PURBlue™ 4 Adhesive Melter

Equipment Parts 1106413 and 1106415

Customer Product Manual
Part 1107607A
Issued 5/11

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

CE

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 and that the processing characteristics of the material will not create a hazardous environment. Refer to the Material Safety Data Sheet (MSDS) 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 MSDS for PPE requirements.
- Do not use equipment that is malfunctioning or shows signs of a potential malfunction.

Maintenance and Repair Practices

- 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 MSDS supplied with equipment cleaning compounds.

  NOTE: MSDSs 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 MSDS 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 MSDS. 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 MSDS 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...

General Safety Warnings and Cautions *(contd)*

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 should not be used with solvent-based adhesives that can create an explosive atmosphere when processed. Refer to the MSDS 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.

Continued...

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

Equipment Type	Warning or Caution
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.
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 MSDS 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 handgun at yourself or others.
- Suspend dispensing handguns 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 MSDS 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.

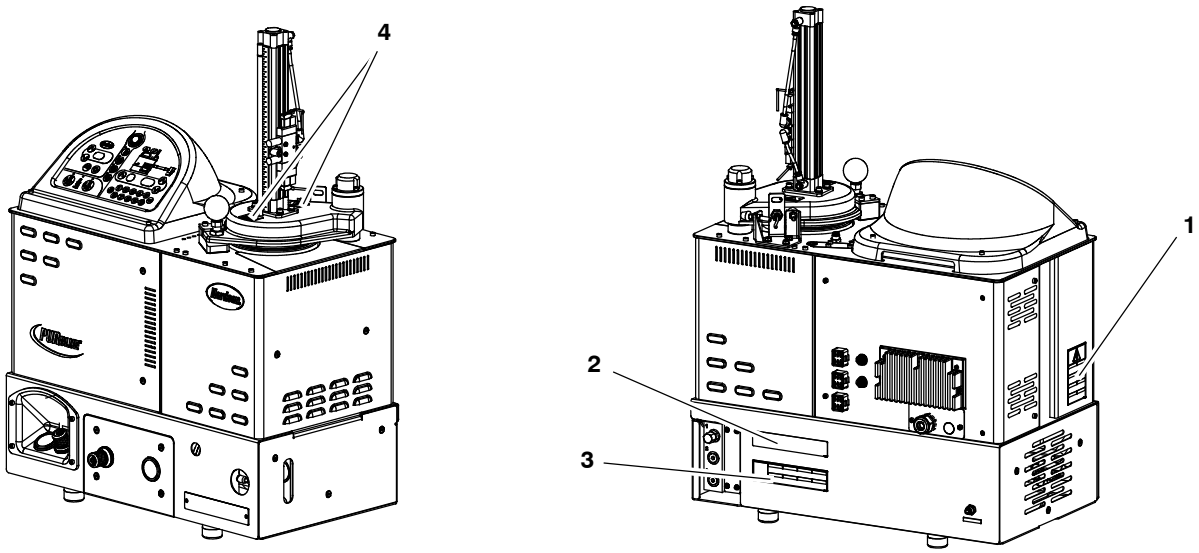


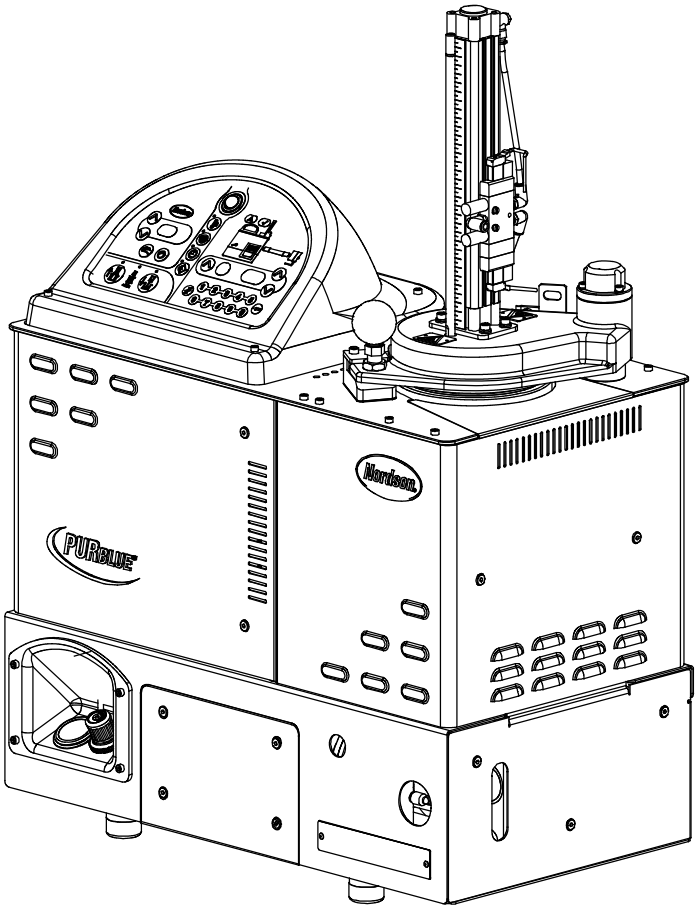
Figure 1-1 Safety labels and tags

Table 1-2Safety Labels and Tags

Item	Description
1	**WARNING:** Hazardous voltage. Disconnect all power supply connections before servicing.
2	**WARNING:** Burn hazard. Hot surfaces.
3	**WARNING:** Burn hazard. Hot adhesive. Release pressure before servicing.
4	**WARNING:** Pinch hazard.
NS	 Tag, hazardous voltage [located inside the electrical cabinet on the main board—refer to Section 7, Parts, for an illustration that shows the location of the main board]
NS: Not Shown	

Section 2
Introduction

This manual describes the installation and use of PURBlue 4 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 PURBlue 4 melter.

Online Support

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

Product Description

See Figure 2-1. Nordson PURBlue 4 adhesive melters are used in conjunction with Nordson hot melt hoses and guns to create a hot melt application system.

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

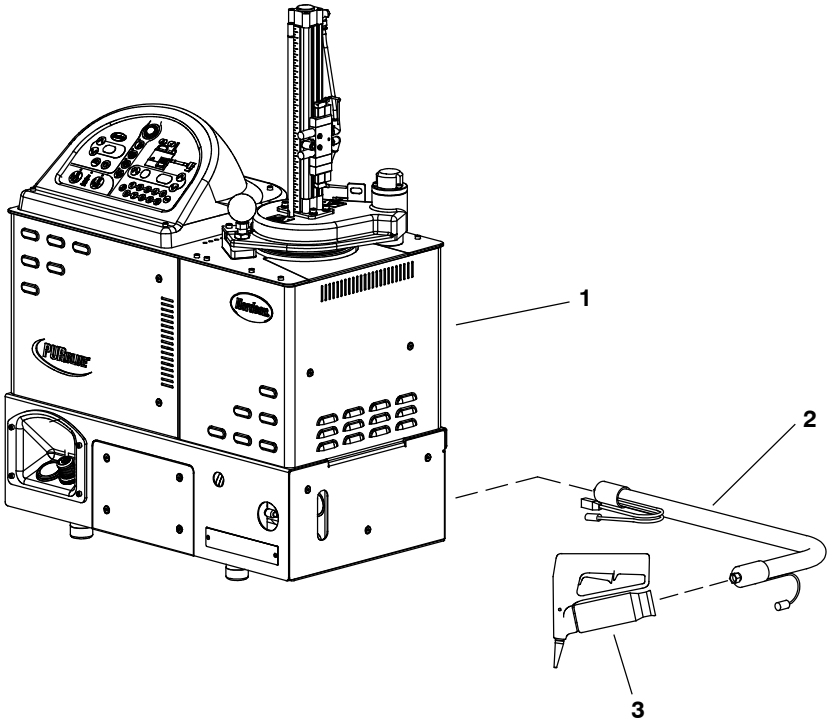


Figure 2-1 System components

1. PURBlue 4 melter
2. Hot melt hose
3. Hot melt handgun

Intended Use

PURBlue 4 melters are specifically designed to:

- Melt and pump solid-form hot melt materials in foil bags, such as polyurethane-reactive (PUR), ethylene vinyl acetate copolymer (EVA), and polyolefine (PO) adhesives, that are engineered to be liquified and extruded at temperatures at or below 125 °C (257 °F)
- Be used with compatible hot melt hoses and guns that are manufactured by Nordson Corporation
- Be used in non-explosive environments

Limitations of Use

Use PURBlue 4 melters only for the purpose for which they are designed. PURBlue 4 melters should not be used:

- to melt or pump any 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

Additional Limitations of Use for PUR Adhesives

When the maximum level of harmful substance concentration is exceeded, use a gas mask and air purifying equipment.

Melter Identification

You will need to know the configuration of your melter when requesting service or ordering spare parts and optional equipment. Refer to *Melter Part Numbers* in Section 7, *Parts*, to determine the part number and/or configuration of your melter.

Modes of Operation

PURBlue 4 melters operate in the following modes:

Automatic scan — The melter automatically checks and displays the current temperature of the tank, hoses, and guns 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.

Melt-on-demand — The melter automatically melts the amount of adhesive needed from the foil-lined slug to keep the 0.5-kg reservoir full. When the melt-on-demand sensor detects that the reservoir is not full, the grid turns on and the pneumatic cylinder applies downward force (as set by the melter air regulator) on the slug. When the melt-on-demand sensor detects that the reservoir is full, the grid turns off and the cylinder force is removed.

NOTE: To prevent unnecessary heating of PUR adhesive, the melter may enter the standby mode in the following ways:

- If the grid is **off** for too long, the control system determines that it is no longer in use and sets the system to standby. This time is determined by parameter 24, Automatic Standby Timeout.
- If the grid is **on** for too long, the control system determines that the MOD sensor has failed and sets an S1Cal condition, which places the unit in standby. This time is determined by parameter 49, PUR Timer.

Standby—The temperatures of the tank, hoses, and guns are reduced down from their operating temperature (hereafter referred to as setpoint temperature) by a preset number of degrees and the grid, which is controlled by the melt-on-demand sensor, is turned off.

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. For a list of faults and their impact, refer to *Melter Faults* in Section 6, *Troubleshooting*.

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.

Pressure Control Options

PURBlue 4 melters have four different pressure control options for maintaining maximum adhesive output pressure. When the melter is dispensing adhesive, the system hydraulic pressure is governed by the pressure drop through the manifold, hose, and applicator as affected by fluid flow rate, fluid viscosity, and nozzle size(s). However, between products (or any time the pump is turning but no adhesive is being dispensed) the pump adhesive output is being recirculated to the reservoir through a hydraulic pressure regulator that maintains the maximum hydraulic pressure. The method of maintaining this hydraulic pressure can significantly affect the adhesive application. Depending on the specific needs of an application, one of the following pressure control options will provide optimum performance:

- **Standard (X option):** A melter with this option has a spring-balanced manual pressure control valve (PCV) with which the operator can easily set the maximum pressure by adjusting the preload of the spring.

  One way this option may be used is to meter a specific amount of adhesive based on the pump rpm and displacement, in which case the PCV is set to a high value and the pump speed changes (either manually or automatically through the gear-to-line capability) based on the output requirements.

- **Pneumatic PCV with automatic control through a user supplied 4-20 mA signal (P option):** A melter with this option has a pneumatic PCV integrated with a pneumatic transducer that regulates the air pressure from 0-5 bar (0-70 psi). With this option, the maximum hydraulic pressure can easily be controlled by the user from 0-69 bar (0-1,000 psi).

- **Pneumatic PCV with flow control bypass (F option):** A melter with this option has a pneumatic PCV that is integrated with a solenoid valve. An air pressure regulator and gauge located on the drive cover assembly are used to set the air pressure to the pneumatic PCV when the solenoid is in a nonenergized state. When the solenoid is energized, the air pressure to the pneumatic PCV is switched to the air supplied to the melter, which in turn sets the system hydraulic pressure to the maximum possible. On a melter with this option, the user provides only the 24V signal—no additional air supply is required.

  This option is typically set up such that the signal to the solenoid valve is in common with the signal that opens the applicator so that when the applicator is dispensing adhesive, the PCV is set to maximum and the entire output of the pump is delivered through the applicator. This allows for consistent, metered adhesive application because the hydraulic pressure is consistent in both the applicator-open and applicator-closed states.

This page intentionally left blank.

Key Components

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

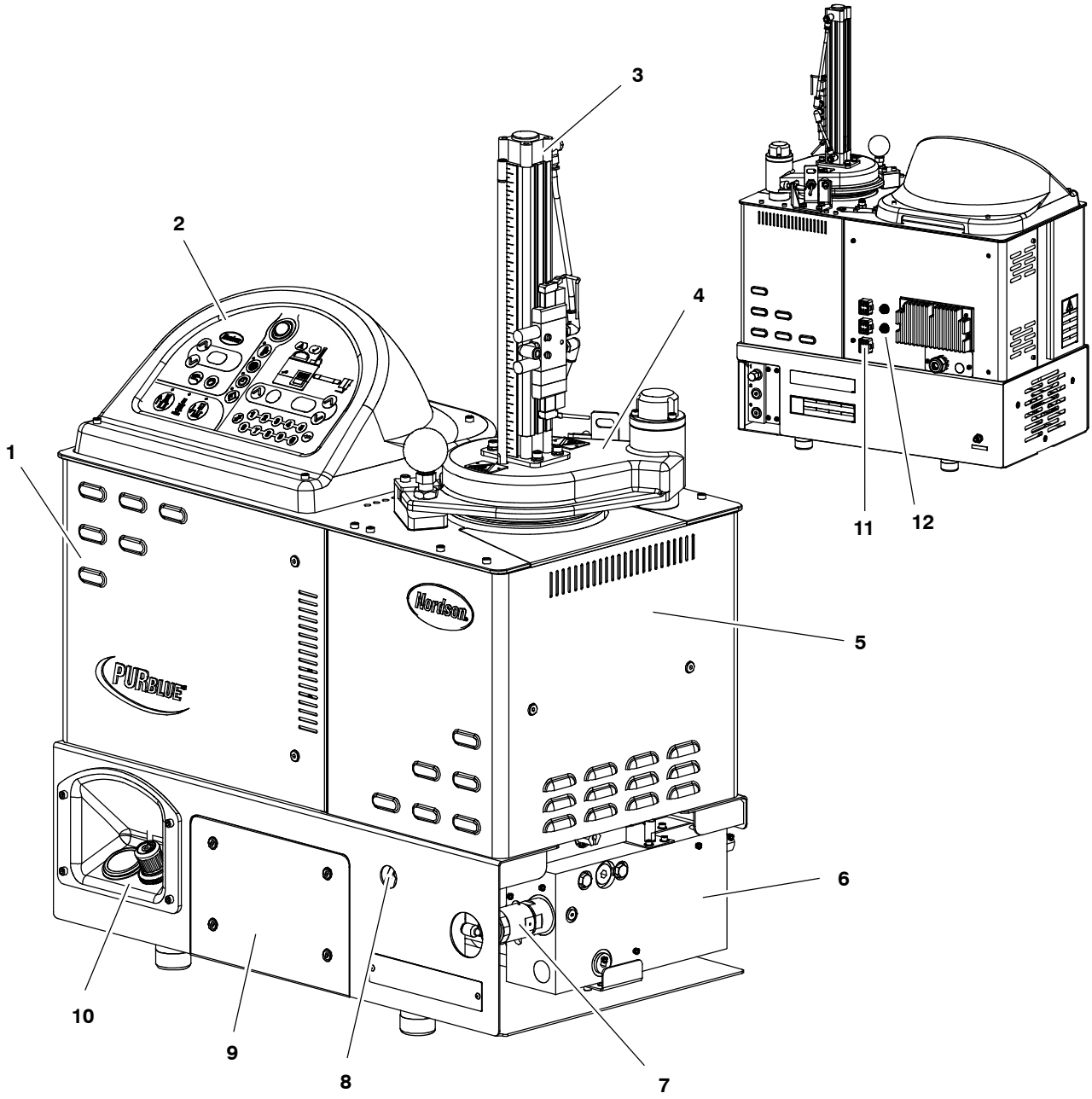


Figure 2-2 Key components

1. Electrical enclosure door
2. Control panel (see Figure 2-3)
3. Pneumatic cylinder
4. Hopper lid
5. Behind service cover—hopper, grid, and reservoir (tank) assembly
6. Drive, pump, and manifold assembly (cover removed for clarity)
7. Pressure control valve (PCV)
8. Drive removal jack screw
9. Drive cover or optional pressure control drive cover (F option drive cover not shown)
10. Piston air pressure regulator and gauge
11. Hose/gun electrical receptacles
12. Switch receptacles

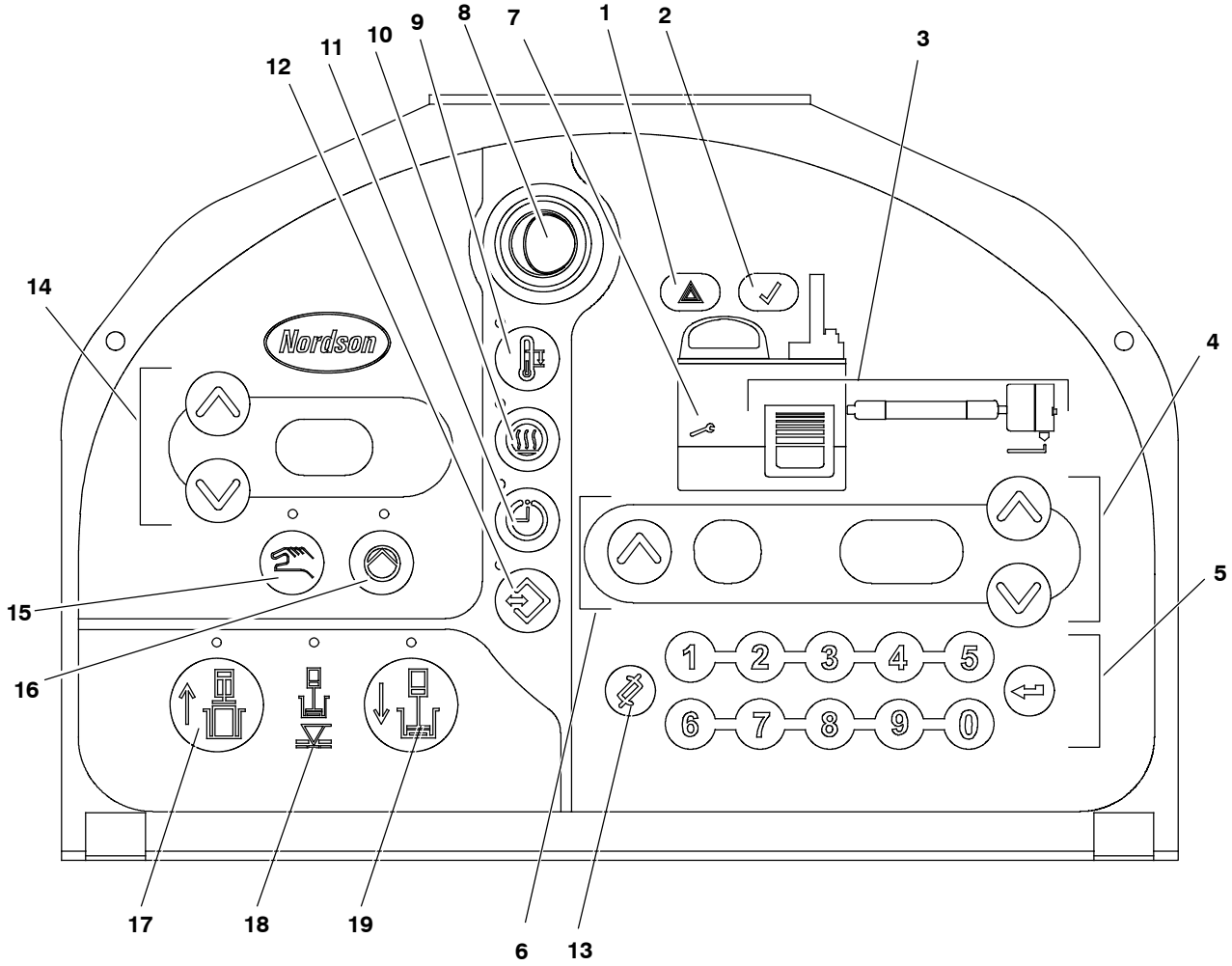


Figure 2-3 Control panel

1. Fault LED
2. Ready LED
3. Component keys/LEDs
4. Right display and scroll keys
5. Keypad
6. Left display and scroll key
7. Service LED
8. Control switch
9. Standby key
10. Heaters key/LED
11. Clock key/LED
12. Setup key/LED
13. Clear/reset key
14. Pump speed display (rpms) and arrow keys
15. Pump mode key/LED
16. Pump start/stop key/LED
17. Piston up key/LED
18. Hopper empty LED
19. Piston down key/LED

Optional Equipment

Optional equipment may be ordered to expand the functionality of PURBlue 4 melters, including, but not limited to, the following:

- **Automatic pressure control option kits** that allow the melter to automatically adjust adhesive output pressure based on production requirements.
- **Pressure gauge** that provides a manifold hydraulic pressure reading. A hose port must available to use this gauge.
- **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.
- **Footswitch** that allows remote pump activation.

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

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, 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

PURBlue 4 melters are factory-configured for each order and require only the assembly and set up tasks described in this section.

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.

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 guns.
6. Connect a compressed air supply.
7. Set up the melter to work with the manufacturing process.
8. (Optional) Install inputs and outputs.
9. Install optional equipment.
10. Set up the melter for gear-to-line operation.
11. (If used) Connect a gun driver, pattern controller, or timer.
12. Flush the melter.

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

This page intentionally left blank.

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. For all melter dimensions, refer to Section 8, *Technical Data*.

Table 3-1 Minimum Installation Clearances

Item	Description	Required Clearance
A	Clearance required between the back of the melter and the nearest object	150 mm (5.9 in.)
B	Clearance required between the front of the melter (control panel) and the nearest object in order to fully open the electrical enclosure door	252 mm (9.9 in.)
C	Minimum horizontal space required to open the electrical enclosure door	137 mm (5.4 in.)
D	Minimum horizontal space required to remove the service cover	290 mm (11.4 in.)
E	Depth of melter including service handles	678 mm (26.7 in.)
F	Minimum vertical space required for the melter if mounting feet are not used	964 mm (37.9 in.)

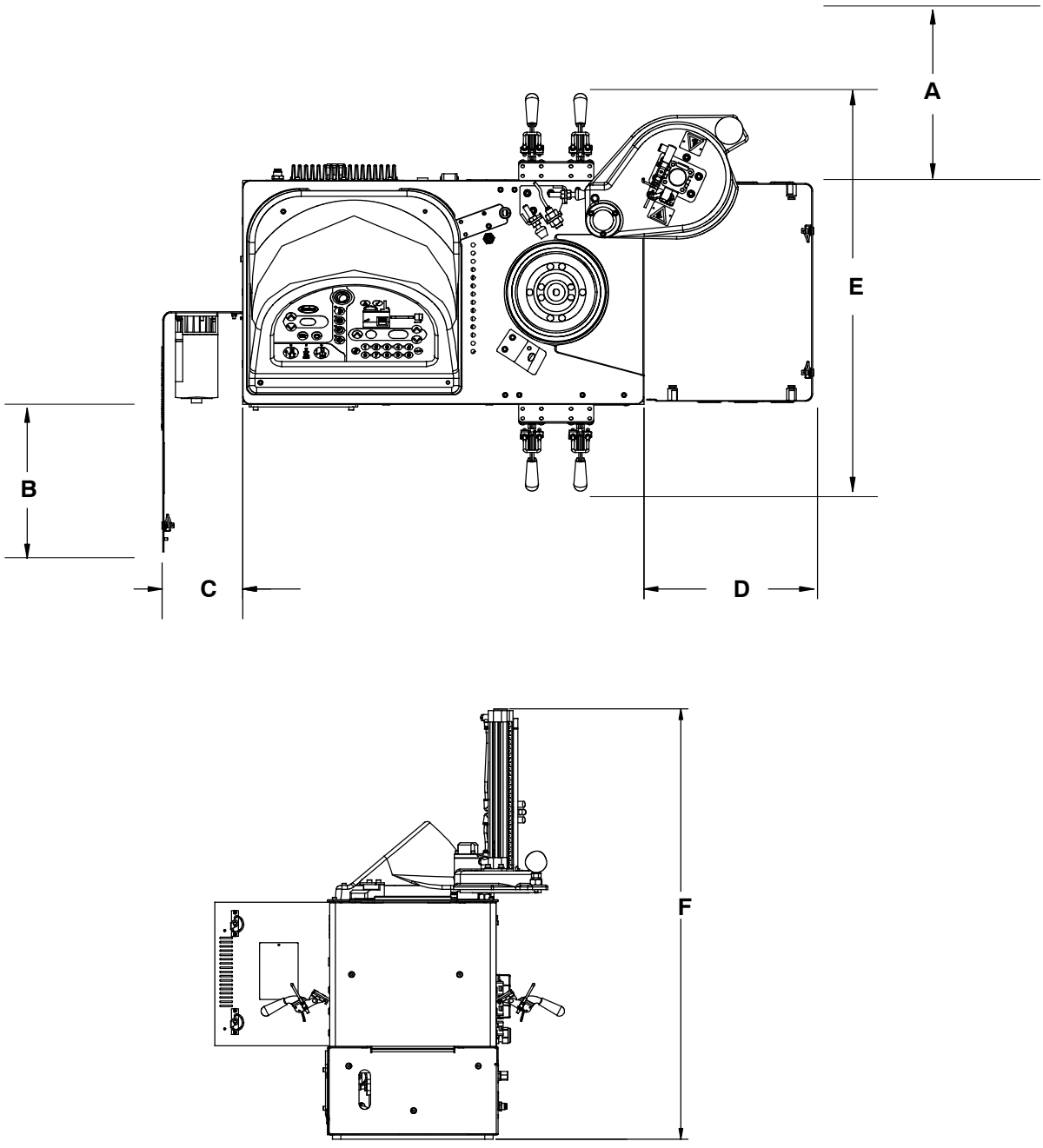


Figure 3-1 Minimum installation clearances

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 guns 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 gun 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.

Compressed Air

The melter must be connected to an air supply that is capable of providing a maximum of 6.2 bar (90 psi) of dry, nonlubricated air. The actual pressure required for the melter to support your manufacturing process will depend on such factors as the type of hot melt and gun you are using and the required dimensions of the hot melt bead.

Nordson recommends that an isolation valve be installed in the plant air supply line just before the melter.

Other Considerations

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

- The maximum distance between the melter and each gun 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 access all four sides of the melter for service.
- The melter must be installed away from areas with strong drafts or where sudden temperature changes occur.
- The melter must be installed away from areas where debris or contaminant could fall into the hopper.
- 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 10-mm machine bolts and locking hardware
- 10 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. 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.

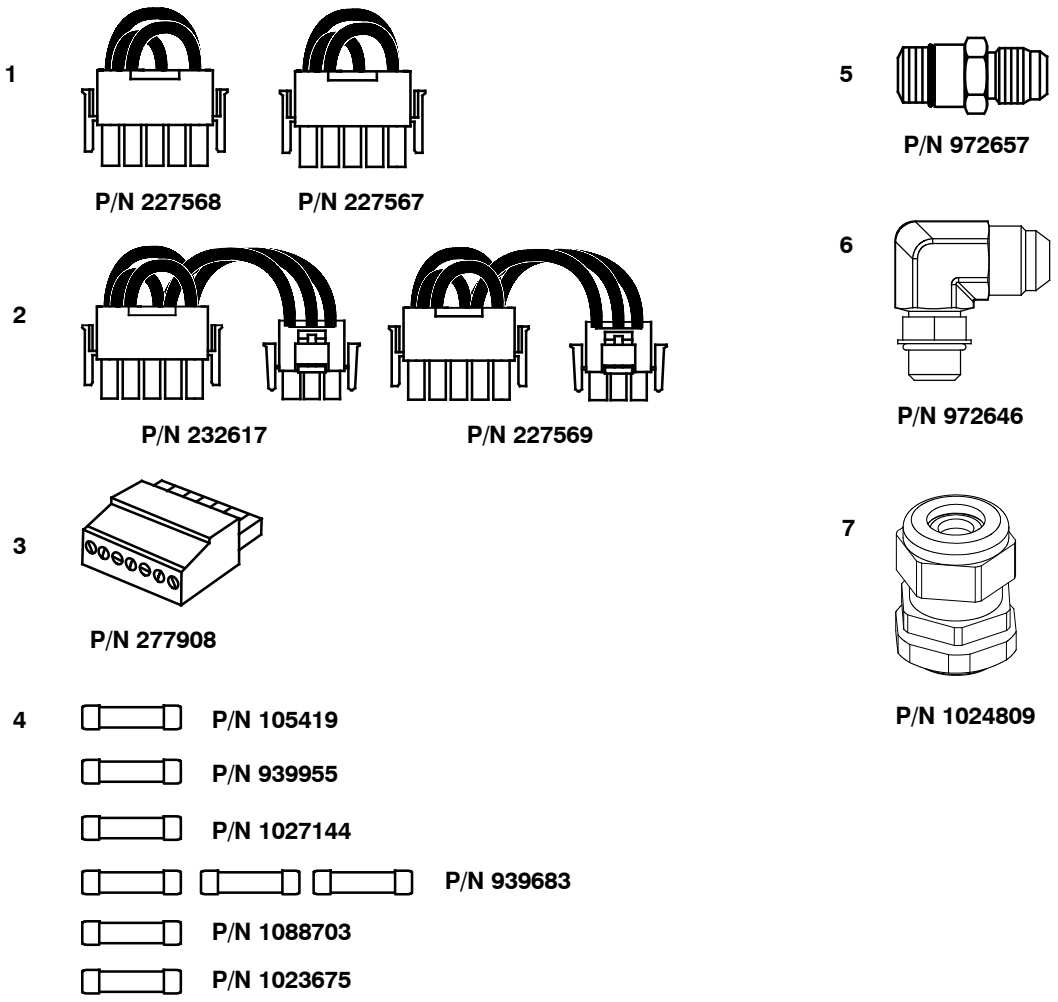
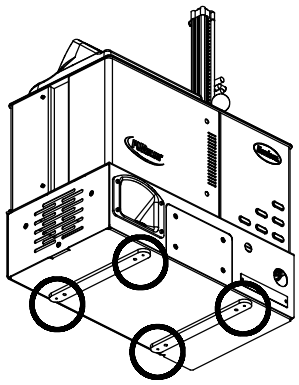


Figure 3-2 Installation kit components

1. Voltage plug (2)
2. Voltage plug with neutral (2)
3. Input/output connectors (2)
4. Spare fuses (8)
5. Straight hose fitting (1)
6. 90-degree hose fitting (1)
7. Strain relief connector (1)

Mounting the Melter



Location of the mounting holes

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 guns.

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.

To mount the melter

See Figure 3-3. Use 10-mm machine bolts and locking hardware to secure the melter mounting brackets to the mounting surface.

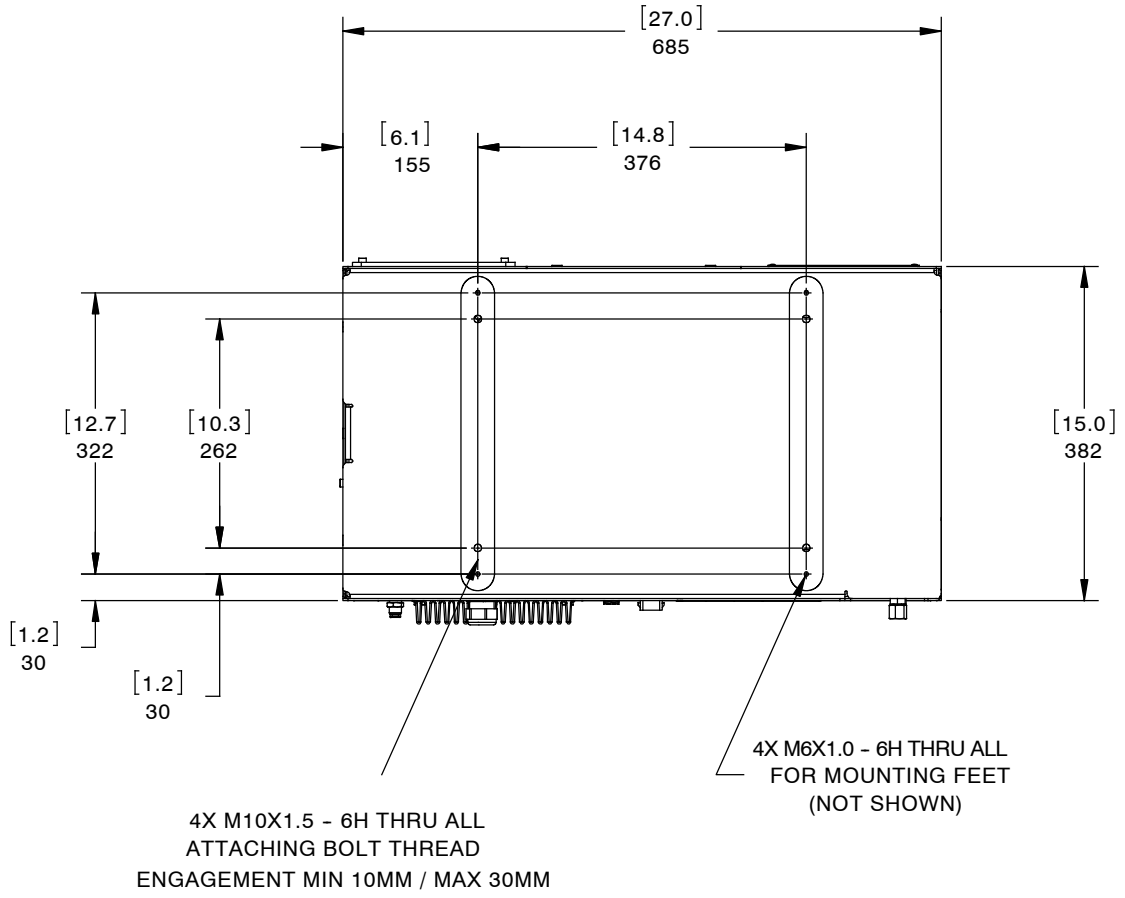


Figure 3-3 Bolt mounting pattern

Configuring the Electrical Service

PURBlue 4 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

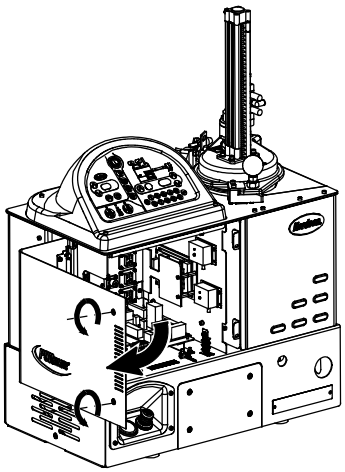
WARNING! Risk of electrocution! Install a lockable power disconnect switch between the electrical service and the melter. Failure to install or properly use the disconnect switch when servicing the melter can result in personal injury, including death.

1. Select a 10 mm^2 (8 AWG) power cable that meets applicable electrical codes and standards. The maximum amperages of PURBlue 4 melters operating at a specified voltage are shown in Table 3-2.

Table 3-2 Maximum Amperages

Model	Voltage (VAC)	Maximum Amperage
PURBlue 4, three hoses/guns	200-240, 1-phase	20-25
	200-240, 3-phase	18-22
	400/230Y, 1-phase	24
	400/230Y, 3-phase	15
NOTE: The voltage tolerance is ± 10 percent. For 200-240 VAC systems, the voltage must be 180-264 VAC.		

Configuring the Electrical Service *(contd)*



Opening the electrical enclosure

2. Open the electrical enclosure door.

See Figure 3-4.

3. Route the power cable through the back of the electrical enclosure and under the electrical box tray to terminal block XT1 using the M-32 strain relief in the ship with kit.
4. Connect each power cable lead to terminal block XT1. 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.

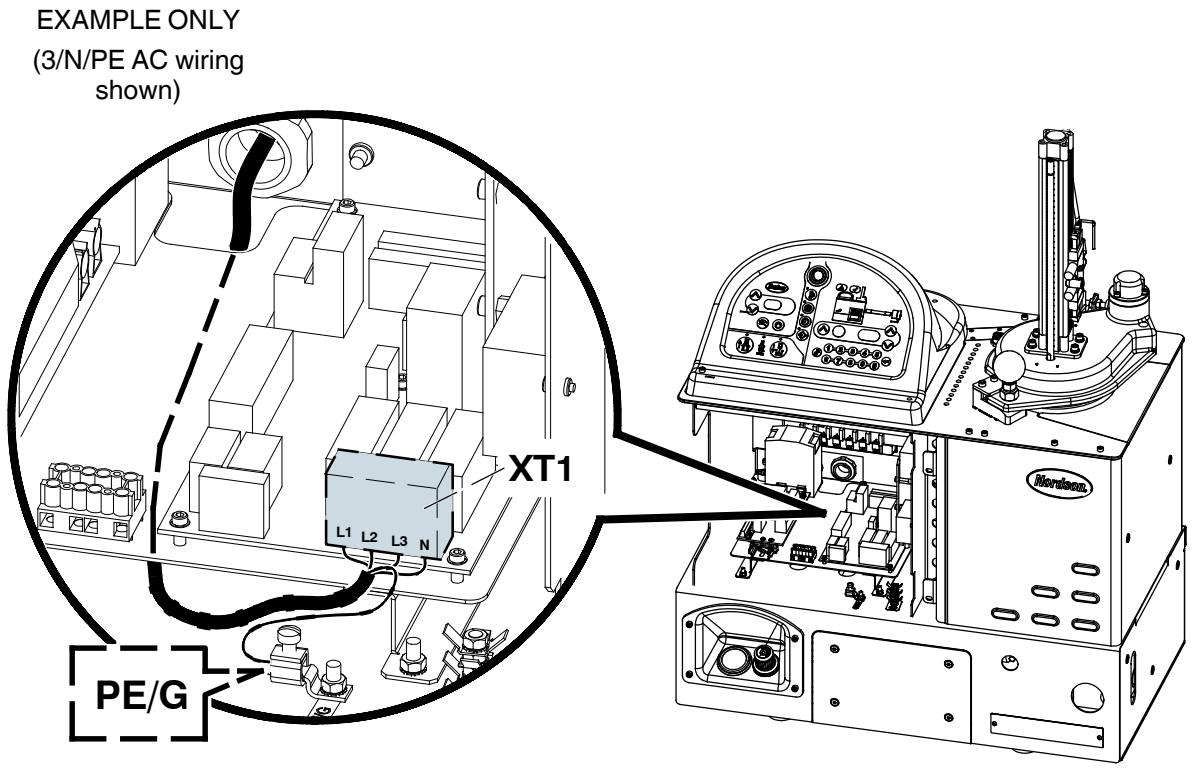
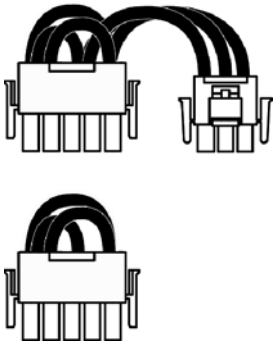


Figure 3-4 Connecting the power cable and ground lead

Table 3-3 Electrical Service Information

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
230 VAC 1-phase (2-wire service, including a neutral) (See Note A)	1/N/PE AC 200–240V	●			●	232617 Blue/Yellow
200 to 240 VAC 3-phase (3-wire service without a neutral)	3/PE AC 200–240V	●	●	●		227568 Red/Green
200 to 240 VAC 1-phase (2-wire service without a neutral)	1/PE AC 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.



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.

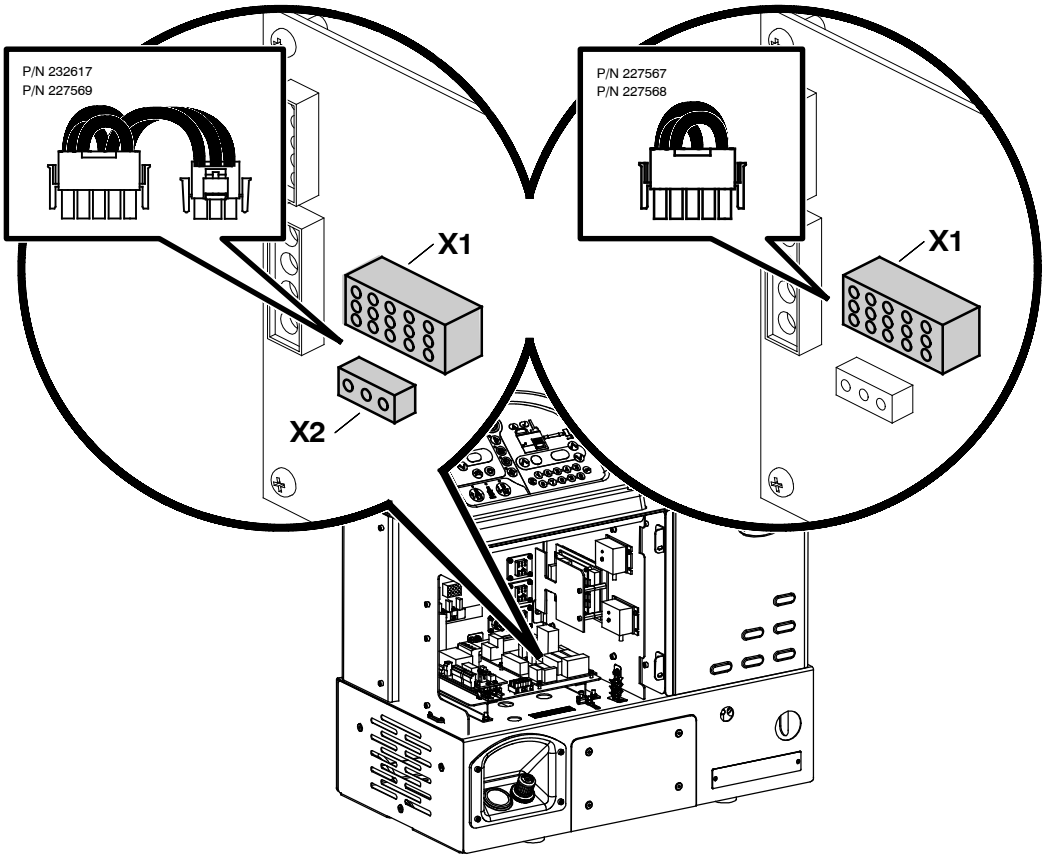


Figure 3-5 Connecting a voltage plug

This page intentionally left blank.

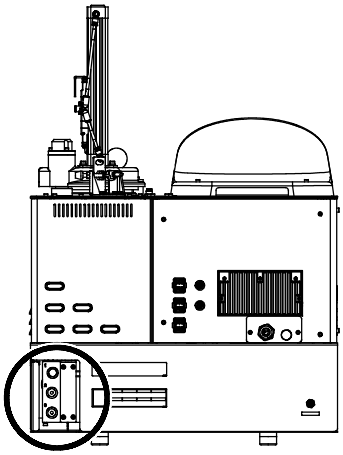
Connecting Hoses and Guns

PURBlue 4 melters use standard Nordson hoses and guns and support the connection of up to three hose/gun pairs. The hose/gun capacity of each melter is determined by the number of hose/gun receptacles on the melter. Each hose/gun receptacle supports the connection of one hose/gun pair.

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

To connect hoses

See Figure 3-6.

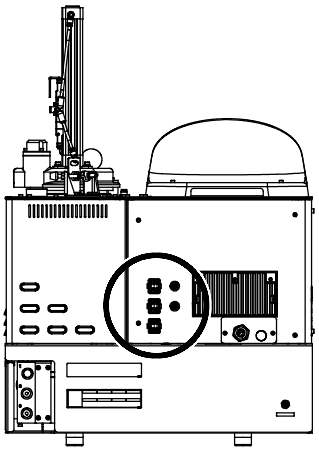


Location of hose ports

Observe the following guidelines:

- 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.
- 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 handgun hoses or footswitches to the switch receptacles on the back of the melter.

  NOTE: Only connect a switched handgun, the optional footswitch, or a cordset that is approved by Nordson Corporation to the switch receptacle.



Location of switch receptacles

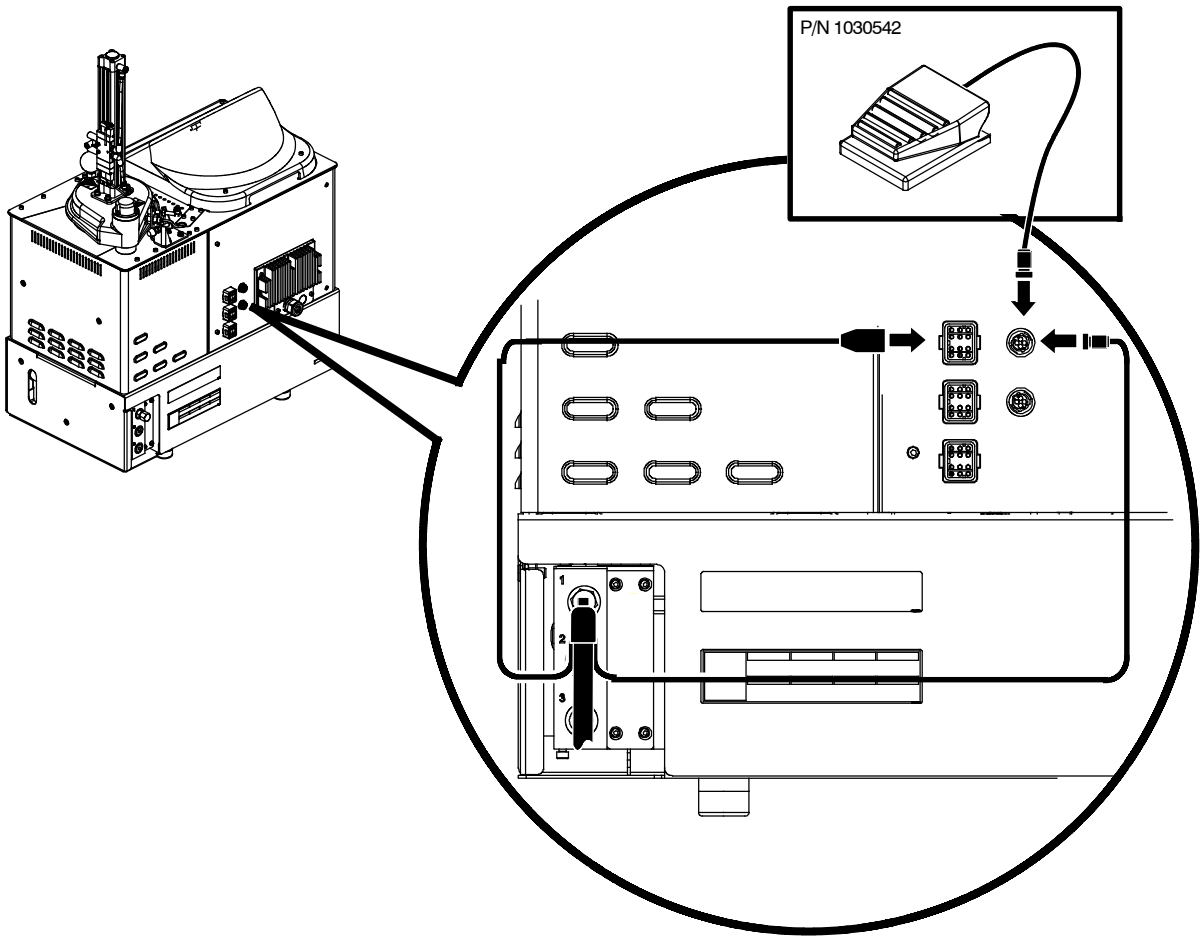


Figure 3-6 Connecting a switched handgun hose or footswitch

To connect guns

Observe the following guidelines:

- For information about choosing the most appropriate Nordson hot melt gun 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 guns.
- Refer to the user's guide that is shipped with each gun for information about installing the gun and connecting a hose to the gun.

This page intentionally left blank.

Connecting a Compressed Air Supply

To connect an air supply

See Figure 3-7.

1. Connect a regulated plant air supply to the air supply inlet (2) at 6.2 bar (90 psi) using M6 flexible tubing.
2. Open the plant air supply to the melter.
3. Turn the air regulator (1) to set the melter's operating air pressure (pressure supplied to the piston) to 2 bar (30 psi).

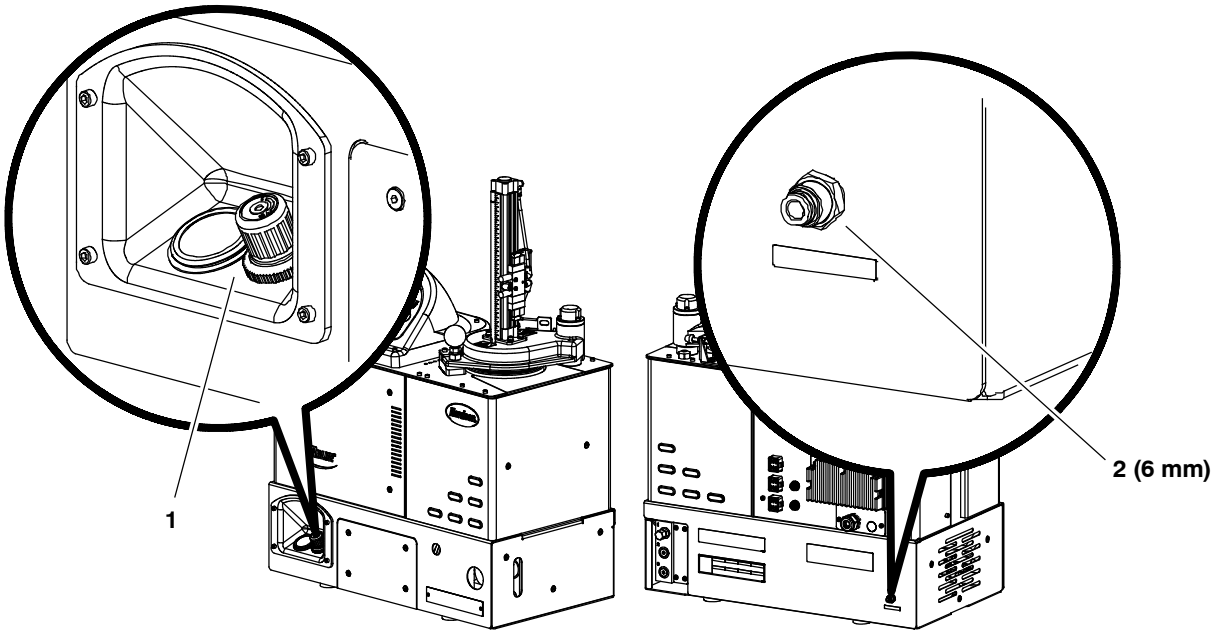


Figure 3-7 Location of the air supply input port

1. Piston air regulator and gauge
2. Air supply inlet

Connecting a Pressure Control Signal

If your melter has either the automatic pressure control option (option P) or the flow control bypass option (option F), make the electrical connections shown below. Refer to *Pressure Control Options* in Section 2, *Introduction*, for a detailed description of the pressure control options. To determine the configuration of your melter, refer to *Melter Part Numbers* in Section 7, *Parts*.

To connect wiring for the automatic pressure control option (P)

See Figure 3-8. Connect a customer-supplied 4-20 mA DC supply control signal to the I/P transducer (1) located on the inside of the drive cover assembly (2). Refer to Table 3-4 for the wiring connections.

With this pressure control option, the output pressure supplied to the pneumatic PCV (3) is automatically regulated from 0.01-5 bar (0-70 psi) when the supply pressure to the melter is a minimum of 6 bar (87 psi).

Table 3-4 I/P Transducer Connections for the Automatic Pressure Control Option

I/P Transducer Terminal Numbers	Wire Color	Signal
1	Brown	Supply power
2	White	Input signal
3	Blue	GND (common)
4	Black	Monitor output

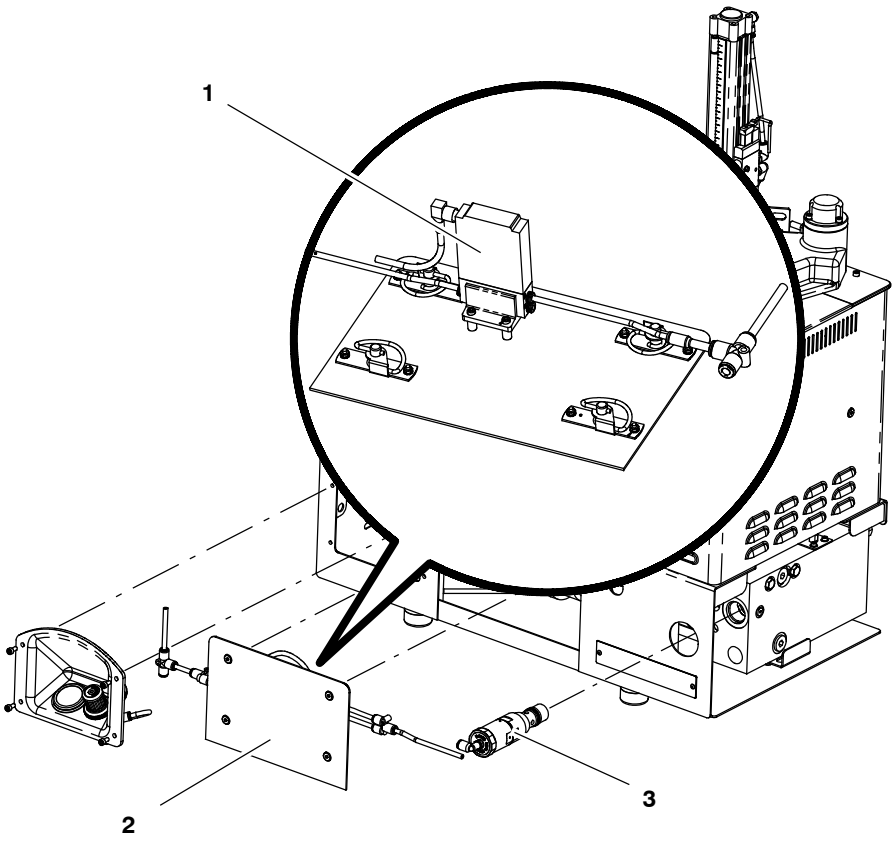


Figure 3-8 Connecting a signal to the I/P transducer for the pressure control P option

1. I/P transducer
2. Drive cover assembly (P option)
3. Pneumatic PCV

To connect wiring for the flow control bypass option (F)

See Figure 3-9. Connect a customer-supplied 24V control signal to the pressure control option terminal block (1) located inside the electrical enclosure. Terminals are not polarity-sensitive.

With this pressure control option, the output pressure supplied to the pneumatic PCV (3) is controlled with the F option air pressure regulator (2) when no signal is provided to the solenoid. When a signal is provided to the solenoid valve, the output pressure to the pneumatic PCV corresponds to the melter supply pressure.

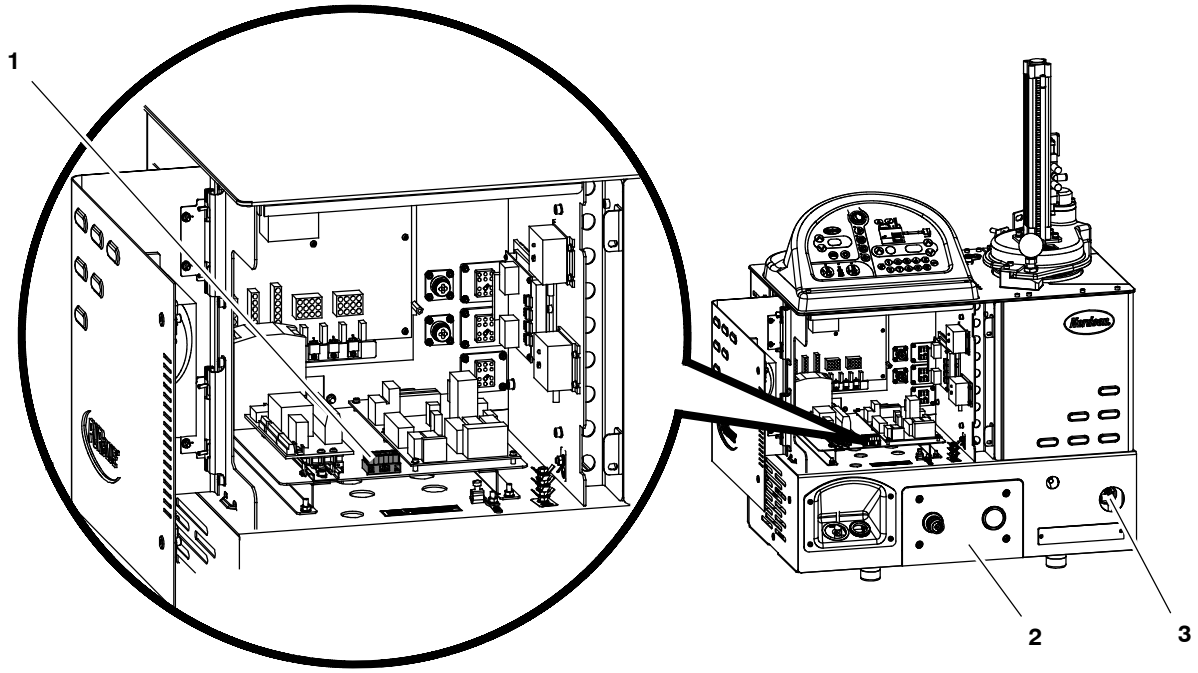


Figure 3-9 Connecting a signal to the pressure control terminal block for the pressure control F option

1. Pressure control option terminal block
2. F Option drive cover assembly
3. Pneumatic PCV

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 gun 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 3-5 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 Guns* 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*.

Quick Setup (contd)

Table 3-5 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 guns 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.	15 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 enable 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 3-6.

Table 3-6 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
PUR Timer	49	Set the PUR timer
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 3-7 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 3-7.

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.

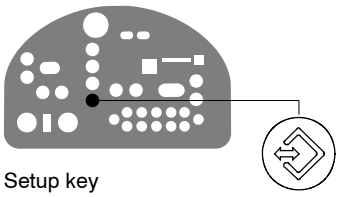
Reading or Editing Operating Parameters

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.



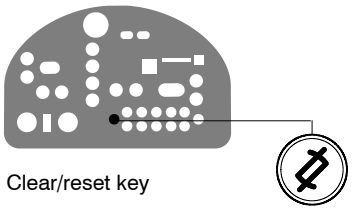
Setup key

2. Press the **Setup** key.

   The left display flashes parameter 1.

3. Use the numeric keypad to enter the number of the desired parameter. Refer to Table 3-7 for a complete list of parameters.

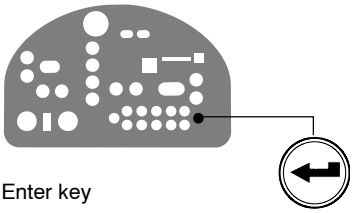
   NOTE: If you incorrectly enter the parameter number, press the **Clear/Reset** key to return to parameter 1 and then re-enter the correct parameter number.



Clear/reset key

   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*.

Reading or Editing Operating Parameters *(contd)*

To read or edit a parameter (contd)

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.

Table 3-7 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	10 to 60 minutes	15 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 Gun Activation	0 (disabled) or 1 (enabled)	0 (disabled)
13	Change Hose 2 Output to Electric Gun Activation	0 (disabled) or 1 (enabled)	0 (disabled)
14	External Communications Lock-out	0 or 1	0 (disabled)

Continued...

Table 3-7 Operating Parameters *(contd)*

Parameter	Name	Range of Values	Default Value
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 125 °C (257 °F)	50 °C (100 °F)
24	Automatic Standby Timeout	30 to 1440 minutes	180 minutes
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 125 °C (257 °F)	0 (disabled)
28	Gun Standby Delta	1 °C (1 °F) to 125 °C (257 °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	0–9, 13–14, 19–20	0 (disabled)
31	Standard Input 2 (non-editable)	0–9, 13–14, 19–20	20 (hopper empty)
32	Standard Input 3 (non-editable)	0–9, 13–14, 19–20	19 (melt demand)
33	Standard Input 4	0–9, 13–14, 19–20	0 (disabled)
34	Optional Input 5	0–9, 13–14, 19–20	0 (disabled)
35	Optional Input 6	0–9, 13–14, 19–20	0 (disabled)
36	Optional Input 7	0–9, 13–14, 19–20	0 (disabled)
37	Optional Input 8	0–9, 13–14, 19–20	0 (disabled)
38	Optional Input 9	0–9, 13–14, 19–20	0 (disabled)
39	Optional Input 10	0–9, 13–14, 19–20	0 (disabled)
Output Setup			
40	Standard Output 1	0–6	1 (Ready)
41	Standard Output 2	0–6	3 (Fault)
42	Standard Output 3	0–6	6 (Alert)
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)
PUR Timer			
49	PUR timer	10–120 minutes	30 minutes

Continued...

Reading or Editing Operating Parameters (contd)

Table 3-7 Operating Parameters *(contd)*

Parameter	Name	Range of Values	Default Value
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/Gun 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.

Setpoint Temperature of the Tank, Hoses, and Guns

The melter is shipped from the factory with the tank setpoint temperature at 105 °C (220 °F) and the hose and gun setpoint temperatures at 0 degrees (turned off).

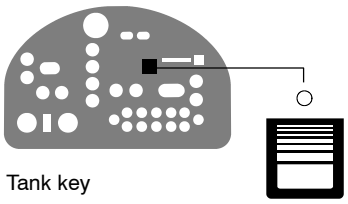
Before the melter can be used, a setpoint temperature must be assigned to the tank, hoses, and guns. Assign setpoint temperatures using any of the following methods:

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

Since most manufacturing processes will require the tank, hoses, and guns 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.

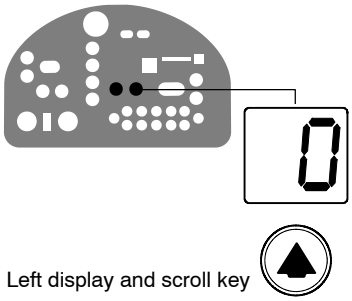
To assign a global setpoint temperature



Tank key

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

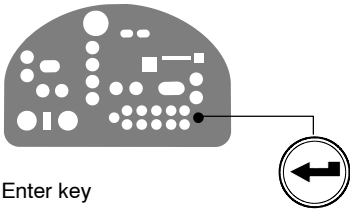
   The left display flashes 1.



Left display and scroll key

2. Scroll the left display to 0.

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



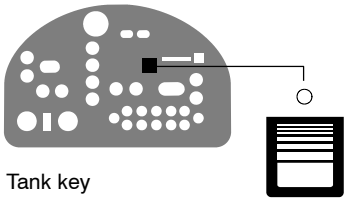
Enter key

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.

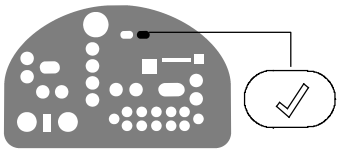
   Refer to the technical data sheet provided by the manufacturer of the hot melt to determine the optimal setpoint temperature.



Tank key

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.



Ready LED

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

Save and Restore Melter Settings

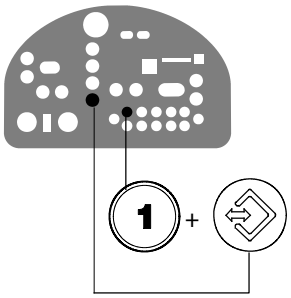
The current value of all editable operating parameters and the setpoint temperature of each component can be saved and, if necessary, restored at a later time. When saved settings are restored, they overwrite the settings that are presently in use.

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

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.



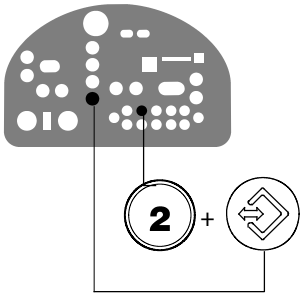
Saving current settings

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.

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.

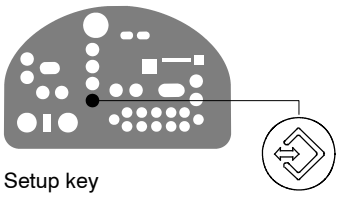


Restoring current settings

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.

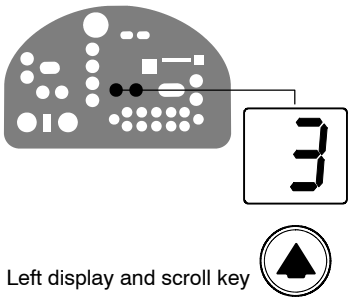
To review the change history log



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.

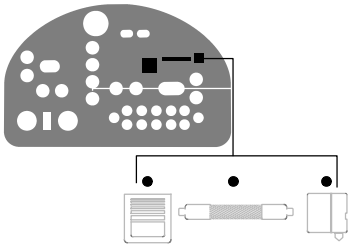
     or

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

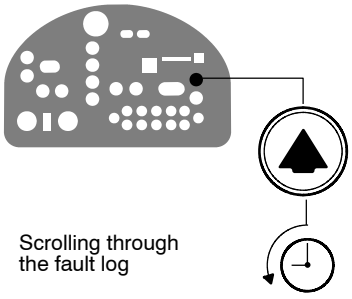
     and

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

     Table 3-8 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



Scrolling through the fault log

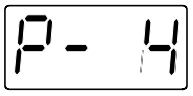
3. Press a right-display scroll key to review each of the remaining nine log entries. Each press of a scroll key displays a progressively older log entry.
4. Press the **Setup** key to return to the automatic scan mode.

Table 3-8 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>Gun Key</td><td>1– 6</td><td>A single gun</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>Gun Key</td><td>0</td><td>All guns</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 gun key is on, then this display would indicate that the global-by-component method was used to change the temperature of the guns.

Installing Melter Inputs

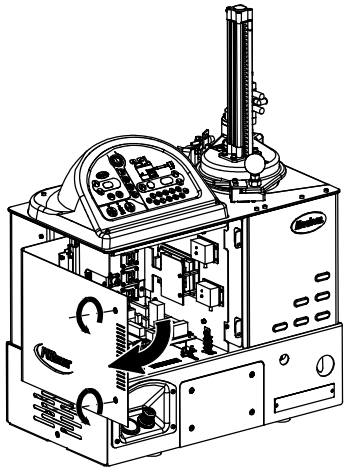
PURBlue 4 melters are equipped with two standard digital inputs. Each input is customer-wired to the melter and then set up to provide one of the following control options:

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



Opening the electrical enclosure

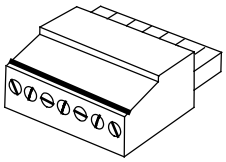
To wire digital inputs to the melter

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 back of the electrical enclosure. 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 class 1 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 3-10.

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 (available in the installation kit) must also be used. Table 3-9 lists the terminal numbers that correspond to each input.



Connector P/N 277909

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.

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.

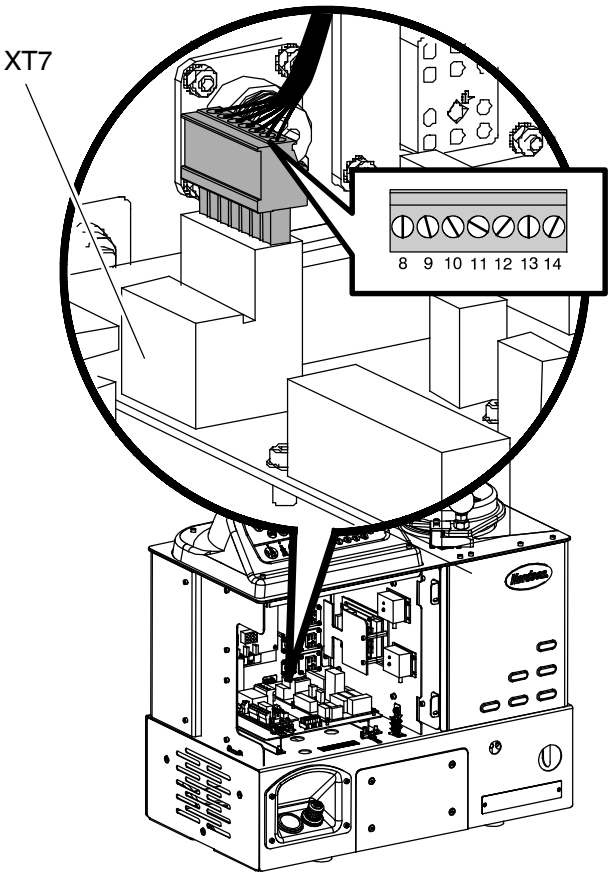


Figure 3-10 Wiring inputs

Installing Melter Inputs *(contd)*

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 (Default) 1 - Standby On/Off 2 - Heaters On/Off 3 - Motor 1 Enable/Disable 4 - Hose/Gun 1 Enable/Disable 5 - Hose/Gun 2 Enable/Disable 6 - Hose/Gun 3 Enable/Disable 7 - Hose/Gun 4 Enable/Disable 8 - Hose/Gun 5 Enable/Disable 9 - Hose/Gun 6 Enable/Disable 11 - Motor 2 Enable/Disable 13 - Automatic Fill Timer No. 1 14 - Automatic Fill Timer No. 2	A
2	10 and 11	31	Not available	
3	12 and 13	32	Not available	
4	7 and 14	33	Same as parameter 30 (except for control option 10, which is not available) (Default=0)	
Optional Inputs				
5	11 and 12	34	Same as parameter 33 (Default=0)	B, C
6	13 and 14	35	Same as parameter 33 (Default=0)	B, C
7	15 and 16	36	Same as parameter 33 (Default=0)	B, C
8	17 and 18	37	Same as parameter 33 (Default=0)	B, C
9	19 and 20	38	Same as parameter 33 (Default=0)	B, C
10	9 and 10	39	Same as parameter 33 (Default=0)	B, C

NOTE A: If control option 3 is selected, the motor will not turn on—even if you press the pump enable key—if voltage is not present on the input's contacts.

B: 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.

C: Refer to the instruction sheet provided with the optional I/O expansion card or analog I/O board for wiring information.

Installing Melter Outputs

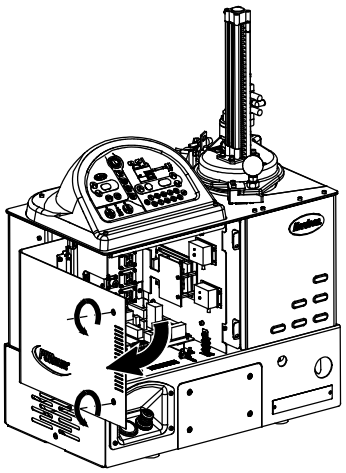
The PURBlue 4 melter is equipped with three user-configurable digital outputs. Outputs are used to communicate with user-supplied production equipment or control hardware, such as a programmable logic controller.

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 reservoir is empty
- The service LED is on

All output contacts are rated for 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*.



Opening the electrical enclosure

To connect a digital output to the melter

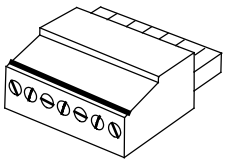
1. Route a 2-, 4, or 6-conductor signal cable from the control equipment to the melter, through the PG-16 penetration on the back of the electrical enclosure. Use rigid or flexible conduit or a suitable strain relief to protect the cable from the sharp edge of the conduit penetration.

   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 3-11.

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.



Output connector P/N 277908

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

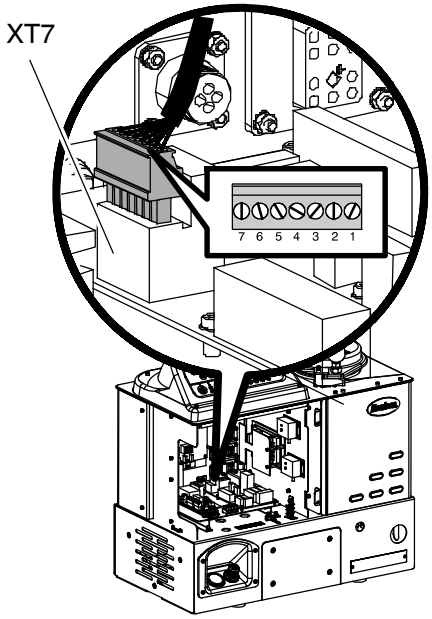


Figure 3-11 Wiring outputs

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.

Installing Melter Outputs *(contd)*

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 - Reservoir is empty	A, C
			5 - Service LED is On	A
			6 - Alert	B, D
2	3 and 4	41	Same as parameter 40 (Default=3)	
3	5 and 6	42	Same as parameter 40 (Default=6)	
Optional Outputs				
4	1 and 2	43	Same as parameter 40 (Default=0)	E, F
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 this control option condition occurs, the contacts close. Contacts are normally open when power is off. To inverse this control option, press both the up and down arrow keys simultaneously until a dash is visible in front of the displayed control option. When an inverted control option condition occurs, the contacts open.

B: When this control option condition occurs, the contacts open. Contacts are normally open when power is off. To inverse this control option, press both the up and down arrow keys simultaneously until a dash is visible in front of the displayed control option. When an inverted control option condition occurs, the contacts close. Note that when an inverted control option is used, some conditions cannot be indicated, including loss of power, some types of damage to the display/CPU board, or an open melter thermostat.

C: For PURBlue 4 melters, a reservoir-empty state produces a melter fault after several seconds. When the fault occurs, the reservoir-empty output reverts back to its standard condition. In most cases, Nordson Corporation recommends the use of control option 3 (Fault), which will indicate a reservoir-empty state or any other condition that will stop production.

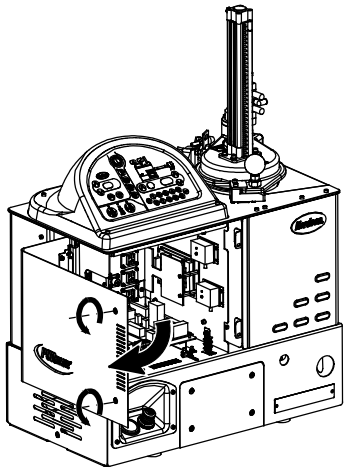
D: Control option 6 provides an output signal when a potential fault is detected. If control option 3 and 6 are both used, then both a fault output and an alert output signal will be present when the fault LED turns on.

E: 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.

F: For wiring information, refer to the instruction sheet that is provided with the optional I/O expansion card or analog I/O board.

This page intentionally left blank.

Setting Up Gear-to-Line Operation



Opening the electrical enclosure

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 mode key, the motor/pump speed scroll keys are 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.

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

1. Route a 2-conductor signal cable from the control equipment to the melter and through the PG-16 penetration on the back of the electrical enclosure. 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 class 1 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 3-12.

2. Connect a 0-10 VDC line speed reference signal to terminals A8-X5-1 (+) and A8-X5-2 (-) on the motor control assembly.

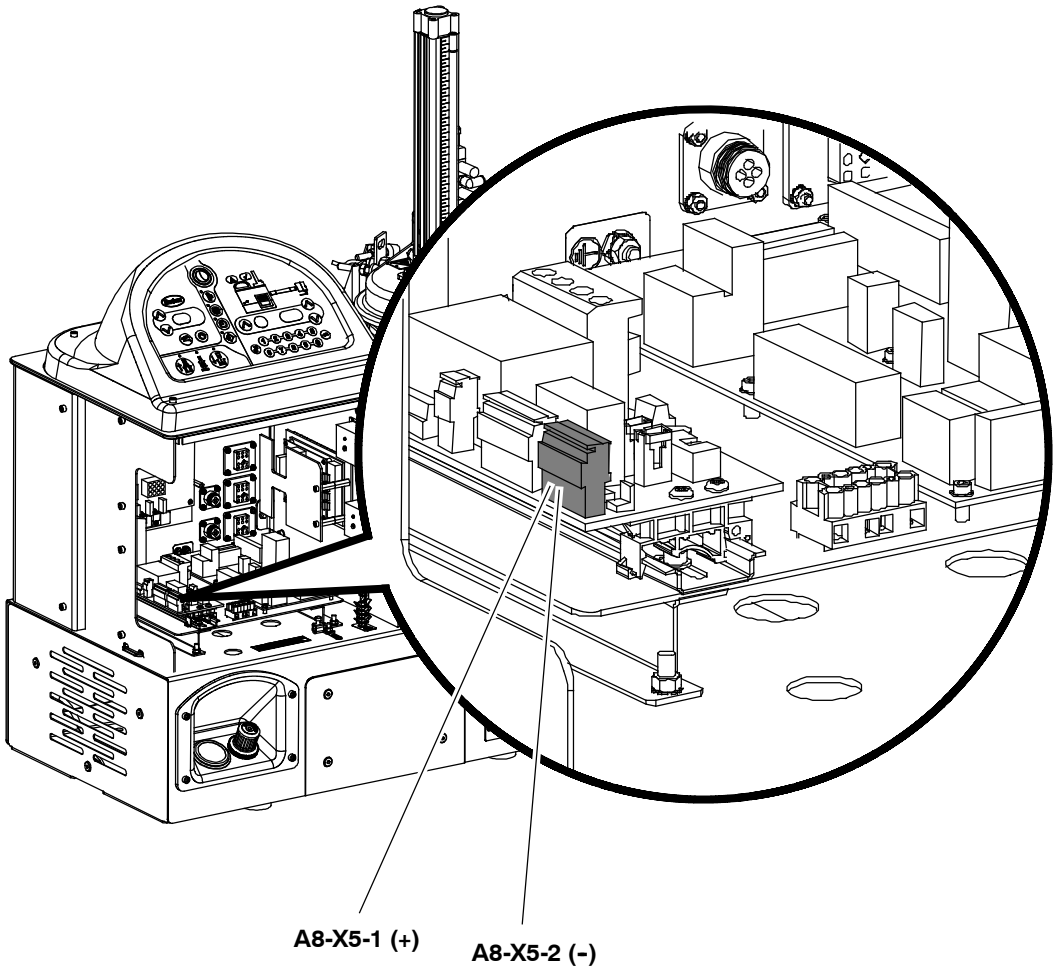
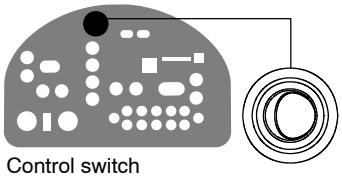


Figure 3-12 Connecting a line speed reference signal for gear-to-line operation

Setting Up the Motor Control

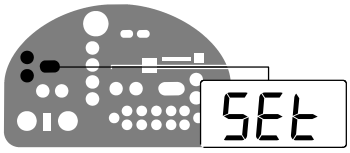
The motor control parameters are factory-set and may not need to be changed. Follow this procedure if your application requires a change to a motor control parameter.

To change a motor control parameter



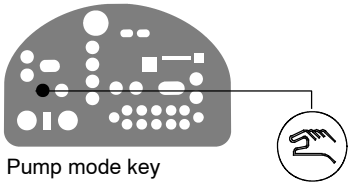
Control switch

1. Switch the melter off.



Pump speed display and arrow keys

2. Press and hold both **Pump speed arrow** keys and then switch the melter back on. When the motor control 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 3-11 for a parameter list.



Pump mode key

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 3-11 Default Motor Control Parameter Settings

Parameter	Default Setting	Description	Explanation
SEt	69	Maximum pump rpm	This parameter controls the increment of change in motor speed that occurs on each press of the up or down key when the melter is operating in the manual mode. To change the rpm in increments of 1, set this parameter to the maximum pump rpm.
LoS	0	Minimum pump speed in gear-to-line mode	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.
dLy	3	Revolutions pump will turn after reservoir empty	This parameter controls the number of revolutions the pump will turn after the reservoir-empty sensor signals a reservoir-empty state. After the set number of turns, the melter will shut down and display an F9/1 melter fault code. Refer to *Melter Faults* in Section 6, *Troubleshooting*, for more information on melter fault codes.

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 Gun Driver, Pattern Controller, or Timer

If applicable, complete the melter installation by connecting the guns to the desired gun 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

Flush the melter before initial operation. Refer to *Flushing the Melter* in Section 5, *Maintenance*.

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

Section 4
Operation

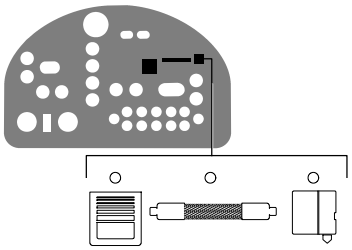
WARNING! Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others, and damage to the equipment.

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

- Loading an adhesive slug
- Starting the melter
- Adjusting the PCV
- 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.

Grid Operation and More about Heated Components



Component keys

The melter contains three groups of heated components. These are the tank group (which contains the tank, the grid, and the manifold), the hose group, and the gun 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 manifold is fixed at 1. The position of the grid is fixed at 2. Hose and gun position numbers are automatically assigned based on the hose/gun receptacle they are connected to. For example, the position number of a hose/gun pair that is connected to the second receptacle would be hose position 2 and gun position 2. The number of hose/gun receptacles available on each melter depends on the configuration in which the melter was ordered.

NOTE: The grid temperature setpoint cannot be programmed. It is either the same as the tank (when the reservoir is not full) or off (when the reservoir is full). The following bullets supply additional important information about the grid:

- The piston always applies downward force on the adhesive slug in the hopper when the grid is on.
- Under normal operating conditions, when the system is warming up, the grid also heats until it reaches setpoint. On reaching the setpoint the grid turns off until the system reaches setpoint.
- When the adhesive slug becomes empty, the grid turns off.
- The actual temperature of the grid can be displayed by pressing the Tank key and then 2.

Loading an Adhesive Slug

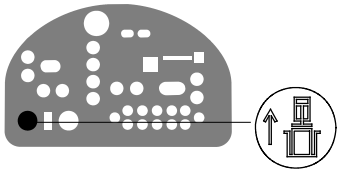
The PURBlue 4 melter is designed to work with PUR adhesive slugs in sealed foil bags. Before loading an adhesive slug, confirm that the hot melt material is compatible with the melter. Refer to *Intended Use* in Section 2, *Introduction*, for information about hot melt materials that should not be used in PURBlue 4 melters.

WARNING! Hot! Risk of burns! Never use your bare hands. Doing so may result in personal injury.

WARNING! Risk of personal injury. Closing the lid creates a pinching risk. Take care when closing the lid.

1. Ensure that
   - the hopper empty LED is turned on
   - the expiration date of the adhesive slug is not exceeded
   - there are no tears or openings in the foil bag
2. Press the **Piston up** key to raise the piston. The LED illuminates when the piston is raising.

   NOTE: The piston up key is an alternate action switch: when it is pressed, the piston will start to raise; when it is pressed again, the piston will stop.
3. See Figure 4-1. When the piston is fully raised, pull up on the handle to open the lid.



Piston up key

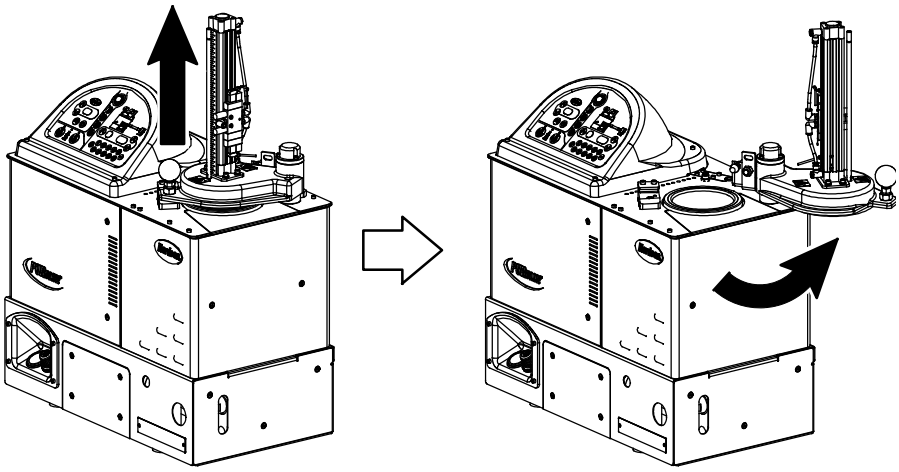


Figure 4-1 Opening the lid

Loading an Adhesive Slug *(contd)*

4. Remove the empty foil bag in the hopper and properly dispose of it.

CAUTION! Do not remove an empty foil bag until a new bag is ready to load. An adhesive slug must always be in place so that the melter is sealed and the adhesive will not cure.

5. Inspect the grid for adhesive or debris on the outer diameter and, if necessary, clean the surface with a plastic or wooden scraper.

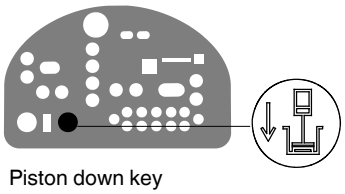
   NOTE: The outside diameter of the grid must be clean in order to create a proper seal with the new slug's foil bag.

6. Cut a circle in the bottom of the foil bag such that a minimum of 20 mm (0.8 in.) of foil remains around the outside diameter to provide an adequate sealing surface between the bottom of the bag and the top of the grid.

7. Load the adhesive slug into the hopper and close the lid.

8. Press the **Piston down** key to lower the piston.

   NOTE: The Piston down key only activates the piston if the piston is In place (PIP) over the hopper. If the piston is in place, it applies downward force for 30 seconds after the Piston down key is pressed. After 30 seconds, the downward force is turned on and off by the melt-on-demand sensor functionality.



Piston down key

Starting the Melter

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

- melter is fully installed including any required inputs and outputs, gun 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.

To start the melter

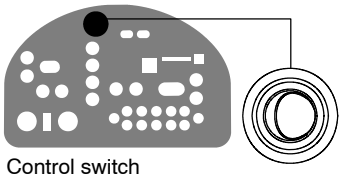
1. Ensure that adhesive is present in the melter hopper. Refer to *Loading an Adhesive Slug* as needed.
2. Switch the melter on.

   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 gun that has a setpoint temperature that is greater than zero degrees. The sequence of the automatic scan is: tank, each hose and gun pair, and then back to the tank.

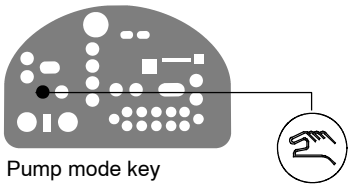
     NOTE: The grid and pneumatic cylinder are activated when the melt-on-demand sensor signals that adhesive is needed in the reservoir.
   - Turns on the ready LED (green) when the tank and all of the hoses and guns are within 3 °C (5 °F) of their assigned setpoint temperature.

     NOTE: If the Ready Delay Time (parameter 4) is set to a value other than 0, then this additional time must pass before the ready state will be reached.

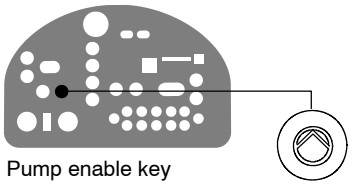


Control switch

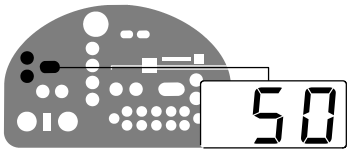
Operating in Manual Mode



Pump mode key



Pump enable key



Pump speed display and arrow keys

1. Press the **Pump mode** key until the LED is turned on.
2. Press the **Pump enable** key until the LED is turned on.
3. Use the **Pump speed arrow** keys to change the pump speed to a setting greater than 10.

   The pump speed display indicates the actual pump speed in rpms.

   - If the system has not reached the system-ready state at the time that the pump enable key is pressed, the LED on the pump enable key will turn yellow, indicating that the pump is enabled, but not started. The pump will start automatically when the system-ready state is reached.
   - If the system has reached the system-ready state at the time that the pump enable key is pressed, the pump will start and the LED on the pump enable key will turn green, indicating that the pump is running.
   - If the melter is set up for foot/handgun switch pump activation, the pump enable LED will not turn on and the pump will not start until the pump is manually started using the switching device.
   - When the reservoir is empty, the motor will stop after it has rotated the number of revolutions specified in the dLy (delay after empty) motor control parameter. To run the pump after it has been turned off by the control system, clear all melter faults and press the **Pump enable** key. The motor will run for the number of revolutions specified and then stop again.

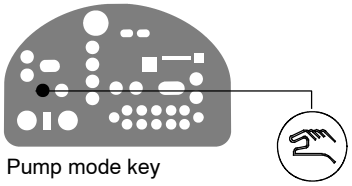
NOTE: You can change the way the pump enable key operates by changing parameter 8 (automatic pump on). Refer to Appendix B, *Operating Parameters*.

NOTE: When the melter is operating in the manual mode, the pump speed is determined by the following equation. Refer to Section 8, *Technical Data*, for pump displacement values.

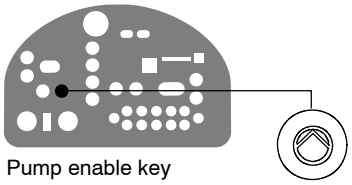
$$\text{Adhesive output (cc/min)} = \textit{displayed rpm} \times \textit{pump displacement}$$

Operating in Gear-To-Line Mode

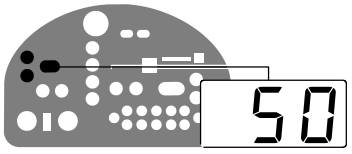
The melter can be set up to deliver an adhesive output that is geared to the production line speed. The gear-to-line capability is enabled or disabled through the pump mode key, the pump speed arrow keys are used to adjust the scaled output, and the actual pump speed is displayed in rpms on the pump speed display. When the melter is operating In the gear-to-line mode, the pump speed follows the 0-10 VDC signal from the production line. To set up the melter for gear-to-line operation, refer to *Setting Up Gear-to-Line Operation* in Section 3, *Installation*.



Pump mode key



Pump enable key



Pump speed display and arrow keys

1. Press the **Pump mode** key until the LED is turned off.
2. Press the **Pump enable** key until the LED is turned on.
3. Press the **Pump enable** key to enable the pump. If needed, use the **Pump speed arrow** keys to adjust the scaled adhesive output.

   The pump speed display indicates the actual pump speed in rpms.

   - If the system has not reached the system-ready state at the time that the pump enable key is pressed, the LED on the pump enable key will turn yellow, indicating that the pump is enabled, but not started. The pump will start automatically when the system-ready state is reached and when the production line starts.
   - If the system has reached the system-ready state at the time that the pump enable key is pressed, the pump will start and the LED on the pump enable key will turn green, indicating that the pump is running.
   - When the reservoir is empty, the motor will stop after it has rotated the number of revolutions specified in the dLy (delay after empty) motor control parameter. To run the pump after it has been turned off by the control system, press the **Pump enable** key. The motor will run for the number of revolutions specified and then stop again.

NOTE: You can change the way the pump enable key operates by changing parameter 8 (automatic pump on). Refer to Appendix B, *Operating Parameters*.

NOTE: When the melter is operating in the gear-to-line mode, the pump speed is determined by the following equation. Refer to Section 8, *Technical Data*, for pump displacement values.

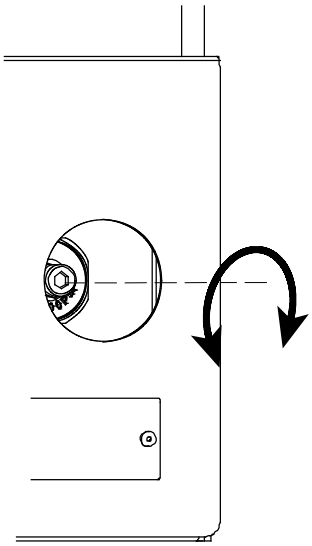
$$\text{Adhesive output (cc/min)} = \textit{displayed rpm} \times \textit{pump displacement} \times \left[\frac{\textit{input voltage}}{10}\right]$$

Adjusting the PCV

Your melter will have one of the following types of pressure control: manual PCV, pneumatic PCV only, automatic pressure control option, or flow control bypass option. Refer to *Pressure Control Options* in Section 2, *Introduction*, for a detailed description of the pressure control options. Refer to *Melter Part Numbers* in Section 7, *Parts*, to determine the configuration of your melter.

NOTE: If you want to change the type of pressure control, service kits for each option are available for field-retrofit. Refer to Section 7, *Parts*.

Manual PCV (X Option)



Adjusting the PCV

NOTE: The PCV 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 2.7 N•m (24 in.-lb) of torque when adjusting the PCV.

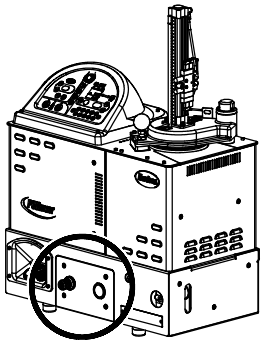
To use the PCV to control adhesive output, loosen the lock nut and adjust the valve to achieve the desired adhesive output rate for your manufacturing process. With the melter at operating temperature, the line running, and the guns dispensing adhesive, turn the adjustment screw on the PCV

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

Automatic Pressure Control (P Option)

Use the customer-supplied 4-20 mA signal to control the air pressure. The 4-20 mA signal corresponds to a pneumatic pressure range of 0.01-5 bar (0-70 psi).

Flow Control Bypass (F Option)

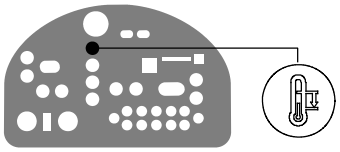


Location of the air regulator and gauge used with the flow control bypass option

If no signal is being supplied to the solenoid valve, use the air pressure regulator located on the F option drive cover assembly to adjust the output pressure to the pneumatic PCV. The gauge on the drive cover displays the air pressure provided to the pneumatic PCV.

NOTE: If a signal is being provided to the solenoid valve, the output pressure to the pneumatic PCV corresponds to the melter supply pressure.

Placing the System in Standby



Standby key

To keep reactive materials from curing, perform the following actions before downtime or breaks:

1. Press the **Standby** key to reduce the system temperature and place the system in standby mode.
2. Cover the applicator nozzles with petroleum jelly or submerge them in a suitable oil.

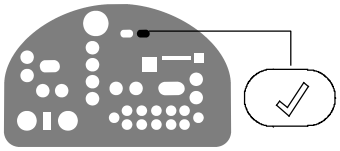
Monitoring the Melter

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 gun
- Identify melter faults
- Determine when service is required

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

Confirm that the Melter is Operating Correctly



Ready LED

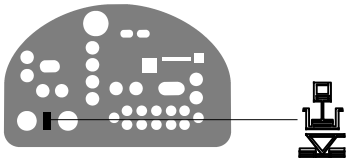
The ready LED turns on (green) when all of the heated components are within 3 °C (5 °F) of their setpoint temperature.

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.

Monitor the Adhesive Level



Hopper empty LED

The hopper empty LED turns on when it is time to load a new adhesive slug. Refer to *Loading an Adhesive Slug*.

The melter is also equipped with two identical capacitive adhesive level sensors:

- The melt-on-demand sensor keeps the reservoir full of molten adhesive by telling the melter when to melt adhesive in the hopper for transfer through the grid to the reservoir.
- When the reservoir becomes empty, the reservoir-empty monitor will stop the pump after it rotates the number of revolutions set in the dLy (delay after empty) motor control parameter. Refer to *Setting Up the Motor Control* in Section 3, *Installation*, to set this parameter.

  NOTE: When dLy is displayed, the pump can be started again by pressing the Pump enable key. The pump will turn the set number of rotations again before it stops and the dLy message is shown again.

The melter is shipped with both level sensors calibrated for standard adhesive. If recalibration becomes necessary, refer to *Calibrating the Hopper-Empty Sensor* or *Calibrating the Level Sensors* in Section 5, *Maintenance*.

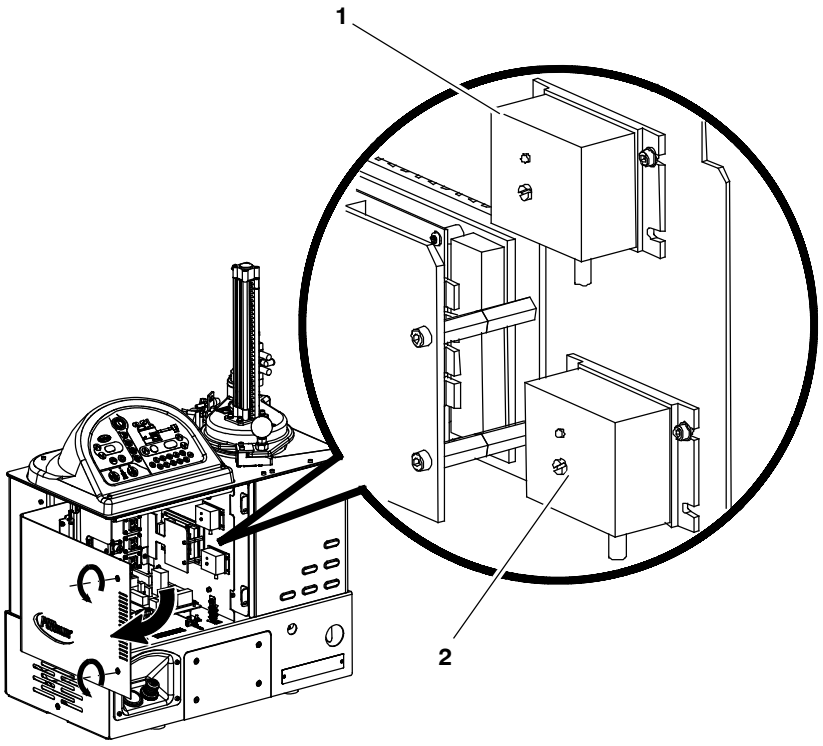


Figure 4-2 Location of the level sensors

1. Melt-on-demand sensor
2. Reservoir-empty monitor

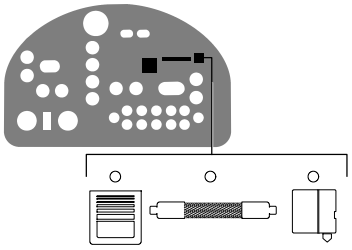
Monitor Component Temperatures

You can check the actual temperature of each heated component—the tank and each hose and gun—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 guns is set to zero degrees
- A fault occurs

To check component temperatures using the automatic scan mode

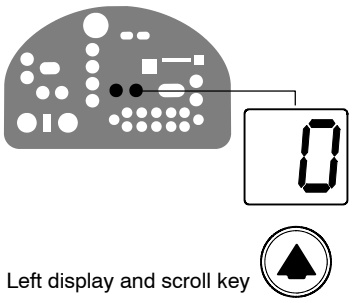


Component keys

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 gun) 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.

   NOTE: On PURBlue 4 melters, 1 is the pump temperature and 2 is the grid temperature when the tank LED is on.

To manually check a component's temperature



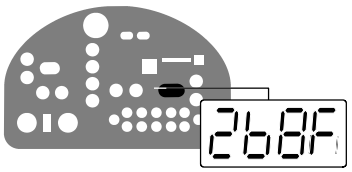
Left display and scroll key

1. Press the key (tank, hose, or gun) 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).

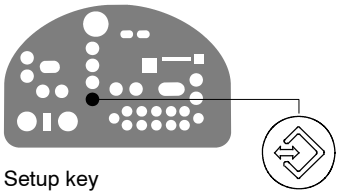
   NOTE: On PURBlue 4 melters, 1 is the pump temperature and 2 is the grid temperature when the tank LED is on.



Component temperature 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.



Setup key

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

Monitor Melter Faults

The melter alerts the operator to the faults listed in Table 4-1. 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 4-1 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/gun connections See flowchart T.2
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 See flowchart T.2
F3/None	Over temperature	Heaters turn off	The actual temperature of the component indicated has increased beyond the over temperature delta, set in parameter 21.	Change parameter 21. If the problem persists, replace the RTD. See flowchart T.2
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 4-1 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 gun RTD analog-to-digital converter could not be calibrated (grounded RTD in system)	Replace hose or gun. 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/A	Thermostat	Melter stops functioning	Reservoir or grid thermostat is open	Replace thermostat, XP6 harness, or main board
F4/C	Expansion board connection	Melter stops functioning	Ribbon cable P/N 1026662 is 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

Continued...

Monitor Melter Faults (contd)

Table 4-1 Melter Faults *(contd)*

Display Code/Sub-code	Name	Affect on Melter	Cause	Corrective Action
F9/1 (see Note A)	Reservoir empty	Pump turns off and fault output is generated, but heaters and READY light remain on	Reservoir empty then pump continues to turn the number of rotations set in motor control parameter dLy (refer to Table 3-11)	Ensure that adhesive is present in the hopper and allow time for the adhesive to melt into the reservoir. Unless it is critical that the unit turn off immediately when the reservoir is empty, set the dLy value higher to prevent this fault condition.
S1Cal (see Note B)	Sensor 1 calibration	Melter enters standby mode	A continuous grid-on condition occurred because the setting for parameter 49 was exceeded (refer to Table 3-11).	Check the S1 sensor calibration (refer to *Calibrating the Level Sensors* in Section 5, *Maintenance*) or adjust the setting for parameter 49.

NOTE A: An F9/1 fault does not create a fault condition, but it does generate a fault output. This output is visible only if the digital fault output or optional light tower are being used and is the only situation in which both a red and green light may be on at the same time. In such cases, the heaters and motor are okay, but the melter will not run because there is no adhesive in the reservoir.

B: For a detailed description of how the melt-on-demand functionality of this melter works, refer to *Modes of Operation* in Section 2, *Introduction*.

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.

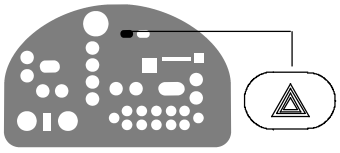
2. The LED on the affected component key (tank, hose, or gun) turns on to indicate the type of component that has, or is, failing.

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

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.



Fault LED

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 gun) 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 affect 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.

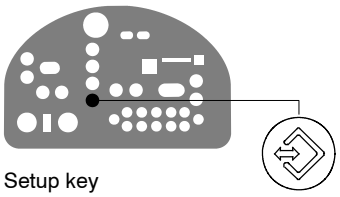
5. The melter records the fault in the fault log. Refer to *To review the fault log* later in this section.

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.

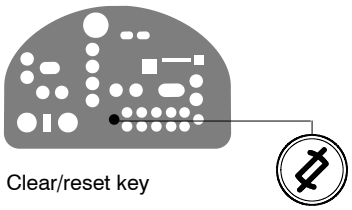
   NOTE: When a fatal F4 fault exists, the control switch will not function. Remove power to the melter at the local disconnect switch.

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



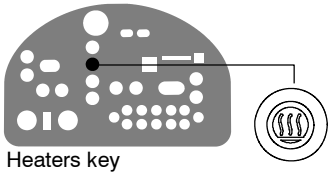
Setup key

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



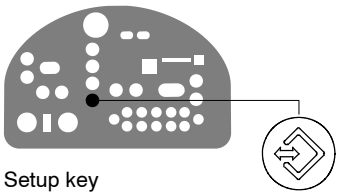
Clear/reset key

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



Heaters key

Monitor Melter Faults (contd)

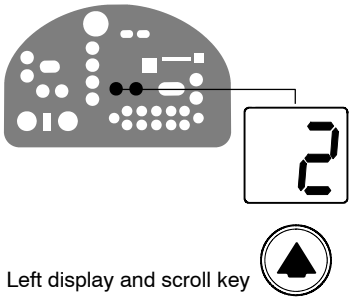


Setup key

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.

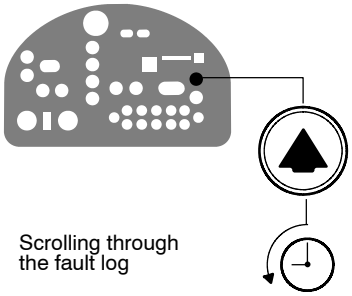


Left display and scroll key

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 4-2 provides the meaning of each digit in the log entry. Following the table are two example fault log entries.



Scrolling through the fault log

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.

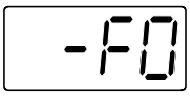
4. Press the **Setup** key to return to the automatic scan mode.

Table 4-2 Fault Log

First Digit	Second and Third Digits	Fourth Digit
Component: 0 = Tank 1 = Pump or hose/gun 1 2 = Grid or hose/gun 2 3 = Hose 3 or gun 3	- 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

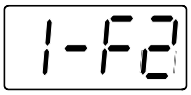
Fault Log Examples

Example 1:



An unused log entry.

Example 2:

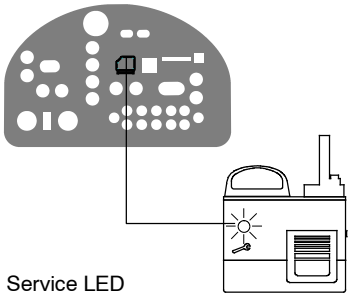


If the LED on the tank key were on, this log entry would indicate that the tank is under temperature. If the LED on the hose key were on, this log entry would indicate that hose 1 is under temperature.

Monitor Motor/Piston Control or Motor Drive Faults

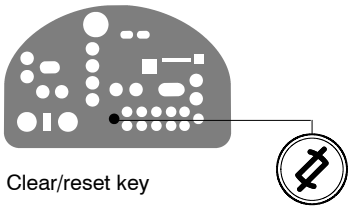
The pump speed display and the display on the motor drive located inside the electrical enclosure alert the operator to abnormal motor/piston-related faults. These faults may cause the pump to stop. Refer to *Motor/Piston Control Faults* or *Motor Drive Faults* in Section 6, *Troubleshooting*.

Monitor the Service Interval



Service LED

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.



Clear/reset key

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.

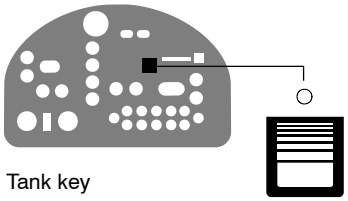
Adjusting Component Temperatures

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

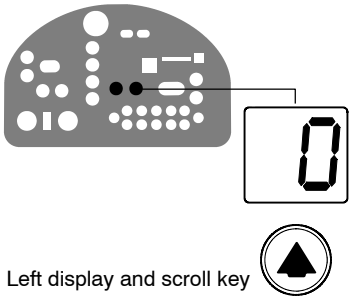
- **Global**—The tank and all hoses and guns are set to the same setpoint temperature.
- **Global-by-component group**—All of the hoses or all of the guns are set to the same setpoint temperature.
- **Individual Component**—The setpoint temperature of the tank and each hose and gun is adjusted independently.

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

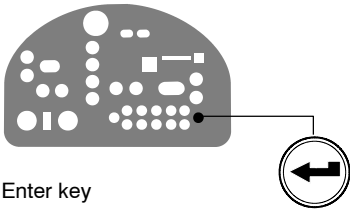
To adjust setpoint temperatures using the global method


Tank key

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


Left display and scroll key

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.

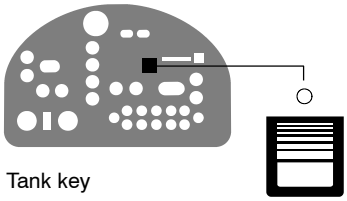

Enter key

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

To adjust setpoint temperatures using the global method (contd)

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.

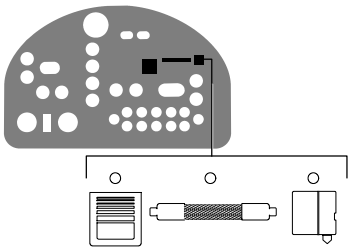
   NOTE: If the keypad or the right-display scroll keys have no affect on the right display, the melter is password protected. You must enter a valid password before you can change setpoint temperatures. Refer *Enter the Melter Password*, later in this section.



Tank key

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 **Gun** key for three seconds.

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

2. Scroll the left display to 0.

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

3. Press the **Enter** key.

   The right display flashes.

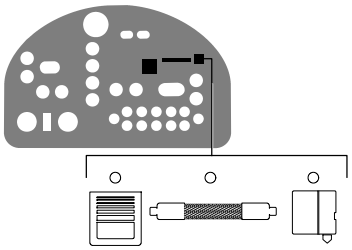
4. Use the keypad to enter the setpoint temperature recommended by the manufacturer of the hot melt. Refer to the technical data sheet provided by the manufacturer of the hot melt to determine the optimal setpoint temperature.

   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 guns begin to heat or cool to their new setpoint temperature.

Adjusting Component Temperatures *(contd)*



Component keys

To adjust the setpoint temperature of an individual component

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

   If the tank key was pressed, the left display indicates 1 (Flashing). If a hose or gun key was pressed, the left display indicates the number of the first sequential hose or gun (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.

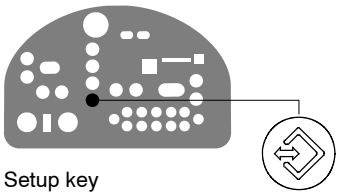
6. Press any component key (tank, hose, or gun).

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

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.

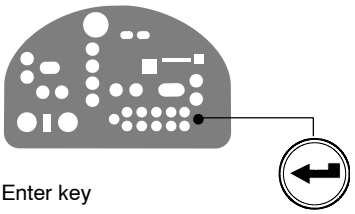
To enter a melter password



Setup key

1. Press the **Setup** key.

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



Enter key

2. Press the **Enter** key.

   The right display begins flashing.

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.

Using Melter Function Keys

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

Standard function keys

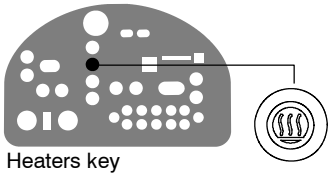
- Heater
- Pump enable
- Setup
- Pump mode key

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

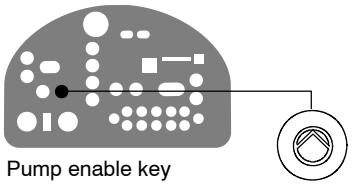


Heaters key

Use the heaters key to manually turn the component heaters on and off. Pressing the heater 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 heater 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 heater key is used to turn the heaters back on after correcting a fault condition.

Pump Enable Key



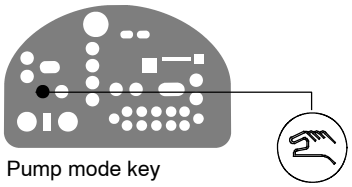
Pump enable key

Use the pump enable key to enable and stop the pump. The LED on the pump enable key is green when the pump is enabled.

If the automatic pump on feature (parameter 8) is disabled, then the pump 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 pump LED will flash green.

Pump Mode Key

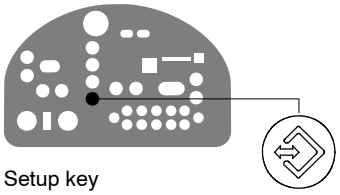


Pump mode key

Use the pump mode key to toggle between the manual and gear-to-line modes. The LED on the pump mode key is green when the melter is in the manual mode.

When the melter is operating in the gear-to-line mode, a 0-10 VDC signal must be supplied. Refer to *Setting Up Gear-to-Line Operation* in Section 3, *Installation*.

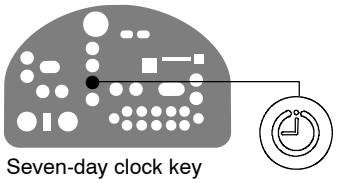
Setup Key



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

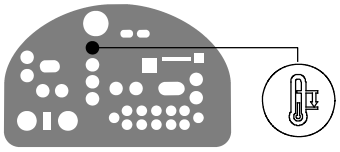
Use the seven-day clock key to turn the melter's clock feature on and off. When the clock is on, the temperature of each heated component is automatically regulated based on a set of user-defined schedules.

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.

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.

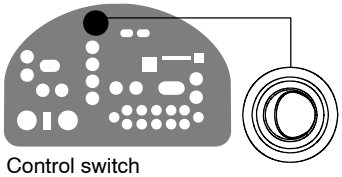
Using the standby key overrides the control of the melter (on or off) by the seven-day clock or a remote input.

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.

Shutting Down the Melter

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

To shut the melter down


Control switch

1. Switch the melter off.
2. Relieve system pressure. Refer to *Relieving System Pressure* in Section 5, *Maintenance*, as needed.
3. Disable the guns as follows:
   - Air-operated guns: Turn off the air supply to the guns and cover the nozzles.
   - Electric guns: Turn off the gun driver, pattern controller, or timer.

   Ensure that material connections are closed such that they are airtight.
4. If the system will be shut down for a longer period of time, rinse it with a suitable cleaning agent. Use only a cleaning agent recommended by the material manufacturer.

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.

Preventive Maintenance Tasks

Table 5-1 describes the preventive maintenance tasks required to keep PURBlue 4 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.

Preventive Maintenance Tasks *(contd)*

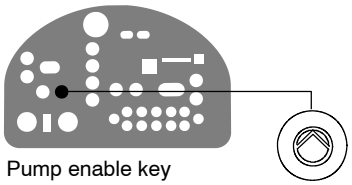
Table 5-1 Preventive Maintenance Tasks

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 guns	Daily	*Cleaning the Melter*
Cleaning the hopper, grid, tank, piston, and level sensor probes	Weekly or as needed depending on the adhesive type	*Cleaning the Hopper and Grid*, *Cleaning the Tank and Level Sensors*, and *Cleaning the Piston*
Cleaning or replacing the electrical enclosure fan filter	Depending on dust accumulation; daily if necessary	
Calibrating sensors	As needed throughout the life of the melter (sensors are factory-calibrated)	*Calibrating the Hopper-Empty Sensor* or *Calibrating the Level Sensors*
Calibrating the pump speed display	As needed throughout the life of the melter (the pump speed display is factory-calibrated)	*Calibrating the Pump Speed Display*

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 guns.

To relieve system pressure

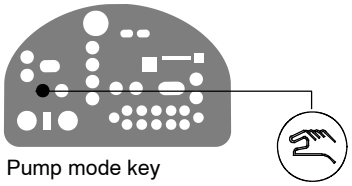

Pump enable key

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

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. Ensure that the **Pump mode** key LED is 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 *Setting Up the Melter* in Section 3, *Installation*, for information about changing operating parameters.

Flushing the Melter

Flush the melter at the following times to remove residue:

- before first-time operation of a new melter
- whenever the adhesive type is changed
- if a PUR adhesive is being used, before a melter shutdown that will last longer than two days

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 PCV is set to low pressure.

Process a minimum of one tank volume of hot melt or flushing material through the melter, hoses, and applicators. At some point, set the pressure control to a low value and close the applicator(s) to flush the pressure control recirculation loop.

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 guns.

If hot melt inadvertently spills inside the melter's interior spaces, the side covers 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 service covers

See Figure 5-1.

1. De-energize the melter. Refer to Section 1, *Safety*.
2. Use a 4-mm ($^{5}/_{32}$-in.) hex-head wrench to turn the $^{1}/_{2}$-turn fasteners on each cover counterclockwise.
3. Disconnect all ground wires from the covers.
4. Lift the covers out of the melter's frame.
5. Reverse steps 2-4 to reinstall each cover.

To clean the electrical enclosure

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

Cleaning the Melter *(contd)*

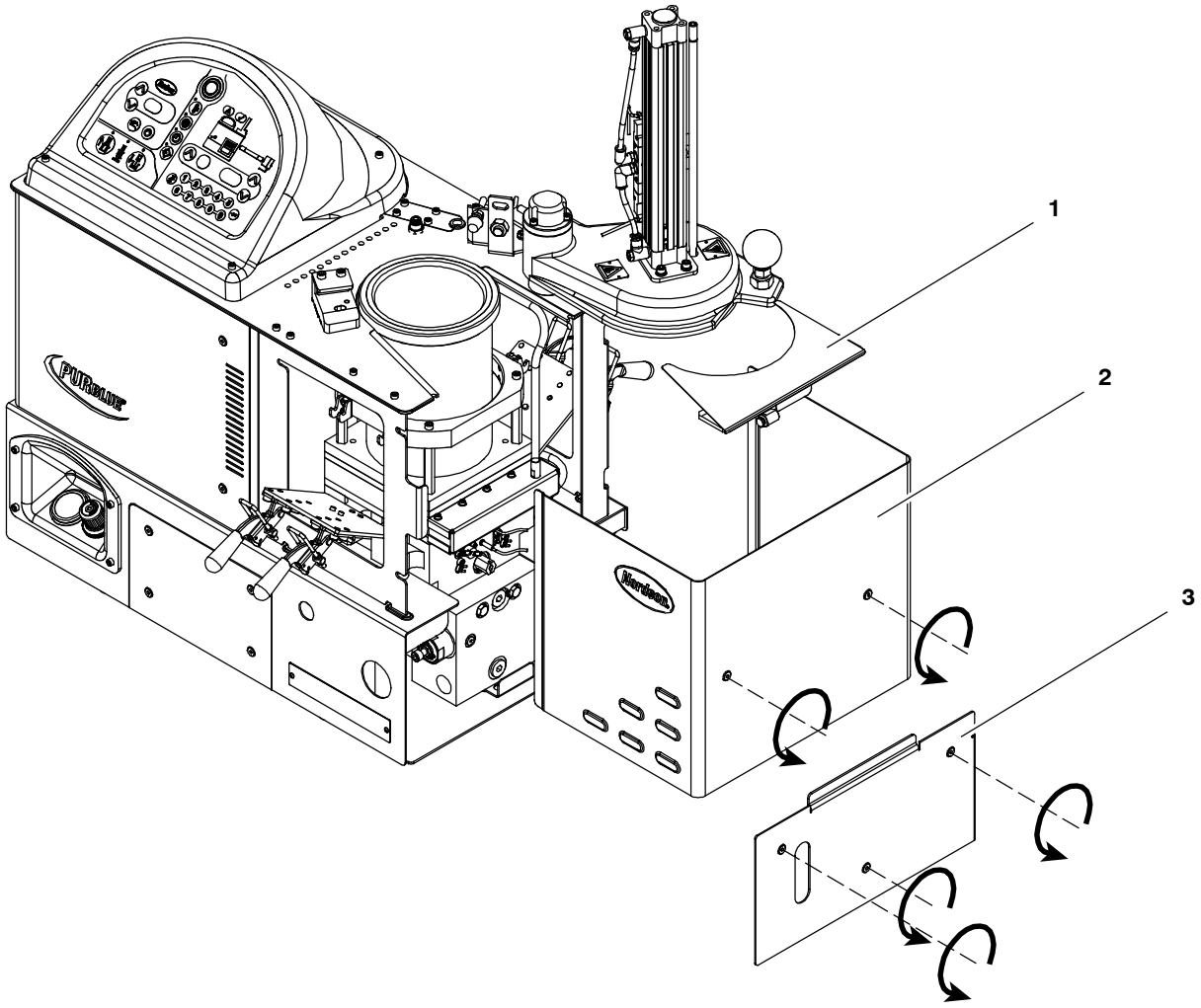


Figure 5-1 Removing the service covers

1. Hopper cover
2. Service cover
3. Manifold cover

Cleaning the Hopper and Grid

WARNING! Risk of injury. Wear proper protective gear.

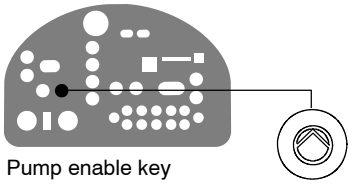
1. Open the lid.

CAUTION! Risk of equipment damage. The inside of the melter is release-coated. Do no use metallic tools or wire brushes to clean the tank.

2. Wipe/remove any residual hot melt from the inside of the hopper and the top of the grid. When the melter is cool, adhesive can typically be peeled from the release-coated parts. If the adhesive cannot be peeled off, heat the melter to the softening point of the adhesive and use a wooden or plastic scraper to remove the adhesive.
3. Remove all debris from the flat portion of the outer diameter of the grid.

   NOTE: It is particularly important to remove the adhesive from the flat portion of the outer diameter of the grid. This surface must be clear so that a good seal with the adhesive slug foil bag is possible.
4. Restore the system to normal operation.

Cleaning the Tank and Level Sensors



Pump enable key

NOTE: If you are using a flushing material to clean the tank, ensure that the material is compatible with both the previous adhesive and the new adhesive, if applicable.

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 cool to the temperature recommended by the manufacturer of the adhesive or flushing material.
4. Remove the service covers. Refer to *To remove and replace service covers* earlier in this section as needed.
5. Disconnect the grid heater.
6. See Figure 5-2. Disengage the four hopper/grid assembly clamps.
7. Lift the hopper/grid assembly above the clamps and remove it through the open side of the melter.
8. If the adhesive is cool, try to peel it from the release-coated parts. If the adhesive is hot, use a wooden or plastic scraper to remove it.
9. See Figure 5-2. Clean the melt demand and reservoir empty sensor probes at the back of the reservoir.
10. Restore the system to normal operation.

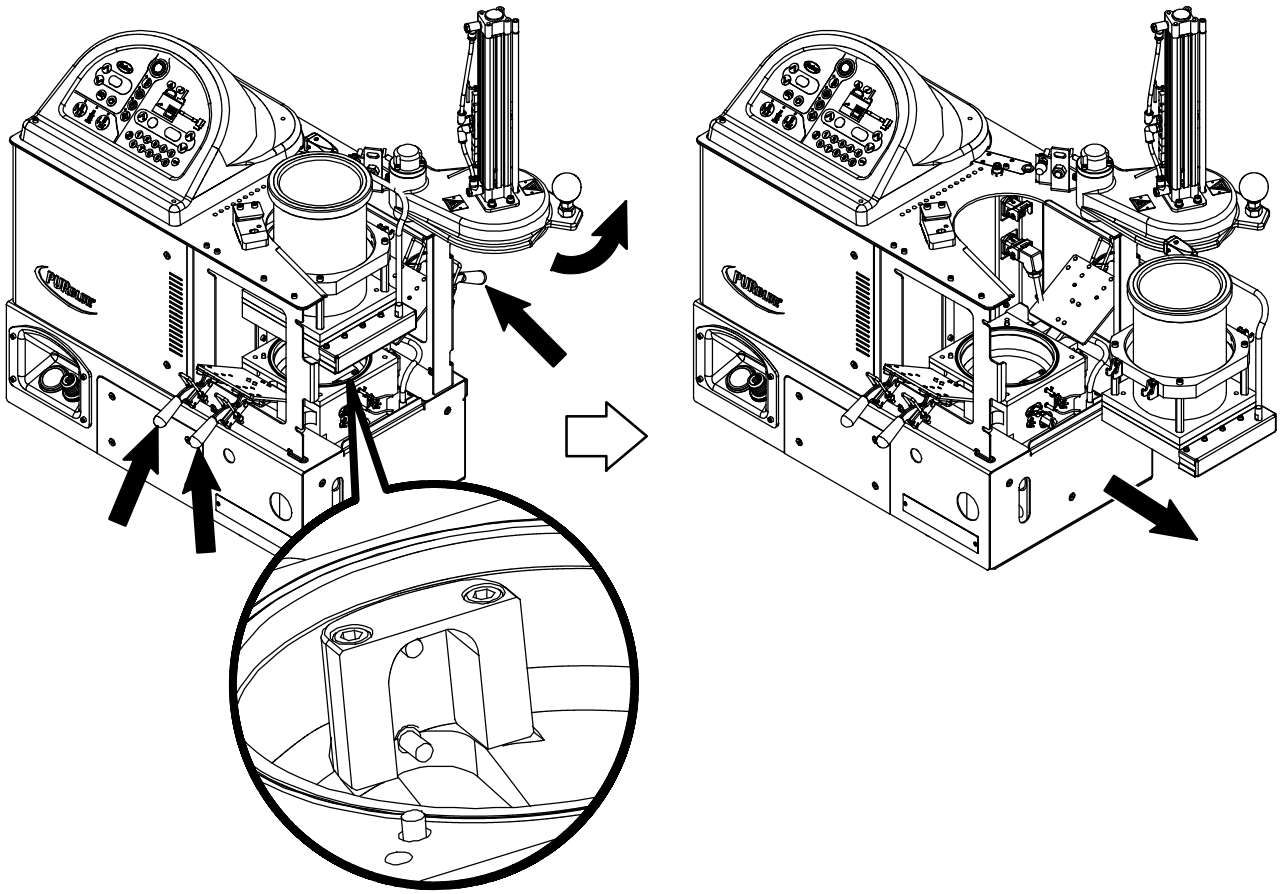


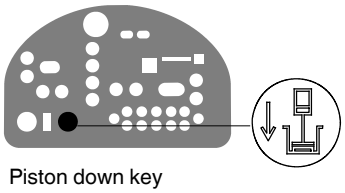
Figure 5-2 Hopper/grid assembly removal and the location of the level sensor probes

Cleaning the Piston

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 cool to the temperature recommended by the manufacturer of the adhesive or flushing material.
4. Remove the service covers. Refer to *To remove and replace service covers* earlier in this section as needed.
5. Disconnect the grid heater.
6. See Figure 5-2. Disengage the four hopper/grid assembly clamps.
7. Lift the hopper/grid assembly above the clamps and remove it through the open side of the melter.

WARNING! Risk of personal injury. Keep hands away from the moving piston.

8. Close the lid.
9. Use the manual cylinder override on the top solenoid valve to lower the piston.
10. If the adhesive is cool, try to peel it from the release-coated parts. If the adhesive is hot, use a wooden or plastic scraper to remove it.
11. Restore the system to normal operation.



Piston down key

Calibrating the Hopper-Empty Sensor

The melter is shipped with the hopper-empty sensor calibrated for standard PUR adhesive. If recalibration becomes necessary, follow this procedure.

See Figure 5-3.

1. Operate the melter normally until the reservoir is empty, but leave the empty foil bag in place in the hopper.
2. Loosen the hopper-empty sensor (1) and move it to the lowest position on the piston (2).
3. Move the sensor up until its LED illuminates and then secure the sensor at this location.

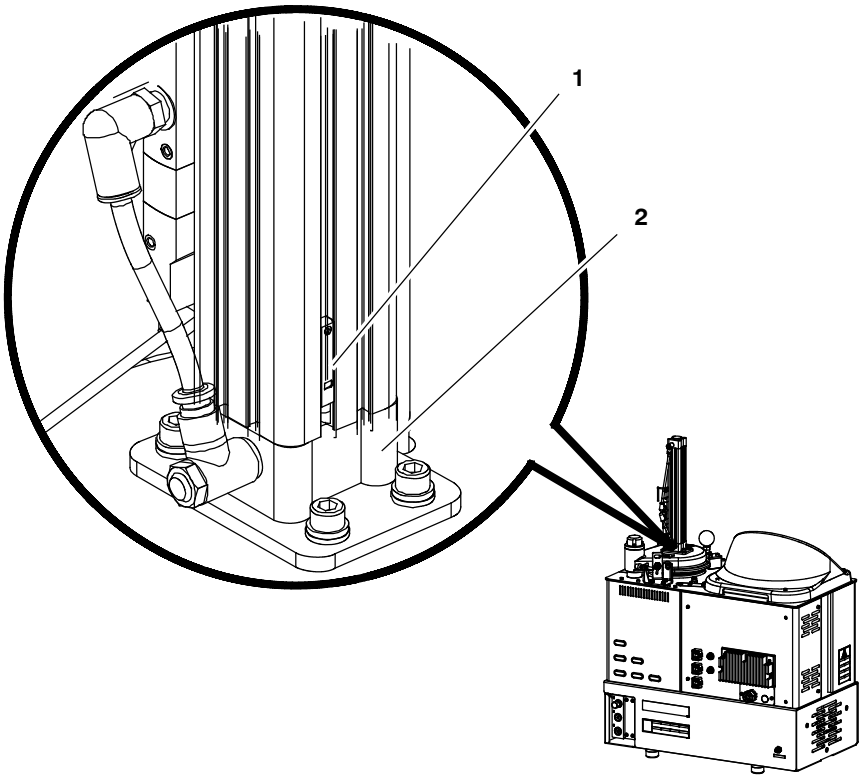


Figure 5-3 Location of the hopper-empty sensor

1. Hopper-empty sensor
2. Piston

Calibrating the Level Sensors

The melter is shipped with both level sensors calibrated for standard PUR adhesive. If recalibration becomes necessary, follow this procedure.

1. Operate the melter normally until the reservoir is empty. If the slug in the hopper is not empty, lift out the solid slug before pumping the adhesive from the reservoir.
2. Remove all debris or cured adhesive from the sensor probes. Refer to *Cleaning the Tank and Level Sensors* earlier in this section, then return here to continue.
3. Ensure that the melter is switched on.
4. See Figure 5-4. Open the electrical enclosure and locate the level sensors.

WARNING! Risk of equipment damage, personal injury, or death. This procedure requires you to perform work inside the electrical enclosure with the power on. Follow electrical safety procedures and observe all high-voltage indicators.

5. Remove the plugs that cover the sensor adjustment screws.
6. Turn each adjustment screw as follows:
   - clockwise until the LED turns yellow,
   - counterclockwise until the LED turns green,
   - counterclockwise two (2) additional turns

   NOTE: When an LED turns yellow, the system believes that adhesive is present. Because we know that adhesive is not present, turning an adjustment screw counterclockwise until the LED turns green and then adding an additional two (2) counterclockwise turns calibrates the sensors.

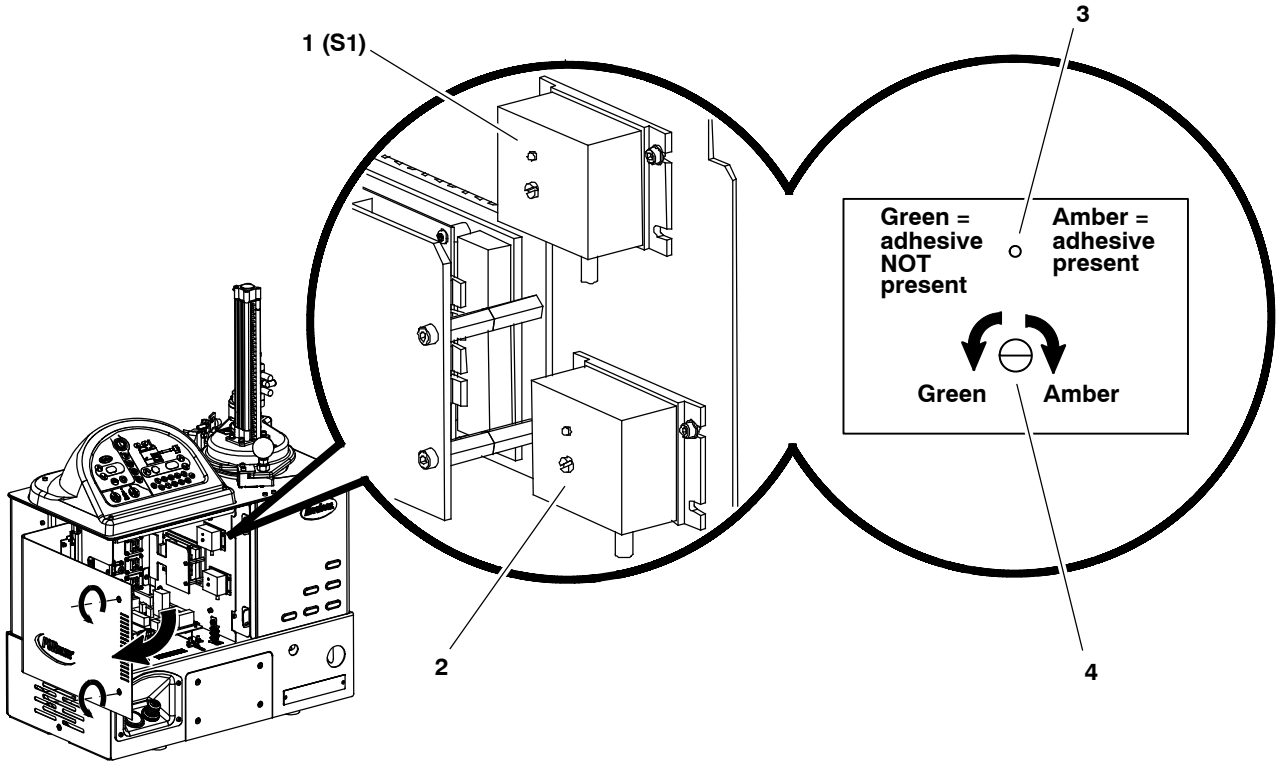
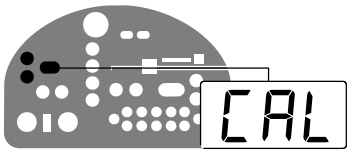


Figure 5-4 Location of the level sensor adjustment screws and LEDs

1. Melt-on-demand sensor (S1)
2. Reservoir-empty monitor
3. Level sensor LED
4. Level sensor adjustment screw (behind plug)

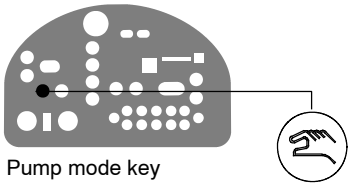
Calibrating the Pump Speed Display

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



Pump speed display and arrow keys

1. Ensure that the motor is running at 50 percent speed or higher.
2.
3. Press and hold both **Pump speed arrow** keys.
4. When the motor control display indicates CAL, release the keys.
5. Enter the actual pump rpm.


Pump mode key

6. Press the **Pump mode** key.

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/gun connections See flowchart T.2
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 See flowchart T.2
F3/None	Over temperature	Heaters turn off	The actual temperature of the component indicated has increased beyond the over temperature delta, set in parameter 21.	Change parameter 21. If the problem persists, replace the RTD. See flowchart T.2
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 gun RTD analog-to-digital converter could not be calibrated (grounded RTD in system)	Replace hose or gun. 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/A	Thermostat	Melter stops functioning	Reservoir or grid thermostat is open	Replace thermostat, XP6 harness, or main board
F4/C	Expansion board connection	Melter stops functioning	Ribbon cable P/N 1026662 is 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

Continued...

Melter Faults *(contd)*

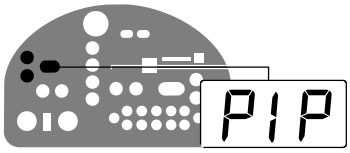
Table 6-1 Melter Faults *(contd)*

Display Code/Sub-code	Name	Affect on Melter	Cause	Corrective Action
F9/1 (see Note A)	Reservoir empty	Pump turns off and fault output is generated, but heaters and READY light remain on	Reservoir empty then pump continues to turn the number of rotations set in motor control parameter dLy (refer to Table 3-11)	Ensure that adhesive is present in the hopper and allow time for the adhesive to melt into the reservoir. Unless it is critical that the unit turn off immediately when the reservoir is empty, set the dLy value higher to prevent this fault condition.
S1Cal (see Note B)	Sensor 1 calibration	Melter enters standby mode	A continuous grid-on condition occurred because the setting for parameter 49 was exceeded (refer to Table 3-11).	Check the S1 sensor calibration (refer to *Calibrating the Level Sensors* in Section 5, *Maintenance*) or adjust the setting for parameter 49.

NOTE A: An F9/1 fault does not create a fault condition, but it does generate a fault output. This output is visible only if the digital fault output or optional light tower are being used and is the only situation in which both a red and green light may be on at the same time. In such cases, the heaters and motor are okay, but the melter will not run because there is no adhesive in the reservoir.

B: For a detailed description of how the melt-on-demand functionality of this melter works, refer to *Modes of Operation* in Section 2, *Introduction*.

Motor/Piston Control Faults



Pump speed display showing a fault code

Table 6-2 provides a list of motor- and piston-control related faults and problems. Fault codes are displayed on the pump speed display.

Table 6-2 Motor/Pistol Control Faults and Troubleshooting

Fault	Affect on Melter	Possible Cause	Corrective Action
dIS (Pump Disable)	Pump and heaters turn off; F9/1 melter fault code displayed on right display	Reservoir empty but pump continues to turn the number of rotations set in motor control parameter dLy (refer to *Setting Up the Motor Control* in Section 3, *Installation*).	Ensure that adhesive is present in the hopper and allow time for the adhesive to melt into the reservoir. Unless it is critical that the unit turn off immediately when the reservoir is empty, set the dLy value higher to prevent this fault condition.
FLt (Motor Thermostat Fault)	Motor turns off	Motor cable disconnected or motor temperature too high	Ensure that motor cable is connected. Ensure that motor is not operating above maximum rpm, hydraulic pressure, or ambient temperature.
no P1P (Lid Not Closed)	Piston cannot be lowered	Lid not closed	Close the lid.
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* in Section 5, *Maintenance.*

Continued...

Motor/Piston Control Faults *(contd)*

Table 6-2 Motor/Pistol Control Faults and Troubleshooting *(contd)*

Fault	Affect on Melter	Possible Cause	Corrective Action
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*.
N/A	Piston stuck in down position	Excessive downward air pressure [greater than 2 bar (30 psi)] on a slug or foil bag torn or damaged	Press the **Piston up** key, increase the piston air pressure to the maximum, and wait 5 minutes. If after 5 minutes the piston has not lifted, increase the melter temperature to the maximum safe limit recommended by the material supplier. Allow the temperature to stabilize for 30 minutes (with the maximum air pressure still applied).

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.

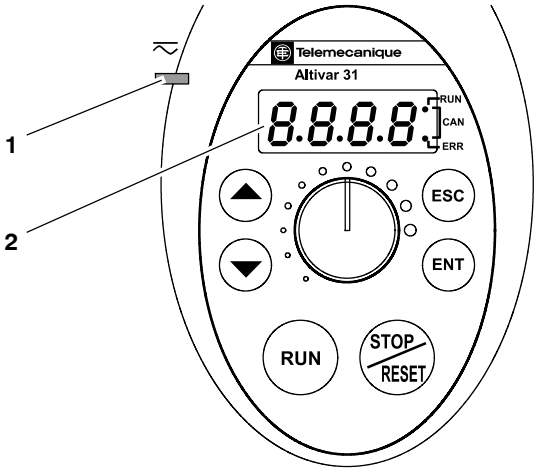


Figure 6-1 Motor drive display and motor drive power LED

1. Motor drive power LED (steady=OK, flashing=fault, off=no power)
2. Display

Note: Do not use the motor drive keys. Contact your Nordson representative for assistance if you need to adjust any motor drive settings.

Motor Drive Faults *(contd)*

Table 6-3 Motor Drive Faults

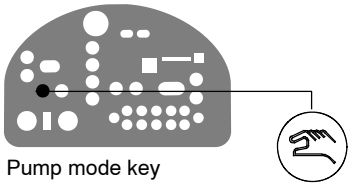
Fault Code	Probable Cause	Corrective Action
CrF Capacitor load circuit	Motor drive hardware failure	Replace the motor drive.
EEF EEPROM fault	Internal memory fault	• Check the environment (electromagnetic compatibility). • Replace the motor drive.
InF Internal fault	Internal fault	• Check the environment (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 PCV 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 PCV. 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.

Pump Operational Status



Pump mode key

NOTE: To use the pump operating variables table, ensure that the **Pump mode** key LED is on and that the motor speed is at a setting other than 0. In addition, ensure that the reservoir is not empty.

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 (handgun or footswitch)
- Activation of the pump key

Table 6-4 provides the status of the pump LED for each combination of the pump operating variables.

Table 6-4 Pump Operating Variables

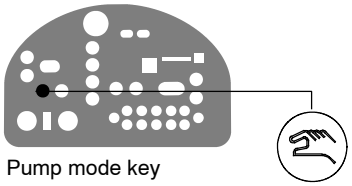
Pump LED Status	Remote Motor Input Assigned (See Note A)	Remote Motor Input Status (See Note B)	Automatic Pump On (Parameter 8)	Handgun/ Footswitch	Handgun/ Footswitch Input Status	Unit Ready Status	Pump Key Press Status (See Note C)	Motor Rotating
Single green flash, then off	Not Assigned	N/A	Disabled	Not present	N/A	No	Ignored	No
Off	Not Assigned	N/A	Disabled	Not present	N/A	Yes	Off	No
Green	Not Assigned	N/A	Disabled	Not present	N/A	Yes	On	Yes
Off	Not Assigned	N/A	Enabled	Not present	N/A	No	Off	No
Yellow	Not Assigned	N/A	Enabled	Not present	N/A	No	On	No
Off	Not Assigned	N/A	Enabled	Not present	N/A	Yes	Off	No
Green	Not Assigned	N/A	Enabled	Not present	N/A	Yes	On	Yes
Single green flash, then off	Not Assigned	N/A	Disabled	Present	On/Off	No	Ignored	No
Off	Not Assigned	N/A	Disabled	Present	On/Off	Yes	Off	No
Yellow	Not Assigned	N/A	Disabled	Present	Off	Yes	On	No
Green	Not Assigned	N/A	Disabled	Present	On	Yes	On	Yes
Off	Not Assigned	N/A	Enabled	Present	On/Off	No	Off	No
Yellow	Not Assigned	N/A	Enabled	Present	On/Off	No	On	No
Off	Not Assigned	N/A	Enabled	Present	On/Off	Yes	Off	No
Green	Not Assigned	N/A	Enabled	Present	On	Yes	On	Yes
Yellow	Not Assigned	N/A	Enabled	Present	Off	Yes	On	No
Single green flash, then off	Assigned	On/Off	Disabled	Not present	N/A	No	Ignored	No
Off	Assigned	On	Disabled	Not present	N/A	Yes	Off	No
Flashing Green	Assigned	Off	Disabled	Not present	N/A	Yes	On	No
Green	Assigned	On	Disabled	Not present	N/A	Yes	On	Yes
Off	Assigned	On/Off	Enabled	Not present	N/A	No	Off	No
Off	Assigned	On/Off	Enabled	Not present	N/A	Yes	Off	No
Yellow	Assigned	On/Off	Enabled	Not present	N/A	No	On	No
Flashing Green	Assigned	Off	Enabled	Not present	N/A	Yes	On	No
Green	Assigned	On	Enabled	Not present	N/A	Yes	On	Yes

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

B: If the remote motor input is assigned, then its status is described in this column.

C: "On" means 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.

Using the Troubleshooting Flow Chart

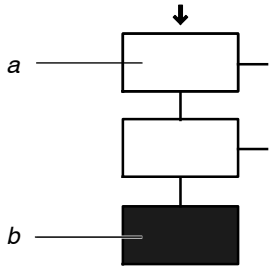


Pump mode key

NOTE: To use the pump operating variables table, ensure that the **Pump mode** key LED is on and that the motor speed is at a setting other than 0. In addition, ensure that the reservoir is not empty.

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 guns. The chart is organized in a simple question-action block format. If your response to a question is yes (+), continue downward in the chart to the next question or action block. If you response is no (-), 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 courses of action:

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



Troubleshooting question and action blocks

a) Question *b*) Action

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 connector X1 and/or X2. 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, switch the melter off, simultaneously press the **Setup** and **Right Display Scroll Down** keys, and then switch the melter back on, holding the **Setup** and **Right Display Scroll Down** keys until the letters PUR appear on the right display.

NOTE: If PUR does not appear upon a first attempt at factory reset, switch the melter off, simultaneously press the **Tank** and **Clear/reset** keys, and then switch the melter back on, holding the **Tank** and **Clear/reset** keys until the letters PUR appear on the right display. This will reset the melter as a PUR melter.

Identifying Electrical Components

Tables 6-5 through 6-9 provide detailed descriptions of the circuit board indicators, connection points, and test points that are referred to in the troubleshooting chart. Refer to the wiring diagram in Section 8, *Technical Data*, for the location of each of these circuit board components.

Table 6-5 Main Board Components

Item Number	Type	Description
Indicators		
DS2	Neon	Power to tank heater
DS3	Neon	Power to manifold heater
DS4	Neon	Power to 5 VDC and 24 VDC power supplies
DS5	Neon	Power to grid heaters
DS6	Neon	Power to hose/gun 1 heaters
DS8	LED	Control signal for grid heater
DS9	LED	Not used
DS10	LED	Control signal for tank heaters
DS11	LED	Control signal for motor
DS12	LED	Control signal for gun 1 heater
DS13	LED	Control signal for hose 1 heater
DS14	LED	Control signal for manifold 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	--	Manifold heater (5 A, 250 V, fast-acting, 5 x 20 mm)
F7/F8	--	Grid heaters (6.3 A, 250 V, 5 x 20 mm)
F9/F10	--	Hose/gun 1 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 6-5 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 gun solenoid 1
XP2	Output	Control voltage to gun solenoid 2
XP3	Input	Switch closure from handgun 1
XP4	Input	Switch closure from handgun 2
XP5	Input	Manifold RTD
XP6	Input	Tank RTD and tank overtemperature thermostat
X1	Output	High-voltage to manifold heater
X2	Output	High-voltage to tank heaters
X3	Output	High-voltage to motor
X4	Output	High-voltage and control voltage out to grid heaters
X5	Output	High-voltage and control voltage out to hose/gun 1
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 6-6 Expansion Board Components

Item Number	Type	Description
Indicators		
DS1	LED	24 VDC present at X3
Connection Points		
XT1	Input	AC power into board
XT2	Output	AC power out to power module (hoses/guns 2 and 3)
XT3	Output	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 (hoses/guns 2 and 3)
J2	Input/output	Ribbon cable connection between expansion board and main board

Identifying Electrical Components *(contd)*

Table 6-7 Power Module Components

Item Number	Type	Description
Indicators		
N1	Neon	Hose 3 is turned on
N2	Neon	Gun 3 is turned on
N3	Neon	Hose 2 is turned on
N4	Neon	Gun 2 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/gun 3 and the power module
J3	Input/output	Connection point for the wire harness between hose/gun 2 and the power module
J4/J5	Input	AC power input from XT2 on the expansion board
Fuses		
F1, F2	--	Hose 3 and gun 3
F3, F4	--	Hose 2 and gun 2

Table 6-8 Piston/Motor Control Board Components

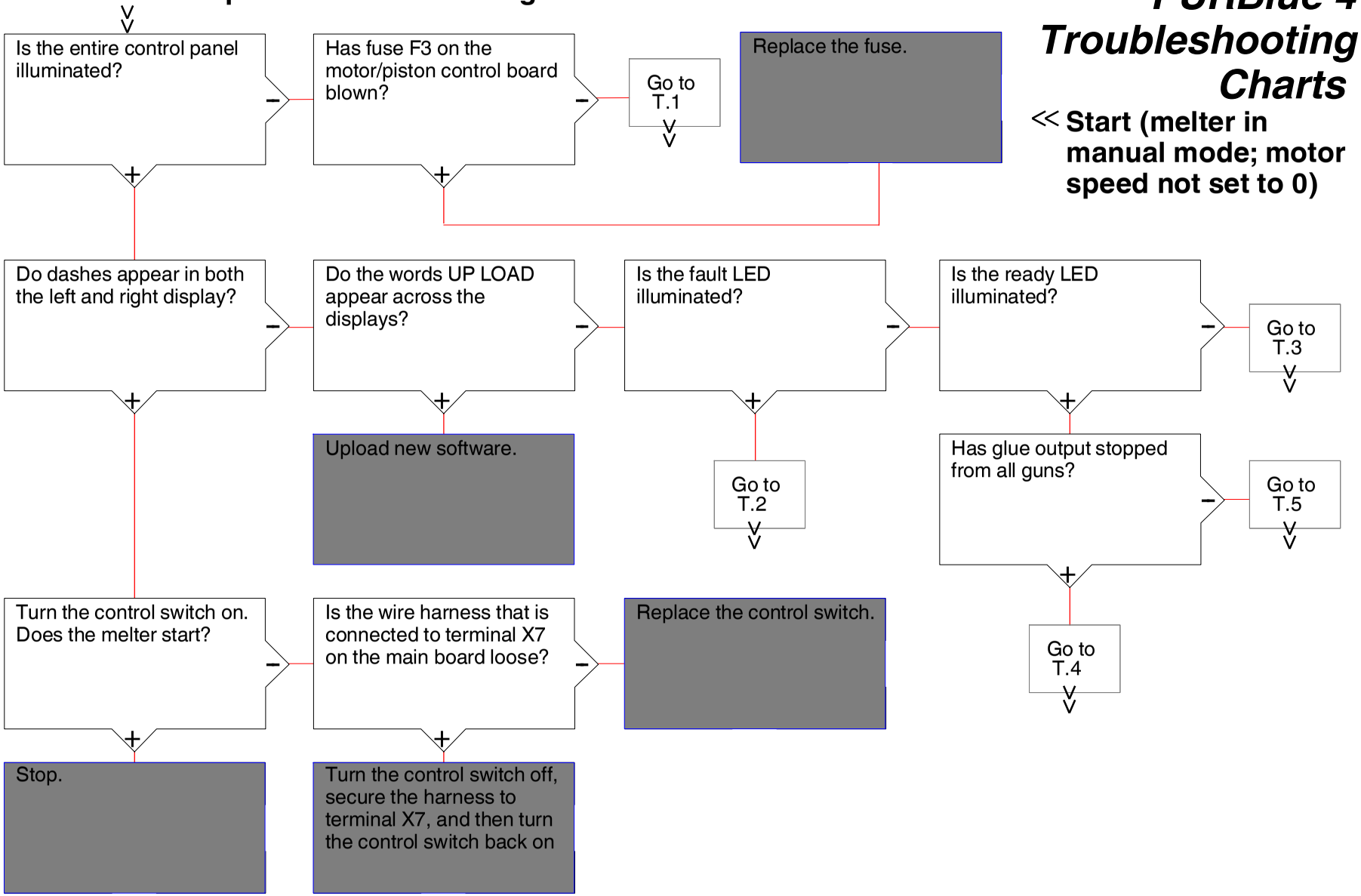
Item Number	Type	Description
Indicators		
DS5	LED	Status
DS7	LED	Reservoir empty
DS8	LED	Motor enable input
DS9	LED	Piston in place
DS10	LED	Melt on demand
DS12	LED	Hopper empty
DS15	LED	Motor thermostat
DS16	LED	Power switch
DS14	LED	Serial port fault
Connection Points		
X1	Input/output	Expansion serial port connection
X2	Input/output	Serial port connection to melter CPU
X3	Data	CPU debug connector
X4	Input	Membrane key pad
X5	Signal input/output	Connections to motor drive
X6	Signal input	DIN rail board connections
X8	Signal input/output	Melter I/O connections
X9	Signal input/output	Power switch connections
X10	Signal output	Membrane panel LEDs
TB1	Output	Piston solenoid connections
TB4	Sensor input	Piston-in-place sensor connection
TB5	Sensor input	Melt on demand sensor connection
TB6	Sensor input	Reservoir empty sensor connection
TB7	Sensor input	Hopper empty sensor connection
SW1	Switch	Switch to put motor control CPU into software upgrade mode

Identifying Electrical Components *(contd)*

Table 6-9 Relay Board Components

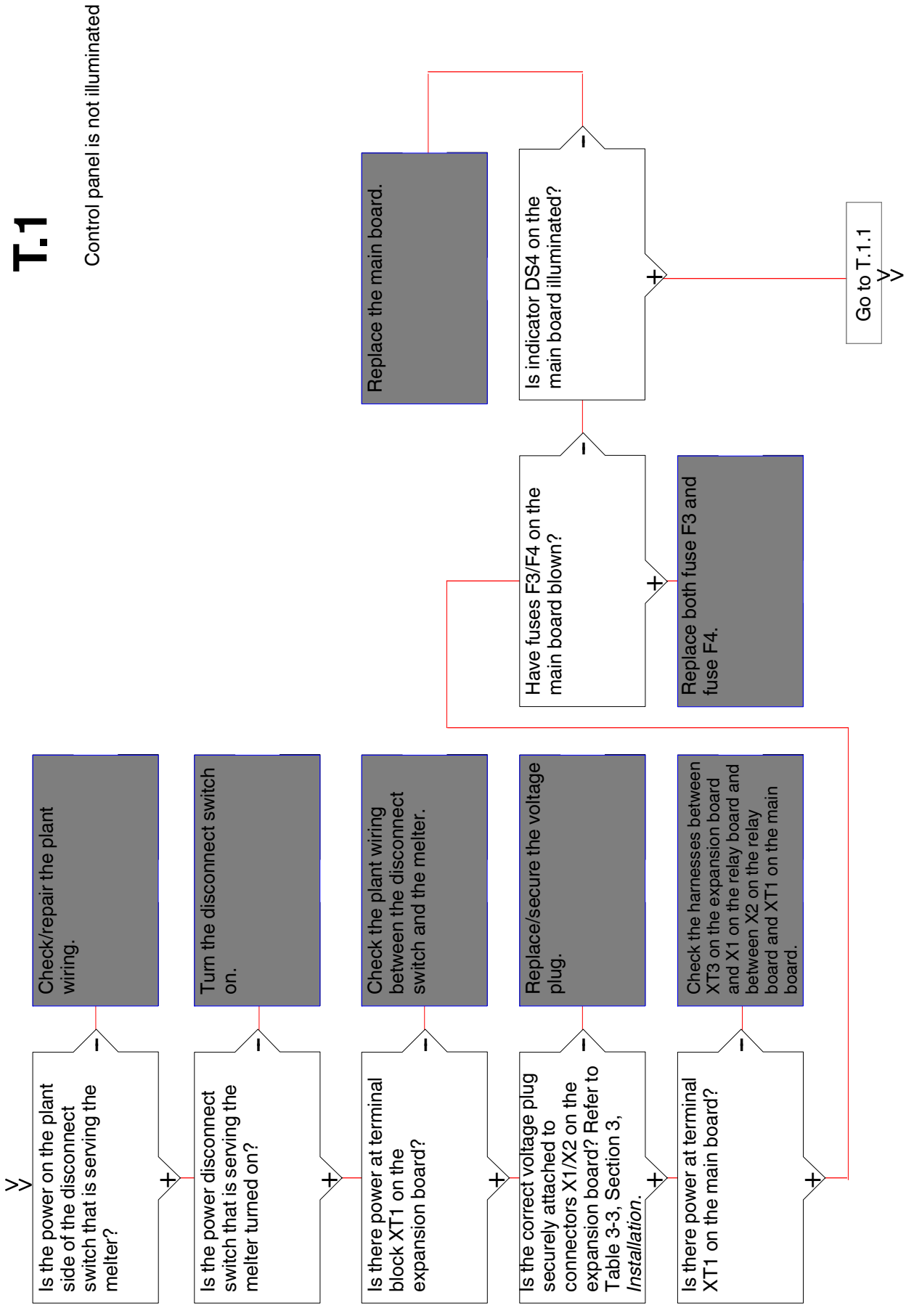
Item Number	Type	Description
Connection Points		
X1	Input	Power
X2	Output	Power
X3	Output	Motor drive and 24V power supply
X4	Output	Motor piston control
X5	Input	Customer-supplied motor run-up input signal
X6	Output	240V fan power (option C)
X7	Input	Motor relay power
X8	Input	24 VDC power to board
J1	Input	Solenoid signals from main board
J2	Test	Test
J3	Test	Test
J4	Output	Solenoid 1
J5	Output	Solenoid 2
Fuses		
F1	Fuse	Fuse for fan, motor drive, 24VDC power supply
F2	Fuse	Same as above
F3	Fuse	Fuse for 24 VDC power to and through board

No adhesive output from one or more guns

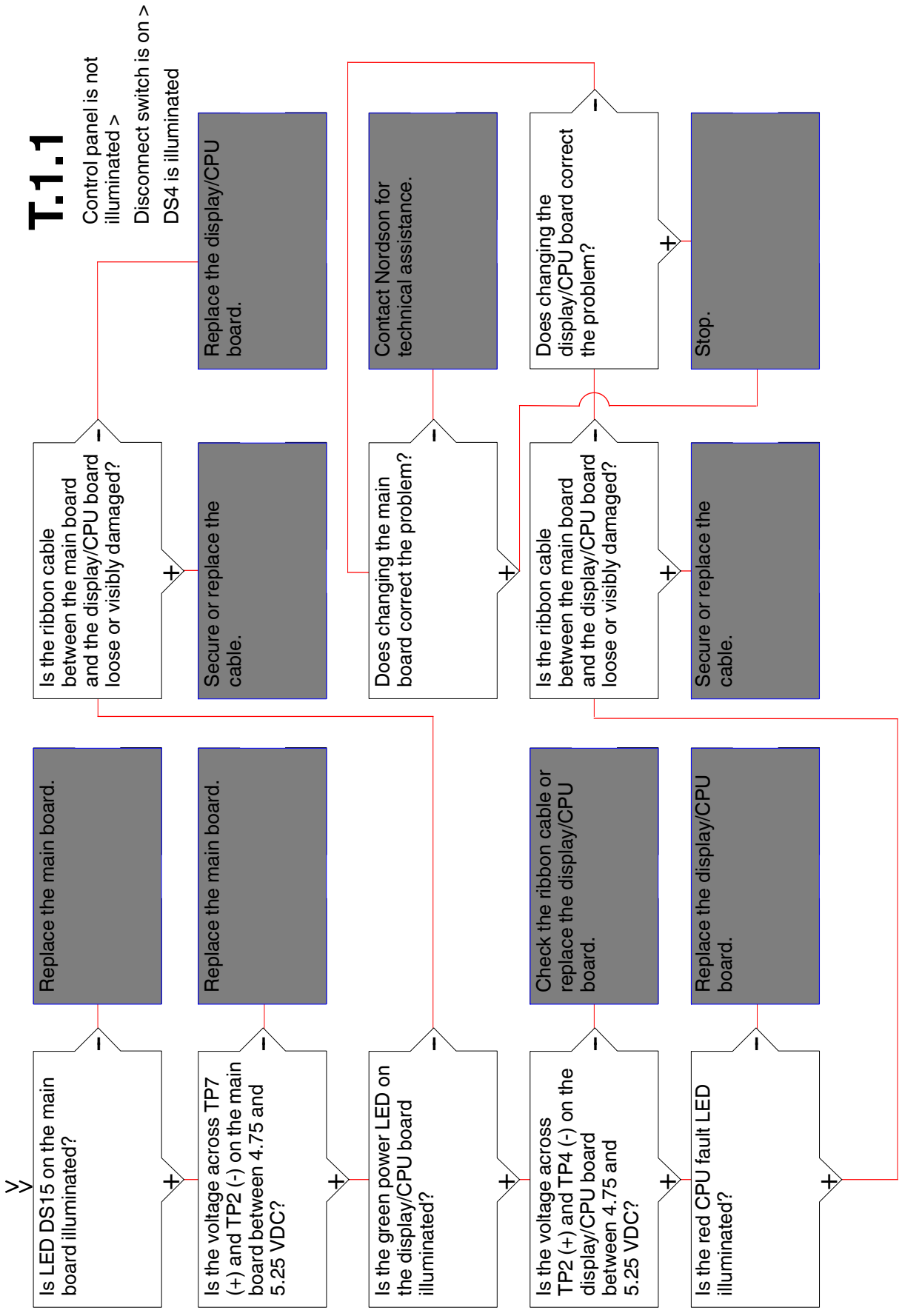


<< Start (melter in manual mode; motor speed not set to 0)

This page intentionally left blank.



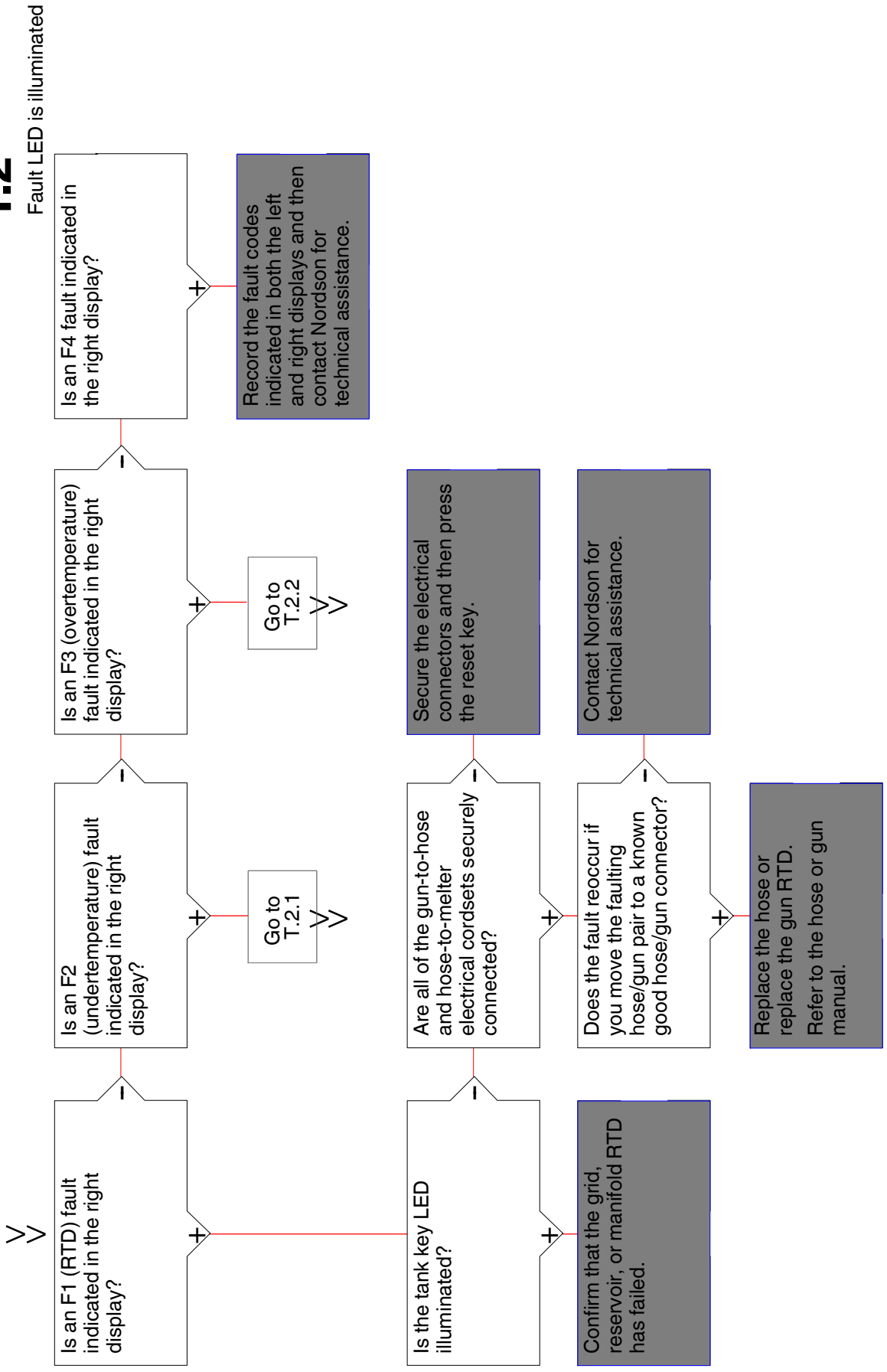
This page intentionally left blank.



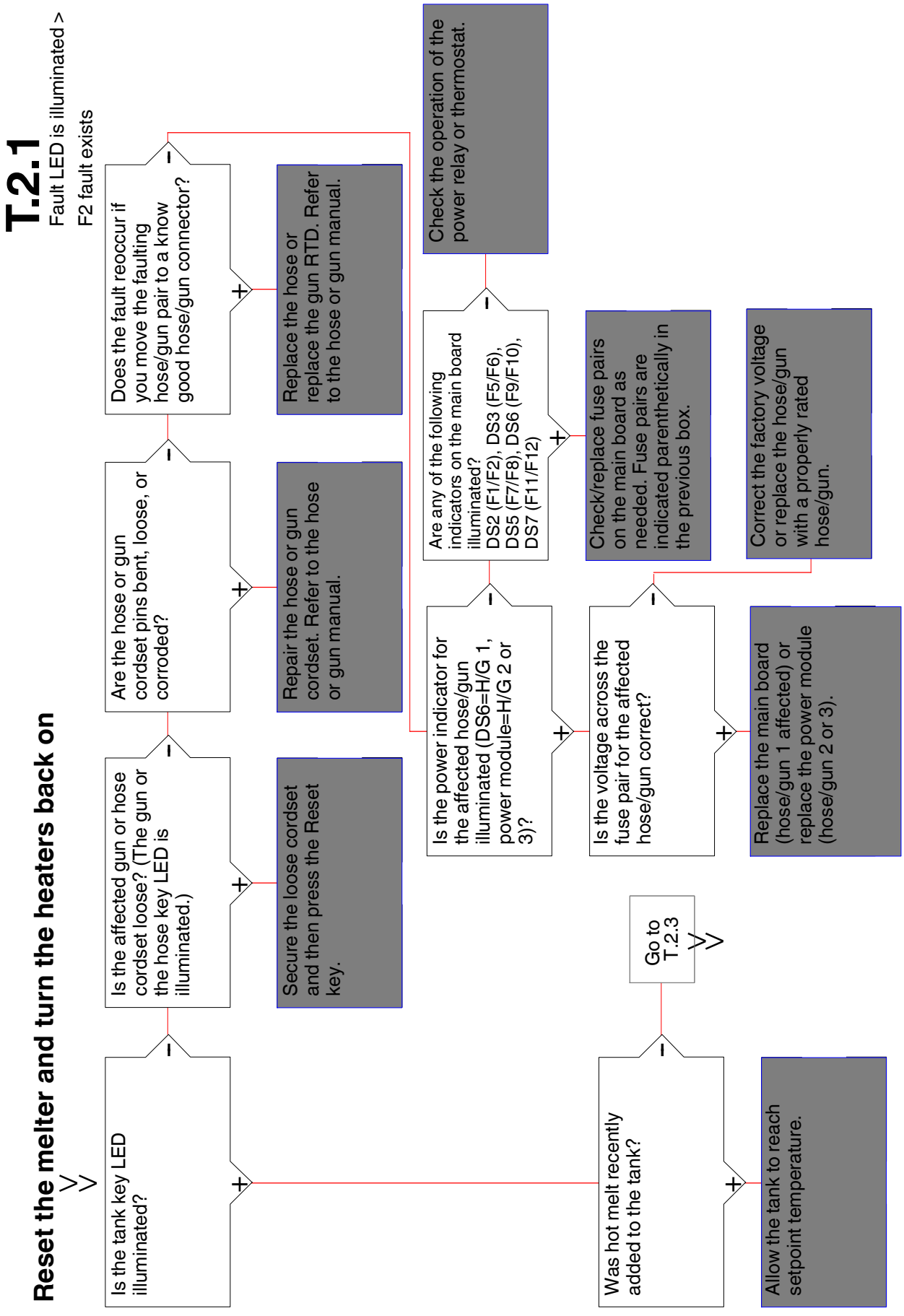
This page intentionally left blank.

T.2

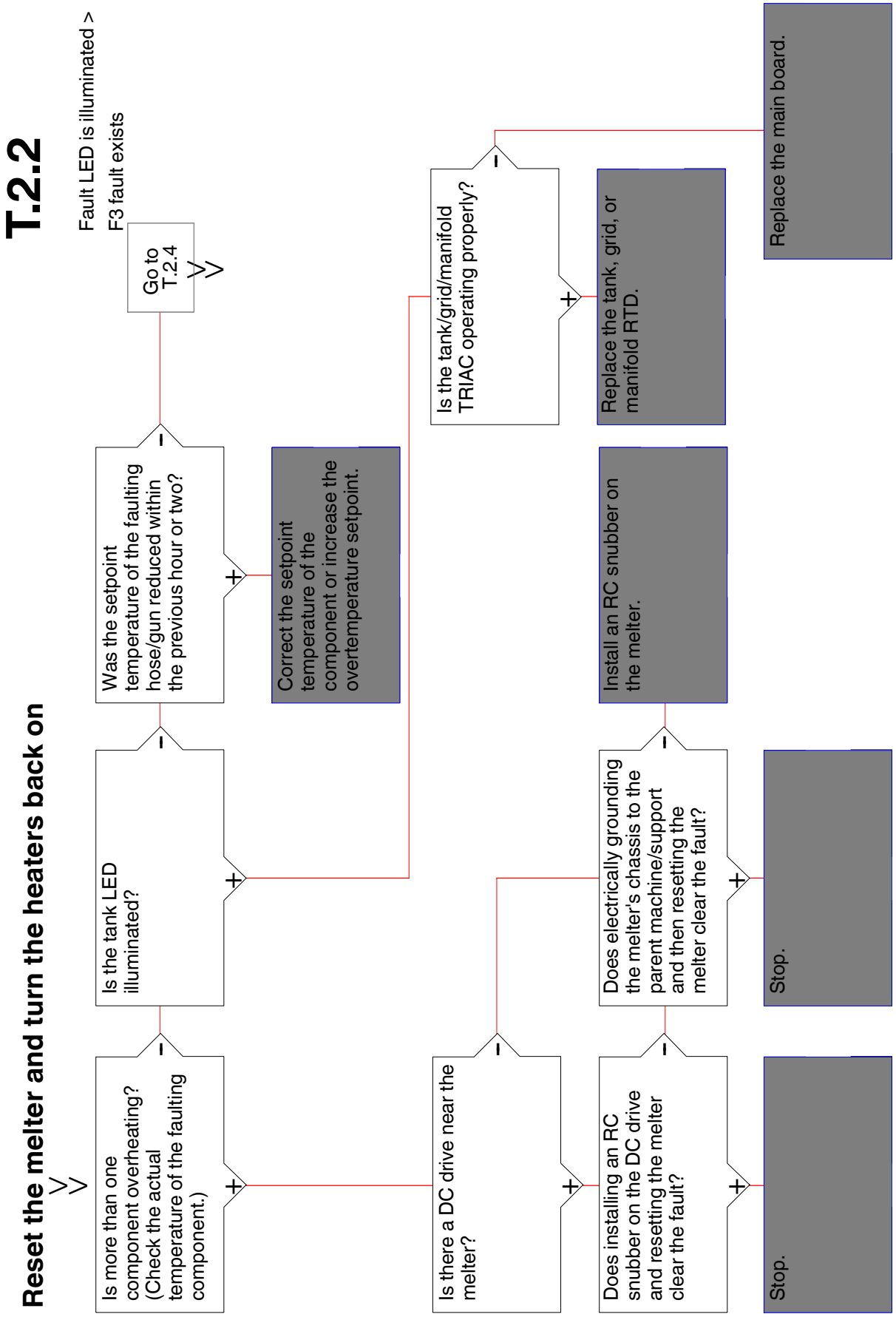
Fault LED is illuminated



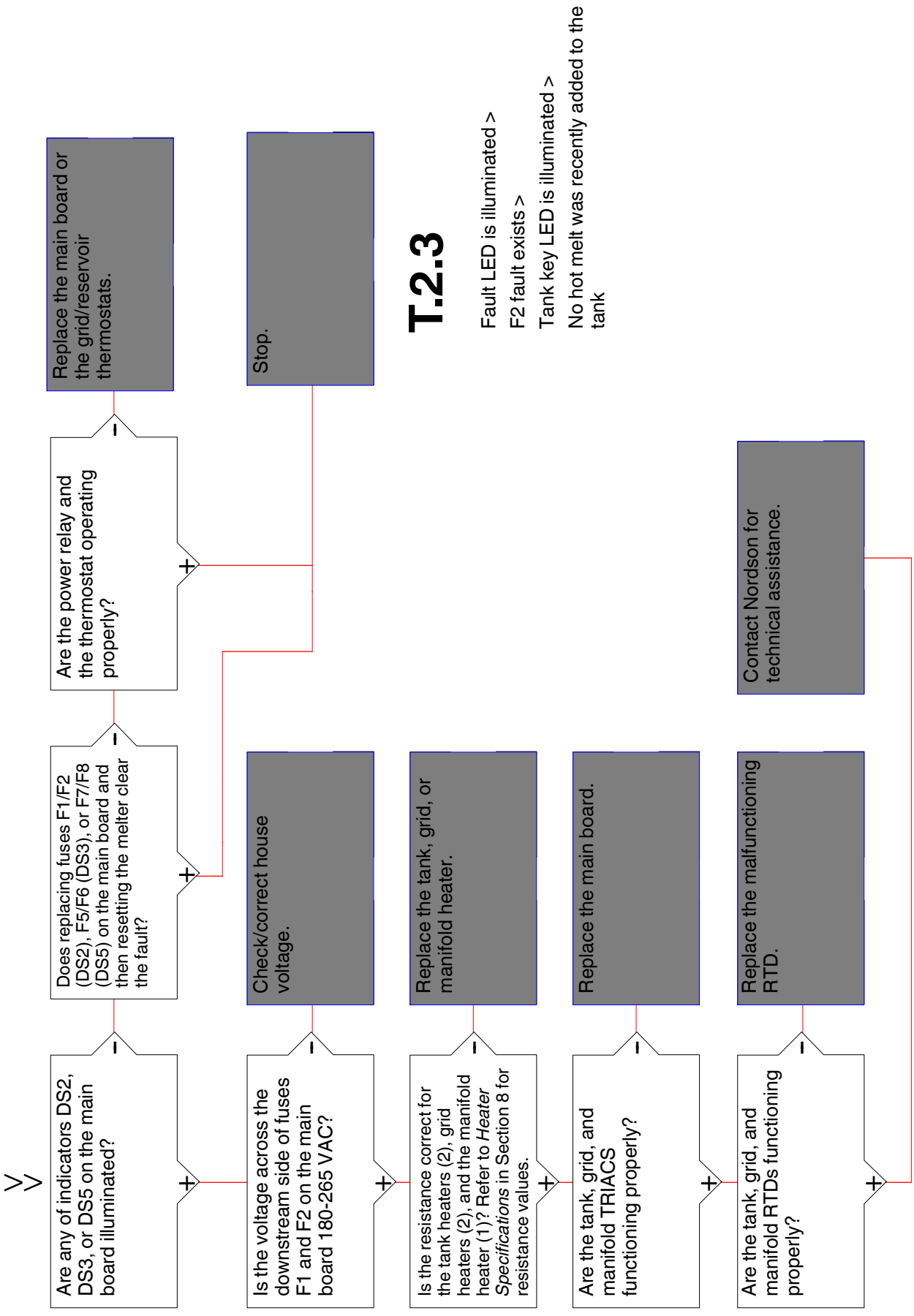
This page intentionally left blank.



This page intentionally left blank.



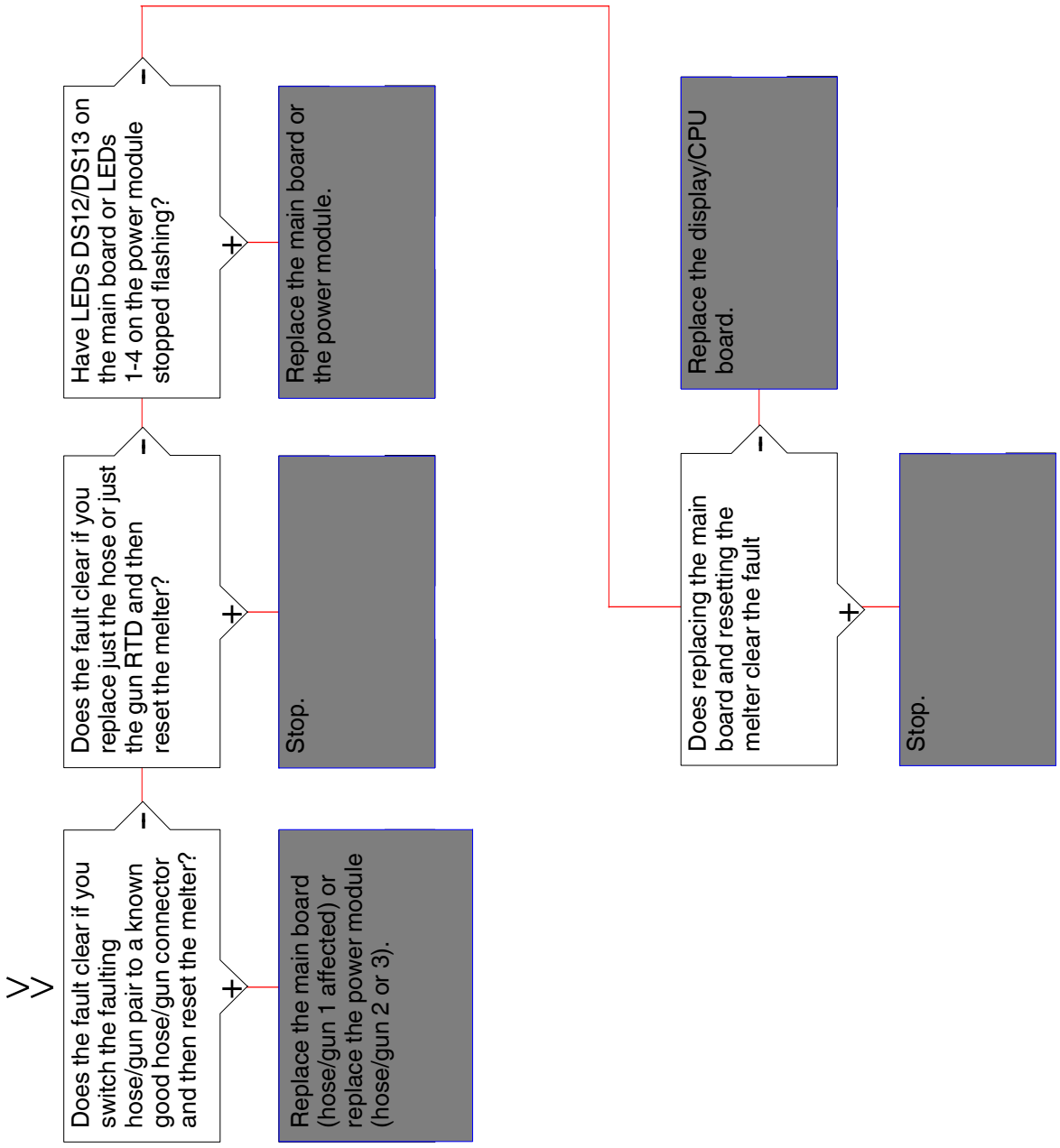
This page intentionally left blank.



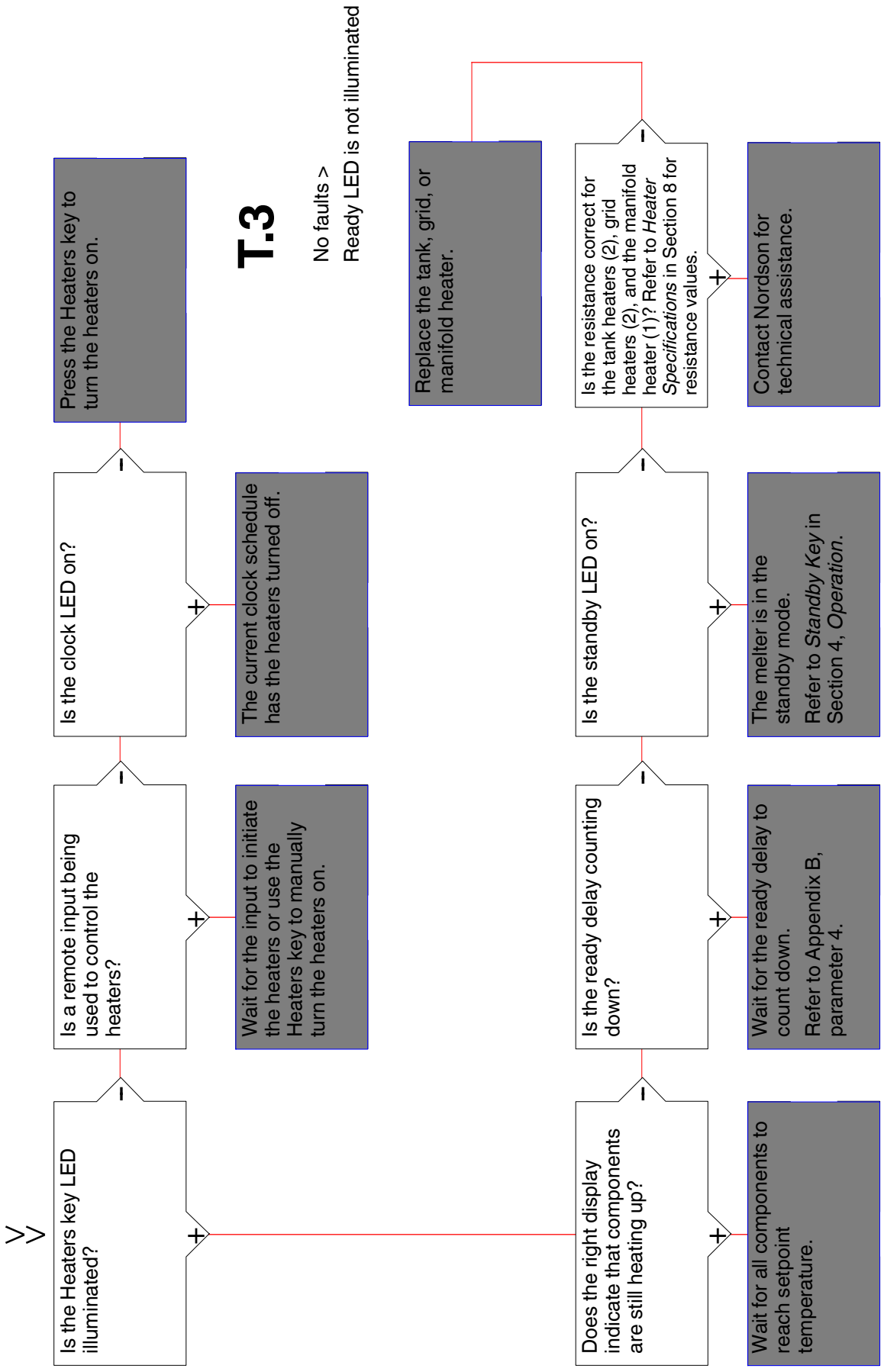
This page intentionally left blank.

T.2.4

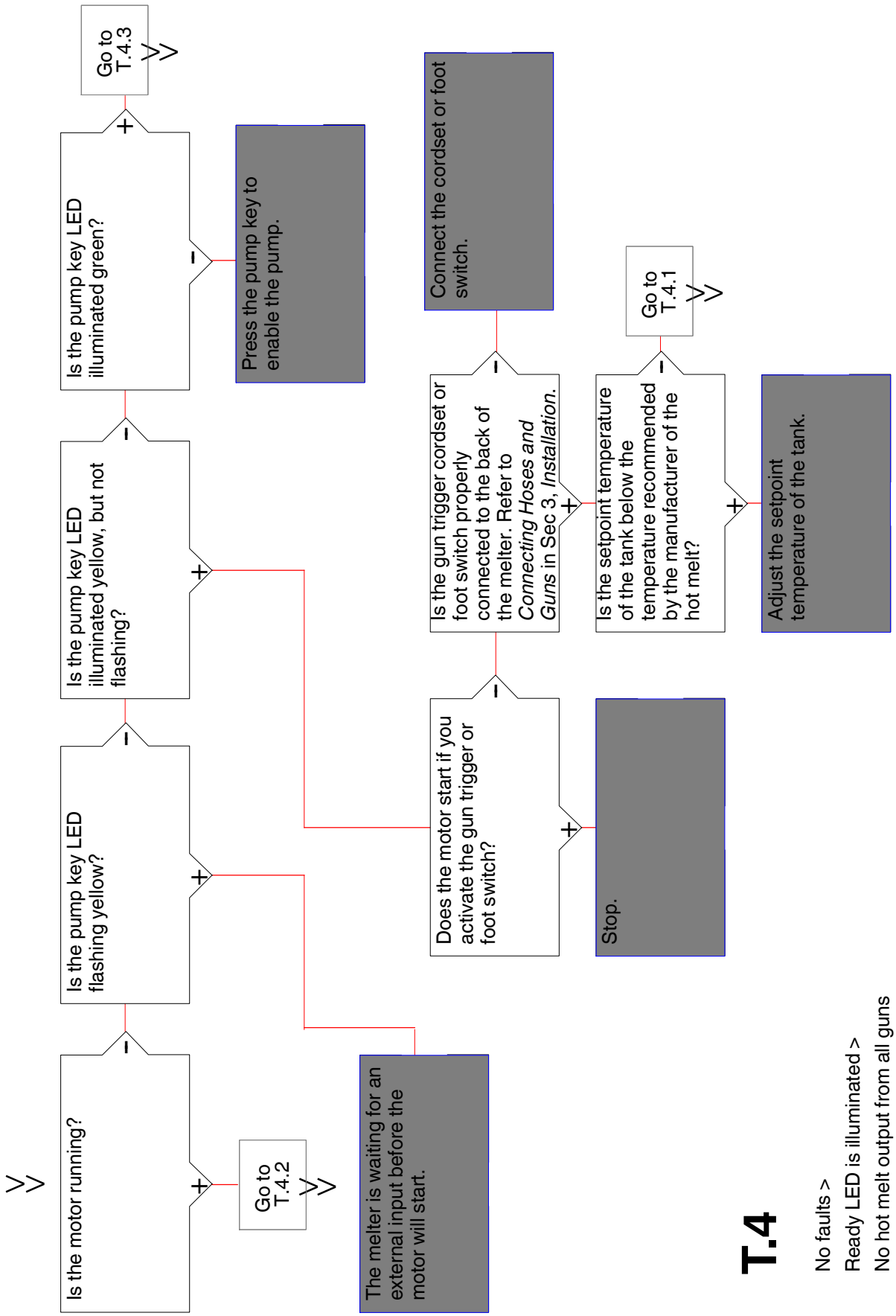
Fault LED is illuminated >
An F3 fault exists on a hose or gun >
The setpoint temperature was not changed



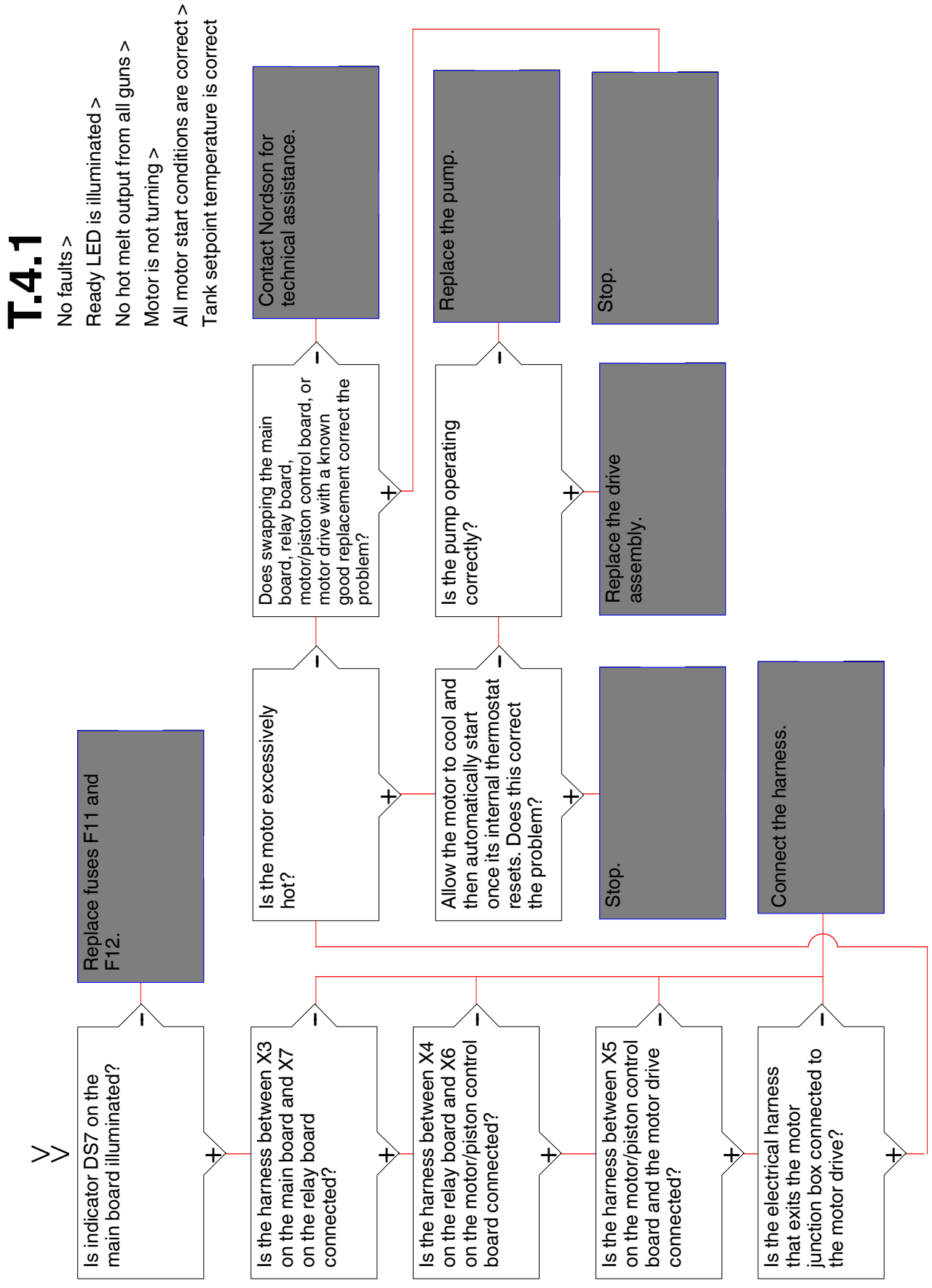
This page intentionally left blank.



This page intentionally left blank.



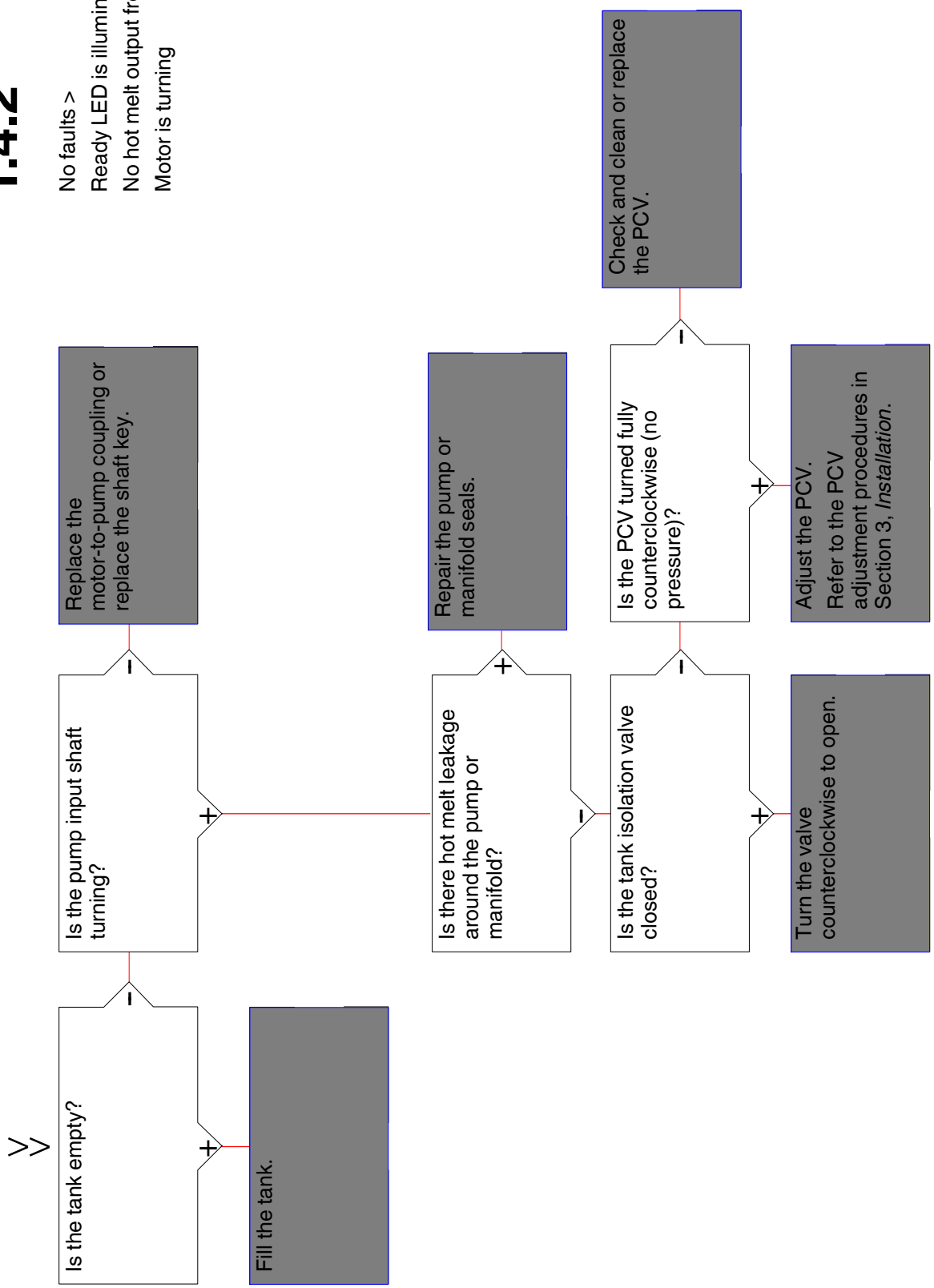
This page intentionally left blank.



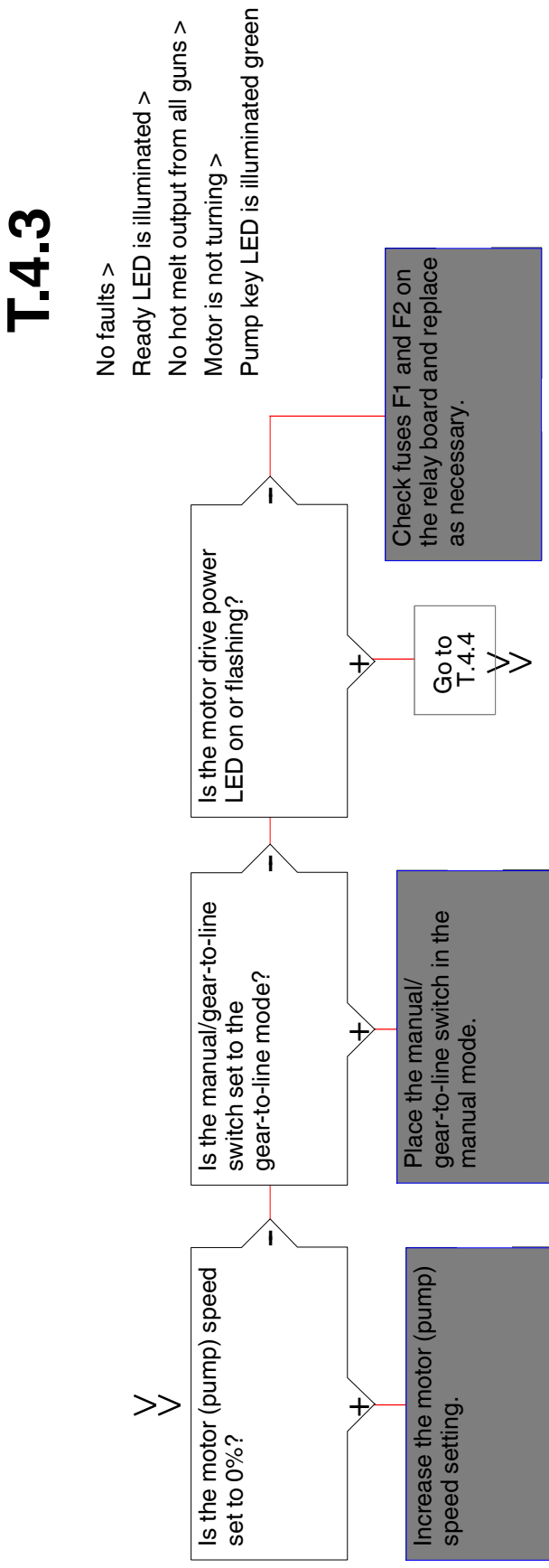
This page intentionally left blank.

T.4.2

No faults >
Ready LED is illuminated >
No hot melt output from all guns >
Motor is turning



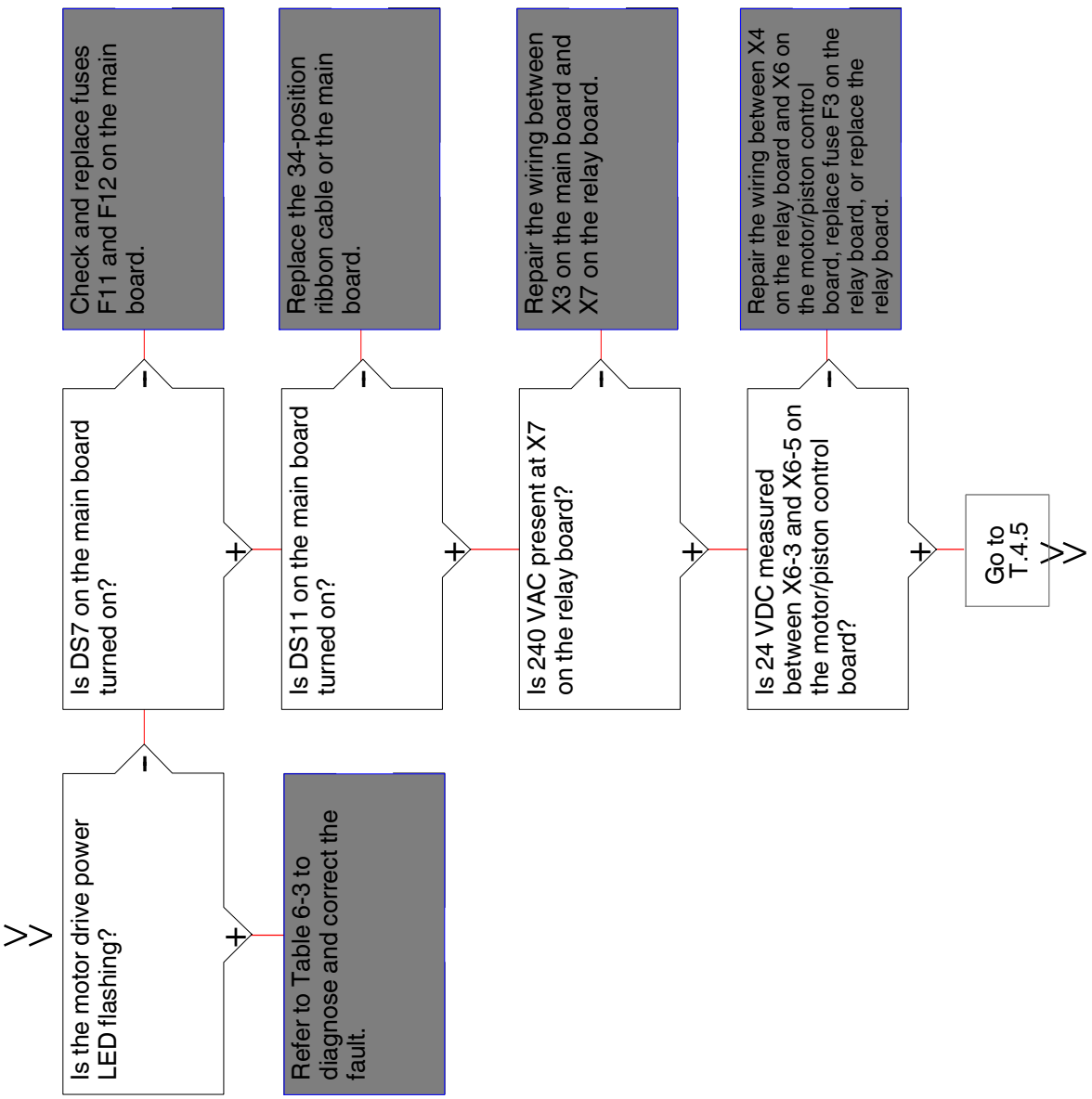
This page intentionally left blank.



This page intentionally left blank.

T.4.4

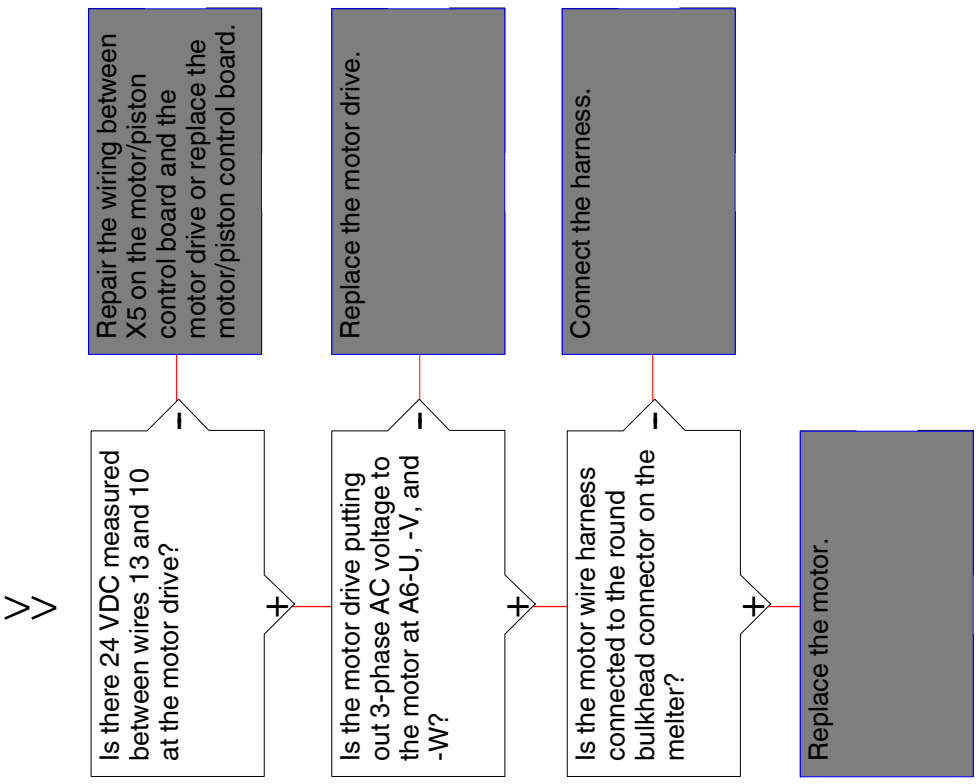
No faults >
Ready LED is illuminated >
No hot melt output from all guns >
Motor is not turning



This page intentionally left blank.

T.4.5

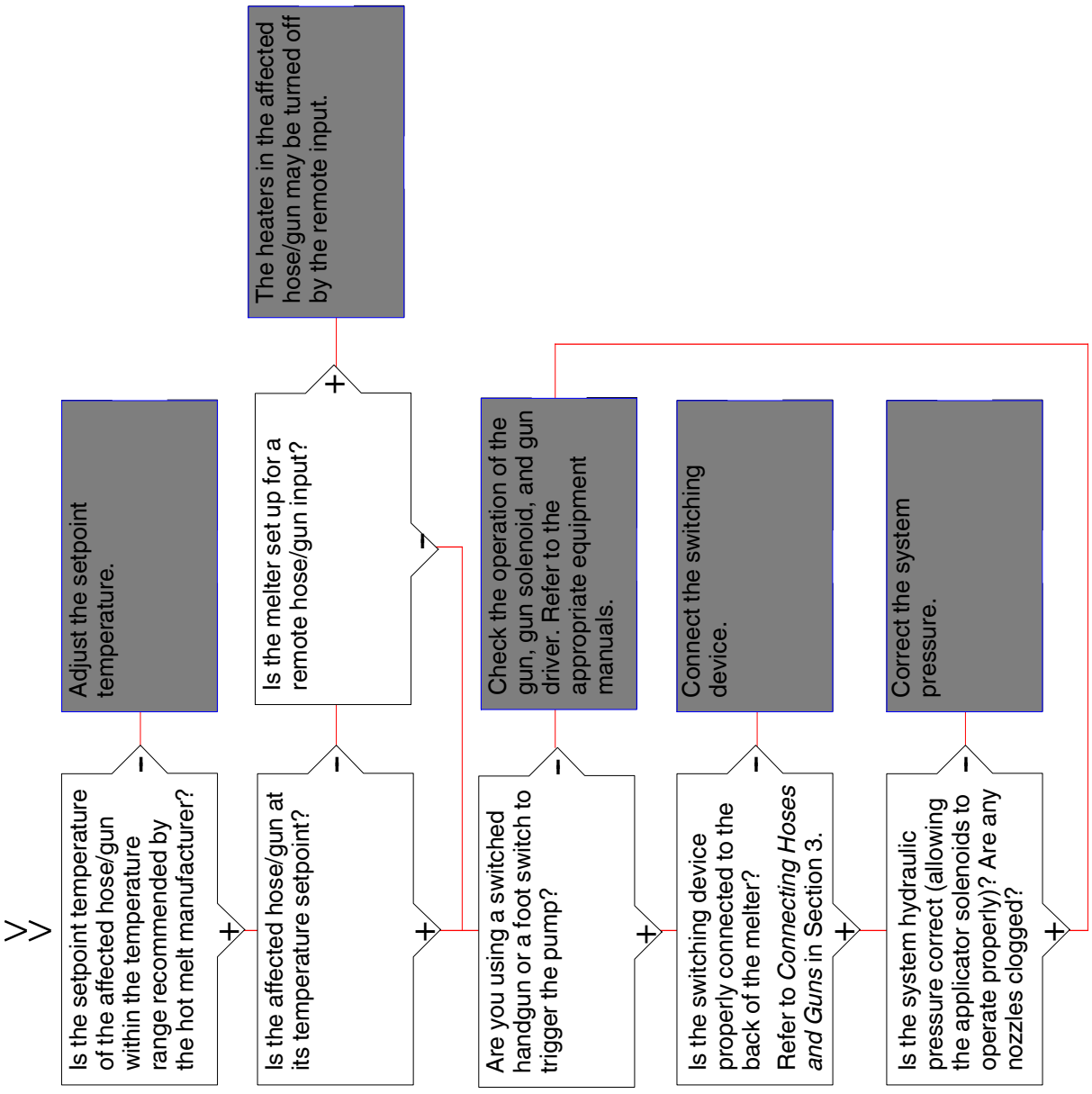
No faults >
Ready LED is illuminated >
No hot melt output from all guns >
Motor is not turning



This page intentionally left blank.

T.5

No faults >
Ready LED is illuminated >
No hot melt output from some guns



This page intentionally left blank.

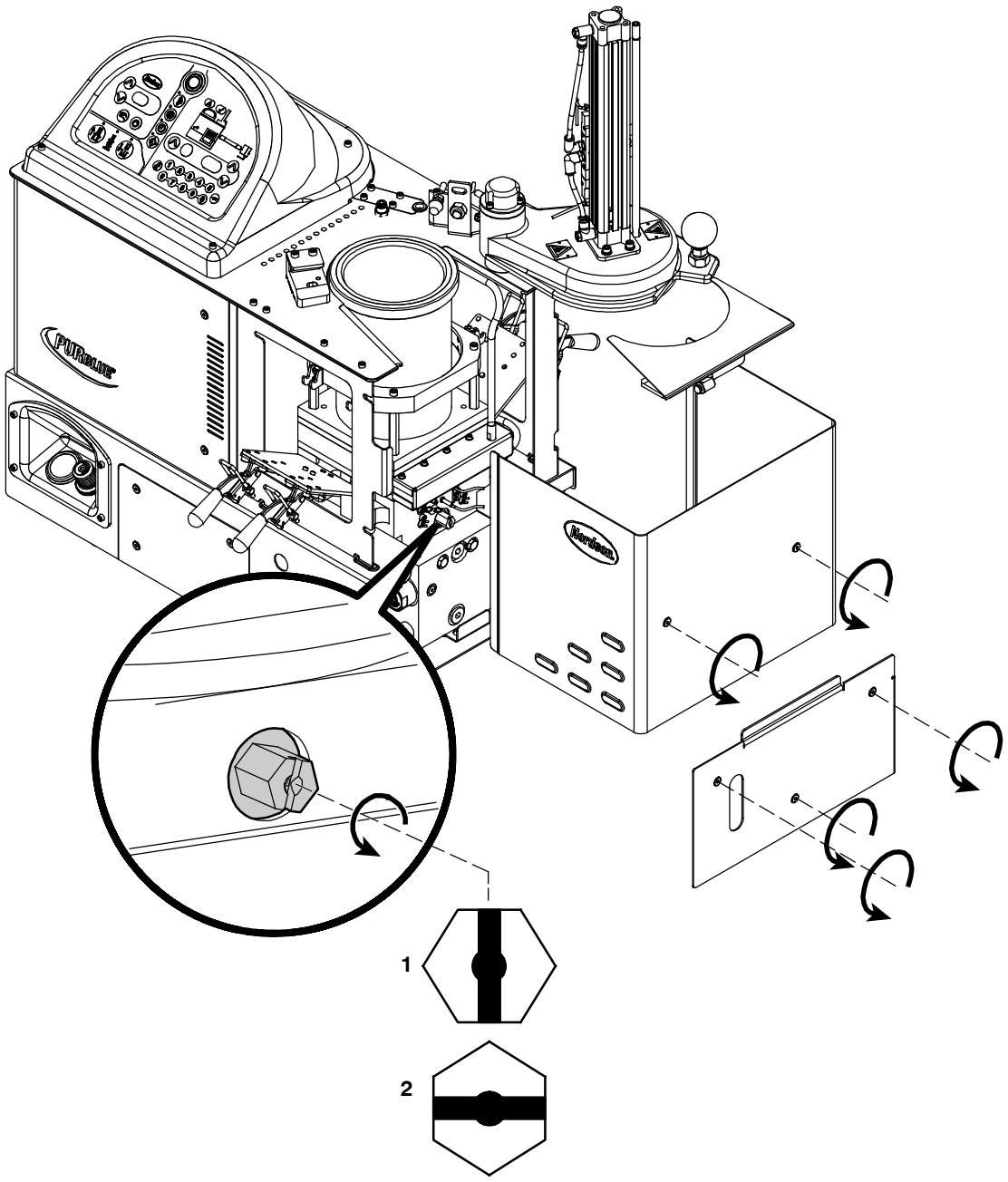


Figure 6-2 Opening the tank isolation valve

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

See Figure 7-1. You will need to know the configuration of your melter when requesting service or ordering spare parts and optional equipment. The melter part number is stamped on the melter identification plate. Refer to this parts list as needed to determine the configuration of your melter.

NOTE: The following table is not a complete list of melter configurations. As new configurations are developed, additional melter part numbers will be created. Contact your Nordson representative for information on available PURBlue 4 melter configurations.

Part Number	Description
1106413	MELTER, PB4, 240V, 130HOP, 3H/G, PR2M1
1106415	MELTER, PB4, 240V, 130HOP, 3H/G, PR25M2
NOTE: All melters have three hoses/guns and include installation (ship-with) kit part number 1090922. Refer to Section 3, *Installation*, for the contents of the installation kit.	

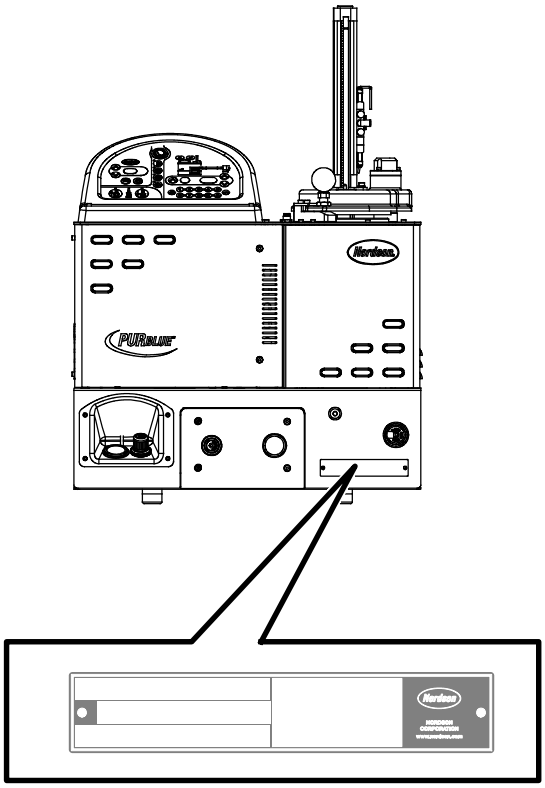


Figure 7-1 Unit identification plate

This page intentionally left blank.

Top Support Plate Assembly Parts

See Figure 7-2.

Item	Part	Description	Quantity	Note
—	- - - - - -	TOP SUPPORT PLATE ASSY, PB4	—	
1	- - - - - -	• PLATE, TOP, PB4	1	
2	- - - - - -	• ROD, PIVOT, LID, PB4	1	
4	- - - - - -	• BRACKET, BUMPER, LID, PB4	1	
5	- - - - - -	• BLOCK, STOP, LID CLOSE, PB4	1	
6	- - - - - -	• PLATE, TOP, STOP PLATE, PB4	1	
7	- - - - - -	• UNION, BULKHEAD, 6 MM T X 6MM T	1	
8	- - - - - -	• SUPPORT, CONTROLS, PB4	2	
9	1102263	• PROXSENSOR,INDUCTIVE,2MM,M12, W-CABLE	1	
10	- - - - - -	• PRESSURE SCREW NLM05260-08	2	
11	- - - - - -	• NUT, HEX, M8, STL, ZN	4	
12	- - - - - -	• NUT, HEX, M12X1.0, STL, ZN	2	
13	- - - - - -	• SCR, SET, CUP, M6X12, BL	4	
14	- - - - - -	• WASHER, LK, M, SPT, M6, STL, ZN	7	
15	- - - - - -	• NUT, HEX, M6, STL, ZN	7	
16	- - - - - -	• SCR, SKT, M6X16, BL	12	
17	- - - - - -	• STANDOFF, CONTROLS, COVER, PB4	4	
18	- - - - - -	• SHIELD, DRIP, GUI, PB4	1	
19	- - - - - -	• SPACER, .020 THK, LID, PB4	4	
20	- - - - - -	• LUG, 45, SINGLE, M5 X .032	1	
21	- - - - - -	• NUT, HEX, W/EXT TOOTH WASHER, M5, STL, ZN	1	
22	- - - - - -	• BAFFLE, CONTROLS, COVER, PB4	1	
23	- - - - - -	• SHIELD, DOOR, ELEC, PB4	1	
24	- - - - - -	• SHIELD, PANEL, REAR, PB4	1	
25	- - - - - -	• RIVET, POP, 1/8X.250 CARBON STL	5	
26	288221	• GASKET, .354X.216, MPL, 3000V (cut pcs)	1	

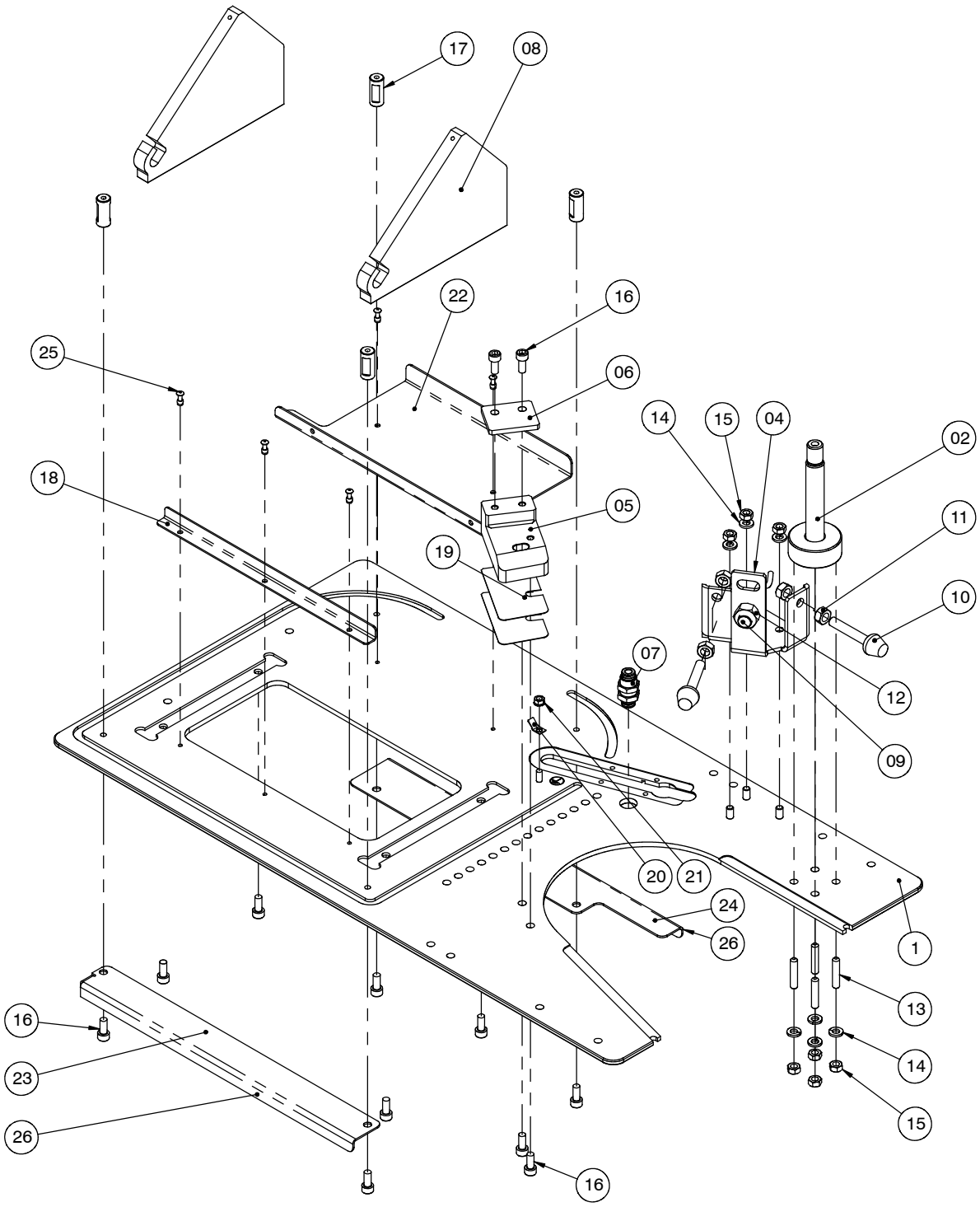


Figure 7-2 Top support plate assembly parts

Hopper/Grid Assembly Parts

See Figure 7-3.

Item	Part	Description	Quantity	Note
—	1106480	HOPPER,GRID ASSY,152MM,BLOSSOM	—	A
1	- - - - - -	• HOPPER, WELDMENT, 152 ID, PB4	1	
2	- - - - - -	• PLATE,SLUG MELTER,BLOSSOM,PB4	1	
3	- - - - - -	• COVER, ELECT, MELT PLATE, PB4	1	
4	1087919	• INSULATOR, 154 ID, ALTA TT-RM	1	
6	- - - - - -	• SCR,SKT,M5X10,BL	5	
7	- - - - - -	• SCR,SKT,M4X8,BL	6	
8	- - - - - -	• WASHER,FLT,M,NARROW,M4,STL,ZN	5	
9	- - - - - -	• SCR,SKT,M6X20,BL	8	
10	- - - - - -	• SCR,SKT,M6X60,BL	4	
11	- - - - - -	• PLATE, CAPTURE, RTD, ALTA TT-RM	1	
14	- - - - - -	• NUT,PANEL MOUNTING	1	
15	- - - - - -	• WASHER,LK,M,EXT,M10,ZN	1	
16	900344	• LUBRICANT,NEVER SEEZ,8OZ CAN	1	
19	- - - - - -	• BLOCK, CLAMP, HOPPER, PB4	1	
20	- - - - - -	• STAND-OFF, 13 DIA X 70 LONG, M6	4	
21	- - - - - -	• SCR,SKT,M6X35,BL	4	
22	- - - - - -	• CABLETIE,4 IN,338F/170C,TEFLON,BLUE	4	
NS	1096020	KIT, SERVICE, MANIFOLD/GRID, RTD SENSOR	1	
NS	1096027	KIT, SERVICE, GRID HEATER ASSY, 240V	2	

NOTE A: Optional hopper sizes are available. Refer to *Optional Equipment* later in this section.

NS: Not Shown

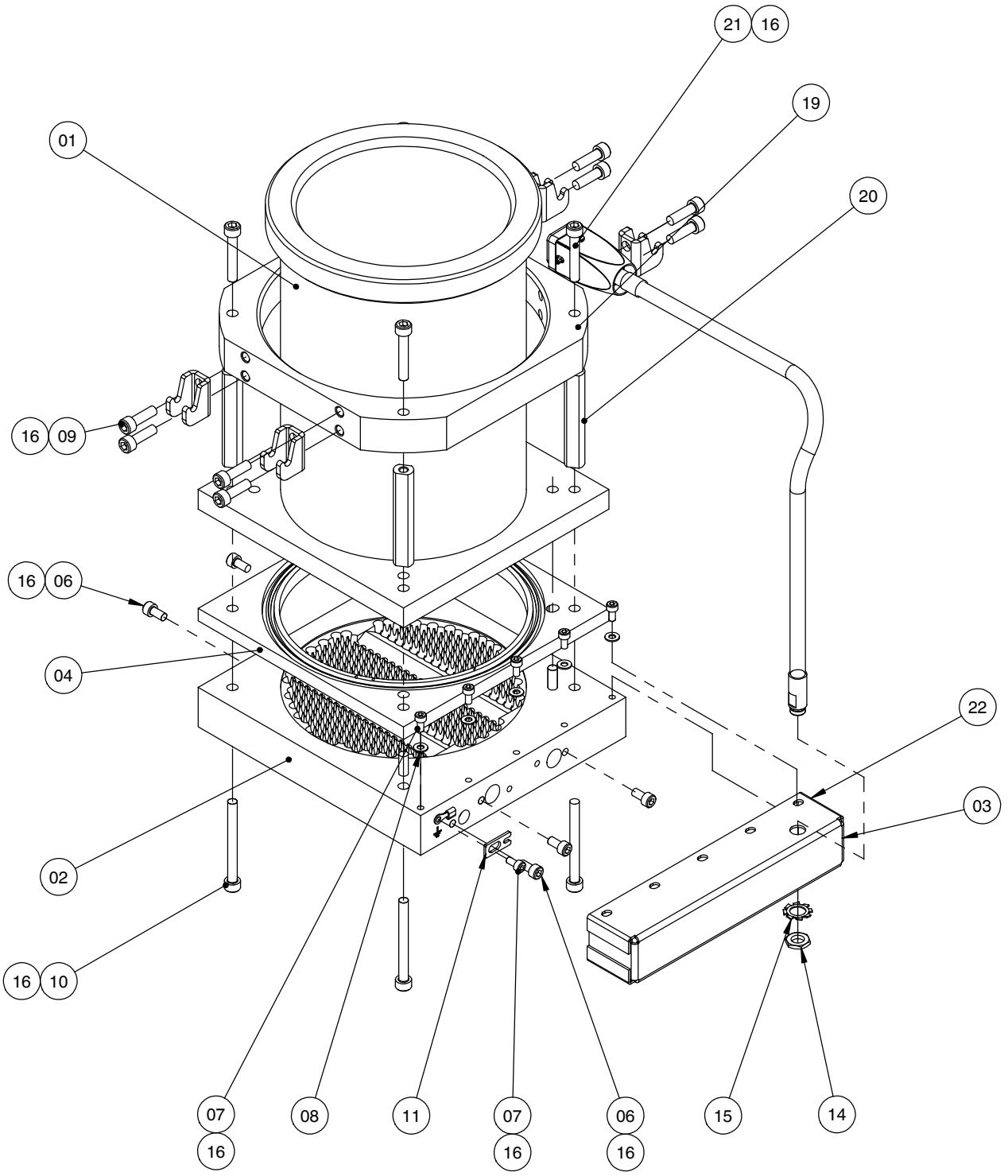


Figure 7-3 Hopper/grid assembly parts

Reservoir Assembly Parts

See Figure 7-4.

Item	Part	Description	Quantity	Note
—	- - - - - -	RESERVOIR ASSY, PB4	—	
1	- - - - - -	• RESERVOIR, MACHINING, PB4	1	
2	- - - - - -	• RETAINING RING,INT,112,BASIC	1	
3	1021670	• VALVE,SHUTOFF,TANK	1	
4	940201	• O RING,VITON,.864ID X .070W,BR	1	
5	- - - - - -	• SCR,SKT,M5X10,BL	5	
6	- - - - - -	• SCR,SKT,M4X8,BL	1	
7	- - - - - -	• PLATE, CAPTURE, RTD, ALTA TT-RM	1	
8	1087919	• INSULATOR, 154 ID, ALTA TT-RM	1	
10	1091209	• SENSOR, CAPACITIVE, M8/25, RECHNER,1.1M	2	
11	- - - - - -	• CLAMP ASSY, RESERVOIR, PB4	2	
12	- - - - - -	• PIN,DOWEL,6MM X 60MM LONG (DIN 6325-M6)	2	
13	- - - - - -	• SCR,SET,CUP,M4X6,BL	2	
14	- - - - - -	• PIN,DOWEL,6MM X 28MM LONG (DIN 6325-M6)	2	
15	900344	• LUBRICANT,NEVER SEEZ,8OZ CAN	1	
16	900236	• SEALANT,PASTE,TEFLON	1	
17	900493	• LUBRICANT,PARKER HI-TEMP,11208	1	
NS	- - - - - -	• SENSOR ASSY,TANK RTD & TSTAT,PB4	1	A
19	- - - - - -	• SCR,HEX,MACH,M5X8,ZN	2	
20	1093681	• SCREEN, RESERVOIR, PB4	1	
NS	1096025	KIT, SERVICE, RES. HEATER ASSY, 240V	2	

NOTE A: To replace this part, order service kit 1095999.

NS: Not Shown

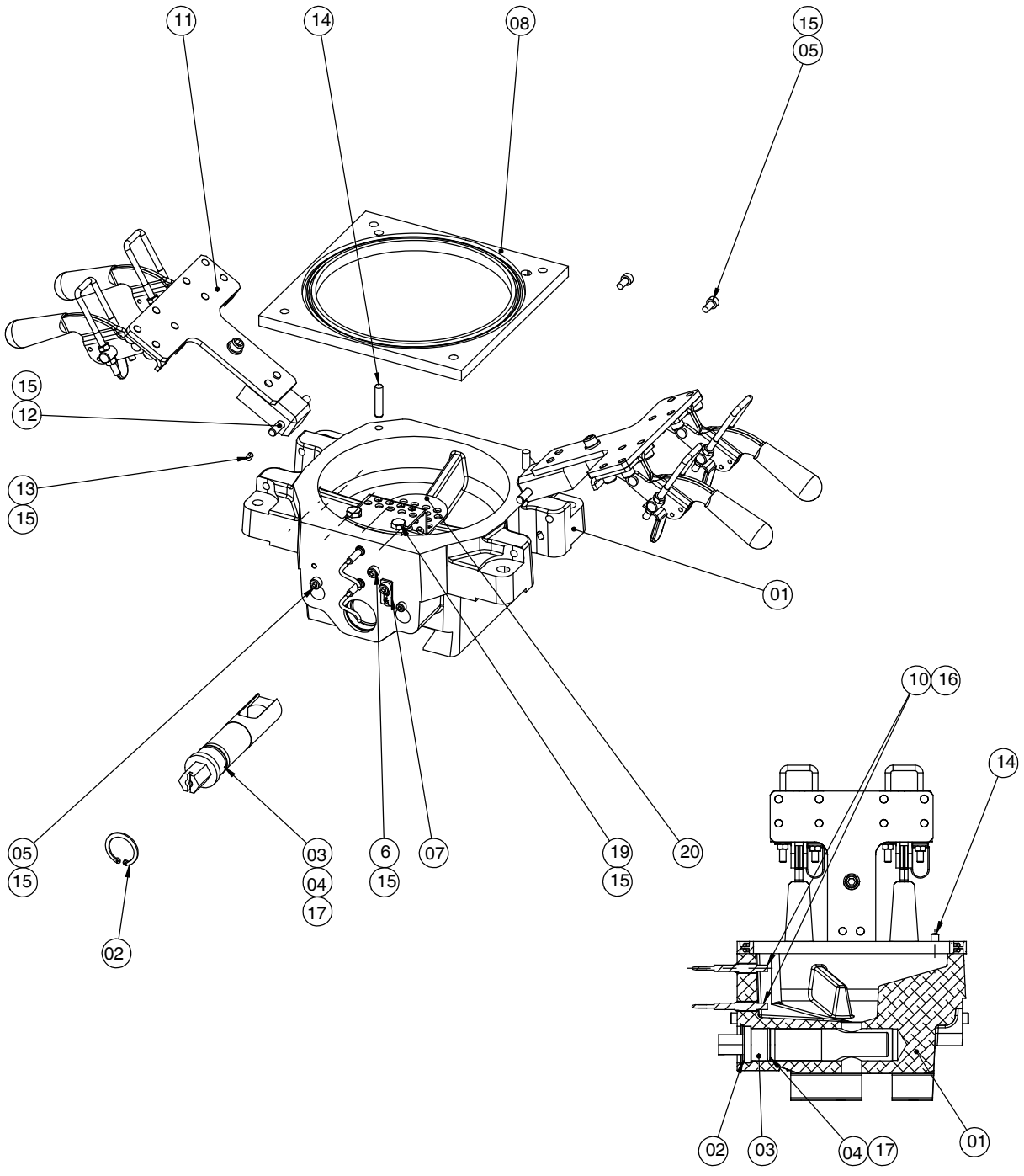


Figure 7-4 Reservoir assembly parts

Pivot Lid Assembly Parts

See Figure 7-5.

Item	Part	Description	Quantity	Note
—	- - - - - -	LID ASSY, PIVOT, 152MM, PB4	—	
1	- - - - - -	• LID, PISTON, MACHINING, PB4	1	
2	- - - - - -	• FIXING BOLT	1	
3	1087995	• HANDLE, BALL, 48 MM DIA X M8 THREAD	1	
5	- - - - - -	• CYLINDER ASSY, LID, PB4	1	A
NS	1096034	• • SOLENOID, REPLACEMENT, PISTON, PB4	1	
6	- - - - - -	• PLATE, CYLINDER ADJUSTMENT, LID, PB4	1	
7	- - - - - -	• WASHER, LK, M, SPT, M6, STL, ZN	8	
8	- - - - - -	• WASHER, FLT,M, OVERSIZED, 6, STL, Z	4	
9	- - - - - -	• SCR, SKT, M6X22, BL	8	
11	- - - - - -	• NUT, HEX, FINE, M10-1.25, STL/ZN, DIN 934	1	
12	- - - - - -	• INDICATOR SCALE, ADH-BACKED, VERT, PB4	1	A
14	- - - - - -	• TAG, WARNING, CRUSH HAZARD, ISO 1159	1	
15	- - - - - -	• SCR, DRIVE, RD, .187,ZN	4	
16	- - - - - -	• PLUNGER ASSY, 152MM LID, PB4	1	
17	- - - - - -	• TUBING, TEFLON, 6 MM ODX 1 MM WALL	5	
18	900344	• LUBRICANT, NEVER SEEZ, 8OZ CAN	1	

NOTE A: To replace these parts, order service kit 1093148. This kit includes item 12.

NS: Not Shown

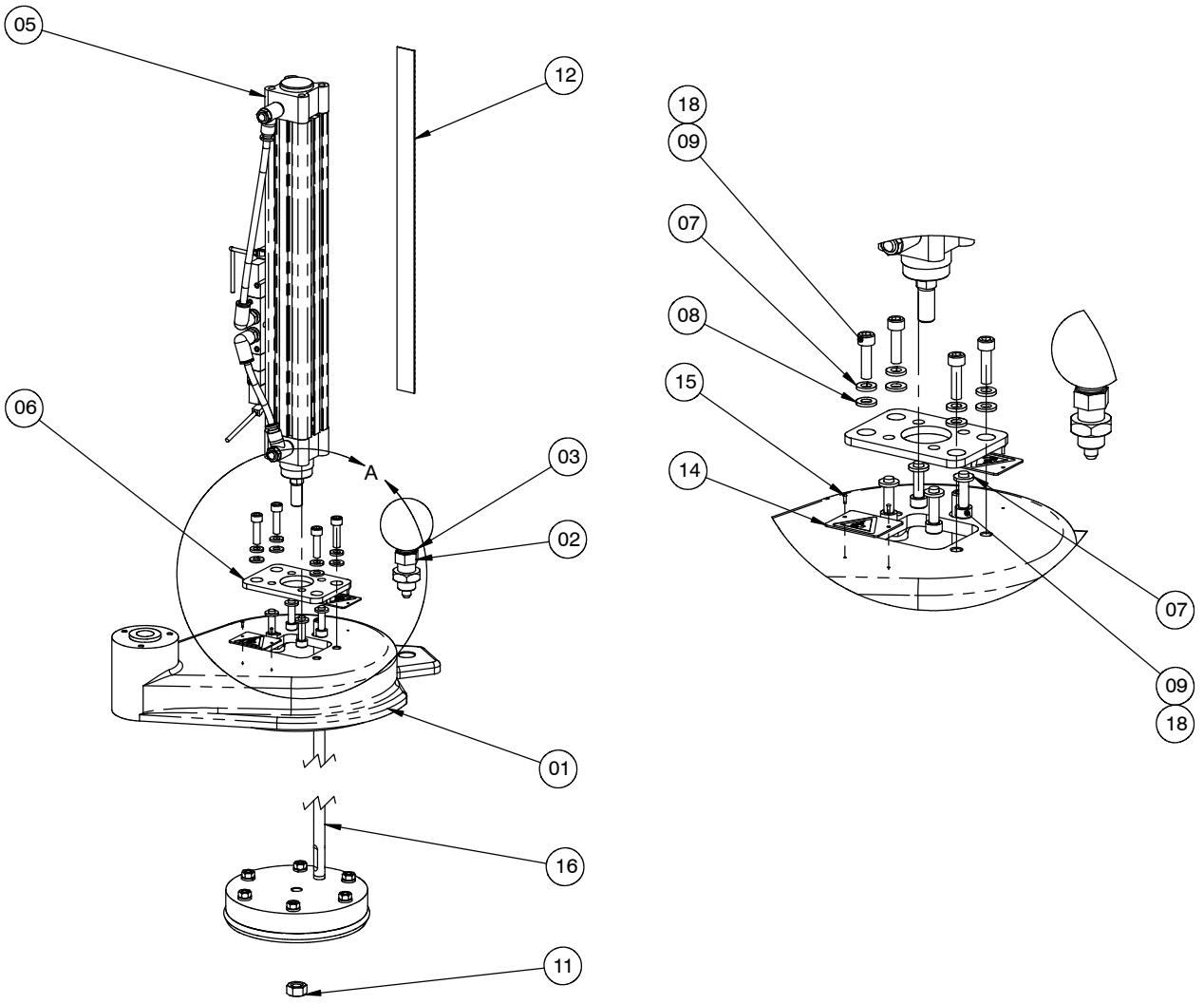


Figure 7-5 Pivot lid assembly parts

This page intentionally left blank.

Pump/Drive/Manifold Assembly Parts

See Figure 7-6.

Item	Part	Description	Quantity	Note
—	- - - - - -	MODULE, PUMP MANIFOLD DRIVE	—	
201	- - - - - -	• DRIVE ASSY	1	A
NOTE A: Refer to *Drive Assembly* later in this section.				

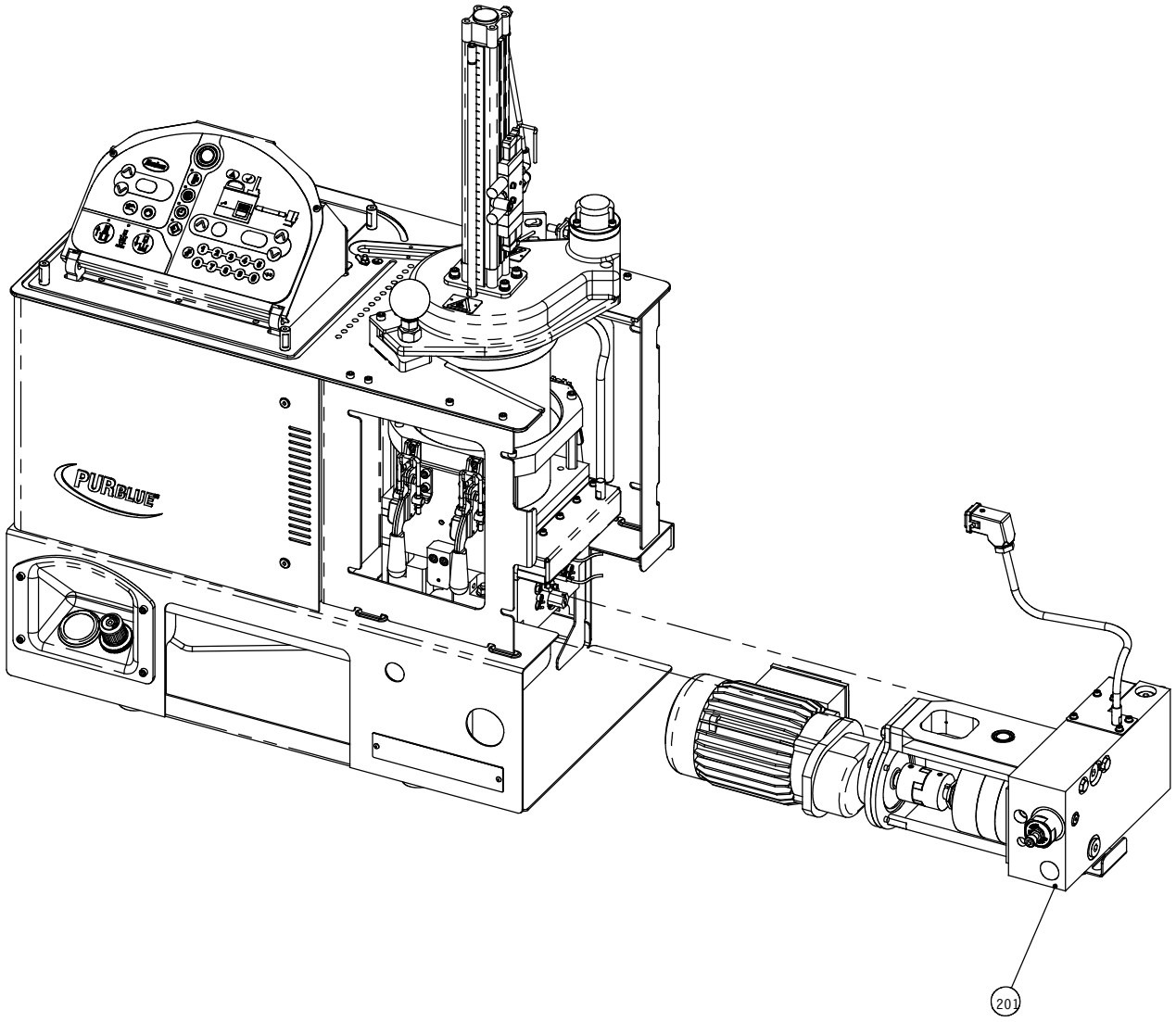


Figure 7-6 Pump/manifold/drive assembly parts

Drive Assembly

See Figure 7-7.

Item	Part	Description	Quantity	Note
—	- - - - - -	DRIVE ASSY, PB4	—	
1	- - - - - -	• MOTOR ASSY W/CABLE,.25KW	1	A
2	- - - - - -	• PUMP MANIFOLD ASSY, PB4	1	B
3	1088035	• COUPLING, DRIVE, L075,.50”ID X 17 MM ID	1	
4	- - - - - -	• SCR, HEX, CAP, M8X25, ZN	2	
	- - - - - -	• SCR, HEX, CAP, M8X40, ZN	2	C
5	- - - - - -	• WASHER, FLT,M, NARROW, M8, STL, ZN	2	
6	- - - - - -	• SCR, HEX, CAP, M6X20, ZN	4	
7	- - - - - -	• WASHER, LK, M, SPT, M6, STL, ZN	4	
8	- - - - - -	• SCR, HEX, CAP,M8X90,304 SS,GR A2,CL 70	2	
9	940024	• ORING,-118,VITON, .862X .103,BR	2	
10	- - - - - -	• PLATE, MOTOR MOUNTING, ALTA TT-RM	1	
12	- - - - - -	• ROD, BOTTOM MOTOR SUPPORT, PB4	2	
13	- - - - - -	• SCR, SET, CUP, M6X16, STL/BLK	2	
14	- - - - - -	• BRACKET, PUMP MANIFOLD, PB4	1	
15	- - - - - -	• WASHER, LK, M, SPT, M8, STL, ZN	2	
16	900344	• LUBRICANT, NEVER SEEZ, 8OZ CAN	1	
17	900493	• LUBRICANT, PARKER HI-TEMP, 11208	1	
19	- - - - - -	• SCR, SKT, M5X10, BL	2	
20	- - - - - -	• BRACKET, MANIFOLD COVER, PB4	1	

NOTE A: To replace the motor, order service kit 1093143.

B: Refer to *Pump/Manifold Assembly* later in this section.

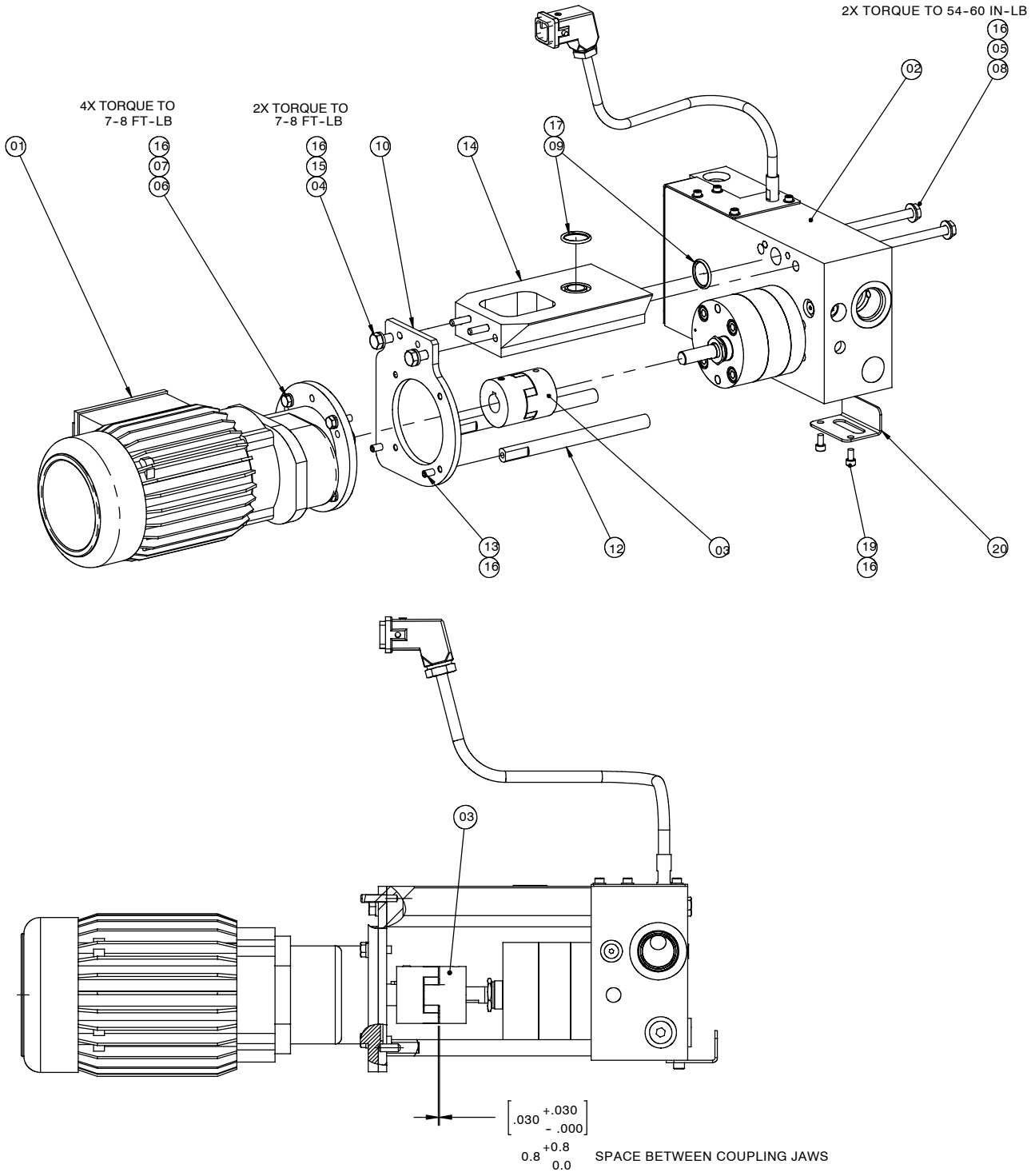


Figure 7-7 Drive assembly parts

Pump/Manifold Assembly

See Figure 7-8.

Item	Part	Description	Quantity	Note
—	- - - - - -	PUMP MANIFOLD ASSY, PB4	—	
1	- - - - - -	• MANIFOLD, 3 HOSE, PB4	1	A
2	972657	• CONN W/O RING, HOSE, 9/16-18	1	
3	- - - - - -	• CAP, TUBE, 37, 9/16-18, STL,ZN	1	
4	- - - - - -	• PLUG, O RING, STR THD, 9/16-18	5	
5	- - - - - -	• PLUG, O RING, STR THD, 5/16-24	3	
7	- - - - - -	• PLUG, O RING, STR THD, 3/4-16, STL	2	
8	- - - - - -	• GEAR PUMP, COMPLETE	1	B
9	- - - - - -	• CAPSCRM, SKT, M8X80, BL	4	
10	- - - - - -	• COVER, ELEC, MANIFOLD, PB4	1	
11	- - - - - -	• WIRE GRP, MANIFOLD CORDSET, PB4	1	
12	- - - - - -	• WASHER, LK, E, EXT, 3/8, STL, ZN	1	
13	- - - - - -	• NUT, PANEL MOUNTING	1	
14	- - - - - -	• SCR, SKT, M4X8, BL	10	
15	- - - - - -	• WASHER, FLT, M, NARROW, M4, STL, ZN	9	
17	900493	• LUBRICANT, PARKER HI-TEMP, 11208	1	
18	900344	• LUBRICANT, NEVER SEEZ, 8OZ CAN	1	
19	- - - - - -	• ADAPTER PLATE, PUMP STL, PR100M3, PB4	1	C
20	- - - - - -	• SCR, SKT, M8X1.25X25, BL	4	C
21	- - - - - -	• PIN, DOWEL, M6X16 MM, H&G	1	C
22	941220	• O RING, VITON, 1.125X1.313X.094	2	C
23	- - - - - -	• WASHER, LK, HIGH COLLAR, M8	4	C
NS	1096020	KIT, SERVICE, MANIFOLD/GRID, RTD SENSOR	1	
NS	1096027	KIT, SERVICE, MAN. HEATER ASSY, 240V	1	

NOTE A: To replace the manifold, order service kit 1093142 (240V melters).

B: Refer to *Pump Assembly* later in this section.

AR: As Required

NS: Not Shown

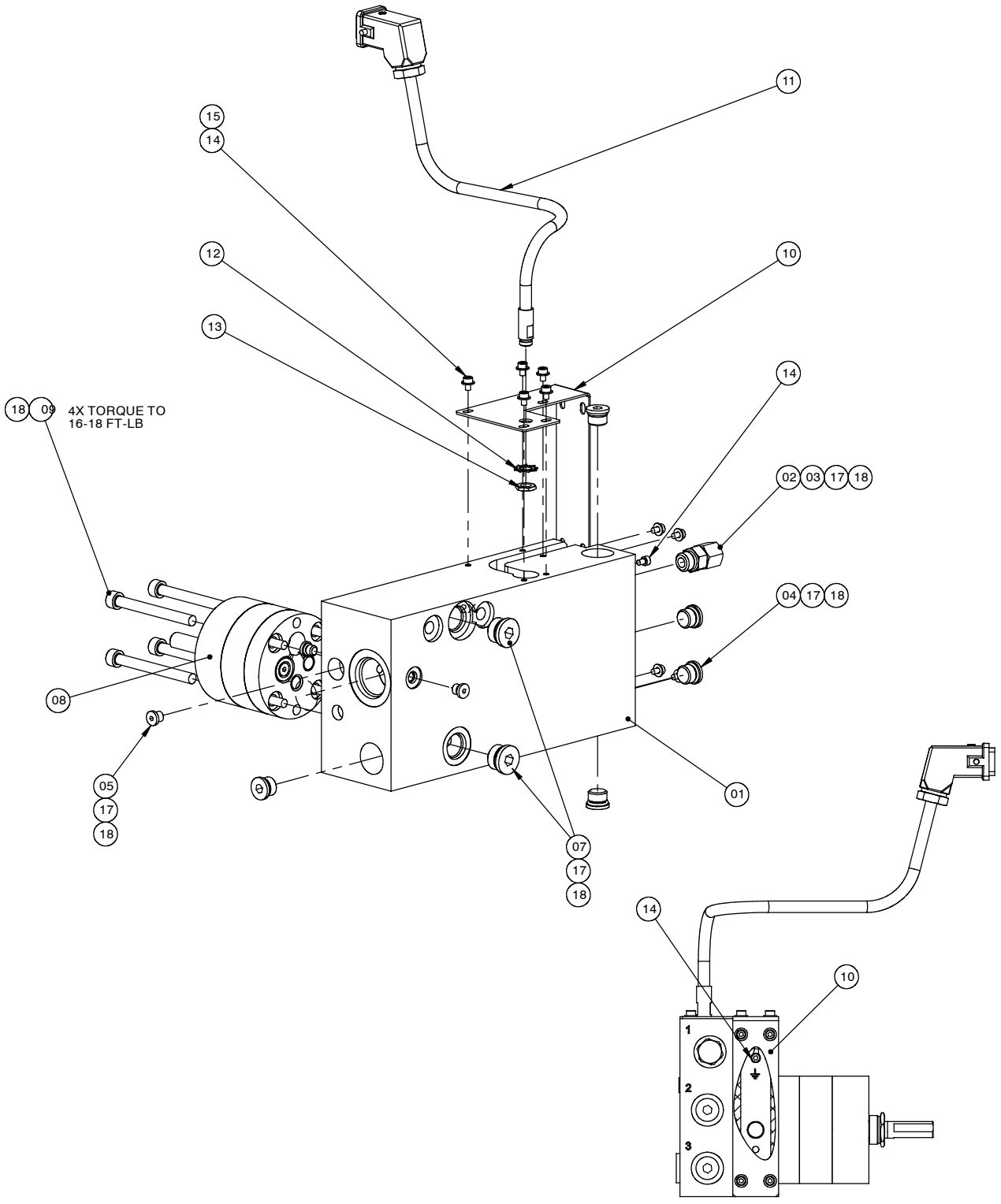


Figure 7-8 Pump/manifold assembly parts (except PR100M3 pumps)

Pump Assembly

See Figure 7-9.

Item	Part	Description	Quantity	Note
1	7109715	GEAR PUMP PR2M1/SN0030 (0.30 CC/REV)	1	
	729107	GEAR PUMP PR25M2/SN0773 (7.73 CC/REV)	1	
NS	- - - - - -	SERVICE KIT, PUMP SEALS	—	A
NS	- - - - - -	SERVICE KIT, TOOLS, PUMP SEAL KIT	—	A

NOTE A: Refer to Table 7-1 for these parts lists.

NS: Not Shown

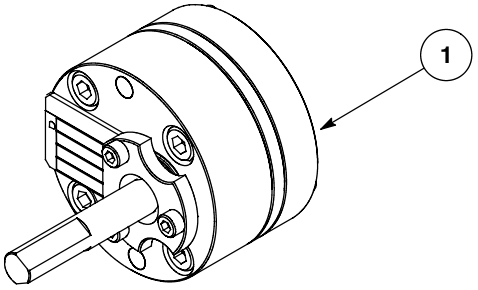


Figure 7-9 Variseal gear pump

Table 7-1 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 may be obtained from http://emanual.nordson.com, or contact your Nordson representative.

NS: Not Shown

Pressure Control Option Parts

Your melter will have one of the following types of pressure control: manual PCV, pneumatic PCV only, automatic pressure control, or flow control bypass. Refer to *Melter Part Numbers* earlier in this section to determine the configuration of your melter.

NOTE: If you want to change the type of pressure control used on your melter, order the appropriate service kit shown in these parts lists. Each option may be field-retrofitted.

Manual PCV (X Option)

See Figure 7-10.

Item	Part	Description	Quantity	Note
1	1031222	• SVCE KIT, DURABLUE, PCV, 1100 PSI	1	A
NOTE A: Order this kit to change to this pressure control option.				

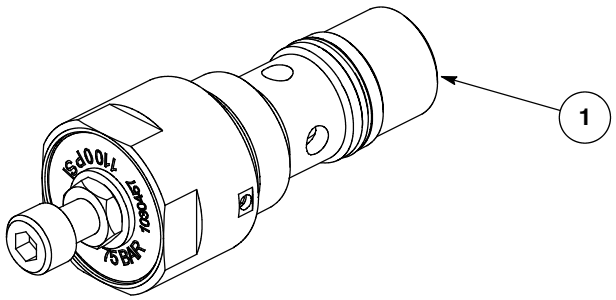


Figure 7-10 Manual PCV

Automatic Pressure Control (P Option)

See Figure 7-11.

Item	Part	Description	Quantity	Note
—	1093138	KIT, ACCESSORY, P OPTION, PB4	—	A
1P	- - - - - -	• PANEL ASSY, P OPTION, PB4	1	
2	1068719	• ELBOW, MALE, 4 MM TUBEX 1/8 NPT ,FKM	1	
3	1066902	• TRANSDUCER, I/P, D4F	1	
NS	1067973	• CONNECTOR, CABLE, TRANSDUCER, I/P, D4F	1	

NOTE A: Order this kit to change to this pressure control option. To use this option, the pneumatic PCV contained in kit part 1034042 must be installed on the melter.

NS: Not Shown

Flow Control Bypass (F Option)

See Figure 7-11.

NOTE: For a pneumatic schematic of this option, refer to Section 8, *Technical Data*.

Item	Part	Description	Quantity	Note
—	1093136	KIT, ACCESSORY, F OPTION, PB4	—	A
1	- - - - - -	• PANEL ASSY, F OPTION, PB4	1	
2	972126	• CONN, MALE, ELBOW,6MM T X 1/8UNI	1	
4	1088395	• REGULATOR, AIR, 1/8NPT, 5-100 PSI, SELF-REL	1	
5	1018810	• GAGE, PRESSURE, PANEL MOUNT	1	
6	1007414	• SOLENOID ASSY, 35 SERIES, 1/8NPT, 24 VDC	1	

NOTE A: Order this kit to change to this pressure control option. To use this option, the pneumatic PCV contained in kit part 1034042 must be installed on the melter.

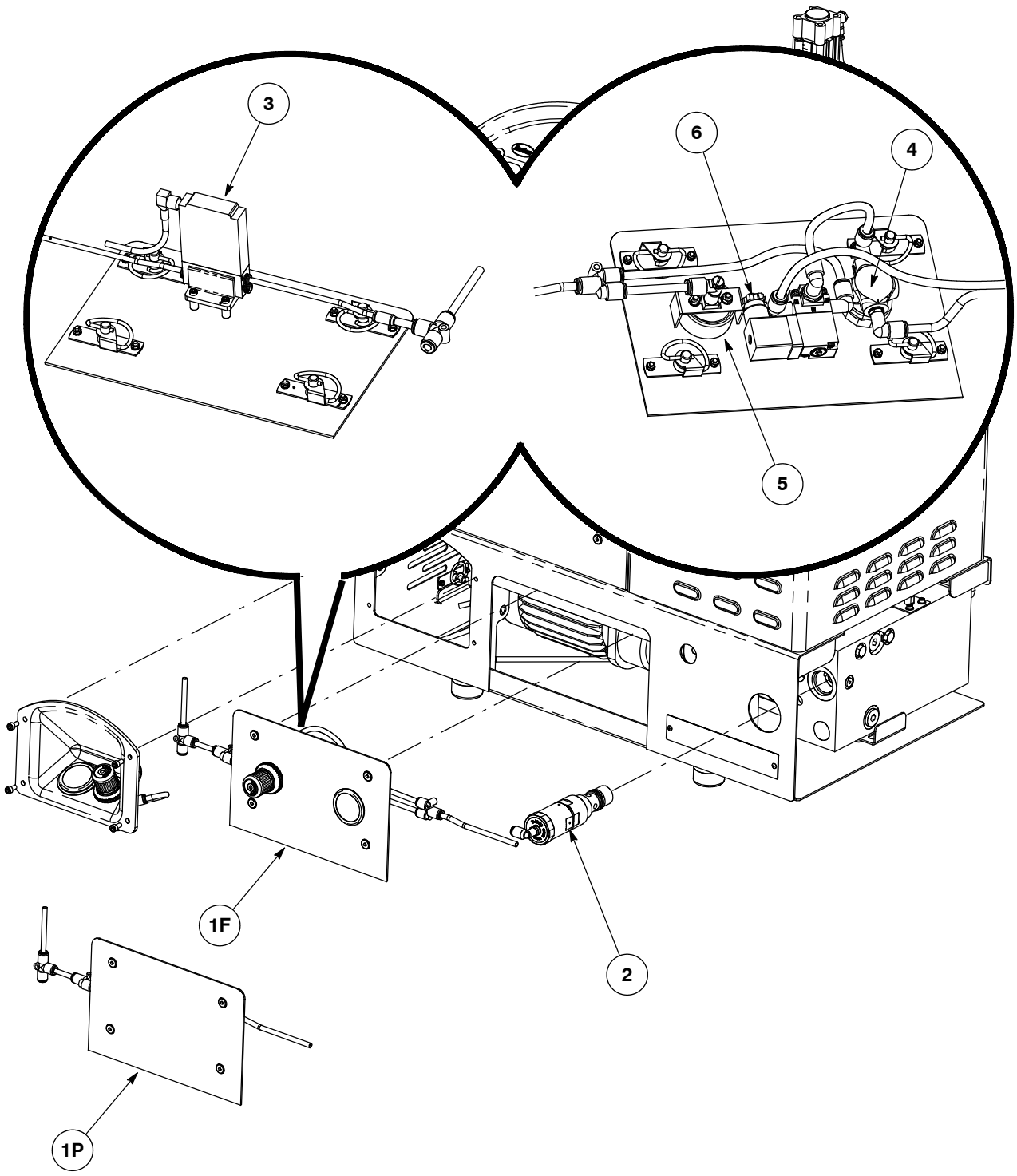


Figure 7-11 Pressure control option parts

Note: For a pneumatic schematic of the pressure control F option, refer to Section 8, *Technical Data*.

Electrical Component Parts

This part of section 7 provides electrical component parts lists.

Control Panel Assembly

See Figure 7-12.

Item	Part	Description	Quantity	Note
—	- - - - - -	PANEL ASSY, CONTROL, PB4	—	A
1	1090868	• SWITCH, ROCKER, RND, 250 V, 10A, SEALED	1	
2	- - - - - -	• MEMBRANE PANEL, PUR	1	
3	- - - - - -	• PLATE, CONTROL, PB4	1	
4	- - - - - -	• PCA, MTR/PISTON CNTL, RX MELTER	1	B
5	- - - - - -	• PCA, DISPLAY/CPU, BLUE SERIES, SPECIAL, PB4	1	C
6	- - - - - -	• THRDSPCRMM, MALE/FEM, SS, HEX, M3, 8 MM LG	11	
7	- - - - - -	• WASHER, LK, M, INT, M3, STL, ZN	11	
8	- - - - - -	• THRDSPCRMM, NYLON, F/F, M3 X 6MM HEX x10M	1	
9	- - - - - -	• TAG, GROUND	1	
10	- - - - - -	• LUG, 45, SINGLE, M5 X .032	1	
11	- - - - - -	• NUT, HEX, W/EXT TOOTH WASHER, M5, STL, ZN	1	
13	- - - - - -	• CABLETIE,3.9 IN,185F/85C,NYLON, NATURAL	2	

NOTE A: To replace this item order service kit 1101619.
B: To replace this item, order service kit 1093146.
C: To replace this item, order service kit 1095998.

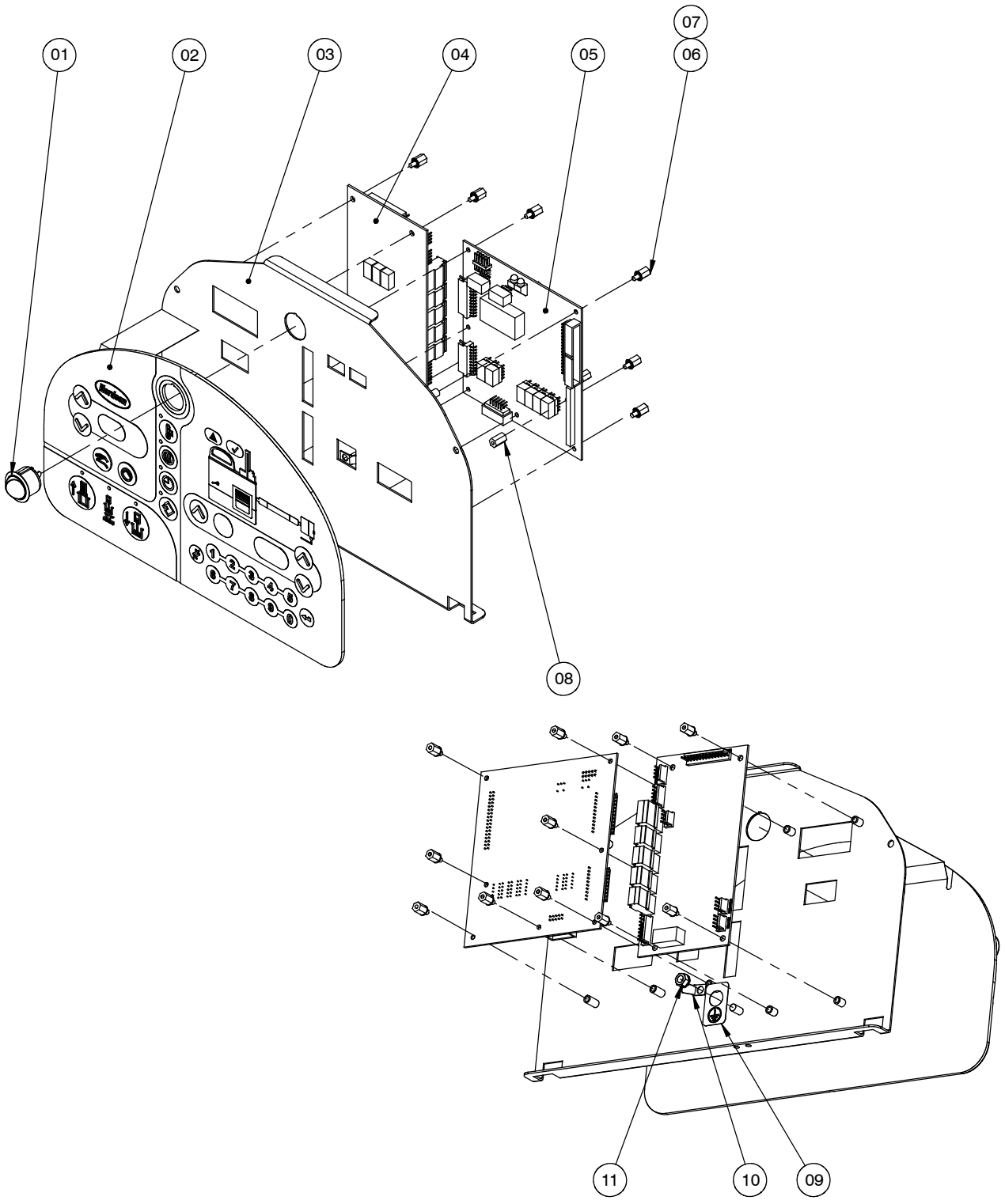


Figure 7-12 Control panel assembly parts

Other Circuit Boards and Electrical Components

See Figure 7-13.

Item	Part	Description	Quantity	Note
1	1078624	SVCE KIT, MAIN, PCA	1	A
2	1031201	SVCE KIT, EXPANSION PCA	1	
3	1093145	KIT, SERVICE, RELAY BOARD, PB4	1	
NS	1088703	• FUSE, 6.00, TIME-DELAY, 250V, 13/32x1-1/2	2	
NS	1023675	• FUSE, TR5, FA, 2A, 250 V, RAD, PC-MNT	1	
4	1087152	SVCE KIT, DURABLUE, PCA PWR MOD 4-CH	1	
NS	939683	• FUSE, 6.30, FAST-ACTING, 250V, 5X2	4	
5	1093144	KIT, SERVICE, MOTOR DRIVE, PB4	1	
6	1005874	POWER, SUPPLY, 85-264 VAC IN, 24 VDC, 2A OUT	1	
7 (NS)	1095995	KIT, ACCESSORY, FAN, PB4 (option C)	1	B
8	1087922	AMPLIFIER, CAPACITIVE PROBE, RECHNER (melt-on-demand and reservoir-empty sensor amplifiers)	2	
NS	1091209	SENSOR, CAPACITIVE, M8/25, RECHNER, 1.1M (melt-on-demand and reservoir-empty sensor probes)	2	C

NOTE A: For fuses, refer to the next parts list, *Main Board Fuses*.

B: The location where this item is installed is shown in Figure 7-13.

C: See Figure 7-4 and the accompanying parts list for the location of the sensor probe.

NS: Not Shown

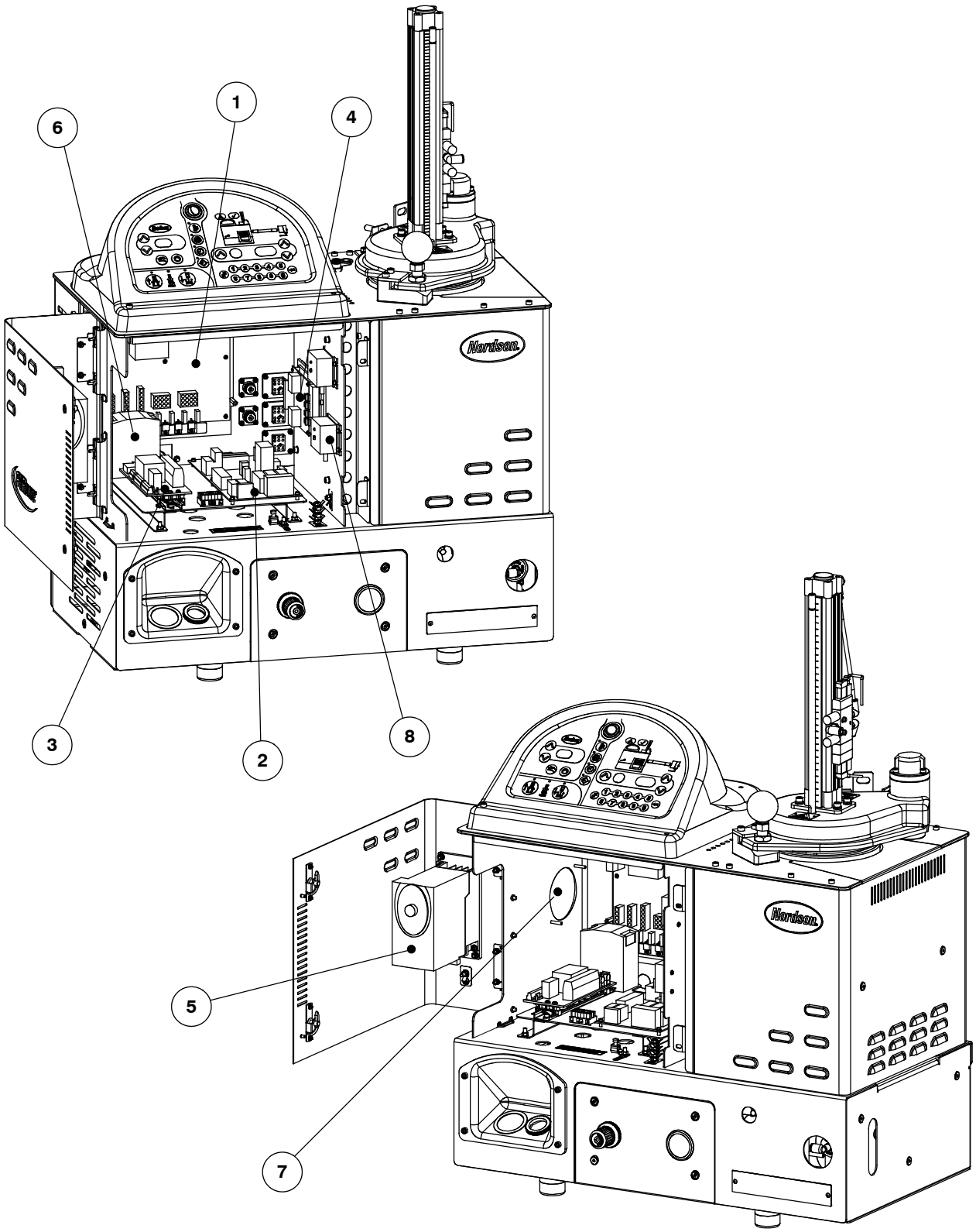


Figure 7-13 Other circuit board and electrical component parts

Main Board Fuses

See Figure 7-14.

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	

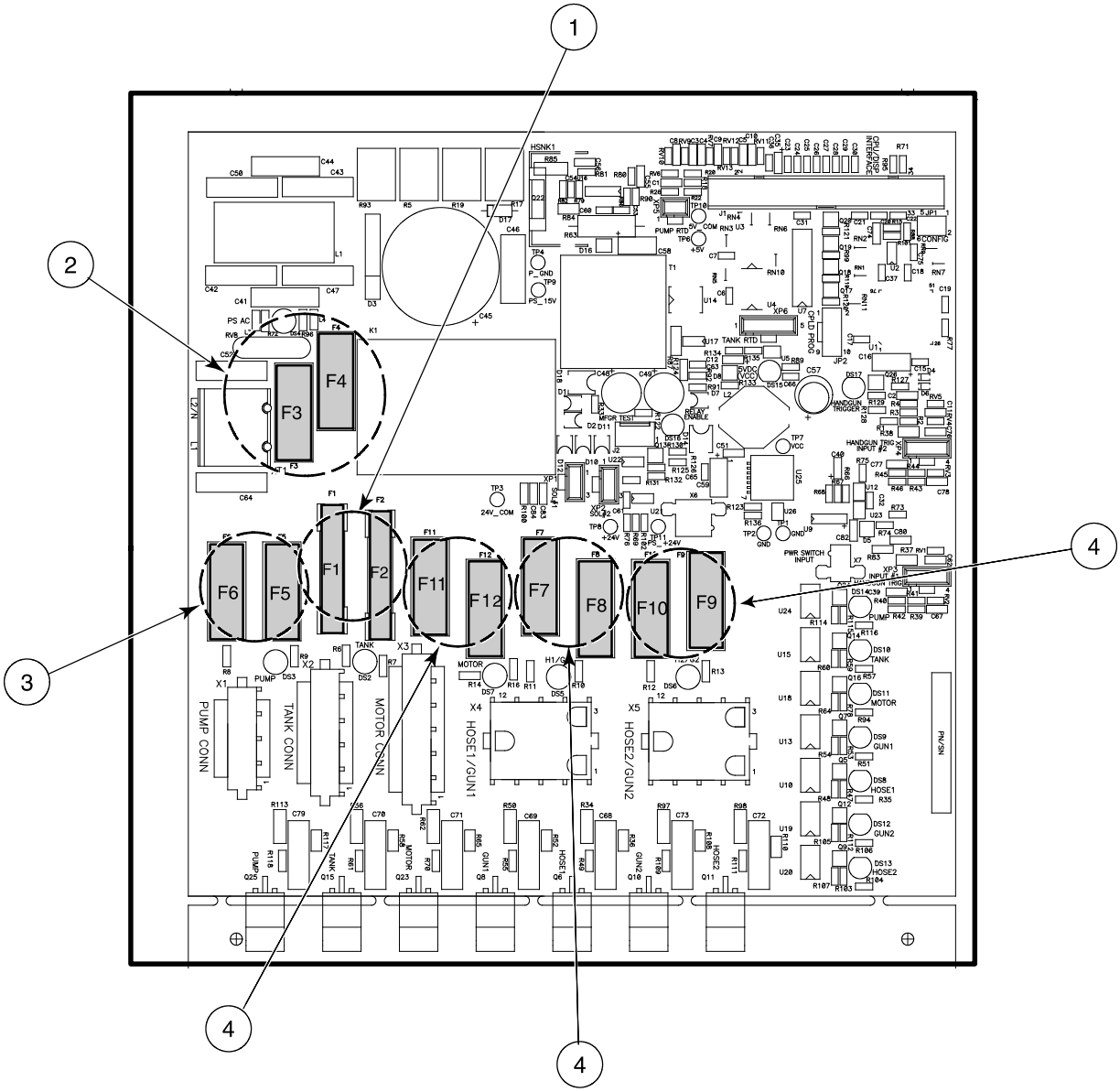


Figure 7-14 Fuse service kit parts

Thermostat Assembly

See Figure 7-15.

Item	Part	Description	Quantity	Note
1	1096031	KIT, THERMOSTAT, O.O.R, 300 DEG F, PB4	2	
2	- - - - - -	SCR, SKT, M4X8, BL	4	
3	900298	COMPOUND, HEAT SINK, 5 OZ TUBE, 11281	1	

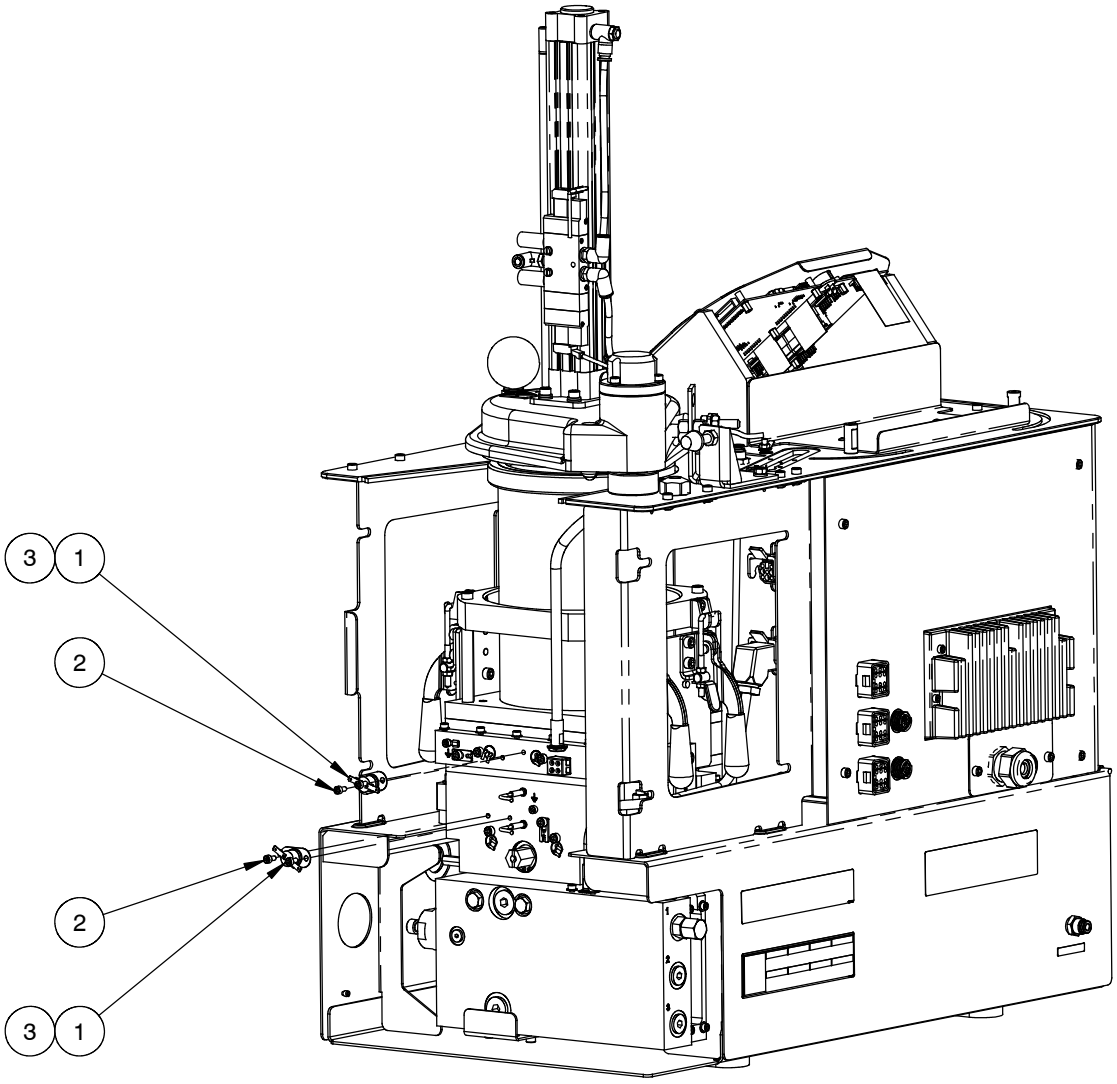


Figure 7-15 Thermostat assembly parts

Recommended Spare Parts

Nordson Corporation recommends stocking these service kits and other components for a complete spare parts inventory.

Assembly	Part	Description	Note
Top support plate	1102263	PROXSENSOR,INDUCTIVE,2MM,M12,W-CABLE	
Hopper/grid	1087919	INSULATOR, 154 ID, ALTA TT-RM	
	1096020	KIT, SERVICE, MANIFOLD/GRID, RTD SENSOR	
	1096027	KIT, SERVICE, GRID HEATER ASSY, 240V	
Reservoir	940201	O-RING,VITON, .864IDX.070W,BR	
	1087919	INSULATOR, 154 ID, ALTA TT-RM	
	1091209	SENSOR, CAPACITIVE, M8/25, RECHNER, 1.1 M	
	1095999	KIT, SERVICE, RESERVOIR, RTD SENSOR, PB4	
	1096025	KIT, SERVICE, RES. HEATER ASSY, 240V	
Pivot lid	1096034	SOLENOID, REPLACEMENT, PISTON, PB4	
Drive/pump/manifold	1093143	KIT, SERVICE, MOTOR, PB4	
	1088035	COUPLING, DRIVE, L075, .50" I D X 17 MM ID	
	940024	O-RING,-118,VITON, .862X.103, BR	
	- - - - - -	GEAR PUMP, COMPLETE	A
	941220	O RING,VITON, 1.125X1.313X.094	
	1096020	KIT, SERVICE, MANIFOLD/GRID, RTD SENSOR	
	1096026	KIT, SERVICE, MAN. HEATER ASSY, 240V	
Pressure control	1031222	SVCE KIT, DURABLUE, PCV, 1100 PSI (X option)	
	1034042	KIT, RUN UP CONTROL VALVE, 1100 PSI (M option)	
	1093136	KIT, ACCESSORY, F OPTION, PB4 (F option)	
Control	1090868	SWITCH, ROCKER, RND, 250V, 10A, SEALED	
	1101619	KIT, PANEL ASSY, CONTROL, PB4	
	1093146	KIT, SERVICE, MOTOR/PISTON CNTL	
	1095998	KIT, SERVICE, DISPLAY/CPU, PB4	
	- - - - - -	Other circuit boards and electrical components	B
Thermostats	1096031	KIT, THERMOSTAT, O.O.R, 300 DEG F, PB4	

NOTE A: Refer to *Pump Assembly* earlier in this section for pump part numbers.

B: Refer to *Other Circuit Boards and Electrical Components* earlier in this section. All the items in this parts list are recommended spare parts.

Optional Equipment

Flow/Pressure Control and Pressure Indication

Part	Description	Note
1034042	KIT,RUN UP CONTROL VALVE,1100 PSI	
1093138	KIT, ACCESSORY, P OPTION, PB4 (automatic pressure control)	A
1093136	KIT, ACCESSORY, F OPTION, PB4 (flow control bypass)	A
1030537	KIT, GAUGE, 1500 PSI	
NOTE A: This option is already present on some melter configurations. It may also be field-installed on a melter that does not have this option. Refer to *Melter Part Numbers* earlier in this to determine the configuration of your melter.		

Expansion and Control Kits

Part	Description	Note
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	
1030542	KIT, FOOTSWITCH	
1047093	KIT, REMOTE TRIGGER	
1029938	CABLE ASSY, RIBBON, SERIAL PORT, 9 POS, DURA	

Cooling Fan and Light Tower

Part	Description	Note
1095995	KIT, ACCESSORY, FAN, PB4	
1097938	KIT, LIGHT TOWER, MAG. BASE, PB4	

Hoppers

Part	Description	Note
1096285	KIT, RETROFIT, 130 HOPPER, PB4	
1096250	KIT, RETROFIT, 150 HOPPER, PB4	

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	

Section 8
Technical Data

General Specifications

Item	Data	Note
Adhesive application temperature	125 °C (257 °F) maximum	
Weight of empty melter	100 kg (221 lb)	
Weight of melter with full reservoir	104 kg (230 lb)	
Hydraulic hose ports	3	
Melt rate (at nominal voltage)	9 kg/hr (20 lb/hr)	A
Noise	64dB (A) at maximum pump speed	B
Workplace temperature	0 to 40°C (32 to 104 °F)	C
Pump speed	7–69 rpm	D

NOTE
A: Varies depending on the type of adhesive used.
B: The noise level is measured at a distance of 1 m (3.3 ft.) from the surface of the melter.
C: A melter may have a cooling fan (kit part number 1095995) installed to allow operation in environments up to 50°C (120 °F).
D: For displacement information, refer to *Motor and Pump Specifications*.

Motor and Pump Specifications

Item	Data	Note
Viscosity range	45,000 cps	
Maximum hydraulic pressure	75 bar (1100 psi)	
Displacement	PR2M1 pump: 0.30 cc/rev PR25M2 pump: 7.73 cc/rev	

Electrical Specifications

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

Item	Data		Note
	Nominal	Allowable Range	
Voltage	200-240 VAC	180-264 VAC	A
	400/230 VAC	312/180-457/264 VAC	A, B
Frequency	50/60 Hz		
Hose/gun heating capacity	3 hose/gun pairs		
Control temperature range	Minimum: 50 °C (120 °F) Maximum: 20 °C (40 °F) below thermostat temperature rating (148 °C [300 °F])		C, D
Control temperature accuracy	± .5 °C (± 1 °F)		
IP rating	IP32		

NOTE A: Depends on the melter configuration and the voltage plug installed. Refer to *Melter Part Numbers* in Section 7, *Parts*, and to *Melter Configuration Code* later in this section to determine the configuration of your melter.

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 the melter configuration. Refer to *Melter Part Numbers* in Section 7, *Parts*, and to *Melter Configuration Code* later in this section to determine the configuration of your melter.

D: The maximum unit temperature is 125 °C (257 °F).

Heater Specifications

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

Location	Wattage (see Note A)	Voltage	Cold Resistance (see Note B)
Manifold	600	240 V	82-96 ohms
Tank	2 x 400	240 V	137-160 ohms each
Grid	2 x 400	240 V	137-160 ohms each

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

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

Dimensions

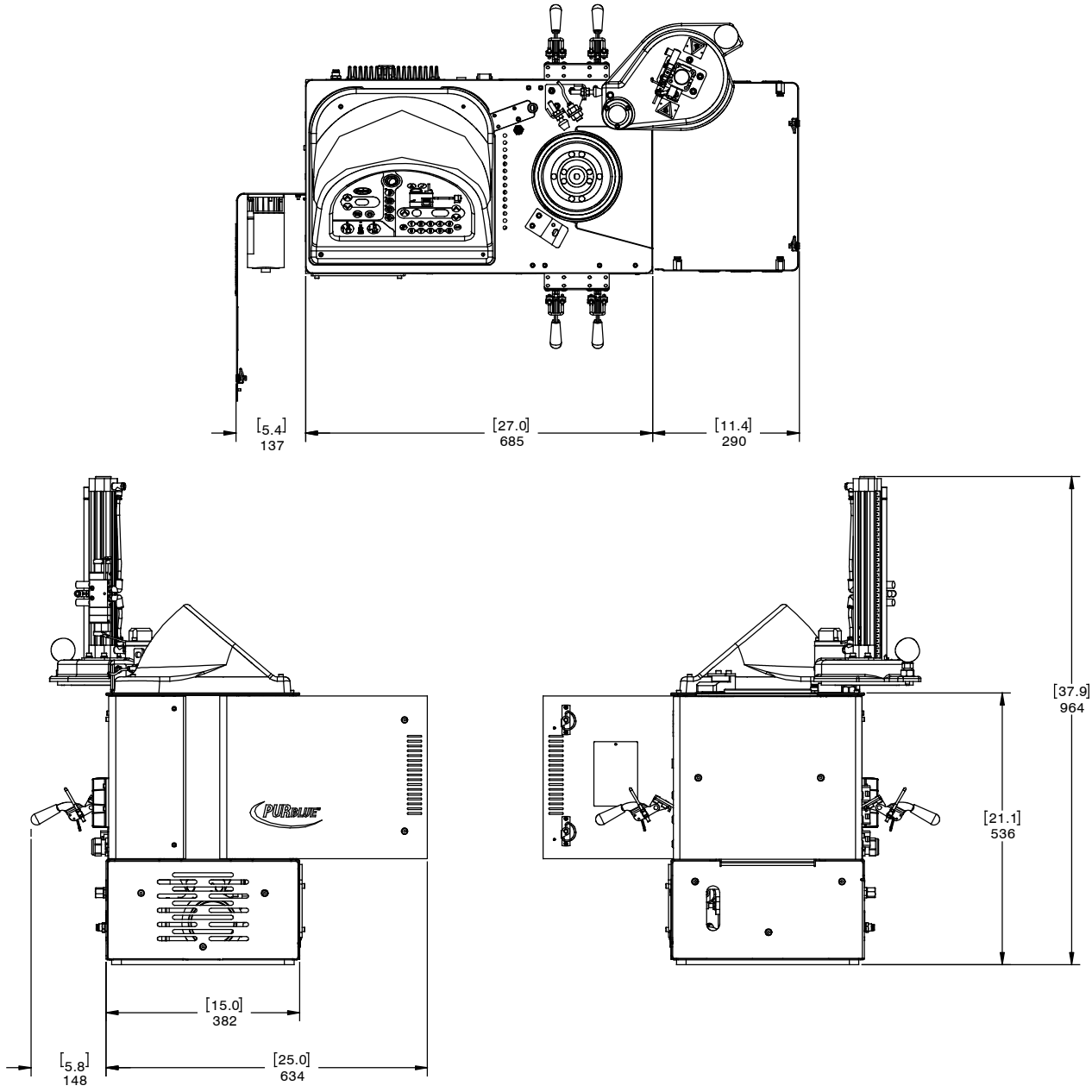


Figure 8-1 Melter dimensions

Conduit Penetration Sizes

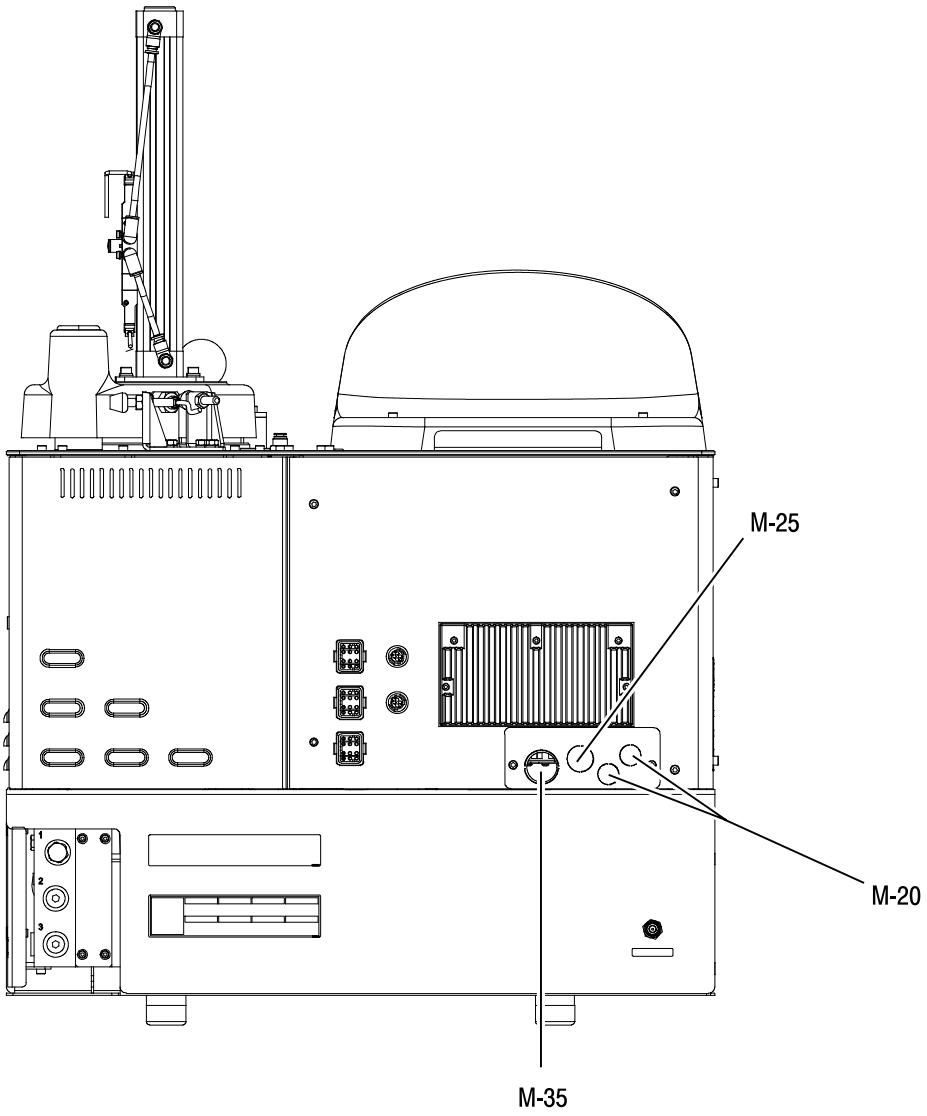


Figure 8-2 Conduit penetration sizes

Wiring Diagram

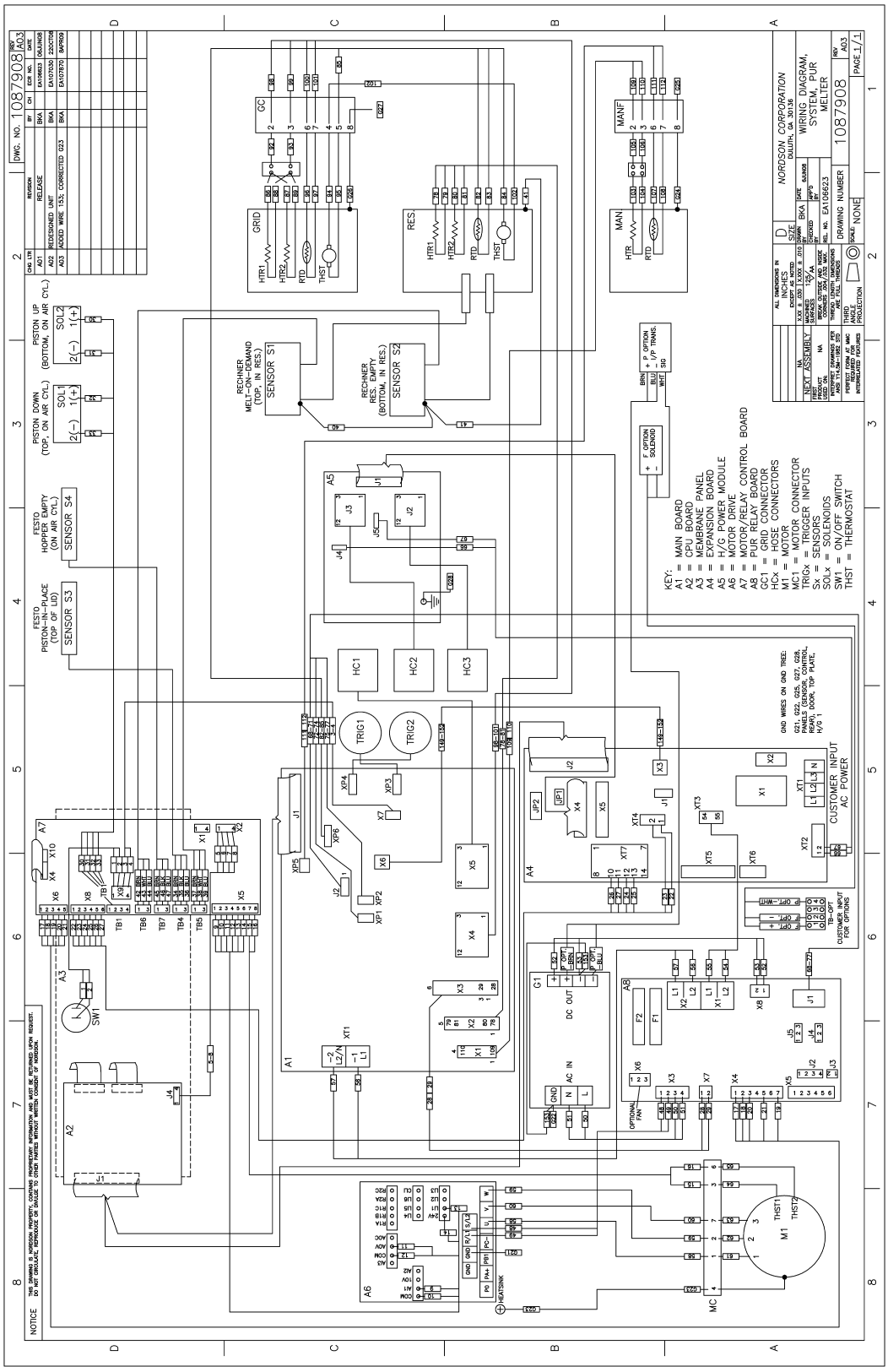


Figure 8-3 Wiring diagram

Flow Control Bypass Pneumatic Schematic

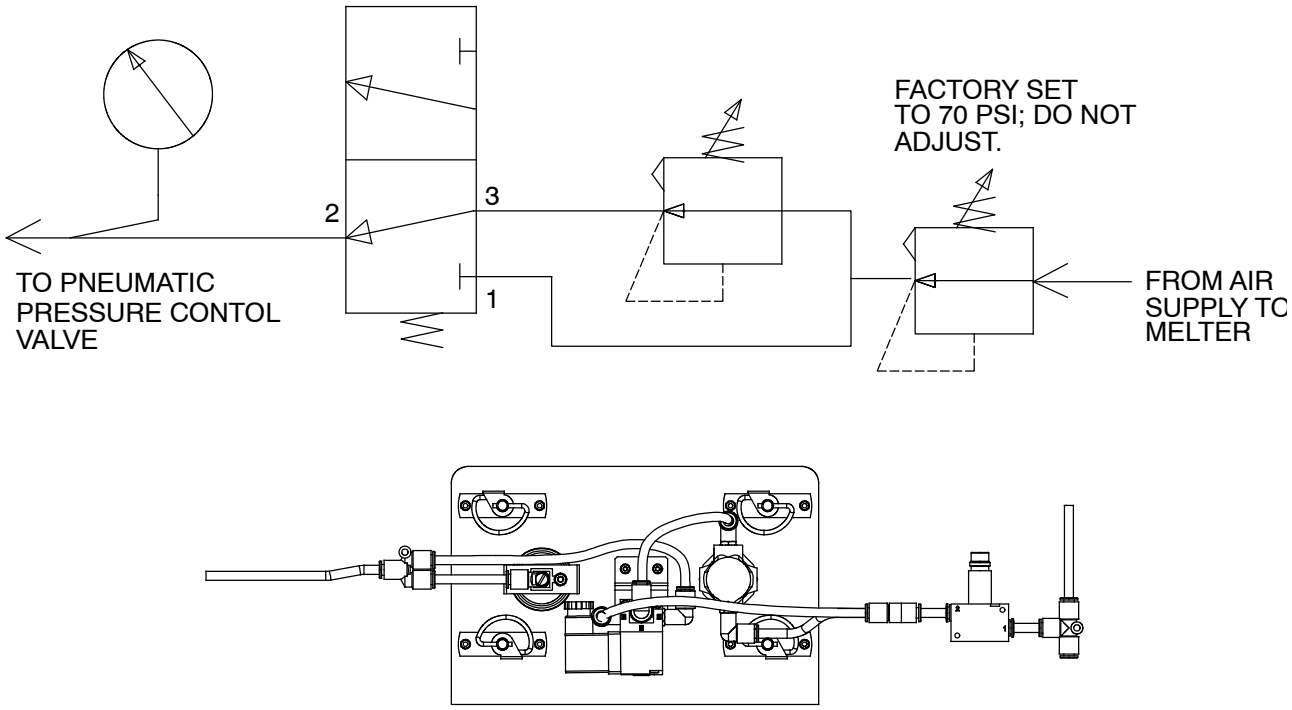


Figure 8-4 Flow control bypass option pneumatic schematic (F option)

Appendix A

Calculating Melter Power Requirements

Before locating the melter on the production floor or attaching hoses and guns to the melter, you must calculate the electrical power required by the hoses and guns 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 gun
- **Hose/gun pair maximum**—The combined wattage of any hose and gun (hose/gun pair)
- **Two hose/gun pair maximum**—The combined wattage of hose/gun pair 1 or hose/gun pairs 2 and 3

If your Nordson representative has already calculated the hose/gun 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 gun power requirements before you:

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

To evaluate the hose/gun power requirements

1. Identify all hose/gun pairs based on the hose/gun receptacle to which they are connected.
2. Examine the identification tag or plate on each hose and gun and record the wattage of each in Column A of Table A-1. Enter a zero for any hose or gun that is not installed.
3. Add the wattages of each hose/gun pair and place the sum in Column B of Table A-1.
4. Add the wattages of hose/gun pair 1 and hose/gun pairs 2 and 3 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 guns 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/gun pairs must be rearranged, shorter hoses must be used, or lower power guns must be used in order to reduce the power requirement.

Table A-1 Hose/Gun Wattages

Component Number	Type/Size	A	B	C
		Component Wattage	Hose/Gun Pair Wattage	Multi-Hose/Gun Pair Wattage
Hose 1				
Gun 1				
Hose 2				
Gun 2				
Hose 3				
Gun 3				

Table A-2 Maximum Allowable Hose/Gun Wattages

Column in Table A-1	Component	Maximum Wattage
A	Any single hose or gun	1000 W
B	Any hose/gun pair	1200 W
C	Sum of hose/gun pairs 2 and 3	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
PUR Timer	49	Set the PUR timer
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:	10 to 60 minutes
Resolution:	1 minute
Default Value:	15 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 handgun hose, footswitch, etc.) is connected to the switch receptacle.

8 Automatic Pump On

Description: Determines if 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.

If Automatic Pump On 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 Gun 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 gun.
Value:	0 (disabled) 1 (enabled)
Resolution:	—
Default Value:	0 (disabled)
Format:	—
Use:	Use only when a Nordson manifold-mounted electric gun is installed and a switching device is connected to the melter's switch receptacle. Refer to the electric gun manual for information on mounting and using the gun.

Standard *(contd)*

13 Change Hose 2 Output to Electric Gun 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 gun.
Value:	0 (disabled) 1 (enabled)
Resolution:	—
Default Value:	0 (disabled)
Format:	—
Use:	Use only when a Nordson manifold-mounted electric gun is installed and a switching device is connected to the melter's switch receptacle. Refer to the electric gun manual for information on mounting and using the gun.

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 gun 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 125 °C (10 °F to 257 °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 the grid can stay off (as controlled by the melt-on-demand function) before the melter is placed in standby. Automatic Standby Timeout protects the PUR adhesive from unnecessary heat exposure when the melter is not in use.
Value:	30 to 1440 minutes
Resolution:	1 minute
Default Value:	180 (minutes)
Format:	—
Use:	1. Change parameter 23 if required.

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 125 °C (1 °F to 257 °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 Gun Standby Delta

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

Value: 1 °C to 125 °C (1 °F to 257 °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
PURBlue: 4 primary=tank; secondary=manifold; tertiary=grid

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/Gun 1 Enable/Disable
5 – Hose/Gun 2 Enable/Disable
6 – Hose/Gun 3 Enable/Disable
7 – Hose/Gun 4 Enable/Disable
8 – Hose/Gun 5 Enable/Disable
9 – Hose/Gun 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

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 (Noneditable)

Description: Control option that allows the unit to function as a PUR melter.

Value: 20 - Hopper empty

Resolution: —

Default Value: 20

Format: —

Use: Allows a PUR melter to identify when the hopper is empty.

32 Standard Input 3 (Noneditable)

Description: Control option that allows the unit to function as a PUR melter.

Value: 19 - Melt demand

Resolution: —

Default Value: 19

Format: —

Use: Allows a PUR melter to control the melt demand logic.

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/Gun 1 Enable/Disable
5 – Hose/Gun 2 Enable/Disable
6 – Hose/Gun 3 Enable/Disable
7 – Hose/Gun 4 Enable/Disable
8 – Hose/Gun 5 Enable/Disable
9 – Hose/Gun 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/Gun 1 Enable/Disable
5 – Hose/Gun 2 Enable/Disable
6 – Hose/Gun 3 Enable/Disable
7 – Hose/Gun 4 Enable/Disable
8 – Hose/Gun 5 Enable/Disable
9 – Hose/Gun 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/Gun 1 Enable/Disable
5 – Hose/Gun 2 Enable/Disable
6 – Hose/Gun 3 Enable/Disable
7 – Hose/Gun 4 Enable/Disable
8 – Hose/Gun 5 Enable/Disable
9 – Hose/Gun 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 = Reservoir empty
5 = Service LED is on
6 = Alert (Potential fault)

Resolution: 1

Default Value:
Output 1 = 1
Output 2 = 3
Output 3 = 6

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 = Reservoir empty
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 = Reservoir empty
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.

PUR Timer

49 PUR Timer

Description: Control option that determines the amount of time that the grid can remain on before it is automatically shut off and an S1Cal warning is displayed.

Value: 10 to 120 minutes

Resolution: 1 minute

Default Value: 30 minutes

Format: —

Use: For most applications, the grid only needs to stay on for about 10 minutes to satisfy the need for adhesive in the reservoir. Accordingly, if the grid is on continuously for a considerably longer time period (such as the default value of 30 minutes), it is likely that adhesive has not been added and the heaters are on but not in operation or that the melt-on-demand adhesive sensor is out of calibration. Refer to *Calibrating the Level Sensors* in Section 5, *Maintenance*, if this situation occurs and the S1Cal warning is displayed.

Seven-Day Clock

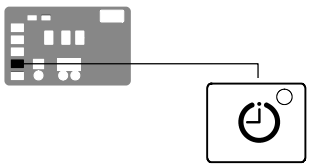
Before setting up the clock, refer to *Using Melter Function Keys* in Section 4, *Operation*, to familiarize yourself with the function and use of the clock feature.

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 99 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/Gun 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 gun 1, and so on, up to hose 4/gun 4.
Value:	0 = Hose 1 = Standard gun 2 = Large gun 3 = Air heater
Resolution:	—
Default Value:	0 or 1 depending on the channel type (hose or gun)
Format:	—
Use:	Consult your Nordson representative before changing PID settings.

88 - 91 PID Selection for Hose/Gun 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 gun 5, and so on, up to hose 8/gun 8.
Value:	0 = Hose 1 = Standard gun 2 = Large gun 3 = Air heater
Resolution:	—
Default Value:	0 or 1 depending on the channel type (hose or gun)
Format:	—
Use:	Consult your Nordson representative before changing PID settings.