meler

GLUING SOLUTIONS

INSTRUCTIONS
MANUAL

ADHESIVE MELTER **MICRON PISTON SERIES**

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Focke Group

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The specifications and information contained in this manual may be modified without prior notice.

The official language of this manual is only the English language. The remaining versions of the manual in other languages are mere translations without any official value or efficacy. In case of discrepancies or contradictions between the English version of the manual and any other version of the manual written in another language, the English version will prevail.

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1. SAFETY GUIDELINES

General

The information contained in this section applies not only to everyday equipment operation, but also to any procedure carried out on it, whether for preventive maintenance or in the case of repairs and the replacement of worn out parts.

It is very important to observe the safety warnings in this manual at all times. Failure to do so may result in personal injury and/or damage to the equipment or the rest of the installation.

Before beginning work on the equipment, read this manual carefully, and in case of any doubt, contact our Technical Service Center. We are available for any clarification that you might need.

Keep manuals in perfect condition and within reach of personnel that use the equipment and perform maintenance on it.

Also provide necessary safety material: appropriate clothing, footwear, gloves and safety glasses.

In all cases, observe local regulations regarding risk prevention and safety.

Symbols

The symbols used on both the melter/applicator equipment and in this manual always represent the type of risk we are exposed to. Failure to abide by a warning signal may result in personal injury and/or damage to the equipment or the rest of the installation.

Warning: Risk of electrical shock. Carelessness may produce injury or death.

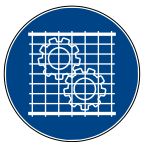
Warning: Hot zone with high temperatures. Risk of burns. Use thermal protective equipment.

Warning: System under pressure. Risk of burns or particle projection. Use thermal protective equipment and glasses.

Warning: Important information for the correct use of the system. May include one or several of the previous hazards, and therefore must be kept in mind to avoid damage and injury.

Warning: Dangerous area. Risk of entrapment. Carelessness may produce injury or death.

Mechanical components



The hot-melt installation, which is installed to this device, requires moving parts that can cause damage. Use the equipment correctly, and do not remove the safety guards while the equipment is in operation; prevent the risk of possible entrapment due to moving mechanical parts.

Do not use the equipment if the safety devices are not in place or appear to be inadequately installed.

For maintenance or repair operations, stop the movement of moveable parts by turning off the main switch.

The device has no moving mechanical parts, so it does not pose risks to consider in this section.

Electrical components

The system works with single-phase or three-phase current of a certain power. Never handle the equipment with the power connected, as this may result in powerful electrical shocks.

The installation must be correctly grounded.

The installation's power cable conductors must match the required electric current and voltage.

Periodically inspect the cables to check for crushing, wear and tear, as well as to prevent tripping and falls as a result of their placement.

Although the system meets EMC requirements, it is inadvisable to use devices that transmit high levels of radiation, i.e., mobile phones or soldering equipment in their vecinity.

Hydraulic components

As this is a pressurized system, precautions related to this type of equipment must be observed.

Before each operation, always make sure that the adhesive circuit is completely free of pressure. There is a high risk of hot particle projection, along with the corresponding danger of burns.

Use caution with the residual pressure that may remain in the hoses when the adhesive cools. When reheated, there is a risk of hot particle projection if the outputs are left open.

Pneumatic components

Some equipment uses compressed air to 6 bar pressure. Before any manipulation, please ensure that the circuit has lost fully air pressure. The risk of projection of particles at high speed can cause injury to a certain severity.

Extreme precautions with the residual pressure that could be contained in the circuit, before disconnecting any pneumatic feeding tube.

Thermal components

The entire system works with temperatures that can exceed 200°C (392°F). The equipment must be operated using adequate protection (clothing, footwear, gloves and protective glasses) that completely cover exposed parts of the body.

Keep in mind that, due to the high temperatures reached, the heat does not dissipate immediately, even when the power (in this case, electric) source is disconnected. Therefore, use caution, even with the adhesive itself. It may remain very hot, even in a solid state.

In case of burns:

1. If the burn is the result of contact with melted adhesive, do not try to remove the adhesive material from the skin. Do not try to remove it once it has solidified either.
2. Cool the affected area down immediately with lots of cold and clean water.
3. Seek medical attention as soon as possible either from the company's medical service or the nearest hospital. Provide the medical staff with the Safety Information Sheet of the adhesive.

Materials

Focke Meler systems are designed for use with hot-melt adhesives. They should not be used with any other type of material, and especially not with solvents, which may cause personal injury or damage to internal system components.

Some units are specifically designed to use polyurethane reactive (PUR) hot-melt adhesives. Using PUR on a unit that is not prepared for that purpose may cause severe damage to the unit.

When using adhesive, follow the corresponding guidelines found in the Technical and Safety Sheets provided by the manufacturer. Pay special attention to the advised work temperatures in order to prevent adhesive burning and degradation.

Ventilate the work area adequately in order to remove the vapors produced. Avoid the prolonged inhalation of these vapors.

Always use original Focke Meler components and replacement parts, which guarantee the correct system operation and service.

Noise emission declaration

The A-weighted emission sound pressure level (L_{pA}) of the unit in operation does not exceed 70 dB(A) under any circumstances.

The maximum C-weighted sound pressure level (L_{pCpeak}) and the A-weighted sound power level (L_{WA}) do not exceed values worthy of mention and thus do not represent a specific risk that must be taken into account.

Intended use

The equipment are designed to be used in the following conditions:

- Hot-melt adhesive fusion and pumping at temperatures up to 200 °C (392 ºF). Consult with Focke Focke Meler technical service to operate with higher working temperatures.
- Use of equipment with Focke Meler accessories.
- Installation of equipment according to the security regulations currently in force and the instructions provided in this manual (anchoring, electrical connection, hydraulic connection, etc).
- Use of equipment in non-explosive, non-chemically aggressive environments.
- Use of equipment following the safety instructions indicated in this manual, as well as on the labels accompanying the equipment, using adequate means of protection during each mode of operation.

Limited use

The equipment should never be used under the following conditions:

- Use with reactive polyurethane or any other material that might cause safety or health risks when heated.
- Use of equipment in environments where cleaning is necessary using water jets.
- Use of equipment to heat or melt food products.
- In potentially explosive atmospheres, aggressive chemical environments or outdoors.
- Use or operation without adequate safety protection.
- If the person in question does not have the necessary training to use the unit or to apply all of the necessary safety measures.

Note: Do not modify the equipment or use components that were not supplied by Focke Meler. For any modification of a component of the equipment or part of the installation, you must firstly consult the After-Sales Service

2. INTRODUCTION

In this manual you will find information about the installation, use and maintenance of the hot-melt adhesive melter/applicator in Focke Meler's micron series.

The 'micron' series includes the 5, 10, 20 and 35 liter range of hot-melt adhesive melters/applicators.

Most of the photographs and illustrations that appear in this manual refer to the 5-liter 'micron' melter/applicator. This model has been used as a reference for writing this manual as its main characteristics, with the exception of the tank capacity and the connection outputs are the same as those in the rest of the 'micron' series.

Description

The 'micron' are designed for use with 'Focke Meler' hoses and applicators in hot-melt adhesive applications. Their different variations – line, coating or swirl-spray – cover a wide range of applications, being very versatile in all markets where they are used.

Modes of operation

The 'micron' series hot-melt melters/applicators may be used in all of the following modes:

Work mode_ The hot-melt melter/applicator keeps materials hot at the pre-selected temperature indicated on the display. The pump is kept activated, waiting for the consumption command when one or more application applicators are activated.

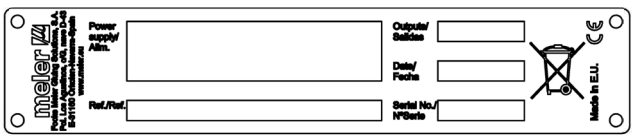
Standby mode_ The hot-melt melter/applicator remains in a resting state, with the materials kept at (programmable) temperature values below the pre-selected value. The pump remains deactivated.

Alarm mode_ The hot-melt melter/applicator detects a malfunction and warns the operator of this event. The pump remains deactivated.

Stop mode_ The hot-melt melter/applicator remains off, without heating the materials and with the pump deactivated. The electrical and pneumatic supply remains activated between the network and the system, however.

Hot-melt melter/applicator identification

When placing orders for replacement parts or requesting help from our service center, you should know the model and reference number of your hot-melt melter/applicator.

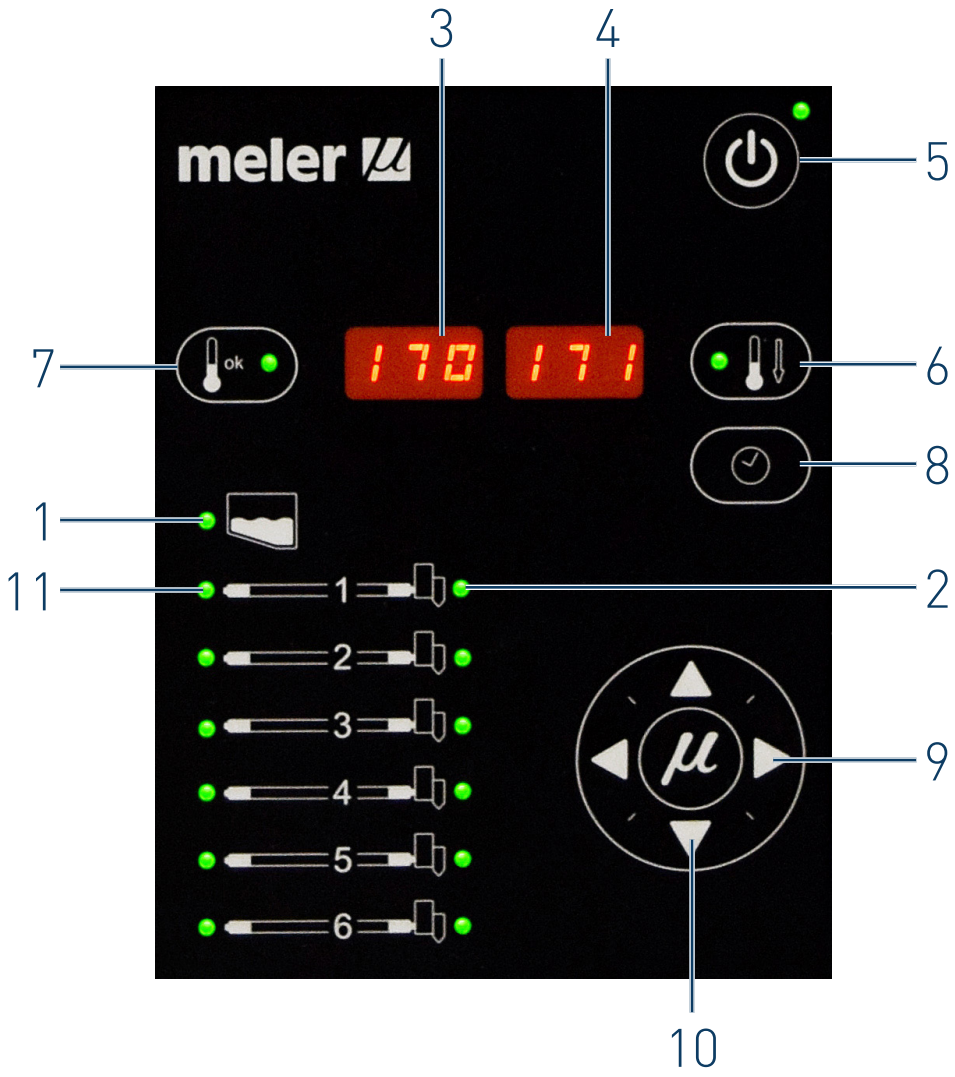


Main components

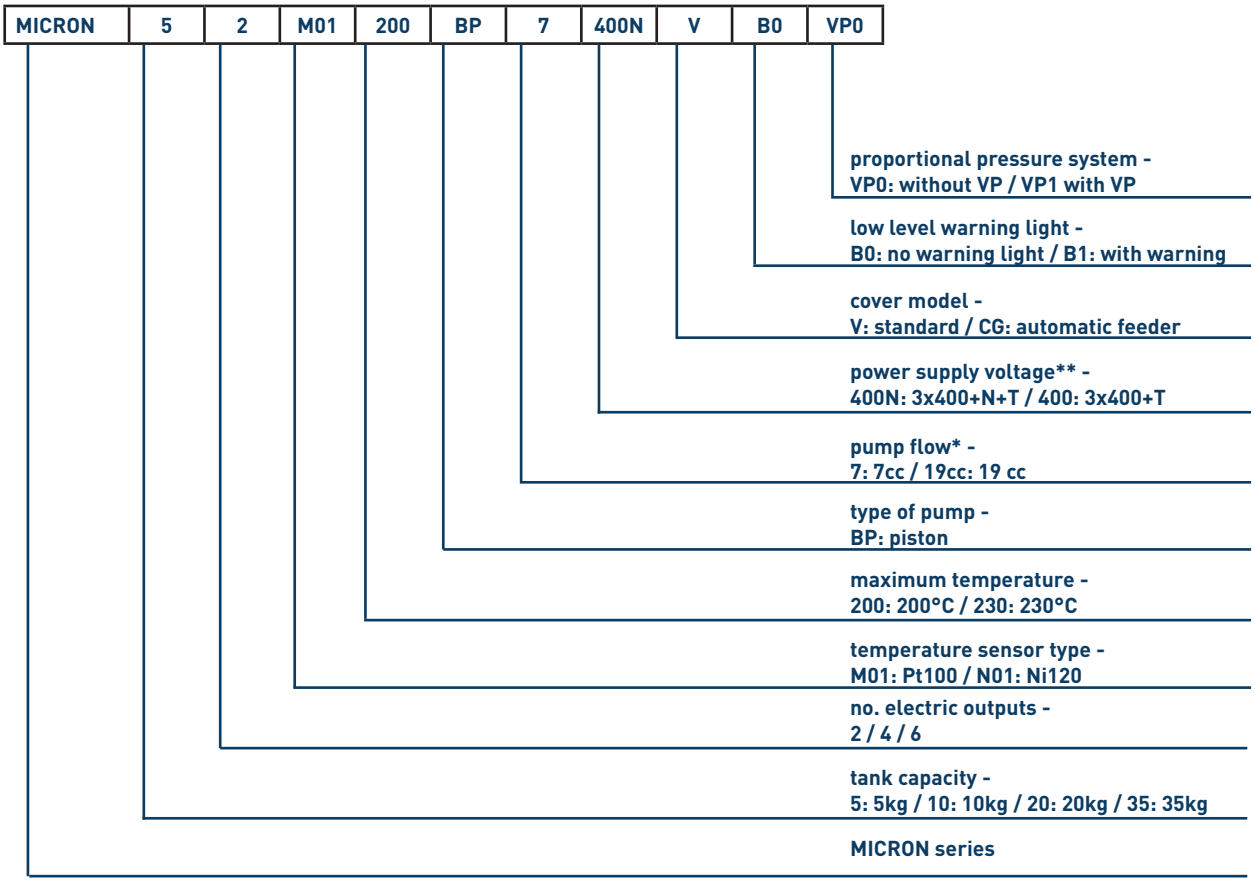
1. Front control card
2. Access door to the electric/pneumatic area
3. Tank access lid
4. Pump air pressure regulator
5. Air pressure gauge
6. Characteristics plate
7. Main switch
8. Hose output distributor (up to 6 hydraulic connections)
9. Hose-applicator electrical connections
10. Compressed air hook-up (Max. 6 bar)
11. Set of pump drain valve and filter.

Control card components

1. Tank indicator LED
2. Applicator indicator LED
3. Temperature set point
4. Real temperature
5. ON/OFF switch
6. Standby function
7. Temperature OK LED
8. Time scheduling
9. Left/right button - channel selection
10. Up/down button - temperature modification
11. Hose indicator LED



MICRON series range



* Micron 35 allows 19cc pump only.
** Micron 35 allows 3x400+N+T only

MICRON range option accessories

If some of the different machine configuration options have been chosen, it will be necessary to purchase the following accessories separately:

400N or 400 power supply voltage option

The transformer for the 5, 10 and 20l machine must be requested separately. The Micron 35 does not allow a '400' to 3x400+T

Automatic feeder option

The automatic adhesive loader must be requested separately and is the same for the 5, 10, 20 and 35l machines.

Warning light option

The warning light must be requested separately. There is a choice of the low level and colourless (white) indicator light or the low level and temperature OK indicator light (green). They are both the same for all machines.

VP option

The VP proportional valve system must be requested separately. It is the same for all machines in all cases.

Optional equipment

To increase the functionality of the melter machines, the following optional elements can be incorporated:

- **Low level of melted adhesive detection system.** This can be fitted to all the machines.
- **Adaptation plate for previous models.** For adapting ST machines, the previous 4, 8 and 16l machines in the Micron range and current 5, 10, and 20l Micron machines.
- **4 wheels:** Only for 20 and 35l machines.

3. INSTALLATION

Warning: The melters/applicators are equipment with current technology and with certain foreseeable risks. Therefore, only allow qualified personnel with sufficient training and experience to use, install or repair this equipment.

Introduction

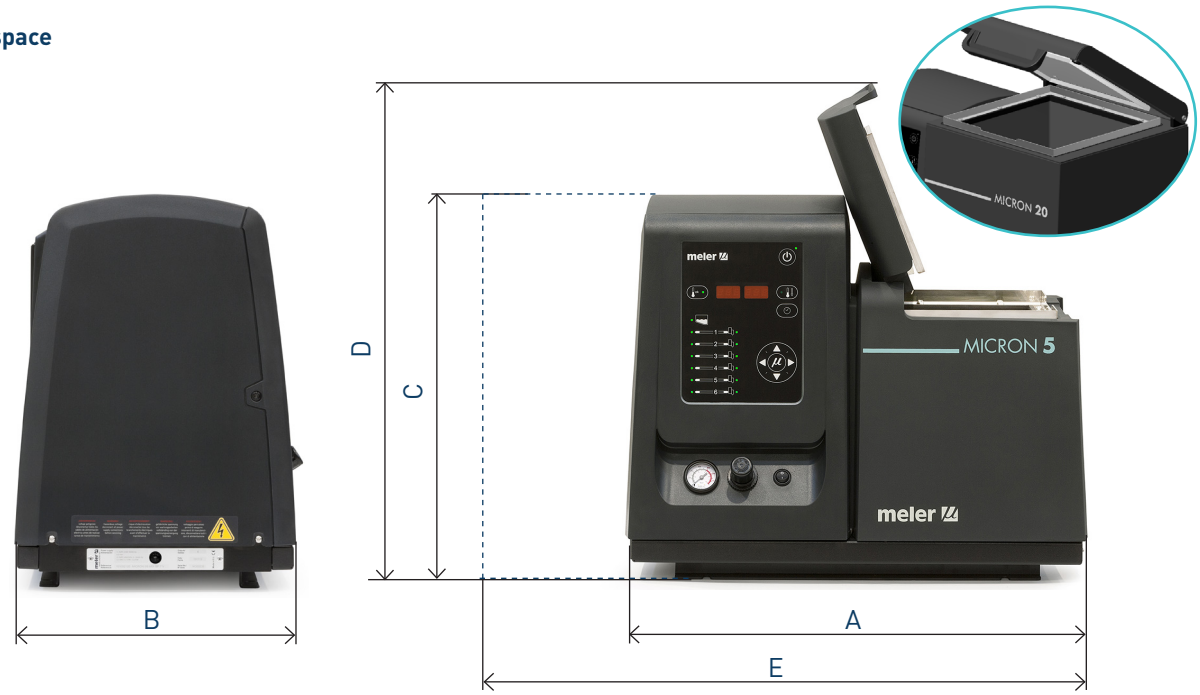
The 'micron' series melters/applicators are delivered with all the materials necessary for their installation. However, some components must be provided by the user himself, according to the location and connections in each particular installation:

- Anchoring screws for the melter/applicator equipment
- Power cord and plug for electrical power
- Pneumatic pipe and connection to the compressed air system
- Multicore cable for external electrical control
- Optionally, a gas ventilation system

Installation requirements

Before installing 'micron' series melter/applicator equipment, we must make sure that the space assigned to it permits installing, connecting and using the entire system. Similarly, we must check to see that the electrical and pneumatic supplies meet the necessary requirements of the melter/applicator equipment being installed.

Free space



Item	Description	Dimension
A	EQUIPMENT LENGTH	5l 588 mm 10l 671 mm 20l 671 mm 35l 742 mm
B	EQUIPMENT WIDTH	5l 339 mm 10l 339 mm 20l 383 mm 35l 435 mm
C	EQUIPMENT HEIGHT	5l 481 mm 10l 481 mm 20l 526 mm 35l 673 mm
D	EQUIPMENT HEIGHT WITH LID OPEN	5l 628 mm 10l 760 mm 20l 875 mm 35l 1067 mm
E	EQUIPMENT LENGTH WITH ELECTRICAL CABINET OPEN	5l 838 mm 10l 921 mm 20l 921 mm 35l 992 mm

Electrical Consumption

In order to install a 'micron' series melter/applicator, we should take into consideration the total consumption of the installation, including the consumption of the installed hoses and applicators.

Before connecting, make sure that the voltage that is being connected to the melter/applicator is the correct one appearing on the equipment's characteristics plate.

Connect the machine and check to see if it is well grounded.

Warning: Risk of electrocution. Even when the equipment is turned off, voltage remains in the intake terminals, which may be dangerous during internal equipment manipulations.

Install a power switch for disconnecting the melter/applicator equipment from the electrical network. It must be protected against overload and short circuits by circuit breaker and install appropriate personal protection leads to mass by differential switch.

Consumption figures, according to melter/applicator and output configuration, are included in the table in the section 'Electrical power connection'.

Compressed air

To install 'micron' series melters/applicators, it is necessary to have a dry, non-lubricated compressed air system with a maximum pressure of 6 bar.

The applicator's internal pneumatic equipment is able to work with a minimum of 0.5 bar, however, pressure lower than this will cause intermittent operational anomalies.

The air consumption is according to the number of stroke made by the pump cylinder, which in turn depends on the adhesive consumption during the

application. It is therefore necessary to estimate this consumption in all cases. Generally speaking, we can provide as a maximum consumption value 40-50 l/min for a pressure of 6 bar at maximum pump speed.

Other factors

While installing 'micron' series melters/applicators, other practical considerations should be kept in mind:

- Keep the load opening accessible for comfortable melter/applicator filling.
- Position the melter/applicator equipment in such a way that you can easily see the front panel display where temperatures and possible alarm signals are shown.
- As much as possible, try to avoid unnecessarily long hoses that result in elevated electrical energy consumption levels and pressure drops.
- Do not install the melter/applicator equipment beside powerful heat or cooling sources that may have distortional effects upon its operation.
- Avoid melter/applicator vibrations.
- Make sure that the melter/applicator maintenance areas (filter, purging valve, tank interior, etc.) are easily accessible.

Unpacking

Before proceeding with the installation of the melter/applicator, it should be removed from its location on a pallet and examined in order to detect any possible breakage or deterioration. Communicate any defect, even to the outer packing materials, to your Focke Meler Representative or to the Main Office.

Contents

The 'micron' series packing materials may contain accessories that form part of the same order. If this is not the case, the following are the standard components that accompany the melter/applicator:

- Instruction manual.
- Guarantee card.
- Hose couplings.
- Connector for external I/O (included on the power card).

Mounting the equipment

For mounting the 'micron' series set the base in the desired location using the indicated holes M8 screws.

The 'micron' series equipments have an optional adaptation plate for fixing 'micron' 5, 10, 20, 35 and previous 'micron' range 4, 8, 16, 32 and ST machines. To mount the base plate, place it on the machine bench and adjust its position.

Mark and drill the four holes for the base plate's M8 fastening screws. The holes may be threaded or non-threaded, depending on the bench to which they are being attached.

Warning: Make sure that the bench where the base plate is fastened is level, free from vibrations and is able to support the weight of the equipment in addition to the full tank load.

Once the base plate is fastened in place on the bench, the melter/applicator should be mounted on top of it.

Electrical power connection

'micron' series melters/applicators are designed to be connected to the electrical power supply in three possible ways, depending on the power of different elements connected:

- 1-phase 230 VAC with neutral.
- 3-phases 230 VAC without neutral.
- 3-phases 400 VAC with neutral.

A good ground connection is required in all cases.

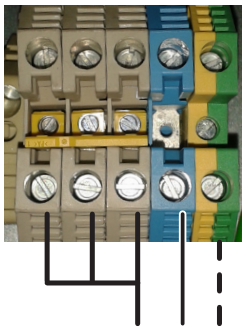
Consumption figures, according to melter/applicator and output configuration, are included in the table. Due to high power connected Focke Meler recommends 3-phases 400 VAC with neutral connection.

Equipment	No. Outputs	1 Phase	3 Phases	
		230 VAC	230 VAC Δ	400 VAC Y
micron 5	2	20.87 A	13.73 A	10.00 A
	4	31.30 A	18.45 A	10.87 A
	6	41.74 A	27.49 A	16.09 A
micron 10	2	25.22 A	17.86 A	14.35 A
	4	35.65 A	21.91 A	14.35 A
	6	46.09 A	27.49 A	16.09 A
micron 20	2	27.39 A	19.96 A	16.52 A
	4	37.83 A	23.89 A	16.52 A
	6	48.26 A	28.24 A	16.52 A
micron 35	2	33.91 A	24.55 A	16.09 A
	4	44.35 A	29.35 A	21.30 A
	6	54.78 A	37.27 A	26.52 A

Warning: Risk of electrical shock. Carelessness may cause injury or death.

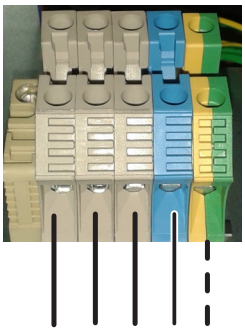
Open the electric cabinet door as far as possible. Thread the power cord (max. Ø14.5mm) through the electrical wall bushing Pg 16 and fasten it to the inside anchor, making sure that the cord reaches the power card connector at the position where it will be installed.

Connect each wire in the power cord to its corresponding place on the power intake connector on the power card.



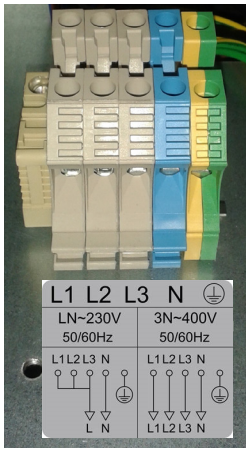
L3 N PE

LN~230V 50/60Hz + PE

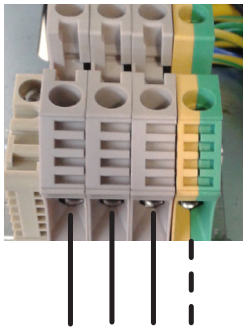


L1 L2 L3 N PE

3N~400V 50/60Hz + PE

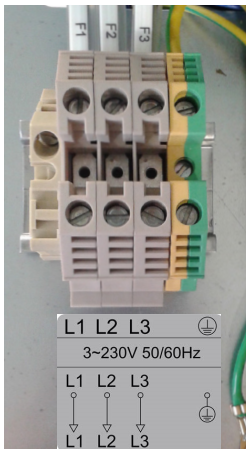


WITHOUT NEUTRAL



L1 L2 L3 PE

3~230V 50/60Hz + PE



Consumption values concerning each equipment can be found in the characteristics plate.

Pneumatic connection

Before connecting the pneumatic power to the melter/applicator, make sure the pressure regulator is completely closed. To do this, turn the regulator located on the front of the equipment next to the pressure gauge counterclockwise as far as it will go.

Connect the plant air supply (max. 6 bar) to the melter/applicator intake using flexible tubing with an outside diameter of 8 mm. The equipment is provided with a quick coupling for this purpose.

Activate the air supply to pass and turn the pressure regulator clockwise. Adjusting to 1 bar of pressure is enough for checking the pump operation.

The pump will not operate and the pressure gauge will show 0 bar until the melter/applicator and the hoses-applicators connected to it reach the correct temperature.

Once the pump operation has been checked, you may adjust the pressure to the operational value you wish.

In the pressure gauge can be found pneumatic and hydraulic pressure values, the relation between both are 1:13,6.

Hose and applicator connection

'micron' series melters/applicators use standard Focke Meler components. The entire range of 'classic', 'compact' and 'manual' hoses and applicators may be connected to this equipment.

Up to six hose-applicator outputs may be connected to 5, 10, 20 and 35L 'micron' melters/applicators.

Warning: When connecting hose-applicator outputs, verify that the connected power is not above the maximum allowable power for each output.

'micron' series melters/applicators are equipped with a six outputs hydraulic distributors. Connect the hoses to the distributor in order, following the numbering in the diagram.

Caution:

- In order to identify each hose-applicator, electrically connect them to the connector with the same number as the output they use.
- It is preferable to use couplings at 45° or 90° angle to minimize the space the hoses occupy. Using straight couplings usually results in curves with very small radii that may damage the inside of the hose.
- Save the screw-on caps that are removed from the distributor in order to connect a hose. They may be necessary in the future if a hose is removed from its location.
- Perform the electrical hose and applicator connections with the equipment turned off. Failing to do so may result in electrical defects in the connection and the appearance of alarm messages on the melter/applicator display.

Parameter Programming

Once the melter/applicator and its components are installed, you will need to program the operational parameters appropriate for the specific application that will be performed.

'micron' series melters/applicators simplify this task as much as possible, allowing the operator to modify only those parameters that are necessarily variable for each application.

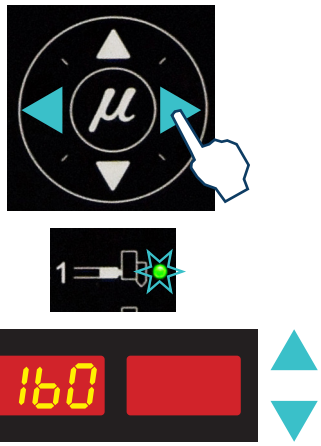
Among the various parameters, it is necessary to program the set point temperature values for each component connected and the value for overheating warnings. There are two other parameters (weekly start-up and shut-down programming and the standby temperature value) left to program in advanced systems, although the factory default values are perfectly valid for operational purposes.

Programming working temperatures

The melters/applicators leave the factory with the following set point temperatures:

- 160 °C for the tank and the distributor
- 150 ºC for hoses and 160 ºC for applicators

The general process for modifying set up temperature values for any component is described below.



1. Select the component for which you wish to modify the value with the left-right arrow.

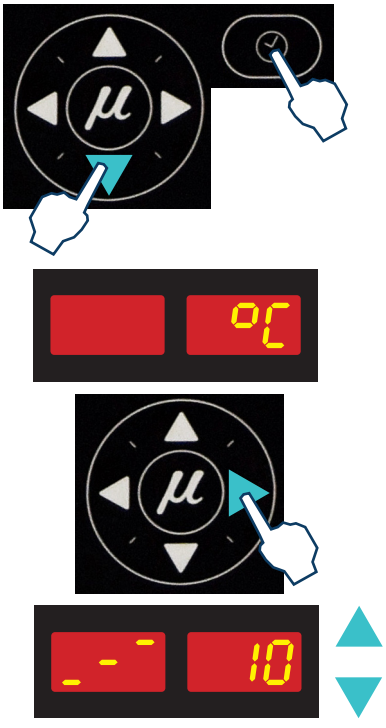
   The corresponding LED will blink quickly.

2. Using the up-down arrow, select the desired value for the set point temperature.

3. After ten seconds, the LED will stop blinking and the display will change by default to the set point temperature, saving the changed data.

This simple process must be repeated for each one of the components installed on the melter/applicator.

Selecting the overheating value



1. Press the buttons with the clock symbol and the down arrow at the same time to enter the special menu.

   The choice of display units (ºC or ºF) will appear on the display.

2. Using the right arrow, we advance to the next screen where the overheating symbol appears. _ - ¯

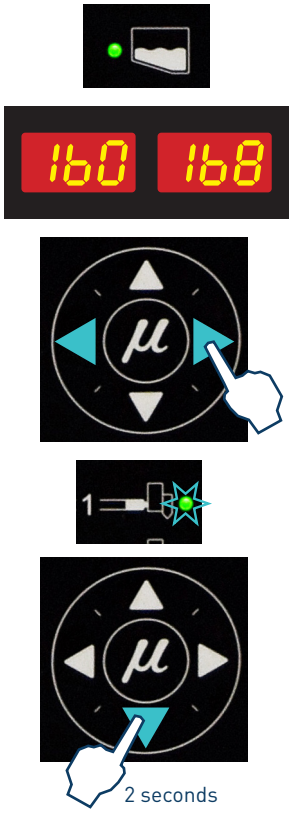
3. Select the desired value with the up-down arrow.

   The value displayed corresponds to the increase in real temperature over the set point temperature permitted without activating the alarm message.

4. Use the right arrow to advance to the next screen.

5. Exit the special menu using the left arrow and the tank temperatures will once again be displayed.

All the special menu values will be saved.



Keeping a component on display

By default, the main display shows the tank temperatures. However, it is possible to display indefinitely the temperatures of any component for analysis or tracking.

1. Select the component you wish to see permanently with the left-right arrow.

   The corresponding LED will blink rapidly.

2. Hold the arrow button down for two seconds, selecting the desired component.

3. The display will now remain on the selected component, without changing.

4. Simple press any left-right arrow button again to restore the default display (tank).

External I/O connections

The melter/applicator's input and output signals (I/O) allow it to communicate with the main machine simply and directly.

There are four signals that may be used to communicate with the main machine:

- **Temperatures ok_**an output from a non-voltage contact that communicated to the main machine (or to a warning light beacon) that all the system temperatures have reached 3° below their set point value (and the delay time have finished) during start-up, or that their real value is not 20°C below their set point value during operation.
- **External Standby_**control input from the standby mode, via a non-voltage contact. The standby function is connected with a closed contact; an open contact disconnects it.
- **Low level_**an output from a non-voltage contact that communicates to the main machine (or to a warning light beacon) that the adhesive fluid level in the tank has reached the minimum level established (optional)
- **Output disabled_**disabled input signal for each hose-applicator output via a non-voltage contact. With a closed contact, the output remains activated (output on); with an open contact, it is deactivated (output off).

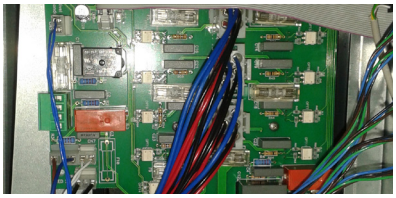
Warning: Risk of electric shock. Carelessness may cause injuries or death.

Temperature ok

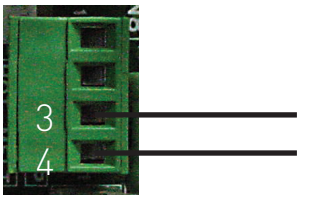
1. If only this signal will be connected, use a 0.5 mm^2 two-wire cable.

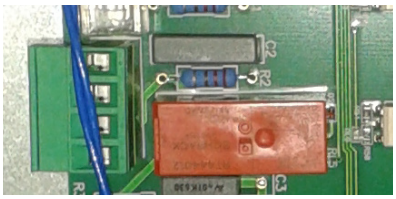
Install an electrical wall bushing Pg13.5 on the equipment base plate next to the electrical supply input.

2. Open the door to the electrical cabinet as far as possible. Thread the power cord (max. Ø12.5mm) through the electrical wall bushing Pg13.5 and fasten it to the inside anchor, making sure that the cord reaches the power card connector at the position where it will be installed (CN 1).



3. Remove the connector from the card and connect the two cable wires to their corresponding connector terminals:





4. Reconnect the card connector.

5. Make sure that the cable is well connected and that its path through the electrical cabinet presents no risks of snagging, being cut or any other accidental deterioration.

Warning: It must be connected to 24 AC or DC voltage. If you connect this signal to 230V load current cannot be less than 50mA.

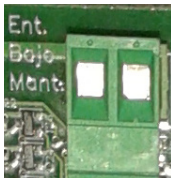
External Standby

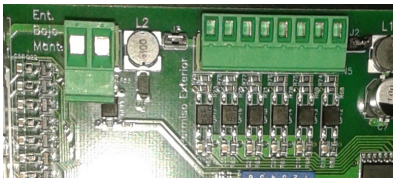
1. If this is the only signal being connected, use 0.5 mm^2 two-wire cable.

Install an electrical wall bushing Pg13.5 on the equipment base plate next to the electrical supply input.

2. Open the door to the electrical cabinet as far as possible. Thread the power cord (max. Ø12.5mm) through the electrical wall bushing Pg13.5 and fasten it to the inside anchor, making sure that the cord reaches the control card connector at the position where it will be installed (CN 4).

3. Remove the connector from the card and connect the two cable wires to their corresponding connector terminals:





4. Reconnect the card connector.

5. Make sure that the cable is well connected and that its path through the electrical cabinet presents no risks of snagging, being cut or any other accidental deterioration.

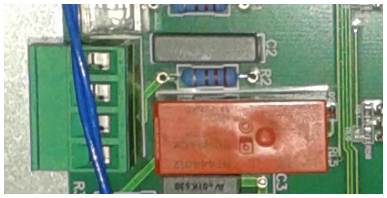
Low level (optional)

1. If this is the only signal being connected, use 0.5 mm² two-wire cable.

   Install an electrical wall bushing Pg13.5 on the equipment base plate next to the electrical supply input.

2. Open the door to the electrical cabinet as far as possible. Thread the power cord (max. Ø12.5mm) through the electrical wall bushing Pg13.5 and fasten it to the inside anchor, making sure that the cord reaches the power card connector at the position where it will be installed (CN 1).

3. Remove the connector from the card and connect the two cable wires to their corresponding connector terminals:



4. Reconnect the card connector.

5. Make sure that the cable is well connected and that its path through the electrical cabinet presents no risks of snagging, being cut or any other accidental deterioration.

Warning: It must be connected to 24 AC or DC voltage. If you connect this signal to 230V load current cannot be less than 50mA.

Output disabled

1. If this is the only signal being connected, use a seven-wire cable no smaller than 0.22 mm².

   Install an electrical wall bushing Pg13.5 on the equipment base plate next to the electrical supply input.

2. Open the door to the electrical cabinet as far as possible. Thread the power cord (max. Ø12.5mm) through the electrical wall bushing Pg13.5 and fasten it to the inside anchor, making sure that the cord reaches the control card connector at the position where it will be installed (CN 5).

3. Remove the connector from the card and connect the two cable wires to their corresponding connector terminals:

   1 common (+) voltage output

   2 input for disabled output 1

   3 input for disabled output 2

4 input for disabled output 3

5 input for disabled output 4

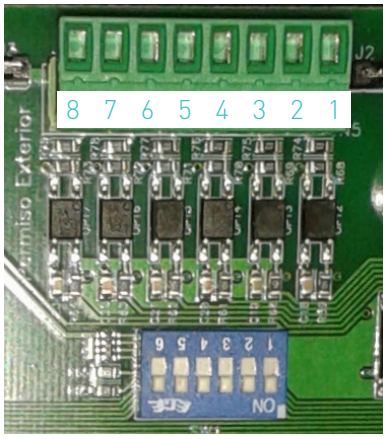
6 input for disabled output 5

7 input for disabled output 6

8 without connection

4. Reconnect the card connector.

5. Make sure that the cable is well connected and that its path through the electrical cabinet presents no risks of snagging, being cut or any other accidental deterioration.



It is possible to select the channels that you want to control from the outside using the small switches located above the connecter. Switches 1 through 6 control each of the channels, so that the switch in the 'ON' position means heating from the equipment, without any external control.

When the switch is in the 'OFF' position, the corresponding channel does not heat unless activated from the outside, through a non-voltage contact between pin 1 (the common pin) and the pin that corresponds to the channel.

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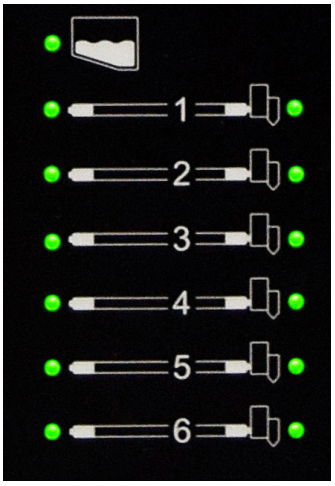
4. MELTER OPERATION

In this section we will introduce the method for using the melter/applicator. Although its operation is very simple, it should not be used by untrained personnel.

Warning: Improper use may cause damage to the machine or injury and even death to the person using it.

General information



There are three large groups of components with thermal control in a hot-melt installation: the fusion unit, the transport hoses and the melter/ applicators. All of these are controlled from the front panel of the melter/ applicator equipment.

The first large group is the tank-distributor group. Combined to form a single unit, they have separate controls even though their set point values are the same. Therefore, when you program a set point value for the tank, for example 170°C, the distributor adopts this same value.

The second group is the hose group. They are identified on the front panel, depending on the equipment model, by number, from No.1 to No.6 and by the corresponding hose picture. Each one has its own set point value.

The third group is the applicator group. It is identified on the front panel, depending on the equipment model, by number from No.1 to No.6 and by the corresponding applicator picture. Each one has its own set point value.

The hose and applicator numbers are automatically assigned to the hose/ applicator channel they are connected to on the rear part of the melter/ applicator.

Filling the tank

The tank can be equipped with a floating-type low level sensor (optional) that warns when the level of hot-melt adhesive drops below a third of the tank's capacity.

The unit will activate the external signal and, if it is connected, the corresponding warning device.

Warning: Before refilling the tank, make sure that the adhesive is the same type as that already in the tank. Mixing different types of adhesives can cause damage to the melter/applicator equipment.

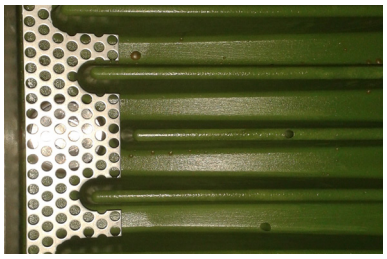
Warning: Do not fill the tank above the loading opening level

To fill the tank:

1. Open the tank lid.
2. Use a shovel or a ladle to fill the tank with adhesive. Fill the tank to a maximum of 1 cm below the charging port. The lid must be able to close normally.

Warning: Risk of burns. Always refill using protective gloves and goggles.

3. Close the lid when you have finished refilling the tank.



Model	Capacity	
micron5	5.15 l	5.15 kg
micron10	9.7 l	9.7 kg
micron20	19.7 l	19.7 kg
micron35	37.4 l	37.4 kg
* for density of 1g/cm^3		

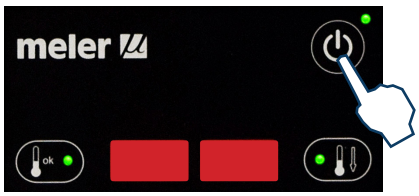
Starting up the melter/applicator equipment

Before starting up the melter/applicator equipment, it is necessary to check to see if the unit has been correctly installed and all its input/output and accessory connections are correctly established.

It is also necessary to make sure that the equipment has been filled with adhesive and that the operational parameters have been programmed.

To start:

1. Connect the melter/applicator's switch.



If the control card was turned off the last time the machine was disconnected, it will remain tuned off when the machine is started up again (time display).

If the control card was on the last time that the machine was disconnected, it will turn on when the machine is started up again.

2. Press the ON/OFF button on the control card to turn it on, if it not already activated.

By default, the set point and real temperature values shown are those corresponding to the tank.

The tank heating control LED (green) will light up and the tank will begin to heat.

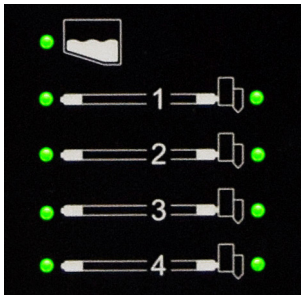
One it has reached 3° below the programmed temperature (set point) of the tank, a programmable delay timer starts until, guaranteeing fusion, the pump receives permission to operate and the signal will be sent to the main machine, indicated by the two corresponding (green) LEDs.

While the system is running the delay timer both LEDs remains blinking until the programmed time value has been reached. If then, any other element has not reached 3° below its temperature setting point, the LEDs turn off.

If the system is shut down, for any possible mode, when it is turning on the delay timer only starts again if the tank temperature is 20° below setting point.

3. Use the machine's pressure gauge to make sure that the generated pressure is adequate. Values below 0.5 bar may cause erratic pump action.

Melter/applicator equipment displays



'micron' series melters/applicators have two displays built into their control panel, with three sets of 7 segments each for displaying the temperature values (set point and real temperature), programmable parameters and alarms.

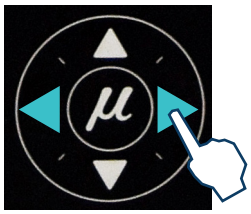
They are equipped with LED indicators to display the heating of each component,

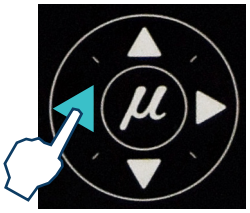
LED display	Component heating	Component status
constantly lit	constant	low temperature
blinking slowly	as need (according to PID parameters)	temperature near set point
blinking rapidly	programming or display	change in set point values
off	not heating	temperature reached

as well as the pump activations and the main machine connection signal:

They are also equipped with LEDs indicating equipment connection/ disconnection and standby function connection/disconnection:

LED display	On/off	Standby
constantly lit	turned off unit	function activated
blinking slowly	deactivation programmed for the current day	activation programmed for the current day
blinking rapidly	activation/deactivation programming mode	activation/deactivation programming mode
off	unit in operation	function deactivated
simultaneous intermittence from leds of pump activation and main machine signal	timing in progress, once the tank has reached its set point temperature	





Displaying the temperature for each component

The temperature may be displayed for each component (tank, distributor and each hose and applicator) by selecting the component with the cursor.

Press the left-right arrow until the desired component is displayed.

After 10 seconds, the display will return to the default component (the tank).

If you wish to keep the component displayed permanently, press and hold the left-right arrow for 2 seconds while selecting the chosen element.

The following is the display sequence:

distributor<—tank<—hose1<—applicator1<—...<—hose6<—applicator6

distributor—>tank—>hose1—>applicator1—>...—>hose6—>applicator6

To remove a component from permanent display, simply press either of the left-right arrows.

Alarm displays

'micron' series melter/applicator equipment tell the user when a malfunction has occurred in the unit, sending warning messages that may be seen on the control panel display.

Code	Source	Actions		
		Heating	Pump	Main machine signal
Err 000	tank broken sensor	only tank off	off	off
Err 001	hose1 broken sensor	only hose1 off	off	off
Err 002	applicator1 broken sensor	only applicator1 off	off	off
Err 003	hose2 broken sensor	only hose2 off	off	off
Err 004	applicator2 broken sensor	only applicator2 off	off	off
Err 005	hose3 broken sensor	only hose3 off	off	off
Err 006	applicator3 broken sensor	only applicator3 off	off	off
Err 007	hose4 broken sensor	only hose4 off	off	off
Err 008	applicator4 broken sensor	only applicator4 off	off	off
Err 009	hose5 broken sensor	only hose5 off	off	off
Err 010	applicator5 broken sensor	only applicator5 off	off	off
Err 011	hose6 broken sensor	only hose6 off	off	off
Err 012	applicator6 broken sensor	only applicator 6 off	off	off
Err 013	distributor broken sensor	only distributor off	off	off
Err 100	tank overheating	all components off	off	off
Err 101	hose1 overheating	all components off	off	off
Err 102	applicator1 overheating	all components off	off	off

Code	Source	Actions		
		Heating	Pump	Main machine signal
Err 103	hose2 overheating	all components off	off	off
Err 104	applicator2 overheating	all components off	off	off
Err 105	hose3 overheating	all components off	off	off
Err 106	applicator3 overheating	all components off	off	off
Err 107	hose4 overheating	all components off	off	off
Err 108	applicator4 overheating	all components off	off	off
Err 109	hose5 overheating	all components off	off	off
Err 110	applicator5 overheating	all components off	off	off
Err 111	hose6 overheating	all components off	off	off
Err 112	applicator6 overheating	all components off	off	off
Err 113	distributor overheating	all components off	off	off

When an alarm appears, the control unit takes a series of steps to protect the unit. Simply correct that malfunction and the control unit will reactivate the equipment functions.

Standby function does not generate any alarm. If a temperature sensor is broken, the system heats all the elements except the one where the failure is located.

In case of overheating the system cuts off inmediately the damaged element. After three minutes if the failure continues all the system will be shut down. After repairing the failure the system starts heating normally.

Hot-melt display level (optional)

When the level of hot-melt drops below 1/3 of the tank capacity, the level detector sends a signal to the melter/applicator control unit, which takes the following actions:

1. On-screen display (if the function is activated)
2. It closes a non-voltage output contact where the user will install the required device (horn, light or PLC input).

Simply refill the tank and wait for the adhesive to melt enough that the sensor sends the message that the correct level has been reached.

Operational pressure display and adjustment

The air pressure with which the pneumatic pump control device works with is shown on the pressure gauge located on the base of the melter/applicator. The pressure must be adjusted according to the application needs.

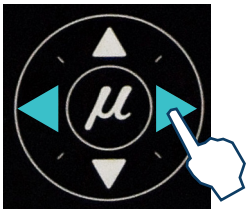
To do this, turn the regulator located on the front of the equipment next to the pressure gauge counterclockwise as far as it will go. Activate the air supply to pass and turn the pressure regulator clockwise.

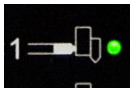
Warning: Values below 0.5 bar may cause erratic pump action. Never surpass 6 bar of pressure. The multiplying effect of the pump elevates the hydraulic pressure to dangerous levels for component operation.

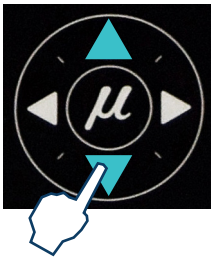
Temperature adjustment

The melters/applicators leave the factory with the following set point temperature values:

- 160 °C for the tank and distributor
- 150 °C for the hoses and 160 °C for applicators
- °C displayed
- Overheating value: 20°C
- Standby value: 40%
- Delay time: 10 min
- On/off and stanby programming: ON
- Low level detector: ON







The general process for adjusting the temperatures of each components is described below.

1. Select the component whose value you wish to modify using the left-right arrow. The tank and the distributor have the same set point value.

   The corresponding LED will blink rapidly.

2. Select the desired set point temperature value with the up-down arrow. Below 40°C the set point value displays 'OFF' canceling the heating of that element.

3. After ten seconds, the LED will stop blinking and the display will show the tank's set point temperature value by default, saving the modified data.

This simple procedure should be repeated for each of the components whose set point temperature value you wish to modify.

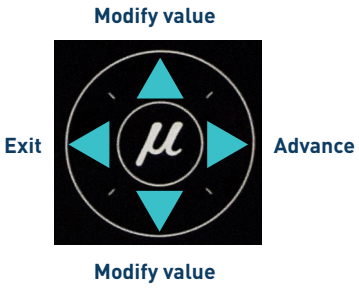
Programming the applicator parameters

The access to the parameters is performed from the special menu. Simultaneously press the buttons with the clock symbol and the down arrow to enter this menu. The navigation order is as follows:

Function	Symbol on the display	Default value
Selects the temperature unit to display	ºC - ºF	ºC
Programs overheating	▁▔▁	20 ºC
Programs the temperature for the STANDBY mode	▔▁▁	40%
Delay time to activate the Pump	F	10 minutes
Activates and deactivates the low tank level alarm	n	On
Programs the time span between the ON mode and the STANDBY mode	S-1	OFF
Programs the time span between the STANDBY mode and the OFF mode	S-2	OFF
Programs the Password for parameter protection	PAS	000
Displays the total hours of service	t	00000
Programs the partial filter change counter	tP	1000

To select the function to be programmed, press the right arrow to advance through the various functions. Once selected, the buttons up and down modify the value. Pressing the arrow right again the data is stored and passed to the next function.

To exit the special menu press the left arrow at any time.

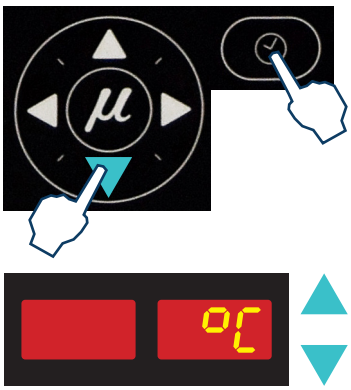


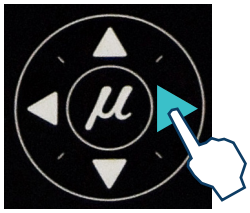
Programming process

1. Simultaneously press the buttons with the clock symbol and the down arrow to enter the special menu.

   The choice of temperature display units (°C or °F) will appear on the display.

2. Select the desired value using the up-down arrow.

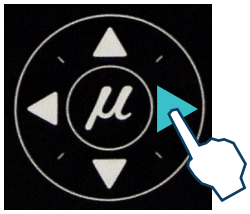




3. Use the right arrow to move to the next display where the overheating symbol appears. _ _ _

4. Select the desired value (between 10 and 25) using the up-down arrow.

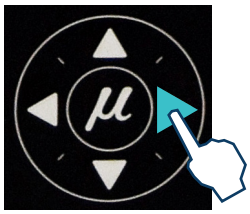
   The value shown corresponds to the increase in real temperature allowed over the set point temperature without activating the alarm message.



5. Use the right arrow to go to the next display where the standby function symbol appears. _ _ _

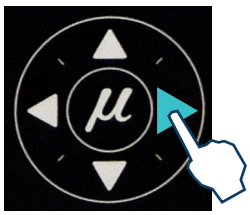
6. Use the up-down arrow to select the desired value (between 25 and 55).

   The value shown corresponds to the percent decrease in the real temperature compared to the set point temperature that will occur when this function is activated.



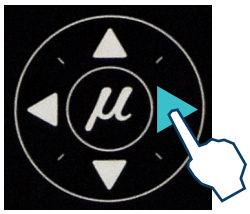
7. Use the right arrow to go to the next display where delay time value appears.

8. Use the up-down arrow to select the desired value (between 0 and 60 min).



9. Use the right arrow to advance to the next screen, where the level detector activation/deactivation is found.

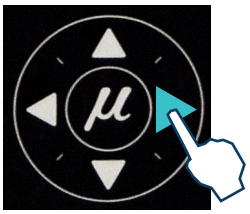
10. Use the up-down arrow to select the desired value (ON/OFF). When OFF is selected, neither the on-screen display nor the external signal activation will be operational. If ON is selected, when the level of hot-melt is low the alarm (n - - -) will be displayed on the screen and the external signal contact will be activated.



11. Use the right arrow to go to the next display.

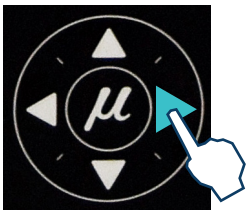
12. Use the up-down arrow to select the desired value (see 'Timer to switch between ON - Standby - OFF modes').

13. Use the right arrow to go to the next display.



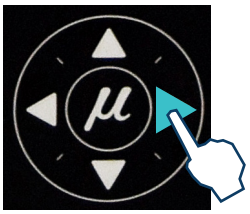
14. Use the up-down arrow to select the desired value (see 'Timer to switch between ON - Standby - OFF modes').

13. Use the right arrow to go to the next display.



16. Use the up-down arrow to select the desired value (see 'Password to access parameter programming').

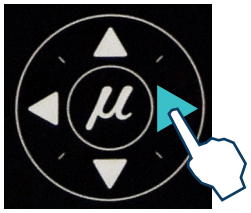
17. Use the right arrow to go to the next display.



This function is a counter that registers total hours of equipment operation, that is, with service temperature OK enabled.

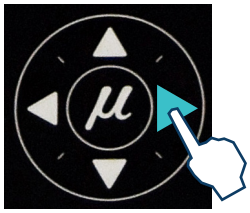
This is an increment counter and its value cannot be modified.

The maximum number of hours is t99999, after which the counter will return to t00000 to continue counting.



18. Use the right arrow to go to the next display.

19. Use the up-down arrow to select the desired value (see 'Counter that warns of the need to change the adhesive agent filter').



20. Use the right arrow to return to the initial parameter.

For any parameter, the left arrow may be used to exit the special menu and display the tank temperatures once again.

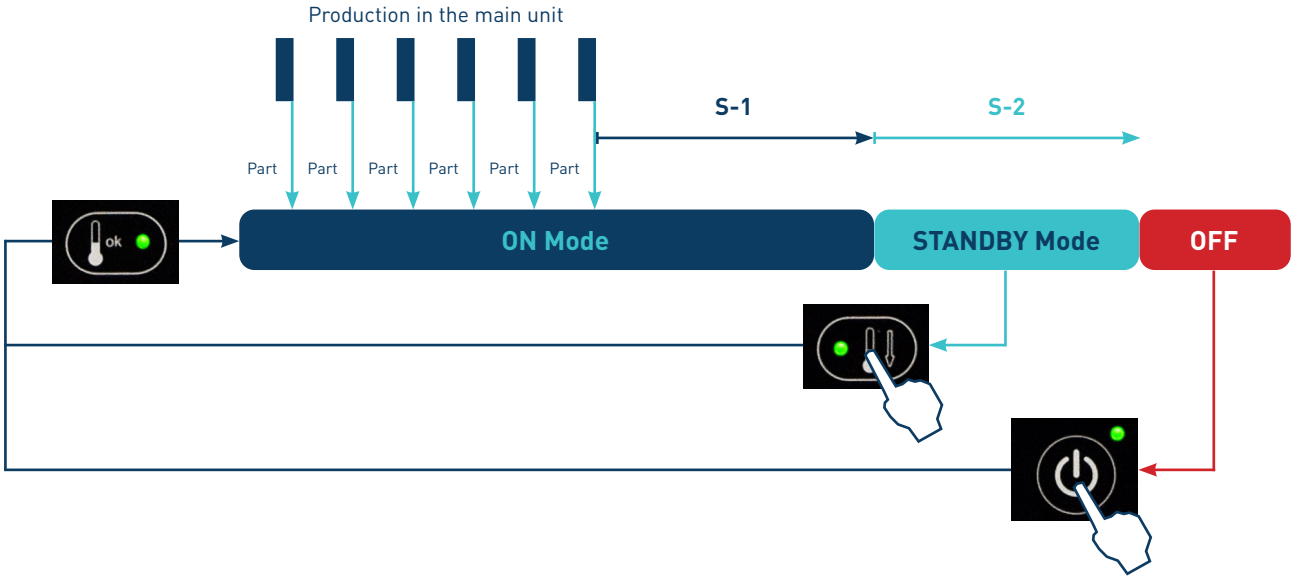
To record any parameter, you must always move to the next parameter, using the right arrow.

Timer to switch between ON - Standby - OFF modes

This function is used to program automatic switching from the ON mode to Standby mode after an inactive period of time (S-1) and from STANDBY mode to OFF mode after another waiting period (S-2) during which activity has not been resumed.

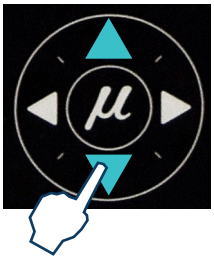
To program this function and ensure that it works properly, the melter must be connected to the main unit via the CN4 external standby connector on the control board. The main unit will use this connection to send continuous signals (not less than 500 ms) indicating that production is in progress. After the first programmed time elapses without any activity (S-1) the equipment will switch to STANDBY mode. If the equipment remains in standby and the 'Standby' push button is not pressed during the second programmed time (S-2), the equipment will switch to OFF mode.

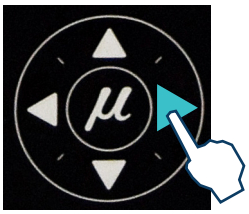
To set the equipment to the ON mode again, press the 'ON/OFF' push button on the control board. The programmed S-1 time will begin a countdown the moment the melter reaches the service temperature.



S-1	S-2	Functionality
dIS	dIS	The external Standby input (CN4) is disabled. The melter can be set to Standby mode with the push button.
OFF	OFF	The external Standby input (CN4) runs normally. • Contact CLOSED: Equipment in STANDBY Mode. • Contact OPEN: Equipment in ON Mode.
Between 001 and 999 (minutes)	OFF or 000	The external Standby input (CN4) detects inactivity. If no activity is taking place, once the time programmed in S-1 elapses, the melter switches from ON mode to OFF mode. It will not switch to STANDBY mode because S-2 is OFF or 000.
Between 001 and 999 (minutes)	Between 001 and 999 (minutes)	The Standby input (CN4) detects inactivity. If no activity is taking place, once the time programmed in S-1 elapses, the melter switches from ON Mode to STANDBY Mode. If no activity is taking place, once the time programmed in S-2, elapses the melter switches from STANDBY Mode to OFF Mode.

Password to access parameter programming





A Password can be programmed to protect access to certain equipment programming functions by unauthorised users.

The special menu can be used to program a value between 000 (disabled) and 999. When the Password value is a value other than 000, the equipment is protected and functions are programmed as follows:

- NO password.
  - Operation with the 'ON/OFF' and 'Standby' keys.
  - Viewing the real working temperatures.
- WITH password.
  - Modify the temperature set points.
  - Program equipment time periods.
  - Set melter parameters.

When the Password is activated in the equipment and the user attempts to access the protected functions of the equipment, the displays will show 'PAS 000'.

Enter the Password using the 'up' and 'down' keys.

Once the Password is displayed, press the 'right' key.

By pressing the 'left' key, the equipment will return to the same mode of operation that was active before the enter password message appeared.

If the Password is incorrect, the equipment will not access the desired menu and it will return to the same mode of operation that was active before the 'PAS 000' message appeared. No message will be displayed indicating that the Password that is entered is incorrect.

If this is correct, the equipment will access the desired menu and it will be possible to program or view the parameters.

Total equipment service hours counter

This function is a counter that registers total hours of equipment operation, that is, with service temperature OK enabled.

This is an increment counter and its value cannot be modified.

The maximum number of hours is t99999, after which the counter will return to t00000 to continue counting.

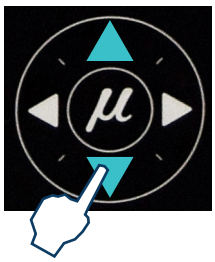
Counter that warns of the need to change the adhesive agent filter

This function is a partial countdown counter that registers the hours of equipment operation, that is, with service temperature OK activated, from tP1000 hours to tP0000 hours.

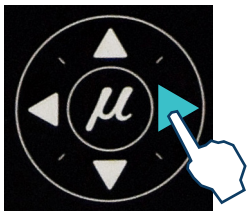
When this value is reached, the display shows the 'FIL tEr' message, which warns that the adhesive filter of the equipment must be cleaned and/or replaced.

Press any key to delete the message and the counter will return again to 1000 hours. The equipment will return to the same mode of operation that was activated before the message appeared.

Use the 'up' and 'down' keys of this function to modify this value so the filter cleaning warning adjusts to the specific needs required for melter operation.



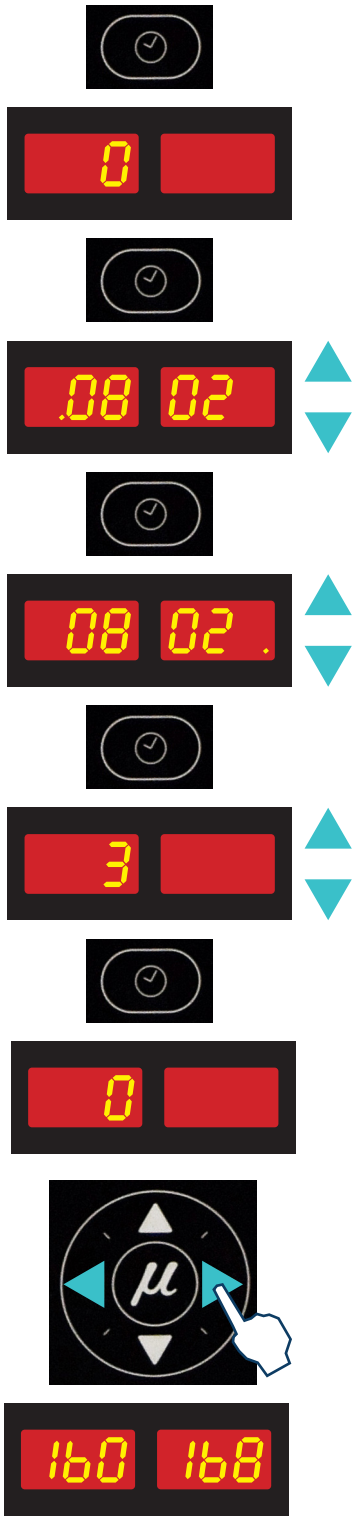
Once the value has been selected, press the 'right' key to store the new value and the 'FIL tEr' warning will be activated after the new programmed time elapses.



Setting the clock

'micron' series melters are equipped with a weekly programmable system controlling equipment connection and disconnection and activating and deactivating the standby function.

Before programming these functions, it is necessary to introduce into the control unit data corresponding to the day and hour used to execute these programs.



Programming the current day and hour

1. Press the button with the clock symbol.
   A '0' will appear on the display, indicating the program for current day and hour information.
2. Press the button with the clock symbol once again.

   On the left display, you will see the time with a dot, indicating that this is the value that may be modified, while the minutes appear on the second display.
3. Use the up-down arrow to select the desired value.
4. Press the button with the clock symbol once again.

   Now the dot will appear on the right display.
5. Use the up-down arrow to select the desired value.
6. Press the button with the clock symbol once again.

   A number appears, indicating the day of the week (1- Monday / 7- Sunday).
7. Use the up-down arrow to select the desired value.
8. Press the button with the clock symbol once again.

   The '0' program appears once again.
9. Pressing either the left or the right arrow button will exit this program and return to the tank temperature display.

Programming equipment activation/deactivation

You may program an activation and a deactivation time for every day of the week, from Monday (1) to Sunday (7).

Time is expressed in 15 minute increments, so we cycle from 10.0 (10 hours and 0 minutes) to 10.1 (10 hours and 15 minutes) to 10.2 (10 hours and 30 minutes) to 10.3 (10 hours and 45 minutes).

1. Press the button with the clock symbol

   A '0' will appear on the display, indicating the program for current day and hour information.

2. Use the up-down arrow to select the value for the desired day of the week, from Monday (1) to Sunday (7).

3. Press the button with the clock symbol once again.

   Two times will appear, one in each display. The display on the left shows the start time, while the display on the right shows the finish time.

4. The blinking dot next to the start time indicates that this is the value that may be modified. Use the up-down arrow to select the desired value.

5. Press the button with the clock symbol once again.

   The dot changes to the finish time.

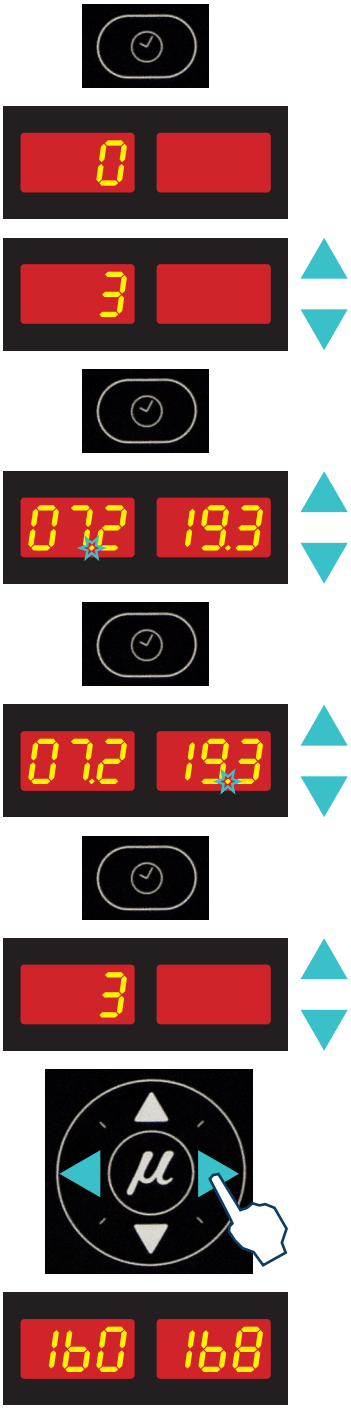
6. Use the up-down arrow to select the desired value.

7. Press the button with the clock symbol once again.

   The selected program will appear once again. Use the up-down arrow to select other programs.

8. Pressing either the left or the right arrow button will exit this program and return to the tank temperature display.

The green LED next to the 'ON/OFF' button will remain blinking as long as there is an equipment disconnection time programmed for the current day.



Disabling the equipment activation/deactivation program

It is possible to disable the equipment activation/deactivation programming without canceling the daily programming. This way the programmed data is saved, but the programming will have no effect on the equipment.

1. Press the button with the clock symbol.

   A '0' will appear on the display, indicating the program for current day and hour information.

2. Use the up-down arrow to go past the selection for the last day of the week (7).

   The message 'ON/OFF' will appear on the display, depending on the current status.

3. Press the button with the clock symbol once again.

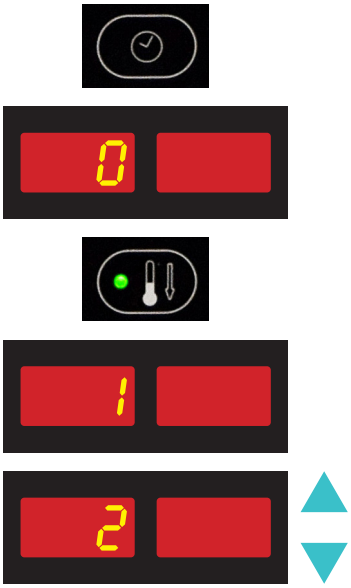
   The status will alternate each time you press the button.

4. Pressing either the left or the right arrow button will exit this program and return to the tank temperature display.

Programming the equipment's standby function activation/deactivation

You may program an activation and a deactivation time for every day of the week, from Monday (1) to Sunday (7).

Time is expressed in 15 minute increments, so we cycle from 10.0 (10 hours and 0 minutes) to 10.1 (10 hours and 15 minutes) to 10.2 (10 hours and 30 minutes) to 10.3 (10 hours and 45 minutes).



1. Press the button with the clock symbol.

   A '0' will appear on the display, indicating the program for current day and hour information.

2. Press the standby function button.

   A '1' will appear, indicating the first day in the standby function programming.

   [Since the current time and date are values common to both programs, the value '0' does not appear in this menu].

3. Use the up-down arrow to select the desired value for the day of the week, Monday (1) to Sunday (7).

4. Press the button with the clock symbol once again.

   Two times will appear, one in each display. The left display shows the start time, while the right display shows the finish time.

5. The blinking dot next to the start time indicates that this is the time that may be modified.

   Use the up-down arrow to select the desired value.

6. Press the button with the clock symbol once again.

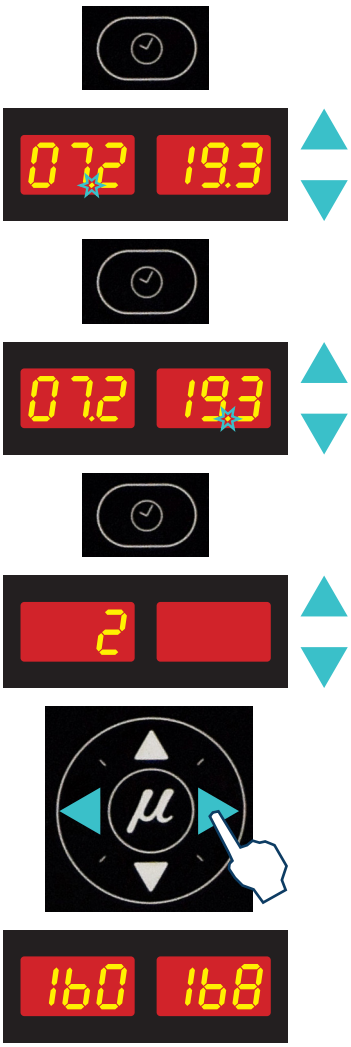
   The dot changes to the finish time.

7. Use the up-down arrow to select the desired value.

8. Press the button with the clock symbol once again.

   The selected program appears once again. You may use the up-down arrow to select other programs.

9. Pressing either the left or the right arrow button will exit this program and return to the tank temperature display.



The green LED next to the 'maintenance' button will remain blinking as long as there is an equipment standby function activation time programmed for the current day.

Disabling the equipment standby function programming

It is possible to disable the equipment standby function programming without canceling the daily programming. This way the programmed data is saved, but the programming will have no effect on the equipment.

1. Press the button with the clock symbol.

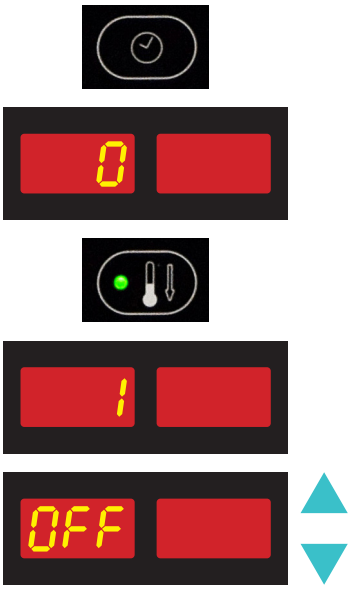
   A '0' will appear on the display, indicating the program for current day and hour information.

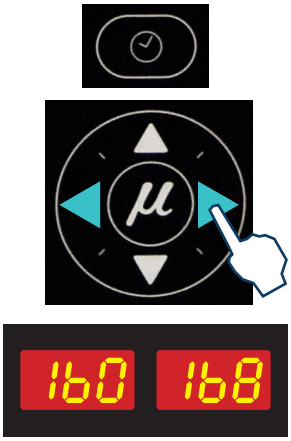
2. Press the standby function button.

   A '1' will appear, indicating the first day in the standby function programming.

3. Use the up-down arrow to go past the selection for the last day of the week (7).

   The message 'ON/OFF' will appear on the display, depending on the current status.



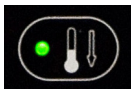


4. Press the button with the clock symbol once again.

   The status will alternate each time you press the button.

5. Pressing either the left or the right arrow button will exit this program and return to the tank temperature display.

Special function buttons



The simplicity of programming 'micron' series melters/applicators reduces the use of the special function buttons to only the standby function.

This manual function allows you to alternate between the operational mode and the standby mode. Using the standby function during periods of melter/applicator inactivity helps save energy and allows the heated elements to return quickly to their set point temperatures once you return to the operational mode.

When the standby function is activated, the set point temperature for all the heated components is lowered to a certain value, according to the programmed parameter (see 'Programming melter/applicator equipment parameters'). For example, if the tank set point temperature is 160 °C and the standby temperature is programmed as 30 (30%), when you press the standby function button, the tank set point temperature will drop to 112 °C (70% of 160 °C).

The three means for activating the standby function available with 'micron' melters/applicators have the following priority protocols:

1° manual standby function button

2° standby function external signal

3° standby function activation/deactivation programming

Therefore, if the function is activated by any of the three means, it may always be deactivated using the manual button. On the other hand, if it was activated using the manual button, it may not be deactivated by either of the other two means. The weekly programming may not deactivate a standby function that has been activated by either of other two means.

The following criteria are suggested for standby function use:

- If the period of inactivity is less than 2 hours, allow the melter applicator equipment to heat as normal.
- If the period of inactivity is more than 2 hours and less than 4 hours, use the standby function.
- If the period of inactivity is over 4 hours, use one of the following two options: turn off the equipment if you do not plan on using it for the rest of the day or keep the standby function on if you plan on using the equipment during that same day.

Turning off the melter/applicator equipment

If you need to disconnect the melter/applicator equipment:

1. Turn off the machine switch on the door of the electrical cabinet next to the pressure regulator.

   The depressurization valve frees pressure from the hydraulic circuit, returning the adhesive to the tank.

2. Disconnect the pneumatic power to the applicators and the electrical power to the control unit programmer, if there is one.

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5. MAINTENANCE

Warning: The melter/applicator equipment is equipped with current technology, but has certain foreseeable risks. Therefore, only allow qualified personnel with enough training and experience to operate install or repair this equipment.

The following table briefly summarizes the indications for adequate melter/applicator equipment maintenance. Always read the corresponding section carefully.

Operation	Frequency	Refer to
External cleaning	Daily	Equipment cleaning
System depressurization	Before performing maintenance tasks and repairing the hydraulic system	System depressurisation
Remove electrical cabinet	Before performing pneumatic unit or pump shaft maintenance	Access to pneumatic unit
Filter cleaning or changing	- As needed (once a year minimum) - With each adhesive change	Filter maintenance
Emptying and cleaning the tank	- When burnt adhesive is present - With each adhesive change	Cleaning the tank
Check thermostat operating	- Check in continuous work	Safety thermostat
Equipment change	- Equipment change or repair	Remove the equipment from its base

If the equipment does not work or works incorrectly, you may refer to the next chapter '6. Quick problem solving'.

Equipment cleaning

To continue to take advantage of the melter/applicator's benefits and to ensure the perfect mobility of its components, it is necessary to keep all its parts clean, especially the ventilation grate on the upper part of the machine.

Warning: Risk of electric shock. Carelessness may result in injury or death.

Clean the exterior using a cloth moistened with water. Do not use flammable liquids or solvents.

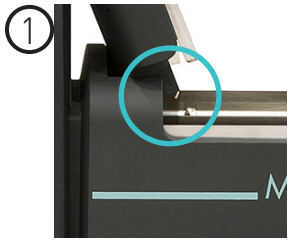
To carry out external cleaning:

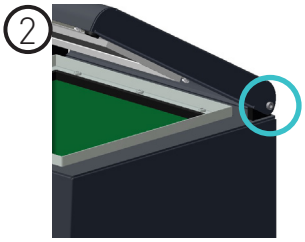
- Use cleaning products compatible with polyamide materials.
- Apply the cleaning product with a soft cloth.
- Do not use sharp tools or scrapers with sharp edges.

Removing and changing exterior panels:

1. Turn off the melter.
2. Disconnect the compressed air from the machine intake.
3. To remove the casing from the machine, first you have to separate the electrical cabinet from the tank. To do this, slacken the 1/4 turn screw as indicated (A) and slide it along the guides.
4. To remove the electrical cabinet door, open the door by turning the 1/4 turn screw as indicated (B), lift the door, turn it and remove the screws (C).
5. To remove the electrical cabinet casing, slacken the screws (D) that hold it to the base of the machine and the screws (E) that hold it to the structure of the electrical cabinet.
6. To remove the tank casing, remove screws F and G that hold this casing to the base of the equipment. The lid and the casing are removed from the tank at the same time.
7. The tank lid of Micron 5 and 10 is removed once the tank casing has been dismantled. It is simply a matter of sliding the shafts at the ends along the grooves in the casing. (See diagram 1).

   The tank lid of Micron 20 and 35 is removed loosening the side lid screws (See diagram 2).





8. To assemble the casing, follow the instructions in reverse order.

System depressurisation

'micron' series melters/applicators are equipped with a safety valve that allows you to depressurize the system whenever the equipment is pneumatically or electrically disconnected.

Before disconnecting any hydraulic component or opening any distributor output, it is necessary to follow these steps:

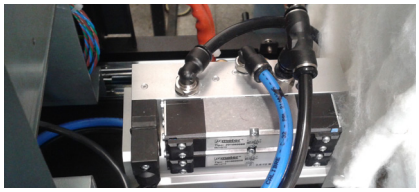
1. Turn off the machine switch on the door of the electrical cabinet next to the pressure regulator.

   The depressurization valve releases the pressure from the hydraulic circuit, returning the adhesive to the tank.

   2. Purge all applicators that have been used either manually or with the corresponding program command.

Access to pneumatic unit

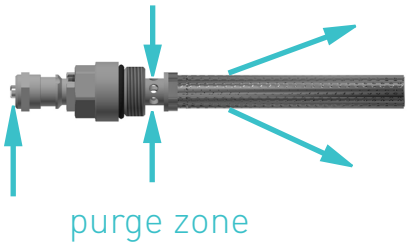
To access the unit for more exhaustive machine maintenance, it will be necessary to remove the electrical cabinet from its place so it can be handled more comfortably and accessibly. To do this, slacken the 1/4 turn screw that keeps the electrical cabinet in position (screw A) and slide it along the guides.



To carry out this operation it is not necessary to open the electrical cabinet door.

Maintenance of the filters

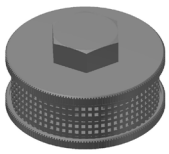
'micron' series melter/applicator equipment is equipped with a 50 mesh pump filter. The filter prevents impurities and burnt adhesive remains from being pushed out from the tank by the pump.



The adhesive flows from the inside to the outside of the filter, with impurities being trapped inside it.

The drain valve is included in the filter cap.

There is also a filter in the tank's inlet valve. This filter performs a first-step filtration, preventing impurities resulting from burning in the tank and other impurities that may enter from the outside from passing through.



The filters can be cleaned or replaced with new ones.

No rule exists for determining when to change the filters. Several factors influence this decision:

- the type and purity of the adhesives used.
- the adhesive work temperatures.
- adhesive consumption in relation to the time it spends in the tank.
- changes in the type of adhesive used.

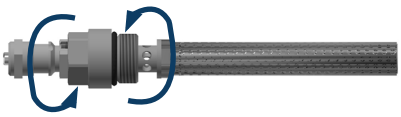
In any case, we recommend that the filters are checked and cleaned at least every 1000 hours of operation (melter turned on).

Warning: Always use protective gloves and goggles. Risk of burns.

Changing the pump filter

To change the filter, it should be borne in mind that the filter and purge valve are the same assembly:

1. Depressurise the system.
2. To remove the whole filter, unscrew the assembly's hexagonal plug using a 22mm socket driver and remove it.
3. Depending on the amount of dirt inside the cartridge, clean it or throw it away, following the applicable waste regulations.



4. Replace the joints if they are damaged.
5. Screw the assembly up again, clockwise.
6. Put the assembly back inside the distributor and tighten the screws.
7. Continue to work as normal.

Changing the inlet filter

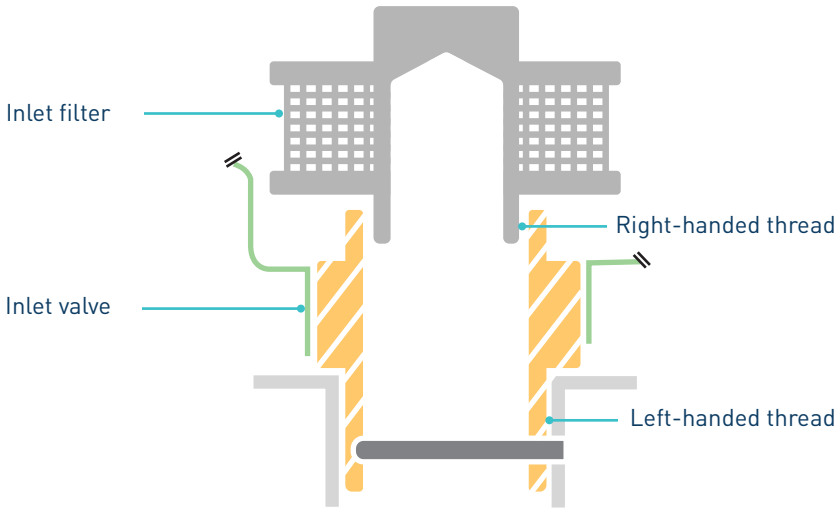
Warning: It is important to install and remove the filter as instructed below, to prevent the inlet valve from coming loose.

Bear in mind that the inlet filter is screwed onto the inlet valve via a right-handed thread and that this, in turn, is screwed onto the distributor's adapter via a left-handed thread.

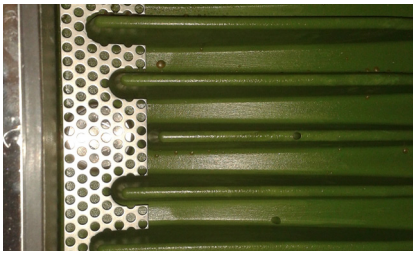
1. Empty the tank.
2. Remove the grid from the bottom of the tank, taking care not to scratch it.
3. Put the unit on Standby.
4. Remove the filter unit with a size 17 socket driver, turning the unit's head anticlockwise.
5. Depending on how dirty the filter is, replace the mesh or the entire unit, disposing of it in accordance with the current waste regulations.
6. Reinstall the filter unit, screwing it clockwise onto the inlet valve.

Important: It should only be tightened by hand and should not be forced, to avoid loosening the inlet valve.

7. Fill the tank with adhesive and continue working as normal.



Cleaning the tank



The hot-melt tank must be cleaned on occasion to maintain its fusion and anti-adherence properties. The tank is covered on the inside with PTFE and inclined enough to aid unloading the hot-melt and to avoid it from being retained inside when consequential burning occurs.

Furthermore, when adhesives are mixed, reactions may occur between them, causing a degeneration and thus problems in unloading in the direction of the pump.

Therefore, it is recommended to clean the deposit every time that:

- a change is made to a different type of hot-melt.
- too much burnt material is generated in its interior.

Changing adhesive type.

1. Use up as much of the adhesive as possible.

   If it is necessary to unload the adhesive without having used it up as much as possible, follow the instructions in the section 'Emptying the tank'.

2. Clean the remains of hot-melt adhesive on the inside of the tank.

Warning: Use appropriate protective equipment for high temperatures.

3. Add the appropriate type and quantity of the new adhesive, wait for it to melt and pump at least one full tank through the system (hoses and applicators).

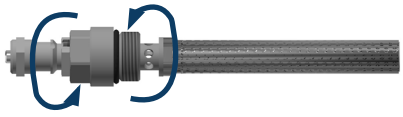
Cleaning burnt adhesive

1. Empty the tank directly (see the section 'Emptying the tank') to prevent the burnt material from passing through the pump circuit.

2. Clean the adhesive remains and burnt material inside the tank. Do not use sharp objects that might damage the inside coating.

Warning: Use appropriate protective equipment for high temperatures.

3. Add the appropriate type and quantity of adhesive and wait for it to melt.



4. Remove the filter cartridge and clean it, if necessary (see the section 'Filter maintenance').

5. Reassemble the filter without the cartridge.

6. Pump a minimum of one tank through the distributor output marked number 1.

7. Remove the filter and attach it to the corresponding cartridge. Reinstall it in the distributor.

8. Refill the tank with adhesive, wait for it to melt and continue working as usual.

Warning: Whenever you handle the filter or any other element subject to pressure, you must always perform a system depressurization first (see the corresponding section)

Emptying the tank

During normal maintenance activities, it is recommended, and sometimes necessary to empty the tank directly, without passing the adhesive through the pump system.

In the case of the Micron 5, the tank does not have a pouring chute so, to empty out the adhesive you need to wait until it has cooled and separate it from the walls of the tank, making it easier to remove.

For the other models, empty the tank following these indications:

1. Keep the tank at working temperature.

2. Remove the tank cover and then its casing.

3. Lower the emptying chute attached to the tank and put a suitable container in position.

4. Unscrew the plug and allow the adhesive to flow freely into the container.

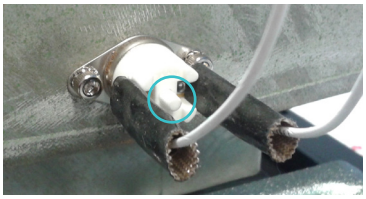
5. Once it is completely empty, clean the exit hole and chute of remains of adhesive.

6. Put the plug back in position.

7. Raise the emptying chute and put the cover of the casing back in position.

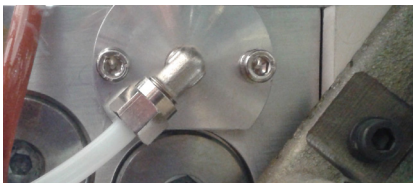
Warning: Use appropriate protective equipment for high temperatures.

Safety Thermostat



If there is an error in the resettable thermostat (the tank does not heat), slide the electrical cabinet along and dismantle the cover. When you can see the thermostat, press the button indicated to reset it.

Remove the equipment from its base



For more thorough equipment maintenance, it is necessary to remove it from its present location to be able to perform operations more comfortably and with greater accessibility.

To do this, the equipment should be removed from its base following these indications:

1. Turn off the machine switch on the door of the electrical cabinet next to the pressure regulator.
2. Depressurise the system.
3. Disconnect the hoses connected to the distributor outputs both electrically and hydraulically.
4. Disconnect the input power supply and ground connection.
5. Raise the machine to extract it from the base.

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6. TROUBLESHOOTING

This chapter shows basic help for solving simple problems without intervention from 'meler' technical personnel.

It is very important to respect the security instructions in this manual at all times. Failure to do so may result in personal injury and/or damage to the machine or to the rest of the installation.

Warning: The melter/applicator equipment is equipped with current technology, but with certain foreseeable risks. Therefore, only allow appropriate personnel with enough training and experience to use, install or repair this equipment.

Each observed problem corresponds to a chapter section. There are four different columns in each one:

- Possible causes
- Verification to be performed
- Useful observations
- Actions

The system is simple. Locate the chapter section that corresponds to the observed problem. Starting from the column on the left, follow vertically the causes. Once the cause is found check, the action is performed taking into account the comments and once the error checked carried out in each case corrective action.

If you do not reach the cause follow to the next problem.

If you are unable to solve the problem with the help provided in this chapter, contact your Area Technical Service Center or 'meler' headquarter directly.

Melter

The unit does not turn on

Causes	Checking	Comments	Actions
Equipment power supply malfunction.	Check voltage between phases and neutrals in the main terminal. Check voltage in CN4 connector (power board).	Voltages will vary depending on power supply.	Check wiring. Check net power supply. Change electric supply cable.
Switch malfunction.	Check continuity in switch (2S1)	If continuity in CN7 connector, switch is OK.	Change switch.
Power board malfunction.	Check voltage in CN8 connector.	If 230V, the board is correct.	Change power board.
Thermostat damaged.	Check continuity (2S2.1).	Release the cables before performing the checks. The thermostat is OK if there is continuity.	Change thermostat.
Control board fuse damaged.	Verify continuity in fuse (F1).	Check first 230V is supplied to the control board (CN8)	Change fuse.
Control board malfunction.	Check voltage in CN9 connector.	Fuse works and 230V arrive to control board	Change control board.
Faulty tank thermostat. **(*)**	Check for continuity in the thermostat (5S5).	The thermostat is OK if there is continuity.	Replace the thermostat.
Faulty contactor. **(*)**	Check that the contactor (5K2) receives 230 V (A1-A2) and then check for continuity between the NO contacts (21-22).	The contactor is working properly if it receives 230 V and there is continuity between contacts 21-22.	Replace the contactor.

Equipment shortcircuit malfunction

Causes	Checking	Comments	Actions
Shortcircuit in tank.	Disconnect CN6 connector from the power board.	If the tank is shortcircuited, the system will turn on. Reconnect CN6 and release the wires from the tank terminal strip.	Check wiring, some cables might be bypassed. Change tank.
Shortcircuit in manifold.	Disconnect CN6 connector from the power board	If the distributor is shortcircuited, the system will turn on. Reconnect CN6 and release the wires from the manifold terminal strip.	Check wiring, some cables might be bypassed, broken... Change heating elements of the distributor
Hose-applicator shorcircuit (1-6 output).	Disconnect the hose-connectors one by one until the unit turns on.	Later, it will have to be found out if the shortcircuit is in the hose or in the applicator.	Change hose or applicator.

Tank

The tank does not heat

Causes	Checking	Comments	Actions
Equipment power supply malfunction.	Check voltage between phases and neutrals.Check voltage in CN4 connector (power board).	Voltages will vary depending on power supply.	Check wiring. Check electrical net. Change electric supply cable.
Ribbon cable malfunction.	Check ribbon cable (CN3).	Check the connections between the cable and the board.	Change ribbon cable.

Causes	Checking	Comments	Actions
Tank fuse blown.	Check fuse continuity (F01).	Release the fuse to check it out with the system turned off.	Change fuse.
Power board damaged.	Check CN6 connector voltage (pins 2 and 4).	Correct if voltage is around 230V and DL2 is on.	Check wiring, it might be wrong positioned. Change board.
Power supply wire to the tank damaged.	Check CN6 connector voltage (pins 2 and 4) and in the tank terminal strip.	If connector voltage is around 230V and the cercamic terminal strip does not, the wire is damaged.	Check connections to the connector and terminal strip. Change wire.
Heating element shortcircuited or blown.	Check voltage in the terminal strip.	Correct if voltage equals to 230V.	Change tank.
Faulty power contacts of the contactor. **(*)**	Check for continuity in the power contacts.	The contactor is working properly if there is continuity between the contacts.	Replace the contactor.
Faulty thermal magnetic circuit breaker. **(*)**	Check for continuity in the thermal magnetic circuit breaker (5F6).	If there is no continuity in the actuated thermal magnetic circuit breaker, the device is faulty.	Replace the thermal magnetic circuit breaker.
2 solid state relays are faulty. **(*)**	Check the voltage between output 2 of each relay and the neutral (5K5 and 5K7).	If there is 230 V, the relay is OK; if not, it is faulty. If the tank is heating, it must receive 230 V.	Replace the relays.
Blown or short-circuited resistors. **(*)**	Check the voltage on the tips of both resistors.	They are OK if there is 230 V between the tips.	Replace the tank.

The tank does not stop heating

Causes	Checking	Comments	Actions
Power board malfunction.	Check power board (pins 2 and 4 in CN6).	LED indicator (DL2) remains off.	Change power board.
Control board malfunction.	Check control board.	LED indicator (DL2) remains on.	Change control board.
Faulty power board. **(*)**	Check the voltage between points 4-3 of the solid state relays (5K5, 5K7).	If there is 230 V when it should not heat up, the board is not OK.	Replace the power board.
Faulty relays. **(*)**	Check for continuity between points 1-2 of each relay (5K5, 5K7).	If there is continuity between 1-2 and the voltage reading is not 230 V between 3-4, the relay is not OK.	Replace the relay(s).

Temperature fluctuations in the tank

Causes	Checking	Comments	Actions
Temperature sensor malfunction.	Check the sensor resistance (Pt-100 or Ni-120) with polimeter.	Check the CN1 connector (sensor board) and the two upper wires status.	Change connector. Change sensor.
Sensor wrong positioned.	Check the sensor position inside its housing.	Sensor must be introduced to the bottom.	Introduce sensor to the bottom.
Sensor board malfunction.	Last failure option.	Check first sensors, connections and wirings.	Change sensor board.

(*) Only take into account these defects in the case of the MICRON 35 unit.

Manifold

The manifold does not heat

Causes	Checking	Comments	Actions
Equipment power supply malfunction.	Check voltage between phases and neutrals.Check voltage in CN4 connector.	Voltages will vary depending on power supply.	Check wiring. Check net power supply. Change electric supply cable.
Ribbon cable malfunction.	Check ribbon cable (CN3).	Check the connections between the cable and the board.	Change ribbon cable.
Manifold fuse blown.	Check fuse continuity (F02 in CN6).	Release the fuse to check it out with the system turned off.	Change fuse.
Power board damaged.	Check voltage in the CN6 connector (pins 1 and 3).	Correct if voltage is around 230V and DL1 is on.	Check connector wiring, position. Change board.
Power supply wire to the tank damaged.	Check voltage in the CN6 connector (pins 1 and 3) and in the manifold terminal strip.	If voltage around 230V in the connector, but not in the terminal strip, the wire is damaged.	Check connections between the connector and the terminal strip. Change wire.
Fuse shortcircuited or blown.	Check voltage in the terminal strip.	Voltage should be around 230V.	Change heating elements.

The manifold does not stop heating

Causes	Checking	Comments	Actions
Power board malfunction.	Check the power board.	LED indicator (DL1) remains off.	Change power board.
Control board malfunction.	Check the control board.	LED indicator (DL1) remains on.	Change control board.

Temperature fluctuations in the manifold

Causes	Checking	Comments	Actions
Temperature sensor malfunction.	Check the sensor resistance (Pt-100 or Ni-120) with polimeter.	Check CN1 connector (sensor board) and the two bottom wires status.	Change connector. Change sensor.
Sensor wrong positioned.	Check the sensor position inside its housing.	Sensor must be introduced to the bottom.	Introduce sensor to the bottom.
Sensor board malfunction.	Last failure option.	Check first sensors, connections and wirings.	Change sensor board.

Pump

The shaft is not moving (the pressure gauge shows no pressure reading)

Causes	Checking	Comments	Actions
No air pressure.	Check the pressure in the regulator and net pressure.	If no pressure, the manometer will show zero bars.	Change pressure regulator.
All the components are not indicating that the temperature is OK.	Check all the components.	Check all menus of the control board.	Repair the faulty component.
Damaged solenoid valve (2Y3).	Check that the solenoid valve is receiving 220 VAC.	If the solenoid valve is receiving voltage but no air is passing through, the solenoid valve is faulty.	Replace the solenoid valve.
Power board malfunction.	Check if voltage in CN2 is 230V.	If voltage, card is OK.	Change power board.

The shaft is not moving (the pressure gauge shows pressure readings)

Causes	Checking	Comments	Actions
The shaft does not change the pumping direction.	Incorrectly positioned ball joint.	The ball joint must be positioned on the end of the shaft.	Place the ball joint in the correct position.
The shaft does not change the pumping direction.	Faulty differential valve or pilot valve.	Firstly replace the differential valve.	Replace the valve(s).
Air leakage.	Put the pressure at 6 bars.	Any element may leak	Change fittings, valves...
Shaft blocked.	Try to manually move the shaft.	Try to move it when shaft warm.	Clean or change pump.
Complete pneumatic unit.	Release the pneumatic unit.	The pneumatic unit does not move.	Change complete pneumatic unit.

Inefficient pumping process

Causes	Checking	Comments	Actions
No adhesive in the tank.	Check the hot-melt level in the tank.	Pump shaft moves fast in both directions.	Refill tank with adhesive.
Tank filter dirty.	Check the filter and clean the bottom of the tank.	Bottom of the tank dirt impregnated.	Change or clean filter.
Shaft malfunction	Check if adhesive returns through the FOI o-rings to the tank. (system under pressure).	Quick pumping occurs in one direction; this is the direction of the pneumatic cylinder shaft when it is pushed out of the pump body. Discontinuous flow of adhesive	Change shaft.
Intake valve malfunction.	Check if there are bubbles at the valve area due to adhesive return (system under pressure).	Quick pumping occurs in one direction; this is the direction of the pneumatic cylinder shaft when it is pushed inside the pump body. Discontinuous flow of adhesive	Change intake valve.

Causes	Checking	Comments	Actions
Depressurization valve malfunction.	Check if adhesive returns through the valve (system under pressure).	Quick pumping occurs in two direction but without having a continuous adhesive output.	Change depressurization valve.

Adhesive leaks

Causes	Checking	Comments	Actions
Pump shaft leaks	Put the system (melter + hose + applicator) under pressure.	Plain bearings worn.	Change shaft completely.
Relief valve leaks.	Put the system (melter + hose + applicator) under pressure.	The manifold hole is full of adhesive.	Change relief valve.
Manifold plug leaks.	Put the system (melter + hose + applicator) under pressure.	Dripping below the manifold.	Change plug o-ring and retighten it. Thread might be damaged.
Leaks between pump and tank.	Put the system (melter + hose + applicator) under pressure.	Dripping at the pump.	Change o-rings in both parts.
Hose fitting leaks.	Put the system (melter + hose + applicator) under pressure.	Dripping by external part of the manifold.	Change fitting o-ring and retighten it. Thread might be damaged.

Hose

Hose does not heat

Causes	Checking	Comments	Actions
Hose damaged.	Replace the hose by another one that works.	Change hose channel.	Change hose.
Pins and wiring damaged.	Check voltage between board and hose-output connector (with the hose plugged).	CN* connector (black wire-neutral and blue wire-hose M*) [1]	Change connectors.
Ribbon cable wrong placed.	Observe ribbon cable (CN3) connection.	Ribbon cable correct if red LED light on (DL15).	Put ribbon cable correctly.
Power board fuse damaged.	Verify fuse continuity. [2]	Check continuity with the unit turned off.	Change fuse.
Power board damaged.	Check voltage at the board output (with the hose plugged).	CN* board connector (black wire-neutral and blue wire-hose M*). Fuse shows continuity. DL* LED light remains on. [3]	Change power board.

Hose does not stop heating

Causes	Checking	Comments	Actions
Power board damaged.	Check power board.	DL* LED green indicator is continuously off. [4]	Change power board.
Control board damaged.	--	DL* LED green indicator is continuously on. [4]	Change control board.

Temperature fluctuations in hose

Causes	Checking	Comments	Actions
Hose temperature sensor malfunction.	Replace the hose by another one that works.	Change hose channel.	Change hose.
Sensor wiring.	Check sensor board and hose connector.	CN* sensor board connector (black and green wire). [5]	Change connector.
Sensor board malfunction.	Last failure option.	Check first sensors, connections and wirings.	Change the sensor board.

Note	Hose 1	Hose 2	Hose 3	Hose 4	Hose 5	Hose 6
(1)	CN9 / M1	CN9 / M2	CN10 / M3	CN10 / M4	CN11 / M5	CN11 / M6
(2)	F04	F05	F06	F07	F08	F09
(3)	CN9 / M1 / DL3	CN9 / M2 / DL5	CN10 / M3 / DL7	CN10 / M4 / DL9	CN11/ M5 /DL11	CN11/ M6 /DL13
(4)	DL3	DL5	DL7	DL9	DL11	DL13
(5)	CN2	CN3	CN4	CN5	CN6	CN7

Applicator

Applicator does not heat

Causes	Checking	Comments	Actions
Applicator damaged.	Replace the applicator by another one that works.	Change applicator channel.	Change applicator.
Hose damaged.	Replace the hose by another one that works.	Change hose channel.	Change hose.
Pins and wiring damaged.	Check voltage between board and applicator-output connector (with the hose plugged).	CN* connector (black wire-neutral and red wire-applicator P*). [1]	Change connectors.
Ribbon cable wrong placed.	Observe ribbon cable (CN3) connection.	Ribbon cable correct if red LED light on (DL15).	Put ribbon cable correctly.
Power board fuse damaged.	Verify fuse continuity. [2]	Check continuity with the unit turned off.	Change fuse.
Power board damaged.	Check voltage at the board output (with the hose plugged).	CN* board connector (black wire-neutral and red wire-applicator P*). Fuse shows continuity. DL* LED light remains on. [3]	Change power board.

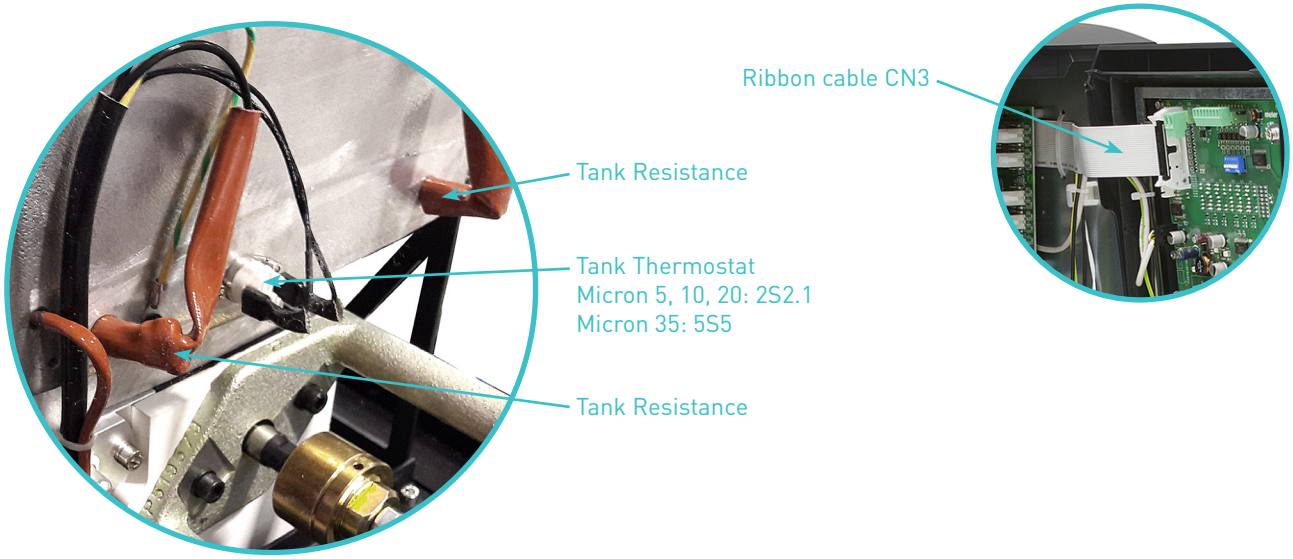
Applicator does not stop heating

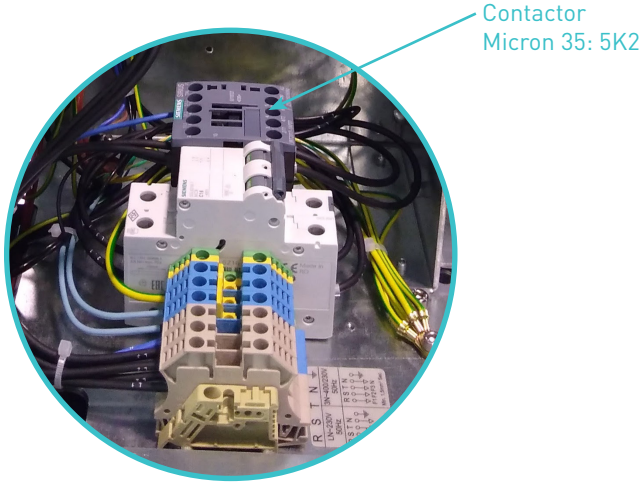
Causes	Checking	Comments	Actions
Power board damaged.	Check power board.	DL* LED green indicator is continuously off. [4]	Change power board.
Control board damaged.	--	DL* LED green indicator is continuously on. [4]	Change control board.

Temperature fluctuations in applicator

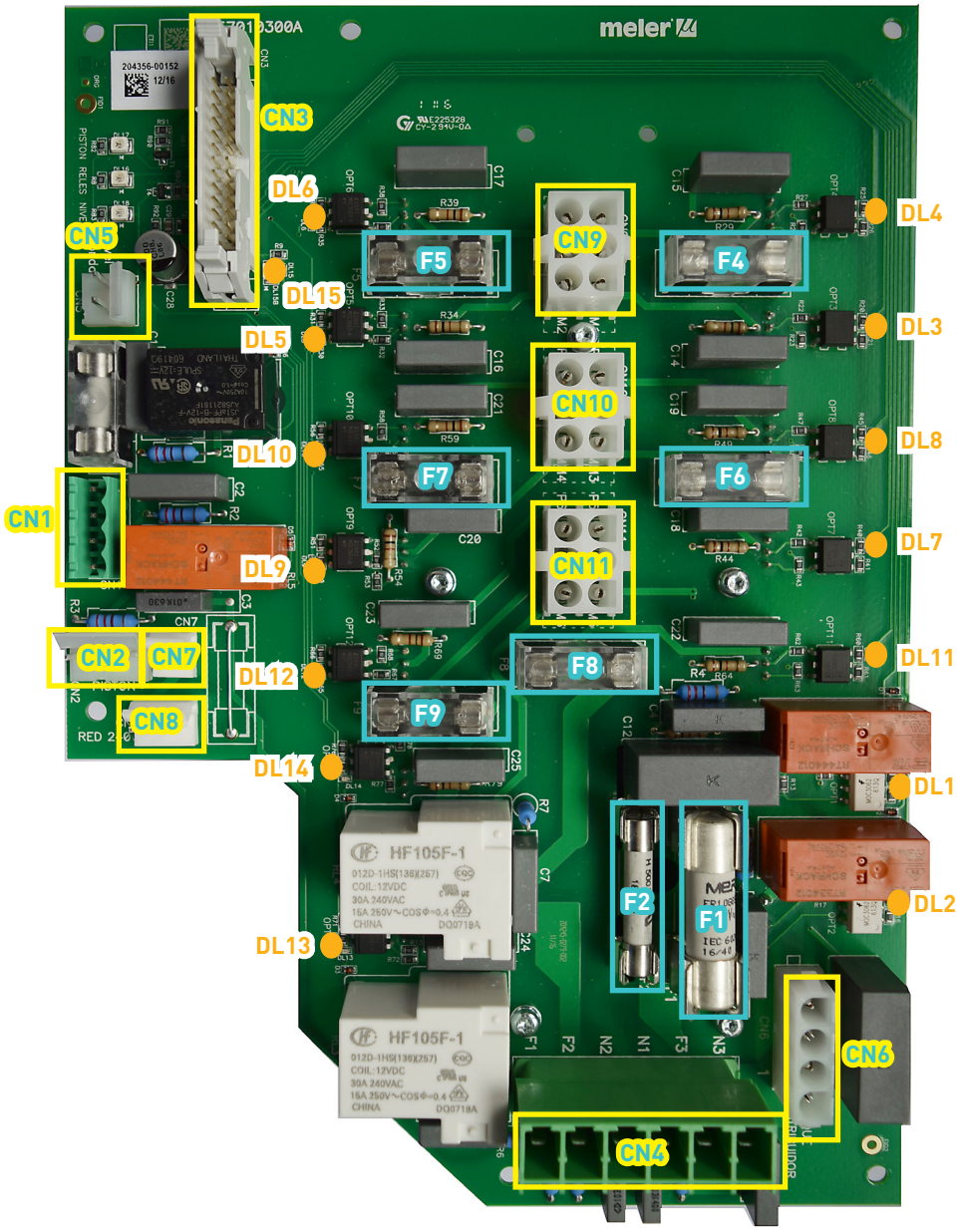
Causes	Checking	Comments	Actions
Applicator temperature sensor malfunction.	Replace the applicator by another one that works.	Change applicator channel.	Change applicator.
Sensor wiring.	Check sensor board and applicator connector.	CN* sensor board connector (black and blue wire). [5]	Change connector.
Sensor board malfunction.	Last failure option.	Check first sensors, connections and wirings.	Change the sensor board.

Note	Applicator 1	Applicator 2	Applicator 3	Applicator 4	Applicator 5	Applicator 6
(1)	CN9 / P1	CN9 / P2	CN10 / P3	CN10 / P4	CN11 / P5	CN11 / P6
(2)	F04	F05	F06	F07	F08	F09
(3)	CN9 / P1 / DL4	CN9 / P2 / DL6	CN10 / P3 / DL8	CN10/ P4 /DL10	CN11/ P5 /DL12	CN11/ P6 /DL14
(4)	DL4	DL6	DL7	DL10	DL12	DL14
(5)	CN2	CN3	CN4	CN5	CN6	CN7

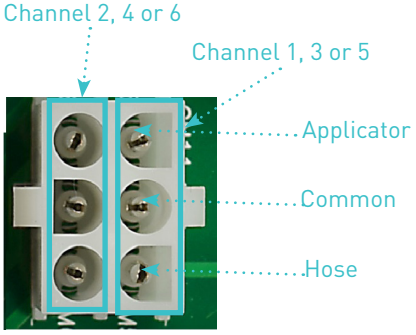




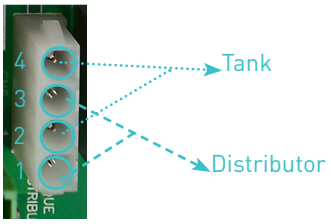
LAY OUT POWER BOARD



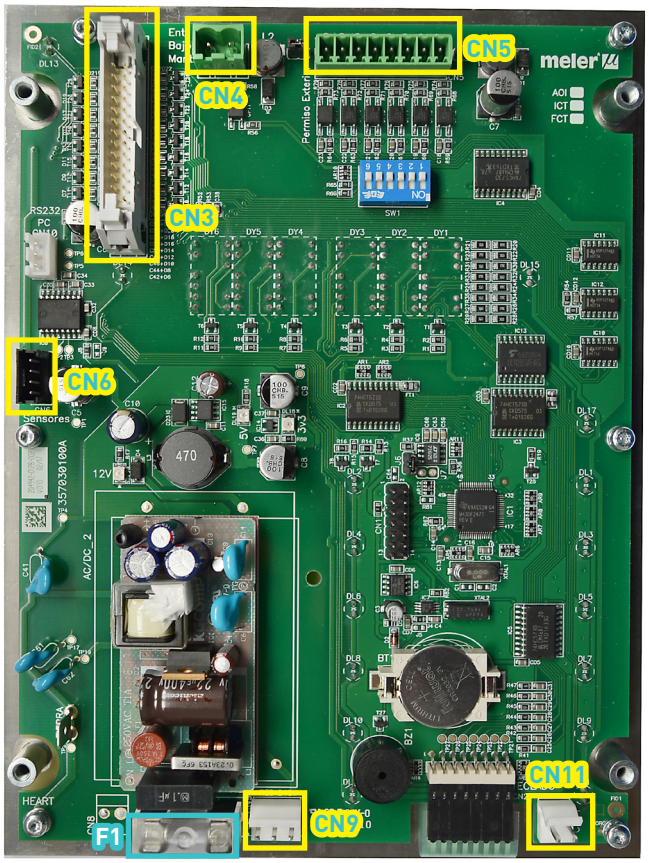
CN9,CN10 and CN11



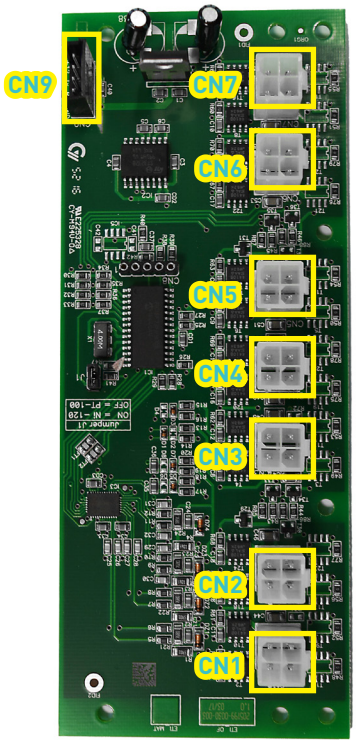
CN6

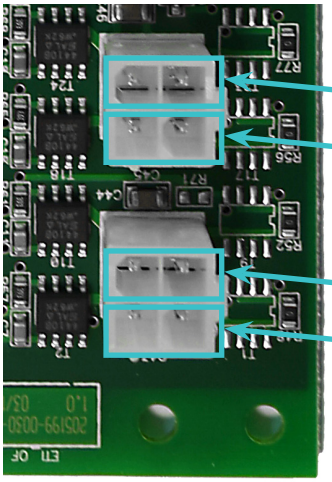


LAY OUT CONTROL BOARD



LAY OUT SENSOR BOARD





CN2, CN3, CN4, CN5, CN6,CN7
Applicator
Hose

CN1
Distributor
Tank

7. TECHNICAL CHARACTERISTICS

Generals

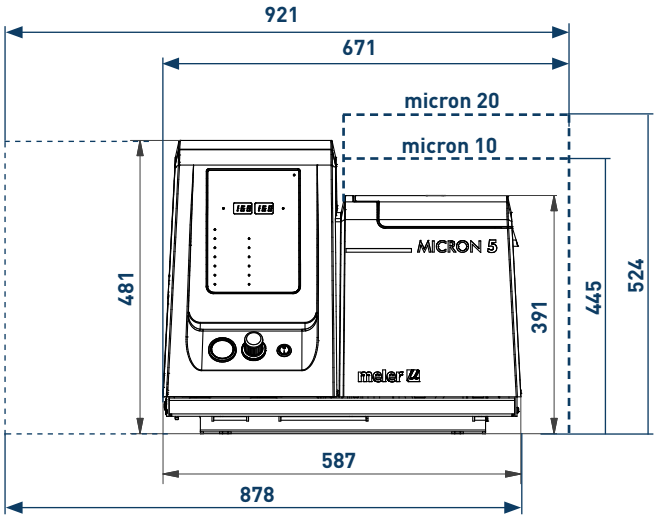
	MICRON 5	MICRON 10
Tank capacity	5,15 liters	9,7 liters
Pumping rate	29,3 kg/h 7cc/stroke pump (*)	29,3 kg/h 7cc/stroke pump (*)
	66,0 kg/h 19cc/stroke pump (*)	66,0 kg/h 19cc/stroke pump (*)
Melting rate	9,0 kg/h (*)	13,5 kg/h (*)
Number of hydraulic outputs	6 (thread 9/16)	6 (thread 9/16)
Number of electrical outputs	2, 4 or 6	2, 4 or 6
Temperature range	40 to 200°C (100 to 392°F)	40 to 200°C (100 to 392°F)
(optional)	230°C (450°F)	230°C (450°F)
Temperature control	RTD ±0.5°C (±1°F)	RTD ±0.5°C (±1°F)
	Pt-100 or Ni-120	Pt-100 or Ni-120
Max. working pressure (at 6 bar)	81,6 bar (1183 psi)	81,6 bar (1183 psi)
Max. installation power (at 230V)	4.700W (2 outputs)	5.700W (2 outputs)
	7.100W (4 outputs)	8.100W (4 outputs)
	9.500W (6 outputs)	10.500W (6 outputs)
External requirements	Temperature ok output	Temperature ok output
	Low level output (optional)	Low level output (optional)
	External stand-by activation	External stand-by activation
	Outputs disabled external control	Outputs disabled external control
Electrical requirements	LN ~ 230V 50/60Hz + PE	LN ~ 230V 50/60Hz + PE
	3N ~ 400V 50/60Hz + PE	3N ~ 400V 50/60Hz + PE
	3 ~ 230V 50/60Hz + PE	3 ~ 230V 50/60Hz + PE
(optional)	3 ~ 400V 50Hz + PE with transformer base	3 ~ 400V 50Hz + PE with transformer base
Workplace temperature	0 to 40°C	0 to 40°C
Dimensions	587 x 341 x 481	671 x 341 x 481
	587 x 341 x 628 (lid open)	671 x 341 x 760 (lid open)
Weight	37,5 kg (empty)	45,7 kg (empty)

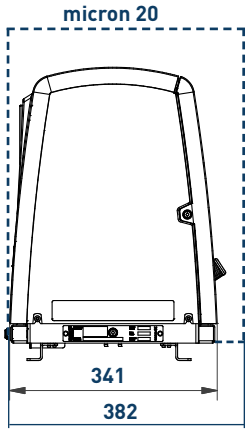
(*) Under standard conditions

		MICRON 20	MICRON 35
Tank capacity		19,7 liters	37,4 liters
Pumping rate		29,3 kg/h 7cc/stroke pump (*)	29,3 kg/h 7cc/stroke pump (*)
		66,0 kg/h 19cc/stroke pump (*)	66,0 kg/h 19cc/stroke pump (*)
Melting rate		19 kg/h (*)	30 kg/h (*)
Number of hydraulic outputs		6 (thread 9/16)	6 (thread 9/16)
Number of electrical outputs		2, 4 or 6	2, 4 or 6
Temperature range		40 to 200°C (100 to 392°F)	40 to 200°C (100 to 392°F)
	(optional)	230°C (450°F)	230°C (450°F)
Temperature control		RTD ±0.5°C (±1°F)	RTD ±0.5°C (±1°F)
		Pt-100 or Ni-120	Pt-100 or Ni-120
Max. working pressure (at 6 bar)		81,6 bar (1183 psi)	81,6 bar (1183 psi)
Max. installation power (at 230V)		6.200W (2 output)	7.700W (2 output)
		8.600W (4 output)	12.100W (4 output)
		11.000W (6 output)	12.500W (6 output)
External requirements		Temperature ok output	Temperature ok output
		Low level output (optional)	Low level output (optional)
		External stand-by activation	External stand-by activation
		Outputs disabled external control	Outputs disabled disabled control
Electrical requirements		LN ~ 230V 50/60Hz + PE	LN ~ 230V 50/60Hz + PE
		3N ~ 400V 50/60Hz + PE	3N ~ 400V 50/60Hz + PE
		3 ~ 230V 50/60Hz + PE	3 ~ 230V 50/60Hz + PE
	(optional)	3 ~ 400V 50Hz + PE with transformer base	3 ~ 400V 50Hz + PE with transformer base
Workplace temperature		0 to 40°C	0 to 40°C
Dimensions		671 x 382 x 524	738x 435 x 673
		671 x 382 x 875 (lid open)	738x 435 x 1067 (lid open)
Weight		60,2 kg (empty)	90,1 kg (empty)

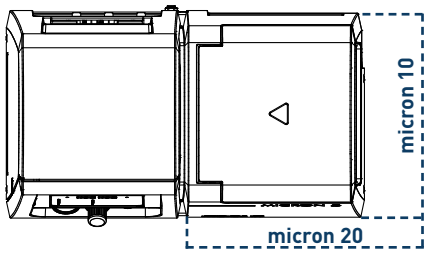
(*) Under standard conditions

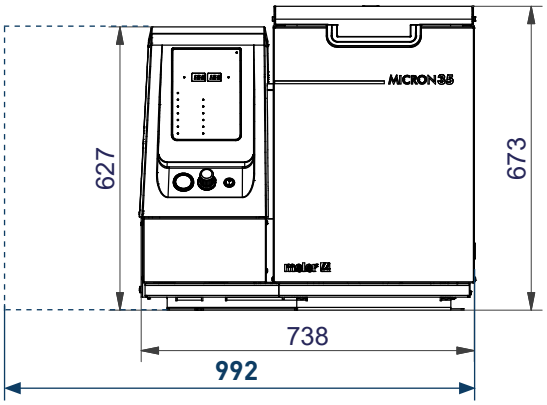
Dimensions

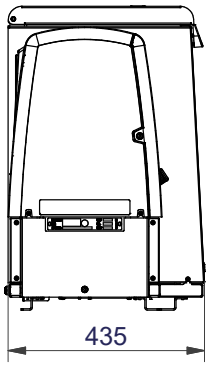




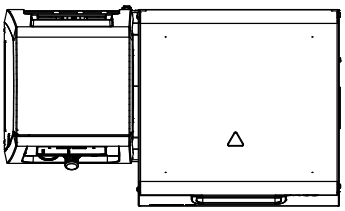
micron 5, 10, 20



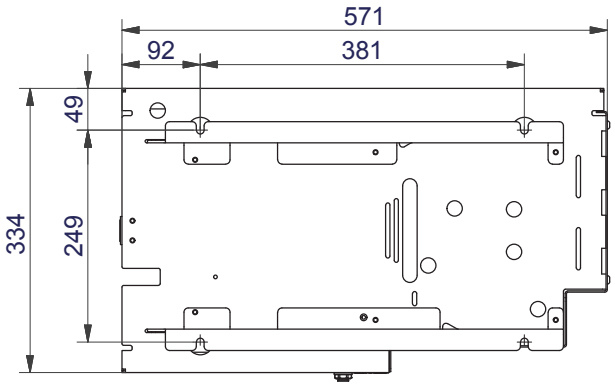




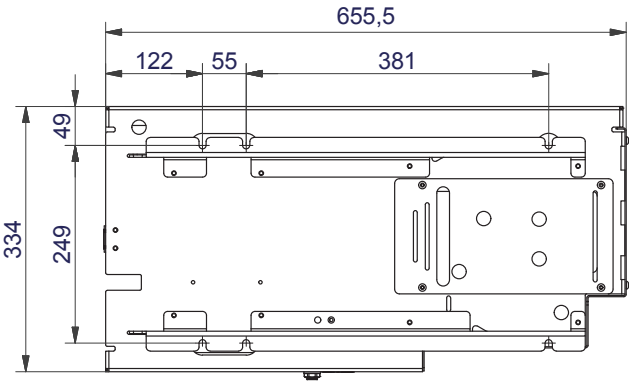
micron 35



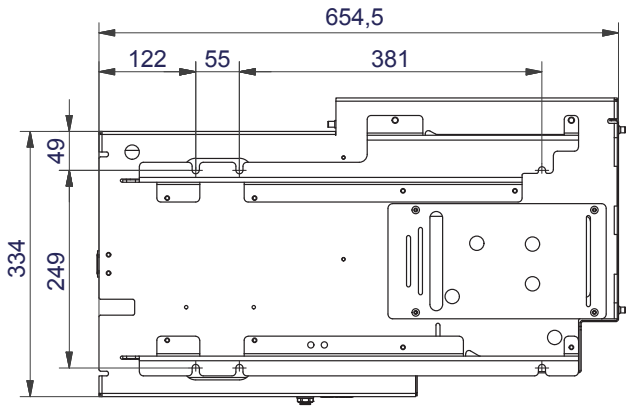
MOUNTING THE EQUIPMENT micron 5



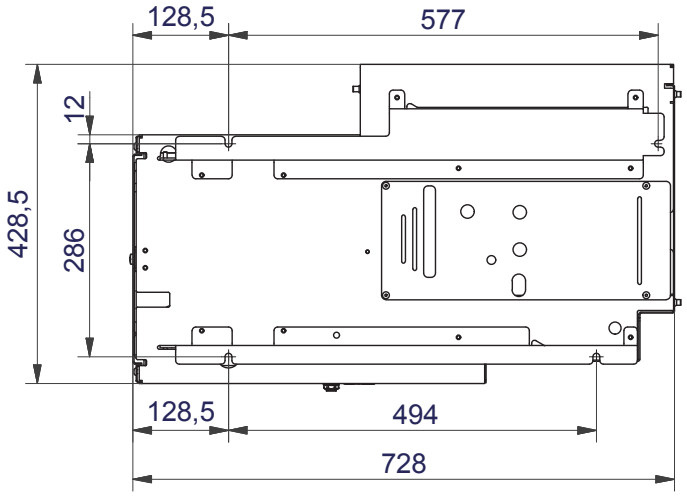
MOUNTING THE EQUIPMENT micron 10



MOUNTING THE EQUIPMENT micron 20



MOUNTING THE EQUIPMENT micron 35



Note: the indicated holes are for M8 screws.

Accessories

Low level detection system

System for warning and/or monitoring the level of melted adhesive, with a float to detect the level.

Wheel system

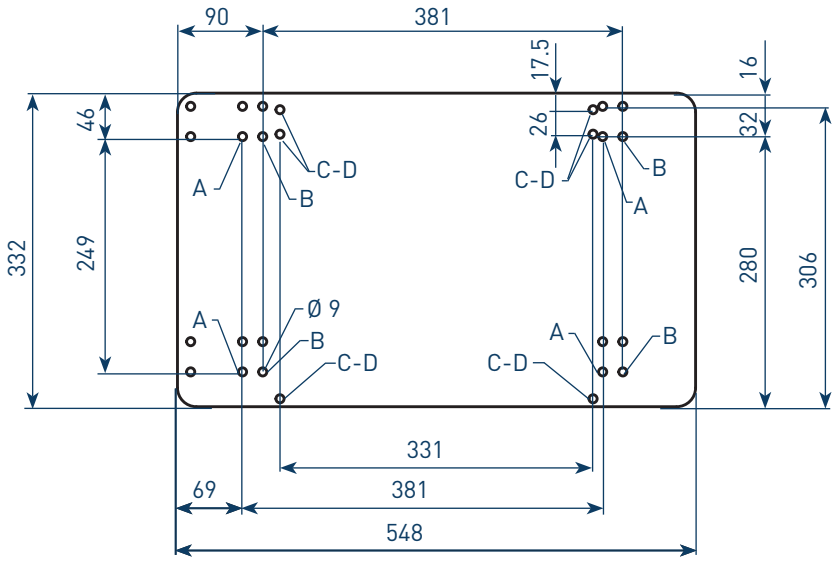
For 25 and 35l Micron machines there is the option to add 4 wheels to the base of the machine to make it easier to move.

Adaptation plate for previous models

If you want to replace a 'micron' 4, 8, or 16 range by new range 'micron' 5, 10, or 20, you can directly change between them if the standard holes was used to fix the equipment. In this case, the equipment will be outdated a few centimeters relative to the position of the previous equipment and mooring table.

To correct this small gap there is an optional adaptation plate to attach the new equipments of the range in the above position. This plate is the same for all equipments, use the holes indicated depending on the equipment (see dimensions below).

For the equiment 'micron' 35 the adaptation plate does not exist.



A: micron 5 equipment set up and replacament of other equipment.
B: micron10, micron 20 equipment set up and replacament of other equipment.
C: Replacement of ML-240-ST series equipment.
D: Replacement of ML-240-ST series equipment.

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8. ELECTRICAL DRAWINGS

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9. PNEUMATIC DIAGRAM

Components list

7 cm^3/stroke pump

- 1 Inlet filter (filtering disk)
- 2 Solenoid valve 3/2 manual override (230V 50 Hz 1.5VA)
- 3 Pressure regulator 1-8 bar
- 4 Pressure gauge 0-10 bar
- 5 Pneumatic valve 5/2
- 6 Differential valve
- 7 Pneumatic cylinder double acting double chamber
  Ø50x50 (7cm^3/stroke pump)
- 8 Exhaust port filter
- 9 Pressure discharge valve

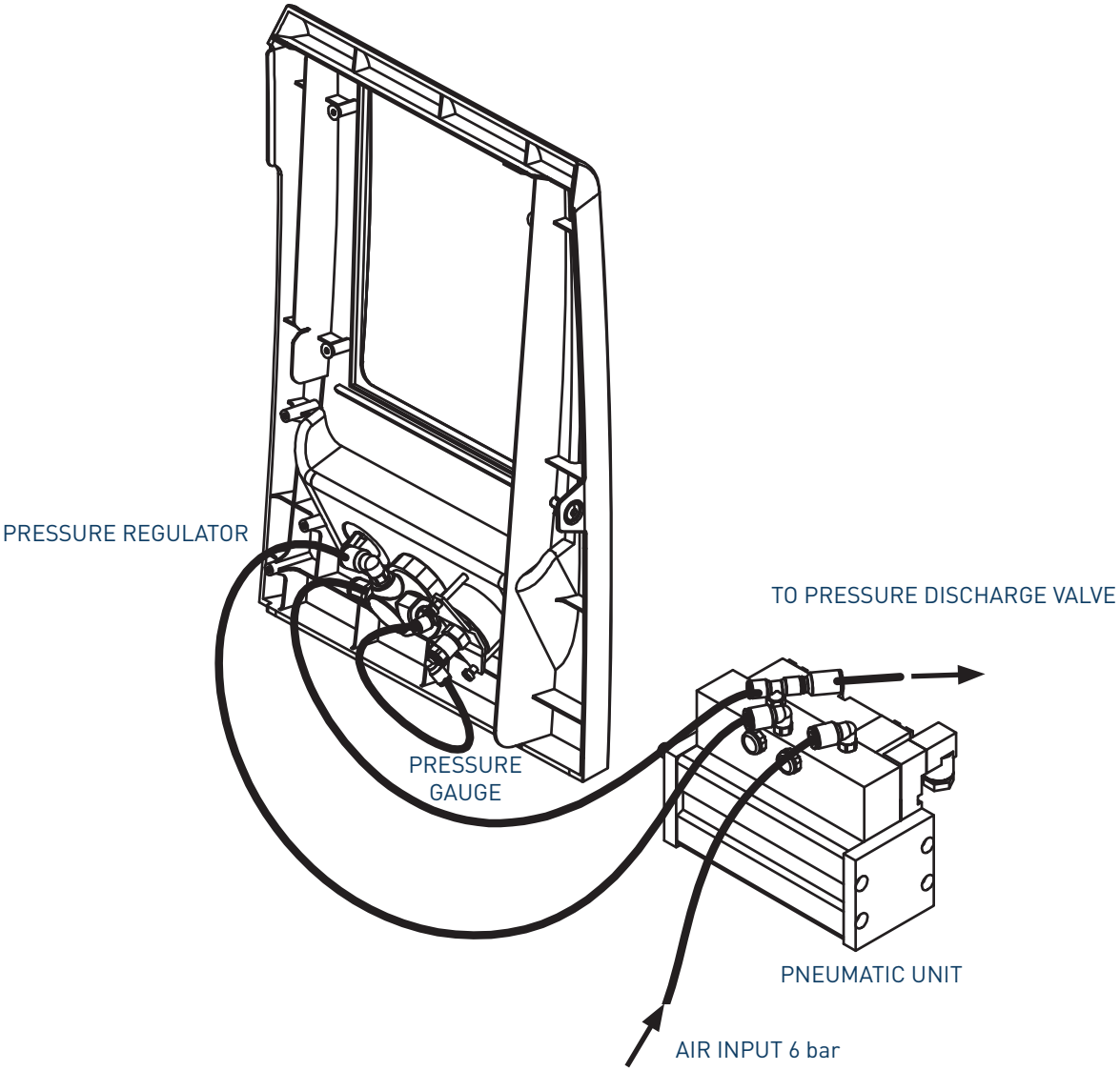
19 cm^3/stroke pump

- 1 Inlet filter (filtering disk)
- 2 Pneumatic valve 3/2 (80x50 cylinder)
- 3 Pressure regulator 1-8 bar
- 4 Pressure gauge 0-10 bar
- 5 Pneumatic valve 5/2
- 6 Differential valve
- 7 Pneumatic cylinder double acting double chamber
  Ø80x50 (19cm^3/stroke pump)
- 8 Exhaust port filter
- 9 Pressure discharge valve

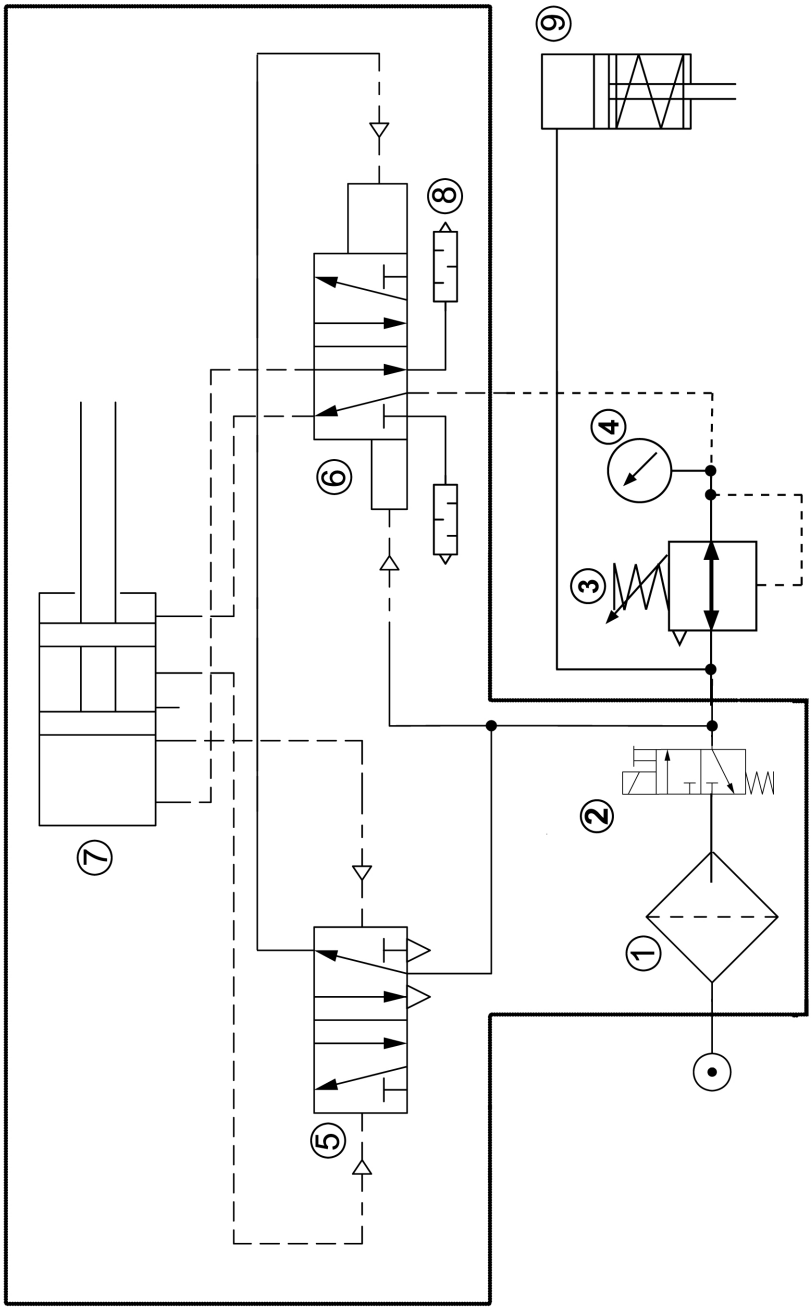
With electro-pneumatic pressure regulator VP

- 10 Air filter 5µ
- 11 Pressure regulator (proportional valve)

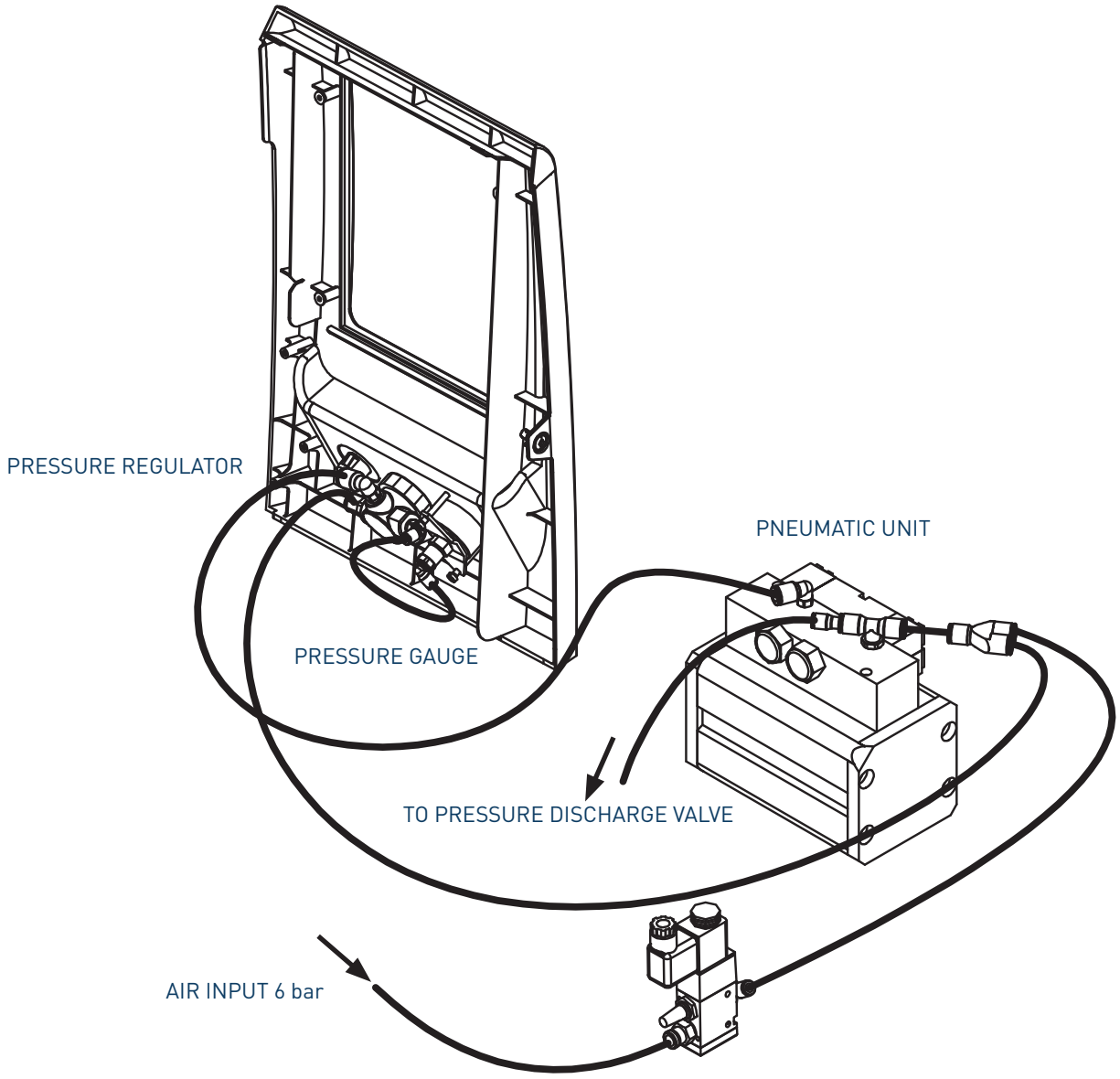
Pneumatic connection for 7 cm³/stroke PUMP



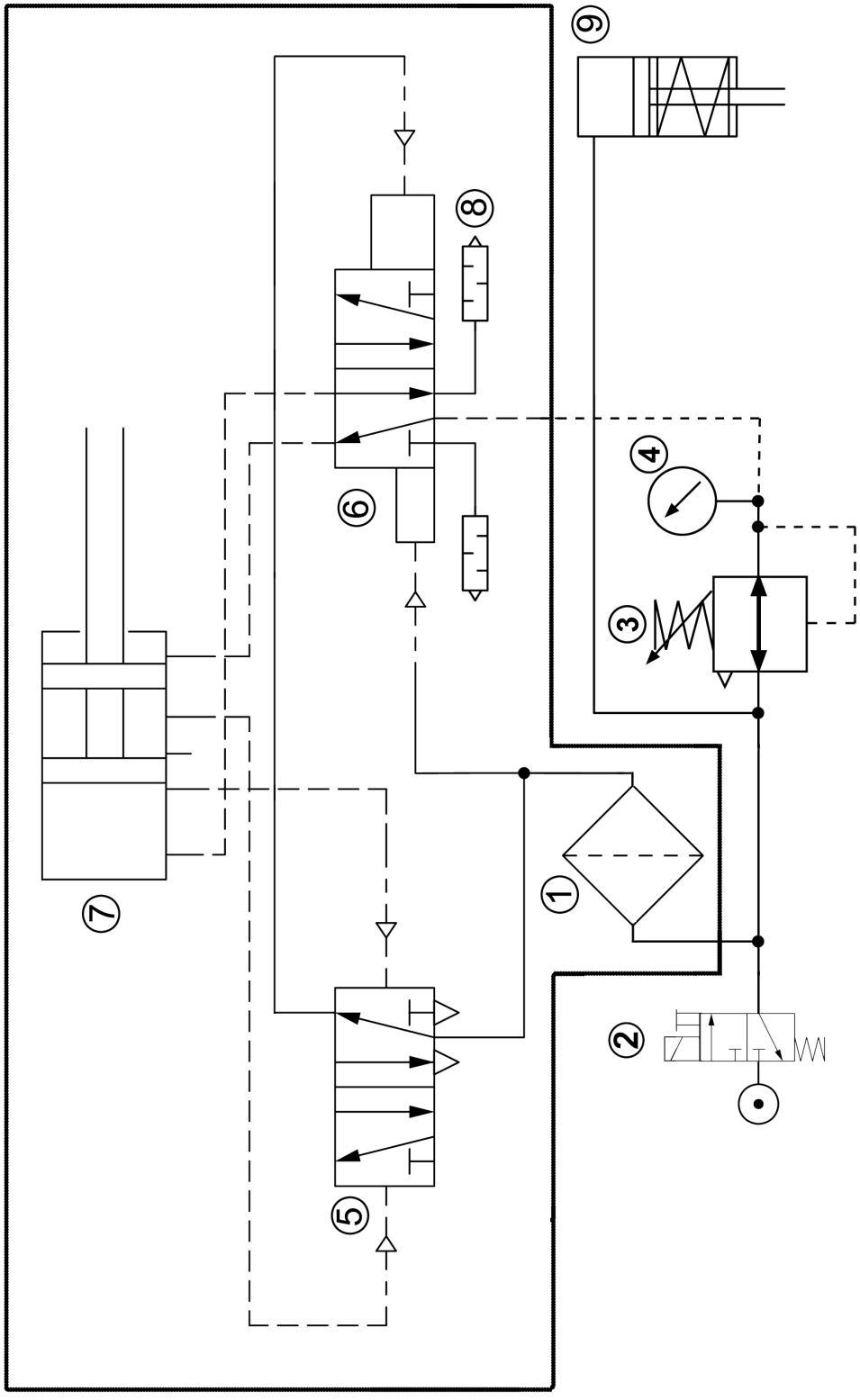
Pneumatic diagram for 7 cm^3/stroke PUMP



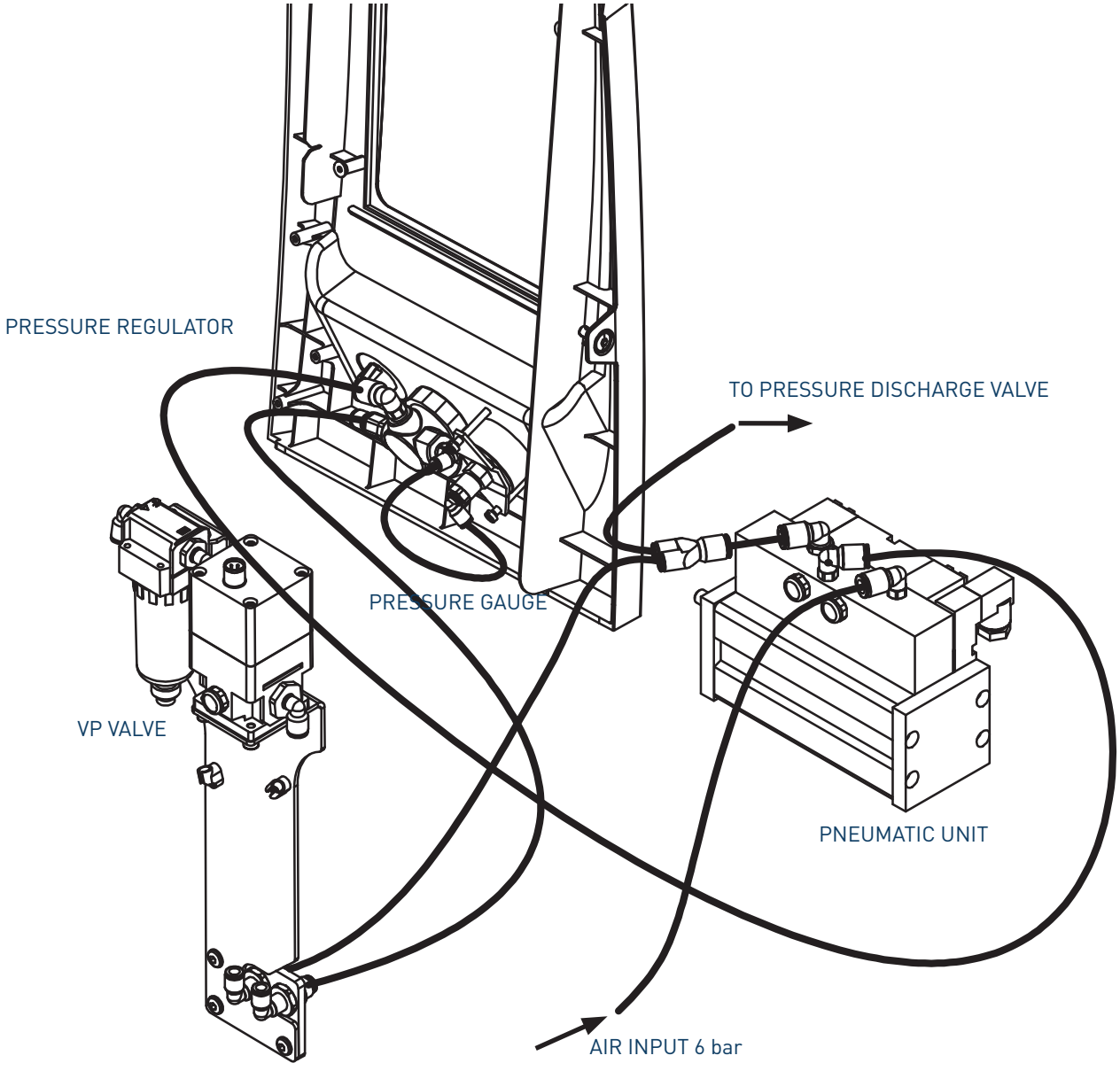
Pneumatic connection for 19 cm^3/stroke PUMP



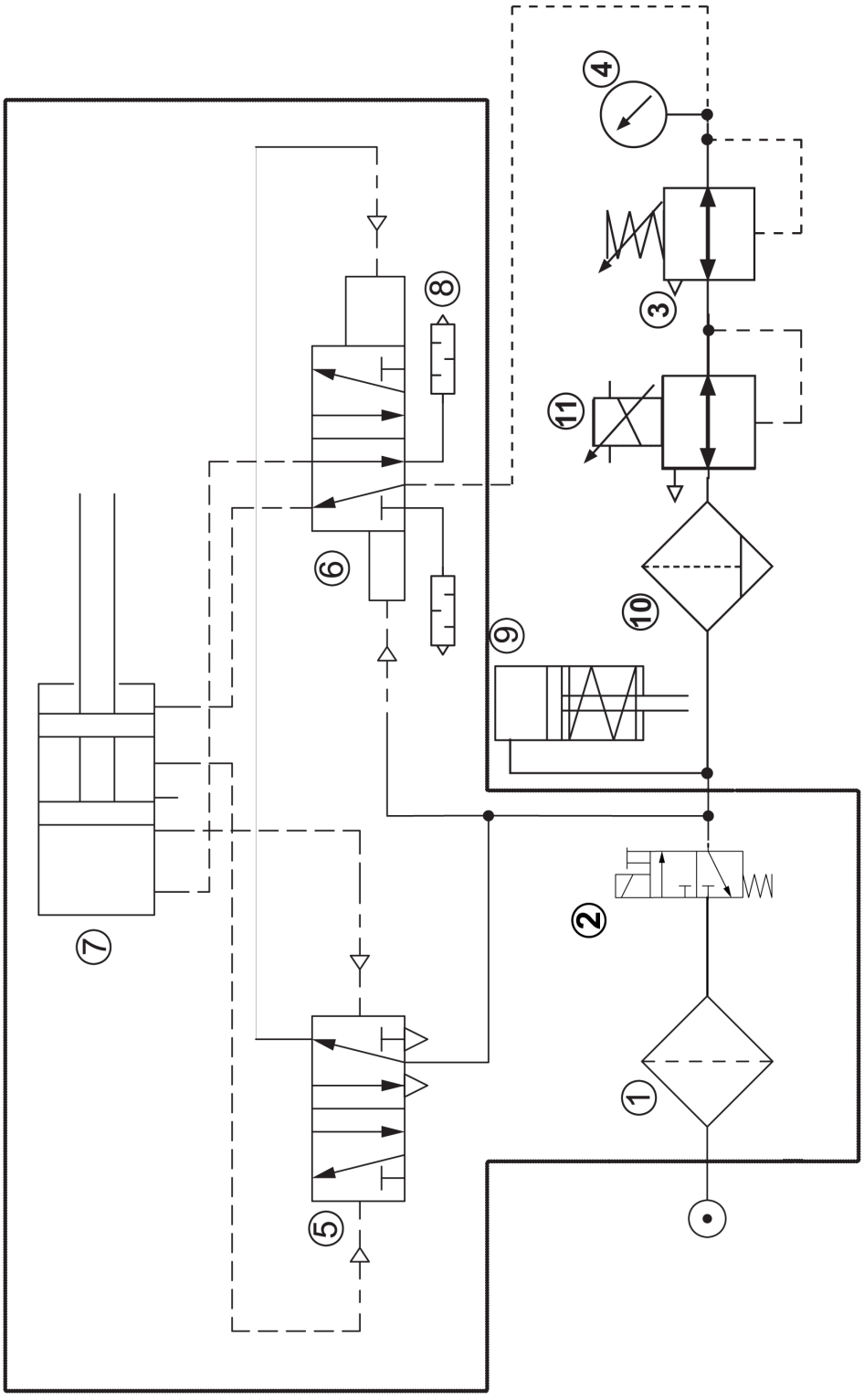
Pneumatic diagram for 19 cm^3/stroke PUMP



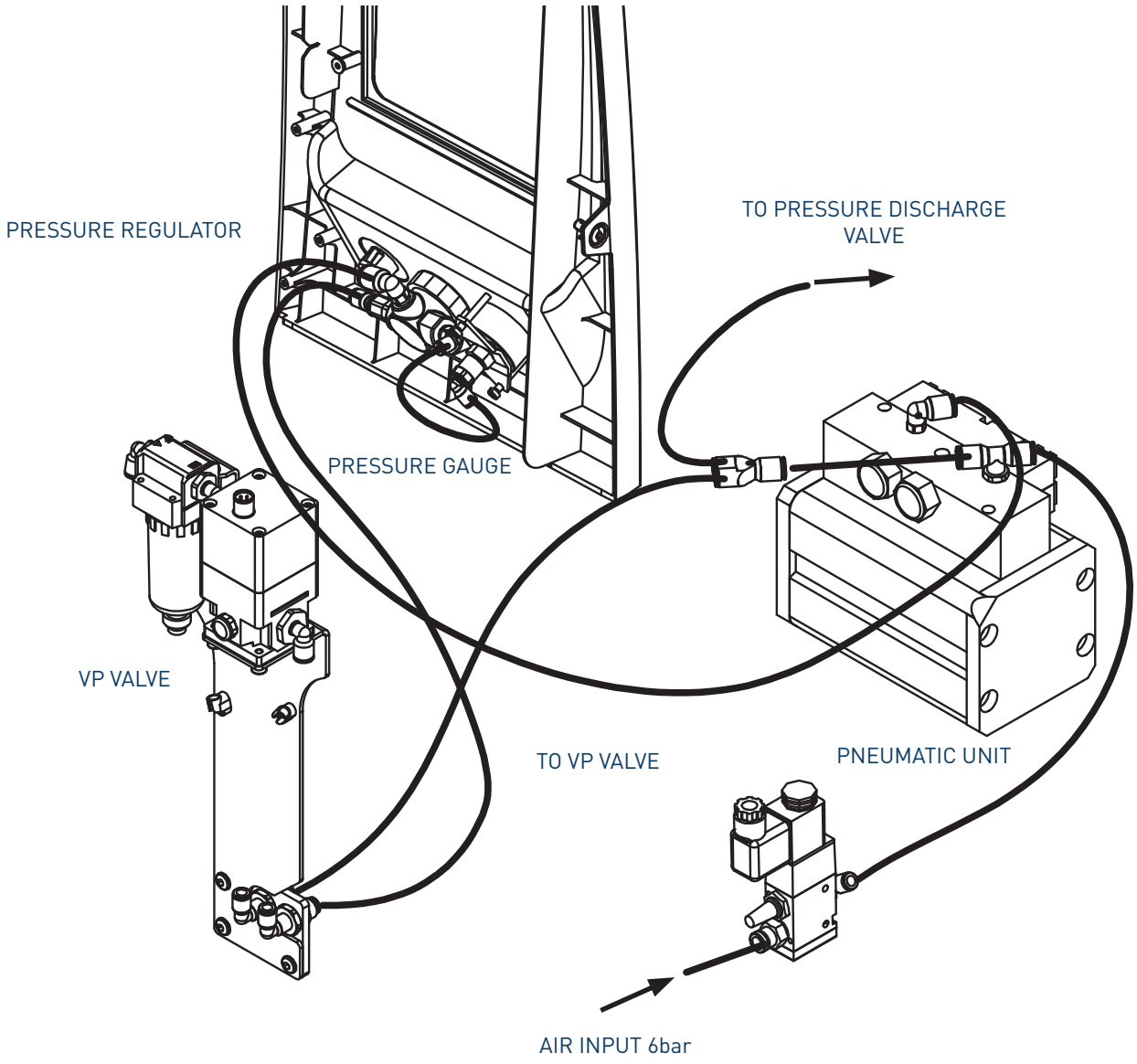
Electro-pneumatic connection with pressure regulator VP. 7 cm³/stroke PUMP



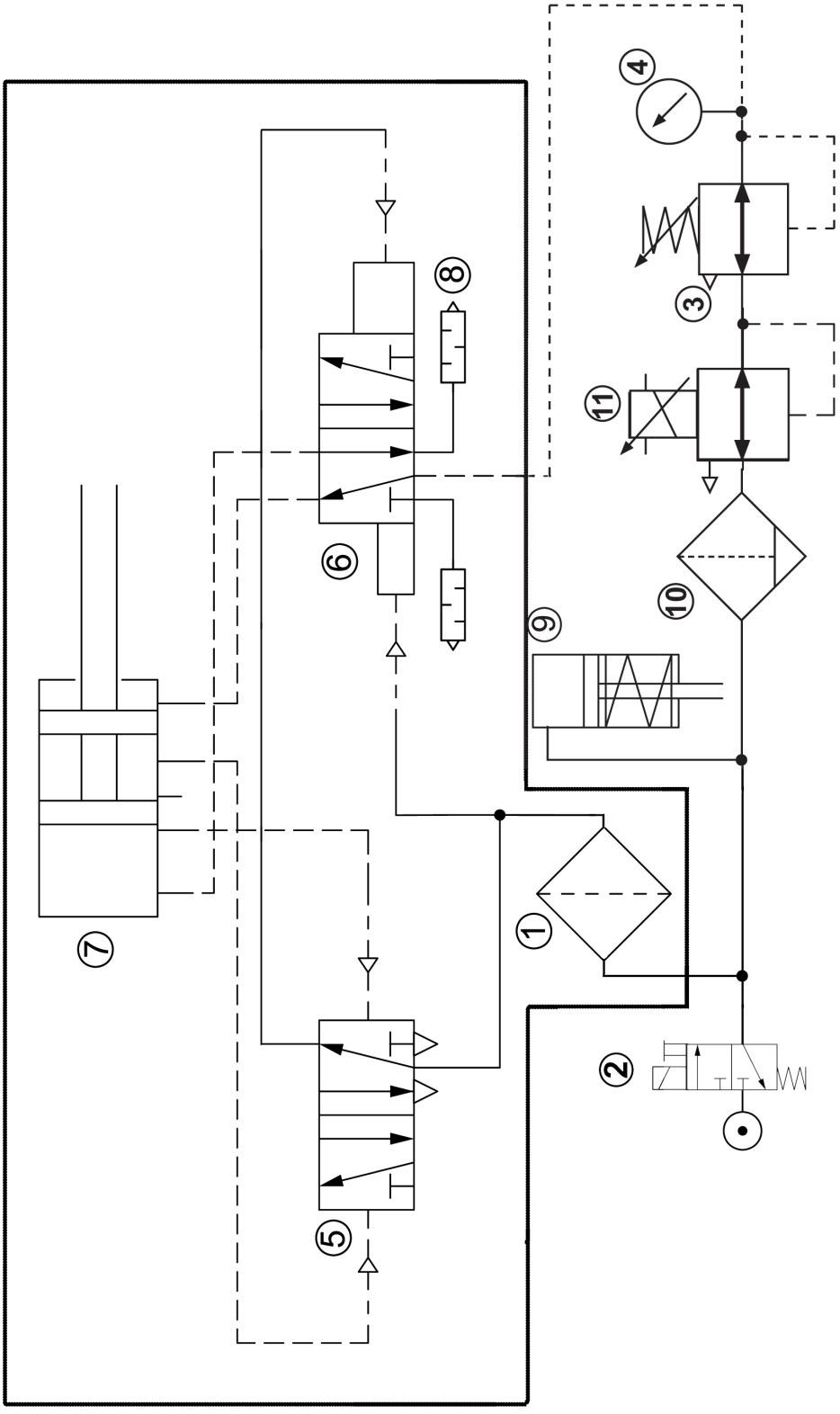
Electro-pneumatic diagram with pressure regulator VP. 7 cm³/stroke PUMP



Electro-pneumatic connection with pressure regulator VP. 19 cm³/stroke PUMP



Electro-pneumatic diagram with pressure regulator VP. 19 cm³/stroke PUMP



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10. SPARE PARTS LIST

The list of the most common spare parts for Micron series machines appears in this section, providing a quick and reliable guide to choosing them.

The spare parts are grouped together naturally, in the same way as they are located in the melters.

As a visual aid, drawings of the parts are included and are numbered to help identify them in the list. For further information about the content of the spare parts, click on the number of the spare part.

The lists provide the reference and name of the spare part, indicating, when necessary, whether the reference corresponds to the 5-, 10-, 20- or 35-litre model.

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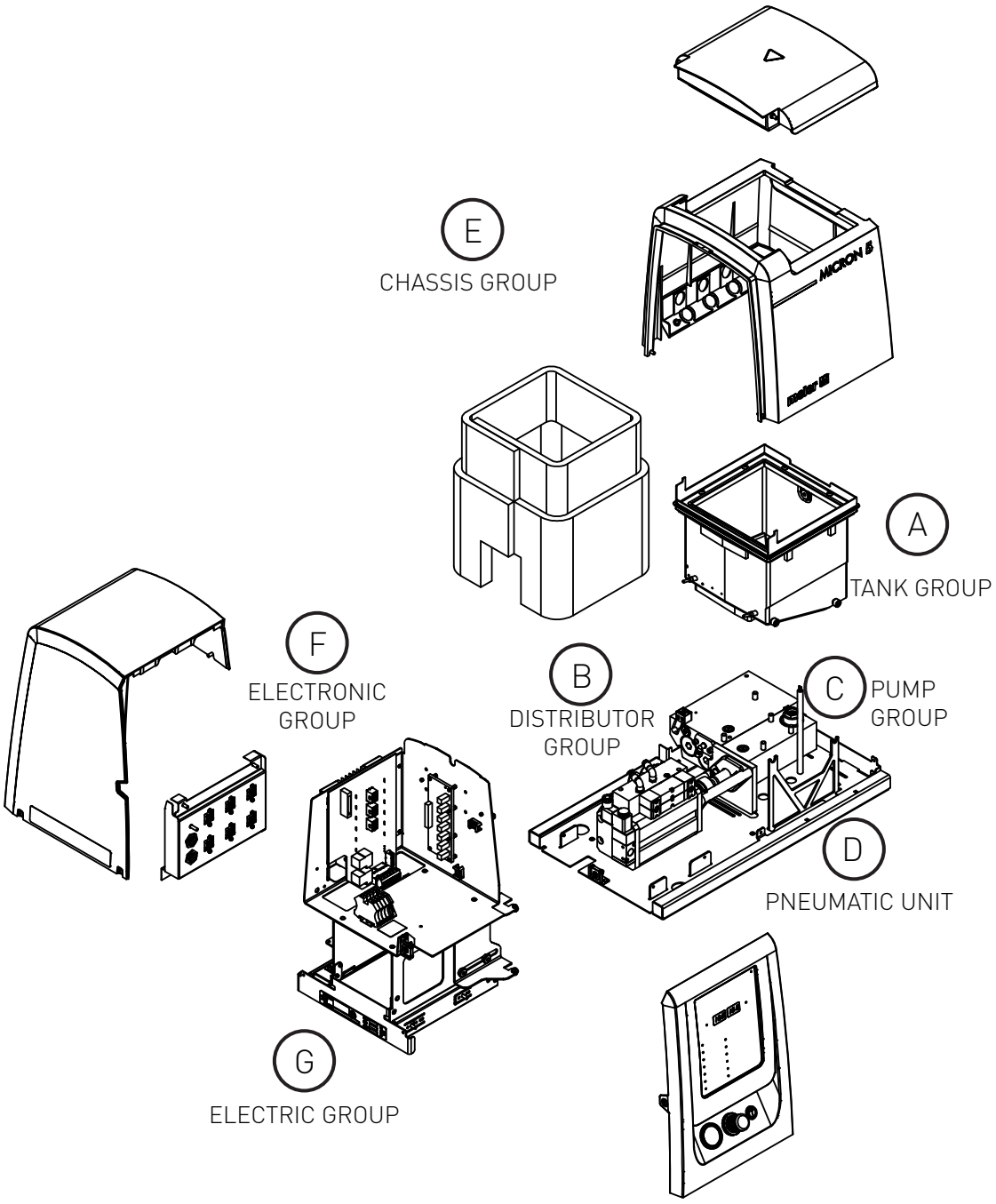
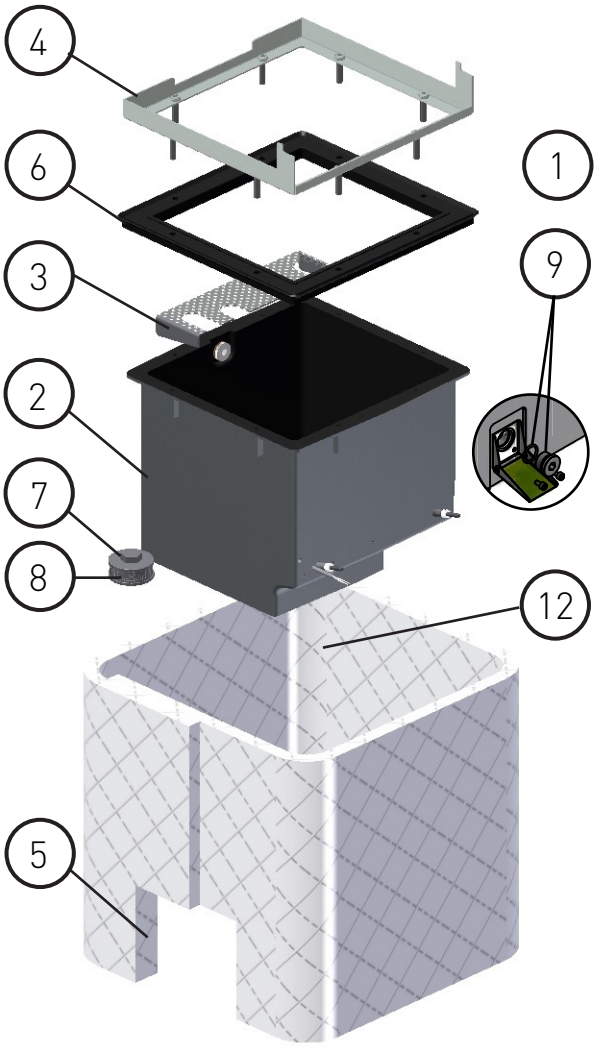
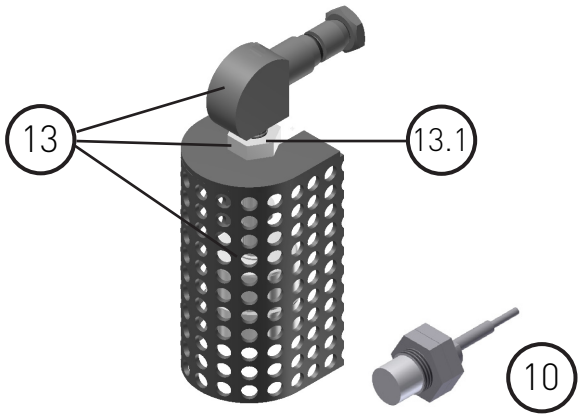
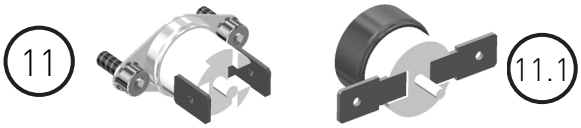

E
CHASSIS GROUP
A
TANK GROUP
F
ELECTRONIC GROUP
B
DISTRIBUTOR GROUP
C
PUMP GROUP
D
PNEUMATIC UNIT
G
ELECTRIC GROUP







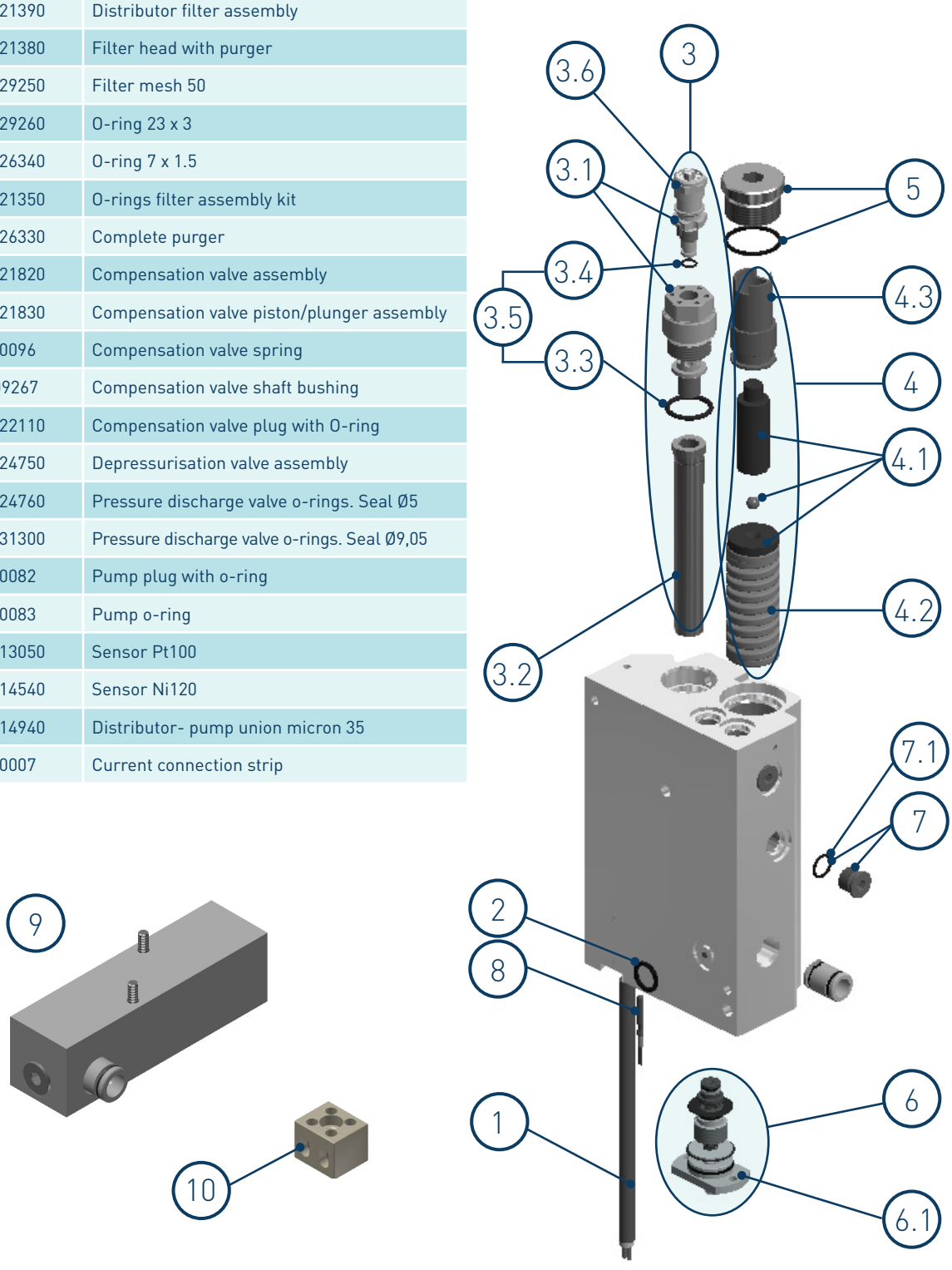
A. TANK ASSEMBLY

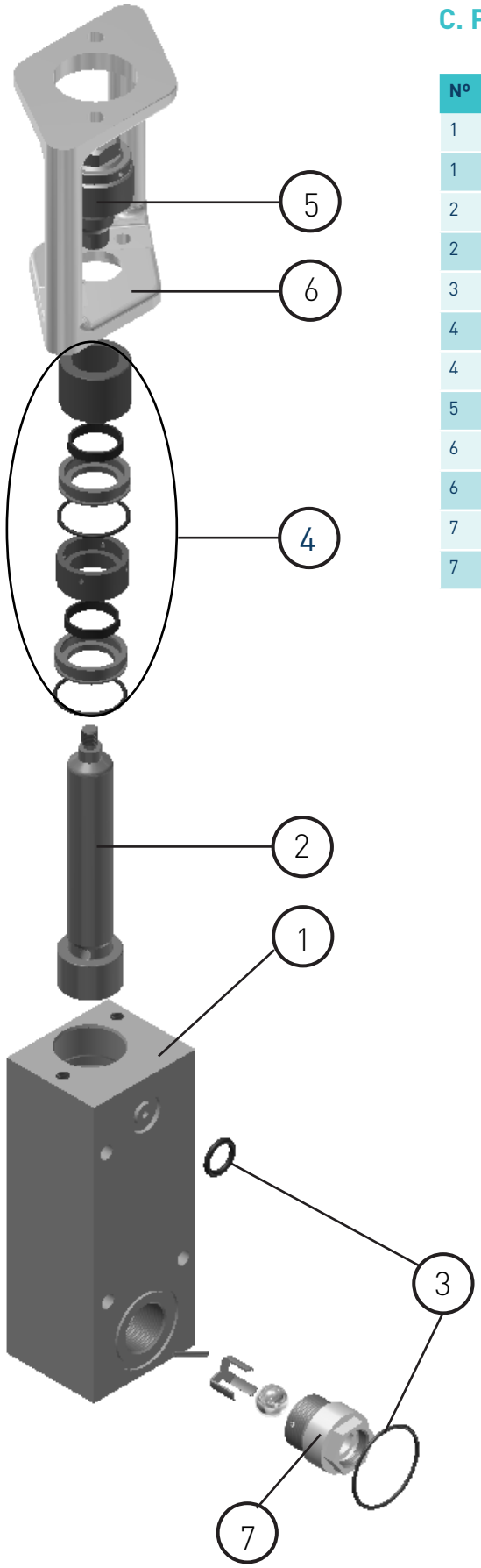
Nº	Ref.	Description
1	150113470	Complete tank assembly micron 5 230V
1	150113480	Complete tank assembly micron 10 230V
1	150113490	Complete tank assembly micron 20 230V
1	150114890	Complete tank assembly micron 35 230V
2	150113500	PTFE coated tank micron 5 230V
2	150113510	PTFE coated tank micron 10 230V
2	150113520	PTFE coated tank micron 20 230V
2	150114900	PTFE coated tank micron 35 230V
3	150113370	Tank grid micron 5-10L
3	150114880	Tank grid micron 20L
3	150028830	Tank grid micron 35L
4	150113380	Inlet tank micron 5
4	150113390	Inlet tank micron 10
4	150113400	Inlet tank micron 20
4	150121360	Inlet tank micron 35
5	150113410	Tank insulation mantle micron 5
5	150113420	Tank insulation mantle micron 10
5	150113430	Tank insulation mantle micron 20
5	150114920	Tank insulation mantle micron 35
6	150113440	Insulation mantle inlet tank micron 5
6	150113450	Insulation mantle inlet tank micron 10
6	150113460	Insulation mantle inlet tank micron 20
6	150121370	Insulation mantle inlet tank micron 35
7	10100070	Flat tank filter
7	10100085	Flat tank filter, extra-thick
8	10100071	Tank flat filter mesh
8	10100086	Flat tank filter screen, extra-thick
9	150113270	Drain plug with o-ring
10	150110140	Capacitive sensor **(*)**
11	150114500	Safety thermostat, up to 200°C
11.1	150114510	Safety thermostat, up to 230°C **(*)**
12	150113050	Sensor Pt100
12	150114540	Sensor Ni120
13	150114490	Level detector assembly micron **(*)**
13.1	150021920	Low level detector **(*)**

(*) optional

B. DISTRIBUTOR UNIT

Nº	Ref.	Description
1	150026350	Heating element 300 W
2	10120032	Tank-distributor seating o-ring
3	150121390	Distributor filter assembly
3.1	150121380	Filter head with purger
3.2	150029250	Filter mesh 50
3.3	150029260	O-ring 23 x 3
3.4	150026340	O-ring 7 x 1.5
3.5	150121350	O-rings filter assembly kit
3.6	150026330	Complete purger
4	150021820	Compensation valve assembly
4.1	150021830	Compensation valve piston/plunger assembly
4.2	10100096	Compensation valve spring
4.3	R0009267	Compensation valve shaft bushing
5	150022110	Compensation valve plug with O-ring
6	150024750	Depressurisation valve assembly
6.1	150024760	Pressure discharge valve o-rings. Seal Ø5
6.1	150131300	Pressure discharge valve o-rings. Seal Ø9,05
7	10100082	Pump plug with o-ring
7.1	10100083	Pump o-ring
8	150113050	Sensor Pt100
8	150114540	Sensor Ni120
9	150114940	Distributor- pump union micron 35
10	10030007	Current connection strip



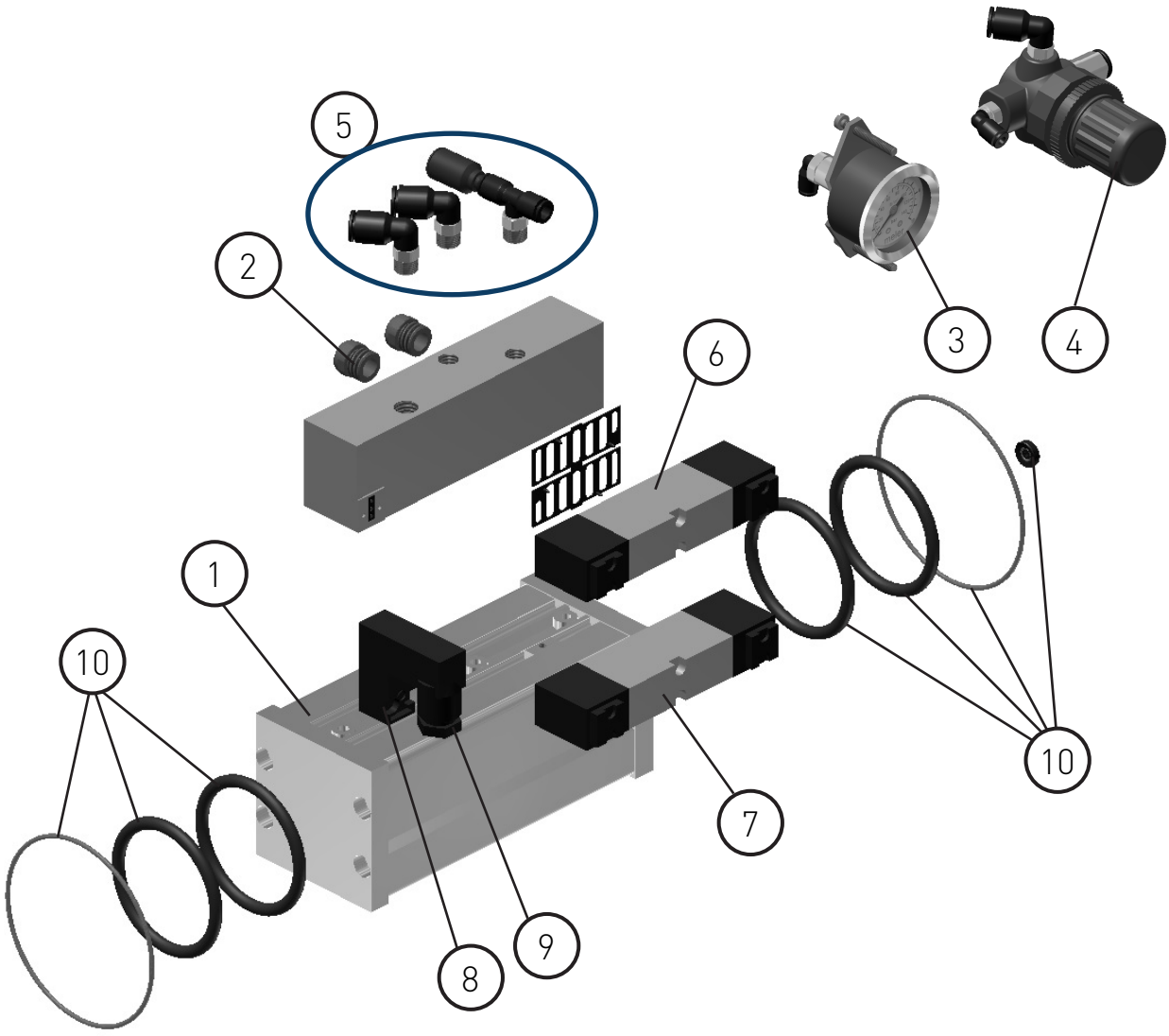


C. PUMP ASSEMBLY

Nº	Ref.	Description
1	150113550	7cc pump body with braces and fittings
1	150113560	19cc pump body with braces and fittings
2	10100011	Pump shaft 7cc
2	150023080	Pump shaft 19cc
3	150113570	Tank-pump-distributor seating O-ring kit
4	150113530	7cc pump guide bushing kit
4	150113540	19cc pump guide bushing kit
5	150020590	Short ball and socket joint for pump shaft activator
6	150113580	Pump holding support 7cc
6	150113590	Pump holding support 19cc
7	150024970	Inlet valve fitting micron pump 7cc
7	150024980	Inlet valve fitting micron pump 19cc

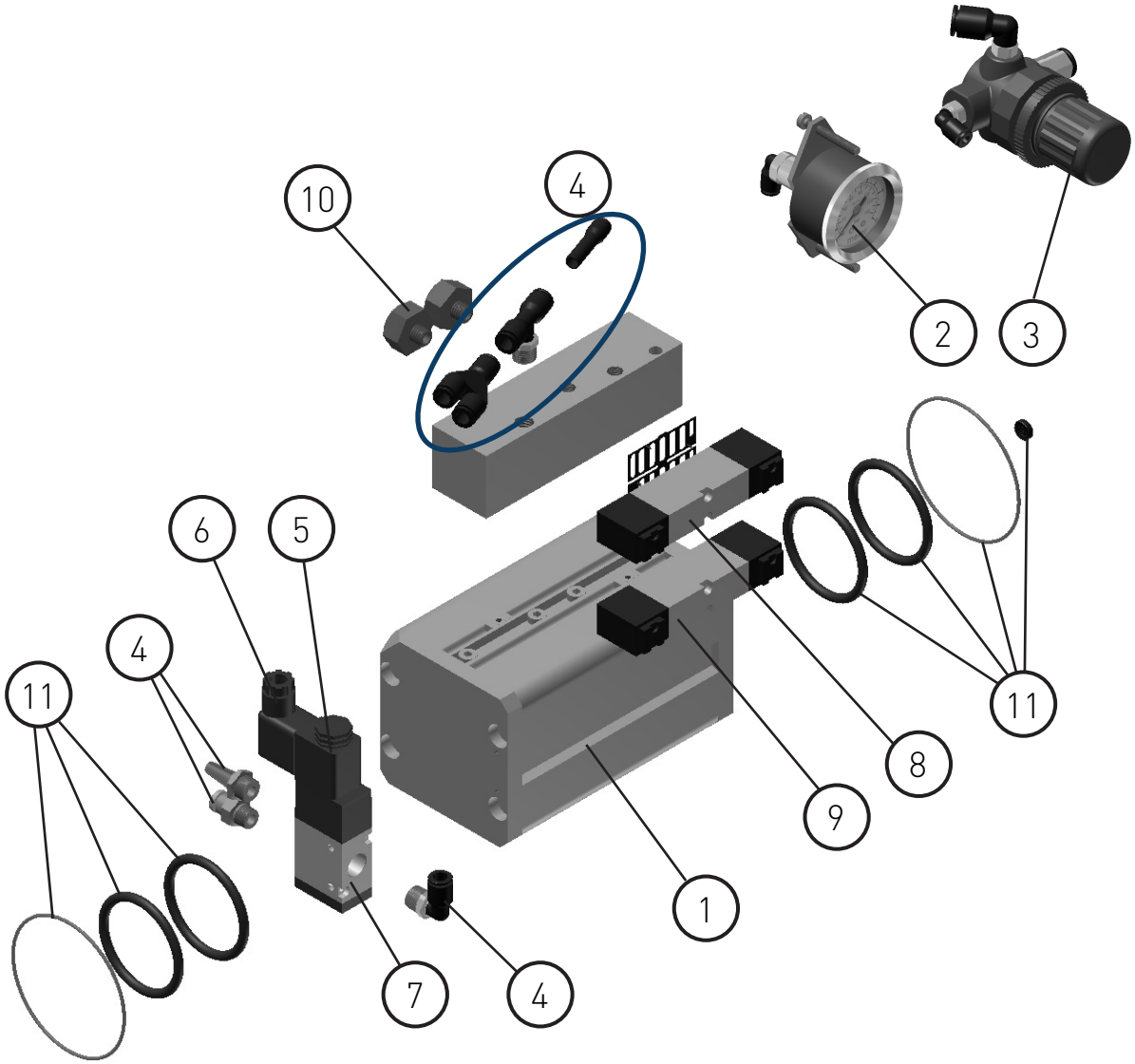
D. PNEUMATIC UNIT ASSEMBLY 7cc

Nº	Ref.	Description
1	150113610	Pneumatic unit assembly with filter 7cc
2	150113650	1/4' flat silencer
3	150114480	Pressure gauge
4	10110031	Pressure regulator
5	150113690	Connector kit for 7cc pump unit without VP
6	150020490	Differential valve with o-ring
7	150020500	Control valve with o-ring
8	150020520	Inlet solenoid valve (220V AC)
9	150020630	Connector 2P+T 15x15
10	150020580	O-ring kit of pneumatic cylinder 7cc



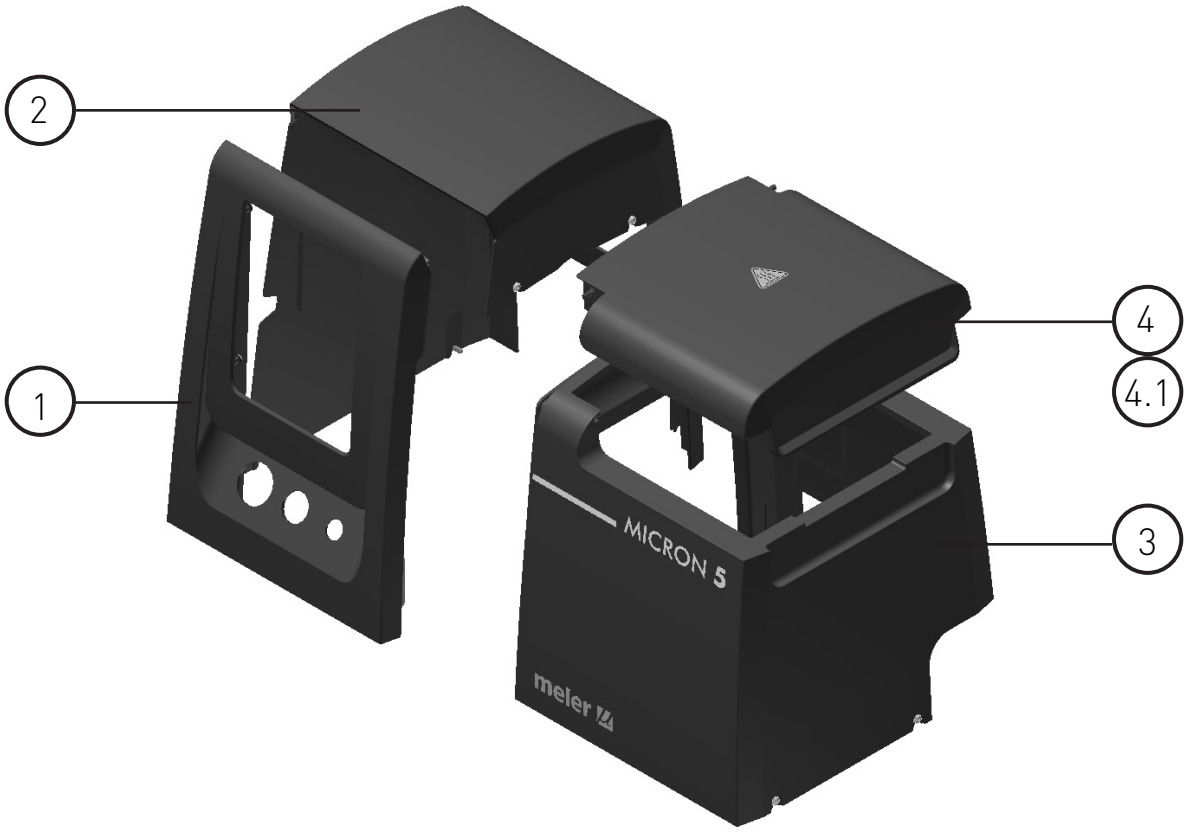
D. PNEUMATIC UNIT ASSEMBLY 19cc

Nº	Ref.	Description
1	150113620	Pneumatic unit assembly 19cc with filter
2	150114480	Pressure gauge
3	10110031	Pressure regulator
4	150113850	Connector kit for 19cc pump unit without VP
5	150111730	Solenoid coil (220V AC) 19cc
6	150060040	Solenoid valve connector DIN 43650B
7	150111710	Intake solenoid valve (220V AC)
8	150020490	Differential valve with o-ring
9	150020500	Control valve with o-ring
10	150023330	Exhaust silencer
11	150023300	O-ring kit of pneumatic cylinder 19cc



E. CHASSIS ASSEMBLY

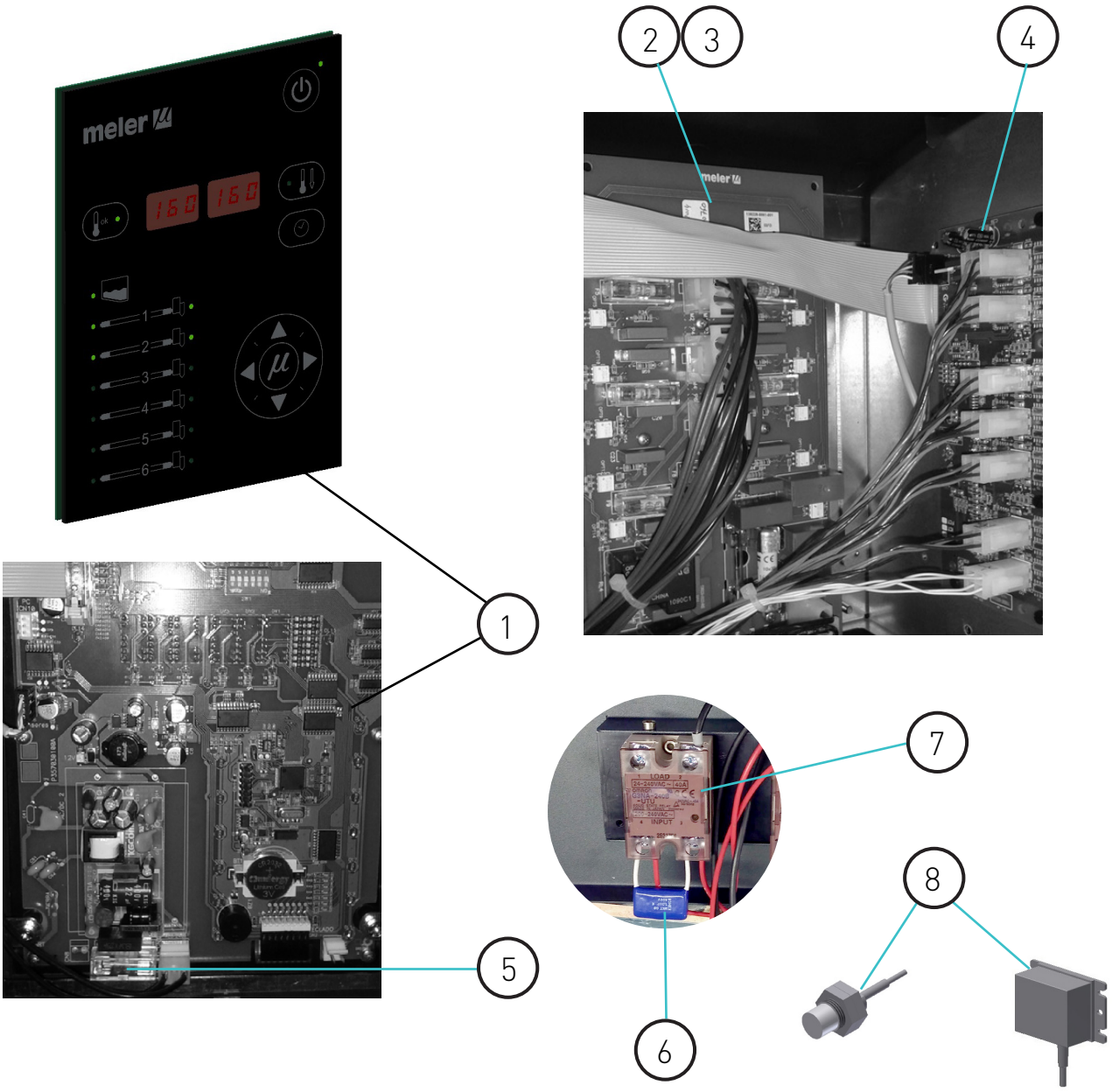
Nº	Ref.	Description
1	150113280	Micron electrical cabinet door casing
2	150113290	Electrical cabinet casing assembly without warning light
2	150113360	Electrical cabinet casing assembly with warning light
3	150113300	Micron 5 tank housing assembly
3	150113310	Micron 10 tank housing assembly
3	150113320	Micron 20 tank housing assembly
3	150114950	Micron 35 tank housing assembly
4	150113330	Micron 5 tank cover assembly
4	150113340	Micron 10 tank cover assembly
4	150113350	Micron 20 tank cover assembly
4	150114960	Micron 35 tank cover assembly



F. ELECTRONIC ASSEMBLY

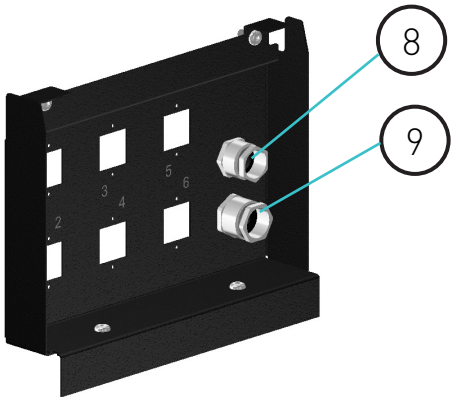
Nº	Ref.	Description
1	150113660	Control board micron
2	150113670	Power board micron 2 outlets
3	150113680	Power board micron 6 outlets
4	150024710	Sensor board Pt100/Ni120 micron
5	150110970	Fuse 0,315A 5x20
6	R0002393	Capacitor
7	R0001938	Solid state relay 40A
8	150114760	Capacitive sensor and amplifier kit **(*)**

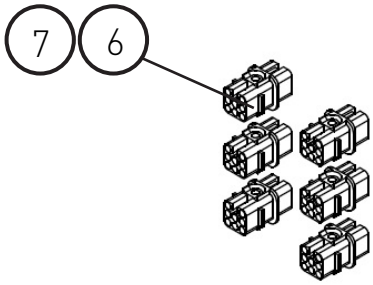
(*) optional

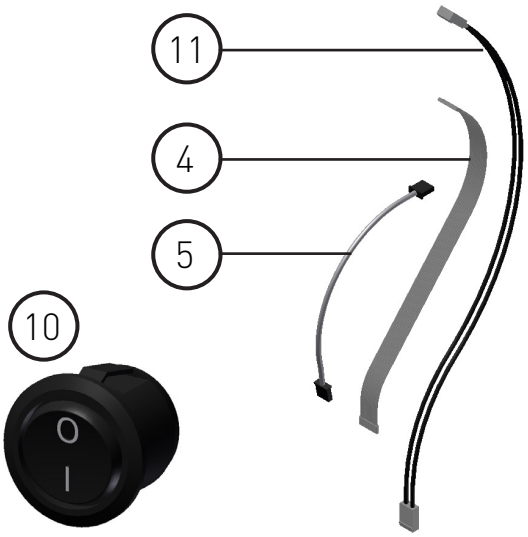


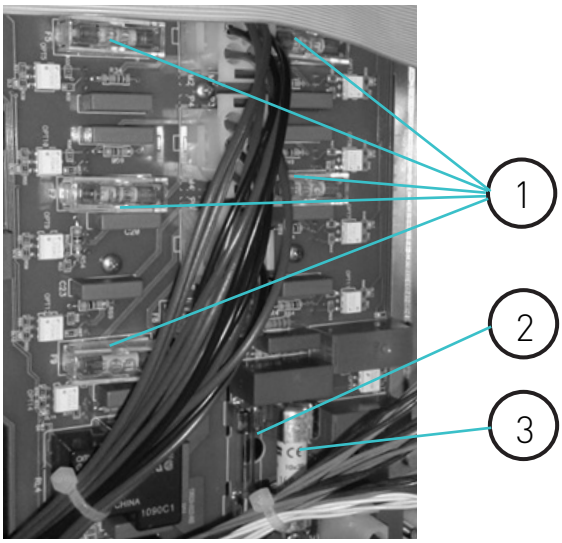
G. ELECTRIC ASSEMBLY

Nº	Ref.	Description
1	10010300	Fuse 6,3A 5x20
2	150028860	Fuse 6,3A 6x32
3	150021540	Fuse 16A 10x38
4	150114450	Control to power board ribbon cable assembly
5	150024740	Control to sensor board cable assembly
6	16010003	Female connector 8 pin (base housing)
7	150020720	Female connector 12 pin (base housing)
8	150119180	Cable gland Pg13.5
9	150119190	Cable gland Pg16
10	150114470	Main switch
11	150114460	Power board to DC power supply cable micron 5-10-20
11	150114980	Power board to DC power supply cable micron 35









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EC DECLARATION OF CONFORMITY

Original Declaration

The manufacturer,

Focke Meler Gluing Solutions, S.A.
Pol. Los Agustinos, c/G, nave D-43
E-31160 Orkoien, Navarra - Spain
— Focke Group —

declaring that the machinery, Type:
Model:
Serial Number:

fulfils all the relevant provisions of the Directive 2006/42/EC on machinery,

and the object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

- Directiva 2014/30/EU on the harmonisation of the laws of the Member States relating to electromagnetic compatibility .
- Directiva 2011/65/EU and its amendments on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

In reference to the harmonised standards:

- EN ISO 12100:2010. Safety of machinery - General principles for design - Risk assessment and risk reduction.
- EN ISO 13732-1:2008. Ergonomics of the thermal environment - Methods for the assessment of human responses to contact with surfaces - Part 1: Hot surfaces.
- EN ISO 13849-1:2015. Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design.
- EN ISO 14120:2015. Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards.
- EN 60204-1:2018. Safety of machinery - Electrical equipment of machines - Part 1: General requirements.
- EN 61000-6-2:2005, +/AC:2005. Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments.
- EN 61000-6-4:2007, +/A1:2011. Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments.
- EN 50581:2012. Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

This declaration of conformity is issued under the sole responsibility of the manufacturer.

The person authorised to compile the technical file is the manufacturer established at the above address in this declation.

Signed in Orkoien, to date:

Javier Aranguren
Managing Director

V0222

For more information speak with your Focke Meler representative:

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Pol. Arazuri-Orkoien, c/B, nº3 A
E-31170 Arazuri - Navarra - Spain
Phone: +34 948 351 110
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Focke Group