

MANTA 660/920 Letterpress Flowline Machines



The MANTA Range of Letterpress Machines:

The MANTA range of Letterpress plate processors from HEIGHTS have been designed and developed for the narrow to mid web print, label and packaging markets. Specifically for plate makers who expect the highest standards of build quality and performance. The MANTA range is provided with a black mask removal section for digital plates 'D', or without for analogue plates 'A'. Wash out is by a single wash brush head with further rinse, dryer and post exposure sections. The unique 4 pole downward facing brush assembly delivers excellent plate wash out results combined with high speed throughput. Operator adjustments for each section are accessed from the full colour touch screen (HMI) which can be mounted on the left or right hand to suite each installation.

As an ISO 9001: 2015 accredited company, the MANTA is manufactured by HEIGHTS to strict quality standards making our processors an ideal choice for plate making where reliability, performance and robust engineering are a must have. The machines are designed to in accordance with worldwide safety standards (CE) and can be configured to a range of electrical power supplies.



MANTA Sectional Illustration

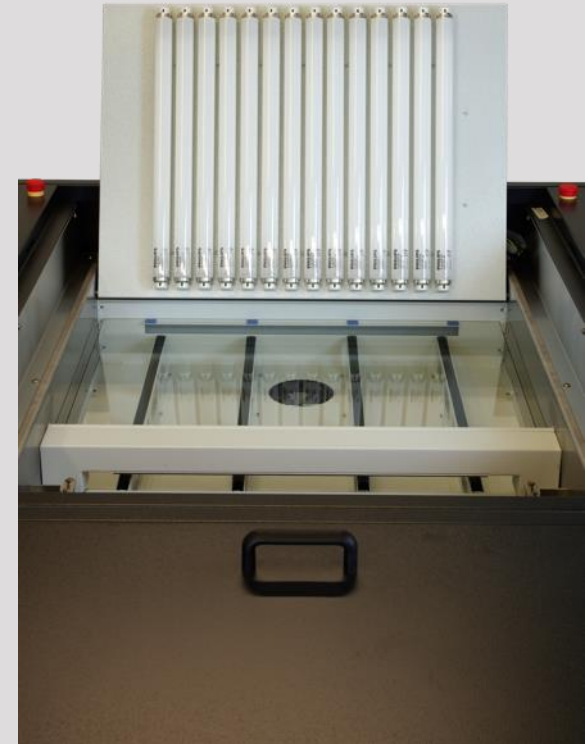
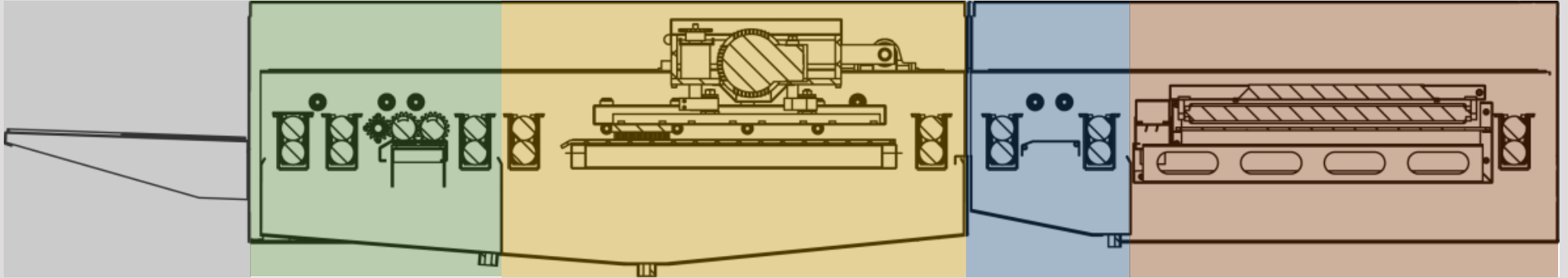
Input

Black Mask

Main Wash

Rinse

Air Dry & UVA Post Exposure



MANTA Range Sequential Process Description

Plate Mounting: Plate mounting is by means of a stainless steel carrier sheet. Affixed to the carrier sheet smooth plastic mounting material and Tessa double sided tape for Mylar/Polyester backed plates or a magnetic self-adhesive sheet for steel backed plates (Dry Offset). The plate is affixed to the carrier sheet and positioned onto the input table. The MANTA automatically starts the plate production cycle by means of an inductive sensor.

Process Initialisation: The plate carrier is driven into the MANTA by means of roller pairs driven by a drive plate and chain system via spur gears to the roller pairs. The speed is pre-set on the HMI. All subsequent functions are sequentially actioned by the PLC on a plate path mapped out over distance and monitored by a motor encoder system.

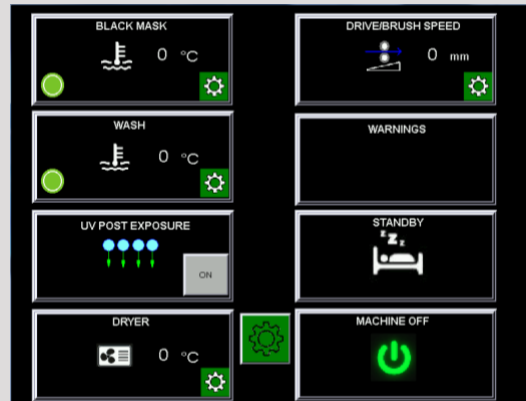
Black Mask Removal: The first section is the black mask removal section. The black mask removal brushes and motor assembly are optional depending on whether the installation is for analogue or digital plates. 2 contra-rotating brushes apply heated water via spray bars to the surface of the plate. The water is heated to a pre-set temperature on the user HMI and contained in its own dedicated bath. The section has its own pump and filter (10" VIH canister). This section is equipped with its own heaters which are external self-adhesive flat heater mats. There is a temperature probe, over temperature safety cut-out and low and high level float switches.

Rinse, Dry & Post Exposure: The carrier sheet is transported to the final unit with the fresh water rinse as the initial process in this section. 1 Dual direction Spray bar delivers fresh water to the surface of the plate. The carrier sheet is guided both from the underside and also from both sides by stainless steel & plastic supports. The waste water goes to drain. This is to provide a final wash to remove any residual debris. Next, there is a heated low pressure air knife to remove any surface water from the plate. The carrier sheet either exits the machine or enters a UVA exposure chamber. This consists of 14 x 24" 40W tubes. The carrier sheet then exits the machine onto a flat metal table.

Main Wash Out: The carrier sheet exits the black mask removal section and enters the main wash section. The main wash head is then initiated. The 4 pole drive system rotates the brush head in an elliptical motion. Spray bars and a pump deliver the heated water in-between each brush segment. This section is equipped with its own heaters which are external self-adhesive flat heater mats. There is a temperature probe, over temperature safety cut-out and low and high level float switches. The carrier sheet is guided onto a flat, pressure plate where the brushes make contact with the plate surface. Water replenishment is made as by means of software user programmed parameters.

The Electronic Control System:

The control system is a PLC based system utilising the latest Delta technologies equipment. A PLC, expansion modules, power supply, HMI and Invertors are used along with analogue electrics such as MCB's, contactors and relays. The Delta system is supplied with a "free to use" suite of software requiring no expensive licences for everyday servicing, upgrading or fault finding. Delta is also one of the simpler and easier to use systems making service work more accessible to the more mechanically biased service engineer. A touch screen, full colour HMI provides a graphical interface to the machine operation. The screen can be mounted on either side of the machine depending on installation requirements. There is a password protected engineering and settings section. A couple of screen shots are shown below:



Operational Adjustable parameters include:

- Conveyor speed
- Water temperature for black mask and main wash sections (all independent)
- Dryer temperature
- Auto warm up function 7 day Off/On
- Plate counters

Included with software package is a sophisticated input and output, password protected test section for component inspection, machine testing and operational configuration.

The HMI is also Ethernet enabled allowing for local connection to a LAN. Screen cloning software is available to permit remote operation of the machine within a LAN or by use of cloud connection services. This permits the actual screen and its functions to be transferred to a remote PC residing on the same network as the Manta. From here the machine can be monitored, accessed and operated. Implementation of this is dependent on the complexity of the host network, but gets over many of the integral problems of security protocols and complicated setups of similar systems.

Dimensions and General Specifications:

Maximum Plate Size:

Manta 660 - Max plate size (W x L) 63.5 x 100 cm (25 x 39")

Manta 920 - Max plate size (W x L) 89.5 x 110 cm (35.2 x 43") (TBC)

Maximum Plate Calliper:

660 & 920 - Up to 1.7mm (0.067")

Black mask Removal Tank Capacity:

660 - 60ℓ (15.8 US/g)

920 - 80ℓ (21.1 US/g)

Main Wash Tank Capacity:

660 - 120ℓ (31.7 US/g)

920 - 150ℓ (39.6 US/g)

Water Supply, Drainage, Extraction & Air:

Supply: ¾" BSP Connection with a flow rate of at least 6ℓ (1.6 US/g) per minute

Waste: 32mm (1.25") Drain at Floor Level

Air Supply: 1 x 6mmØ push connection, 7 Bar Minimum (100 psi)

Extraction: 1 x 50mmØ Extraction Hose (water vapour removal)

Environmental:

<75dB

Electricity Supply Options:

660 - 400V 3ph+N+PE 50/60Hz, 21A per phase or 230V 3ph+GND 60Hz, 25A per phase

920 - 400V (3ph+N+PE 50/60Hz) 22A per phase (5 Wire) or 230V (3ph+GND 50/60Hz) 27A per phase (4 Wire)

Dimensions (L x W x H):

660 - 477 x 132 x 124 cm (188 x 52 x 49") – Length includes fully extended input and exit table, no HMI.

920 - 487 x 158 x 124 cm (192 x 62 x 49") – Length includes fully extended input and exit table, no HMI (TBC).

(It is strongly recommended that at least 1m (39") clearance left and right and 1.5m (59") at the input and 1m (39") at the exit be left clear for access).

For further information please contact Heights UK Ltd sales@heights-uk.com or go to www.heights.com

Height UK Ltd reserve the right to alter the specifications of the Manta range of machines without prior notice and accept no liability for any consequences of these changes.