility.



Further additional equipment and adaptations
available on request: info@microprint.ch

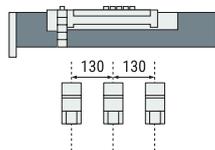


ML350 | ML350E | ML500 | ML500E

Cup and cliché combinations

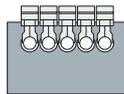
We provide various combinations of cups and clichés to meet all requirements, ensuring our machines are perfectly adapted for each application. If a part shuttle is used, further combinations as well as a larger number of cups can be used.

ML350 | ML350E

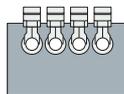


Travel distance
Pad shuttle
MFT350

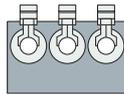
Cliché:
400 x 250 mm
Cup:
5x ø56 mm



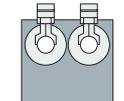
Cliché:
400 x 250 mm
Cup:
4x ø70 mm



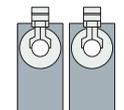
Cliché:
400 x 250 mm
Cup:
3x ø120 mm



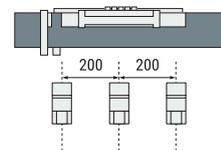
Cliché:
300 x 300 mm
Cup:
2x ø140 mm



Cliché:
2x 150 x 300 mm
Cup:
2x ø140 mm

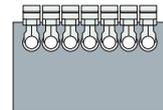


ML500 | ML500E

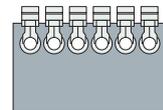


Travel distance
Pad shuttle
MFT500

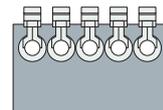
Cliché:
520 x 300 mm
Cup:
7x ø56 mm



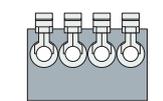
Cliché:
520 x 300 mm
Cup:
6x ø70 mm



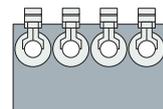
Cliché:
520 x 300 mm
Cup:
5x ø86 mm



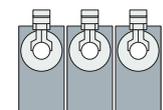
Cliché:
400 x 250 mm
Cup:
4x ø86 mm



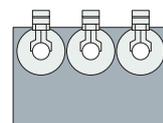
Cliché:
520 x 300 mm
Cup:
4x ø120 mm



Cliché:
3x 150 x 300 mm
Cup:
3x ø140 mm



Cliché:
520 x 340 mm
Cup:
3x ø160 mm



TECHNICAL DATA OVERVIEW

Machine series

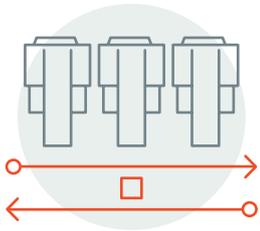
ML line

Machine types	ML350	ML350E	ML500	ML500E
Number of colours	1–5	1–5	1–7	1–7
Speed [cycles/h]	1,500/970 with pad cleaning	1,800/1,200 with pad cleaning	900/700 with pad cleaning	1,700/1,200 with pad cleaning
Drive – pad stroke	pneumatic	electric with servomotor	pneumatic	electric with servomotor
Drive – pad X-axis	linear motor	linear motor	linear motor	linear motor
Drive – pad Y-axis	linear motor	linear motor	linear motor	linear motor
Drive – cliché	pneumatic	pneumatic	pneumatic	pneumatic
Cliché sizes max. [mm]	400 x 300 x 0.5/10	400 x 300 x 0.5/10	520 x 340 x 0.5/10	520 x 340 x 0.5/10
Cliché sizes for transverse doctoring unit max. [mm]	130 x 600	130 x 600	130 x 800	130 x 800
Ink cup [number x Ø in mm]	5x56 / 5x70 / 4x86 / 3x120 / 2x140	5x56 / 5x70 / 4x86 / 3x120 / 2x140	7x56 / 6x70 / 5x86 / 4x120 / 3x140 / 3x160	7x56 / 6x70 / 5x86 / 4x120 / 3x140 / 3x160
Print image max. [Ø in mm]	46 / 60 / 76 / 110 / 130	46 / 60 / 76 / 110 / 130	46 / 60 / 76 / 110 / 130 / 150	46 / 60 / 76 / 110 / 130 / 150
Pad stroke – force [N]	1,750	3,000	3,000	6,000
Pad stroke – travel distance max. [mm]	140	140	165	160
Pad projection max. [mm]	160	160	206	206
Pad cleaning	optional: 138 mm wide	optional: 138 mm wide	optional: 138 mm wide	optional: 138 mm wide
Control	SPS Beckhoff	SPS Beckhoff	SPS Beckhoff	SPS Beckhoff
Program memory size	approx. 200	approx. 200	approx. 200	approx. 200
Interfaces	digital, Ethernet / optional: EtherCAT, Profinet, Ethernet IP, OPC UA			
Thinning system	optional: 1–5 connections	optional: 1–5 connections	optional: 1–7 connections	optional: 1–7 connections
Weight without base [kg]	approx. 171	approx. 225	approx. 260	approx. 305
Air consumption [l/min]	162	65	290	70
Power supply	110 – 240V, 50/60Hz, 250VA	110 – 240V, 50/60Hz, 600VA	3x400V, 50–60Hz, 600VA	3x400V, 50–60Hz, 800VA

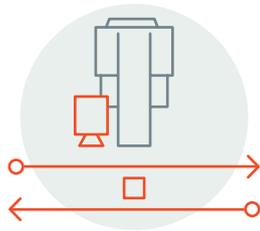
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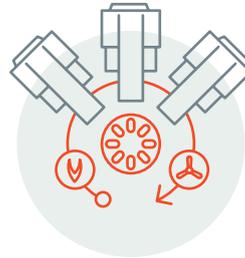
System options & details



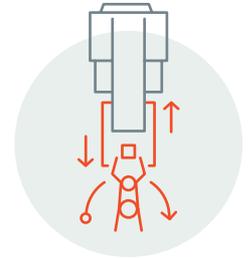
Part shuttle or plate system



Camera control & positioning

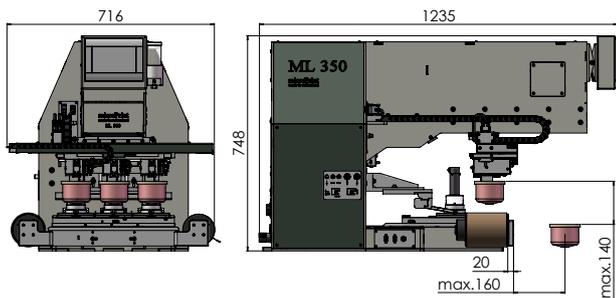


Rotary index table for pre- & post-treatment



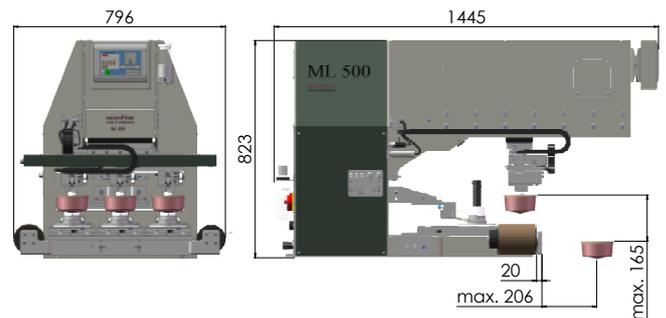
Robot loader

ML350



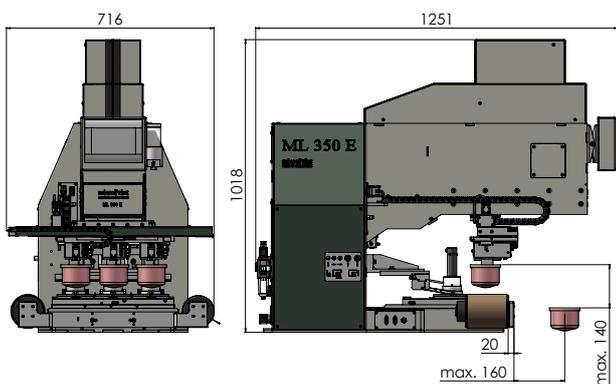
Download detailed drawing as PDF file

ML500



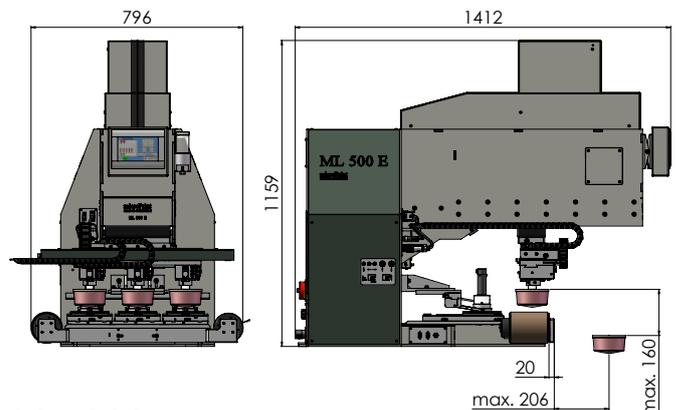
Download detailed drawing as PDF file

ML350E



Download detailed drawing as PDF file

ML500E



Download detailed drawing as PDF file

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Since 1995, **microPrint** has been at the forefront of pad printing technology, consistently setting new standards and revolutionising the industry. Our team of experts is dedicated to developing innovative solutions tailored to meet the unique requirements of our clients. With extensive configuration options and a commitment to customised solutions, we deliver the ideal solution for every challenge.

Discover the microPrint advantage.

OUR GOAL:

Precision

Versatility

Innovation

Customised solutions

Flexibility

Efficiency



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