

SCHULZE

Instruction manual

Version 20.03

Pneumatic transfer press for mugs
with automatic conveyor



1. Introduction

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Annex 1 - Wiring diagram

Annex 2 - Safety valve certificate

Annex 3 - Certificate for pressure reducer

Annex 4 - Certificate for a compressed air tank

1.2 Illustration of the heat press



- 1. Control box
- 2. Preheating plate
- 3. Emergency stop button
- 4. Touch-Display
- 5. Heating element
- 6. Protective cover
- 7. Exhaust fan
- 8. Automatic gripper
- 9. Circulating air fan of the cooling station
- 10. Cooling station
- 11. Air conditioner
- 12. Rolls with brakes

1.3 Technical data

Technical data	MUG-15 Turbo
Dimensions	149 x 131 x 185 cm
Dimensions for transportation	150 x 112 x 185 cm
Weight	370 kg
Power supply voltage	3 x 400 VAC
Power output	7,5 kW
Main fuse	B25A
Temperature range	30 - 220°C
Time settings	3 min. 30 sec. - 5 min.
Heating element	105 x 230 mm
Working area	85 x 180 mm
Diameter of mugs	78 - 83 mm
Min. pressure supplied to the press	6,0 bar
Max. pressure supplied to the press	7,0 bar
Air consumption	10 L / min.
Noise	The machine generates noise less than 70 dB (A)

1.4 Safety arrangements of the heat press

The MUG-15 Turbo press is equipped with different safety arrangements, to make a safe usage possible.

Main fuse B25A

The main fuse B25A is situated on the left side of the machine, in the control box. In case of overcharge, the main fuse prevents the heat press from getting damaged. Once the fuse was switched off, it has to be activated. The instruction for activation of the main fuse can be found in chapter 4.3.

Safety valve 7 bar

The safety valve 7 bar is located at the pressure pipe in the press. If the pressure exceeds 7.0 bar, the valve will be activated automatically.

Emergency stop button

Has been installed to eliminate the residual risks. In dangerous situations push the red emergency button. It is situated in front of the press. The press will open automatically. To resume the work pull the button back again.

1.5 Safety arrangements at the workplace

The machine is equipped with a pressure tank with a capacity of 10L. If the regulations of the country in which the machine will be used require this, please report the machine to the appropriate technical inspection body. The tank must be regularly serviced and inspected.

Set-up and installation of the heat press

The set up and installation of the press has to be done under supervision of an authorized person by the company owner. Depending on the model and weight of the heat press, the installation has to be done by 4 or more persons. The press should be situated on the flat, non-inflammable surface, in a room with constant temperature and constant moisture. Keep the machine away from dusty rooms, because dust could have a negative influence on some parts of the machine. Very important! The machine may be connected only to an installation provided with a protection against electric shock. The machine is destined for industrial use only.

Testing the machine

After the correct installation of the machine it is important to ensure that the machine works properly, is not damaged after the transportation and has no safety defects. The testing can only be done by the employer or other authorized persons. It is mandatory to guarantee a correct installation and safe usage of the machine. After receiving the machine, check the packaging. The testing should be protocoled. If any irregularities regarding functionality or safety are found during the testing, these have to be noted and reported to Walter Schulze GmbH in written form within 7 days. Until the clarification the machine can not be used.

Information and education

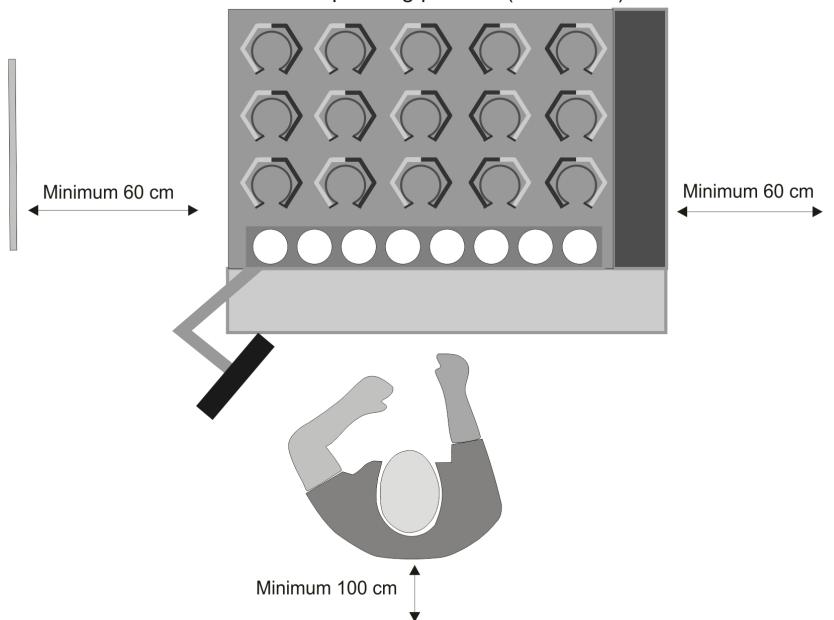
According to §81 the industrial law and § 14 employment protection law (german law), the advice from the producer and general safety arrangements at the workplace, the employer has to make arrangements to give all information about the safety, function and the range of application to the user. In particular the user needs to be acquainted with the complete manual and be explicitly informed of the dangers of working with the machine. The details have to be explained in a coherent form and language.

Every user is obligated to a safe usage of the machine and to read the manual instruction before start working with the machine. Using the machine means, that the operator has read the instruction and is aware of the possible risks of working with the machine.

Safety arrangements

In order to ensure optimized safety, please read the instruction manual precisely. Only one person is allowed to work on the machine at the time. The machine has to be under supervision the whole time, when it is working. Supervise the machine till it is switched off and the power plug is pulled out. There should be no unauthorized persons near the machine while it's working. Using the press with certain materials may create a strong smell. That's why the user should evaluate the need for a ventilation system at the workplace. The type of ventilation should be used as needed and depends on the size of the room and used inks. There is a risk of burns on the heating elements and on the preheating plate, which has been indicated by warning signs. Do not install the machine in doors, floors or busy places. The machine has to be installed at a place with enough space around the machine. The space in front of the machine has to be wide enough. Nothing can disturb the operator at work. All wires should be placed in a safe way, to make sure they will not pose a threat for the person working at the machine or passing it. In case of damages or untypical signals from the machine, please disconnect the machine from the power supply, contact the service and do not work with the machine, till the problem is solved. All repairs should be performed after consulting the service. Do not remove machine covers while the machine is working.

Correct operating position (Plan view)



Correct operating position

The operator needs enough space and free distance to all switches and buttons to work with the machine. Safe position allows operator to activate the emergency button in every moment.

Other risks and dangers

There are some movable elements on the machine, which can cause injuries of hands or fingers. For reasons of workability, these elements cannot be eliminated. It is important to work with the machine with great care and be alert to avoid other dangerous situations. The machine should be operated in accordance with the manufacturer's recommendations to avoid risks. The machine complies with the essential requirements laid down in regulation for machines. Above information has been worked out in accordance with the standards PN-EN 12100:2012.

2. Initiation

2.1 Notes regarding transportation

The MUG-15 Turbo press is covered with protective film for the transportation and the sides are additionally protected with MDF boards. It should be checked, if the packaging and the machine are in good condition without damages. It has to be done just after receiving the goods from the transportation company and in accompany of a responsible person. Later on, if you need to send the press, please pack the press exactly as you received it. The machine must be cooled for further shipping.

2.2 Installation of the heat press

Place the press at its destination and unpack carefully. Carefully remove the display from the machine. Unpack the worktop and attach it to the front of the machine. Connect the exhaust fan to the ventilation installation. Connect the air conditioner. The operating instructions for the air conditioner are enclosed.

2.3 Connection of the press to compressed air

The MUG-15 Turbo press is a pneumatic press that must be connected to the compressed air. The maximum pressure in the press must not exceed 7 bar. The compressed air must be dry and free of oil.

It is recommended to use an air dryer. By using an air dryer we achieve dry and clean air and avoid damage to the pneumatic installation.

The compressor is connected to the press with a quick connector type DN 7.2. Once the work on the press is finished, the compressed air hose must be disconnected and the filter container emptied. Water may accumulate in the filter tank. Check the container at least once a day and empty the collected condensation water if needed. If there is oil in the tank, switch off the press immediately and repair the compressor. Oil in the system may damage the press. If necessary, please contact Service.

Damage to the pneumatic installation caused by a faulty compressor or by no use of an air dryer is excluded from the warranty.

2.4 Power supply voltage

The machine must be connected to the power supply by an authorised and qualified person. The correct connection of the machine to the power supply must be confirmed by the signature and stamp of the installer in a suitable document.

The MUG-15 Turbo press has to be connected to a voltage of 400 VAC / 50 Hz. The Press is equipped with a power plug. Make sure that the power outlet is in the right condition and that the grounding is connected to the power outlet. **Caution:** Please do not connect this press to any other outlet (socket) than those equipped with ground-fault protection ELCB (earth leakage circuit breaker). In case of doubt ask your licensed electrician to check the wiring. Connecting the machine to a socket that is not earthed, or where the earthing does not work properly, is hazardous to health and dangerous for the machine. Any damages arising from an improper plugging invalidates the warranty. **Before starting up the machine, it is absolutely necessary to perform a voltage measurement according to the instructions below.**

The machine can only be started up once the voltages have been checked.

Step 1 - Open the cover of the control cabinet on the left side of the machine and make sure that all fuses are switched off. Then connect the machine to the power supply but do not switch it on (the main switch should be set to position "0"). Then carry out a voltage measurement on all three phases. The measurement value for each phase should be between 220V and 240V.

Step 2 - turn on the main fuse (the main switch should still be in the "0" position) Three LEDs will light up.

Step 3 - switch the machine on by setting the main switch to position "1". The green LED lights up.

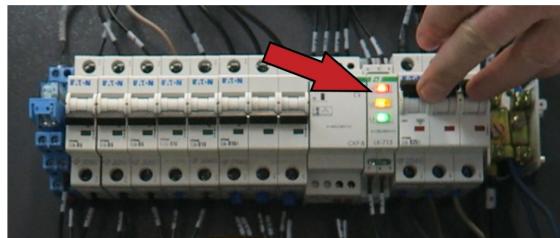
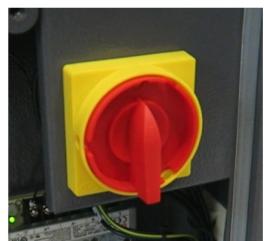
Step 4 - Switch off the machine by setting the main switch to "0". The green LED will switch off.

Step 5 - While the main switch is set to "0", switch on the other circuit breakers.

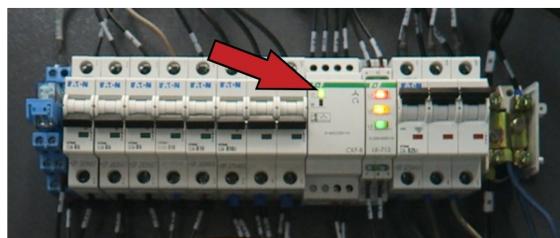
Step 6 - If no problems have occurred and the voltages have been checked correctly, close the control box cover and then turn on the machine by setting the main switch to position "1".



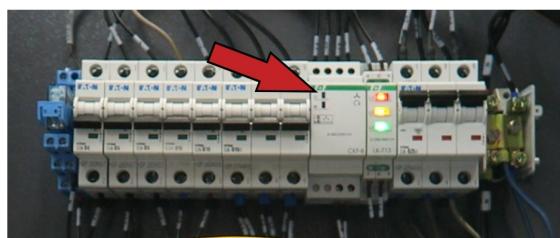
Step 1



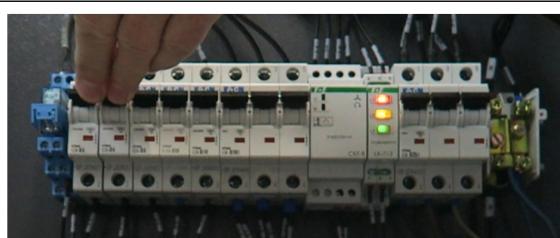
Step 2



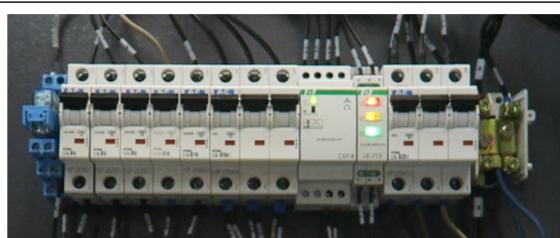
Step 3



Step 4



Step 5



Step 6



2.5 Initiation of the heat press

Mug-15 Turbo may only be operated by trained personnel after reading the instruction manual. Before starting work, the working plate and the air conditioner must be installed (see chapter 2.2). Before you switch on the press for the first time, please check that your socket is in proper condition and that the protective line is properly connected. After the press has been connected to the electricity network and the compressed air, the press is ready for operation. In order to switch on the press, set the main switch on position 1. The switch is located on the left side of the press (picture 1). Wait until the electronics is ready. Activate the preheating plate to heat the bottom of the cups before the transfer, and switch on the heating of the heating elements (picture 2). Switch on the cooling system and exhaust ventilator (picture 3). Set the desired temperature and time. Press the START button on the display. The automatic gripper searches for the starting points of the machine. Place the prepared sublimation mugs in the preheating plate (picture 4). The automatic arm will pick up the mugs after approx. 28 seconds of preheating and bring them into the heating elements. The mugs will be closed automatically. After the time has elapsed, the gripper will place mugs in the cooling station for cooling. The automatic belt transports the cooled mugs forward to the operator. When finishing work with the MUG-15 Turbo, make sure that all mugs have been removed from the machine. When the work is finished, the switch must be switched off and the plug must be removed from the socket.



3. Working with the heat press

3.1 Programming the electronics

In order to switch on or off some heating elements, press the corresponding icon on the display (**picture 1**).



Heating element is switched off.



Heating is switched off



Heating element heats up



Heating element is ready for pressing



The process of pressing is in progress



Mug is ready



(queue) Pre-heating is switched off



(queue) The process of pre-heating is in progress



(queue) Mug is ready to be placed in the heating element

3.2 Manual movement of the conveyor belt

If it's required to move the conveyor belt manually, press the green button situated on the right side of the machine (picture).



3.3 Daily counter

The display shows the counter, which that counts down the number of mugs. In order to change its value, press the buttons "+" or "-" on the display. Press the button "RESET" on the display, to reset the counter. The counter will reset automatically after switching off the machine.



3.4 Global counter

The machine is equipped with a global counter. It counts down how many cycles have been completed in total.

In order to preview the global counter:

1. Press the "settings" button on the display (picture 1)
2. Press the "other" button on the display (picture 2).



3.5 Cycle counter for individual heating elements

The machine is equipped with a cycle counter for individual heating elements. It counts how many heating cycles have been completed on each of the heating elements.

In order to reset the cycle counter for individual heating elements (for example after replacement of the heating elements):

1. Press the settings button on the display (picture 1)
2. Press the "other" button on the display (picture 2)
3. Press the corresponding field on the display (picture 3). The cycle counter of the selected heating element has been reset.



3.6 Error reports

Possible reports:

//01 - communication error
//02 - communication error
//03 - communication error
//04 - zeroing error
//05 - zeroing error
//06 - zeroing error
//07 - zeroing error
//08 - movement error
//09 - movement error
//10 - by settings -> save - data transfer to casx, y (new x,y) timed out
//11 - arm lowering timed out
//12 - arm rising timed out
//13 - movement attempt by lowered arm
//14 - movement attempt by lowered arm
//15 - mug-setting aside attempt while transportation belt is filled (error screen will show up on the display)
//16 - emergency stop switch activated (error screen will show up on the display)
//17 - electronic error
//18 - electronic error
//19 - stepper motor controller's error y
//20 - stepper motor controller's error X

Temperature error messages:

1 - Temperature sensor missing (sensor fault)
2 - Short-circuit on the sensor line (sensor fault)
3 - temperature resistance too low - out of measuring range
4 - temperature resistance too high - out of measuring range
5 - no temperature increase within 3 minutes, although the plate heats up (temperature fuse damaged)
6 - no temperature drop within 3 minutes, although the plate no longer heats (damaged CRYDOM)
7 - Temperature too high, above 230°C (damaged CRYDOM).

Errors 3 and 4 may occur if the electronics are not programmed correctly.

3.7 Application range and sample adjustments of the heat press

The Mug-15 Turbo press is used to apply transfers to cups. Here are some sample settings:

Sublimation to a cup:

- Temperature of the heating sleeves 180°C
- Time 3:30 min.
- Air conditioner temperature: 18°C

3.8 Pressure adjustment

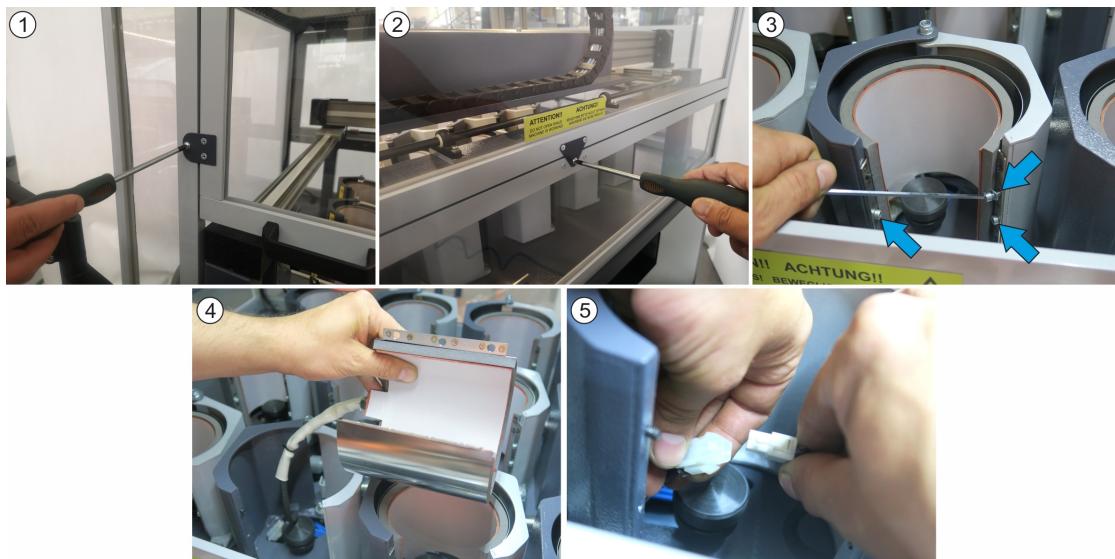
The pressure of the heating elements is preset by the factory and is applied by pneumatic cylinders. The adjustment is located on the left side of the machine. The pressure has been set optimally (4,5 - 5 bar).

3.9 Instruction for replacement of the heating element

Before replacing the heating element, **switch off the press and remove the plug from the socket. The heating element must be cooled down.** To replace the heating element, follow the instructions:

1. open the correct safety cover (**picture 1 or 2**)
2. unscrew the heating element (**picture 3**)
3. remove the heating element (**picture 4**)
4. pull out the cable (**picture 5**)
5. install the new heating element.

Very important! After replacing the heating sleeve, please make sure to check the starting position of the new sleeve.
The instructions can be found in chapter 3.10.



3.10 Positioning of the machine after replacing a heat element

The starting position can be checked with adjustment aids 1 and 2 (picture 1). The heating sleeves and the preheating plate must have cooled down. To check the starting position of the cuff, follow the instructions:

1. Press the "STOP" button and then press the "Settings" button (picture 2).
2. Use and activate the service key (pictures 3-4).
3. Press the "Queue" button (picture 5).
4. Press for example key "2" (picture 6) The gripper moves on the preheating plate pos. 2.
5. Hold setting aid 1 on the suction knob as shown in photo 7 and switch on the vacuum (picture 8).
6. Switch on the desired row of heating elements (picture 9), for example row 1-5.
7. Select the desired heating element (for example 2), press the corresponding button (picture 10). The gripper moves to the position.
8. Unlock the pneumatic feed, turn the switch "Arm unlock" to the right (picture 11).
9. Move the gripper manually downwards to the heating element. Check the distances (picture 12).
10. If the gripper is not in the middle of the cuff, change the X and Y values on the display.
11. Turn the switch "Arm unlock" to the left (picture 13) Gripper moves upwards.
12. Press the "Save" button and then press the "2" button (picture 14). The position is corrected. Check again the new position of the gripper, if necessary repeat the procedure (points 10 to 12).
13. Press the "Queue" button and button 2 (pictures 15-16). The gripper moves forward.
14. Turn the vacuum switch to "0" and remove the setting aid 1 (picture 17).
15. Take the setting aid 2 and repeat steps 5 to 8.
16. Press the "OPEN/CLOSE" button. The heating element is closed (picture 18).
17. Press button 2. the gripper moves to the output position.
18. Repeat steps 9-13.
19. Turn the vacuum switch to "0" and remove the setting aid 2.
20. Remove the service key and keep it away from unauthorized persons.



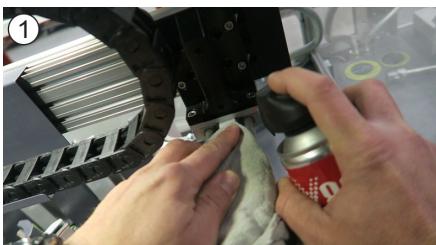


4. Maintenance

4.1 Periodic maintenance - lubrication

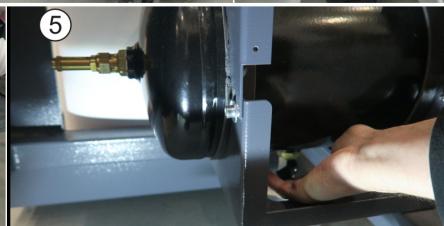
All maintenance work must be performed when the machine is switched off and cooled down.

At least once a month, wipe the guides with a cloth and lubricate them with a silicone spray (**pictures 1-3**). If you have any questions, please contact the service department.



4.2 Periodic maintenance - emptying the tank

The machine is equipped with a pressure tank with a capacity of 10L. If the regulations of the country in which the machine will be used require this, please report the machine to the appropriate technical inspection body. The tank must be regularly serviced and inspected. It is situated in the back part of the machine. The tank has to be emptied at least once a week. Open and remove the cover of the machine (**pictures 1-3**). Then place the bowl under the tank (**picture 4**) and open the valve (**picture 5**). After emptying the tank, close the valve and assemble the cover of the machine.

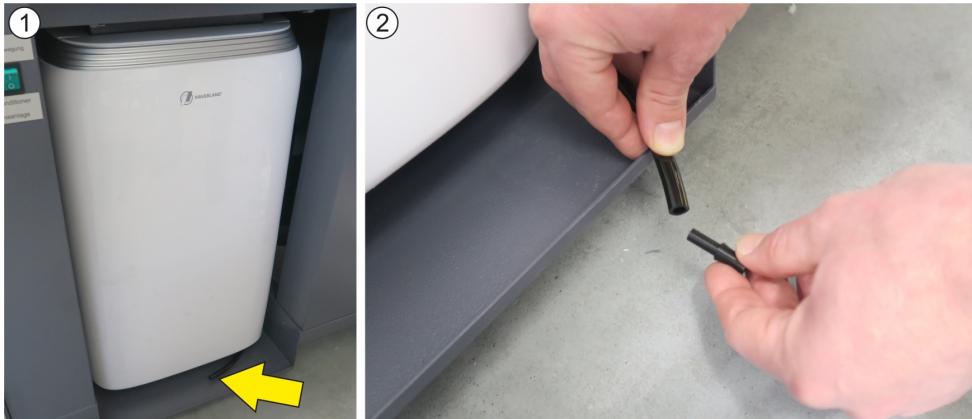


4.3 Periodic maintenance - emptying the tank of the air conditioner

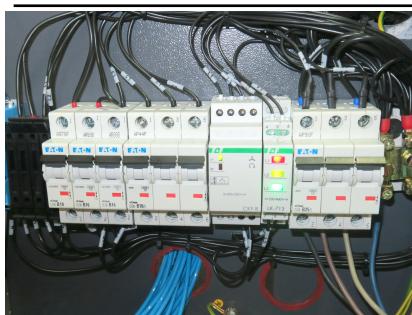
If the air conditioner stops working and the air conditioner display shows a message: **FL** this means that the condensation tank of the air conditioner is full and must be emptied.

In order to do so:

1. turn off the machine with the main switch and unplug the machine from the power outlet.
2. place the condensate tray near the air conditioner.
3. remove the cap and drain the water from the tank (**pictures 1-2**)
4. secure the hose with a plug and connect the machine to the power supply.



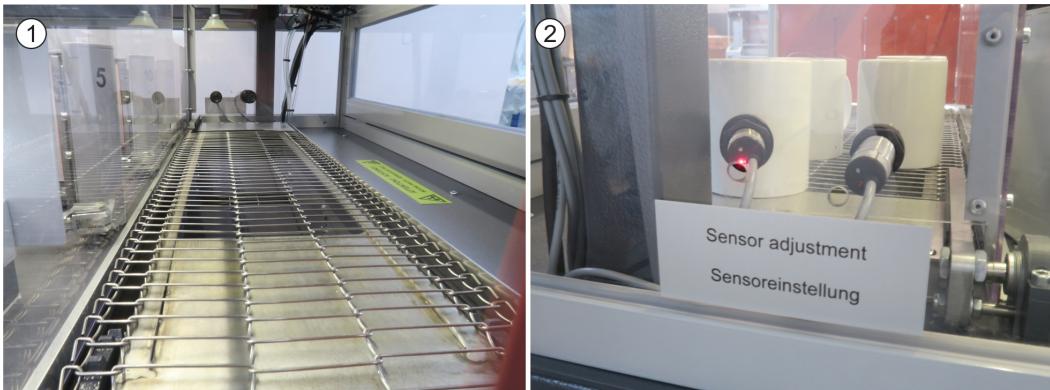
4.4 Instruction for activation of the main fuse



If the press does not work after switching on, check the main fuse in the press. The test may only be done by an authorized person. The main fuse is located in the lower part of the press, in the control box on the left side. **First switch off the press and remove the plug from the socket.** Open the cover and switch on the fuse (**picture**).

4.5 Adjustment of proximity sensors

The MUG-15 Turbo is equipped with two proximity sensors that activate the belt movement (**picture 1**). The adjustment of the proximity sensors is located in the back part of the machine (**picture 2**). To adjust the distance over which the cups should move, please contact the service department.



4.6 Belt problems

If for some reason the last mug on the conveyor belt does not move away from the proximity sensor (there will be no room to put another mug away), an error screen will appear on the display (**picture 1**). Open the side cover (**picture 2**) and remove the mugs from the conveyor belt manually. After removing the blockage, close the side cover and confirm by pressing the screen (**picture 3**).



4.7 Warranty terms and conditions

Schulze heat presses and machines used for screen printing have a warranty for 24 months. This warranty includes the whole construction of the machine, mechanical elements, electronic device and covers. Expandable parts, fuses and safety covers are not included in the warranty terms. Thermo fuses, temperature sensor, switches and buttons and all springs in the machines have a warranty for 6 months. Heat elements for BluePRESSLine Mug, BluePRESSLine Mug 4 plus and MUG-15 Turbo presses have a warranty for 6 months or 500 pressing procedures.

4.8 Testing Report

Final check of the heat press:

- Base, paint
- greasing
- heating elements
- electric connection (safety wire, power cable)
- Electronics, max temperature 220°C
- Electronics, checking of all functions
- Working time by 200°C hours
- Pressing test
- Caution labels

Serial number..... Date Signature

4.9 EC- Conformance – Declaration

The Walter Schulze GmbH
Haberstraße 15-19
12057 Berlin
Germany



as european representative of the manufacturer company ROMANIK hereby declares that the following machine:

Type

Name

Serial number

is compliant with the specifications of the followings EC directives:

Machinery (2006/42/EC)
Low Voltage (2014/35/EU)
EMC (2014/30/EU)
RoHS II (2011/65/EU) and RoHS III (2015/863)

used norms and technical specifications:

PN-EN ISO 12100:2012
PN-EN 60204-1:2018-12
PN-EN 61000-6-1:2019-03
PN-EN 61000-6-3:2008/A1:2012
PN-EN 60335-1:2012
PN-EN ISO 13850:2016-03
PN-EN IEC 6300:2019-01

Applied quality system: testing report/2016

Noise: The machinery generates noise less than 70 dB A

Berlin,

Peter Meidinger
President

A handwritten signature in blue ink, appearing to read 'Peter Meidinger'.

ALL SCHULZE machines are exempt from the waste disposal law under reg. no. DE231030054

The manufacturer reserves the right to make constructional and technological changes.

Manufacturer: ROMANIK, ul. Przemysłowa 10, 84-240 Reda, www.romanik.pl

Distributor: Walter Schulze GmbH, Haberstraße 15-19, 12057 Berlin, www.schulze.com