meler

GLUING SOLUTIONS

INSTRUCTIONS
MANUAL

ADHESIVE MELTER **STREETFIGHTER SF 4 120V**

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A Focke Group Company

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

This manual is a translation of the original that was written by Focke Meler Gluing Solutions, S. A. in english language. If there is any discrepancy between the different versions of this manual, the original written in the english language shall prevail. Focke Meler Gluing Solutions, S. A. shall not be liable in any way for any damages and/or losses that may be directly or indirectly derived from discrepancies between the original version of the manual and this translation.

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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.

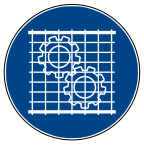
Warning: Hot zone with high temperatures. Risk of burns. Use thermal protective equipment.

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

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 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 Meler technical service to operate with higher working temperatures.
- Use of equipment with 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 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 'SF 4 120V' adhesive melter of Meler.

It is designed to be used commonly in manual applications with EVA based adhesives or simple automatic applications where a gear pump with variable speed is needed.

Description

Operating modes

The melter can be used in the operating modes described below:

Operating mode_ The melter keeps the hot components at the temperature indicated on the display, which has been preselected as the desired value. The pump-motor unit remains activated while it waits for a consumption request via the opening of one or two application guns.

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

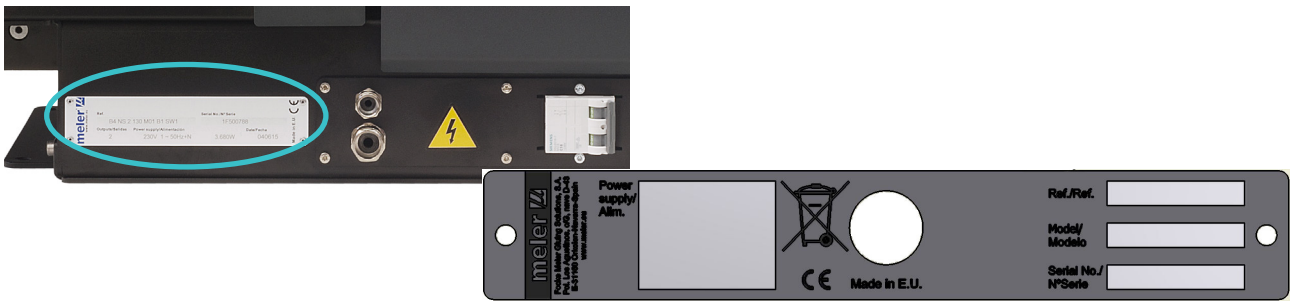
Alarm mode_ The hot-melt melter detects a malfunction and warns the operator of this event. The pump remains deactivated.

Stop mode_ The hot-melt melter 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.

Melter identification

You will need your melter model and reference when ordering spare parts or requesting support from our Technical Service Centre.

This data and other technical information can be found on the nameplate located on the side of the melter base.

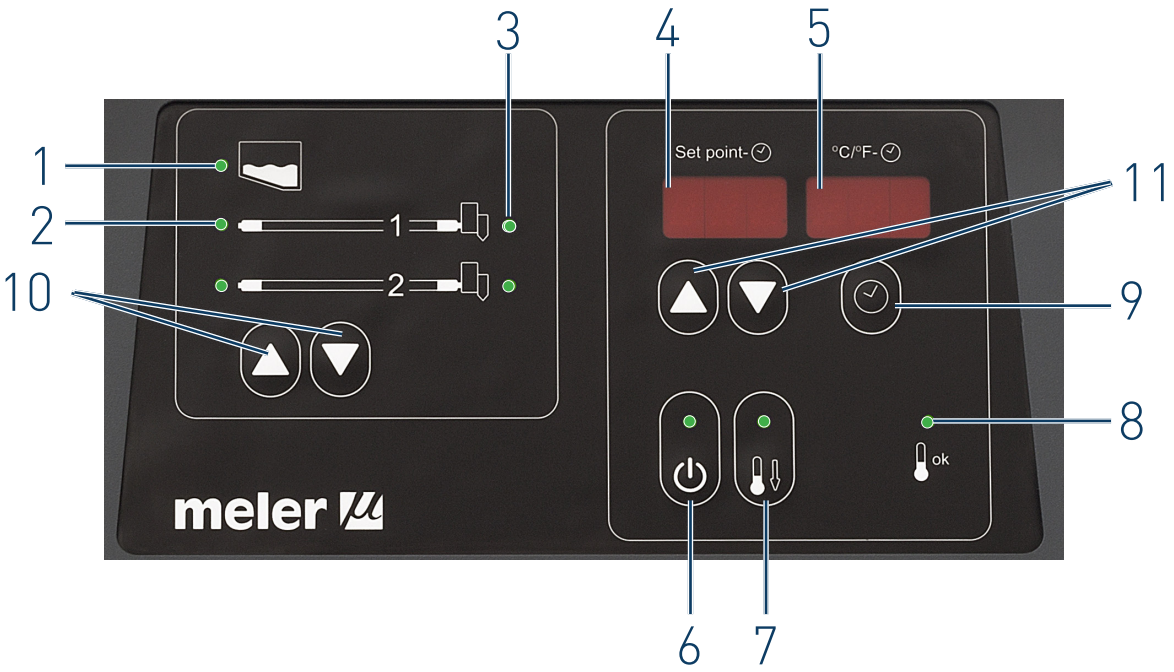


Main components

1. Front control card.
2. Hose- applicator electrical connection.
3. Hose- applicator hydraulic connection.
4. General power switch and power supply.
5. Pressure bypass valve.
6. Purge valve.
7. Filter pump.
8. ON-OFF Switch.

Control panel

1. Tank indicator led.
2. Hose indicator led.
3. Applicator indicator led.
4. Temperature set point.
5. Actual temperature.
6. ON/OFF switch.
7. Standby function.
8. Temperatures ok led.
9. Timer programming.
10. Up/Down arrows for element selection.
11. Up/Down arrows for value modification.



3. INSTALLATION

Warning: The melters 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

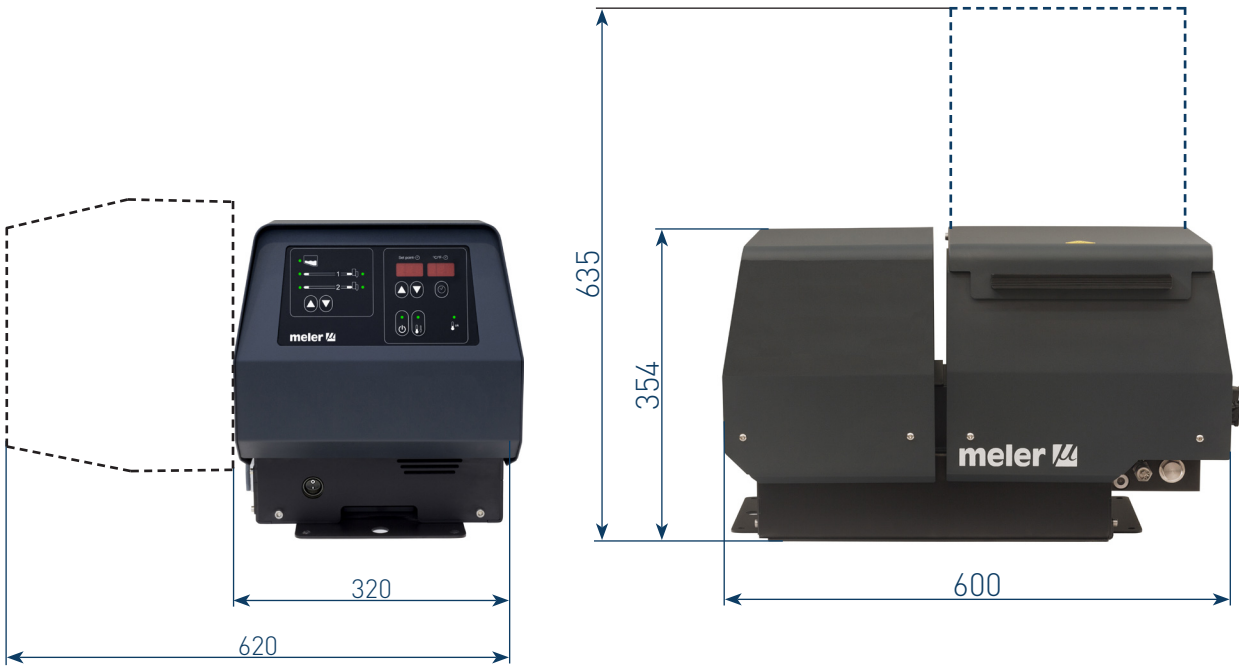
The melter is supplied with all the components required for its installation. However, some components must be supplied by the user depending on the location and connections in each specific installation:

- Melter anchoring screws.
- Power cord for electrical power supply.
- Stranded wire for external electric control functions.
- Optionally, a gas venting system.

Installation requirements

Before installing the melter you must ensure that the space allocated is suitable for the installation, connection and use of the entire system. You must also ensure that the electrical and pneumatic supplies meet the requirements of the melter being installed.

Free space



Electrical consumption

When installing the melter, the installation's total consumption must be taken into account, including the consumption of the installed hose and applicator.

Before connecting the melter, make sure that the voltage to which it is to be connected is the same as that indicated on the equipment's nameplate.

Connect the melter and check that it is well grounded.

Warning: Risk of electrocution. Even when the melter is turned off, voltage remains in the input terminals, which could be dangerous when the equipment is handled internally.

The melter should be installed with a power switch to disconnect it from its power supply source. A circuit breaker should be installed as personal protection against earth leakages.

The powers associated with these protections are indicated in the table in section 'Electrical power supply connection'.

Other factors

Other practical considerations should be taken into account when installing the melter:

- Make sure the load opening remains accessible to facilitate changing the adhesive block.
- Position the melter so that it is easy to see the front panel display where the temperatures and possible alarm signals are shown.
- As far as possible, try to avoid unnecessarily long hoses which consume a lot of electrical energy and result in high pressure drops.
- Do not install the melter next to powerful heat or cooling sources which may affect its operation.
- Avoid melter vibrations.
- Make sure that the melter maintenance areas (filter, purging valve, tank interior, gear motor, etc.) are easily accessible.

Unpacking

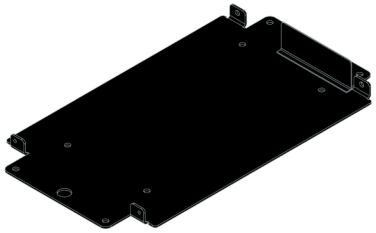
Before installing the melter, it should be removed from the pallet and inspected to detect any possible breakage or damage. Notify your Meler Representative or the Main Office of any defect, even to the outer packaging.

Contents

The melter packing materials may contain accessories requested in the same order. Otherwise, the standard components included with the melter are as follows:

- Instruction manual
- Guarantee card

Mounting the equipment



The melter includes an assembly base plate for easy mounting.

The base plate makes it easy to remove and position the melter. To mount the base plate, place it on the machine bench and position. Mark and drill four holes for the base plate's M8 fastening screws. The holes may be threaded or through holes depending on the bench on which they are being mounted.

Warning: Make sure the bench on which the base plate is being mounted is level, free from vibrations and able to support the weight of the equipment plus the full tank load.

Once the base plate has been secured to the bench, the melter should be mounted on top.

Fit the retaining flanges onto the base and position the four fastening screws.

Electrical power supply connection

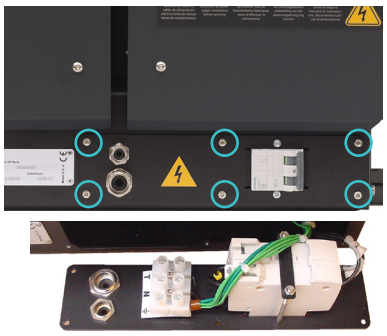
The melter is designed to be connected to the electrical power supply with single-phase 120 VAC and neutral, depending on the power consumption.

In any case a good ground connection is required.

The maximum consumption values are shown in the table attached:

Unit	No. Outputs	Max. connecting power	
		unit only	with outputs installed
SF4 120V	2	10A	20A

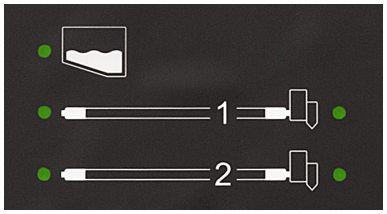
Warning: Risk of electric shock. Carelessness may cause injury or death.



Remove the six screws fastening the connection support plate and power switch, on the left side of the equipment. Pass the power cable (Ø6-12 mm) through the Pg13 bushing and fasten as shown in the figure, ensuring that the cable is perfectly secure and that it does not impede the mounting of the plate.

Connect each of the power cable's wires in their corresponding position in the input terminals.

Hose and applicator connection



The melter can use standard Meler components. The entire range of Meler hoses and applicators may be connected to this equipment.

The melter has two outputs for connecting the hose-applicator for only one installed pump. These are identified on the same plate with the numbers 1 and 2. These numbers correspond to the control channels which appear on the front control panel.

Warning: When connecting the hose-applicator outputs, check that the power connected does not exceed the maximum power allowed.

Caution:

- To identify each hose-applicator pair, electrically connect them to the connector with the same number as the output used.
- It is preferable to use couplings at 45° or 90° to minimise the space occupied by the hose. Straight couplings usually generate very small radii of curvatures that may damage the inside of the hose.
- Save the threaded cap which is removed from the distributor when connecting the hose. It may be required in the future if the hose is removed from its position.
- Electrically connect the hose and applicator when the equipment is turned off. Failing to do so may result in electrical defects in the connection and alarm messages may appear on the melter display.

Programming parameters

Once the melter and its components have been installed, the correct working parameters must be programmed for the specific application to be performed.

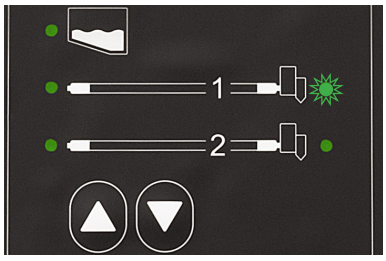
The melter simplifies this task as much as possible, allowing the operator to change only those parameters which are necessarily variable for each application.

Among the different parameters, it is necessary to program the set point temperature values for each component connected and the value for the overheating warning. Other parameters (weekly start/turn off programming or the standby temperature value) are required in advanced systems, with the factory default values being perfectly valid for operational purposes.

Programming working temperatures

The melter's default set point temperature values are:

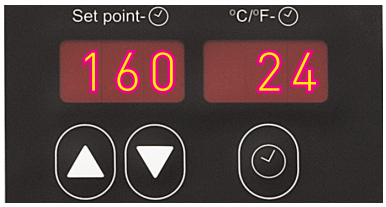
- 160°C (320°F) for the tank.
- 150 °C (302 °F) for the hoses and 160 °C (320 °F) for applicators.



The general process for changing the set point temperature value for any component is described below.

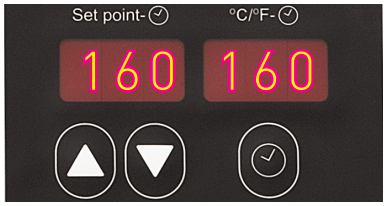
1. Use the arrows to select the component for which you wish to change the value.

   The corresponding LED will blink rapidly.



2. Use the up-down arrows under the display to 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 tank set point temperature, saving the changed data.

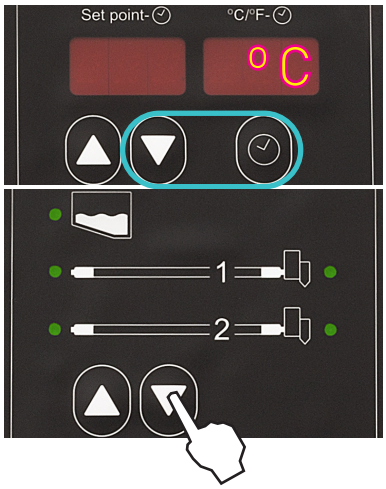


Repeat this step for each of the components installed in the melter.

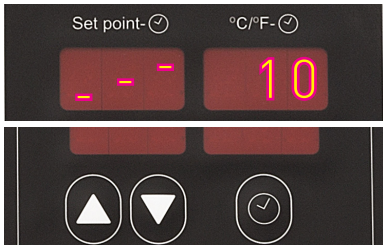
Selecting the overheating value

1. Press simultaneously the clock and down arrow buttons, located under the display, to enter the special menu.

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



2. Use the down arrow on the left side of the front card (component selection) to move to the next screen where the overheating symbol is displayed. ▬▬▬



3. Use the up-down arrows on the right of the front card to select the desired value.

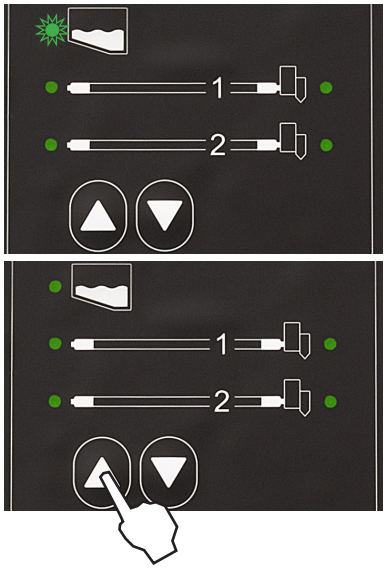
   The value displayed corresponds to the increase in real temperature over the set point temperature permitted without activating the alarm message (between 10 and 25).

4. Use the down arrow on the left of the front card (component selection) to move to the next screen.

5. Use the up arrow to exit the special menu; the tank's temperatures are displayed once again.

All of the values in the special menu are saved.

Keeping a component on display



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

1. Use the up-down arrows to permanently display the desired component.

   The corresponding LED will blink rapidly.

2. Hold the arrow button on the desired component for two seconds.

3. The display will now remain on the selected component and will not be changed.

4. Simply press the up-down buttons again to restore the default display (tank).

External I/O connections

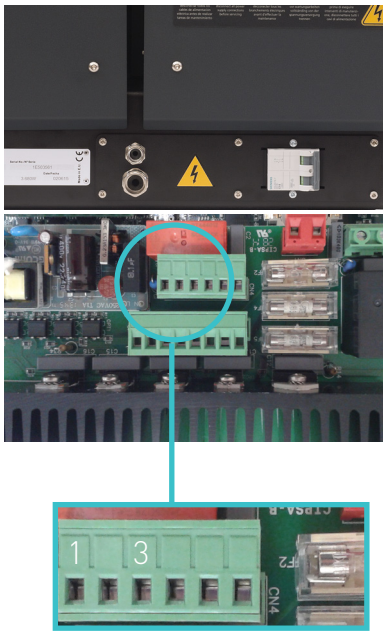
The melter uses its input and output (I/O) signals to communicate with the main machine simply and directly.

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

- **Temperature ok**_non-voltage contact output which notifies the main machine that all the system temperatures have reached a value which is 3 °C (37.4 °F) below the set point value (and that the time delay has elapsed), at start-up, or that the real value is not 20 °C (68 °F) below the set point value during operation.
- **External standby**_control input from the standby mode, via a non-voltage contact. When the contact is closed the standby function is connected; when the contact is open the function disconnects.

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

Temperature ok



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

   Install a Pg9 bushing on the equipment base plate, next to the electric power supply unit.

2. Remove the six screws fastening the connection support plate and power switch, on the left side of the equipment. Pass the signal cable (Ø4-8 mm) through the Pg9 bushing and attach it to the internal fitting, ensuring that the cable reaches the control board connector at the point where it is to be installed (CN4).

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

   1 contact NO

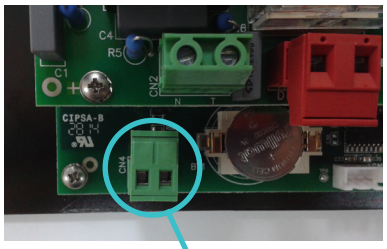
   3 contact NO

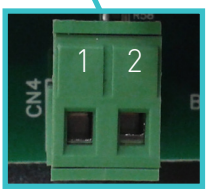
4. Reconnect the connector to the panel.

5. Check that the cable is correctly connected and that its passage through the electric cabinet presents no risk of jamming, being cut or any other accidental damage.

Warning: Connect to 24 V (AC or DC). If connected to 230 V the load current cannot be less than 50 mA.

Note: take into account the image of CN4 temperature ok connector, do not confused with CN4 external standby connector.





External standby

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

   Install a Pg9 bushing on the equipment base plate, next to the electric power supply unit.

2. Remove the six screws fastening the connection support plate and power switch, on the left side of the equipment. Pass the signal cable (Ø4-8 mm) through the bushing Pg9 and attach to the internal fitting, ensuring that the cable reaches the control board connector at the point where it is to be installed (CN4).

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

   1 contact NO

   2 contact NO

4. Reconnect the connector to the panel.

5. Check that the cable is correctly connected and that its passage through the electric cabinet presents no risk of jamming, being cut or any other accidental damage.

Warning: Connect to 24 V (AC or DC). If connected to 230 V the load current cannot be less than 50 mA.

Note: take into account the image of CN4 external standby connector, do not confused with CN4 temperature ok .

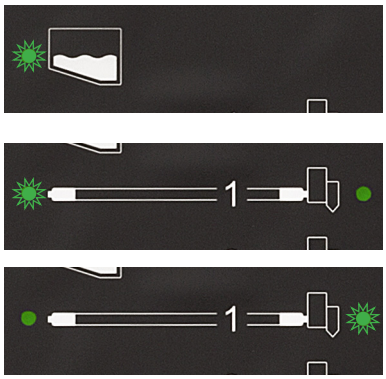
4. MELTER OPERATION

This section explains how to operate the melter. Although the equipment is very easy to operate, it should not be used by untrained personnel.

Warning: Improper use may cause damage to the equipment itself or the person using it and can even result in death.

General information

There are three large groups of thermally controlled components in a hot-melt installation: the melter unit, the transport hoses and the applicators. All of these are controlled form the melter's front panel.

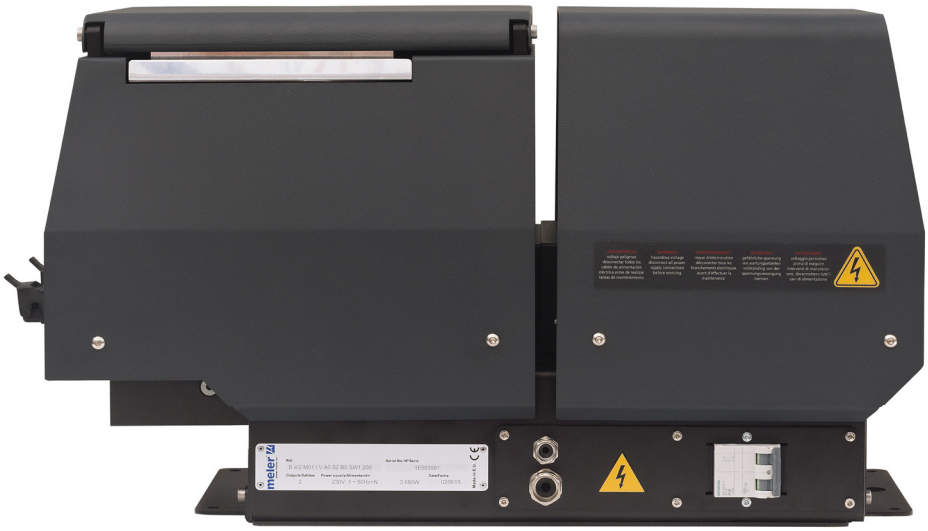


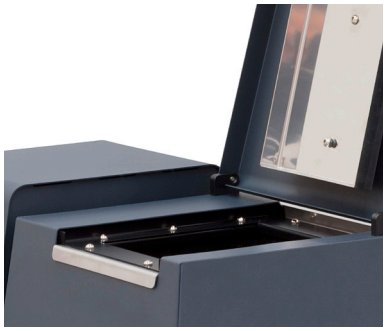
The first large group is the tank-distributor-pump unit. They form one single unit and have the same temperature control and set point value. Therefore, when the set point value for the cylindrical hopper is set to 170°C, for example, this same value is set for the distributor and pump.

The second group is the hose unit. These are identified on the front panel with the numbers 1 and 2 and the corresponding hose drawing. Each hose has its own set point value.

The third group is the applicator unit. These are identified on the front panel with the numbers 1 and 2 and the corresponding applicator drawing. Each applicator has its own set point value.

The hose and applicator numbers are automatically assigned to the hose/ applicator channel to which they are connected via the connector on one side of the melter.





Loading the adhesive

To fill the tank:

1. Open the tank lid.
2. Use a shovel or a ladle to fill the tank with adhesive. Do not fill the tank above the loading opening level. The lid must be able to close normally.

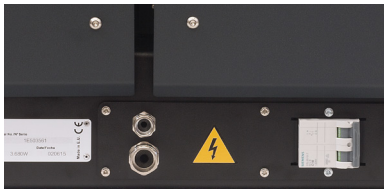
Warning: Risk of burns. Always wear protective gloves and safety glasses when refilling.

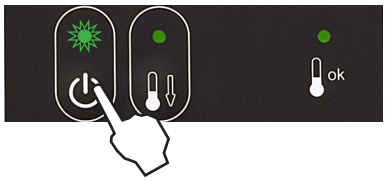
3. Close the lid when you have finished refilling the tank.

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.

The melter has a tank capacity of 4 liters/ 1.05 gal (4 kg for an adhesive density of 1 g/cc).

Starting up the melter





Before starting up the equipment, check that the unit is correctly installed and that all the input/output and accessory connections have been established.

Also check that the equipment has been filled with the adhesive to be used and that the working parameters have been programmed.

To start:

1. Connect the melter's power switch.
2. Turn the switch to the ON position.

If the control board was turned off the last time the equipment was disconnected, this will remain off on restarting (time display).

If the control board was on the last time the equipment was disconnected, it will turn on again when restarted.

3. If it is not already activated, turn on the control board by pressing the ON/OFF button.

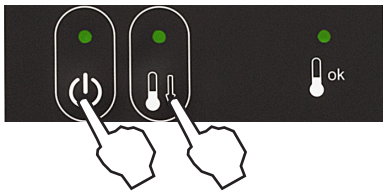
By default, the tank set point value and temperature are displayed.

The tank heating control LED (green) will light up and the tank will begin to heat. The LEDs for the hoses and applicators connected will also come on.

Once the tank has reached 3 °C (37.4 °F) below the temperature set point value, a programmable delay timer is activated until a signal is given to start the pump (activation of the solenoid valve or turning of the motor) and connect to the main machine, provided that the other components have also reached 3 °C (37.4 °F) below their set point temperature.

While the system counts down the delay time, the LEDs for pump activation and connection to the main machine continue to blink until the selected temperature has been reached, when the LEDs will remain on. If, after this time, any of the components has not reached 3 °C (37.4 °F) below the set point value, the LEDs will turn off.

If the system is disconnected by pressing the off or standby button, by programming disconnection or activation of standby, by disconnecting the power supply or external activation of standby, when the system is restarted, the delay will only be activated if the tank temperature has fallen 20 °C (68 °F) below the set point temperature.



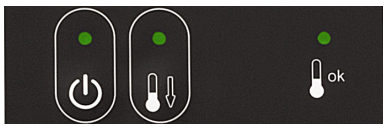
Melter displays

The control panel on the melters have two displays, each with three sets of 7 segments to display the temperature values (set point and actual temperature), the programmable parameters and alarms.

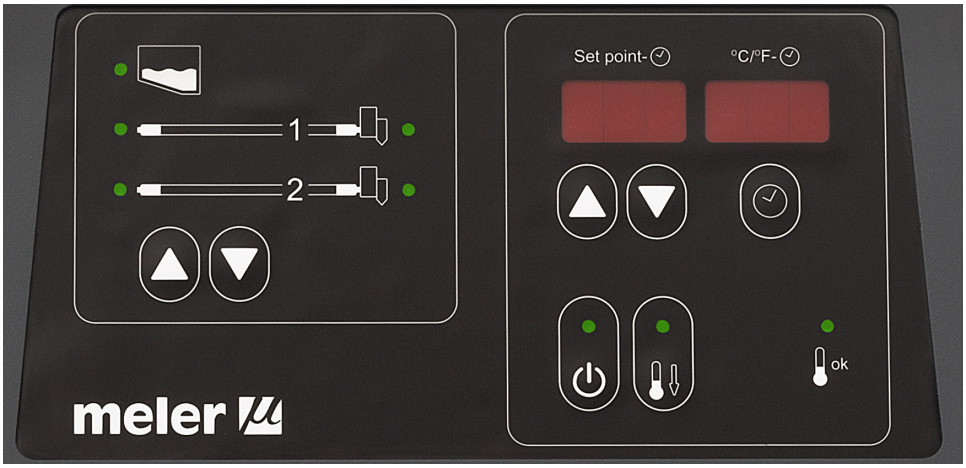
They are equipped with LED indicators to display the heating of each component, as well as the pump activations and the main machine connection signal:

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

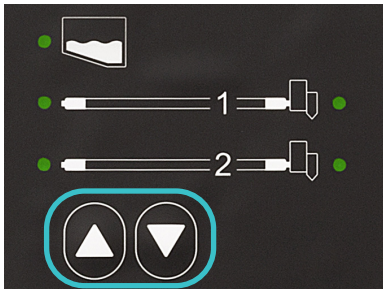
They are also equipped with LEDs indicating the programming of the equipment connection/disconnection and the connection/disconnection of the standby function:



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	



Temperature display for each component



The temperature of each component (tank and each hose and applicator) can be displayed by selecting the component using the cursors.

Press the component selection up/down arrow until the desired component is displayed.

After 10 seconds the display returns to the default component (tank).

If you would like the component to be displayed permanently press the up-down button for 2 seconds on the selected component.

The display sequence is as follows:

tank<—hose1<—applicator1<—hose2<—applicator2

tank—>hose1—>applicator1—>hose2—>applicator2

To permanently remove a component from the display, simply press any of the up-down arrows.

Alarm display

The melters inform the user when there is a malfunction in the unit, by sending messages that can be seen on the control panel display.

When an alarm appears, the control should take a series of actions to protect the unit. Simply correct the fault and the control will reactivate the equipment's functions.

Activating the standby function does not trigger any alarm.

If the sensor is broken, the system will keep all the components hot, except for the one in which the fault has occurred.

In the event of overheating, the system immediately stops heating the failed component. If after three minutes, the fault persists, the system will stop heating all components and the power relays will be disconnected. The panel will continue to display the alarm until the error has been rectified. Once resolved, the power relays will be reactivated and the system will begin to heat as normal.

Code	Cause	Actions		
		Heating	Pump	Main machine signal
Err 0	tank broken sensor	only tank off	off	off
Err 1	hose1 broken sensor	only hose1 off	off	off
Err 2	applicator1 broken sensor	only applicator1 off	off	off
Err 3	hose2 broken sensor	only hose2 off	off	off
Err 4	applicator2 broken sensor	only applicator2 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
Err 103	hose2 overheating	all components off	off	off
Err 104	applicator2 overheating	all components off	off	off

Temperature adjustment

By default, the melters have the following parameter values:

- Tank and distributor set point temperature: 160 °C (320 °F)
- 150 °C (302 °F) for hoses and 160 °C (320 °F) for applicators
- Display in °F
- Overheating value: 20°C (68 °F)
- Standby value: 40%
- Delay time: 10 mins
- Time programming: ON

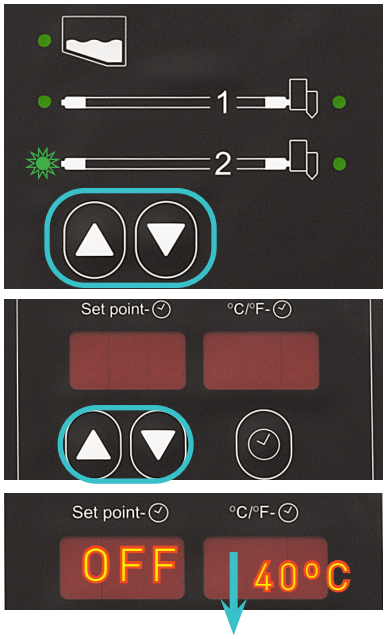
The general procedure for adjusting the temperature of each of the components is described below.

1. Use the up-down arrows to select the component for which you wish to change the value.

   The corresponding LED will blink quickly.

2. Use the up-down arrows under the display to select the desired value for the set point temperature. Below 40 °C (104 °F), the temperature value displays 'OFF', cancelling the heating of this component (hoses and applicators only).

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



Repeat this simple procedure for each of the components whose set point temperature you would like to change.

Programming the melter parameters

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

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

2. Use the up-down arrows to select the desired value.

3. Use the component selection down arrow to move to the following screen where the overheating symbol appears. ▬▬▬

4. 4.Select the desired value (between 10 and 25 °C / 50 and 77 °F) using 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.

5. Use the component selection down arrow to move to the following screen where the standby function symbol appears. ▬▬▬

6. Use the up-down arrows under the display to select the desired value (between 25 and 55 %).

   The value displayed corresponds to the percentage decrease in actual temperature below the set point temperature that will occur when this function is activated.

7. Use the component selection down arrow to move to the following screen where the delay time value appears.

8. Use the up-down arrows under the display to select the desired value (between 0 and 60 mins).

9. Use the component selection down arrow to return to the first parameter.

10. For any parameter, use the component selection up arrow to exit the special menu and display the tank's temperatures again.

To save any parameter, you must move to the next parameter using the component selection down arrow.

Setting the clock

The melter has a weekly programmable system to control the connection and disconnection of the equipment and activate and deactivate the standby function.

Before programming these functions, the day and time the system will use to execute these programs must be entered into the control panel.

Setting the current day and time

1. Press the button with the clock symbol.

   '0' will appear on the display indicating the program for setting the current day and time.

2. Press the button with the clock symbol again.

   The left display shows the time with a dot, indicating that this is the value that can be changed, while the minutes are shown on the second display.

3. Use the up-down arrows under the display to select the desired value.

4. Press the button with the clock symbol again.

   Now the dot appears on the display on the right.

5. Use the up-down arrows under the display to select the desired value.

6. Press the button with the clock symbol again.

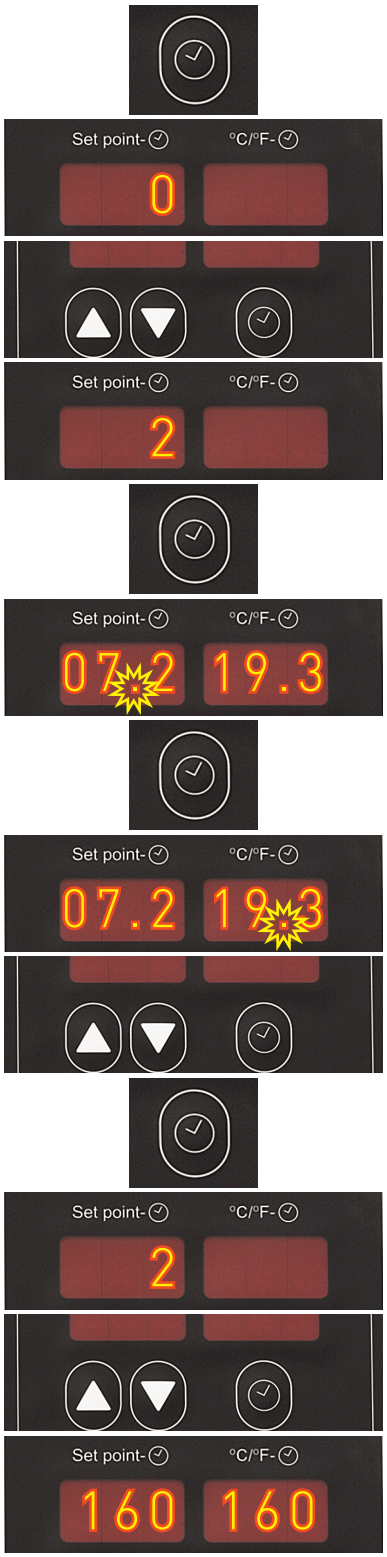
   A number appears indicating the day of the week (1- Monday / 7- Sunday).

7. Use the up-down arrows under the display to select the desired value.

8. Press the button with the clock symbol again.

   The '0' program appears once again.

9. Press any of the up-down component selection buttons to exit this program and return to the tank temperature display.



Programming equipment activation/deactivation

An activation and deactivation time can be set for each day of the week, from Monday (1) to Sunday (7).

Time is expressed in increments of 15 minutes, starting with 10.0 (10 hours 0 minutes), then 10.1 (10 hours 15 minutes), 10.2 (10 hours 30 minutes) and 10.3 (10 hours 45 minutes).

1. Press the button with the clock symbol.

   '0' will appear on the display indicating the program for setting the current day and time.

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

3. Press the button with the clock symbol 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 end time.

4. The flashing dot on the start time display indicates that this value can be changed. Use the up-down arrows under the display to select the desired value.

5. Press the button with the clock symbol again.

   The dot then appears on the end time display.

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

7. Press the button with the clock symbol again.

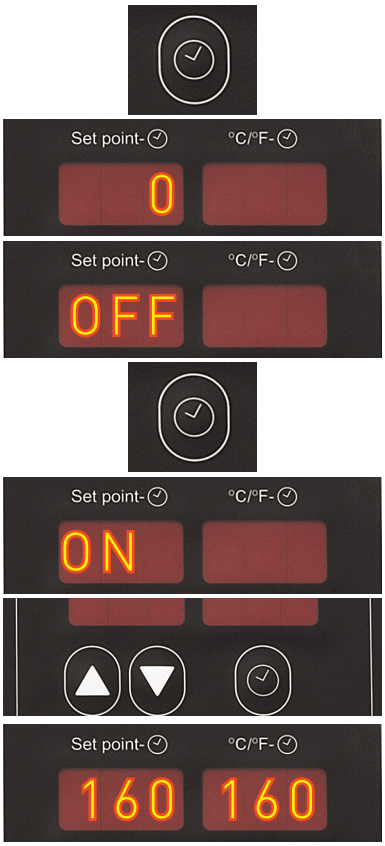
   The selected program appears once again. Use the up-down button to select other programs.

8. Press any of the arrow buttons on the left or right to exit this program and return to the tank temperature display.

The green LED next to the 'ON/OFF' button will always blink if a disconnection time has been set for the current day.

Disabling the equipment activation/deactivation program

The programmed equipment activation/deactivation can be disabled without having to cancel the daily programming. In this way the programmed data is saved but the programming has no effect on the equipment.



1. Press the button with the clock symbol.

   '0' will appear on the display indicating the program for setting the current day and time.

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

   'ON/OFF' will be displayed depending on the current status.

3. Press the button with the clock symbol again.

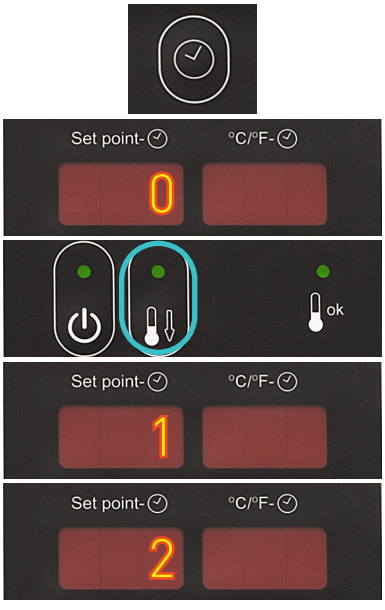
   The status will alternate each time you press the button.

4. Press any of the up-down component selection buttons to exit this program and return to the tank temperature display.

Programming the activation/deactivation of the equipment's standby function

An activation and deactivation time can be set for each day of the week, from Monday (1) to Sunday (7).

Time is expressed in increments of 15 minutes, starting with 10.0 (10 hours 0 minutes), then 10.1 (10 hours 15 minutes), 10.2 (10 hours 30 minutes) and 10.3 (10 hours 45 minutes).



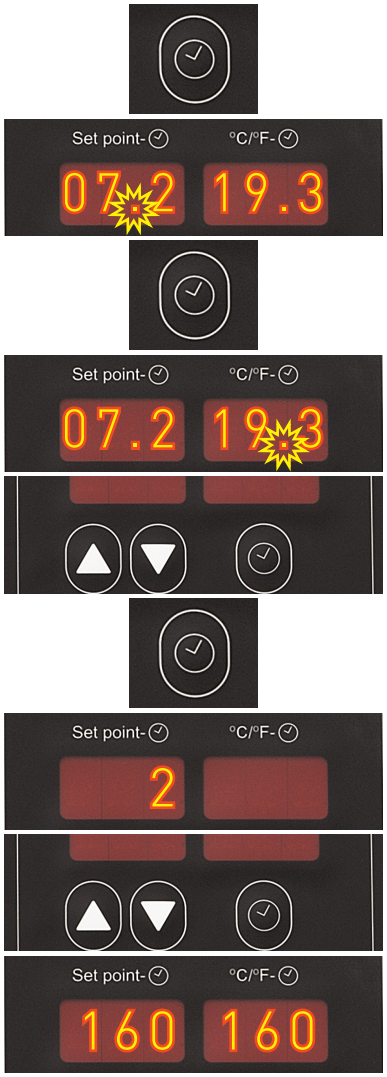
1. Press the button with the clock symbol.

   '0' will appear on the display indicating the program for setting the current day and time.

2. Press the standby function button.

   '1' appears indicating the first day in the standby function program.

   [Since the current date and time are the same for both programs, a '0' does not appear in this menu].



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

4. Press the button with the clock symbol 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 end time.

5. The flashing dot on the start time display indicates that this value can be changed.

   Use the up-down arrows under the display to select the desired value.

6. Press the button with the clock symbol again.

   The dot then appears on the end time display.

7. Use the up-down arrows under the display to select the desired value.

8. Press the button with the clock symbol again.

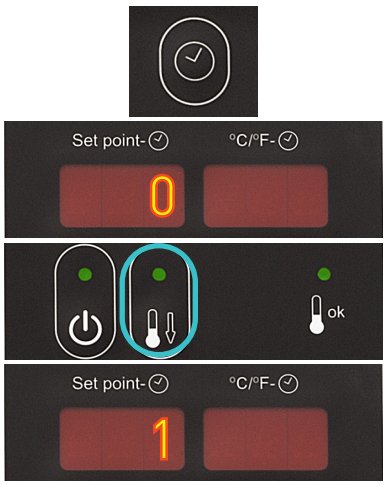
   The selected program appears once again. Use the up-down button under the display to select other programs.

9. Press any of the up-down component selection buttons to exit this program and return to the tank temperature display.

The green LED next to the "under maintenance" button will always blink provided that an activation time has been set for the equipment standby function for the current day.

Disabling the equipment standby function program

The programmed equipment standby function can be disabled without having to cancel the daily programming. In this way the programmed data is saved but the programming has no effect on the equipment.



1. Press the button with the clock symbol.

   '0' will appear on the display indicating the program for setting the current day and time.

2. Press the standby function button.

   '1' appears indicating the first day in the standby function program.

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

   'ON/OFF' will be displayed depending on the current status.

4. Press the button with the clock symbol again.

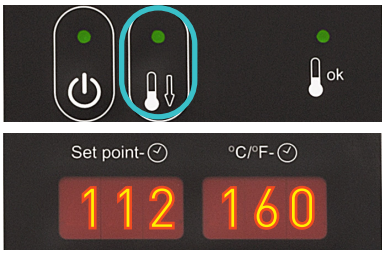
   The status will alternate each time you press the button.

5. Press any of the up-down component selection buttons to exit this program and return to the tank temperature display.

Special function buttons

The simple programming of the SF4 melters means that the special function buttons are only used for the standby function.

This manual function allows you to alternate between operating mode and standby mode. Using the standby function during periods of melter inactivity helps save energy and allows the heated components to return quickly to their set point temperature when you return to operating mode.



When the standby function is activated, the set point temperature for all the heated components drops to a certain value based on the programmed parameter (see 'Programming the melter parameters'). For example, if the tank set point temperature is 160°C and the standby function is set to 30 (30%), when the standby function button is pressed, the tank set point temperature will drop to 112°C (70% of 160°C).

The three systems for activating the standby function in the SF4 melters have the following priority protocols:

1° Manual standby function button.

2° Standby function external signal.

3° Standby function activation/deactivation program.

Therefore, if the function is activated using any of the three systems, it can always be deactivated using the manual button. However, if the function is activated using the manual button it cannot be deactivated by either of the other two systems. The weekly programming cannot deactivate the function if it has been activated via any of the other two systems.

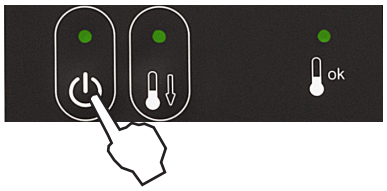
The following criteria is suggested for using the standby function:

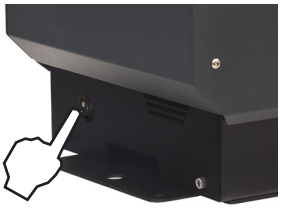
- If the period of inactivity is less than 1 hour, leave the melter to heat as normal.

- If the period of inactivity is more than 1 hour but less than 2 hours, use the standby function.

- If the period of inactivity is more than 2 hours, turn off the equipment.

However, take into consideration that PUR adhesive undergoes moisture curing and deteriorates easily at high temperatures and therefore the more time the equipment is left on without pumping, regardless of whether it is left to heat as normal or is in standby mode, the greater the possibility that the adhesive will deteriorate.





Turning off the melter

If it is necessary to disconnect the melter:

1. Press the control card ON/OFF button to switch off the card.

2. Disconnect the equipment's power switch located on the side, next to the power supply input.

3. Disconnect the melter power switch to the OFF position.

4. Disconnect the applicators' pneumatic power supply and the electric supply to the control programmer if applicable.

5. MAINTENANCE

Warning: The melter 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 equipment maintenance. Always read the corresponding section carefully.

Operation	Frecuency	Refer to
External cleaning	Daily	Equipment cleaning
Despresurización del sistema	Before performing maintenance tasks and repairing the hydraulic system	Depressurizing the system
Emptying and cleaning the tank	- When burnt adhesive is present - With each adhesive change	Tank cleaning
Filter cleaning or changing	- As needed (once a year minimum) - With each adhesive change	Filter maintenance
Check for pump leaks	Depending on the hours of operation and the temperature and speed parameters(min. once per month)	Pump maintenance
Check the lubrication (motor and gear)	Depending on the temperature and conditions of use (max. 8000 hours)	Motor gear maintenance
Check thermostat operating	- Checking while working	Safety thermostat
Equipment change	- Equipment change or repair	Dettaching equipment from base

If the equipment does not work or works incorrectly, called to your Meler Technical Assistance Service or to the Main Office.

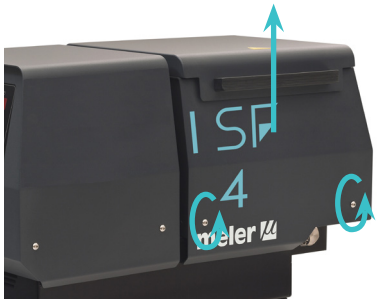
External cleaning

To continue to take advantage of the melters benefits and to ensure the perfect mobility of its components, it is necessary to keep all its parts clean, especially the ventilation grates on the 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.

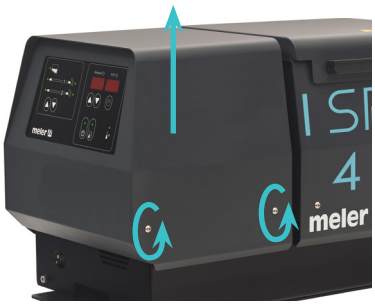
External cleaning:

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



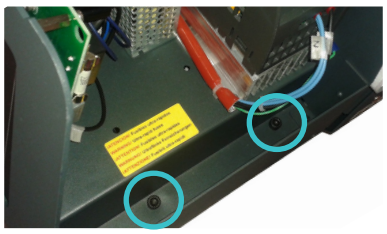
Removing the rear covers from the tank:

1. Disconnect the melter equipment using the circuit breaker.
2. Disconnect the compressed air from the equipment intake (in case of air drying system or pneumatic bypass valve).
3. Remove the four screws fastening the tank cover.
4. Remove the cover sliding it in the direction shown in the figure.
5. To reposition the covers, follow steps 1 to 4 in reverse order.



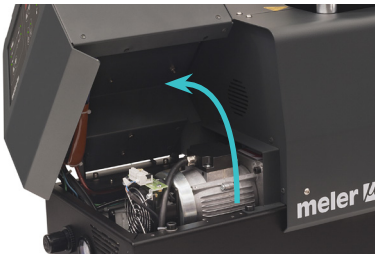
Removing the control box cover:

1. Disconnect the melter using the circuit breaker.
2. Remove the four screws fastening the cover to the equipment's control box.
3. Remove the cover, sliding it upwards in the direction shown in the figure.
4. To replace the cover follow steps 1 to 3 in reverse order.



Opening the control box to access the components inside:

1. Perform steps 1 to 3 to remove the control box cover.
2. Remove the two screws fastening the control panel to the frame of the melter.
3. Tilt the control panel to the left.
4. Follow steps 1 to 3 in reverse order to close the control panel.

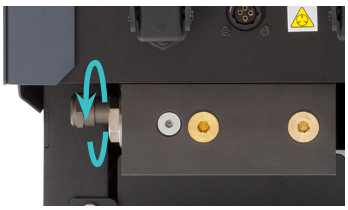


System depressurisation

The melter is a pressurised application system with the corresponding risks that such a system entails. This equipment includes a safety valve (bypass valve) which limits the maximum pressure in the system, particularly during continuous pumping with closed application applicators.

However, in this last case, even with the motor stopped, residual pressure may remain in the circuit. This should be taken into account when carrying out any work on the hydraulic circuit.

Before disconnecting any hydraulic component or opening any distributor outlet, the following steps must be performed:



1. Disconnect the equipment's power switch located on the side, next to the power supply input.

2. Manually purge (or using the corresponding programmer control) the applicator used.

3. Open the purge valve (in case of the equipment has one), located on the distributor next to the filter turning it anti-clockwise. To do so, use a slotted screwdriver. When the adhesive exits without pressure, close the valve by turning it clockwise.

Cleaning the tank

Both the cylindrical hopper and hot-melt tank will need cleaning occasionally to maintain their melting and anti-adherence properties. The tank interior is covered in PTFE and sufficiently slanted to help the unloading of the hot-melt adhesive and prevent it from remaining inside which would result in burning.

Also, when adhesives are mixed, reactions may occur between them, causing degeneration and problems unloading to the pump.

It is therefore recommended that the tank is cleaned each time:

- A different hot-melt adhesive is used.
- Too much carbon deposit is generated inside.

Changing adhesive type

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

   If you need to unload the adhesive before it has been used up, follow the instructions in the section 'Emptying the tank'.

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

Warning: Use the 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 (hose and applicator).

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.

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 work it is recommended, and sometimes necessary, to empty the tank.

To do so, follow the instructions below:

1. Maintain the melter unit at the working temperature.

2. Place a container under the purge valve to collect the adhesive.

Note: in case of pneumatic bypass valve, purge manually using the applicator used.

3. Open the purge valve anti-clockwise using a screwdriver.

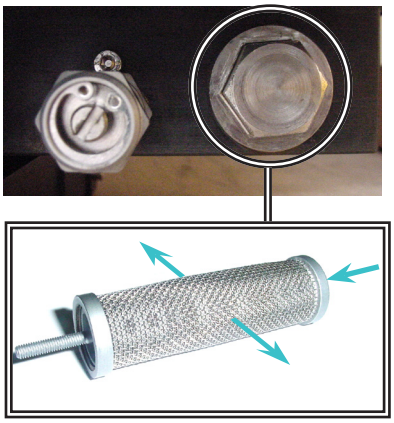
4. Set the pump to maximum speed.

5. After emptying the tank, close the purge valve, remove the container and clean the valve output for future operations.

Warning: Use the appropriate protective equipment for high temperatures.

Filter maintenance

SF4 melter equipment is equipped with a 100 mesh pump filter. The filter prevents impurities and burnt adhesive remains from being pushed out from the tank by the pump.



When the filter is removed from its housing, all the impurities remain inside so that the inside of the distributor stays perfectly clean. The filter can be cleaned or replaced with a new one.

No rule exists for determining when the filter should be changed. Several factors influence this decision:

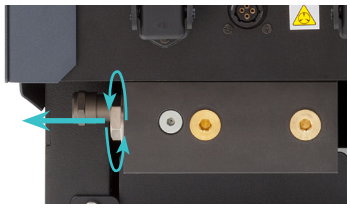
- The type and purity of the adhesives used.
- The working temperatures of the adhesive.
- Adhesive consumption in relation to the time in the tank.
- Changes to the type of adhesive used.

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

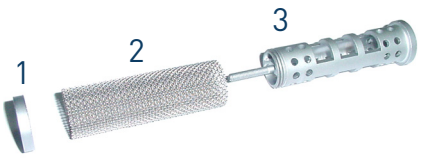
Warning: Always wear protective gloves and safety glasses. Risk of burns.

To change the filter:

1. Depressurise the system.
2. Using a 22 mm wrench, unscrew the hexagonal filter cap turning left and remove it.



3. Unscrew the filter nut (1) and remove the mesh (2) from the filter body (3).
4. Depending on how dirty the mesh (2) is, clean or replace it, following any waste regulations in force.
5. Screw the nut (1) back in place and place the filter inside the distributor.



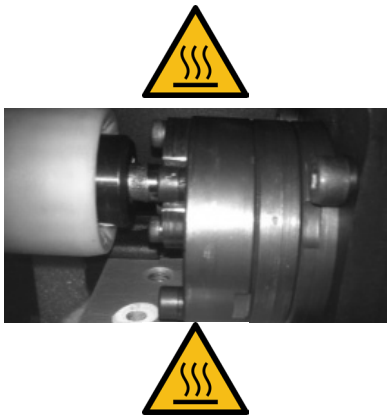
6. Replace the filter cap screw if damaged.
7. Screw the filter cap turning right and tighten as far as possible.
8. Continue to work as normal.

Warning: Use the appropriate protective equipment for high temperatures.

Pump maintenance

Leakage inspection

The pump is equipped with a gasket system in the shaft and gaskets in the seating pump to prevent adhesive leaks through it. Some adhesive can sometimes leak out and therefore the gasket system in the shaft or the gaskets in the seating pump must be changed. Before making any changes, make sure the position of the leak.



Warning: Change the gasket when the pump is hot.

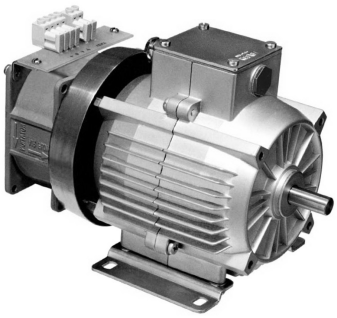
Remove the shaft coupling from the pump. Remove the screws fastening the gasket. Replace the gasket system in the shaft or the gaskets in the seating pump and reassemble.

However, before making any changes and in case of doubt should check with the Technical Assistance Service of Meler.

Warning: Always wear protective gloves and safety glasses. Risk of burns.

Gear motor maintenance

Cleaning the motor fan



Regularly check the condition of the motor fan and its vent grid.

If dust has accumulated, blow gently with air to clean (remove the protective cover if necessary).

Checking the lubricant

The gears are delivered filled with synthetic grease for lubrication -free from external contamination- 'for life'. Room temperature 0 ÷ 40°C with peaks of up to -20°C and +50°C.

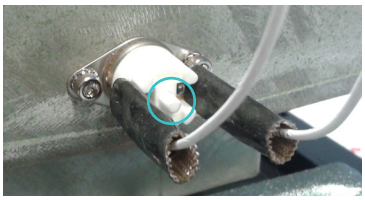
Only use lubricants recommended by the manufacturer. Other types of lubricants may cause premature wear or damage the gear.

Approximately 0.10 kg of lubricating grease fits into the gear model used.

Recommended lubricant

Grasa Kluber, Staburags NBU 12/300.

Safety Thermostat



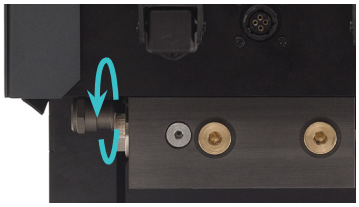
If there is a deactivation of the thermostat, dismantle the tank casing with the cover and slide the electrical cabinet along. When you can see the thermostat, press the button indicated to reset it.

Removing the equipment from its base

For more thorough maintenance of the equipment, the melter needs to be removed from its location so that it can be handled with greater ease and accessibility.

To do this, remove it from its base as follows:

1. Disconnect the equipment from the mains using the power switch on the side.
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. Remove the screws fastening the equipment to the base.
6. Raise the equipment upwards to remove from its base.



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6. TECHNICAL CHARACTERISTICS

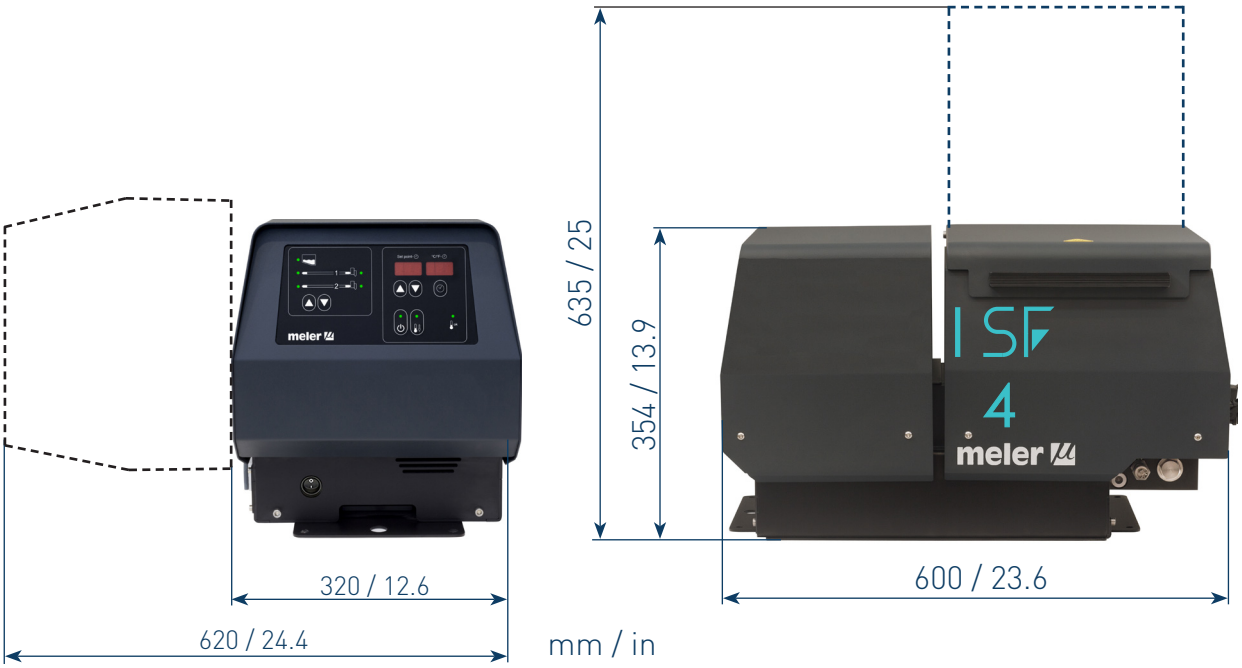
General

Tank volume	4 litres / 1,05 gal
Maximum pump flow rate **(*)**	between 1.2 and 15.6 kg/hr (2 cc/rev pump) between 2.6 and 34 lb/h
Maximum melting rate **(*)**	6,0 kg/h - 13 lb/h
Number of pumps	1
Number of outputs	2
Gear motor	three-phase 179 W two-pole forced ventilation
Pump	2 cc/rev
Pump rotation speed	0-100 rpm (recommended 10-80 rpm continuously)
Maximum working pressure	80 bar max. (1160 psi)
	mechanical or pneumatic bypass valve (adjustable)
Total equipment output	2400W_20 A
External functions	Temperature output ok
	External standby
Electrical requirements	LN~ 120 V 50 Hz + PE/ 20A
Room temperature	0 to 40°C (32 to 104 °F)
Temperature range	40 to 200°C (104 to 392°F)
Temperature control	RTD ±0.5°C (±1°C) / ±0.9 °F (±0,8 °F) Pt100 and Ni120
Dimensions	see diagram on following page
Weight	40 kg / 88 lb without load (approx)

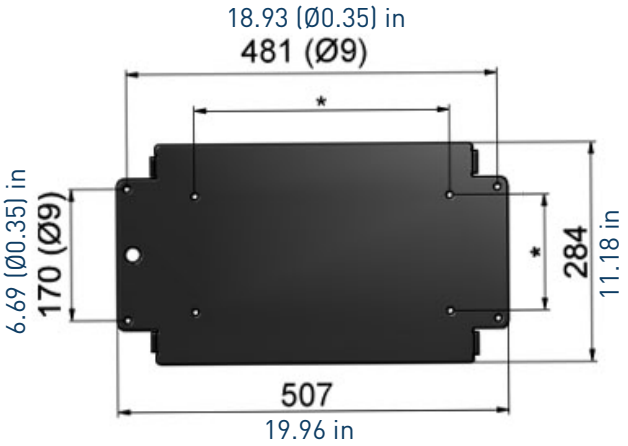
(*) Under normal conditions

Dimensions

Melting unit



Base plate



* For ML-240-ST series replacement.

7. ELECTRICAL DRAWINGS

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8. SPARE PART LIST

The most common spare parts list of the adhesive melters is shown in this chapter to give you a quick and sure guideline to choose them.

The spare parts are listed by groups in a natural order as they are located on the units.

As a visual help the manual includes drawings of the components with a drawing number to easy find them through the list.

The list includes the reference and description of the spare part.

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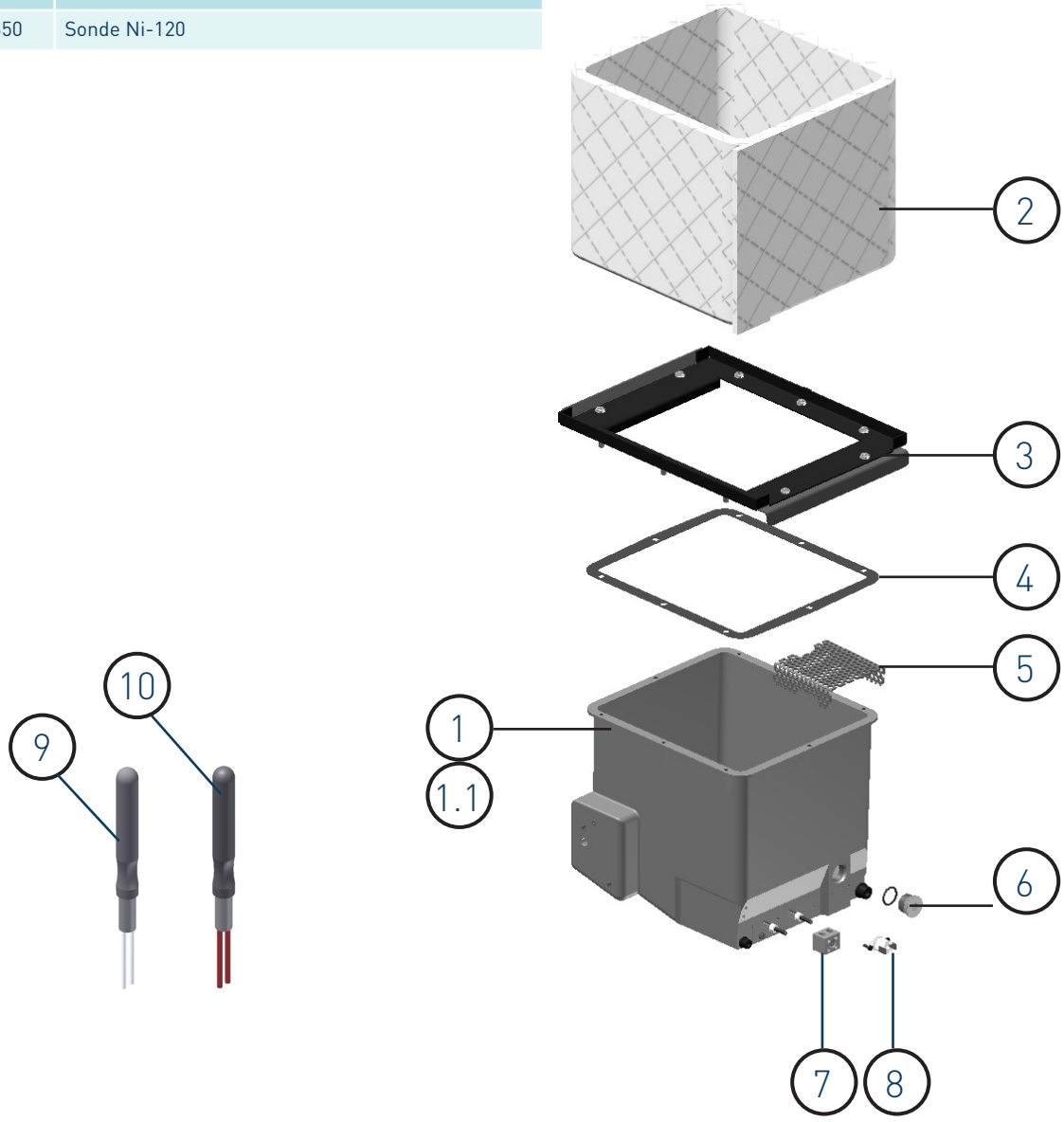
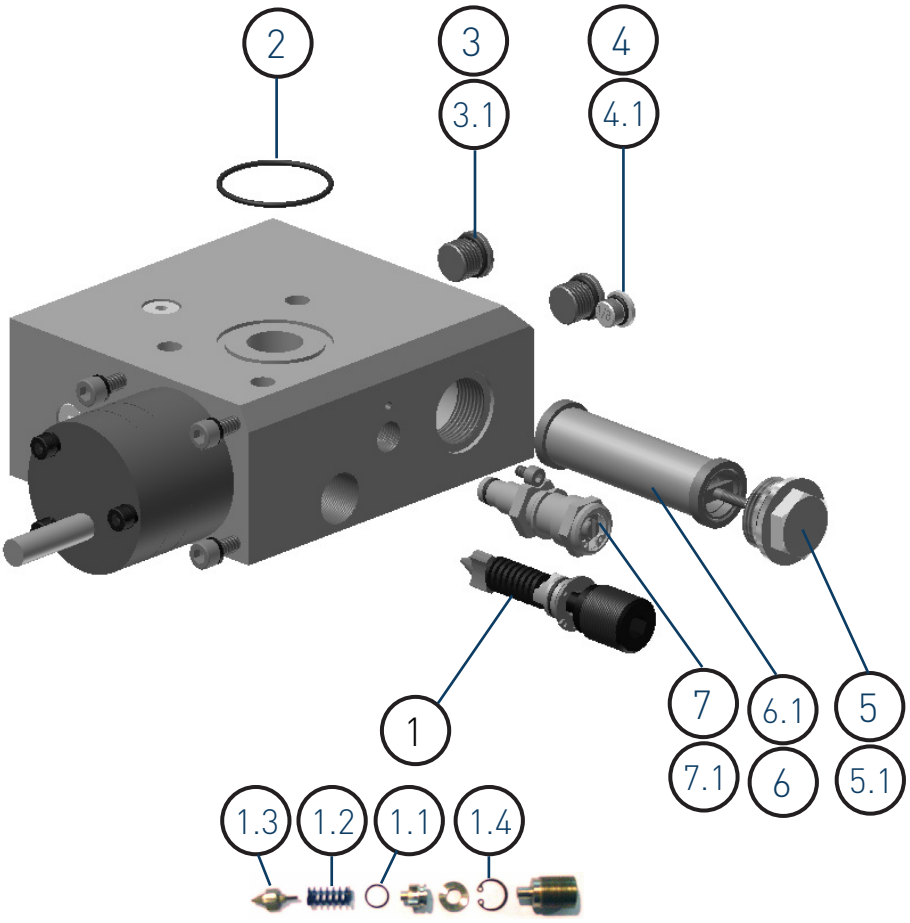
A. TANK GROUP

Nº	Ref.	Description
1	150112110	Complete tank assembly
1.1	150026180	PTFE coated tank
2	150028970	Insulation mantle
3	150112090	Tank port housing
4	150024650	Tank gasket
5	150115280	Tank grid
6	150021790	Plug with o-ring
7	10030007	Current connection strip
8	150114620	Safety thermostat 200°C
9	150022640	Sonde Pt-100
10	150022650	Sonde Ni-120



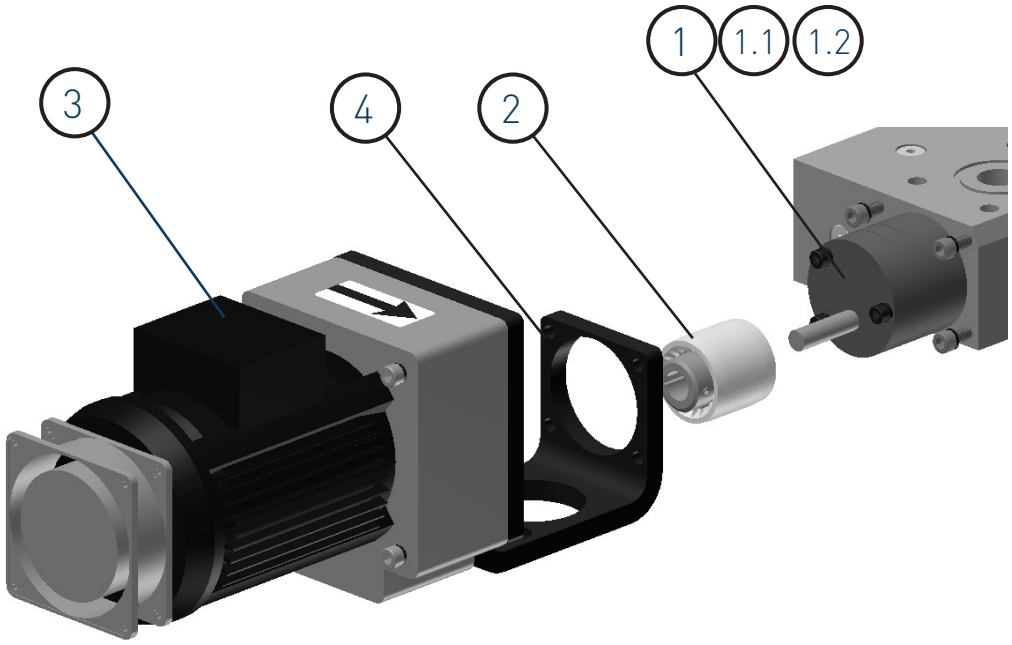
B. DISTRIBUTOR UNIT

Nº	Ref.	Descriptionn
1	150113810	Relief valve assembly
1.1	12330087	Relief valve assembly o-ring
1.2	150112820	Relief valve spring
1.3	150026060	Relief valve closing needle
1.4	150090390	Relief valve seeger ring
2	150090360	Tank-distributor seating o-ring
3	10100082	Pump plug with o-ring
3.1	10100083	Pump plug o-ring
4	10120095	Plug with balancing valve o-ring
4.1	10120096	Balancing valve plug o-ring
5	150029000	Filter plug with o-ring
5.1	10100053	Filter plug o-ring
6	10100090	Pump filter unit
6.1	10100051	Pump filter 100 mesh
7	150026330	Complete purge valve
7.1	150026340	Purge valve o-ring



C. MOTOR- PUMP UNIT

Nº	Ref.	Description
1	150026110	2cc/rev gear pump
1.1	150090410	Pump seating o-rings
1.2	R0007984	Gasket system in the shaft
2	150026090	Motor coupling
3	150026080	Geared motor ratio 43,39:1
4	150026100	Geared motor support



D. ELECTRIC PANEL AND AUXILIARY COMPONENTS

Nº	Ref.	Description
1	10000204	Control card
1.1	150112410	Fuse 6,3A 5x20 ultra fast
1.2	150115650	Fuse 10A 6x32 ultra fast
1.3	10010401	Fuse 1A 5x20
2	150114470	ON-OFF switch
3	16010003	8-pin female connector (base housing)
4	150020720	12-pin female connector (base housing)
5	150125830	Circuit breaker 20A 2P 120V
6	10140040	Cable gland Pg 13.5
7	150021590	Cable gland Pg 9
8	150125840	Inverter Delta 0.4KW 120V