

E-Mix™ XT

3B0224B

EN

**Plural-component system used for proportioning, mixing, and spraying two component coatings.
Not approved for use in explosive atmospheres or hazardous (classified) locations.
For professional use only.**

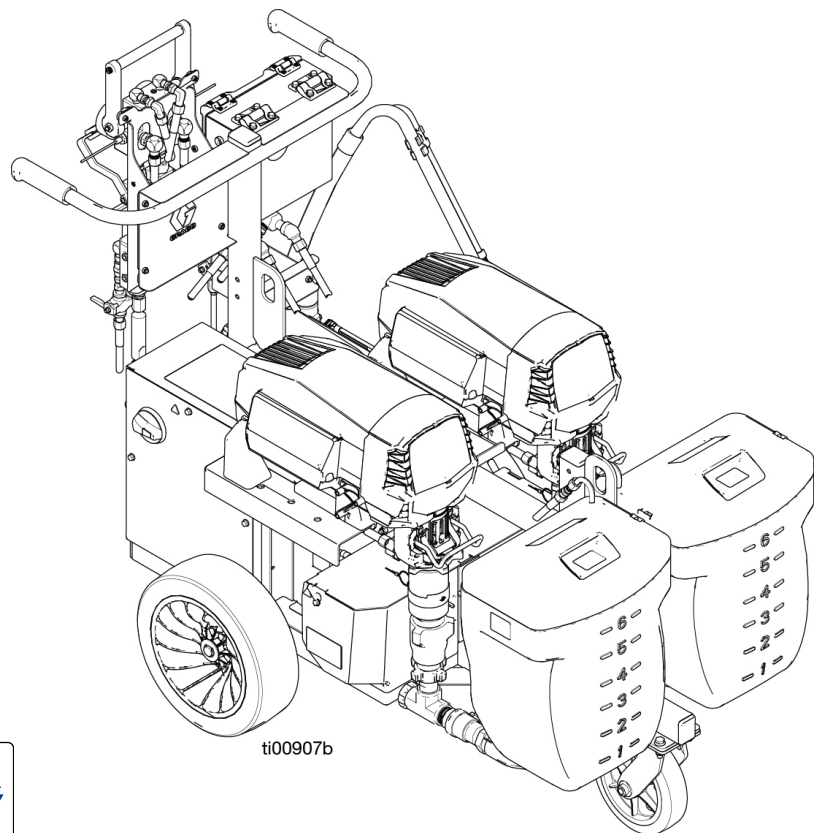
5000 psi (34.5 MPa, 345 bar) Maximum Working Pressure

See page 4 for model information, including approvals



Important Safety Instructions

Read all warnings and instructions in this manual and in related manuals before using the equipment. Be familiar with the proper control and usage of the equipment. Save these instructions.



Use only genuine Graco replacement parts.
The use of non-Graco replacement parts may void warranty.

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Related Manuals

Find English manuals and any available translations at www.graco.com.

English Manual Number	Description
3A7469	XTR 5+™ and XTR 7+™ Spray Guns, Instructions - Parts
Solvent Flush	
3A9095	Electric Airless Sprayers, Operation - Parts (Ultra 495 XT, 240 V)
Mix Manifold	
3A0590	Mix Manifold, Quickset Mix Manifold, Instructions - Parts
Displacement Pump	
3B0281	E-Mix XT Displacement Pump, Repair - Parts
Heated Hose	
3B0260	Independent Plug-in Heated Hose and Control Module, Operation - Repair - Parts

Supplied Manuals

The following manuals and quick guides are shipped with the E-Mix XT. Refer to these manuals and quick guides for detailed equipment information. Manuals are also available at www.graco.com.

English Manual Number	Description
3B0221	E-Mix XT, Operation
3B0261	E-Mix XT, Startup Quick Guide
3B0262	E-Mix XT, Shutdown Quick Guide

Standard Models

Part	Maximum Working Pressure psi (MPa, bar)	Description	Approvals
2004087	5000 psi (34.5 MPa, 345 bar)	Sprayer, E-Mix XT, 200-240 VAC, 1ph	 Intertek 5024314 Certified to CAN/CSA C22.2 No. 88 Conforms to ANSI/UL 499
2004088		Sprayer, E-Mix XT, 350-415 VAC, 3ph	

Professional Models

Part	Maximum Working Pressure psi (MPa, bar)	E-Mix XT Sprayer	Voltage	Included Accessories
2005565	5000 psi (34.5 MPa, 345 bar)	2004087  Intertek	200-240 VAC, 1ph	Remote Mix Manifold Carriage, 262522 Light Tower Kit, 18H278 Hose Rack Kit, 2006329 Remote Hose Kit, 2007132
2005567		2004088 	350-415 VAC, 3ph	

Safety Symbols

The following safety symbols appear throughout this manual and on warning labels. Read the table below to understand what each symbol means.

Symbol	Meaning
	Burn Hazard
	Crush Hazard
	Electric Shock Hazard
	Equipment Misuse Hazard
	Fire and Explosion Hazard
	Moving Parts Hazard
	Moving Parts Hazard
	Skin Injection Hazard
	Skin Injection Hazard
	Splash Hazard

Symbol	Meaning
	Toxic Fluid or Fumes Hazard
	Do Not Place Hands or Other Body Parts Near Fluid Outlet
	Do Not Stop Leaks with Hand, Body, Glove or Rag
	Do Not Wipe with a Dry Cloth
	Eliminate Ignition Sources
	Follow Pressure Relief Procedure
	Ground Equipment
	Read Safety Data Sheet
	Ventilate Work Area
	Wear Personal Protective Equipment



Safety Alert Symbol

This symbol indicates: Attention! Become Alert! Look for this symbol throughout the manual to indicate important safety messages.

General Warnings

The following warnings apply throughout this manual. Read, understand, and follow the warnings before using this equipment. Failure to follow these warnings can result in serious injury.

 DANGER	
 	SEVERE ELECTRIC SHOCK HAZARD This equipment can be powered by more than 240 V. Contact with this voltage will cause death or serious injury. • Turn off and disconnect all power before disconnecting any cables and before servicing equipment. • This equipment must be grounded. Connect only to grounded power source. • All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations. • Do not expose to rain. Store indoors.

 WARNING	
   	FIRE AND EXPLOSION HAZARD Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion: • Use equipment only in well ventilated area. • Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking). • Ground all equipment in the work area. See Grounding instructions in the Operation manual. • Never spray or flush solvent at high pressure. • Keep work area free of debris, including solvent, rags and gasoline. • Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present. • Use only grounded hoses. • Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive. • Stop operation immediately if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem. • Keep a working fire extinguisher in the work area.
	FIRE AND EXPLOSION HAZARD Static charge may build up on plastic parts during cleaning and could discharge and ignite flammable vapors. To help prevent fire and explosion: • Clean plastic parts only in well-ventilated area. • Do not clean with a dry cloth. • Do not operate electrostatic guns in equipment work area.

! WARNING



SKIN INJECTION HAZARD

High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Do not spray without tip guard and trigger guard installed.
- Engage trigger lock when not spraying.
- Do not point gun at anyone or at any part of the body.
- Do not put your hand over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Follow the **Pressure Relief Procedure** when you stop spraying and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses and couplings daily. Replace worn or damaged parts immediately.



MOVING PARTS HAZARD

Moving parts can pinch, cut or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** and disconnect all power sources.

WARNING



EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Specifications** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Specifications** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.



PRESSURIZED ALUMINUM PARTS HAZARD

Use of fluids that are incompatible with aluminum in pressurized equipment can cause serious chemical reaction and equipment rupture. Failure to follow this warning can result in death, serious injury, or property damage.

- Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.
- Do not use chlorine bleach.
- Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.



BURN HAZARD

Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:

- Do not touch hot fluid or equipment.



TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled or swallowed.

- Read Safety Data Sheets (SDSs) for handling instructions and to know the specific hazards of the fluids you are using, including the effects of long-term exposure.
- When spraying, servicing equipment, or when in the work area, always keep work area well-ventilated and always wear appropriate personal protective equipment. See **Personal Protective Equipment** warnings in this manual.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.

 WARNING**PERSONAL PROTECTIVE EQUIPMENT**

Always wear appropriate personal protective equipment and cover all skin when spraying, servicing equipment, or when in the work area. Protective equipment helps prevent serious injury, including long-term exposure; inhalation of toxic fumes, mists or vapors; allergic reaction; burns; eye injury and hearing loss. This protective equipment includes but is not limited to:

- A properly fitting respirator, which may include a supplied-air respirator, chemically impermeable gloves, protective clothing and foot coverings as recommended by the fluid manufacturer and local regulatory authority.
- Protective eyewear and hearing protection.

Important Isocyanate (ISO) Information

Isocyanates (ISO) are catalysts used in two component materials.

Isocyanate Conditions



Spraying or dispensing fluids that contain isocyanates creates potentially harmful mists, vapors, and atomized particulates.

- Read and understand the fluid manufacturer's warnings and Safety Data Sheets (SDSs) to know specific hazards and precautions related to isocyanates.
- Use of isocyanates involves potentially hazardous procedures. Do not spray with this equipment unless you are trained, qualified, and have read and understood the information in this manual and in the fluid manufacturer's application instructions and SDSs.
- Use of incorrectly maintained or mis-adjusted equipment may result in improperly cured material. Equipment must be carefully maintained and adjusted according to instructions in the manual.
- To prevent inhalation of isocyanate mists, vapors, and atomized particulates, everyone in the work area must wear appropriate respiratory protection. Always wear a properly fitting respirator, which may include a supplied-air respirator. Ventilate the work area according to instructions in the fluid manufacturer's SDSs.
- Avoid all skin contact with isocyanates. Everyone in the work area must wear chemically impermeable gloves, protective clothing and foot coverings as recommended by the fluid manufacturer and local regulatory authority. Follow all fluid manufacturer recommendations, including those regarding handling of contaminated clothing. After spraying, wash hands and face before eating or drinking.

Keep Components A and B Separate



Cross-contamination can result in cured material in fluid lines which could cause serious injury or damage equipment. To prevent cross-contamination:

- **Never** interchange component A and component B wetted parts.
- Never use solvent on one side if it has been contaminated from the other side.

Moisture Sensitivity of Isocyanates

Exposure to moisture (such as humidity) will cause ISO to partially cure, forming small, hard, abrasive crystal that become suspended in the fluid. Eventually a film will form on the surface and the ISO will begin to gel, increasing in viscosity.

NOTICE

Partially cured ISO will reduce performance and the life of all wetted parts.

- Always use a sealed container with a desiccant dryer in the vent, or a nitrogen atmosphere. **Never** store ISO in an open container.
- Keep the ISO pump wet cup or reservoir (if installed) filled with appropriate lubricant. The lubricant creates a barrier between the ISO and the atmosphere.
- Use only moisture-proof hoses compatible with ISO.
- Never use reclaimed solvents, which may contain moisture. Always keep solvent containers closed when not in use.
- Always lubricate threaded parts with an appropriate lubricant when reassembling.

NOTE: The amount of film formation and rate of crystallization varies depending on the blend of ISO, the humidity, and the temperature.

Changing Materials

NOTICE

Changing the material types used in your equipment requires special attention to avoid equipment damage and downtime.

- When changing materials, flush the equipment multiple times to ensure it is thoroughly clean.
- Always clean the Fluid Inlet Strainers after flushing.
- Check with your material manufacturer for chemical compatibility.
- When changing between epoxies and urethanes or polyureas, disassemble and clean all fluid components and change hoses. Epoxies often have amines on the B (hardener) side. Polyureas often have amines on the B (resin) side.

Usage

The plural-component sprayer can mix and spray most two component epoxy and urethane protective coatings. It is a variable-ratio system, where settings in the Advanced Display Module can be changed to reconfigure the system to different volume mix ratios or spray pressures.

All models are mounted on a metal Cart, and are equipped with Hoppers where the resin (A material) and catalyst (B material) can be preheated and recirculated prior to spraying.

The materials are pumped to the Primary Heaters, where the resin and hardener are heated to the required spray temperatures. Heat improves the chemical reaction and lowers viscosity to improve the spray pattern.

The materials then flow to the Mix Manifold Assembly. The Mix Manifold Assembly consists of a Recirculation Manifold Assembly, Mix Manifold, and Solvent Flush Valve. At the Recirculation Manifold Assembly, the materials either recirculate back to the Hopper for continued preheating, or combine at the Mix Manifold Assembly into one fluid line. The mixed material then flows through static mixers for continued mixing to the Whip Hose and out the Spray Gun.

The solvent flush system flushes the mixed material out of the manifold, static mixers, mixed material hoses, and Spray Gun.

When using quick-setting materials (less than 10 minute pot life) a Remote Mix Manifold Assembly must be used. The Mix Manifold Assembly is separated from the Recirculation Manifold Assembly and mounted on a remote carriage. Heated hoses are used to prevent temperature loss in the materials while flowing to the remotely mounted Mix Manifold Assembly. Systems are configured to connect either a water heated hose, or an electric heated hose. Heated hoses are sold separately in various configurations and lengths depending on customer need.

Over Pressure Protection



To reduce the risk of injury due to skin injection, perform the following:

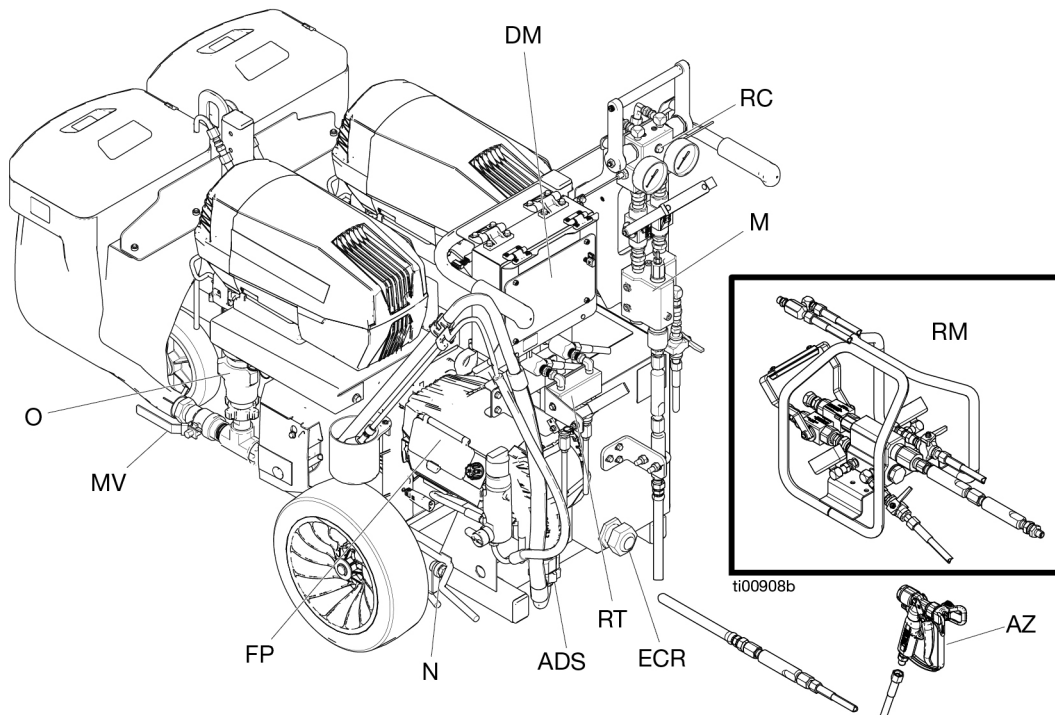
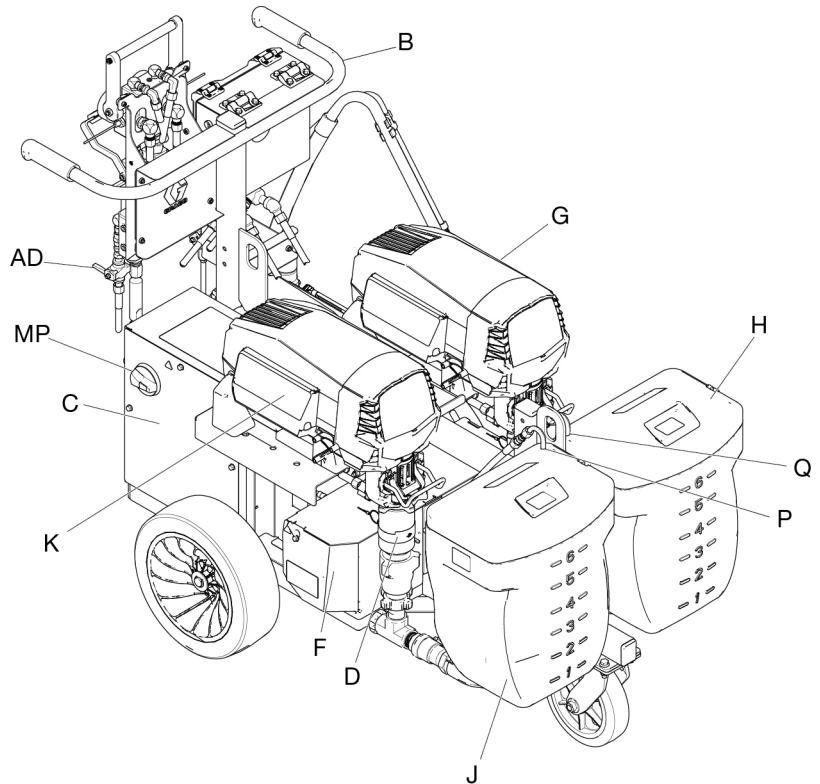
- Automatic over-pressure relief valves are used to transfer excess fluid pressure back to the supply. Never plug the return hoses. See **Fluid Control Assembly (System Mounted)**, on page 14.
- Never install individual shut off valves on the “A” and “B” lines. Common handles link the fluid control valves.
- A rupture disc is provided as a backup to the over-pressure relief valve. If the rupture disc opens, do not operate the machine until the over-pressure valve and the rupture disc have been replaced.

Component Identification

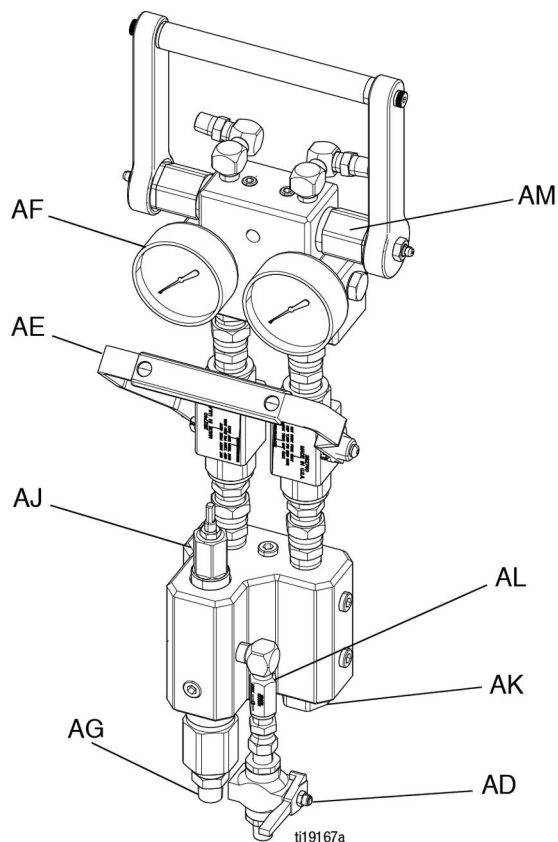
Proportioner

Key:

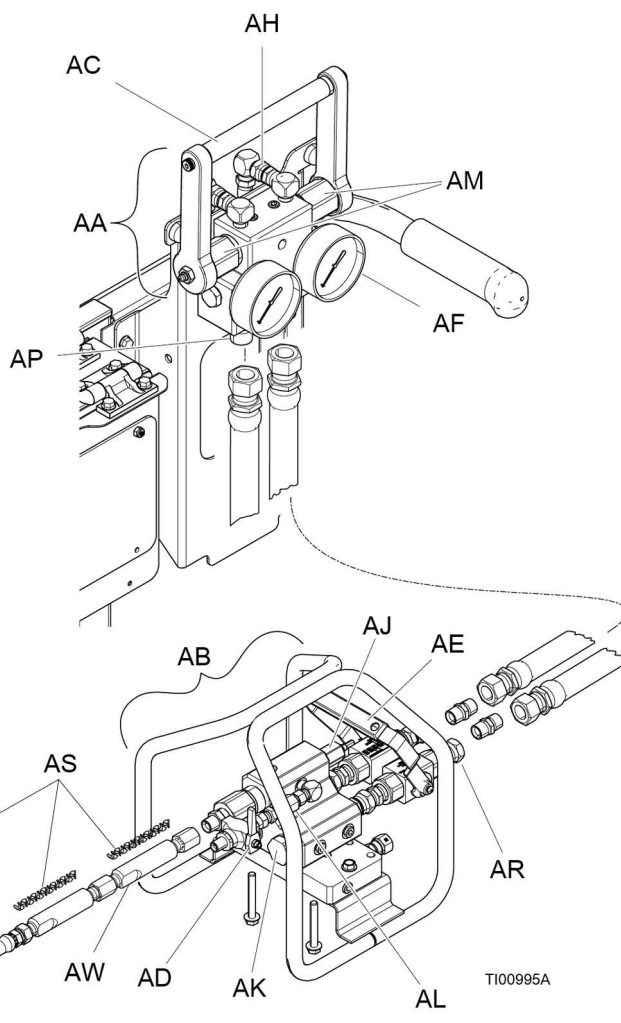
B	Cart
C	Electrical Enclosure Panel
D	'B' Displacement Pump
F	Primary Heater
G	'A' Motor
H	'A' Hopper (Blue)
J	'B' Hopper (Green)
K	'B' Motor
M	Mix Manifold
N	Brake
O	'A' Displacement Pump
P	'B' Side Recirculation/Pressure Relief Lines
Q	'A' Side Recirculation/Pressure Relief Lines
AD	Solvent Flush Valve
ADS	Solvent Flush Suction Set
AZ	Spray Gun
DM	Advanced Display Module (ADM)
ECR	Electrical Cord Strain Relief
FP	Solvent Pump, see page 16
MP	Main Power Switch
MV	Material Inlet Ball Valve
RC	Recirculation Manifold, see page 14
RM	Remote Mix Manifold, see page 14
RT	Ratio Check Manifold



Fluid Control Assembly (System Mounted)



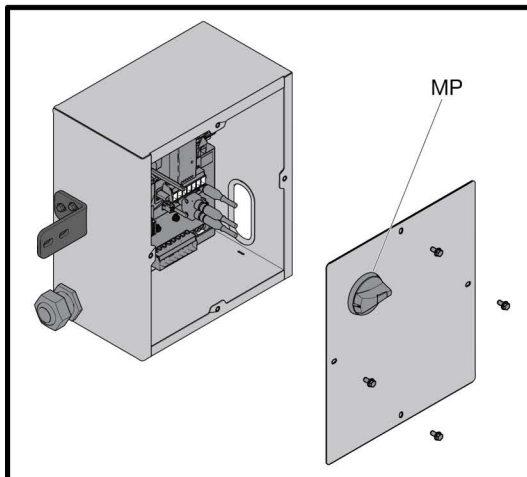
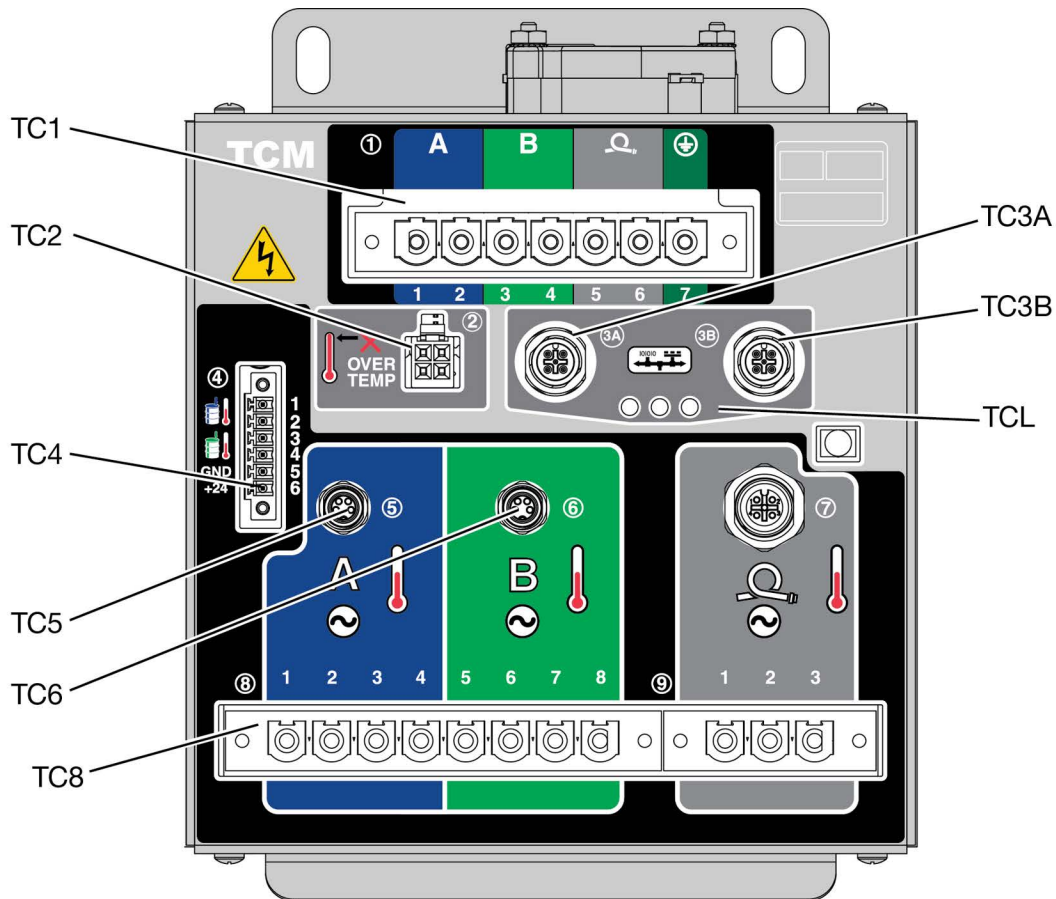
Fluid Control Assembly (Remote Mounted)



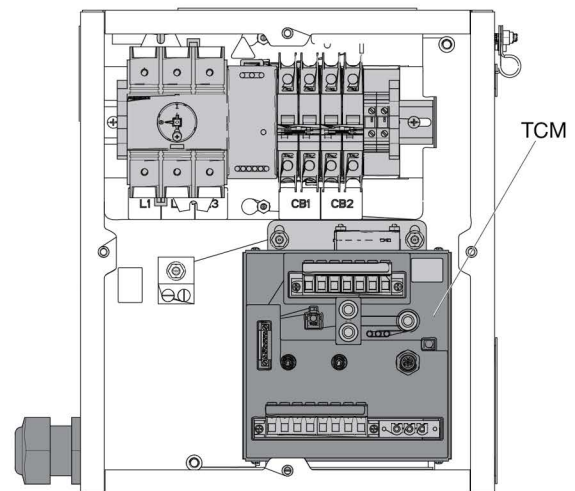
Key:

- AA Recirculation Manifold Assembly
- AB Mix Manifold Assembly
- AC Recirculation Handle
- AD Solvent Flush Valve
- AE Dual Shutoff Handle
- AF Fluid Pressure Gauges
- AG A and B Combined Outlet; 3/8 npt(m)
- AH Fluid Recirculation Outlet
- AJ B Component Adjustable Fluid Restrictor
- AK A and B Mix Manifold Check Valves
- AL Solvent Inlet Check Valve
- AM Over-Pressure Relief Valves; with grease fittings
- AP Recirculation Manifold Outlet
- AR Mix Manifold Inlet
- AS Mix Element
- AV Cleanup Static Mixer Tube
- AW Primary Static Mixer Tubes
- AX Whip Hose
- AY Mix Hose
- AZ Spray Gun

Temperature Control Module (TCM)



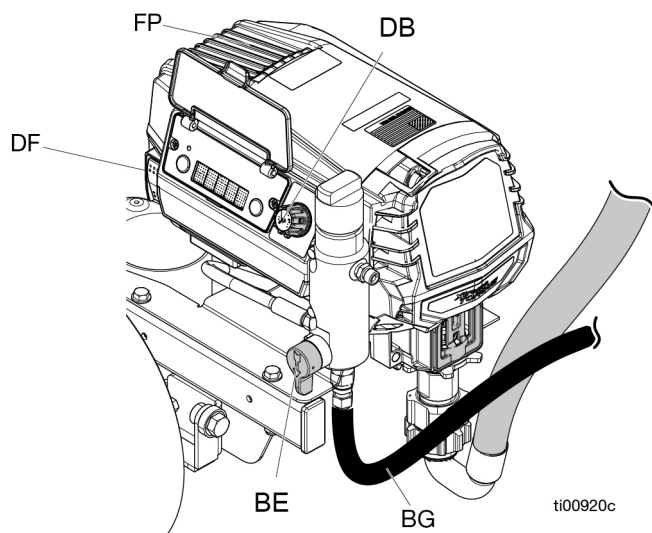
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Ref.	Description
TC1	Main Power Input
TC2	Heater Over-Temperature Inputs
TC3A, TC3B	CAN Communications
TC4	Power Supply 24VDC Input
TC5	A Heater Temperature Input

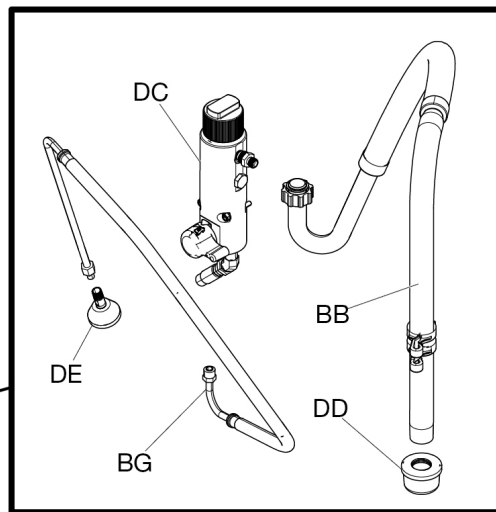
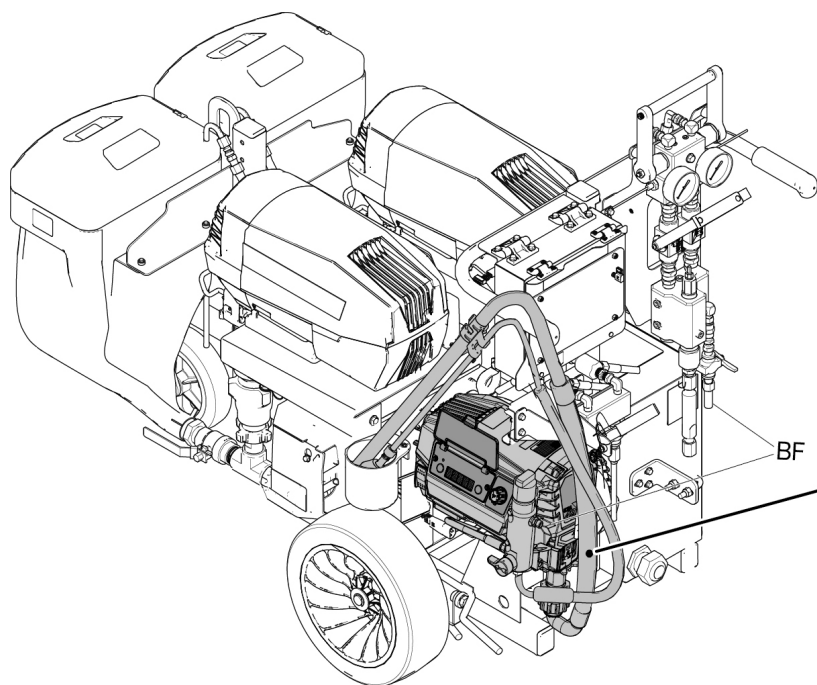
Ref.	Description
TC6	B Heater Temperature Input
TCL	TCM LED Status Lights
TCM	Temperature Control Module
MP	Main Power Switch
TC8	A/B Heater Power Outputs

Solvent Pump



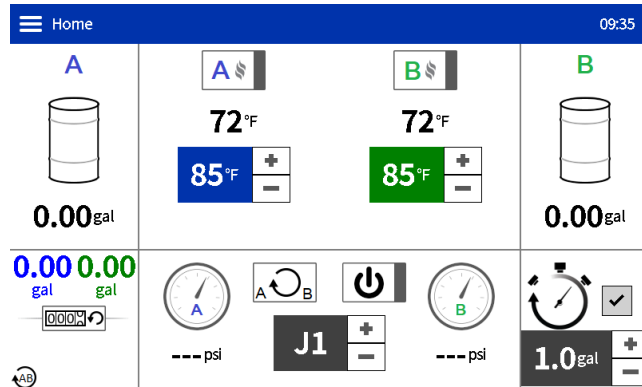
Key:

- FP Solvent Pump
- BB Siphon Tube
- BE Solvent Prime Valve
- BF Solvent Supply Hose
- BG Solvent Prime/Drain Hose
- DB Solvent Pump Control Knob
- DC Filter
- DD Fluid Inlet Strainer
- DE Material Deflector
- DF Solvent Pump ON/OFF Switch



Advanced Display Module (ADM)

The ADM display shows graphical and text information related to setup and spray operations.



ADM Keys and Indicators



Press to stop all proportioner processes.
This is not a safety or emergency stop.

NOTE: For complete description of the ADM icons and screens, refer to the E-Mix XT Operation manual.

System Components

Fluid Line Components

Recirculation Manifold Assembly (AA)

Controls recirculation and pump priming.

Mix Manifold Assembly (AB)

Combines A and B fluid into one fluid line.

Recirculation Handle (AC)

Directs fluid flow for recirculation or mixing. Move to open position to relieve fluid pressure, prime pumps, and circulate material in Hoppers. Move to closed position to spray mixed material.

Solvent Flush Valve (AD)

Controls solvent flow to the Mix Manifold Assembly, Hose, and Spray Gun.

Dual Shutoff Handle (AE)

Controls A and B fluid flow for mixing and dispensing. Close before flushing.

Static Mixer Tubes (AV, AW)

Thoroughly mixes the two fluids and delivers the mixed fluid to the Spray Gun.

Heaters

Primary Heater (F)

The fluid heater heats resin and hardener before the materials combine in the Mix Manifold Assembly. The heater improves chemical reaction and lowers viscosity of material to improve the spray pattern.

Pumps

Pump Assembly

Variable-ratio system that consists of two independently controlled fluid pumps, each with an electric pump driver and Pump Lower.

Displacement Pump Lower (D and O)

Pump Lower used to deliver the resin and hardener materials at high pressure to the Mix Manifold Assembly and Spray Gun.

Solvent Pump (FP)

Pump used to flush the Mix Manifold Assembly, Mix Hose, and Spray Gun.

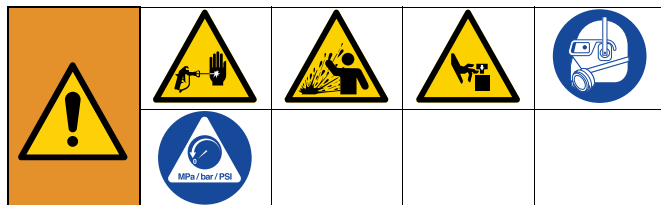
Feed Pumps

Pumps that transfer conditioned resin and hardener materials to the primary pump. Using feed pumps is the preferred method to transfer viscous material compared to the gravity feed method.

Pressure Relief Procedure

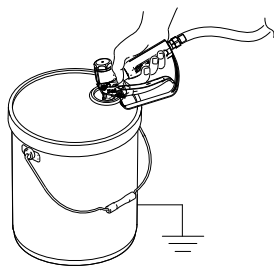


Follow the Pressure Relief Procedure whenever you see this symbol.

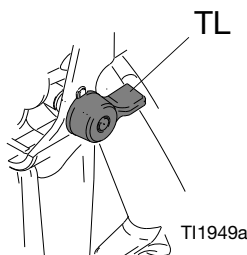


This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

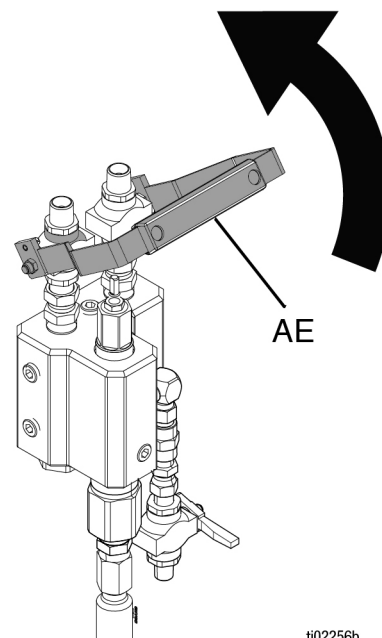
1. Use the Advanced Display Module to stop the system by pressing the Displacement Pump ON/OFF Switch on the home screen. See the **Proportioner Control Panel** in the Operation manual.
2. Turn OFF the heaters using Primary Heater A and B ON/OFF Switch on the home screen of the Advanced Display Module. See **Temperature Control Panel** in the Operation manual.
3. Turn the Main Power Switch (MP) to OFF.
4. Turn off the feed pumps or Solvent Pumps, if used. Follow the **Solvent Pump Pressure Relief**, page 20.
5. Hold a metal part of the Spray Gun firmly to a grounded metal pail. Trigger the Spray Gun to relieve pressure in material hoses.



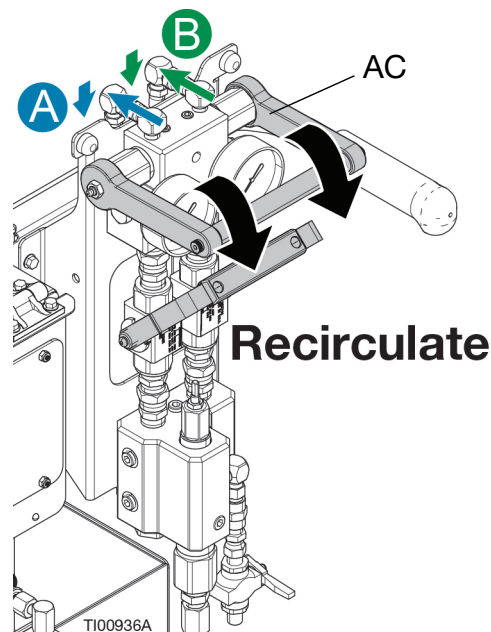
6. Engage the trigger lock (TL).



7. Close the Dual Shutoff Handle (AE).

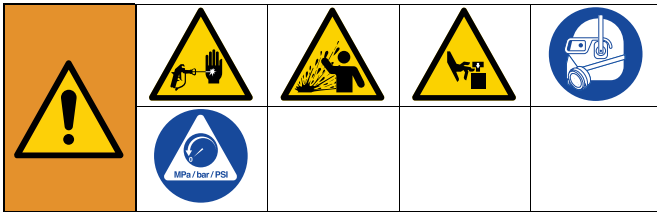


8. Open the Recirculation Handle (AC) to relieve "A" and "B" fluid pressure.



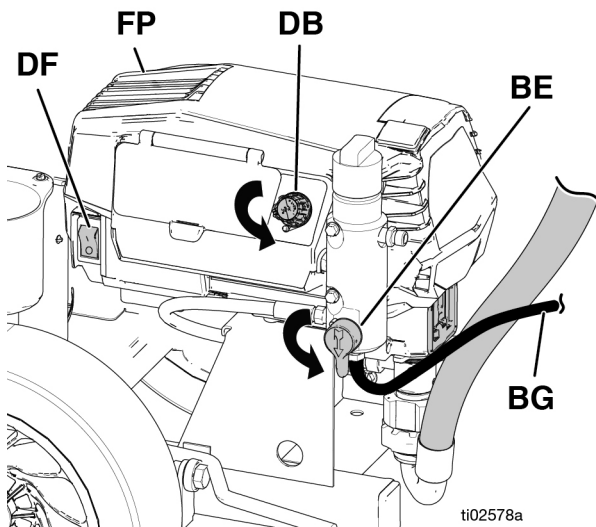
9. If you suspect the spray tip or hose is clogged or that the pressure has not been fully relieved:
 - a. Using a wrench, VERY SLOWLY loosen the tip guard retaining nut or the hose end coupling to relieve pressure gradually.
 - b. Loosen the nut or the coupling completely.
 - c. Clear the obstruction in the hose or tip.

Solvent Pump Pressure Relief



This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

1. Turn the Solvent Pump power switch OFF.
2. Turn the Pressure Control (DB) to the OFF position.



3. Open the Solvent Flush Valve (AD).
4. Turn Solvent Prime Valve (BE) down to the PRIME position.
5. Hold a metal part of the Spray Gun firmly to a grounded metal pail. Trigger the Spray Gun to relieve pressure in material hoses.

6. If you suspect the spray tip or hose is clogged or that the pressure has not been fully relieved:
 - a. Using a wrench, VERY SLOWLY loosen the tip guard retaining nut or the hose end coupling to relieve pressure gradually.
 - b. Loosen the nut or the coupling completely.
 - c. Clear the obstruction in the hose or tip.

Flushing



To avoid fire and explosion, always ground equipment and waste container. To avoid static sparking and injury from splashing, always flush at the lowest possible pressure. Hot solvent may ignite. To avoid fire and explosion:

- Flush equipment only in a well-ventilated area.
- Ensure main power is off and heater is cool before flushing.
- Do not turn on heater until fluid lines are clear of solvent.

Guidelines

Flushing will help prevent materials from setting or gelling in the pumps, lines, and valves. Flush the system when any of the following situations occur:

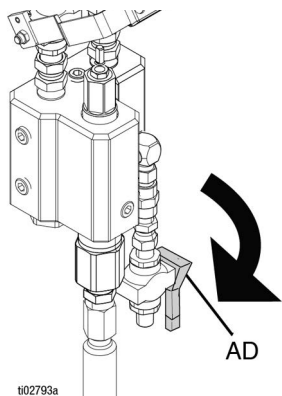
- Any time the system will not be used for more than one week (depending on materials used)
- If the materials used have fillers that will settle
- If using materials that are moisture sensitive
- Before servicing
- If the machine is going into storage, replace the solvent with light oil. Never leave the equipment empty of any fluid.

Flush the Mix Manifold Assembly when any of the following situations occur:

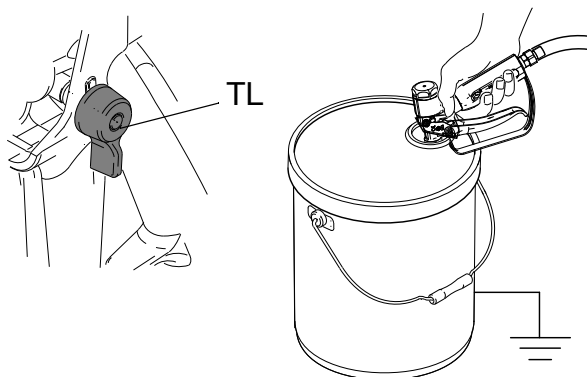
- Breaks in spraying
- Overnight shutdown
- Mixed material in system approaching end of pot life

Flush Mixed Material

1. Follow the **Pressure Relief Procedure**, page 19.
2. Turn the Solvent Pump ON and reduce it to the lowest pressure.



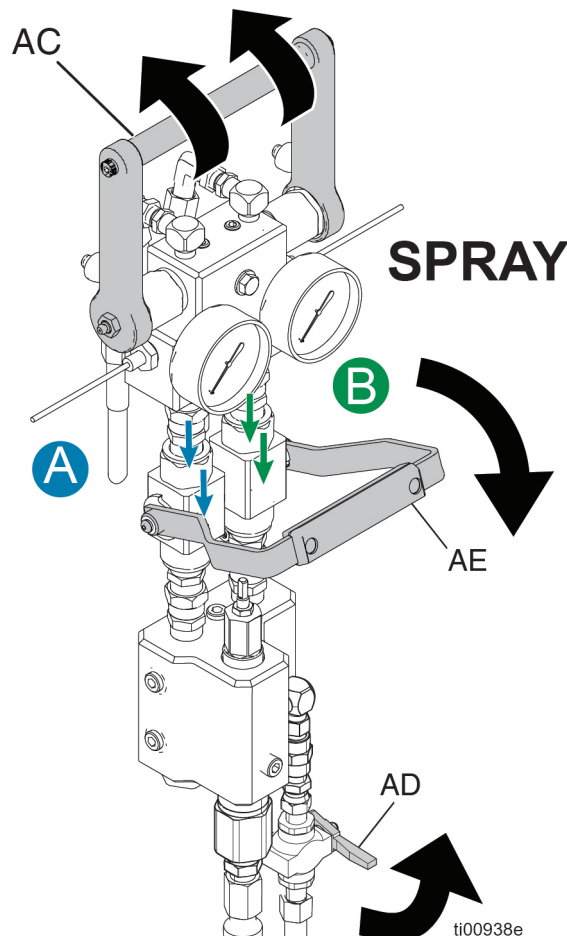
3. Open the Solvent Flush Valve (AD).
4. Disengage the trigger lock (TL), hold the Spray Gun against a grounded metal pail, and trigger the Spray Gun into the pail. Use a pail lid with a hole to dispense through. Seal around the hole and Spray Gun with a rag to prevent splash back. Be careful to keep fingers away from the front of the Spray Gun. Slowly increase the Solvent Pump pressure. Continue flushing until clean solvent dispenses.



5. Turn the Solvent Pump OFF.
6. Hold a metal part of the Spray Gun against a grounded metal pail and trigger the Spray Gun to relieve pressure. Close the Solvent Flush Valve (AD) after relieving the pressure.
7. Engage the trigger lock (TL). Disassemble and clean the spray tip with solvent by hand. Reinstall spray tip on the Spray Gun.

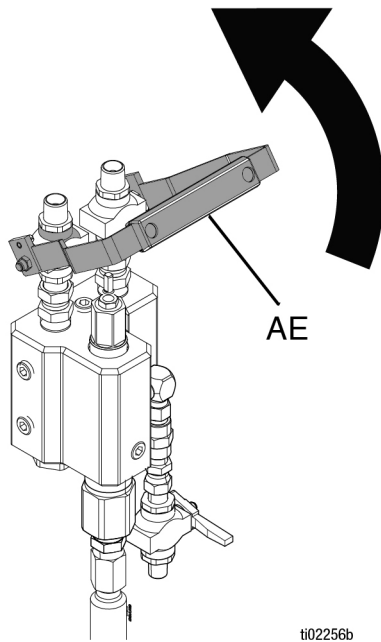
Flush Material Lines Procedure

1. Follow the **Flush Mixed Material** procedure, page 21.
2. Close the Recirculation Handle (AC). Open the Dual Shutoff Handle (AE) and close the Flush Sprayer Ball Valve (AD).



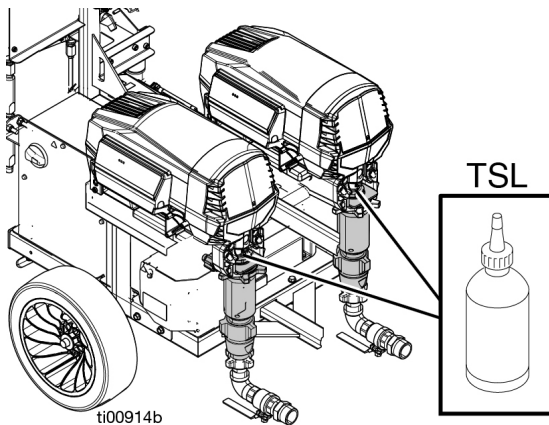
3. Fill A and B Hoppers with fresh compatible solvent recommended by the material manufacturer.
4. Use the Advanced Display Module to navigate to the **Home Screen** and ensure pressure shows '---'.
5. Slowly increase pressure to cycle pumps and dispense fresh solvent from the Hoppers through the Mix Manifold valves and out the Spray Gun.
6. Continue flushing solvent until it runs clean.
7. Use the Advanced Display Module to stop the system by pressing the Displacement Pump ON/OFF Switch on the home screen. See the **Proportioner Control Panel** in the Operation manual.

8. Lift to close the Dual Shutoff Handle (AE).



9. Follow the **Pressure Relief Procedure**, page 19.

10. Fill the pump packing nuts of the Displacement Pumps with Graco Throat Seal Liquid (TSL).



NOTICE

Always leave some type of fluid, such as solvent or oil, in the system to prevent scale build up. This build up can flake off later and cause damage to the equipment.

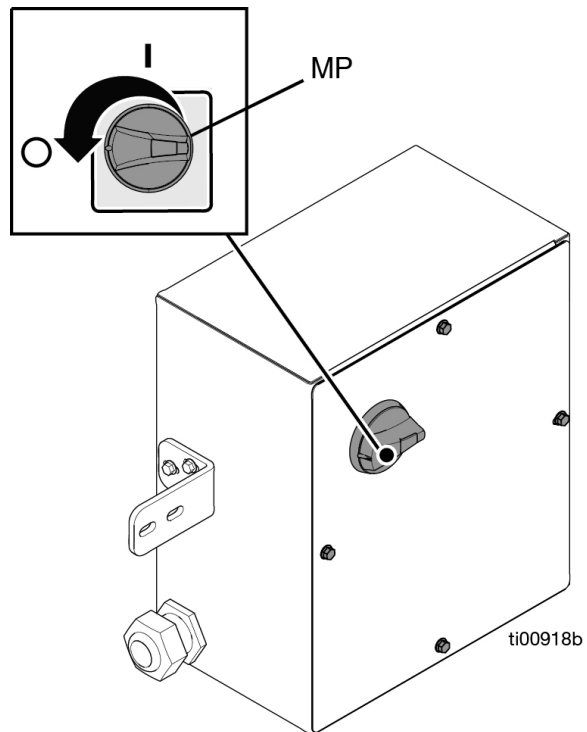
NOTE: Always keep the A side and B side solvent containers separate to avoid cross-contamination.

NOTE: If Hoppers are removed, always return to the A and B side as indicated in component identification section.

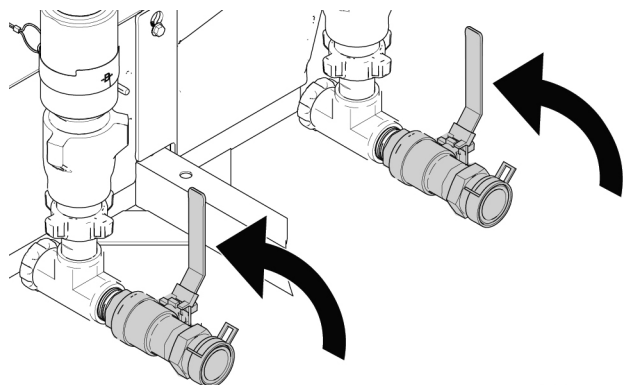
Overnight Shutdown



1. Follow the **Pressure Relief Procedure**, page 19.
2. Flush the Mix Manifold, hoses, and Spray Gun. Follow the **Flush Mixed Material** procedure on page 21.
3. Follow the **Pressure Relief Procedure**, page 19, and the **Solvent Pump Pressure Relief**, page 20.
4. Turn the Main Power Switch (MP) OFF.



5. Close pump inlet ball valves.



Recycling and Disposal

This section includes information on how to properly recycle and dispose of a product at the end of its useful life.

End of Product Life

At the end of the product's useful life, dismantle and recycle it in a responsible manner.

- Perform the **Pressure Relief Procedure**, page 19.
- Drain and dispose of fluids according to applicable regulations. Refer to the material manufacturer's Safety Data Sheet.
- Remove motors, batteries, circuit boards, LCDs (liquid crystal displays), and other electronic components. Recycle according to applicable regulations.
- Do not dispose of batteries or electronic components with household or commercial waste.



- Deliver remaining product to a recycling facility.

California Proposition 65

CALIFORNIA RESIDENTS

 **WARNING:** Cancer and reproductive harm – www.P65warnings.ca.gov.

Troubleshooting



Follow **Pressure Relief Procedure**, page 19, before checking or repairing the equipment.

NOTE: Check all possible problems and causes before disassembling the equipment.

NOTE: Anytime you are troubleshooting, follow the **Prior to Repair** procedure and disconnect power to the system when working on any electrical components.

NOTE: Any error codes on the ADM can be troubleshot by going to help.graco.com.

	Problem	Cause	Solution
Pump	A or B pump output is low.	Spray tip is clogged.	Clear tip by rotating spray tip 180° or removing and cleaning with compatible solvent.
		Chemical supply low.	Refill hoppers and clear lines of any air pockets.
		Intake valve ball and/or piston ball not seating properly.	Remove intake valve and clean. Check balls and seats for nicks, replace if necessary. See pump manual. Clear any contaminants in material.
		Tip filter clogged or dirty.	Remove and clean, then reinstall.
		Leaking around throat packing nut which may indicate worn or damaged packings.	Tighten packing nut/wet cup. Replace packings. See pump manual. Also check piston valve seat for hardened material or nicks and replace if necessary.
		Pump rod damage.	Repair pump. See pump manual.
		Piston packings are worn or damaged.	Replace packings. See pump manual.
		O-ring in pump is worn or damaged.	Replace O-ring. See pump manual.
		Large pressure drop in hose with high viscosity materials.	Reduce overall length of hose. Use larger diameter hose.
		Connecting rod assembly damaged.	Replace connecting rod assembly.
	Only displacing material on the up stroke.	Inlet ball not seating correctly.	Remove intake valve and clean with compatible solvent.
	Only displacing material on the down stroke.	Piston ball not seating correctly.	Remove and clean piston valve and piston packings.
	Only displacing material on one of the strokes.	Cold or high viscosity material.	Precondition material before putting in hoppers and recirculate material in hoppers until thinned out and pumping on both up and down stroke.
	Excessive pump movement.	Loose upper star nut.	Tighten upper star nut.

	Problem	Cause	Solution
Pump	Excessive material leakage into throat packing nut.	Throat packing nut is loose.	Remove throat packing nut spacer. Tighten throat packing nut just enough to stop leakage.
		Throat packings are worn or damaged.	Replace packings.
		Displacement rod is worn or damaged.	Replace rod.
	Pump is difficult to prime.	Air in pump or hose.	Check and tighten all fluid connections. Cycle pump as slowly as possible during priming.
		Intake valve is leaking.	Clean intake valve. Be sure ball seat is not nicked or worn and that ball seats well. Reassemble valve.
		Pump packings are worn.	Replace pump packings. See pump manual.
		Material viscosity too high.	Recirculate material in hoppers and add heat until desired viscosity.
		Air pocket in hopper assembly or above inlet valve ball.	Add solvent or material to remove air pocket. Remove foot valve from pump and add solvent or material above ball check.
	Pump loses prime.	Debris stuck in inlet ball.	Remove foot valve and clean with compatible solvent.
Motor	Motor keeps turning when gun is de-triggered.	Leak in the system and motor is attempting to maintain stall pressure.	Check all fittings. Check pump, a ball could be stuck open causing pressure to drop.
	Motor does not run.	Error code on ADM.	Scan QR code on screen or go to help.graco.com .
		Tripped circuit breaker.	Reset breaker. Check for short circuit in wiring.
		Motor cables damaged or loose connections.	Reconnect or replace if necessary.
		Cured or dried material in pump.	Repair pump. See pump manual.
		Motor control module issue, see A/B Pump wiring diagram, page 61.	Replace power cord or motor control module.
		Additional motor troubleshooting.	See LED Status Descriptions, Table 2 , page 28.
	Motor runs but pump does not stroke.	Connecting rod assembly damaged.	Replace connecting rod assembly.

	Problem	Cause	Solution
Heater	Heater only heating on one side.	Heater wires damaged or loose connections.	Reconnect or replace if necessary.
		Heating rod damaged.	Replace heating rod if resistance is outside range.
	Heating up wrong side of heater.	Improper wiring.	Connect heater wires as shown in Wiring Diagrams , page 60.
	Heater not heating up.	No power to Temperature Control Module (TCM).	Check wiring and breaker.
	Large pressure drop or restriction in heater.	Pack-out of material in heater.	Remove heater and clean thoroughly.
	Heating erratic on ADM or showing cooler than expected.	Hoses plumbed backwards. Pump is plumbed to outlet of heater.	Rework hoses to correct orientation.
	Material leaking from heater.	Rupture disk blown.	Determine cause of overpressurization and fix. Replace rupture disk.
	Heating erratic on ADM.	RTD Sensor not properly positioned.	Adjust RTD position. See Heater Repair , page 32.
Ratio Check	Failed ratio check.	Recirculation or mix valves in wrong position.	Correct valve position.
		Air in pump or hose.	Purge air.
		Ratio valves restricting flow.	Throw valve fully open or closed.
		Opened ratio check valve before green check mark appeared.	Wait for green check mark.
		Leak in system.	Check pumps, fittings, and gun to stop leak.
		Large difference in viscosity of A-material vs. B-material.	Condition material by recirculating until viscosities are more similar.
	Ratio check handle is stuck.	Cured or dried material in ball valve.	Take all ratio check components apart and clean thoroughly.
	No flow out of one or both ratio check outlets.	Clogged orifice.	Remove orifice and clean thoroughly.
		Dried material in dispense tubes.	Clean with solvent or replace dispense tubes.
		Ball valve not working correctly.	Take apart and inspect parts for damage or dried material.
Fluid Control Manifolds	Pressure not balanced.	Restrictor causing too much or not enough restriction to the B-side.	Use the restrictor on the mix manifold to increase/decrease the restriction of the B-side to balance pressures.
	No flow through recirculation line.	Debris stuck in overpressure valve.	Remove overpressure valve and clean thoroughly.
	Pressure reading on ADM but not on analog gauge even after pressure relief.	Cured or dried material on the pressure sensor in the recirculation manifold.	Remove pressure sensor and clean thoroughly.
	Pressure on analog gauge after pressure relief.	Cured or dried material in gauge or recirculation manifold.	Clean or replace analog gauge.

	Problem	Cause	Solution
Solvent Pump	Solvent pump not turning on.	No power to pump.	Check adapter plug underneath the A-side motor.
		Tripped breaker.	Check for tripped breaker.
	No flow from solvent pump.	Not primed correctly.	Re-prime. Ensure the suction tube is submerged in solvent and the prime knob on the sprayer is down in prime position.
		Contaminated solvent stuck in ball check of pump.	Pull pump apart and clean thoroughly. See Solvent Pump manual.
ADM	ADM does not turn on.	CAN cable not plugged in or damaged.	Check CAN cable for damage and plug back in if in good condition.
		24VDC not supplied to TCM and ADM (DC OK light on 24VDC power supply OFF).	Check surge protection module and wiring, replace or reconnect.
		24VDC power supply light ON.	Check wiring between 24VDC supply and TCM, repair or replace.
	Pressures not balanced on ADM and restrictor doesn't completely fix difference.	Large difference in viscosity of A-material vs. B-material.	Navigate to setup page on ADM. Use the pressure offset to get pressures aligned and eliminate nuisance alarms.
Other	Fluid is spitting from gun.	Air in pump or hose.	Cycle pump as slowly as possible during priming. Purge material through gun.
		Spray tip is partially clogged.	Clear tip.
		Fluid supply is low or empty.	Refill hoppers. Prime pump. Check fluid supply often to prevent running pump dry or introducing air pockets into the fluid path.

LED Status Descriptions

The following tables describe the meaning of LED statuses for the TCM, MCM, ADM, and system.

Table 1 TCM

LED	Conditions	Description
TCM status (in electrical enclosure)	Green solid	Power applied to module
	Yellow fast flashing	Active communication
	Red sequential flashing or solid	Module error exists

Table 2 MCM

LED	Conditions	Description
MCM status (LEDs on Pump Connector Board)	Green solid	Power applied to module
	Yellow fast flashing	Active communication
	Yellow slow flashing (once per second)	No communication
	Red sequential flashing or solid	Module error exists

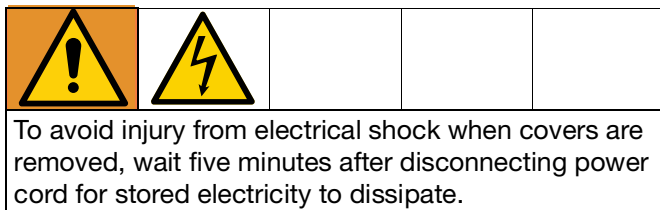
Table 3 ADM and System

LED	Conditions	Description
ADM status (back side of ADM)	Green solid	Power applied to module
	Yellow fast flashing	Active communication
	Red fast flashing	Software update in progress
	Red sequential flashing or solid	Module error exists
System status (top right of front of ADM)	Green fast flashing	Software update is in progress
	Green slow flashing (once per second)	System on

NOTE: If a module error exists, power cycle the E-Mix.
If the error persists, replace the module.

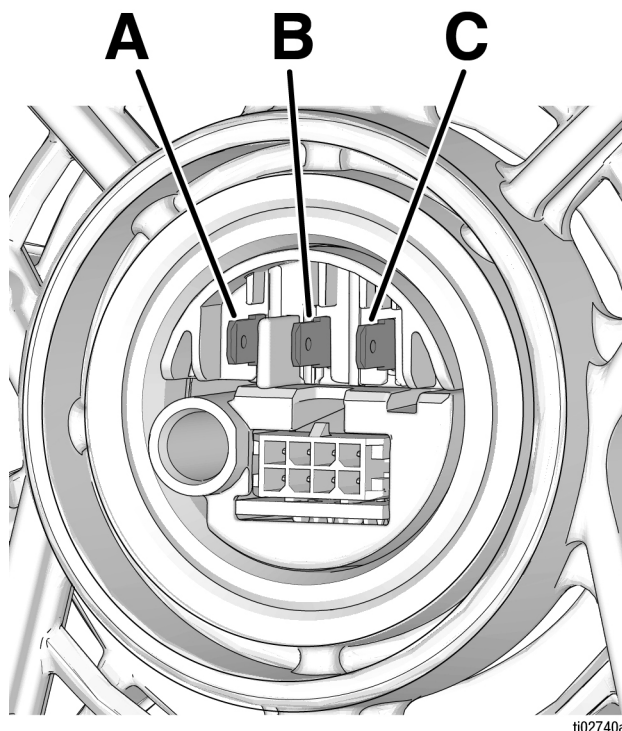
NOTE: If the green light is OFF, check the wiring and breaker powering the module. If power is reaching the module, replace the module.

Motor



Symptom: Unit doesn't run, runs rough, or is noisy.

1. Perform **Pressure Relief Procedure**, page 19.
2. Follow the **Pump Replacement** procedure, page 30, to remove the pump.
3. Follow the **Motor Shroud Removal** procedure, page 34, to remove the shrouds.
4. Follow the **Bottom Cover Kit Removal** procedure, page 39, to remove the module.
5. Motor should spin freely with no binding or excessive cogging. If motor binds or requires excessive force to spin, replace motor.
6. With multimeter, measure the resistance between the following phases.
 - a. A to B
 - b. B to C
 - c. A to C
7. Resistance values should be equal. If resistance values are significantly different from one another ($>0.5\Omega$) replace motor.
8. Install pump.
9. Install Motor Control Module (MCM).
10. Install motor shrouds.



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Repair

Prior to Repair

NOTCE

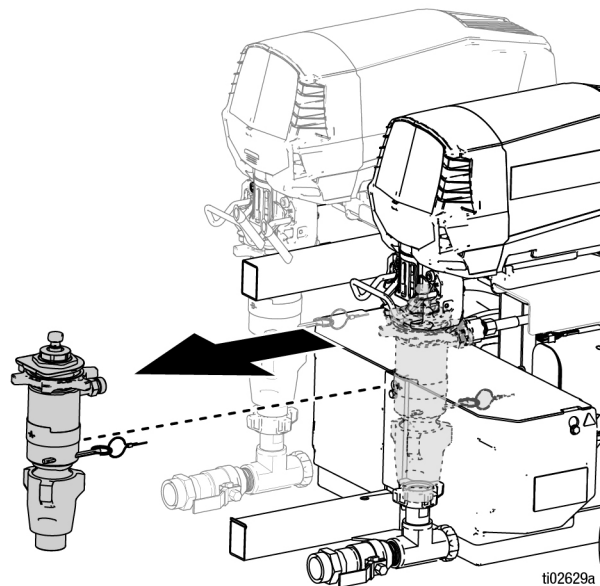
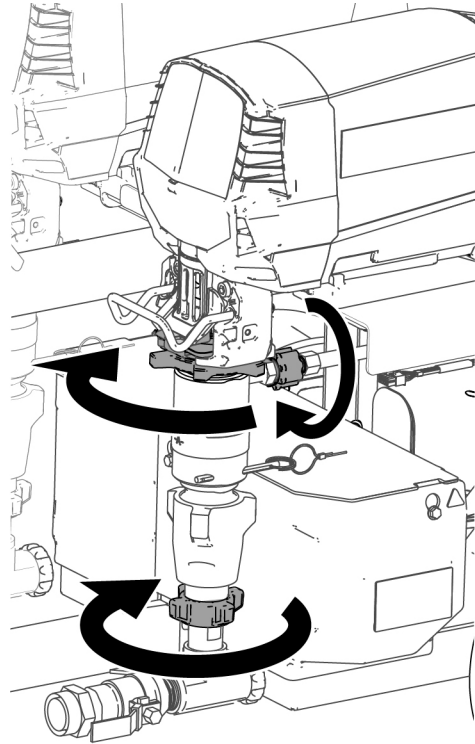
Proper system setup, startup, and shutdown procedures are critical to electrical equipment reliability. The following procedures ensure steady voltage. Failure to follow these procedures will cause voltage fluctuations that can damage electrical equipment and void the warranty.

1. Flush if repairing wetted component. Follow the **Flush Material Lines Procedure**, page 21.
2. Follow the **Overnight Shutdown** procedure, page 22.
3. Lock-out or disconnect AC cable from power supply.

Pump Replacement

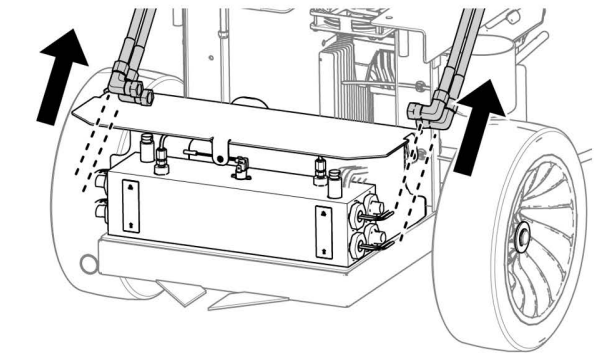
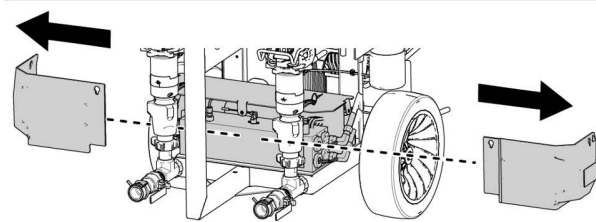
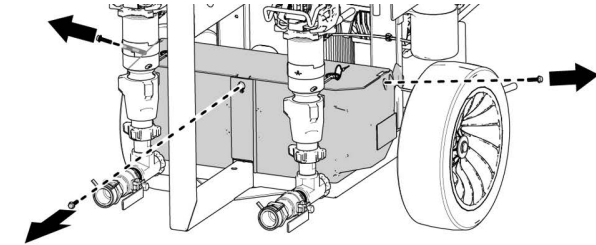
1. Follow the **Prior to Repair** procedure, page 30.
2. Knock the lower star nut loose from the pump inlet and disconnect.
3. Remove the hose from the pump outlet by loosening the hand nut from the side of the pump.
4. Knock the upper star nut loose backing it off completely, and lift pump rod guard away from the pump.
5. Remove pump by pulling straight out.
6. Refer to the E-Mix XT Displacement Pump manual for service and repair of the pump.
7. Repeat steps in reverse order to install the pump.

NOTE: Retighten star nuts after one day of operation.



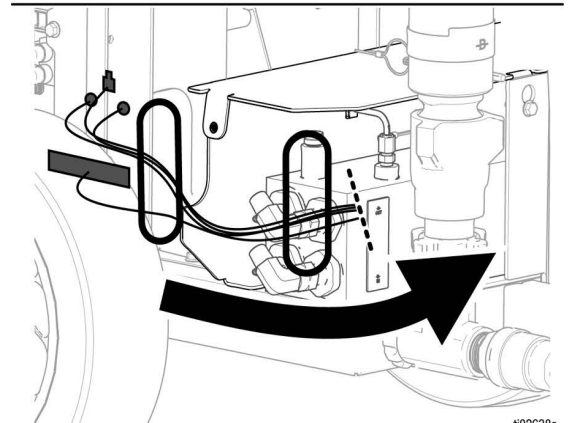
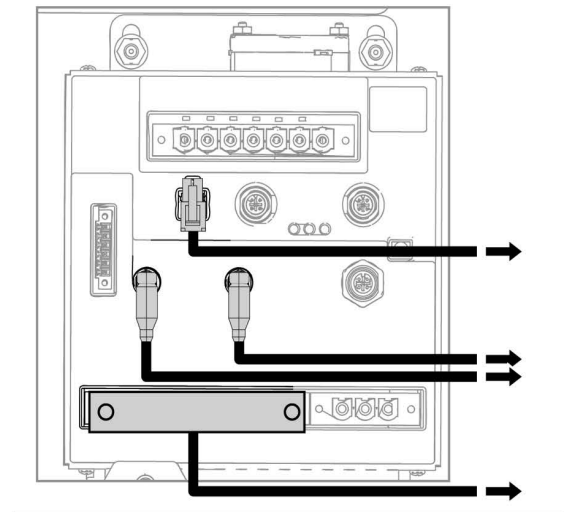
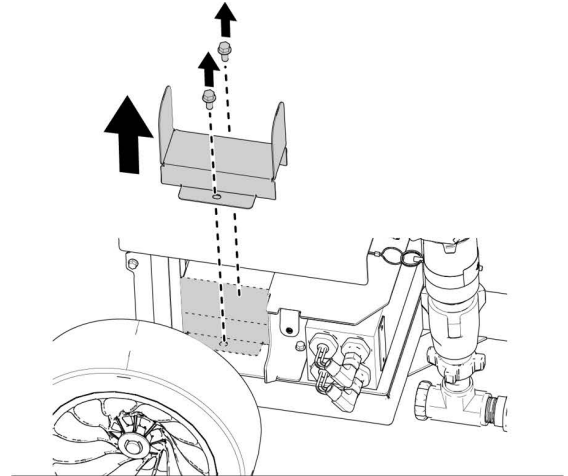
Heater Removal

1. Follow the **Prior to Repair** procedure, page 30.
2. Allow time for heater to cool off.
3. Remove 3 bolts and heater shrouds.
4. Remove hoses from both sides of the heater by removing the two 90 degree swivel fittings.



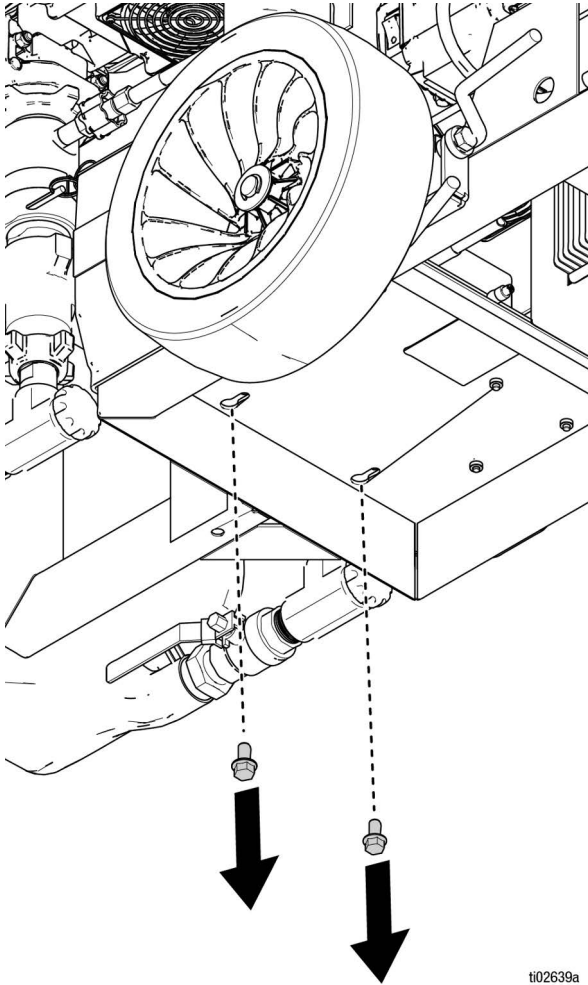
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5. Remove two bolts and lift off the wire cover.
6. Remove the connector plug (heater rod wires), RTD cables, and over-temp switch from the TCM inside the electrical enclosure and pull the wires through the hole on back of metal heater shroud. See **Wiring Diagrams**, page 60.



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7. Loosen or remove the two bolts on the bottom of the heater and pull heater from base plate of frame.



8. Remove heater and work on a clean surface as to not introduce contaminants to the heater during repair/cleaning. Recommend placing the heater in a vice during repair/cleaning.
9. Repeat steps in reverse order to reinstall the heater assembly.

Heater Over-Temp Switch Replacement

1. Follow the **Prior to Repair** procedure, page 30.
2. Remove wire harness from both spade terminals on over-temp switch.
3. Remove two #6-32 screws (do not discard).
4. Put thermal paste on bottom of new over-temp switch.
5. Reassemble by tightening the two #6-32 screws and attaching wire harness.

Heater Burst Disc Replacement

1. Follow the **Prior to Repair** procedure, page 30.
2. Remove old burst disc assembly with 3/4" wrench.
3. Apply lubricant to o-ring on new burst disc assembly.
4. Torque to 15 +/- 1 ft-lb (1.4 N·m) .

Heater RTD Replacement

1. Follow the **Prior to Repair** procedure, page 30.
2. Remove the compression fitting (121f) and RTD assembly (121g) with a 1/2" wrench.
3. Assemble the bottom half of the new compression fitting (121f) into the adapter (123b) and torque to 15 +/- 1 ft-lb (20.3 N·m).
4. Slide the nut of the new compression fitting on the new RTD (121g) and the ferrule after.
5. Place the RTD into the compression fitting bottom half and ensure RTD is touching the heater rod (121a) and not the spring (121c).
6. Tighten compression fitting (121f) to secure the RTD and torque to 21 +/- 1 ft-lb (28.5 N·m) while holding the RTD against the heater rod and at the specified orientation shown in the view below. Hold NPT portion of compression fitting while tightening to prevent rotation of the fitting body (123b).

NOTE: Replace RTD's whenever you are replacing heater rods.

NOTE: Failure to properly place RTD against heater rod may cause material to be heated above or below the setpoint.

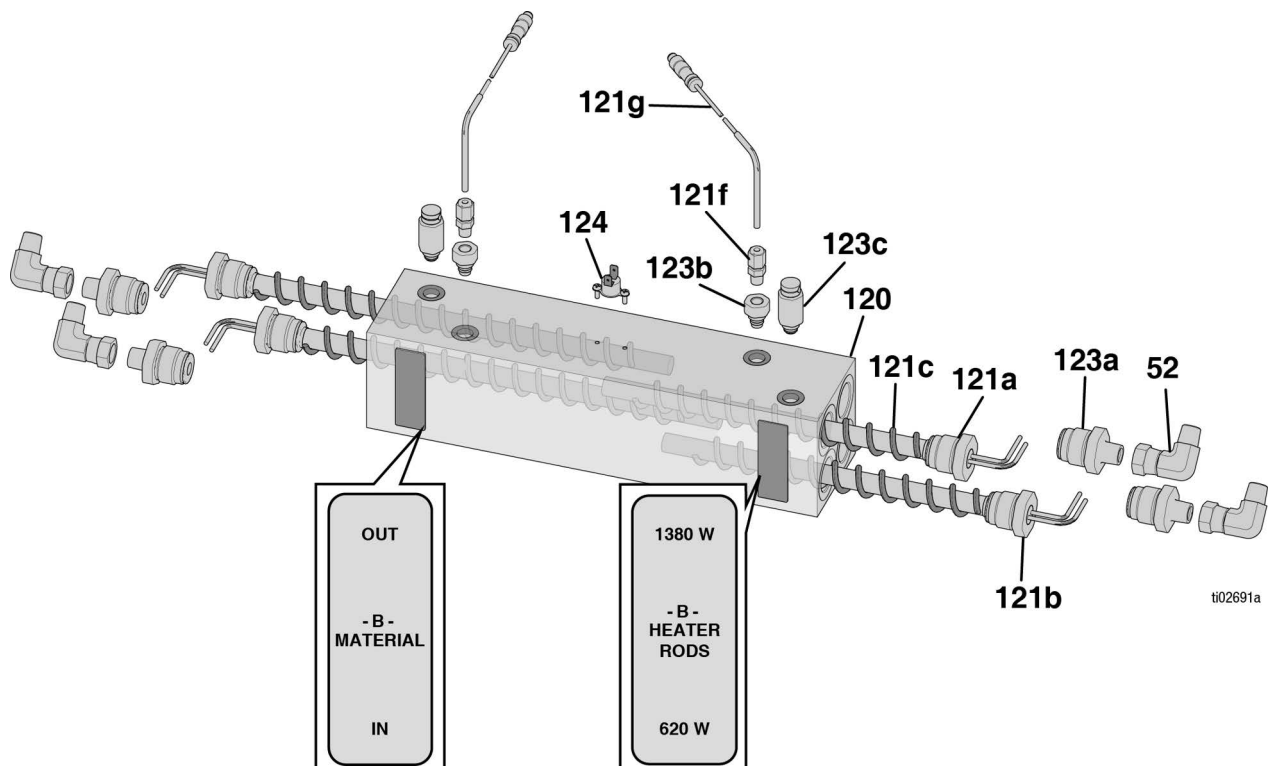
Heater Rod Replacement

1. Follow the **Prior to Repair** procedure, page 30.
2. Remove RTD. Follow step 1 of **Heater RTD Replacement**.
3. Remove the heater rod (121a/b) using an open sided crowsfoot wrench (head size 1.375"). Remove spring (121c) if it did not come out with the heater rod.
4. Apply lubricant to o-ring on the new heater rod.
5. Install new heater rod (121a/b) with spring (121c) into the heater block. Torque to 120 +/- 5 ft-lb (162.7 N·m).
6. Follow steps 2-5 of the RTD replacement to install the new RTD after the new heater rod is in place.

NOTE: It is best practice to place used wetted components back on the side they came from to prevent cross-contamination of materials.

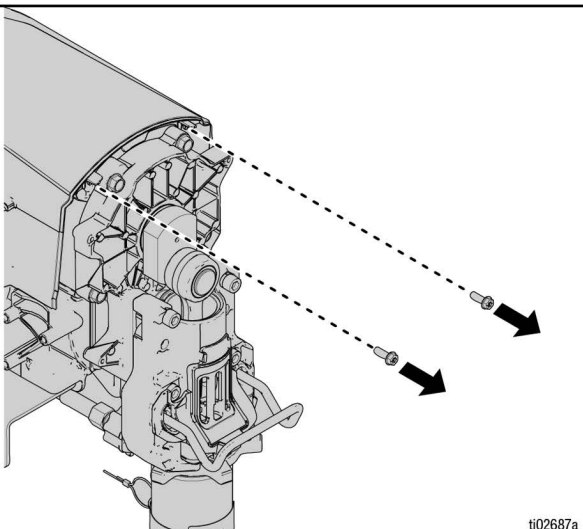
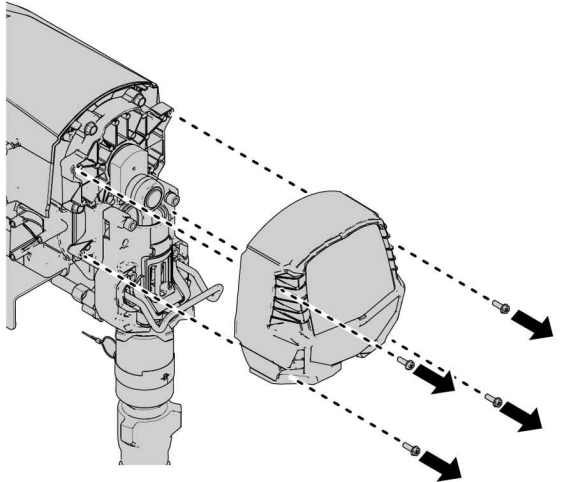
NOTE: Replace the heater rod if the resistance falls outside this range 620 W: 73-94 ohms; 1380 W: 32-43 ohms.

NOTE: Rod wattage must match the positions shown.



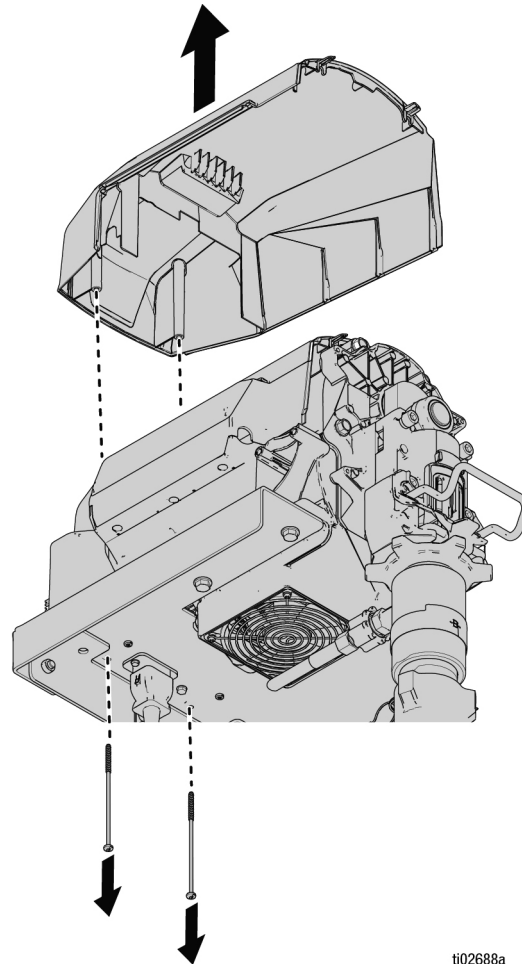
Motor Shroud Removal

1. Follow the **Prior to Repair** procedure, page 30.
2. Using a 1/4" socket or T20 wrench, remove four screws from the front cover.
3. Using a 1/4" socket or T20 wrench, remove two screws from the top cover.



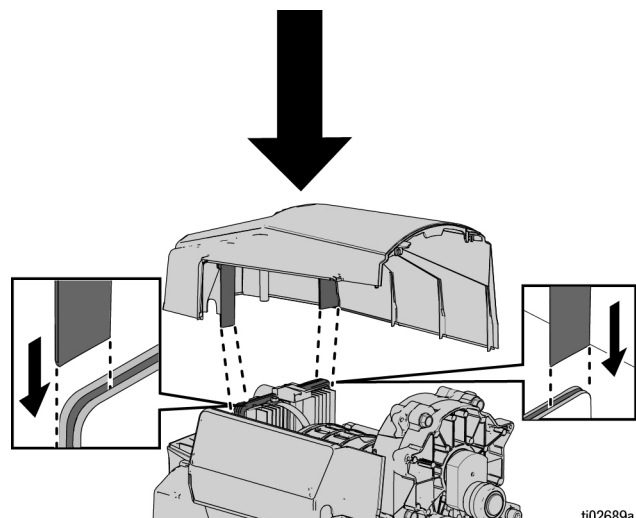
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4. Remove the two screws from under the motor mounting plate that hold down the top shroud.



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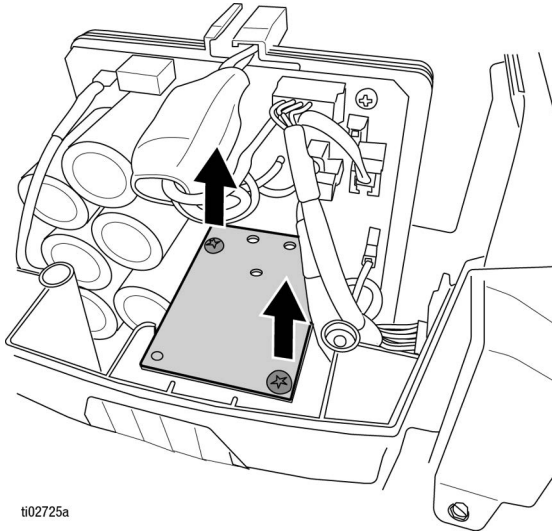
5. When replacing the motor shrouds, ensure the slots on the top shroud slide down in the notches of the motor control module.



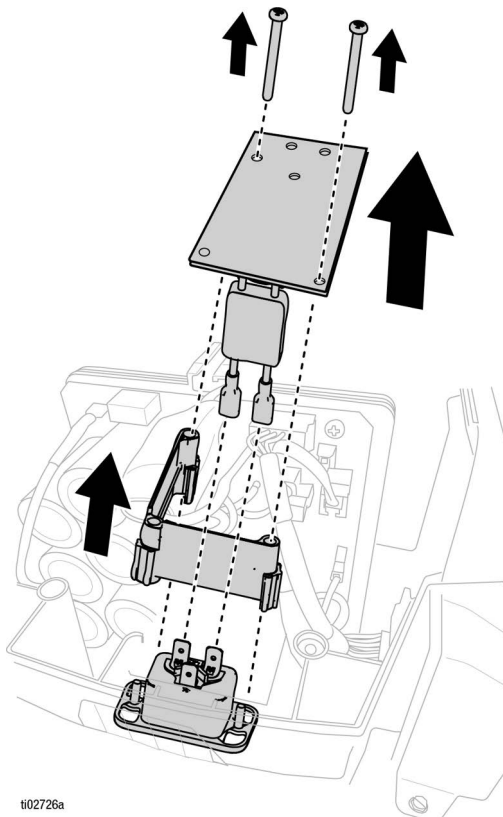
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Motor Control Module (MCM) Replacement

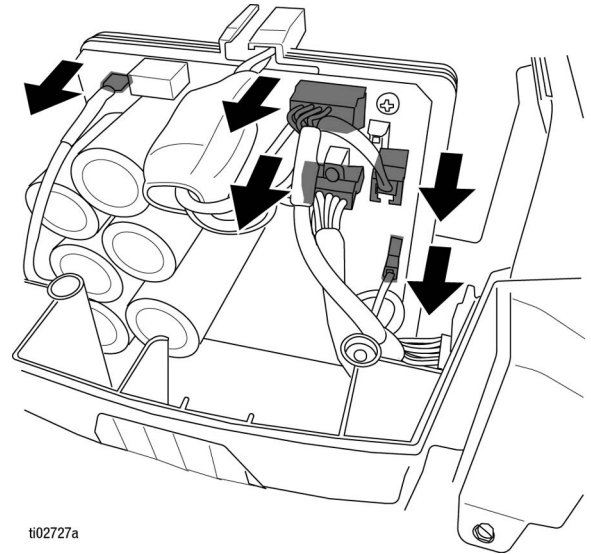
1. Follow the **Prior to Repair** procedure, page 30.
2. Follow the **Motor Shroud Removal** procedure, page 34, to remove the shrouds.
3. Remove the two screws holding down the filter board.



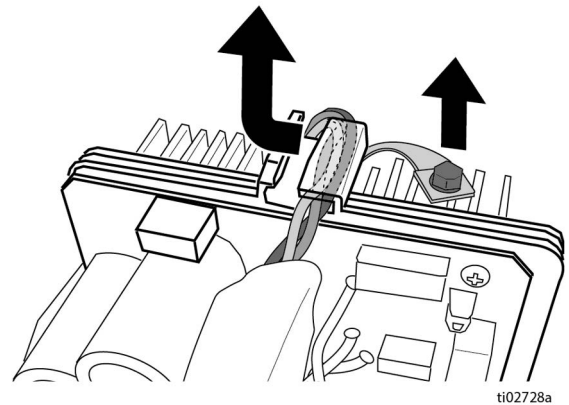
4. Remove the three cables from the power cord socket. Remove the spacer.



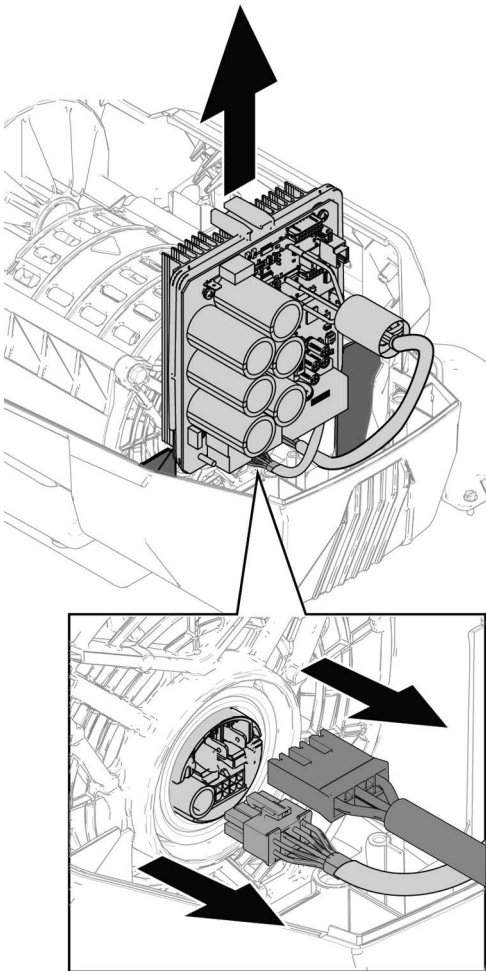
5. Unplug the four cables from the back of the control module as well as the ground wire.



6. Take the motor harness wires (red, blue, and white) out of the strain relief on the top of the module and move the three wires to the side of the module. Remove the ground strap screw from heat sink and leave attached to the motor.

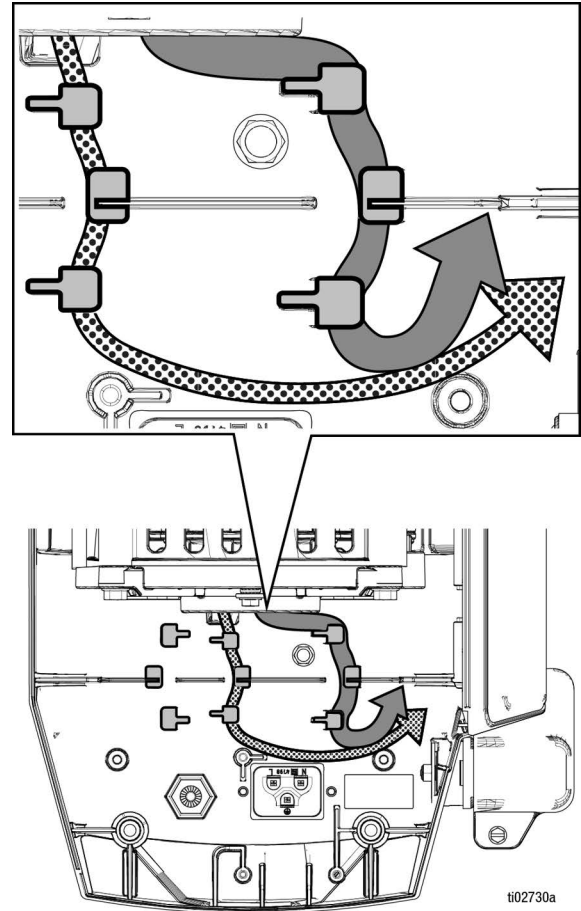


7. Lift the module up slightly from the slots on the bottom motor shroud. Remove both the motor harness and encoder harness from the back of the motor.



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8. Repeat steps in reverse order to install new control module. Ensure the fan cable and encoder harness are placed in the appropriate strain reliefs on the bottom motor shroud. See **A/B Pump** wiring diagrams, page 61, for layout of connections.

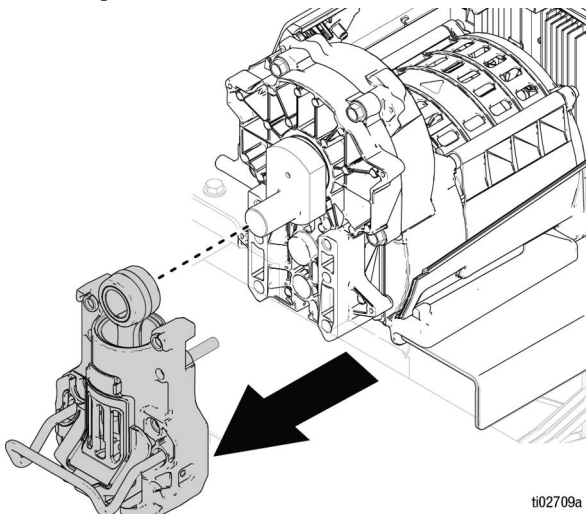
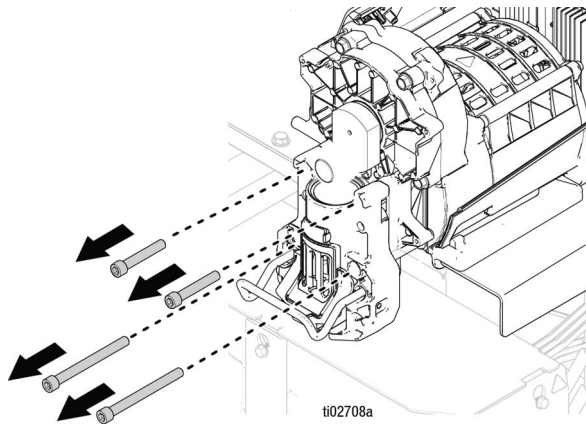


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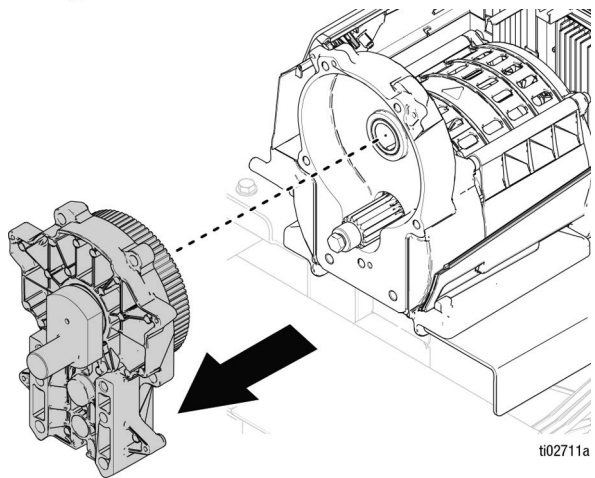
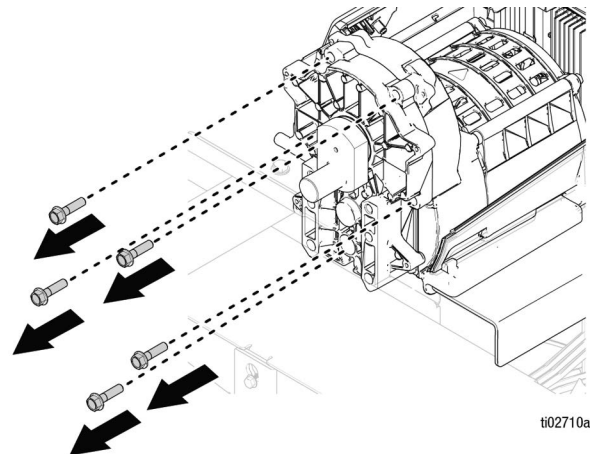
Motor Replacement

Tools Used:

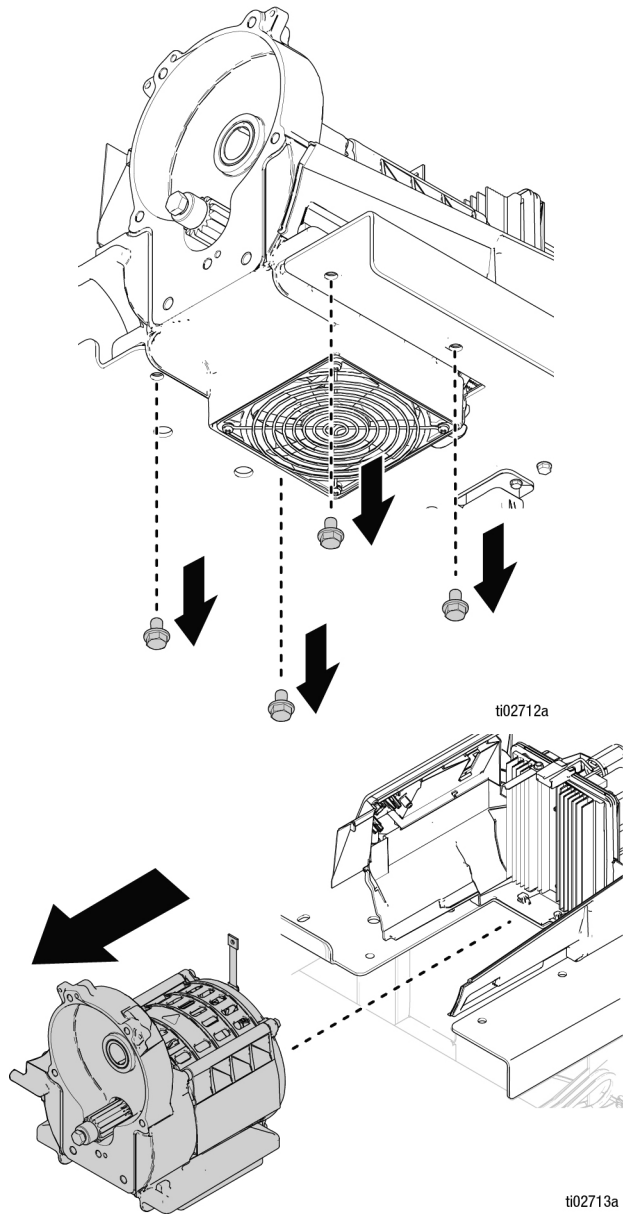
- 1/4" nut driver or T-20 hex driver
 - 1/2", 7/16", and 3/8" socket
 - 5/16" hex drive
1. Follow the **Prior to Repair** procedure, page 30.
 2. Follow the **Pump Replacement** procedure, page 30, to remove the pump.
 3. Follow the **Motor Shroud Removal** procedure, page 34, to remove the shrouds.
 4. Remove four bolts. Pull connecting rod and bearing housing assembly straight off drive housing.



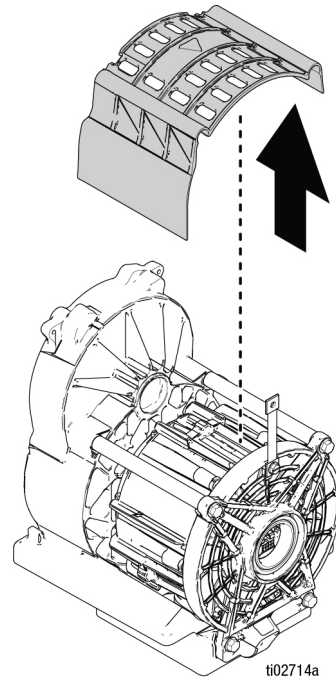
5. Remove five bolts. Pull drive housing from the chassis.



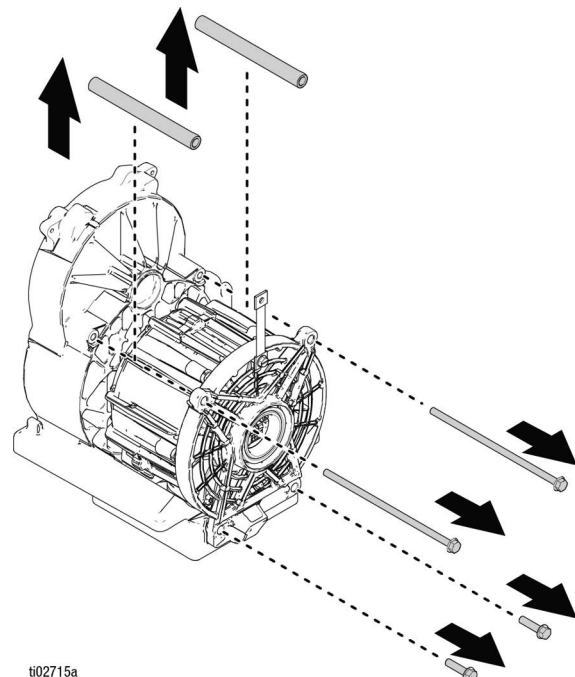
6. Remove four bolts. Slide motor assembly straight out from bottom motor shroud. While removing the motor assembly, carefully remove the fan wire from the strain relief on the bottom shroud.



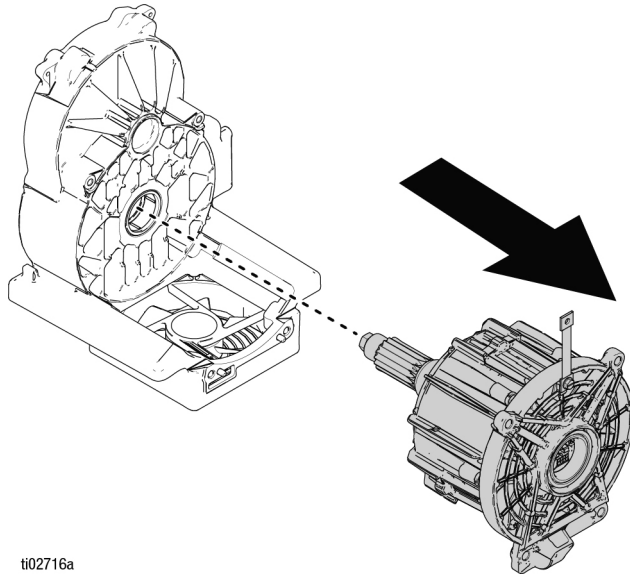
7. Remove motor cover.



8. Remove two long bolts and two short bolts from back of motor. Remove tie rod spacers.



9. Remove the motor from the assembly by sliding the motor straight back from the chassis.



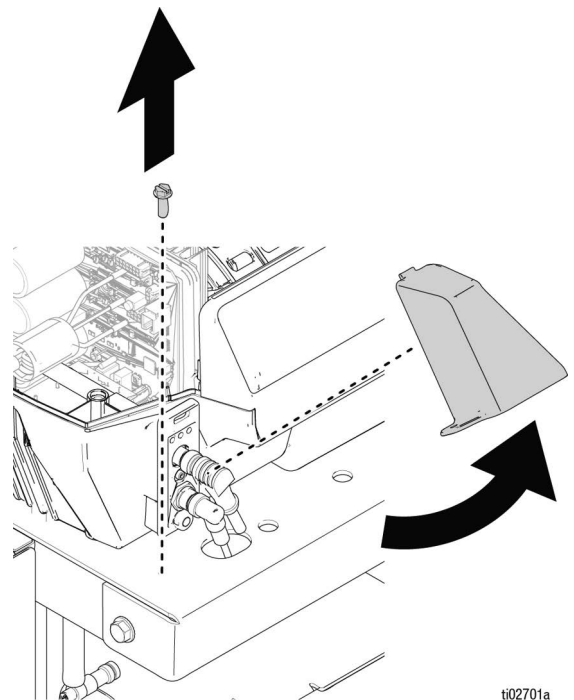
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10. Follow steps in reverse order to install the new motor. Apply provided grease to all bearings and gears. See parts section, page 46, for torque specifications.

Bottom Cover Kit Removal

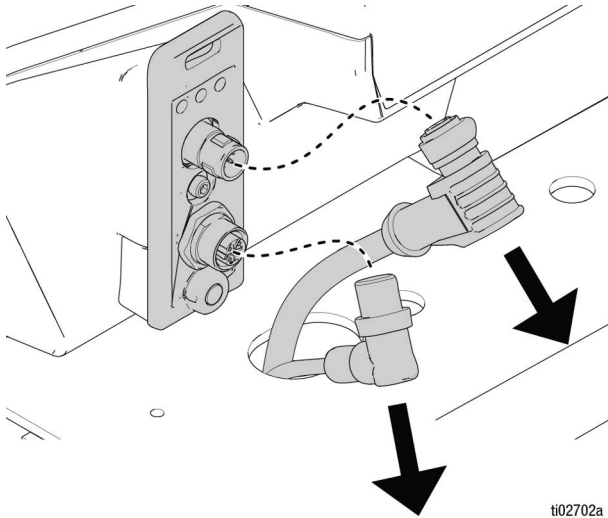
Tools Used:

- 5/16" wrench
1. Follow the **Prior to Repair** procedure, page 30.
 2. Follow the **Motor Shroud Removal** procedure, page 34, to remove the shrouds.
 3. Remove the single screw from the connector cover.
 4. Remove connector cover.

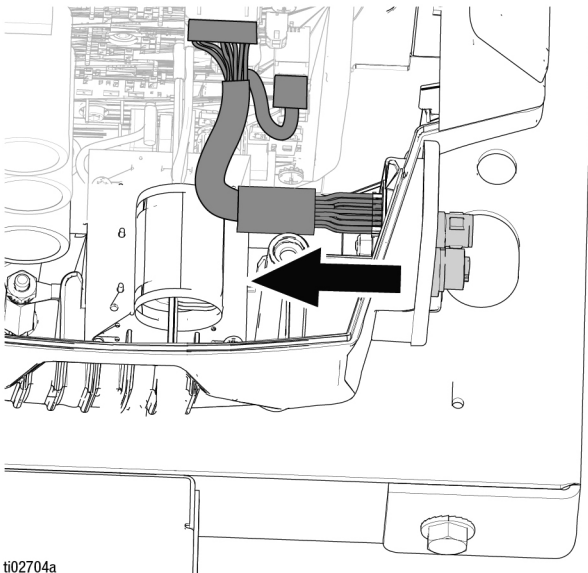


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5. Remove pressure and CAN cables from the front of the Pump Connector Board.

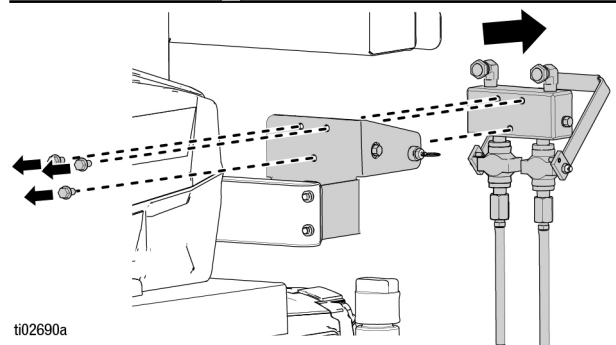
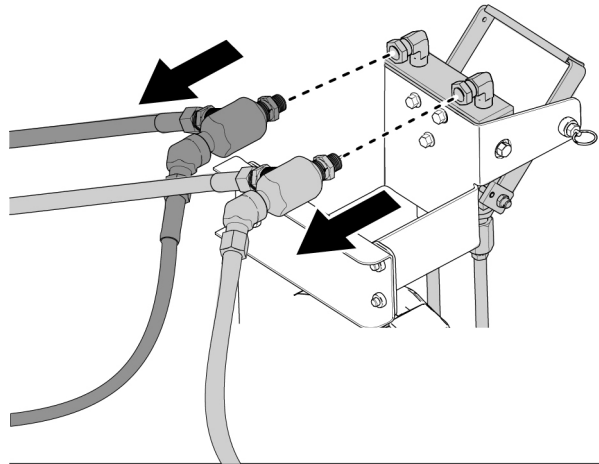


6. Remove the connector board harness from the back of the Pump Connector Board.



Ratio Check Replacement

1. Follow the **Prior to Repair** procedure, page 30.
2. Remove T-fitting from ratio check assembly.
3. While supporting the ratio check assembly, remove the three bolts from the back of the bracket.

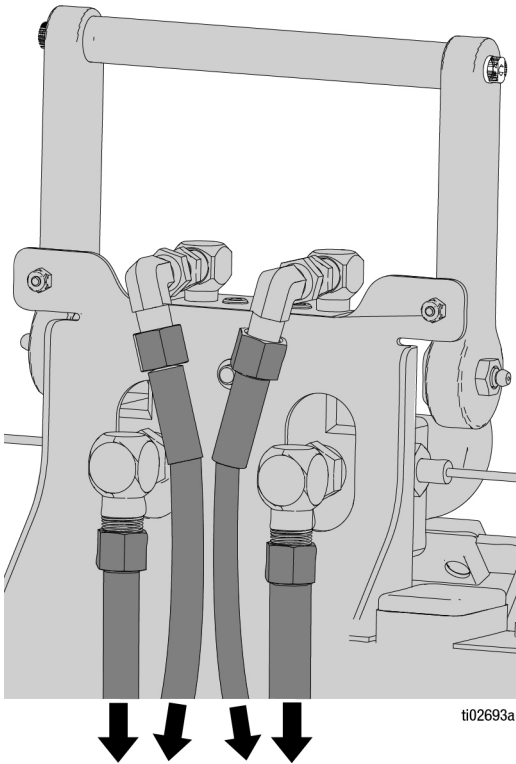


4. Repeat steps in reverse order to install the ratio check assembly.

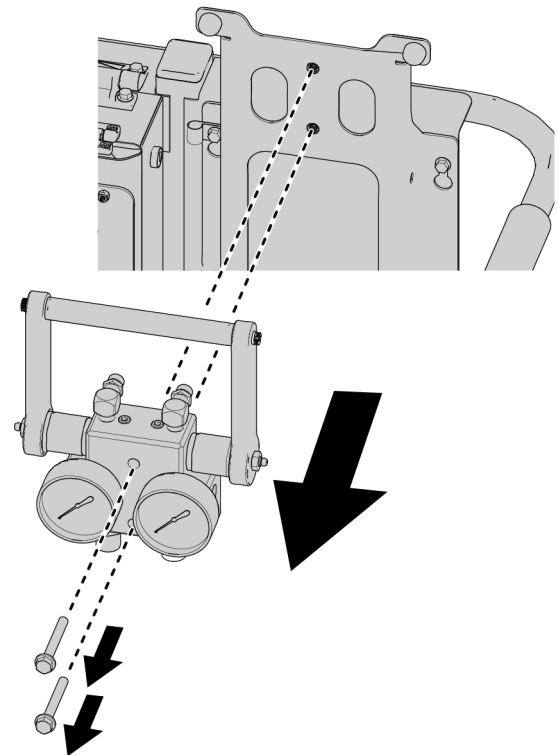
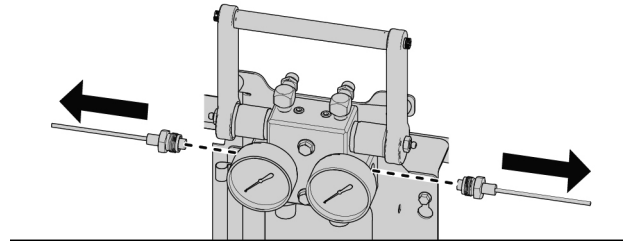
Recirculation Manifold Replacement

1. Follow the **Prior to Repair** procedure, page 30.
2. Disconnect all fluid hoses from the recirculation manifold.

NOTE: Label hoses for preoper reassembly.



3. Remove pressure sensors from the side of the recirculation manifold.
4. While supporting the manifold, remove the two bolts that secure the recirculation manifold to the fluid control assembly bracket.

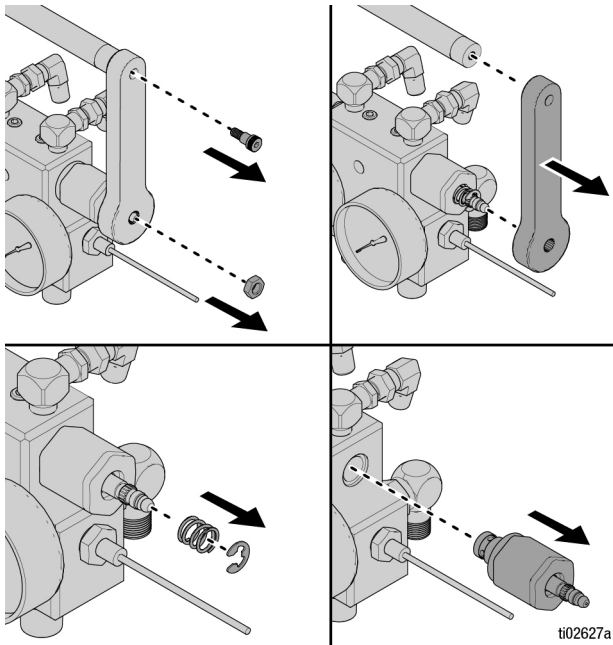


5. Disconnect fluid outlet fittings above ball valves.
6. Repeat steps in reverse order to install the recirculation assembly.

Over-Pressure Relief Valves Replacement

1. Follow the **Prior to Repair** procedure, page 30.
2. Remove the socket head bolts and jam nuts.
3. Remove the handles and handle rod.
4. Remove the retaining clips and springs.
5. Unscrew both over-pressure valves from the manifold.

NOTE: The correct over-pressure relief valve must be used on all systems. See parts section, page 46.



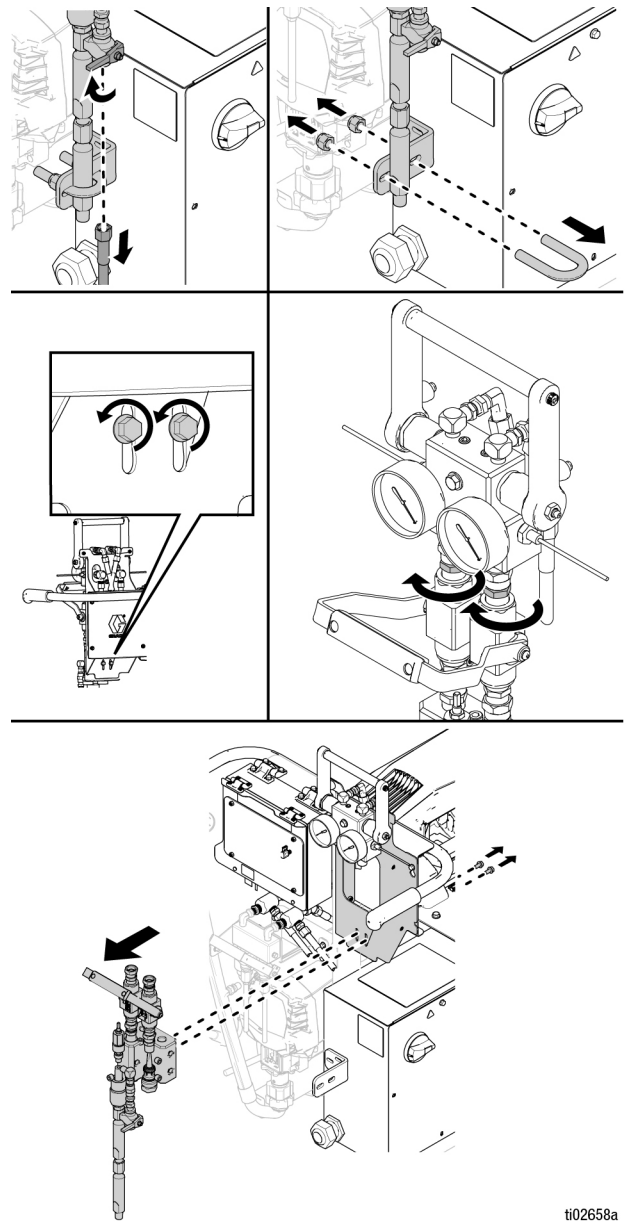
6. Apply blue threadlock to the new overpressure relief valve threads, apply lubricant to the o-rings, and install in the manifold. Torque to 28-32 ft-lb (38-43 N·m).
7. Place the springs over each valve stem. Place a retaining clip in each valve stem groove to retain the springs.
8. Slide handle onto the valve stem and rotate approximately 90° until you feel it fully lock against the seat valve. Remove handle and repeat on the opposite side.
9. Position the handle in the vertical position. Apply blue threadlock on the jam nut threads and tighten the handle against the spring and clip. Torque to 6-7 ft-lb (8.1-9.5 N·m).
10. Place the rod and the second handle on the second valve stem aligned with the opposite handle.
11. Repeat step 9.
12. Install the two socket head bolts in each handle.
13. Check operation of the handles and valves.
14. Operate the handle in and out of the spray and recirculation positions.
15. Check for clearance with fittings.

NOTE: Both valves should settle firmly into the spray position inward against the seats in the valve.

NOTE: Both valve stems should rotate out of the most extended positions when the handle is pulled down to the recirculate position.

Mix Manifold Assembly Replacement

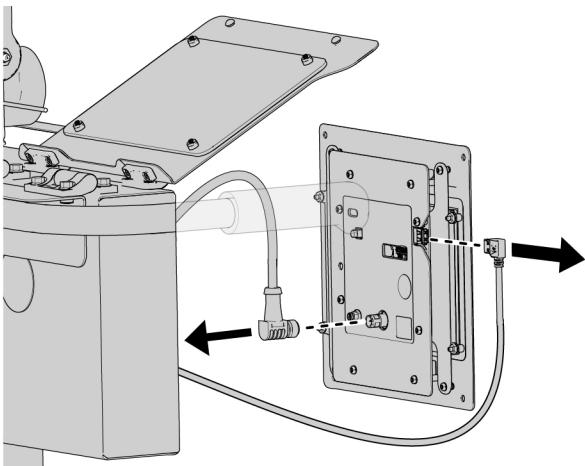
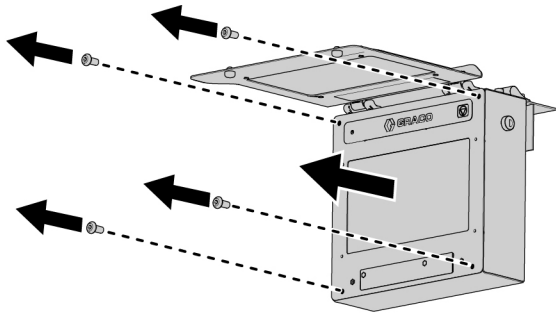
1. Follow the **Prior to Repair** procedure, page 30.
2. Close the flush valve and remove the 3 foot solvent hose from the mix manifold assembly.
3. Remove nuts and U-bolt from the electrical enclosure box.
4. Loosen bolts on back side of mix manifold bracket to allow mix manifold to slide down.
5. Loosen the union fittings that connect to the mix manifold 1/2" fittings.
6. While supporting the mix manifold assembly, remove the bolts from back of mix manifold.
7. Refer to Mix Manifold Manual for service and repair of mix manifold.
8. Repeat steps in reverse order to install the mix manifold assembly.



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Advanced Display Module (ADM) Replacement

1. Turn the Main Power switch off on your system.
2. Remove four screws from the front panel of the ADM.
3. Gently lift the ADM out of the ADM box.
4. Remove the USB cable and CAN cable from the back of the ADM.

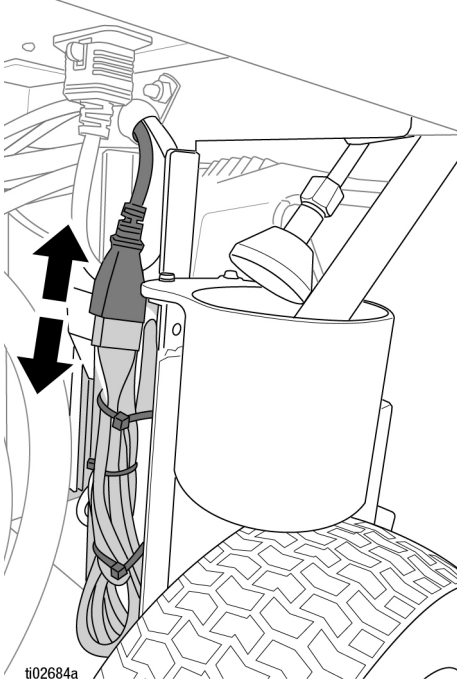


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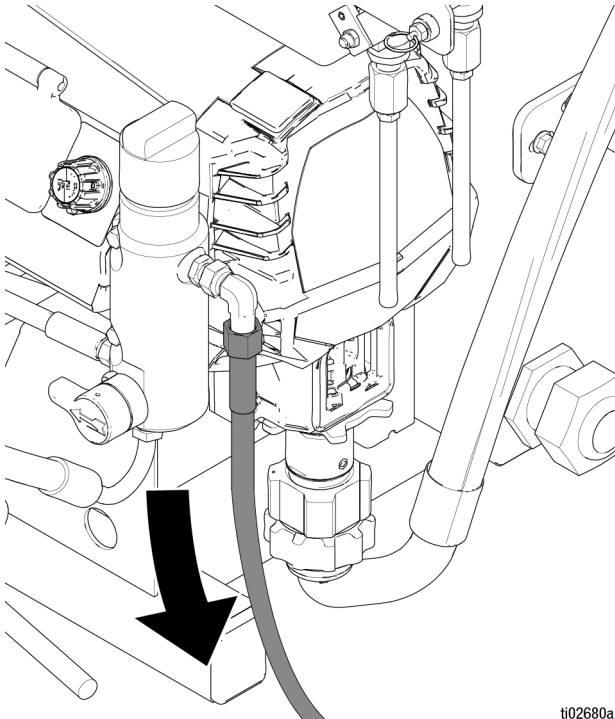
5. Repeat steps in reverse order to install the ADM.
6. Insert USB drive provided with new ADM.
7. Follow on-screen instructions when starting unit for the first time.

Solvent Pump Replacement

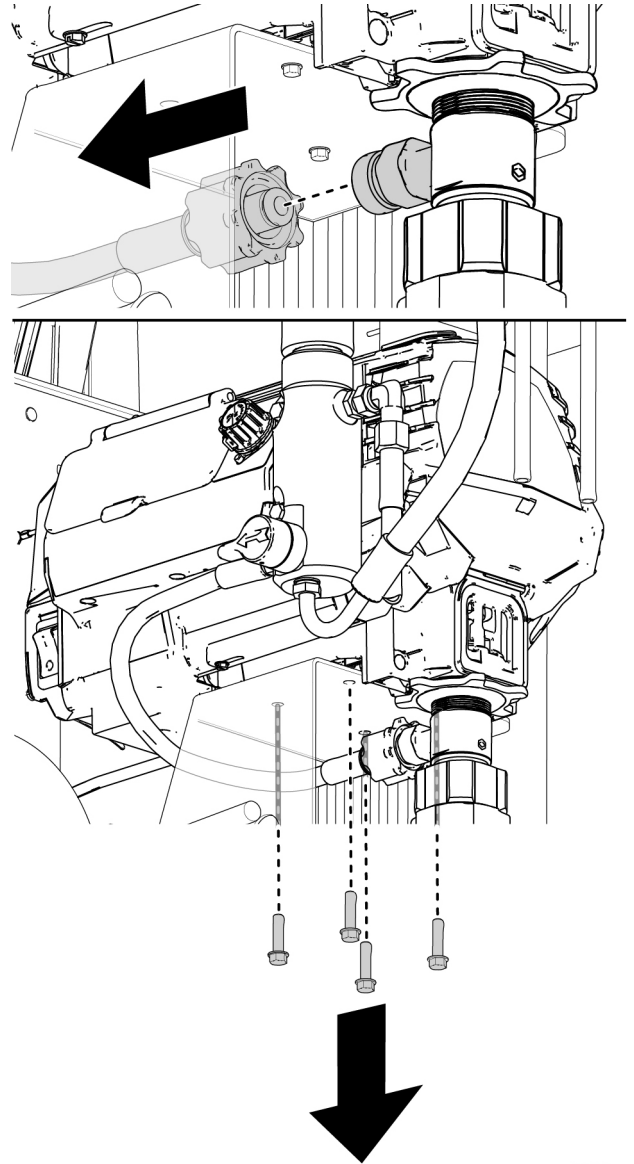
1. Follow the **Prior to Repair** procedure, page 30.
2. Unplug the solvent pump. The power cord plugs into the adapter under the A-side motor.



3. Remove the 3 foot solvent hose from the solvent pump.



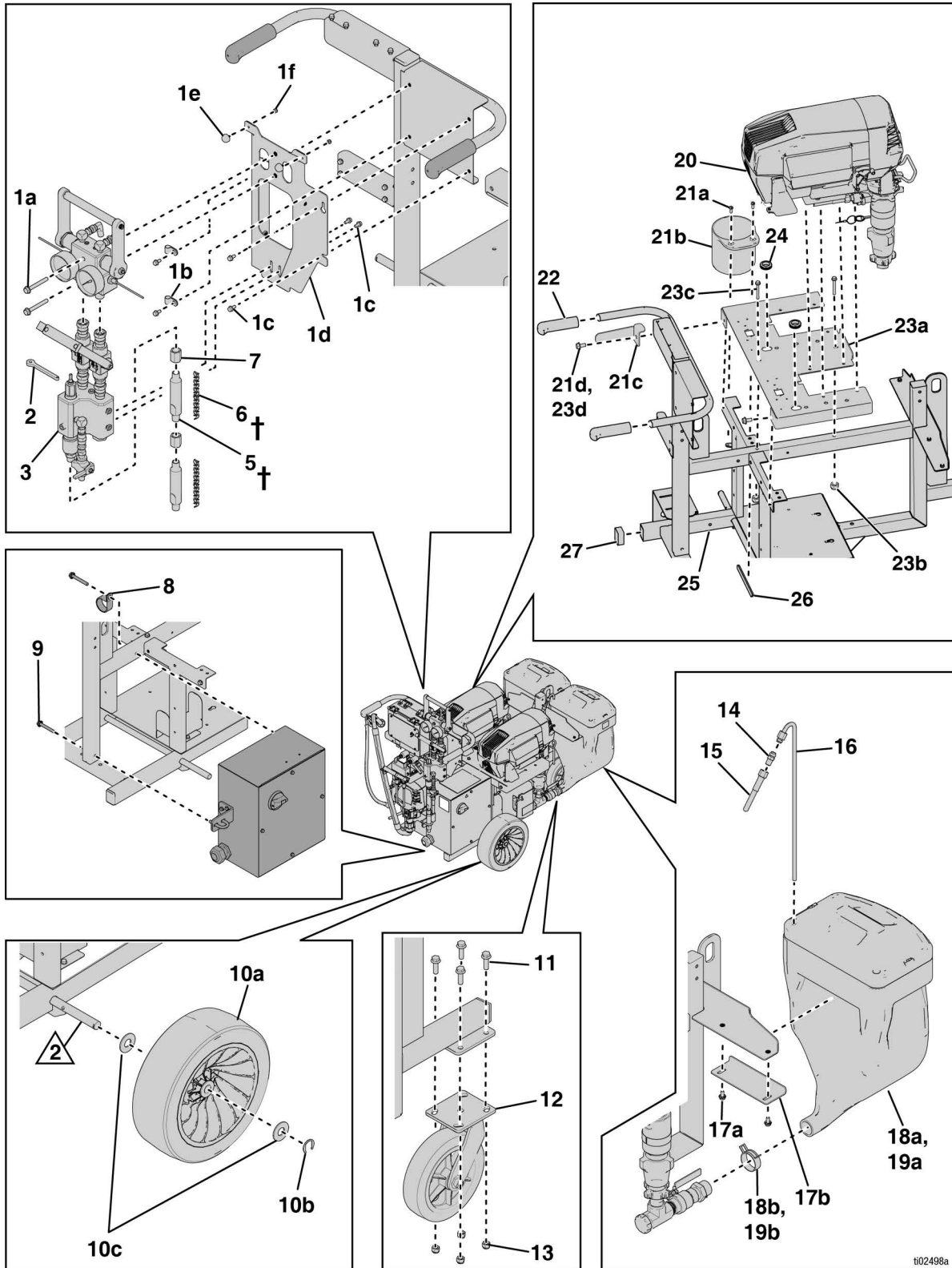
4. Disconnect hand nut on bottom of the solvent pump.
5. Remove four bolts from the bottom of the solvent pump.



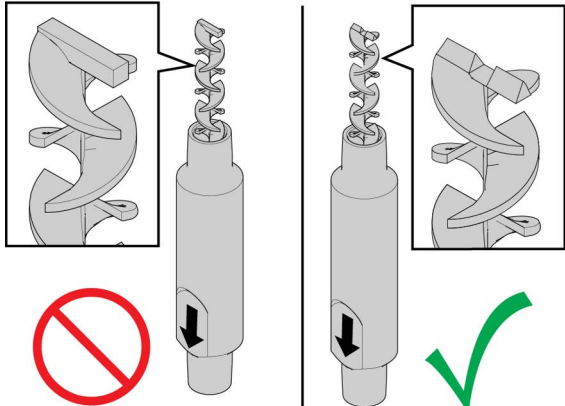
6. Refer to the Solvent Pump manual for service and repair of the solvent pump.
7. Repeat steps in reverse order to reinstall the solvent pump.

Parts 2004087, 2004088

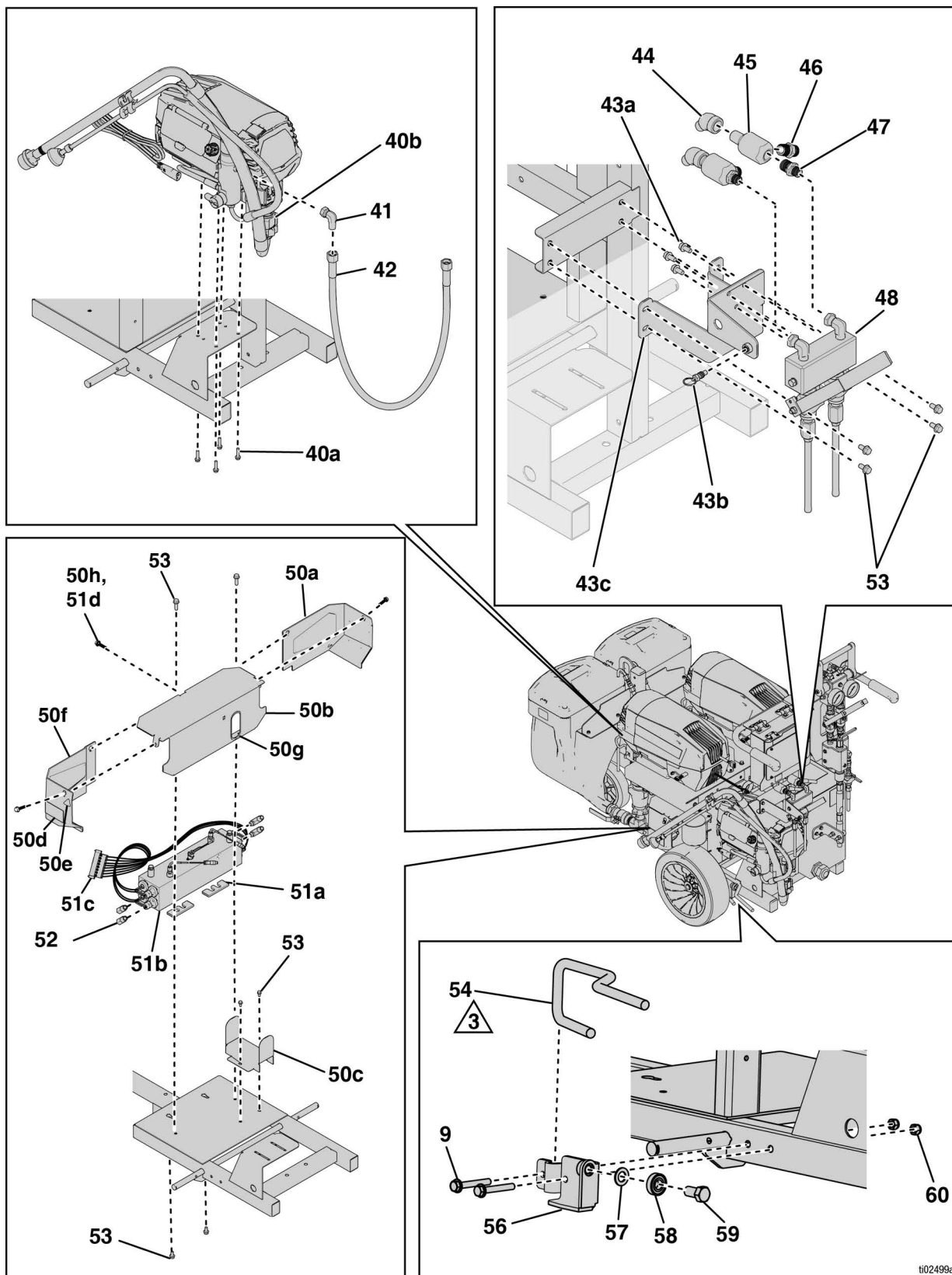
Top Level Unit



2004087 Parts List

Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
1	2007369	KIT, bracket, recirculation manifold, <i>includes 1a, 1b, 1c, 1d, 1e, 1f</i>	1	19a	----	HOPPER, green assembly	1
1a	----	SCREW, flanged, hex hd, 5/16"-18 x 2.5"	2	19b	----	CLAMP, spring	1
1b	----	CLAMP, loop, 7/16" ID	2	20	----	DRIVER with pump, see Drivers Parts , page 50	2
1c	----	SCREW, flanged, hex hd, 1/4"-20 x 0.5"	6	21	2007696	KIT, suction cup, <i>includes 21a, 21b, 21c, 21d</i>	1
1d	----	BRACKET, recirculation manifold	1	21a	----	SCREW, flanged, hex hd, #8-32 x 0.5"	2
1e★	----	BUMPER, threaded stud, #8-32	2	21b	----	CUP, suction/drain	1
1f★	----	NUT, lock, hex, #8-32	2	21c	----	BRACKET, suction hose	1
2	126786	TOOL, restrictor	1	21d	----	SCREW, flanged, hex hd, 5/16"-18 x 1"	1
3	262779	MANIFOLD, mix	1	22	114659	GRIP, handle	2
5†	262478	HOUSING, mixer	3	23	2007370	KIT, mounting plate, <i>includes 23a, 23b, 23c, 23d</i>	1
6†	248927	MIXER, 1/2-12 element (25 pack)	1	23a	----	PLATE, mounting frame	1
7	162024	COUPLING, 3/8" npt	2	23b	----	NUT, lock, hex, 5/16"-18	2
8	25N652	CLAMP, loop, 1.5" ID	1	23c	----	SCREW, flanged, hex hd, 5/16"-18 x 2.5"	2
9	----	SCREW, flanged, hex hd, 5-16"-18 x 2.25"	2	23d	----	SCREW, flanged, hex hd, 5/16"-18 x 1"	2
10*	2007362	KIT, rear wheel, <i>includes 10a, 10b, 10c</i>	1	24	19D311	GROMMET, rubber, 1.0" ID	2
10a	----	TIRE, black, 13"	1	25	----	FRAME, weldment	1
10b	----	CLIP, retaining	1	26	----	TRIM, edge protection	1
10c	----	WASHER, flat	2	27	2007364	PLUG, tube, 1.5" x 2.0" (5 pack)	1
11	----	SCREW, flanged, hex hd, 3/8"-16 x 1.25"	4	★ Included in Bumper Repair Kit 2007365. † Orientation is critical. Ref. 6 must be placed in mixer housing in the correct orientation (see image below). * Two kits may be required for complete repair or replacement.			
12	2007367	CASTER, swivel, 8"	1				
13	----	NUT, lock, hex, 3/8"-16	4				
14	116704	ADAPTER, 9/16"-18 x 1/4" npt	2				
15	H52506	HOSE, coupled, 5600 psi, 1/4" ID, 6'	2				
16	24T980	TUBE, recirculation	2				
17*	2007380	KIT, bracket, hopper mount, <i>includes 17a, 17b</i>	1				
17a	----	SCREW, flanged, hex hd, 5/16"-18 x 0.5"	2				
17b	----	BRACKET, hopper, mount	1				
18	2007359	KIT, blue hopper, <i>includes 18a, 18b</i>	1				
18a	----	HOPPER, blue, assembly	1				
18b	----	CLAMP, spring	1				
19	2007360	KIT, green hopper, <i>includes 19a, 19b</i>	1				

2004087, 2004088



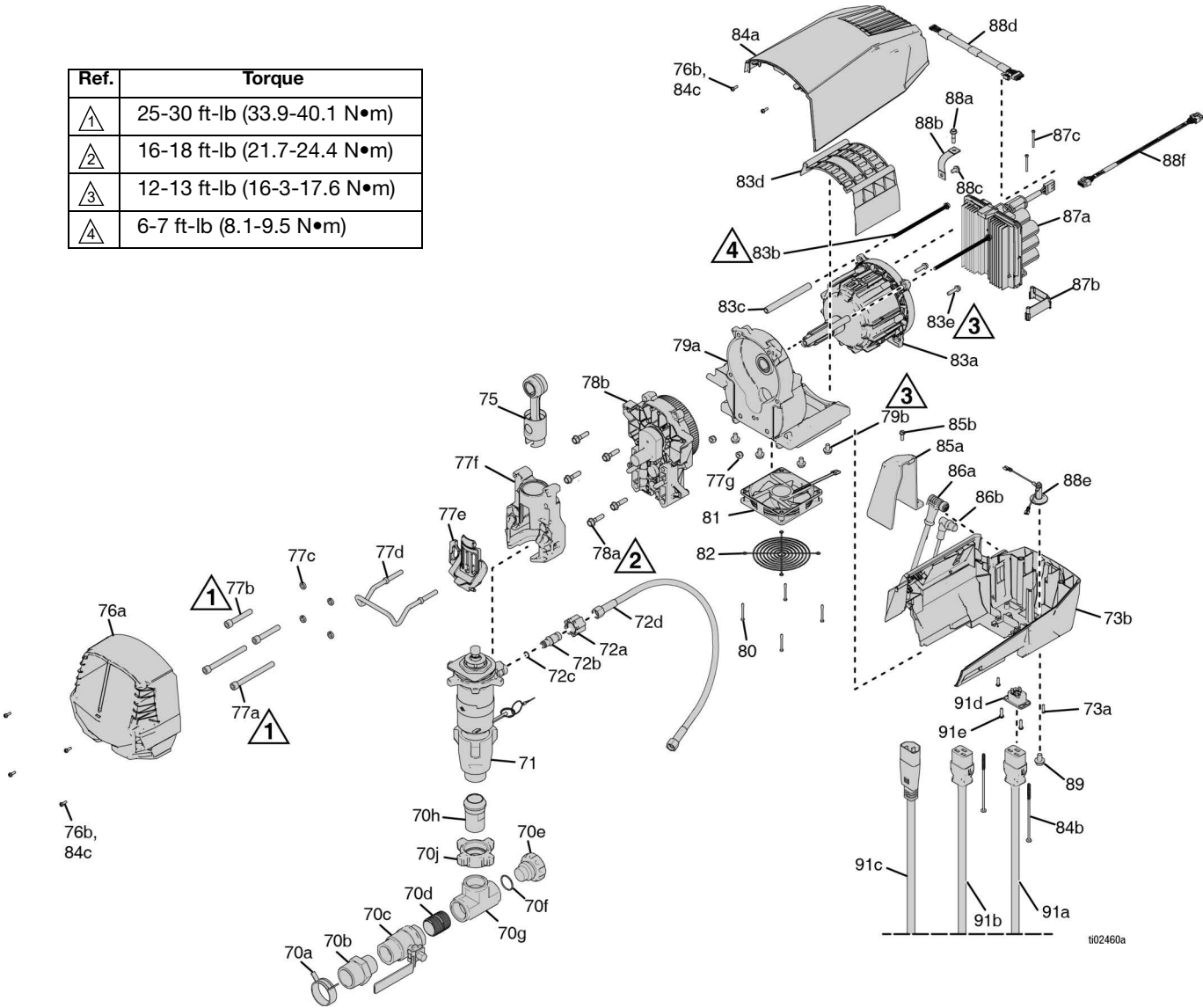
2004087, 2004088 Parts List

Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
9	----	SCREW, flanged, hex hd, 5/16"-18 x 2.25"	2	50c	----	COVER, wire	1
40	2007356	KIT, solvent pump, <i>includes 40a, 40b</i>	1	50d	----	LABEL, dual-flo, heater	2
40a	----	SCREW, flanged, hex hd, thread forming, 1/4"-20 x 1"	4	50e▲	----	LABEL, safety, warning	2
40b	----	PUMP, solvent	1	50f	----	SHROUD, heater, A-side	1
41	155541	FITTING, swivel, elbow, 1/4" npt	1	50g	----	TRIM, edge protection	1
42	H52503	HOSE, coupled, 5600 psi, 1/4" ID, 3'	1	50h	----	SCREW, flanged, hex hd, 1/4"-20 x 1"	3
43	2007368	KIT, bracket, ratio manifold, <i>includes 43a, 43b, 43c</i>	1	51	2007357	KIT, heater, <i>includes 51a, 51b, 51c, 51d</i>	1
43a	----	SCREW, flanged, hex hd, 1/4"-20 x 0.5"	7	51a	----	INSULATOR, foam, heater	2
43b	----	SPRING, lock, threaded, 3/8-16	1	51b	----	HEATER, assembly	1
43c	----	BRACKET, ratio manifold mount	1	51c	----	CONNECTOR, plug, 8-position	1
44	2005259	FITTING, elbow, 45 degree street, 3/8" npt	2	51d	----	SCREW, flanged, hex hd, 1/4"-20 x 1"	3
45	15R874	FITTING, tee, 3/8" npt	2	52	155494	FITTING, swivel, 90 degree	4
46	162485	ADAPTER, 3/8" npt x 3/8 npsm	2	53	----	SCREW, flanged, hex hd, 1/4"-20 x 0.5"	6
47	157350	ADAPTER, 3/8" npt x 1/4" npsm	2	54	198930	ROD, brake	1
48	2007389	KIT, ratio manifold	1	56	198891	BRACKET	1
50	2007358	KIT, heater covers, <i>includes 50a, 50b, 50c, 50d, 50e, 50f, 50g, 50h</i>	1	57	195134	SPACER	1
50a	----	SHROUD, heater, B-side	1	58	198931	BEARING	1
50b	----	PANEL, shroud, heater	1	59	113961	SCREW, hex hd, 1/2"-13 x 1"	1
				60	----	NUT, lock, hex, 5/16"-18	2

▲ Replacement safety labels, tags, and cards are available at no cost.

Drivers Parts

Ref.	Torque
	25-30 ft-lb (33.9-40.1 N•m)
	16-18 ft-lb (21.7-24.4 N•m)
	12-13 ft-lb (16-3-17.6 N•m)
	6-7 ft-lb (8.1-9.5 N•m)

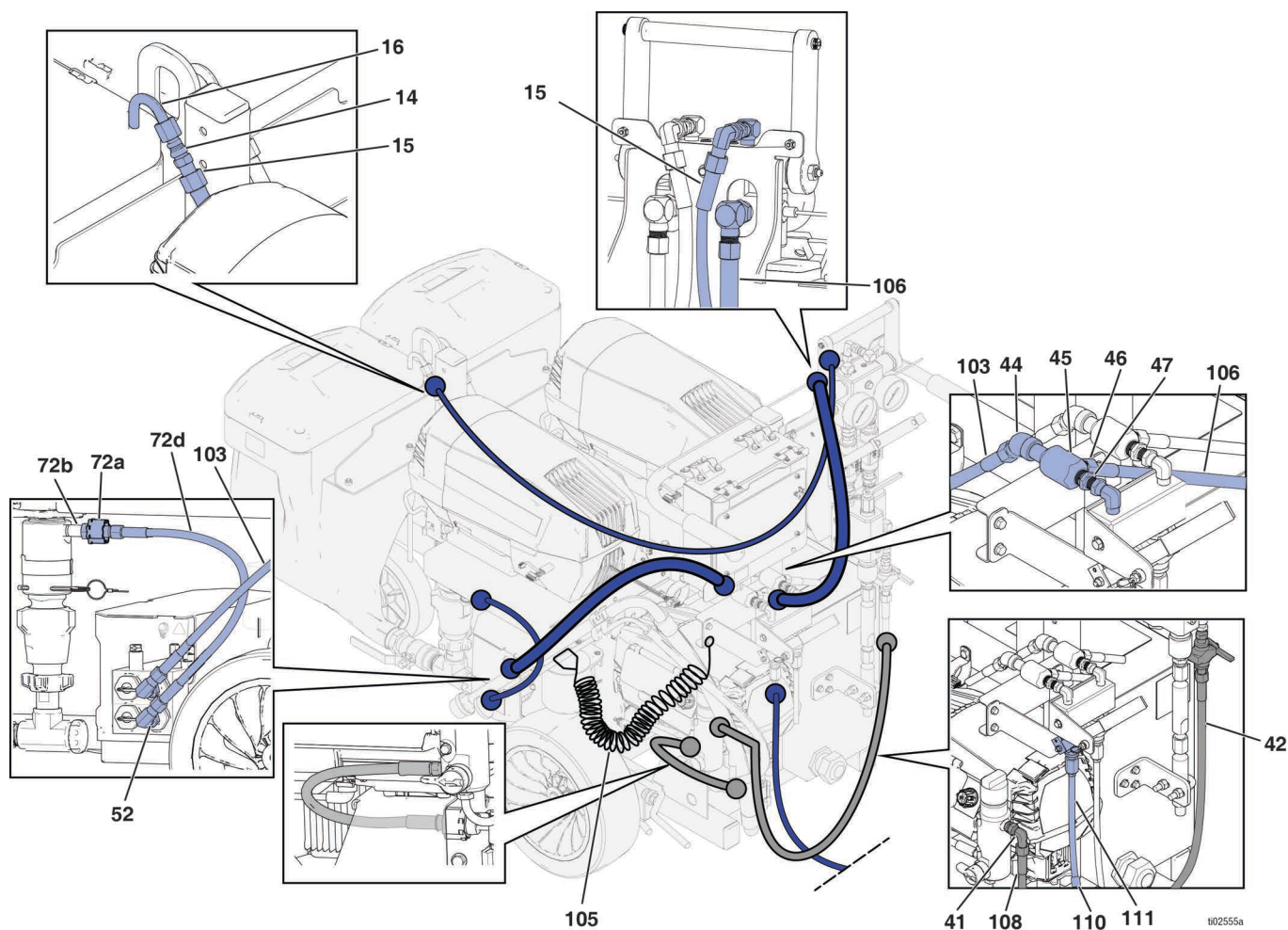


Drivers Parts List

Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
70*	2007361	KIT, pump, inlet fittings, <i>includes 70a - 70j</i>	1	83a	----	MOTOR	1
70a	----	CLAMP, spring	1	83b	----	SCREW, hex hd, 1/4"-20 x 6"	2
70b	----	FITTING, adapter, 1-1/4" npt x 1" npt	1	83c	----	SPACER, tie rod, motor	2
70c	----	VALVE, ball	1	83d	----	COVER, motor	1
70d	----	FITTING, nipple, 1" npt	1	83e	----	SCREW, flanged, hex hd, thread forming, 1/4"-20 x 1"	2
70e	----	CAP, custom	1	84*	2003284	KIT, top cover, <i>includes 84a, 84b, 84c</i>	1
70f	117828	O-RING	1	84a	----	SHIELD, motor, top	1
70g	----	FITTING, tee	1	84b	----	SCREW, star hd, self-tapping, #10 x 5"	2
70h	----	SEAT, siphon	1	84c	----	SCREW, star hd, thread forming, #8-32 x 0.5"	2
70j	----	NUT, siphon seat	1	85	2007376	KIT, connector cover set, <i>includes 85a, 85b</i>	1
71	2007207	PUMP, displacement	2	85a	----	COVER, connector	2
72*	2007354	KIT, hose, pump, <i>includes 72a, 72b, 72c, 72d</i>	1	85b	----	SCREW, flanged, hex hd, #8-32 x 0.5"	2
72a	----	NUT, hand	1	86	2007375	KIT, communication, cable set, <i>includes 86a, 86b, 86c</i>	1
72b	----	FITTING, quick disconnect, 3/8" npsm	1	86a	----	CABLE, communication, 36"	2
72c	107505	PACKING, o-ring	1	86b	----	CABLE, adapter, 19"	2
72d	----	HOSE, coupled, 5600 psi, 3/8" ID, 18"	1	86c	see page 55	CABLE, communication, 39" (not shown)	1
73*	2007353	KIT, bottom cover, <i>includes 73a, 73b</i>	1	87*	2007355	KIT, motor, control module, <i>includes 87a, 87b, 87c</i>	1
73a	----	SCREW, star hd, #8 x 5/8"	4	87a	----	MODULE, control, motor	1
73b	----	COVER, bottom, with pump connector board	1	87b	----	SPACER, board	1
75	16X964	ROD, connecting	2	87c	----	SCREW, star hd, self-tapping, #6 x 1.5"	2
76*	2003282	KIT, front cover, <i>includes 76a, 76b</i>	1	88*	2007379	KIT, motor cables, <i>includes 88a - 88f</i>	1
76a	----	COVER, front	2	88a	----	SCREW, flanged, hex hd, thread forming, M5 x 20mm	1
76b	----	SCREW, star hd, thread forming, #8-32 x 0.5"	4	88b	----	HARNESS, ground	1
77*	2003295	KIT, housing, bearing, <i>includes 77a - 77g</i>	1	88c	----	SCREW, flanged hex hd, thread forming, #10-24 x 0.38"	1
77a	----	SCREW, socket hd, 3/8"-16 x 4.0"	2	88d	----	HARNESS, connector board	1
77b	----	SCREW, socket hd, 3/8"-16 x 2.25"	2	88e	----	POST, ground	1
77c	----	WASHER, lock, 3/8"	4	88f	----	HARNESS, encoder	1
77d	----	HANGER, pail	1	89	16M007	SCREW, flanged, hex hd, #10-32 x 0.5"	1
77e	----	COVER, pump, rod	1	91	2007377	KIT, AC cable and socket, <i>includes 91a-91e</i>	1
77f	----	HOUSING, bearing	1	91a	----	CABLE, harness, A	1
77g	----	NUT, lock, hex, 5/16"-18	2	91b	----	CABLE, harness, B	1
78*	2003291	KIT, housing, drive, <i>includes 78a, 78b</i>	1	91c	----	CABLE, harness, solvent	1
78a	----	SCREW, flanged, hex hd, thread forming, 5/16"-18 x 1.25"	5	91d	----	SOCKET, power cord, C20	2
78b	----	HOUSING, drive	1	91e	----	SCREW, flanged, hex hd, thread forming, #6-32 x 0.75"	4
79*	2003293	KIT, chassis, <i>includes 79a, 79b</i>	1				
79a	----	CHASSIS	1				
79b	----	SCREW, flanged, hex hd, 5/16"-18 x 0.5"	4				
80	----	SCREW, phillips, #6-32 x 1.5"	8				
81	19D923	FAN, 12V	2				
82	19D924	GUARD, fan	2				
83*	2003300	KIT, motor, <i>includes 83a - 83e</i>	1				

* Two kits may be required for complete repair or replacement.

Hose Connections / Fittings Parts

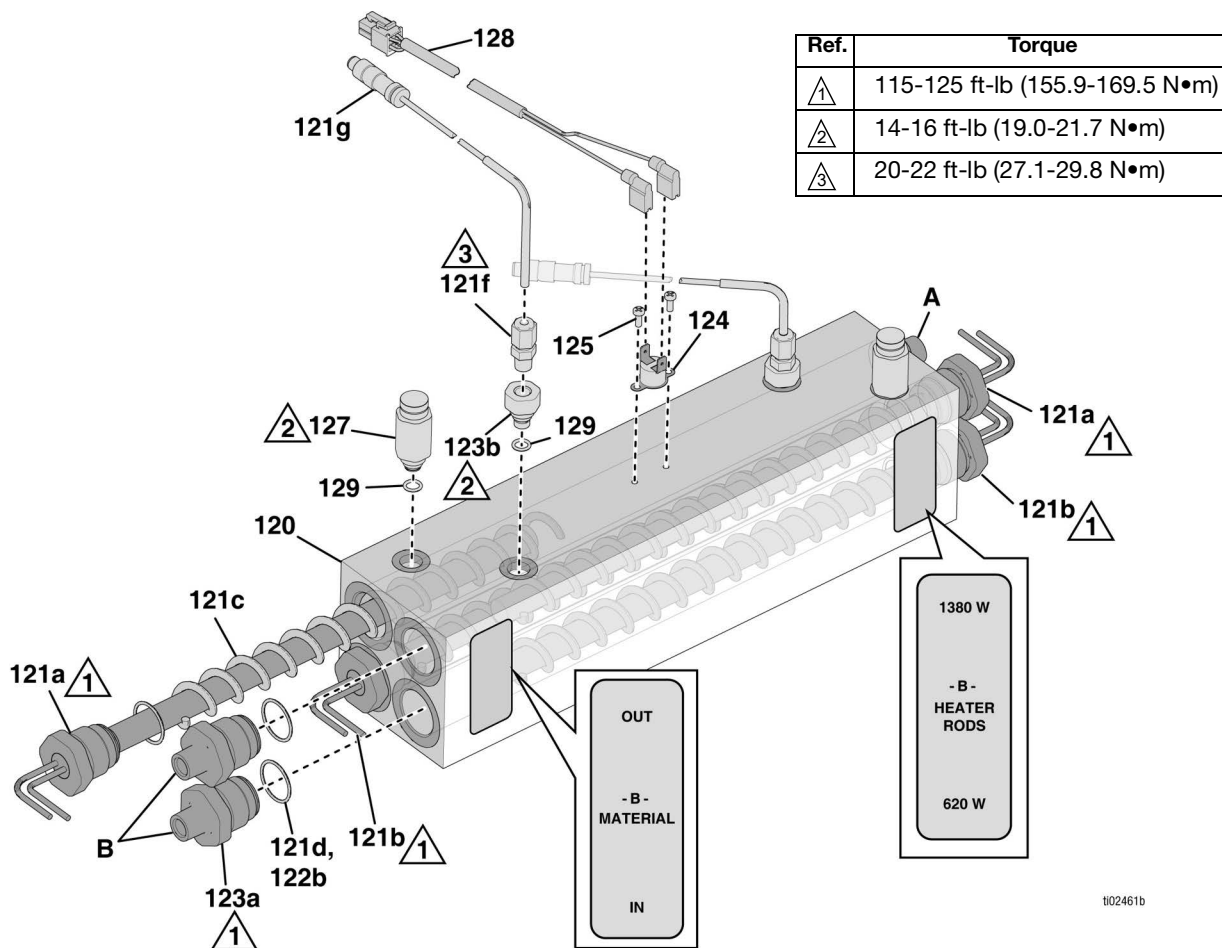


Hose Connections / Fittings Parts List

Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
14	116704	ADAPTER, 9/16"-18 x 1/4" npt	2	72a*	----	NUT, hand	1
15	H52506	HOSE, coupled, 5600 psi, 1/4" ID, 6'	2	72b*	----	FITTING, quick disconnect, 3/8 npsm	1
16	24T980	TUBE, recirculation	1	72d*	----	HOSE, coupled, 5600 psi, 3/8" ID, 18"	1
41	155541	FITTING, swivel, elbow, 1/4" npt	1	103	H53803	HOSE, coupled, 5600 psi, 3/8" ID, 3'	2
42	H52503	HOSE, coupled, 5600 psi, 1/4", 3'	1	105	244524	WIRE, ground assy w/ clamp	1
44	2005259	FITTING, elbow, 45 degree street, 3/8" npt	1	106	H53802	HOSE, coupled, 5600 psi, 3/8" ID, 2'	2
45	15R874	FITTING, tee, 3/8" npt	1	110	413442	CAP, plug, vinyl	1
46	162485	ADAPTER, 3/8" npt x 3/8 npsm	1	111	----	TUBE, nylon	1
47	157350	ADAPTER, 3/8" npt x 1/4" npsm	1				
52	155494	FITTING, swivel, elbow, 3/8" npt	2				

* Included in kit 2007354. See page 50 for more details.

Primary Heater Parts



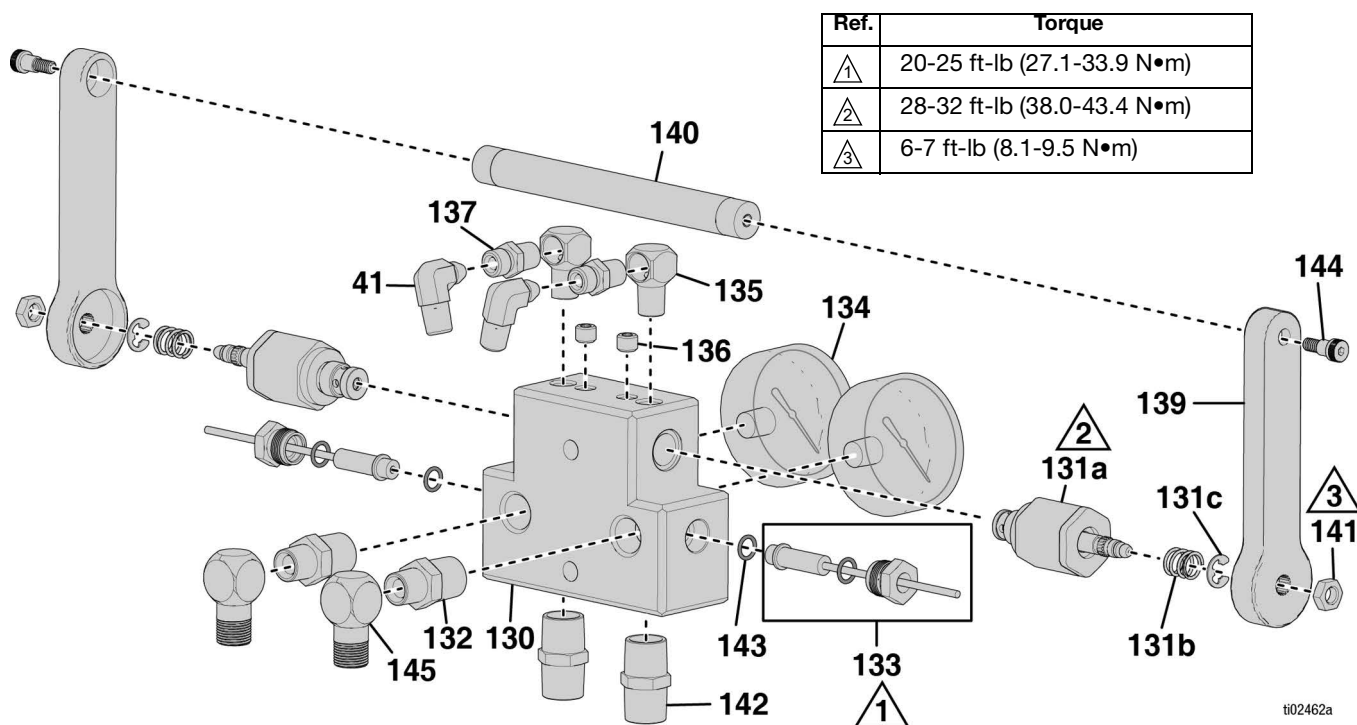
Primary Heater Parts List

Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
120	---	BLOCK, heater	1	123*	2007718	KIT, heater, adapter, <i>includes 123a, 123b</i>	1
121*	2007208	KIT, heater, rod, <i>includes 121a, 121b, 121c, 121d, 121f, 121g</i>	1	123a	----	ADAPTER, heater	2
121a	----	ROD, heater, 1380W	1	123b	----	ADAPTER, thermocouple	1
121b	----	ROD, heater, 620W	1	124	15B137	SWITCH, over temperature	1
121c	----	MIXER, heater	2	125	----	SCREW, phillips hd, #6-32 x 0.38"	2
121d	----	PACKING, o-ring	4	127	2000677	KIT, disc, rupture, 5000 psi	2
121f	----	FITTING, compression, 1/8 npt	1	128	132476	CABLE, over-temperature	1
121g	----	SENSOR, RTD	1	129‡	110004	PACKING, o-ring	1
122	2007381	KIT, heater, seal set, <i>includes 122b</i>	1				
122b	----	PACKING, o-ring	8				

* Two kits may be required for complete repair or replacement.

‡ Included in Heater Repair Kits 2007208 and 2007381.

Recirculation Manifold Parts



Ref.	Torque
1	20-25 ft-lb (27.1-33.9 N•m)
2	28-32 ft-lb (38.0-43.4 N•m)
3	6-7 ft-lb (8.1-9.5 N•m)

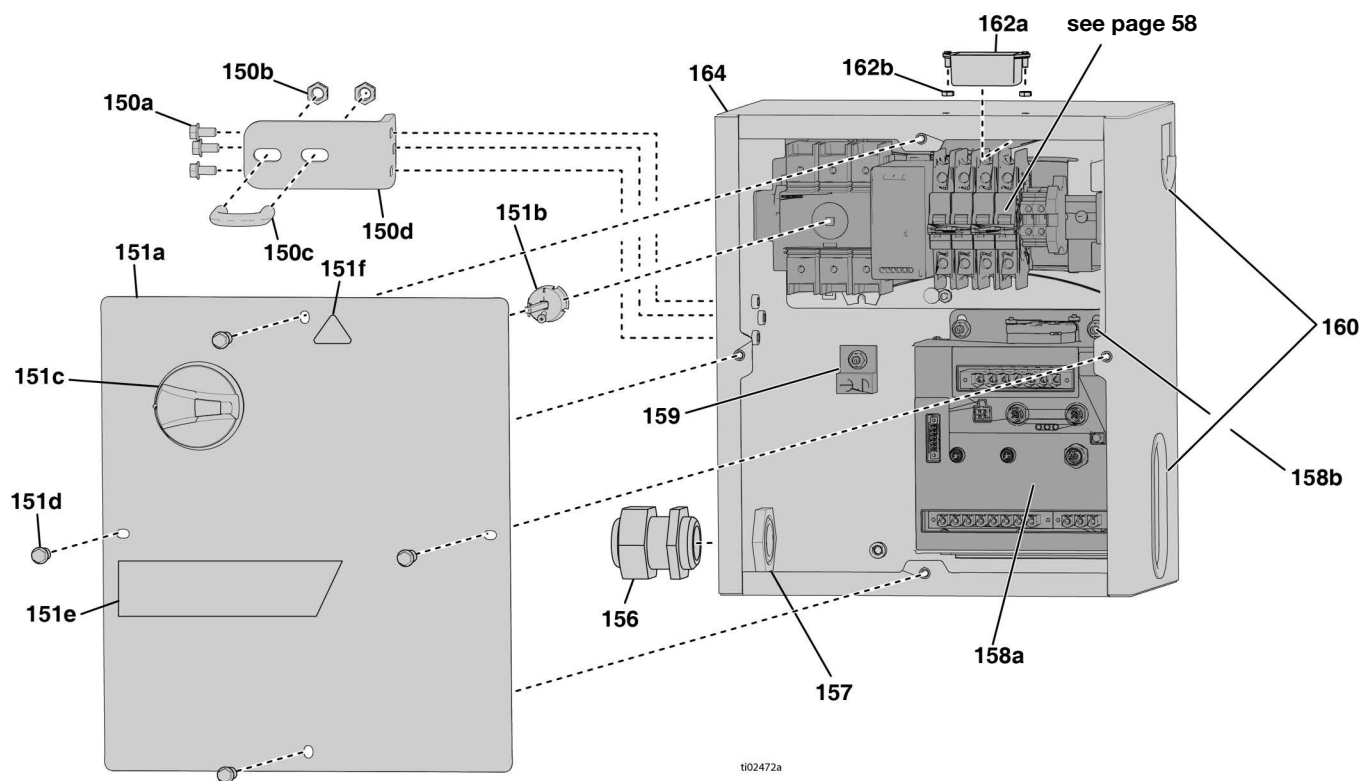
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Recirculation Manifold Parts List

Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
41	155541	FITTING, swivel, elbow, 1/4" npt	2	137	162453	ADAPTER, 1/4 npsm x 1/4 npt	2
130	16D693	BLOCK, manifold, recirculation	1	139	16E334	HANDLE, manifold, aluminum	2
131*	262809	KIT, relief valve	1	140	16E332	ROD, connecting, handle	1
131a	----	VALVE, drain, cartridge	1	141	112309	NUT, jam hex, 3/8"-16	2
131b	----	SPRING, compression	1	142	158491	FITTING, nipple, 1/2 npt	2
131c	----	RING, snap, external, 3/8 shaft	1	143	111457	PACKING, o-ring	2
132	159239	ADAPTER, 1/2" npt x 3/8" npt	2	144	124859	BOLT, shoulder, 1/4-20 x 5/16	2
133	15M669	SENSOR, pressure, fluid outlet	2	145	155699	FITTING, 90 degree, elbow, street, 3/8" npt	2
134	114434	GAUGE, pressure fluid	2				
135	100840	FITTING, 90 degree, elbow, street, 1/4" npt	2				
136	557349	PLUG, pipe, soc hd 1/8 nptf	2				

* Two kits may be required for complete repair or replacement.

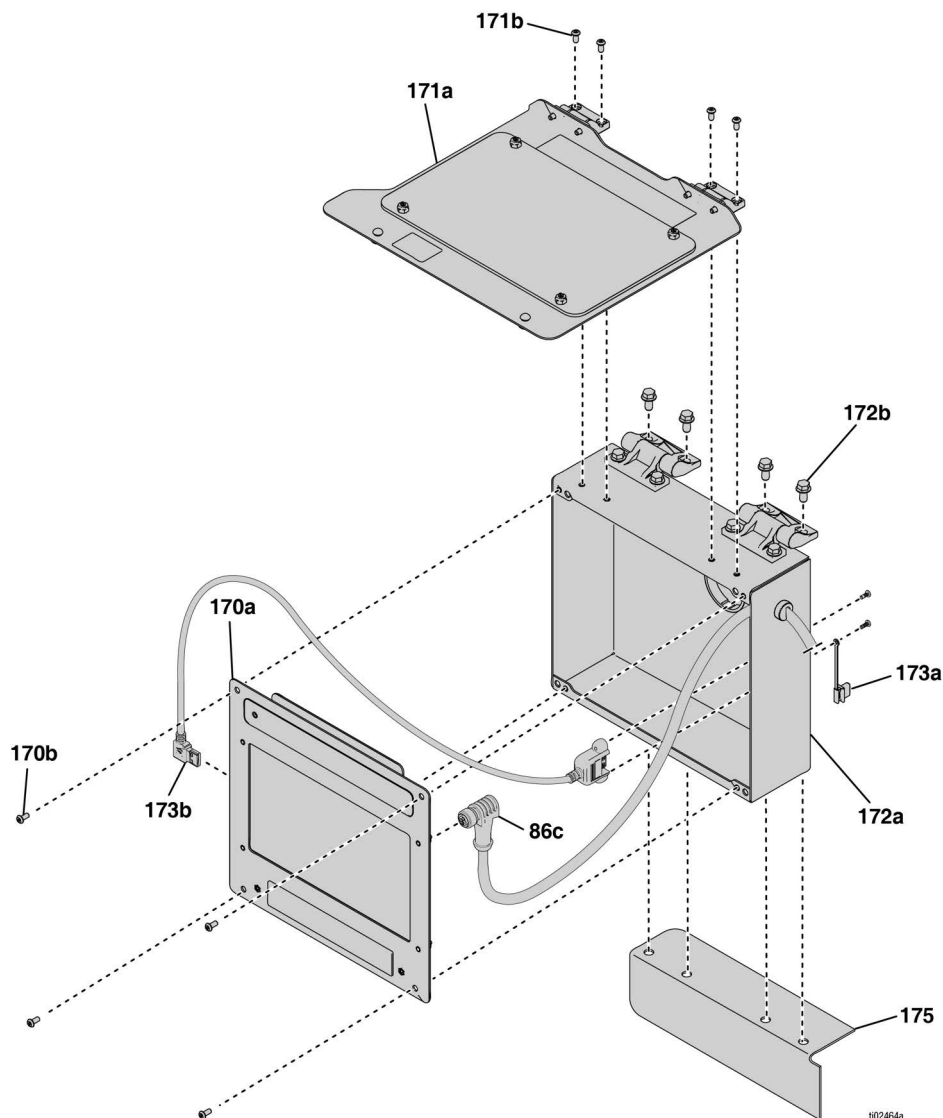
Electrical Enclosures Parts



Electrical Enclosures Parts List

Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
150	2007366	KIT, bracket, mixer support, includes 150a, 150b, 150c, 150d	1	156	255047	KIT, bushing, strain relief, M40	1
150a	----	SCREW, flanged, hex hd, 1/4"-20 x 0.5"	3	157	255048	NUT, strain relief, M40	1
150b	----	NUT, lock, hex, 3/8"-16	2	158	2007390	KIT, module, TCM, includes 158a, 158b	1
150c	----	BOLT, u-bolt, 3/8"-16	1	158a	----	MODULE, TCM	1
150d	----	BRACKET, mixer, support	1	158b	----	NUT, hex, flanged hd, 1/4"-20	2
151	2007378	KIT, cover, electrical box, includes 151a-151f	1	159	132931	BLOCK, ground, terminal	1
151a	----	COVER, junction box	1	160	114225	TRIM, edge protection	1
151b	----	SHAFT, door interlocked	1	162	2007391	KIT, surge protection, includes 162a, 162b	1
151c	----	KNOB, door interlocked	1	162a	----	MODULE, surge protection	1
151d	----	SCREW, flanged, hex hd, 1/4"-20 x 0.5"	4	162b	----	NUT, lock, hex, #8-32	2
151e	----	BRAND, label, E-Mix XT	1	164	----	BOX, electrical enclosure	1
151f▲	----	LABEL, safety, warning, shock	1	▲ Replacement safety labels, tags, and cards are available at no cost.			

Display Parts

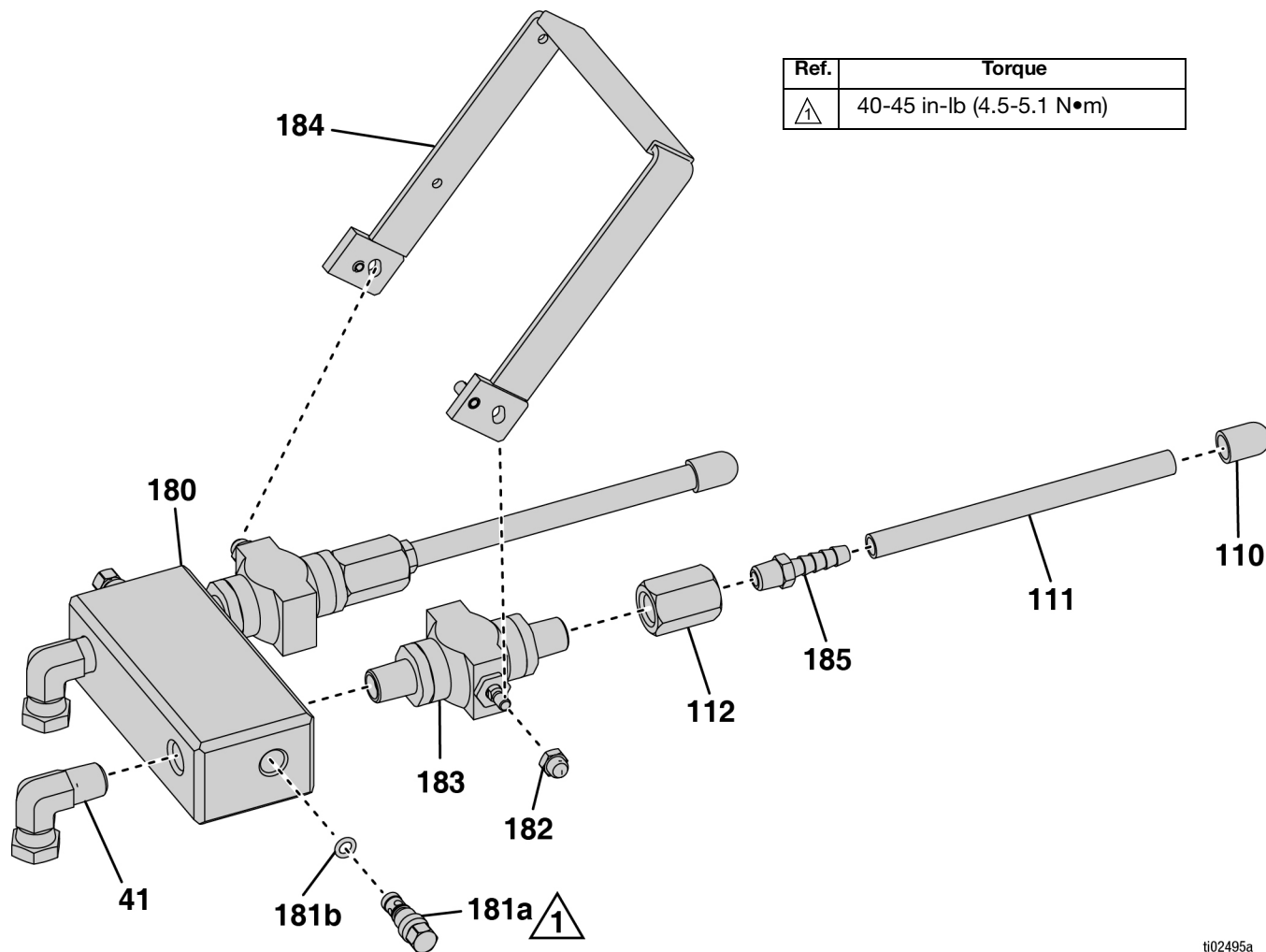


Display Parts List

Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
86c*	----	CABLE, communication, 59"	1	172a	----	BOX, ADM	1
170	2007373	KIT, ADM, <i>includes 170a, 170b</i>	1	172b	----	SCREW, flanged, hex hd, 1/4"-20 x 0.5"	4
170a	----	MODULE, ADM, 9"	1				
170b	----	SCREW, button hd, #8-32 x 0.38"	4	173	2007374	KIT, USB cable, <i>includes 173a, 173b</i>	1
171	2007372	KIT, ADM cover, <i>includes 171a, 171b</i>	1	173a	----	PLUG, USB, type A w/ lanyard	1
				173b	----	CABLE, USB, 19"	1
171a	----	COVER, display box	1	175	----	FRAME, weldment	1
171b	----	SCREW, button hd, #8-32 x 0.38"	4	<i>*Included in kit 2007375. See page 50 for more details.</i>			
172	2007371	KIT, ADM box, <i>includes 172a, 172b</i>	1				

**Included in kit 2007375. See page 50 for more details.*

Ratio Check Manifold Parts



Ref.	Torque
	40-45 in-lb (4.5-5.1 N•m)

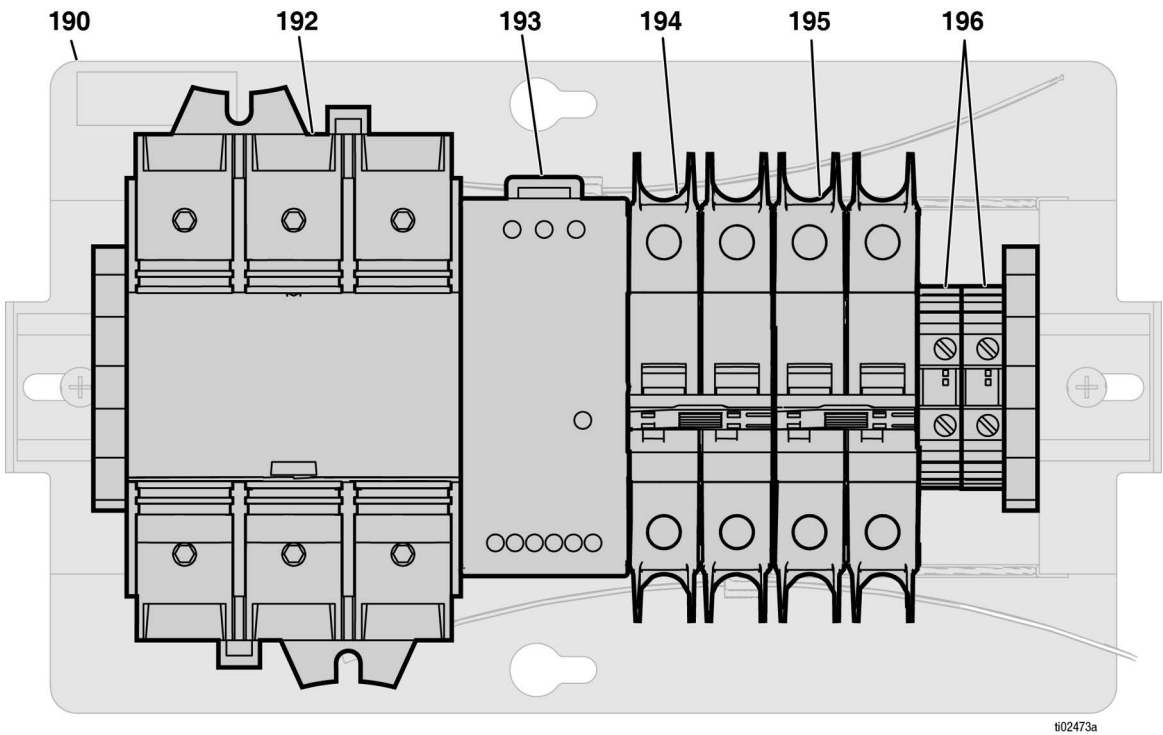
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Ratio Check Manifold Parts List

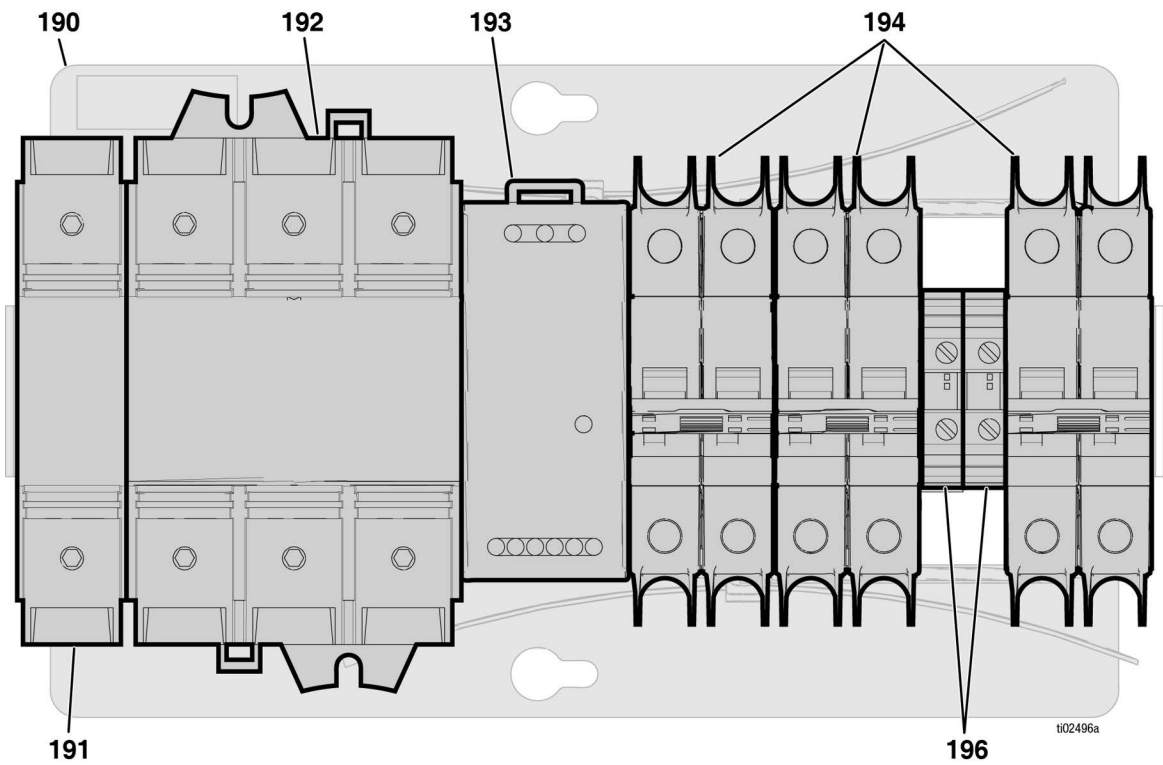
Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
41	155541	FITTING, swivel, elbow, 1/4" npt	1	181a	----	RESTRICTOR, ratio check, 0.62"	2
110	413442	CAP, plug, vinyl	2	181b	----	O-RING, packing	2
111	----	TUBE, nylon	2	182	102310	NUT, hex, nylon cap	2
112	150278	COUPLING, 1/4" npt x 1/8" npt	1	183	237303	KIT, valve, ball, 7400 psi	2
180	----	MANIFOLD, ratio check	1	184	2008086	KIT, lever, valve	1
181	2007839	KIT, restrictor, .062", includes 181a, 181b	1	185	116746	FITTING, barbed, plated	2

Rail Module Parts

200-240VAC, 1 Phase (2004087)



350-415 VAC, 3 Phase (2004088)



Rail Module Parts List**1 Phase (2004087)**

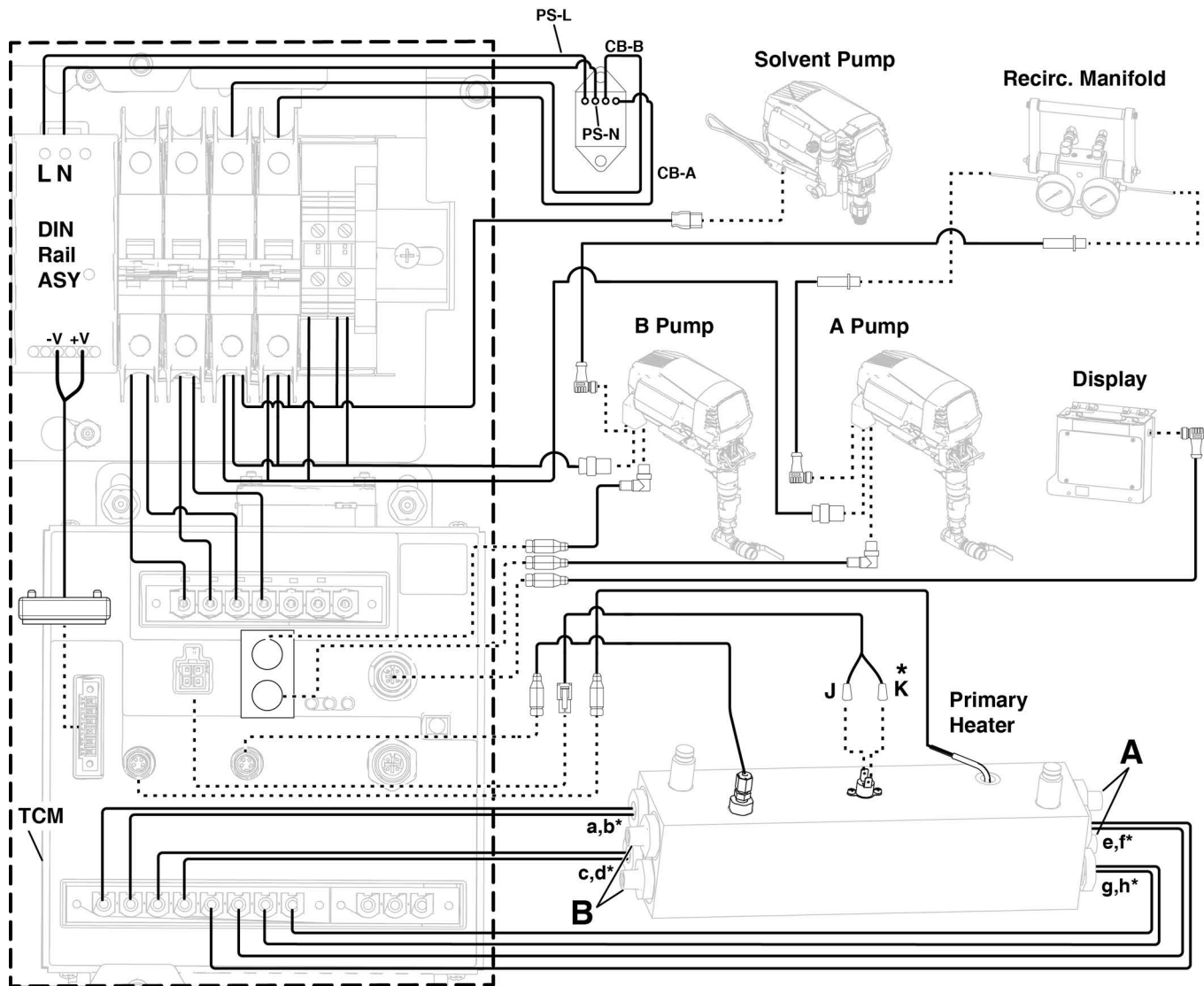
Ref.	Part	Description	Qty
190	----	BRACKET, din, rail	1
192	132801	SWITCH, rotary, disconnect, 3P, 100A	1
193	126453	POWER, supply, 24V	1
194	17A314	CIRCUIT, breaker, 2P, 20A	1
195	17A316	CIRCUIT, breaker, 2P, 30A	1
196	132931	BLOCK, ground, terminal	2

3 Phase (2004088)

Ref.	Part	Description	Qty
190	----	BRACKET, din, rail	1
191	132802	SWITCH, fourth pole, 100A	1
192	132801	SWITCH, rotary, disconnect, 3P, 100A	1
193	126453	POWER, supply, 24V	1
194	17A314	CIRCUIT, breaker, 2P, 20A	3
196	132931	BLOCK, ground, terminal	2

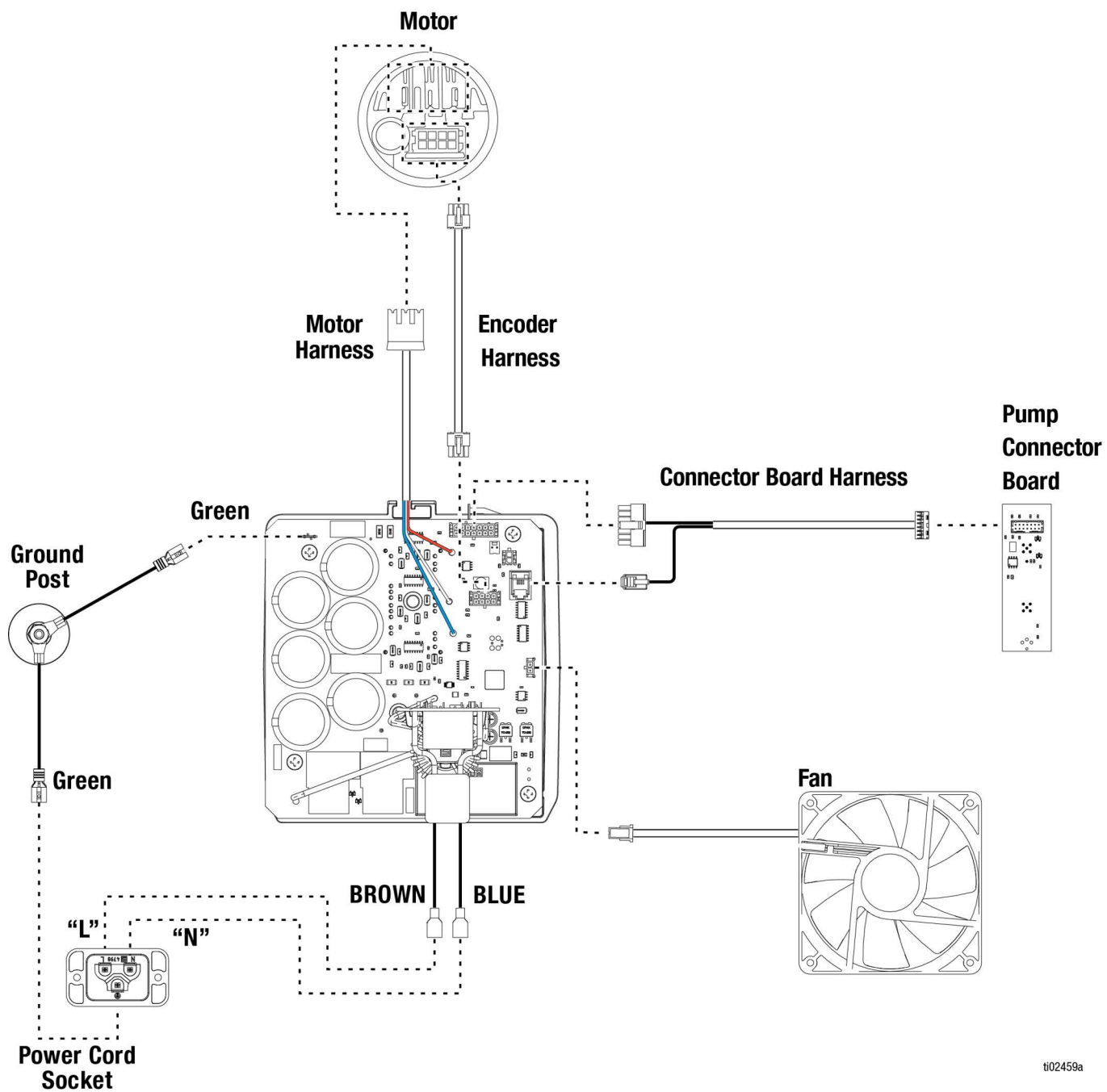
Wiring Diagrams

System Overview



* Wire positions are interchangeable.

A/B Pump



ti02459a

Technical Specifications

E-Mix XT		
	U.S.	Metric
Output		
Maximum System Fluid Working Pressure	5000 psi	345 bar, 34,5 MPa
Maximum Flush Pump Working Pressure	3300 psi	228 bar, 22.8 MPa
Maximum Storage Time	5 years (To maintain original performance, replace soft seals after 5 years of inactivity)	
Electrical Specifications (See Pressure Relief Procedure, page 19)		
2004087: Voltage	200 - 240 Volts, 1 ph	
Current	40 Maximum Amps	
Frequency	50/60 Hz	
2004088: Voltage	350 - 415 Volts, 3 ph	
Current	20 Maximum Amps	
Frequency	50/60 Hz	
Filtration		
XTR Spray Gun	60 mesh	
Viscosity		
Gravity Feed	200 - 20,000 cps (pourable)	
Pressure Feed	Feed pressure must not exceed 15% of the spray pressure regardless of viscosity	
Temperature		
Operating	40-108 °F	4-42 °C
Storage	30-160 °F	1-71 °C
Maximum Fluid Temperature	160 °F	71 °C
Wetted Materials		
Housings and Manifold	Carbon steel with electroless nickel plating	
Displacement Pump Packings	Carbon filled PTFE, proprietary UHMWPE	
Solvent Pump	See Solvent Pump manual	
Hoses	Plated carbon steel, Nylon	
Feed Pump	See your feed pump manual	
Agitator	See your agitator manual	
Hopper	Polyethylene, stainless steel, brass, nickel plating, plated carbon steel, PTFE	
Miscellaneous Parts	Carbide, acetal, solvent resistant plastics, zinc- and nickel-plated carbon steel, nylon, stainless steel, PTFE, acetal, leather, UHMWPE, aluminum, tungsten carbide, polyethylene, fluoroelastomer, urethane	
Weight		
Dry Weight	423 lb	192 kg
Output		
Recirculation Manifold Assembly	1/2 in. npt(f)	
Fluid Mix Manifold Inlets (ball valves)	1/2 in. npsm	
Mix Manifold material outlet	1/2 npt(f)	
Noise (dBa)		
Maximum sound pressure	85.4 dBa at 5,000 psi (34.5 MPa, 345 bar)	
Sound pressure measured 1 feet (0.3 meter) from equipment. Sound power measured per ISO-3744.		
Notes		
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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.

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Original instructions. This manual contains English. MM 3B0224

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