Instructions

Independent Plug-In Heated Hose and Control Module

3B0260B

EN

For spraying or dispensing epoxy and polyurea coatings. For use with Graco E-Mix XT only. For professional use only.

Not approved for use in explosive atmospheres or hazardous (classified) locations.

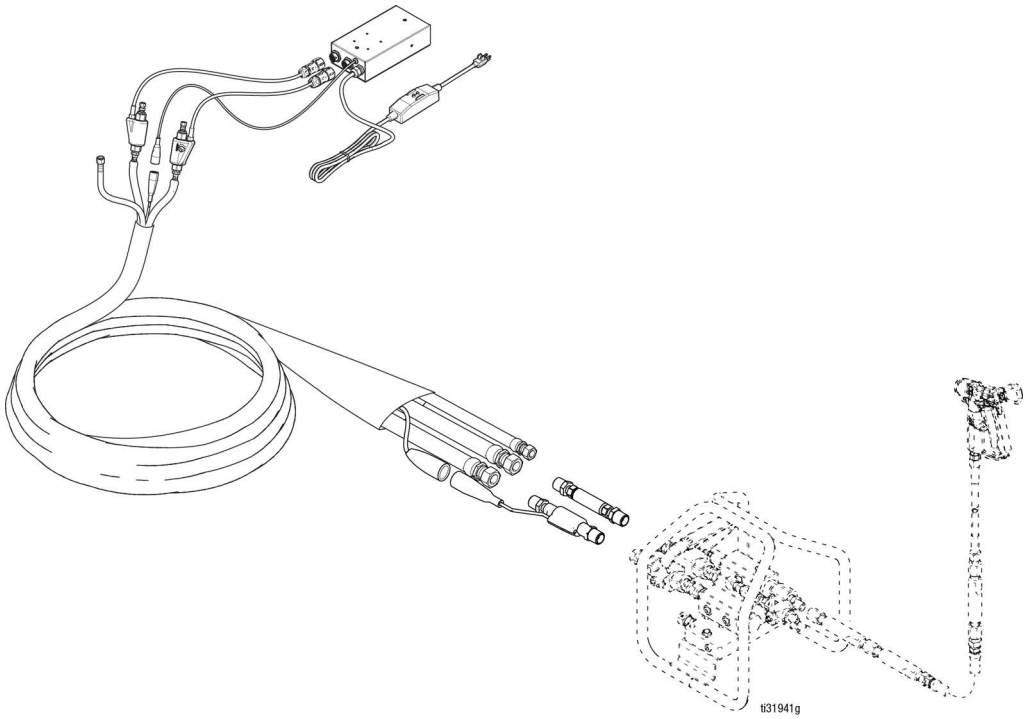
See page 3 for model information.

5000 psi (34.4 MPa, 344 bar) Maximum Fluid Working Pressure

160°F (71°C) Maximum Hose Operating Temperature

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.



Contents

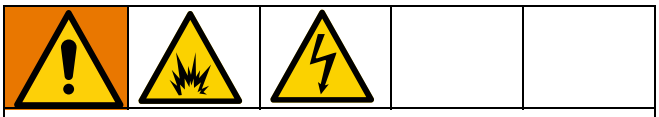
Related Manuals

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

English Manual Number	Description
3B0221	E-Mix™ XT, Operation

Part Numbers	Approvals
HH5555	CE UKCA
HH555X	
HH5535	
HH553X	
2006697	
2006698	

Models



To prevent risk of fire, explosion, and electric shock, the Independent Plug-In Heated Hose must be used with a corresponding Graco control module.

Packages

Model	Description	Hose Bundle	Control Module	Installation Kit	Fluid Temperature Sensor (FTS) Kit	Length (ft)	Voltage (VAC)	Current (A)
2007169	Heated Hose, 1/2 x 1/2, °F	HH5555	2006697	2006565	2006605	50 ft	240	6
2007170	Heated Hose, 1/2 x 1/2, °C	HH5555	2006698	2006565	2006605	50 ft	240	6
2007171	Heated Hose, 1/2 x 1/2, °F	HH555X	2006697	2006565	2006605	100 ft	240	12
2007172	Heated Hose, 1/2 x 1/2, °C	HH555X	2006698	2006565	2006605	100 ft	240	12
2007173	Heated Hose, 1/2 x 3/8, °F	HH5535	2006697	2006565	2006606	50 ft	240	6
2007174	Heated Hose, 1/2 x 3/8, °C	HH5535	2006698	2006565	2006606	50 ft	240	6
2007175	Heated Hose, 1/2 x 3/8, °F	HH553X	2006697	2006565	2006606	100 ft	240	12
2007176	Heated Hose, 1/2 x 3/8, °C	HH553X	2006698	2006565	2006606	100 ft	240	12

Control Modules

Control Module	Description	Voltage (VAC)	Max Current (A)	Plug
2006697	240 V, °F	240	16	NEMA L6-30
2006698	240 V, °C	240	16	CEE 7/7 Schuko

Installation Kits

Install Kit	Description
2006565	E-Mix XT Install Kit

Overview

The Independent Plug-In Heated Hose for the E-Mix XT is designed to allow efficient spraying of heated, dual component materials. Do not use the hose with any equipment other than the E-Mix XT.

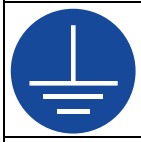
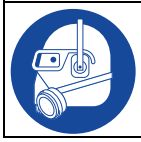
The mix manifold is removed from the E-Mix XT and remounted to a remote carriage (262522) placed just before the mixed material line leading to the spray gun. A solvent line in the hose bundle allows for flushing of the mixed material line.

The heated hose maintains fluid temperature at desired setpoint when spraying. See **Performance Chart**, page 38.

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
	Electric Shock Hazard
	Equipment Misuse Hazard
	Fire and Explosion Hazard
	Moving Parts Hazard
	Skin Injection Hazard
	Splash Hazard
	Toxic Fluid or Fumes Hazard

Symbol	Meaning
	Do Not Stop Leaks with Hand, Body, Glove or Rag
	Eliminate Ignition Sources
	Follow Pressure Relief Procedure
	Ground Equipment
	Read Manual
	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

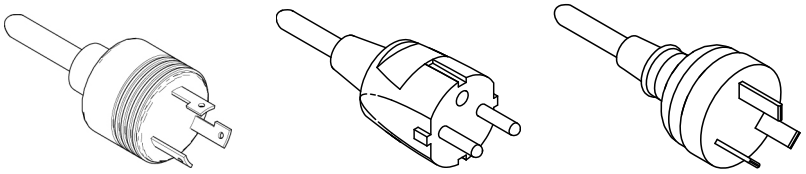
The following warnings apply throughout this manual. Read, understand, and follow the warnings before using this equipment. Failure to follow these warnings can result in serious injury.

⚠WARNING

GROUNDING

This product must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This product is equipped with a cord having a grounding wire with an appropriate grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

- Improper installation of the grounding plug is able to result in a risk of electric shock.
- When repair or replacement of the cord or plug is required, do not connect the grounding wire to either power terminal.
- The wire with insulation having an outer surface that is green with or without yellow stripes is the grounding wire.
- Check with a qualified electrician or serviceman when the grounding instructions are not completely understood, or when in doubt as to whether the product is properly grounded.
- Do not modify the plug provided; if it does not fit the outlet, have the proper outlet installed by a qualified electrician.
- This product is for use on a nominal 240 V circuit and has a grounding plug similar to the plugs illustrated in the figure below.



- Only connect the product to an outlet having the same configuration as the plug.
- Do not use a 3-2 adapter with this product.

Extension Cords:

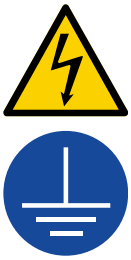
- Use only a 3-wire extension cord that has a grounding plug and a grounding receptacle that accepts the plug on the product.
- Make sure your extension cord is not damaged.
- An undersized cord results in a drop in line voltage and loss of power and overheating.

⚠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.
- 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.



ELECTRIC SHOCK HAZARD

This hoses must be grounded. Improper grounding, set-up, or usage of hoses can cause electric shock.

- Turn off and disconnect power before installing or servicing equipment.
- Connect only to grounded power source.
- All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.
- Never cut or puncture a hose cover.
- Do not expose to rain. Store indoors.

SKIN INJECTION HAZARD

High-pressure fluid from 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.**

- Inspect hose before each use for cuts, bulges, kinks or any other damage.
- Replace damaged hose immediately.
- Replace hoses proactively at regular intervals based on your operating conditions.
- Tighten all fluid connections before operating the equipment.
- Keep clear of leaks.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Never exceed hose Maximum Pressure or Temperature ratings.
- Only use chemicals that are compatible with hose materials. See in this manual. Read Safety Data Sheets (SDSs) and fluid and solvent manufacturer's recommendations.
- Follow the **Pressure Relief Procedure** in proportioner manual when you stop spraying/dispensing and before cleaning, checking, or servicing equipment.

⚠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** in proportioner manual 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.

THERMAL EXPANSION HAZARD

Fluids subjected to heat in confined spaces, including hoses, can create a rapid rise in pressure due to the thermal expansion. Over-pressurization can result in equipment rupture and serious injury.

- Open a valve to relieve the fluid expansion during heating.
- Replace hoses proactively at regular intervals based on your operating conditions.

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.

⚠WARNING

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.

PERSONAL PROTECTIVE EQUIPMENT

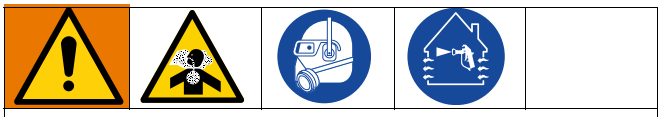
Always wear appropriate personal protective equipment and cover all skin when spraying, servicing equipment, or when in the work area. Protective equipment helps prevent serious injury, including long-term exposure; inhalation of toxic fumes, mists or vapors; allergic reaction; burns; eye injury and 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 A (hardener) side. Polyureas often have amines on the B (resin) side.

Component Identification

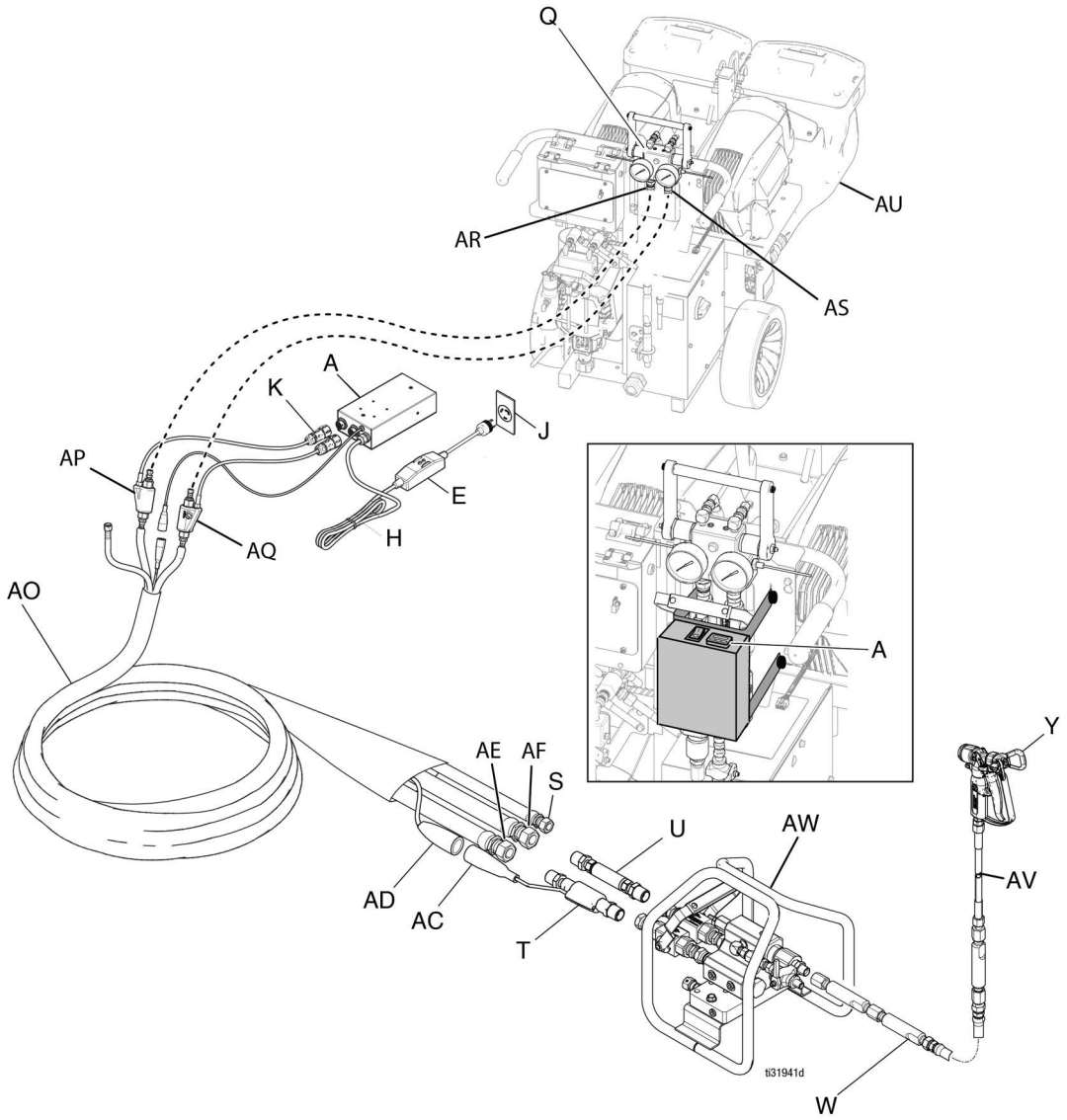


FIG. 1: Component Identification

Key:

A Control Module
E Ground Fault
H Control Module Power Cord
J 240 V Outlet
K Heated Hose Power Connection
Q Proportioner Recirculation Manifold
S Solvent Hose
T Fluid Temperature Sensor (FTS)
U FTS Coupler
W Static Mixer
Y Gun or Applicator
AC Fluid Temperature Sensor Communication Cable

Key:

AD Communication Cable
AE A-Side Heated Hose
AF B-Side Heated Hose
AO Independent Plug-In Hose
AP A-Side Heat Inlet Fitting
AQ B-Side Heat Inlet Fitting
AR A-Side Recirculation Manifold
AS B-Side Recirculation Manifold
AU E-Mix XT
AV Mixed Material Line
AW Remote Mix Manifold

Component Identification

Control Module

2006697 (240 V, °F); 2006698 (240 V, °C)

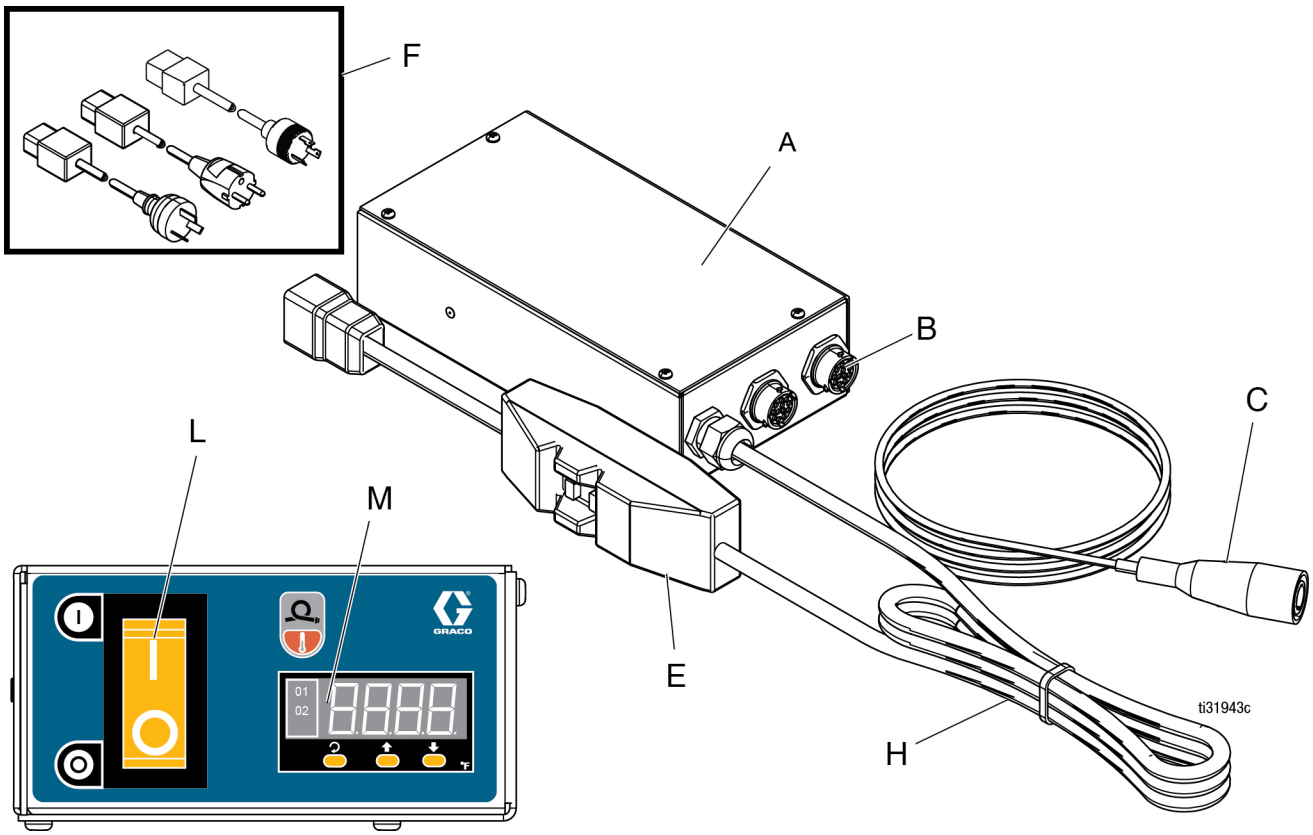


FIG. 2: Control Module Component Identification

Key:

A Control Module
B Heated Hose Connection
C Fluid Temperature Sensor (FTS) Cable
H Control Module Power Cord

Key:

E Ground Fault
F Power Cord Adapter
L ON/OFF Switch
M Temperature Control

Installation

This equipment is used with heated fluid, which can cause equipment surfaces to become very hot. To avoid severe burns:

- Do not touch hot fluid or equipment.
- Do not turn on hose heat without fluid in hoses.
- Allow equipment to cool completely before touching it.
- Wear gloves if fluid temperature exceeds 110°F (43°C).

Thermal expansion can cause over-pressurization, resulting in equipment rupture and serious injury, including fluid injection. Do not pressurize system when preheating hose.

Fluid hoses are marked with blue tape for major component (A-side) and green tape for minor component (B-side).

NOTICE

Incorrect connection of fittings can cause fluid cross-over and permanently damage the hose. Ensure correct hoses are paired with the corresponding fluid path (A-side=Blue, B-side=Green).

NOTICE

Heated hose must always contain fluid when hose power is on. Never apply power to an empty heated hose. Powering empty hoses may cause equipment damage.

NOTICE

Always completely unroll and bleed the air from the hose before each use. If the air is not bled from the hose, heat transfer from the heating conductor will not be uniform. In the worst case, the conductor can be damaged. The warranty is void in such cases.

Location

- Do not expose the Independent Plug-In Heated Hose to rain.

Electrical Requirements

- 200-240 V, 50/60 Hz required power source: single, dedicated circuit rated at a minimum of 16 A.
- Power cord connector (200-240 V):

NEMA L6-30P

Euro CEE 7/7

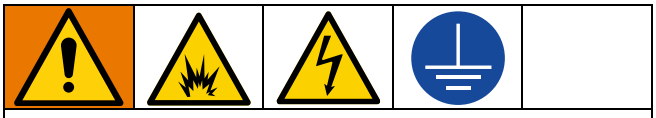
Australia/China

- Extension cord requirements:

Required Wire Size	
Up to 50 ft (15 m)	**Up to 100 ft (30 m)**
AWG 12	AWG 10

NOTE: Cords must be 3-conductor grounded and rated for your environment.

Grounding



The equipment must be grounded to reduce the risk of static sparking and electric shock. Electric or static sparking can cause fumes to ignite or explode. Improper grounding can cause electric shock. Grounding provides an escape wire for the electric current.

E-Mix XT: grounded through power cord.

Generator (if used): follow your local code. Start and stop generator with power cord(s) disconnected.

Spray gun: grounded through fluid hoses and properly grounded proportioner and hose Control Module.

Control Module: grounded through power cord.

Independent Plug-In Heated Hose: grounded through a properly grounded proportioner and the Control Module.

Fluid supply container: follow local code.

Object being sprayed: follow local code.

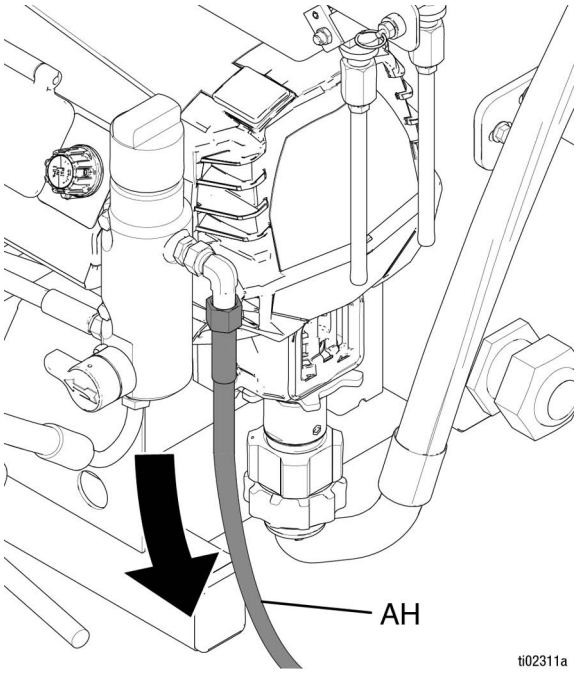
Solvent pails used when flushing: follow local code. Use only conductive metal pails, placed on a grounded surface. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts grounding continuity. Attach the grounding wire included with your E-Mix XT to the pail. Refer to the E-Mix ZT manual for more information.

To maintain grounding continuity when flushing or relieving pressure: hold metal part of the spray gun/dispense valve firmly to the side of a grounded metal pail, then trigger the gun/valve.

Remote Mount Mix Manifold

1. Follow the **Pressure Relief Procedure**, page 22. Follow **Solvent Pump Pressure Relief** from your E-Mix XT Operation manual.

2. Disconnect the 3 foot Solvent Hose (AH) from the solvent pump.



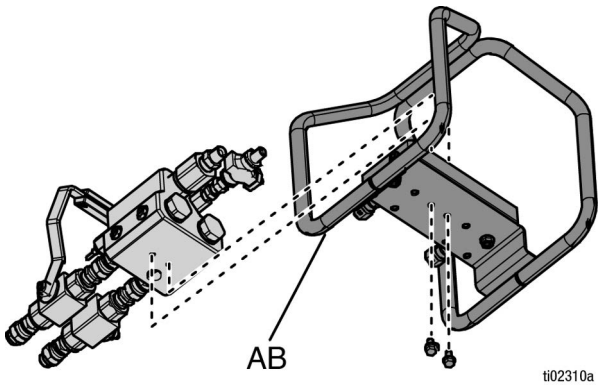
3. Remove two nuts and U-bolt holding the Static Mixer (W) in place.

4. Loosen two bolts on the back of the mix manifold. This will allow it to slide down.

5. Disconnect NPSM fittings on mix manifold assembly from the Recirculation Manifold.

6. While supporting the mix manifold assembly, remove the two bolts on the back of the mix manifold.

7. Using the same two bolts, mount the mix manifold assembly to the Carriage (AB).



Connect Hoses to Proportioner

NOTICE

Heated hose must always contain fluid when hose power is on. Never apply power to an empty heated hose. Powering empty hoses may cause equipment damage.

NOTICE

Always completely unroll and bleed the air from the hose before each use. If the air is not bled from the hose, heat transfer from the heating conductor will not be uniform. In the worst case, the conductor can be damage. The warranty is void in such cases.

1. Before installing Independent Plug-In Heated Hose, prepare all previously installed fluid hoses for storage.
   a. Follow the **Pressure Relief Procedure**, page 22.
   b. Flush fluid hoses with the appropriate solvent. Follow the **Flush Material Lines** procedure, page 24.
   c. Fill fluid hoses with hydraulic oil. Follow the same steps from the **Flush Material Lines** procedure but with oil in the hoppers, page 24.
   d. Remove hoses from the system and cap ends to lock hydraulic oil in the hose for storage.
2. Attach the Heated Hose Inlet Fittings (AP, AQ) to the Recirculation Manifolds (AR, AS). See FIG. 3.

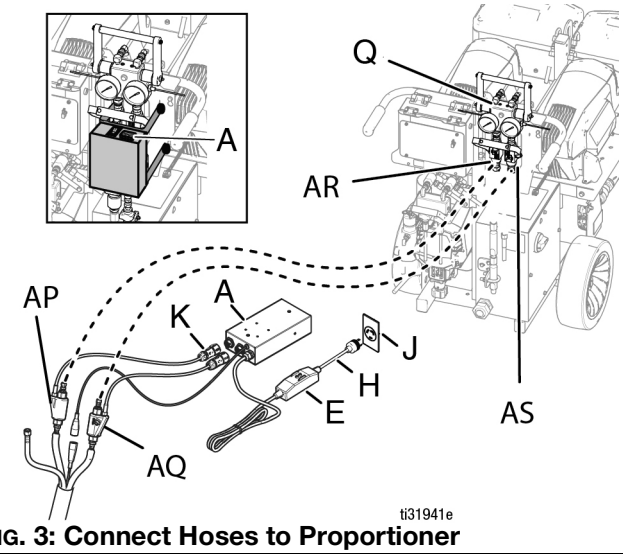


FIG. 3: Connect Hoses to Proportioner

3. Connect the Heated Hose Power Connection (K) to the Control Module (A) connectors.
4. Connect the FTS Communication Cable (C) from the Control Module to the Communication Cable (AD) in the hose bundle.
5. Connect the Solvent Hose (S) from the hose bundle to the outlet of the solvent pump (AZ). See FIG. 4.

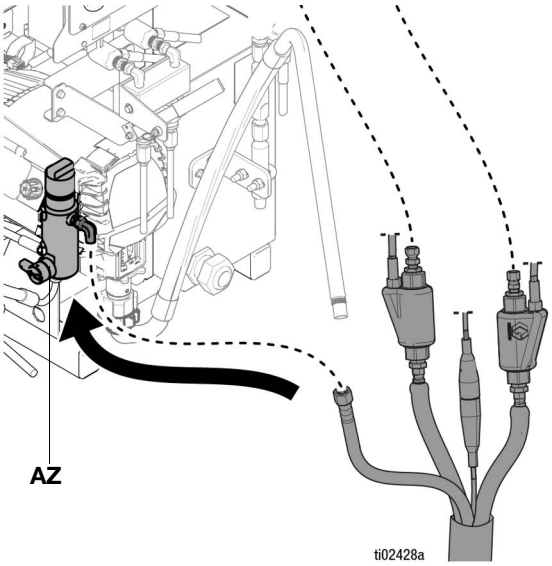


FIG. 4: Connect Solvent Hose to Solvent Pump

6. If you performed step 1, flush the hydraulic oil from the system with solvent. Follow the **Flush Material Lines** procedure, page 24.
7. **Flush (Prime) A and B Heated Hose Fluid Lines**, page 20. Ensure clean material is exiting both fluid hoses before connecting the Control Module Power Cord (H) to a power source.

NOTE: For installing the 200-240 V Control Module (A), choose the correct Power Cord Adapter (F) for your region. See **Control Module**, page 34, for power cord adapter parts.

Connect Solvent Hose to Mix Manifold

Using the 1/4” nipple fitting (AJ), connect the Solvent Hose (S) to the 3 foot Solvent Hose (AH) that is attached to the system.

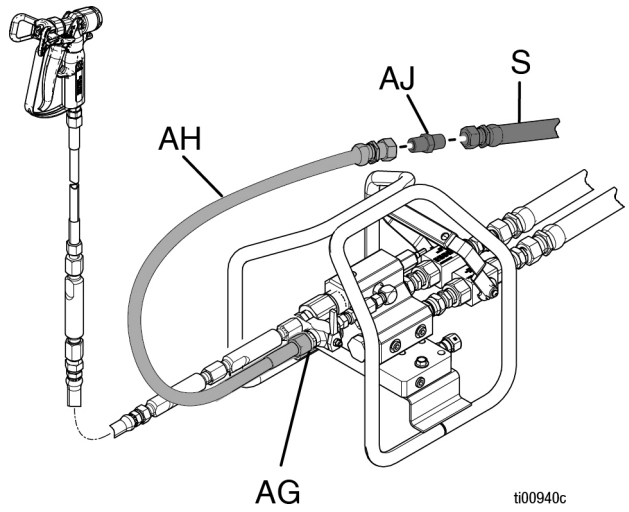


FIG. 5: Connect Solvent Hose to Mix Manifold

Connect Fluid Temperature Sensor (FTS) to Heated Hose

NOTICE

To prevent damage to FTS Probe (AT), do not kink or excessively bend hose or probe. Do not coil hose tighter than a bend radius of 1.5 ft (0.5 m). Do not subject hose to excessive weight, impact, or other abuse.

1. Feed FTS Probe (AT) into A-Side Heated Hose (AE).
2. Tighten NPSM fitting on A-Side Heated Hose (AE) to FTS (T). Ensure FTS Communication Cable (AC) is towards the hose bundle.
3. Tighten NPSM fitting on B-Side Heated Hose (AF) to FTS Coupler (U).
4. Connect FTS communication cable (AC) to communication cable (AD) from the heated hose bundle.

Connect Fluid Temperature Sensor to Mix Manifold

1. Tighten NPSM fitting on A-Side Mix Manifold Inlet (AA) to FTS (T).
2. Tighten NPSM fitting on B-side Mix Manifold Inlet (Z) to FTS Coupler (U).

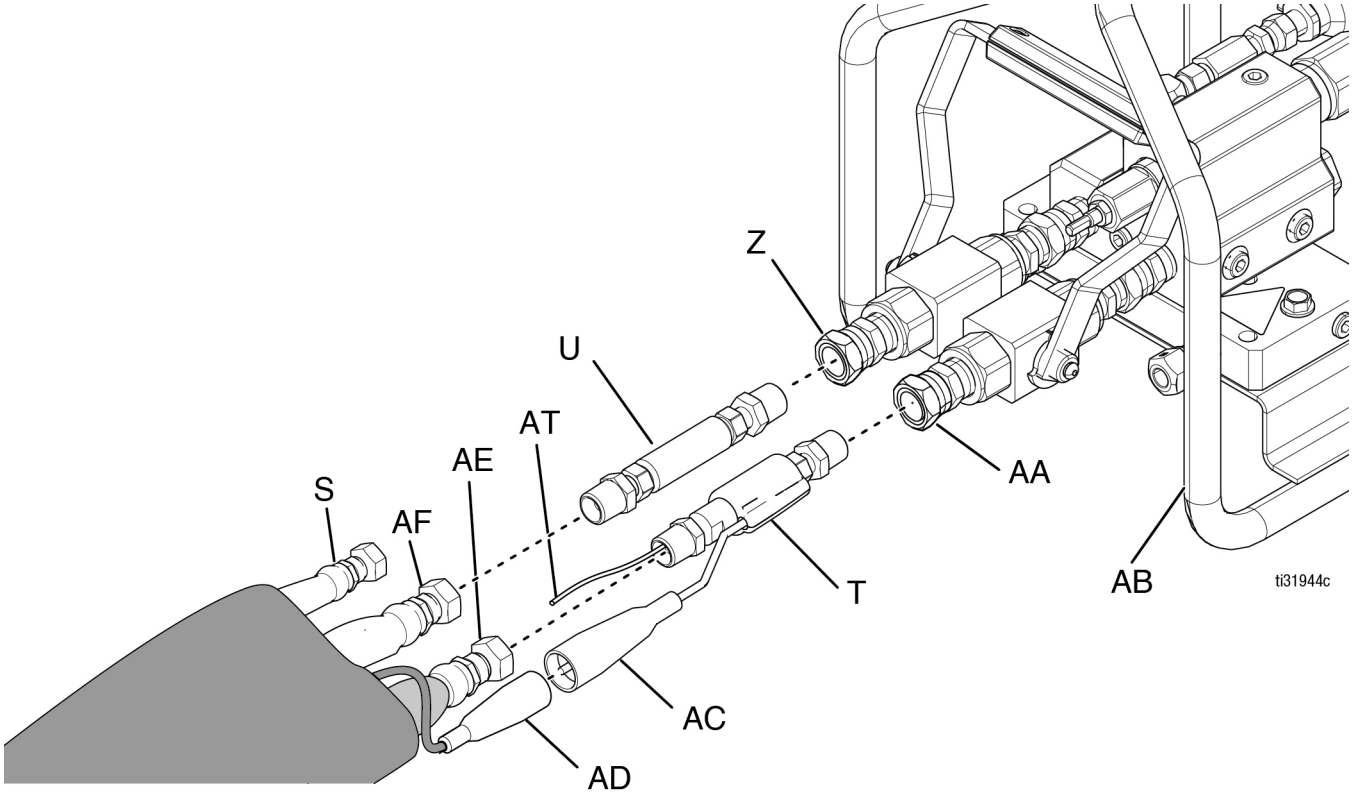


FIG. 6: Connect FTS/Coupler to Hose and Mix Manifold

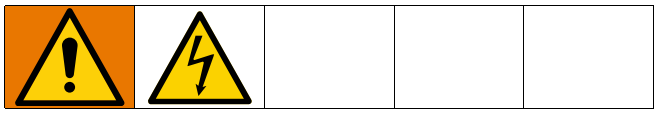
Key:

AA A-Side Mix Manifold Inlet
AB Carriage
AC FTS Communications Cable
AD Communication Cable
AE A-Side Heated Hose
AF B-Side Heated Hose

Key:

AT FTS Probe
S Solvent Hose
T Fluid Temperature Sensor (FTS)
U FTS Coupler
Z B-Side Mix Manifold Inlet

Mount Control Module



1. Turn off the main power switch on the E-Mix XT electrical control box.
2. Using installation kit 2006565, mount the Control Module (A) to the E-Mix XT. See FIG. 7.
3. Thread in thumb screws (AN) on recirculation manifold bracket leaving about 1/4” gap on each screw from the sheet metal surface.

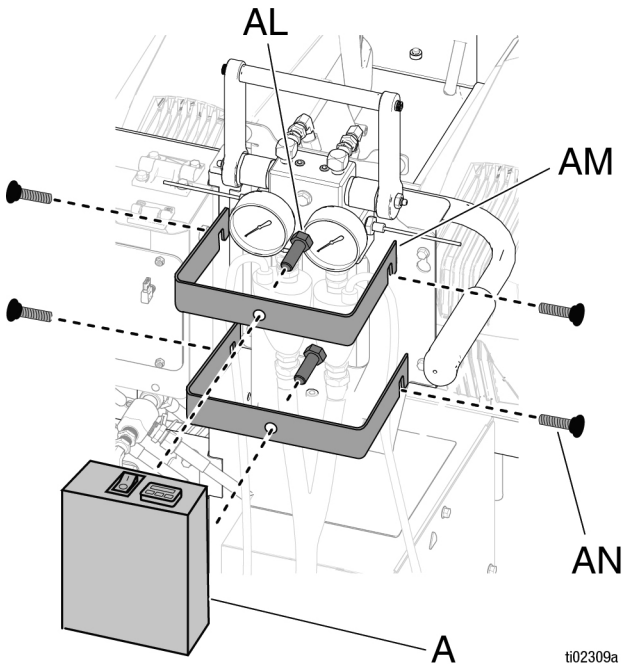


FIG. 7: Mount Control Module

4. Position the Control Module on the thumb screws. Tighten thumb screws by hand or by 3/16” hex drive. See FIG. 8 for final assembly.

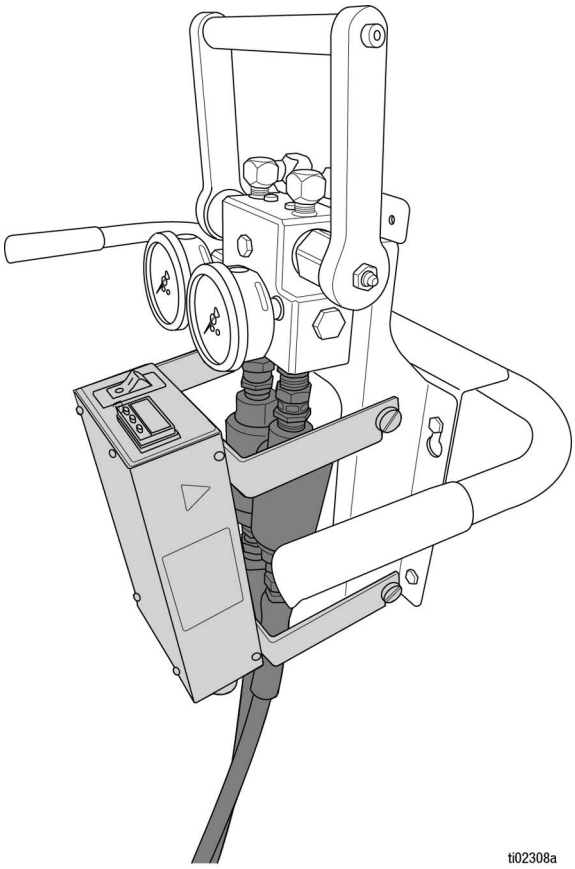


FIG. 8: Control Module Final Assembly

Flush (Prime) A and B Heated Hose Fluid Lines

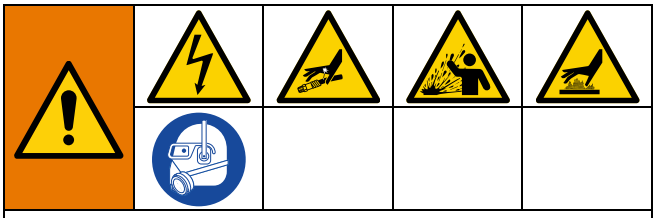
NOTE: Refer to the E-Mix XT Operation manual for more information on Advanced Display Module controls.

1. Connect the heated hose bundle to the E-Mix XT proportioner with the termination of the hose bundle still disconnected. See **Connect Hoses to Proportioner**, page 16.
2. Place the A-side hose termination into a grounded waste container.
3. Turn the E-Mix XT to jog mode using the Advanced Display Module. Run jog mode with the handles on your recirculation and mix manifold set to spray. This will push A material through your hose and flush any solvent or contaminates in your hose line into the waste container.
4. Once clean A material is through the entire line, turn off jog mode on your E-Mix XT.
5. Repeat steps 2-4 for B-side hose.
6. Connect Fluid Temperature Sensor (FTS) kit to the heated hose. See **Connect Fluid Temperature Sensor (FTS) to Heated Hose**, page 18.
7. Connect the Solvent Hose from the bundle to the E-Mix XT proportioner, see **Connect Hoses to Proportioner**, page 16. Then connect the termination of the Solvent Hose to the mix manifold solvent flush hookup, see **Connect Solvent Hose to Mix Manifold**, page 17.
8. Use solvent pump to flush the mixed material line before filling with material. See **Flush Mixed Material Line**, page 23.
9. Turn E-Mix XT to spray mode using the Advanced Display Module (ensure handles are in the correct orientation). Run the spray mode at desired ratio while letting the material prime the mix hose. Turn off spray mode on the Advanced Display Module and follow the **Pressure Relief Procedure**, page 22.

Check Hoses for Leaks

1. Prime hoses with material. See **Flush (Prime) A and B Heated Hose Fluid Lines**, page 20.
2. Pressure check hoses. Turn on spray mode using the Advanced Display Module. Starting at low pressure and gradually increasing until desired spray pressure is achieved without any leaks. If there are leaks, relieve pressure as instructed in **Pressure Relief Procedure**, page 22.
3. After all lines are free of air, check for leaks. If there are leaks, relieve pressure as instructed in **Pressure Relief Procedure**, page 22.
4. Tighten connections, then pressurize again to ensure leaks have stopped. If leaks have not stopped, replace fittings and hoses as necessary.
5. Follow **Pressure Relief Procedure**, page 22.

Operation



Do not operate a coiled hose. A coiled hose creates uneven heat buildup, which can result in hose rupture and cause serious injury, including skin injection.

To prevent hose rupture, hose must be properly supported. Avoid excessive strain due to weight, bending, sharp edges, or stress caused by running over a roof edge.

To prevent over-pressurization caused by thermal expansion, do not pressurize system when pre-heating hose. Set RECIRC/SPRAY valves to RECIRC to relieve the fluid expansion during heating.

NOTICE

Heated hose must always contain fluid when hose power is on. Never apply power to an empty heated hose. Powering empty hoses may cause equipment damage.

NOTICE

Always completely unroll and bleed the air from the hose before each use. If the air is not bled from the hose, heat transfer from the heating conductor will not be uniform. In the worst case, the conductor can be damaged. The warranty is void in such cases.

1. Plug in Control Module (A).
2. Test the GFCI:
   a. Press the TEST button. The indicator will change from active to inactive, indicating that the GFCI has tripped.
   b. Press the RESET button. The indicator will change back to active when the GFCI has been reset to active.

NOTE: Test the GFCI on a daily basis.

3. Follow Setup, Startup, and Operation procedures in the E-Mix XT Operation manual.
4. Turn on hose heat with ON/OFF switch (L). Heated hose is ready for operation.

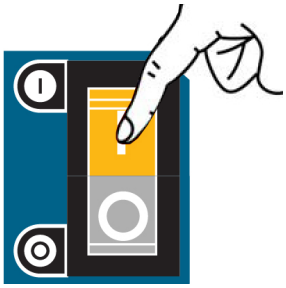


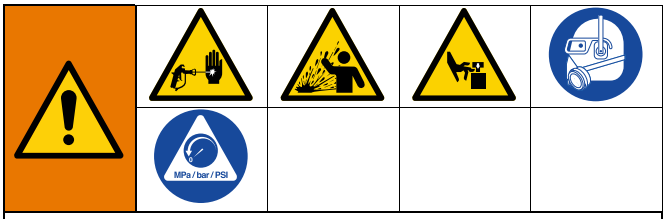
FIG. 9: ON/OFF Switch

NOTE: Unplug Control Module Power Cord (H) when not in use.

5. Follow the **Control Module Temperature Setup**, page 25.

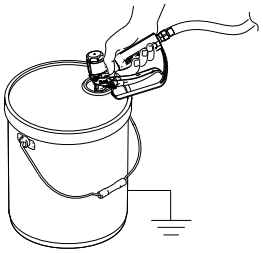
Pressure Relief Procedure

Follow the Pressure Relief Procedure whenever you see this symbol.

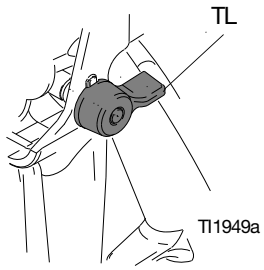


This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

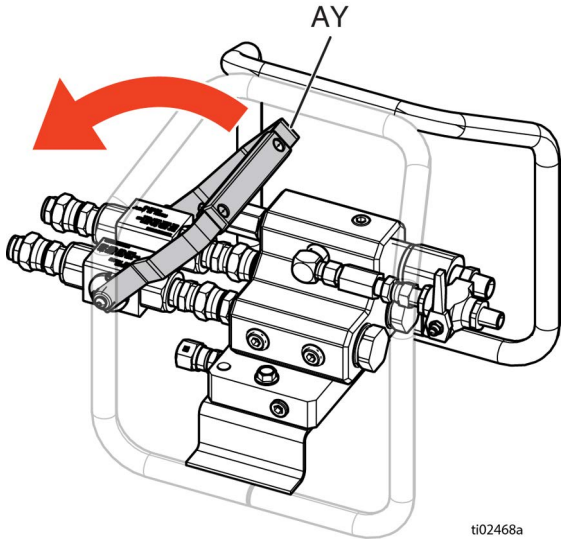
1. Use the Advanced Display Module to stop the system by pressing the Displacement Pump ON/OFF Switch on the home screen. See **Proportioner Control Panel** in the E-Mix XT Operation manual.
2. Turn OFF the heaters using Primary Heater A and B ON/OFF Switch on the home screen of the Advanced Display Module. See **Temperature Control Panel** in the E-Mix XT Operation manual.
3. Turn the Main Power Switch to OFF.
4. Turn off the feed pumps or solvent pumps, if used. Follow the **Solvent Pump Pressure Relief** procedure in the E-Mix XT Operation manual.
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.



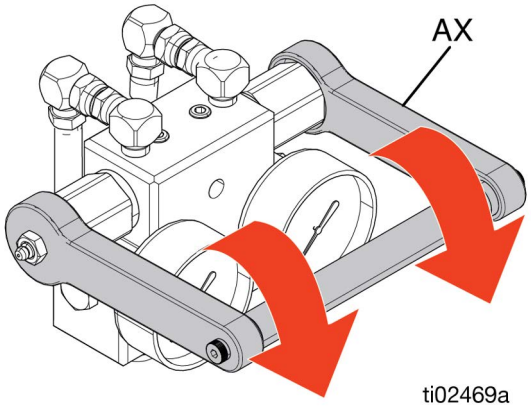
6. Engage the trigger lock (TL).



7. Close the Dual Shutoff Handle (AY).



8. Open the Recirculation Handle (AX) 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.

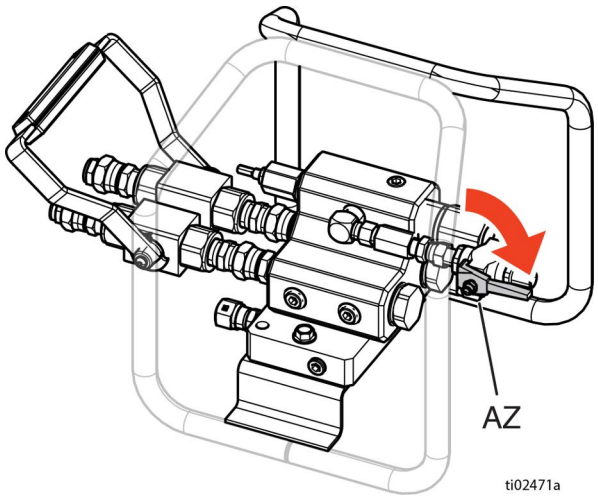
Flush Mixed Material Line

To avoid fire and explosion:

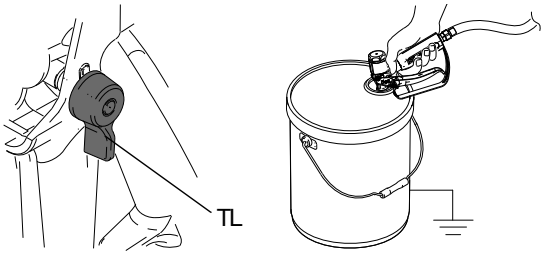
- Flush equipment only in a well-ventilated area.
- Ensure E-Mix system is off on the Advanced Display Module and pressure is relieved.
- Ensure recirculation handle is in recirculation position.
- Ensure mix manifold handle is closed in recirculation position.
- Do not turn on heat to hoses until fluid lines are clear of solvent.
- Flush at the lowest possible pressure.

- Generally, flush equipment if it will be shut down for more than 3 days. Flush more often if material is moisture-sensitive, if humidity is high in the storage area, or if material may separate or settle out over time.
- Use solvent pump to flush mixed material from lines as necessary based on pot life of material and down time between trigger pulls. Refer to your material data sheet for more information.
- Use the lowest possible pressure when flushing.
- Always leave some type of fluid in system. Do not use water.
- For long-term storage, flush out the solvent with a storage fluid such as a clean light oil.

1. Follow the **Pressure Relief Procedure**, page 22.
2. Turn the solvent pump (AZ) ON and reduce it to the lowest pressure.



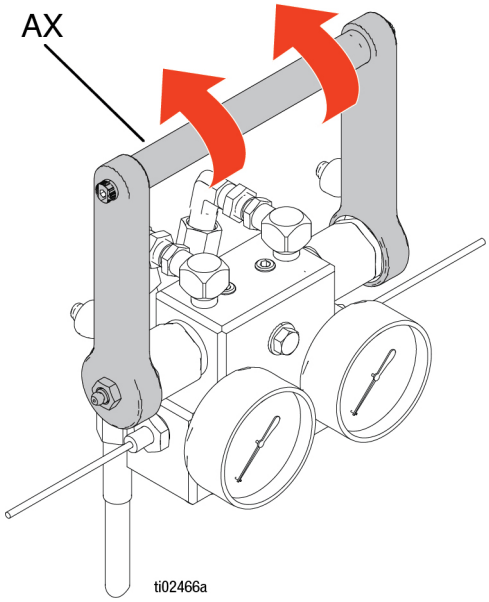
3. Open the Solvent Flush Valve.
4. Disengage the trigger lock (TL), hold the Spray Gun against a grounded metal pail, and trigger the Spray Gun into the pail. Use a pail lid with a hole to dispense through. Seal around the hole and Spray Gun with a rag to prevent splash back. Be careful to keep fingers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

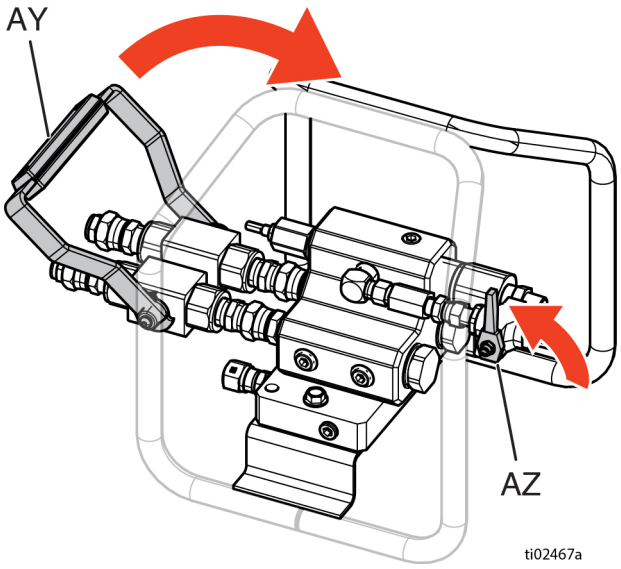


5. Turn the solvent pump (AZ) OFF.
6. Hold a metal part of the Spray Gun against a grounded metal pail and trigger the Spray Gun to relieve pressure. Close the Solvent Flush Valve after relieving the pressure.
7. Engage the trigger lock (TL). Disassemble and clean the spray tip with solvent by hand.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

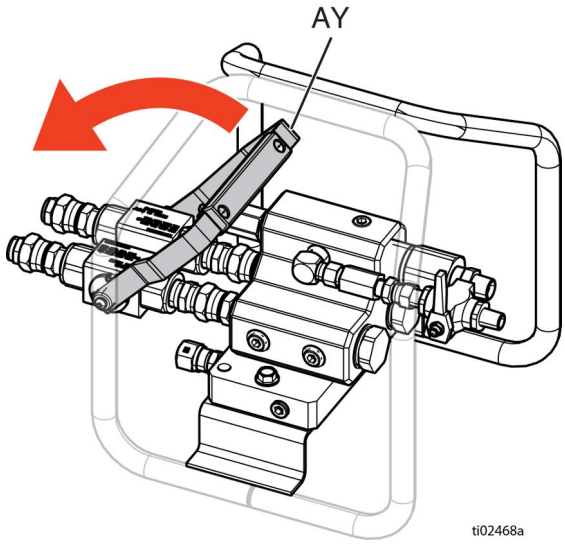
Flush Material Lines

1. Follow the **Flush Mixed Material Line** procedure, page 23.
2. Close the Recirculation Handle (AX). Open the Dual Shutoff Handle (AY) and close the Flush Sprayer Ball Valve (AZ).





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 **Proportioner Control Panel** in the E-Mix XT Operation manual.
8. Lift to close the Dual Shutoff Handle (AY).



9. Follow the **Pressure Relief Procedure**, page 22.

Control Module Temperature Setup

The Control Module is factory-programmed. The only user-programmable parameters are temperature setpoint “SP1” and temperature units “UNIT” (°C or °F).

Thermal expansion can cause over-pressurization, resulting in equipment rupture and serious injury, including fluid injection. Do not pressurize system when preheating hose.

To avoid fire and explosion, use only Graco-supplied, pre-programmed Temperature Controls. If you encounter a problem with a Temperature Control, order a replacement.

Adjust Temperature Setpoint

NOTICE

Heated hose must always contain fluid when hose power is on. Never apply power to an empty heated hose. Powering empty hoses may cause equipment damage.

NOTICE

Always completely unroll and bleed the air from the hose before each use. If the air is not bled from the hose, heat transfer from the heating conductor will not be uniform. In the worst case, the conductor can be damaged. The warranty is void in such cases.

1. Turn on power to Control Module (A) using ON / OFF switch (L).
2. Wait five seconds. Initial information displayed on Temperature Control (M) during startup is background data that does not affect hose performance.
3. Press (SCROLL).
4. When module screen displays “SPI,” use (UP) and (DOWN) to select desired setpoint.
5. Once desired setpoint is reached, press both (UP) and (DOWN) at the same time to return to actual temperature display. Hose is now controlling temperature to desired setpoint.

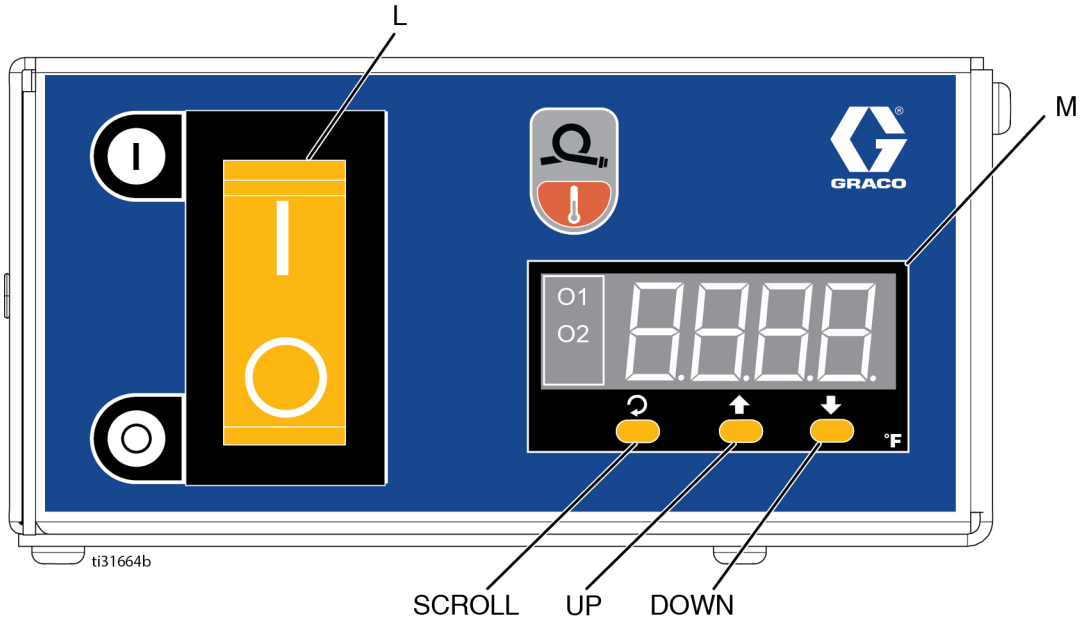


FIG. 10: Control Module Display and Switch

Change Temperature Units

1. Enter the setup menu by pressing  (SCROLL). “SP1” is shown on the display.

2. Press  (SCROLL) repeatedly until “LOCK” is shown on the display.

3. Press  (UP) or  (DOWN) arrow until “NONE” is shown on the display.

4. Press  (SCROLL) again until “UNIT” is shown on the display.

5. Press  (UP) or  (DOWN) arrow buttons until the desired unit of °C or °F is shown on the display.

6. Press  (SCROLL) to return to the setup menu. “UNIT” will be shown on the display again.

7. Press  (SCROLL) repeatedly until “LOCK” is shown on the display again.

8. Press  (UP) or  (DOWN) arrow buttons until “USER” is shown on the display.

9. Press  (SCROLL) to return to the setup menu. “LOCK” will be shown on the display again.

10. Return to the actual temperature display and normal operation by pressing  (UP) and  (DOWN) buttons at the same time.

Repair

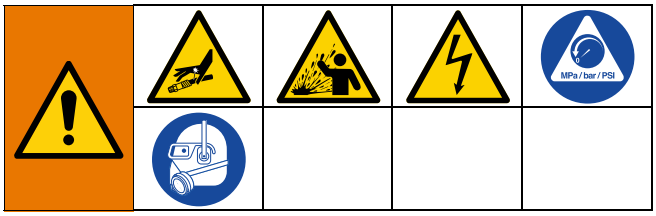
NOTE: The Control Module, Installation Kit, and Fluid Temperature Sensor contain parts that can be repaired. Refer to the **Parts** section on page 34. The heated hose section contains no serviceable components. Replace heated hose bundle as necessary.

Shutdown

NOTE: For breaks longer than 10 minutes, use the following shutdown procedure.

1. Turn the Control Module ON/OFF Switch (L) to OFF.
2. Follow **Overnight Shutdown** from the E-Mix XT manual.

Troubleshooting



1. Follow **Pressure Relief Procedure**, page 22.
2. Disconnect power to Control Module (A).

Online Troubleshooting

To view online help for error codes or troubleshooting, scan the QR code with your smartphone or visit help.graco.com.

Problem	Cause	Solution
Hose heats up slower than usual or does not reach set temperature.	Fluid temperature is too cold.	Ensure fluid temperature is within the equipment specifications. Ensure fluids are stored at chemical supplier specifications. Raise fluid temperatures as necessary.
	FTS failed or not installed correctly.	Verify correct FTS installation, page 16.
	Low supply voltage.	Verify line voltage. Low line voltage significantly reduces power available to hose heat system.
Hose temperature exceeds setpoint.	A and/or B heaters are overheating material.	Check primary heaters for faulty temperature sensors or heating elements. Consult proportioner manual for further troubleshooting steps.
	Faulty FTS connections.	Verify that all FTS connections are snug and that the connector pins are clean. See **Wiring Schematic**, page 39. Examine connection of FTS to Temperature Control (B) terminals. Unplug and re-plug FTS wires, cleaning off any debris. Unscrew wire terminals (TCM 1-9, TCM 1-10) on Temperature Control, clean the FTS wires, and re-tighten terminal screws.
	Missing/damaged insulation around FTS, causing the hose heat to be ON constantly.	Ensure hose bundle has adequate insulation evenly covering the entire length and connection joints.

Problem	Cause	Solution
Erratic hose temperature.	Faulty FTS connections.	Verify that all FTS connections are snug and that the connector pins are clean. See **Wiring Schematic**, page 39. Examine connection of FTS to Temperature Control (B) terminals. Unplug and re-plug FTS wires, cleaning off any debris. Unscrew wire terminals (TCM 1-9, TCM 1-10) on Temperature Control, clean the FTS wires, and re-tighten terminal screws.
	FTS not installed correctly.	FTS should be installed close to the end of the hose in the same environment as the Gun. Verify correct FTS installation, see page 18.
	Missing/damaged insulation around FTS, causing the hose heat to be ON constantly.	Ensure hose bundle has adequate insulation evenly covering the entire length and connection joints.
Hose temperature below setpoint or hose does not maintain temperature while spraying.	A and B setpoint is too low.	Increase A and B primary heater setpoint. Hose is designed to maintain temperature and provide the temperature increase shown in **Performance Chart**, page 38.
	Fluid temperature is too cold.	Ensure fluid temperature is within the equipment and chemical product specifications. Raise fluid temperatures as necessary.
	Fluid entering hose is below the minimum fluid inlet temperature to achieve the desired output temperature.	Review hose **Performance Chart**, page 38, and ensure the hose is operating within the hose performance limits. Solutions may require: • Increasing the inlet fluid temperature. • Increasing the primary heater temperature setting. • Reducing the flow rate to increase thermal transfer to fluids.
	Flow too high.	Use a smaller tip size. Decrease pressure.
	Hose was not fully preheated.	Wait for hose to preheat to correct temperature before spraying. Although the fluid within the hose may be at the desired operating temperature, the hose bundle may still be cool, reducing hose performance.
	Low supply voltage.	Verify line voltage. Low line voltage significantly reduces power available to hose heat system.
	Loose hose electrical connections.	Check all electrical connections inside Control Module (A). See **Wiring Schematic**, page 39. Inspect Control Module Power Cord and hose power cords. Repair or replace as necessary.

Problem	Cause	Solution
Hose does not heat.	Faulty FTS connections.	Verify that all FTS connections are snug and that the connector pins are clean. See **Wiring Schematic**, page 39. Examine connection of FTS to Temperature Control (B) terminals. Unplug and re-plug FTS wires, cleaning off any debris. Unscrew wire terminals (TCM 1-9, TCM 1-10) on Temperature Control, clean the FTS wires, and re-tighten terminal screws.
	FTS not installed correctly.	FTS should be installed close to the end of the hose in the same environment as the Gun. Verify correct FTS installation, see page 18.
	Temperature Control error or alarm.	Check temperature display for **Temperature Control Error Codes**, page 32.
	Loose hose electrical connections.	Check all electrical connections inside Control Module (A). See **Wiring Schematic**, page 39. Inspect Control Module Power Cord and hose power cords. Repair or replace as necessary.
	Hose zone not turned on.	Increase hose setpoint if necessary.
	Failed SSRs.	With hose heat on, verify line voltage at Hose Inlet Fittings (AP/AQ).
		Open Control Module (A). Inspect wiring to Temperature Control and SSRs. Replace SSRs or Temperature Control as necessary.
	Shorted connection or failed hose heating element.	Check hose resistance.
		Inspect the power supply for a tripped breaker and reset breaker as necessary.
		Inspect the GFCI for tripping and reset as necessary.
GFCI trips immediately.	Incorrect outlet wiring.	Make sure the power outlet is wired correctly with line and neutral wires in the correct locations.
	Shorted connection or failed hose heating element.	Check hose resistance.
	Unexpected current flow.	Inspect Temperature Control (M) wiring. Repair/replace as necessary.

Problem	Cause	Solution
No temperature display.	Control Module (A) power switch circuit breaker tripped.	Display is powered from control module power circuit breaker. To reset breaker, cycle Control Module power off  then on 
	Loose display cables on control board.	Check all electrical connections inside Control Module (A). See **Wiring Schematic**, page 39. Inspect Control Module Power Cord and hose power cords. Repair or replace as necessary.
	Failed Temperature Control (M).	Open Control Module (A). Ensure ON/OFF Switch (L) is operational. Inspect wiring to Temperature Control (M). See **Wiring Schematic**, page 39. If switch and wiring is correct, replace Temperature Control (M).
	Inadequate power to Temperature Control (M).	Check that power supply meets requirements.
	No electrical power (tripped electrical breaker or GFCI).	Plug in the Control Module (A). Inspect the power supply for a tripped breaker and reset breaker as necessary. Inspect the GFCI for tripping and reset as necessary.
	Shorted connection or failed hose heating element.	With hose heat on, verify line voltage at Hose Inlet Fittings (AP/AQ).
		Check hose resistance.
		Inspect the power supply for a tripped breaker and reset breaker as necessary.
		Inspect the GFCI for tripping and reset as necessary.
Wrong temperature displayed.	Incorrect Temperature Control (M) programming.	Check Temperature Control (M) programming for correct units (°F/°C).
		Replace Temperature Control (M).
	Faulty FTS connections.	Verify that all FTS connections are snug and that the connector pins are clean. See **Wiring Schematic**, page 39. Examine connection of FTS to Temperature Control (B) terminals. Unplug and re-plug FTS wires, cleaning off any debris. Unscrew wire terminals (TCM 1-9, TCM 1-10) on Temperature Control, clean the FTS wires, and re-tighten terminal screws.
	FTS not installed correctly.	FTS should be installed close to the end of the hose in the same environment as the Gun. Verify correct FTS installation, page 16.

Temperature Control Error Codes

Display Symbol	Error Description	Corrective Action
Er04	Illegal setup values	Do not modify Temperature Control parameters. Replace Temperature Control.
Er10	Communication error	Inspect Temperature Control wiring. See **Wiring Schematic**, page 39.
Er11	Communication error	Inspect Temperature Control wiring. See **Wiring Schematic**, page 39.
Er14	Communication error	Inspect Temperature Control wiring. See **Wiring Schematic**, page 39.
Er15	Communication error	Inspect Temperature Control wiring. See **Wiring Schematic**, page 39.
AtEr	Fail to perform auto-tuning function	Do not modify Temperature Control parameters. Replace Temperature Control.
EEPE	EEPROM write error	Replace Temperature Control.
CJEr	Cold junction compensation for thermocouple malfunction	Replace Temperature Control.
SbEr	Input sensor failure	Inspect FTS cabling and FTS sensor. Replace/repair as necessary.
AdEr	A to D converter malfunction	Replace Temperature Control.

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.

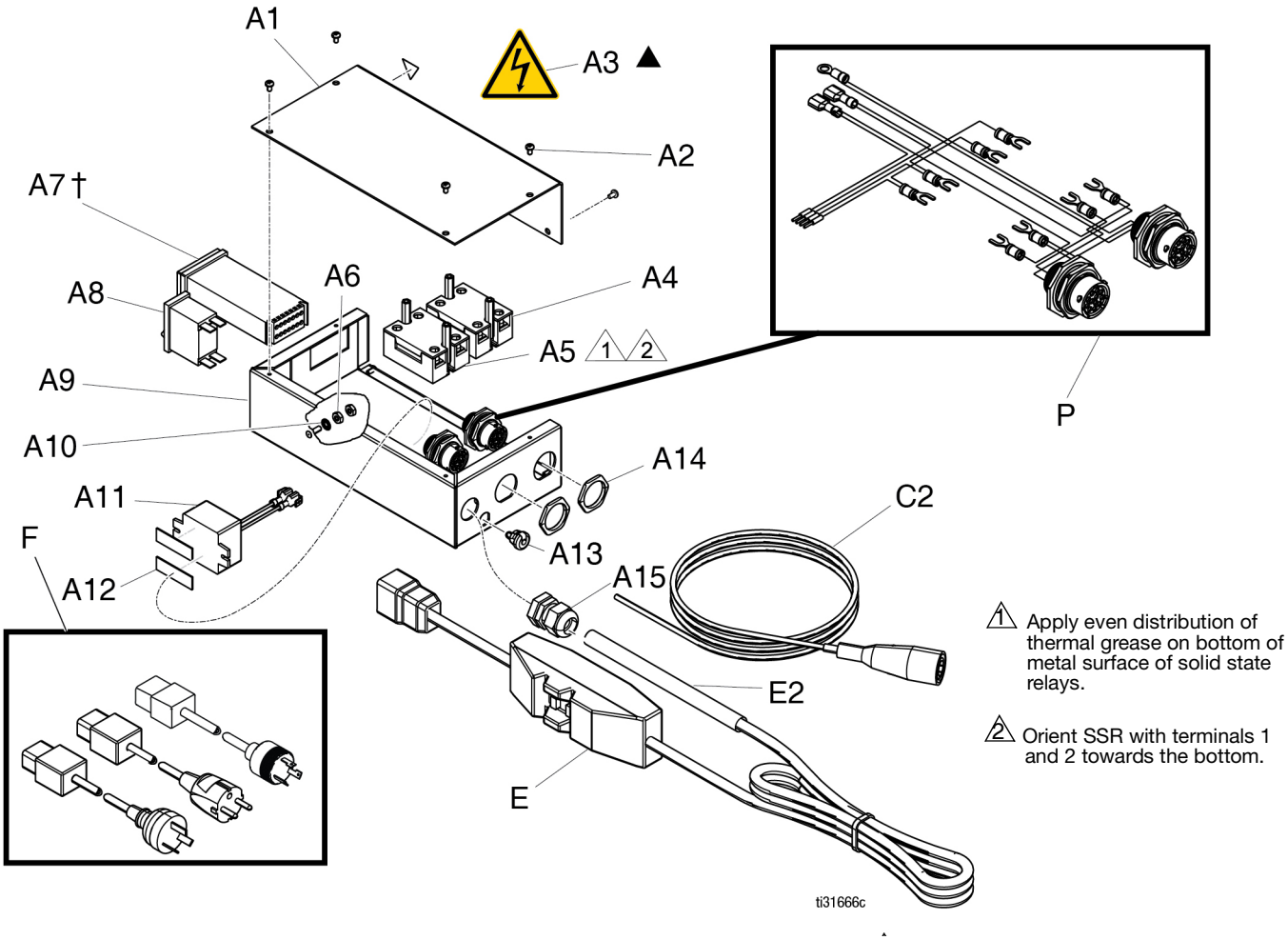
- Perform the **Pressure Relief Procedure**, page 22.
- Drain and dispose of fluids according to applicable regulations. Refer to the material manufacturer's Safety Data Sheet.
- Remove motors, batteries, circuit boards, LCDs (liquid crystal displays), and other electronic components. Recycle according to applicable regulations.
- Do not dispose of batteries or electronic components with household or commercial waste.

- Deliver remaining product to a recycling facility.

Parts

Control Module

2006697 (240 V, °F); 2006698 (240V, °C)



1 Apply even distribution of thermal grease on bottom of metal surface of solid state relays.

2 Orient SSR with terminals 1 and 2 towards the bottom.

Parts List

Ref.	Part	Description	Qty.
A1	----	COVER, enclosure (included in A9)	1
A2	-----	SCREW, enclosure (included in A9)	6
A3▲	189930	LABEL, warning	2
A4	128046	FASTENER, hex standoff	4
A5	129913	RELAY, solid state, 20 A, 24 VDC	2
A6	555388	NUT, hex, machine, 8-32	1
A7†	131372	CONTROL, temperature, °F	1
	131373	CONTROL, temperature, °C	1
A8	24K983	SWITCH, rocker, w/ breaker, 240 V, 20 A	1
A9	17S446	ENCLOSURE, electrical, painted	1
A10	555628	WASHER, #8 lock external	2
A11	25D308	FILTER, quick disconnect	1
A12	115711	TAPE, foam, 1/2 wide	2
A13	129598	GRIP, cord, snap-in	1
A14	----	NUT, harness (included in P)	2
A15	114421	BUSHING, strain relief	1
C2	17T493	CABLE, hose, control, 76 in.	1
E	17S974	CORD, power, heater, 240 V	1
E2	127371	SLEEVE, split, wired, 0.38 ID	1
F	2006535	CORD SET, adapter, NA, L6-30	1
◆	15G958	CORD SET, adapter, Europe, 1.5 mm	1
	15G962	CORD SET, adapter, Australia, 1.5 mm	1
P	17T137	HARNESS, electrical, heater	1

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

† *Part included in Kit 2006697 (purchase separately).*

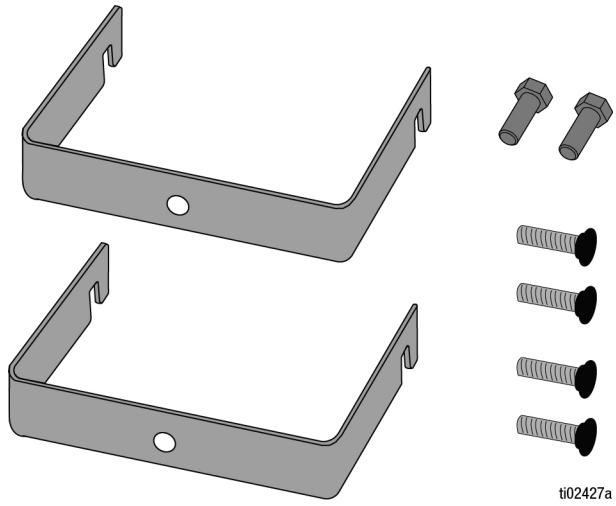
◆ *Part included in Kit 2006698 (purchase separately).*

NOTE: See **Wiring Schematic**, page 39.

Heated Hose Install Kit

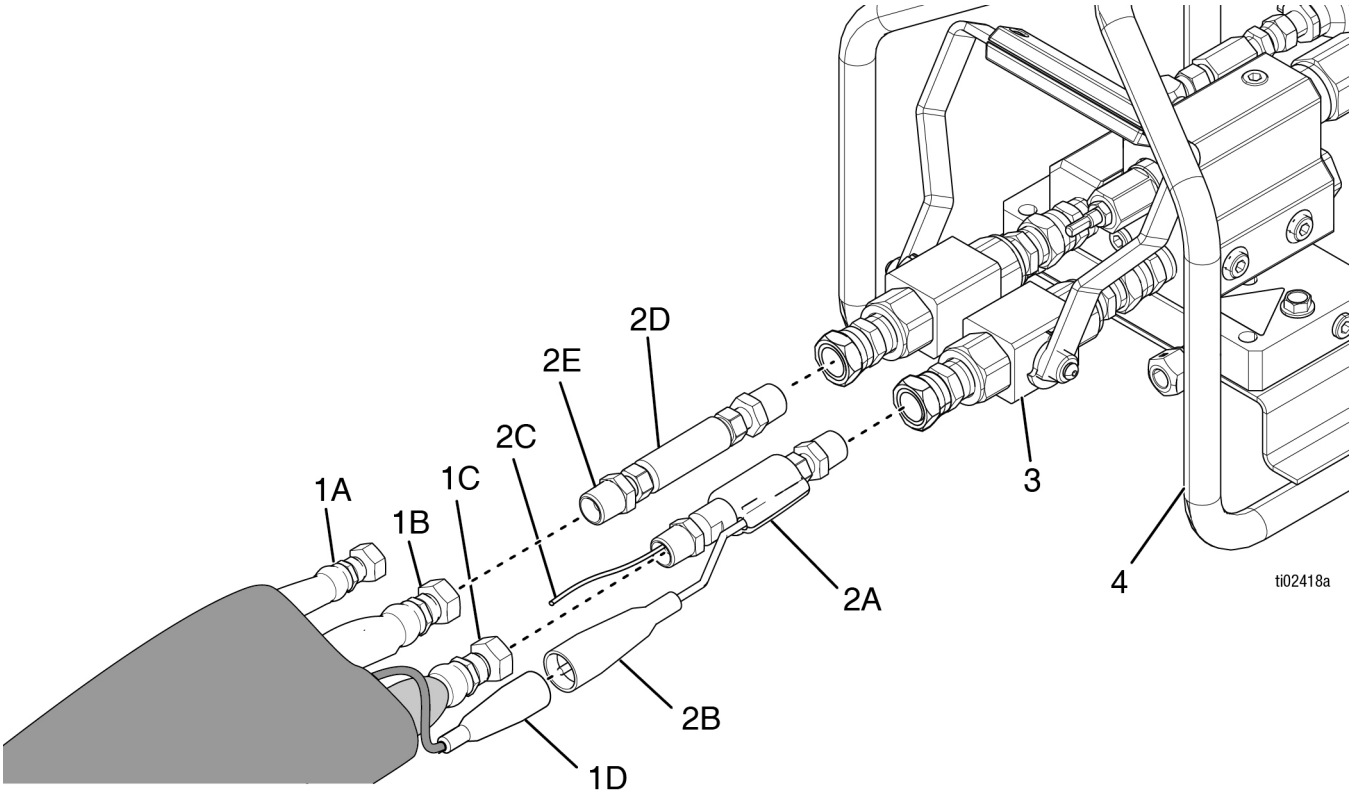
2006565

Part	Description	Qty.
-----	BRACKET, heated hose	2
-----	SCREW, 1/4-20	2
-----	SCREW, thumb, hex drive	4
-----	TIE, cable, 14.5”	5



Fluid Temperature Sensor (FTS)

2006606 (1/2” x 1/2”); 2006605 (1/2” x 3/8”)



Parts List

Ref.	Part	Description	Qty
1A†	-----	HOSE, solvent	1
1B†	-----	HOSE, B-Component	1
1C†	-----	HOSE, A-Component	1
1D†	-----	HOSE, communication cable	1
2A‡	-----	SENSOR, fluid temperature, 1/2” hose	1
2B‡	-----	CABLE, fluid sensor connector	1
2C‡	-----	PROBE, fluid sensor	1
2D‡	-----	FITTING, coupler, 3/8” hose	1
2E‡	162449	FITTING, nipple, reducing	4
3	262779	MANIFOLD, mix, 1/2 valve	1
4	262522	CARRIAGE	1

† *Included in Independent Plug-In Heated Hose, see* ***Models****, page 3. Hose bundle components are non-repairable. Replace as necessary.*

‡ *Included in FTS/Coupler kits, see* ***Models****, page 3.*

‡ *2006606 Kit FTS/Coupler, 1/2 x 3/8 Hose Bundle*

‡ *2006605 Kit FTS/Coupler, 1/2 x 1/2 Hose Bundle*

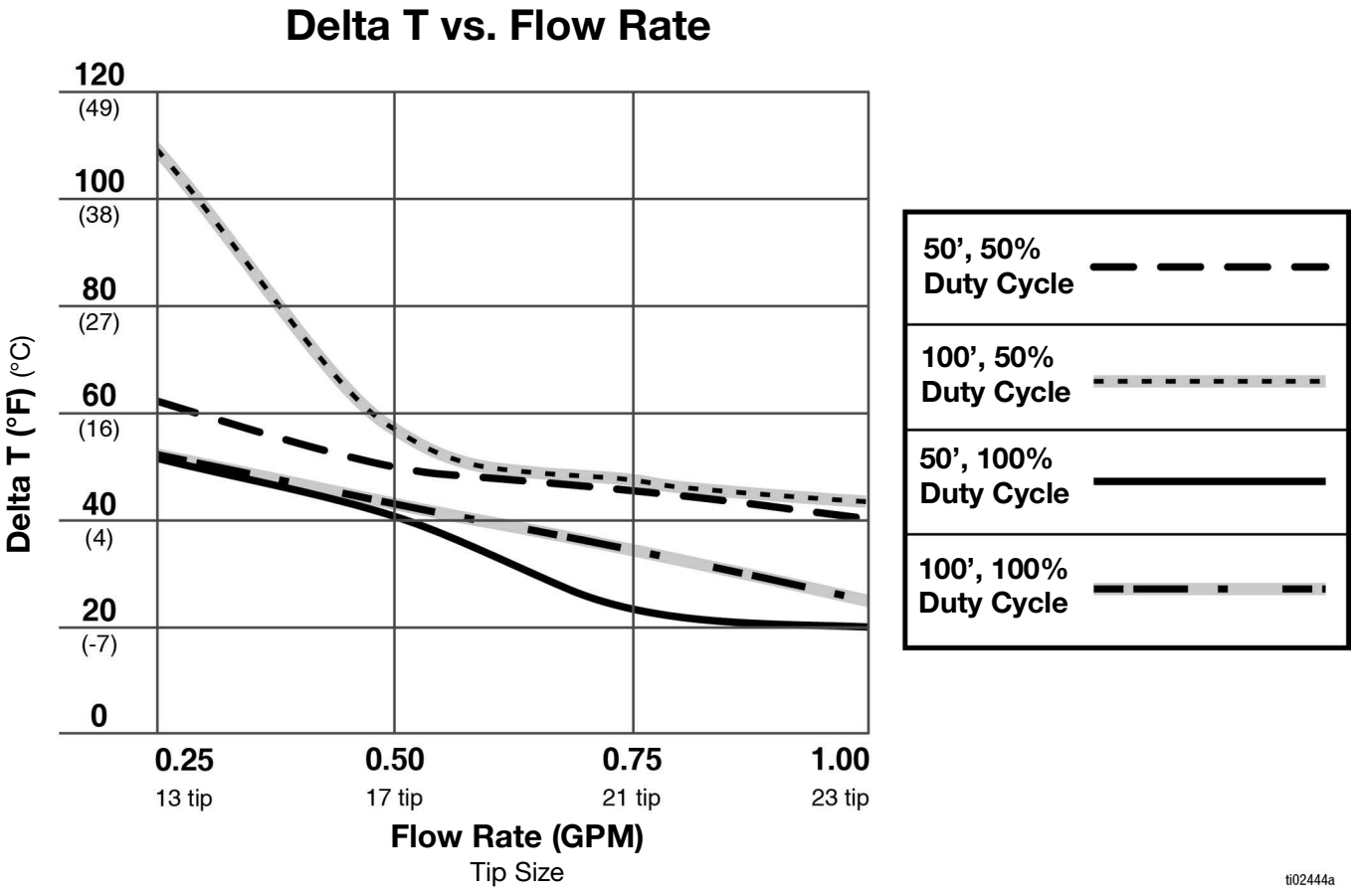
Accessories

Scuff Guard / Protective Cover

Use to keep hose clean and protect it from damage.

Part	**Description**
246078	50 ft (15.2m) braided blue polyester mesh. Fold back over itself for easy installation.
25M493	Full length Graco Xtreme-Wrap™ abrasion-resistant woven nylon sleeve for 50 ft (15.2 m) hoses

Performance Chart



NOTE: Performance chart is ran with ISO 46 oil. 50% duty cycle; 5 seconds on; 5 seconds off

Flow rates are based on a material viscosity of 50 cPs.

Wiring Schematic

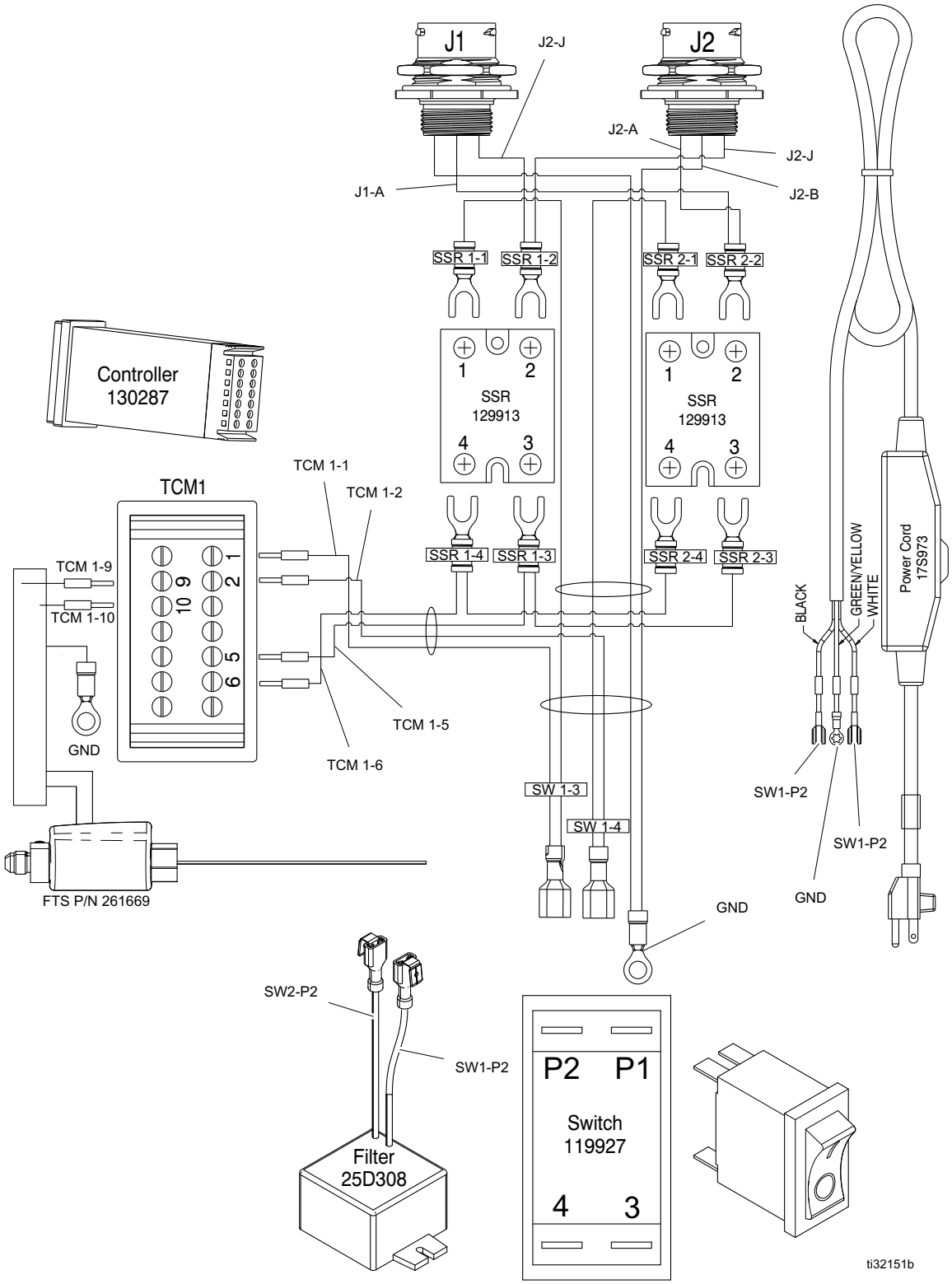


FIG. 11: Wiring Schematics

Technical Specifications

Independent Plug-In Heated Hose				
	US		**Metric**	
Minimum Fluid Operating Temperature	40° F		4° C	
Maximum Fluid Operating Temperature	160° F		71° C	
Maximum Fluid Working Pressure	5000 psi		34.5 MPa, 345 bar	
Fluid Outlets				
Component A	1/2” NPSM			
Component B	1/2” or 3/8” NPSM			
Electrical Requirements				
Part, Description	**Volts (V AC)**	**Current (A)**	**Power (W)**	**Resistance (Ω)**
HH5555, 1/2” x 1/2”, 50 ft. Heated Hose	240	6	1440	61.3-65.3
HH555X, 1/2” x 1/2”, 100 ft. Heated Hose	240	12	2880	36.0-40.0
HH5535, 1/2” x 3/8”, 50 ft. Heated Hose	240	6	1400	61.3-65.3
HH553X, 1/2” x 3/8”, 100 ft. Heated Hose	240	12	2880	36.0-40.0
Control Module				
Part, Description	**Volts (V)**	**Maximum Current (A)**	**Frequency (Hz)**	
2006697	240	16	50/60	
2006698	240	16	50/60	
Wetted Parts				
Wetted Parts	Nickel, zinc, PE-RT, ETFE, nitrile rubber, aluminum, zinc plating, carbon steel, brass			

California Proposition 65

CALIFORNIA RESIDENTS

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

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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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