Instructions

THERM-O-FLOW® Hot Melt Tank T18

309833 Rev.B

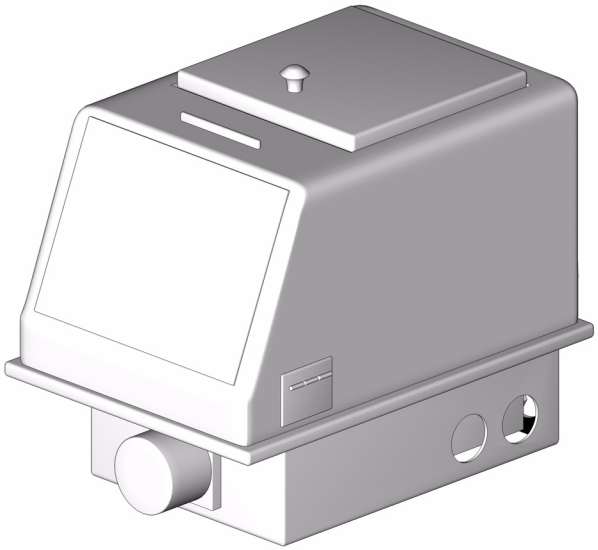
For melting and pumping non-flammable hot melt thermoplastic sealants and adhesives.

Model 234253

230 VAC

500 psi (3.4 MPa, 34 bar) Maximum Working Pressure

Read warnings and instructions.
See page 2 for table of contents.



PROVEN QUALITY. LEADING TECHNOLOGY.

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CE

Contents

Manual Conventions

⚠ WARNING

WARNING: a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Warnings in the instructions usually include a symbol indicating the hazard. Read the general **Warnings** section for additional safety information.

CAUTION

CAUTION: a potentially hazardous situation which, if not avoided, may result in property damage or destruction of equipment.

Note

Additional helpful information.

Warnings

The following warnings include general safety information for this equipment. More specific warnings are included in the text where applicable.

⚠ WARNING	
	**ELECTRIC SHOCK HAZARD** Improper grounding, setup, or usage of the system can cause electric shock. • Turn off and disconnect power cord before servicing equipment. • Use only grounded electrical outlets. • Use only 3-wire extension cords. • Ensure ground prongs are intact on sprayer and extension cords.
	**PRESSURIZED EQUIPMENT HAZARD** Fluid from the gun/dispense valve, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury. • Follow **Pressure Relief Procedure** in this manual, when you stop spraying and before cleaning, checking, or servicing equipment. • Tighten all fluid connections before operating the equipment. • Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.
	**EQUIPMENT MISUSE HAZARD** Misuse can cause death or serious injury. • Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals. • Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Data** in all equipment manuals. Read fluid and solvent manufacturer's warnings. • Check equipment daily. Repair or replace worn or damaged parts immediately. • Do not alter or modify equipment. • For professional use only. • Use equipment only for its intended purpose. Call your Graco distributor for information. • Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces. • Do not use hoses to pull equipment. • Comply with all applicable safety regulations.
	**PRESSURIZED ALUMINUM PARTS HAZARD** Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminum equipment. Such use can cause serious chemical reaction and equipment rupture, and result in death, serious injury, and property damage.
	**BURN HAZARD** Equipment surfaces and fluid that's heated can become very hot during operation. To avoid severe burns, do not touch hot fluid or equipment. Wait until equipment/fluid has cooled completely.
	**PERSONAL PROTECTIVE EQUIPMENT** You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. This equipment includes but is not limited to: • Protective eyewear • Clothing and respirator as recommended by the fluid and solvent manufacturer • Gloves • Hearing protection

Installation

THERM-O-FLOW® T18 Hot Melt System is used for melting and pumping hot melt thermoplastic adhesives. The system consists of the melt unit, up to four heated supply hoses, and applicators. System operation is further enhanced by the use of pattern controllers, timers, foot switches, or other such devices. All temperatures in the hot melt system are controlled by closed loop electronics using thermistor-based sensors.

Melt unit

Includes heated melt tank with a motor-driven, positive displacement gear pump. Front panel controls temperatures and settings. Fluid pressure is supplied by the regulator that controls flow through a bypass mechanism.

Pump and Motor

To prevent damage to the pump and/or motor with material that is too viscous or solid, operation of the pump motor is inhibited until the tank reaches approximately 90% of the selected temperature. The pump and motor are protected by a fuse that blows if a stall or overload condition occurs. See **Repair** page 21, for replacement instructions.

Auxiliary Input Connection

One auxiliary connection is available in the system. Foot switches, timers, and air pattern controllers connect to the auxiliary input. Power from the auxiliary input is automatically on when the tank is on.

On/Off Switch and Circuit Breaker

See FIG. 3, page 10. The on/off switch and circuit breaker (R) is a manual circuit breaker and also a magnetic breaker. The magnetic breaker opens the circuit when the current exceeds 20 amps (230 VAC) or when over-temperature conditions are sensed at the melt tank. See **Troubleshooting**, page 18.

Accessories

FIG. 1 shows the following accessories that may be installed.

Hoses

- **Heated Hose (J):** allow adhesive to flow from the tank to the applicator while maintaining the set temperature. Can install up to four hoses
  - Extrusion Hose: for extrusion application
  - Spray/Swirl Hose: includes air line in the hose jacket.

Hose Part No.	Extrusion, Spray/Swirl Application	Length	VAC
117852	Extrusion	4 ft (1.2 m)	115
117853	Extrusion	6 ft (1.8 m)	115
117854	Extrusion	8 ft (2.4 m)	115
117855	Extrusion	10 ft (3 m)	115
117856	Extrusion	12 ft (3.6 m)	115
117857	Extrusion	16 ft (4.8 m)	115
117858	Extrusion	18 ft (5.4 m)	115
117859	Extrusion	24 ft (7.3 m)	115
117860	Extrusion	4 ft (1.2 m)	230
117861	Extrusion	6 ft (1.8 m)	230
117862	Extrusion	8 ft (2.4 m)	230
117863	Extrusion	10 ft (3 m)	230
117864	Extrusion	12 ft (3.6 m)	230
117865	Extrusion	16 ft (4.8 m)	230
117866	Extrusion	18 ft (5.4 m)	230
117867	Extrusion	20 ft (6 m)	230
117868	Extrusion	24 ft (7.3 m)	230
117872	Swirl/Spray	4 ft (1.2 m)	115
117873	Swirl/Spray	6 ft (1.8 m)	115
117874	Swirl/Spray	8 ft (2.4 m)	115
117875	Swirl/Spray	10 ft (3 m)	115
117876	Swirl/Spray	12 ft (3.6 m)	115
117877	Swirl/Spray	16 ft (4.8 m)	115
117878	Swirl/Spray	18 ft (5.4 m)	115
117879	Swirl/Spray	24 ft (7.3 m)	115
117880	Swirl/Spray	4 ft (1.2 m)	230
117881	Swirl/Spray	6 ft (1.8 m)	230
117882	Swirl/Spray	8 ft (2.4 m)	230
117883	Swirl/Spray	10 ft (3 m)	230
117884	Swirl/Spray	12 ft (3.6 m)	230
117885	Swirl/Spray	16 ft (4.8 m)	230
117886	Swirl/Spray	18 ft (5.4 m)	230
117887	Swirl/Spray	24 ft (7.3 m)	230

Applicators

Refer to manual applicator instructions 310801 and/or automatic applicator instructions 310803.

- **EG Electric Head (D):** for automatic dispensing. No air needed for application. Use with timer and pattern controller.
- **COM-PAK Pneumatic (H):** for automatic dispensing. Use with timer and pattern controller.
- **AG Applicator (F):** for automatic dispensing. Use with timer and pattern contoller. Air-open, air-close with spring-assist closing action.
- **HG Handgun (G):** for manual dispensing. Top or bottom feed available. Control pump motor with reed relay switch on the gun.
- **Vertical Electric Applicator (VEA) (E):** for manual dispensing. One or two hand control options.

Timers and controllers

Refer EC-20/40 manual 310814 and/or air saver manual instructions located in applicator manuals.

- **EC-20 (B):** 2-event pattern timer for automatic application.
- **EC-40 (B):** 4-event pattern timer for automatic application.
- **Air Saver Control Unit (C):** for spray or swirl pattern applications. Adjusts and regulates air to the applicator. Graco part number.

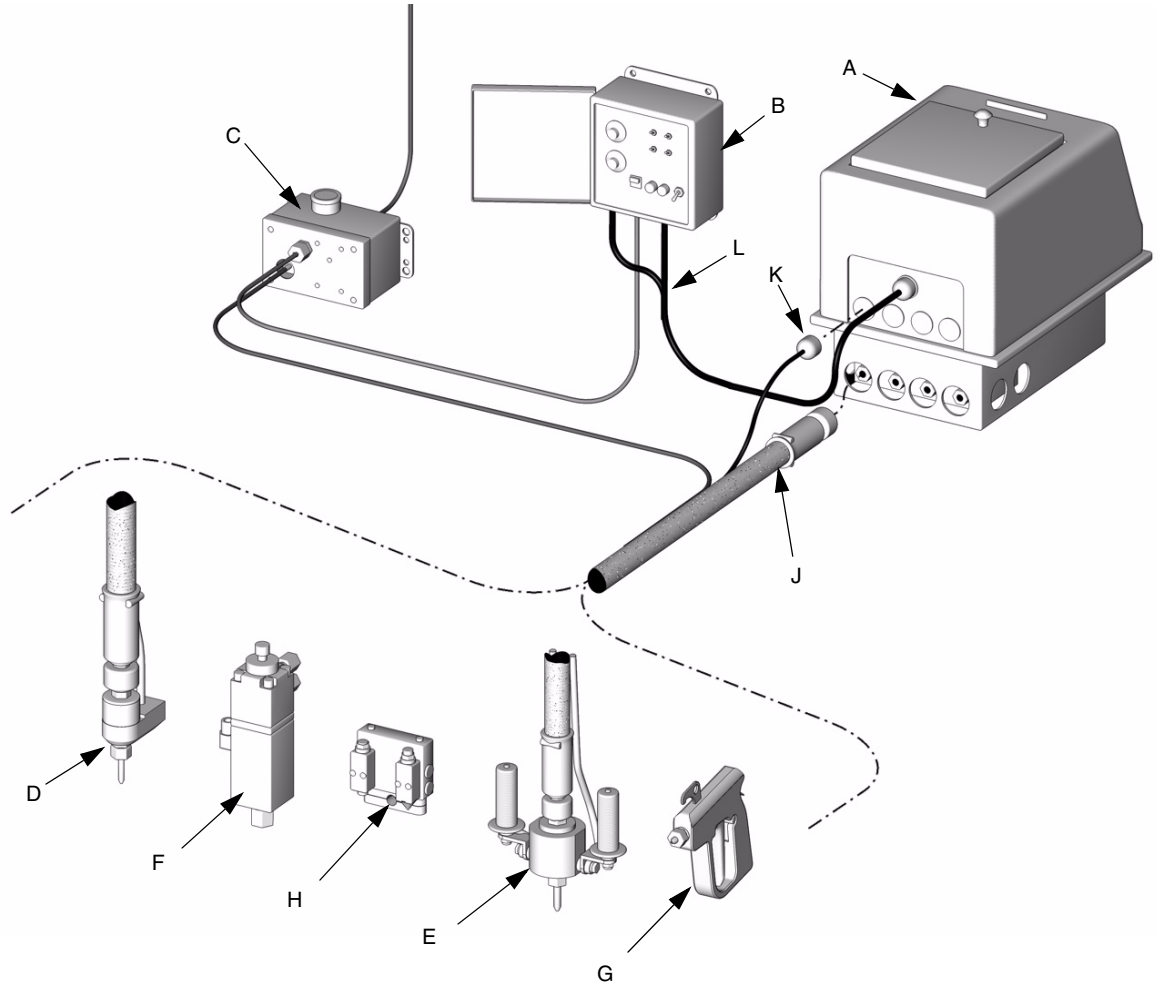


FIG. 1: Typical Installation

Key:

A T18 Hot Melt Tank
B Timer (required for automatic application)
C Air Controller (required for airspray and swirl application)
D EG Applicator
E VEA Applicator
F AG Applicator
G Handgun Applicator
H COM-PAK Applicator
J Fluid Hose
K Hose Electrical Connector
L Timer to Tank Power Cord

Front panel display

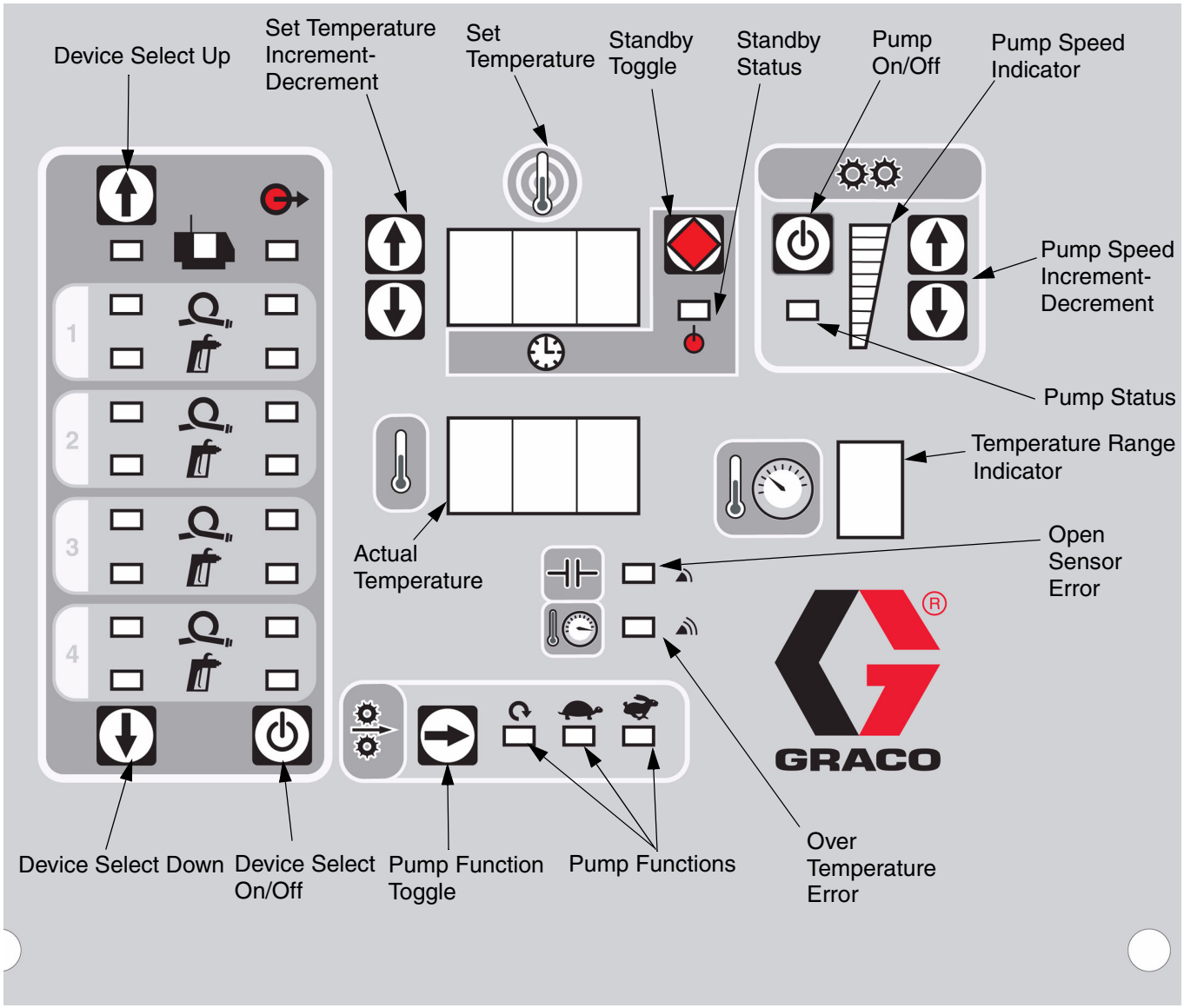
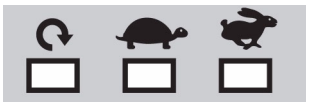
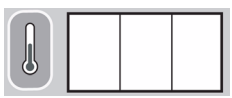
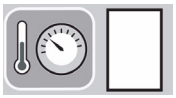
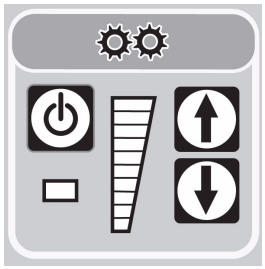
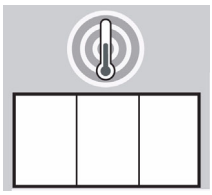


FIG. 2: Front Panel Display

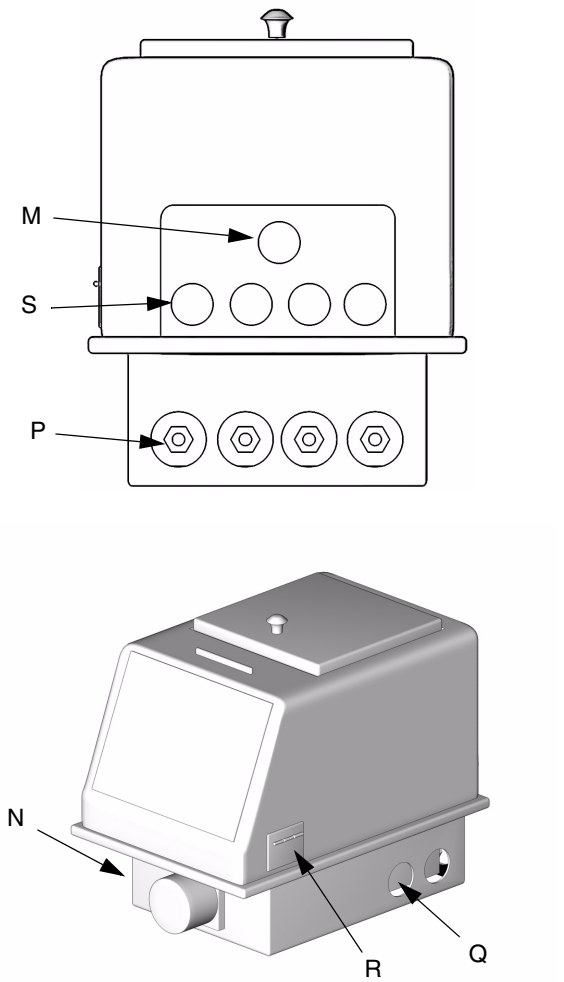
Front panel display

See FIG. 2.

Control	Name	Function
	Device Select Up/Down	Selects device for modification. Lights to the left of device signify the device is ready to be modified. Enables Temperature Range Indicator LED and Actual Temperature LED
	Set Temperature Increment/Decrement	Selects the temperature range digit and temperature set point.
	Device Select On/Off	Turns specified device settings (auxiliary, hose, head) on or off. Does not affect the tank zone. Lights to the right of the device will show if device is on or off. Changes temperature setting to °F or °C.
	Pump Function Toggle	Selects the pump settings Cycle, Crawl, or Run: •  CYCLE: Pump runs when applicator is actuated. For automatic application, the pump will run when timer is activated. •  CRAWL: Pump is at a constant slow turning velocity, keeping constant pressure from the pump, to the hose and applicator. When applicator is actuated the pump switches to cycle setting. When applicator is off the pump switches back to crawl setting. •  RUN: Pump is always on.
	Pump Functions	Shows GREEN when ready. Shows RED when the tank is not ready or the Pump Control is off.
	Over Temperature Error	Flashes RED when over-temperature condition is detected. The device indicator LED for the affected zone flashes RED. Heating is disabled. See **Troubleshooting**, page 18.
	Open Sensor Error	Shows RED when condition is sensed. The affected zone is automatically de-energized. The device indicator LED for the affected zone flashes RED. See **Troubleshooting**, page 18.
	Actual Temperature	Displays actual temperature (°F or °C) for selected zone.

Control	Name	Function
	Temperature Range Indicator	Shows the range currently set for the tank, hose, and head temperatures. See **Temperature Range Chart**, page 14.
	Pump Status 	Indicates if pump is on or off. Shows RED if pump is off or the tank is not ready. Shows GREEN when pump is on.
	Pump Speed Increment/Decrement 	Increases or decreases pump speed.
	Pump Speed Indicator 	Shows the current level of pump speed. Lights are GREEN to show speed level. The more lights are shown, the faster the pump is running.
	Pump Control On/Off 	Turns pump on or off.
	Standby Status	Shows GREEN when Standby Toggle is actuated.
	Standby Toggle	Starts cooling the tank, hoses, and applicators to approximately 75% of the set point. Initiates standby timer.
	Set Temperature (Standby Timer)	Shows the set temperature (°F or °C) of selected device. Shows set time that you want the Standby activated.

Setup



Key:
M Auxiliary Bypass Connection
N Power Cord (not shown)
P Fluid Outlets
Q Pressure Adjuster
R On/Off Power Switch
S Hose Electrical Receptacle

FIG. 3: T18 connections and power supply

Mounting hot melt tank

Bolt the hot melt tank securely to appropriate surface. Bolt holes are provided on the base of the tank. Mount tank where hose fittings are accessible from the bottom of the tank with wrenches. Floor mounting stand 118089 is available.

Connecting hose

WARNING

To avoid accidental system pressurization or electrical shock, disconnect power cord and turn the on/off switch to OFF. See **Warnings**, page 3.

WARNING

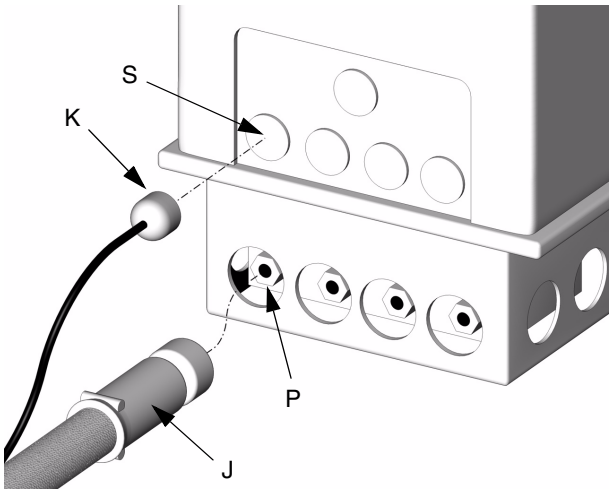
To prevent hose damage, do not flex hose when cold. When hot, the hoses have a minimum bend diameter of 16 in. (40.64 cm).
230 VAC tanks can support up to a variation of 72 ft. (21.95 m) of total hose.

WARNING

Wait until equipment/fluid has cooled completely. See **Warnings**, page 3.

1. Raise or tilt the melt unit to access the fluid outlet fittings.

2. Connect hose (J) to fluid outlet fitting (P). Tighten with 11/16 in (mm) open end wrench.



To prevent leakage, make sure hose is seated securely on outlet fitting.

To insure proper seating of threads, make sure outlet threads are clean. See **Troubleshooting**, page 18.

3. Connect hose electrical connector (K) to hose electrical receptacle (S). Make sure pins align properly.

4. Screw bayonet ring of the plug onto the receptacle.

To connect other fluid hoses, repeat steps 1 through 4.

Connecting applicator

See hot melt tank applicator manual for specific instruction on how to install applicators to the hot melt tank.

- 310801 Manual Applicator manual
- 310803 Automatic Applicator manual

Connecting timers and controllers

See EC-20/40 timer manual 310814 for instruction. See appropriate gun manual for air saver control instructions.

- 310801 Manual Applicator manual
- 310803 Automatic Applicator manual

Adding material to tank

WARNING

This equipment is designed for use with non-flammable hot melt thermoplastic sealants and adhesive, such as EVA's, butyls, and poly-olefins with flash points above 450°F (232°C). Not recommended for water curable or solvent based adhesive. Do not use flammable material or material not compatible with the specifications of this equipment. Failure to follow this instruction can cause burn injury to operators and damage to equipment.

1. Make sure melt tank has been flushed and cleaned. See **Flushing** page 13.

If material to be added is compatible to existing material in tank, flushing is not necessary.

2. Fill the melt tank with the amount of adhesive material that will be used in one day. Material should not be higher than 1.5 in. (4 cm) from the top of the tank.

3. Follow the material manufacturer's instructions for operating temperature.

Electrical wiring

The hot melt tanks use single phase, 200 to 240 VAC, 50 to 60 Hz power sources, each with earth ground for safety. The system is designed to be energized from a 30 amp power source.

Operation

Pressure relief procedure

WARNING

Follow **Pressure relief procedure** when you stop spraying and before cleaning, checking, servicing, or transporting equipment. Read warnings, page 3.

1. Shut off pump motor.
2. Actuate applicator, dispensing material into an empty pail, until material stops dispensing through the applicator.
3. Make sure material in tank is completely dispensed.
4. Follow **Pressure relief procedure**, page 13.
5. Remove nozzle and clean with compound.
6. Put compound into tank.
7. Start up the hot melt system. Follow instructions for **Starting the hot melt system**, page 14; **Adjusting panel controls, page** 14; and **Dispensing material**, page 16.
8. Trigger the gun until clean compound dispenses.
9. Turn on/off switch (R) OFF and unplug unit. See FIG. 3 page 10.
10. Remove gun from hose. See gun manual to further clean gun.

Flushing

WARNING

This equipment is designed for use with non-flammable hot melt thermoplastic sealants and adhesive, such as EVA's, butyls, and polyolefins with flash points above 450°F (232°C). Not recommended for water curable or solvent based adhesive. Do not use flammable material or material not compatible with the specifications of this equipment. Failure to follow this instruction can cause injury to operators and damage to equipment.

- Flush before changing materials.
- Flush at the lowest pressure possible. Check connectors for leaks and tighten as necessary.
- Flush with purging compound 118090.

Starting the hot melt system

1. Plug in hot melt system.

2. Turn on/off switch (R) ON. See FIG. 3, page 10.

Adjusting panel controls

Refer to the material manufacturer's specifications for correct operating temperatures.

Temperature Range Chart

The Temperature Range chart shows each range number that represents an actual temperature range for tank, hose and applicator.

Range	Tank Temperature	Hose and Applicator Temperature
1	120 to 195°F 49 to 91°C	150 to 225°F 66 to 107°C
2	160 to 235°F 71 to 113°C	190 to 265°F 88 to 129°C
3	200 to 275°F 93 to 135°C	230 to 305°F 116 to 152°C
4	240 to 315°F 116 to 157°C	270 to 345°F 132 to 174°C
5	280 to 355°F 138 to 179°C	310 to 385°F 154 to 196°C
6	320 to 395°F 160 to 202°C	350 to 425°F 177 to 218°C

Setting temperature to Fahrenheit (°F) or Celsius (°C)

1. Use the device select up/down to select tank . The LED to the left of the device should show GREEN.

2. Once the device is selected and LED is GREEN, press the device select up four times. The temperature range indicator will begin flashing.

3. Press the device select on/off . Notice the actual temperature display If the temperature in the display is lower, it is set to °C. If the temperature in the display is higher, it is set to °F.

Selecting tank

Use the device select up/down to select tank . The LED to the left of the device indicates selection.

Setting temperature range

The temperature range number reflects the setting for the tank, hose, and applicator. See **Temperature Range Chart**, page 14.

1. Select the tank and press the device select up four times. The temperature range indicator will blink.

2. Press the set temperature increment or decrement to set appropriate range digit. See **Temperature Range Chart**, page 14. This will only raise or lower the range digit value one level. To change the value, repeat steps 1 and 2.

Selecting hoses and applicators

1. Press the device select up/down to scroll through and select each device .

2. Press the device select on/off ON. The LED to the right of the selected device should flash GREEN when ready and flash AMBER when heating.

Setting tank, hose, and applicator temperature

Once device is selected, press the set temperature increment or decrement to set appropriate actual temperature within selected range. See **Temperature Range Chart**, page 14.

Setting pump control and speed

The pump will not operate until the tank is within 90% of set temperature. The tank is at temperature when all device LED's are flashing GREEN.

1. Press the pump on/off ON.

2. To set the pump to cycle, crawl, or run, press the pump function toggle . For pump function description, see **Front Panel Display** chart on page 8. The LED's will show RED when tank is not ready or pump control is off. The LED's will show GREEN when ready.

3. Adjust pump speed by pressing the pump speed increment/decrement . The pump speed indicator will illuminate showing current speed level.

If pump is in crawl setting, pump speed is not adjustable.

Setting auxiliary controls

Power to the auxiliary input is continual when the hot melt system is plugged in.

Setting standby timer

Setting the standby will turn off the tank for a selected amount of time. When the standby time is complete, the tank settings automatically resume to previous set temperatures and heating continues.

1. Press the standby toggle.

2. Press temperature increment/decrement to increase or decrease time. Set time will appear in the set temperature display. Enter a minimum of five minutes for set time.

Dispensing material

Do not operate hot melt unit until material in tank is set at set temperature. The pump will not operate until the tank is within 90% of set temperature. The tank is at temperature when tank LED is flashing GREEN.

1. Adjust panel controls, see **Adjusting panel controls**, page 14.

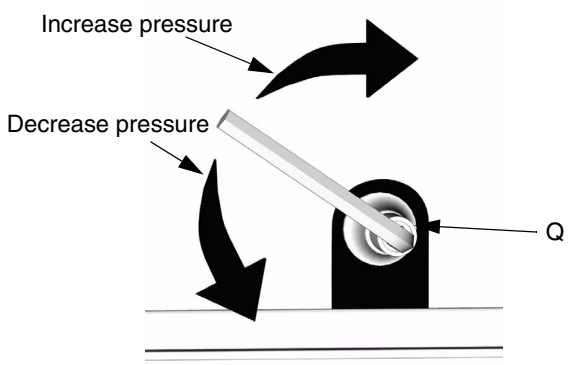
2. When device indicator is flashing green, set pump function. See **Setting pump control and speed**, page 15.

- The normal mode of pump operation is the cycle mode.
- When setting pump speed for DC motors, set the pump speed to the lowest necessary speed. This will maintain operating fluid pressure and reduce the potential for glue degradation due to shearing in the pump.

3. Spray the material as instructed in appropriate applicator manual.

4. To adjust material pressure, using a 10 mm hex wrench, turn the pressure regulator (Q).

- To increase pressure, turn regulator clockwise.
- To decrease pressure, turn regulator counter-clockwise.



Adjusting timers and controllers

See Timer manual 310814 for instruction. See Air Saver Control instructions in appropriate applicator manual.

- 310801 Manual Applicator manual
- 310803 Automatic Applicator manual

Maintenance

Daily Maintenance

Before powering up the hot melt system perform the following checks.

1. Inspect the melt tank for foreign materials and/or charring of the adhesive. Wipe off all excess adhesives from all surfaces with purging solvent 118090.

2. Check the hoses, applicator heads, and nozzles for wear and ensure integrity of all electrical connections.

3. Verify the hose is being properly supported so it is not over-stressed during use. The minimum bend diameter is 16 in. (40.64 cm) when hot.

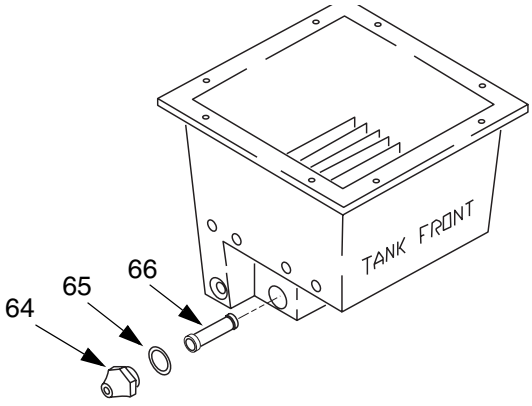
4. Look for leaks under the melt unit and at all mechanical connections.

Filter screen replacement

A filter screen, located next to the tank heaters, is available in filter screen kit 118178. This screen should be inspected and cleaned on a regular basis. Inspect when tank is empty of material. See **Flushing**, page 13.

1. Flush hot melt unit, see **Flushing**, page 13.

2. Using a 10 mm hex wrench, remove filter cap (64). Pull out o-ring (65) and filter (66). To replace filter and o-ring, order filter kit 118178.



3. Reassemble in reverse order.

Troubleshooting

Problem	Cause	Solution
Front panel not lit.	Unit not plugged in or turned on.	Plug in unit. Turn on/off switch ON.
	Wire harness connections not connected or needs replacing. Fuse disconnected or needs replacing.	Check all power supply connections to the front panel. Replace if necessary, see **Replacing front panel**, page 23. Check fuse with ohmmeter, replace if necessary.
Open Sensor LED is activated and flashes RED. Affected zone LED will flash RED.	Sensor condition is detected in the applicator, melt unit, and/or hose.	Check hose and applicator electrical connections. Make sure pins are lined up correctly and are secure.
		Check tank thermistor assembly with ohmmeter, which should read approximately 100,000 ohms at room temperature. Replace if necessary, see **Replacing thermistor assembly**, page 33.
		Check hose thermistor assembly with ohmmeter. Replace hose. See **Replacing hose**, page 21.
		Check applicator thermistor assembly. See appropriate applicator manual.
Unit circuit breaker, on/off switch is tripped.	Operator significantly lowers set temperatures after tank has reached set temperature.	Turn the circuit breaker ON and quickly press temperature increment  , increasing desired tank temperature. Allow tank to cool below or equal to operator's set temperature.

Problem	Cause	Solution
Tank not heating or taking a long time to heat and front panel is lit.	Temperature range not selected. Power supply to the heaters not connected correctly. One or both heaters are damaged.	Check temperature range, see **Front panel display**, page 7. Check fuse and heaters with ohmmeter. Check power supply to the heaters, see **Replacing front panel**, page 23. Replace heaters, see Replacing heaters, page 34.
Hoses are not heating.	Hose not plugged into correct connector.	Properly connect hose, see **Connecting hose**, page 10.
	Tank temperature too low.	Wait for tank to heat up properly. Hose will not heat completely until tank reaches 65% of set temperature.
	Improper voltage rating hose.	A 230 VAC hose will connect to a 115 VAC receptacle. Make sure voltage rating on hose matches the voltage rating on the tank.
	Pins not aligned correctly at hose to tank connection.	Check connection for proper alignment of pins.
		Check pins 13 and 14 with ohmmeter.
	Power supply connections not connected or needs replacing.	Check all power supply connections to the front panel. Check fuses with ohmmeter. Replace if necessary, see **Replacing front panel**, page 23.
	Hose is damaged.	Replace hose. See **Replacing hose**, page 21.
	Front panel fuse is bad.	Inspect front panel fuses with ohmmeter, replace. See **Replacing front panel fuses**, page 24.

Problem	Cause	Solution
Low or no flow of material from unit.	No power to tank.	Plug in unit. Turn on/off switch ON.
	Front panel settings not properly set.	See **Adjusting panel controls**, page 14.
	Not enough material in tank.	Add material. Material should not be higher than 1.5 in. (4 cm) from the top of the tank. See **Adding material to tank**, page 12.
	Pressure adjuster is set too low.	Adjust pressure adjuster, see **Dispensing material**, page 16.
	Set screw on pump/motor coupling is loose.	Tighten set screw (32) on pump/motor coupling.
	Viscosity of material too high.	Increase temperature settings. Reference material manufacturer's instruction and follow **Adjusting panel controls**, page 14.
		Increase orifice size.
	Gun nozzle plugged.	Clean nozzle or replace. See appropriate applicator manual.
	Hose is kinked or bent.	Check for kinks in hose, replace if damaged. See **Replacing hose**, page 21.
	Pump damaged.	Replace pump, see **Replacing pump**, page 27.
Material leaks from hose connection.	Threads at hose connection not seated properly.	Tighten connection. Clean threads by heating or using purging compound 118090.
Applicator not heating.	Front panel control not properly set.	See **Adjusting panel controls**, page 14.
	Tank has not yet reached set temperature.	See **Adjusting panel controls**, page 14.
	Applicator heater is damaged.	See appropriate gun manual.
	Front panel fuse is bad.	Inspect front panel fuses with ohmmeter, replace. See **Replacing front panel fuses**, page 24.

Repair

Tools Used

• 11/16 in. wrench	• 3/16 in. hex wrench	• 1/4 in. hex wrench	• Phillips screw driver
• 1/8 in. hex wrench	• 1 1/4 in. wrench	• Krytox® lubricant	
• 5/16 in. socket wrench	• 3/32 in. hex wrench	• Penetrating lubricant	
• 1/4 in. wrench	• 5/8 in. wrench	• Pliers	

Replacing hose

WARNING

Wait until equipment/fluid has cooled completely. See **Warnings**, page 3.

WARNING

To prevent hose damage, do not flex hose when cold. When hot, the hoses have a minimum bend diameter of 16 in. (40.64 cm).
230 VAC tanks can support up to a variation of 72 ft. (21.95 m) of total hose.

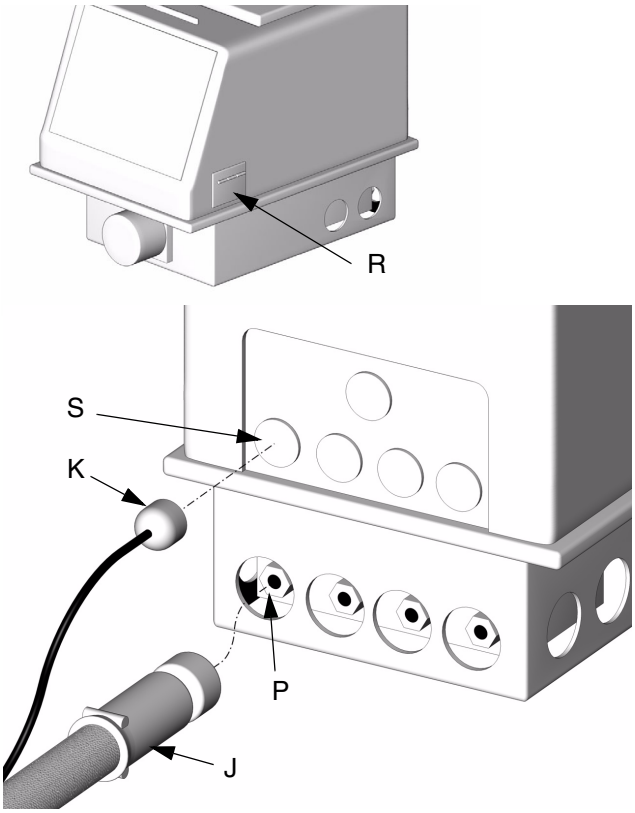


FIG. 4: Replacing hose

1. Follow **Pressure relief procedure**, page 13.

2. See FIG. 4. Turn on/off switch (R) OFF. Unplug tank unit.

3. Allow tank unit to cool before repairing.

4. Disconnect applicator from hose. See appropriate applicator manual for instructions.

5. See FIG. 4. Remove bayonet ring from the electrical connector (K).

6. Pull electrical connector (K) from the hose electrical receptacle (S).

7. Using an 11/16 in. wrench, remove hose (J) from the fluid outlet fitting (P).

8. Connect new hose, see **Connecting Hose**, page 10.

Replacing front panel

For replacement parts, see **Tank assembly**, page 36.

WARNING

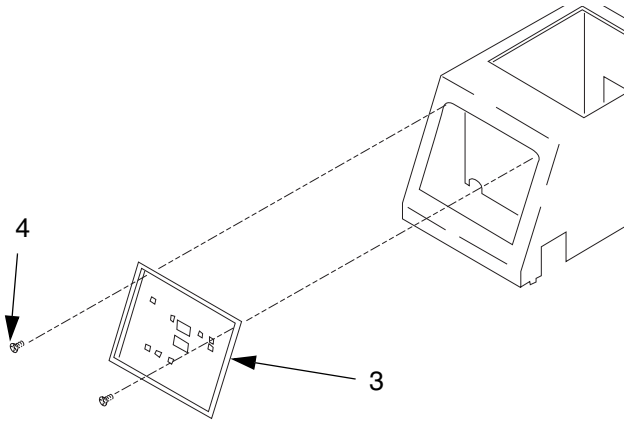
Wait until equipment/fluid has cooled completely. See **Warnings**, page 3.

WARNING

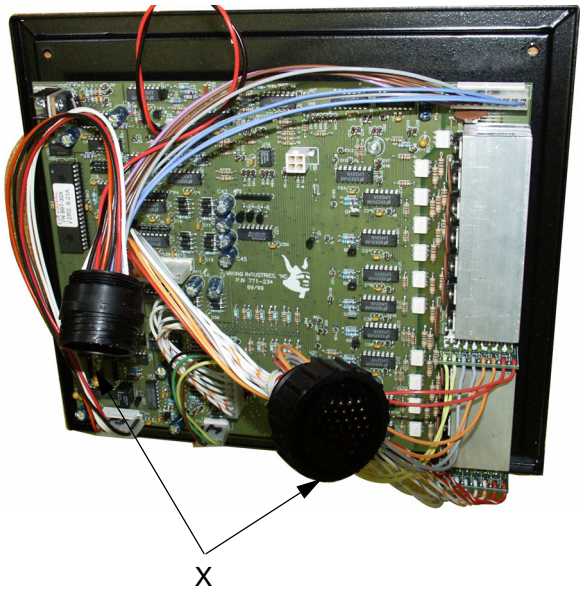
To avoid accidental system pressurization or electrical shock, disconnect power cord and turn the on/off switch OFF. See **Warnings**, page 3.2

1. Turn on/off switch (R) OFF. Unplug tank unit. Allow tank unit to cool completely before repairing.

2. Using 1/8 in. hex wrench, remove two screws (4) from front panel (3).



3. Pull front panel (3) from tank. Disconnect two bayonet electrical connectors (X) from front panel to power source. Replace if necessary.



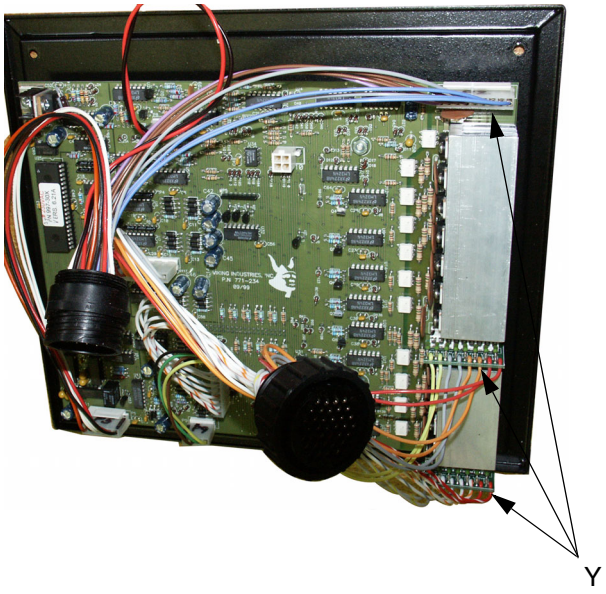
When reassembling front panel, make sure secondary connections are secure before mounting front panel.

Replacing front panel fuses

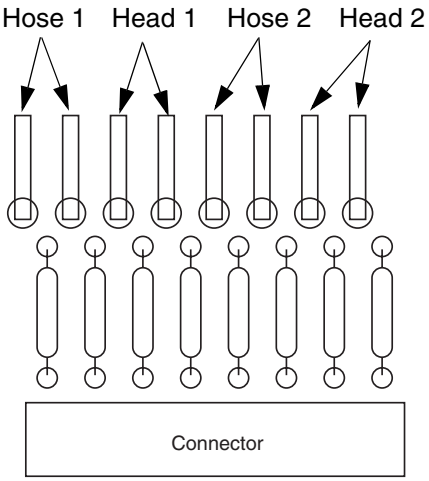
The T18 front panel includes two front panel fuse boards. Replacement fuses are available in fuse kit 118252.

1. Remove front panel. See **Replacing front panel**, page 23.

2. Remove fuse boards (Y).



3. Check fuses with ohmmeter. If ohmmeter shows infinite resistance, fuses are bad. Use a pliers to remove bad fuses and replace.

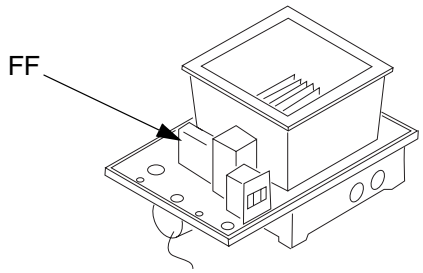


4. Reconnect fuse boards to front panel. Line up pins.

Replacing motor control board fuses 118321

1. Remove front panel, see **Replacing front panel**, page 23.

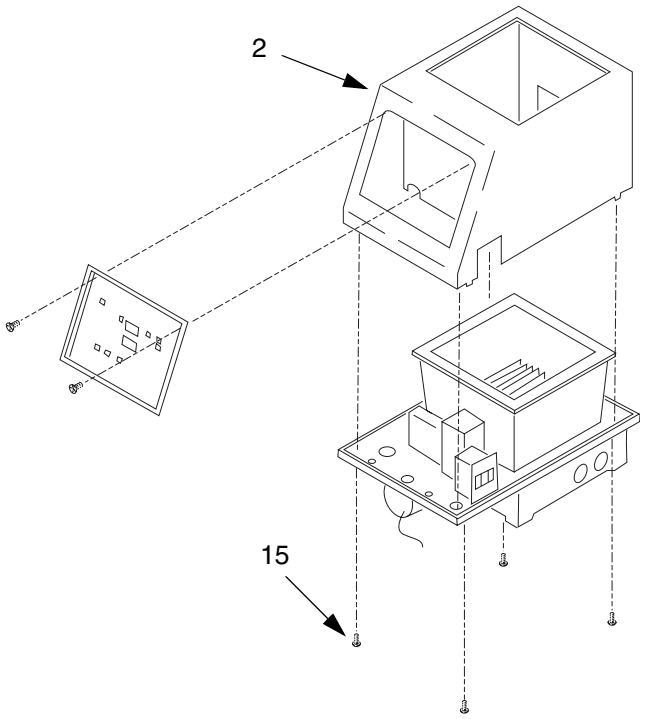
2. From the motor control board (FF), remove fuses (GG). Test with ohmmeter and replace if necessary.



Removing tank cover

1. Remove front panel, see **Replacing front panel**, page 23.

2. Using a 1/4 in. hex wrench, remove four screws (15) from underneath cover (2). Pull off cover



Replacing motor

For replacement parts, see **Parts,** page 38.
For the following instruction, see FIG. 5.

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WARNING

Wait until equipment/fluid has cooled completely. See **Warnings**, page 3.

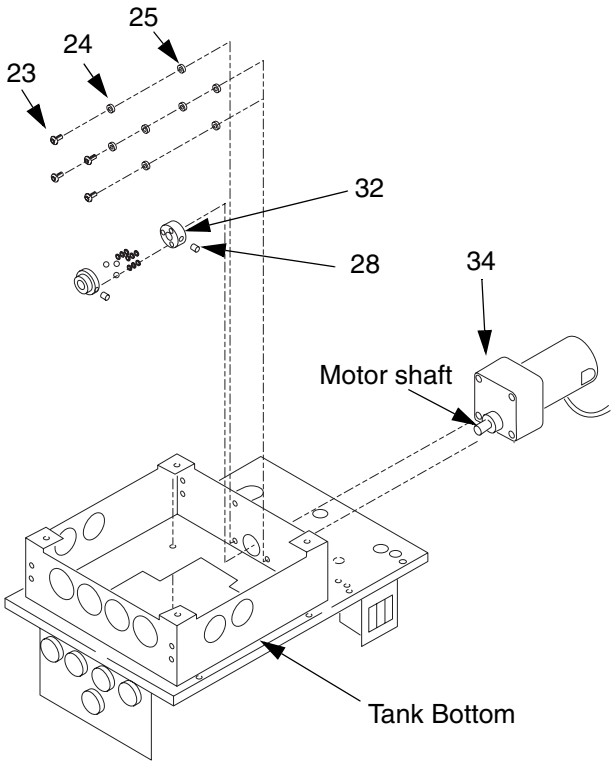


FIG. 5: Repairing motor

1. Follow **Pressure relief procedure**, page 13.
2. Remove front panel, see **Replacing front panel**, page 23.
3. Disconnect two wire spade connectors and ground wire leading from the motor to the motor control board.
4. To access motor, turn unit on its side.
5. Using a 5/16 socket wrench, remove four screws and washers (23, 24, 25).
6. From the motor side coupling (32), loosen set screw (28) and pull motor from coupling assembly. When reassembling coupling onto the motor shaft, assemble set screw (28) on the motor shaft flat.
7. Reassemble in reverse order.

Replacing coupling assembly

For replacement parts, see **Parts,** page 38.

For the following instruction, see FIG. 6.

WARNING

To avoid accidental system pressurization or electrical shock, disconnect power cord and turn the on/off switch OFF. See **Warnings**, page 3.

WARNING

Wait until equipment/fluid has cooled completely. See **Warnings**, page 3.

1. Turn on/off switch OFF. Unplug tank unit and allow tank unit to cool.
2. Remove the motor and motor side coupling, see **Replacing motor**, page 26.
3. Using 1/8 in. hex wrench, remove set screw (28) on the pump side coupling.
4. Pull off coupling assembly and replace with 118159.
5. Reassemble coupling in reverse order. Lubricate with Krytox® lubricant. Make sure set screws (28) are assembled on shaft flat and are aligned with each other.

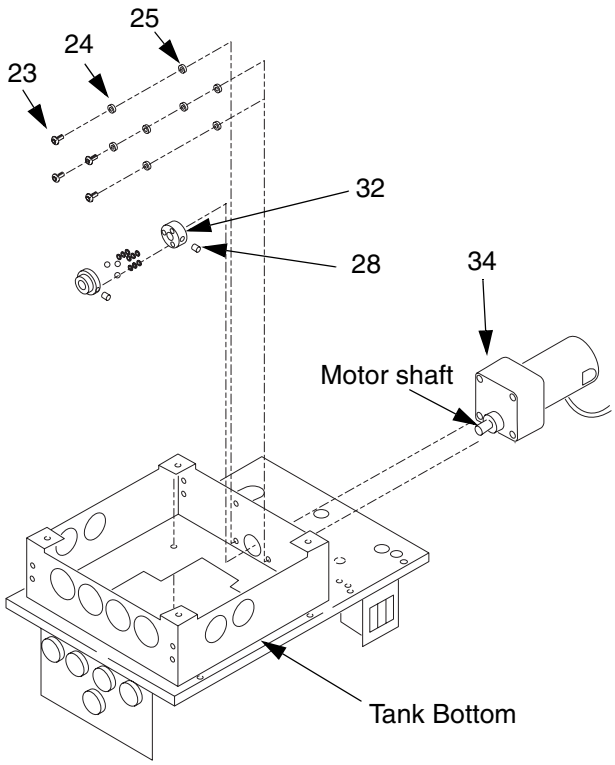


FIG. 6: Removing coupling assembly

Replacing pump

For replacement parts, see **Parts**, page 42.

WARNING

To avoid accidental system pressurization or electrical shock, disconnect power cord and turn the on/off switch OFF. See **Warnings**, page 3.

WARNING

Wait until equipment/fluid has cooled completely. See **Warnings**, page 3.

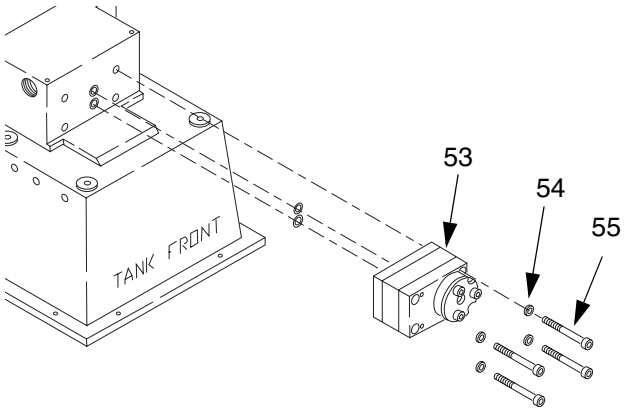
Pump assembly will not loosen if material in pump has cooled. Using a heat gun, heat the pump assembly before repairing. Wear gloves when handling heated parts.

When replacing o-ring seals, lubricate with Krytox® lubricant.

1. Turn on/off switch OFF. Unplug tank unit and allow tank unit to cool completely.

2. Turn tank over to access the pump.

3. Using a 1/4 in. hex wrench, remove cap screws and washers (55, 54). Pull pump (53) from tank.



Use FIG. 7 for the following instruction.

4. Using a 1/4 in.hex wrench, remove three cap screws (101), plate (102), and u-cup (103). Replace u-cup. Lubricate with Krytox lubricant.

5. Using a 1/4 in. hex wrench, from the lower plate (122), remove two hex screws (123). Separate bottom plate (122) and center plate (119) from assembly.

6. From center plate (119), remove slave gear (118).

7. Remove and replace o-rings (113). Lubricate.

8. Remove drive gear (115) from pump shaft (105).

9. Remove key (114) and push shaft (105) through top of drive side plate (112).

10. Remove and replace washer (109) and o-ring (110). Lubricate.

11. Reassemble pump in reverse order. Make sure to insert pump shaft (105) from the top of drive side plate (112).

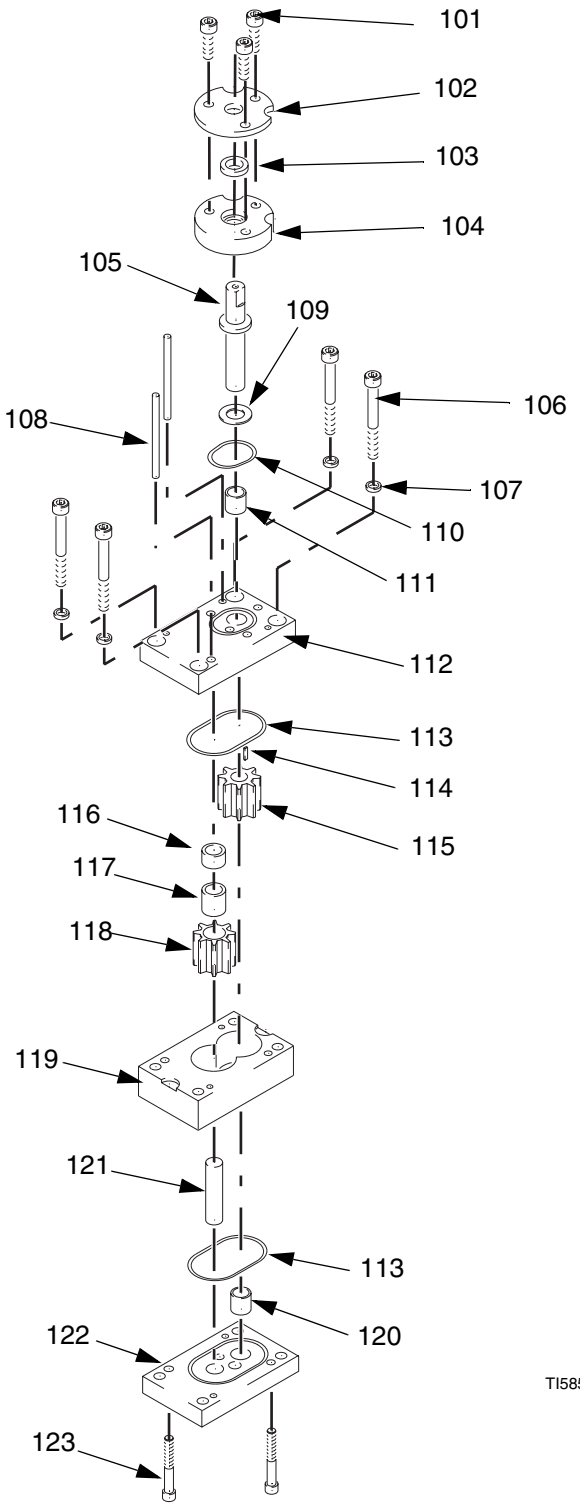


FIG. 7: Pump assembly

Replacing pressure adjuster

For replacement parts, see **Parts** page 41.

WARNING

Wait until equipment/fluid has cooled completely. See **Warnings**, page 3.

WARNING

To avoid accidental system pressurization or electrical shock, disconnect power cord and turn the on/off switch to OFF. See **Warnings**, page 3.

Disassembly

Refer to FIG. 8 for the following instructions.

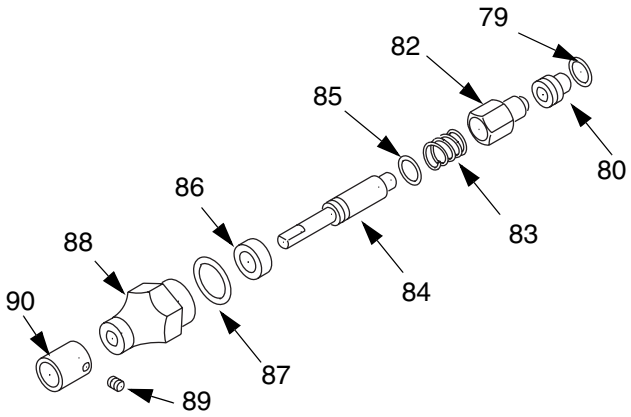


FIG. 8: Pressure adjuster assembly

1. Perform **Pressure relief procedure**, page 13.
2. Turn on/off switch OFF. Unplug tank unit and allow unit to cool before repairing.
3. To access the pressure adjuster, turn unit on its side.
4. Using a 1 1/4 in. wrench, remove pressure adjuster body (88).
5. Using a 3/32 in. hex wrench loosen set screw (89). Loosen and remove knob (90).
6. From the body (88), remove shaft (84), u-cup (86), and o-ring (87). Inspect for damage and replace.
7. From shaft (84), remove o-ring (85). Inspect for damage and replace.
8. From pressure adjuster insert, use an o-ring pick to remove spring (83) and poppet (82). Inspect for damage and replace.
9. Using a 3/16 in.hex wrench, remove seat (80) and o-ring (79). Inspect for damage and replace.

Reassembly

Refer to FIG. 9 for the following instructions.

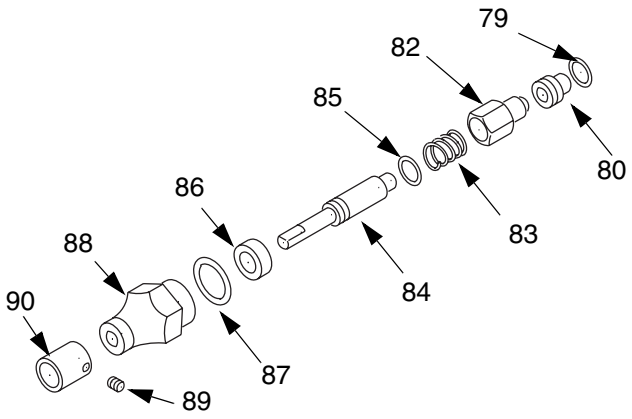


FIG. 9: Pressure adjuster assembly

Before reassembly, make sure all threads are free of material. Use a penetrating lubricant to loosen and remove material around threads.

When replacing o-ring seals, lubricate with Krytox lubricant.

1. Assemble o-ring (85) onto shaft (84). Lubricate.

2. Assemble u-cup (86) onto shaft (84). Make sure lips face towards tank.

3. Lubricate and assemble o-ring (87) into body (88). Assemble shaft (84) onto body (88).

4. Assemble knob (90) onto shaft (84). Tighten screw (89) on knob (90).

5. Lubricate and assemble o-ring (79) onto seat (80). Using a 3/16 in. hex wrench, thread seat (80) into pressure adjuster insert.

6. Place spring (83) into poppet (82). Rest poppet (82) onto shaft (84) and insert remaining pressure adjuster assembly into the pump. Tighten securely.

Replacing fluid outlet fittings

For replacement parts, see **Parts**, page 38.

WARNING

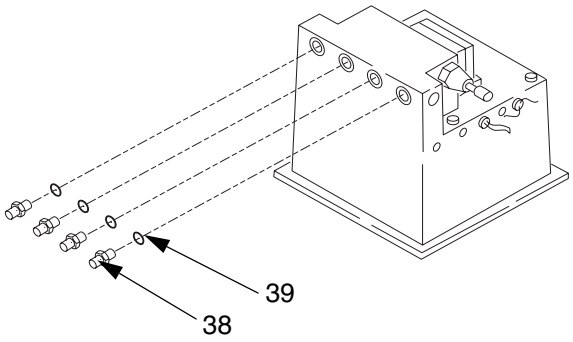
To avoid accidental system pressurization or electrical shock, disconnect power cord and turn the on/off switch OFF.

WARNING

Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns, do not touch hot fluid or equipment. Wait until equipment/fluid has cooled completely.

1. Disconnect all fluid hoses. See **Replacing hose**, 21.

2. Using an 11/16 in. wrench, remove fittings (38) and o-rings (39). Replace and lubricate with Krytox lubricant.



3. Reassemble new fluid outlet fittings in reverse order.

Replacing thermistor and switch assembly

For replacement parts, see **Parts,** page 40.

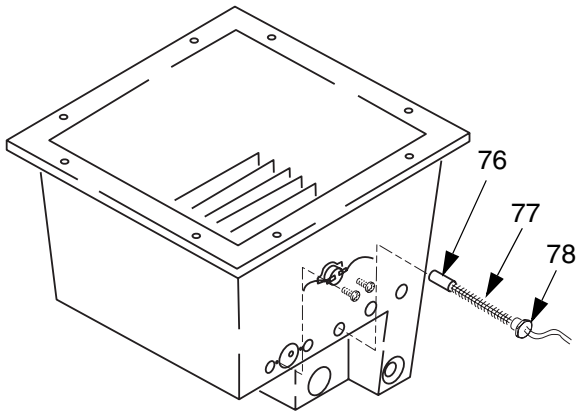
1. Remove front panel, see **Replacing front panel**, page 23.

2. Remove tank cover, see **Removing tank cover**, page 25.

3. The thermistor and switch assemblies are located behind the insulation on the pressure adjuster side of the tank. Cut tape around lower insulation panel. Remove insulation panel.

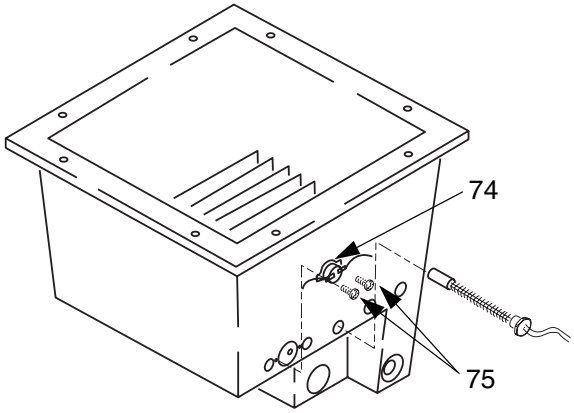
4. Disconnect wires to the thermistor assembly.

5. Using a 5/8 in wrench, remove thermistor assembly (78, 77, and 76).



6. Reassemble new thermistor assembly in reverse order.

7. To remove the switch assembly, use a phillips screw driver and remove screws (75). Pull out assembly (74).



8. Disconnect wire leads to the switch assembly.

9. Check switch assembly with an ohmmeter. Ohmmeter should read infinite ohms. Replace if necessary. Reassemble in reverse order.

Replacing tank heaters

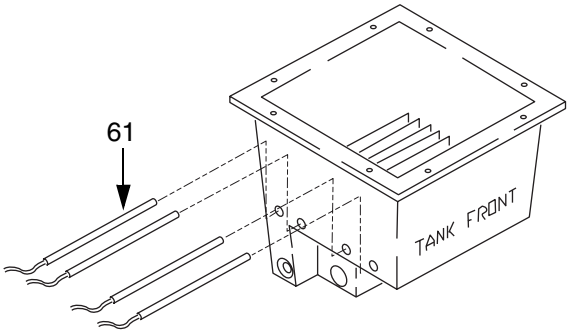
For replacement parts, see **Parts,** page 40.

1. Remove front panel, see **Replacing front panel,** page 23.

2. Remove tank cover, see **Replacing tank cover**, page 25.

3. The heaters are located behind the insulation on the tank filter side of the tank. Cut tape around lower insulation panel.

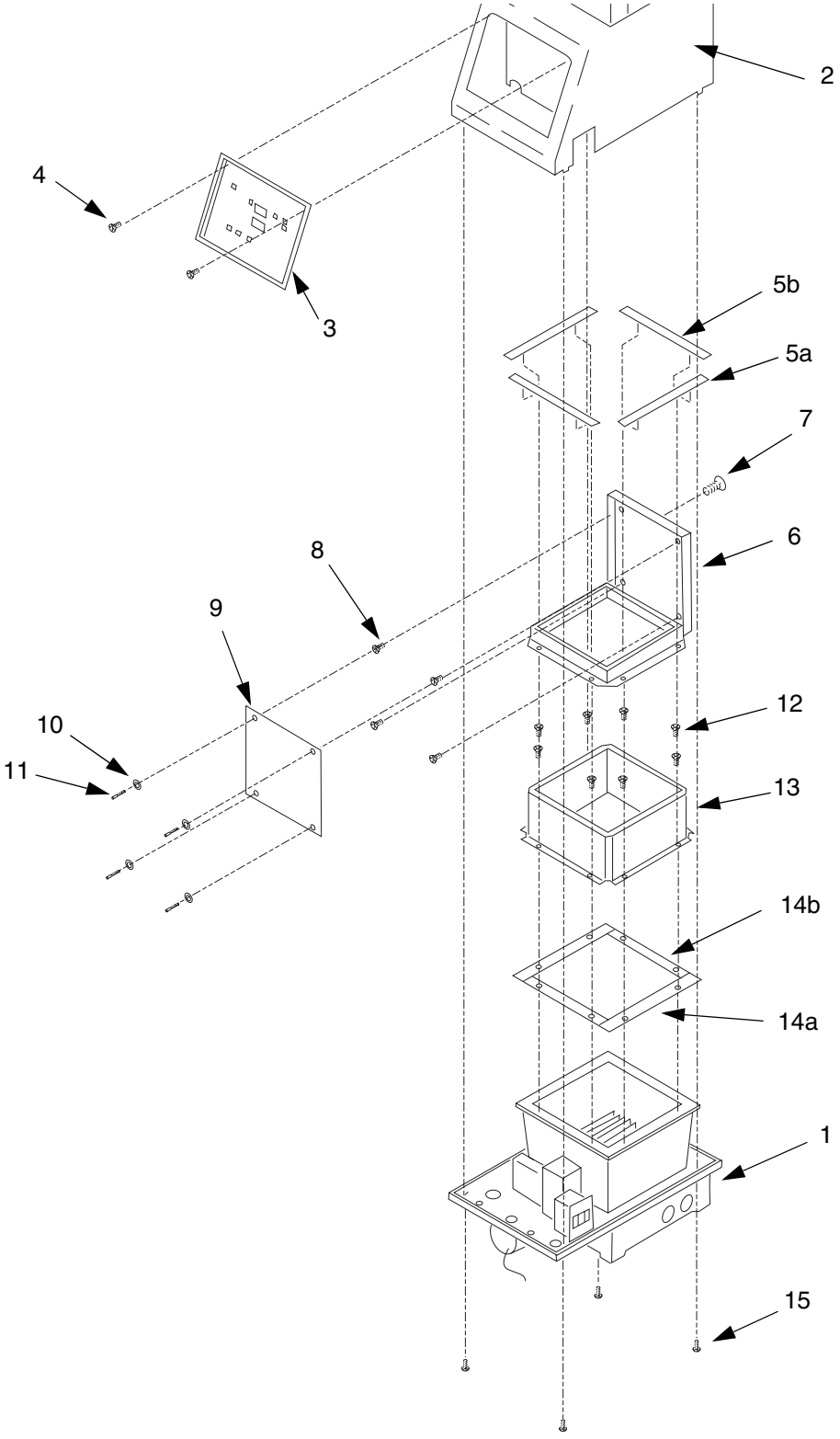
4. Remove insulation panel and pull out four heaters (61). Disconnect heater wire connectors.



5. Reassemble new heaters in reverse order.

Parts

Tank assembly

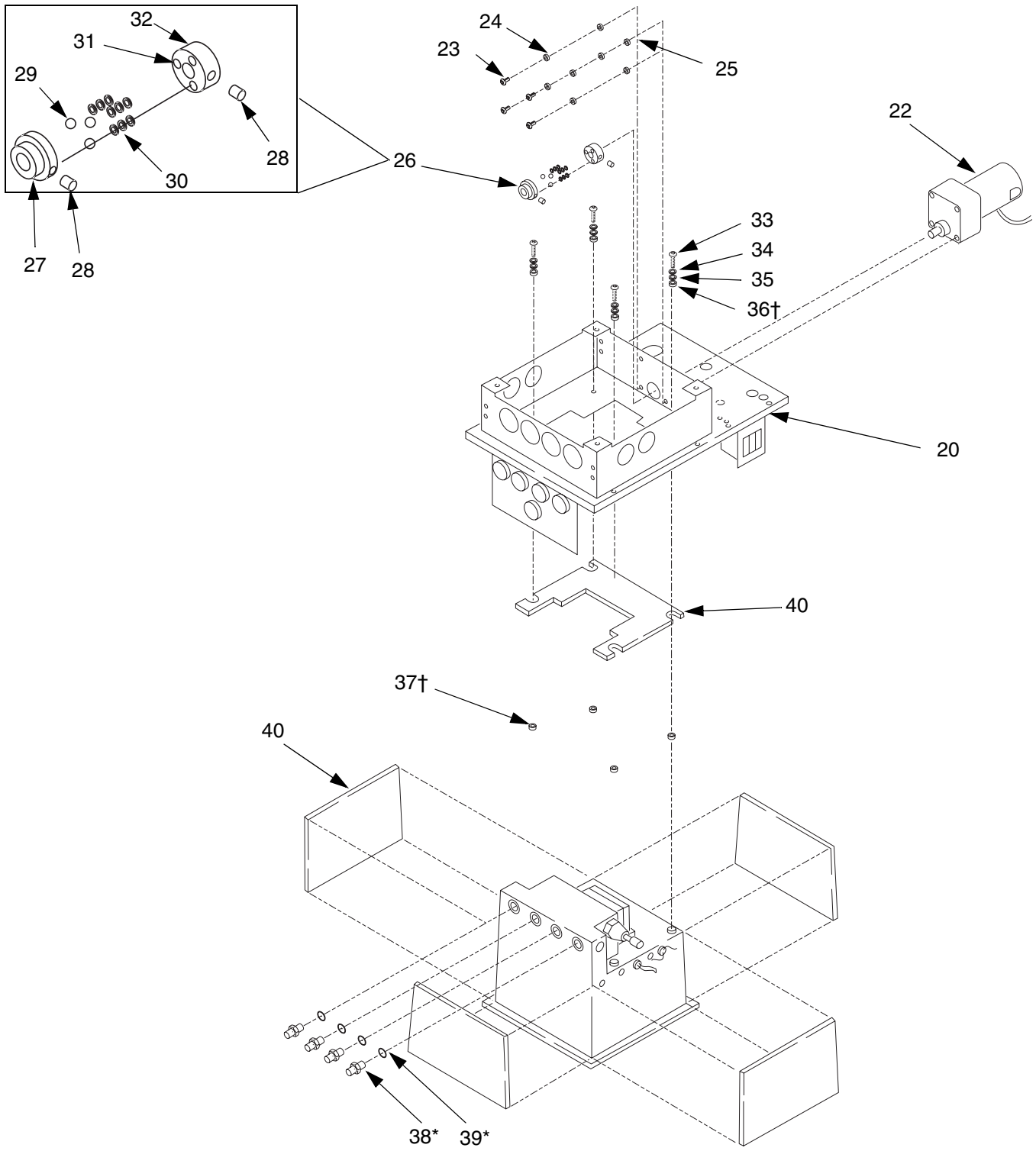


Tank Assembly

Ref. No.	Part No.	Description	Qty.
1		BASE ASSEMBLY, electronic	1
2	118212	HOUSING ASSEMBLY	1
3	118213	FRONT PANEL	1
4		SCREW	2
5a		SEAL, sponge, long	2
5b		SEAL, sponge, short	2
6		LID ASSEMBLY	1
7		KNOB	1
8		SPRING	4
9		SHIELD, lid, s.s.	1
10		WASHER, flat	4
11		SCREW	4
12		SCREW	8
13		CHIMNEY SECTION	1
14a		SEAL, gasket, long	2
14b		SEAL, gasket, short	2
15		SCREWS	4

*Free replacement of worn or damaged labels are available by ordering safety label kit 119610.

Tank to frame, motor to pump



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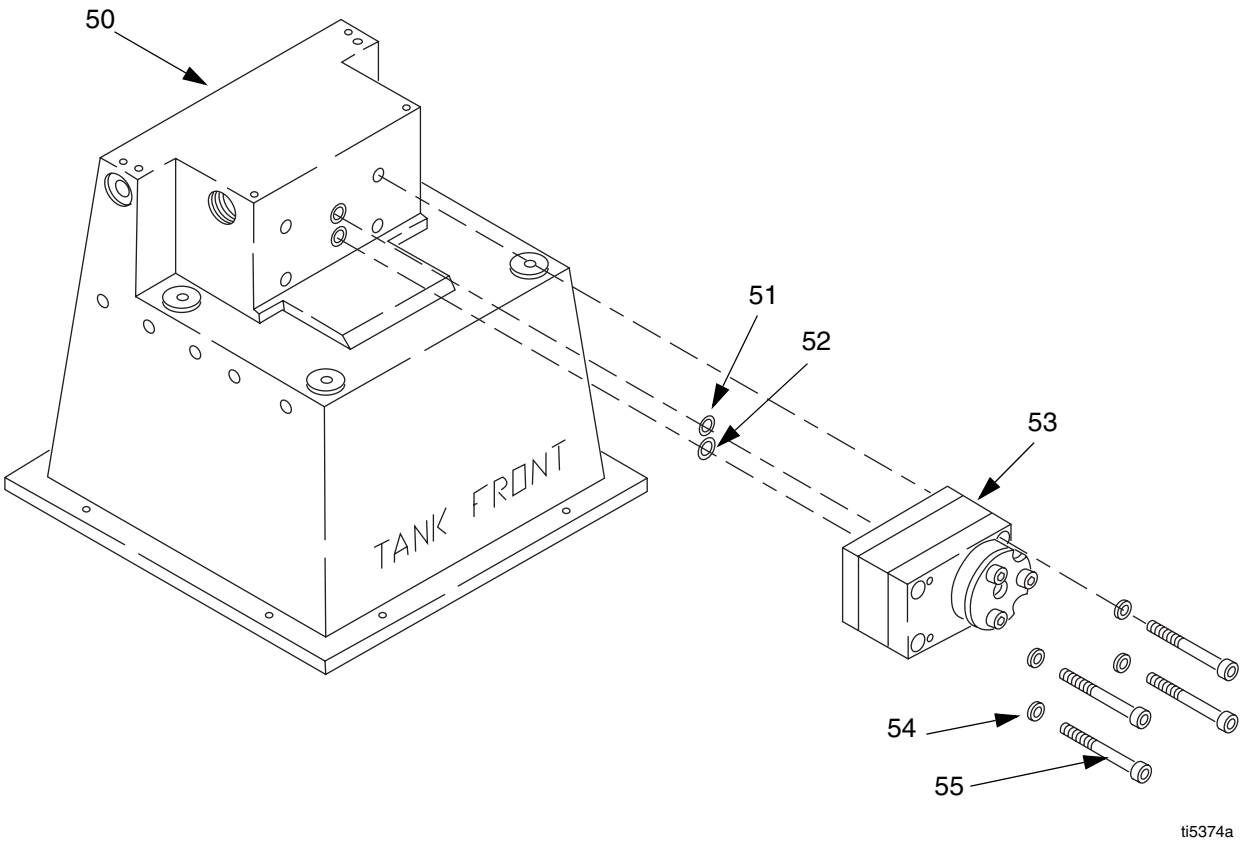
Tank to frame, motor to pump assembly

Ref. No.	Part No.	Description	Qty.
20		BASE ASSEMBLY	1
21		TANK ASSEMBLY	1
22	118204	MOTOR, 180 VDC, 230 VAC, DC	1
23		SCREW, hex; #10-32 x 1/2 in.	4
24		WASHER, lock #10 split	8
25		WASHER, flat #10	8
26	118159	HUB ASSEMBLY (Includes items 27-32)	1
27		HUB, pump side	1
28		SCREW, 1/3-20 x 3/8 in.	2
29		BEARING, coupler pivot	3
30		SPRING, 240 od x .020 wire	3
31		PIN, dowel 3/16 x 1 in. (pressed into motor side hub, not shown)	3
32		HUB, motor side	1
33		SCREW, hex; 5/16-18 x 1 1/14 in.	4
34		WASHER, lock; 5/16-18 x 1 1/4	4
35		WASHER, lock; 5/16 in. split	4
36†		WASHER, insulating; 1 x 1	4
37†		WASHER, insulation; 1/4	4
38*		FITTING, conn. JIC/straight	4
39*		O-RING	4
40		TANK, insulation	1

* *Included in T18 Tank Fitting Kit 118265.*

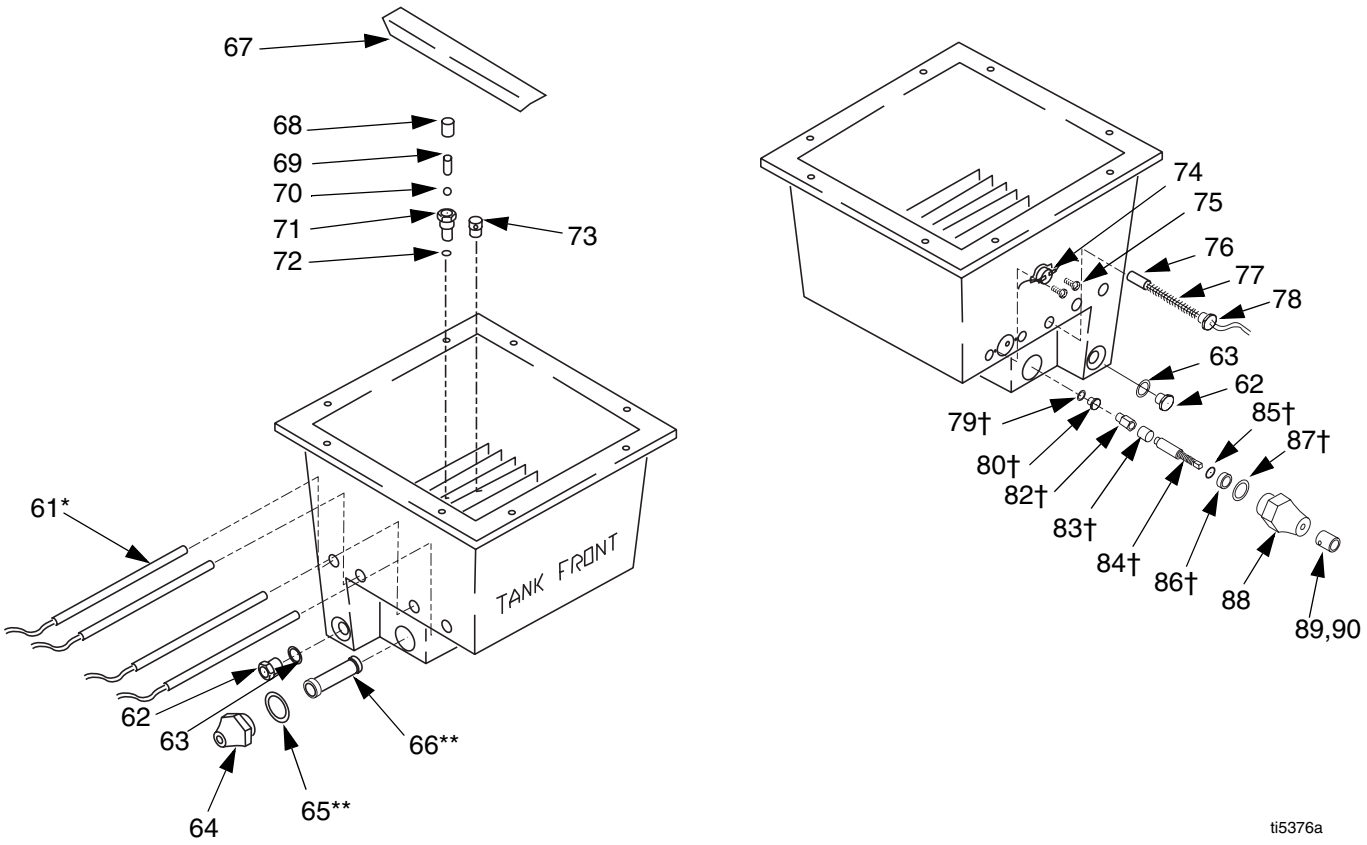
† *Included in T18 Tank Spacer Insulation Kit 118304.*

Tank to pump assembly



Ref. No.	Part No.	Description	Qty.
50		CASTING	1
51		O-RING	1
52		O-RING	1
53	118274	PUMP ASSEMBLY	1
54		WASHER, lock split; 5/16 in.	4
55		SCREW, cap; 5/16-18 x 3 in. black	4

Preliminary tank assembly



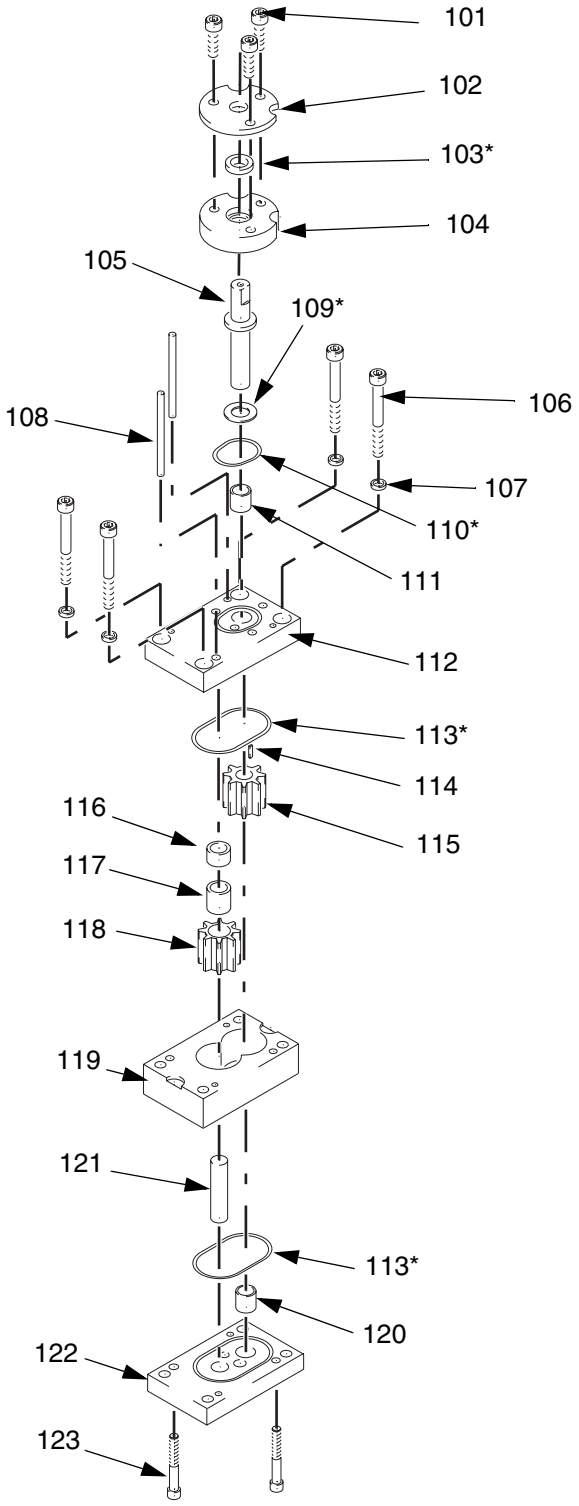
Ref. No.	Part No.	Description	Qty.
60		CASTING, machined and coated	1
61*		HEATER, tank, 230 V	4
62		PLUG, hex	2
63		O-RING	2
64		CAP, filter	1
65**		O-RING	1
66**		FILTER, screen, 100 mesh	1
67		SCREEN	1
68		RETAINER, spring	1
69		SPRING, pressure	1
70		BALL, bearing, SS; 5/16	1
71		BODY, hp relief valve	1
72		O-RING	1
73		REGULATOR, material return pressure	1
74	119570	SWITCH ASSEMBLY	1
75		SCREW, hex; #6-32 x 1/2 in	2
76	118209	THERMISTOR ASSEMBLY (includes items 77-78)	1
77		SPRING	1
78		NUT, retainer	1
79†		O-RING	1
80†		SEAT, pressure adjuster	1
81†	118181	PRESSURE ADJUSTER ASSEMBLY (includes items 82-90)	1
82†		NEEDLE	1
83†		SPRING	1
84†		SHAFT	1
85†		O-RING	1
86†		SEAL, flow valve	1
87†		O-RING	1
88		BODY	1
89		SCREW, set; #10-32 x 1.4 in.	1
90		KNOB	1

* *Included in Tank Heater repair kit 118174.*

** *Included in Filter Screen kit 118178.*

† *Included in Pressure Adjuster repair kit 118150.*

Pump assembly 118274



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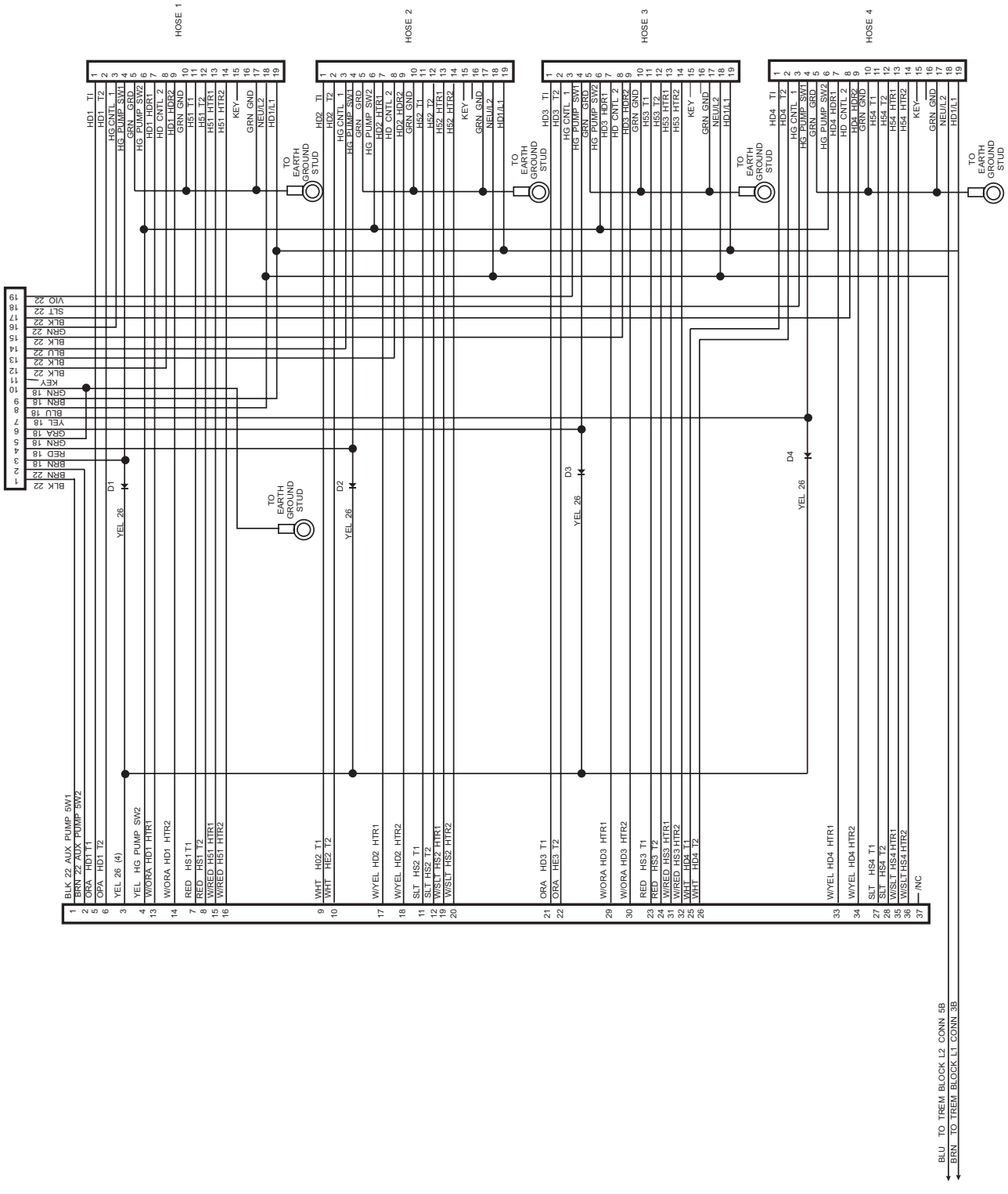
Pump assembly 118274

Ref. No.	Part No.	Description	Qty.
101		SCREW, hex; 5/16-18 x 1 in.	3
102		RETAINER, housing	1
103*		SEAL, shaft, pump	1
104		HOUSING, pump seal	1
105		SHAFT	1
106		SCREW, hex; 5/16-18 x 3 in.	4
107		WASHER, lock; 5/16 in. split	4
108		PIN, alignment	2
109*		WASHER, thrust	1
110*		O-RING	1
111		BUSHING	1
112		PLATE, drive side	1
113*		O-RING	2
114		KEY, shaft	1
115		GEAR, drive, hobbed	1
116		BUSING	1
117		BUSHING	1
118		GEAR, slave, hobbed	1
119		PLATE, center section	1
120		BUSHING	1
121		SHAFT, idler	1
122		PLATE, pump side driver	1
123		SCREW, hex; 1/4-20 x 2 in.	2

* *Included in T18 pump rebuild kit 118157.*

Schematics

T18 base 230 VAC



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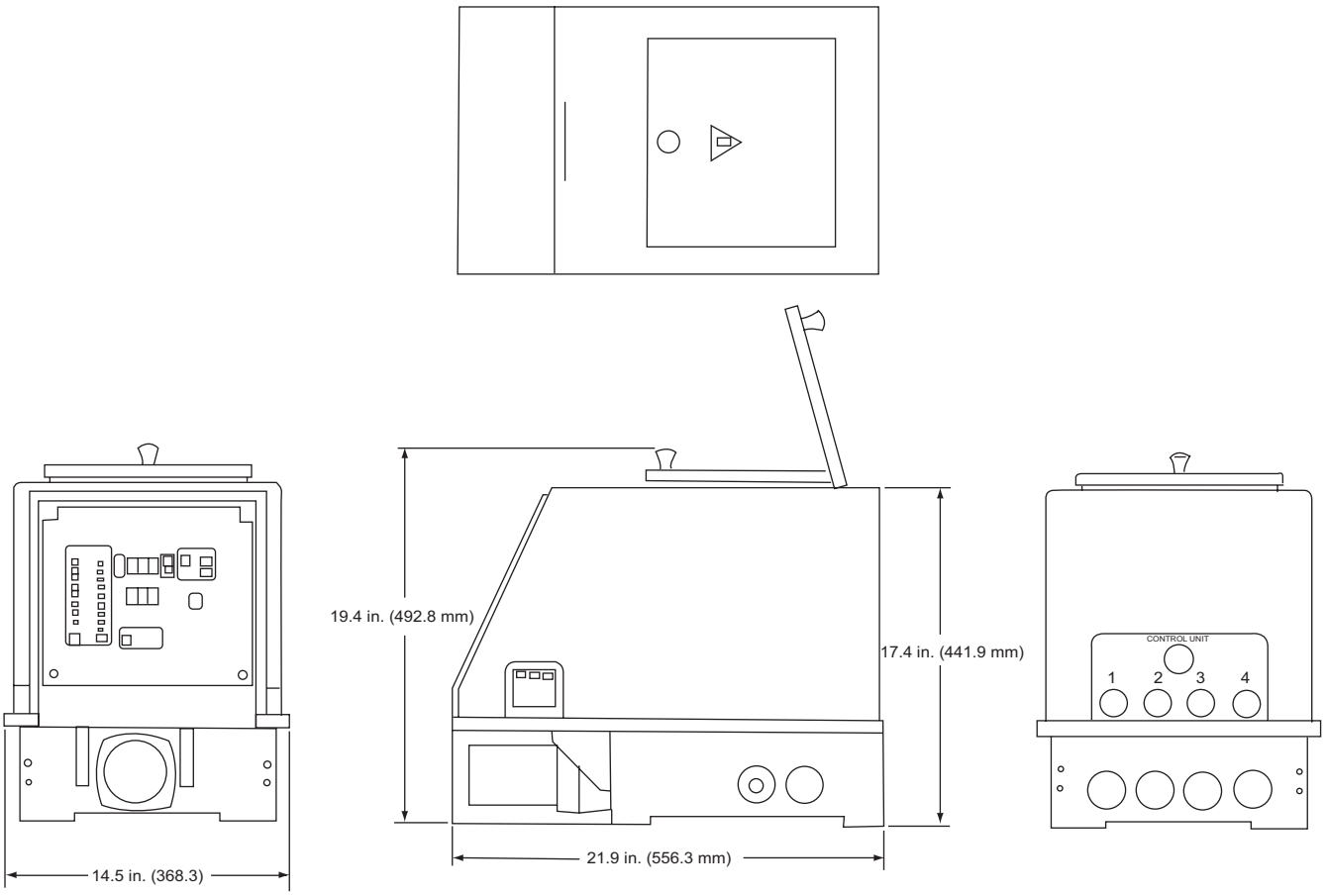
Dimensions



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Technical Data

Application temperature	up to 425°F (218°C)
Tank temperature	up to 395°F (202°C)
Temperature accuracy	± 2%
Melt rate	75 lb/hr (34 kg/hr)
Viscosity range	up to 30,000 centipoise
Tank capacity	34 lbs (18 liters)
Power consumption	230V: 6900 watts max Melt unit: 3400 watts
Power requirements - single phase	230 VAC 50/60 Hz
Circuit breaker rating	30 amp
Empty weight	86 lb (39 kg)
Pump pressure	500 psi (3.4 MPa, 34 bar)
Hoses	Variations up to 72 ft (21.9 m).

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Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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Graco Information

TO PLACE AN ORDER, contact your Graco distributor or call to identify the nearest distributor.
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