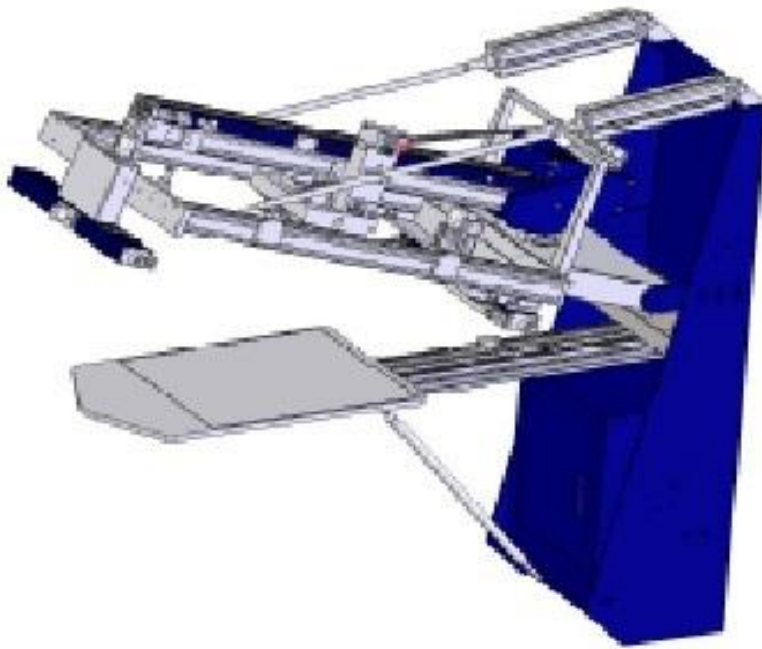


Operating manual

Single Print Station



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1. Safety Instructions


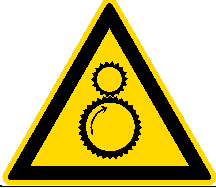



The machine is built according to the state of the art and in accordance with all appropriate safety regulations. Owing to its complex design, the machine must only be operated and maintained by appropriately skilled staff.

All procedures should only be carried out by properly trained and appropriately qualified personnel. ‘Qualified personnel’ refers to people who are able to carry out the required procedures and to recognize as well as prevent potential risks, as a result of their training, experience and instructions. Such personnel should have a good knowledge of any relevant standards, regulations, rules of accident prevention and internal conditions etc.

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1.1. Additional Risks

Even though the machine has been designed and built according to the most stringent safety criteria, as with all machinery we have to anticipate certain additional risks, which are detailed below:

Danger	Description	Behavior/Action
Mechanical threats: Crushing 	Crushing of parts of the body - in particular arms and hands.	Be aware of moving parts whilst operating the machine. Wear protective clothing at all times.
Mechanical threats: Getting caught or trapped 	Danger through moving parts (linear or rotary drive systems).	Danger in reaching into, under or over the machine. Only reach into the machine from the indicated points. Wear appropriately fitting clothes, particularly in the area of the arms.
Mechanical threats: Slipping, stumbling and falling 	Danger of falling (e.g. over obstacles on the floor).	The floor area around the machine must be kept free from any obstacles.
Electrical threats: Indirect contact (in case of defect) 	Danger of life-threatening electrical shock by indirect contact with defective parts carrying voltage (in particular in case of defective insulation).	Switch off the machine using the main switch and EMERGENCY STOP facilities. Isolate the mains supply.
Danger through contact with or inhaling of substances 	Danger through contact with or inhaling substances or materials with harmful or toxic effects.	Observe the safety instructions for handling such substances.

2. Technical Data

Description	Requirement/Value Without vacuum	Requirement/Value With vacuum option
Electric supply	1x 230V; 50/60Hz; ±5%	1x 230V; 50/60Hz; ±5%
Power consumption	600VA	1500VA
Minimum air pressure	7 bar	7 bar
Dimensions (L/W/H)	193/74/161cm	193/74/161cm
Weight of the machine	220kg	235kg
Max. print area	50x70	50x70

3. Construction

The print station is mounted on the base frame. Below the print station is the pallet.

3.1. Base frame

The base frame is for mounting on a wall.

3.1.1. Indicator lamp

The indicator lamp shows the actual status of the machine. The following conditions are possible:

- Lamp is off: No failure, machine is ready or actual active.
- Lamp is on: Error. Emergency stop button is pressed or both sensors for squeegee carriage are active.

3.2. Pallet (optional: vacuum)

On the pallet the piece to be printed on will be applied. At vacuum pallets the substrate will be fixed with vacuum through small holes.

3.3. Print station

3.3.1. Squeegee Drive Motor

The squeegee/print arm motor is used to drive the squeegee carriage back and forth, precisely controlled by the frequency converter.

3.3.2. Frequency Converter

The frequency converter controls the squeegee drive motor. The motor and the frequency converter have already been adjusted by MHM, and no further adjustment should be necessary.

3.3.3. Squeegee/print arm

The squeegee carriage, squeegee stroke length adjustment, control keypad and control knobs for the squeegee carriage speed & pressure are all located on the squeegee arm.

3.3.4. Squeegee/print arm lock-down

Pressing the squeegee/print arm lock raises the entire squeegee/print upwards, providing unobstructed access to the screens.

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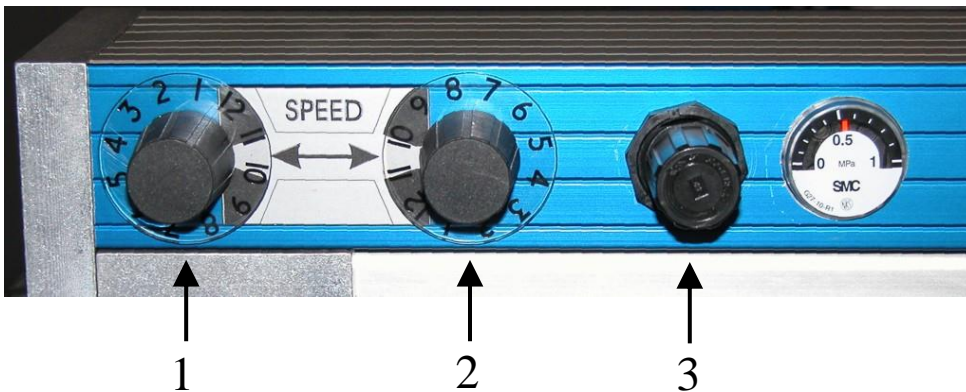
3.3.5. Screen Adjustment/Micro-Registration

The screen adjustment/micro-registration is used for the precise positioning of the screens. The screen may be positioned forwards/backwards by means of a single handwheel adjuster located at the front of each individual print station. For left/right adjustment there are two handwheel adjusters located at the front and rear of the print station. Adjustment is free from play and self-locking, therefore no additional clamping is required.

3.3.6. Squeegee Stroke Length Adjustment

The squeegee stroke length adjustment may be used to adjust the precise travel of the squeegee carriage. There are individual sensors on each print station to adjust the front and rear positions. Minimizing the travel of the squeegee carriage helps to reduce printing times and increase production.

3.3.7. Squeegee carriage speed and pressure controls



- 1... Adjustment for squeegee carriage speed forwards
- 2... Adjustment for squeegee carriage speed backwards
- 3... Adjustment for squeegee pressure (with clear display gauge)

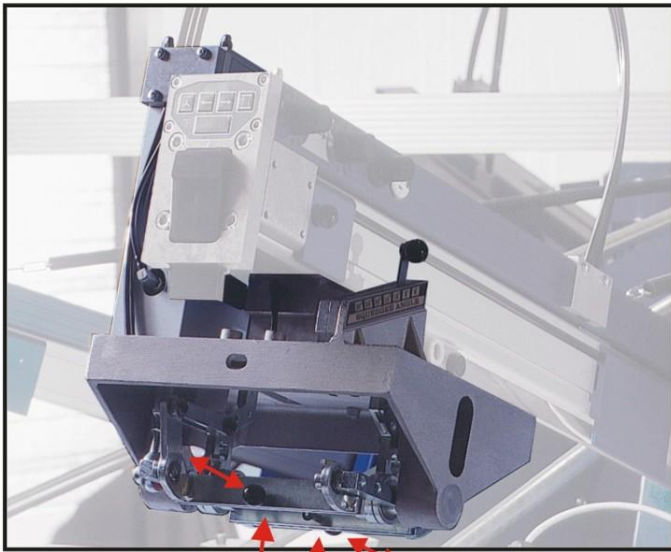
3.3.8. Control Keypad



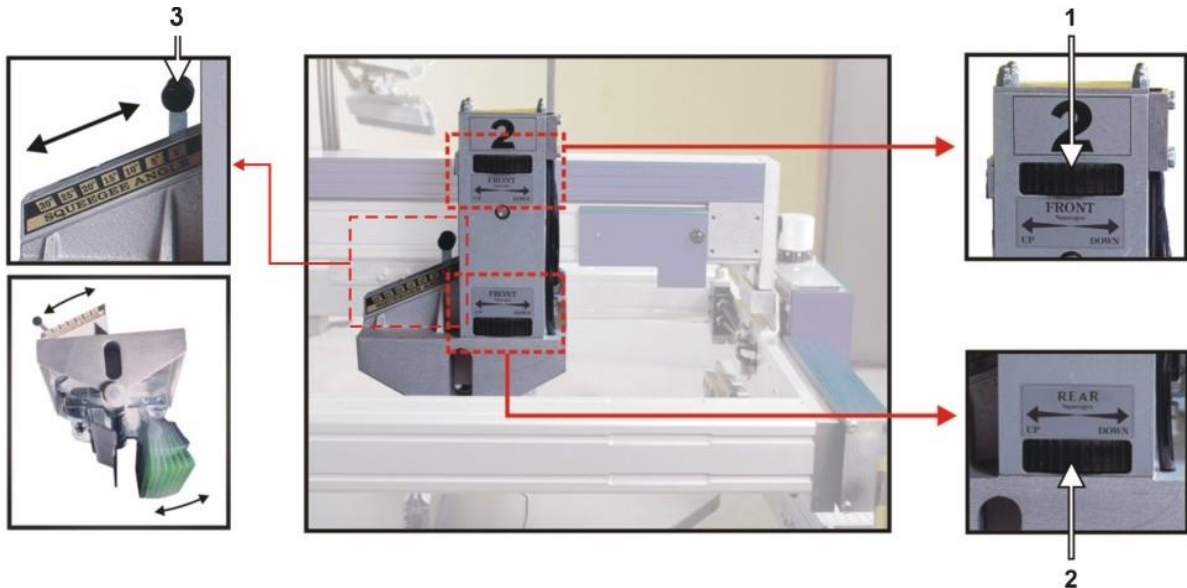
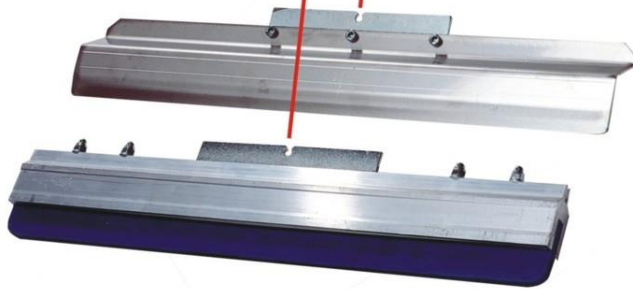
The control keypad is used to operate various functions.

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3.4. Squeegee Carriage



The squeegee carriage is equipped for two squeegees. Pulling the black 'quick release' knob (*pic. opposite*) will release the respective squeegee. Make sure that these locking knobs engage fully when loading the squeegee. The maximum permitted squeegee width must be observed.



Squeegee height may be adjusted individually by the hand wheels (*pic. 1 + 2*). Squeegee angle may also be adjusted individually by the sliding levers (*pic. 3*). Squeegee pressure may be adjusted by an adjusting knob located on the squeegee arm.

4. Control elements

4.1. Emergency stop push buttons

Push buttons located right and left on the print station. Pressing the emergency stop push button immediately stops all movements and lifts the print station. The function of the push button is cancelled by unlocking the switch (turning it to the right).

4.2. Main power switch

The main power switch disconnects the machine from the main supply voltage immediately.

4.3. Vacuum control switch (optional)

The vacuum control switch is used to turn the vacuum function on or off.

4.4. Print medium switch

With print medium switch the used paint medium can be chosen.

Water: First print stroke then flood stroke

Plastisol: First flood stroke then print stroke

4.5. Print sequence switch

The MHM sample print machine can automatically print with five different print sequences:

- 1: 1 print- and 1 flood stroke
- 2: 2 print- and 2 flood strokes
- 3: 3 print- and 3 flood strokes
- 4: 2 print- and no flood strokes
- 5: 4 print- and no flood strokes

4.6. START-button

With the start button the chosen print sequence will be started. Make sure that the squeegee carriage is on sensor position, otherwise the machine will not start.

4.7. Control keypad

The control keypad is used to operate various functions.





4.8. Foot switch

The foot switch interrupts the vacuum at machines with vacuum function.

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5. Control of the machine

To control the machine the control keypad and the foot switch is used.

Button	Function
	The button ADJ moves the print station up and down.
	The 'LOCK' key is used for locking/unlocking the screen.
	Pressing the 'SQUEEGEE CARRIAGE MOVEMENT' key moves the squeegee carriage once, either forwards or backwards depending on its initial position. This only works in down position of the print station. The squeegee carriage must be on front or rear position sensor. Otherwise the squeegee will not move.
	The button "screen up/down" moves only the screen. Be careful that at squeegee movements the screen is in right position, otherwise the screen can be destroyed.
Foot switch	The foot switch is used to interrupt the vacuum supply of the pallet. To shut down the vacuum for a longer time the vacuum control switch must be used.

6. Automatic print cycle

Before starting an automatic print cycle move the squeegee carriage to the right position (on front or rear sensor, depends on print/flood direction and the print medium switch adjustment).

Choose the correct print sequence and start automatic print cycle with START-button.

First the print station will go to down position, afterwards the print job starts. When finished the print station goes back to up position.

Starting the automatic print cycle from down position of the print station also works.

When starting the screen will be locked and the vacuum will be switched on automatically.

If squeegee carriage is not on front or rear position sensor (not on both) the automatic print cycle can not be started.