AltaBlue™ TT Adhesive Melter for Precise Handheld Applications

Customer Product Manual
Part 1128190_03
Issued 03/2021

This document contains important safety information.
Be sure to read and follow all safety information in this document and any other related documentation.

NORDSON CORPORATION • DULUTH, GEORGIA • USA
www.nordson.com

Nordson Corporation welcomes requests for information, comments, and inquiries about its products. General information about Nordson can be found on the Internet using the following address: http://www.nordson.com.

Address all correspondence to:

Nordson Corporation
Attn: Customer Service
11475 Lakefield Drive
Duluth, GA 30097

Notice

Trademarks

Table of Contents

Section 1
Safety

Read this section before using the equipment. This section contains recommendations and practices applicable to the safe installation, operation, and maintenance (hereafter referred to as “use”) of the product described in this document (hereafter referred to as “equipment”). Additional safety information, in the form of task-specific safety alert messages, appears as appropriate throughout this document.

WARNING! Failure to follow the safety messages, recommendations, and hazard avoidance procedures provided in this document can result in personal injury, including death, or damage to equipment or property.

Safety Alert Symbols

The following safety alert symbol and signal words are used throughout this document to alert the reader to personal safety hazards or to identify conditions that may result in damage to equipment or property. Comply with all safety information that follows the signal word.

WARNING! Indicates a potentially hazardous situation that, if not avoided, can result in serious personal injury, including death.

CAUTION! Indicates a potentially hazardous situation that, if not avoided, can result in minor or moderate personal injury.

CAUTION! (Used without the safety alert symbol) Indicates a potentially hazardous situation that, if not avoided, can result in damage to equipment or property.

Responsibilities of the Equipment Owner

Equipment owners are responsible for managing safety information, ensuring that all instructions and regulatory requirements for use of the equipment are met, and for qualifying all potential users.

Safety Information

- Research and evaluate safety information from all applicable sources, including the owner-specific safety policy, best industry practices, governing regulations, material manufacturer's product information, and this document.
- Make safety information available to equipment users in accordance with governing regulations. Contact the authority having jurisdiction for information.
- Maintain safety information, including the safety labels affixed to the equipment, in readable condition.

Instructions, Requirements, and Standards

- Ensure that the equipment is used in accordance with the information provided in this document, governing codes and regulations, and best industry practices.
- If applicable, receive approval from your facility's engineering or safety department, or other similar function within your organization, before installing or operating the equipment for the first time.
- Provide appropriate emergency and first aid equipment.
- Conduct safety inspections to ensure required practices are being followed.
- Re-evaluate safety practices and procedures whenever changes are made to the process or equipment.

User Qualifications

Equipment owners are responsible for ensuring that users:

- receive safety training appropriate to their job function as directed by governing regulations and best industry practices
- are familiar with the equipment owner's safety and accident prevention policies and procedures
- receive equipment- and task-specific training from another qualified individual

  NOTE: Nordson can provide equipment-specific installation, operation, and maintenance training. Contact your Nordson representative for information

- possess industry- and trade-specific skills and a level of experience appropriate to their job function
- are physically capable of performing their job function and are not under the influence of any substance that degrades their mental capacity or physical capabilities

Applicable Industry Safety Practices

The following safety practices apply to the use of the equipment in the manner described in this document. The information provided here is not meant to include all possible safety practices, but represents the best safety practices for equipment of similar hazard potential used in similar industries.

Intended Use of the Equipment

- Use the equipment only for the purposes described and within the limits specified in this document.
- Do not modify the equipment.
- Do not use incompatible materials or unapproved auxiliary devices. Contact your Nordson representative if you have any questions on material compatibility or the use of non-standard auxiliary devices.

Instructions and Safety Messages

- Read and follow the instructions provided in this document and other referenced documents.
- Familiarize yourself with the location and meaning of the safety warning labels and tags affixed to the equipment. Refer to *Safety Labels and Tags* at the end of this section.
- If you are unsure of how to use the equipment, contact your Nordson representative for assistance.

Installation Practices

- Install the equipment in accordance with the instructions provided in this document and in the documentation provided with auxiliary devices.
- Ensure that the equipment is rated for the environment in which it will be used. This equipment has not been certified for compliance with the ATEX directive nor as nonincendive and should not be installed in potentially explosive environments.
- Ensure that the processing characteristics of the material will not create a hazardous environment. Refer to the Safety Data Sheet (SDS) for the material.
- If the required installation configuration does not match the installation instructions, contact your Nordson representative for assistance.
- Position the equipment for safe operation. Observe the requirements for clearance between the equipment and other objects.
- Install lockable power disconnects to isolate the equipment and all independently powered auxiliary devices from their power sources.
- Properly ground all equipment. Contact your local building code enforcement agency for specific requirements.
- Ensure that fuses of the correct type and rating are installed in fused equipment.
- Contact the authority having jurisdiction to determine the requirement for installation permits or inspections.

Operating Practices

- Familiarize yourself with the location and operation of all safety devices and indicators.
- Confirm that the equipment, including all safety devices (guards, interlocks, etc.), is in good working order and that the required environmental conditions exist.
- Use the personal protective equipment (PPE) specified for each task. Refer to *Equipment Safety Information* or the material manufacturer's instructions and SDS for PPE requirements.
- Do not use equipment that is malfunctioning or shows signs of a potential malfunction.

Maintenance and Repair Practices

- Allow only personnel with appropriate training and experience to operate or service the equipment.
- Perform scheduled maintenance activities at the intervals described in this document.
- Relieve system hydraulic and pneumatic pressure before servicing the equipment.
- De-energize the equipment and all auxiliary devices before servicing the equipment.
- Use only new Nordson-authorized refurbished or replacement parts.
- Read and comply with the manufacturer's instructions and the SDS supplied with equipment cleaning compounds.

  NOTE: SDSs for cleaning compounds that are sold by Nordson are available at www.nordson.com or by calling your Nordson representative.
- Confirm the correct operation of all safety devices before placing the equipment back into operation.
- Dispose of waste cleaning compounds and residual process materials according to governing regulations. Refer to the applicable SDS or contact the authority having jurisdiction for information.
- Keep equipment safety warning labels clean. Replace worn or damaged labels.

Equipment Safety Information

This equipment safety information is applicable to the following types of Nordson equipment:

- hot melt and cold adhesive application equipment and all related accessories
- pattern controllers, timers, detection and verification systems, and all other optional process control devices

Equipment Shutdown

To safely complete many of the procedures described in this document, the equipment must first be shut down. The level of shut down required varies by the type of equipment in use and the procedure being completed.
If required, shut down instructions are specified at the start of the procedure.
The levels of shut down are:

Relieving System Hydraulic Pressure

Completely relieve system hydraulic pressure before breaking any hydraulic connection or seal. Refer to the melter-specific product manual for instructions on relieving system hydraulic pressure.

De-energizing the System

Isolate the system (melter, hoses, applicators, and optional devices) from all power sources before accessing any unprotected high-voltage wiring or connection point.

1. Turn off the equipment and all auxiliary devices connected to the equipment (system).
2. To prevent the equipment from being accidentally energized, lock and tag the disconnect switch(es) or circuit breaker(s) that provide input electrical power to the equipment and optional devices.

   NOTE: Government regulations and industry standards dictate specific requirements for the isolation of hazardous energy sources. Refer to the appropriate regulation or standard.

Disabling the Applicators

NOTE: Adhesive dispensing applicators are referred to as “guns” in some previous publications.

All electrical or mechanical devices that provide an activation signal to the applicators, applicator solenoid valve(s), or the melter pump must be disabled before work can be performed on or around an applicator that is connected to a pressurized system.

1. Turn off or disconnect the applicator triggering device (pattern controller, timer, PLC, etc.).
2. Disconnect the input signal wiring to the applicator solenoid valve(s).
3. Reduce the air pressure to the applicator solenoid valve(s) to zero; then relieve the residual air pressure between the regulator and the applicator.

General Safety Warnings and Cautions

Table 1-1 contains the general safety warnings and cautions that apply to Nordson hot melt and cold adhesive equipment. Review the table and carefully read all of the warnings or cautions that apply to the type of equipment described in this manual.

Equipment types are designated in Table 1-1 as follows:

HM = Hot melt (melters, hoses, applicators, etc.)

PC = Process control

CA = Cold adhesive (dispensing pumps, pressurized container, and applicators)

Table 1-1General Safety Warnings and Cautions

Equipment Type	Warning or Caution
HM	**WARNING!** Hazardous vapors! Before processing any polyurethane reactive (PUR) hot melt or solvent-based material through a compatible Nordson melter, read and comply with the material's SDS. Ensure that the material's processing temperature and flashpoints will not be exceeded and that all requirements for safe handling, ventilation, first aid, and personal protective equipment are met. Failure to comply with SDS requirements can cause personal injury, including death.
HM	**WARNING!** Reactive material! Never clean any aluminum component or flush Nordson equipment with halogenated hydrocarbon fluids. Nordson melters and applicators contain aluminum components that may react violently with halogenated hydrocarbons. The use of halogenated hydrocarbon compounds in Nordson equipment can cause personal injury, including death.
HM, CA	**WARNING!** System pressurized! Relieve system hydraulic pressure before breaking any hydraulic connection or seal. Failure to relieve the system hydraulic pressure can result in the uncontrolled release of hot melt or cold adhesive, causing personal injury.

Continued...

Table 1-1General Safety Warnings and Cautions *(contd)*

Equipment Type	Warning or Caution
HM	**WARNING!** Molten material! Wear eye or face protection, clothing that protects exposed skin, and heat-protective gloves when servicing equipment that contains molten hot melt. Even when solidified, hot melt can still cause burns. Failure to wear appropriate personal protective equipment can result in personal injury.
HM, PC	**WARNING!** Equipment starts automatically! Remote triggering devices are used to control automatic hot melt applicators. Before working on or near an operating applicator, disable the applicator's triggering device and remove the air supply to the applicator's solenoid valve(s). Failure to disable the applicator's triggering device and remove the supply of air to the solenoid valve(s) can result in personal injury.
HM, CA, PC	**WARNING!** Risk of electrocution! Even when switched off and electrically isolated at the disconnect switch or circuit breaker, the equipment may still be connected to energized auxiliary devices. De-energize and electrically isolate all auxiliary devices before servicing the equipment. Failure to properly isolate electrical power to auxiliary equipment before servicing the equipment can result in personal injury, including death.
HM, CA, PC	**WARNING!** Risk of fire or explosion! Nordson adhesive equipment is not rated for use in explosive environments and has not been certified for the ATEX directive or as nonincendive. In addition, this equipment should not be used with solvent-based adhesives that can create an explosive atmosphere when processed. Refer to the SDS for the adhesive to determine its processing characteristics and limitations. The use of incompatible solvent-based adhesives or the improper processing of solvent-based adhesives can result in personal injury, including death.
HM, CA, PC	**WARNING!** Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others and can damage to the equipment.

Equipment Type	Warning or Caution
HM	 **CAUTION!** Hot surfaces! Avoid contact with the hot metal surfaces of applicators, hoses, and certain components of the melter. If contact can not be avoided, wear heat-protective gloves and clothing when working around heated equipment. Failure to avoid contact with hot metal surfaces can result in personal injury.
HM	**CAUTION!** Some Nordson melters are specifically designed to process polyurethane reactive (PUR) hot melt. Attempting to process PUR in equipment not specifically designed for this purpose can damage the equipment and cause premature reaction of the hot melt. If you are unsure of the equipment's ability to process PUR, contact your Nordson representative for assistance.
HM, CA	**CAUTION!** Before using any cleaning or flushing compound on or in the equipment, read and comply with the manufacturer's instructions and the SDS supplied with the compound. Some cleaning compounds can react unpredictably with hot melt or cold adhesive, resulting in damage to the equipment.
HM	**CAUTION!** Nordson hot melt equipment is factory tested with Nordson Type R fluid that contains polyester adipate plasticizer. Certain hot melt materials can react with Type R fluid and form a solid gum that can clog the equipment. Before using the equipment, confirm that the hot melt is compatible with Type R fluid.

Other Safety Precautions

- Do not use an open flame to heat hot melt system components.
- Check high pressure hoses daily for signs of excessive wear, damage, or leaks.
- Never point a dispensing handheld applicator at yourself or others.
- Suspend dispensing handheld applicators by their proper suspension point.

First Aid

If molten hot melt comes in contact with your skin:

1. Do NOT attempt to remove the molten hot melt from your skin.
2. Immediately soak the affected area in clean, cold water until the hot melt has cooled.
3. Do NOT attempt to remove the solidified hot melt from your skin.
4. In case of severe burns, treat for shock.
5. Seek expert medical attention immediately. Give the SDS for the hot melt to the medical personnel providing treatment.

Safety Labels and Tags

Figure 1-1 illustrates the location of the product safety labels and tags affixed to the equipment. Table 1-2 provides an illustration of the hazard identification symbols that appear on each safety label and tag, the meaning of the symbol, or the exact wording of any safety message.

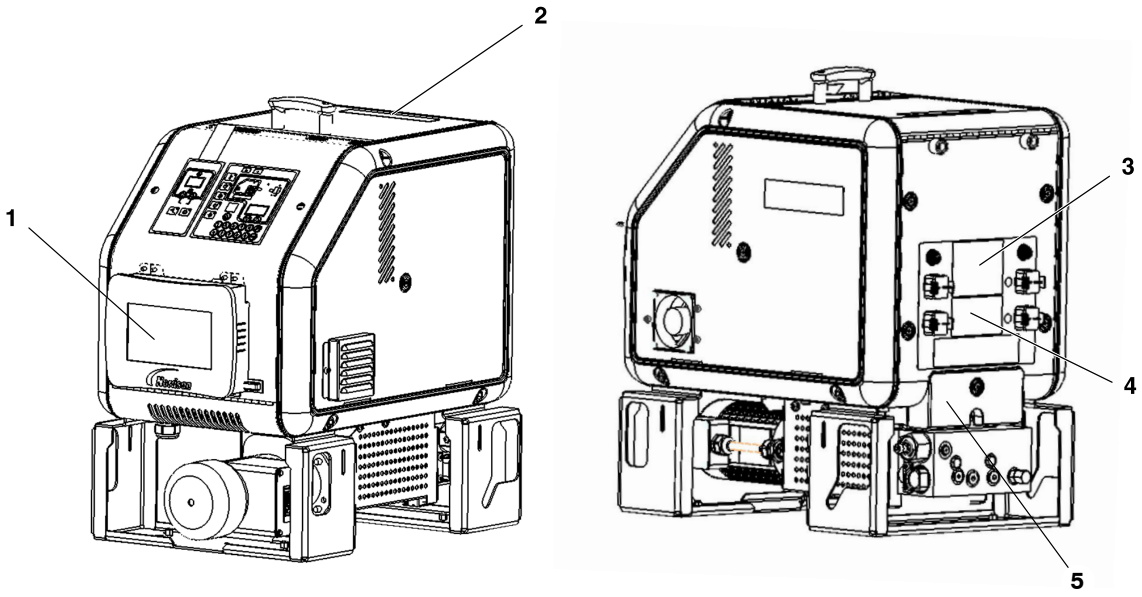


Figure 1-1 Safety labels and tags

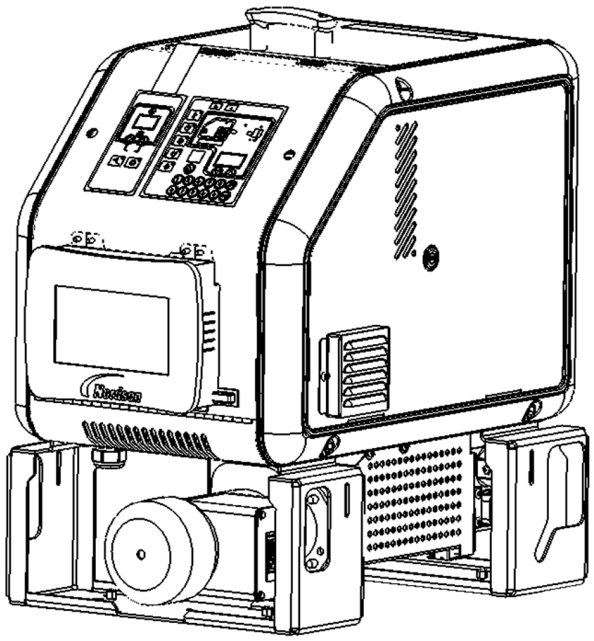
Table 1-2 Safety Labels and Tags

Item	Description
1	**WARNING:** Hazardous voltage. Disconnect all power supply connections before servicing.
2	**CAUTION:** Burn hazard. Hot surfaces.
3	**WARNING:** Hazardous voltage. Disconnect all power supply connections before servicing.
4	**CAUTION:** Burn hazard. Hot surfaces.
5	**WARNING:** Burn hazard. Hot adhesive. Release pressure before servicing.
NS	 Tag, hazardous voltage [located inside the electrical cabinet on the main board—refer to Section 8, *Parts*, for an illustration that shows the location of the main board]
NS: Not Shown	

This page intentionally left blank.

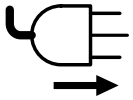
Section 2
Introduction

This manual describes the installation and use of the AltaBlue for Handheld Applications TT16L (MT16L) adhesive melters. When necessary, the reader is referred to the documentation supplied with other Nordson products or products supplied by third parties.



Other Sources of Information

Refer to the following additional resources for quick-reference information, technical support, and information about getting the most out of your AltaBlue TT melter.



Installation Guide

The installation guide shipped with the melter provides a visual quick-reference for installing the melter.

User's Guide

The user's guide shipped with the melter provides a visual quick-reference to the most common operator-level tasks. The guide is appropriately sized and laminated so that it can be kept with the melter on the production floor.

Online Support

Visit www.enordson.com/support to download melter firmware updates and Blue Series software utilities.

Product Description

See Figure 2-1. Nordson AltaBlue TT adhesive melters are used in conjunction with Nordson hot melt hoses and applicators to create a hot melt application system.

The melter liquifies solid-form hot melt and maintains the hot melt at the desired temperature. When the applicators are activated, the melter pumps the liquified hot melt through the hoses and out the applicator nozzles, where it is commonly applied to the surface of a product.

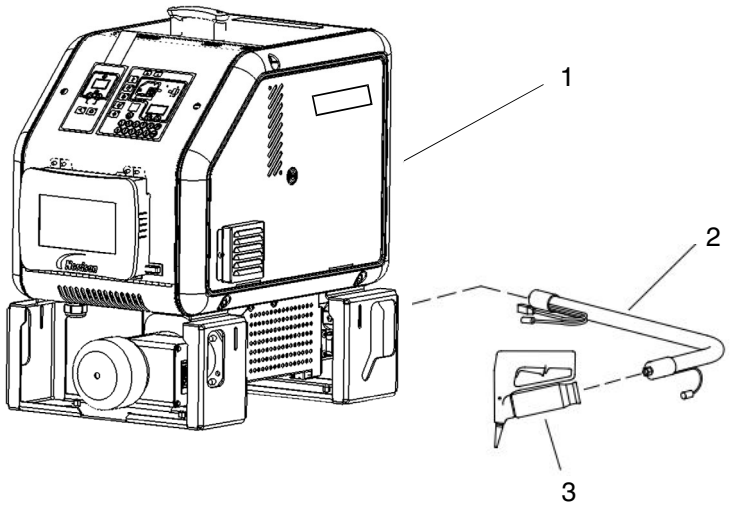


Figure 2-1 System components

1. AltaBlue TT melter
2. Hot melt hose
3. Hot melt handheld applicator

Intended Use

AltaBlue TT melters are specifically designed to:

- Melt and pump solid-form hot melt materials that are engineered to be liquified and extruded at temperatures below 230 °C (450 °F)
- Be used with compatible hot melt hoses and applicators that are manufactured by Nordson Corporation
- Be used in non-explosive environments

Limitations of Use

Use AltaBlue TT melters only for the purpose for which they are designed. AltaBlue TT melters should not be used:

- to melt or pump polyurethane reactive hot melt materials or any other material that creates a health or safety hazard when heated
- in environments that will require the melter to be cleaned using a water wash or spray

Modes of Operation

AltaBlue TT melters operate in the following modes:

Automatic scan—The melter automatically checks and displays the current temperature of the tank, hoses, and applicators to confirm that they are within their pre-defined temperature range. By default, the melter is always in the automatic scan mode unless it is placed into another operating mode.

Standby—The temperatures of the tank, hoses, and applicators are reduced down from their operating temperature (hereafter referred to as setpoint temperature) by a pre-set number of degrees.

Setup—The setup mode is used to configure melter control options and features and to review stored operating data. To prevent unauthorized changes to the melter's configuration, the melter can be password-protected.

Fault—The melter alerts the operator when an abnormal event occurs.

Manual and gear-to-line—The melter allows you to manually set the adhesive output rate or the melter can automatically adjust the adhesive output based on production requirements.

Melter Identification

See Figure 2-2. You will need the model and part number of your melter when requesting service or ordering spare parts and optional equipment. The model and part number are indicated on the equipment identification plate that is located on the front of the melter.

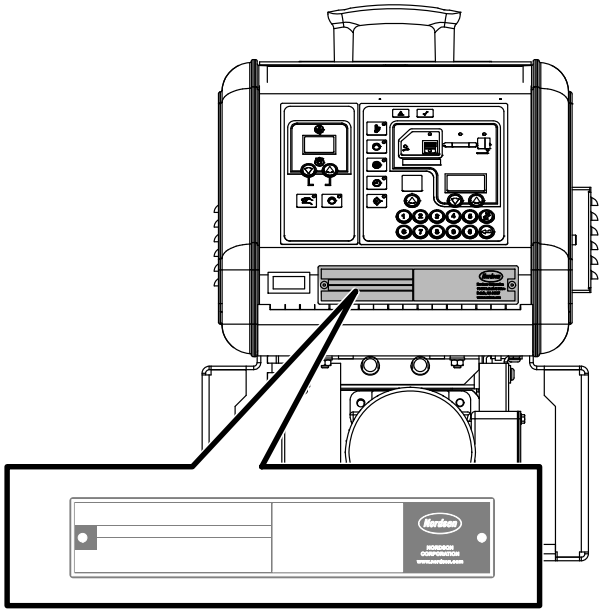


Figure 2-2 Equipment identification plate

Key Components

Figure 2-3 provides the name and the location of key melter components.

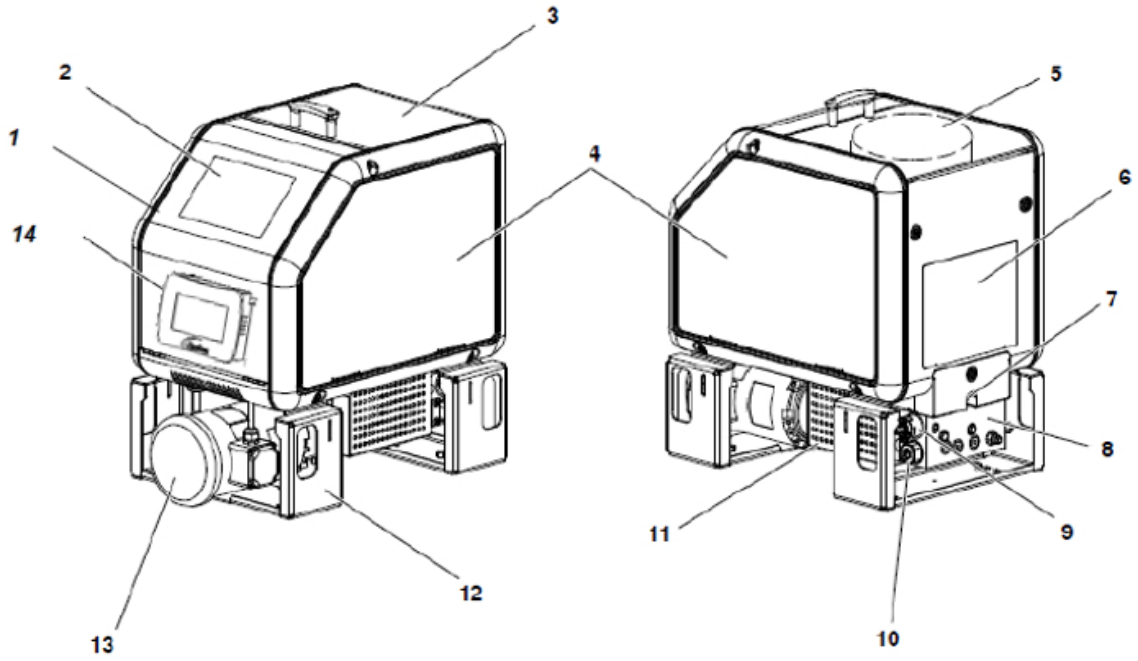


Figure 2-3 Key components

1. Electrical enclosure door
2. Control panels (see Figure 2-4)
3. Tank lid
4. Side panels
5. Tank
6. Hose/applicator receptacles
7. Tank isolation valve (A10/A16 only)
8. Manifold
9. Pressure control valve
10. Filter
11. Pump
12. Mounting bracket
13. Motor
14. Handheld applicator controller

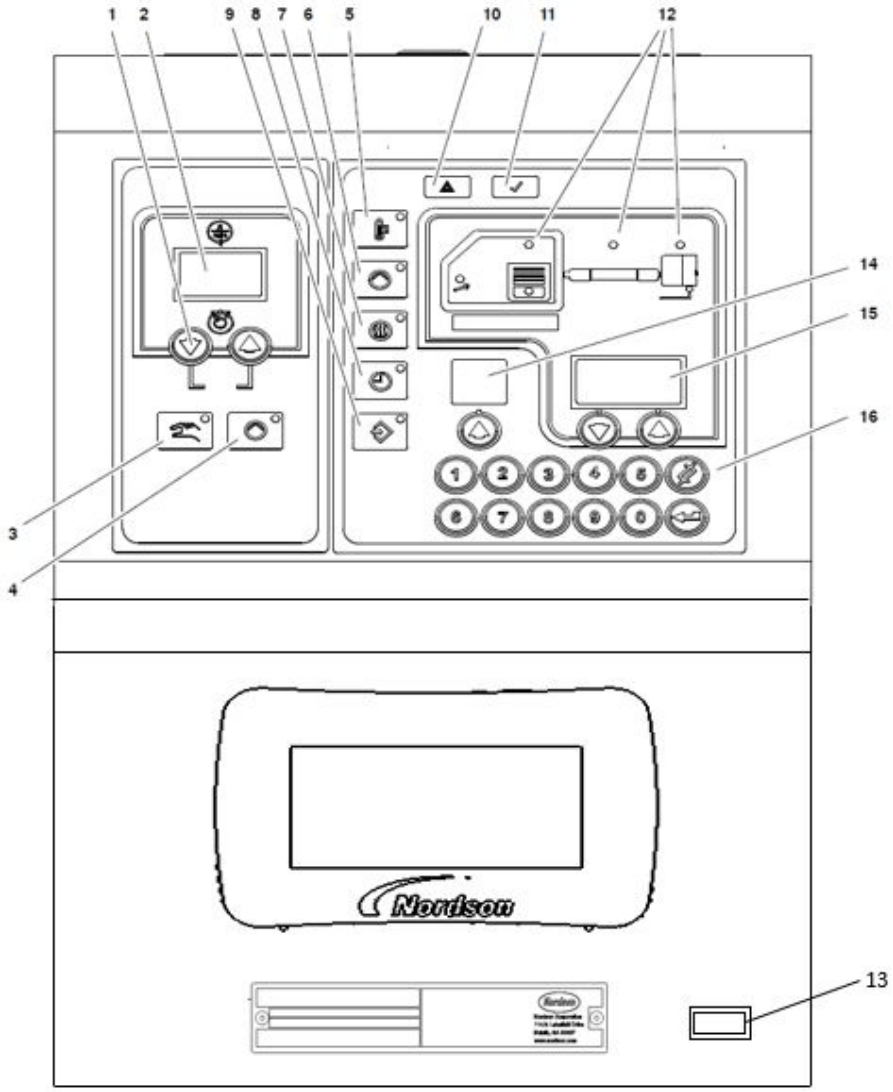


Figure 2-4 Motor control panel (left), melter control panel (right), and control switch

1. Pump speed arrow keys
2. Pump speed display (rpm)
3. Pump mode key/LED
4. Pump enable key/LED
5. Standby key/LED
6. Master pump enable key/LED
7. Heaters key/LED
8. Clock key/LED
9. Setup key/LED
10. Fault light
11. Ready light
12. Component keys/LEDs
13. Control switch
14. Left display and arrow key
15. Right display and arrow keys
16. Numeric keypad

Note: The control switch on an A10/A16 melter is located to the lower right of the control panel.

Optional Equipment

Optional equipment may be ordered to expand the functionality of AltaBlue TT melters, including, but not limited to, the following:

- **Input/output (I/O) expansion cards (digital)** that allow you to expand the number of available control inputs and outputs.
- **Communications cards** that allow the melter to communicate with other process equipment or a controller using standard network protocols.
- **Automatic pressure control** kit that allows the melter to automatically adjust adhesive output pressure based on production requirements.
- **Pressure gauge** that provides a manifold hydraulic pressure reading.
- **Footswitch** that allows remote pump activation.
- **Air control kit** that controls the module-actuating air for a manual manifold-mounted applicator or a manual spray applicator.
- **Handheld applicator hanger** that provides a convenient and safe method for storing a handheld applicator that is not in use.
- **Pressure control valve knob** that replaces the hex screw pressure adjustment with a hand knob.

Refer to Section 7, *Parts*, for a complete list of optional equipment.

Control Box

The MT16L melter has a new control box near the key membrane panel. This control box allows requirements for handheld applications to be set using the touch screen.

The control box can be rotated from 0° to 90° to provide a suitable position for operation.

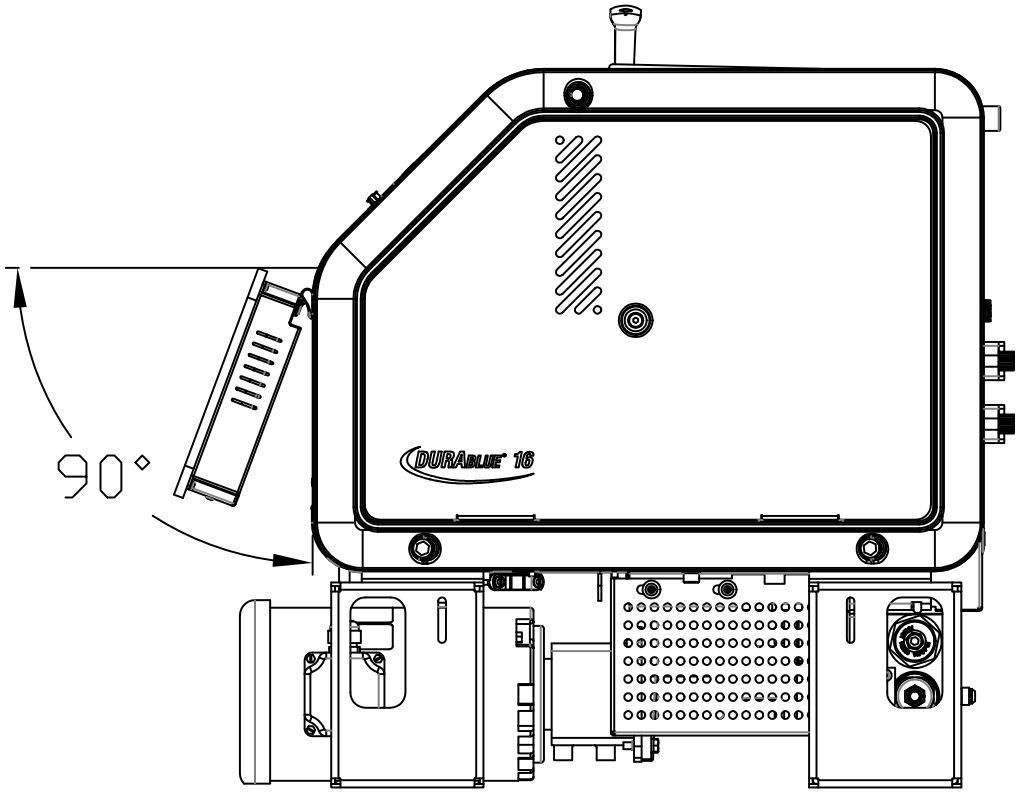


Figure 2-5 Control box rotated from 0 to 90 degrees

The functions that can be completed on the control box are as follows:

- Adhesive output can be adjusted by the applicator numbers being open.
- There are five recipes to choose from.
- Air control function. The operating air will be opened prior to the adhesive for a period of delay time when the applicator is turned on. However, it will not be closed immediately when the applicator is turned off. It will be kept for another period of delay time until the residual adhesive is completely removed.
- The delay time can be entered from 0 to 3 seconds on the touch screen.

This page intentionally left blank.

Section 3
Installation

WARNING! Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others, and damage to the equipment.

Quick-Start

If you have already installed the melter using the installation guide (P/N 1024498) that is provided inside the shipping container, and you have no questions concerning the installation, go to *Setting Up the Melter* later in this section for information about how to prepare the melter to operate with your manufacturing process.

Overview

AltaBlue TT melters are factory-configured for each order and require only the assembly and set up tasks described in this section. If your melter was ordered as a complete system, the shipping container will also contain one or more hot melt hoses and applicators.

The melter is shipped from the factory with an installation kit that contains components that must be assembled on the melter by the customer. Some additional materials must also be supplied by the customer to complete the installation.

If optional equipment was ordered with the melter, refer to the documentation provided with the optional equipment for installation and operating instructions.

Additional Information

This section presents installation procedures in their most commonly used form. Procedural variations or special considerations are explained in the additional information table that follows most procedures. Where applicable, some table entries also contain cross-reference information. Additional information tables are indicated by the symbol shown to the left.

Installation Tasks

The installation sequence is as follows:

1. Verify that the required installation conditions and utilities exist.
2. Unpack and inspect the melter.
3. Mount the melter on the parent machine or support structure.
4. Configure the electrical service.
5. Connect hot melt hoses and applicators.
6. Set up the melter to work with the manufacturing process.
7. (Optional) Install inputs and outputs.
8. Install optional equipment.
9. (If used) Connect a applicator driver, pattern controller, or timer.
10. Flush the melter.
11. Adjust the pressure control valve.
12. Adjust the motor for manual or gear-to-line operation.

Experience of Installation Personnel

The instructions provided in this section are intended to be used by personnel who have experience in the following subjects:

- Hot melt application processes
- Industrial power and control wiring
- Industrial mechanical installation practices
- Basic process control and instrumentation

Installation Requirements

Before installing the melter, ensure that the desired installation location provides the required clearances, environmental conditions, and utilities.

Clearances

Figure 3-1 illustrates the *minimum* clearances that are required between the melter and surrounding objects. Table 3-1 describes each clearance.

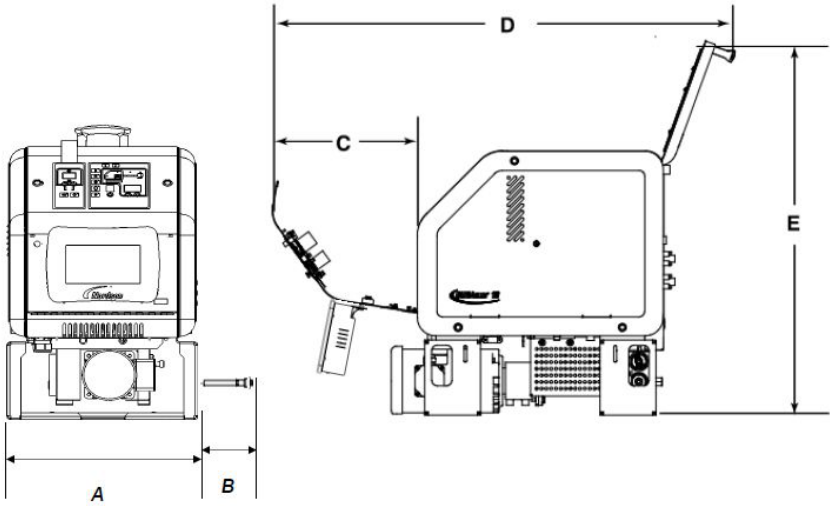


Figure 3-1 Minimum installation clearances

Table 3-1 Minimum Installation Clearances

Item	Description	Required Clearance
		A10 MT16L
A	Width of melter at the outside of the mounting brackets.	393 mm (15.48 in.)
B	Clearance required between the melter and the nearest object in order to remove the filter.	203 mm (8.00 in.)
C	Clearance required for electrical enclosure ventilation.	100 mm (4.00 in.)
D	Clearance required between the front end of the melter (control panel) and the nearest object in order to fully open the electrical enclosure door	330 mm (12.99 in.)
E	Minimum horizontal space required for the melter when both the electrical enclosure door and tank lid are fully opened.	1052 mm (41.40 in.)
F	Minimum vertical space required for the melter when the tank lid is at its highest point.	878 mm (34.57 in.)

Electrical Power

Before installing the melter, ensure that the melter will not be overloaded and that the plant's electrical service is rated to handle the power required by the melter and the hoses and applicators that you plan to use.

Refer to Appendix A, *Calculating Melter Power Requirements*, for information about how to calculate the maximum allowable hose lengths and applicator wattages that can be used in your manufacturing application.

WARNING! Risk of electrocution! Install a lockable power disconnect switch between the electrical service and the melter. Failure to install or properly use the disconnect switch when servicing the melter can result in personal injury, including death.

Electrical Enclosure Ventilation

AltaBlue TT melters are cooled by forced air. Air is drawn in through the ventilation fan and is exhausted out of the ventilation slots on the side of the melter.

CAUTION! Do not block the fan air intake openings or the exhaust ventilation slots.

Other Considerations

Consider the following additional factors when determining where to install the melter.

- The maximum distance between the melter and each applicator is dictated by the power requirement of each hose. Refer to Appendix A, *Calculating Melter Power Requirements*, for information about how to determine the maximum allowable length.
- The operator must be able to safely reach the control panel and accurately monitor the control panel indicators.
- The operator must be able to safely observe the level of hot melt inside the tank.
- The melter must be installed away from areas with strong drafts or where sudden temperature changes occur.
- The melter must be installed where it will be in conformance with the ventilation requirements specified in the Material Safety Data Sheet for the hot melt being used.

Unpacking the Melter

Before starting the installation, remove the melter from the pallet, locate the installation kit, and inspect the melter for damaged and missing parts. Report any problems to your Nordson representative.

Customer-Supplied Materials

The following additional materials are required to install the melter:

- Four 8 mm ($^{5}/_{16}$ in.) machine bolts and locking hardware
- One10 mm^2 (8 AWG) power cable

Contents of the Installation Kit

The installation kit provided with the melter contains the components shown in Figure 3-2, as applicable. The quantity and type of hose fittings provided in the kit depends upon the melter's model number and configuration.

NOTE: Fuses are provided as spares.

The installation kit also contains a package of safety label overlays that are printed in variety of languages. If required by local regulations, the appropriate language overlay should be applied over the English version of the same label. Refer to *Safety Labels and Tags* in Section 1, *Safety*, for the location of each safety label.

MT16L Melter Installation Kit

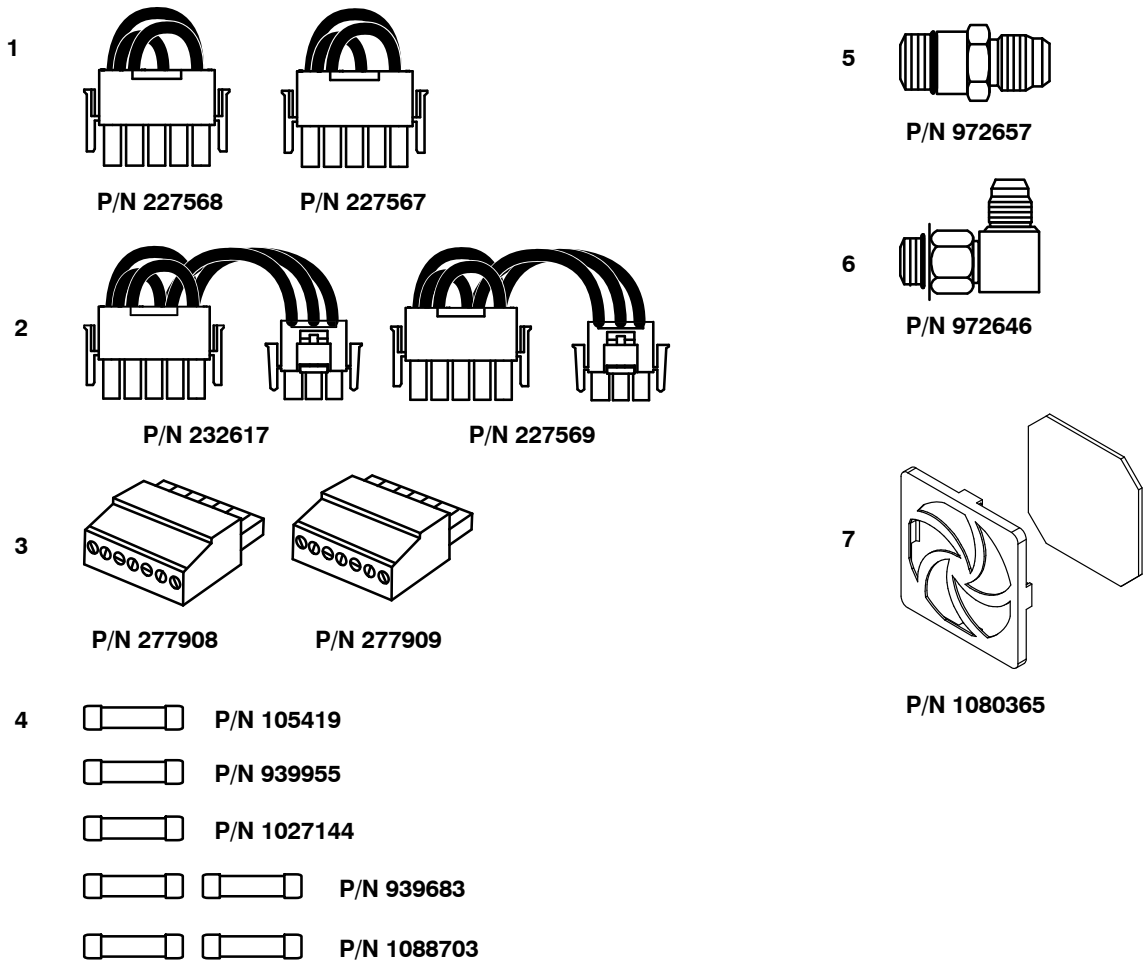


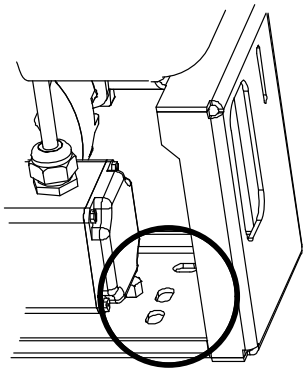
Figure 3-2 A10 and A16 installation kit components

1. Voltage plug (2)
2. Voltage plug with neutral (2)
3. Input/output connectors (2)
4. Spare fuses (7)
5. Straight hose fitting
6. 90-degree hose fitting
7. Fan filter (2)

Mounting the Melter

Before mounting the melter, ensure that the parent machine or support structure is level with respect to the floor, provides an even mounting surface, is not subject to extreme vibration, and is capable of supporting the weight of the melter, a full tank of hot melt, and the hoses and applicators.

Refer to Section 8, *Technical Data*, for the weight of the melter. Refer to the technical data provided by the hot melt manufacturer for information about the volumetric weight of the hot melt.



Mounting holes

To mount the melter

See Figure 3-3. Use 8 mm ($^{5}/_{16}$ in.) machine bolts and locking hardware to secure the melter mounting brackets to the mounting surface.

MT16L

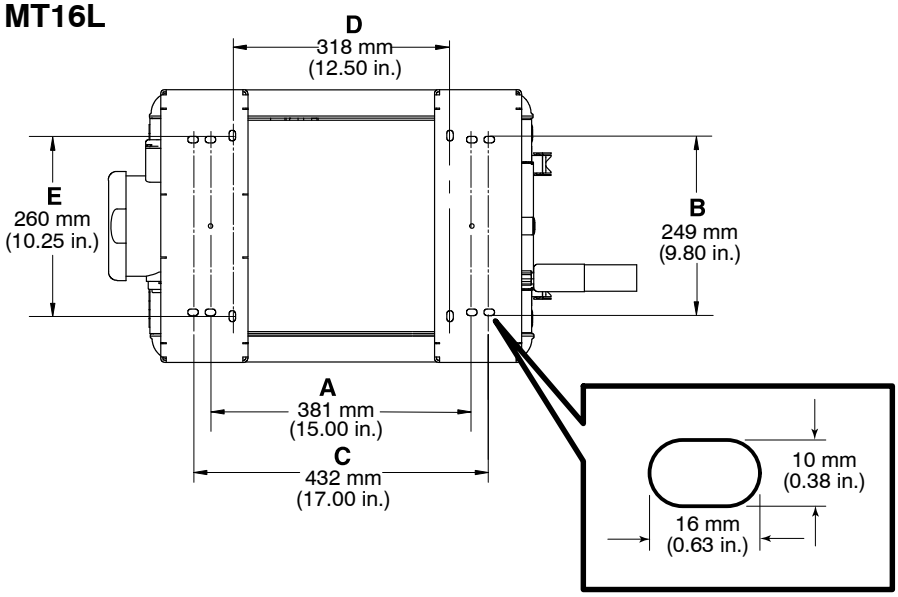


Figure 3-3 Bolt mounting patterns

Configuring the Electrical Service

AltaBlue TT melters are shipped from the factory without an attached power cable and without a designated service-type. To configure the melter to function in your facility, you must connect a power cable to the melter and designate the service type by installing a Nordson-supplied voltage plug into the melter.

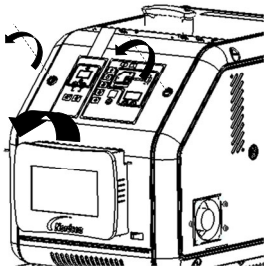
To connect a power cable to the melter

WARNING! Risk of electrocution! Install a lockable power disconnect switch between the electrical service and the melter. Failure to install or properly use the disconnect switch when servicing the melter can result in personal injury, including death.

1. Select a 10 mm^2 (8 AWG) power cable that meets applicable electrical codes and standards. The maximum amperages of AltaBlue TT melters operating at a specified voltage are shown in Table 3-2.

Table 3-2 Maximum Amperages

Model	Voltage (VAC)	Maximum Amperage
MT16L	200, 1-phase 200, 3-phase	32
	200-240, 1-phase 200-240, 3-phase 400, 3-phase	29
NOTE: The voltage tolerance is ± 10 percent. For 200 VAC systems, the voltage must be 180-220 VAC. For 200-240 VAC systems, the voltage must be 180-264 VAC.		



Opening the electrical enclosure door

2. Open the electrical enclosure door.

See Figure 3-4 for A10/A16 melters.

3. Route the power cable between the power disconnect switch and the melter and then through the PG-21 or 1-inch conduit penetration on the floor of the electrical compartment.
4. Connect each power cable lead to terminal block XT1, as shown in Figure 3-4. Table 3-3 lists the terminals that are used for each of the electrical service types that are compatible with the melter.
5. Connect the ground lead from the power cable to the ground lug that is located on the chassis. The ground lug is marked PE/G.

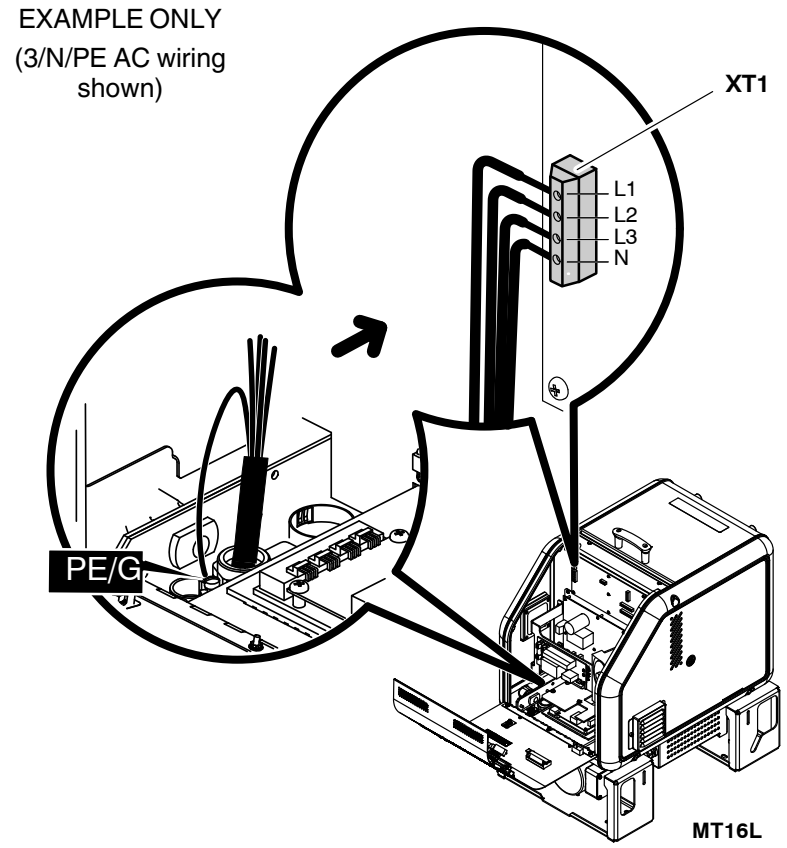


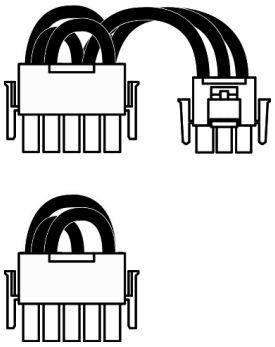
Figure 3-4 Connecting the power cable and ground lead on MT16L melters

Table 3-3 Electrical Service Information for A10/A16 Melters

If the Electrical Service Type is..		Use Electrical Connector Terminals..				Use Voltage Plug..
		L1	L2	L3	N	
400/230 VAC 3-phase (4-wire service, including a neutral) (See Note A)	3/N/PE AC 400/230V	●	●	●	●	227569 Red/Yellow (See Note B)
230 VAC 1-phase (2-wire service, including a neutral) (See Note A)	1/N/PE AC 200–240V	●			●	232617 Blue/Yellow (See Note B)
200 VAC or 200 to 240 VAC 3-phase (3-wire service without a neutral)	3/PE AC 200V or 200–240V	●	●	●		227568 Red/Green
200 VAC or 200 to 240 VAC 1-phase (2-wire service without a neutral)	1/PE AC 200V or 200–240V	●	●			227567 Blue/Green

NOTE A: The 400/230 VAC 3-phase service (4-wire service including neutral) includes the 415/240 VAC 3-phase (4-wire service, including neutral) voltage. The 230 VAC 1-phase service (2-wire service, including a neutral) includes the 240 VAC 1-phase (2-wire service, including a neutral) voltage.

B: This voltage plug is not provided with 200 VAC melters.



Typical voltage plugs
(plugs with and without the neutral lead shown)

To connect a voltage plug to the melter

1. Refer to Table 3-3 to determine the part number of the voltage plug that matches the required electrical service. Each voltage plug is labeled with its part number and service type.

See Figure 3-5.

2. Insert the correct voltage plug into receptacle X1. Ensure that the plug snaps into place. If the plug contains a neutral lead, connect the neutral lead to receptacle X2.
3. When the electrical service is completely installed and inspected in accordance with local electrical codes and standards, close the electrical enclosure door and switch the local power disconnect switch on.

   If the electrical service was configured correctly, the melter control panel will display dashes.

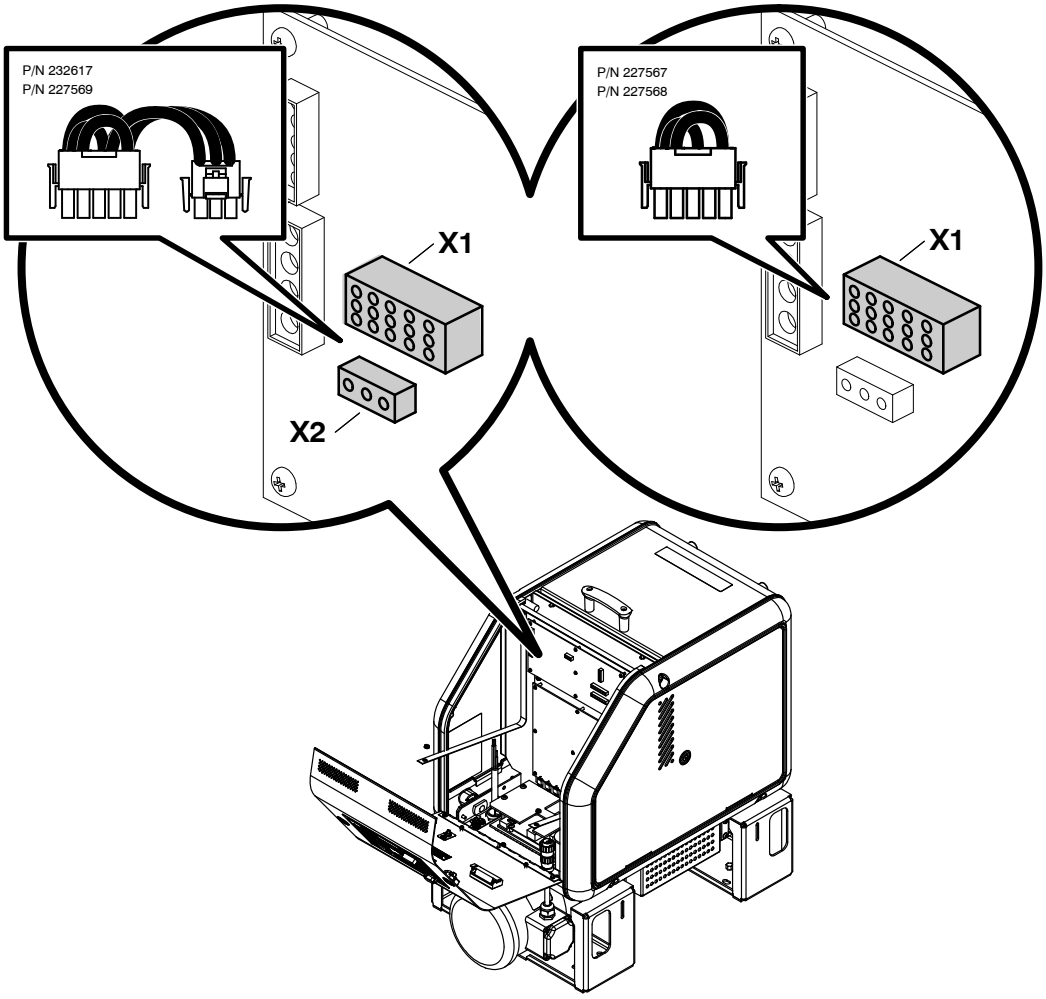


Figure 3-5 Connecting a voltage plug

Connecting Hoses and Applicators

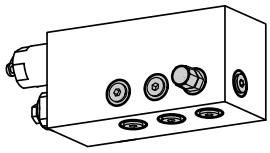
AltaBlue TT melters use standard Nordson hoses and applicators and support the connection of up to four hose/applicator pairs. The hose/applicator capacity of each melter is determined by the number of hose/applicator receptacles on the melter. Each hose/applicator receptacle supports the connection of one hose/applicator pair.

WARNING! Risk of fire or equipment damage. Before connecting hoses and applicators to the melter, confirm that the power required by the hoses and the applicators does not exceed the maximum wattages specified in Appendix A, *Calculating Melter Power Requirements.*

To connect hoses

See Figure 3-6.

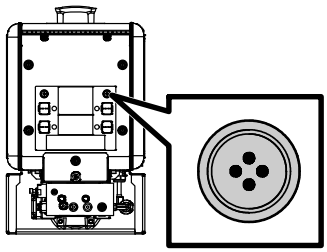
Observe the following guidelines:



Hose ports

- For information about choosing the correct Nordson hot melt hose for your manufacturing process, refer to the latest edition of Nordson's hot melt dispensing equipment *Replacement Parts Catalog* or contact your Nordson representative.
- Connect hoses to any of the hose ports provided on the manifold. The melter is shipped with one hose fitting (capped) pre-installed on the manifold.
- Use a 90-degree fitting when connecting a hose to any of the bottom hose ports or to the end hose port.
- Refer to the user's guide provided with each Nordson hose. The guide contains important information about routing and installing the hose.
- Save all of the plugs that were removed from the hose ports. A plug will need to be reinstalled into a hose port if a hose is later removed.
- Connect switched handheld applicator hoses or footswitches to the switch receptacles on the back of the melter.

  NOTE: Connect only the optional footswitch or a Nordson-approved switched handheld applicator or cordset to the switch receptacle.



Switch receptacle

Connecting Hoses and Applicators *(contd)*

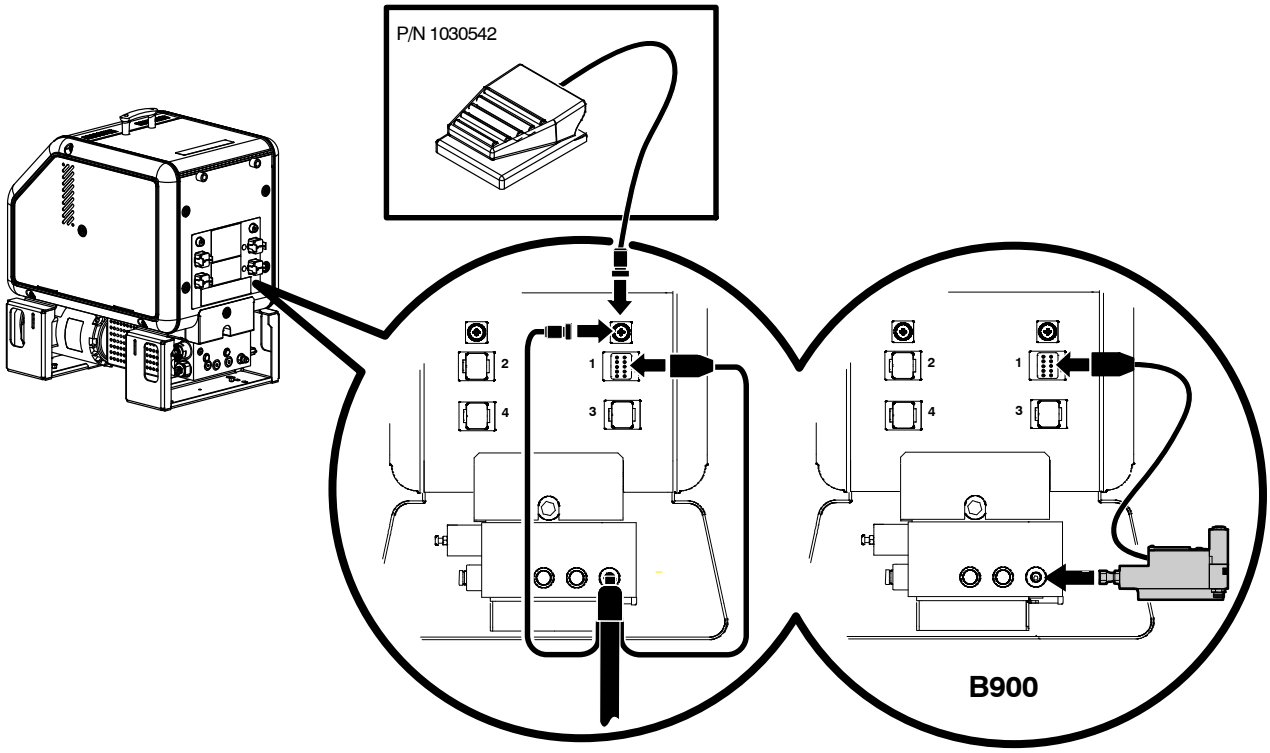


Figure 3-6 Connecting a switched handheld applicator hose, footswitch, or a B900N electric applicator

To connect applicators

Observe the following guidelines:

- For information about choosing the most appropriate Nordson hot melt applicator for your manufacturing process, refer to the latest edition of Nordson's hot melt dispensing equipment *Replacement Parts Catalog* or contact your Nordson representative. Refer to Appendix A, *Calculating Melter Power Requirements*, for information about how to calculate the power required by Nordson hot melt applicators.
- Refer to the user's guide that is shipped with each applicator for information about installing the applicator and connecting a hose to the applicator.
- See Figure 3-6. The B900N electric applicator can be connected directly to the manifold. Operating parameter 12 or 13 must be enabled if a B900N is connected. Refer to Appendix B, *Operating Parameters*.

NOTE: AltaBlue TT melters are shipped with a 100-mesh (0.15 mm) hot melt filter installed in the pump body. Filters with 50- and 150-mesh screens (0.11 mm and 0.07 mm respectively) are also available. Order the appropriate filter based on the smallest nozzle size used in your application.

Setting Up the Melter

After physically installing the melter, it must be set up to support your manufacturing process. Melter setup consists of enabling or making changes to factory-set operating parameters that affect the use and function of the melter. The operating temperature (setpoint) of the tank and each hose and applicator is also established during melter setup.

The melter is shipped from the factory with the most commonly used operating parameters already set up. The factory setup can be modified at any time to suit your manufacturing process.

Quick Setup

Table 3-4 describes the most commonly used operating parameters and their factory settings. Review the table to determine if the factory settings for each parameter will support your manufacturing process. If the default values for each of these operating parameters are appropriate for your manufacturing process, then no melter setup is required. Go directly to *Setpoint Temperature of the Tank, Hoses, and Applicators* later in this section to complete the installation process.

If you need to make changes to the factory setup or if you want to learn about other operating parameters, go to the next part in this section, *Operating Parameters*.

Table 3-4 Common Operating Parameters

Parameter	Parameter Name	Purpose	Default Value
4	Ready Delay Time	A timer that delays the activation of the ready LED for a pre-defined time period after the tank, hoses, and applicators are at the desired setpoint temperature. The ready delay timer will only activate if the temperature of the tank, at the time the melter is turned on, is below its assigned setpoint temperature by 27 °C (50 °F) or more.	0 minutes
5	Service Interval Time	A timer that turns on a service LED when the value set for the timer equals the number of hours that the heaters have been on. The service LED is used to signal the need for maintenance.	500 hours
7	Motor Off Delay	If the switch receptacle is used, this parameter determines the amount of time the motor will remain on after the switched device is turned off.	0 seconds
8	Automatic Pump On	Allows the pump to start automatically when system ready is reached, provided that the pump has been enabled by pressing the pump key.	Enabled
11	Create Password	Sets a password that must be entered before any melter operating parameter or setpoint temperature can be changed.	5000
20	Temperature Units	Sets the units of the temperature display to degrees Celsius (C) or to degrees Fahrenheit (F).	C
21	Over Temperature Delta	Sets the number of degrees that any heated component can exceed its assigned setpoint temperature before an over temperature fault occurs.	15 °C (25 °F)
22	Under Temperature Delta	Sets the number of degrees that any heated component can drop below its assigned setpoint temperature before an under temperature fault occurs.	25 °C (50 °F)
23	Standby Delta	Sets the number of degrees that the temperature of all heated components will be decreased when the melter is placed into the standby mode.	50 °C (100°F)
26	Manual Standby Time	Sets the amount of time the melter will remain in the standby mode after the standby key is pressed.	Disabled
50 to 77	Seven-day Clock	A group of parameters that control the melter's clock. The clock is used to automatically turn the heaters on and off and to place the melter into the standby mode.	Disabled

Operating Parameters

The melter uses operating parameters to store noneditable and editable values. Noneditable values are those that provide information about the historical performance of the melter. Editable values are either a numeric setpoint or a control option setting. Control option settings affect the display of information or the function of the melter.

Operating parameters are stored in the melter's firmware in the form of a sequentially numbered list. The list is organized into the logical groups described in Table 3-5.

Table 3-5 Parameter Groups

Group	Parameter Numbers	Group Description
Standard	0 to 8 and 10 to 14	Frequently used parameters
Pressure Control	15 to 17	Configure pressure settings
Temperature Control	20 to 29	Control heater function
Input Setup	30 to 39	Configure the standard and optional inputs
Output Setup	40 to 46	Configure the standard and optional outputs
Seven-day Clock	50 to 77	Configure the clock feature
Automatic Fill Timer	78	Configure the external motor control switch
PID Selection	80 to 91	Configure the PID settings

In addition to the ability to read and edit parameter values, you can also save and restore the current value of every operating parameter and review a log of the last ten changes that were made to editable parameters.

Selecting Operating Parameters

Table 3-6 provides a complete list of the operating parameters. Review the list to determine which operating parameters would best support your manufacturing process. Refer to Appendix B, *Operating Parameters*, for detailed information about each parameter. Appendix B contains a complete description of each parameter, including its affect on the melter, default value, and format.

NOTE: Parameters that are used to configure optional equipment or that are otherwise reserved in the firmware are excluded from Table 3-6.

NOTE: Motor control parameters are set differently from operating parameters. Refer to *Setting Up the Motor Control* later in this section. Some applications will require a change to one or more motor control parameters.

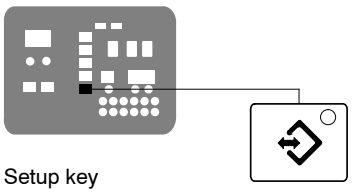
Reading or Editing Operating Parameters

Regardless of whether a parameter's value is editable or not, the procedure for accessing each parameter in order to read or edit its current value is the same.

To read or edit a parameter

1. Switch the melter on.

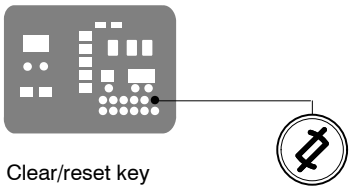
   The melter performs a start-up check.



Setup key

2. Press the **Setup** key.

   The left display flashes parameter 1.



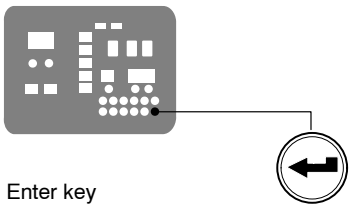
Clear/reset key

3. Use the numeric keypad to enter the number of the desired parameter. Refer to Table 3-6 for a complete list of parameters.

   NOTE: If you incorrectly enter the parameter number, press the **Clear/Reset** key to return to parameter 1 and then re-enter the correct parameter number.

   When you have finished entering the one- or two-digit parameter number, the right display indicates the parameter's current value.

4. Do *one* of the following:
   - If the value is noneditable, refer to *Monitoring the Melter* in Section 4, *Operation*.
   - If the value is editable go to step 5.



Enter key

5. Press the **Enter** key.

   The right display flashes.

6. Use the keypad to enter the desired numeric setpoint or control option into the right display. Refer to Appendix B, *Operating Parameters*, for information about the numeric value or control option choices for each parameter.

   NOTE: If the keypad has no affect on the right display, the melter is password protected. You must enter a valid password before you can edit parameters. Refer to *Entering the Melter Password* in Section 4, *Operation*.

7. Press the **Enter** key.

   The melter checks that the new value or control option is acceptable.
   - If the numeric setpoint or control option is accepted, the left and right displays index to the next sequential parameter number and value.
   - If the numeric setpoint or control option is not accepted, the right display will indicate dashes (----) for three seconds and then it will change back to the original value.

8. Repeat step 5 through step 7 to read or change the next sequential parameter number or press the **Setup** key to exit the setup mode.

To read or edit a parameter (contd)

Table 3-6 Operating Parameters

Parameter	Name	Range of Values	Default Value
Standard			
0	Enter Password	0 to 9999	4000
1	Total Hours with Heaters On (noneditable)	0 to 9999	0
2	Fault Log (noneditable)	—	_-F0 (empty)
3	Change History Log (noneditable)	—	P-_ (empty)
4	Ready Delay Time	0 to 60 minutes	0 minutes
5	Service Interval Time	0 to 8736 hours	500 hours
6	Service LED Heater Hours	0 to 9999 hours	0
7	Motor Off Delay	0 to 360 seconds	0 seconds
8	Automatic Pump On	0 (disabled) or 1 (enabled)	1 (enabled)
10	Enable or Disable Password	0 (disabled) or 1 (enabled)	0 (disabled)
11	Create Password	0 to 9999	5000
12	Change Hose 1 Output to Electric Applicator Activation	0 (disabled) or 1 (enabled)	0 (disabled)
13	Change Hose 2 Output to Electric Applicator Activation	0 (disabled) or 1 (enabled)	0 (disabled)
14	External Communications Lock-out	0 or 1	0 (disabled)
Temperature Control			
20	Temperature Units (degrees °C or °F)	C (degrees Celsius) or F (degrees Fahrenheit)	C (degrees Celsius)
21	Over Temperature Delta	5 °C (10 °F) to 60 °C (110 °F)	15 °C (25 °F)
22	Under Temperature Delta	5 °C (10 °F) to 60 °C (110 °F)	25 °C (50 °F)
23	Standby Delta	5 °C (10 °F) to 190 °C (350 °F)	50 °C (100 °F)
24	Automatic Standby Timeout	0 to 1440 minutes	0 (disabled)
25	Automatic Heaters Off Time	0 to 1440 minutes	0 (disabled)
26	Manual Standby Time	0 to 180 minutes	0 (disabled)
27	Hose Standby Delta	1 °C (1 °F) to 190 °C (350 °F)	0 (disabled)
28	Applicator Standby Delta	1 °C (1 °F) to 190 °C (350 °F)	0 (disabled)
29	Internal Zone Temperate Offset	0 °C (0 °F) to -15 °C (-30 °F)	0 (disabled)
Input Setup			
30	Standard Input 1 (A10/A16 only)	0–10 and 11–14	10 (Automatic Standby)
31	Standard Input 2 (A10/A16 only)	0–9, 11, and 13–14	1 (Standby on/off)
32	Standard Input 3 (A10/A16 only)	0–9, 11, and 13–14	2 (Heaters on/off)
33	Standard Input 4 (A10/A16 only)	0–9, 11, and 13–14	4 (Hose/applicator 1 enable/disable)
34	Optional Input 5	0–9, 11, and 13–14	0 (disabled)
35	Optional Input 6	0–9, 11, and 13–14	0 (disabled)
36	Optional Input 7	0–9, 11, and 13–14	0 (disabled)
37	Optional Input 8	0–9, 11, and 13–14	0 (disabled)
38	Optional Input 9	0–9, 11, and 13–14	0 (disabled)
39	Optional Input 10	0–9, 11, and 13–14	0 (disabled)

Continued...

Parameter	Name	Range of Values	Default Value
Output Setup			
40	Standard Output 1 (A10/A16 only)	0–6	1 (Ready)
41	Standard Output 2 (A10/A16 only)	0–6	3 (Fault)
42	Standard Output 3 (A10/A16 only)	0–6	4 (Not used)
43	Optional Output 4	0–6	0 (disabled)
44	Optional Output 5	0–6	0 (disabled)
45	Optional Output 6	0–6	0 (disabled)
46	Optional Output 7	0–6	0 (disabled)
Seven-day Clock			
50	Current Day	1 to 7 (1 = Monday)	—
51	Current Hour	0000 to 2359	—
55	Schedule 1 Heaters On	0000 to 2359	06:00
56	Schedule 1 Heaters Off	0000 to 2359	17:00
57	Schedule 1 Enter Standby	0000 to 2359	—:—
58	Schedule 1 Exit Standby	0000 to 2359	—:—
60	Schedule 2 Heaters On	0000 to 2359	—:—
61	Schedule 2 Heaters Off	0000 to 2359	—:—
62	Schedule 2 Enter Standby	0000 to 2359	—:—
63	Schedule 2 Exit Standby	0000 to 2359	—:—
65	Schedule 3 Heaters On	0000 to 2359	—:—
66	Schedule 3 Heaters Off	0000 to 2359	—:—
67	Schedule 3 Enter Standby	0000 to 2359	—:—
68	Schedule 3 Exit Standby	0000 to 2359	—:—
71	Schedule for Monday	0–7	0
72	Schedule for Tuesday	0–7	0
73	Schedule for Wednesday	0–7	0
74	Schedule for Thursday	0–7	0
75	Schedule for Friday	0–7	0
76	Schedule for Saturday	0–7	0
77	Schedule for Sunday	0–7	0
Automatic Fill Timer			
78	Automatic Fill Timer	0–99 seconds	0 (Disabled)
PID Selection			
80–91	PID Selection for Hose/Applicator Receptacles	0–3	0 or 1

NOTE: Motor control parameters are set differently from operating parameters. Refer to *Setting Up the Motor Control* later in this section. Some applications will require a change to one or more motor control parameters.

To read or edit a parameter (contd)

You can exit the setup mode at any time by pressing the **Setup** key.	
Parameter numbers that are not applicable are skipped when you scroll through the operating parameter list in the left display.	
When the right display is flashing, you can quickly set the value of the current parameter to it's lowest possible value by simultaneously pressing both of the right-display scroll keys.	
While in the setup mode, if no key is pressed for two minutes, the melter will return to the automatic scan mode.	
You can also use the right-display scroll keys to enter or change a parameter's value or control option. After entering the parameter's number in the left display, press either of the right-display scroll keys to change the value or control option.	
If password protection is enabled, the melter will return to the password protected mode whenever you exit the setup mode.	Appendix B, parameter 10

Setpoint Temperature of the Tank, Hoses, and Applicators

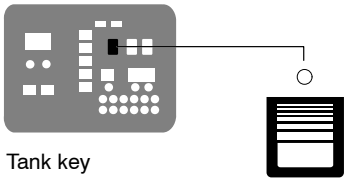
The melter is shipped from the factory with the tank setpoint temperature at 175 °C (350 °F) and the hose and applicator setpoint temperatures at 0 degrees (turned off).

Before the melter can be used, a setpoint temperature must be assigned to the tank, hoses, and applicators. Assign setpoint temperatures using any of the following methods:

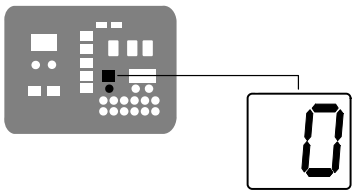
- **Global**—The tank and all hoses and applicators are set to the same setpoint temperature.
- **Global-by-component group**—All of the hoses or all of the applicators are set to the same setpoint temperature.
- **Individual Component**—The setpoint temperature of the tank and each hose and applicator is set individually.

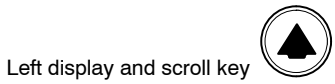
Since most manufacturing processes will require the tank, hoses, and applicators to be set to the same temperature, only the global method of assigning setpoint temperatures is described in this section. For information about the other two methods of assigning setpoint temperatures, refer to *Adjusting Component Temperatures* in Section 4, *Operation*.

As with operating parameters, you can also save and restore setpoint temperatures and review past changes that were made to setpoint temperatures.

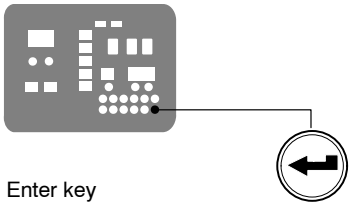


Tank key

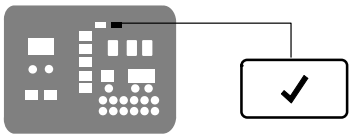




Left display and scroll key



Enter key



Ready LED

To assign a global setpoint temperature

1. Press and hold the **Tank** key for three seconds.

   The left display flashes 1.

2. Scroll the left display to 0.

   The right display indicates all dashes (----) and the LEDs on the tank, hose, and applicator keys turn green.

3. Press the **Enter** key.

   The right display flashes.

4. Use the numeric keypad to enter the setpoint temperature recommended by the manufacturer of the hot melt.

   Refer to the technical data sheet provided by the manufacturer of the hot melt to determine the optimal setpoint temperature.

5. Press the **Tank** key.

   Each component begins to heat or cool to the new global setpoint temperature and the melter returns to the automatic scan mode.

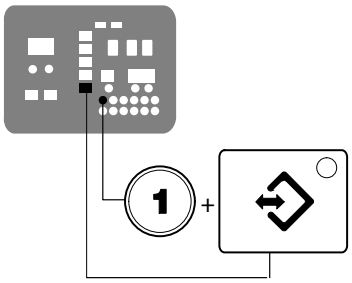
   When all of the components reach the global setpoint temperature, the ready LED turns on (green).

Save and Restore Melter Settings

The current value of all editable operating parameters and the setpoint temperature of each component can be saved and, if necessary, restored at a later time. When saved settings are restored, they overwrite the settings that are presently in use.

This save-restore feature is useful in instances where the settings that are in use are deliberately or accidentally changed and you need to return the melter to its pre-change setup.

To save current settings



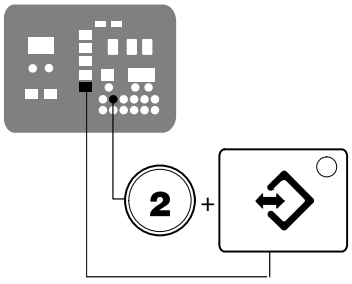
Saving current settings

With the melter in the automatic scan mode, simultaneously press the number **1** key and the **Setup** key.

S-1 appears momentarily in the right display.

To restore saved settings

CAUTION! All melter settings will be deleted! Before restoring saved settings, ensure that use of the restored settings will not disrupt the current process or create an unsafe operating condition.



Restoring current settings

With the melter in the automatic scan mode, simultaneously press the number **2** key and the **Setup** key.

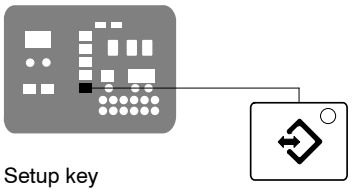
S-2 appears momentarily in the right display.

If you use the restore feature before the save feature is used for the very first time, the factory default setpoint temperatures will be restored. This will cause the hoses and applicators to stop heating.

Review Parameter and Setpoint Temperature Changes

The melter stores in a change history log, a record of the last ten changes that were made to either operating parameters or setpoint temperatures. Since the log only stores ten changes, old log entries are overwritten beginning with the first log entry, by the eleventh and following log entries.

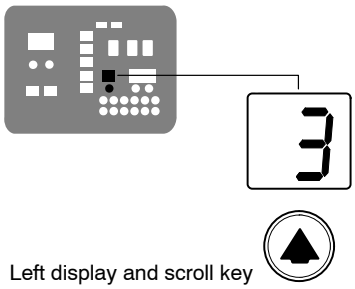
To review the change history log



Setup key

1. Press the **Setup** key.

   Operating parameter 1 flashes in the left display.



Left display and scroll key

2. Press the left-display scroll key to change the display to parameter 3 (the change history log).

   The following occurs:

   - If the last change was to an editable parameter, all of the component key LEDs remain off.

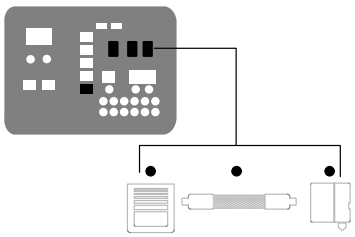
     or

   - If the last change was to a setpoint temperature, the LED on the associated component key(s) turns on.

     and

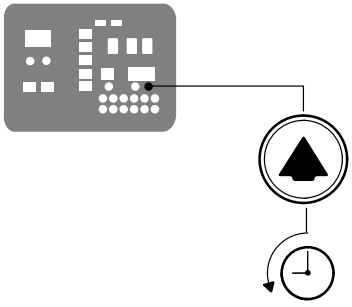
   - The right display indicates the four-digit log entry associated with the *last* change that was made.

     Table 3-7 provides the meaning, from left to right, of each digit in the log entry. Following the table are two example log entries.



LEDs on component keys

3. Press a right-display scroll key to review each of the remaining nine log entries. Each press of a scroll key displays a progressively older log entry.
4. Press the **Setup** key to return to the automatic scan mode.



Scrolling through the fault log

Table 3-7 Change History Log

<table>
<tr><th>First Digit</th><th>Second Digit</th><th colspan="4">Third and Fourth Digits</th></tr>
<tr><td>P (Parameter)</td><td rowspan="8">-</td><td colspan="4">Indicates the number of the parameter that was changed</td></tr>
<tr><td rowspan="7">S (Setpoint)</td><td colspan="4">Are used in conjunction with the LEDs on the component keys to indicate the location and method of a setpoint temperature change.</td></tr>
<tr><td>When this LED is on..</td><td>And the Fourth Digit Indicates..</td><td>The change was to..</td><td>And the Method of Change was..</td></tr>
<tr><td>Tank Key</td><td>1</td><td>The tank</td><td>Individual</td></tr>
<tr><td>Hose Key</td><td>1– 6</td><td>A single hose</td><td>Individual</td></tr>
<tr><td>Applicator Key</td><td>1– 6</td><td>A single applicator</td><td>Individual</td></tr>
<tr><td>All Keys</td><td>0</td><td>All components</td><td>Global</td></tr>
<tr><td>Hose Key</td><td>0</td><td>All hoses</td><td>Global-by-component</td></tr>
<tr><td>Applicator Key</td><td>0</td><td>All applicators</td><td>Global-by-component</td></tr>
</table>

Change History Log Examples

Example 1:

Parameter 4 (ready delay) was changed.

Example 2:

If the LED on the applicator key is on, then this display would indicate that the global-by-component method was used to change the temperature of the applicators.

Unused log entries in the change history log are indicated by “P-_” in the right display.

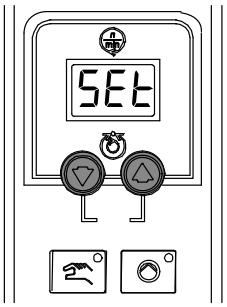
To view how many heater hours have elapsed since a specific change (displayed) was made, simultaneously press both of the right-display scroll keys.

Setting Up the Motor Control

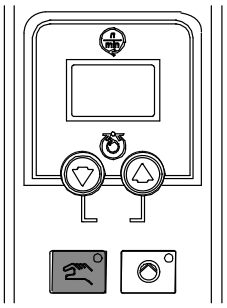
The motor control parameters are factory set, but may need to be changed depending on your specific application. Follow this procedure to check and, if needed, change the motor control parameters. The motor control parameters are accessed through the motor control panel located on the front of the melter.

To view or change a motor control parameter

1. Switch the melter OFF.
2. Press and hold both **Pump speed arrow** keys and then switch the control switch back on. When the pump speed display indicates SEt, release the keys.
3. Use the **Pump speed arrow** keys to select a value for the parameter shown on the pump speed display. Refer to Table 3-8 for a parameter list.



Pump speed arrow keys



Pump mode key and LED

4. Press the **Pump mode** key to save the value and move to the next parameter.
5. Repeat steps 3-4 for each parameter you want to change.
6. To exit the setup mode, press the **Pump mode** key one additional time after the last parameter has been displayed.

Table 3-8 Motor Control Parameter Factory Settings

Parameter	Description	Factory Setting	Explanation
SEt	Maximum pump rpm	100 **NOTE:** This setting must be changed for all AltaBlue TT melters. Refer to *Explanation*.	This parameter controls the increment of change in motor speed that occurs upon each press of the pump speed up or down arrow key when the melter is operating in the manual mode. To change the rpm in increments of 1 (recommended for most applications), enter the maximum pump rpm. The settings for an AltaBlue TT melter are as follows: • All melters except 50 kg/hr melters: 80 • 50 kg/hr melters only: 115 **NOTE:** Refer to *Melter Part Numbers* in Section 7, *Parts*, to determine the configuration of your melter.
Srt	Motor start mode	0 **NOTE:** This setting must be changed for all AltaBlue TT melters. Refer to *Explanation*.	This parameter controls the method used to start the motor. For AltaBlue TT melters, enter 1. A setting of 1 allows the motor to start when the pump enable signal is activated.
LoS	Minimum pump speed in gear-to-line mode	0	If the melter will be operated in the manual mode, enter 0. If the melter will operated in the gear-to-line mode, enter a minimum line speed. The motor speed will not fall below this valve even if the signal drops to 0 V.

Installing Melter Inputs

AltaBlue for Handheld Applications TT16L melters are equipped with four standard digital inputs. Each input is customer-wired to the melter and then set up to provide one of the following control options:

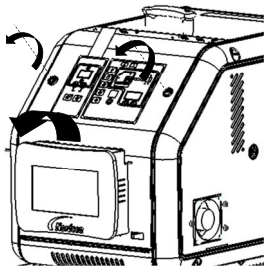
- Place the melter into the standby mode
- Turn the heaters on and off
- Enable or disable a specific hose or applicator
- Turn the motor on and off

The inputs require a 10 to 30 VDC signal voltage. The inputs are not polarity-sensitive.

NOTE: Additional input/outputs are available through an optional I/O expansion card kit. Refer to *Optional Equipment* in Section 7, *Parts*.

WARNING! The operator can override the melter inputs by using the control panel function keys. Ensure that the control logic for any external device that sends an input signal to the melter is programmed to prevent the creation of an unsafe condition in the event that the operator overrides an external input to the melter.

To wire digital inputs to the melter



Opening the electrical enclosure door

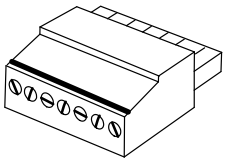
1. Route a 2-, 4-, 6-, or 8-conductor signal cable from the control equipment to the melter and through the PG-16 penetration on the floor of the electrical compartment. Use rigid or flexible conduit or a suitable strain relief to protect the cable from the sharp edge of the conduit penetration.

   NOTE: Use a signal cable suitable for NEC class1 remote control and signaling circuits. To reduce the possibility of electrical shorting, route the cable so that it does not touch nearby circuit boards.

See Figure 3-7.

2. Connect each pair of input wires to the appropriate terminals (8 through 14) on connector P/N 277909. If input number four is used, terminal 7 on connector P/N 277908 must also be used. Both connectors are provided in the installation kit. Table 3-9 lists the terminal numbers that correspond to each input.

   NOTE: Connector P/N 277909 is physically keyed to prevent it from being used in place of connector P/N 277908, which has terminals numbered 1 through 7.



Connector P/N 277909

3. Plug the connector (P/N 277909) into the bottom receptacle of terminal XT7, which is located on the expansion board. If input number four is used, plug connector P/N 277908 into the top receptacle on terminal XT7.

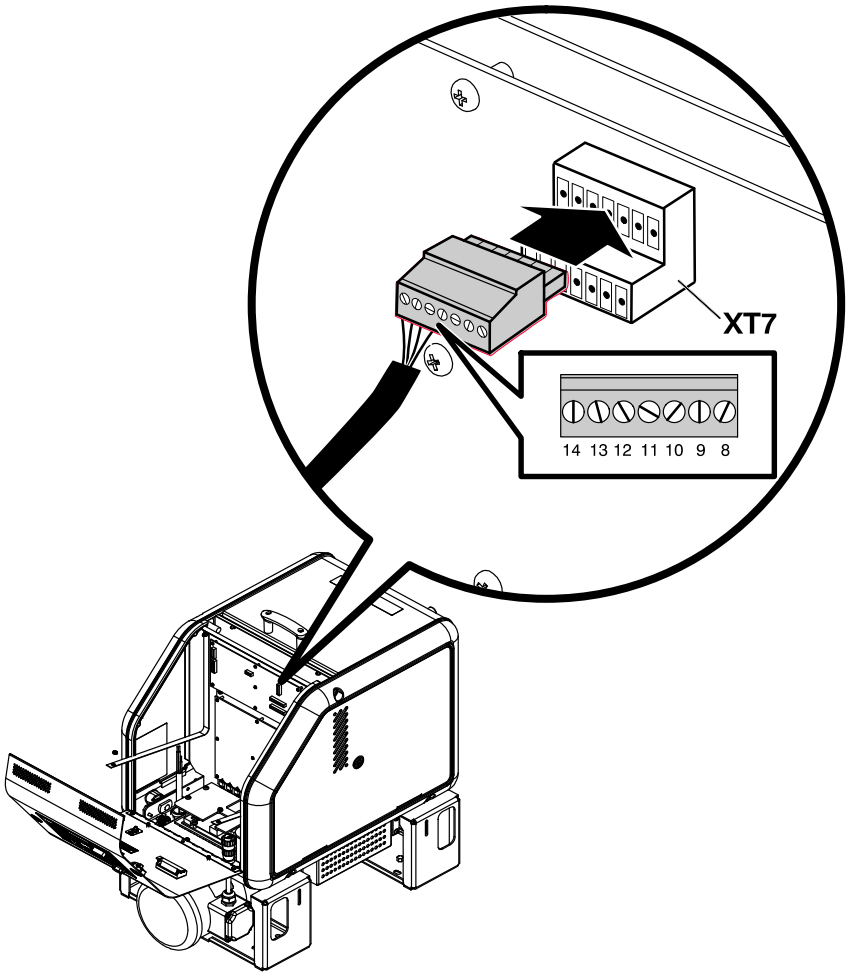


Figure 3-7 Wiring inputs

To set up a digital input

Set up the parameter control option for each input that you connected to the melter. Table 3-9 lists the available control options. Refer to *Setting Up the Melter* earlier in this section, for information about how to select operating parameters and edit parameter control options.

With the exception of the pump enable/disable control option, all inputs are transition-based.	*Input Setup* in Appendix B
The input capacity of the melter may be increased from four inputs to a total of ten inputs by adding an optional I/O expansion card that is available from Nordson Corporation.	Section 7, *Parts*

Table 3-9 Digital Input Data

Input	Terminals	Operating Parameter	Control Option	Note
Standard Inputs				
1	8 and 9	30	0 - Input Disabled 1 - Standby On/Off 2 - Heaters On/Off 3 - Motor 1 Enable/Disable 4 - Hose/Applicator 1 Enable/Disable 5 - Hose/Applicator 2 Enable/Disable 6 - Hose/Applicator 3 Enable/Disable 7 - Hose/Applicator 4 Enable/Disable 8 - Hose/Applicator 5 Enable/Disable 9 - Hose/Applicator 6 Enable/Disable 10 - Automatic standby (Default) 11 - Motor 2 Enable/Disable 13 - Automatic Fill Timer No. 1 14 - Automatic Fill Timer No. 2	A B
2	10 and 11	31	0 - Input Disabled 1 - Standby On/Off (Default) 2 - Heaters On/Off 3 - Motor Enable/Disable 4 - Hose/Applicator 1 Enable/Disable 5 - Hose/Applicator 2 Enable/Disable 6 - Hose/Applicator 3 Enable/Disable 7 - Hose/Applicator 4 Enable/Disable 8 - Hose/Applicator 5 Enable/Disable 9 - Hose/Applicator 6 Enable/Disable 11 - Motor 2 Enable/Disable 13 - Automatic Fill Timer No. 1 14 - Automatic Fill Timer No. 2	A
3	12 and 13	32	Same as parameter 31 (Default=2)	
4	7 and 14	33	Same as parameter 31 (Default=4)	

Continued...

To set up a digital input (contd)

Table 3-9 Digital Input Data *(contd)*

Input	Terminals	Operating Parameter	Control Option	Note
Optional Inputs				
5	11 and 12	34	Same as parameter 31 (Default=0)	C, D
6	13 and 14	35	Same as parameter 31 (Default=0)	C, D
7	15 and 16	36	Same as parameter 31 (Default=0)	C, D
8	17 and 18	37	Same as parameter 31 (Default=0)	C, D
9	19 and 20	38	Same as parameter 31 (Default=0)	C, D
10	9 and 10	39	Same as parameter 31 (Default=0)	C, D

NOTE
A: If control option 3 is selected, the motor will not turn on—even if you press the pump key—if voltage is not present on the input's contacts.
B: If control option 10 is selected for input 1, a time must be set in parameter 24.
C: Parameters 34 through 39 are reserved for the inputs created when either the optional I/O expansion card or optional I/O board is installed. Refer to Appendix B, *Operating Parameters*, for more information.
D: Refer to the instruction sheet provided with the optional I/O expansion card or analog I/O board for wiring information.

Installing Melter Outputs

The AltaBlue for Handheld Applications TT16L melter is equipped with three user-configurable digital outputs. Outputs are used to communicate with user-supplied production equipment or control hardware, such as a programmable logic controller.

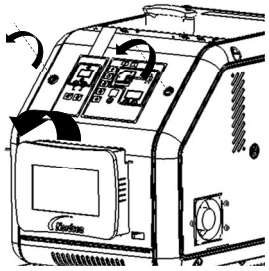
Each output is customer-wired and then set up in the melter's firmware to provide one of the following outputs:

- The melter is ready.
- The melter is ready *and* the motor is on.
- A fault has occurred.
- The hot melt level is low.
- The service LED is on.

All outputs contacts are rated at 240 VAC 2 A or 30 VDC 2 A. All contacts are normally open when the melter is turned off.

NOTE: Additional input/outputs are available through an optional I/O expansion card kit. Refer to *Optional Equipment* in Section 7, *Parts*.

To connect a digital output to the melter



Opening the electrical enclosure door

1. Route a 2-, 4, or 6-conductor signal cable from the control equipment to the melter, through the PG-16 penetration on the floor of the electrical compartment. Use rigid or flexible conduit or a suitable strain relief to protect the cable from the sharp edge of the conduit penetration.

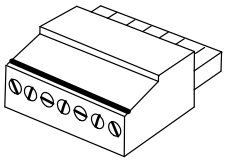
   NOTE: Use a signal cable suitable for NEC class1 remote control and signaling circuits. To reduce the possibility of electrical shorting, route the cable so that it does not touch nearby circuit boards.

See Figure 3-8.

2. Connect each pair of output wires to the appropriate terminals (1 through 7) on connector P/N 277908. The connector is provided in the installation kit. Table 3-10 lists the terminal numbers that correspond to each output.

   NOTE: Terminal number 7 on connector P/N 277908 is reserved for input number four.Connector P/N 277908 is physically keyed to prevent it from being used as connector P/N 277909, which has terminals numbered 8 through 14.

3. Plug connector P/N 277908 into the top receptacle on terminal XT7, which is located on the expansion board.



Output connector P/N 277908

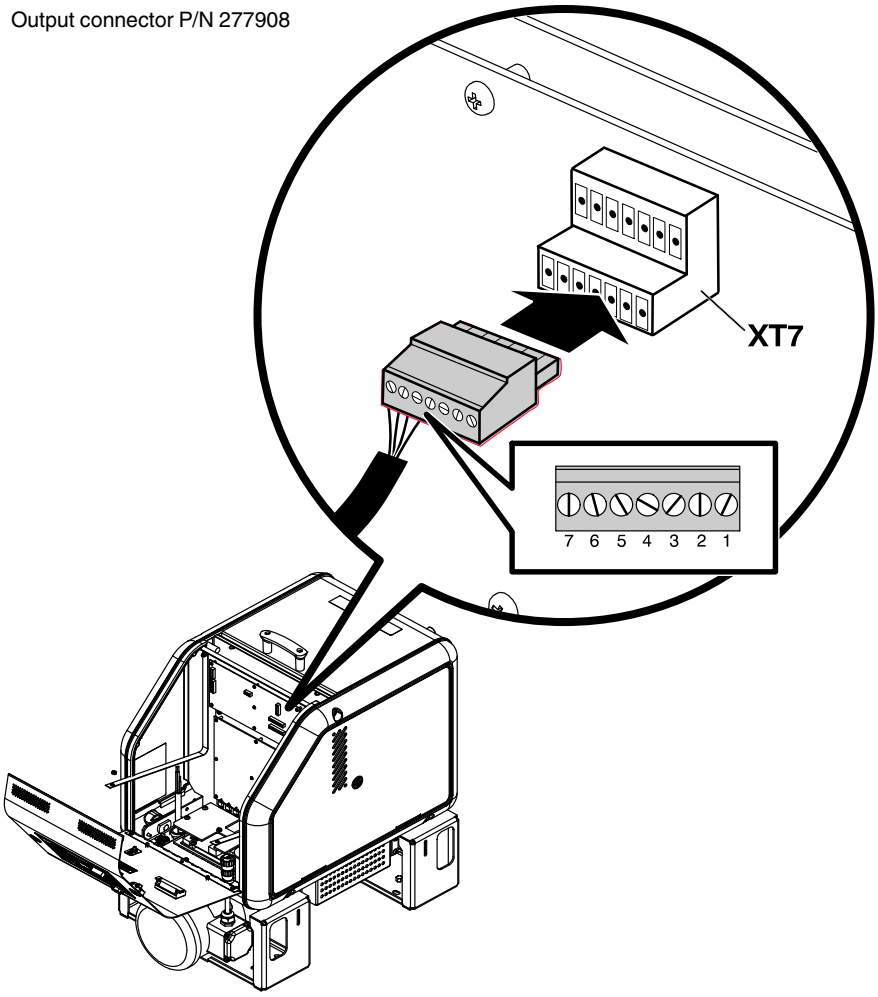


Figure 3-8 Wiring outputs

To set up a digital output

Set up the parameter control option for each output that you connected to the melter. Table 3-10 lists the available control options. Refer to *Setting Up the Melter* earlier in this section for information about how to select operating parameters and edit parameter control options.

The output capacity of the melter may be increased from three outputs to seven outputs by adding an optional I/O expansion card that is available from Nordson Corporation.

Refer to Section 7, *Parts*

Table 3-10 Digital Output Data

Output	Terminals	Operating Parameter	Control Options	Note
Standard Outputs				
1	1 and 2	40	0 - Output Disabled	
			1 - Ready (Default)	A
			2 - Ready *and* the Motor is On	A
			3 - Fault	B
			4 - Tank Low Level	A
			5 - Service LED is On	A
			6 - Alert	C
2	3 and 4	41	Same as parameter 40 (Default=3)	
3	5 and 6	42	Same as parameter 40 (Default=4)	
Optional Outputs				
4	1 and 2	43	Same as parameter 40 (Default=0)	D, E
5	3 and 4	44	Same as parameter 40 (Default=0)	
6	5 and 6	45	Same as parameter 40 (Default=0)	
7	7 and 8	46	Same as parameter 40 (Default=0)	

NOTE
- A: When control option condition occurs, contacts close. Contacts are normally open when power is off.
- B: When control option condition occurs, contacts open. Contacts are normally open when power is off.
- C: Control option 6 provides an output signal when a potential fault is detected. If control option 3 and 6 are both used, then both a fault output and an alert output signal will be present when the fault LED turns on.
- D: Parameters 43 through 45 are reserved for the outputs created when either the optional I/O expansion card or optional I/O board is installed. Refer to Appendix B, *Operating Parameters*, for more information.
- E: For wiring information, refer to the instruction sheet that is provided with the optional I/O expansion card or analog I/O board.

Setting Up Gear-to-Line Operation

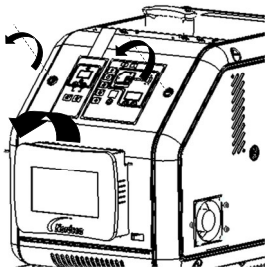
The melter can be set up to deliver an adhesive output that is geared to the production line speed. The gear-to-line capability is enabled or disabled through the manual/gear-to-line switch, the motor (pump) speed dial is used to adjust the scaled output, and the actual pump speed is displayed in rpms on the pump speed display. When the melter is operating in the gear-to-line mode, the pump speed follows a 0-10 VDC analog input signal from the production line.

If you want to use the gear-to-line capability, you will need to supply a line-speed signal to the melter in one of the following ways:

- Use a (customer-supplied) line-speed signal generator to measure the speed of the production line.
- Use an analog signal from the production line automation.

NOTE: Nordson offers a 0-10 VDC line-speed signal generator. Refer to *Optional Equipment* in Section 7, *Parts*, for the part number.

To connect a gear-to-line input to the melter



Opening the electrical enclosure door

1. Route a 2-conductor signal cable from the control equipment to the melter and through the PG-16 penetration on the floor of the electrical compartment. Use rigid or flexible conduit or a suitable strain relief to protect the cable from the sharp edge of the conduit penetration.

   NOTE: Use a signal cable suitable for NEC class1 remote control and signaling circuits. To reduce the possibility of electrical shorting, route the cable so that it does not touch nearby circuit boards.

2. Connect a 0-10 VDC line speed reference signal as shown in Figure 3-9 for melters with a relay board.
3. If the maximum value of your line-speed signal generator is less than 10 VDC, change the value of parameter tFr (maximum output frequency). Refer to *To change motor drive parameter tF4 (if needed)* after this procedure. Return here to continue.
4. If you want to run the motor at a minimum speed other than rpm equals 0 at 0 VDC, change the value of motor control parameter LoS (minimum pump speed in gear-to-line mode). Refer to *Setting Up the Motor Control* earlier in this section.

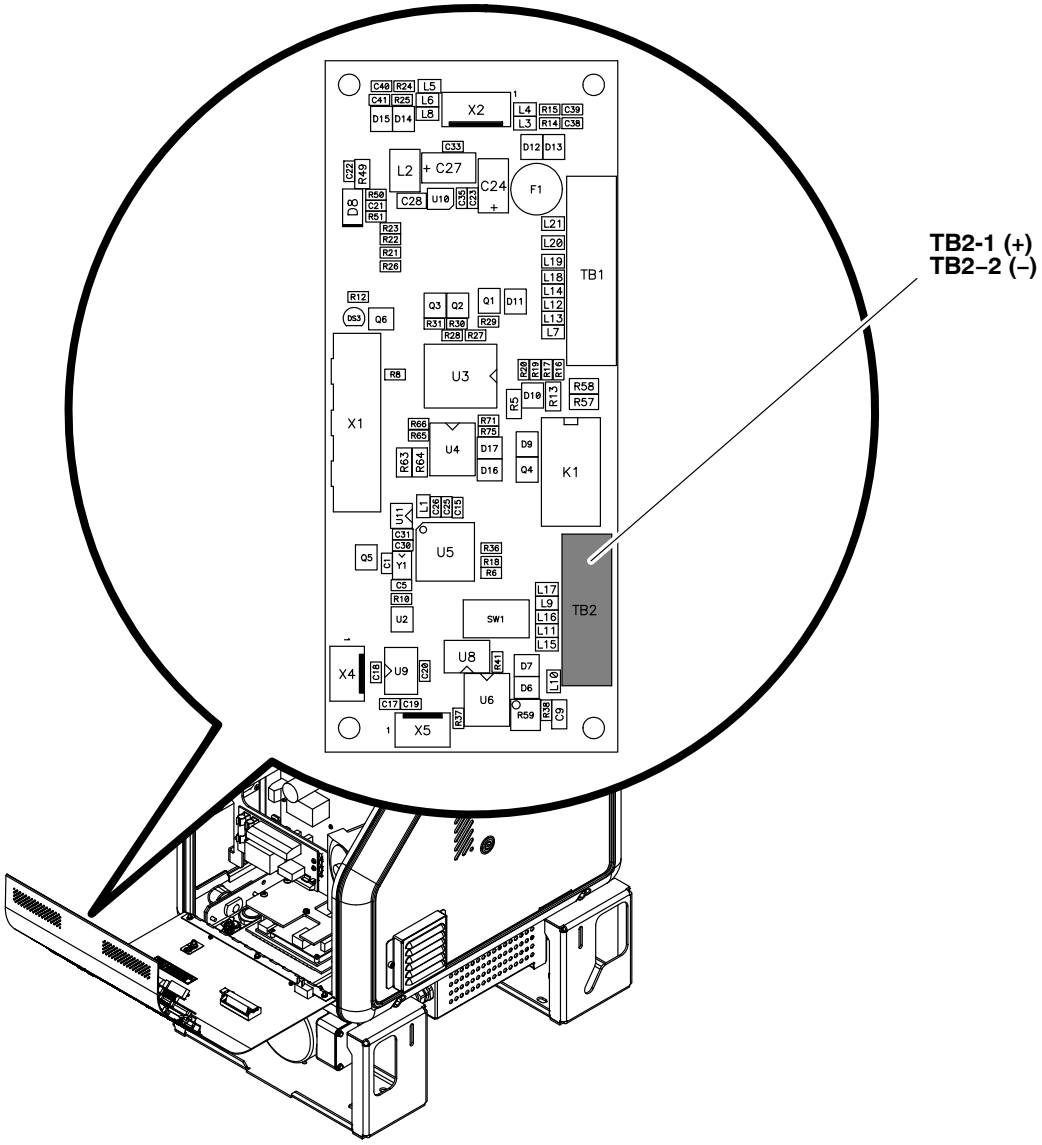


Figure 3-9 Connecting a line speed reference signal for gear-to-line operation on melters with a relay board

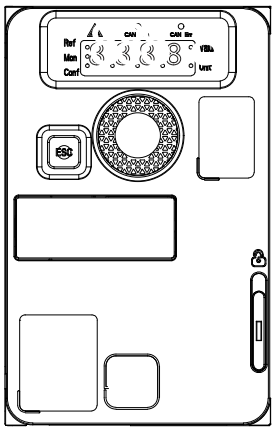
To change motor drive parameter tF4 (if needed)

If the maximum value of your line-speed signal generator is less than 10 VDC, use the motor drive keypad (located inside the electrical enclosure) to change the value of parameter tFr (maximum output frequency). Use the following formula to determine the value to set for parameter tFr:

$$\left(\frac{10}{Vmax}\right) 50\ Hz$$

where Vmax is the maximum value of the analog voltage generator.

NOTE: Refer to *Changing a Motor Drive Parameter* in Section 6, *Troubleshooting*, for a more detailed procedure for changing a motor drive parameter.



Motor drive keypad (located on the motor drive inside the electrical enclosure)

1. Press **Jog Dial** to display Conf-.
2. Press **Jog Dial** again to display FULL.
3. Press **Jog Dial** again to display drC.
4. Turn and press **Jog Dial** to display the parameter.
5. Turn **Jog Dial** to change the parameter value.
6. Press **Jog Dial** to save the value.
7. Press **ESC** until it reaches the monitoring mode.

Installing Optional Equipment

Each item of optional equipment is shipped with instructions for installing and operating the equipment. Refer to Section 7, *Parts*, for equipment part numbers.

Connecting a Applicator Driver, Pattern Controller, or Timer

If applicable, complete the melter installation by connecting the applicators to the desired applicator driver, pattern control, or timer. Refer to the product manual provided with the device for information about installing and operating the equipment.

Flushing the Melter

WARNING! Risk of burns! New melters contain a small quantity of low-viscosity test fluid. Test fluid may splatter when discharged under high pressure. Before flushing the melter, ensure that the pressure control valve is set to low pressure.

Before using the melter for production, it should be flushed to remove any residue left over from factory-testing. Flushing the melter is accomplished by processing a minimum of one tank volume of hot melt through the melter, hoses, and applicators.

Refer to Section 4, *Operation*, for information about filling the tank and operating the melter.

This page intentionally left blank.

Section 4
Operation

WARNING! Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others, and damage to the equipment.

This section provides information about the following operator-level tasks:

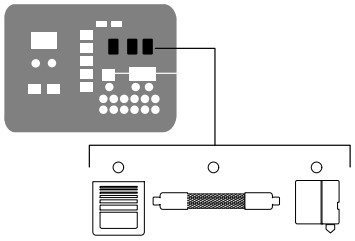
- Filling the melter tank
- Starting the melter
- Adjusting the pressure control valve
- Monitoring melter operation
- Adjusting the operating temperature of heated components
- Using the melter function keys
- Shutting the melter down

Most of the controls described in this section are located on the control panel. Refer to *Key Components* in Section 2, *Introduction*, for the location of the controls and indicators described in this section.

Additional Information

This section presents operating procedures in their most commonly used form. Procedural variations or special considerations are explained in the additional information table that follows most procedures. Where applicable, some table entries also contain cross-reference information. Additional information tables are indicated by the symbol shown to the left.

More about Heated Components



Component keys

The melter contains three groups of heated components. These are the tank group, which contains the tank and the pump, the hose group, and the applicator group. Component groups are represented on the control panel by the component keys shown to the left.

Heated components within each group are identified by their position number. The position of the tank and pump is fixed at 1. Hose and applicator position numbers are automatically assigned based on the hose/applicator receptacle they are connected to. For example, the position numbers of a hose/applicator pair that is connected to the second receptacle would be hose position 2 and applicator position 2.

The number of hose/applicator receptacles available on each melter depends on the configuration in which the melter was ordered. AltaBlue TT melters may have either two or four hose/applicator receptacles.

NOTE: In some installations, auxiliary devices (such as a heated air manifold) may be connected to a hose/applicator receptacle. In such cases, you should label (or otherwise identify) the auxiliary device as to the hose or applicator position number that represents the device. The control panel will identify such devices as a hose or applicator, regardless of what the device actually is.

Filling the Tank

Before filling the tank, confirm that the hot melt material is compatible with the melter. Refer to *Intended Use* in Section 2, *Introduction*, for information about hot melt materials that should not be used in AltaBlue TT melters.

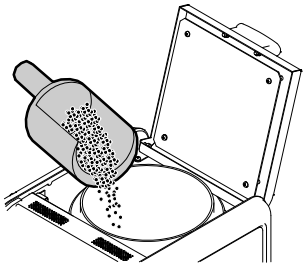
To fill the tank

WARNING! Hot! Risk of burns! Use a scoop to fill the tank with hot melt Never use your bare hands. Using your bare hands to fill the tank may result in personal injury.

1. Open the tank lid.
2. Use a scoop to fill the tank with hot melt. Table 4-1 lists the tank capacity of each AltaBlue TT melter.

   NOTE: Nordson Corporation recommends that the tank be kept at least one-half full while the melter is operating.

3. Close the tank lid when you are finished filling the tank.



Filling the tank

Table 4-1 Tank Capacity

Model	Capacity*		
	Liters	Kilograms	Pounds
MT16L	16	16	35

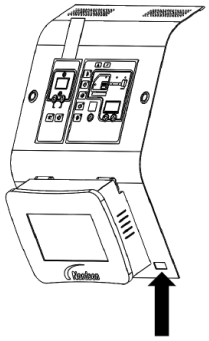
*Assumes a hot melt with a specific gravity of 1

Starting the Melter

Before starting the melter for the first time, confirm that the

- melter is fully installed including any required inputs and outputs, applicator drivers, pattern controllers, or timers.
- melter's operating parameters are set up to support the current manufacturing process.

Refer to Section 3, *Installation*, if any of the items listed above are not complete.



Melter control switch (A4)

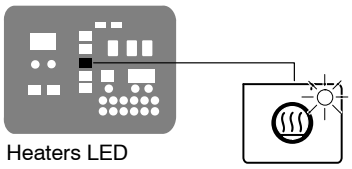
To start the melter

1. Switch the melter on.

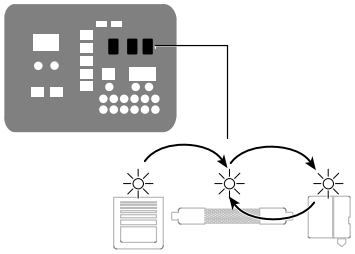
   NOTE: The control switch on an MT16L melter is located in the lower-right corner of the control panel.

   The melter:

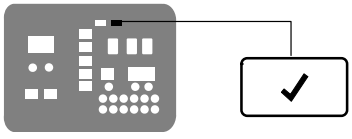
   - Tests the control panel LEDs
   - Turns on the heaters (the heaters LED turns green)
   - Begins to automatically scan through and display the actual temperature of the tank and each hose and applicator that has a setpoint temperature that is greater than zero degrees. The sequence of the automatic scan is: tank, each hose and applicator pair, and then back to the tank.
   - Turns on the ready LED (green) when the tank and all of the hoses and applicators are within 3 °C (5 °F) of their assigned setpoint temperature.



Heaters LED

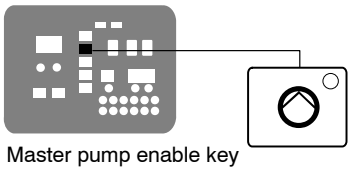


Automatic scan sequence



Ready LED

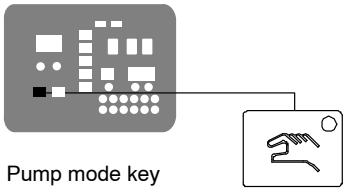
CAUTION! Do not operate Nordson pumps without material. Before enabling the motor(s), ensure that the tank is filled.



Master pump enable key

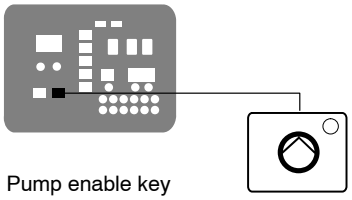
2. Press the master pump enable key to enable the pump.

   The LED on the key turns yellow to indicate that the pump is enabled, but not running.



Pump mode key

3. Press the pump mode key to select the manual (LED on) or automatic (LED off) mode.



Pump enable key

4. Press the pump enable key to enable the motor. The LED turns on when the motor is enabled:

   Manual Mode - If the system is at ready status (master pump enable key LED is green) at the time the pump enable key is pressed, then the motor will start. If the system is not at ready status (master pump enable key LED is yellow), wait until the LED is green, and then repress the pump enable key.

   Automatic Mode - If the system is at ready status (master pump enable key LED is green) at the time the pump enable key is pressed, then the motor will start. If the system is not at ready status (master pump enable key LED is yellow), the motor will start automatically when the system reaches ready.

   NOTE: If any one of standard inputs 1-4 (parameters 30-33) are being used *and* if either control option 3 (Motor 1 Enable/Disable) or control option 11 (Motor 2 Enable/Disable) is selected, the pump enable keys have no effect. Refer to *Installing Melter Inputs* in Section 3, *Installation*, for information on connecting and setting up inputs/outputs.

   NOTE: For detailed information about the variables that control the status of the pump—enabled or disabled—and the associated indication that is provided by the pump LED, refer to *Pump Operational Status* in Section 6, *Troubleshooting*.

To start the melter (contd)

If the melter is switched on when the temperature of the tank is 27 °C (50 °F) or greater below its assigned setpoint temperature (cold start condition), the ready LED will not turn on until the ready delay (defined when the melter was set up) has elapsed.	Appendix B, parameter 4
The time remaining on the ready delay (in minutes) appears in the right display at the end of every scan cycle. When only one minute remains in the ready delay time, the right display counts down in seconds.	Appendix B, parameter 4
You can by-pass the ready delay time by pressing the **Heaters** key twice.	
The appearance of F4 in the right display immediately after the melter is switched on indicates a problem with the melter's processor or main board.	*Monitor Melter Faults*
The appearance of F1 in the right display immediately after starting the melter indicates that a hose or applicator cordset may be loose or disconnected.	Section 6, *Troubleshooting*
The condition of one or more inputs, may prevent the heaters from turning on.	*Installing Melter Inputs* in Section 3, *Installation*
If the seven-day clock feature was set up and turned on when the melter was last switched off, the clock will automatically turn on the next time the melter is switched on.	*Function Keys*
If a power failure occurs, the melter will restart in its normal heat-up cycle, even if the heaters were off or the melter was in standby prior to the power failure. If the seven-day clock was on prior to the power failure, the melter will restart in the mode dictated by the clock schedule at the time the melter restarts.	

Manually Adjusting the Pump Speed

When the motor control is set to manual operation, the pump speed can be adjusted from 0-77 rpm for standard motor assemblies and from 0-113 rpm for high-output motor assemblies.

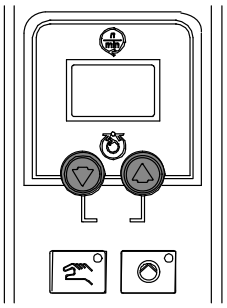
NOTE: When the motor control is set to automatic operation, pressing the motor speed arrow keys will alter the ratio of the line speed reference signal to allow for fine-tuning of the adhesive output rate.

To adjust the motor speed for manual operation

CAUTION! To ensure adequate motor control and cooling, the recommended minimum pump speed is 18 rpm or greater for standard motor assemblies or 28 rpm or greater for high-output motor assemblies. To prevent excessive wear on the pump, avoid prolonged operation of the pump at speeds greater than 80 rpm.

1. Use the following formula to determine the best pump speed:

$$pump\ speed\ [rpm] = \frac{desired\ flow\ rate\ [g/min]}{adhesive\ density\ [g/cc] \times pump\ output\ rate\ [cc/rev]}$$



Pump speed arrow keys

2. Press the pump speed arrow keys to adjust the motor(s) to the desired speed (rpm).

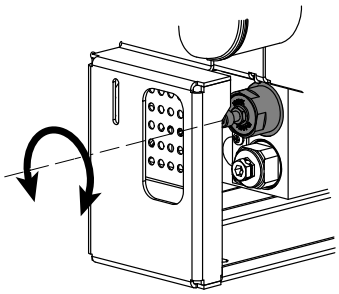
   The current motor speed is indicated on the display.

   NOTE: Each press of an arrow key increases/decreases the motor speed by 1 rpm (factory default).

Adjusting the Pressure Control Valve

NOTE: The pressure control valve screw is turned fully counterclockwise (at or near the valve's lowest pressure setting) at the factory and then the lock nut is tightened.

CAUTION! Do not exceed 16 N•m (12 ft-lb) of torque when adjusting the pressure control valve.



Adjusting the pressure control valve

If using the pressure control valve to control adhesive output, loosen the lock nut and adjust the valve to achieve the desired adhesive output rate for your manufacturing process. With the melter at operating temperature, the line running, and the applicators dispensing adhesive, turn the adjustment screw on the pressure control valve

- clockwise to increase the adhesive output
- counterclockwise to decrease the adhesive output

This page intentionally left blank.

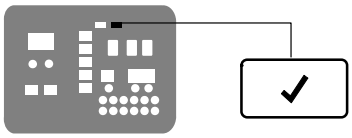
Monitoring the Melter

The melter provides indicators that allow you to:

- Quickly confirm that the melter is operating correctly
- Monitor the actual temperature of the tank group and each hose and applicator
- Identify melter faults
- Determine when service is required

The melter automatically determines the number and location of all hoses and applicators that are connected to it. Refer to *More about Heated Components*, earlier in this section, for information about hose/applicator capacity and the identification of heated components.

Confirm that the Melter is Operating Correctly



Ready LED

The ready LED turns on (green) when all of the heated components are within 3 °C (5 °F) of their setpoint temperature.

The ready LED will not turn on, or will turn off, if any of the following events occur:

- The ready delay is still counting down.
- The operator or a remote input places the melter in the standby mode.
- The seven-day clock places the melter in the standby mode.
- There is a fault (the fault LED will turn on).

Refer to *Monitor Melter Faults* and *Using Melter Function Keys* later in this section for information about melter faults and using the seven-day clock and standby functions. Refer to Appendix B, parameter 4, for information about the ready delay.

Heated components with a setpoint temperature of zero degrees are skipped during the automatic scan cycle.	
The setpoint temperature of the tank and the pump cannot be set independently.	
The time remaining on the ready delay appears in the right display at the end of each scan cycle.	Appendix B, parameter 4
You can override the seven-day clock at any time. If the clock has turned the heaters off, pressing the heaters key will turn the heaters back on. If the clock has placed the melter into the standby mode, pressing the standby key will return the heated components to their assigned setpoint temperature.	*Using Melter Function Keys*

Monitor Component Temperatures

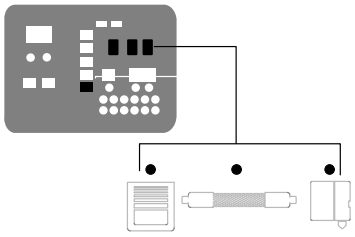
You can check the actual temperature of each heated component—the tank and each hose and applicator—using the automatic scan mode or by manually selecting and checking each component.

By default, the melter remains in the automatic scan mode except when:

- The melter is placed into the setup mode
- The setpoint temperature of all hoses and applicators is set to zero degrees
- A fault occurs

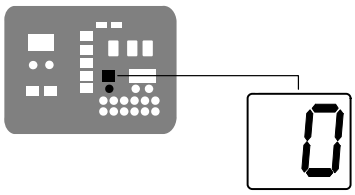
To check component temperatures using the automatic scan mode

1. When the ready LED is on, observe the LEDs on the component keys.
2. When the LED on the key that represents the desired component group (tank, hose, or applicator) turns on, observe the left display until it indicates the position number of the specific component you want to check.
3. When the position number of the desired component appears in the left display, observe the right display to determine the component's actual temperature.

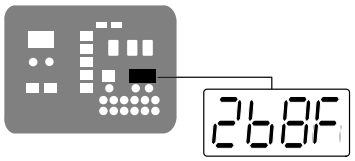


LEDs on component keys

To manually check a component's temperature



Left display and scroll key



Component temperature display

1. Press the key (tank, hose, or applicator) that represents the component group you want to check.

   The automatic scan stops and the left display indicates the number of the first sequential component in the selected component group. The right display indicates the component's actual temperature.

   NOTE: When the tank key is pressed, the left display does not indicate a component number (blank display).

2. If the first sequential component is not the component you want to check, use the left-display scroll key to change to the correct component number.

   The right display indicates the actual temperature of the selected component.

3. Press the **Setup** key twice to return to the automatic scan mode.

When you scroll the left display past the number of the last sequential component in a component group, the number of the first sequential component in the next component group appears in the left display.	
The melter will return to the automatic scan mode two minutes after the last key is pressed.	
When you press the **Tank** key, it is the pump temperature that is actually indicated in the right display. To check the actual temperature of the tank, simultaneously press the **Tank** key and the left-display scroll key.	
The default unit for temperature display is degrees Celsius (C). This may be changed to degrees Fahrenheit using operating parameter 20.	Appendix B, Parameter 20
The LEDs on each component key will change from green to yellow if any component in the component group drops more than 3 °C (5 °F) below its assigned setpoint temperature.	
You can check the setpoint temperature of a component at any time, by pressing the right-display UP scroll key. Holding down the scroll key while the melter is in the automatic scan mode reveals the setpoint of each component that is scanned.	

Monitor Melter Faults

The melter alerts the operator to the faults listed in Table 4-2. Faults affect the melter in one of three ways: the heaters turn off; the heaters remain on, but the fault condition persists; or the melter stops functioning.

When a fault occurs, you must diagnose and correct the fault condition and then place the melter back into operation. You can use the fault log to determine the type, order, and relative time of the last ten faults.

Table 4-2 Melter Faults

Display Code/Sub-code	Name	Affect on Melter	Cause	Corrective Action
F1/None	RTD	Heaters turn off	The RTD for the component indicated has failed or the component was disconnected from the melter.	Replace RTD Check hose/applicator connections
F2/None	Under temperature	Heaters turn off	The actual temperature of the component indicated has dropped below the under temperature delta, which was set using parameter 22.	Check for conditions that may cause a drop in ambient temperature Replace RTD
F3/None	Over temperature	Heaters turn off	The actual temperature of the component indicated has increased beyond the over temperature delta, which was set using parameter 21.	Replace RTD
F4/1	RAM test	Melter stops functioning	Internal RAM failure	Replace CPU
F4/2	Internal Clock time	Heaters remain on, but fault condition persists	Internal clock failure	Replace CPU
F4/3	RAM backup battery	Clock does not function	Insufficient voltage from RAM backup battery	Replace CPU
F4/4	Internal clock battery backed RAM	Heaters remain on, but fault condition persists	Battery-backed RAM failure	Replace CPU

Continued...

Table 4-2 Melter Faults *(contd)*

Display Code/Sub-code	Name	Affect on Melter	Cause	Corrective Action
F4/5	Internal clock battery	Heaters remain on, but fault condition persists	Battery-backed RAM battery dead	Replace CPU
F4/6	Analog-to-digital	Melter stops functioning	RTD analog-to-digital converter failed	Replace main board or CPU
F4/7	Analog-to-digital calibration	Melter stops functioning	Failed hose or applicator RTD analog-to-digital converter could not be calibrated (grounded RTD in system)	Replace hose or applicator. **Note:** Set setpoint to zero to avoid F1 fault. Replace main board or ribbon cable, or CPU
F4/8	Main board feedback	Melter stops functioning	Communication failure between main board and CPU	Replace main board, ribbon cable, or CPU
F4/9	Expansion board feedback	Melter stops functioning	Communication failure between expansion board and main board	Check the ribbon cable connections between the expansion board and the main board.
F4/A	Thermostat	Melter stops functioning	Tank or manifold thermostat is open	Replace thermostat, J7 harness, or main board
F4/b	Not used	—	—	—
F4/C	Expansion board connection	Melter stops functioning	Ribbon cable not connected at J1 on the main board and/or at J2 on the expansion board	Check the ribbon cable connections and make connections as applicable.
F4/d	Communications with optional I/O card	Heaters remain on, but fault condition persists	Communication failure between CPU and the optional I/O card	Replace the I/O card or CPU
F4/E	Fieldbus communications failure	Alert output (if output option 6 is selected) Melter continues to operate normally.	Fieldbus card failure.	Replace the Fieldbus card
F5	Mismatched applicator RTD	Heaters turn off	The applicator RTD type selected in one or more of parameters 92-97 does not match the RTD type of the corresponding applicator	Change parameters 92-97 to match the connected applicators.

How F1, F2, and F3 Faults are Handled

When the melter detects an F1, F2, or an F3 fault:

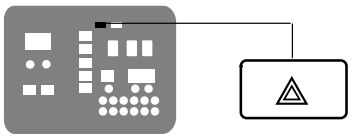
1. The automatic scan stops and the melter begins to monitor the potential fault for up to two minutes. The ready and heater LEDs remain on during the two-minute time period. If, at any time during the two-minute period, the melter detects that the fault condition no longer exists, the melter will return to the automatic scan mode.

2. The LED on the affected component key (tank, hose, or applicator) turns on to indicate the type of component that has, or is, failing.

3. The right display indicates the type of fault (F1, F2, or F3).

4. The left display indicates, as follows, the component that has, or is, failing.

   - If the LED on the tank key is on, the left display will indicate either 1 for the tank or 2 for the pump.
   - If the LED on the hose or applicator key is on, the left display will indicate the number of the affected hose or applicator.



Fault LED

5. If the fault condition still exists at the end of the two-minute monitoring period, the ready LED will turn off, the red fault LED will turn on, the heaters turn off, and the melter records the fault in the fault log. Refer to *To review the fault log* later in this section.

How F4 Faults are Handled

When the melter detects an F4 fault:

1. The ready LED turns off and the red fault LED turns on.

2. All of the component key LEDs (tank, hose, and applicator) turn off.

3. The right display indicates F4.

4. The left display indicates a sub-code. Sub-codes classify the fault as being fatal or nonfatal. The effect on the melter of each of these two classes of F4 faults is:

   Fatal—The fault LED turns on and stays on and the melter stops functioning completely.

   Nonfatal—The fault LED turns on for five seconds, but the heaters and pump continue to operate normally. Nonfatal faults affect the internal clock and the optional I/Os.

   Refer to Section 6, *Troubleshooting*, for information about diagnosing F4 faults.

5. The melter records the fault in the fault log.
   Refer to *To review the fault log* later in this section.

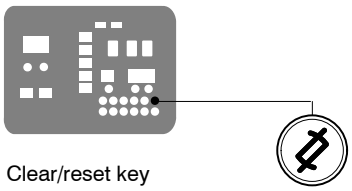
How F4 Faults are Handled *(contd)*

To put the melter back into operation

1. Diagnose and correct the fault condition. Refer to Section 6, *Troubleshooting*, for information about diagnosing and correcting fault conditions.

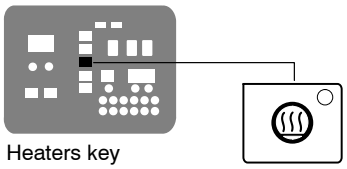
   NOTE: When a fatal F4 fault exists, the control switch will not function. Remove power to the melter at the local disconnect switch.

2. Return the melter to the automatic scan mode by pressing the **Setup** key twice.



Clear/reset key

3. Press the **Clear/Reset** key.



Heaters key

4. Press the **Heaters** key to turn on the heaters.

To view the temperature of a heated component when an F2 or F3 fault exists, simultaneously press and hold both of the right-display scroll keys.

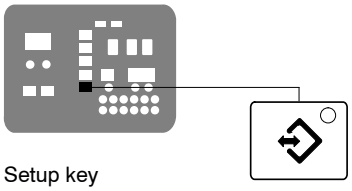
You can temporarily dismiss an F1 fault (RTD) and return to the automatic scan mode by pressing the **Clear/Reset** key. The heaters will, however, remain off. If the fault condition still exists two minutes after pressing the clear/reset key, the fault LED will turn back on.

When an F1 fault code appears, you can determine whether the fault was caused by an open or a shorted RTD by simultaneously pressing both of the right-display scroll keys. If the right display indicates OP, the RTD is open, if it indicates SH, the RTD has shorted.

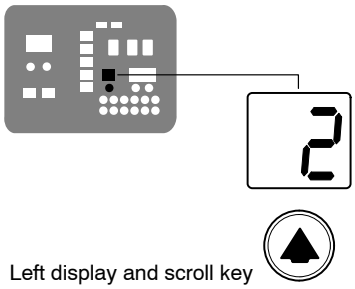
If, for any reason, a component reaches 235 °C (458 °F), an immediate F3 fault will occur (no two-minute monitoring period).

If F4 appears in the right display when you press the clock key, the internal clock function has failed.

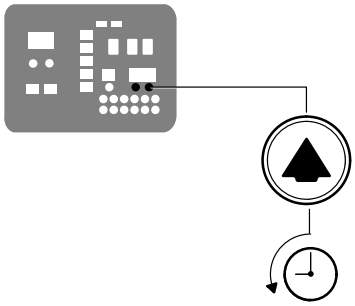
How F4 Faults are Handled *(contd)*



Setup key



Left display and scroll key



Scrolling through the fault log

To review the fault log

1. Press and hold the **Setup** key.

   The automatic scan stops and operating parameter 1 appears in the left display.

2. Scroll the left display to parameter 2 (the fault log).

   The right display indicates the last fault that occurred as follows:

   - If the last fault was an F1, F2, or F3 fault, then the LED on the affected component key turns yellow.
   - If the last fault to occur was an F4 fault, then the LEDs on all of the component keys turn off.
   - The right display indicates the log entry for the last fault to occur. Table 4-3 provides the meaning of each digit in the log entry. Following the table are two example fault log entries.

3. Press the right-display scroll key to review each of the remaining nine log entries. Each press of the scroll key displays a progressively older log entry.

   NOTE: The fault log only stores the last ten faults. After ten faults occur, the existing log entries are overwritten, beginning with the oldest entry, by the eleventh and following log entries.

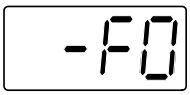
4. Press the **Setup** key to return to the automatic scan mode.

Table 4-3 Fault Log

First Digit	Second and Third Digits	Fourth Digit
Component: 1 = Tank or hose/applicator 1 2 = Pump or hose/applicator 2 3 = Hose 3 or applicator 3 4 = Hose 4 or applicator 4 5 = Hose 5 or applicator 5 6 = Hose 6 or applicator 6	- F	*Type of fault:* 0 = Unused log entry 1 = RTD (open or short) 2 = Component under temperature 3 = Component over temperature 4 = Processor or electrical failure

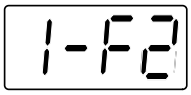
Fault Log Examples

Example 1:



An unused log entry.

Example 2:



If the LED on the tank key were on, this log entry would indicate that the tank is under temperature. If the LED on the hose key were on, this log entry would indicate that hose 1 is under temperature.

To view the number of heater hours that have elapsed since a log entry was created, simultaneously press both of the right-display scroll keys. The hours are indicated in the right display.

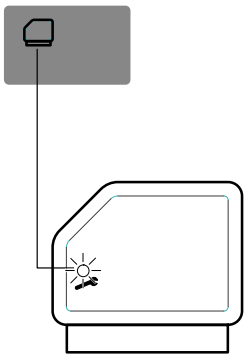
The melter will return to the automatic scan mode if the fault log is left open for a period of two minutes without any key being pressed.

When an F1 fault is the result of a hose/applicator pair being disconnected from the melter, two fault log entries are created. The first entry is for the applicator and the second entry is for the hose.

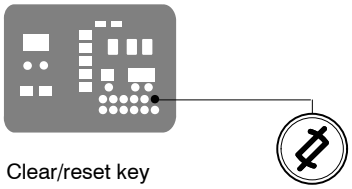
Monitor Motor Control or Motor Drive Faults

The pump speed display and the display on the motor drive located inside the electrical enclosure alert the operator to abnormal motor-related faults. These faults may cause the pump to stop. Refer to *Motor Control Faults* or *Motor Drive Faults* in Section 6, *Troubleshooting*.

Monitor the Service Interval



Service LED (yellow)



Clear/reset key

The melter can be set up so that the service LED located on the left side of the control panel turns on after a customer-defined time period has elapsed. The service LED may be used to signal the need to change the hot melt filter or to complete any other customer-specified maintenance activity. Once the specified maintenance is performed, the service LED must be reset.

To reset the service LED

With the melter in the scan mode, press the **Clear/Reset** key to turn off the service LED and reset the service interval time.

The default setting for the service interval time is 500 hours.

Appendix B, parameter 5

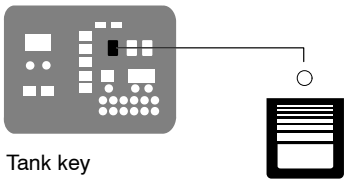
Adjusting Component Temperatures

You can adjust the setpoint temperature of heated components using the following methods:

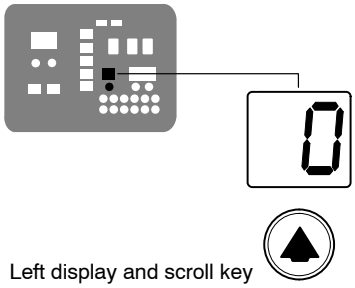
- **Global**—The tank and all hoses and applicators are set to the same setpoint temperature.
- **Global-by-Component Group**—All of the hoses or all of the applicators are set to the same setpoint temperature.
- **Individual Component**—The setpoint temperature of the tank and each hose and applicator is adjusted independently.

Before adjusting setpoint temperatures, confirm that each hose/applicator pair is connected to the correct hose/applicator receptacle. For example, hose/applicator pair 1 should be connected to the receptacle 1. Refer to *More about Heated Components* earlier in this section for information about hose/applicator positions.

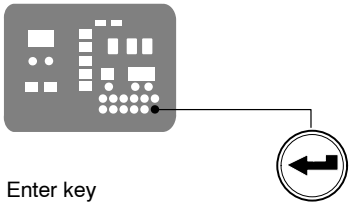
Adjusting Component Temperatures *(contd)*



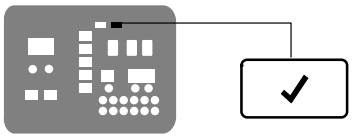
Tank key



Left display and scroll key



Enter key



Ready LED

To adjust setpoint temperatures using the global method

1. Press and hold the **Tank** key for three seconds.
   The left display flashes 1.

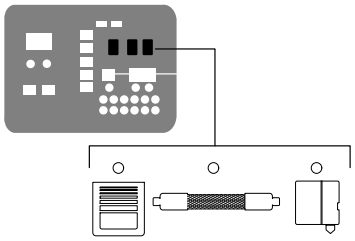
2. Scroll the left display to 0 (flashing).
   The right display indicates all dashes (----) and the LEDs on all of the component keys turn green.

3. Press the **Enter** key.
   The right display flashes.

4. Use the keypad to enter the setpoint temperature recommended by the manufacturer of the hot melt. Refer to the technical data sheet provided by the manufacturer of the hot melt to determine the optimal setpoint temperature.

   NOTE: If the keypad or the right-display scroll keys have no affect on the right display, the melter is password protected. You must enter a valid password before you can change setpoint temperatures. Refer *Enter the Melter Password*, later in this section.

5. Press the **Tank** key.
   All components begin to heat or cool to the new global setpoint temperature. When all of the components reach their setpoint temperature, the ready LED turns on (green).



Component keys

To adjust the setpoint temperature using the global-by-component method

1. Press and hold the **Hose** or **Applicator** key for three seconds.

   The left display indicates the number of the first sequential hose or applicator. The right display indicates the current setpoint temperature of the hose or the applicator.

2. Scroll the left display to 0.

   The right display indicates all dashes (- - - -).

3. Press the **Enter** key.

   The right display flashes.

4. Use the keypad to enter the setpoint temperature recommended by the manufacturer of the hot melt. Refer to the technical data sheet provided by the manufacturer of the hot melt to determine the optimal setpoint temperature.

   NOTE: If the keypad or the right-display scroll keys have no affect on the right display, the melter is password protected. You must enter a valid password before you can change setpoint temperatures. Refer to *Entering the Melter Password* later in this section.

5. Press the **Enter** key.

   The hoses or the applicators begin to heat or cool to their new setpoint temperature.

Adjusting Component Temperatures *(contd)*

To adjust the setpoint temperature of an individual component

1. Press and hold the **Tank**, **Hose**, or **Applicator** key for three seconds.

   If the tank key was pressed, the left display indicates 1 (Flashing). If a hose or applicator key was pressed, the left display indicates the number of the first sequential hose or applicator (Flashing). The right display indicates the current setpoint temperature of the component indicated in the left display.

2. Scroll the left display to the number of the desired component.

   The right display indicates the current setpoint temperature of the component that you selected in the left display.

3. Press the **Enter** key.

   The right display flashes.

4. Use the keypad to enter the setpoint temperature recommended by the manufacturer of the hot melt. Refer to the technical data sheet provided by the manufacturer of the hot melt to determine the optimal setpoint temperature.

   NOTE: If the keypad or the right-display scroll keys have no affect on the right display, the melter is password protected. You must enter a valid password before you can change setpoint temperatures. Refer to *Entering the Melter Password* later in this section.

5. Do *one* of the following:

   - To register the new setpoint temperature and then move on to change the setpoint temperature of the next sequential component, press the **Enter** key and then repeat steps 4 and 5.
   - To register the new setpoint temperature and return to the automatic scan mode, go to step 6.

6. Press any component key (tank, hose, or applicator).

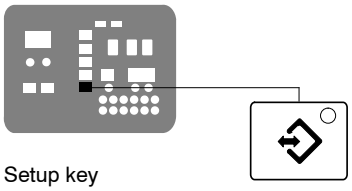
   The selected component begins to heat or cool to its new setpoint temperature.

If you enter a valid setpoint temperature for a hose/applicator that is not connected to the melter or if you enter a setpoint temperature that is out of range, the right display will indicate dashes (----) for three seconds and then change back to the original setpoint temperature.	
When the right display is flashing, you can quickly change the current setpoint temperature to 0 degrees (off) by simultaneously pressing both of right-display scroll keys.	
After removing a hose or a applicator, use the individual component method of setpoint temperature adjustment to set the component's temperature to zero degrees (off). This will avoid causing an F1 fault when a hose or applicator is added, use the individual component method to set the desired temperature.	
The factory setpoint temperature of the tank is 175 °C (350 °F). The factory setpoint temperature of all others components is zero degrees (off).	
When the units of temperature is set to degrees Celsius, the minimum and maximum setpoint temperatures are 40 °C and 230 °C. When the units of temperature are set to degrees Fahrenheit, the minimum and maximum setpoint temperatures are 100 °F and 450 °F.	
When using the right-display scroll keys to adjust a setpoint temperature, the right display automatically increments between 0, 175, and 230 °C or between 0, 350, and 450 °F.	
If you make a mistake while you are changing a setpoint temperature, but you have not yet pressed the enter key, press the **Clear**/**Reset** key to reset the right display to the original temperature.	
The melter will exit the setup mode and return to the automatic scan mode two minutes after the last key is pressed.	
A global setpoint temperature of zero degrees (Celsius or Fahrenheit) turns all components off.	
When scrolling through component numbers in the left display, component numbers that are associated with unused hose/applicator receptacles are skipped.	
The melter stores a record of the last ten changes made to the setpoint temperatures (and operating parameters) in the change history log.	Refer to Section 3, *Installation*, *Review Parameter and setpoint Temperature Changes*
You can save setpoint temperature changes by simultaneously pressing the **1** key and the **Setup** key.	Refer to Section 3, *Installation*, *Save and Restore Melter Settings*

Entering the Melter Password

If the melter is password protected, a valid password must be entered before any setpoint temperature or melter parameter can be changed.

To enter a melter password



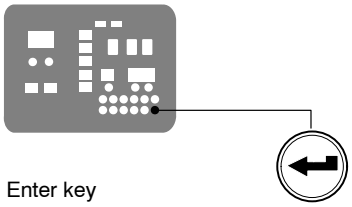
Setup key

1. Press the **Setup** key.

   The left display indicates parameter 0 (flashing) and the right display indicates 4000.

2. Press the **Enter** key.

   The right display begins flashing.



Enter key

3. Use the keypad to enter the melter password.
4. Press the **Enter** key.

   One of the following occurs:

   - If the password is correct, the left display indicates parameter 1.
   - If the password is incorrect, the left display remains at 0 and the right display momentarily indicates dashes (----) and then returns to 4000.

     If the password is incorrect, re-enter it and then press the **Enter** key.

The melter will automatically revert back to the password-protected mode two minutes after the last key press (any key). To force the melter back into the password protected mode before two minutes has elapsed, press the **Setup** key twice.

The melter password is created and enabled/disabled during system setup.	*Setting Up the Melter* in Section 3, *Installation*

Using Melter Function Keys

The control panel provides the following standard and special function keys:

Standard function keys

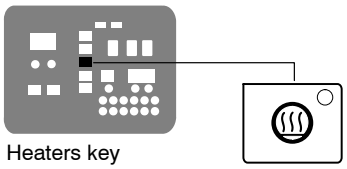
- Heater
- Pump
- Setup

Special function keys

- Seven-day clock
- Standby

CAUTION: Unintentionally activating function keys can, under the correct circumstances, have undesirable effects on the melter or the manufacturing process. Only personnel who are familiar with the melter's setup and its connection with the manufacturing process should use the function keys. Improper use of the function keys can result in erratic process behavior or personal injury.

Heaters Key

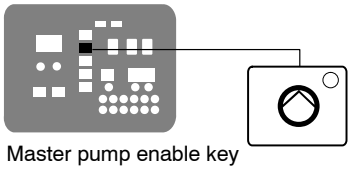


Heaters key

Use the heaters key to manually turn the component heaters on and off. Pressing the heaters key overrides the control (on or off) of the heaters by either the seven-day clock feature or a remote input. The LED on the heaters key illuminates when the heaters are on.

When a fault occurs (refer to *Monitor Melter Faults* earlier in this section) the heaters automatically turn off. The heaters key is used to turn the heaters back on after correcting a fault condition.

Master Pump Enable Key



Master pump enable key

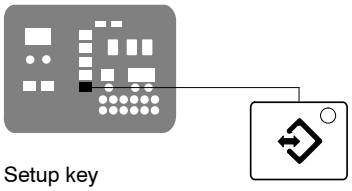
Use the master pump enable key to enable and stop the pump. The LED is green when the pump is enabled and the melter is ready.

If the automatic pump on feature (parameter 8) is disabled, then the master pump enable key must be used to start the pump when the melter is ready.

If any of the inputs are set up to use the pump enable/disable control option, the pump motor will not start until the pump is enabled *and* the correct voltage is applied to the input contacts. If the pump is enabled, but the input voltage is not present, the master pump enable key LED will flash green.

NOTE: For detailed information about the variables that control the status of the pump—enabled or disabled—and the associated indication that is provided by the pump LED, refer to *Pump Operational Status* in Section 6, *Troubleshooting*.

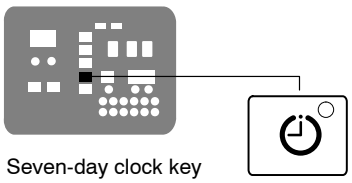
Setup Key



Setup key

Use the setup key to place the melter into and take the melter out of the setup mode. When the melter is placed into the setup mode, the automatic scan stops and the left and right displays are used to select and read or edit operating parameters.

Seven-Day Clock Key



Seven-day clock key

Use the seven-day clock key to turn the melter's clock feature on and off. When the clock is on, the temperature of each heated component is automatically regulated based on a set of user-defined schedules.

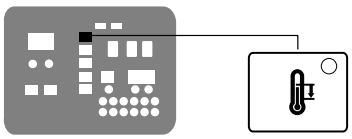
To accommodate daily shift work and non-working days, four clock schedules are available. Schedules 1, 2, and 3 are used to specify when the heaters should turn on and off or when the melter should enter and exit the standby mode. Schedule 0 is used to keep the melter in the last condition dictated by the clock (heaters on or off, or standby).

When a clock schedule calls for the heaters to be on, the heaters are regulated at their pre-assigned setpoint temperatures. When the clock activates the standby mode, the setpoint temperature of each component is temporarily reduced by a pre-set standby delta.

Refer to Appendix B, *Operating Parameters*, *Seven-day Clock*, for information about setting up the seven-day clock and the standby delta.

If the melter is switched off while the clock is on, the clock will automatically turn back on the next time the melter is switched back on.	
If the heaters are manually turned off at the time that a clock schedule calls for the heaters to be on, the heaters will not turn back on until the next clock schedule calls for them to be on.	
The clock will still operate when the melter is faulting or is in the setup mode.	
If F4 appears in the right display when you press the clock key, the internal clock function has failed.	Section 7, *Troubleshooting*

Standby Key



Standby key

Use the standby key to manually place the melter into, and take it out of, the standby mode. Using the standby mode during periods of time when the melter is inactive helps conserve energy and allows heated components to quickly return to their setpoint temperatures when the melter is once again needed.

When the melter is placed into the standby mode, the temperatures of all components are reduced down from their setpoint temperature by a pre-set standby delta. The melter will remain in the standby mode until the standby key is pressed or the function of one of the operating parameters takes the melter out of the standby mode.

If the melter was set up to use the manual standby timer (parameter 26), pressing the standby key will place the melter in the standby mode for the period of time specified by the timer. After the manual standby time has elapsed, the melter will once again begin heating all of the components to their assigned setpoint temperature.

Using the standby key overrides the control of the melter (on or off) by the seven-day clock or a remote input.

Refer to Section 3, *Installation*, *Setting Up the Melter*, and to Appendix B, *Operating Parameters*, for information about setting the standby delta and the standby timer.

The melter may also be set up to automatically enter the standby mode using a variety of operating parameters.	Appendix B, Parameters 25, 26, 57, 30–33, 62, and 67
Whenever manual standby is enabled, the standby LED blinks.	Appendix B, Parameter 26

Handheld Applications Operation

The MT16L melter is made up of a special control box and the classic AltaBlue TT melter, which meets the new requirements for the Mattress and other handheld applicators.

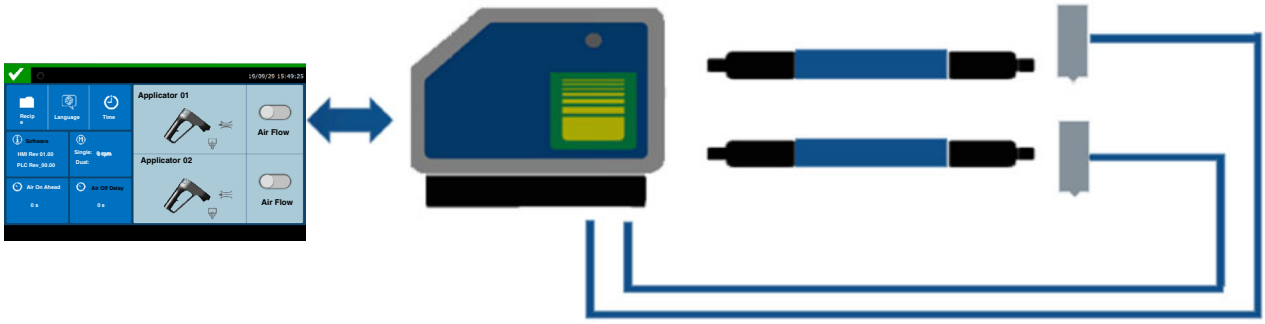


Figure 4-10 MT16L melter system

Handheld Applications TT Statuses

There are two operating statuses for the MT16L melter.

- Heating status
- Handheld Applications status

Heating Status

The heating status is the same as for the AltaBlue TT melter. The melter heats whether it is ready or not. The top status of the GUI while in Heating status changes as shown below:

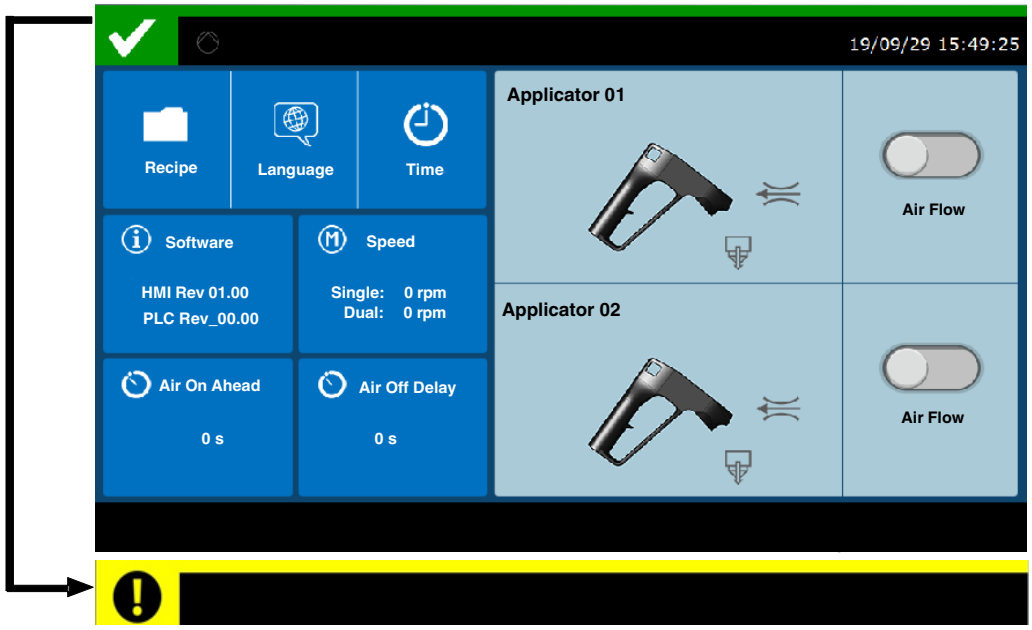


Figure 4-11 Heating status

The following attention messages will display at the bottom of the screen.

Please confirm whether the trigger signal of the applicator is connected to the AltaBlue TT melter. (No trigger signal is connected to the AltaBlue TT melter.).

Please confirm the status of the two enable indicators on the AltaBlue TT melter. (At least one trigger signal is connected to the AltaBlue TT melter.).

Handheld Applications Status

The Handheld Applications status is a new status for the Mattress and other handheld applicators. The melter is ready when the following conditions are met:

- The master pump enable indicator light is on, and the pump enable indicator light on the motor control board is also on.
- At least one applicator's trigger signal is connected to the AltaBlue TT melter.

The top status of the GUI while in Handheld Applications status is shown below:

In this status, nothing will display at the bottom of the screen. If the pump starts to run, the  icon changes to  .

If no trigger signal is connected to the AltaBlue TT melter, the melter runs in the manual operation of the applicator. Manual operation is the same as for the classic AltaBlue TT melter. The top status of the GUI while in manual operation is shown below:

The following attention message will dis play at the bottom of the screen:

Please confirm whether the trigger signal of the applicator is connected to the AltaBlue TT melter.

Switching to the Handheld Applications Status

You can switch to the Handheld Applications status in one of the following ways:

- Lighting the pump’s enable indicator on the motor control board and the master enable indicator at the same time when the melter is ready.
- Setting the parameter “srt” to “1” for the motor control board and lighting the master pump enable to yellow on the CPU board. Both the pump enable and master pump enable indicators change to green when the melter is ready.

Connecting to the Air Control Kit

There are two connectors marked “AIR 01” and “AIR 02” to match the air control kit (P/N1050598) inside the MT16L melter. You can directly connect them with the air control solenoid valve.

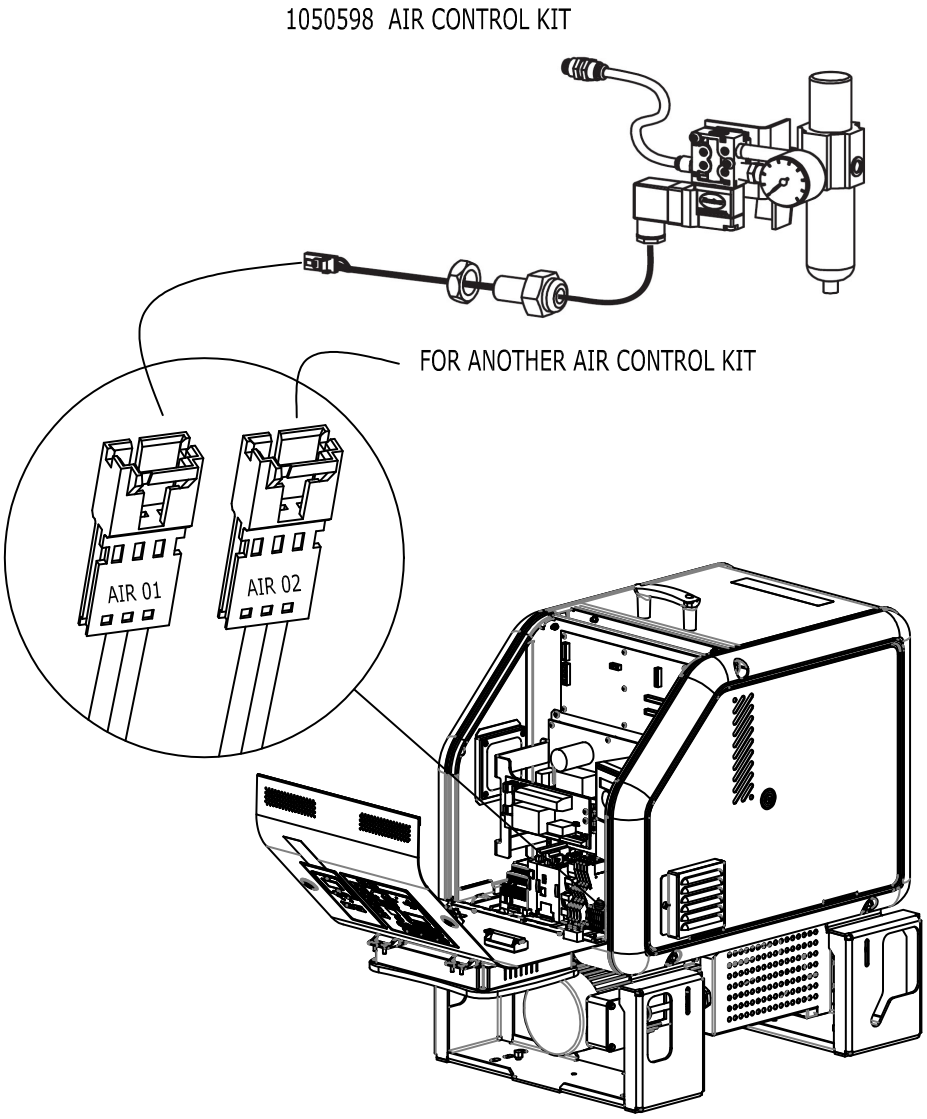


Figure 4-12 Air control kit

Handheld Applications HMI Views

The Handheld Applications HMI views are as follows:

- Main view
- Recipe view
- Language view
- Time view

View Switching

Clicking in the icon area of the Main view opens the corresponding view. It switches back to the Main view whenever you click the ✔ icon in every secondary view.

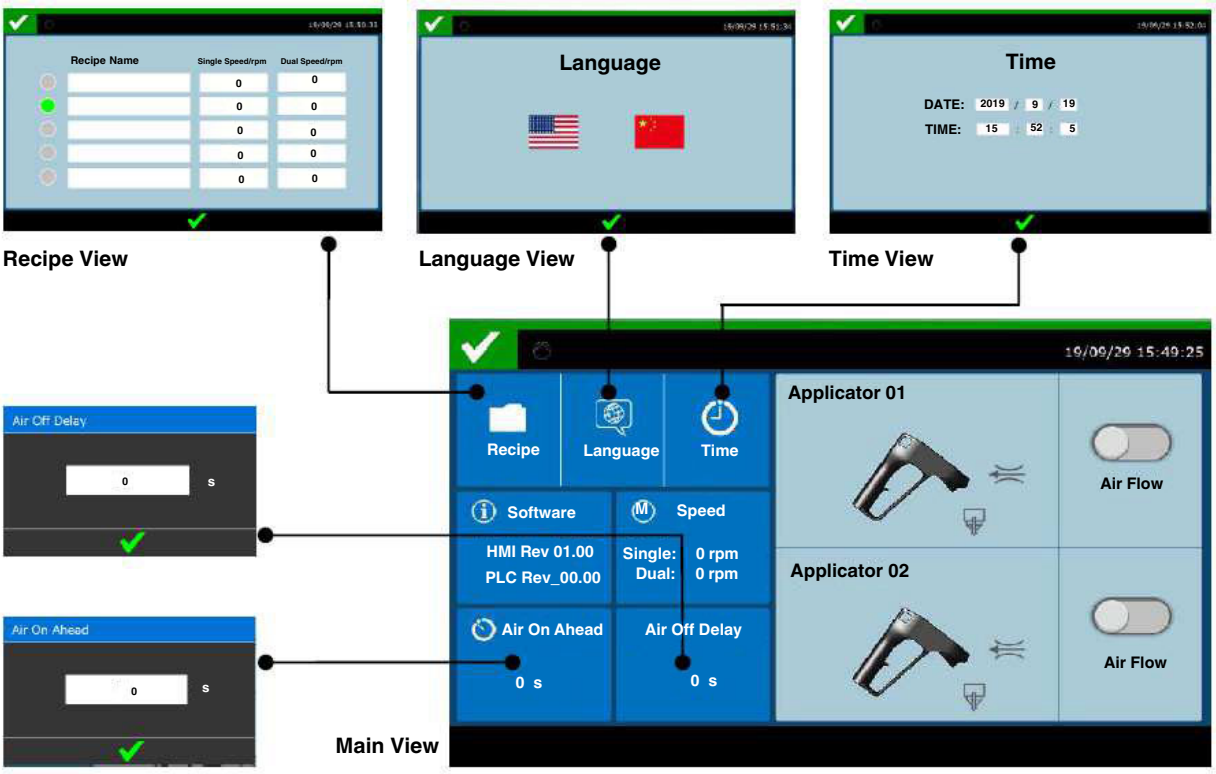


Figure 4-13 Handheld Applications HMI views

Main View

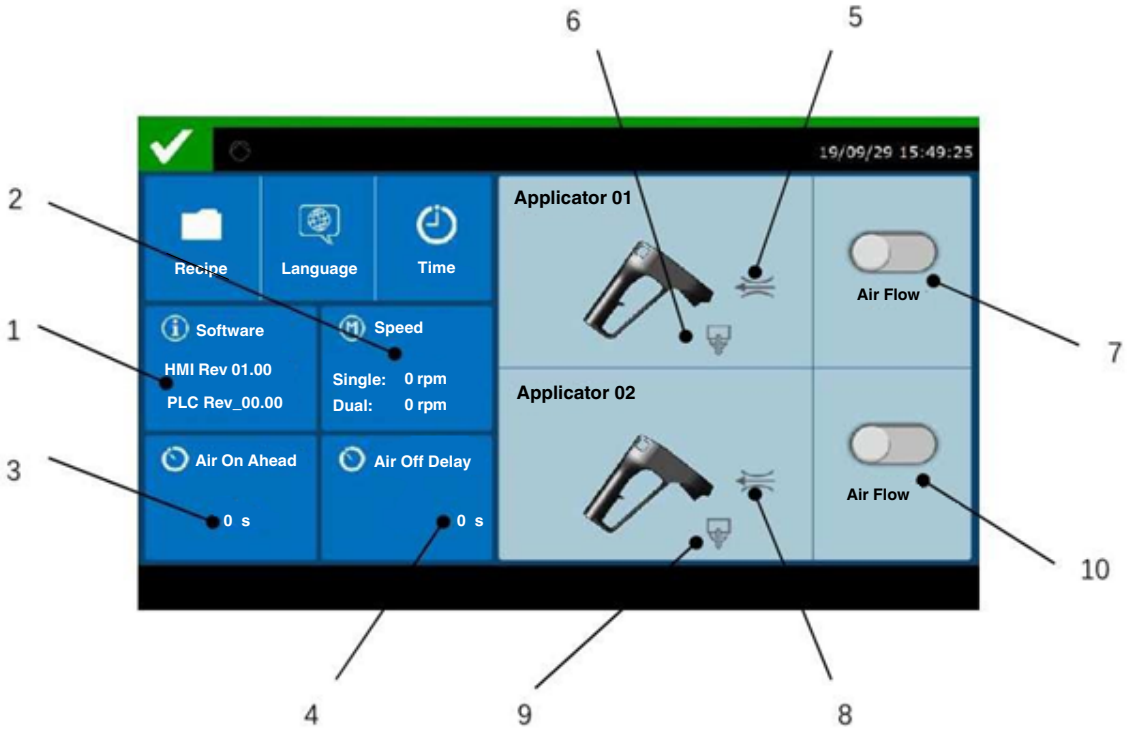


Figure 4-14 Main view

1. Software information.

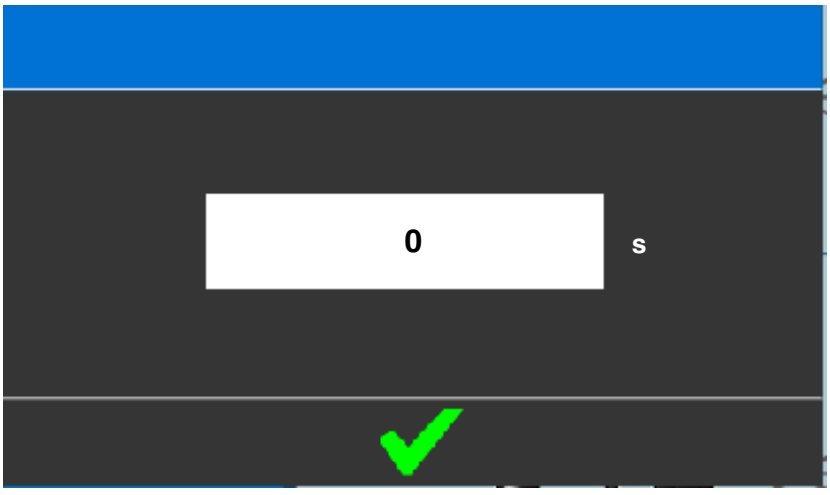
   Displays the current software version of the PLC and GUI.

2. Speed information check.

   Displays the single and dual applicator pump speed of the active recipe.

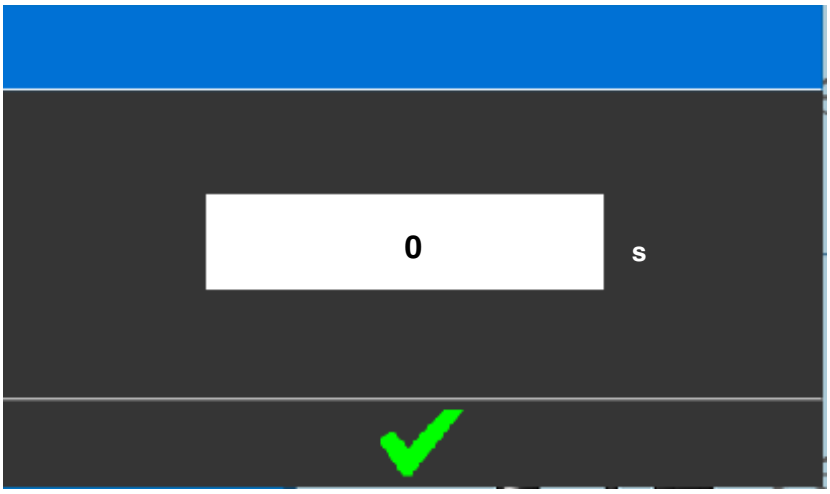
3. The duration time of Air On Ahead (the amount of time the air is open prior to the adhesive output).

   Clicking in this area opens a pop-up window for the delay time of Air On Ahead. You can set it from 0 to 3 seconds.



4. The duration time for Air Off Delay (the time of air shut off after the adhesive stop).

   Clicking in this area opens a pop-up window for the delay time of Air Off Delay. You can set it from 0 to 3 seconds.



5. The air icon status for Applicator 01.

   This icon turns green when the operating air comes from Applicator 01.

6. The glue icon status for Applicator 01.

   This icon turns green when the adhesive flows from Applicator 01.

7. The air flow button for Applicator 01.

   Pressing this button turns the operating air on manually when the operating air is off. Pressing it again turns the operating air off.

   NOTE: This button is disabled if the operating air has already been turned on by the trigger signal.

8. The air icon status for Applicator 02.

   This icon turns green when the operating air comes from Applicator 02.

9. The glue icon status for Applicator 02.

   This icon turns green when the adhesive flows from Applicator 02.

10. The air flow button for Applicator 02.

    Pressing this button turns the operating air on manually when the operating air is off. Pressing it again turns the operating air off.

    NOTE: This button is disabled automatically if the operating air has already been turned on by the trigger signal.

Recipe View

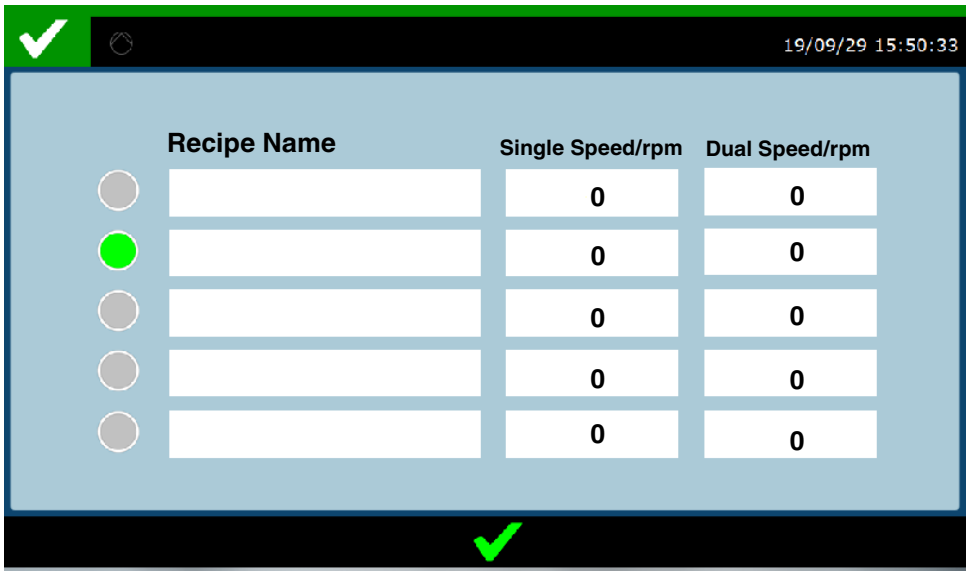


Figure 4-15 Recipe view

There are five recipes to select and edit.

1. Active recipe display and select
   - The circular icon of the current recipe is green, and the others are gray.
   - Clicking the circular icon selects this recipe as the current recipe.
2. Recipe Name

   Clicking the white rectangle in this column lets you edit the name for every recipe. You can enter 20 characters for each name.
3. Single Speed/rpm

   Clicking the white rectangle in this column lets you edit the single speed from 0 to 115 rpm for every recipe. The pump runs at the speed of this value when only one applicator is open.
4. Dual Speed/rpm

   Clicking the white rectangle in this column lets you edit the dual speed from 0 to 115 rpm for every recipe. The pump runs at the speed of this value when both applicators are open.
5. The default setting for the five recipes is shown below.

Recipe Selected	Recipe Name	Single	Dual
The 1st Recipe (Recipe 01)	Recipe 01	30	60
	Recipe 02	35	70
	Recipe 03	45	90
	Recipe 04	50	100
	Recipe 05	55	110

Language View

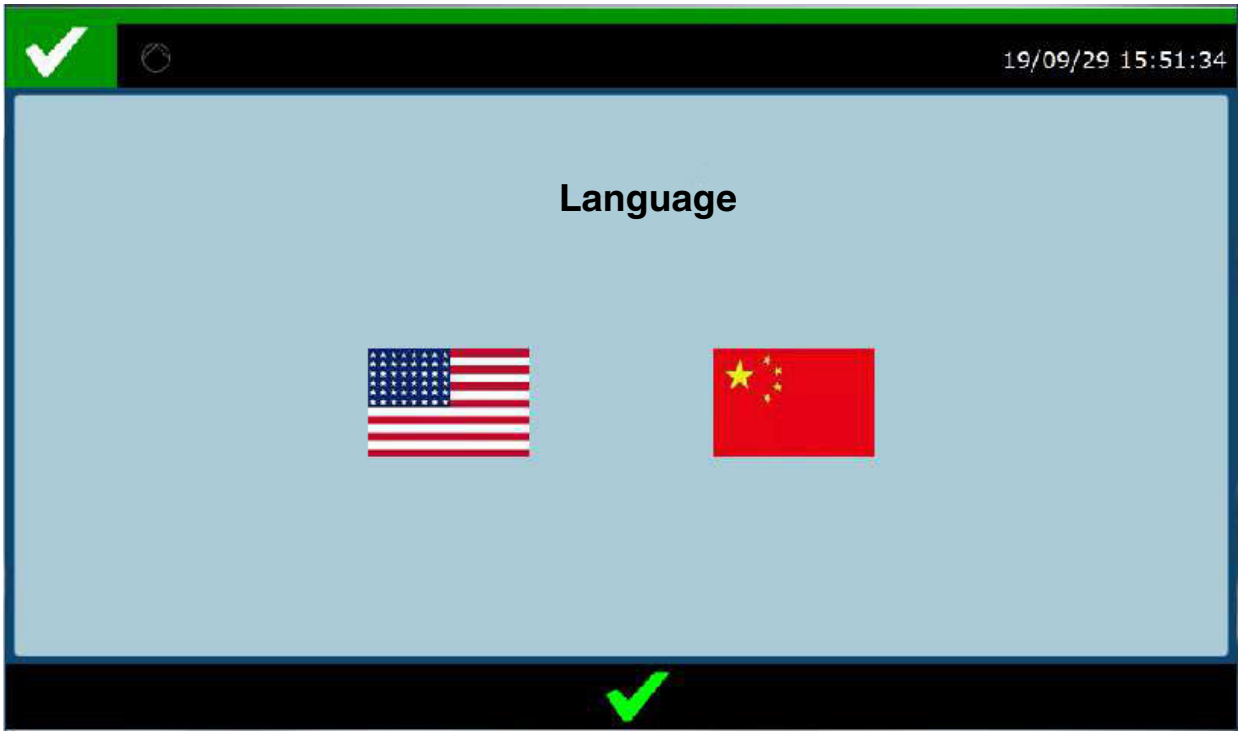


Figure 4-16 Language view

- Clicking the American flag changes the language to English.
- Clicking the Chinese flag changes the language to Chinese.

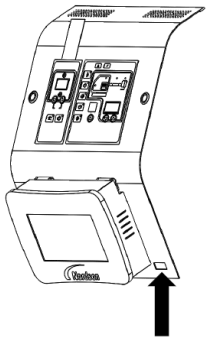
Time View

Figure 4-17 Time view

- **Date** – Clicking one of the white boxes in this row lets you edit the date: year/month/day.
- **Time** – Clicking one of the white boxes in this row lets you edit the time: hour/minute/second.

Shutting Down the Melter

Shut the melter down when it will not be used for an extended period of time.



Melter control switch (A4)

To shut the melter down

1. Switch the melter off.

   NOTE: The control switch on an A10/A16 melter is located to the lower right of the control panel.

2. Relieve system pressure. Refer to *Relieving System Pressure* in Section 5, *Maintenance*, as needed.

3. Disable the applicators as follows:
   - Air-operated applicators: Turn off the air supply to the applicators.
   - Electric applicators: Turn off the applicator driver, pattern controller, or timer.

Section 5
Maintenance

WARNING! Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others, and damage to the equipment.

Maintenance Schedule

Table 5-1 describes the preventive maintenance tasks required to keep AltaBlue for Handheld Applications TT16L melters operating within their specified limits and to prevent equipment malfunctions. For information about maintaining optional equipment that was supplied by Nordson, refer to the instructions provided with the equipment.

If the melter stops operating or is operating incorrectly, refer to Section 6, *Troubleshooting*, for information about diagnosing common problems and performing corrective maintenance.

Table 5-1 Preventive Maintenance Tasks

Task	Frequency	Reference
Relieving System Pressure	Before performing any maintenance task that requires opening a hydraulic connection or port	*Relieving System Pressure*
Cleaning the exterior of the melter, hoses, and applicators	Daily	*Cleaning the Melter*
		Continued...

Maintenance Schedule *(contd)*

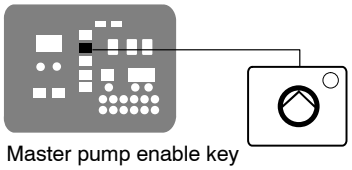
Table 5-1 Preventive Maintenance Tasks *(contd)*

Task	Frequency	Reference
Replacing the Adhesive Filter	• As needed • When changing the type or grade of hot melt	*Replacing the Adhesive Filter* Instruction sheet provided with replacement filter
Cleaning the tank	• When changing the type or grade of hot melt • When excessive charring occurs	*Cleaning the Tank*
Cleaning or replacing the electrical enclosure fan filter	Depending on dust accumulation; daily if necessary	
Tightening the pump screws	• When leakage occurs • When the pump screws become loose • At scheduled service intervals • Whenever the pump gland is tightened (if applicable)	*Tightening the Pump Screws*
Tightening the pump gland bolt (if present)	• When leakage occurs • At scheduled service intervals • Whenever the pump screws are tightened	*Tightening the Pump Gland Bolt*

Relieving System Pressure

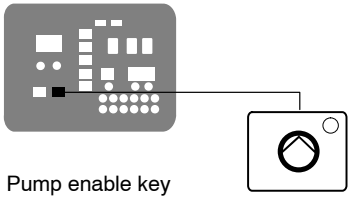
Before disconnecting any hydraulic fitting or opening any pressurized port, always complete the following procedure to safely relieve hydraulic pressure that may be trapped inside the melter, hoses, and applicators.

To relieve system pressure



Master pump enable key

1. Press the either the **Master pump enable** or the **Pump enable** key to stop the pump.
2. Trigger the applicators until hot melt no longer flows from the applicators.

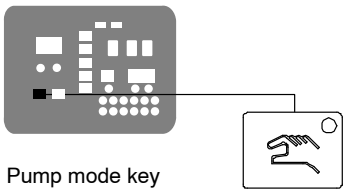


Pump enable key

Locking Out External Communications

WARNING! Disable external inputs and fieldbus communcations with the melter before performing maintenance. Failure to disable external inputs or fieldbus communications with the melter can result in personal injury due to unexpected operation of the melter while performing maintenance.

To lockout external communications with the melter



Pump mode key

1. Press the pump mode key to select the manual mode (LED on).
2. Set the control option for parameter 14 to 1 (enabled).
3. When the service activity is complete, return parameter 14 to 0 (disabled).

Refer to Section 3, *Setting Up the Melter*, for information about changing operating parameters.

Cleaning the Melter

To prevent components from overheating due to heat build-up or loss of air circulation, regularly remove any hot melt that collects on the exterior of the melter, hoses, and applicators.

If hot melt inadvertently spills inside the melter's interior spaces, the side panels can be removed in order to clean out the spilled hot melt.

WARNING! Risk of electrocution and fire! Do not clean the melter with a direct stream of water or steam. Use only water or an appropriate, non-flammable cleaning solution that is applied using a clean cloth. Cleaning the melter using a direct stream of water or steam or a flammable solvent can result in property damage and personal injury, including death.

To clean the exterior of the melter

- Use only cleaning compounds that are compatible with polyester.
- Apply cleaning compounds using a soft cloth.
- Do not use pointed or sharp tools to clean the exterior surface.

To remove and replace the exterior panels

See Figure 5-1.

1. De-energize the melter. Refer to Section 1, *Safety*.
2. Use a 4 mm ($^{5}/_{32}$-inch) hex-head wrench to turn the $^{1}/_{2}$-turn fastener located in the center of each side panel counterclockwise.
3. Disconnect the fan from side panel. Depending on the melter model, either the left or right side panel will be equipped with a fan.
4. Disconnect all ground wires from the panels.
5. Lift the panels out of the melter's frame.
6. Reverse steps 2-4 to reinstall each panel.

To clean the electrical enclosure

- After panels are removed, inspect the fan area and ensure that the air flow path for both side panels is clear. Remove excessive dust from inside the cabinet.

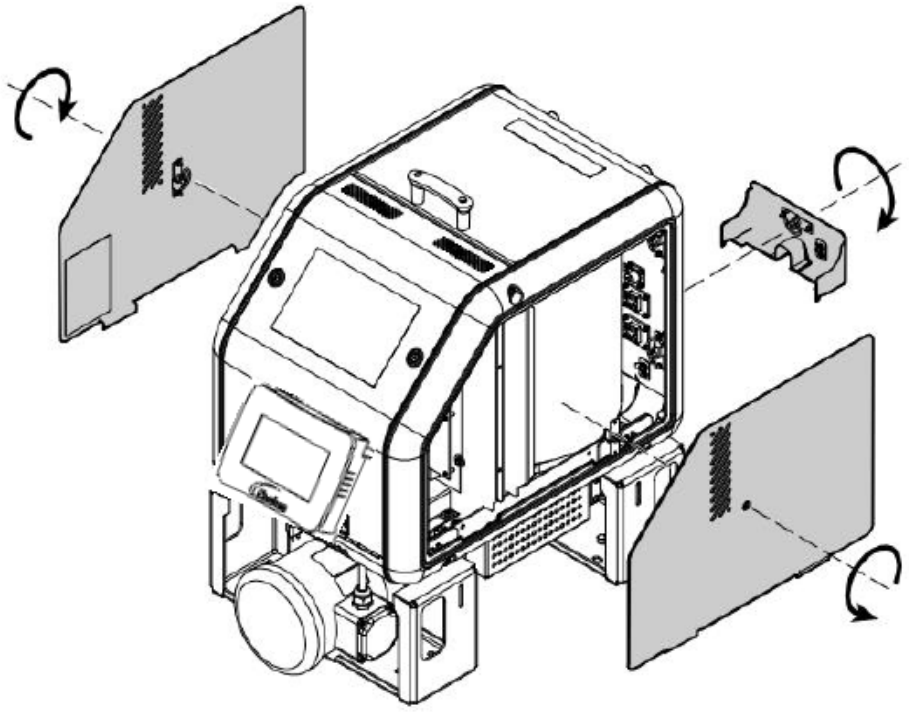


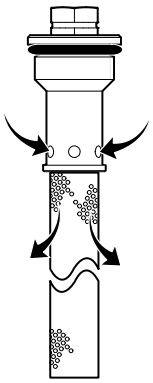
Figure 5-1 Removing the exterior panels

Replacing the Adhesive Filter

AltaBlue for Handheld Applications TT16L melters are equipped with a 100-mesh (0.15-mm) disposable hot melt adhesive filter. The adhesive filter removes debris and char from the hot melt as it flows from the tank. Hot melt flows from the inside to the outside of the filter, trapping contaminants inside the filter. There is no need to back-flush or clean the filter.

When the filter reaches the end of its service life, it should be replaced. The factors that determine the service life of the filter are:

- the type, grade, and purity of the solid-form hot melt
- the set point temperature of the tank
- the period of time that the hot melt remains in the tank



Hot melt flow path

The filter should also be replaced when making the change to a different type or grade of hot melt.

To determine the optimal service life for the filter, monitor and compare the total number of hours that the heaters are on with observations of:

- the purity of the dispensed hot melt
- increases in operating pressure
- the frequency of applicator nozzle replacement or cleaning

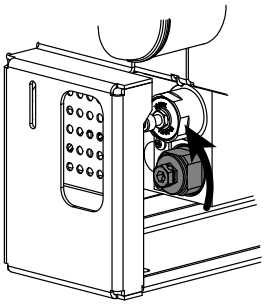
As an aid to ensuring that the filter is replaced at the end of its service life, the melter is equipped with a service LED that turns on at the end of a customer-defined time period. Refer to *Setting Up the Melter* in Section 3, *Installation*, for information about the service interval time.

To replace the adhesive filter

1. Relieve the system pressure. Refer to *Relieving System Pressure* at the beginning of this section.
2. Use an 8 mm (5/16-inch) hex-head wrench or an adjustable wrench to loosen (counterclockwise) and then remove the adhesive filter.
3. Properly dispose of the old filter.
4. Confirm that the O-ring on the new adhesive filter is in good condition (100-mesh filter is P/N 1028305).

   NOTE: 50- and 150-mesh filters are also available (P/Ns 1021941 and 1034720).

5. Screw the filter into the pump body and then tighten the filter to 4.5 N•m (40 in.-lb).
6. Resume normal operation.



Loosening the adhesive filter

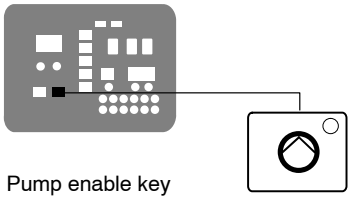
Cleaning the Tank

To avoid the problems that can occur when different hot melt materials are mixed or when hot melt char forms in the tank, clean the tank when:

- changing to a different type of hot melt
- excessive char builds up inside the tank

NOTE: The tank cleaning procedures provided in this section require that an appropriate flushing material be used. The flushing material should be compatible with both the previous adhesive and the new adhesive, if applicable.

To clean the tank when changing hot melt

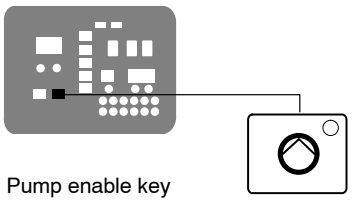


Pump enable key

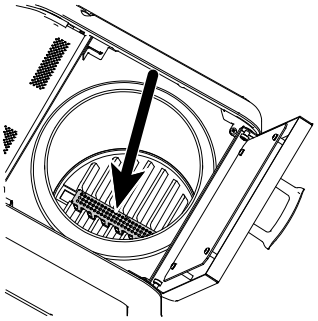
1. Operate the melter normally until the tank is empty.
2. Press the **Pump enable** key to stop the pump.
3. Allow the melter to heat or cool to the temperature recommended by the manufacturer of the flushing material.
4. While wearing the appropriate protective equipment, wipe any residual hot melt from the inside of the tank.
5. Add the appropriate type and quantity of flushing material to the tank.
6. Press the **Pump enable** key to start the pump

   NOTE: The manual/gear-to-line switch must be in the manual (hand) position and the motor (pump) speed dial must be at a setting other than 0.
7. Pump all of the flushing material from the tank and through the hoses and applicators.
8. Return the melter to normal operation and pump a minimum of one tank volume of fresh hot melt through the tank, hoses, and applicators.

To clean the tank of excessive char



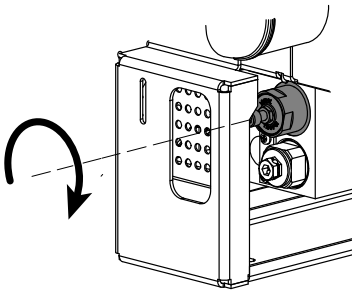
Pump enable key



Tank strainer

1. Remove the old hot melt and loose char as follows:
   a. Operate the melter normally until the tank is empty.
   b. Press the **Pump enable** key to stop the pump.
   c. Allow the melter to heat or cool to the temperature recommended by the manufacturer of the flushing material.
   d. While wearing the appropriate protective equipment, wipe any residual hot melt and loose char from the inside of the tank.
   e. Remove the tank strainer, clean it with an appropriate flushing material, and then reinstall it.
2. Add the appropriate type and quantity of hot melt solvent to the tank.
3. Disconnect a hose from a applicator and direct the hose into a waste container.
4. Close the pressure control valve by turning the valve all the way clockwise.

WARNING! Risk of burns! Wear protective equipment and use caution when pumping hot material into a waste container.



Closing the pressure control valve

5. Press the **Pump enable** key to start the pump

   NOTE: The manual/gear-to-line switch must be in the manual (hand) position and the motor (pump) speed dial must be at a setting other than 0.
6. When the tank is empty, stop the pump.
7. Fill the tank with fresh hot melt.
8. Repeat steps 5 and 6 to pump all of the hot melt out of the tank.
9. Reconnect the disconnected hose to its applicator.
10. Replace the adhesive filter. Refer to *Replacing the Adhesive Filter* earlier in this section.
11. Fill the tank with fresh hot melt and then purge all of the hoses and applicators with the fresh hot melt.
12. Restore the system to normal operation.

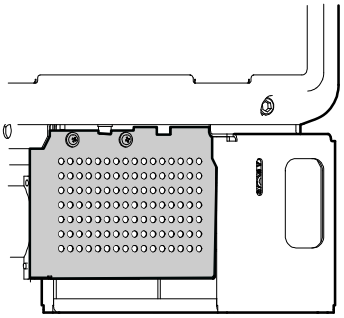
Tightening the Pump Screws

The warming and cooling of the melter can cause the pump screws to loosen. Tighten the pump screws as needed. You will need the following items:

- heat-protective gloves
- flat-head screwdriver
- Phillips-head screwdriver
- 4-mm hex key

To prepare for pump maintenance

1. Heat the system to application temperature.
2. Turn off the melter. Disconnect and lock out power.
3. Shut off the air pressure to the melter.
4. Relieve system pressure. Refer to *Relieving System Pressure* earlier in this section as needed.
5. Remove the right-side coupling cover.



Right-side coupling cover

To tighten the pump screws

1. Ensure that the melter is turned off and that power has been disconnected and locked out.
2. Ensure that the melter, tank, manifold, and pump are cold.
3. See Figure 5-2. Tighten the screws to 25 N•m (222 in.-lb).

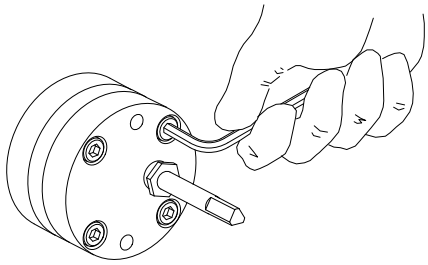


Figure 5-2 Tightening the pump screws

4. Reinstall the coupling cover and restore the system to normal operation.

Section 6
Troubleshooting

WARNING! Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others, and damage to the equipment.

This section provides quick-reference information for diagnosing melter faults and pump operating variables as well as comprehensive melter diagnostic information that is provided in flowchart format.

If you cannot resolve the problem using the troubleshooting flowchart, contact your Nordson representative for technical assistance.

Safety

- Never disconnect cables from, or reconnect cables to, any circuit board while the melter is energized.
- Before breaking any hydraulic connection, always relieve system pressure. Refer to *Relieving System Pressure* in Section 5, *Maintenance*.
- Refer to the safety information provided with optional equipment.

Melter Faults

Table 6-1 lists the four types of melter faults, potential causes, and expected corrective actions.

Table 6-1 Melter Faults

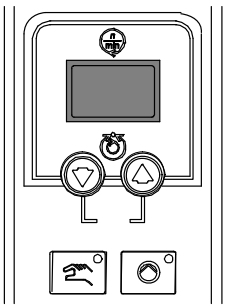
Display Code/Sub-code	Name	Affect on Melter	Cause	Corrective Action
F1/None	RTD	Heaters turn off	The RTD for the component indicated has failed or the component was disconnected from the melter.	Replace RTD Check hose/applicator connections
F2/None	Under temperature	Heaters turn off	The actual temperature of the component indicated has dropped below the under temperature delta, which was set using parameter 22.	Check for conditions that may cause a drop in ambient temperature Replace RTD
F3/None	Over temperature	Heaters turn off	The actual temperature of the component indicated has increased beyond the over temperature delta, which was set using parameter 21.	Replace RTD
F4/1	RAM test	Melter stops functioning	Internal RAM failure	Replace CPU
F4/2	Internal Clock time	Heaters remain on, but fault condition persists	Internal clock failure	Replace CPU
F4/3	RAM backup battery	Clock does not function	Insufficient voltage from RAM backup battery	Replace CPU
F4/4	Internal clock battery backed RAM	Heaters remain on, but fault condition persists	Battery-backed RAM failure	Replace CPU

Continued...

Table 6-1 Melter Faults *(contd)*

Display Code/Sub-code	Name	Affect on Melter	Cause	Corrective Action
F4/5	Internal clock battery	Heaters remain on, but fault condition persists	Battery-backed RAM battery dead	Replace CPU
F4/6	Analog-to-digital	Melter stops functioning	RTD analog-to-digital converter failed	Replace main board or CPU
F4/7	Analog-to-digital calibration	Melter stops functioning	Failed hose or applicator RTD analog-to-digital converter could not be calibrated (grounded RTD in system)	Replace hose or applicator. Note: Set setpoint to zero to avoid F1 fault. Replace main board or ribbon cable, or CPU
F4/8	Main board feedback	Melter stops functioning	Communication failure between main board and CPU	Replace main board, ribbon cable, or CPU
F4/9	Expansion board feedback	Melter stops functioning	Communication failure between expansion board and main board	Check the ribbon cable connections between the expansion board and the main board.
F4/A	Thermostat	Melter stops functioning	Tank or manifold thermostat is open	Replace thermostat, J7 harness, or main board
F4/b	Not used	—	—	—
F4/C	Expansion board connection	Melter stops functioning	Ribbon cable not connected at J1 on the main board and/or at J2 on the expansion board	Check the ribbon cable connections and make connections as applicable.
F4/d	Communications with optional I/O card	Heaters remain on, but fault condition persists	Communication failure between CPU and the optional I/O card	Replace the I/O card or CPU
F4/E	Fieldbus communications failure	Alert output (if output option 6 is selected) Melter continues to operate normally	Fieldbus card failure.	Replace the Fieldbus card
F5	Mismatched applicator RTD	Heaters turn off	The applicator RTD type selected in one or more of parameters 92-97 does not match the RTD type of the corresponding applicator	Change parameters 92-97 to match the connected applicators.

Motor Control Faults



Pump speed display

Table 6-2 includes the motor control fault codes that may appear on the pump speed display.

Table 6-2 Motor Control Faults

Fault Code	Affect on Melter	Possible Cause	Corrective Action
no EnA	Pump enable key does not start pump	Master pump enable key not turned on	Press the Master Pump Enable key until the LED is illuminated.
N/A	Displayed rpms do not match motor speed	Pump speed display not calibrated	Calibrate the pump speed display. Refer to *Calibrating the Pump Speed Display* later in this section.
N/A	Motor control not operating as expected	Improper motor control parameter settings	Check motor control parameter settings. Refer to *Setting Up the Motor Control* in Section 3, *Installation*.

Motor Drive Faults

The display on the motor drive located inside the electrical enclosure alerts the operator to abnormal motor drive/motor operation. Motor drive faults cause the pump to stop. Refer to Table 6-3 for the motor drive fault codes.

To clear a motor drive fault, correct the problem that caused the fault and then remove power from the motor drive by turning the heaters off. Wait until the motor drive display is completely blank before restoring power.

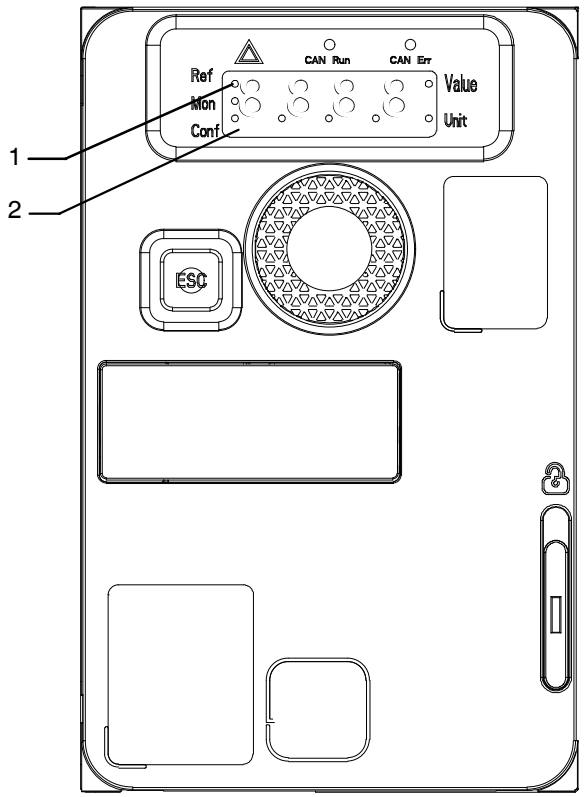


Figure 6-1 Motor drive power LED and display

1. REF/MON/CONF mode LED
2. Display

Motor Drive Faults *(contd)*

Table 6-3 Motor Drive Faults

Fault Code	Probable Cause	Corrective Action
CrF Capacitor load circuit	Motor drive hardware failure	Replace the motor drive.
EEF EEPROM fault	Internal memory fault	• Check the environment (electromagnetic compatibility). • Replace the motor drive.
InF Internal fault	Internal fault	• Check the environment (electromagnetic compatibility). • Replace the motor drive.
OCF Overcurrent	• Adhesive too cold • Pump or drive failure • Foreign object in pump	• Verify temperature setpoints and change as needed. The temperature setpoints should be within the range recommended by the material manufacturer. • Replace the pump or the drive assembly. • Replace the pump.
SCF Motor short-circuit	Short-circuit or earthing at the motor drive output	Check the cables between the motor drive and the motor; also check the motor insulation.
OHF Motor drive overheated	Motor drive temperature too high	• Check the motor load, the motor drive ventilation, and the environment. Wait for the motor drive to cool down before restarting. • Ensure that the unit ambient temperature does not exceed 50 °C (120 °F), that the electrical enclosure vents are not blocked, and that the electrical enclosure fan is operating properly.

Continued...

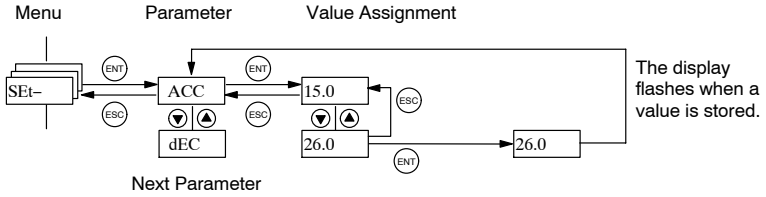
Table 6-3 Motor Drive Faults *(contd)*

Fault Code	Probable Cause	Corrective Action
OLF Motor overload	• Material exceeds the operating viscosity range • Excessive motor current • Overpressure condition caused by pressure control valve failure	• Use a material that falls within the allowable viscosity range. Refer to Section 8, *Technical Data*, for viscosity ranges. • Check the motor load. Wait for the motor drive to cool down before restarting. • If the operating hydraulic pressure exceeds the maximum allowable pressure, replace the pressure control valve. Refer to Section 8, *Technical Data*, for pressure ranges.
OPF Motor phase loss	Loss of one or more phases at motor drive output	Check the connections between the motor drive and the motor.
OSF Overvoltage	• Line voltage too high • Disturbed line supply	Check the unit input line voltage. Refer to Section 8, *Technical Data*, for allowable input voltage range.
CFF Configuration fault	Motor drive parameter(s) changed	Contact your Nordson representative.
USF Undervoltage	• Line supply too low • Transient voltage dip	Check the unit input line voltage. Refer to Section 8, *Technical Data*, for allowable input voltage range.

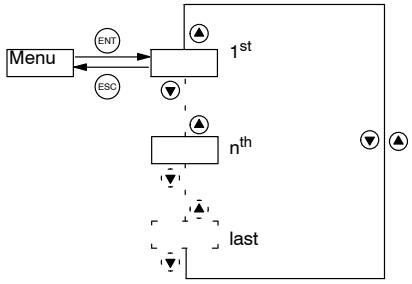
Changing a Motor Drive Parameter

The motor drive parameters are factory set and do not need to be changed. Use this procedure only if a motor drive parameter is inadvertently changed and needs to be changed back to the factory setting shown in Table 6-4. The motor drive parameters are changed through the keypad, shown in Figure 6-1, located on the motor drive inside the electrical enclosure. Figure 6-2 shows how to change a motor drive parameter.

The following figure illustrates how to access parameters and assign their values. To store the parameter value, press the ENT key. The display flashes when a value is stored.



All of the menus are drop–down type menus. Once you have reached the last parameter in a list, press the ▼ key to return to the first parameter. From the first parameter in the list, press the ▲ key to jump to the last parameter.



If you have modified a parameter in a menu and you return to that menu without accessing another menu in the meantime, you will be taken directly to the parameter you last modified. See the illustration below. If you have accessed another menu or have restarted the drive controller since the modification, you will be taken to the first parameter in the menu. See the illustration above.

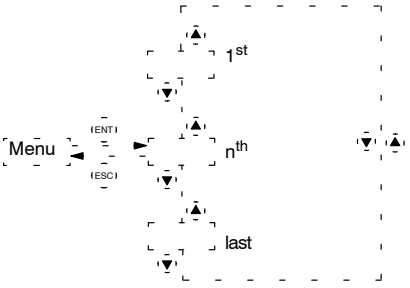


Figure 6-2 Changing a motor drive parameter

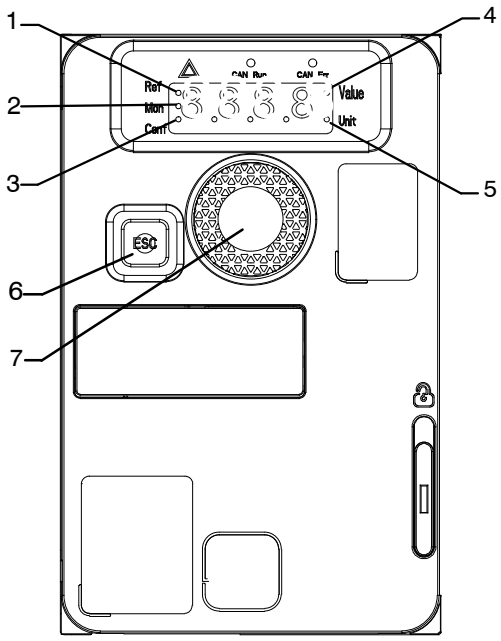


Figure 6-3 Motor drive keypad (located on the motor drive inside the electrical enclosure)

1. REF mode selected
2. MON mode selected
3. CONF mode selected
4. Current display is parameter value
5. Current display is parameter unit
6. ESC key
7. Jog dial for menu navigation and enter

Changing a Motor Drive Parameter *(contd)*

Table 6-4 Motor Drive Parameter Factory Settings

Code			Description	Setting
drC-	bFr		Standard Motor Frequency	60
	-ASY	nPr	Nominal Motor Wattage on Name Plate	0.25
		unS	Nominal Motor Voltage on Name Plate	230
		nCr	Nominal Motor Current on Name Plate	1.6
		FrS	Nominal Motor Frequency on Name Plate	60
		nSP	Nominal Motor Speed on Name Plate	1620
	nrd		Random Switching Frequency	no
SEt-	HSP		High Speed	60
	ITH		Thermal Protect Current	1.6
	CL1		Limit Current	1.8
	SLP		Slip Compensation	100
I-O-	tCC		2Wire/3Wire Control	2C
	tCt		Type of 2 Wire Control	LEL
	AI1-	AI1A	AI1 Configuration	Fr1
		uiL1	AI1 minimum	0.1
	AO1-	AO1	AO1 Configuration	oFr
		AO1t	AO1 Type	IOU
	r2-	r2	R2 Relay	dbL
CtL-	Fr1		Configuration Reference 1	AI1

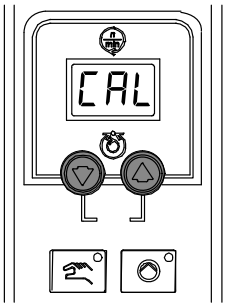
This page intentionally left blank.

Calibrating the Pump Speed Display

The melter is shipped with the pump speed display calibrated to show the pump rpm. If recalibration becomes necessary, follow this procedure.

NOTE: Calibration of the pump speed display may be performed with or without a tachometer.

1. Set the motor speed as follows:
   - If using a tachometer, ensure that the motor is running at 50 percent speed or higher.
   - If not using a tachometer, set the motor speed to 100 percent.
2. Press and hold both **Pump speed arrow** keys.
3. When the pump speed display indicates CAL, release the keys.
4. Use the **Pump speed arrow** keys to enter the actual pump rpm as follows:
   - If using a tachometer, enter the rpm value indicated by the tachometer.
   - If not using a tachometer, enter the pump rpm value shown in Table 6-5.

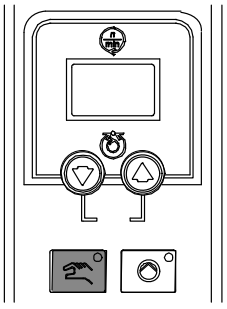


Pump speed arrow keys

Table 6-5 Pump RPM Value to Enter if a Tachometer is Not Used

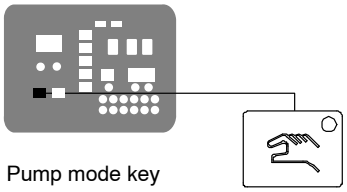
Melter Configuration (see Note)	Pump RPM
50 kg/hr melters	115
NOTE: Refer to *Melter Part Numbers* in Section 7, *Parts*, to determine the configuration of your melter.	

5. Press the **Pump mode** key.

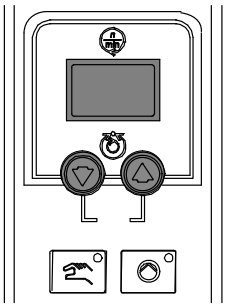


Pump mode key and LED

Pump Operational Status



Pump mode key



Pump speed arrow keys and display

NOTE: To use the pump operating variables tables, ensure that the melter is in the manual mode (LED on) and that the pump speed is at a setting other than 0.

When diagnosing apparent melter malfunctions, it is helpful to understand the following variables that control the status of the pump—enabled or disabled—and the associated indication that is provided by the pump LED.

- Use/activation of a remote input to control the motor
- Use of parameter 8, *Automatic Pump On*
- Ready status of the melter
- Activation of a switched input (handheld applicator or footswitch)
- Activation of the pump key

Tables 6-6 and 6-7 provide the status of the pump LED for each combination of the pump operating variables.

Table 6-6 Pump Operating Variables (Columns 1–5)

Row	1	2	3	4	5
	Master Pump LED Status	**Master Pump Key Press Status (See Note A)**	**Individual Pump LED Status**	**Individual Pump Key Press Status (See Note A)**	**Remote Motor Input Assigned (See Note B)**
1	Off	Not pressed	Off	Off/Ignored	Not Assigned
2	Single green flash, then off	Ignored	Off	Off/Ignored	Not Assigned
3	Green	On	Off	Off	Not Assigned
4	Green	On	Green	On	Not Assigned
5	Off	Not pressed	Off	Off/Ignored	Not Assigned
6	Yellow	On	Off	Off/Ignored	Not Assigned
7	Green	On	Off	Off	Not Assigned
8	Green	On	Green	On	Not Assigned
9	Off	Not pressed	Off	Off/Ignored	Not Assigned
10	Single green flash, then off	Ignored	Off	Off/Ignored	Not Assigned
11	Yellow	On	Off	Off/Ignored	Not Assigned
12	Green	On	Off	Off	Not Assigned
13	Green	On	Green	On	Not Assigned
14	Off	Not pressed	Off	Off/Ignored	Not Assigned
15	Yellow	On	Off	Off/Ignored	Not Assigned
16	Yellow	On	Off	Off/Ignored	Not Assigned
17	Green	On	Off	Off	Not Assigned
18	Green	On	Green	On	Not Assigned
19	Off	Not pressed	Off	Off/Ignored	Assigned
20	Single green flash, then off	Ignored	Off	Off/Ignored	Assigned
21	Flashing green	On	Off	Off/Ignored	Assigned
22	Green	On	Off	Off	Assigned
23	Green	On	Green	On	Assigned
24	Off	Not pressed	Off	Off/Ignored	Assigned
25	Yellow	On	Off	Off/Ignored	Assigned
26	Flashing green	On	Off	Off/Ignored	Assigned
27	Green	On	Off	Off	Assigned
28	Green	On	Green	On	Assigned
29	Off	Not pressed	Off	Off/Ignored	Assigned
30	Single green flash, then off	Ignored	Off	Off/Ignored	Assigned
31	Flashing green	On	Off	Off/Ignored	Assigned
32	Green	On	Off	Off	Assigned
33	Green	On	Green	On	Assigned
34	Off	Not pressed	Off	Off/Ignored	Assigned
35	Yellow	On	Off	Off/Ignored	Assigned
36	Flashing green	On	Off	Off/Ignored	Assigned
37	Green	On	Off	Off	Assigned
38	Green	On	Green	On	Assigned

NOTE A: “On” means that the pump key was pressed and the unit accepted the key press. “Ignored” means that the pump key will not respond to a key press. “Off” means that the key was not pressed.

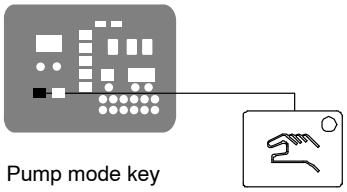
B: If any of Parameters 30-39 are set to 3 or 11, then the remote motor input is assigned.

Table 6-7 Pump Operating Variables (Columns 6–12)

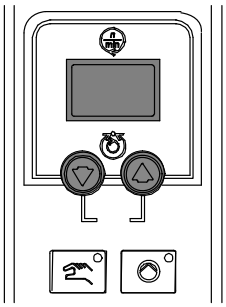
Row	6	7	8	9	10	11	12
	Remote Motor Input Status (See Note A)	**Automatic Pump On (Parameter 8)**	**Handheld applicator/ Footswitch**	**Handheld applicator/ Footswitch Input Status**	**Unit Ready Status**	**Relay Board Start Status**	**Motor Running?**
1	N/A	Disabled	Not present	N/A	Yes or no	Manual or Auto	No
2	N/A	Disabled	Not present	N/A	No	Manual or Auto	No
3	N/A	Disabled	Not present	N/A	Yes	Manual	No
4	N/A	Disabled	Not present	N/A	Yes	Manual or Auto	Yes
5	N/A	Enabled	Not present	N/A	Yes or no	Manual or Auto	No
6	N/A	Enabled	Not present	N/A	No	Manual or Auto	No
7	N/A	Enabled	Not present	N/A	Yes	Manual	No
8	N/A	Enabled	Not present	N/A	Yes	Manual or Auto	Yes
9	N/A	Disabled	Present	On/Off	Yes or no	Manual or Auto	No
10	N/A	Disabled	Present	On/Off	No	Manual or Auto	No
11	N/A	Disabled	Present	Off	Yes	Manual or Auto	No
12	N/A	Disabled	Present	On	Yes	Manual	No
13	N/A	Disabled	Present	On	Yes	Manual or Auto	Yes
14	N/A	Enabled	Present	On/Off	Yes or no	Manual or Auto	No
15	N/A	Enabled	Present	On/Off	No	Manual or Auto	No
16	N/A	Enabled	Present	Off	Yes	Manual or Auto	No
17	N/A	Enabled	Present	On	Yes	Manual	No
18	N/A	Enabled	Present	On	Yes	Manual or Auto	Yes
19	On	Disabled	Not present	N/A	Yes or no	Manual or Auto	No
20	On/Off	Disabled	Not present	N/A	No	Manual or Auto	No
21	Off	Disabled	Not present	N/A	Yes	Manual or Auto	No
22	N/A	Disabled	Not present	N/A	Yes	Manual	No
23	On	Disabled	Not present	N/A	Yes	Manual or Auto	Yes
24	On/Off	Enabled	Not present	N/A	Yes or no	Manual or Auto	No
25	On/Off	Enabled	Not present	N/A	No	Manual or Auto	No
26	Off	Enabled	Not present	N/A	Yes	Manual or Auto	No
27	N/A	Enabled	Not present	N/A	Yes	Manual	No
28	On	Enabled	Not present	N/A	Yes	Manual or Auto	Yes
29	On	Disabled	Present	On/Off	Yes or no	Manual or Auto	No
30	On/Off	Disabled	Present	On/Off	No	Manual or Auto	No
31	Off	Disabled	Present	On/Off	No	Manual or Auto	No
32	N/A	Disabled	Present	On	Yes	Manual	No
33	On	Disabled	Present	On	Yes	Manual or Auto	Yes
34	On/Off	Enabled	Present	On/Off	Yes or no	Manual or Auto	No
35	On/Off	Enabled	Present	On/Off	No	Manual or Auto	No
36	Off	Enabled	Present	On/Off	Yes	Manual or Auto	No
37	N/A	Enabled	Present	On	Yes	Manual	No
38	On	Enabled	Present	Off	Yes	Manual or Auto	Yes

NOTE A: If a remote motor input is assigned, then its status is described in this column.

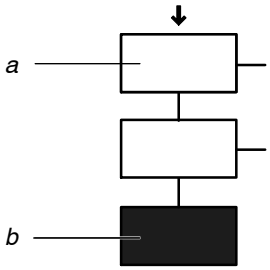
Using the Troubleshooting Flow Chart



Pump mode key



Pump speed arrow keys and display



Troubleshooting question and action blocks

a) Question *b*) Action

NOTE: To use the pump operating variables table, ensure that the melter is in the manual mode (LED on) and that the pump speed is at a setting other than 0.

The flowchart, which is provided at the end of this section, is designed to assist you in diagnosing and correcting a complete or partial stop in hot melt output from the applicators. The chart is organized in a simple question-action block format. If your response to a question is yes (Y), continue downward in the chart to the next question or action block. If you response is no (N), continue to the right to the next question or action block. All diagnostic paths within the chart end with an action block that specifies one of the following three courses of action:

- Refer to information provided elsewhere in this manual
- Replace a component

To return your melter to service as quickly as possible, the chart is designed under the assumption that it is preferable to immediately replace a faulty assembly as opposed to conducting detailed diagnostics and repair of the assembly while the melter is out of service.

Use of the chart assumes that the melter is installed correctly and that it is set up to support the current manufacturing process. Refer to Section 3, *Installation*, for information about installing and setting up the melter.

Troubleshooting Quick-Checks

Before using the troubleshooting charts confirm:

- whether or not service was recently performed on the melter or the melter's settings were recently adjusted.
- the correct voltage plug is installed on terminal J1. Refer to Section 3, *Installation*, for information about selecting the correct voltage plug.
- external inputs (if used) are functioning properly.
- the standby or clock functions are not turned on (if not required or expected at the current time).

Returning the Melter Setup to Factory Settings

By returning the melter to its factory setting many common melter problems can be isolated to either a problem with the melter settings or the melter hardware.

To return the melter to its factory settings, simultaneously press and hold the Setup key and the right-display DOWN arrow key, and then, while holding down these keys, cycle the melter control switch off and on. When the melter restarts, release the two keys.

Identifying Electrical Components

Tables 6-8 through 6-11 provide detailed descriptions of the circuit board indicators, connection points, and test points that are referred to in the troubleshooting chart. Figure 6-1 illustrates the location of each of these circuit board components.

Table 6-8 Main Board Components

Item Number	Type	Description
Indicators		
DS2	Neon	Power to tank heater
DS3	Neon	Power to pump heater
DS4	Neon	Power to 5 VDC and 24 VDC power supplies
DS5	Neon	Power to hose/applicator 1 heaters
DS6	Neon	Power to hose/applicator 2 heaters
DS7	Neon	Power to motor
DS8	LED	Control signal for hose 1 heater
DS9	LED	Control signal for applicator 1 heater
DS10	LED	Control signal for tank heaters
DS11	LED	Control signal for motor
DS12	LED	Control signal for applicator 2 heater
DS13	LED	Control signal for hose 2 heater
DS14	LED	Control signal for pump heater
DS15	LED	+5 VDC control voltage present
DS17	LED	Trigger closure present at XP3 or XP4
Fuses		
F1/F2	––	Tank heaters (10 A, 250 V, fast-acting)
F3/F4	––	5 VDC and 24 VDC power supplies (2A, 250 V, slow-blow)
F5/F6	––	Pump heater (5 A, 250 V, fast-acting, 5 x 20 mm)
F7/F8	––	Hose/applicator 1 heaters (6.3 A, 250 V, 5 x 20 mm)
F9/F10	––	Hose/applicator 2 heaters (6.3 A, 250 V, 5 x 20 mm)
F11/F12	––	Motor start (6.3 A, 250 V, 5 x 20 mm)

Continued...

Table 6-8 Main Board Components *(contd)*

Item Number	Type	Description
Connection Points		
XT1	Input	High-voltage power connection to board
J1	Input/output	Signal ribbon cable between main board and CPU
XP1	Output	Control voltage to applicator solenoid 1
XP2	Output	Control voltage to applicator solenoid 2
XP3	Input	Switch closure from handheld applicator 1
XP4	Input	Switch closure from handheld applicator 2
XP5	Output	Control voltage to pump RTD
XP6	Output	Control voltage to tank RTD and tank overtemperature thermostat
X1	Output	High-voltage to pump heater
X2	Output	High-voltage to tank heaters
X3	Output	High-voltage to motor
X4	Output	High-voltage and control voltage out to hose/applicator 1
X5	Output	High-voltage and control voltage out to hose/applicator 2
X6	Output	24 VDC to expansion board
X7	Input	Unit on/off control switch
Test Points		
TP7	Contact	+5 VDC control voltage present
TP2	Contact	Circuit common of low-voltage power supply

Table 6-9 Expansion Board Components

Item Number	Type	Description
Indicators		
DS1	LED	24 VDC present at X3
Connection Points		
XT1	Output	AC power into board
XT2	Output	AC power out to power module (Hose/Applicators 3 and 4)
XT3	Input	AC power out to main board
XT7	Output/Input	Positions 1–6 are control outputs; Positions 7–14 are control inputs
X1/X2	Jumper	Input voltage configuration plugs
X3	Input	24 VDC in from main board
X4	Input/output	Ribbon cable connection between expansion board and power module (Hose/applicator 3 and 4)
J2	Input/output	Ribbon cable connection between expansion board and main board

Identifying Electrical Components *(contd)*

Table 6-10 Power Module Components

Item Number	Type	Description
Indicators		
N1	Neon	Hose 4 is turned on
N2	Neon	Applicator 4 is turned on
N3	Neon	Hose 3 is turned on
N4	Neon	Applicator 3 is turned on
Connection Points		
J1	Input/output	Ribbon cable connection between power module and expansion board
J2	Input/output	Connection point for the wire harness between hose/applicator 4 and the power module
J3	Input/output	Connection point for the wire harness between hose/applicator 3 and the power module
J4/J5	Input	AC power input from XT2 on the expansion board
Fuses		
F1, F2	––	Hose 4 and applicator 4
F3, F4	––	Hose 3 and applicator 3

Table 6-11 Part Numbers of Cable and Boards for AltaBlue Handheld Applications TT Melters (Figure 6-3)

Identifier	Component	Connection One	Connection Two	Part Number
B1	Expansion board	Not applicable	Not applicable	1031201
B2	Main board	Not applicable	Not applicable	1078624
B3	Power module	Not applicable	Not applicable	1031202
B4	CPU board	Not applicable	Not applicable	1121899
C1	Cable	Tank heaters	X2 (TANK CONN) on main board	See Note A
C2	Cable	Tank thermostat and RTD	XP6 (TANK RTD) on main board	1031234
C3	Cable	Pump RTD	XP5 (PUMP RTD) on main board	1031233
C4	Cable	Pump heater	X1 (PUMP CONN) on main board	See Note A
C5	Cable	X7 on a relay board or K6 on a motor control terminal block assembly	X3 (MOTOR CONN) on main board	Not applicable
		NOTE: The motor cable is included with the motor assembly and is not available separately.		
C6	Cable	XT2 on expansion board	J4/J5 on power modules	1027340
C7	Cable	XT3 on expansion board	XT1 on main board	1027341
C8	Cable	X3 (24V SUPPLY) on expansion board	X6 on main board	1027342
C9	Cable	XP1 or XP2 on main board	Applicator solenoid 1 or 2	1045269
C10	Cable	X4 or X5 (HOSE/APPLICATOR) on main board	Hose/applicator 1 and 2 receptacles on back panel	1024925 (240V)
	Cable	J3 or J2 (HOSE/GUN) on power module	Hose/applicator 3 and 4 receptacles on back panel	1024925 (240V)
C11	Cable	X7 (PWR SWITCH INPUT) on main board	Control switch on electrical cabinet door	1026663
C12	Cable	XP3 or XP4 (HANDHELD APPLICATOR TRIG INPUT) on main board	Switch receptacles on back panel	1025746
RC1	Ribbon cable	X4 on expansion board	J1 on power module	189211
RC2	Ribbon cable	J1 on CPU board	J1 on main board and J2 on expansion board	1026662

NOTE A: Refer to *Heaters* in Section 7, *Parts*, for heater kit part numbers.

This page intentionally left blank.

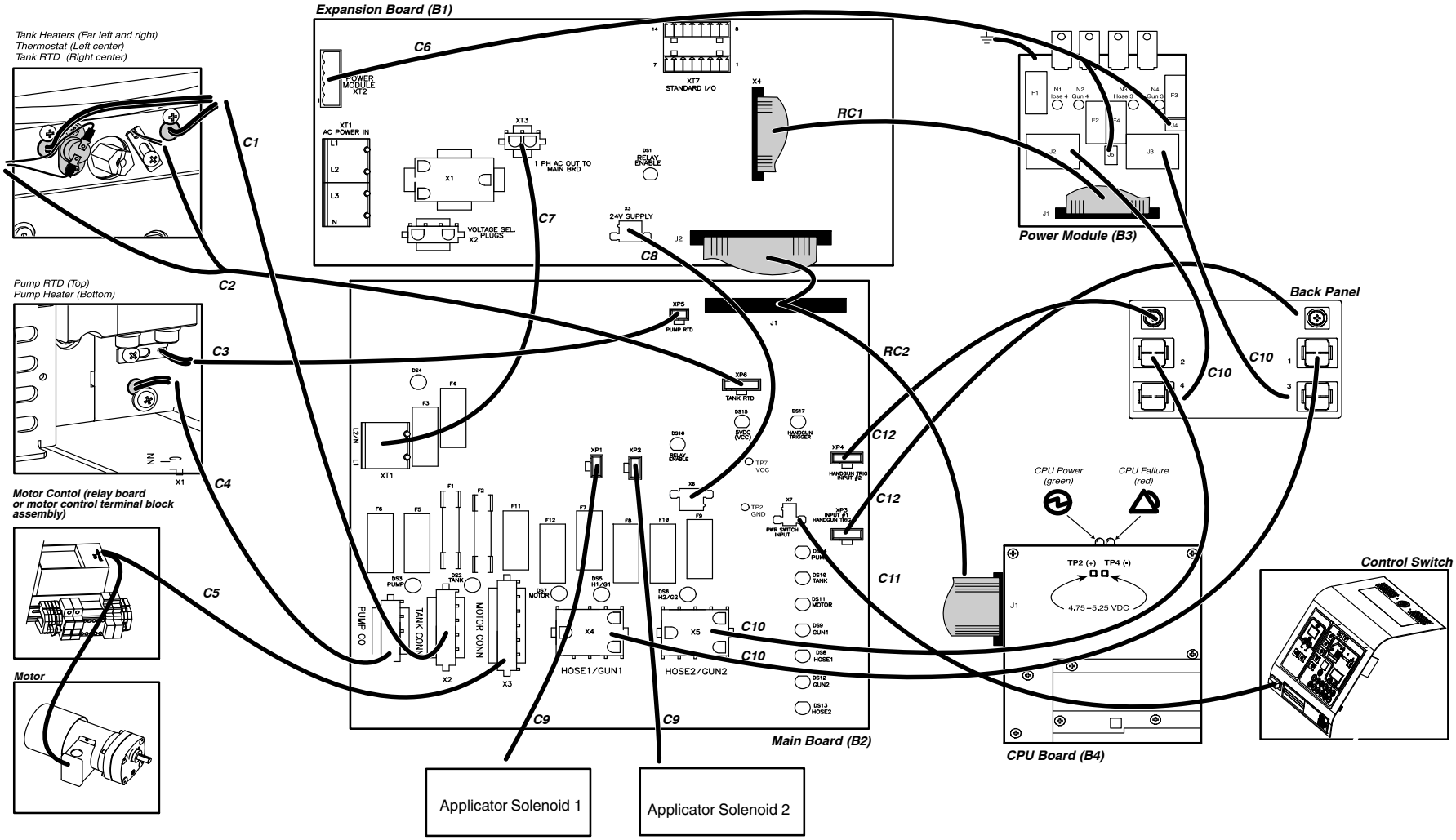
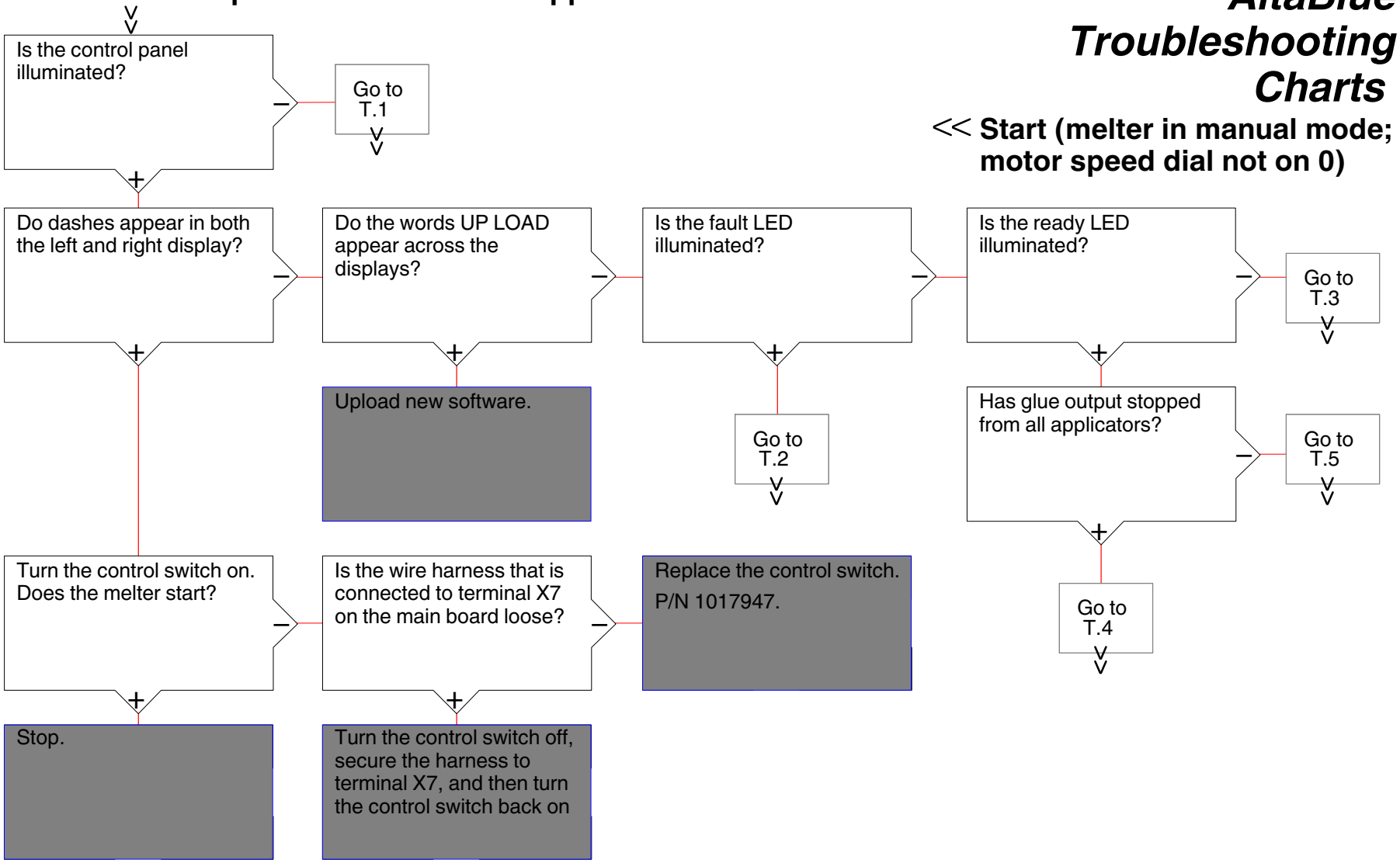


Figure 6-4 Location of electrical components on MT16L melters (refer to *Identifying Electrical Components* earlier in this section for part numbers)

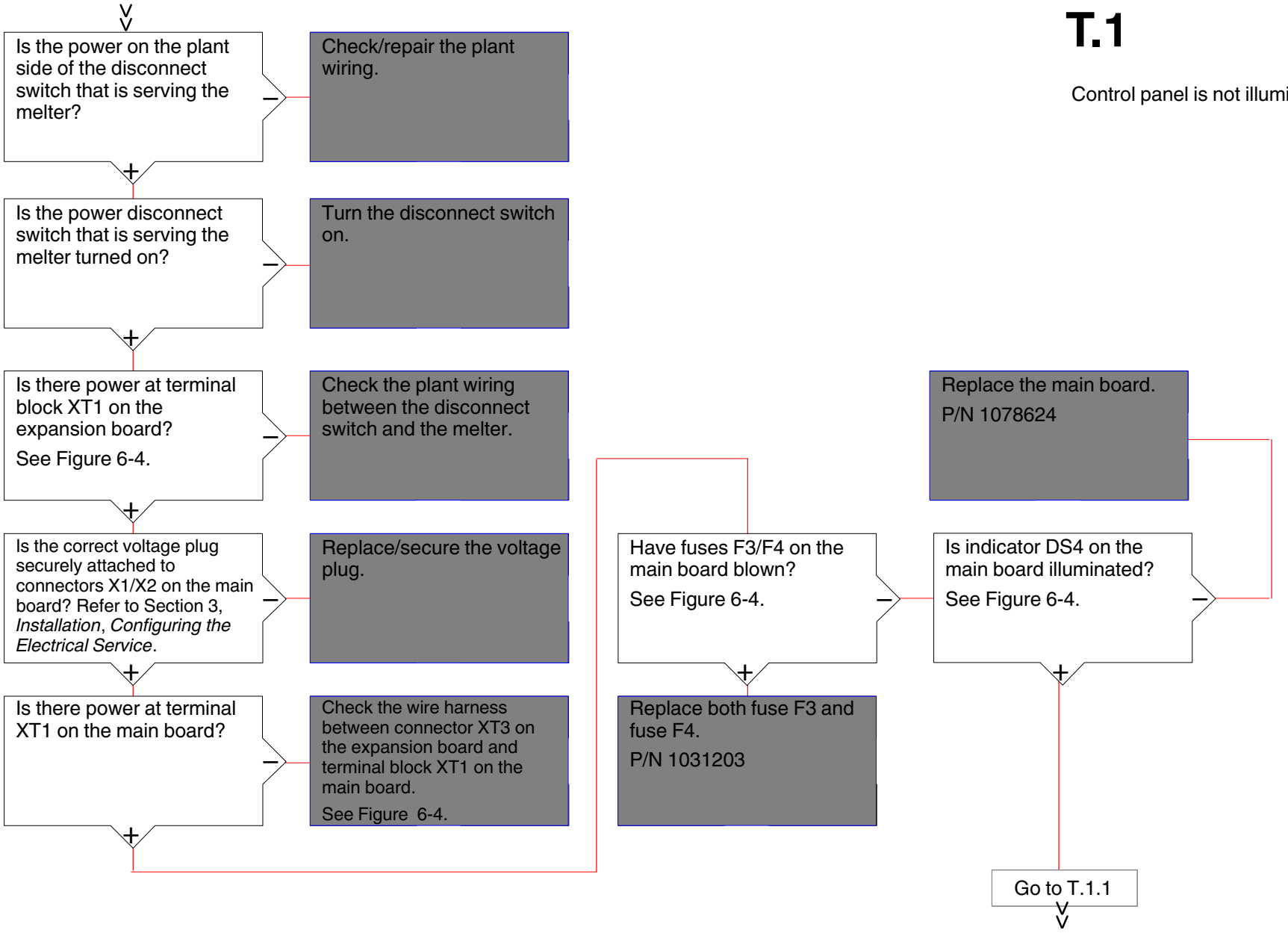
No adhesive output from one or more applicators

<< **Start (melter in manual mode; motor speed dial not on 0)**



T.1

Control panel is not illuminated

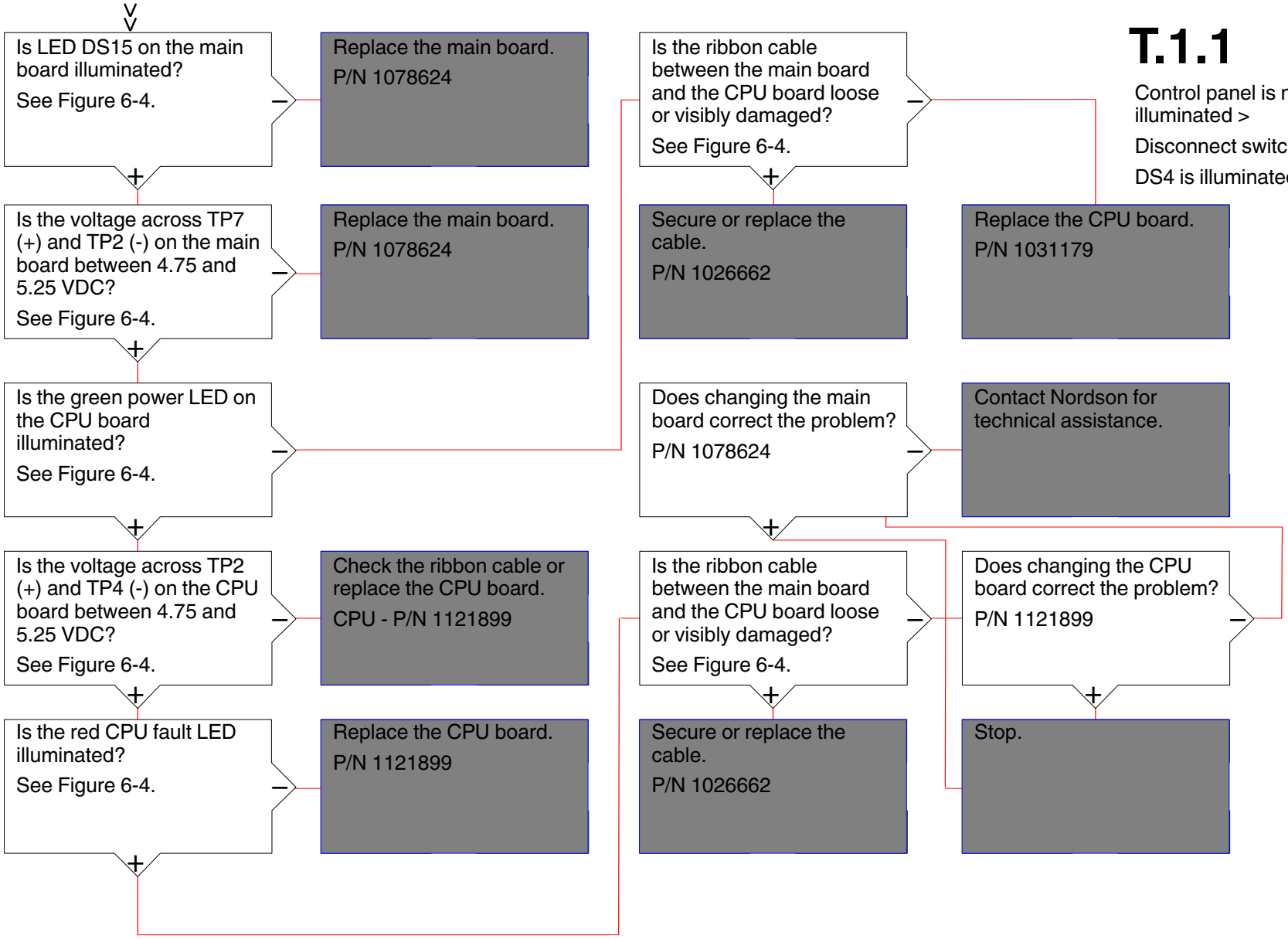


T.1.1

Control panel is not illuminated >

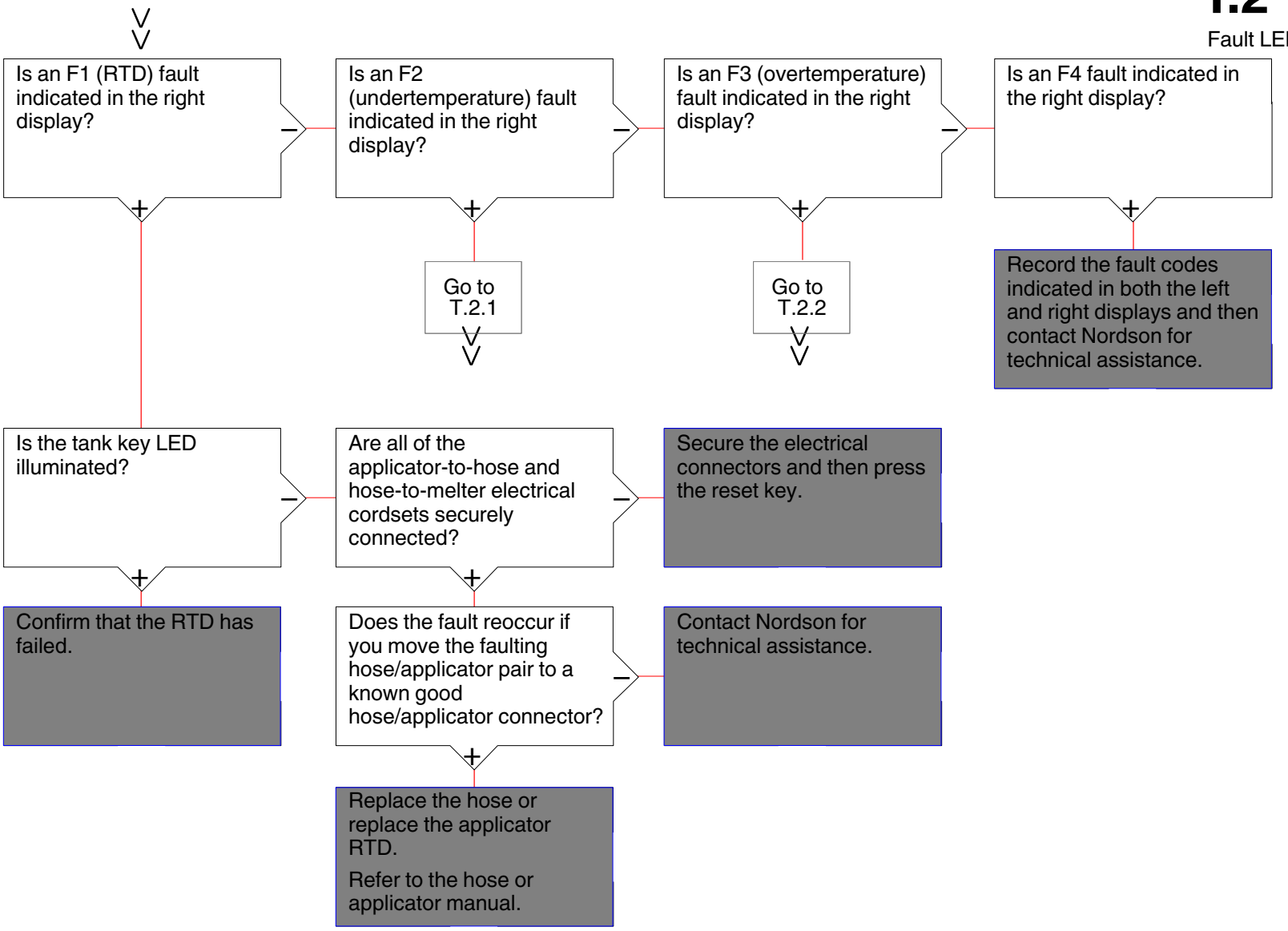
Disconnect switch is on >

DS4 is illuminated



T.2

Fault LED is illuminated

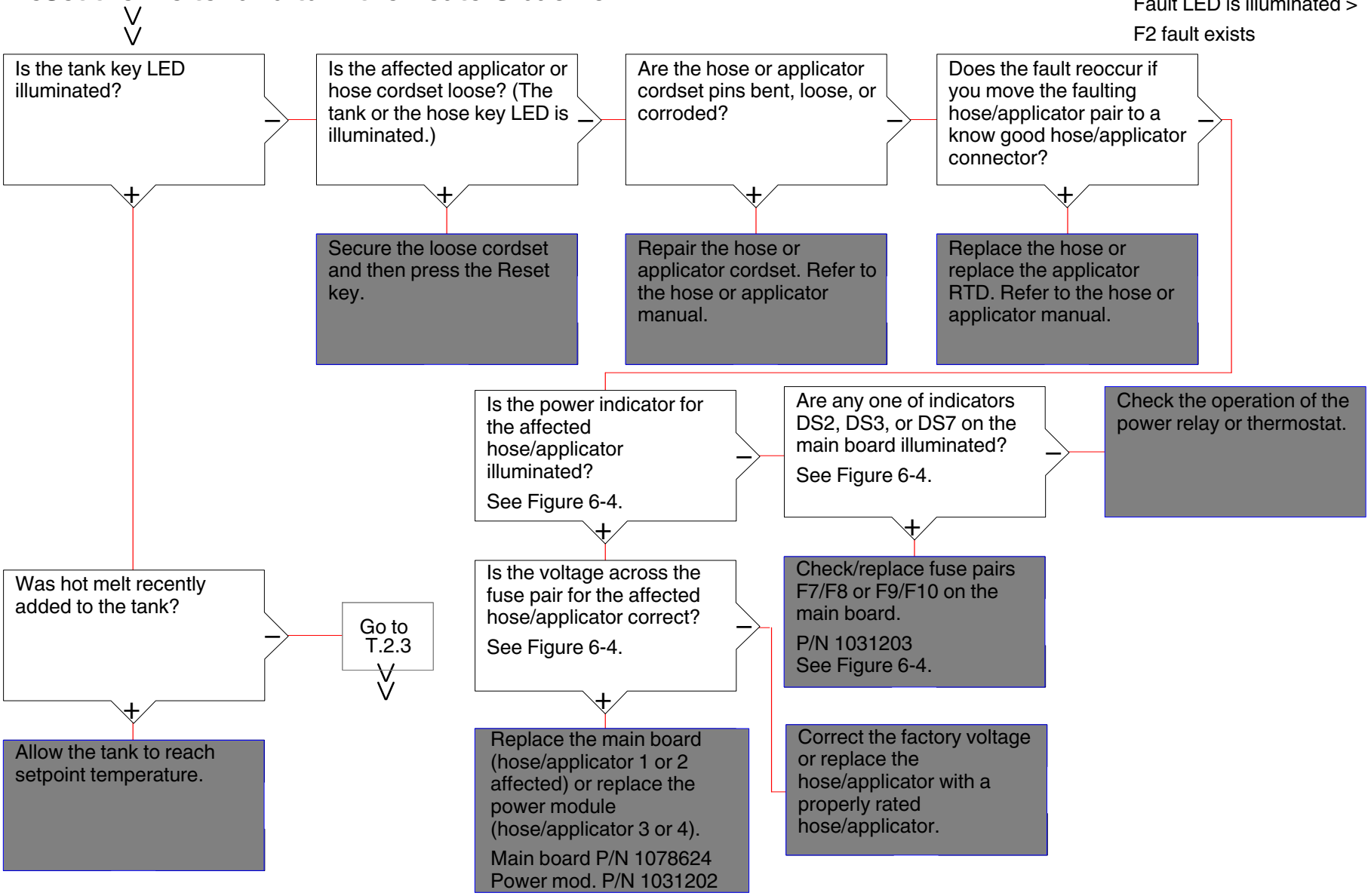


T.2.1

Fault LED is illuminated >

F2 fault exists

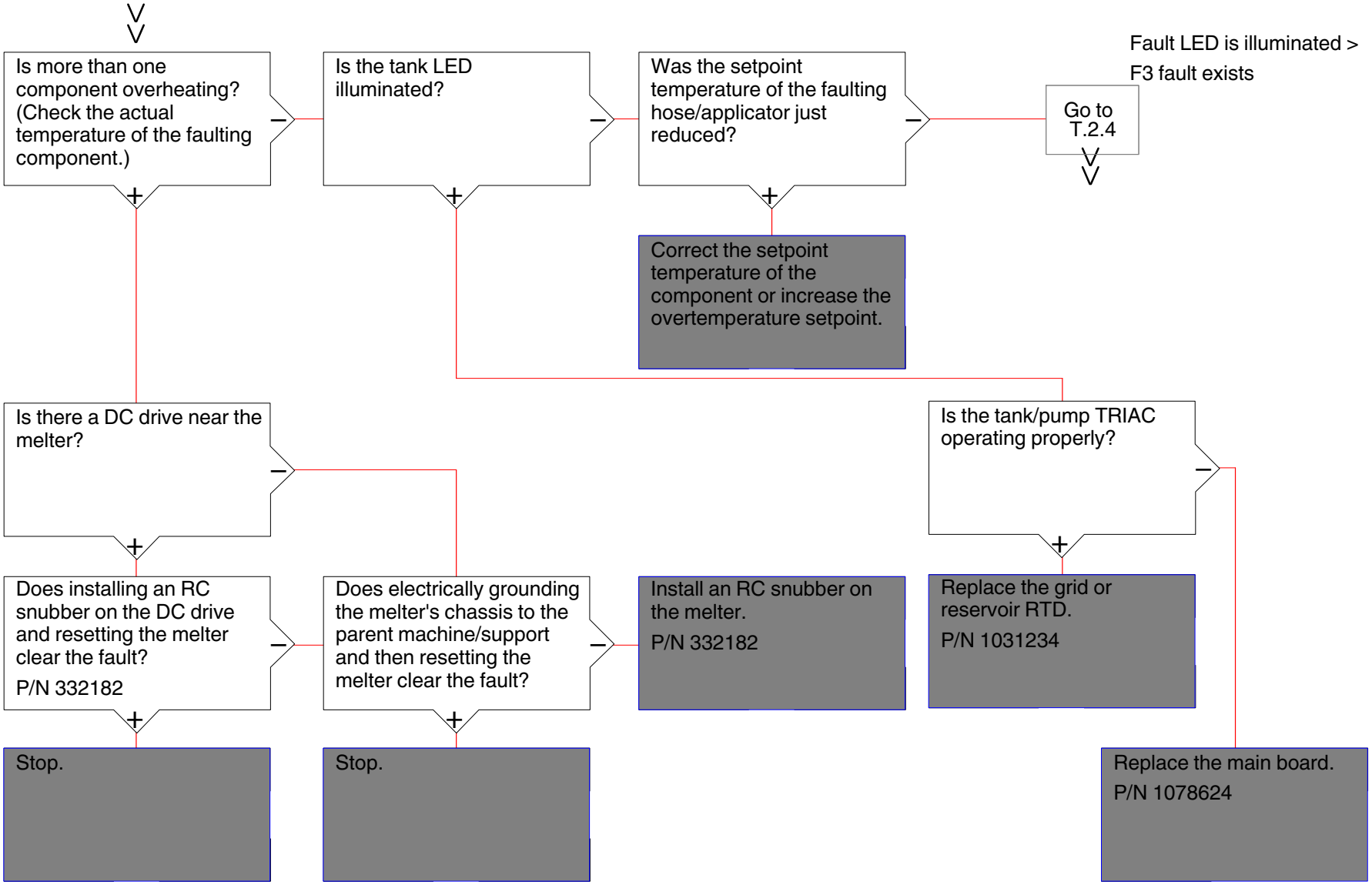
Reset the melter and turn the heaters back on

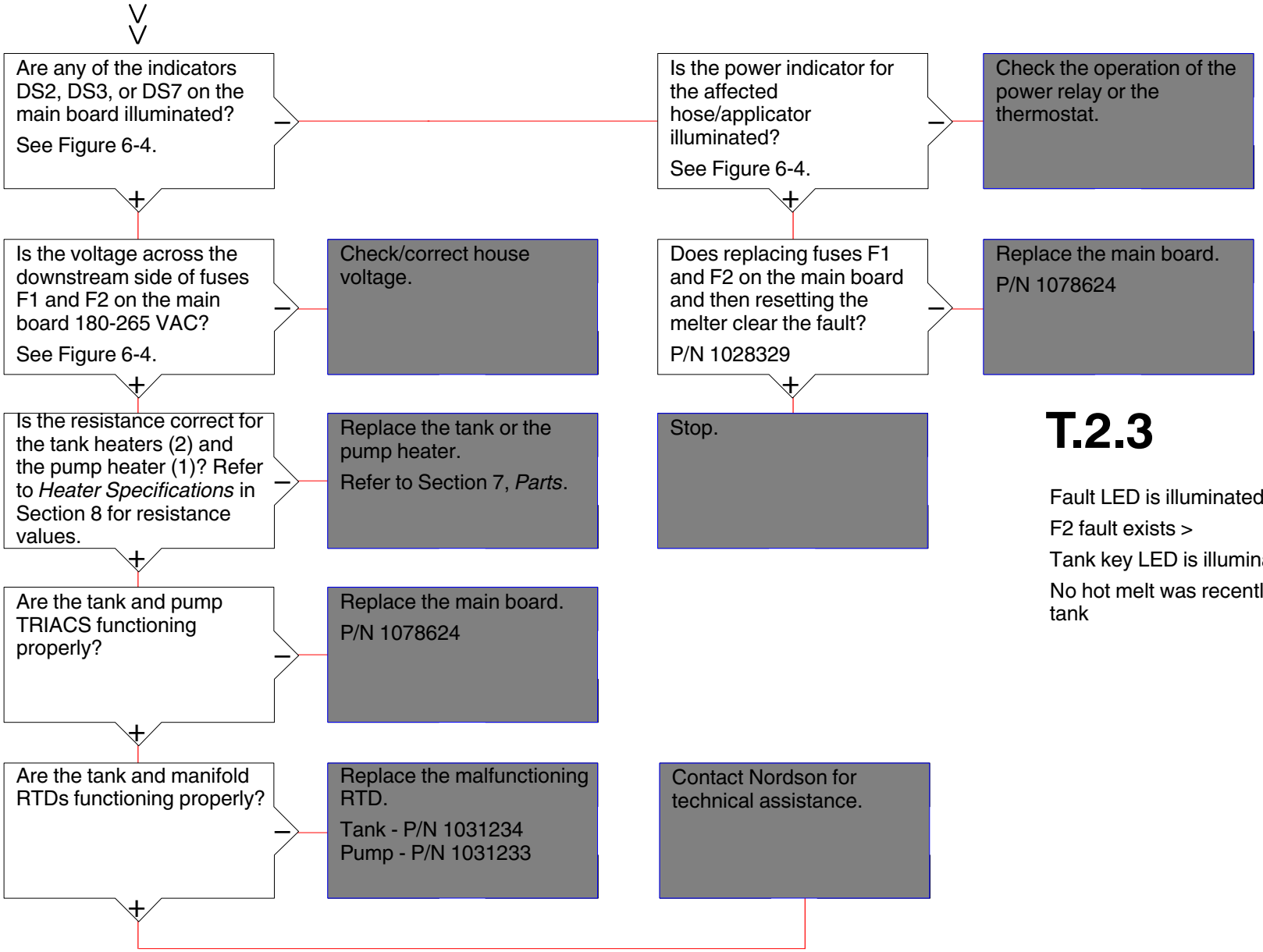


T.2.2

Reset the melter and turn the heaters back on

Fault LED is illuminated > F3 fault exists





T.2.3

Fault LED is illuminated >

F2 fault exists >

Tank key LED is illuminated >

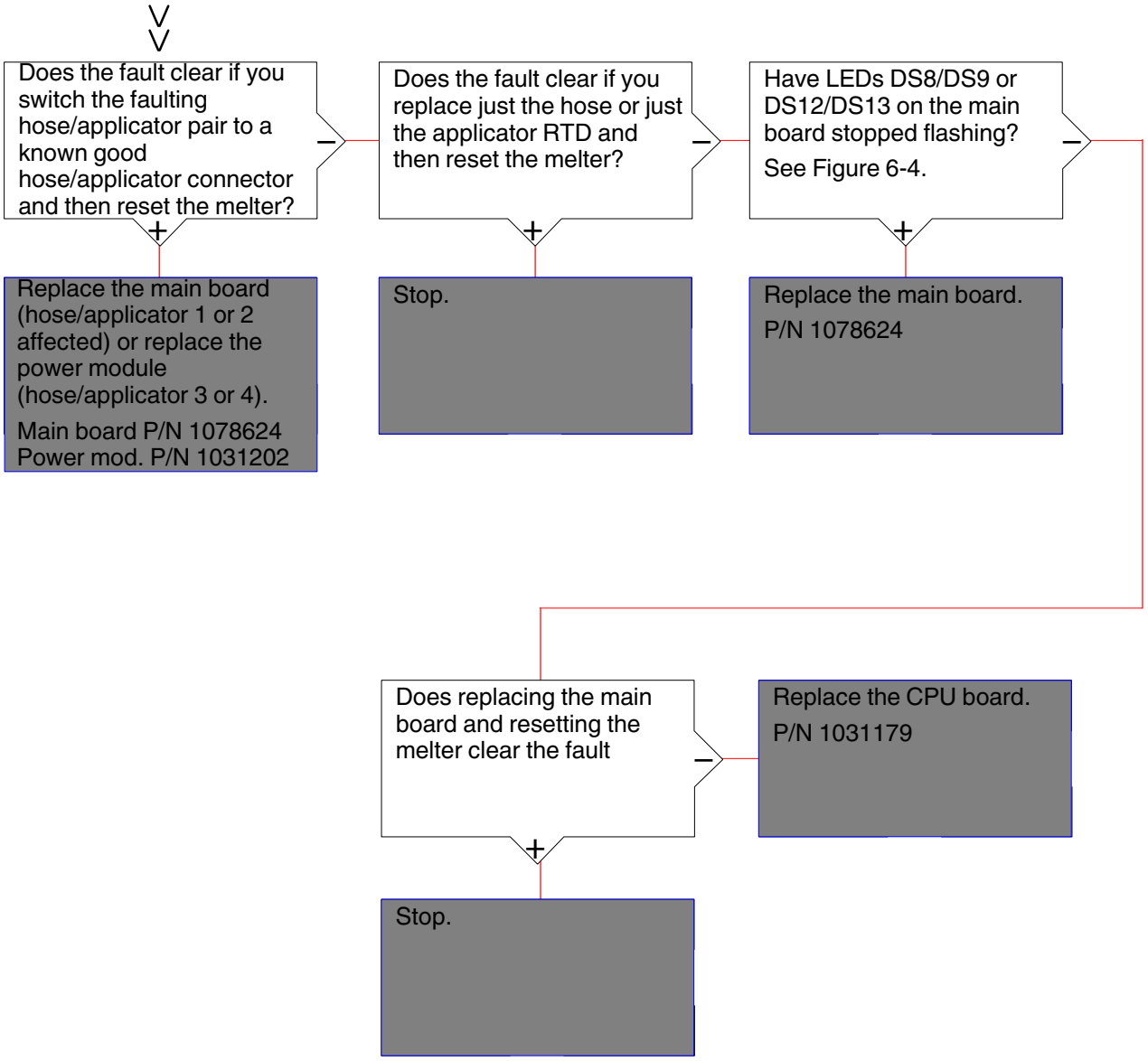
No hot melt was recently added to the tank

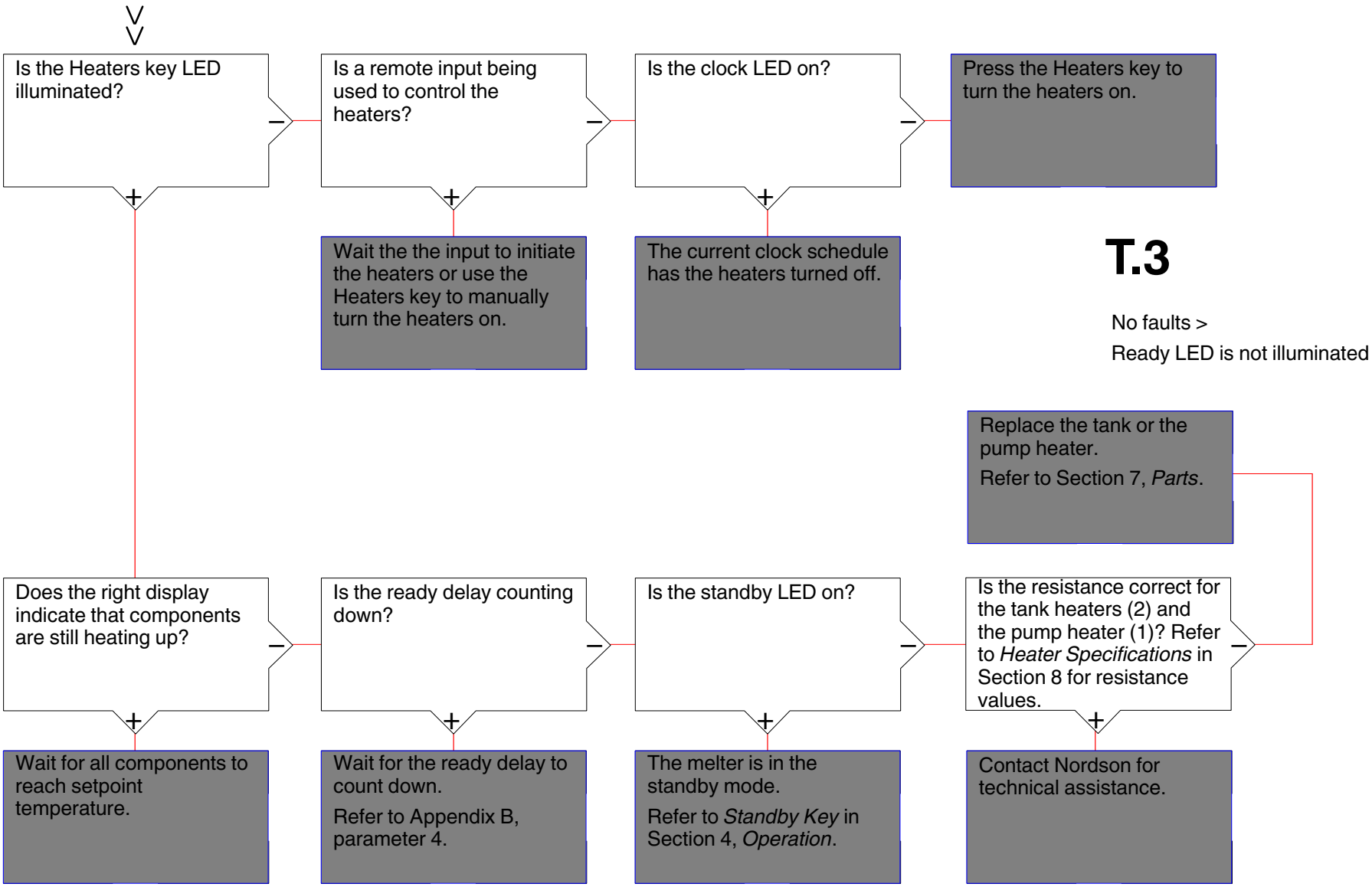
T.2.4

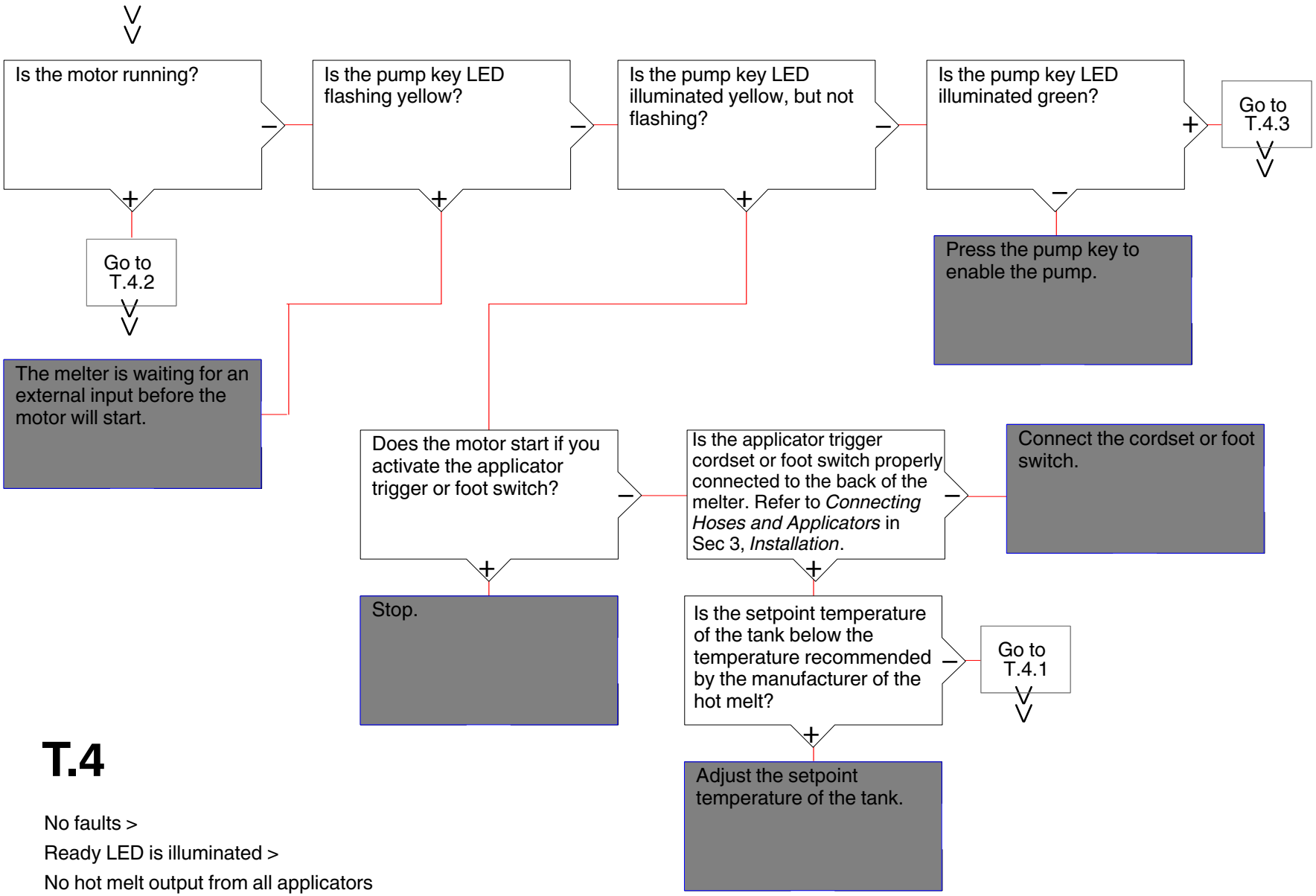
Fault LED is illuminated >

An F3 fault exists on a hose or applicat >

The setpoint temperature was not changed







T.4

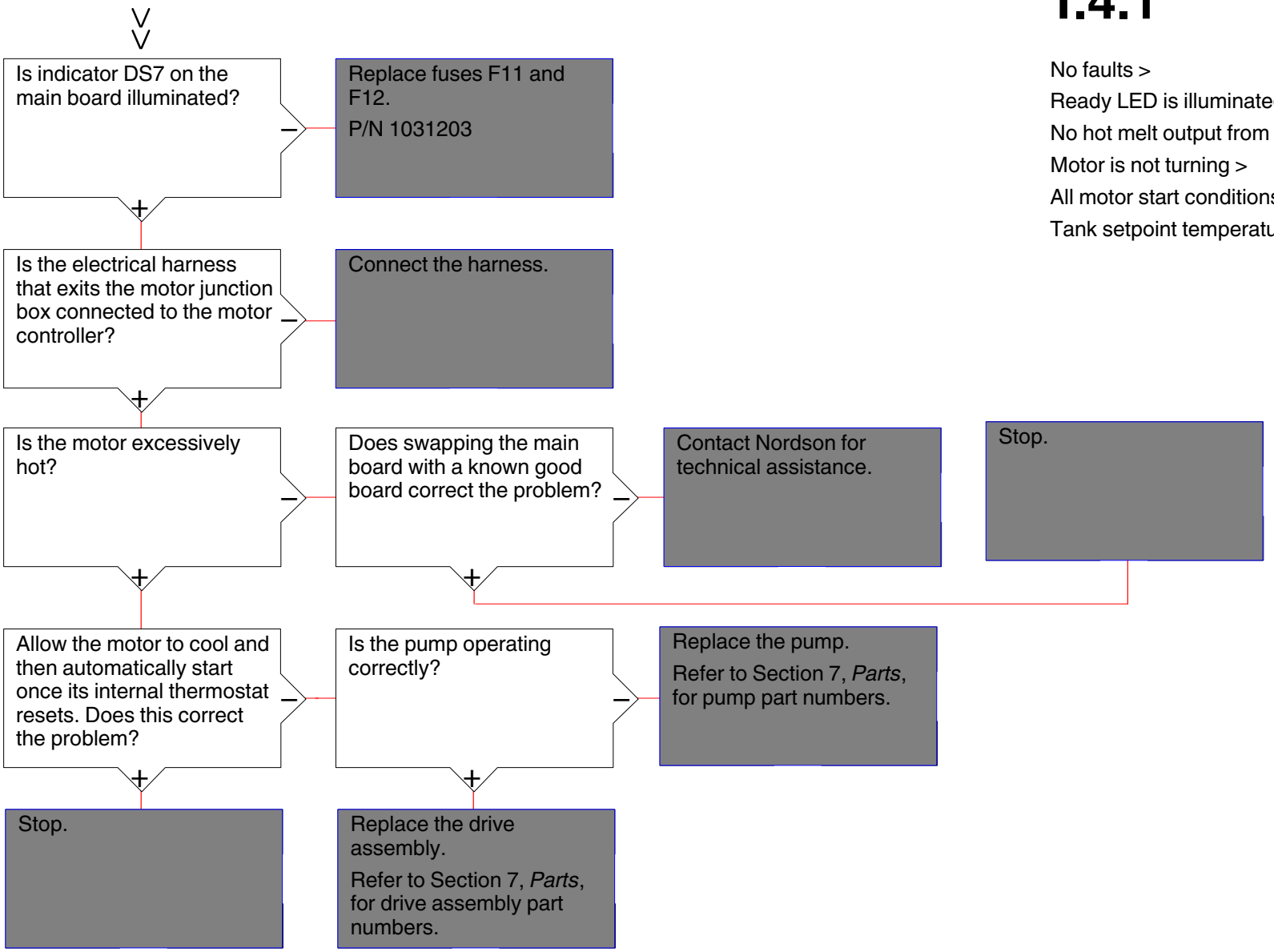
No faults >

Ready LED is illuminated >

No hot melt output from all applicators

T.4.1

No faults >
Ready LED is illuminated >
No hot melt output from all applicators >
Motor is not turning >
All motor start conditions are correct >
Tank setpoint temperature is correct



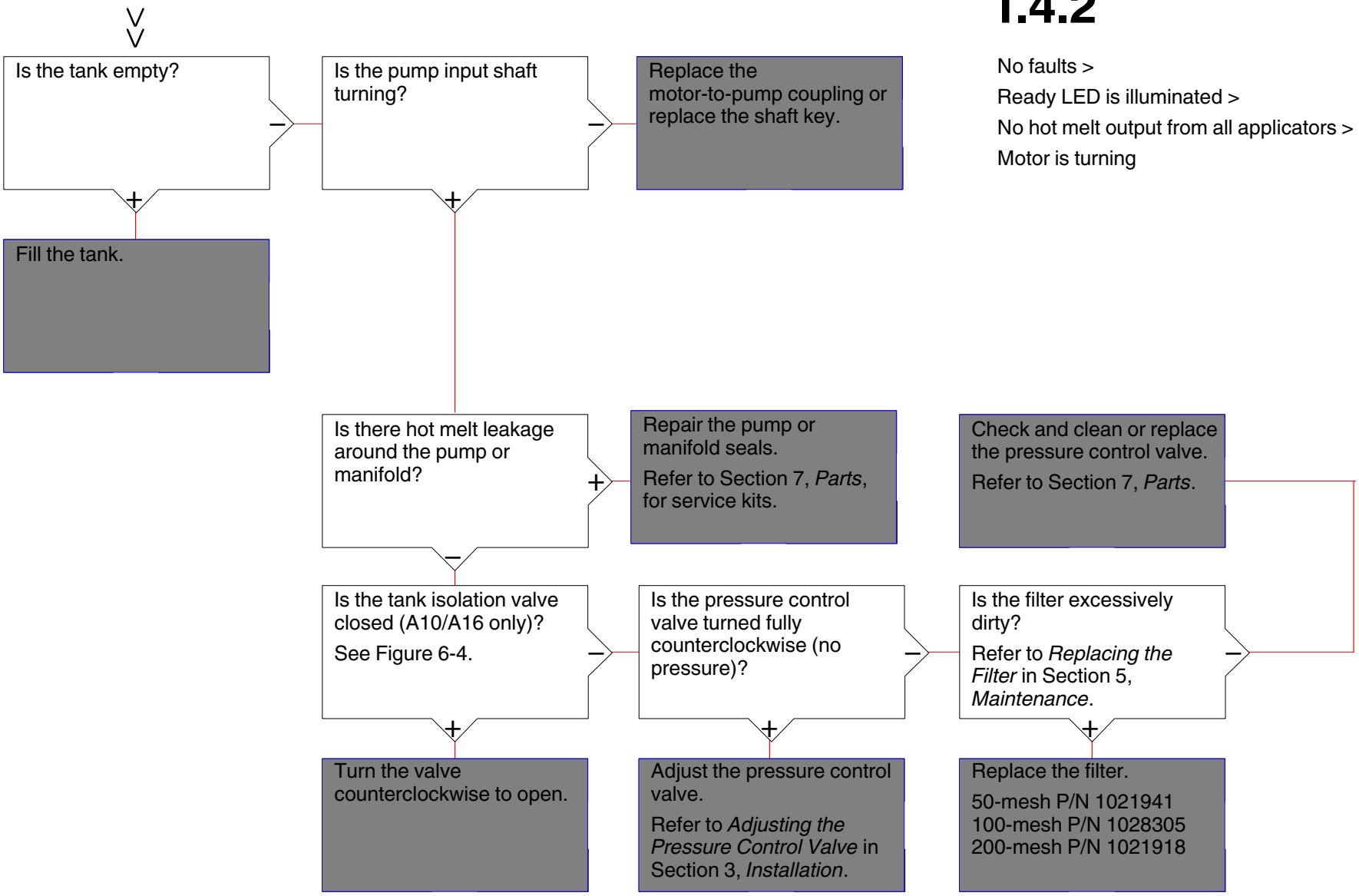
T.4.2

No faults >

Ready LED is illuminated >

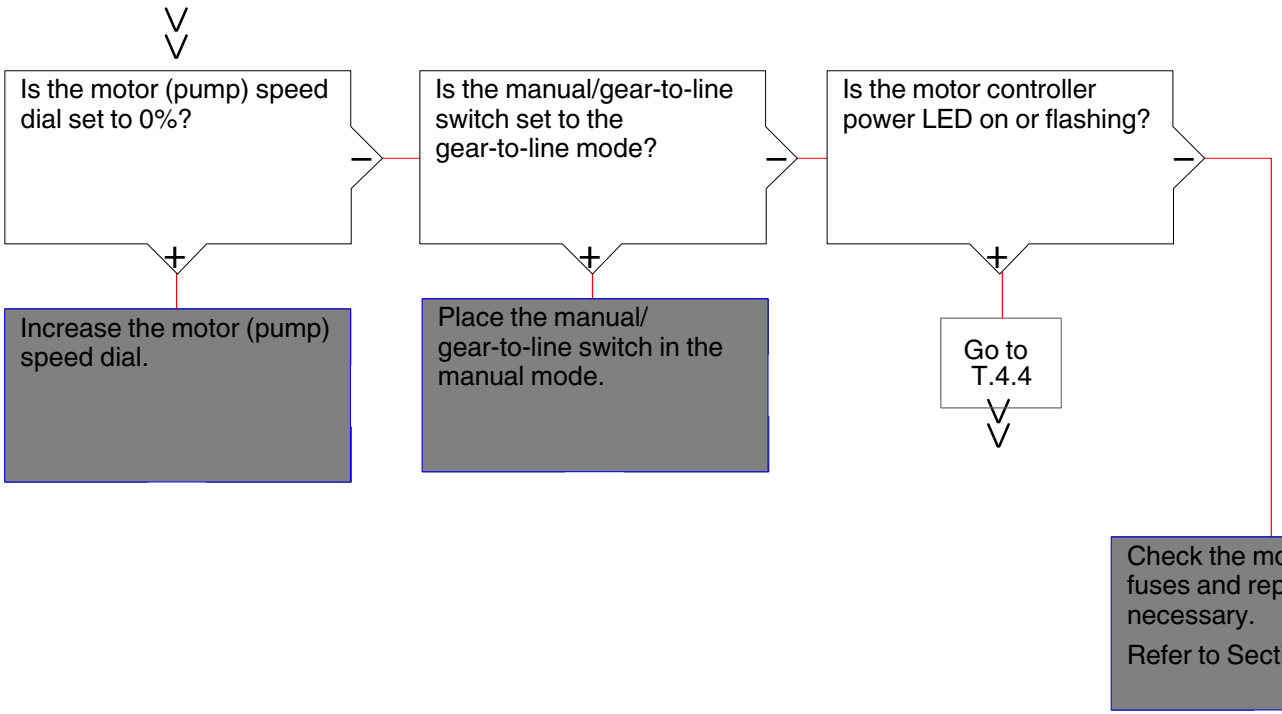
No hot melt output from all applicators >

Motor is turning



This page intentionally left blank.

T.4.3



No faults >

Ready LED is illuminated >

No hot melt output from all applicators >

Motor is turning

This page intentionally left blank.

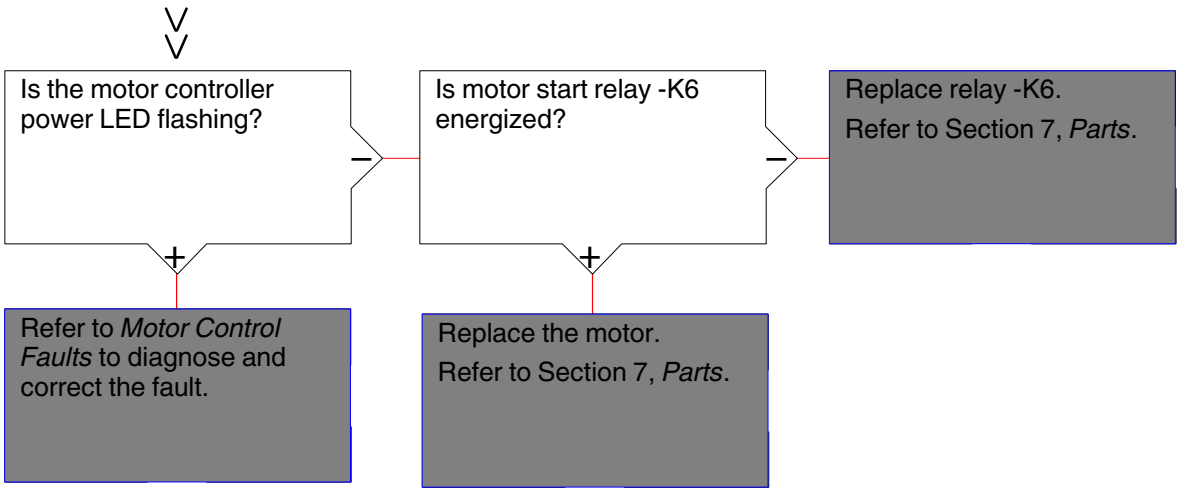
T.4.4

No faults >

Ready LED is illuminated >

No hot melt output from all applicators >

Motor is turning



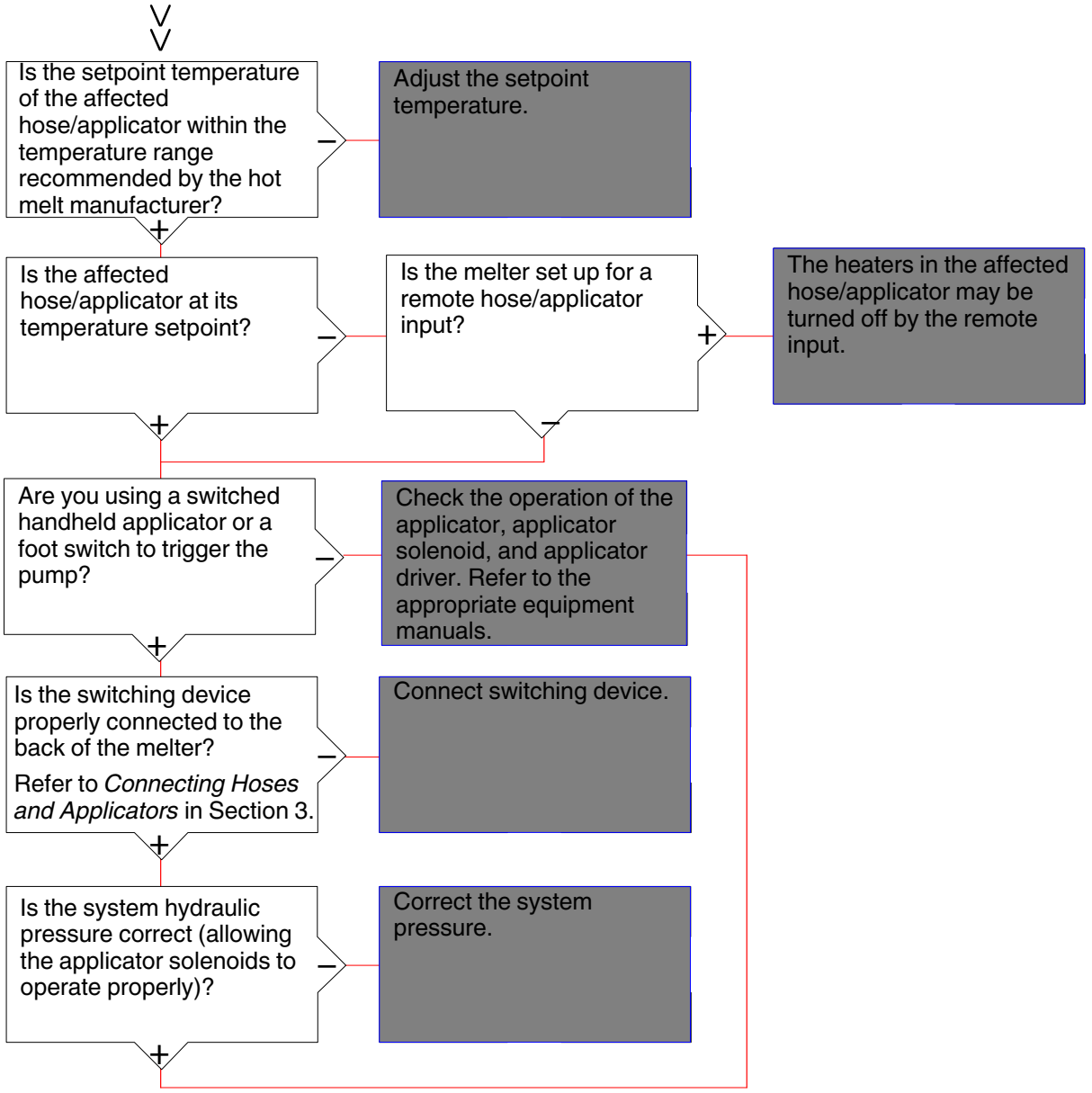
This page intentionally left blank.

T.5

No faults >

Ready LED is illuminated >

No hot melt output from some applicators



This page intentionally left blank.

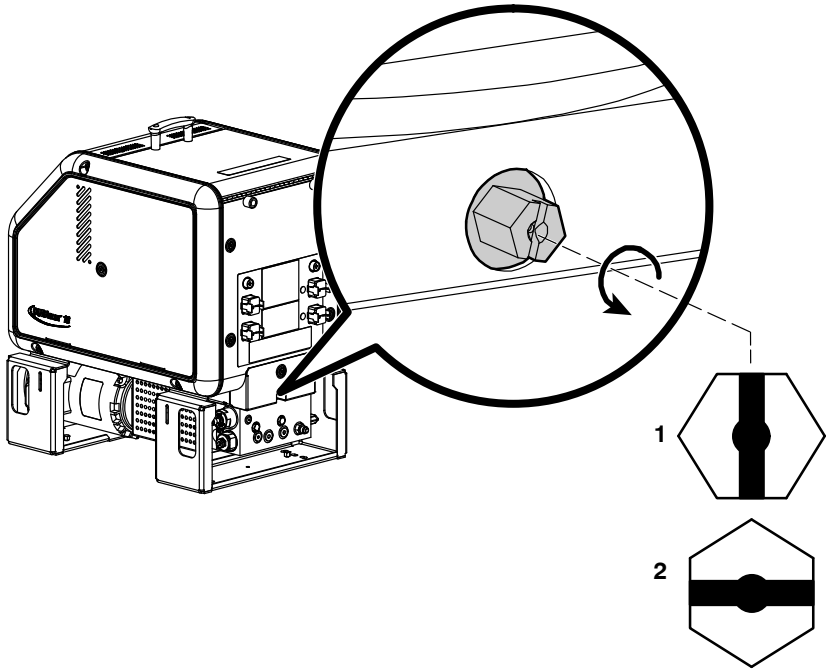


Figure 6-6 Opening the tank isolation valve (A10/A16 melters only)

1. Open
2. Closed

Section 7
Parts

Using the Illustrated Parts Lists

To order parts, call the Nordson Customer Service Center or your local Nordson representative. Use these five-column parts lists, and the accompanying illustrations, to describe and locate parts correctly. The following chart provides guidance for reading the parts lists.

The number in the Item column corresponds to the circled item number in the parts list illustration. A dash in this column indicates that the item is an assembly.

The number in the Part column is the Nordson part number you can use to order the part. A series of dashes indicates that the part is not saleable. In this case, you must order either the assembly in which the part is used or a service kit that includes the part.

The Description column describes the part and sometimes includes dimensions or specifications.

The Note column contains letters that refer to notes at the bottom of the parts list. These notes provide important information about the part.

The Quantity column tells you how many of the part is used to manufacture the assembly shown in the parts list illustration. A dash or AR in this column indicates that the amount of the item required in the assembly is not quantifiable.

Item	Part	Description	Quantity	Note
—	0000000	Assembly A	—	
1	000000	• Part of assembly A	2	A
2	- - - - - -	• • Part of item 1	1	
3	0000000	• • • Part of item 2	AR	
NS	000000	• • • • Part of item 3	2	

NOTE A: Important information about item 1

AR: As Required

NS: Not Shown

Melter Part Numbers

This manual applies to all configurations of the AltaBlue for Handheld Applications TT melter. You will need the mod el and part number of your melter when requesting service or ordering spare parts and optional equipment. The model and part number are indicated on the equipment identification plate that is located on the front of the melter, as shown in Figure 7-1. Refer to Table 7-1 to determine the configuration of your melter based on its part number.

NOTE: Standard melters are recommended for use in applications with operating temperatures up to 191 °C (375 °F).

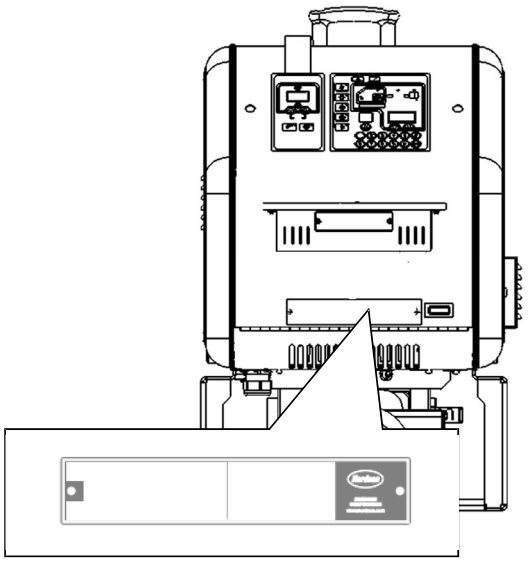


Figure 7-1 Equipment identification plate

Table 7-1 Melter Part Numbers

Model	Voltage	Melter Type	Number of Hoses/ Applicators	Pump Size	Pump Rate	Part Number	Note
Alta TT MT16L	240V	Standard	2	7.73 cc/rev	50 kg/hr	7402988	

Base Assembly Parts Lists

The base assembly parts vary depending on the configuration of the melter. Refer to the appropriate parts list for your melter. To determine the configuration of your melter, refer to *Melter Part Numbers* at the beginning of this section.

Base Parts, MT16L

See Figures 7-2 through 7-4.

Item	Part	Description	Quantity	Note
—	- - - - - -	UNIT ASSY,BASE, A10/A16	—	
1	- - - - - -	• LEG, FRONT, D10/16	1	
2	- - - - - -	• BASE,ALTABLUE 10,16	1	
3	- - - - - - -	• BOARD, MAIN W/HT SINK ASSY, DURA/ALTA	1	A
4	- - - - - -	• NUT,HEX,M4,STL,ZN	2	
6	- - - - - - -	• PANEL,ELEC.,BULKHEAD,ALTABLUE 10,16	1	
7	- - - - - -	• FRAME,LEFT,10/16 LITER	1	
8	- - - - - -	• SCR,SKT,M12X30MM,BL	6	
9	- - - - - -	• TRAY,TANK	1	
10	- - - - - -	• CLAMP,STEEL BAND	1	
11	900493	• LUBRICANT,PARKER HI-TEMP,11208	AR	
12	- - - - - -	• SCR,SKT,M5X10,BL	7	
13	- - - - - -	• WASHER,FLT,M,OVERSIZED,5,STL,Z	4	
15	- - - - - -	• SCR,BTN,SKT,M5X10,BL	2	
16	1028334	• SCREEN,TANK,DURABLUE,10 LITER	1	
	1028336	• SCREEN,TANK,DURABLUE,16 LITER	1	
17	- - - - - -	• FRAME,RIGHT,10/16 LITER	1	
18	288221	• GASKET,.354X.216,MPL,3000V	4.2	
19	- - - - - -	• WASHER,FLT,M,NARROW,M4,STL,ZN	4	
20	- - - - - -	• STRAP,CONTROLLER,SHALLOW AC	2	
21	- - - - - -	• COVER,VENTILATION,10/16L BASE	1	
22	1040586	• TANK, D10	1	
	1040588	• TANK, D16	1	
23	- - - - - -	• INSULATION,HOPPER	1	
25	- - - - - -	• SCR,SKT,M8X1.25X25,BL	4	
26	- - - - - -	• WASHER,LK,M,SPT,M8,STL,ZN	4	
27	- - - - - -	• SPACER,.750 X .625 X .250,STL	4	
28	1021670	• VALVE,SHUTOFF,TANK	1	
29	- - - - - -	• RETAINING RING,INT,112,BASIC	1	
30	- - - - - -	• PANEL, TANK BULKHEAD, D10/16	1	
31	940201	• O RING,VITON,.864ID X .070W,BR (STANDARD)	1	
	1047549	• O RING,-020, PA,.864IDX.070W (PA)	1	B
32	900344	• LUBRICANT,NEVER SEEZ,8OZ CAN	AR	
33	- - - - - -	• PLUG,DOME,HEYCO,.875,BLACK	1	
36	- - - - - -	• TERMLUG,GROUND,6-14AWG	1	
37	- - - - - -	• NUT,HEX,M5,STL,ZN	7	
38	- - - - - -	• WASHER,LK,M,SPT,M5,STL,ZN	9	

Continued...

Base Parts, MT16L *(contd)*

Item	Part	Description	Quantity	Note
39	------	• SCR,SKT,M5X16,BL	1	
40	------	• TAG,PE/G,INPUT POWER,GROUND	1	
41	------	• CAPSCRM,SKT HD,M5,40,ST, BLKOX, CL12.9, FUL	1	
42	------	• TAG,GROUND	1	
43	------	• LUG,45,DOUBLE,.250,.438	5	
44	------	• SCR,SKT,M4X10MM,BL	4	
45	------	• WASHER,LK,M,EXT,M12,ZN	2	
46	------	• HEXNUT,CAP,M6,STL.,NI.	4	
50	1039340	• GASKET,VITON,1/16”THK,D10 TANK	1	
	1039329	• GASKET,VITON,1/16”THK,D16 TANK	1	
51	------	• LEG,REAR,D10/16,S/G	1	

NOTE A: Refer to *Circuit Boards and Motor Drives* later in this section for the part number of this item.

B: Parts designated as “PA” are recommended for use in product assembly applications with operating temperatures greater than 191 °C (375 °F). The PA-type O-rings and hardened stainless-steel pumps used in PA melters provide exceptionally high chemical and temperature resistance.

AR: As Required

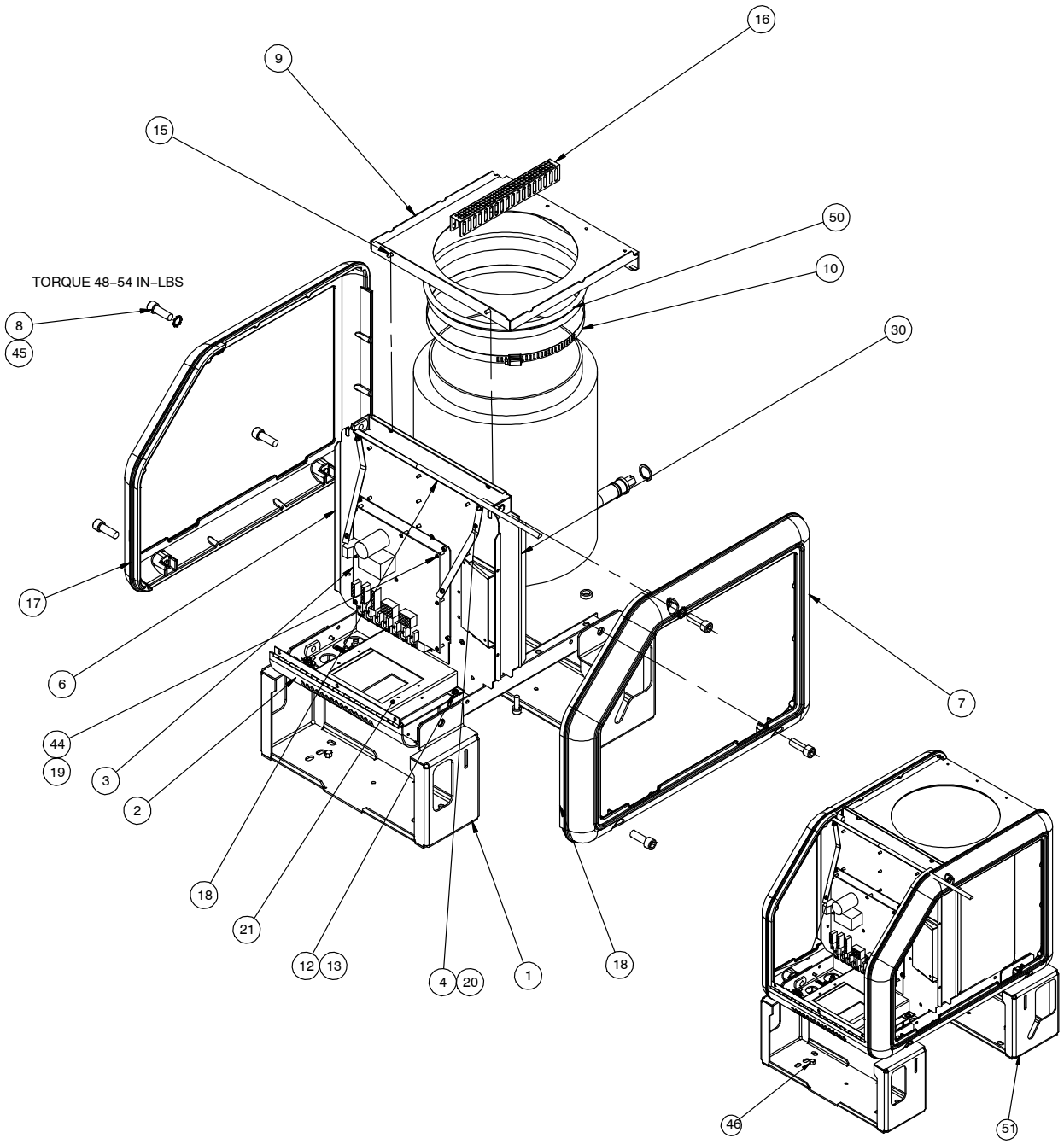


Figure 7-2 Base parts, MT16L (1 of 3)

Base Parts, MT16L *(contd)*

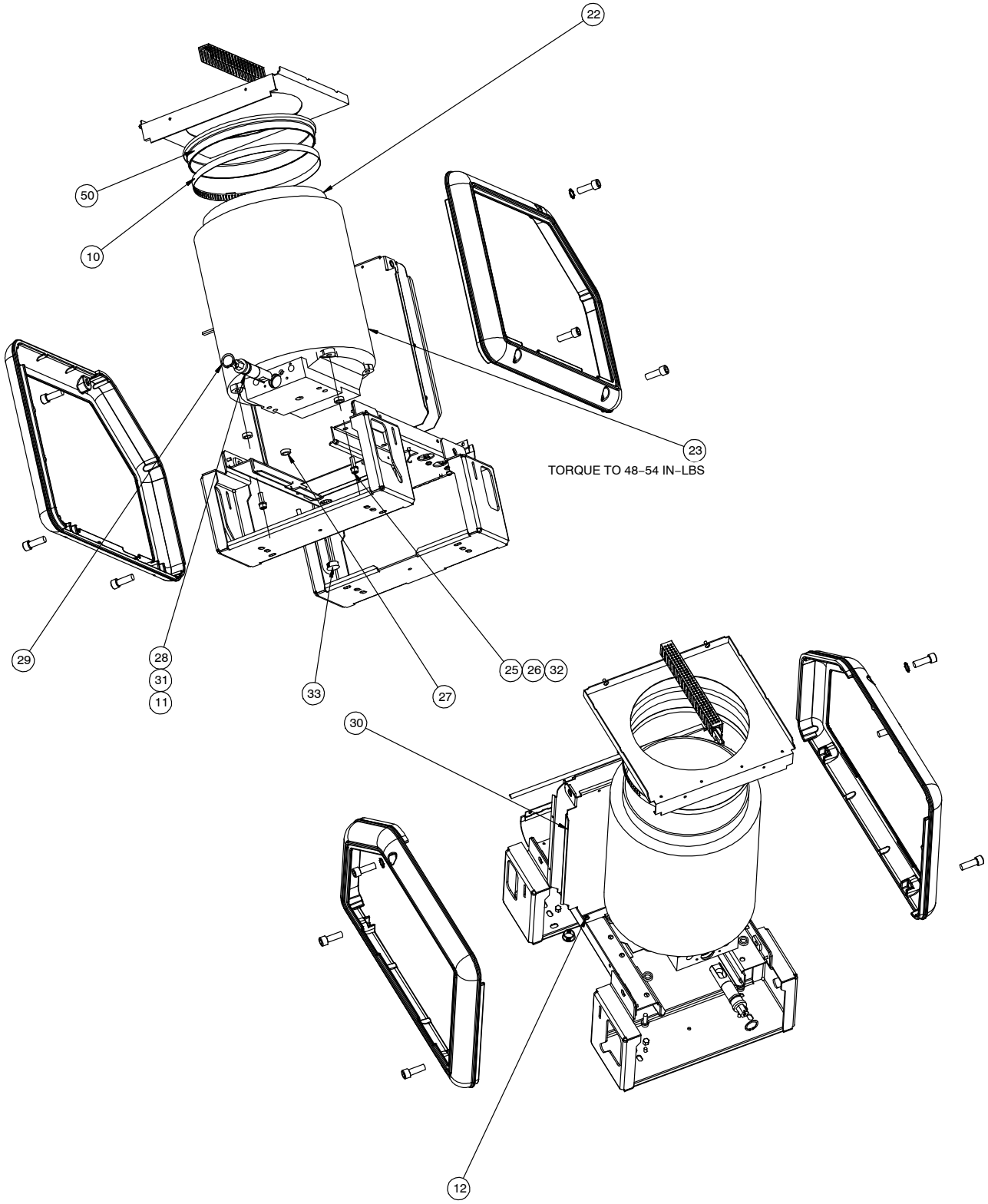


Figure 7-3 Base parts, MT16L (2 of 3)

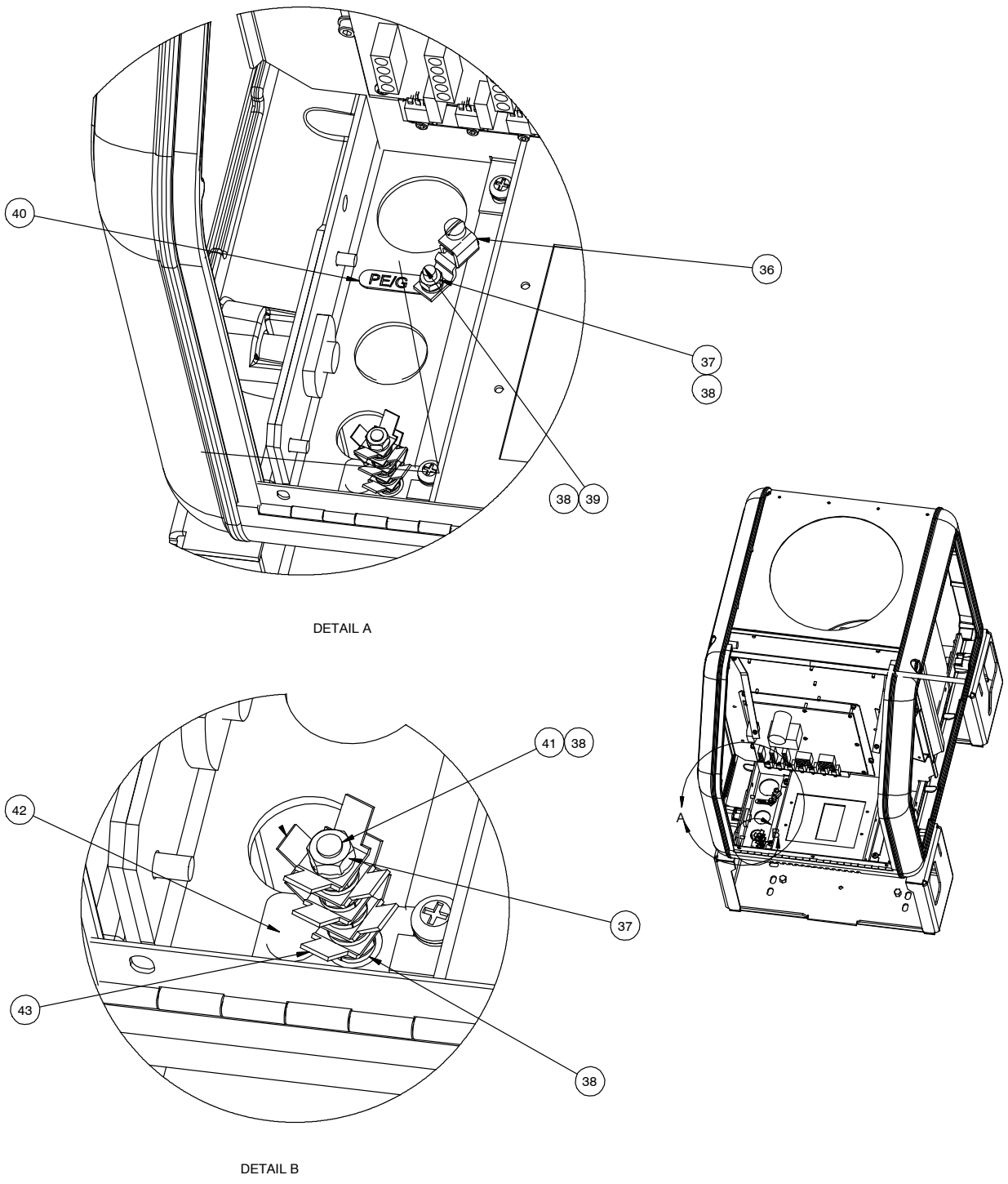


Figure 7-4 Base parts, MT16L (3 of 3)

Lid Assembly Parts Lists

The lid assembly parts vary depending on the configuration of the melter. Refer to the appropriate parts list for your melter. To determine the configuration of your melter, refer to *Melter Part Numbers* at the beginning of this section.

Lid Parts, MT16L

See Figure 7-5.

Item	Part	Description	Quantity	Note
—	1039298	LID ASSY,D10	—	A
—	1039299	LID ASSY,D16	—	
1	- - - - - -	• LID,TANK,D10/16	1	
2	- - - - - -	• SCR,SKT,M6X50,BL	2	
3	901576	• HANDLE,PLASTIC	1	
4	- - - - - -	• SPACER,8MM,HEX,M5X22MM,LG,STL,THRU THD.	4	
5	- - - - - -	• LID,INNER TANK	1	
6	- - - - - -	• SCR,BTN,SKT,M5X10,BL	4	
7	900464	• ADHESIVE,LOCTITE 242, BLUE, REMOVABLE, 50ML	AR	
8	1025326	• TAG,CAUTION,HOT SURFACE,1.19X6.544	1	

NOTE A: Used on all A10 melters except for the following: 1080791, 1080800, 1080778, and 1080797.

AR: As Required

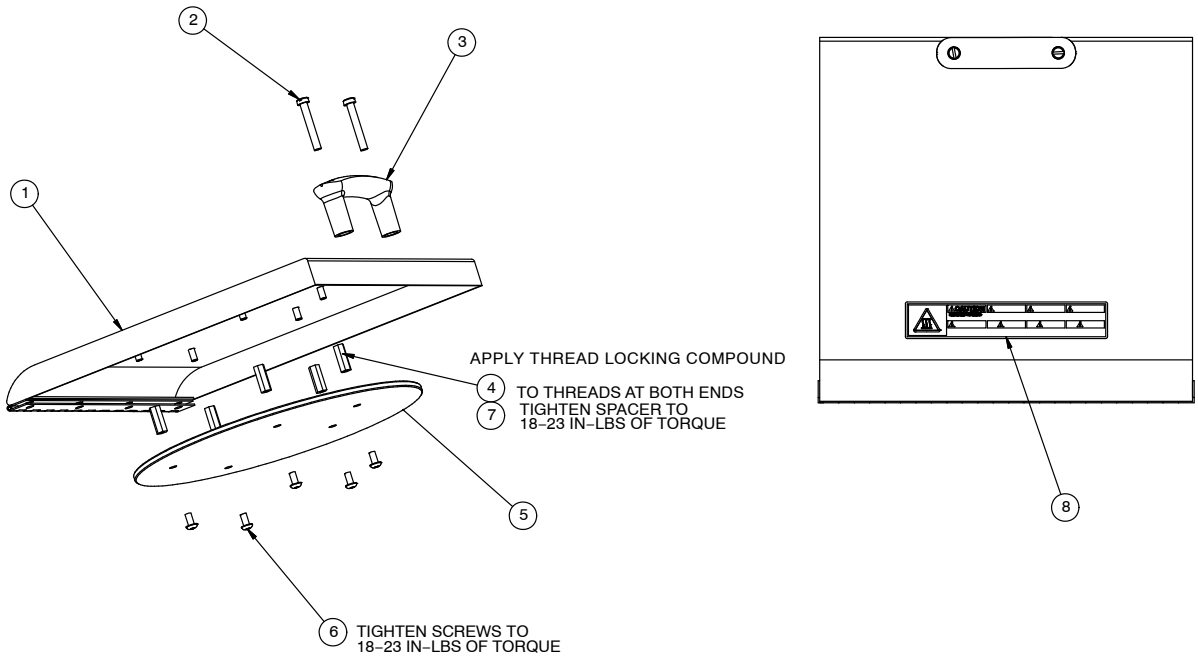


Figure 7-5 Lid parts, MT16L

Lid Parts, MT16L, Return Feed

See Figure 7-6.

Item	Part	Description	Quantity	Note
—	- - - - - -	LID ASSY,D10 RETURN FEED	—	A, B
1	- - - - - -	• LID,HINGED,D10 RETURN FEED	1	
2	- - - - - -	• SCR,SKT,M6X50,BL	4	
3	901576	• HANDLE,PLASTIC	1	
4	- - - - - -	• SPACER,8MMHEX,M5X20MMLG,STL,THRU THD	4	
5	- - - - - -	• LID,INNER,D10 RETURN FEED	1	
6	- - - - - -	• SCR,BTN,SKT,M5X10,BL	4	
7	900464	• ADHESIVE,LOCTITE 242,BLUE,REMOVABLE,50ML	AR	
8	1025326	• TAG,CAUTION,HOT SURFACE,1.19X6.544	1	

NOTE A: To order a complete return feed lid assembly, order service kit part 1043074.

B: Used only on the following A10 melters: 1080791, 1080800, 1080778, and 1080797.

AR: As Required

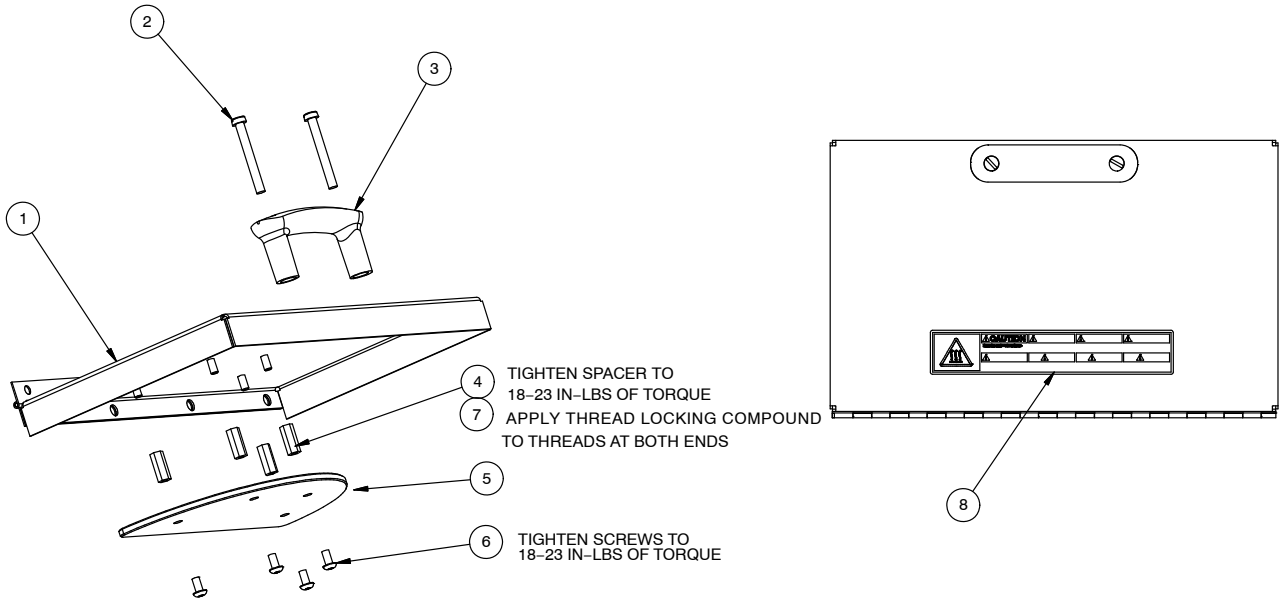


Figure 7-6 Lid parts, MT16L, return feed

Drive Assembly Parts Lists

The drive assembly parts vary depending on the configuration of the melter. Refer to the appropriate parts lists for your melter. To determine the configuration of your melter, refer to *Melter Part Numbers* at the beginning of this section.

Drive Assembly Parts

See Figure 7-7.

Item	Part	Description	Quantity	Note
—	7407581	MODULE,DRIVE,50 KG/HR,V/S,1100PSI	—	
201	- - - - - -	• DRIVE,50KG/HR,.20HP,PR25M2,1100PSI, 4 PT	1	
202	- - - - - -	• SCR,HEX,CAP,M8X70,ZN	4	
203	- - - - - -	• WASHER,LK,M,SPT,M8,STL,ZN	4	
204	940024	• ORING,-118,VITON,.862X.103,BR	1	
208	1108371	• LUBRICANT,NEVER-SEEZ,NSF-H1, FOOD GRADE	AR	
209	1108371	• LUBRICANT,NEVER-SEEZ,NSF-H1, FOOD GRADE	AR	
210	1087288	• COVER,COUPLING,ALTABLUE TT,RIGHT	1	
211	1087289	• COVER,COUPLING,ALTABLUE TT,LEFT	1	
212	- - - - - -	• SCR,SKT,M5X10,ZN	4	
213	- - - - - -	• WASHER,FLT,M,OVERSIZED,5,STL,Z	4	

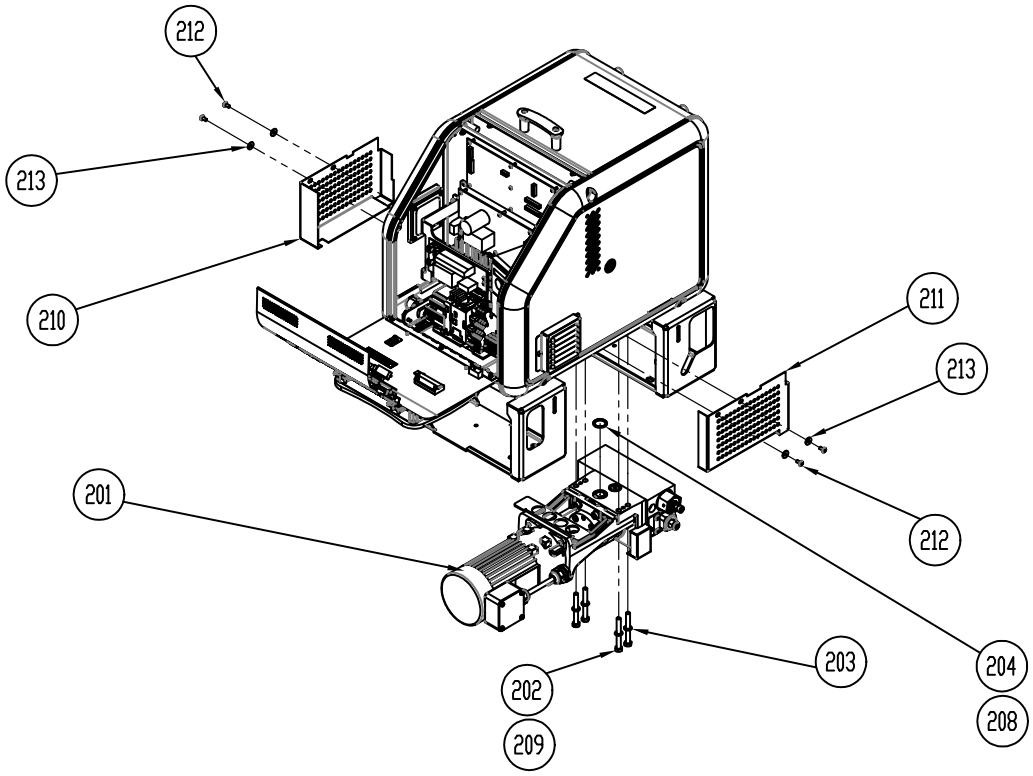


Figure 7-7 Drive assembly parts

Drive Assembly Service Kits

Standard melters are recommended for use in applications with operating temperatures up to 191 °C (375 °F). Manifold and complete drive assembly kits do not include heaters and RTD.

Table 7-2 Drive Assembly Components (PA)

Melter P/N	Melter Description	Motor P/N	Motor Controller P/N	Pump P/N	Manifold P/N	Complete Drive Assembly P/N
7402988	TT 16, 240V,2 H/T,50kg/hr	7407767	1081272	7171040	7414111	7414112

Table 7-3 Variseal Pump Service Kits

Item	Part	Description	Quantity	Note
NS	7136920	SEALING KIT,PUMP F.SHAFT D12,7 (pump seal service kit)	—	
NS	- - - - - -	• O-RING 22X3 VITON 70 SHORE A BLACK	2	
NS	- - - - - -	• RING ID 12,7	1	
NS	- - - - - -	• TURCON-ROTO-VARISEAL D12,7 INSIDE SEAL	1	
NS	- - - - - -	• ALLEN HEAD CAP SCREW M5X16 DIN912 A2-70	3	
NS	- - - - - -	• HIGH-TEMP.GREASE GLS 595/N2 CAN:10G	1	
NS	7146229	• IN-ASSEMBLY TOOLS 7136915, 7136918,EN/GE	1	A
NS	7136915	ASSY TOOL F.SHAFT SEALING D12,7 (assembly tool service kit)	—	
NS	- - - - - -	• ASSY MANDREL F.SHAFT SEALING D12,7	1	
NS	- - - - - -	• ASSY BUSHING F.SHAFT SEALING D12,7	1	
NS	7146229	• IN-ASSEMBLY TOOLS 7136915, 7136918,EN/GE	1	A

NOTE A: This instruction sheet may be obtained from https://www.revbase.com/TagTeam/Client/Login.asp?dbid=1534, or contact your Nordson representative.

NS: Not Shown

Manifold Parts

See Figure 7-8.

Item	Standard Part	PA Part (Note A)	Description	Quantity	Note
—	1081224	1081223	SERVICE KIT, MANIFOLD, 4-PORT, 1100 PSI, FILTERED, SINGLE-STREAM	—	
1	- - - - - -	- - - - - -	• MANIFOLD ASSEMBLY	1	
2	940172	- - - - - -	• O-RING, VITON, 0.676ID X 0.070W IN.	2 or 3	
3	—	—	• ITEM NO. NOT USED	—	
4	- - - - - -	- - - - - -	• SCREW, HEX, CAP, M8 X 90, 304 STAINLESS-STEEL	2	
5	- - - - - -	- - - - - -	• WASHER, FLAT, NARROW, M8	2	
6	- - - - - -	- - - - - -	• CONNECTOR, WITH O-RING, HOSE, 9/16-18	2	
NS	- - - - - -	- - - - - -	• CONNECTOR, 90 DEGREE, 9/16-18 X 9/16-18	1	
NS	- - - - - -	- - - - - -	• GREASE, HIGH-TEMPERATURE, 0.50 OZ	AR	
—	1031222	1067877	SERVICE KIT, VALVE, PRESSURE CONTROL, 1100 PSI	—	
7	- - - - - -	- - - - - -	• VALVE, PCV, 1100 PSI	—	
8	1031235	—	FILTER, WITH O-RING, 50-MESH	1 or 2	B
	1028305	1070899	FILTER, WITH O-RING, 100-MESH	1 or 2	B
	1031236	—	FILTER, WITH O-RING, 200-MESH	1 or 2	B
NS	- - - - - -	- - - - - -	• O-RING, VITON, $^{3}/_{4}$ IN. TUBE	1	
NS	- - - - - -	- - - - - -	• LUBRICANT, PARKER, HIGH-TEMPERATURE	AR	

NOTE A: Parts designated as “PA” are recommended for use in product assembly applications with operating temperatures greater than 191°C (375 °F). The PA-type O-rings and hardened stainless-steel pumps used in PA melters provide exceptionally high chemical and temperature resistance.

B: Present only on filtered manifolds.

NS: Not Shown

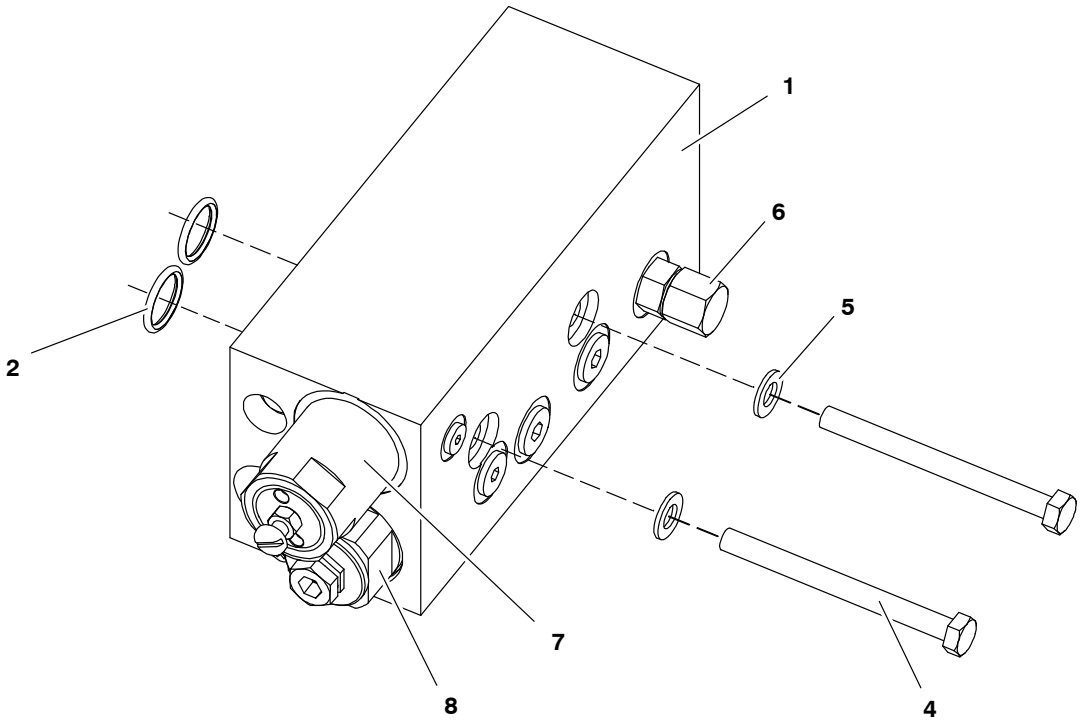


Figure 7-8 Manifold service kit parts, single-stream (filtered manifold shown)

Drive Assembly Parts, Single-Stream

See Figure 7-9.

Item	Standard Part	PA Part (Note A)	Description	Quantity	Note
—	7407765	—	SERVICE KIT, DRIVE ASSEMBLY, SINGLE-STREAM, 50 KG/HR, 1100 PSI, 4-PORT, FILTERED	—	
1	7407767	7407767	• MOTOR ASSY W/CABLE, 0.25KW,110RPM,ALTA	1	
2	------	------	• SCREW, HEX, CAP, M6 X 25	4	
3	------	------	• WASHER, LOCK, SPLIT, M6	4	
4	------	------	• BRACKET, SPUR GEAR PUMP	1	
5	------	------	• COUPLING, L075, 12.7 MM X $^{5}/_{8}$	1	B
6	—	—	• ITEM NO. NOT USED	—	
7	7171040	—	• PUMP, 7.73 CC/REV	1	C
8	940172	------	• O-RING, VITON, 0.676 ID X 0.070 W	2	
9	900493	900493	• LUBRICANT, PARKER HI-TEMP	AR	
10	—	—	• ITEM NO. NOT USED	—	
11	------	------	• SCREW, HEX, CAP, M8 X 90, 304 STAINLESS-STEEL	2	
12	------	------	• WASHER, FLAT, NARROW, M8	2	
13	------	------	• MANIFOLD	1	D
14	900344	900344	• LUBRICANT, NEVER SEEZ, 8 OZ CAN	AR	
15	------	------	• BRACKET, PUMP, SPUR GEAR, ASSY	1	
NS	------	------	• GREASE, HIGH-TEMP, 0.50 OZ	AR	
16	940024	1047564	O-RING, -118, VITON, 0.862 X 0.103	1	
—	1063171	1063171	SERVICE KIT, COUPLING, GEAR PUMP	—	

NOTE A: Parts designated as “PA” are recommended for use in product assembly applications with operating temperatures greater than 191 °C (375 °F). The PA-type O-rings and hardened stainless-steel pumps used in PA melters provide exceptionally high chemical and temperature resistance.

B: Provided in the motor coupling service kit.

C: For pump service kits, refer to Table 7-3 earlier in this section.

D: Refer to *Manifold Parts* earlier in this section.

NS: Not Shown

AR: As Required

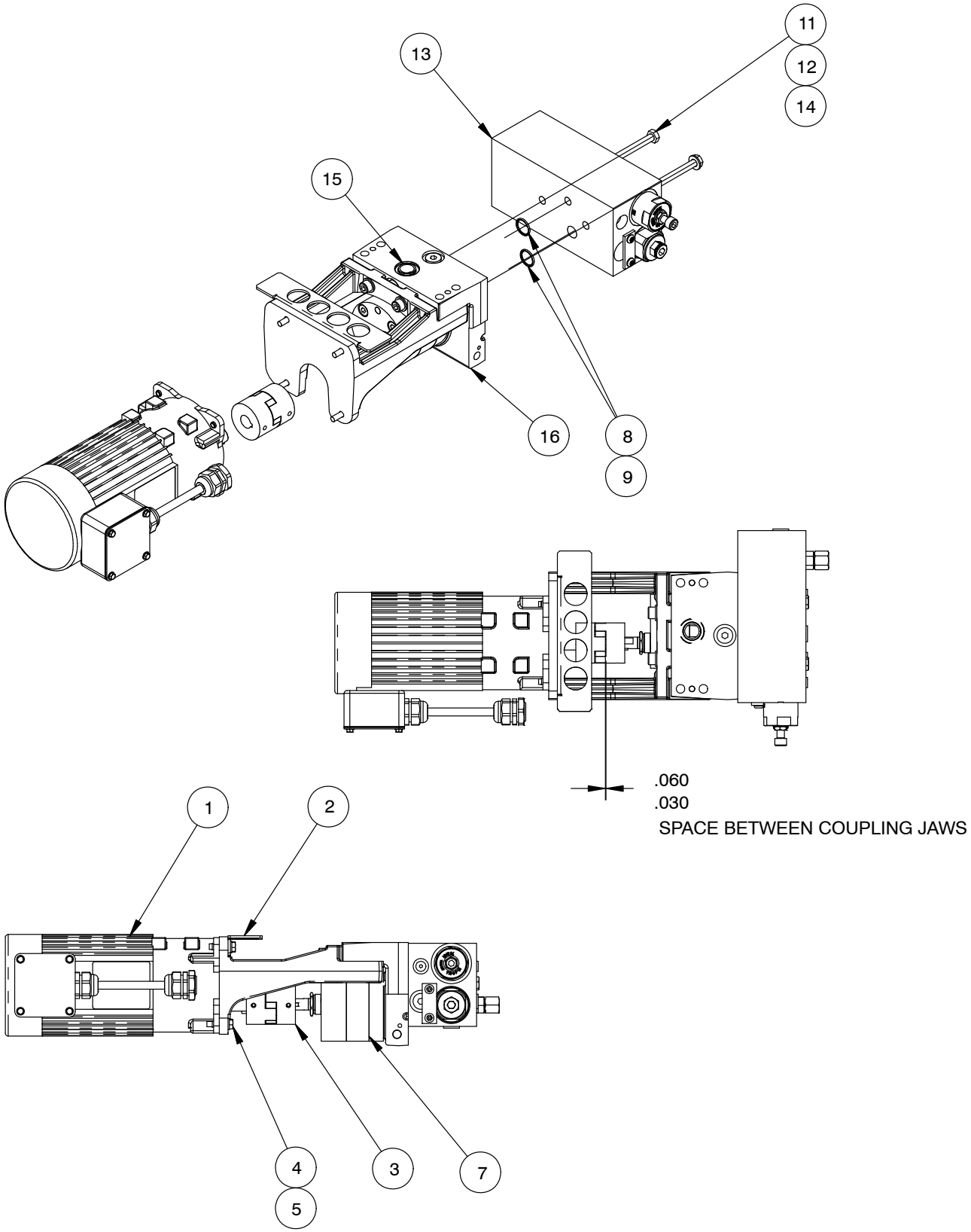


Figure 7-9 Drive assembly, single-stream

Electrical Service Kits

The electrical components vary depending on the configuration of the melter. Refer to the appropriate parts lists for your melter. To determine the configuration of your melter, refer to *Melter Part Numbers* at the beginning of this section.

Control Panels

See Figure 7-10.

Item	Part	Description	Quantity	Note
1	1078085	MEMBRANE PANEL, ALTABLUE,4,10,16	1	
2	1085183	MEMBRANE PANEL MOTOR CONTROL,STD ALTA	1	A
3	1017947	SWITCH,ROCKER,SPST,250V,16A,GOLD	1	
4	7401798	PANEL, ASSY, FRONT,CONTROL, ALTA 10/16	1	
NOTE A: For a replacement motor control panel circuit board, refer to the next parts list, *Circuit Boards and Motor Drives*.				

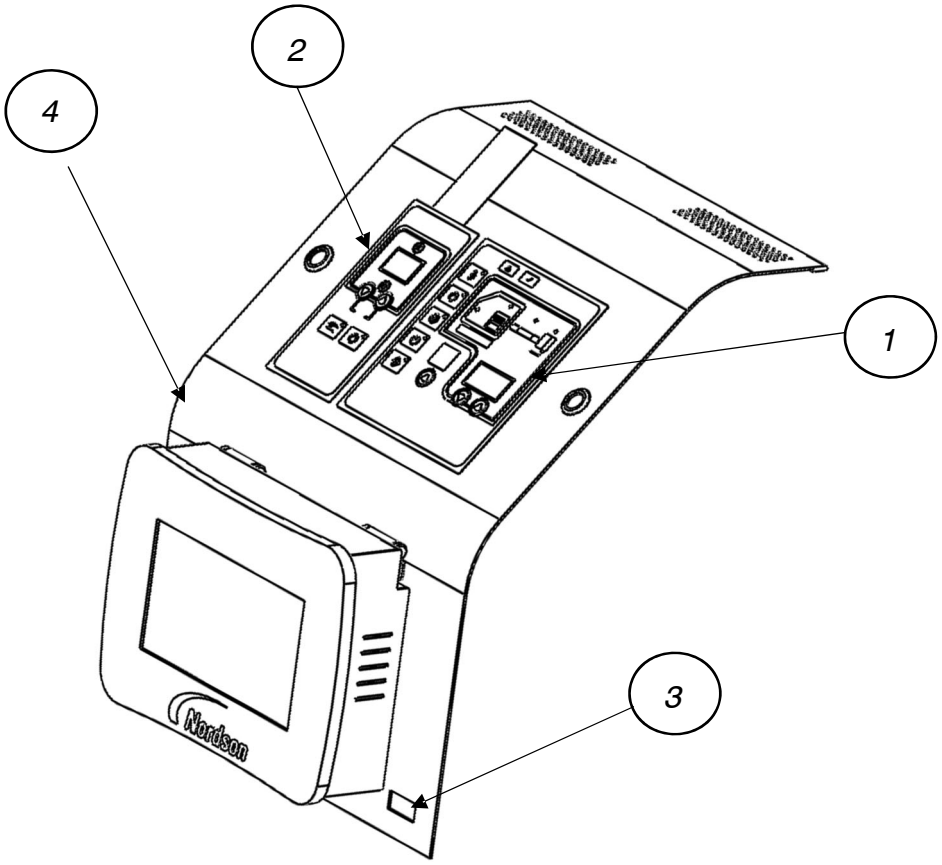


Figure 7-10 Control panel service kit parts

This page intentionally left blank.

Circuit Boards and Motor Drives

See Figure 7-11. Your melter enclosure will have either a relay board or a motor control terminal block assembly. Refer to the correct illustration for your melter.

Item	Part	Description	Quantity	Note
1	1121899	KIT,SERVICE,CPU BOARD	—	
2	1078624	SVCE KIT,DURABLUE,MAIN,PCA	—	A
3	1031201	SVCE KIT,DURABLUE,EXPANSION PCA (A10/A16 ONLY)	—	
4	7409925	ASSY, CONTROL, MATTRESS	—	
5	1095690	PCA, RELAY BOARD, ALTA TT	1	B
5A	1088703	• FUSE,6.00,TIME-DELAY,250V,13/32x1-1/2	2	
5B	1023675	• FUSE,TR5, FA, 2 A, 250V, RAD PC-MT	1	
6	1081271	SVCE KIT,ALTA TT,MOTOR DRIVE,35 KG/HR	1	
	1081272	SVCE KIT,ALTA TT,MOTOR DRIVE,50 KG/HR	1	
7	- - - - - -	Assembly, motor control terminal block	1	C
8	1099532	SVCE KIT, MOTOR CONTROL BOARD	1	

NOTE A: For the part numbers and location of the main board fuses, see Figure 7-12.

B: Present only on melters with a relay board.

C: Present only on melters with a motor control terminal block assembly. Refer to *Motor Control Assembly Terminal Block* later in this section.

NS: Not Shown

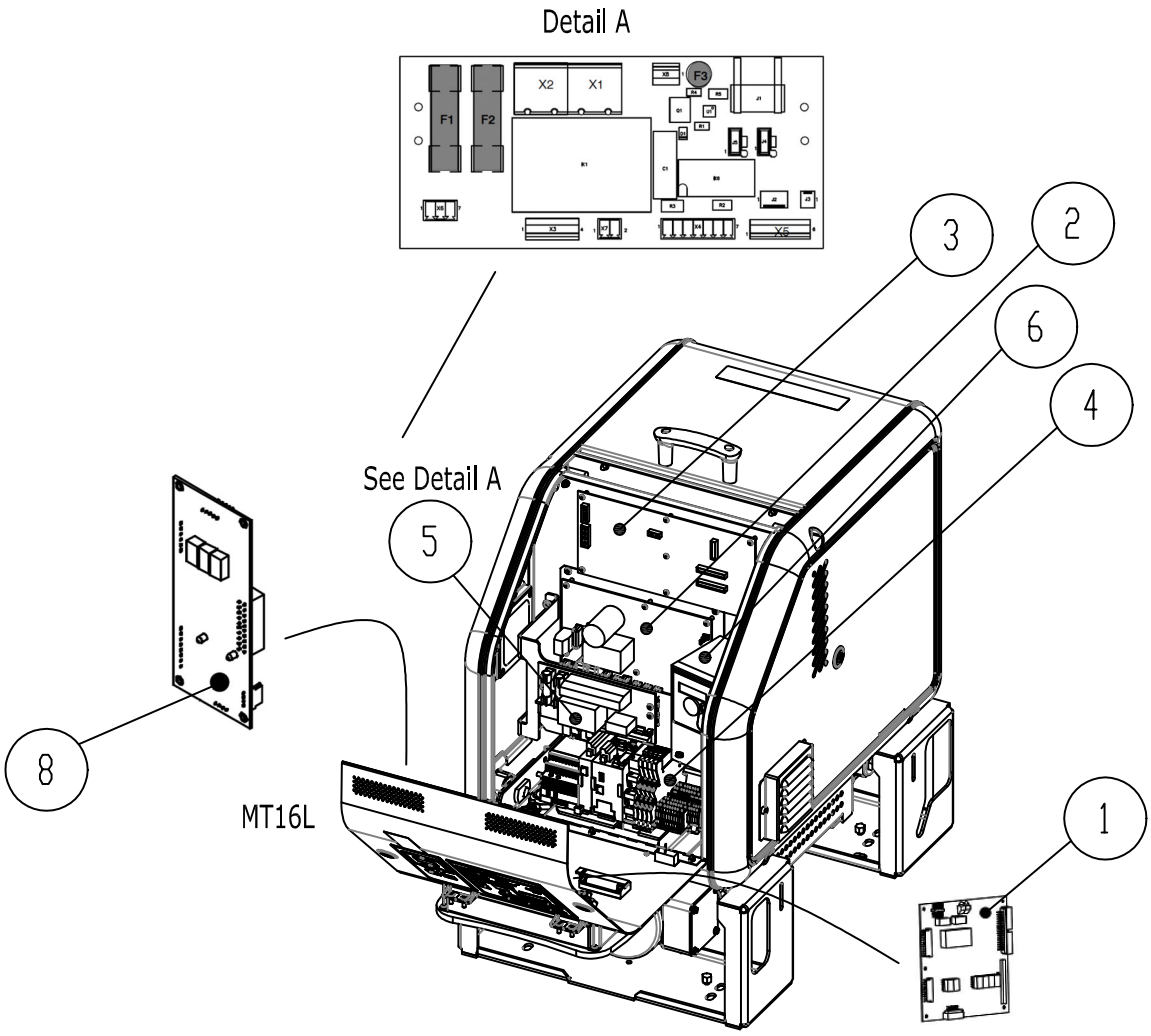


Figure 7-11 Circuit boards and motor drives on melters with a relay board

Main Board Fuses

See Figure 7-12.

Item	Part	Description	Quantity	Note
—	1031203	SERVICE KIT, FUSES, MAIN BOARD	—	
1	105419	• FUSE, FAST, 10 A, 250 VAC, $^{1}/_{4}$ X $1^{1}/_{4}$ IN., F1-F2	2	
2	939955	• FUSE, SLOW, 2 A, 250 VAC, 5 X 20 MM, F3-F4	2	
3	- - - - - -	• FUSE, FAST, 5 A, 250 VAC, 5 X 20 MM, F5-F6	2	
4	939683	• FUSE, 6.3 A, 250 VAC, 5 X 20 MM, F7-F12	6	

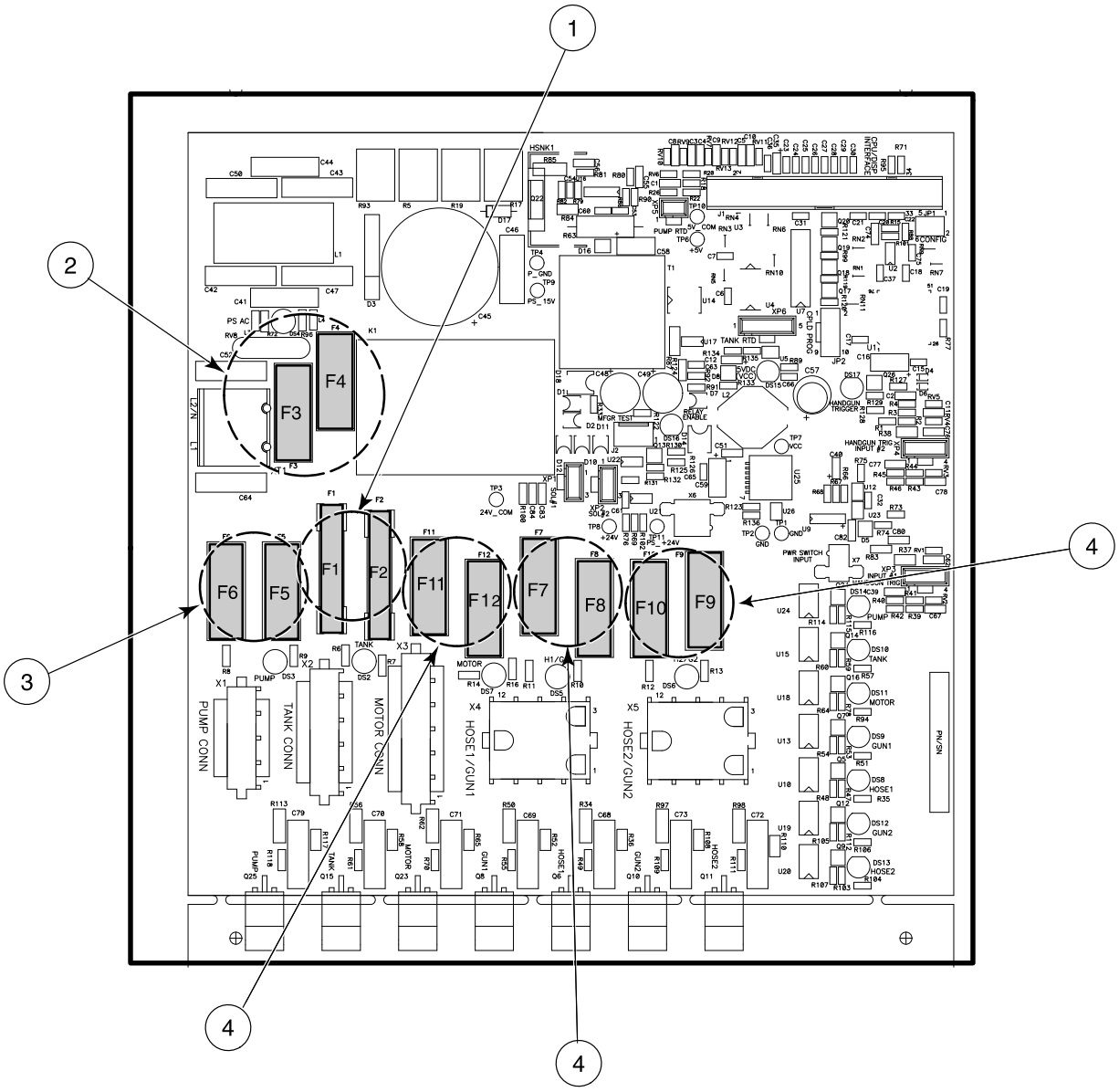


Figure 7-12 Fuse service kit parts

Thermostat

Item	Part	Description	Quantity	Note
NS	1028321	SERVICE KIT, THERMOSTAT,	—	
NS	- - - - - -	• THERMOSTAT, 500-DEGREE, OPEN-ON-RISE	1	
NS	- - - - - -	• SCREW, M4 X 6	2	
NS	- - - - - -	• COMPOUND, THERMAL, 1 GRAM	1	
NS: Not Shown				

RTDs

Item	Part	Description	Quantity	Note
NS	1031233	SERVICE KIT, RTD, PUMP	—	A
NS	1031234	SERVICE KIT, RTD, TANK	—	A
NOTE A: All RTD service kits include thermal compound.				
NS: Not Shown				

Heaters

Item	240V Part	Description	Quantity	Note
NS	1063156	SERVICE KIT, HEATER, PUMP, SINGLE-STREAM MELTERS	—	A
NS	1031230	SERVICE KIT, HEATER, TANK, A16	—	A
NOTE A: All heater service kits include thermal compound.				
NS: Not Shown				

Cables and Harnesses

Refer to *Identifying Electrical Components* in Section 6, *Troubleshooting*, for an illustration and part numbers for cables and harnesses.

Electrical Enclosure Filter Fan

See Figure 7-13.

Item	Part	Description	Quantity	Note
1	1080365	FILTER ASSEMBLY, FAN, 80 X 80 MM	1	

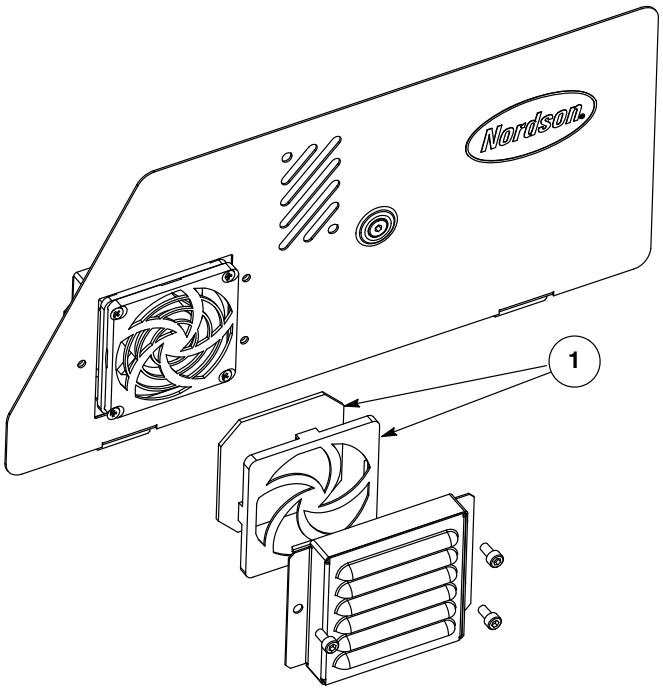


Figure 7-13 Electrical enclosure filter fan parts

Optional Equipment

Flow/Pressure Control and Pressure Indication

Part	Description	Quantity
1032537	Flow controller, FC1 (also requires 1034042, 1028627, and 1030537)	—
1034042	Valve, run-up PCV, 1100 psi	—
1093624	Kit, flow control bypass	—
1028627	Assembly, tachometer, generator, and cable, FC1, 0-225 VDC	—
1030537	Kit, gauge, 1500 psi	—
1034248	Kit, knob, adjustment, pressure control valve	—
1037495	Kit, drain valve	—

Expansion and Control Kits

Part	Description	Quantity
1036607	Kit, I/O expansion card (digital)	—
1063740	Kit, analog I/O board	—
1053288	Kit, DeviceNet card	—
1053289	Kit, Ethernet card	—
1053300	Kit, PROFIBUS card	—
1031175	Kit, 2-hose to 4-hose conversion	—
1050598	Kit, air control	—
1030542	Kit, footswitch	—
1047093	Kit, remote trigger	—

General Melter Accessory Kits

Part	Description	Quantity
1050595	Kit, support, hose, double	—
1030530	Kit, handheld applicator hanger	—
1043074	Kit, return feed, A10/A16	—

Line-Speed Signal Generator

To use the gear-to-line capability of the melter, you must install a device that measures the speed of the production line. The default type of line-speed signal input is 0-10 VDC, although other inputs can be accepted. Nordson Corporation offers the following 0-10 VDC generator.

Part	Description	Note
119560	Generator, 0-10 VDC, with bracket and cable	

Control Box Parts List

See Figure 7-14.

Item	Part	Description	Quantity	Note
—	7409931	ASSY, HANGING, DISPLAY, MATTRESS	—	
1	- - - - - -	• BOX, SHEET, DISPLAY, MATTRESS	1	
2	- - - - - -	• PANEL, FRONT, DISPLAY MATTRESS	1	
3	- - - - - -	• PANEL, BOTTOM, DISPLAY, MATTRESS	1	
4	7407550	• SCREEN, CMT3072, 7 INCH, 1024X600	1	
5	- - - - - -	• HINGE, E6-10-220F-50, MATTRESS	2	
6	- - - - - -	• SCR, PAN, SLT, M3 X 6, ZN	6	
7	- - - - - -	• WASHER, LK, M, SPT, M3, STL, ZN	4	
8	- - - - - -	• WASHER, FLT, M, NARROW, M3, STL, ZN	4	
9	- - - - - -	• SCREW, M4×10, MATTRESS	8	
10	- - - - - -	• TAG, GROUND	1	
11	- - - - - -	• NUT, HEX, M4, STL, ZN	1	

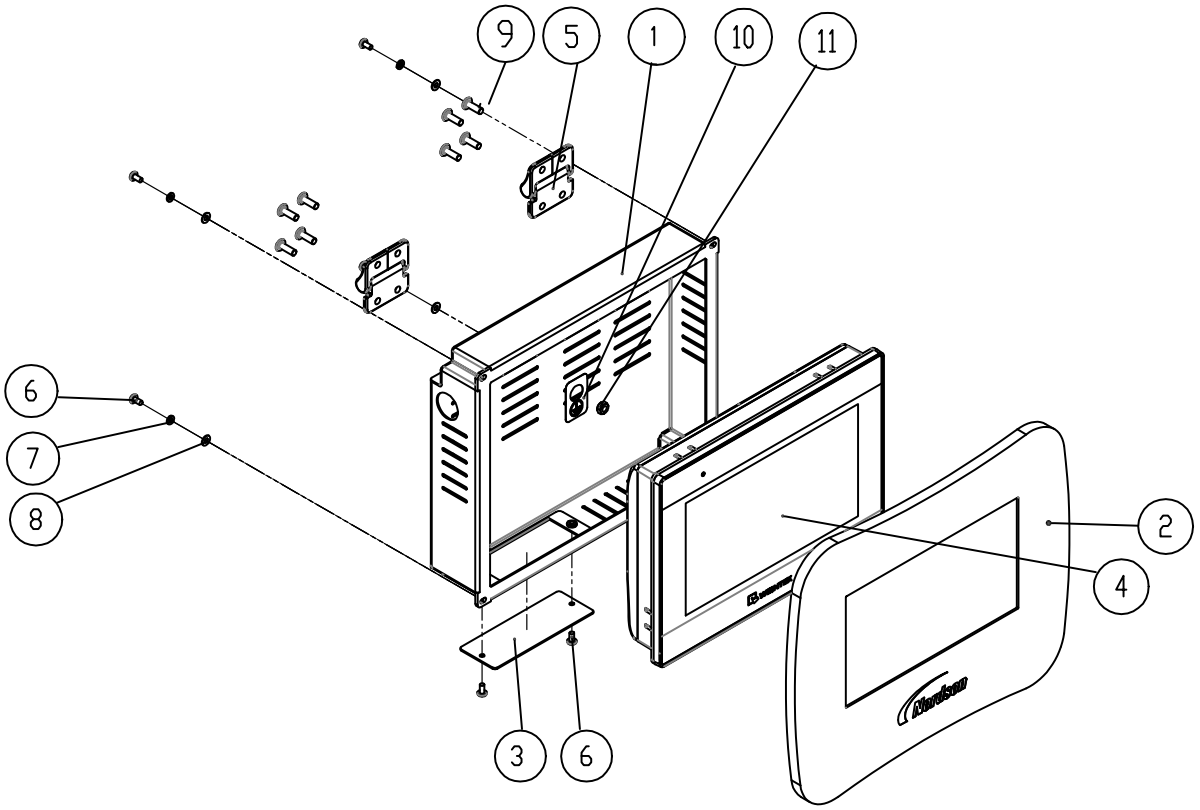


Figure 7-14 Control box

Terminal Row Parts List

See Figure 7-14.

Item	Part	Description	Quantity	Note
—	7409925	ASSY, CONTROL, MATTRESS	—	
1	7407835	• TB ASSY, MATTRESS	1	
2	7404373	• POWER SUPPLY, 24VDC, 60W	1	
3	7407547	• PLC, FX5UC-32MT/D, MT16L	1	
4	7407549	• MODULE, ANALOG, FX5-4DA-ADP	1	
5	7410639	• RELAY MODULE, 24VDC	4	
6	- - - - - -	• BRACKET, END, DIN RAIL, ASIC	3	
7	7409469	• RELAY MODULE, 24VDC, 2 NO/NC	1	

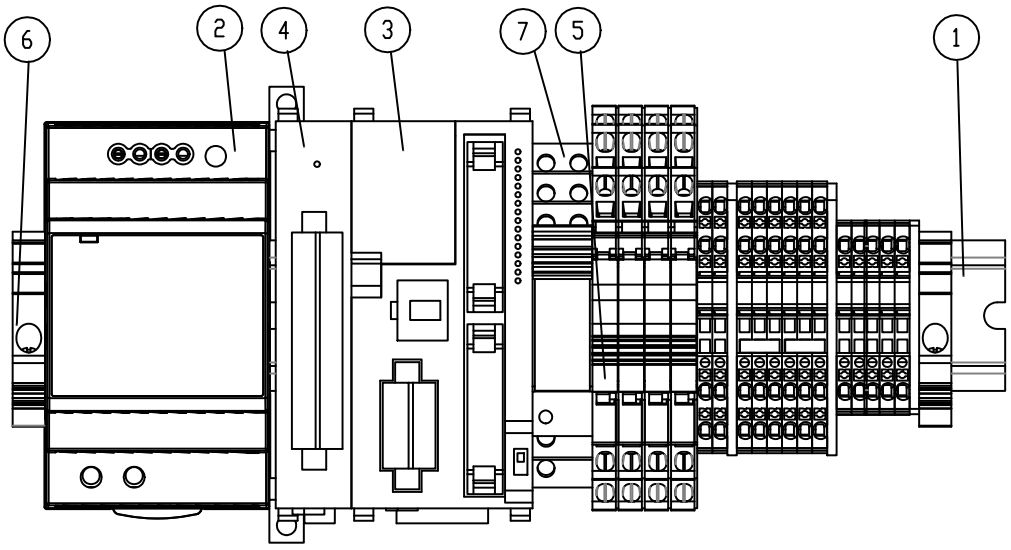


Figure 7-15 Terminal Row

Relay Board

See Figure 7-16.

Item	Part	Description	Quantity	Note
1	1088703	FUSE,6.00,TIME-DELAY,250V,13/32x1-1/2	1	F1
2	1088703	FUSE,6.00,TIME-DELAY,250V,13/32x1-1/2	1	F2

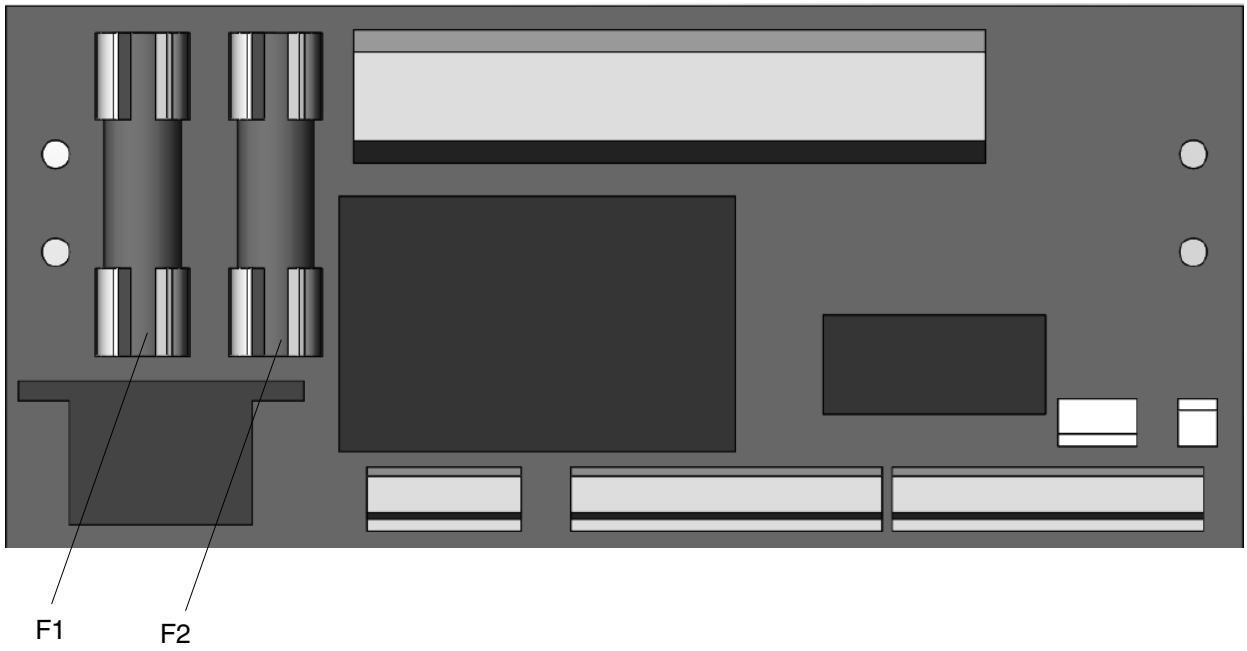


Figure 7-16 Relay board

Power Cord

See Figure 7-17.

Item	Part	Description	Quantity	Note
1	939683	FUSE,6.30,FAST-ACTING,250V,5X2OMM	1	F1
2	939683	FUSE,6.30,FAST-ACTING,250V,5X2OMM	1	F2
3	939683	FUSE,6.30,FAST-ACTING,250V,5X2OMM	1	F3
4	939683	FUSE,6.30,FAST-ACTING,250V,5X2OMM	1	F4

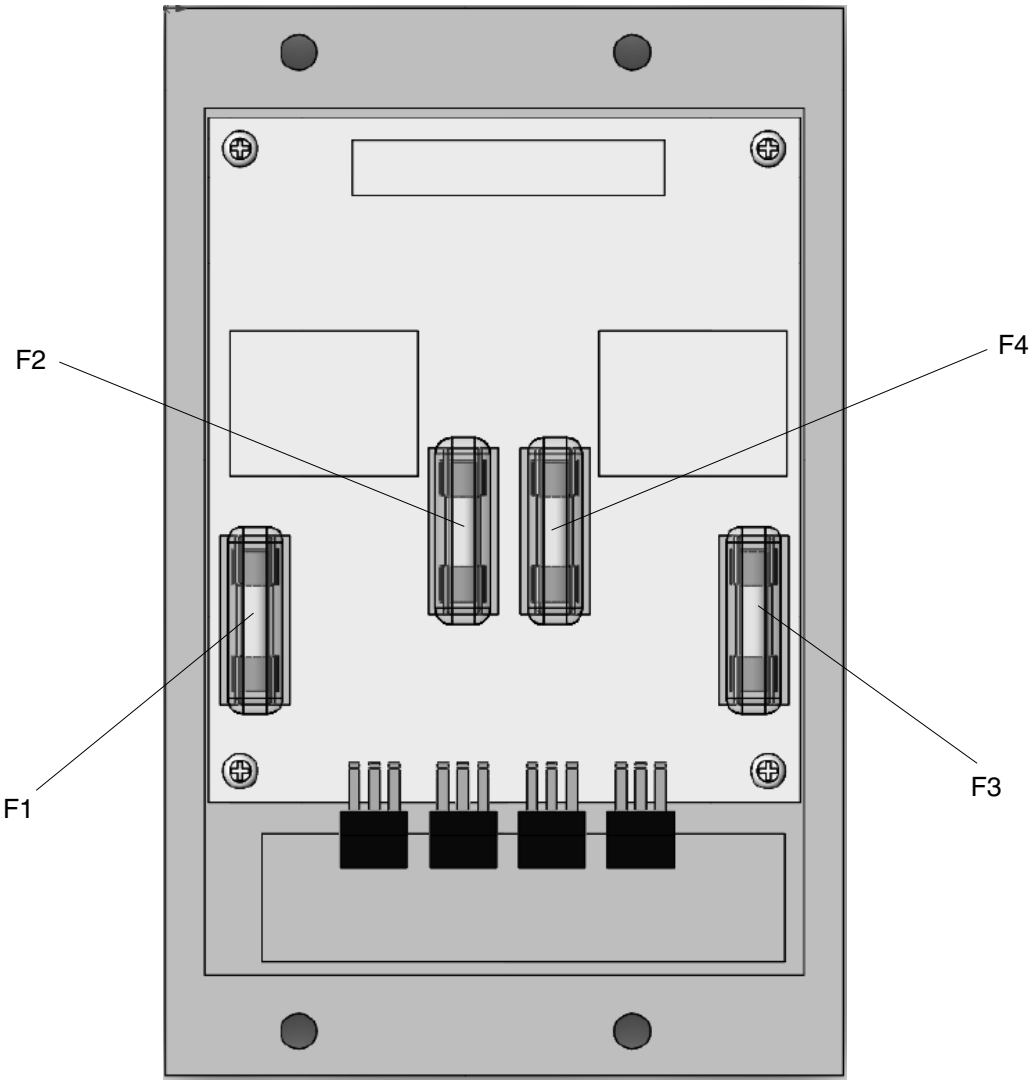


Figure 7-17 Power Cord

This page intentionally left blank.

Section 8
Technical Data

General Specifications

Item	Data	Note
Weight of empty melter		
M16L	82 kg (217 lb)	
Weight of melter with full tank		
MT16L	98 kg (212 lb)	
Hydraulic Hose ports	4	
Melt rate		
@ nominal voltage		
MT16L	11.2 kg/hr (24.7 lb/hr)	
Noise	64dB (A) at maximum pump speed	A
Workplace temperature	0 to 50 °C (32 to 122 °F)	
Throughput rate		
@ nominal voltage		
MT16L	20 kg/hr (44 lb/hr)	
Pump rate (maximum)	50 gkg/hr (110 lb/hr)	
NOTE A: The noise level is measured at a distance of 1 m (3.3 ft.) from the surface of the melter.		

Electrical Specifications

NOTE: Refer to *Configuring the Electrical Service* in Section 3, *Installation*, for maximum amperage specifications.

Item	Data		Note
	Nominal	Allowable Range	
Voltage	200 VAC	180-220 VAC	A
	200-240 VAC	180-264 VAC	
	400/230 VAC	312/180-457/264 VAC	A, B
Frequency	50/60 Hz		
Hose/applicator heating capacity	2 hose/applicator pairs		C
Control temperature range	40 to 230 °C (100 to 450 °F)		
Control temperature accuracy	± .5 °C (± 1 °F)		
IP rating	IP 32		

NOTE A: Depends on unit version and voltage plug installed and presence of expansion board.

B: 400/230 VAC is for electrical service with neutral (WYE) where the 400 VAC is a line-to-line voltage and the 230 VAC is a line-to-neutral voltage.

C: Depends on melter configuration.

Heater Specifications

NOTE: Refer to the hose and applicator manuals for hose/applicator heater specifications.

Location	Wattage (see Note A)	Voltage	Cold Resistance (see Note B)
Pump (single-stream)	550	200 V	65.5-76.4 ohms
		240 V	94.0-110.0 ohms
Tank, MT16L	2 x 900	200 V	40.0-46.7 ohms each
		240 V	57.9-67.6 ohms each

NOTE A: Nominal wattage at 177-204 °C (350-400 °F).

B: Measured at room temperature for a previously heated element.

Motor and Pump Specifications

Item	Data	Note
Viscosity range Melter *with* filter	 50 kg/hr: 500–10,000 cps	
Maximum hydraulic pressure Melter *with* filter	 50 kg/hr: 75 bar (1100 psi)	
Displacement	Single-stream: 7.73 cc/rev (50 kg/hr)	A
Pump speed	50 kg: 113 rpm	B
NOTE A: Displacement per hour shown at 80 rpm motor speed. B: Depends on motor used.		

MT16L Melter

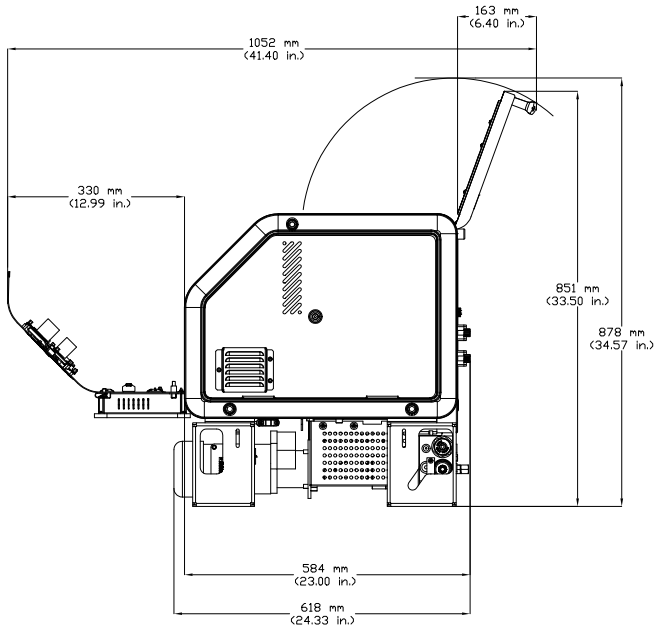


Figure 8-1 MT16L melter dimensions

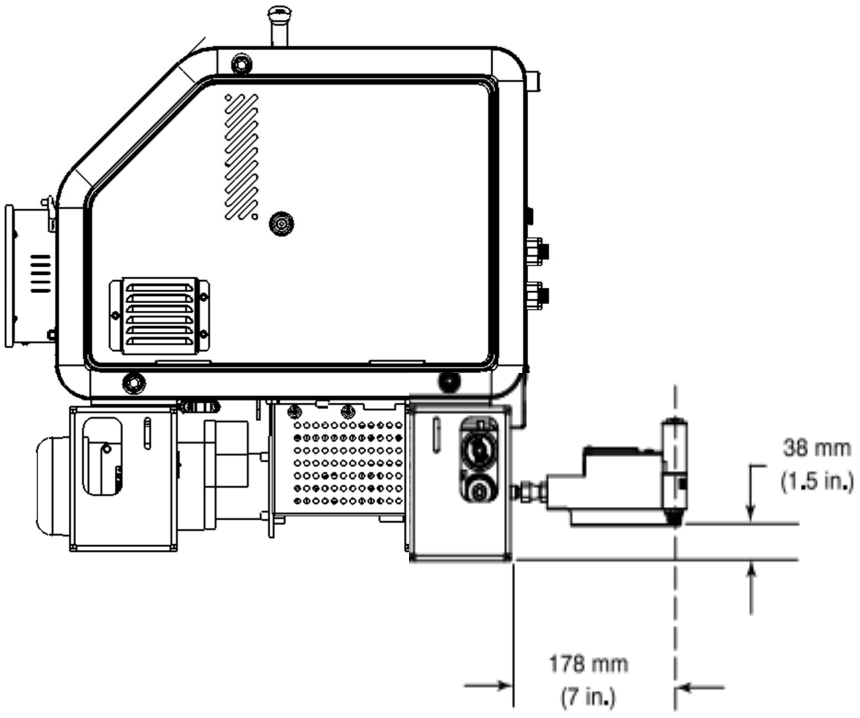


Figure 8-2 B900N mounting dimensions (from manifold)

Conduit Penetration Sizes

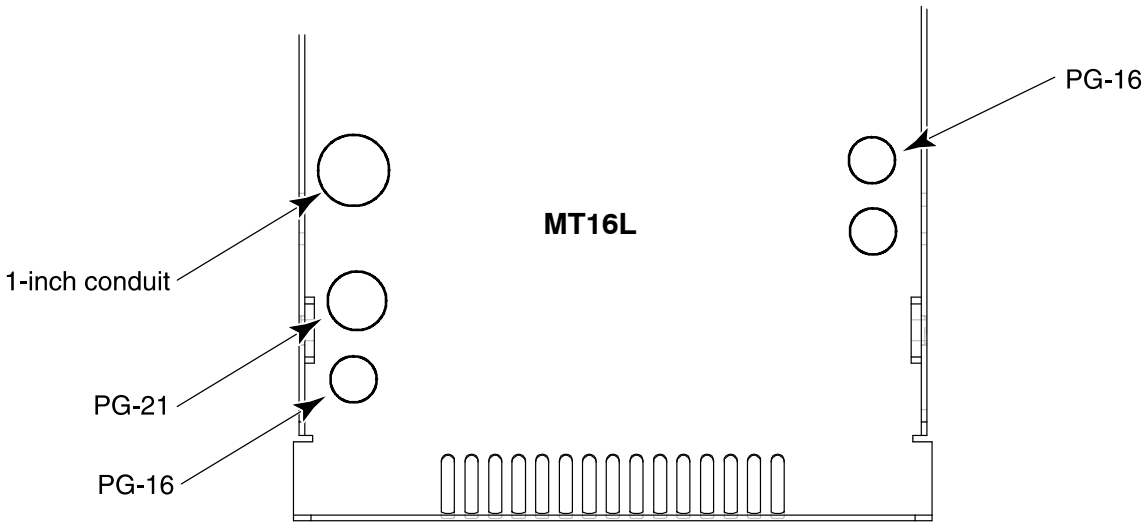


Figure 8-3 Conduit penetration sizes

This page intentionally left blank.

Appendix A

Calculating Melter Power Requirements

Before locating the melter on the production floor or attaching hoses and applicators to the melter, you must calculate the electrical power required by the hoses and applicators and confirm that the required power does not exceed maximum allowable wattages. Properly calculating melter power requirements will prevent damage to the melter and identify the maximum allowable distance between the melter and the point at which the hot melt is dispensed.

The following three maximum wattages must be considered when calculating melter power requirements.

- **Single-component maximum**—The wattage of any single hose or applicator
- **Hose/applicator pair maximum**—The combined wattage of any hose and applicator (hose/applicator pair)
- **Two hose/applicator pair maximum**—The combined wattage of hose/applicator pairs 1 and 2 or hose/applicators pairs 3 and 4

If your Nordson representative has already calculated the hose/applicator power requirements and confirmed that the maximum allowable wattages will not be exceeded, then no further calculation is necessary. However, you should re-evaluate the hose and applicator power requirements before you:

- add a new hose or applicator to the melter that was not factored into the original wattage evaluation
- replace an existing hose with a higher wattage hose or an existing applicator with a higher wattage applicator

To evaluate the hose/applicator power requirements

1. Identify all hose/applicator pairs based on the hose/applicator receptacle to which they are connected.
2. Examine the identification tag or plate on each hose and applicator and record the wattage of each in Column A of Table A-1. Enter a zero for any hose or applicator that is not installed.
3. Add the wattages of each hose/applicator pair and place the sum in Column B of Table A-1.
4. Add the wattages of hose/applicator pairs 1 and 2 and hose/applicator pairs 3 and 4 and place the sum in Column C of Table A-1.
5. Compare each of the wattages tabulated in Columns A, B, and C of Table A-1 with the associated maximum allowable wattages in Table A-2.
6. Do *one* of the following:
   - If each of the wattages calculated in step 5 *do not* exceed the associated maximum allowable wattages listed in Table A-2, then the power required by the hoses and applicators is within acceptable limits.
   - If any of the wattages calculated in step 5 *does* exceed an associated maximum allowable wattage listed in Table A-2, then the configuration or position of the hose/applicator pairs must be rearranged, shorter hoses must be used, or lower power applicators must be used in order to reduce the power requirement.

Table A-1 Hose/Applicator Wattages

Component Number	Type/Size	A	B	C
		Component Wattage	Hose/Applicator Pair Wattage	Two Hose/Applicator Pair Wattage
Hose 1				
Applicator 1				
Hose 2				
Applicator 2				
Hose 3				
Applicator 3				
Hose 4				
Applicator 4				

Table A-2 Maximum Allowable Hose/Applicator Wattages

Column in Table A-1	Component	Maximum Wattage
A	Any single hose or applicator	1000 W
B	Any hose/applicator pair	1200 W
C	Sum of hose/applicator pairs 1 and 2	2000 W
	Sum of hose/applicator pairs 3 and 4	2000 W

Appendix B
Operating Parameters

Operating parameters are organized in this appendix according to the logical groups listed in Table B-1. For information about selecting and editing operating parameters, refer to Section 3, *Installation, Setting Up the Melter*.

NOTE: Parameter numbers that are reserved or that are not used do not appear in this appendix.

Table B-1 Parameter Groups

Group	Parameter Numbers	Group Description
Standard	0 to 8 and 10 to 14	Frequently used parameters
Pressure Control	15 to 17	Configure pressure settings
Temperature Control	20 to 29	Control heater function
Input Setup	30 to 39	Configure the standard and optional inputs
Output Setup	40 to 46	Configure the standard and optional outputs
Seven-day Clock	50 to 77	Configure the clock feature
Automatic Fill Timer	78	Configure the external motor control switch
PID Selection	80 to 91	Configure the PID settings

Standard

0 Enter Password

Description: A user-defined password that prevents unauthorized changes to setpoint temperatures and operating parameters.

Value: 0 to 9999

Resolution: 1

Default Value: 4000

Format: —

Use: This parameter only appears if a password is created using parameter 11 and then enabled using parameter 10.

NOTE: The melter remains in the password-protected mode for two minutes after the last key press. After exiting the setup mode, attempting to re-enter the setup mode, even before two minutes has elapsed, will require you to re-enter the password.

1 Total Hours with Heaters On (Noneditable)

Description: A noneditable value that indicates the total number of hours that the heaters have been on.

Value: 999,999 (using abbreviated convention described below)

Resolution: 1 hour

Default Value: 0

Format: —

Use: The right display indicates up to 9999 hours of heater operation. When the accumulated heater hours reaches 10,000, the display alternates every two seconds between the three left most digits (thousands) and the three right digits (hundreds). For example, 10,001 hours would be displayed as ”10,” for two seconds and then ”001” for two seconds. The comma is present if parameter 20, *Temperature Units*, is set to degrees Fahrenheit. A period is present if parameter 20 is set to degrees Celsius.

2 Fault Log (Noneditable)

Description: Stores a record of the last ten faults.

Value: —

Resolution: —

Default Value: _-F0 (unused log entry)

Format: F1, F2, F3, and F4

Use: Use the right-display scroll keys to review the log entries for the last ten faults. Empty log entries are indicated by “_-F0.” Refer to *Monitoring the Melter* in Section 4, *Operation*.

3 Change History Log (Noneditable)

Description:	Records the last ten changes made to either the setpoint temperatures or the operating parameters.
Value:	—
Resolution:	—
Default Value:	P-_ (unused log entry)
Format:	Refer to Section 3, *Installation, Review Parameter and Setpoint Temperature Changes*.
Use:	Use the right-display key to review the log entries for the last ten changes that were made to the operating parameters or the setpoint temperatures. Empty log entries are indicated by “P-_.”

4 Ready Delay Time

Description:	The amount of time that will elapse after all of the components have reached their setpoint temperature before the ready LED will turn on. The ready delay time only functions when the temperature of the tank, at the time the melter is turned on, is more than 27 °C (50 °F) from its setpoint temperature. The ready delay time begins when all components are within 3 °C (5 °F) of their respective setpoint temperature.
Value:	0 to 60 minutes
Resolution:	1 minute
Default Value:	0 minutes
Format:	Left display “rd.” Right display, minutes or seconds remaining.
Use:	The ready delay allows the contents of the tank an additional amount of time to heat before pump turns on. **NOTE:** The time remaining on the ready delay is indicated in minutes in the right display at the end of every automatic scan cycle. When the delay time reaches 1 minute, the time remaining appears in seconds.

5 Service Interval Time

Description:	The number of heater-on hours that must elapse before the service LED turns on.
Value:	0 hours (disabled) to 8736 (one year)
Resolution:	1 hour
Default Value:	500 hours
Format:	—
Use:	Set the service interval time to signal a user-defined service check or maintenance event, such as changing the filter. The service LED will turn on after the pre-set time elapses. With the melter in the scan mode, press the **Clear**/**Reset** key to turn off the service LED and reset the time.

Standard *(contd)*

6 Service LED Heater Hours **(Noneditable)**

Description: A timer indicates how many more hours the heaters need to remain on before the service LED illuminates (service required).

Value: 0 hours (disabled) to 9999

Resolution: 1 hour

Default Value: 0

Format: —

Use: The service interval time (parameter 5) must be enabled before this parameter will work.

Note: Heater hours accumulate whenever the heaters LED is illuminated.

7 Motor Off Delay

Description: Determines the amount of time the motor will remain on after the switching device turns off.

Value: 0 to 360 seconds

OR

- - - - (infinite)

Resolution: seconds

Default Value: 0 seconds

Format: —

Use: This parameter functions only when a switching device (switched handheld applicator hose, footswitch, etc.) is connected to the switch receptacle.

8 Automatic Pump On

Description: Determines if the pump can be enabled before the melter is ready so that the pump will turn on automatically when the melter is ready.

Value: 0 = disabled or 1 = enabled

Resolution: —

Default Value: 1 (enabled)

Format: —

Use: If Automatic Pump On is disabled, you must press the pump key to turn the pump on when the melter is ready.

If Automatic Pump On is enabled and the pump is enabled, the pump will turn on automatically when the melter is ready.

NOTE: If Automatic Pump On is disabled (0) while the pump is running, the pump will remain on until the pump key is pressed.

10 Enable or Disable the Melter Password

Description:	Activates or deactivates the melter password. When password protection is activated, component setpoint temperatures or melter operating parameters cannot be changed until a valid password is entered using parameter 0.
Value:	0 (disabled) 1 (enabled)
Resolution:	—
Default Value:	0
Format:	—
Use:	A password must first be created using parameter 11 before it can be enabled or disabled using parameter 10.

11 Create Password

Description:	A user-defined password that prevents unauthorized changes to operating parameters or setpoint temperatures.
Value:	0 to 9999
Resolution:	1
Default Value:	5000
Format:	—
Use:	Refer to Section 4, *Operation, Entering the Melter Password*. **NOTE:** When the password is created and enabled, parameter 10 will not appear again in the right display until the password is entered.

12 Change Hose 1 Output to Electric Applicator Activation

Description:	Changes the proportioned 240 VAC current that is provided to the hose 1 heater to a switched 240 VAC current that is used to activate a manifold-mounted electric applicator.
Value:	0 (disabled) 1 (enabled)
Resolution:	—
Default Value:	0 (disabled)
Format:	—
Use:	Use only when a Nordson manifold-mounted electric applicator is installed and a switching device is connected to the melter's switch receptacle. Refer to the electric applicator manual for information on mounting and using the applicator.

Standard *(contd)*

13 Change Hose 2 Output to Electric Applicator Activation

Description:	Changes the proportioned 240 VAC current that is provided to the hose 1 heater to a switched 240 VAC current that is used to activate a manifold-mounted electric applicator.
Value:	0 (disabled) 1 (enabled)
Resolution:	—
Default Value:	0 (disabled)
Format:	—
Use:	Use only when a Nordson manifold-mounted electric applicator is installed and a switching device is connected to the melter's switch receptacle. Refer to the electric applicator manual for information on mounting and using the applicator.

14 External Communications Lock-out

Description:	Used as a safety feature when performing maintenance on the melter. Prevents external control of the melter through standard or optional inputs/outputs or network communications (optional)
Value:	0 (disabled) or 1 (enabled)
Resolution:	—
Default Value:	0 (disabled
Format:	—
Use:	Set parameter to 1 (enabled) before performing any maintenance on the melter. When enabled, all external control of the melter stops until the parameter is once again set to 0 (disabled).

Pressure Control

15 Pressure Setpoint

Description: Used to set the percentage of maximum output pressure (from 0–100 percent).

Value: 0 to 100 (percent)

Resolution: —

Default Value: 0 (disabled)

Format: —

Use: This parameter is available only when the optional analog input/output (I/O) board is installed on the melter. Refer to Section 7, *Parts*, for the I/O board kit part number. The pressure is displayed after the last applicator temperature: the left display shows a P (for pressure) and the right display shows the pressure reading.

16 Over Pressure Setpoint

Description: If the pressure in the system exceeds the value of this setting, an over-pressure alarm will occur.

Value: 0 to 50 (percent) above the pressure setpoint (parameter 15)

Resolution: —

Default Value: 0

Format: —

Use: This parameter is available only when the optional analog I/O board is installed on the melter. Refer to Section 7, *Parts*, for the I/O board kit part number.

17 Under Pressure Setpoint

Description: If the pressure in the system drops below the value of this setting, an under-pressure alarm will occur.

Value: 0 to 50 (percent) below the pressure setpoint (parameter 15)

Resolution: —

Default Value: 0

Format: —

Use: This parameter is available only when the optional analog I/O board is installed on the melter. Refer to Section 7, *Parts*, for the I/O board kit part number.

Temperature Control

20 Temperature Units

Description:	Sets the units for temperature display.
Value:	C (degrees Celsius) or F (degrees Fahrenheit)
Resolution:	1 degree
Default Value:	C
Format:	—
Use:	—

21 Over Temperature Delta

Description:	The number of degrees that the temperature of any component can increase over its assigned setpoint temperature before an over temperature fault (F3) will occur.
Value:	5 °C (10 °F) to 60 °C (110 °F)
Resolution:	1°C 1°F
Default Value:	15 °C (25 °F)
Format:	—
Use:	—

22 Under Temperature Delta

Description:	The number of degrees that the temperature of any component can decrease from its setpoint temperature before an under temperature fault (F2) occurs.
Value:	5 °C (10 °F) to 60 °C (110 °F)
Resolution:	1°C 1°F
Default Value:	25 °C (50 °F)
Format:	—
Use:	—

23 Standby Delta

Description: The number of degrees by which all heated components will be decreased when the applicator is placed into the standby mode.

Value: 5 °C to 190 °C (10 °F to 350 °F)

Resolution: 1 °C
1 °F

Default Value: 50 °C (100 °F)

Format: —

Use: A standby delta should be selected that results in a balance between melter energy savings during periods of inactivity, the amount of time and energy required to bring the melter back up to setpoint temperature, and a temperature at which the hot melt can be held in the tank for extended periods of time without charring. Refer to Section 4, *Operation, Using Melter Function Keys*.

NOTE: The standby delta does not affect the under temperature delta (parameter 22).

24 Automatic Standby Timeout

Description: The amount of time that must elapse after the last signal (applicator driver) is sent to input 1 before the melter will enter the standby mode. The automatic standby timeout feature saves energy by allowing the melter to automatically go into the standby mode if the melter detects that the applicators are no longer firing.

Value: 0 to 1440 minutes (24 hours)

Resolution: 1 minute

Default Value: 0 (disabled)

Format: —

Use: 1. Change parameter 23 if required.

2. Set the control option for parameter 30 (input 1) to option 10 (automatic standby)

NOTE: Only enable parameter 24 when a 24 VDC signal voltage is connected to input 1. If there is no voltage on the input contacts when the melter is ready, the melter will enter the standby mode after the automatic standby time.

25 Automatic Heaters Off Time

Description: The amount of time that must elapse after the automatic standby time elapses (parameter 24) before the heaters turn off.

Value: 0 to 1440 minutes (24 hours)

Resolution: 1 minute

Default Value: 0 (disabled)

Format: —

Use: Set parameter 24 (automatic standby timeout) to the desired value before setting parameter 25.

Temperature Control *(contd)*

26 Manual Standby Time

Description: The amount of time that the melter will remain in the standby mode after the standby key is pressed.

Value: 0 to 180 minutes

Resolution: 1 minute

Default Value: 0

Format: —

Use: Set the standby time when you want the operator to be able to place the melter into the standby mode for a limited period of time (break, lunch, etc.). When manual standby is enabled (value greater than 0 minutes), the standby LED blinks.

Set the standby delta (parameter 23) to the desired value before setting parameter 26.

Note: When a time value equal to or greater than 1 minute is entered, the standby LED will flash to indicate that the manual standby timer is counting down.

27 Hose Standby Delta

Description: The number of degrees by which all heated hoses will be decreased when the applicator is placed into the standby mode.

Value: 1 °C to 190 °C (1 °F to 350 °F)

Resolution: 1 °C
1 °F

Default Value: 0

Format: —

Use: This parameter functions like parameter 23 except when it is set to 0, in which case it reverts to the setting for parameter 23.

NOTE: The standby delta does not affect the under temperature delta (parameter 22).

28 Applicator Standby Delta

Description: The number of degrees by which all heated applicators will be decreased when the applicator is placed into the standby mode.

Value: 1 °C to 190 °C (1 °F to 350 °F)

Resolution: 1 °C
1 °F

Default Value: 0

Format: —

Use: This parameter functions like parameter 23 except when it is set to 0, in which case it reverts to the setting for parameter 23.

NOTE: The standby delta does not affect the under temperature delta (parameter 22).

29 Internal Zone Temperature Offset

Description:	The difference in the number of degrees by which the melter's internal zones will operate. If this parameter is used, the primary internal zone will operate at a lower temperature than the secondary internal zone as determined by the value of this parameter.
Value:	0 °C to -15 °C (0 °F to -30 °F)
Resolution:	1 °C 1 °F
Default Value:	0
Format:	—
Use:	Melter internal zones are designated as follows: DuraBlue D10/D16: primary=tank; secondary=pump DuraBlue D4L/D10L/D16L: primary=tank; secondary=pump AltaBlue TT: primary=tank; secondary=pump DuraBlue 25/50/100: primary=grid; secondary=reservoir AltaBlue 15/30/50/100: primary=grid; secondary=reservoir DuraDrum: primary=platen; secondary=pump

Input Setup

30 Standard Input 1

Description: Control options that determine the function of input 1.

Value:
0 – Input Disabled
1 – Standby On/Off
2 – Heaters On/Off
3 – Motor Enable/Disable
4 – Hose/Applicator 1 Enable/Disable
5 – Hose/Applicator 2 Enable/Disable
6 – Hose/Applicator 3 Enable/Disable
7 – Hose/Applicator 4 Enable/Disable
8 – Hose/Applicator 5 Enable/Disable
9 – Hose/Applicator 6 Enable/Disable
10 – *Automatic standby*
11 – Motor 2 Enable/Disable (DuraBlue D50 and D100 melters only)
13 – Automatic Fill Timer 1
14 – Automatic Fill Timer 2 (DuraBlue D50 and D100 melters only)

Resolution: 1

Default Value: 10

Format: —

Use: Multiple inputs can be set to the same input value. After one or more inputs that have the same input value are energized, the input functionality will not be considered inactive (off) until all of the inputs with the same input value are de-energized (Multiple inputs set to the same input value are logical ORed.).

NOTE: Parameter 78, *Automatic Fill Timer*, must be set to a value of 1 or greater in order to use option 13 or 14. Output option 6, *Alert*, can be used to signal when the Automatic Fill Timer expires.

31 Standard Input 2

Description: Control options that determine the function of input 2.

Value:
0 – Input Disabled
1 – Standby On/Off
2 – Heaters On/Off
3 – Motor Enable/Disable
4 – Hose/Applicator 1 Enable/Disable
5 – Hose/Applicator 2 Enable/Disable
6 – Hose/Applicator 3 Enable/Disable
7 – Hose/Applicator 4 Enable/Disable
8 – Hose/Applicator 5 Enable/Disable
9 – Hose/Applicator 6 Enable/Disable
11 – Motor 2 Enable/Disable (DuraBlue D50 and D100 melters only)
13 – Automatic Fill Timer 1
14 – Automatic Fill Timer 2 (DuraBlue D50 and D100 melters only)

Resolution: 1

Default Value: 1

Format: —

Use: Multiple inputs can be set to the same input value. After one or more inputs that have the same input value are energized, the input functionality will not be considered inactive (off) until all of the inputs with the same input value are de-energized (Multiple inputs set to the same input value are logical ORed.).

NOTE: Parameter 78, *Automatic Fill Timer*, must be set to a value of 1 or greater in order to use option 13 or 14. Output option 6, *Alert*, can be used to signal when the Automatic Fill Timer expires.

32 Standard Input 3

Description: Control options that determine the function of input 3.

Value:
0 – Input Disabled
1 – Standby On/Off
2 – Heaters On/Off
3 – Motor Enable/Disable
4 – Hose/Applicator 1 Enable/Disable
5 – Hose/Applicator 2 Enable/Disable
6 – Hose/Applicator 3 Enable/Disable
7 – Hose/Applicator 4 Enable/Disable
8 – Hose/Applicator 5 Enable/Disable
9 – Hose/Applicator 6 Enable/Disable
11 – Motor 2 Enable/Disable (DuraBlue D50 and D100 melters only)
13 – Automatic Fill Timer 1
14 – Automatic Fill Timer 2 (DuraBlue D50 and D100 melters only)

Resolution: 1

Default Value: 2

Format: —

Use: Multiple inputs can be set to the same input value. After one or more inputs that have the same input value are energized, the input functionality will not be considered inactive (off) until all of the inputs with the same input value are de-energized (Multiple inputs set to the same input value are logical ORed.).

NOTE: Parameter 78, *Automatic Fill Timer*, must be set to a value of 1 or greater in order to use option 13 or 14. Output option 6, *Alert*, can be used to signal when the Automatic Fill Timer expires.

33 Standard Input 4

Description: Control options that determine the function of input 4.

Value:
0 – Input Disabled
1 – Standby On/Off
2 – Heaters On/Off
3 – Motor Enable/Disable
4 – Hose/Applicator 1 Enable/Disable
5 – Hose/Applicator 2 Enable/Disable
6 – Hose/Applicator 3 Enable/Disable
7 – Hose/Applicator 4 Enable/Disable
8 – Hose/Applicator 5 Enable/Disable
9 – Hose/Applicator 6 Enable/Disable
11 – Motor 2 Enable/Disable (DuraBlue D50 and D100 melters only)
13 – Automatic Fill Timer 1
14 – Automatic Fill Timer 2 (DuraBlue D50 and D100 melters only)

Resolution: 1

Default Value: 4

Format: —

Use: Multiple inputs can be set to the same input value. After one or more inputs that have the same input value are energized, the input functionality will not be considered inactive (off) until all of the inputs with the same input value are de-energized (Multiple inputs set to the same input value are logical ORed.).

NOTE: Parameter 78, *Automatic Fill Timer*, must be set to a value of 1 or greater in order to use option 13 or 14. Output option 6, *Alert*, can be used to signal when the Automatic Fill Timer expires.

Input Setup *(contd)*

34 – 35 Optional Inputs 5 and 6

Description: Control options that determine the function of two of the optional inputs provided when either the optional I/O expansion card (digital) or the analog I/O board is installed on the CPU board.

Value:
0 – Input Disabled
1 – Standby On/Off
2 – Heaters On/Off
3 – Motor Enable/Disable
4 – Hose/Applicator 1 Enable/Disable
5 – Hose/Applicator 2 Enable/Disable
6 – Hose/Applicator 3 Enable/Disable
7 – Hose/Applicator 4 Enable/Disable
8 – Hose/Applicator 5 Enable/Disable
9 – Hose/Applicator 6 Enable/Disable
11 – Motor 2 Enable/Disable (DuraBlue D50 and D100 melters only)
13 – Automatic Fill Timer 1
14 – Automatic Fill Timer 2 (DuraBlue D50 and D100 melters only)

Resolution: 1

Default Value: 0 (disabled)

Format: —

Use: Multiple inputs can be set to the same input value. After one or more inputs that have the same input value are energized, the input functionality will not be considered inactive (off) until all of the inputs with the same input value are de-energized (Multiple inputs set to the same input value are logical ORed.).

NOTE: Parameter 78, *Automatic Fill Timer*, must be set to a value of 1 or greater in order to use option 13 or 14. Output option 6, *Alert*, can be used to signal when the Automatic Fill Timer expires.

36 - 39 Optional Inputs 7, 8, 9, and 10

Description: Control options that determine the function of four of the optional inputs provided when the optional I/O expansion card (digital) is installed on the CPU board.

Value:
0 – Input Disabled
1 – Standby On/Off
2 – Heaters On/Off
3 – Motor Enable/Disable
4 – Hose/Applicator 1 Enable/Disable
5 – Hose/Applicator 2 Enable/Disable
6 – Hose/Applicator 3 Enable/Disable
7 – Hose/Applicator 4 Enable/Disable
8 – Hose/Applicator 5 Enable/Disable
9 – Hose/Applicator 6 Enable/Disable
11 – Motor 2 Enable/Disable (DuraBlue D50 and D100 melters only)
13 – Automatic Fill Timer 1
14 – Automatic Fill Timer 2 (DuraBlue D50 and D100 melters only)

Resolution: 1

Default Value: 0 (disabled)

Format: —

Use: Multiple inputs can be set to the same input value. After one or more inputs that have the same input value are energized, the input functionality will not be considered inactive (off) until all of the inputs with the same input value are de-energized (Multiple inputs set to the same input value are logical ORed.).

NOTE: Parameter 78, *Automatic Fill Timer*, must be set to a value of 1 or greater in order to use option 13 or 14. Output option 6, *Alert*, can be used to signal when the Automatic Fill Timer expires.

Output Setup

40 - 42 Standard Outputs 1, 2, and 3

Description: Determines the function of the output.

Value:
0 = Output Disabled
1 = Ready
2 = Ready and motor is on
3 = Fault
4 = Low level
5 = Service LED is on
6 = Alert (Potential fault)

Resolution: 1

Default Value:
Output 1 = 1
Output 2 = 3
Output 3 = 4

Format: —

Use: Refer to *Installing Melter Outputs* in Section 3, *Installation*, for information on setting up outputs.

When control option 6, *Alert* is selected, the output is active whenever the melter enters the two minute fault monitoring period. If the potential fault condition clears before the end of the two minute period, the output signal ends. Refer to Section 4, *Operation, Monitor Melter Faults*, for information about fault monitoring.

43 Optional Output 4

Description: Control options that determine the function of one of the optional outputs provided when either the optional I/O expansion card (digital) or the I/O analog board is installed on the CPU board.

Value:
0 = Output Disabled
1 = Ready
2 = Ready and motor is on
3 = Fault
4 = Low level
5 = Service LED is on
6 = Alert (Potential fault)

Resolution: 1

Default Value: 0 (all optional outputs)

Format: —

Use: Refer to the instruction sheet provided with the optional I/O expansion card or analog I/O board for information about wiring and setting up the optional outputs.

When control option 6, *Alert* is selected, the output is active whenever the melter enters the two minute fault monitoring period. If the potential fault condition clears before the end of the two minute period, the output signal ends. Refer to Section 4, *Operation, Monitor Melter Faults*, for information about fault monitoring.

44 - 46 Optional Outputs 5, 6, and 7

Description: Control options that determine the function of three of the optional outputs provided when the optional I/O expansion card (digital) is installed on the CPU board.

Value:
0 = Output Disabled
1 = Ready
2 = Ready and motor is on
3 = Fault
4 = Low level
5 = Service LED is on
6 = Alert (Potential fault)

Resolution: 1

Default Value: 0 (all optional outputs)

Format: —

Use: Refer to the instruction sheet provided with the optional I/O expansion card for information about wiring and setting up the optional outputs.

When control option 6, *Alert* is selected, the output is active whenever the melter enters the two minute fault monitoring period. If the potential fault condition clears before the end of the two minute period, the output signal ends. Refer to Section 4, *Operation, Monitor Melter Faults*, for information about fault monitoring.

Seven-Day Clock

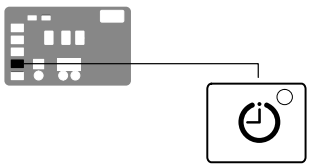
Before setting up the clock, refer to *Using Melter Function Keys* in Section 4, *Operation*, to familiarize yourself with the function and use of the clock feature.

If you are unfamiliar with the procedure for accessing and editing operating parameters, refer to Section 3, *Installation, Setting Up the Melter*.

To set the clock

Refer to the examples on the next page.

1. Use parameter 50 to select the current day of the week.
2. Use parameter 51 to set the current time of day.
3. Create schedule 1 by:
   a. Setting parameters 55 and 56 to the time of the day that the heaters should turn on and off.
   b. Setting parameters 57 and 58 to the time of the day that the melter should enter and exit the standby mode.
4. Using parameters 60 through 68, create schedules 2 and 3 by repeating step 3.
5. Use parameters 71 through 77 to assign which of the four schedules should be used on each day of the week. Up to three schedules may be assigned each day (to support three work shifts). Each of the eight control options (0 to 7) that is available in parameters 71 through 77 assigns a different combination of the three schedules. Option 0 is used hold the melter in the state dictated by the last clock transition until the next clock transition occurs.



Seven-day clock key

6. Press the **Clock** key.

In order for the clock to operate continuously throughout the week, a valid schedule must be assigned to every day of the week (parameters 71 through 77).

To prevent unintentional activation of the clock the default setting for parameters 71 through 77 is schedule 0, which has no time values assigned to it. With the default set to schedule 0, unintentionally pressing the clock key will have no affect on the melter.

Example 1

To turn the heaters on at 0600 and turn them off at 0015 every day of the week:

Par 55 = 0600
Par 56 = 0015
Par 60 = - - - -
Par 61 = - - - -
Par 71 through 77 = 1

Example 2

To turn the heaters on at 0700 and off at 1700 Monday through Friday, and turn the heaters off Saturday and Sunday:

Par 55 = 0700
Par 56 = 1700
Par 57 = - - - -
Par 58 = - - - -
Par 71 through 75 = 1
Par 76 and 77 = 0

Example 3

To turn the heaters on at 0600 each morning, go into standby for lunch at 1130, come out of standby after lunch at 1230, and turn the heaters off at 1600 at the end of the day, every day of the week:

Par 55 = 0600
Par 56 = 1600
Par 57 = 1130
Par 58 = 1230
Par 71 through 75 = 1
Par 71 and 77 = 1

Seven-Day Clock *(contd)*

50 Current Day

Description:	Used to set the current day of the week.
Value:	1 to 7 (1 = Monday, 2 = Tuesday, etc.)
Resolution:	1
Default Value:	—
Format:	—
Use:	Refer to Section 4, *Operation, Using Melter Function Keys*, for information about the use and affects of the seven-day clock feature.

51 Current Hour

Description:	Used to set the local time of the day.
Value:	0000 to 2359 (European time format)
Resolution:	1 minute
Default Value:	(Time set at factory)
Format:	*Hours, Hour: Minute, Minute*
Use:	This setting only needs to be made once for all daily schedules

55 Schedule 1 Heaters On

Description:	Used to set the time that the clock will turn on the heaters during schedule 1.
Value:	0000 to 2359, - - - -
Resolution:	1 minute
Default Value:	0600
Format:	*Hours, Hour: Minute, Minute*
Use:	Set the desired time for the heaters to turn on. To disable this parameter, set the parameter's value to "- - - -" by simultaneously pressing both of the right-display scroll keys.

56 Schedule 1 Heaters Off

Description:	Used to set the time that the clock will turn off the heaters during schedule 1.
Value:	0000 to 2359, - - - -
Resolution:	1 minute
Default Value:	1700
Format:	*Hours, Hour: Minute, Minute*
Use:	To disable this parameter, set the parameter's value to "- - - -" by simultaneously pressing both of the right-display scroll keys.

57 Schedule 1 Enter Standby

Description: Used to set the time that the melter will enter the standby mode during schedule 1.

Value: 0000 to 2359, - - - -

Resolution: 1 minute

Default Value: - - - -

Format: *Hour, Hour: Minute, Minute*

Use: Set the time that the applicator will enter the standby mode during schedule 1.

To disable this parameter, set the parameter's value to "- - - -" by simultaneously pressing both of the right-display scroll keys.

Note: Do not set an enter standby time that is outside of the time period defined by the schedule's heater on and off time. The melter cannot enter the standby mode when the heaters are off.

58 Schedule 1 Exit Standby

Description: Used to set the time that the melter will exit the standby mode during schedule 1.

Value: 0000 to 2359, - - - -

Resolution: 1 minute

Default Value: - - - -

Format: *Hour, Hour: Minute, Minute*

Use: Set the time that the applicator will exit the standby mode during schedule 1.

To disable this parameter, set the parameter's value to "- - - -" by simultaneously pressing both of the right-display scroll keys.

Note: Do not set an exit standby time that is outside of the time period defined by the schedule's heater on and off time. The melter cannot enter the standby mode when the heaters are off.

60 Schedule 2 Heaters On

Description: Used to set the time that the clock will turn on the heaters during schedule 2.

Value: 0000 to 2359, - - - -

Resolution: 1 minute

Default Value: - - - -

Format: *Hours, Hour: Minute, Minute*

Use: Set the desired time for the heaters to turn on.

To disable this parameter, set the parameter's value to "- - - -" by simultaneously pressing both of the right-display scroll keys.

Seven-Day Clock *(contd)*

61 Schedule 2 Heaters Off

Description: Used to set the time that the clock will turn off the heaters during schedule 2.

Value: 0000 to 2359, - - - -

Resolution: 1 e

Default Value: - - - -

Format: *Hours, Hour: Minute, Minute*

Use: To disable this parameter, set the parameter's value to "- - - -" by simultaneously pressing both of the right-display scroll keys.

62 Schedule 2 Enter Standby

Description: Used to set the time that the melter will enter the standby mode during schedule 2.

Value: 0000 to 2359, - - - -

Resolution: 1 minute

Default Value: - - - -

Format: *Hour, Hour: Minute, Minute*

Use: Set the time that the applicator will enter the standby mode during schedule 2.

To disable this parameter, set the parameter's value to "- - - -" by simultaneously pressing both of the right-display scroll keys.

Note: Do not set an enter standby time that is outside of the time period defined by the schedule's heater on and off time. The melter cannot enter the standby mode when the heaters are off.

63 Schedule 2 Exit Standby

Description: Used to set the time that the melter will exit the standby mode during schedule 2.

Value: 0000 to 2359, - - - -

Resolution: 1 minute

Default Value: - - - -

Format: *Hour, Hour: Minute, Minute*

Use: Set the time that the applicator will exit the standby mode during schedule 2.

To disable this parameter, set the parameter's value to "- - - -" by simultaneously pressing both of the right-display scroll keys.

Note: Do not set an exit standby time that is outside of the time period defined by the schedule's heater on and off time. The melter cannot enter the standby mode when the heaters are off.

65 Schedule 3 Heaters On

Description: Used to set the time that the clock will turn on the heaters during schedule 3.

Value: 0000 to 2359, - - - -

Resolution: 1 minute

Default Value: - - - -

Format: *Hours, Hour: Minute, Minute*

Use: Set the desired time for the heaters to turn on.

To disable this parameter, set the parameter's value to "- - - -" by simultaneously pressing both of the right-display scroll keys.

66 Schedule 3 Heaters Off

Description: Used to set the time that the clock will turn off the heaters during schedule 3.

Value: 0000 to 2359, - - - -

Resolution: 1 minute

Default Value: - - - -

Format: *Hours, Hour: Minute, Minute*

Use: To disable this parameter, set the parameter's value to "- - - -" by simultaneously pressing both of the right-display scroll keys.

67 Schedule 3 Enter Standby

Description: Used to set the time that the melter will enter the standby mode during schedule 3.

Value: 0000 to 2359, - - - -

Resolution: 1 minute

Default Value: - - - -

Format: *Hour, Hour: Minute, Minute*

Use: Set the time that the applicator will enter the standby mode during schedule 3.

To disable this parameter, set the parameter's value to "- - - -" by simultaneously pressing both of the right-display scroll keys.

Note: Do not set an enter standby time that is outside of the time period defined by the schedule's heater on and off time. The melter cannot enter the standby mode when the heaters are off.

Seven-Day Clock *(contd)*

68 Schedule 3 Exit Standby

Description: Used to set the time that the melter will exit the standby mode during schedule 3.

Value: 0000 to 2359, - - - -

Resolution: 1 minute

Default Value: - - - -

Format: *Hour, Hour: Minute, Minute*

Use: Set the time that the applicator will exit the standby mode during schedule 3.

To disable this parameter, set the parameter's value to "- - - -" by simultaneously pressing both of the right-display scroll keys.

Note: Do not set an exit standby time that is outside of the time period defined by the schedule's heater on and off time. The melter cannot enter the standby mode when the heaters are off.

71 Schedules for Monday

Description: Used to select which schedule(s) should be used on Monday.

Value: 0 – Remain at last clock transition
1 – Use just schedule 1
2 – Use just schedule 2
3 – Use just schedule 3
4 – Use schedule 1 and 2
5 – Use schedule 2 and 3
6 – Use schedule 1 and 3
7 – Use schedule 1, 2, and 3

Resolution: 1

Default Value: 0

Format: —

Use: Selects the active schedule(s) for the day.

NOTES: If the 0 schedule option is used, the heaters will not turn on again until the next scheduled heaters on time arrives.

72 Schedules for Tuesday

Description: Used to select which schedule(s) should be used on Tuesday.

Value:
0 – Remain at last clock transition
1 – Use just schedule 1
2 – Use just schedule 2
3 – Use just schedule 3
4 – Use schedule 1 and 2
5 – Use schedule 2 and 3
6 – Use schedule 1 and 3
7 – Use schedule 1, 2, and 3

Resolution: 1

Default Value: 0

Format: —

Use: Selects the active schedule(s) for the day.

NOTES: If the 0 schedule option is used, the heaters will not turn on again until the next scheduled heaters on time arrives.

73 Schedules for Wednesday

Description: Used to select which schedule(s) should be used on Wednesday.

Value:
0 – Remain at last clock transition
1 – Use just schedule 1
2 – Use just schedule 2
3 – Use just schedule 3
4 – Use schedule 1 and 2
5 – Use schedule 2 and 3
6 – Use schedule 1 and 3
7 – Use schedule 1, 2, and 3

Resolution: 1

Default Value: 0

Format: —

Use: Selects the active schedule(s) for the day.

NOTES: If the 0 schedule option is used, the heaters will not turn on again until the next scheduled heaters on time arrives.

Seven-Day Clock *(contd)*

74 Schedules for Thursday

Description: Used to select which schedule(s) should be used on Thursday.

Value:
0 – Remain at last clock transition
1 – Use just schedule 1
2 – Use just schedule 2
3 – Use just schedule 3
4 – Use schedule 1 and 2
5 – Use schedule 2 and 3
6 – Use schedule 1 and 3
7 – Use schedule 1, 2, and 3

Resolution: 1

Default Value: 0

Format: —

Use: Selects the active schedule(s) for the day.

NOTES: If the 0 schedule option is used, the heaters will not turn on again until the next scheduled heaters on time arrives.

75 Schedules for Friday

Description: Used to select which schedule(s) should be used on Friday.

Value:
0 – Remain at last clock transition
1 – Use just schedule 1
2 – Use just schedule 2
3 – Use just schedule 3
4 – Use schedule 1 and 2
5 – Use schedule 2 and 3
6 – Use schedule 1 and 3
7 – Use schedule 1, 2, and 3

Resolution: 1

Default Value: 0

Format: —

Use: Selects the active schedule(s) for the day.

NOTES: If the 0 schedule option is used, the heaters will not turn on again until the next scheduled heaters on time arrives.

76 Schedules for Saturday

Description: Used to select which schedule(s) should be used on Saturday.

Value:
0 – Remain at last clock transition
1 – Use just schedule 1
2 – Use just schedule 2
3 – Use just schedule 3
4 – Use schedule 1 and 2
5 – Use schedule 2 and 3
6 – Use schedule 1 and 3
7 – Use schedule 1, 2, and 3

Resolution: 1

Default Value: 0

Format: —

Use: Selects the active schedule(s) for the day.

NOTES: If the 0 schedule option is used, the heaters will not turn on again until the next scheduled heaters on time arrives.

77 Schedules for Sunday

Description: Used to select which schedule(s) should be used on Sunday.

Value:
0 – Remain at last clock transition
1 – Use just schedule 1
2 – Use just schedule 2
3 – Use just schedule 3
4 – Use schedule 1 and 2
5 – Use schedule 2 and 3
6 – Use schedule 1 and 3
7 – Use schedule 1, 2, and 3

Resolution: 1

Default Value: 0

Format: —

Use: Selects the active schedule(s) for the day.

NOTES: If the 0 schedule option is used, the heaters will not turn on again until the next scheduled heaters on time arrives.

Automatic Fill Timer

78 Automatic Fill Timer

Description:	A count-down timer that can be associated with a switch connected to an input.
Value:	0 to 90 seconds
Resolution:	1
Default Value:	0 (Disabled)
Format:	—
Use:	Used in conjunction with input control option 13 or 14. Enable output control option 6, *Alert*, to send a signal when the timer expires.

PID Selection

80-87 PID Selection for Hose/Applicator Receptacles 1, 2, 3, and 4

Description:	Used to change the preset PID selections. Use parameter 80 to select the value for hose 1, parameter 81 to select the value for applicator 1, and so on, up to hose 4/applicator 4.
Value:	0 = Hose 1 = Standard applicator 2 = Large applicator 3 = Air heater
Resolution:	—
Default Value:	0 or 1 depending on the channel type (hose or applicator)
Format:	—
Use:	Consult your Nordson representative before changing PID settings.

88 - 91 PID Selection for Hose/Applicator Receptacles 5, 6, 7, and 8 (DuraBlue D25, D50, and D100 melters only)

Description:	Used to change the preset PID selections. Use parameter 88 to select the value for hose 5, parameter 89 to select the value for applicator 5, and so on, up to hose 8/applicator 8.
Value:	0 = Hose 1 = Standard applicator 2 = Large applicator 3 = Air heater
Resolution:	—
Default Value:	0 or 1 depending on the channel type (hose or applicator)
Format:	—
Use:	Consult your Nordson representative before changing PID settings.