Operation, Repair, and Parts

XP™ and XP-h™ Proportioners

3A0420ZAC

EN

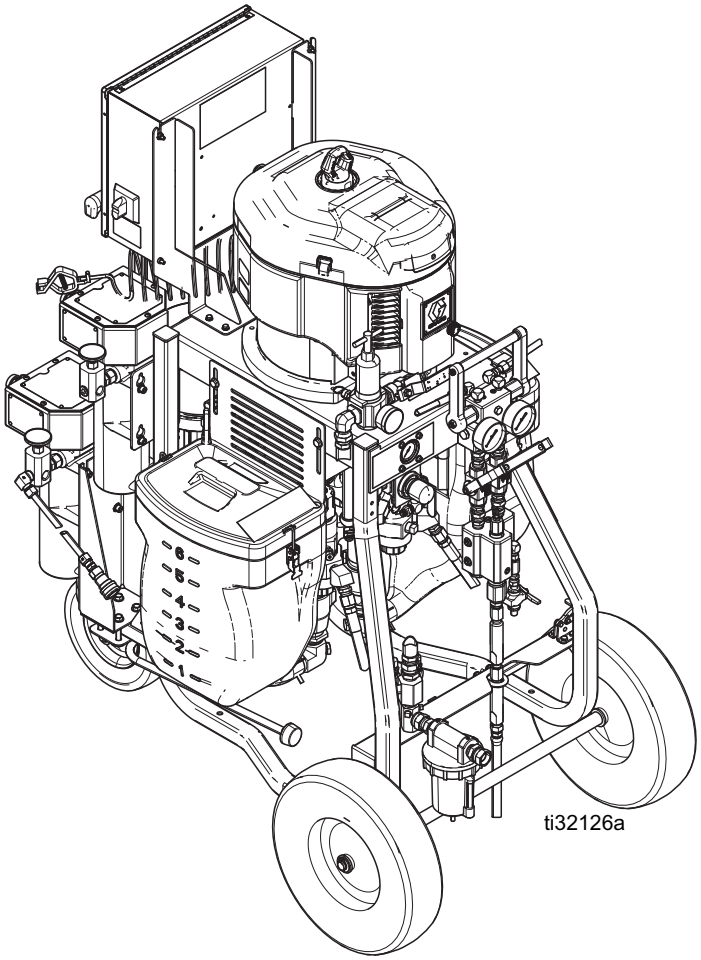
Mechanically linked fixed ratio plural-component system used for proportioning, mixing, and spraying two component coatings. For professional use only.

Not approved for use in explosive atmospheres or hazardous locations except where indicated in the Models section.

Important Safety Instructions

Read all warnings and instructions in this manual and in related manuals. Save these instructions.

See **Models** section (starting on page 11) for model numbers, descriptions, and agency approval designations.



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Related Manuals

Manuals are available at www.graco.com. Component manuals in English:

Manual	Description
312145	XTR™ 5 and XTR™ 7 Spray Guns, Instructions - Parts
Pump Package Components	
307158	Viscount® II Hydraulic Motor, Instructions - Parts
311238	NXT® Air Motor, Instructions - Parts
311762	Xtreme® Displacement Pumps, Instructions - Parts
334914	GH™ Power Pack, Instructions - Parts
Hopper Kits	
312747	20 Gallon Double Wall Hopper Kit, Instructions - Parts
406860	7 Gallon Hopper Installation Kit, Instructions - Parts
Heating	
309524	Viscon® HP Heater, Instructions - Parts
309525	Heated Hose Kit, Instructions - Parts
313259	Hopper or Hose Heat Circulation Kit, Instructions - Parts
406861	Heater Adapter Kit, Instructions - Parts
3A2954	Viscon HF Heater, Instructions - Parts
Solvent Flush	
310863	Feed and Solvent Flush Kits, Instructions - Parts
312794	Merkur® Pump Assembly, Instructions - Parts
Accessories and Kits	
309852	Polyurethane Circulation and Return Tube Kits, Instructions - Parts
311486	DataTrak™ Conversion Kit, Instructions - Parts
3A3320	XP and XP-hf PressureTrak Kit, Instructions - Parts
3A1331	XP Pressure Monitor Kit, Instructions - Parts
312769	Feed Pump and Agitator Kits, Instructions - Parts
339361	High Pressure Hose and Accessories, Brochure
3A0421	Ratio Check Kit, Instructions - Parts
3A0590	Mix Manifold, Quickset Mix Manifold, Instructions - Parts
3A2573	Gun Splitter Valve with Independent Flush, Instructions - Parts
406739	Desiccant Kit, Instructions - Parts

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

⚠ 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.

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.

SPECIAL CONDITIONS FOR SAFE USE

- If using the Viscon HP and HF Heaters see manuals for special conditions for safe use.
- If using the PressureTrak, see the manual for special conditions for safe use.

⚠ 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.
- Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** and disconnect all power sources.


ELECTRIC SHOCK HAZARD

This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.

- Turn off and disconnect power at main switch before disconnecting any cables and before servicing or installing 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.

⚠ 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 Sheet (SDS) 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.

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.

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.

BURN HAZARD

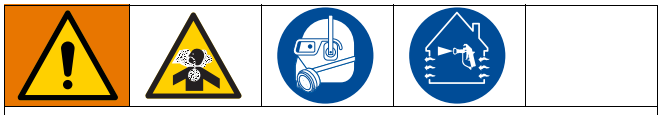
Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:

- Do not touch hot fluid or equipment.

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.

A and B Component Designations

Material suppliers and markets refer to plural component materials differently. The table below summarizes the different designations for the components used in various machines.

Market	Equipment	Designations	Machine Left Side	Machine Right Side
Foam and Polyurea, and Urethane Pour	All Reactors, HFR™, and VRM™	Letter	A	B
		Color	Red	Blue
		Component Names	ISO, Hardener, Catalyst	Polyol, Resin, Base
		Major or Minor Component (when not 1:1 mix)	Low Volume Side	High Volume Side
Epoxy and Urethane Protective Coatings	Hydra-Cat®, XtremeMix™, XM™, and XP	Letter	A	B
		Color	Blue	Green
		Component Names	Resin, Base	Hardener, Catalyst
		Major or Minor Component (when not 1:1 mix)	High Volume Side	Low Volume Side
Epoxy, Silicone, Urethanes, and other materials	PR70™ and PR	Letter	A	B
		Color	Red	Blue
		Component Names	Polyol, Resin, Base	ISO, Hardener, Catalyst
		Major or Minor Component (when not 1:1 mix)	High Volume Side	Low Volume Side

Overview

Usage

The XP system is a mechanically linked fixed ratio system that can mix and spray most two-component epoxy and urethane protective coatings.

When using quick-setting material (less than 10 minute pot life), the Remote Manifold Heater Block Kit (24Z934) is recommended for use (included in complete systems).

The two pumps are carbide seat severe duty positive displacement pumps that displace fluid on both strokes.

Using an XP system, or components on the system, not approved for hazardous locations or explosive atmospheres may result in a fire or explosion hazard.

The XP systems are not approved for use in hazardous locations unless the base model, all accessories, all kits, and all wiring meet local, state, and national codes.

See **Wire Systems with Explosion-Proof Heaters** on page 30.

Over Pressure Protection

Mechanically linked pumps can create excessive fluid pressure if the full motor force is applied to only one of the fluid pumps.

- *Cart-Mounted Systems Only:* Maximum air pressure set point blow off valves are provided to limit maximum fluid pressure. Do not remove these valves.
- Color coded automatic over pressure relief valves are used on cart-mounted systems to dump excess fluid pressure back to the supply. Never plug these return hoses. See **Fluid Circulation Manifold with Over Pressure Relief Valves** on page 56.
- When using an XP bare pump package to build a system, use the over pressure relief valves referenced above.
- Never install individual shut off valves on the “A” and “B” lines. On cart-mounted systems, common handles link the fluid control valves.
- A rupture disc is provided on the small side fluid pump (pumps 145 cc and smaller) as a back-up to the over pressure relief valve. If the rupture disc ever opens, do not operate the machine until the over pressure valve and the rupture disc have been replaced.
- If changing pump lowers or motor on your system, use the correct over pressure relief valves from the chart on page 57.

Approvals

CE	All systems CE marked except where noted by #.
Ex II 2 G c IIA T3	All systems noted by X (in Approval column) are Ex marked.

Models

Using an XP system, or components on the system, not approved for hazardous locations or explosive atmospheres may result in a fire or explosion hazard.

The XP systems are not approved for use in hazardous locations unless the base model, all accessories, all kits, and all wiring meet local, state, and national codes.

See **Wire Systems with Explosion-Proof Heaters** on page 30.

NOTE: See special conditions for safe use in Viscon HF Heater manual (3A2954) and Viscon HP Heater Manual (309524).

Pump sizes are marked on the pump cylinder; sizes are nominal. See technical data in manual 311762 for actual displacement.

XP 35 with NXT Air Motor

Models	Pump Package					Volume Mix Ratio					Max Regulated Air psi (MPa, bar)				Specifications		Includes										Approval
	281100	281200	262803	281300	281400	1.0 : 1	2.0 : 1	2.5 : 1	3.0 : 1	4.0 : 1	85 (0.59, 5.9)	90 (0.62, 6.2)	95 (0.65, 6.5)	100 (0.70, 7.0)	Max Fluid Working Pressure psi (MPa, bar)	Pressure Ratio (Fluid to Air)	7 Gallon Hoppers	Solvent Pump	HP Hazardous Location Heaters	HP Non-Hazardous Heater	Wiring Junction Box	HP Hazardous Location Hose Heater	HP Non-Hazardous Location Hose Heater	Hose Heat Circulation Pump	PressureTrak	XTR504 Spray Gun	35 ft. (10.7m) Fluid Hose	Ex Marked
281101	X					X							X		3500	38:1										X	X	X
281102	X					X							X		3500	38:1	X									X	X	X
281103	X					X							X		3500	38:1		X	X							X	X	X
281104	X					X							X		3500	38:1	X	X	X							X	X	X
574105	X					X							X		3500	38:1	X	X		X	X					X	X	
574106	X					X							X		3500	38:1	X	X	X			X		X	X	X	X	X
574107	X					X							X		3500	38:1	X	X		X	X		X	X	X	X	X	
281201		X					X				X				3500	40:1										X	X	X
281202		X					X				X				3500	40:1	X									X	X	X
281203		X					X				X				3500	40:1		X	X							X	X	X
281204		X					X				X				3500	40:1	X	X	X							X	X	X
574205		X					X				X				3500	40:1	X	X		X	X					X	X	
574206		X					X				X				3500	40:1	X	X	X			X		X	X	X	X	X
574207		X					X				X				3500	40:1	X	X		X	X		X	X	X	X	X	
262804			X					X						X	3400	34:1										X	X	X
281252			X					X						X	3400	34:1	X									X	X	X
281253			X					X						X	3400	34:1		X	X							X	X	X
281254			X					X						X	3400	34:1	X	X	X							X	X	X
574255			X					X						X	3400	34:1	X	X		X	X					X	X	
574256			X					X						X	3400	34:1	X	X	X			X		X	X	X	X	X
574257			X					X						X	3400	34:1	X	X		X	X		X	X	X	X	X	

XP 35 with NXT Air Motor (continued)

Models	Pump Package					Volume Mix Ratio					Max Regulated Air psi (MPa, bar)				Specifications		Includes										Approval
	281100	281200	262803	281300	281400	1.0 : 1	2.0 : 1	2.5 : 1	3.0 : 1	4.0 : 1	85 (0.59, 5.9)	90 (0.62, 6.2)	95 (0.65, 6.5)	100 (0.70, 7.0)	Max Fluid Working Pressure psi (MPa, bar)	Pressure Ratio (Fluid to Air)	7 Gallon Hoppers	Solvent Pump	HP Hazardous Location Heaters	HP Non-Hazardous Heater	Wiring Junction Box	HP Hazardous Location Hose Heater	HP Non-Hazardous Location Hose Heater	Hose Heat Circulation Pump	PressureTrak	XTR504 Spray Gun	35 ft. (10.7m) Fluid Hose	Ex Marked
281301				X					X				X		3500	36:1										X	X	X
281302				X					X				X		3500	36:1	X									X	X	X
281303				X					X				X		3500	36:1		X	X							X	X	X
281304				X					X				X		3500	36:1	X	X	X							X	X	X
574305				X					X				X		3500	36:1	X	X		X	X					X	X	
574306				X					X				X		3500	36:1	X	X	X			X		X	X	X	X	X
574307				X					X				X		3500	36:1	X	X		X	X		X	X	X	X	X	
281401					X					X		X			3500	38:1										X	X	X
281402					X					X		X			3500	38:1	X									X	X	X
281403					X					X		X			3500	38:1		X	X							X	X	X
281404					X					X		X			3500	38:1	X	X	X							X	X	X
574405					X					X		X			3500	38:1	X	X		X	X					X	X	
574406					X					X		X			3500	38:1	X	X	X			X		X	X	X	X	X
574407					X					X		X			3500	38:1	X	X		X	X		X	X	X	X	X	

XP50 with NXT 6500 Air Motor

Models	Pump Package							Volume Mix Ratio							Maximum Regulator Air psi (MPa, bar)				Specifications		Includes										Approvals
	282100	282150	282200	282250	282300	282330	282400	1.0 : 1	1.5 : 1	2.0 : 1	2.5 : 1	3.0 : 1	3.3 :1	4.0 : 1	85 (0.59, 5.9)	90 (0.62, 6.2)	95 (0.65, 6.5)	100 (0.70, 7.0)	Max Fluid Working Pressure psi (MPa, bar)	Pressure Ratio (Fluid to Air)	7 Gallon Hoppers	Solvent Pump	HP Hazardous Location Heaters	HP Non-Hazardous Location Heaters	Wiring Junction Box	HP Hazardous Location Hose Heater	HP Non-Hazardous Location Hose Heater	Hose Heat Circulation Pump	PressureTrak (Hazardous Location)	XTR504 Spray Gun	35 ft. (10.7m) Fluid Hose	Ex Marked
282101	X							X										X	4500	45:1										X	X	X
282102	X							X										X	4500	45:1	X									X	X	X
282103	X							X										X	4500	45:1		X	X							X	X	X
282104	X							X										X	4500	45:1	X	X	X							X	X	X
575105	X							X										X	4500	45:1	X	X		X	X					X	X	
575106	X							X										X	4500	45:1	X	X	X			X		X	X	X	X	X
575107	X							X										X	4500	45:1	X	X		X	X		X	X	X	X	X	
282151		X							X							X			5000	55:1										X	X	X
282152		X							X							X			5000	55:1	X									X	X	X
282153		X							X							X			5000	55:1		X	X							X	X	X
282154		X							X							X			5000	55:1	X	X	X							X	X	X
575155		X							X							X			5000	55:1	X	X		X	X					X	X	
575156		X							X							X			5000	55:1	X	X	X			X		X	X	X	X	X
575157		X							X							X			5000	55:1	X	X		X	X		X	X	X	X	X	
282201			X							X								X	4800	48:1										X	X	X
282202			X							X								X	4800	48:1	X									X	X	X
282203			X							X								X	4800	48:1		X	X							X	X	X
282204			X							X								X	4800	48:1	X	X	X							X	X	X
575205			X							X								X	4800	48:1	X	X		X	X					X	X	
575206			X							X								X	4800	48:1	X	X	X			X		X	X	X	X	X
575207			X							X								X	4800	48:1	X	X		X	X		X	X	X	X	X	
282251				X							X						X		5000	52:1										X	X	X
282252				X							X						X		5000	52:1	X									X	X	X
282253				X							X						X		5000	52:1		X	X							X	X	X
282254				X							X						X		5000	52:1	X	X	X							X	X	X
575255				X							X						X		5000	52:1	X	X		X	X					X	X	
575256				X							X						X		5000	52:1	X	X	X			X		X	X	X	X	X
575257				X							X						X		5000	52:1	X	X		X	X		X	X	X	X	X	

XP50 with NXT 6500 Air Motor (continued)

Models	Pump Package							Volume Mix Ratio							Maximum Regulator Air psi (MPa, bar)				Specifications		Includes										Approvals
	282100	282150	282200	282250	282300	282330	282400	1.0 : 1	1.5 : 1	2.0 : 1	2.5 : 1	3.0 : 1	3.3 :1	4.0 : 1	85 (0.59, 5.9)	90 (0.62, 6.2)	95 (0.65, 6.5)	100 (0.70, 7.0)	Max Fluid Working Pressure psi (MPa, bar)	Pressure Ratio (Fluid to Air)	7 Gallon Hoppers	Solvent Pump	HP Hazardous Location Heaters	HP Non-Hazardous Location Heaters	Wiring Junction Box	HP Hazardous Location Hose Heater	HP Non-Hazardous Location Hose Heater	Hose Heat Circulation Pump	PressureTrak (Hazardous Location)	XTR504 Spray Gun	35 ft. (10.7m) Fluid Hose	Ex Marked
282301					X							X						X	4500	45:1										X	X	X
282302					X							X						X	4500	45:1	X									X	X	X
282303					X							X						X	4500	45:1		X	X							X	X	X
282304					X							X						X	4500	45:1	X	X	X							X	X	X
575305					X							X						X	4500	45:1	X	X		X	X					X	X	
575306					X							X						X	4500	45:1	X	X	X			X		X	X	X	X	X
575307					X							X						X	4500	45:1	X	X		X	X		X	X	X	X	X	
282331						X							X			X			5000	56:1										X	X	X
282332						X							X			X			5000	56:1	X									X	X	X
282333						X							X			X			5000	56:1		X	X							X	X	X
282334						X							X			X			5000	56:1	X	X	X							X	X	X
282401							X							X				X	4800	48:1										X	X	X
282402							X							X				X	4800	48:1	X									X	X	X
282403							X							X				X	4800	48:1		X	X							X	X	X
282404							X							X				X	4800	48:1	X	X	X							X	X	X
575405							X							X				X	4800	48:1	X	X		X	X					X	X	
575406							X							X				X	4800	48:1	X	X	X			X		X	X	X	X	X
575407							X							X				X	4800	48:1	X	X		X	X		X	X	X	X	X	

XP70 with NXT 6500 Air Motor

Models	Pump Package						Volume Mix Ratio						Maximum Regulator Air psi (MPa, bar)				Specifications		Includes										Approvals
	571100	571150	571200	571250	571300	571400	1.0 : 1	1.5 : 1	2.0 : 1	2.5 : 1	3.0 : 1	4.0 : 1	80 (0.55, 5.5)	90 (0.62, 6.2)	95 (0.65, 6.5)	100 (0.70, 7.0)	Max Fluid Working Pressure psi (MPa, bar)	Pressure Ratio (Fluid to Air)	7 Gallon Hoppers	Solvent Pump	HP Hazardous Location Heaters	HP Non-Hazardous Location Heaters	Wiring Junction Box	HP Hazardous Location Hose Heater	HP Non-Hazardous Location Hose Heater	Hose Heat Circulation Pump	PressureTrak (Hazardous Location)	XTR704 Spray Gun	35 ft. (10.7 m) Fluid Hose	Ex Marked
571101	X						X									X	7250	73:1										X	X	X
571102	X						X									X	7250	73:1	X									X	X	X
571103	X						X									X	7250	73:1		X	X							X	X	X
571104	X						X									X	7250	73:1	X	X	X							X	X	X
576105	X						X									X	7250	73:1	X	X		X	X					X	X	
576106	X						X									X	7250	73:1	X	X	X			X		X	X	X	X	X
576107	X						X									X	7250	73:1	X	X		X	X		X	X	X	X	X	
571151		X						X					X				7250	91:1										X	X	X
571152		X						X					X				7250	91:1	X									X	X	X
571153		X						X					X				7250	91:1		X	X							X	X	X
571154		X						X					X				7250	91:1	X	X	X							X	X	X
576155		X						X					X				7250	91:1	X	X		X	X					X	X	
576156		X						X					X				7250	91:1	X	X	X			X		X	X	X	X	X
576157		X						X					X				7250	91:1	X	X		X	X		X	X	X	X	X	
571201			X						X						X		7250	76:1										X	X	X
571202			X						X						X		7250	76:1	X									X	X	X
571203			X						X						X		7250	76:1		X	X							X	X	X
571204			X						X						X		7250	76:1	X	X	X							X	X	X
576205			X						X						X		7250	76:1	X	X		X	X					X	X	
576206			X						X						X		7250	76:1	X	X	X			X		X	X	X	X	X
576207			X						X						X		7250	76:1	X	X		X	X		X	X	X	X	X	
571251				X						X						X	6500	65:1										X	X	X
571252				X						X						X	6500	65:1	X									X	X	X
571253				X						X						X	6500	65:1		X	X							X	X	X
571254				X						X						X	6500	65:1	X	X	X							X	X	X
576255				X						X						X	6500	65:1	X	X		X	X					X	X	
576256				X						X						X	6500	65:1	X	X	X			X		X	X	X	X	X
576257				X						X						X	6500	65:1	X	X		X	X		X	X	X		X	

XP70 with NXT 6500 Air Motor (continued)

Models	Pump Package						Volume Mix Ratio						Maximum Regulator Air psi (MPa, bar)				Specifications		Includes									Approvals
	571100	571150	571200	571250	571300	571400	1.0 : 1	1.5 : 1	2.0 : 1	2.5 : 1	3.0 : 1	4.0 : 1	85 (0.59, 5.9)	90 (0.62, 6.2)	95 (0.65, 6.5)	100 (0.70, 7.0)	Max Fluid Working Pressure psi (MPa, bar)	Pressure Ratio (Fluid to Air)	7 Gallon Hoppers	Solvent Pump	HP Hazardous Location Heaters	HP Non-Hazardous Location Heaters	Wiring Junction Box	HP Hazardous Location Hose Heater	HP Non-Hazardous Location Hose Heater	Hose Heat Circulation Pump	PressureTrak (Hazardous Location)	XTR704 Spray Gun	35 ft. (10.7 m) Fluid Hose	Ex Marked
571301					X						X					X	6800	68:1										X	X	X
571302					X						X					X	6800	68:1	X									X	X	X
571303					X						X					X	6800	68:1		X	X							X	X	X
571304					X						X					X	6800	68:1	X	X	X							X	X	X
576305					X						X					X	6800	68:1	X	X		X	X					X	X	
576306					X						X					X	6800	68:1	X	X	X			X		X	X	X	X	X
576307					X						X					X	6800	68:1	X	X		X	X		X	X	X	X	X	
571401						X						X				X	7250	73:1										X	X	X
571402						X						X				X	7250	73:1	X									X	X	X
571403						X						X				X	7250	73:1		X	X							X	X	X
571404						X						X				X	7250	73:1	X	X	X							X	X	X
576405						X						X				X	7250	73:1	X	X		X	X					X	X	
576406						X						X				X	7250	73:1	X	X	X			X		X	X	X	X	X
576407						X						X				X	7250	73:1	X	X		X	X		X	X	X	X	X	

XP Systems with No Lowers

Models	Compatible To	Pump Package without Pump Lowers		Recirculation Manifold			Includes				# Approvals	
	XP System	24M422	24M423	262784 (purple over-pressure valve)	262783 (gold over-pressure valve)	262806 (silver over-pressure valve)	Spray Gun	25 ft. Fluid Hose	10 ft. Whip Hose	10 ft. Recirculation Hose	CE Rated	Ex Marked
281000	XP35	X		X			XTR504	H43825	H42510	H52510		
282000	XP50		X		X		XTR504	H53825	H52510	H52510		
571000	XP70		X			X	XTR704	H73825	H72510	H52510		

These models without pump lowers are not operational and are not CE rated or Ex marked.

XP-h with Viscount II Hydraulic Motor

Models	Pump Package										Volume Mix Ratio					Specifications			Includes						Approvals
	284102	284202	284252	284302	284402	284103	284203	284253	284303	284403	1.0:1	2.0:1	2.5:1	3.0:1	4.0:1	Maximum Fluid Working Pressure psi (MPa, bar)	Maximum Hydraulic Oil Working Pressure psi (MPa, bar)	Pressure Ratio (Fluid to Hydraulic)	7 Gallon Hoppers	Solvent Pump	HP Hazardous Location Heaters	XTR504 Spray Gun	XTR704 Spray Gun	35 ft (10.7 m) Supply Hose	Ex Marked
XPh-50:																									
284104	X										X					4700	1800	2.6:1	X			X		X	
284204		X										X				5050	1800	2.8:1	X			X		X	
284254			X										X			5000	1650	3.0:1	X			X		X	
284304				X										X		4700	1800	2.6:1	X			X		X	
284404					X										X	5000	1800	2.8:1	X			X		X	
284105	X										X					4700	1800	2.6:1	X	X	X	X		X	
284205		X										X				5050	1800	2.8:1	X	X	X	X		X	
284255			X										X			5000	1650	3.0:1	X	X	X	X		X	
284305				X										X		4700	1800	2.6:1	X	X	X	X		X	
284405					X										X	5000	1800	2.8:1	X	X	X	X		X	
XPh-70:																									
284106						X					X					7100	1700	4.2:1	X				X	X	
284206							X					X				7200	1650	4.4:1	X				X	X	
284256								X					X			6800	1800	3.8:1	X				X	X	
284306									X					X		7100	1800	4.0:1	X				X	X	
284406										X					X	7150	1700	4.2:1	X				X	X	
284107						X					X					7100	1700	4.2:1	X	X	X		X	X	
284207							X					X				7200	1650	4.4:1	X	X	X		X	X	
284257								X					X			6800	1800	3.8:1	X	X	X		X	X	
284307									X					X		7100	1800	4.0:1	X	X	X		X	X	
284407										X					X	7150	1700	4.2:1	X	X	X		X	X	

Bare Proportioning Pump Packages

Packages include motor, pump lowers, and all connection hardware.

Building systems with bare proportioning pump packages:

- **Over Pressure Protection** must be used, see page 10. See chart on page 57 to identify the over pressure relief valves to use with your system.
- All components must meet or exceed maximum working pressures.

NOTE: All pump packages are Ex rated except for the XP-h pump packages (284xxx):

II 2 G c IIA T3

Hydraulically powered pump packages (XP-h) are not available as complete systems. Refer to manual 307158 for hydraulic application information.

Pump sizes are marked on the pump cylinder; sizes are nominal. See technical data in manual 311762 for actual displacement.

Type	Pump Package	A Side Pump	B Side Pump	Volume Mix Ratio	Combined Fluid Output cc/cycle	Pressure Ratio	Fluid Flow at 40 cpm gpm (lpm)	Maximum Fluid Working Pressure psi (MPa, bar)	Maximum Air/ Hydraulic Oil Working Pressure psi (MPa, bar)	Over Pressure Relief Valve To Use	Ex Rated
XP35 with NXT 3400 Air Motor	281100	L090C0	L090C0	1.0:1	180	38:1	1.9 (7.2)	3500 (24, 241)	95 (0.65, 6.5)	Purple	✔
	281200	L115C0	L058C0	2.0:1	173	40:1	1.8 (6.8)	3500 (24, 241)	85 (0.59, 5.9)		
	262803	L14AC0	L058C0	2.5:1	202	34:1	2.1 (7.9	3500 (24, 241)	100 (0.7, 7)		
	281300	L14AC0	L048C0	3.0:1	192	36:1	2.0 (7.6)	3400 (23, 234)	95 (0.65, 6.5)		
	281400	L14AC0	L036C0	4.0:1	180	38:1	1.9 (7.2)	3500 (24, 241)	90 (0.62, 6.2)		
XP50 with NXT 6500 Air Motor	282100	L14AC0	L14AC0	1.0:1	288	45:1	3.1 (11.7)	4500 (31, 310)	100 (0.7, 7)	Gold	
	282150	L14AC0	L097C0	1.5:1	240	55:1	2.6 (9.8)	5000 (34, 345)	90 (0.62, 6.2)		
	282200	L18AC0	L090C0	2.0:1	270	48:1	2.9 (11.0)	4800 (33, 331)	100 (0.7, 7)		
	282250	L18AC0	L072C0	2.5:1	252	52:1	2.7 (10.2)	5000 (34, 345)	95 (0.65, 6.5)		
	282300	L22AC0	L072C0	3.0:1	288	45:1	3.1 (11.7)	4500 (31, 310)	100 (0.7, 7)		
	282330	L18AC0	L054C0	3.3:1	234	56:1	2.5 (9.5)	5000 (34, 345)	95 (0.65, 6.5)		
	282400	L22AC0	L054C0	4.0:1	270	48:1	2.9 (11.0)	4800 (33, 331)	100 (0.7, 7)		
XP70 with NXT 6500 Air Motor	571100	L090C0	L090C0	1.0:1	180	72:1	1.9 (7.2)	7250 (50, 500)	100 (0.7, 7)	Silver	
	571150	L085C0	L058C0	1.5:1	144	91:1	1.5 (5.6)	7250 (50, 500)	80 (0.55, 5.5)		
	571200	L115C0	L058C0	2.0:1	174	76:1	1.8 (6.8)	7250 (50, 500)	95 (0.65, 6.5)		
	571250	L14AC0	L058C0	2.5:1	203	65:1	2.1 (7.9)	6500 (45, 448)	100 (0.7, 7)		
	571300	L14AC0	L048C0	3.0:1	193	68:1	2.0 (7.5)	6500 (45, 448)	100 (0.7, 7)		
	571400	L14AC0	L036C0	4.0:1	181	73:1	1.9 (7.2)	7250 (50, 500)	100 (0.7, 7)		
XP-h with Viscount II Hydraulic Motor	284101	L22AC0	L22AC0	1.0:1	435	1.75:1	4.6 (17.4)	3150 (22, 217)	1800 (12, 124)	Purple	
	284102	L14AC0	L14AC0		293	2.63:1	3.1 (11.7)	4700 (32, 324)	1800 (12, 124)	Gold	
	284103	L090C0	L090C0		180	4.21:1	1.9 (7.2)	7150 (49, 493)	1700 (12, 117)	Silver	
	284201	L29AC0	L14AC0	2.0:1	435	1.75:1	4.6 (17.4)	3150 (22, 217)	1800 (12, 124)	Purple	
	284202	L18AC0	L090C0		274	2.81:1	2.9 (11.0)	5050 (35, 348)	1800 (12, 124)	Gold	
	284203	L115C0	L058C0		170	4.39:1	1.8 (6.8)	7200 (50, 496)	1650 (11, 114)	Silver	
	284251	L29AC0	L115C0	2.5:1	407	1.88:1	4.3 (16.3)	3400 (23, 234)	1800 (12, 124)	Purple	
	284252	L18AC0	L072C0		255	3.02:1	2.7 (10.2)	5000 (34, 345)	1650 (11, 114)	Gold	
	284253	L14AC0	L058C0		199	3.77:1	2.1 (7.9)	6800 (47, 469)	1800 (12, 124)	Silver	
	284301	L29AC0	L097C0	3.0:1	388	1.97:1	4.1 (15.5)	3500 (24, 241)	1800 (12, 124)	Purple	
	284302	L22AC0	L072C0		293	2.63:1	3.1 (11.7)	4700 (32, 324)	1800 (12, 124)	Gold	
	284303	L14AC0	L048C0		189	3.95:1	2.0 (7.6)	7100 (49, 490)	1800 (12, 124)	Silver	
	284401	L29AC0	L072C0	4.0:1	360	2.10:1	3.8 (14.4)	3800 (26, 262)	1800 (12, 124)	Purple	
	284402	L22AC0	L054C0		274	2.80:1	2.9 (11.0)	5000 (34, 345)	1800 (12, 124)	Gold	
	284403	L14AC0	L036C0		180	4.21:1	1.9 (7.2)	7150 (49, 493)	1700 (12, 117)	Silver	

Component Identification

XP Proportioners

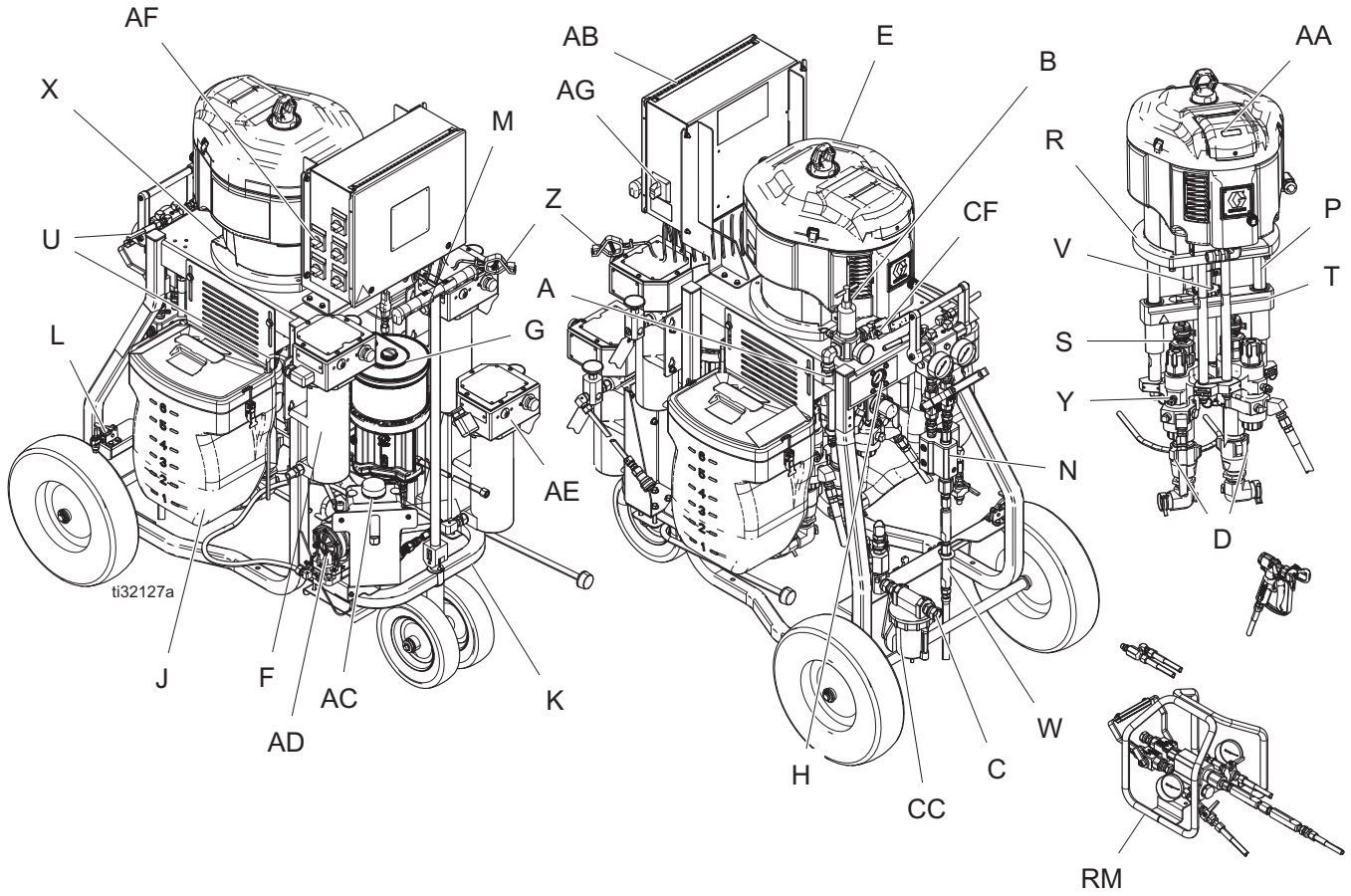


FIG. 1: XP70 Complete System (model 576107 shown)

Key:

A Air Supply Hose for Motor
B Main Air Controls; *see page 23*
C Air Inlet - 3/4 npsm(f)
D High Pressure Fluid Pump
E Air Motor
F Fluid Heater
G Solvent Flush Pump; *see page 24*
H Solvent Flush Pump Air Controls; *see page 24*
J 7 Gallon Hoppers
K Cart
L Brake
M Handle (lift to release)
N Fluid Control Assembly; *see page 23*
P Tie Rods
R Motor Adapter Plate
S Adjustable Packing Nuts with Wet Cups
T Yoke With Rod Bearings
U Recirculation Lines
V Yoke Position Nut
W Static Mixer Tubes with Replacement Plastic Elements
X Motor Position Indicator Lines; *see **Motor Position** on page 30*
Y Over Pressure Rupture Disc;
Z Air Motor Ground Wire
AA PressureTrak
AB Junction Box
AC Circulation Pump Reservoir
AD Circulation Pump
AE Viscon HP Hose Water Heater
AF Heater ON/OFF Switches
AG Power Disconnect Switch

XP-h Proportioners

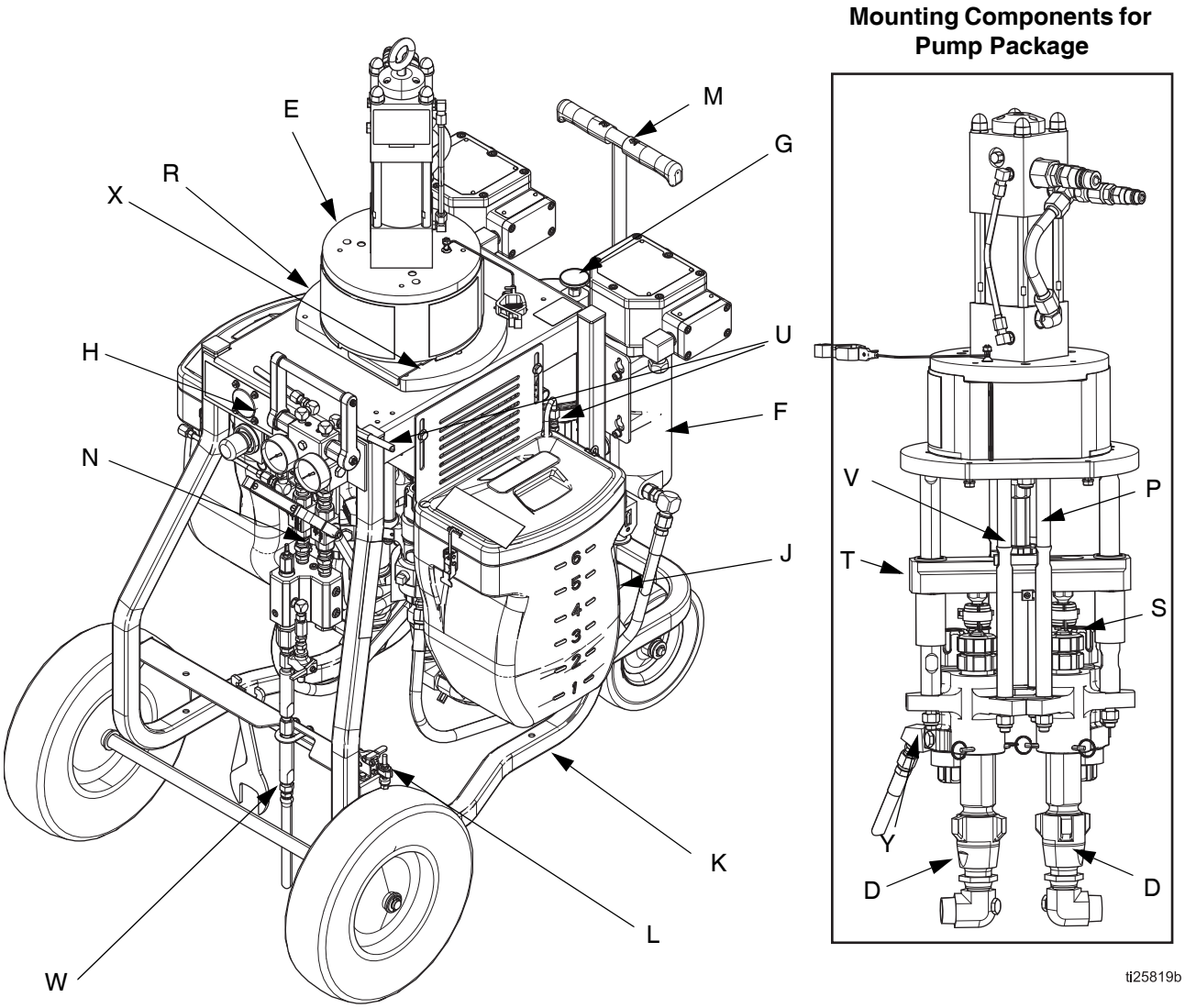


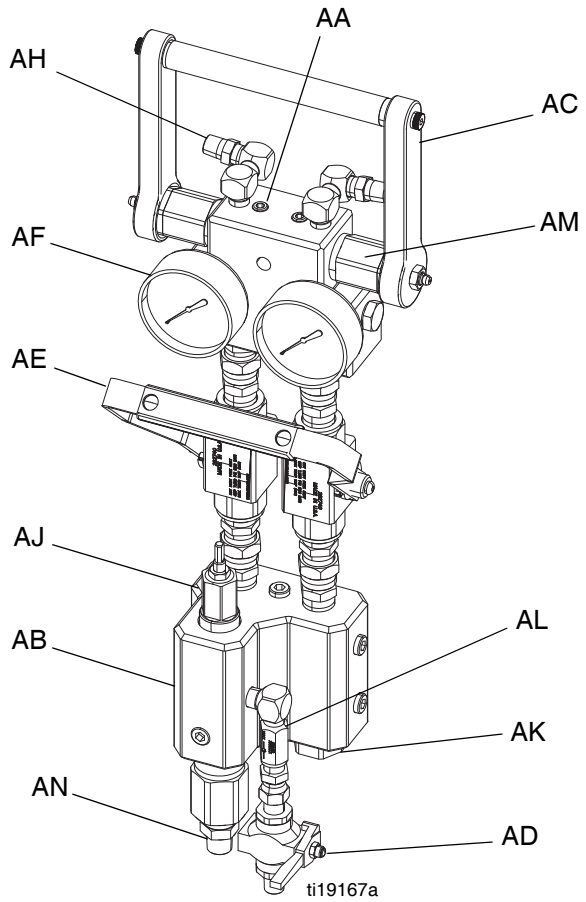
FIG. 2: XP70 System with Optional Accessories

Key:

D High Pressure Fluid Pump
E Hydraulic Motor
F Fluid Heater (optional)
G Solvent Flush Pump (optional); *see page 24*
H Solvent Flush Pump Air Controls; *see page 24*
J 7 Gallon Hoppers (optional)
K Cart
L Brake
M Handle (lift to release)
N Fluid Control Assembly; *see page 23*
P Tie Rods
R Motor Adapter Plate
S Adjustable Packing Nuts with Wet Cups
T Yoke With Rod Bearings
U Recirculation Lines
V Yoke Position Nut
W Static Mixer Tubes with Replacement Plastic Elements
X Motor Position Indicator Lines; *see **Motor Position** on page 30*
Y Over Pressure Rupture Disc; *only 38cc, 48cc, 54cc, 58cc, and 72cc pumps*

Fluid Control Assembly

Standard Mix Manifold shown



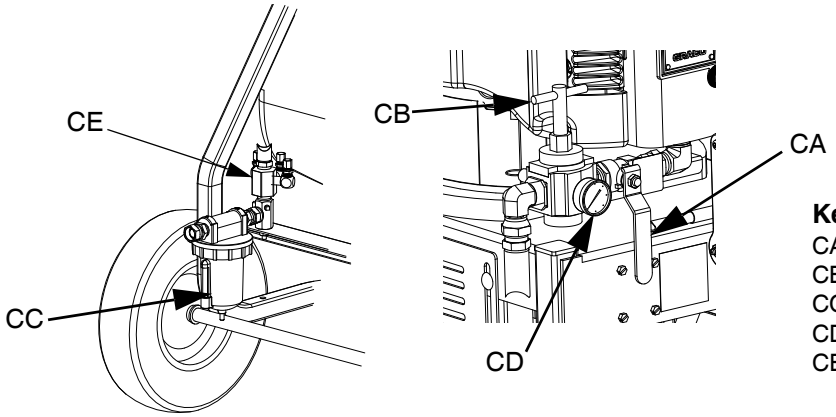
Key:

AA Fluid Manifold
AB Mix Manifold
AC Circulation Handle (shown closed)
AD Solvent Flush Valve
AE Dual Shutoff Handle (shown closed)
AF Fluid Pressure Gauges
AG Fluid Supply Inlet (Behind Fluid Manifold)
AH Fluid Circulation Fittings
AJ B Component Adjustable Fluid Restrictor; *see page 42*
AK A and B Mix Manifold Check Valves
AL Solvent Inlet Check Valve
AM Automatic, Spring Loaded, Color-Coded Over Pressure Relief Valves; with grease fittings; *see page 57*
AN A and B Combined Outlet; 3/8 npt(m)

FIG. 3

Main Air Controls

For XP systems only.



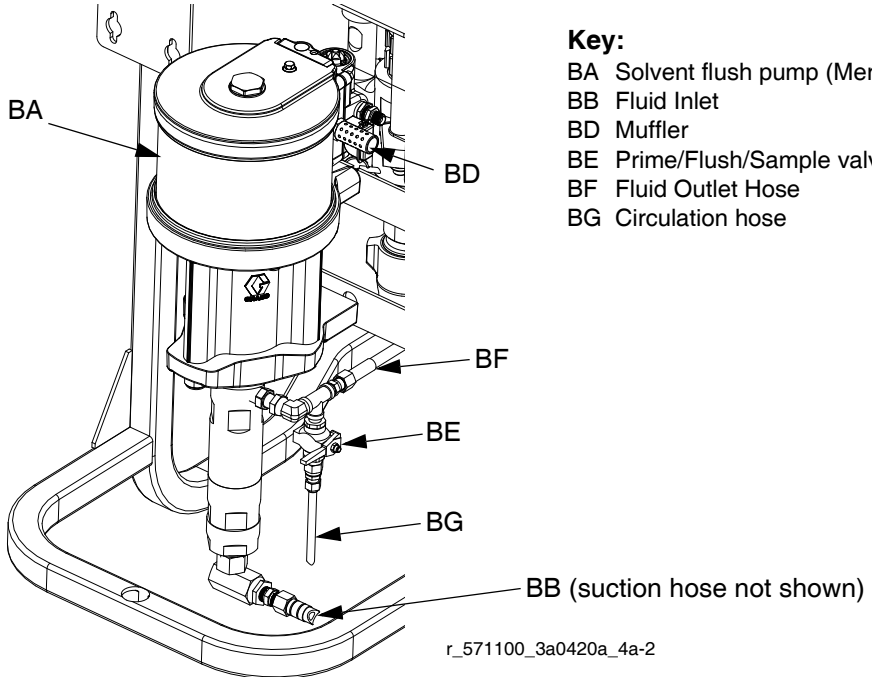
Key:

CA Main Motor Shutoff Valve (Relieving)
CB Main Motor Air Pressure Regulator
CC Air Filter with Auto Drain
CD Main Motor Air Pressure Gauge
CE Filtered Air Distribution Manifold

FIG. 4

45:1 Solvent Flush Pump Kit 262393 (optional)

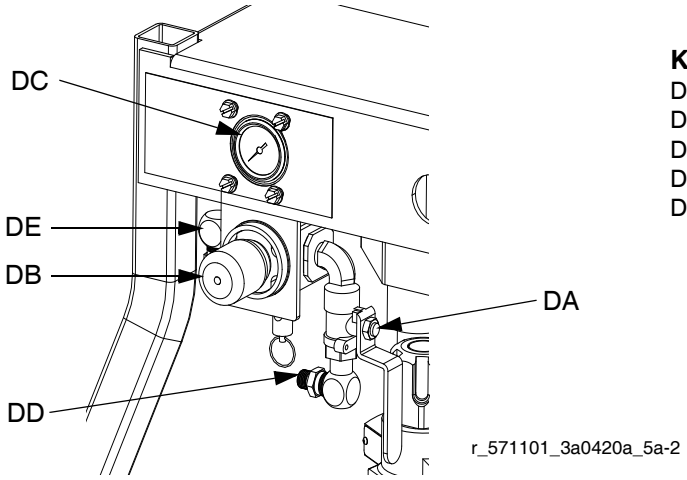
Pump



Key:
BA Solvent flush pump (Merkur Pump)
BB Fluid Inlet
BD Muffler
BE Prime/Flush/Sample valve
BF Fluid Outlet Hose
BG Circulation hose

FIG. 5

Air Controls



Key:
DA Solvent Pump Air Shutoff Valve (Relieving)
DB Solvent Pump Air Pressure Regulator
DC Solvent Pump Air Pressure Gauge
DD Air Outlet
DE Air Inlet

FIG. 6

System Components

* Indicates a customer-supplied component required to add to Bare Pump Packages (part numbers ending in zero “0”) to make a complete system.

*Bleed Type Motor Air Valve (CA)

Trapped air can cause the pump to cycle unexpectedly, which could result in serious injury from splashing or moving parts. Use the Bleed Type Master Air Valve to relieve trapped air.

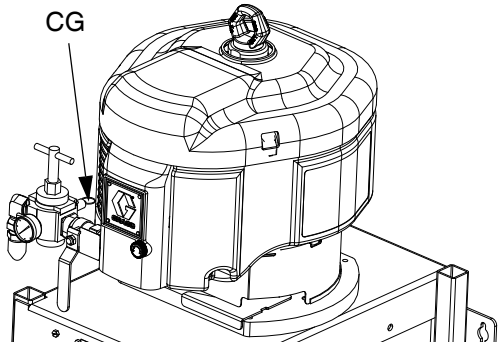
Be sure the valve is easily accessible from the pump and located downstream from the air regulator (CB).

The two steps below are required in your system to relieve air trapped between the air motor when the valve is closed:

1. Open the valve to supply air to the motor.
2. Close the valve to shut off air to the motor, and bleed any trapped air from the motor.

*Air Pressure Relief Valve (CG)

Automatically opens to relieve air pressure if supplied pressure exceeds preset limit. Use the correct air pressure relief valve for the system ratio:



See **Models** (page 11) for Maximum Regulated Air Pressure to ensure proper air pressure relief valve installed.

Valve Part	Pressure Relief psi (MPa, bar)
116643	85 (0.59, 5.9)
16D376	90 (0.62, 6.2)
114055	95 (0.65, 6.5)
113498	100 (0.70, 7.0)

*Air Filter (CC)

Removes harmful dirt from compressed air supply. A minimum 40 micron filter is used.

*Air Regulator Adjustment (CB)

Adjusts air pressure to the motor and fluid outlet pressure of pump. Locate the air regulator close to the pump. Read air pressure on the gauge.

Fluid Line Components

- ***Fluid Manifold (AA):** Controls circulation and pump priming.
- ***Mix Manifold (AB):** Combines A and B fluid into one fluid line.
- ***Circulation Handle (AC):** Directs fluid flow for circulation 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.
- ***Dual Shutoff Handle (AE):** Controls A and B fluid flow for mixing and dispensing. Close before flushing.
- ***Solvent Flush Valve (AD):** Controls solvent flow to the mix manifold, hose, and spray gun.
- ***Static mixer/gun hose kit:** Thoroughly mixes the two fluids and delivers the mixed fluid to the spray gun. Includes static mixer and hoses to the spray gun.
- **Fluid Heaters (F):** Heats the resin and hardener before mixing. Improves the chemical reaction and lowers viscosity to improve the spray pattern.
- **Solvent Flush Pump (ZD):** Flushes the mix manifold. Includes a solvent pump, mounting hardware, and solvent supply hose.

Initial System Setup

1. Check the shipment for accuracy. Ensure you have received everything you ordered. See **Component Identification**, page 21.
2. Check for loose fittings and fasteners.
3. Systems supplied as complete are already connected for fluid, air and electrical hookups.
4. If any accessories are added to a non-complete system refer to **Related Manuals**, page 3.
5. Install desiccant kits if using polyurethane isocyanates in hoppers. See manual 406739 for instructions.
6. Install circulation and return tube kits if you are feeding material from drums or remote hoppers. See manual 309852 if you are feeding urethane material.
7. Connect the feed pumps, fluid strainers, and air hoses as necessary. For systems without hoppers, see manual 312769.
8. Connect the fluid hose assembly, including the static mixers, whip hose and gun. See **Connect Static Mixers, Gun, and Hoses**, page 31.
9. Connect the battery in the PressureTrak module.
10. **XP Units:** Connect the air supply hose. See **Connect Air Supply**, page 31.

    XP-h Units: Connect the hydraulic lines. See manual 334914 for instructions.

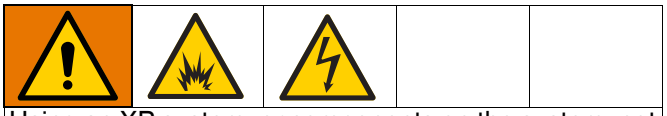
    Flush test oil from system as needed. See **Pressure Relief Procedure**, page 34. See **Empty and Flush Entire System**, page 45.

Flush Before Using Equipment

- The bare pump package was tested with lightweight oil, which is left in the fluid passages to protect parts. To avoid contaminating your fluid with oil, flush the equipment with a compatible solvent before using the equipment. See **Empty and Flush Entire System**, page 45.

Setup

Location



Using an XP system, or components on the system, not approved for hazardous locations or explosive atmospheres may result in a fire or explosion hazard.

The XP systems are not approved for use in hazardous locations unless the base model, all accessories, all kits, and all wiring meet local, state, and national codes.

See **Wire Systems with Explosion-Proof Heaters** on page 30.

1. Locate the proportioner on a level surface.
2. Position the proportioner for convenient operator access and maintenance, proper routing of air and fluid lines, and easy connection of components and accessories.
3. For permanent mounting, remove wheels and mount the frame to the floor. See **Dimensions**, page 86.
4. Make sure cart brake (L) is in the locked position.

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.

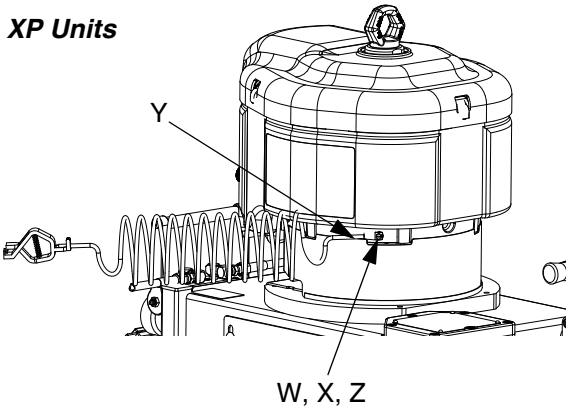
Tools Required:

- Grounding wires and clamps for pails
- Two 5 gallon (19 liter) metal pails

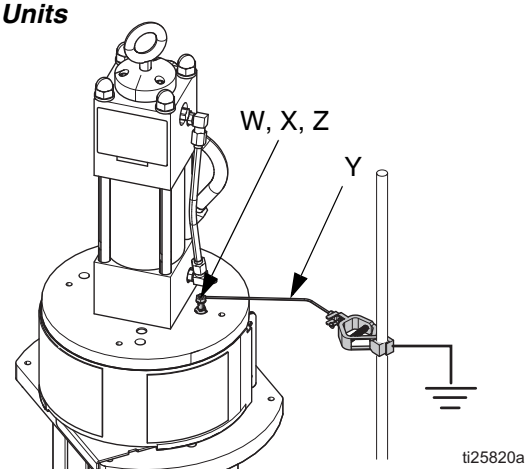
Pump:

1. Use the ground wire and clamp (supplied). Loosen grounding lug locknut (W) and washer (X). Insert ground wire end (Y) into lug (Z) slot and tighten locknut securely. Connect ground clamp to a true earth ground.

XP Units



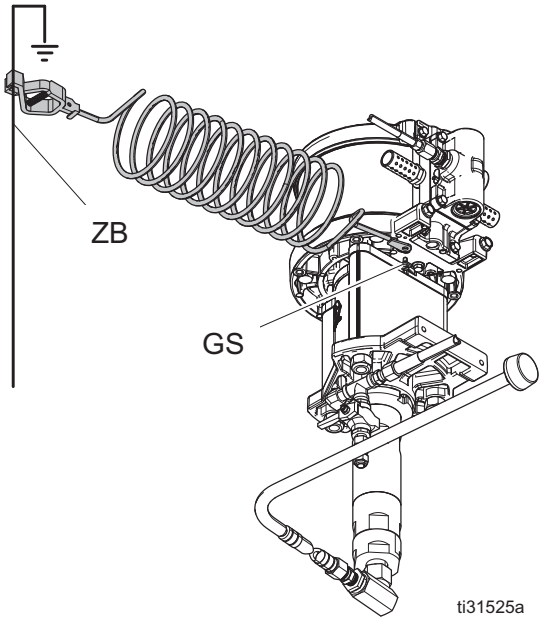
XP-h Units



2. Ground the object being sprayed, fluid supply container, and all other equipment in the work area. Follow your local code. Use only electrically conductive air and fluid hoses.

3. Ground all solvent pails. Use only metal pails, which are conductive, placed on a grounded surface. Do not place pail on a non-conductive surface, such as paper or cardboard, which interrupts grounding continuity.

Solvent Pump: use ground wire and clamp (supplied with solvent pump).



Air and fluid hoses: use only static dissipation type hoses with a maximum of 300 ft (91 m) combined hose length to ensure grounding continuity. Check electrical resistance of hoses regularly. If total resistance to ground exceeds 29 megohms, replace hose immediately.

Air compressor: follow manufacturer's recommendations.

Spray gun: ground through connection to a properly grounded fluid hose and pump.

Connect Power

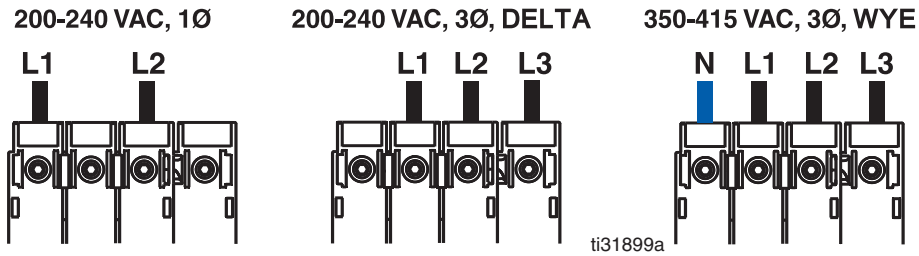
All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

NOTE: This wiring method converts three input power types to 200-240 VAC, 1 Phase output power to all heaters.

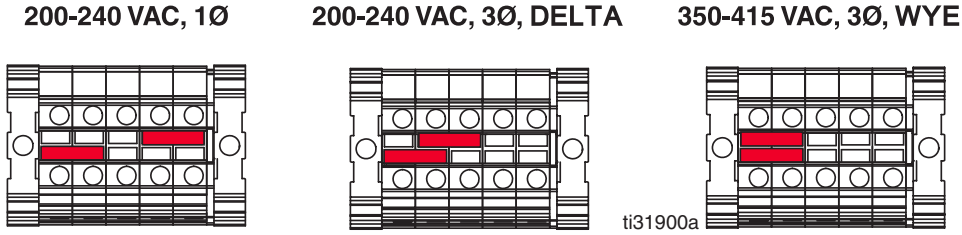
1. Turn main power disconnect switch (ZP) OFF.
2. Open the electrical enclosure door.
3. See the **Power Cord Requirements** table to select proper input power cord.
4. Route the power cable through the strain relief in the electrical enclosure.
5. Connect incoming power wires as shown in the **Power Disconnect** diagram below. Gently pull on all connections to verify that they are properly secured.

   NOTE: Terminal jumpers are located inside the electrical enclosure door.
6. Install supplied terminal jumpers in the positions shown in the **Terminal Block** diagram below for the power source used.
7. Verify that all items are connected properly as shown below, then close the electrical enclosure door.

Power Disconnect



Terminal Block



Power Cord Requirements

Model	Input Power	Cord Specifications AWG (mm^2) + Ground / PE	Full Load Peak Current (Amps)
57xxx5 (two fluid heaters with two optional hopper heaters)	200-240 VAC, 1 Phase	6 (13.3), 2 wire	58
	200-240 VAC, 3 Phase, DELTA	8 (8.4), 3 wire	51
	350-415 VAC, 3 Phase, WYE	10 (5.3), 4 wire	40
57xxx7 (two fluid heaters, one hose heater with two optional hopper heaters)	200-240 VAC, 1 Phase	6 (13.3), 2 wire	75
	200-240 VAC, 3 Phase, DELTA	6 (13.3), 2 wire	65
	350-415 VAC, 3 Phase, WYE	10 (5.3), 4 wire	40

Wire Systems with Explosion-Proof Heaters

(Hazardous location systems only)

Improperly installed or connected equipment will create a hazardous condition and cause fire, explosion, or electric shock. Follow local regulations.

If your system is rated for hazardous areas, and you have explosion-proof heaters, you must have a qualified electrician connect the heater wiring. Make sure the wiring and installation comply with local electrical codes for hazardous areas.

When explosion-proof heaters are used, ensure the wiring, wiring connections, switches, and electrical distribution panel all meet flame-proof (explosion-proof) requirements.

Refer to the Viscon HP or HF heater manual for electrical connection instructions and guidelines in hazardous locations.

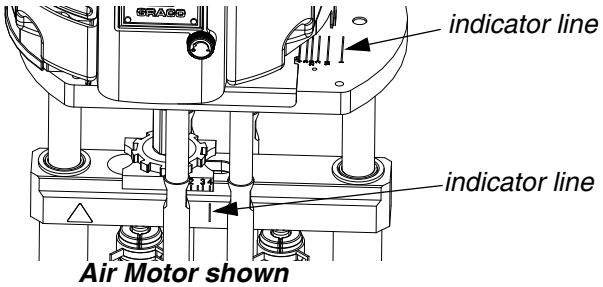
Motor Position

The motor position must be set for the volume mix ratio of the system.

NOTE: Changing the motor position does not change the mix ratio.

Check Motor Position

1. Verify that the correct pumps are mounted for your mix ratio by volume. See chart in **Bare Proportioning Pump Packages** on page 20.



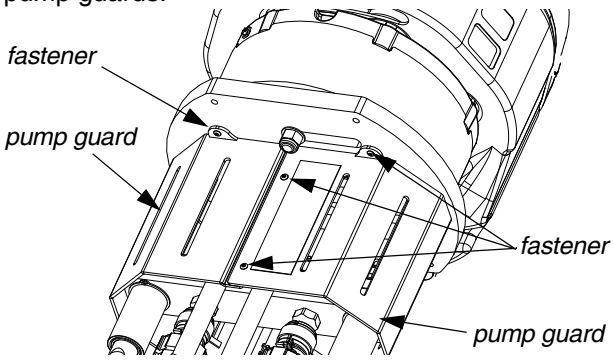
Air Motor shown

2. Verify that the motor position is adjusted correctly for that mix ratio. See FIG. 7. If not, perform the following **Change Motor Position** procedure.

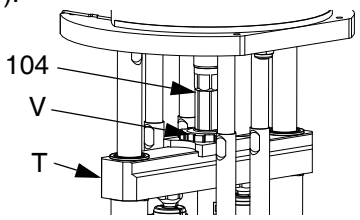
Change Motor Position

There are specific motor positions for each mix ratio setting. To adjust the position of the air motor:

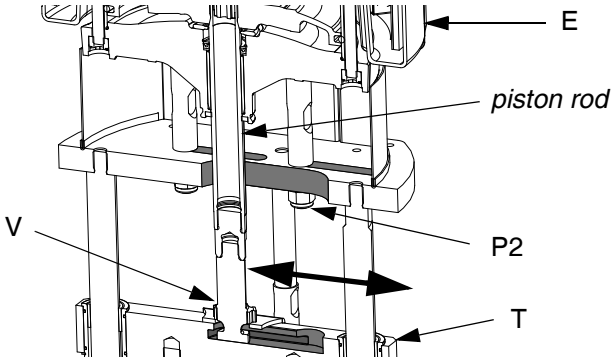
1. Perform **Check Motor Position** procedure. If position is incorrect, continue to next step.
2. Loosen the eight fasteners and remove the two pump guards.



3. Place wrench on adapter rod (104) then use supplied tool to loosen the serrated yoke nut (V) above the yoke (T).



4. Loosen the three nuts (P2) below the motor tie rods.



5. Grab the piston rod and slide the position of the motor (E) until the indicator lines are aligned with your ratio.

NOTICE

Do not hit tie rods (P) with a steel hammer. Damage to the air motor base may result.

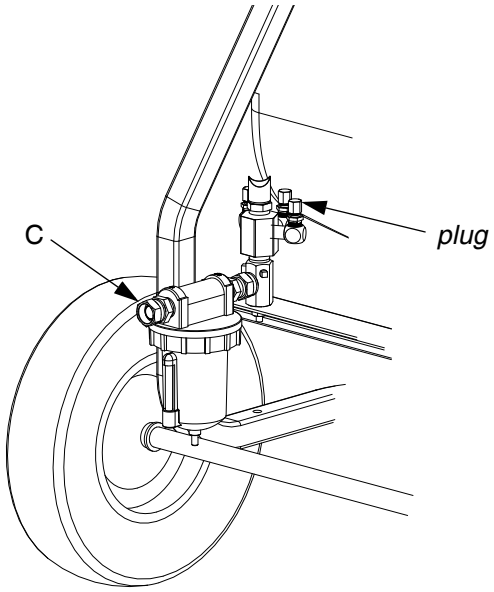
6. Tighten the three nuts (P2) and yoke nut (V).
7. Use supplied tool to tighten the yoke nut, then install the pump guards.

Connect Air Supply

For XP systems only.

1. Connect the air supply hose to the 3/4 npt(f) air filter inlet (C).

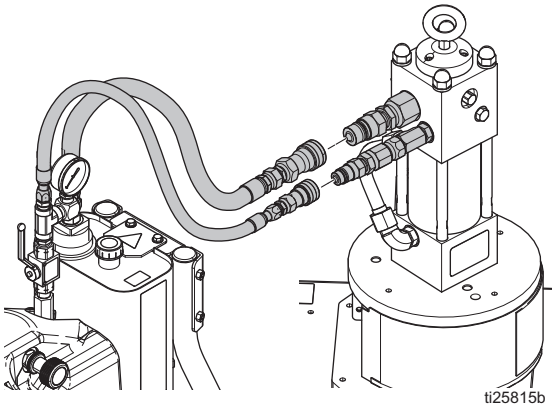
Use a 3/4 in. (19.1 mm) ID minimum air hose. Air consumption is 75 cfm per gallon per minute spraying. Do not use pin fitting type quick disconnects.



2. Remove plugs as necessary for solvent pump and feed supply pump air hoses. See pump manuals for setup instructions.

Connect Hydraulic Supply/Return Lines

For XP-h systems only.



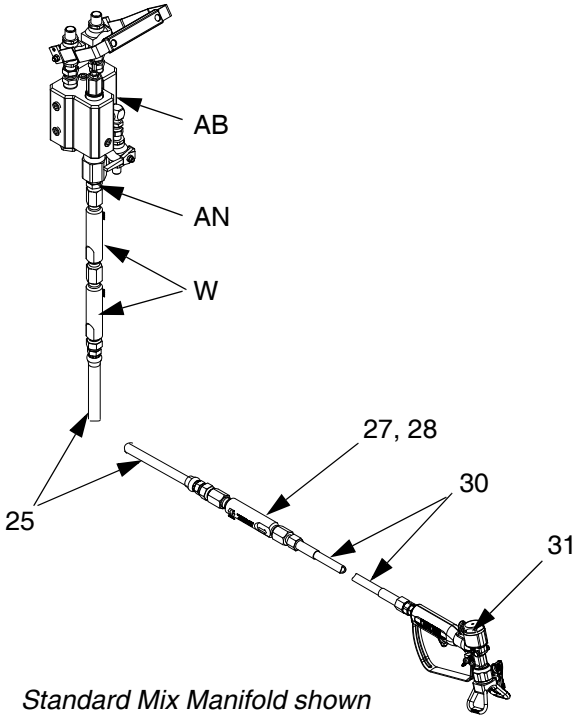
Connect Static Mixers, Gun, and Hoses

NOTICE

To prevent creating a flare on the mixer tube, do not use a union swivel end on the mix tube inlet.

1. Connect the outlet of the two primary static mixer tubes with mixer elements (W) to the fluid mix hose (25), cleanup mixer (27, 28), whip hose (30), and spray gun (31).

2. Add mixed material hose as necessary between the mix hose (25) and cleanup mixer (27, 28).



Standard Mix Manifold shown

Connect Fluid Hose Bundles (Remote Mix Manifold Only)

NOTE: For all steps below refer to the illustration on the next page.

Refer to the mix manifold manual 3A0590 for details when the mix manifold (AB) is remotely mounted.

1. Connect additional resin and hardener fluid hose sections to the proportioner fluid manifold (AA) outlet. Hoses must be properly sized and balanced for your mix ratio.
2. Connect the resin and hardener hoses to the resin and hardener inlets on the mix manifold.
3. Connect the female quick-disconnect “Y” fitting assembly (FQ) to the blue tubing quick-disconnect from below the overflow bottles.
4. Connect the male quick-disconnect “Y” fitting assembly (MQ) to the red tubing quick-disconnect from the heater outlet.
5. Connect the glycol circulation tubing to the “Y” fitting assemblies. Cut the red and blue tubing squarely behind the hose union fittings. Connect to the “Y” fitting assembly.

   NOTE: The tubes and fittings are color coded. Make sure all colors match when connecting the fittings.
6. Connect the mix manifold (MM) to the remote manifold carriage (MC) heater block (HB) and bracket using two screws (9).
7. Connect the resin and hardener hoses to the mix manifold.
8. Connect the extension glycol tubing from the hose bundle to the heater block (HB). Cut the tubing squarely behind only one of the u-fittings. Connect the two union fittings (10) to the hose tubing (one red, one blue). Cut the red tubing (11) piece and blue tubing (12) piece to length to fit between the hose bundle and heater block, then tighten the fittings.

Connecting Additional Hose Lengths

NOTE: For all steps below refer to the illustration on the next page.

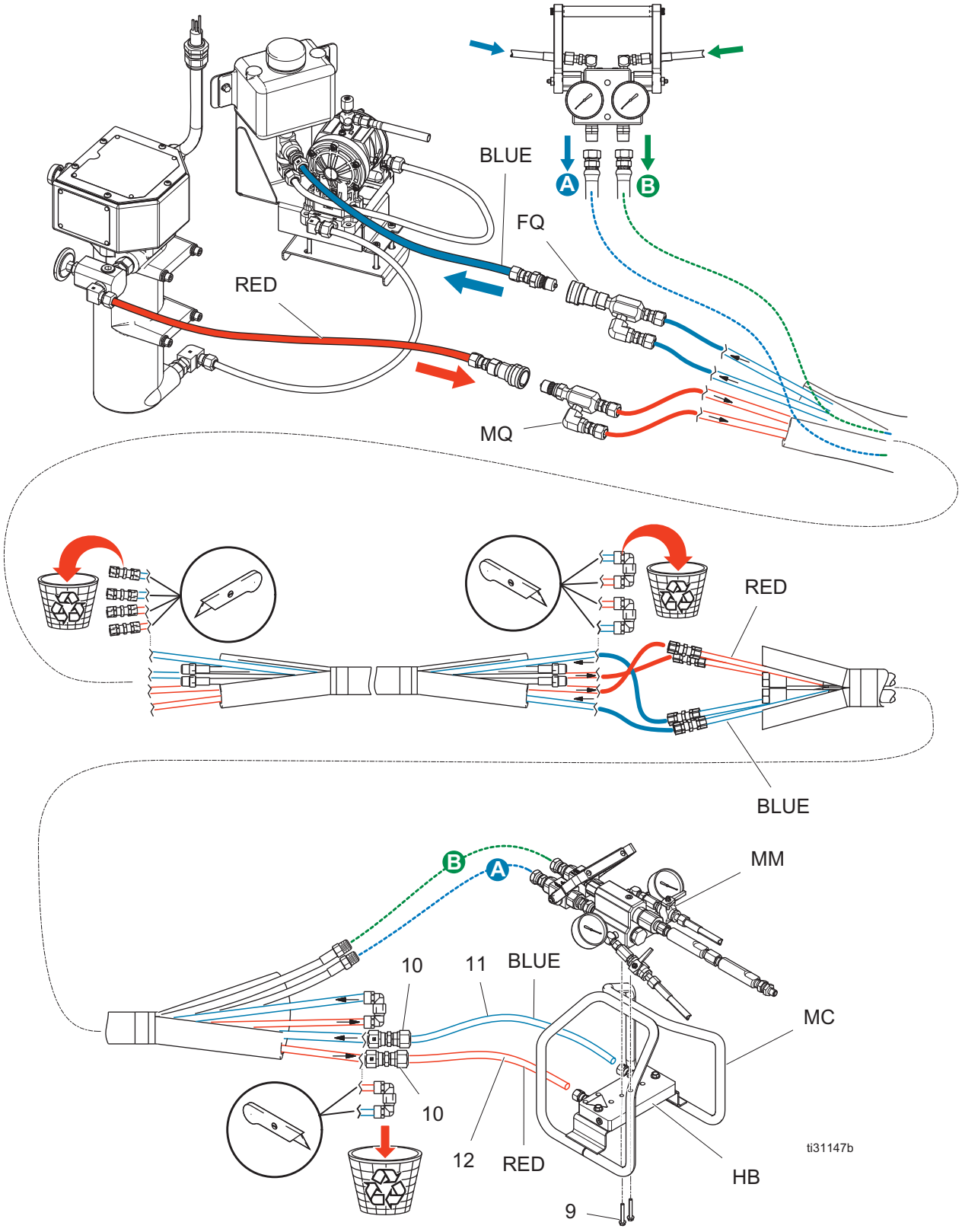
Up to six 50 ft (15.2 m) sections of heated hose can be attached for a maximum total length of 300 ft (91.4 m).

1. Remove the elbow fittings at the end of the heated hose assembly.
2. Connect the next length of hose, using union fittings supplied with the hose.

   NOTE: The tubes are color coded. Make sure all colors match when connecting the fittings.

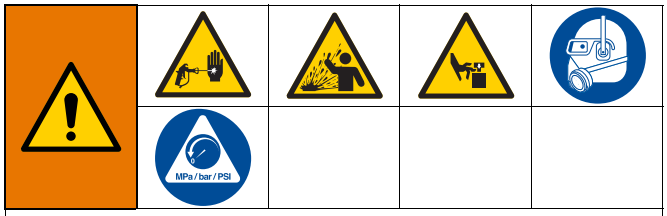
NOTICE
To prevent cross-contamination, ensure you connect the “A” side fluid hose to the “A” side fluid hose on the additional heated hose.

Connecting Hoses



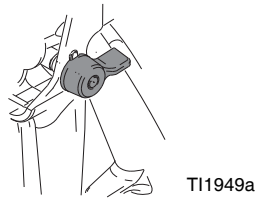
Pressure Relief Procedure

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. Engage the gun trigger lock.



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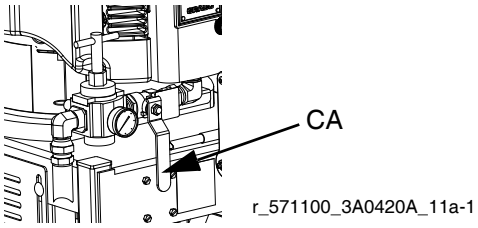
2. **XP Systems:**
   Close the main air shutoff valve (CA).



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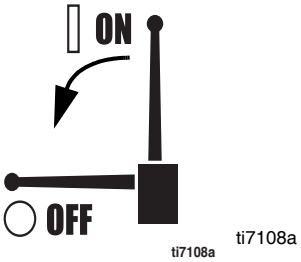
XP-h Systems:
Set pump valve off.



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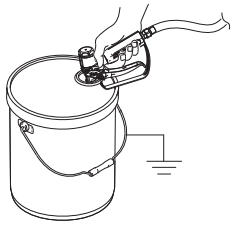
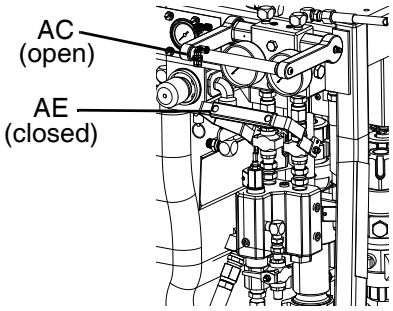
3. Shut off heaters, if used.
4. Shut off feed pumps, if used.
5. Remove the spray tip.
6. Disengage the trigger lock.
7. Hold a metal part of the gun firmly to a grounded metal pail. Trigger the gun to relieve pressure.



8. Engage the gun trigger lock.
9. Close the dual shutoff handle (AE) and open the circulation handle (AC) to relieve A and B fluid pressure.



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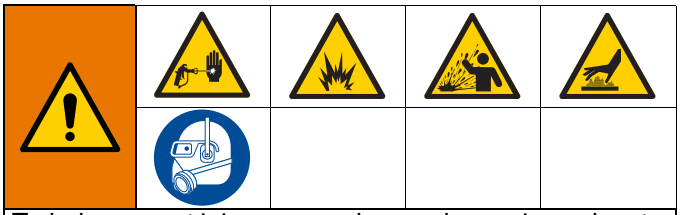
NOTE: Always flush the mix hose after relieving A and B fluid pressure through the mix manifold. Follow **Flush Mixed Material**, page 43 when you stop spraying or dispensing; and before cleaning, checking, servicing, or transporting equipment.

NOTE: For longer valve life when using abrasive fluids, it is advisable to relieve high pressure out through the gun when possible.

- If you suspect the spray tip or hose is clogged or that pressure has not been fully relieved after following the steps above, very slowly loosen tip guard retaining nut or hose end coupling to relieve pressure gradually, then loosen completely. Clear hose or tip obstruction.
- If static mixer, whip hose, and gun cannot be flushed because of mixed and cured material, very slowly loosen static mixer tube from mix manifold outlet to relieve pressure gradually, then loosen completely. Replace or clean clogged components.

Prime Empty System

Prime A and B Fluids

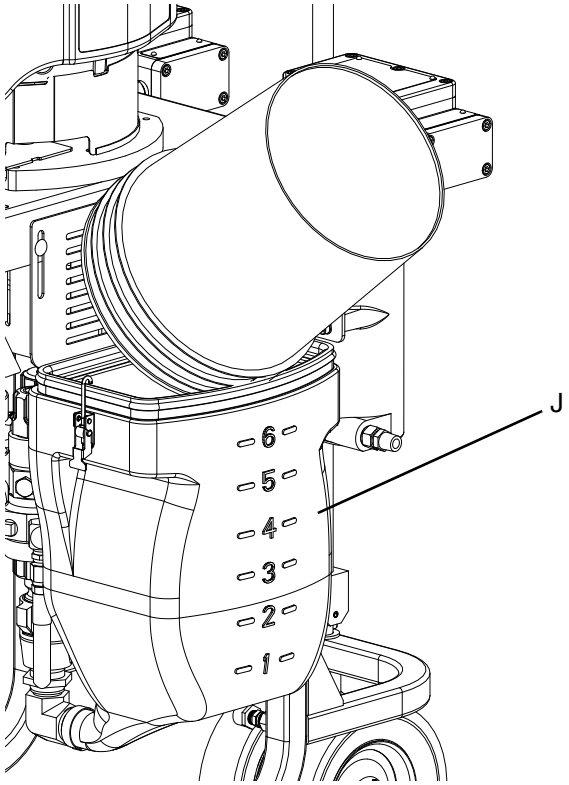


To help prevent injury, wear gloves when using solvents and/or if the fluid temperature exceeds 110° F (48° C).

The equipment is tested with light weight oil at the factory. If necessary, flush out the oil with a compatible solvent before spraying. See **Empty and Flush Entire System**, page 45.

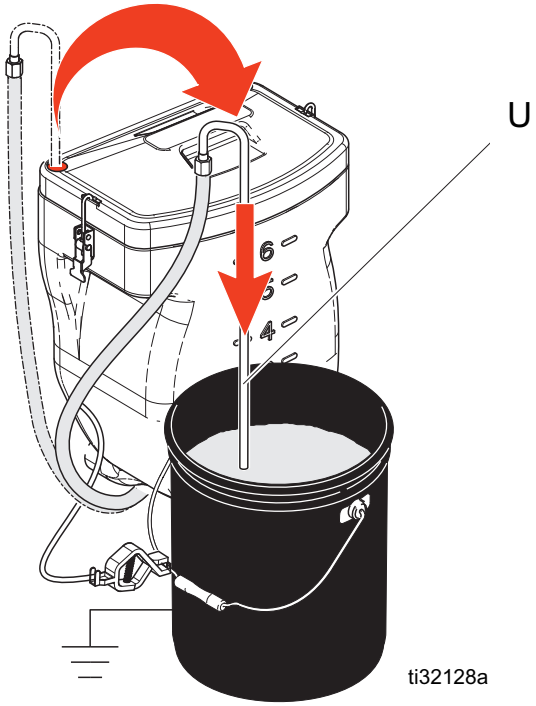
Do not install the gun spray tip yet. To avoid splashing, use the lowest pressure possible to prime.

1. Condition the materials prior to adding to the hoppers (J). Ensure that the resin materials are thoroughly mixed, homogeneous, and pour-able prior to adding to the hopper. Stir the hardeners back into suspension prior to adding material to hopper.

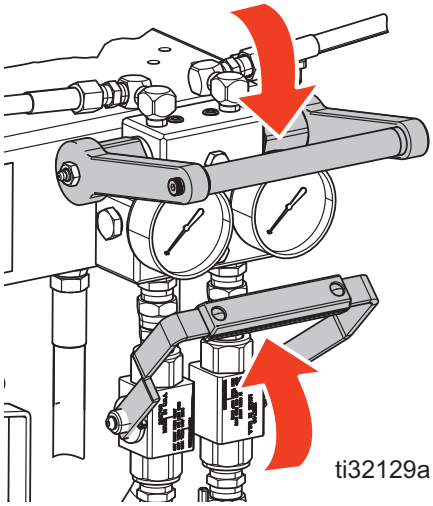


2. Fill the A and B hoppers with proper materials. Fill the A side (blue) with major volume of material; fill the B side (green) with minor volume of material (unless 1:1 mix ratio).

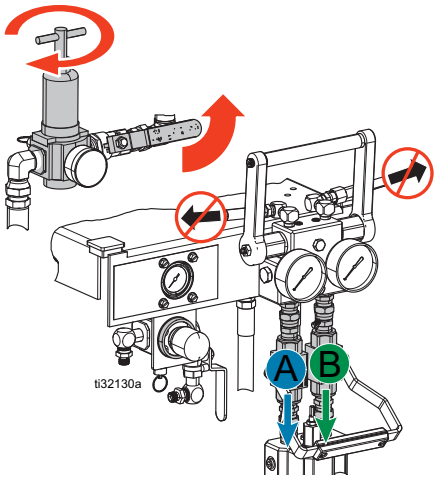
3. Move the recirculation lines (U) to empty containers.



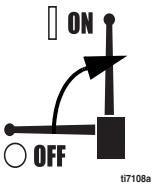
4. Close the dual shutoff handle (AE) and open the circulation handle (AC).



5. **XP Systems only:** Open the main air shutoff valve (CA). Then slowly increase the air regulator pressure (CB).



XP-h Systems only: Set pump valve on. Then turn down the pressure control knob.



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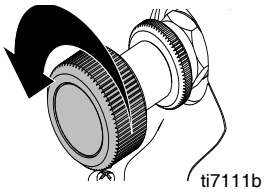
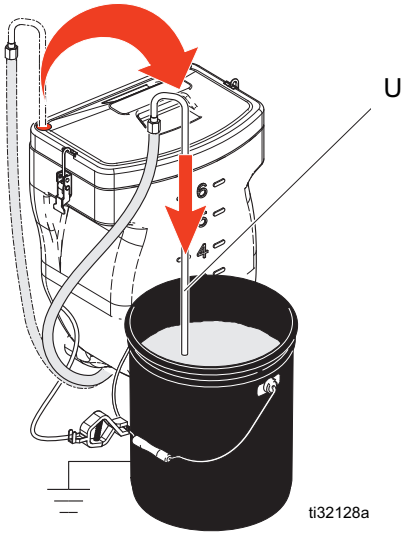
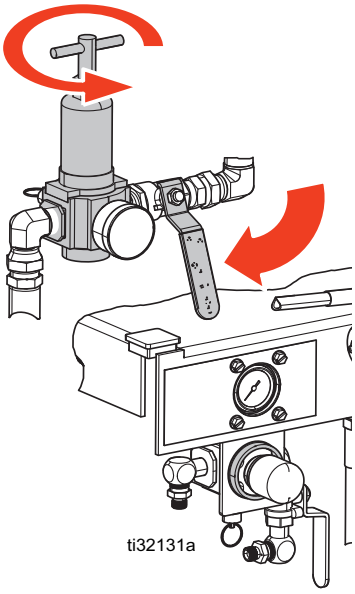


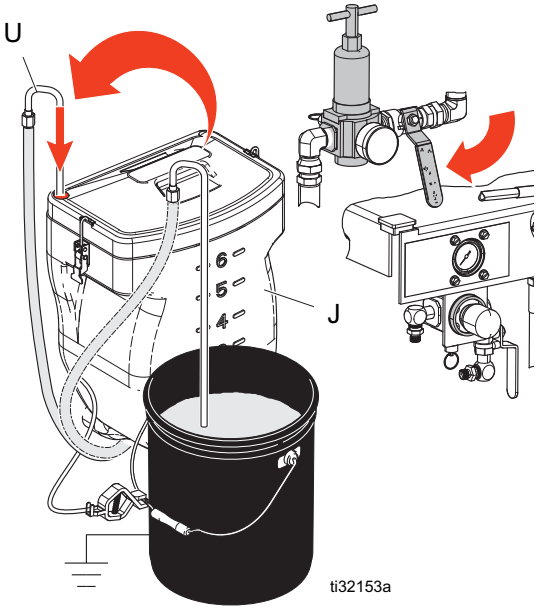
6. Dispense fluid into the containers until clean fluid comes out of the A and B recirculation lines.



7. Decrease air pressure. Close the main air shutoff valve (CA).



8. Move the recirculation lines (U) back to the correct hopper (J).

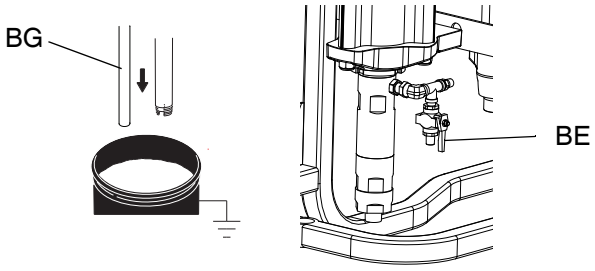


9. If using heaters, heat fluid throughout system before spraying. See **Recirculate Prior to Spraying or Re-Prime After a Pump Runs Dry**, page 38.

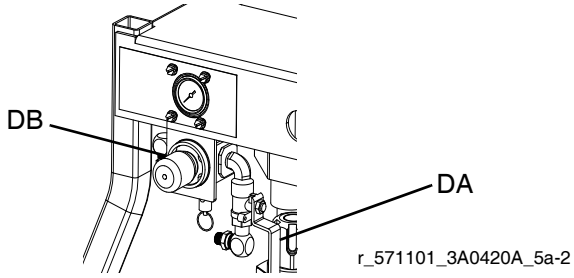
Prime Solvent Flush Pump

Follow instructions if the solvent flush pump is used.

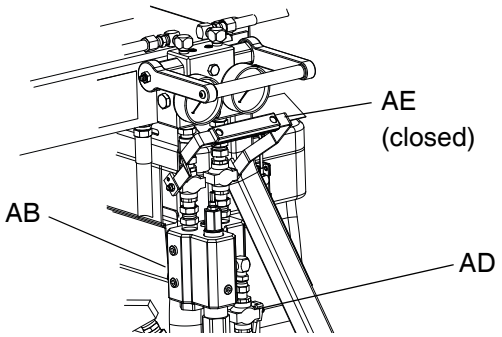
1. Connect a ground wire (not included) to a metal pail of solvent.
2. Place the siphon tube and the solvent circulation hose (BG) in the pail of solvent.



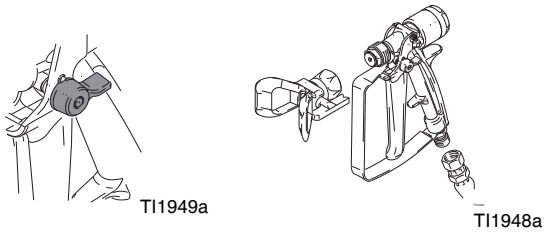
3. Open the solvent prime valve (BE) on the solvent pump (BA) outlet.
4. Open the solvent pump air valve (DA). Slowly turn the solvent pump air regulator (DB) clockwise to prime the solvent pump and route solvent back to the pail. Close the solvent pump fluid valve (BE) and air valve (DA).



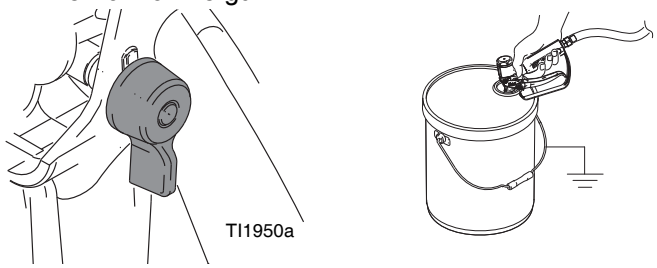
5. Open the solvent flush valve (AD) on the mix manifold.



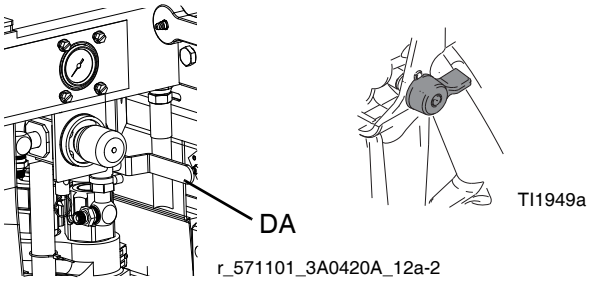
6. Ensure the trigger lock is engaged. Remove the spray tip.



7. Disengage the trigger lock and trigger the gun into a grounded metal pail while holding against a pail. Use a pail lid with a hole to dispense through. Seal around the hole and gun with a rag to prevent splash back. Be careful to keep fingers away from the front of the gun.



8. Open the solvent pump air valve (DA). Slowly turn the solvent pump air regulator (DB) clockwise to prime the solvent pump and push air out of the mix hose and gun. Trigger the gun until all air is purged.
9. Close the solvent pump air valve (DA) and trigger the gun to relieve pressure. Engage the trigger lock. Replace the spray tip.



10. Close the solvent flush valve (AD).

NOTE: Solvent pump air and pressure may be left on while spraying.

NOTE: Never spray mixed material without the solvent pump and hose primed with solvent for proper flushing in time to clear the mixed material.

Recirculate Prior to Spraying or Re-Prime After a Pump Runs Dry

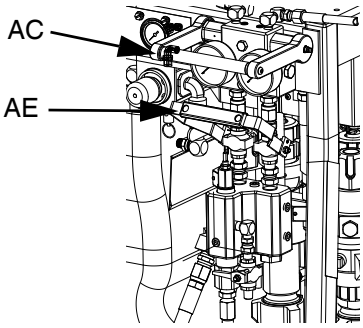
NOTE: Agitate, recirculate, and heat the material only as necessary to avoid mixing air into the fluid.

Use the recirculation mode when heating the material is required. Note the temperature at the top of the heater (outgoing or back to the hopper). When the thermometer reaches operating temperature, the material is ready to spray.

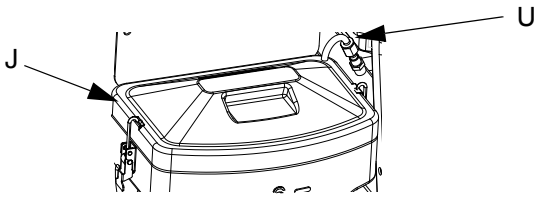
If using a system that does not require heat, recirculation is still required prior to spraying. Recirculation ensures that any settled fillers are mixed in, the pump lines are fully primed, and the pump check valves are operating smoothly.

Recirculation also allows you to re-prime one side that has run dry.

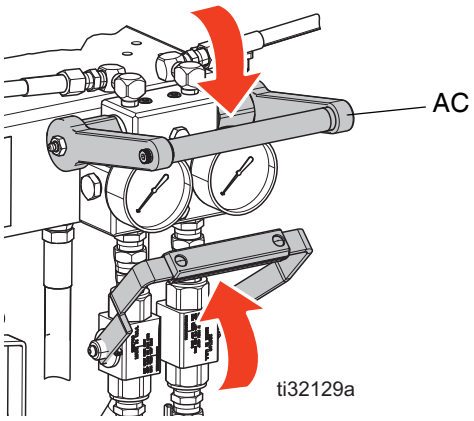
1. Follow **Prime Empty System**, page 35.
2. Close the dual shutoff handle (AE).



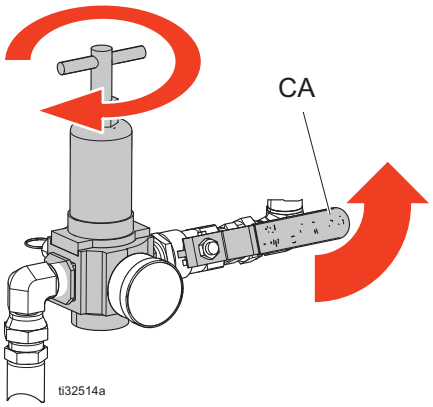
3. Ensure the recirculation hoses (U) are in the correct hoppers (J).



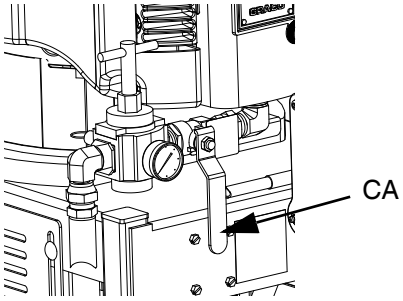
4. Open the circulation valve handle (AC).



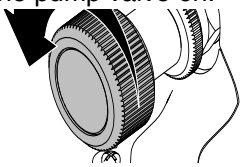
5. ***For XP Systems***:
   a. Turn down air pressure regulator (CB) and then open the main air shutoff valve (CA). Use the air pressure regulator to slowly increase air pressure to pumps until they start running slowly.

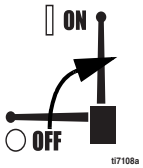


   b. Run the pumps for a few minutes or until the material has reached the desired temperature. See **Heat Fluid**, page 39.
   c. Close the motor air shutoff valve (CA).



6. ***For XP-h Systems***:
   a. Turn down the pressure control knob and set the pump valve on.





   b. Slowly increase the pressure until the pumps start running slowly.
   c. Run the pumps for a few minutes or until the material has reached the desired temperature. See **Heat Fluid**, page 39.
   d. Set the pump valve off.

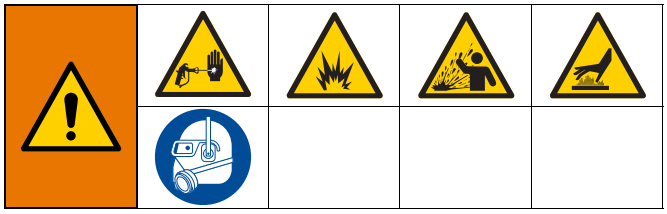
Heat Fluid

To heat fluid evenly throughout the system:

1. Circulate the fluid at approximately 1/2 gpm (10-20 cycles/min.) to raise the temperature of the hoppers to 80°-90° F (27°-32° C).
2. Decrease the circulation rate to approximately 0.25 gpm (5 cycles/min.) to increase the heater outlet temperature to match the spray temperature.

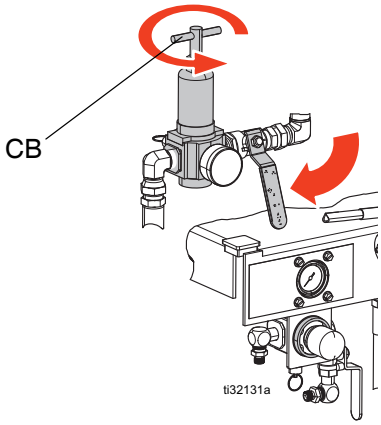
NOTE: Circulating the fluid too quickly without decreasing the circulation rate will increase only the hopper temperature. Similarly, circulating fluid too slowly will increase only the heater outlet temperature.

Spray

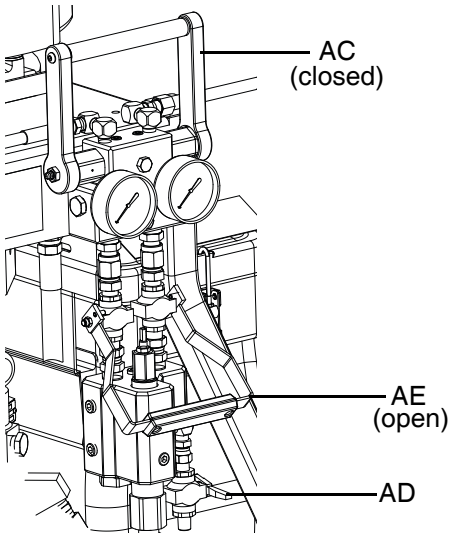


NOTE: After the first day of spraying, re-tighten all hose connection fittings and tighten the throat packing nuts on both pumps.

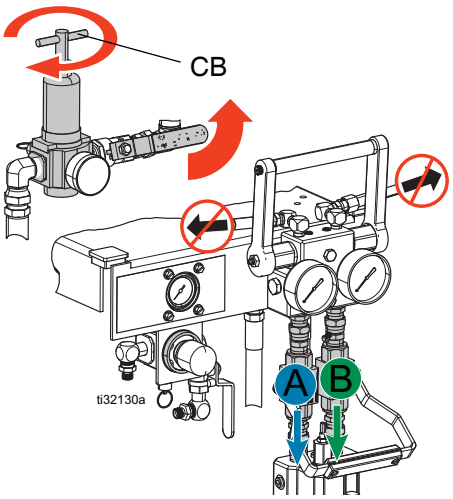
1. If heaters are used, turn them on. To adjust the heater temperature, refer to the Viscon HF or HP manual for instructions, and the **Heat Fluid** section, page 39. Circulate as necessary.
2. Close the motor air pressure regulator (CB) and decrease to zero.



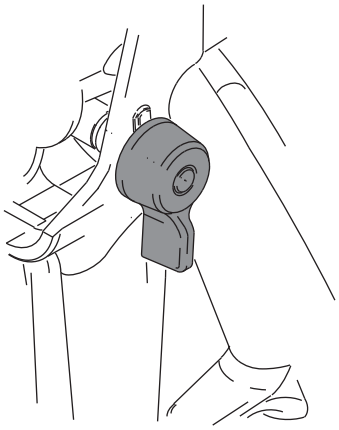
3. Close the circulation handle (AC) and the solvent flush valve (AD). Open the dual shutoff handle (AE).

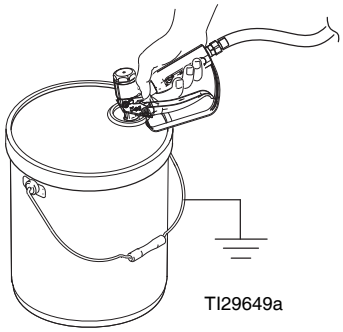


4. Adjust the main air regulator (CB) to 30 psi (0.21 MPa, 2.1 bar) minimum.



5. Remove tip. Disengage the trigger lock and trigger the gun while holding against a grounded metal pail. Use a metal pail lid with a hole to dispense through to avoid splashing. Dispense out of the mix hose until a well mixed coating flows from the gun.

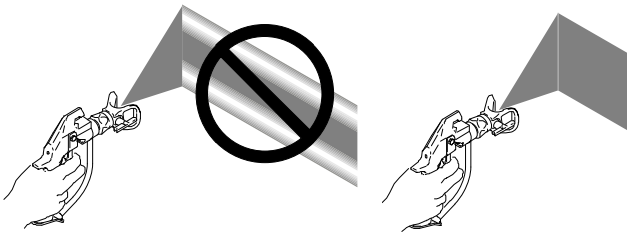




6. Engage the trigger lock. Install the tip on the gun.

7. Adjust the main pump air regulator (CB) to the necessary spraying pressure and apply a coating to a test panel.

   NOTE: Run **System Verification** tests everyday (see page 49).



   NOTE: Excess pressure increases overspray and pump wear.

8. Check and record gauge readings frequently during operation. A change in gauge readings indicates a change in system performance.

NOTE:

- A pressure drop occurs during pump stroke changeover. It should be quick and synchronous.
- Flush the mix manifold as necessary during the day's operation.

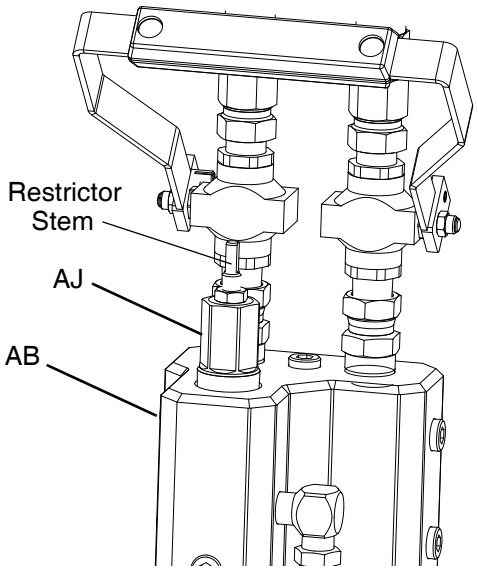
9. Follow **Flush Mixed Material**, page 43 when you are finished spraying or before potlife expires.

NOTE: Mixed material potlife or working time decreases with increased temperature. Pot life in the hose is much shorter than the dry time of the coating.

B Component Adjustable Fluid Restrictor

The B side restrictor (AJ) reduces momentary “lead/lag” ratio imbalance of the A and B flow into the static mixer tubes when the gun opens. The error is caused by differences in viscosity, volume, and hose expansion.

The restrictor is used primarily when the mix manifold is positioned remotely from the machine with a short mix hose to the spray gun. It can also be used in the ratio check procedure.



If the mix manifold (AB) is mounted on the machine, you do not need to adjust the restrictor. Leave the restrictor stem open two turns minimum from fully closed.

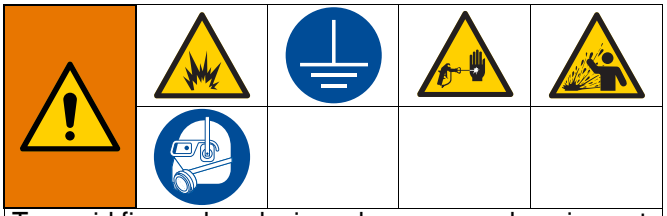
To Adjust the Restrictor:

Adjust the restrictor stem clockwise while spraying until you see a slight rise in the B side pressure gauge. The point where the pressure starts to rise is a good adjustment setting.

Unless you are dispensing directly out of the mix manifold and mixer, this is an approximate adjustment.

See the mix manifold manual 3A0590 for more information.

Flush Mixed Material



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

Flush the mix manifold when any of the following situations occur.

- breaks in spraying
- overnight shutdown
- mixed material in system approaching end of potlife

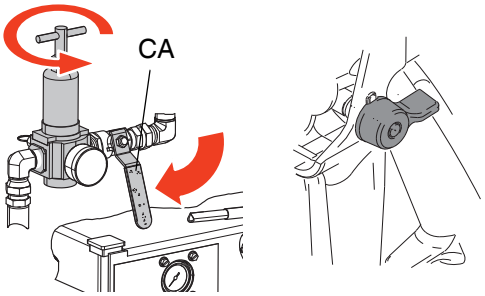
Flush Mix Manifold, Hose, and Spray Gun

If your system doesn't include a solvent flush pump, see **Empty and Flush Entire**, page 45.

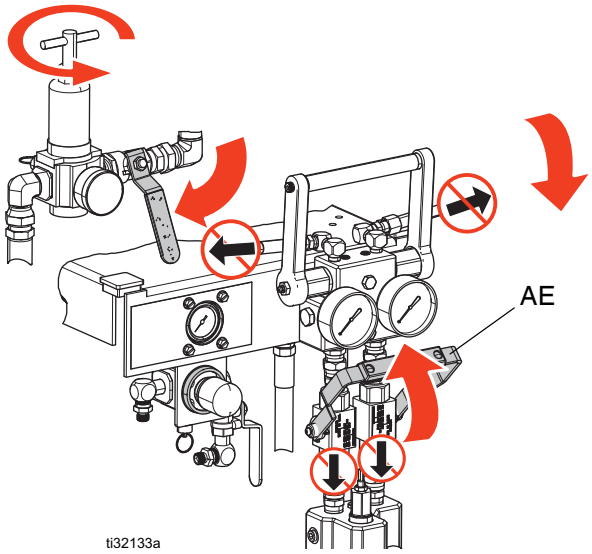
Turn off heaters. Allow heater and heated hoses to cool.

Follow the **Pressure Relief Procedure** on page 34.

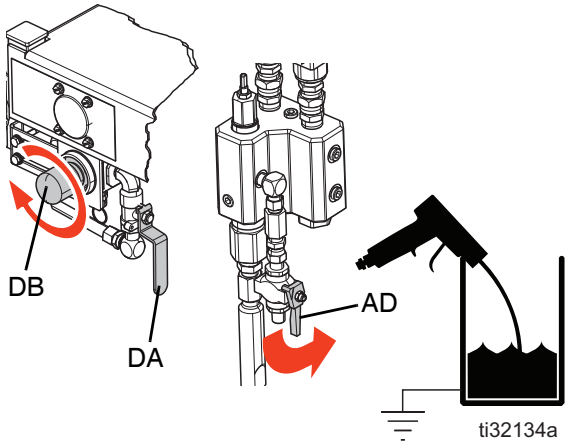
1. Close the motor air shutoff valve (CA) to turn off the pump air motor and reduce air pressure. Engage trigger lock. Remove the spray tip and soak in solvent.



2. Lift to close the dual shutoff handle (AE).

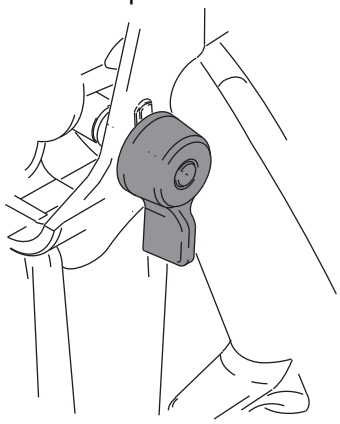


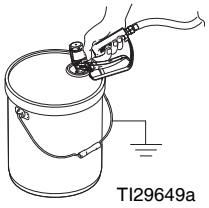
3. Open the solvent pump air valve (DA). Slowly turn the solvent pump air regulator (DB) clockwise to increase air pressure.



4. Open the solvent flush valve (AD)

5. Disengage the trigger lock, hold the gun against a grounded metal pail, and trigger the gun into the pail. Use a pail lid with a hole to dispense through. Seal around the hole and gun with a rag to prevent splash back. Be careful to keep fingers away from the front of the gun. Continue flushing until clean solvent dispenses.





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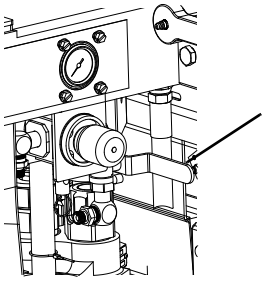
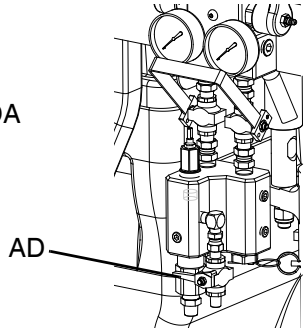
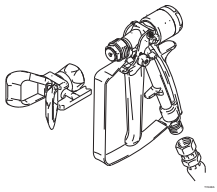
6. Close the solvent pump air valve (DA). Trigger the gun to relieve pressure. Close the solvent flush valve (AD) after relieving the pressure.



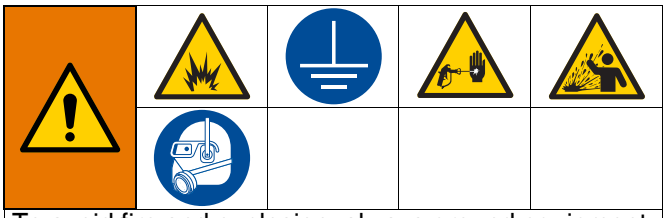


7. Follow **Pressure Relief Procedure**, page 34.

8. Engage the trigger lock. Disassemble and clean the spray tip with solvent by hand. Reinstall on the gun.



Empty and Flush Entire System (new system or end of job)



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

NOTE:

- If the system includes heaters and heated hose, turn them off and allow to cool before flushing. Do not turn on the heaters until the fluid lines are clear of solvent.
- Cover fluid containers and use the lowest possible pressure when flushing to avoid splashing.
- Before color change or shutdown for storage, circulate the solvent at a higher flow rate and for a longer time. Change the solvent when it gets dirty.
- To only flush the fluid manifold, see **Flush Mix Manifold, Hose, and Spray Gun**, page 43.
- If the machine is inoperable, use drain plugs on the pump inlet fittings.

Guidelines

Flush new systems if the coating materials will be contaminated by mineral oil.

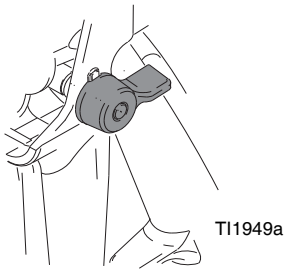
Flushing will help prevent materials from settling or gelling in the pumps, lines, and valves. Flush the system when any of the following situations occur.

- Anytime 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 flush solvent with light oil. Never leave the equipment empty of any fluid.

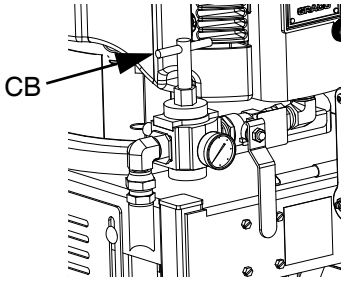
Empty System Procedure

1. Follow **Prime Empty System**, page 35 and **Flush Mix Manifold, Hose, and Spray Gun**, page 43, as required.

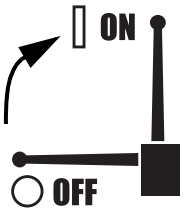
2. Engage the trigger lock.



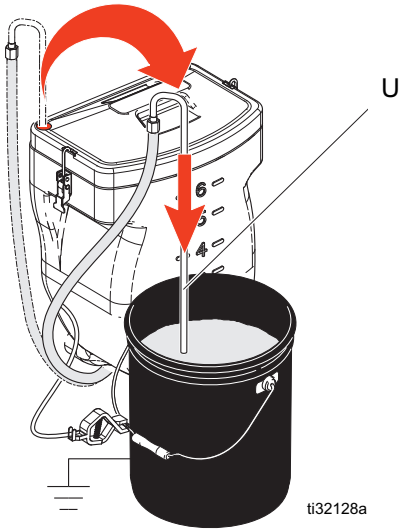
3. **XP Systems:** Turn the main pump air regulator (CB) fully counter-clockwise to shut off.



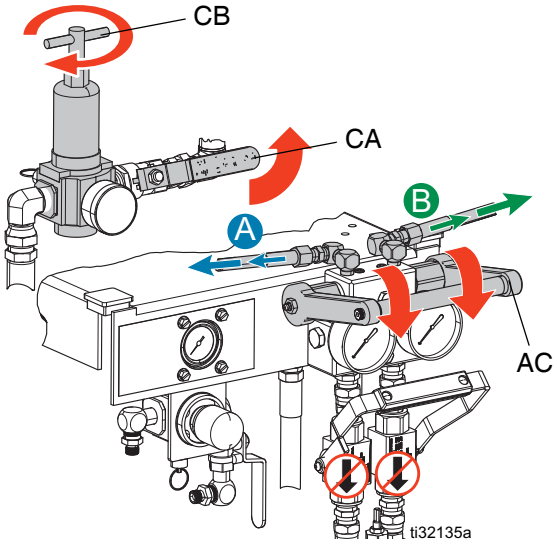
XP-h Systems: Set pump valve on.



4. Move recirculation lines (U) to separate fluid containers to pump remaining fluid out of the system.



5. Lower to open the circulation handle (AC) and increase the motor air pressure regulator (CB) pressure to 20 psi (138 kPa, 1.38 bar).



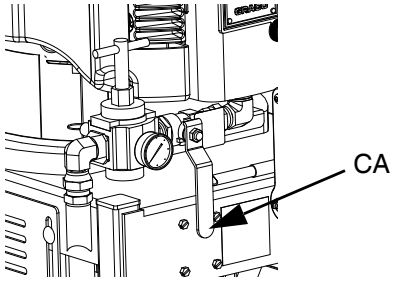
6. Open the motor air shutoff valve (CA).

   NOTE: If the system does not start with static pressure, increase the air pressure by 5 psi (35 kPa, 0.35 bar) increments. To avoid splashing, do not exceed 35 psi (241 kPa, 2.4 bar).

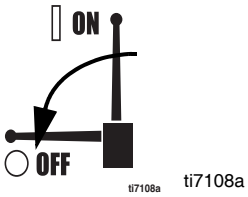
7. Run the pumps until the A and B hoppers (J) are empty. Salvage the material in separate, clean containers.

Flush System Procedure

1. **For XP Systems:** Close the main air shutoff valve (CA).



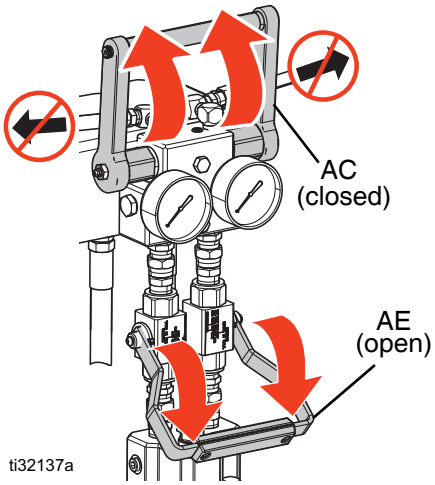
For XP-h Systems: Set pump valve to off.



2. Wipe the hoppers (J) clean, then add solvent to each. Move the circulation lines (U) to waste containers and push out the dirty fluids.

3. Move the recirculation lines (U) back to the hoppers. Continue recirculating until the system is thoroughly flushed.

4. Lift to close the circulation handle (AC) and lower to open the dual shutoff handle (AE).

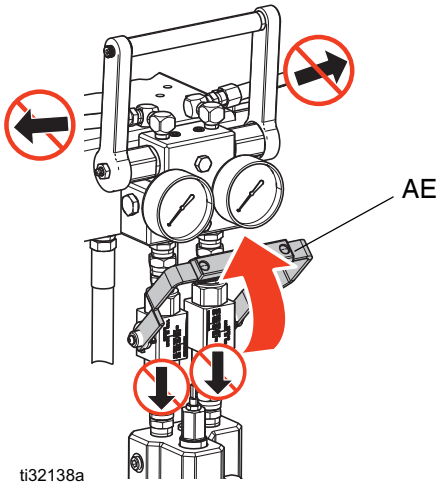


5. Open the motor air shutoff valve. Increase the air regulator pressure to 20 psi (1.9 bar).

6. Increase the motor air pressure regulator to dispense fresh solvent from the hoppers through the mix manifold valves and out the gun.

7. Turn off the air motor.

8. Lift to close the dual shutoff handle (AE).



9. Remove pump fluid filters, if installed, and soak in solvent. Clean and replace the filter cap. Always replace the filter o-rings. See Xtreme pump manual 311762.

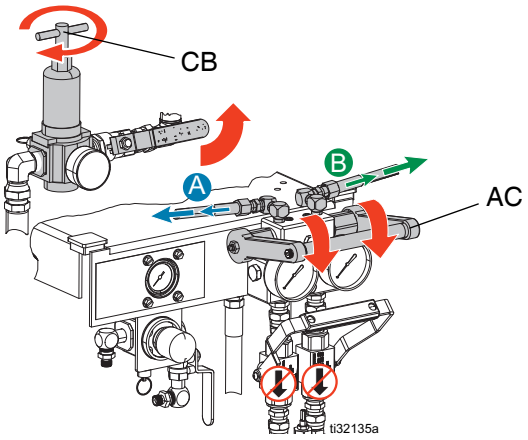
10. Fill the A and B pump packing nuts with TSL. Also, always leave some type of fluid, such as solvent or oil, in the system to prevent scale build up. This build up can flake off later. Do not use water.

NOTE:

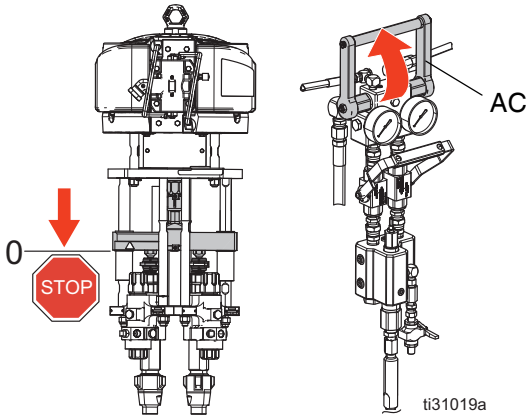
- If machine is set up with a remote mix manifold, the A and B hose can be disconnected from the mix manifold, and secured back to each hopper for circulation of flush solvent.
- Change the flush solvent at least once until it circulates clean.
- Always keep the A side and B side flush solvent containers separate to avoid cross-contamination.

Park

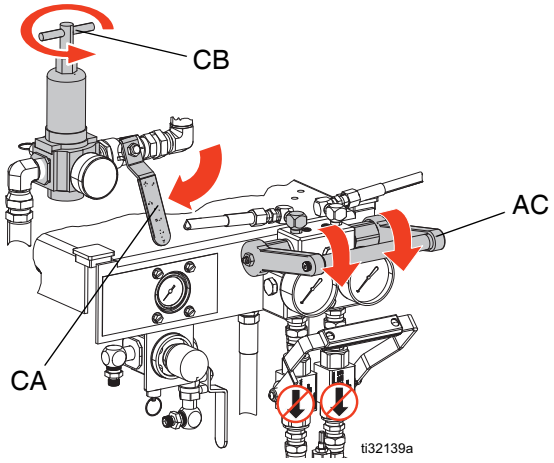
1. Lower to open the circulation handle (AC) and adjust the air regulator (CB) so that the pump runs slowly.



2. Lift to close the circulation handle (AC) when the pump is at the bottom of the stroke.



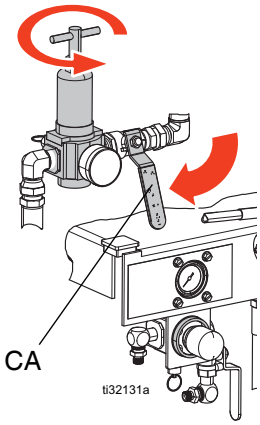
3. Close the motor air valve (CA) and turn the air regulator (CB) counterclockwise. Lower to open the circulation handle (AC).



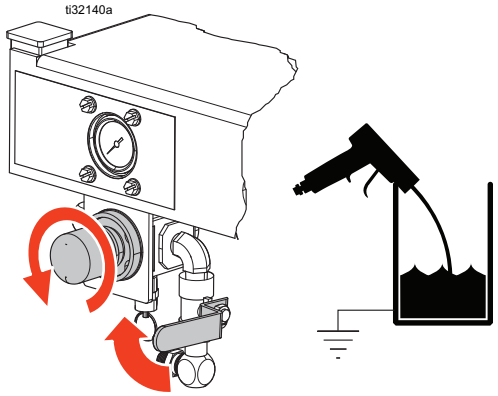
Shutdown

1. Flush mix manifold, hoses, and gun. See **Flush Mix Manifold, Hose, and Spray Gun**, page 43.

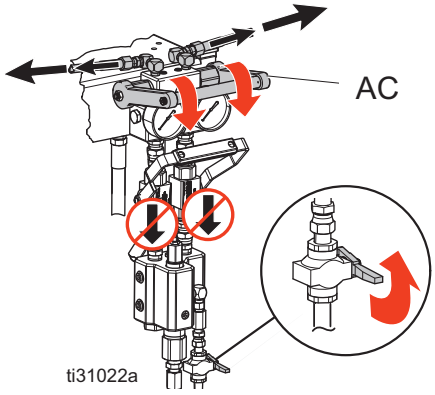
2. Close the main air shutoff valve (CA).



3. Close solvent air valve and turn solvent air regulator fully counterclockwise. Trigger gun to relieve any residual pressure.



4. Close solvent fluid valve and lower re-circulation handle (AC).



System Verification

Graco recommends running the following tests daily.

Check for Normal Operation

Every time you start spraying:

- Watch the fluid gauges (AF). A pressure drop occurs during pump stroke changeover. It should be quick and synchronous.
- Stop the pumps on the upstroke. Check that both gauges hold pressure for at least 20 seconds. See **Pump Troubleshooting** on page 52.

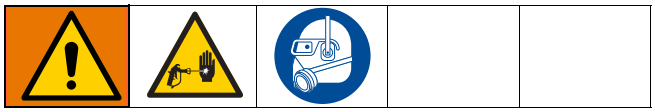
If one gauge drops, the others will rise.

- Stop the pumps on the down-stroke. Check that all gauges hold pressure.
- If using feed pumps, check that both feed pumps run during the proportioner upstroke.

Mix and Integration Tests

Use the following tests to check for proper mix and integration.

Butterfly Test



At low pressure, and with the spray tip reversed, dispense a 1/2 in. (12.7 mm) bead of material onto foil until multiple changeovers of each pump have occurred. Fold the sheet of foil over the fluid then peel it back and look for unmixed material (appears marble-like), or color changes.

Curing Test

Spray a single continuous pattern on foil at typical pressure setting, flow rate, and tip size until multiple changeovers of each pump have occurred. Trigger and de-trigger at typical intervals for the application. Do not overlap or cross over your spray pattern.

Check curing at various time intervals, listed on the material data sheet. For example, check for dry to touch by running your finger along the test pattern's entire length at the time listed on the data sheet.

Spots that take longer to cure indicate insufficient pump loading, leakage, or lead/lag errors at a remote mix manifold.

Appearance Test

Spray material onto foil. Look for variations in color, gloss, or texture that may indicate improperly catalyzed material.

Monitor Fluid Supply

NOTE: To prevent pumping air into the system, which causes incorrect proportioning, never allow the feed pump or solvent pump containers to run dry.

An empty pump will quickly accelerate to a high speed, and may damage itself and the other displacement pump because it causes a pressure rise in the other pump. If a supply container runs dry, stop the pump immediately, refill the container, and prime the system. Be sure to eliminate all air from the system.

Check Pot Life

Check the fluid manufacturer's instructions for fluid pot life at your fluid temperature. Flush mixed fluid out of the mix manifold, hose, and gun before pot life time expires, or before a rise in viscosity affects the spray pattern.

Ratio Check

Check the ratio at the mix manifold after any changes to the proportioning system. Use Ratio Check Kit 24F375 to check the ratio at the mix manifold. See manual ratio check kit manual for instructions and parts.

To prevent an inaccurate ratio check when feed pumps are used in your system, the feed pressure cannot be more than a maximum of 25% of the proportioner outlet pressure. High feed pressure can float the proportioner pump check balls, resulting in an inaccurate ratio check. There must be back pressure on both sides of the mix manifold when checking the ratio.

Maintenance

Hose Electrical Resistance

Check electrical resistance of hoses regularly. If total resistance to ground exceeds 29 megohms, replace hose immediately.

Filters

Once a week check, clean, and replace (if needed) the following filters.

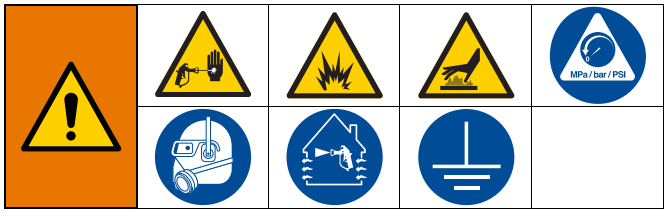
- Both pump filters; see lower manual for instructions.
- Spray gun handle filter; see spray gun manual.

Seals

Once a week, check and tighten throat seals on both pumps. See table for torque specifications. Be sure to follow the **Pressure Relief Procedure** on page 34, prior to tightening seals. There must be zero pressure on the pumps when adjusting.

Pump Size	Torque Specification
All	25-30 ft-lb (34-41 N•m)

Cleaning Procedure



1. Ensure all equipment is grounded. See **Grounding**, page 28.
2. Ensure the area where the system will be cleaned is well ventilated and remove all ignition sources.
3. Turn off all heaters and allow equipment to cool.
4. Flush mixed material. See **Flush Mixed Material**, page 43.
5. Perform the **Pressure Relief Procedure** on page 34.
6. Perform **Park** and **Shutdown** procedures, page 48. Turn off all power.
7. Clean the external surfaces only using a rag soaked in solvent that is compatible with the spray material and surfaces being cleaned.
8. Allow enough time for the solvent to dry before using the system.

Change the Mix Ratio

In order to change the mix ratio, one or both pumps need to be replaced, the air motor needs to be re-positioned, and the over pressure relief valves may need to be changed.

1. Check the **Parts Varying by Pump Package** table on page 72 for the correct pump sizes.
2. Remove and replace pump. See **Remove Displacement Pump** page 53.
3. Adjust the position of the air motor. See **Motor Position** page 30.
4. ***If changing from one type of XP system to another (for example - changing from XP50 to XP70 or from XP70 to XP50):*** Remove the existing over pressure relief valves (302) and install the correct valves for the new system type. See **Replace Over Pressure Relief Valves** on page 56.
5. Change the air pressure relief valve (CG) as required, depending on the ratio.

Troubleshooting

✖ ***Fluid ratio will be wrong.***

◆ ***Purge all air from system before proportioning fluids.***

Problem	Cause	Solution
System stops or will not start.	Air pressure or volume too low.	Increase; check air compressor.
	Closed or restricted air line or air valve.	Open or clean.
	Fluid valves closed.	Open.
	Clogged fluid hose.	Replace.
	Air motor worn or damaged.	Repair air motor; see 311238.
	Displacement pump stuck.	Repair pump; see 311762.
System speeds up or runs erratically.	Fluid containers are empty.◆	Check often; keep filled.
	Air in fluid lines.◆	Purge; check connections.
	Displacement pump parts worn or damaged.	Repair pump; see 311762.
Pump operates, but resin output pressure drops on upstroke.✖	Dirty, worn, or damaged resin pump piston valve or piston packings.	Clean, repair pump; see 311762.
Pump operates, but resin output pressure drops on down-stroke.	Dirty, worn, or damaged resin pump intake valve.	Clean, repair pump; see 311762.
Pump operates, but resin output pressure drops on both strokes.✖	Hardener output restriction.	Clean, unplug hardener side. Open manifold restrictor.
	Fluid supply low.◆	Refill or change container.
Pump operates, but hardener output pressure drops on upstroke.✖	Dirty, worn, or damaged hardener pump piston valve or piston packings.	Clean, repair pump; see 311762.
Pump operates, but hardener output pressure drops on down-stroke.✖	Dirty, worn, or damaged hardener pump intake valve.	Clean, repair pump; see 311762.
Pump operates, but hardener output pressure drops on both strokes.	Resin output restriction.	Clean, unplug resin side.
	Fluid supply low.◆	Refill or change container.
Fluid leak in packing nut.	Loose packing nut or worn throat packings.	Tighten; replace; see 311762.
Fluid leak under packing nut	Packing cartridge o-ring.	Replace o-ring; see 311762
Relief valve (AM) leaks back to supply, opens too soon, or will not close.	Relief valve is dirty or damaged.	Replace over pressure relief valve (302)
No pressure on hardener side; fluid leaking from hardener pump outlet rupture disc fitting.	Overpressure rupture disk blown.	Determine cause of overpressurization and correct. Replace rupture disk assembly 258962 (see page 72) and over pressure relief valve (302).
Pressure and flow surges on upstroke.	Feed pressure too high. Every 1 psi of feed pressure adds 2 psi during upstroke.	Reduce feed pressure. See **Technical Specifications**, page 91.

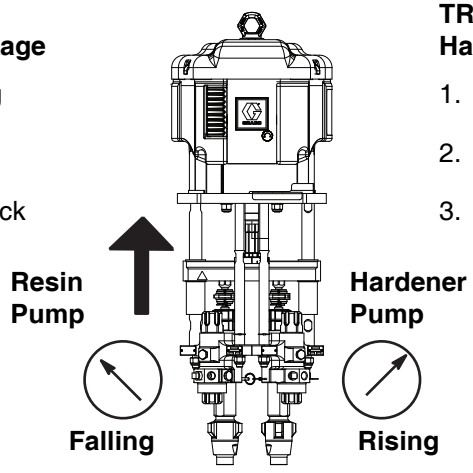
Problem	Cause	Solution
Fluid outlet pressure gauges split only at the top changeover (if one gauge drops the other will rise).	Not fully loading one side on upstroke.	Increase feed pressure on side that dropped. Increase feed hose size. Clean inlet strainer or hopper screen.
	Air mixed in fluid from excessive agitation or circulation.	Flush and add new fluid.

Pump Troubleshooting

This chart uses proportioning fluid gauges to determine pump malfunctions. Observe the gauge readings during the stroke direction indicated by the bold arrow, and immediately after closing the gun or mix manifold. Refer to other manuals to troubleshoot individual components.

TROUBLE AREA:
Resin Pump Leakage

1. Throat packing
2. Piston packing
3. Piston ball check



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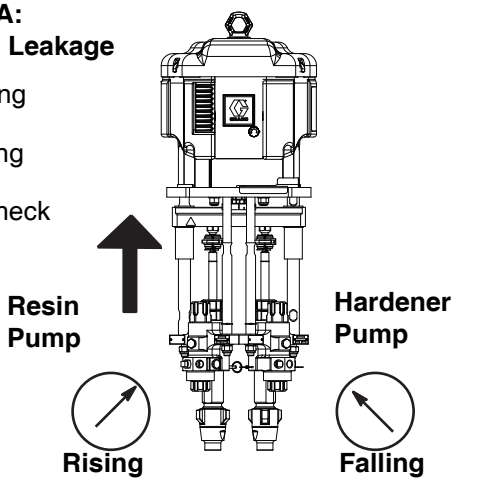
TROUBLE AREA:
Hardener Pump Leakage

1. Throat packing
2. Piston packing
3. Piston ball check



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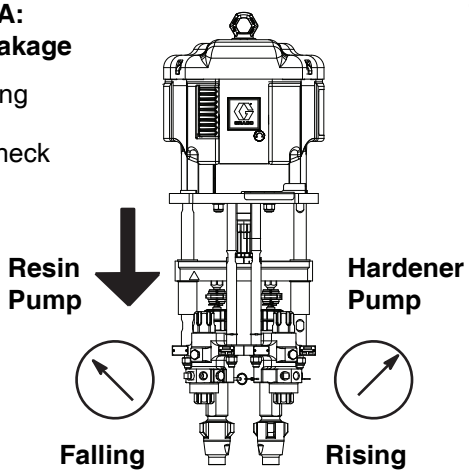
TROUBLE AREA:
Resin Pump Leakage

1. Throat packing
2. Intake ball check



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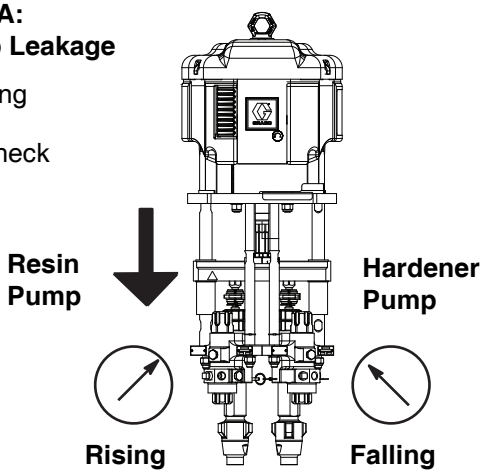
TROUBLE AREA:
Hardener Pump Leakage

1. Throat packing
2. Intake ball check



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Repair

To avoid serious injury due to the pump assembly falling, secure a hoist to the lift ring.

Follow **Park** procedure on page 48, which includes flushing, if service time may exceed pot life time, before servicing fluid components, and before transporting system to a service area.

Pump Assembly

The displacement pumps and air motor may be removed and serviced separately or the entire pump and motor assembly can be removed with a hoist.

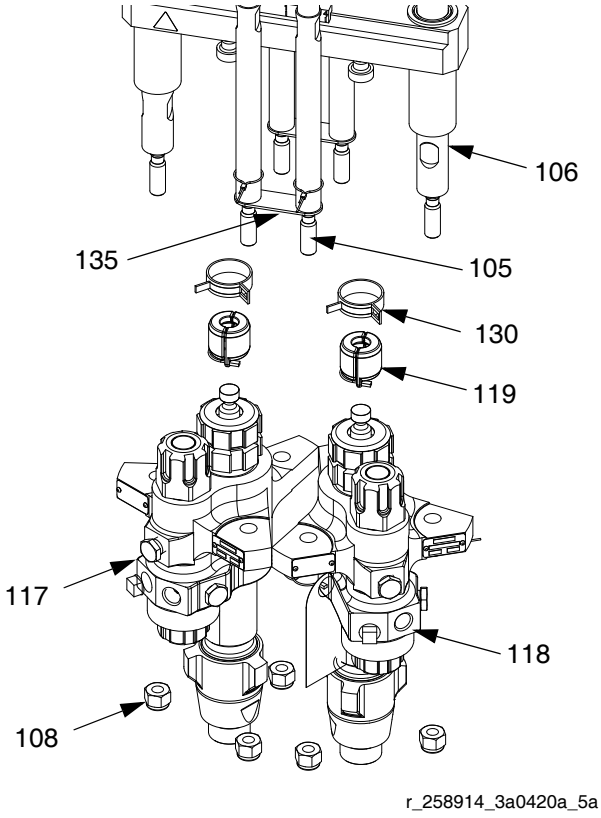
Remove Pump Assembly

1. Stop the pumps near the bottom of their stroke. Follow **Park**, page 48.
2. Disconnect all hoses from the pump assembly.
3. If hoppers are installed, disconnect the hopper fluid lines from the pump fluid inlet. See **Hoppers**, page 58.

   NOTE: The hopper and hopper bracket do not need to be removed from the cart.
4. Remove screws (6) and washers (5) under the tie plate (101).
5. Use hoist to remove the pump assembly by the lift ring and carefully lift out of cart (1).

Remove Displacement Pump

1. Follow **Park**, page 48.
2. If hoppers are installed, remove the hopper and hopper bracket from the cart. See **Hoppers**, page 58.
3. If feed pumps are installed, close the inlet ball valve. Remove inlet union (61).
4. Remove the spring clamp (130) and coupling (119 or 120).

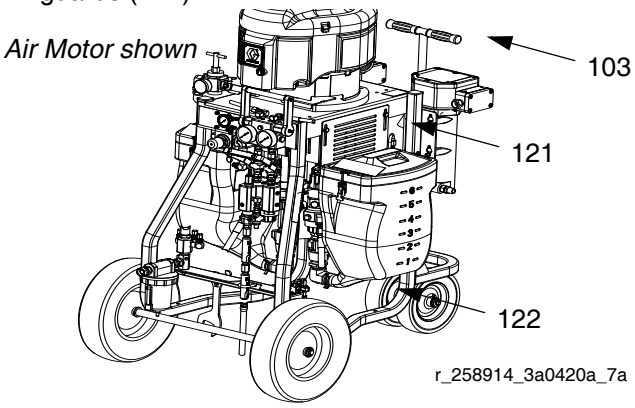


5. Use a wrench to hold the tie rod (105, 106) flats to keep the rods from turning. Unscrew the nuts (108) from the tie rods and carefully remove the displacement pump (117 or 118) and lower straps (135).
6. Refer to the Xtreme Displacement Pump manual to service or repair the displacement pump.
7. Follow the steps in reverse order to reinstall the displacement pump.

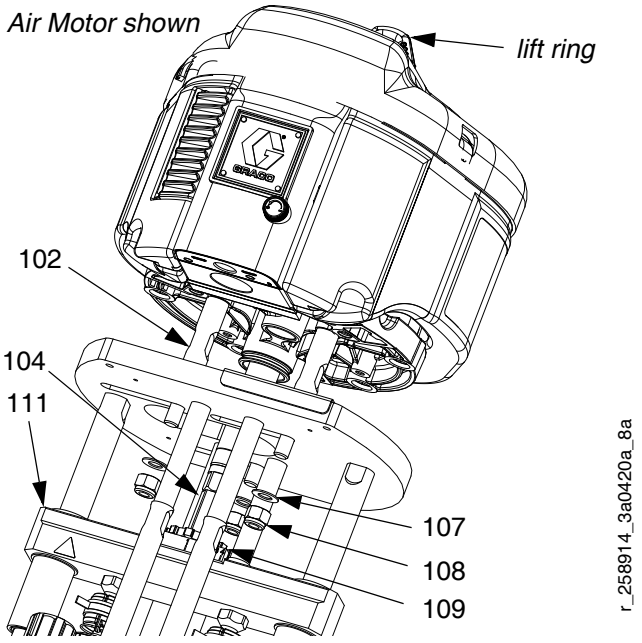
Torque nuts (108) to 50-60 ft-lb (68-81 N•m).

Remove Motor

1. Stop the pumps near the bottom of their stroke. Follow **Park**, page 60.
2. Disconnect the air line from the air motor (103).
3. Remove the air motor rod cover (121) and pump guards (122).



4. Use a wrench to hold the tie rod (102) flats to keep the rods from turning. Unscrew the nuts (108) and washers (107) from the tie rods.



5. Place a wrench on adapter rod (104). Use tool (70) to loosen the serrated yoke nut (109) that holds the air motor (103) above the yoke (111).
6. Face the front of the machine and slide the air motor (103) to the opening in the yoke (111).
7. Use a hoist to remove the air motor by the lift ring.
8. Refer to the air motor manual to service or repair the air motor.
9. Follow the steps in reverse order to reinstall the air motor.

Position air motor for correct mix ratio. See **Motor Position** on page 30 for instructions. Torque nuts (108) to 50-60 ft-lb (68-81 N•m).

Air Controls

For XP systems only. See FIG. 7 on page 55.

Replace Air Control Assembly

1. Close the main air shutoff valve on the air supply line and on the system. Depressurize the air line.
2. Disconnect the air motor air lines and system air line.
3. Remove the nut (8) and washer (5). Remove the bottom air control manifold assembly from the cart.
4. Loosen the upper air control assembly from the air motor.
5. Follow the steps in reverse order to reinstall the new air control assembly.

Replace Air Filter Element

1. Close the main air shutoff valve on the air supply line and on the system. Depressurize the air line.
2. Unscrew the serrated ring on filter bowl (210).
3. Remove and replace the filter element (210a). See **Air Controls, 258983**, page 73.

Replace System Air Regulator

1. Close the main air shutoff valve on the air supply line and on the system.
2. Disconnect air motor air lines and system air line.
3. Remove the regulator assembly (201) and replace with new regulator. See **Air Controls, 258983**, page 73.
4. Follow the steps in reverse order to reassemble.

For XP systems only.

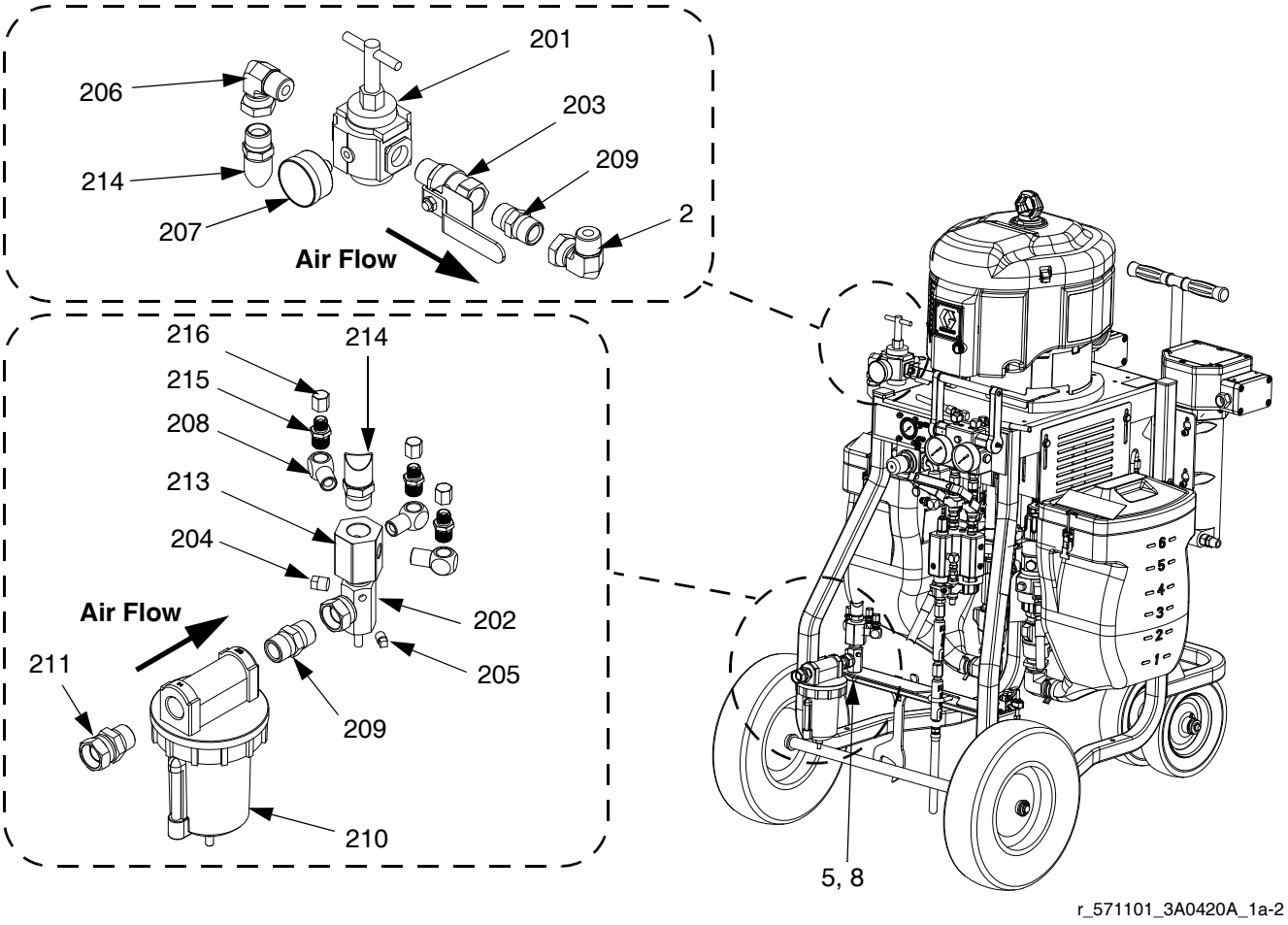
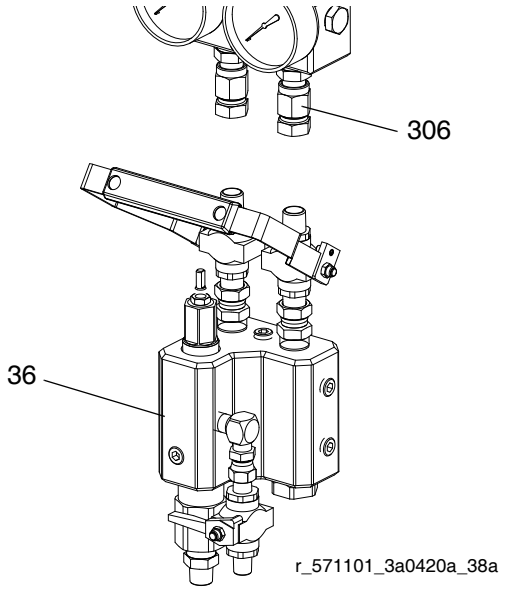


FIG. 7: Air Control Assembly 258983

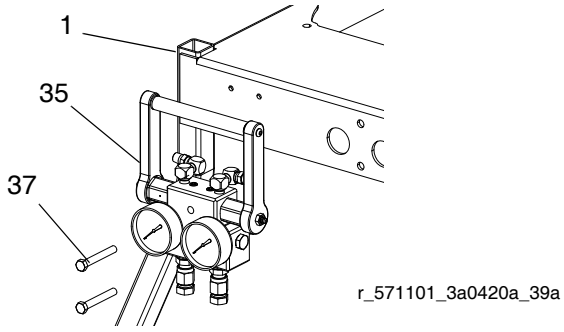
Mix Manifold Assembly

1. Follow the **Park** procedure and **Shutdown** procedure on page 48.
2. Disconnect the fluid hose (25) and the flush hose from the mix manifold (36).
3. Loosen the union fittings (306) that connect to the mix manifold adapter fittings.
4. Remove the mix manifold assembly (36).
5. See mix manifold manual for service and repair instructions.



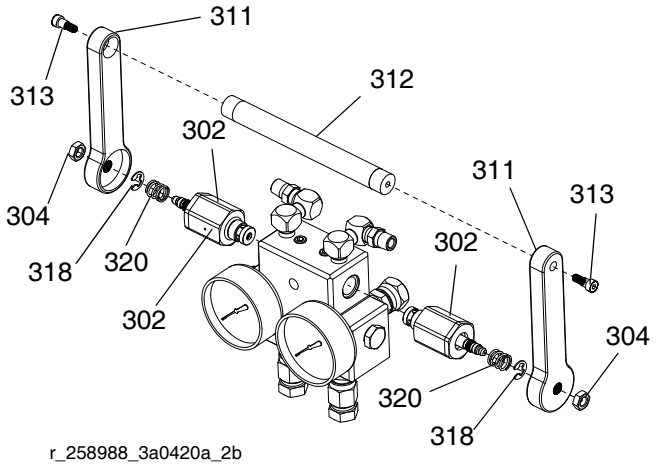
Fluid Circulation Manifold with Over Pressure Relief Valves

1. Follow the **Park** procedure and **Shutdown** procedure on page 48.
2. Disconnect all fluid hoses from the fluid circulation manifold (35).
3. Remove the mix manifold if it is assembled to the fluid circulation manifold. See **Mix Manifold Assembly** (page 56) for instructions.
4. Loosen the two screws (37) that secure the manifold (35) to the cart (1).
5. Remove the two screws (37) and fluid circulation manifold (35) from the cart (1).



Replace Over Pressure Relief Valves

1. Follow the **Park** procedure and **Shutdown** procedure on page 48.
2. Ensure handle (312) is in the down position. Remove the screws (313), jam nut (304), handles (311), handle rod (312), clips (318), and springs (320).



3. Unscrew both over pressure relief valves (302) from the manifold.

NOTE: The correct over pressure relief valve must be used on all systems. Choose the correct color coded valve from the chart on page 57.

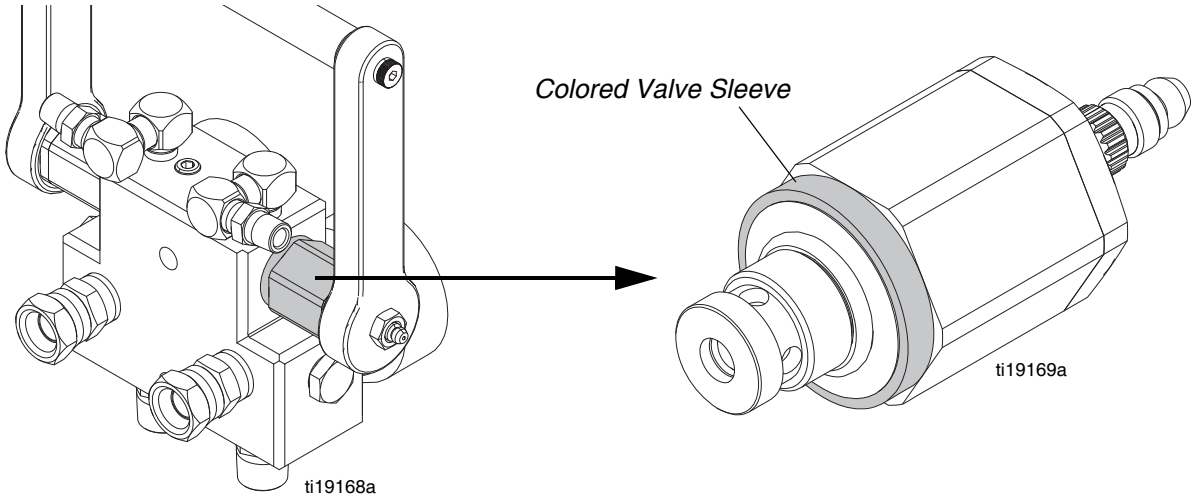
4. Apply blue threadlock to new over pressure relief valves (302) and install in the manifold. Torque to 28-32 ft-lb (38-43 N•m).
5. Place a spring (320) over each valve stem. Place a clip (318) in each valve stem groove to retain the springs.

6. Slide handle (311) onto valve stem and rotate approximately 90° until you feel it fully lock against the seat valve. Repeat for opposite side.
7. Remove handle then place handle (311) on valve stem (302) at the vertical, or near vertical, position.
8. Apply blue threadlock on the nut (304) threads and tighten the handle against the spring (320) and clip (318). Torque to 70-80 in-lb (7.9-9 N•m).
9. Place the rod (312) and the second handle (311) on second valve stem aligned with the opposite handle.
10. Repeat step 9.
11. Install two screws (313) in handles (311).
12. Check operation of the handle and valves.
13. Operate the handle in and out of the spray and circulate positions.
14. Check for clearance with fittings.

NOTE:

- Both valves should settle firmly into the spray position inward against the seats in the valve.
- Both valve stems should rotate out to their most extended positions when the handle is pulled down to the circulate position.

Fluid Circulation Manifold Replacement Guide

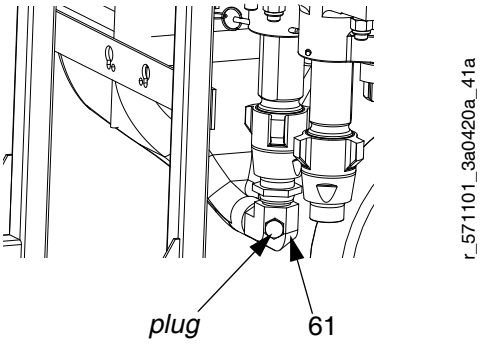


Circulation Manifold (35) Part No.	Relief Valve (302) Part No.	Valve Sleeve Color	Target Opening Pressure psi (MPa, bar)	Use with:
262784	262808	Purple	5300 (37, 365)	All XP35 models, XP-h models 284101, 284251, 284201, 284301, 284401
262783	262809	Gold	7100 (49, 490)	All XP50 models, XP-h models 284102, 284202, 284252, 284302, 284402
262806	262520	Silver	9250 (64, 638)	All XP70 models, XP-h models 284103, 284203, 284253, 284303, 284403

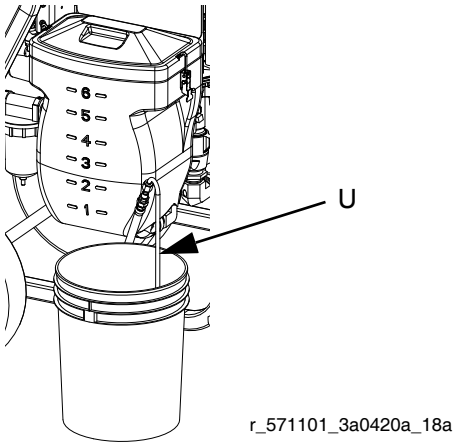
NOTE: Original XP70 valves did not include a silver valve sleeve. When replacing these original valves, replace with the current valves that have the silver valve sleeve.

Hoppers

1. If material is in the hopper, pump out the remaining material.
2. If the pump has failed:
   a. Place a waste container beneath the plug on fitting (61). Remove the plug.
   b. Drain all material from hopper into the waste container.
   c. Install plug after material is no longer draining from fitting (61).



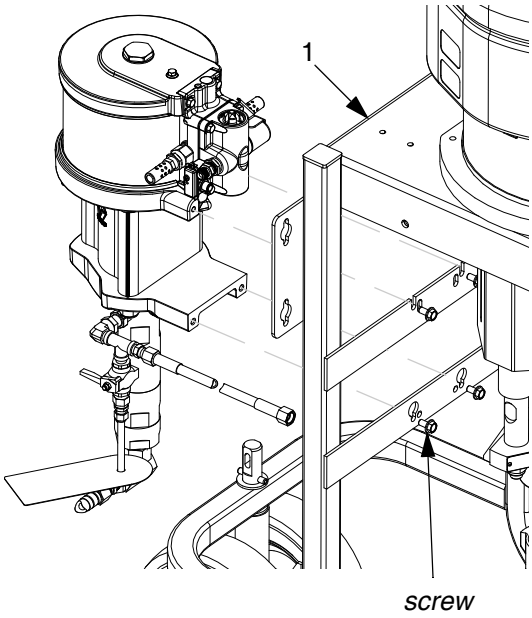
3. Follow **Pressure Relief Procedure**, page 34.
4. Loosen fitting (61) and disconnect hopper from pump.
5. Remove the recirculation line from the hopper and place in a waste container.



6. Lift the hopper off of the mounting bracket.
7. Repeat for second hopper.

Solvent Pump

1. Follow **Pressure Relief Procedure**, page 34.
2. Disconnect the fluid line and air lines from the solvent pump.
3. Loosen the four screws that attach the solvent pump to the cart (1). Lift and pull pump from the slots.



4. Refer to the Merkur Pump Assembly manual to service or repair the solvent pump.
5. Follow the steps in reverse order to reinstall the solvent pump.

Fluid Heaters

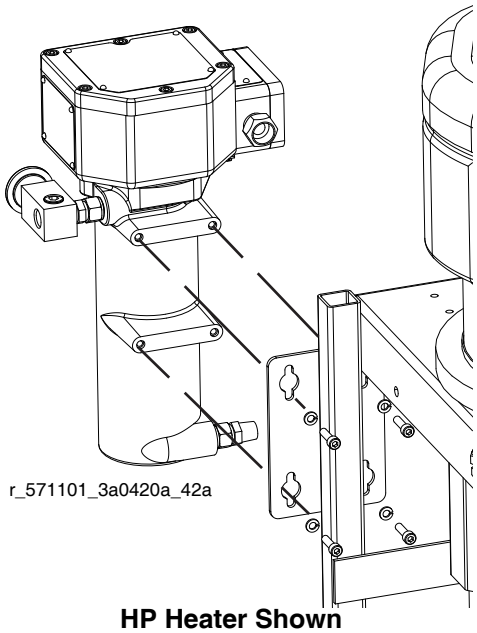
Wiring for heaters is not provided, other than with complete systems. See the Viscon HP or Viscon HF heater manual for wiring, repair, and parts information.

Service and Repair

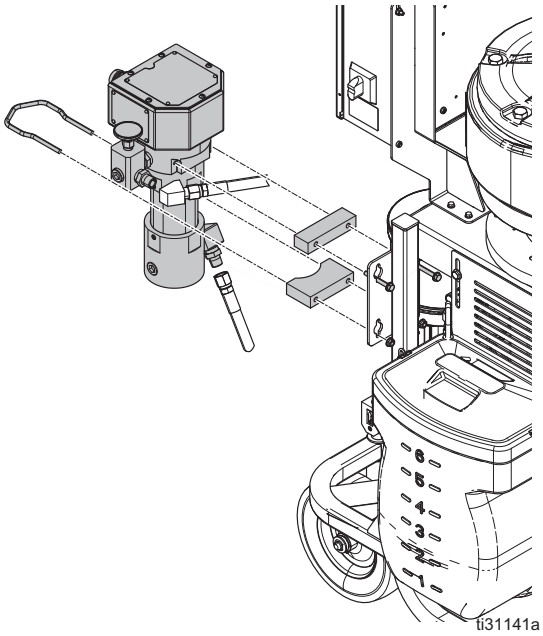
1. Follow **Pressure Relief Procedure**, page 34.
2. Disconnect the fluid lines and electrical wiring from the fluid heater.
3. Refer to the Viscon HP or Viscon HF heater manual to service or repair. Refer to the heater adapter kit manual 406861 for installation instructions.
4. Reconnect the fluid lines and electrical wiring.

Replace

1. Follow steps 1 through 2 in the **Fluid Heaters Service and Repair** section.
2. Loosen the four mounting screws, lock washers, and plain washers on back of the heater. Slide the heater up and remove from the cart.
3. Replace the heater. Follow the steps in reverse order to install a new heater.



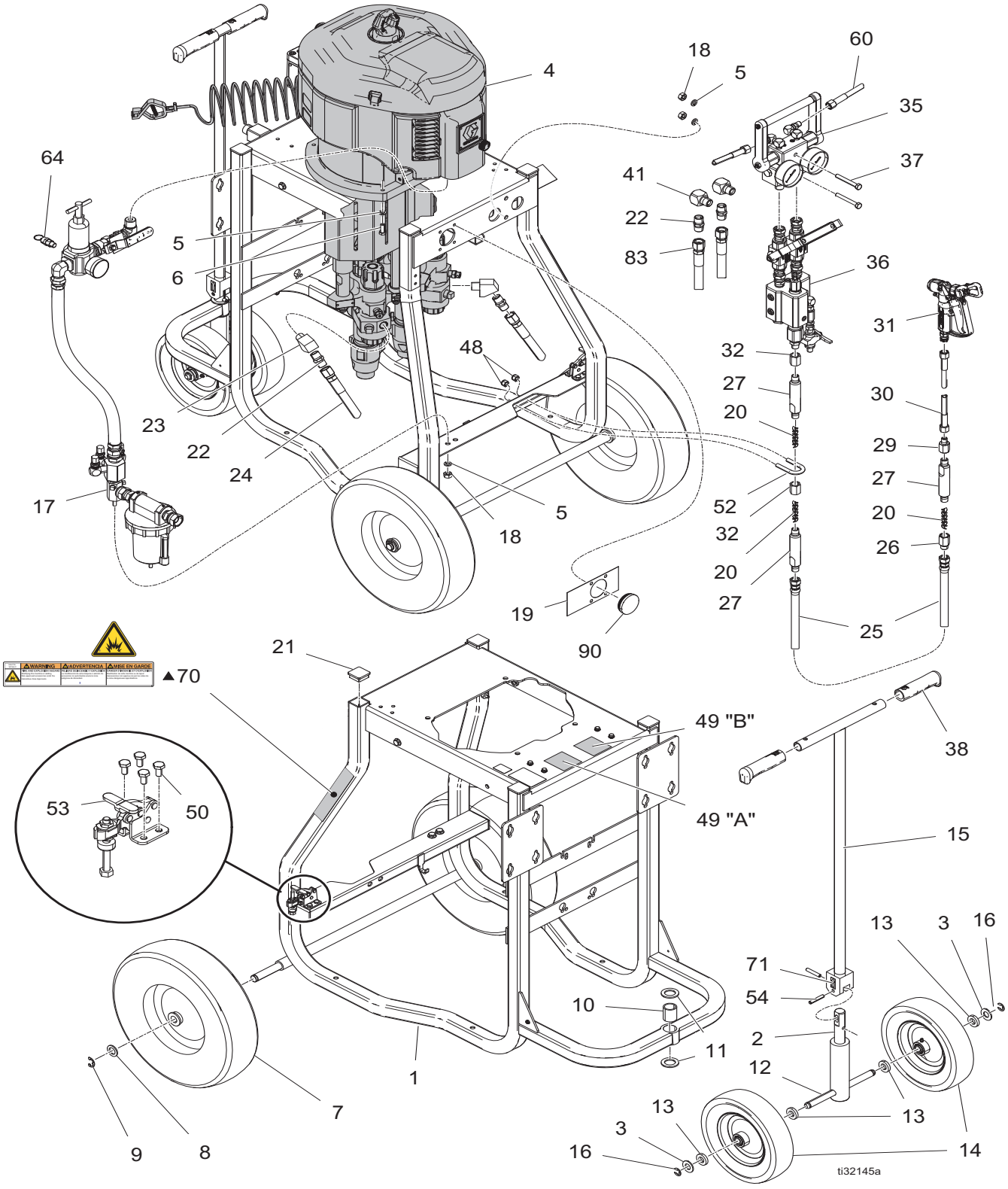
HP Heater Shown



HF Heater Shown

Parts

System Common Parts



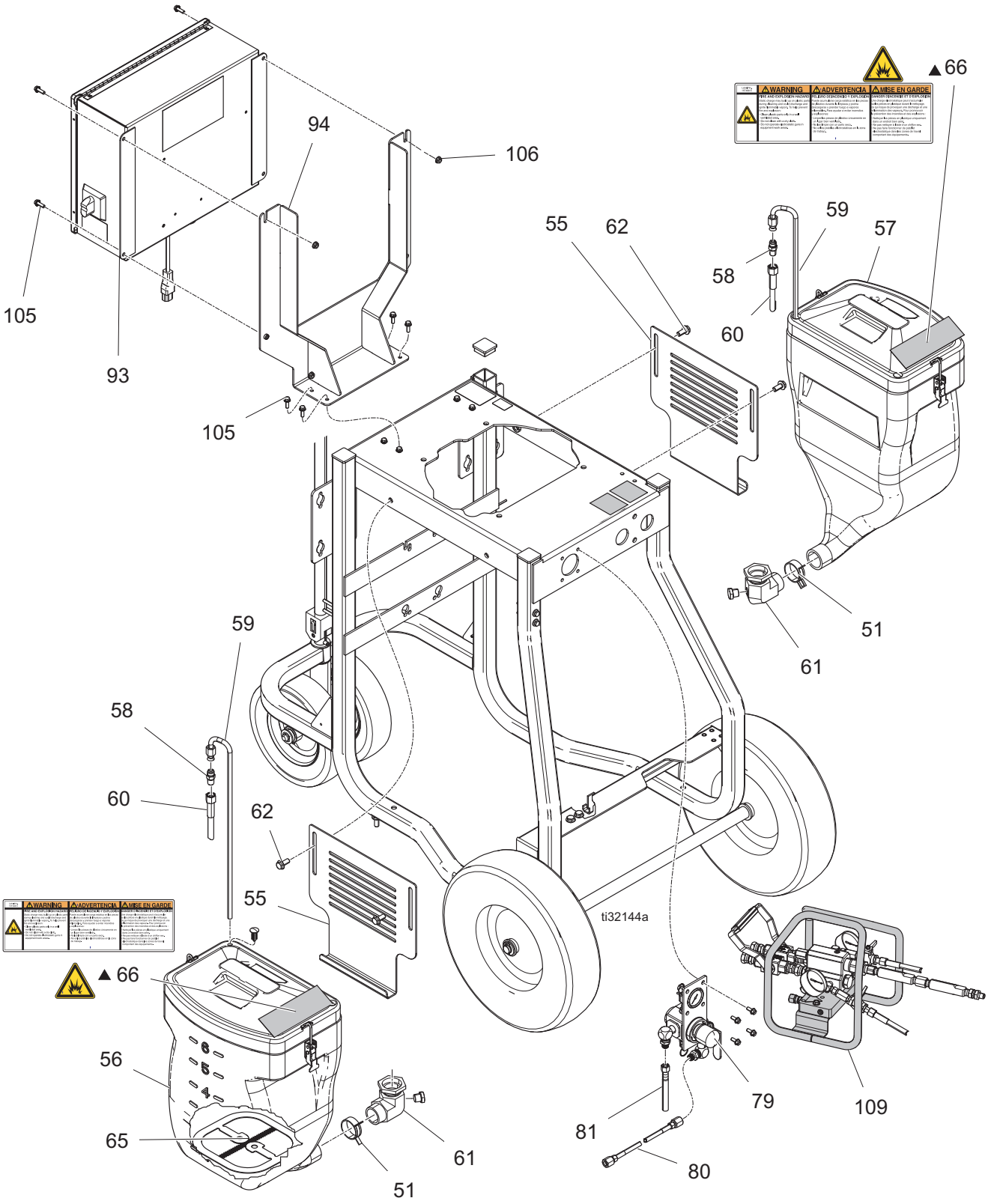
Parts Common to All Systems

Ref	Part	Description	Qty
1	258913	CART, weldment	1
2	262476	AXLE	1
3	111841	WASHER, plain 5/8	2
5	100133	WASHER, lock, 3/8	7
6	100101	SCREW, cap, hex head	4
7	113362	WHEEL, semi-pneumatic	2
8	154628	WASHER	2
9	113436	RING, retaining	2
10	124410	BEARING, sleeve, 1.00 x 1.25 x 1.5	1
11	124664	WASHER, 1 in. ID, stainless steel	2
12	15A913	AXLE	1
13	191824	WASHER, space	4
14	113807	WHEEL, flat free, urethane	2
15	258982	HANDLE, cart	1
16	101242	RING, retaining, ext.	2
17	258983	MODULE, air controls, inlet	1
18	100131	NUT, full hex	3
19	16F206	LABEL, solvent	1
20	512519	MIXER, 1/2-12 element	3
21	111218	CAP, tube, square	4
24	H75003	HOSE, coupled, 7250 psi, 0.50 ID, 3 ft	2
26	15B729	COUPLING	1
27	262478	HOUSING, mixer	3
28*	248927	KIT, mixer element, 25 pack	1
29	150287	COUPLING	1
32	162024	COUPLING	2
36	262807	MANIFOLD, mix, 1/2 valves	1
37	106212	SCREW, cap, hex head	2
38	116139	GRIP, handle	2
47*	206995	FLUID, TSL, 1 qt.	1
48	101566	NUT, lock	2
49	15U654	LABEL, identification, A/B	1
50	555357	SCREW	4
52	124293	BOLT, u-bolt, 3/8-16, 1.0 dia.	1
53	124259	BRAKE, plunger clamp	1
54	124291	PIN, spring	2
58	116704	ADAPTER, 9/16-18 JIC x 1/4 npt	2
59	15V421	TUBE, recirculation	2
67*	16E336	GUIDE, quick start	1
68	114958	STRAP, tie	10
69*	16F615	TOOL, wrench, Xtreme	1
70▲	16F359	LABEL, warning, fire and explosion hazard	1
71	16F536	LABEL, arrow	2
89*	16G819	TOOL, wrench, Xtreme, filter	1
92*	126786	TOOL, wrench, restrictor valve	1

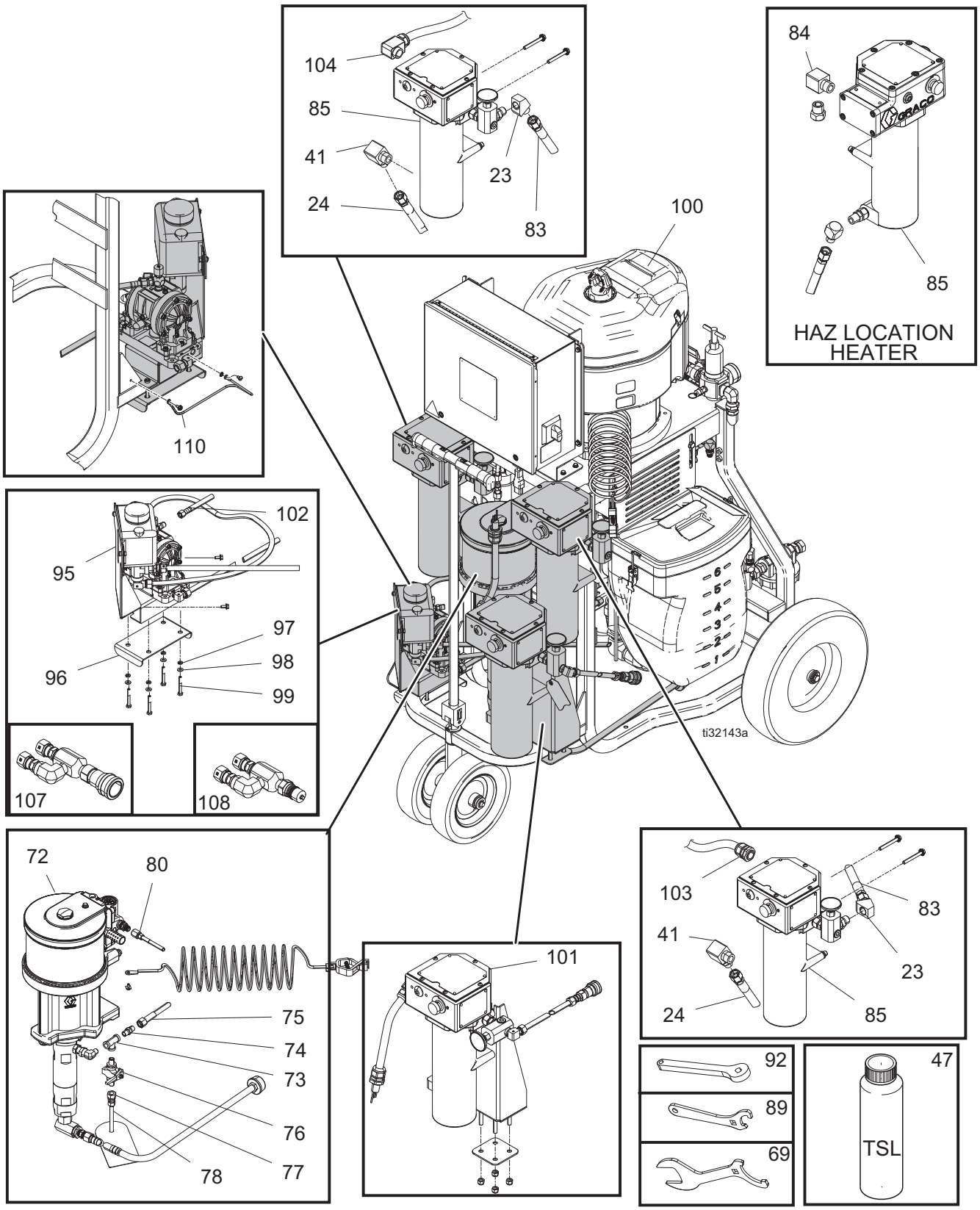
▲ *Replacement Danger and Warning labels, tags, and cards are available at no cost.*

** Part is shipped loose.*

Parts Varying by Model



Parts Varying by Model (continued)



Parts Varying By Model - XP35 Systems

Ref.	Part	Description	Quantity (by system)																																	
			281101	281102	281103	282104	574105	574106	574107	281201	281202	281203	281204	574205	574206	574207	262804	281252	281253	281254	574255	574256	574257	281301	281302	281303	281304	574305	574306	574307	281401	281402	281403	281404	574405	574406	574407
4	281100	PUMP PACKAGE, fixed ratio, 1.0:1	1	1	1	1	1	1	1																												
	281200	PUMP PACKAGE, fixed ratio, 2.0:1								1	1	1	1	1	1	1																					
	281250	PUMP PACKAGE, fixed ratio, 2.5:1															1	1	1	1	1	1	1														
	281300	PUMP PACKAGE, fixed ratio, 3.0:1																						1	1	1	1	1	1	1							
	281400	PUMP PACKAGE, fixed ratio, 4.0:1																													1	1	1	1	1	1	1
22	158491	FITTING, nipple	4	4	6	6	6	6	6	4	4	6	6	6	6	6	4	4	6	6	6	6	6	4	4	6	6	6	6	6	4	4	6	6	6	6	6
23	15M987	FITTING, elbow, 60 degree	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4
25	H43825	HOSE, 4500 psi, 3/8 x 25 ft.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30	H52510	HOSE, cpld, 4500 psi, .25 x 10 ft	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
31	XTR502	GUN, XTR5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
35	262784	MANIFOLD, recirculation, 1/2 valves	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
41	158683	FITTING, elbow, 90 degree	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4
51	124450	CLAMP, spring, constant-tension		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2
55	24E872	BRACKET, hopper		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2
56	262479	HOPPER, blue		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1
57	262480	HOPPER, green		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1
60	H52506	HOSE, coupled, 5600 psi, 0.25 ID, 6 ft		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2
	H52510	HOSE, coupled, 5600 psi, 0.25 ID, 10 ft	2		2					2		2					2		2					2		2					2		2				
61	16D376	FITTING, swivel, 1-1/4, with plug		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2
62	111192	SCREW, cap flange head		4		4	4	4	4		4		4	4	4	4		4		4	4	4	4		4		4	4	4	4		4		4	4	4	4
64	103347	VALVE, safety, 100 psi																													1	1	1	1	1	1	1
	113498	VALVE, safety, 110 psi															1	1	1	1	1	1	1														
	114055	VALVE, safety, 105 psi	1	1	1	1	1	1	1															1	1	1	1	1	1	1							
	16M190	VALVE, safety, 95 psi								1	1	1	1	1	1	1																					
65	262482	STRAINER, hopper, 7 gallon		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2
66▲	15T468	LABEL, warning		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2
72	262392	PUMP, solvent, 6.0 in., 50 cc, std			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
73	104984	FITTING, tee, pipe			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
74	156971	FITTING, nipple, short			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
75	H42503	HOSE, cpld, 4500 psi, .25 ID, 3 ft			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
76	214037	VALVE, ball			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
77	205447	COUPLING, hose			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
78	061132	HOSE, nylon (4 ft)			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
79	24F126	MODULE, air controls, solvent			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
80	16F537	HOSE, coupled, 6 ft, 1/4 npsm, 5/16			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
81	15B772	HOSE, air, 18 in.			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
83	H75004	HOSE, (heater to manifold)			2	2	2	2	2			2	2	2	2	2			2	2	2	2	2			2	2	2	2	2			2	2	2	2	2
84	166590	FITTING, elbow, elec			2	2		2				2	2		2				2	2		2				2	2		2				2	2		2	
85	245863	HEATER, XP, haz, tstat			2	2		2				2	2		2				2	2		2				2	2		2				2	2		2	
	245869	HEATER, XP, non-haz, tstat					2		2					2		2					2		2					2		2					2		2

Ref.	Part	Description	Quantity (by system)																																			
			281101	281102	281103	282104	574105	574106	574107	281201	281202	281203	281204	574205	574206	574207	262804	281252	281253	281254	574255	574256	574257	281301	281302	281303	281304	574305	574306	574307	281401	281402	281403	281404	574405	574406	574407
90	16J688	PLUG, hole, gauge	1	1						1	1						1	1						1	1						1	1					
93	273096	KIT, junction box					1		1					1		1					1		1					1		1					1		1
94*	17P846	BRACKET, painted, junction box					1		1					1		1					1		1					1		1					1		1
95	273093	PUMP, XPhf, htd-hose, re-circ						1	1						1	1						1	1						1	1						1	1
96	17P092	PLATE, XPhf, re-circ, painted						1	1						1	1						1	1						1	1						1	1
97	110755	WASHER, plain	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6
98	100016	WASHER, lock	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6
99	104429	SCREW, cap hex hd	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6
100	17N936	MONITOR, PressureTrak, XPhf						1	1						1	1						1	1						1	1						1	1
101	273094	HEATER, hose, hazardous loc.			1	1		1				1	1		1							1				1	1		1							1	
	273095	HEATER, hose, non-hazardous loc.					1		1					1		1							1					1		1							1
102	248208	HOSE, cpld, 4 ft						1	1						1	1			1	1	1	1	1						1	1			1	1	1	1	1
103	17N598	HARNESS, SW3 to fluid A					1		1					1		1					1		1					1		1					1		1
104	17N599	HARNESS, SW4 to fluid B					1		1					1		1					1		1					1		1					1		1
105*	113796	SCREW, flanged, hex hd					8		8					8		8					8		8					8		8					8		8
106*	115942	NUT, hex, flange head					2		2					2		2					2		2					2		2					2		2
107	17P594	FITTING, assy, hose coupler, split					1		1					1		1						1	1					1		1						1	1
108	17S051	FITTING, assy, hose nipple, split					1		1					1		1						1	1					1		1						1	1
109	24Z934	HEATER BLOCK, remote manifold						1	1						1	1						1	1						1	1						1	1
110	113974	SCREW, thrd forming (10-24)						1	1						1	1						1	1						1	1						1	1

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

** Included in Kit 273096*

Parts Varying By Model - XP50 Systems

Ref.	Part	Description	Quantity (by system)																																											
			282101	282102	282103	282104	575105	575106	575107	282151	282152	282153	282154	575155	575156	575157	282201	282202	282203	282204	575205	575206	575207	282251	282252	282253	282254	575255	575256	575257	282301	282302	282303	282304	575305	575306	575307	282331	282332	282333	282334	282401	282402	282403	282404	575405	575406	575407
4	282100	PUMP PACKAGE, fixed ratio, 1.0:1	1	1	1	1	1	1	1																																							
	282150	PUMP PACKAGE, fixed ratio, 1.5:1								1	1	1	1	1	1	1																																	
	282200	PUMP PACKAGE, fixed ratio, 2.0:1															1	1	1	1	1	1	1																										
	282250	PUMP PACKAGE, fixed ratio, 2.5:1																						1	1	1	1	1	1	1																			
	282300	PUMP PACKAGE, fixed ratio, 3.0:1																													1	1	1	1	1	1	1											
	282330	PUMP PACKAGE, fixed ratio, 3.3:1																																				1	1	1	1								
	282400	PUMP PACKAGE, fixed ratio, 4.0:1																																								1	1	1	1	1	1	1
22	158491	FITTING, nipple	4	4	6	6	6	6	6	4	4	6	6	6	6	6	4	4	6	6	6	6	6	4	4	6	6	6	6	6	4	4	6	6	6	6	6	4	4	6	6	4	4	6	6	6	6
23	15M987	FITTING, elbow, 60 degree	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	2	2	4	4	4	4
25	H53825	HOSE, 5600 psi, 3/8 x 25 ft	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30	H52510	HOSE, cpld, 4500 psi, .25 x 10 ft	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
31	XTR502	GUN, XTR5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
35	262783	MANIFOLD, recirculation, 1/2 valves	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
41	158683	FITTING, elbow, 90 degree	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	2	2	4	4	4	4
51	124450	CLAMP, spring, constant-tension		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2		2		2	2	2	2
55	24E872	BRACKET, hopper		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2		2		2	2	2	2
56	262479	HOPPER, blue		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1		1		1		1		1	1	1	1
57	262480	HOPPER, green		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1		1		1		1		1	1	1	1
60	H52506	HOSE, coupled, 5600 psi, 0.25 ID, 6 ft		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2		2		2	2	2	2
	H52510	HOSE, coupled, 5600 psi, 0.25 ID, 10 ft	2		2					2		2					2		2					2		2					2		2					2		2		2		2				
61	16D376	FITTING, swivel, 1-1/4, with plug		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2		2		2	2	2	2
62	111192	SCREW, cap flange head		4		4	4	4	4		4		4	4	4	4		4		4	4	4	4		4		4	4	4	4		4		4	4	4	4		4		4		4		4	4	4	4
64	103347	VALVE, safety, 100 psi								1	1	1	1	1	1	1																						1	1	1	1							
	113498	VALVE, safety, 110 psi	1	1	1	1	1	1	1								1	1	1	1	1	1	1								1	1	1	1	1	1	1					1	1	1	1	1	1	1
	114055	VALVE, safety, 105 psi																						1	1	1	1	1	1	1																			
65	262482	STRAINER, hopper, 7 gallon		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2		2		2	2	2	2
66▲	15T468	LABEL, warning		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2		2		2	2	2	2
72	262392	PUMP, solvent, 6.0 in., 50 cc, std			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1			1	1	1	1	1
73	104984	FITTING, tee, pipe			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1			1	1	1	1	1
74	156971	FITTING, nipple, short			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1			1	1	1	1	1
75	H42503	HOSE, cpld, 4500 psi, .25 ID, 3 ft			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1			1	1	1	1	1
76	214037	VALVE, ball			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1			1	1	1	1	1

Ref.	Part	Description	Quantity (by system)																																											
			282101	282102	282103	282104	575105	575106	575107	282151	282152	282153	282154	575155	575156	575157	282201	282202	282203	282204	575205	575206	575207	282251	282252	282253	282254	575255	575256	575257	282301	282302	282303	282304	575305	575306	575307	282331	282332	282333	282334	282401	282402	282403	282404	575405	575406	575407
77	205447	COUPLING, hose			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1			1	1	1	1	1
78	061132	HOSE, nylon (4 ft)			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1			1	1	1	1	1
79	24F126	MODULE, air controls, solvent			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1			1	1	1	1	1
80	16F537	HOSE, coupled, 6 ft, 1/4 npsm, 5/16			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1			1	1	1	1	1
81	15B772	HOSE, air, 18 in.			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1			1	1	1	1	1
83	H75004	HOSE, (heater to manifold)			2	2	2	2	2			2	2	2	2	2			2	2	2	2	2			2	2	2	2	2			2	2	2	2	2			1	1			2	2	2	2	2
84	166590	FITTING, elbow, elec			2	2		2				2	2		2				2	2		2				2	2		2				2	2		2				1	1			2	2		2	
85	245863	HEATER, XP, haz, tstat			2	2		2				2	2		2				2	2		2				2	2		2				2	2		2				1	1			2	2		2	
	245869	HEATER, XP, non-haz, tstat					2		2					2		2					2		2					2		2					2		2									2		2
90	16J688	PLUG, hole, gauge	1	1						1	1						1	1						1	1						1	1						1	1			1	1					
93	273096	KIT, junction box					1		1					1		1					1		1					1		1					1		1									1		1
94*	17P846	BRACKET, painted, junction box					1		1					1		1					1		1					1		1					1		1									1		1
95	273093	PUMP, XPhf, htd-hose, re-circ						1	1						1	1						1	1						1	1						1	1										1	1
96	17P092	PLATE, XPhf, re-circ, painted						1	1						1	1						1	1						1	1						1	1										1	1
97	110755	WASHER, plain	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6					2	2	2	2	2	6	6
98	100016	WASHER, lock	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6					2	2	2	2	2	6	6
99	104429	SCREW, cap hex hd	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6					2	2	2	2	2	6	6
100	17N936	MONITOR, PressureTrak, XPhf						1	1						1	1						1	1						1	1						1	1										1	1
101	273094	HEATER, hose, hazardous loc.			1	1		1							1				1	1		1							1				1	1		1											1	
	273095	HEATER, hose, non-hazardous loc.					1		1							1					1		1							1					1		1											1
102	248208	HOSE, cpld, 4 ft						1	1			1	1	1	1	1						1	1			1	1	1	1	1						1	1							1	1	1	1	1
103	17N598	HARNESS, SW3 to fluid A					1		1					1		1					1		1					1		1					1		1									1		1
104	17N599	HARNESS, SW4 to fluid B					1		1					1		1					1		1					1		1					1		1									1		1
105*	113796	SCREW, flanged, hex hd					8		8					8		8					8		8					8		8					8		8									8		8
106*	115942	NUT, hex, flange head					2		2					2		2					2		2					2		2					2		2									2		2
107	17P594	FITTING, assy, hose coupler, split					1		1						1	1					1		1						1	1					1		1										1	1
108	17S051	FITTING, assy, hose nipple, split					1		1						1	1					1		1						1	1					1		1										1	1
109	24Z934	HEATER BLOCK, remote manifold						1	1						1	1						1	1						1	1						1	1										1	1
110	113974	SCREW, thrd forming (10-24)						1	1						1	1						1	1						1	1						1	1										1	1

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

** Included in Kit 273096*

Parts Varying By Model - XP70 Systems

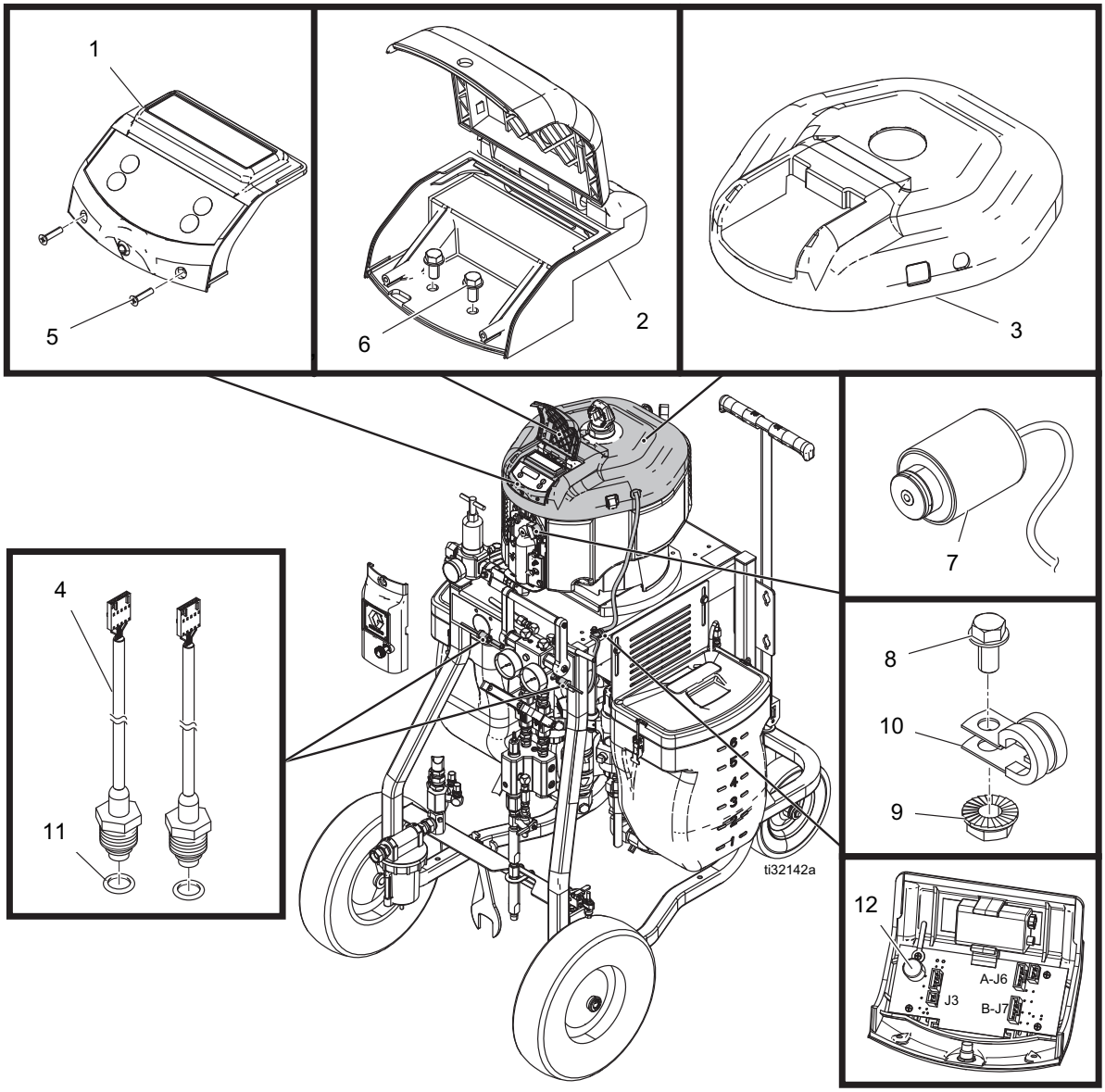
			Quantity (by system)																																									
Ref.	Part	Description	571101	571102	571103	571104	576105	576106	576107	571151	571152	571153	571154	576155	576156	576157	571201	571202	571203	571204	576205	576206	576207	571251	571252	571253	571254	576255	576256	576257	571301	571302	571303	571304	576305	576306	576307	571401	571402	571403	571404	576405	576406	576407
4	571100	PUMP PACKAGE, fixed ratio, 1.0:1	1	1	1	1	1	1	1																																			
	571150	PUMP PACKAGE, fixed ratio, 1.5:1								1	1	1	1	1	1	1																													
	571200	PUMP PACKAGE, fixed ratio, 2.0:1															1	1	1	1	1	1	1																						
	571250	PUMP PACKAGE, fixed ratio, 2.5:1																						1	1	1	1	1	1	1															
	571300	PUMP PACKAGE, fixed ratio, 3.0:1																													1	1	1	1	1	1	1								
	571400	PUMP PACKAGE, fixed ratio, 4.0:1																																				1	1	1	1	1	1	1
22	158491	FITTING, nipple	4	4	6	6	6	6	6	4	4	6	6	6	6	6	4	4	6	6	6	6	6	4	4	6	6	6	6	6	4	4	6	6	6	6	6	4	4	6	6	6	6	6
23	15M987	FITTING, elbow, 60 degree	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4
25	H73825	HOSE, 7250 psi, 3/8 x 25 ft	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30	H52510	HOSE, cpld, 4500 psi, .25 x 10 ft	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
31	XTR502	GUN, XTR5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
35	262806	MANIFOLD, recirculation, 1/2 valves	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
41	158683	FITTING, elbow, 90 degree	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4	2	2	4	4	4	4	4
51	124450	CLAMP, spring, constant-tension		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2
55	24E872	BRACKET, hopper		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2
56	262479	HOPPER, blue		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1
57	262480	HOPPER, green		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1		1		1	1	1	1
60	H52506	HOSE, coupled, 5600 psi, 0.25 ID, 6 ft		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2
	H52510	HOSE, coupled, 5600 psi, 0.25 ID, 10 ft	2		2					2		2					2		2					2		2					2		2					2		2				
61	16D376	FITTING, swivel, 1-1/4, with plug		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2
62	111192	SCREW, cap flange head		4		4	4	4	4		4		4	4	4	4		4		4	4	4	4		4		4	4	4	4		4		4	4	4	4		4		4	4	4	4
64	113498	VALVE, safety, 110 psi	1	1	1	1	1	1	1								1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	116643	VALVE, safety, 105 psi								1	1	1	1	1	1	1																													
65	262482	STRAINER, hopper, 7 gallon		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2
66▲	15T468	LABEL, warning		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2		2		2	2	2	2
72	262392	PUMP, solvent, 6.0 in., 50 cc, std			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
73	104984	FITTING, tee, pipe			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
74	156971	FITTING, nipple, short			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
75	H42503	HOSE, cpld, 4500 psi, .25 ID, 3 ft			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
76	214037	VALVE, ball			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
77	205447	COUPLING, hose			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
78	061132	HOSE, nylon (4 ft)			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
79	24F126	MODULE, air controls, solvent			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
80	16F537	HOSE, coupled, 6 ft, 1/4 npsm, 5/16			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
81	15B772	HOSE, air, 18 in.			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1			1	1	1	1	1
83	H75004	HOSE, (heater to manifold)			2	2	2	2	2			2	2	2	2	2			2	2	2	2	2			2	2	2	2	2			2	2	2	2	2			2	2	2	2	2
84	166590	FITTING, elbow, elec			2	2		2				2	2		2				2	2		2				2	2		2				2	2		2				2	2		2	
85	245863	HEATER, XP, haz, tstat			2	2		2				2	2		2				2	2		2				2	2		2				2	2		2				2	2		2	
	245869	HEATER, XP, non-haz, tstat					2		2					2		2					2		2					2		2					2		2					2		2
90	16J688	PLUG, hole, gauge	1	1						1	1						1	1						1	1						1	1						1	1					

Ref.	Part	Description	571101	571102	571103	571104	576105	576106	576107	571151	571152	571153	571154	576155	576156	576157	571201	571202	571203	571204	576205	576206	576207	571251	571252	571253	571254	576255	576256	576257	571301	571302	571303	571304	576305	576306	576307	571401	571402	571403	571404	576405	576406	576407
			Quantity (by system)																																									
93	273096	KIT, junction box					1		1					1		1					1		1					1		1					1		1					1		1
94*	17P846	BRACKET, painted, junction box					1		1					1		1					1		1					1		1					1		1					1		1
95	273093	PUMP, XPhf, htd-hose, re-circ						1	1						1	1						1	1						1	1						1	1						1	1
96	17P092	PLATE, XPhf, re-circ, painted						1	1						1	1						1	1						1	1						1	1						1	1
97	110755	WASHER, plain	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6
98	100016	WASHER, lock	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6
99	104429	SCREW, cap hex hd	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6	2	2	2	2	2	6	6
100	17N936	MONITOR, PressureTrak, XPhf						1	1						1	1						1	1						1	1						1	1						1	1
101	273094	HEATER, hose, hazardous loc.			1	1		1							1				1	1		1							1				1	1		1							1	
	273095	HEATER, hose, non-hazardous loc.					1		1							1					1		1							1					1		1							1
102	248208	HOSE, cpld, 4 ft						1	1			1	1	1	1	1						1	1			1	1	1	1	1						1	1			1	1	1	1	1
103	17N598	HARNESS, SW3 to fluid A					1		1					1		1					1		1					1		1					1		1					1		1
104	17N599	HARNESS, SW4 to fluid B					1		1					1		1					1		1					1		1					1		1					1		1
105*	113796	SCREW, flanged, hex hd					8		8					8		8					8		8					8		8					8		8					8		8
106*	115942	NUT, hex, flange head					2		2					2		2					2		2					2		2					2		2					2		2
107	17P594	FITTING, assy, hose coupler, split					1		1						1	1					1		1						1	1					1		1						1	1
108	17S051	FITTING, assy, hose nipple, split					1		1						1	1					1		1						1	1					1		1						1	1
109	24Z934	HEATER BLOCK, remote manifold						1	1						1	1						1	1						1	1						1	1						1	1
110	113974	SCREW, thrd forming (10-24)						1	1						1	1						1	1						1	1						1	1						1	1

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

** Included in Kit 273096*

PressureTrak Kit 17G808

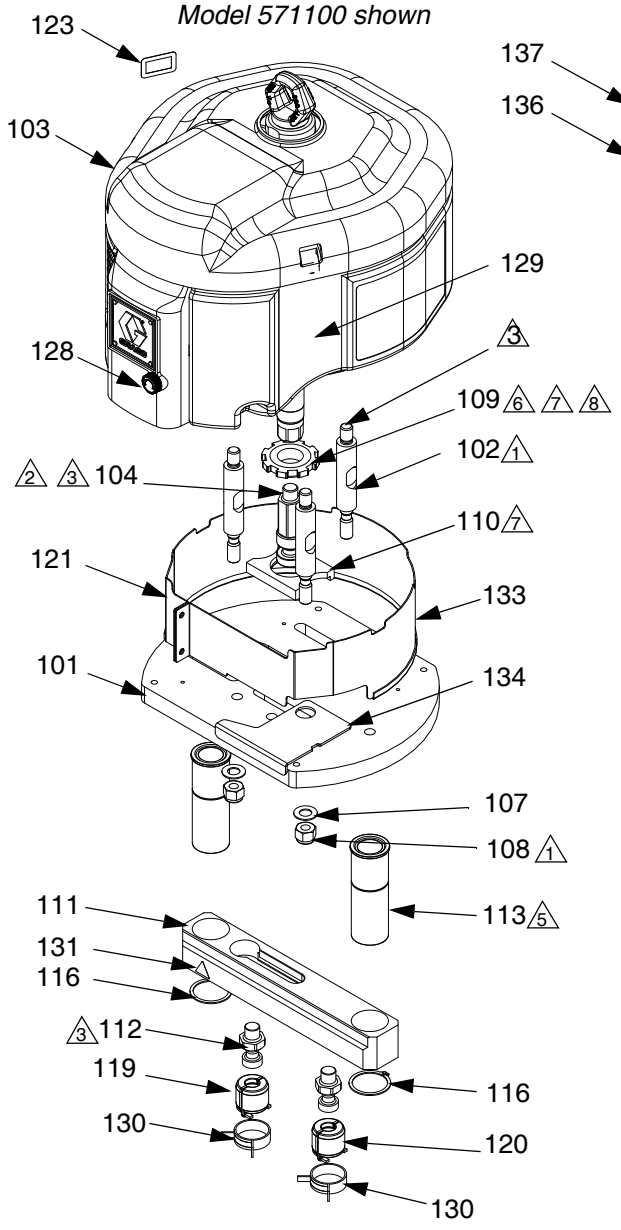


Ref.	Part	Description	Qty.
1	24Y281	MODULE, hazardous location pressure monitor	1
2	24Y932	HOUSING, PressureTrak, machined	1
3	17G839	COVER, PressureTrak, NXT3400	1
	17G840	COVER, PressureTrak, NXT6500	1
4	17G837	SENSOR, PressureTrak, assy	1
5	- - - - -	SCREW, high-low, flat head #6 x .625	2
6	- - - - -	SCREW, thd forming	2
7	NXT403	SOLENOID, locking, DC	1
8	- - - - -	SCREW, flanged, hex hd	1
9	- - - - -	NUT, hex, flange head	1
10	- - - - -	CLAMP, cable	1
11	- - - - -	PACKING, o-ring	2
12	24V216	KIT, repair, fuse assembly	1
13▲	15F716	LABEL, warning	1
14	NXT405	KIT, membrane shield	1

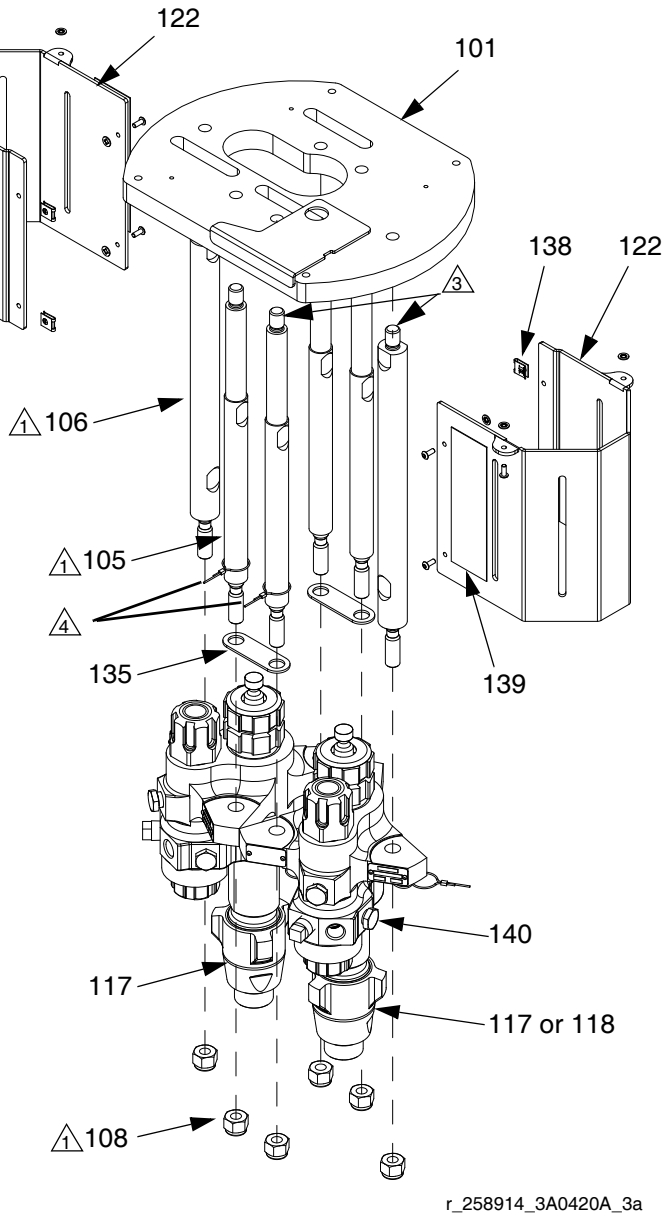
▲ *Replacement Danger and Warning labels are available at no cost.*

Bare Proportioning Pump Package

Model 571100 shown



r_258914_3A0420A_2a



r_258914_3A0420A_3a

1 Torque together to 50-60 ft-lb (68-81 N•m).

2 Torque to 145-155 ft-lb (196-210 N•m).

3 Apply blue thread sealant.

4 Insert lanyard from locking pin onto pumps (17, 18) as shown.

5 Do not apply lubricant.

6 Torque to 70-80 ft-lb (95-108 N•m).

7 Apply lithium grease to mating tapered surfaces.

8 Nuts with nylon patch - add anti-seize lubricant.
Nuts without nylon patch - add blue thread sealant.

Parts Common to All Pump Packages

Ref	Part	Description	Qty
101	262465	PLATE, motor	1
105	262468	ROD, tie, 14.25 long, with shoulder	4
106	262469	ROD, tie, 14.25 long, 1.25 dia	2
107	154636	WASHER, flat	3
108	101712	NUT, lock, 5/8-11	9
109	16D451	NUT, yoke	1
110	262470	BRACKET, ratio indicator	1
111	262471	YOKE, pump assembly	1
112	15H392	ROD, adapter Xtreme	2
113	262472	SLEEVE, with bearing	2
116	123976	RING, snap, external	2
122	262474	COVER, pump	2
128❄	15J277	CONTROL, de-ice	1
130	124078	CLAMP, spring, constant-tension	2
134	262475	BRACKET, ratio indicator	1
135	16E882	STRAP, lowers	2
136	---	SCREW, cap, button head, 10-32	8
137	124172	WASHER, retaining, nylon, 10-32	8
138	124665	NUT, captive, 10-32	4
139▲	15T468	LABEL, warning	2

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

❄ *Kit NXT112 (de-ice knob 5-pack) also available.*

Parts Varying by Pump Package

			Quantity (By Pump Package)																													
Ref	Part	Description	262803	281100	281200	281300	281400	282100	282150	282200	282250	282300	282330	282400	284101	284102	284103	284201	284202	284203	284251	284252	284253	284301	284302	284303	284401	284402	284403	571100	571150	571200	571250	571300	571400
102	262466	ROD, tie, 4.00 long	3	3	3	3	3	3	3	3	3	3	3	3																3	3	3	3	3	3
	16M882	ROD, tie, 5.00 long													3	3	3	3	3	3	3	3	3	3	3	3	3	3	3						
103	262818	MOTOR, hydraulic													1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
	N34DN0	MOTOR, 3400, de-icing	1	1	1	1	1																												
	N65DN0	MOTOR, 6500,de-icing						1	1	1	1	1	1	1																1	1	1	1	1	1
104	262467	ROD, adapter	1	1	1	1	1	1	1	1	1	1	1	1																1	1	1	1	1	1
	16M654	ADAPTER, motor													1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
117	L085C0❖	PUMP LOWER, 85cc																													1				
	L090C0❖	PUMP LOWER, 90cc		2						1							2		1											2					
	L115C0❖	PUMP LOWER, 115cc			1															1	1											1			
	L14AC0❖	PUMP LOWER, 145cc	1			1	1	2	1							2		1					1			1			1				1	1	1
	L18AC0	PUMP LOWER, 180cc								1	1		1						1			1													
	L22AC0	PUMP LOWER, 220cc										1		1	2										1			1							
	L29AC0	PUMP LOWER, 290cc																1			1			1			1								
118	L036C0❖	PUMP LOWER, 36cc					1																						1						1
	L048C0❖	PUMP LOWER, 48cc				1																				1								1	
	L054C0❖	PUMP LOWER, 54cc											1	1													1	1							
	L058C0❖	PUMP LOWER, 58cc	1		1															1			1								1	1	1		
	L072C0❖	PUMP LOWER, 72cc									1	1										1			1									
	L097C0	PUMP LOWER, 97cc							1															1											
119†	244819	COUPLING, for 145-290cc pump lower	1			1	1	2	1	1	1	1	1	1	2	2		2	1		1	1	1	1	1	1	1	1	1				1	1	1
	247167	COUPLING, for 36-115cc pump lower	1	2	2	1	1		1	1	1	1	1	1			2		1	2	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1
121	262473	COVER, motor rod						1	1	1	1	1	1	1																1	1	1	1	1	1
	262704	COVER, motor rod	1	1	1	1	1																												
	262734	COVER, motor rod													1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
123	---	LABEL, identification	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
129	16D029	LABEL, XP70																												1	1	1	1	1	1
	16M178	LABEL, XP50						1	1	1	1	1	1	1																					
	16M179	LABEL, XP35	1	1	1	1	1																												
131▲	15H108	LABEL, pinch point	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1
133	114225	TRIM, edge protection	1.3	1.3	1.3	1.3	1.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.3	2.1	2.1	2.1	2.1	2.1	1.3	2.1	2.1	1.3	2.1	2.1	2.1	2.1	2.1	2.1
140	238909	WIRE, grounding													1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
	244524	WIRE, grounding	1	1	1	1	1	1	1	1	1	1	1	1																1	1	1	1	1	1
141◆	16N396	LABEL, XP-h													1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
142▲ ◆	16N375	LABEL, warning, multi-lingual													1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
198◆	206995	FLUID, tsl, 1 qt.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
199◆	16F615	TOOL, wrench, Xtreme	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

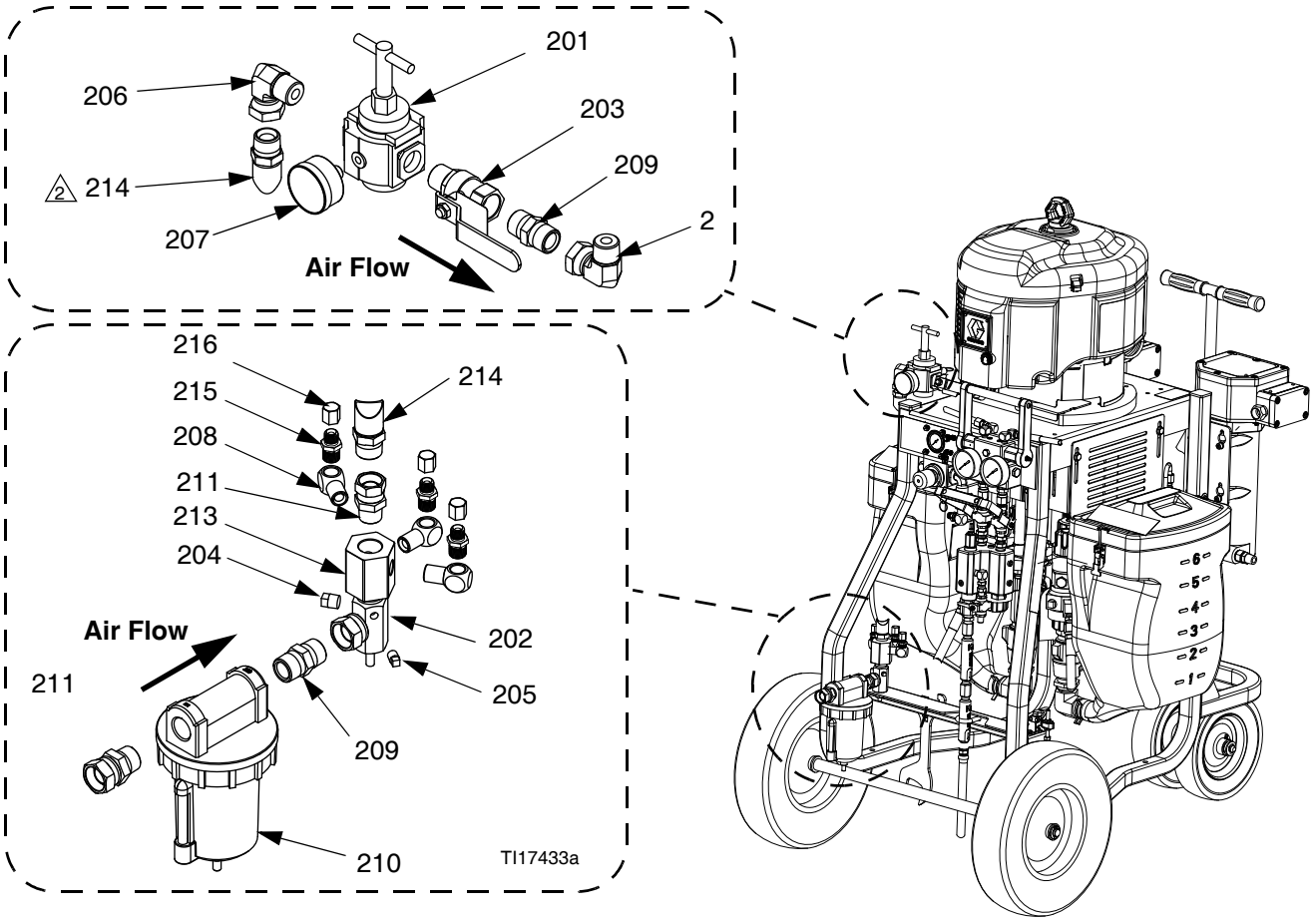
▲ *Replacement Danger and Warning labels, tags, and cards are available at no cost.*

❖ *Includes rupture disc 258962.*

† *Included with new pump assemblies (117, 118).*

◆ *Not shown.*

Air Controls, 258983



1. Apply anaerobic pipe sealant to all non-swiveling pipe threads.

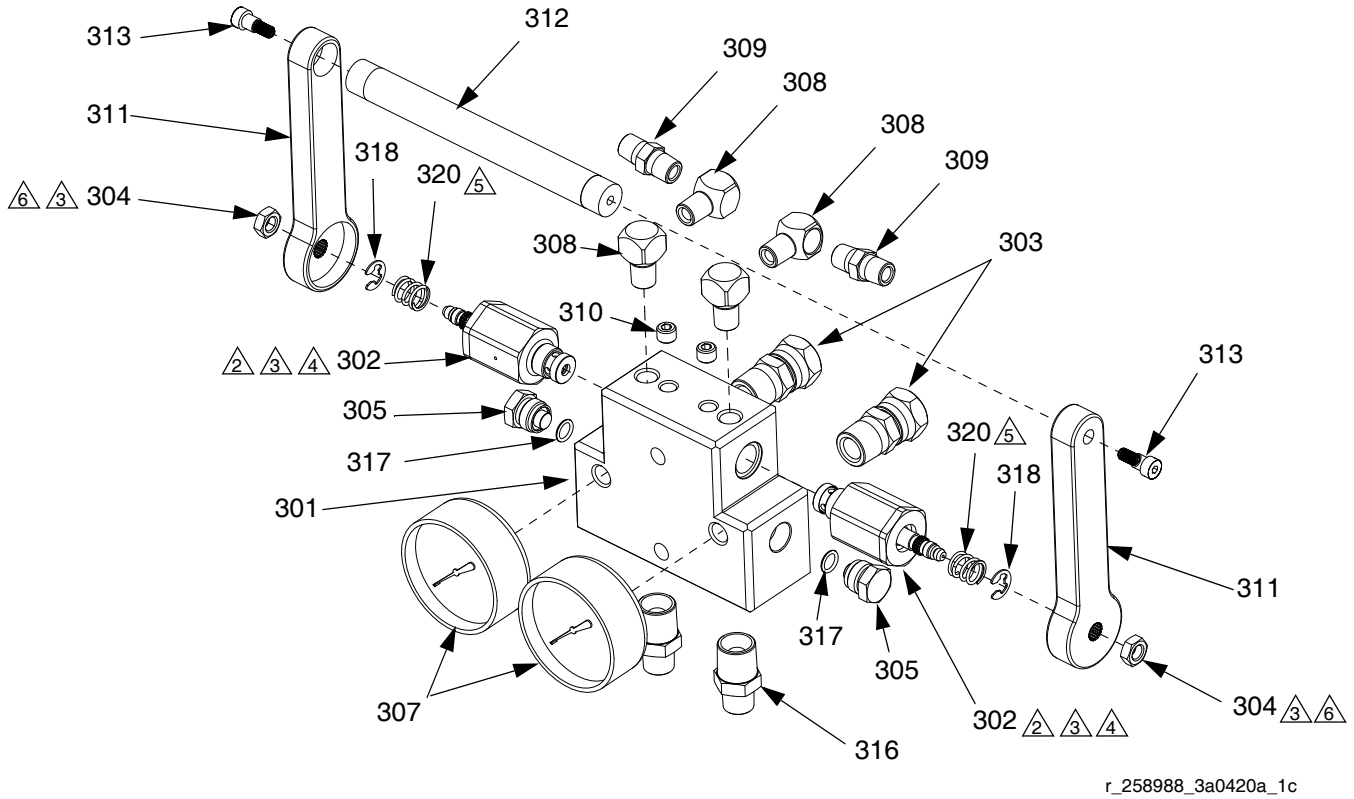
2 Connect hose (214) to fitting (206) and air distribution manifold (213).

Ref. No.	Part No.	Description	Qty.
201	16F014	REGULATOR, air, T-handle	1
202	207675	MANIFOLD, air	1
203	113218	VALVE, ball	1
204	100509	PLUG; 1/4 npt	1
205	100403	PLUG; 1/8 npt	1
206	160327	FITTING, union, 90°; 3/4 male x female	2
207	101689	GAUGE, pressure, air	1
208	155699	FITTING, elbow, street; 3/8 npt	3
209	119992	FITTING, pipe, nipple, 3/4 x 3/4 npt	2
210	117628	FITLTER, air, auto drain; 3/4 npt	1
210a✖	106204	ELEMENT, filter; 3/4 npt	1
211	157785	FITTING, union; 3/4 male x female	2
213	15E145	MANIFOLD, air distribution	1
214	16E004	HOSE, coupled, air; 26 in. (660 mm)	1
215	157350	NIPPLE; 3/8 x 1/4 npt	3
216	115781	CAP PLUG; 1/4 npt	3

✖ *Not shown.*

Fluid Circulation Manifold with Over Pressure Relief Valve

Assembly 262784 (XP35); 262783 (XP50); 262806 (XP70)



r_258988_3a0420a_1c

1. Apply anaerobic pipe sealant to all non-swiveling pipe threads.

2 Torque to 28-32 ft-lb (38-43 N•m).

3 Apply blue anaerobic adhesive to threads.

4 Further tighten either valve (302) as required to line up handle straight across.

5 Apply grease to spring ends.

6 Torque to 70-90 in-lb (7.9-9 N•m).

Ref	Part	Description	Qty
301	16D693	BLOCK, manifold, recirculation	1
302†	262520	VALVE, over pressure relief, silver, XP70	2
◆	262809	VALVE, over pressure relief, gold, XP50	2
★	262808	VALVE, over pressure relief, purple, XP35	2
303	156684	UNION; 1/2 in. male x female	2
304	112309	NUT, hex, jam	2
305	198241	PLUG, port, pressure; 11/16-24	2
307†◆	114434	GAUGE, pressure, fluid, sst; 10k psi	2
★	113654	GAUGE, pressure, fluid, sst; 5k psi	2
308	100840	FITTING, elbow, street; 1/4 npt	4
309	156971	FITTING, nipple; 1/4 npt x npsm	2
310	557349	PLUG, dry seal 1/8 npt	2
311	16E334	HANDLE, manifold	2
312	16E332	ROD, connecting, handle	1
313	124859	SCREW, button head	2

Ref	Part	Description	Qty
316	156684	FITTING, nipple, 1/2 npt x 1/2 npt	2
317	121399	O-RING, solvent resistant	2
318	124676	RING, snap, external	2
320	150829	SPRING, compression	2
351✖	159239	FITTING, nipple, pipe, reducing	2
352✖	156173	UNION, swivel	2

✖ *Not shown. Shipped loose.*

★ *For XP35 systems only.*

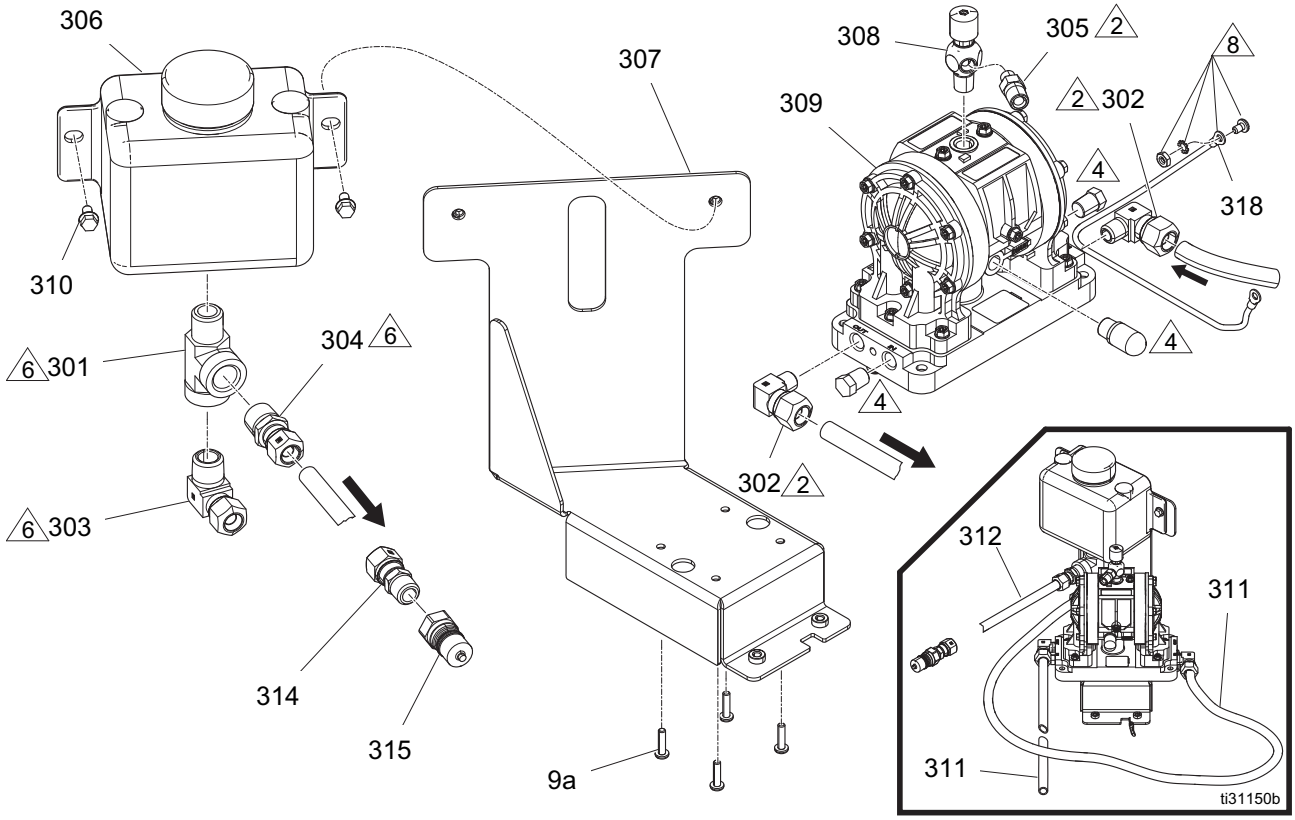
◆ *For XP50 systems only.*

† *For XP70 systems only.*

NOTE: Loose fittings are supplied with replacement manifold to also fit Series A XP Proportioners with 3/8 in. mix manifold ball valves.

Heated Hose Recirculation Pump

273093



1 Apply thread sealant to all non-swiveling pipe threads.

2 Orient fittings as shown.

4 Install two loose plugs and muffler provided with pump in the ports indicated.

6 Orient fittings approximately 15 degrees away from pump.

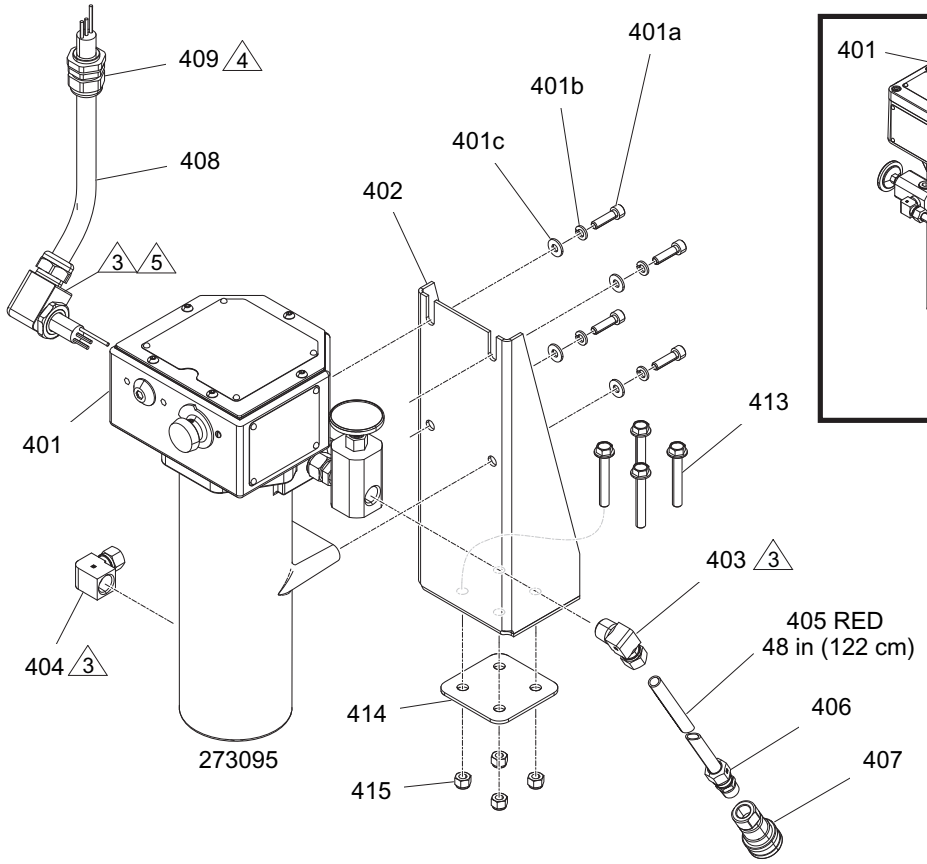
8 Install ground wire between screw and washer. The nut is held in the slot of the pump.

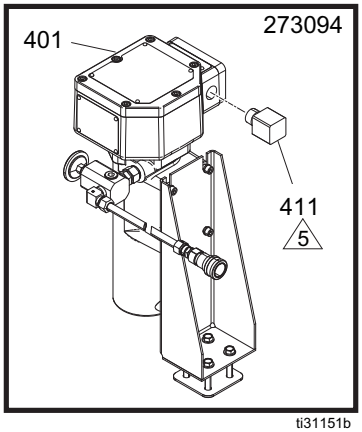
Mounted Heated Hose Parts List

Ref.	Part	Description	Qty.
301	108126	FITTING, tee, street	1
302	126897	FITTING, elbow, 1/2 tube x 1/4 NPTM	2
303	126898	FITTING, elbow, 1/2 tube x 1/2 NPTM	1
304	126899	FITTING, 1/2 tube x 1/2 NPTM	1
305	16D939	FITTING, nipple, reducing	1
306	16R871	BOTTLE, overflow, 1/2 NPT	1
307	17P088	BRACKET, XP-HF, re-circ, painted	1
308	206264	VALVE, needle	1
309	24T761	PUMP, acetal, w/pvdf check, Husky	1
310	113161	SCREW, flange, hex hd	2
311	17N910	TUBE, 35 in. x .5 OD, nylon	2
312	17N911	TUBE, blue, .5 OD, nylon (48 in. long)	1
314	126900	FITTING, 1/2 tube x 3/8 NPTM	1
315	17D307	FITTING, nipple, quick coupling	1
318	17N795	WIRE, ground	1

Hose Heater (bracket mounted)

273095 (Non-Hazardous Locations)
273094 (Hazardous Locations)

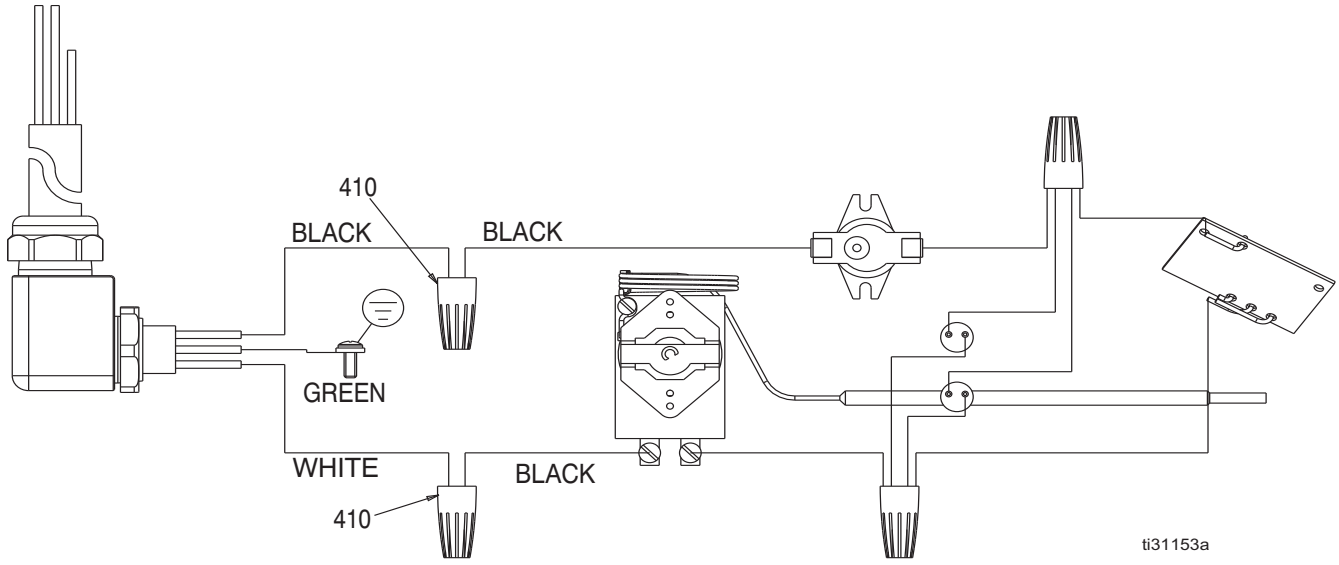




3 Orient fittings as shown.

4 Tighten cord grip .75 in. back from cord cover end.

5 Orient the port facing down.



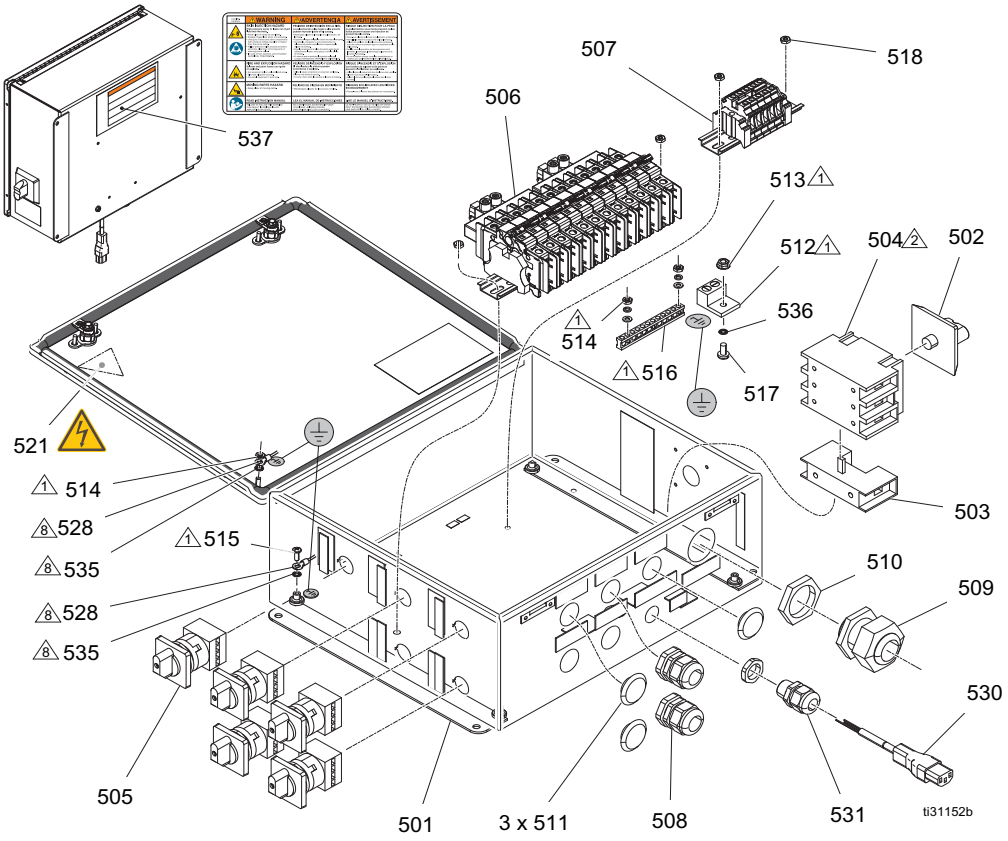
Mounted Heated Hose Parts List

Ref.	Part	Description	Qty. (273095)	Qty. (273094)
401	245869	HEATER, paint, non-hazardous locations	1	
	245863	HEATER, paint, hazardous locations		1
402	24M221	BRACKET, heater, heated hose, paint	1	1
403	126898	FITTING, elbow, 1/2 tube x 1/2 NPTM	1	1
404	126896	FITTING, elbow, 1/2 tube x 1/2 NPTF	1	1
405	17P759	TUBE, 48 in. x .5 OD, nylon	1	1
406	126900	FITTING, 1/2 tube x 3/8 NPTM	1	1
407	17D306	FITTING, coupler, quick coupling	1	1
408	17N600	HARNESS, sw5 to hose heat	1	
409	116171	BUSHING, strain relief	1	
410	122032	NUT, wire	2	
411	166590	FITTING, elbow, street		1
413	123443	SCREW, cap, flng hd	4	4
414	24M223	BRACKET, base, heated hose, painted	1	1
415	113981	NUT, lock, high tensile	4	4

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

Enclosure Junction Box

Kit 273096*



1 Torque to 20-23 in-lb (2.2-2.6 N•m).

2 Torque to 55-60 in-lb (6.2-6.8 N•m).

3 Torque to 13-15 in-lb (1.5-1.8 N•m).

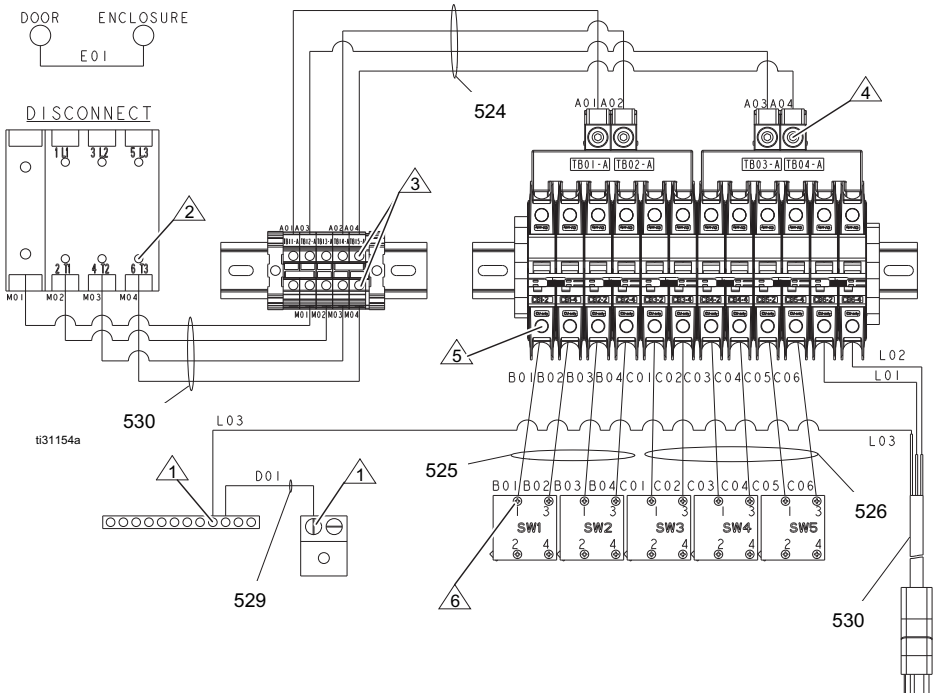
4 Torque to 25-28 in-lb (2.8-3.2 N•m).

5 Torque to 18-20 in-lb (2.0-2.3 N•m).

6 Torque to 10-12 in-lb (1.1-1.3 N•m).

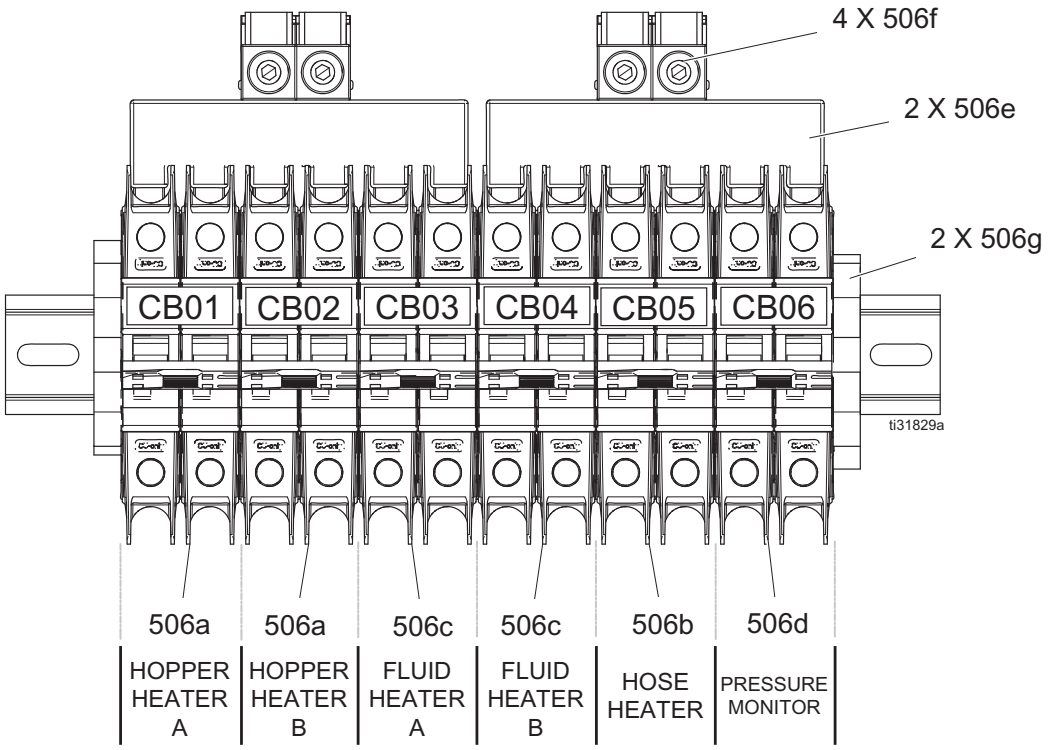
8 Assemble with washer under ground wire.

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

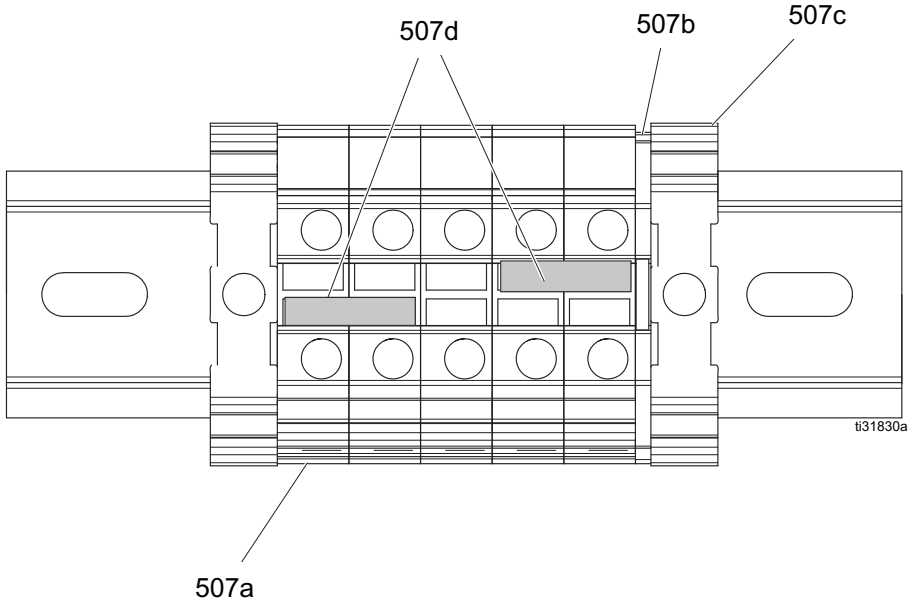


Enclosure Junction Box (continued)

Module 17N687



Module 17N688



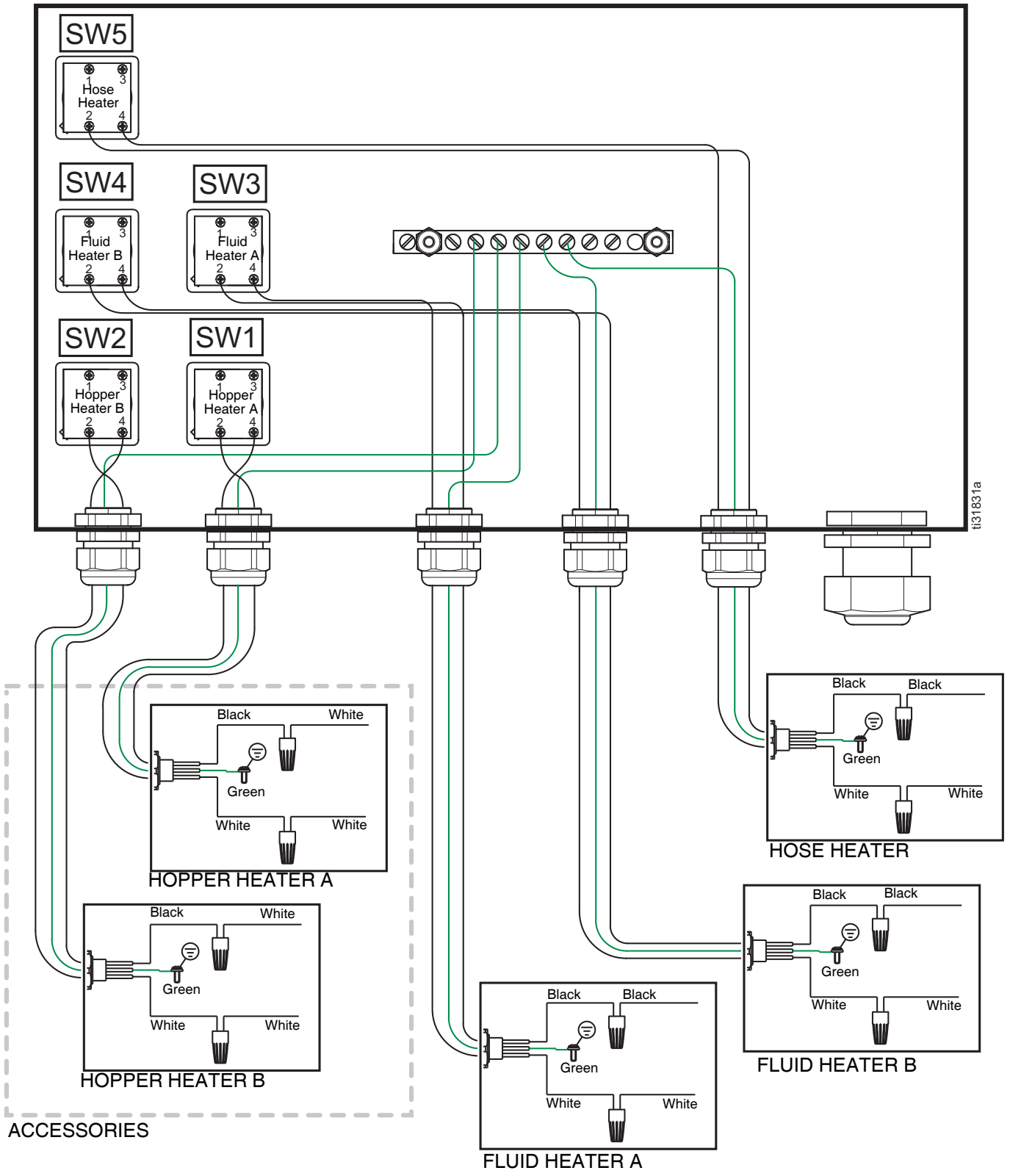
Enclosure Junction Box Parts List

Ref.	Part	Description	Qty.
82*	17P846	BRACKET, painted (not shown)	1
105*	113796	SCREW, 1/4-20 x .75 L (not shown)	8
106*	115942	NUT, flg hd, 1/4-20 (not shown)	2
501	- - - - -	ENCLOSURE, XP, electrical	1
502	123967	KNOB, operator disconnect	1
503	123968	SWITCH, disconnect, ph exp 100 amp	1
504	123969	SWITCH, disconnect, 100a (E-30)	1
505	15U423	SWITCH, 2P, 25A	5
506	17N687	MODULE, din rail assy, circuit brk	1
506a	17A311	CIRCUIT BREAKER, 2P, 10A, UL489	2
506b	17N315	CIRCUIT BREAKER, 2P, 25A, UL489	1
506c	17N316	CIRCUIT, BREAKER, 2P, 30A, UL489	2
506d	17C190	CIRCUIT BREAKER, 2P, 1A, UL489	1
506e	17N690	BAR, power bus, 2P, 6 pin	2
506f	17N691	CONNECTOR, terminal, buss bar	4
506g	120838	BLOCK, clamp ends	2
507	17N688	MODULE, din rail assy, term blks	1
507a	120570	MODULE, din rail assembly, terminal blocks	5
507b	120490	COVER, end	1
507c	126811	BLOCK, clamp ends	2
507d	120573	BRIDGE, plug in, jumper	2
508	116171	BUSHING, strain relief	2
509	120858	BUSHING, strain relief, M40 thread	1
510	120859	NUT, strain relief, M40 thread	1
511	15U544	PLUG, hole, 1 1/8 in.	3
512	117666	TERMINAL, ground	1
513	115942	NUT, hex, flange head	1
514	109466	NUT, lock, hex	3
515	112948	SCREW, mach	1
516	122313	BAR, ground, kit	1
517	113783	SCREW, machine, pn hd	1
518	113505	NUT, keps, hex hd	4
521▲	196548	LABEL, warning, shock	1
524	17N590	HARNESS, term block to circuit bkr	1
525	17N592	HARNESS, circuit brkr to sw1, sw2	1
526	17N593	HARNESS, circuit brkr sw3, sw4, sw5	1
527	17N720	HARNESS, disconnect to term block	1
528	17N595	WIRE, ground, door to enclosure	1
529	17N594	WIRE, ground, gnd1 to gnd2	1
530	17N601	HARNESS, circuit brkr-press montr	1
531	114421	BUSHING, strain relief	1
535	555629	WASHER, #10 lock external	2
536	558685	WASHER, 1/4 external tooth lock	1
537▲	15F674	LABEL, safety	1

**Kit includes these loose parts.*

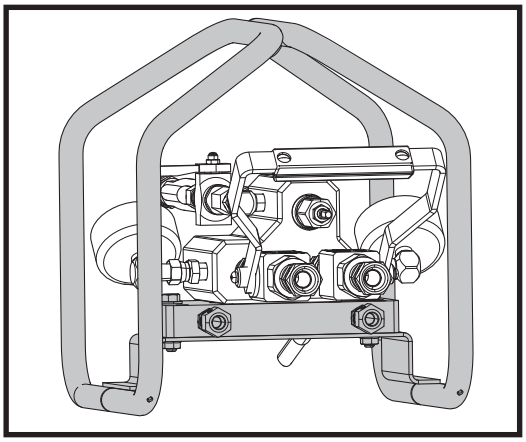
▲Replacement Danger and Warning labels, tags, and cards are available at no cost.

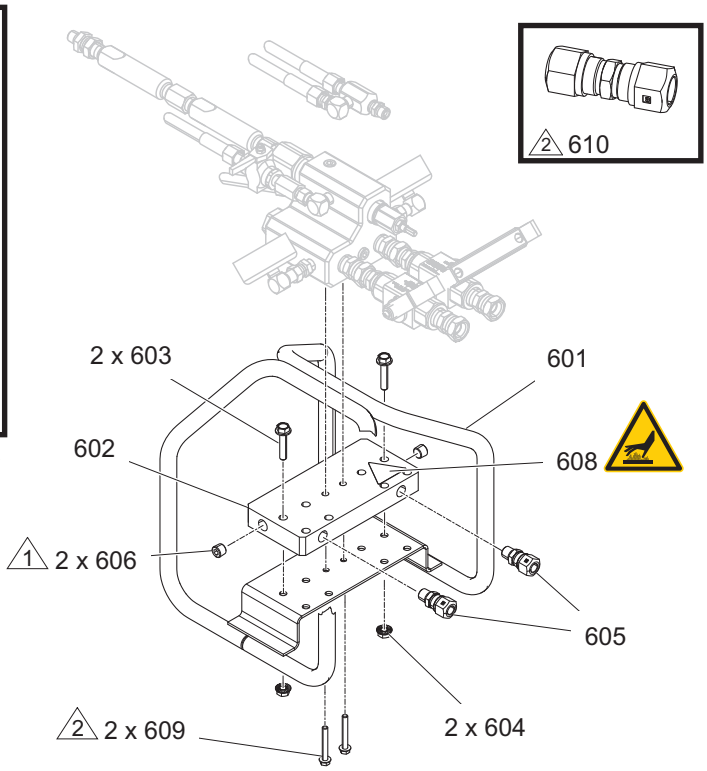
Heater Wiring Diagram



Heater Block Remote Manifold Kit

Kit 24Z934





1 Apply thread sealant to all non-swiveling pipe threads.

2 Supplied loose, not installed.

Ref.	Part	Description	Qty.
601	24F834	CARRIAGE, weldment, remote manifold	1
602	16T294	PLATE, heater transfer, PFP 2k	1
603	110837	SCREW, flange, hex	2
604	110996	NUT, hex, flange head	2
605	126692	FITTING, tube, NPT x tube	2
606	100721	PLUG, pipe	2
608▲	189285	LABEL, safety, burn	1
609	120736	SCREW, hex flange HD	2
610	126894	FITTING, union, 1/2 tube x 1/2 tube	2
611*	054960	TUBE, red, nylon, .375 (9.5 mm) ID (1.5 ft)	1
612*	054961	TUBE, blue, nylon, .375 (9.5 mm) ID (1.5 ft)	1

** Supplied loose, not installed.*

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

Recommended Spare Parts

Keep these spare parts on hand to reduce downtime.

Pump Repair Kits

See **Models** (page 11) to see what pumps are used on your system. See lower manual for repair kits.

Pump Filter O-rings (packs of 10)

262483, Top o-ring
244895, Middle o-ring
262484, Bottom o-ring

Recirculation/Overpressure valve (see page 56)

XP35: 262808, purple
(also for use with XP-h 284x01 assemblies)

XP50: 262809, gold
(also for use with XP-h 284x02 assemblies)

XP70: 262520, silver
(also for use with XP-h 284x03 assemblies)

15K692, Seal Mix Manifold Check Valve Cartridge

NOTE: 15K692 must be replaced when cleaning the check valves.

1/2 in. Mix Manifold Inlet Ball Valves

24M601, Ball valve repair kit
262740, Spare valve (no handle)
262739, Spare valve (single handle)

248927, Spare Mix Elements (pack of 25)

1/2 in. OD x 12 element, acetal plastic

248837, XTR Spray Gun Repair Kit

XHD010, Seat/Seal Kit for XHD™ RAC® Tips (5 pack)

XHDxxx, spray tips

See spray gun manual for tips.

Accessories and Kits

Acceptable For Use in Explosive Atmospheres

N3400 PressureTrak Kit 17G807
N6500 PressureTrak Kit 17G808

Monitors pressures to provide ratio assurance on XP plural component sprayers in hazardous and non-hazardous locations.

Blue 7 Gallon Hopper Kit, 24F376
Green 7 Gallon Hopper Kit, 24F377

Mount to the sides of the XP system. See manual 406860 for more information.

Solvent Pump Kit, 262393

For supplying solvent to the mix manifold. See manual 310863 for more information.

Desiccant Dryer Kit, 262454

For use with polyurethane isocyanates in 7 gallon hoppers. See manual 406739 for more information.

Desiccant Dryer Filter 2 Pack, 24K984

Heater Adapter Kit, 262450

Hose and fittings for connecting Viscon HP heaters to XP system. See manual 406861 for parts. Purchase heaters separately, see heater manual for part numbers.

Twistork® Agitator Kit, 256274

For mixing viscous materials held within a 55 gallon drum. See manual 312769 for more information.

5:1 Feed Pump Kit, 256276

For supplying viscous materials from a drum to XP system. See manual 312769 for more information.

5:1 Drum Feed Kit, 256255

One 5:1 pump feed kit and one Twistork agitator kit for mixing and supplying viscous materials from a 55 gallon drum to XP system. See manual 312769 for more information.

10:1 Drum Feed Kit, 256433

For supplying highly viscous material from a 55 gallon drum to XP system. See manual 312769 for more information.

20 Gallon Hopper Kit, 255963

Floor Stand for 20 Gal. Hopper, 262824

1-1/2 in. ID Hose Flex Feed Kit, 262820

XP Wall Mount Bracket, 262812

Works with air or hydraulic XP systems.

Leg Stand, 24M281

Includes wall bracket 262812.

1/2 in. Ball Valve Upgrade Kit for Mix Manifold, 24M593

Quickset Mix Manifold, 24M398

Mix manifold with independent A and B flushing for use with quick hardening materials. See mix manifold manual 3A0590 for more information.

Remote Mix Manifold with Heater Block, 24Z934

A mounting carriage with a heater block to circulate water-jacketed hose heat to maintain heat on the mix manifold.

Remote Mix Manifold Carriage, 262522

A protective guard to mount mix manifold remote. See mix manifold manual 3A0590 for more information.

Mix Manifold Restrictor Wrench, 126786

Gun Splitter with Carriage, 262826

One splitter valve to use one, two, or three spray guns with the system. Provides independent flush for two guns. Optional 3rd gun port does not have independent flush. See manual 3A2573 for more information.

DataTrak™ Conversion Kit, NXT606

Intrinsically safe battery operated NXT air motor accessory for material tracking system diagnostics and runaway control. See manual 311486 for more information.

Not Approved For Explosive Atmospheres

These kits do not carry the EX mark.

2:1 Feed Pump Kit, 256275

For supplying viscous materials from a drum to XP system. See manual 312769 for more information.

2:1 Drum Feed Kit, 256232

One T2 pump feed kit and one Twistork agitator kit for mixing and supplying viscous materials from a 55 gallon drum to XP system. See manual 312769 for more information.

Wall Powered Pressure Monitor Kit, 262940
Air Powered Pressure Monitor Kit, 262942

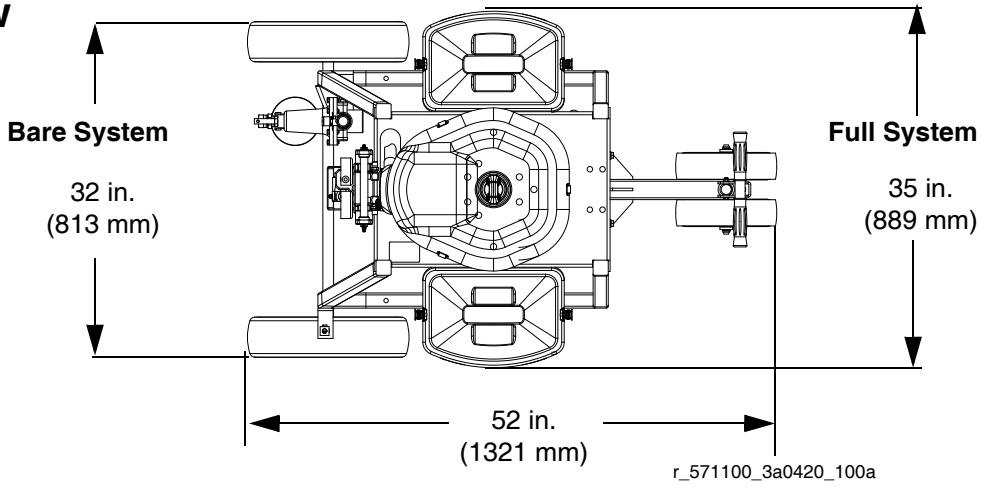
Automatically monitors difference between A and B pressures when at spray pressure and shuts down the system if there is a problem.

GH™ Power Pack, 24X011

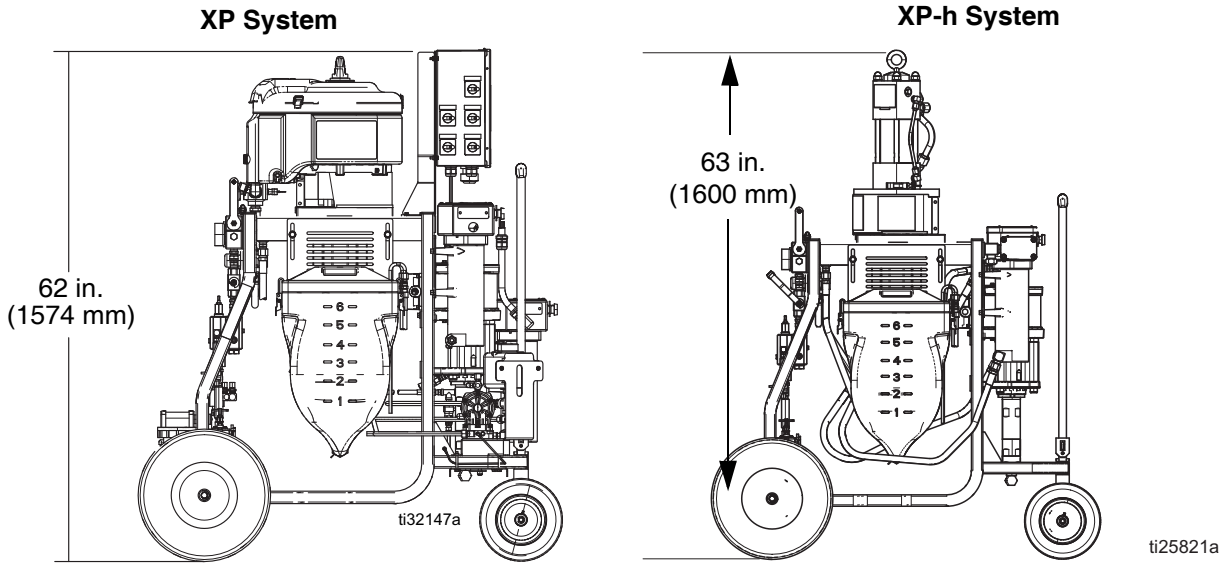
Hydraulic power supply for XP-h systems. See manual 334914 for more information

Dimensions

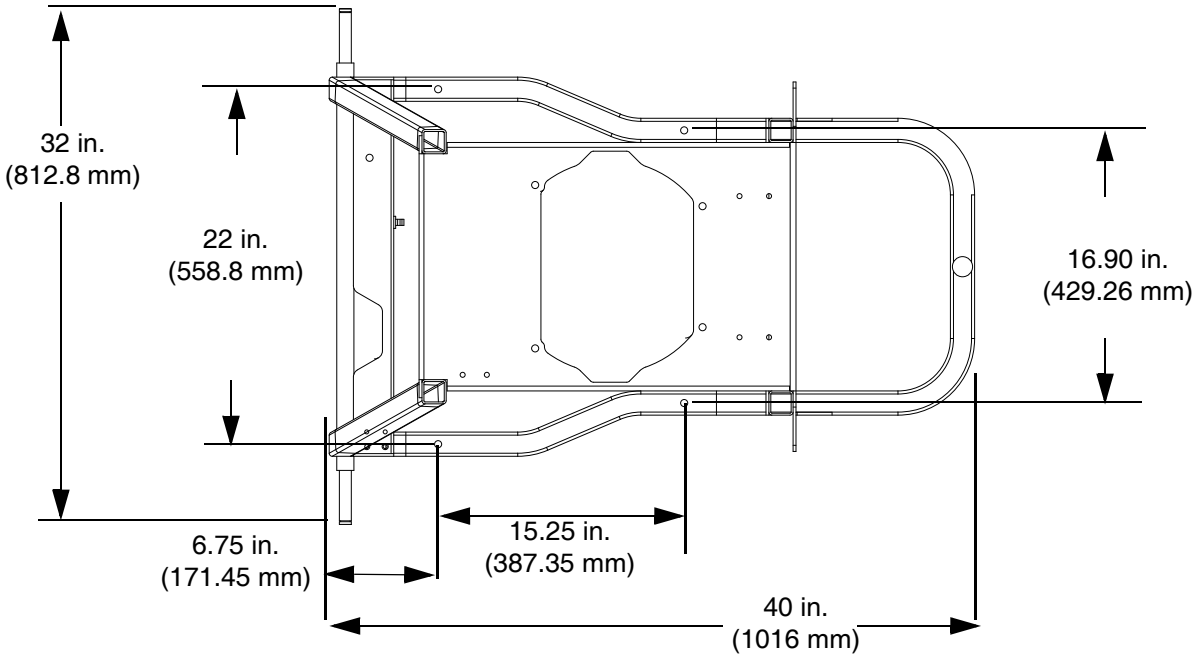
Top View



Side View

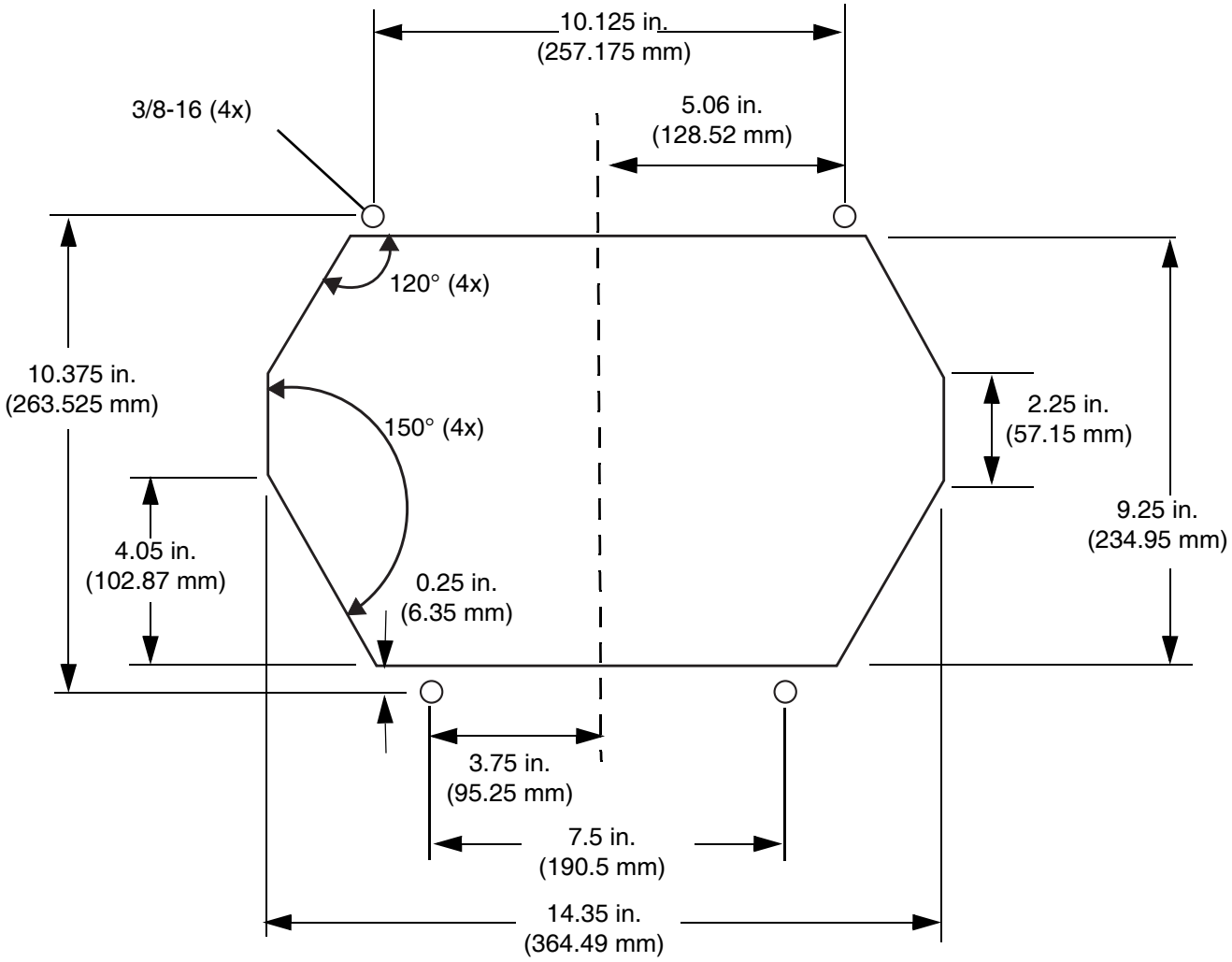


Floor Mounting Dimensions, Top View

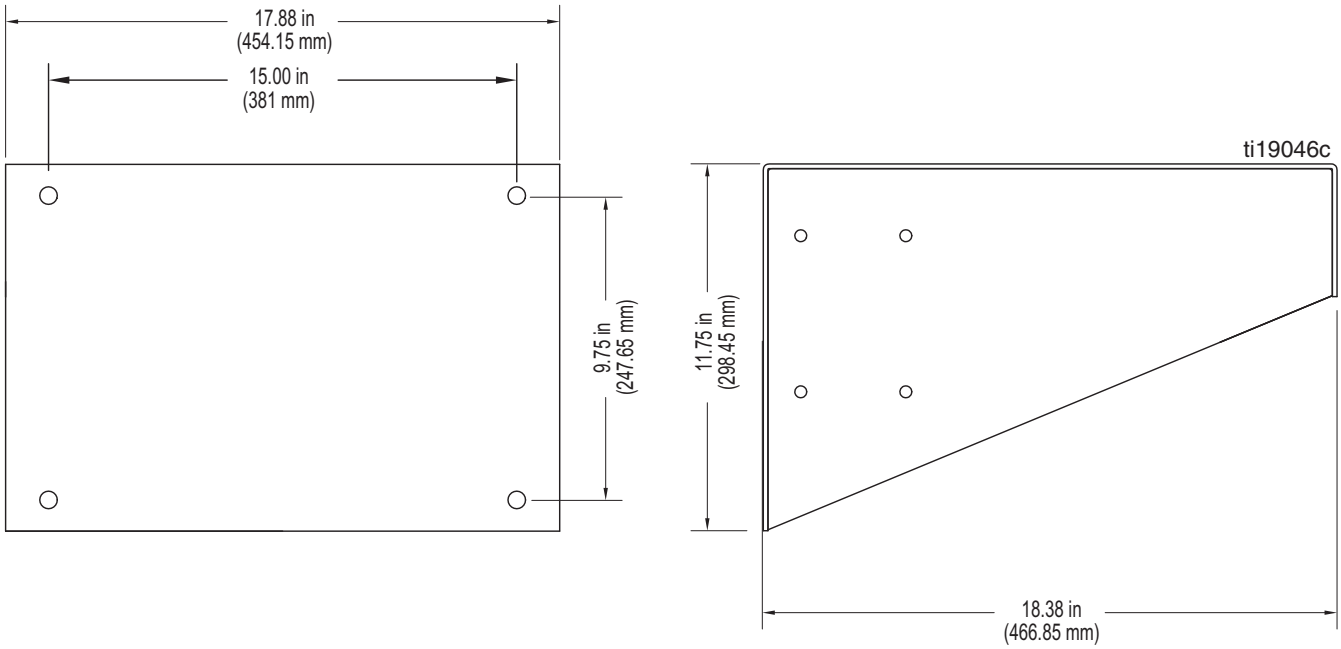


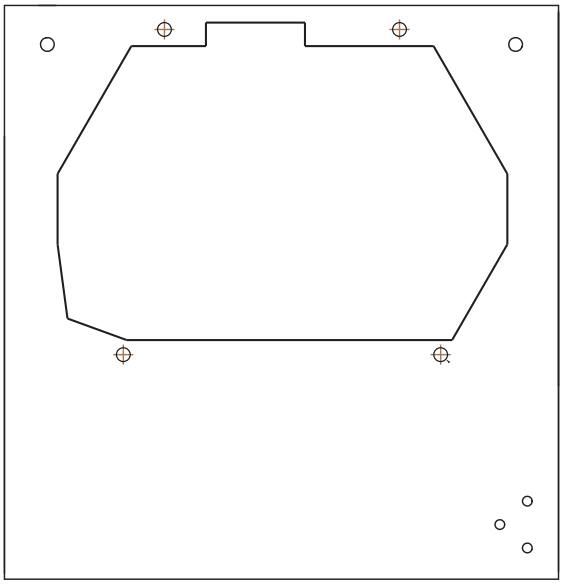
Bare Proportioner Mounting Hole Dimensions

The dimensions below is the minimum opening size for mounting a bare proportioner.

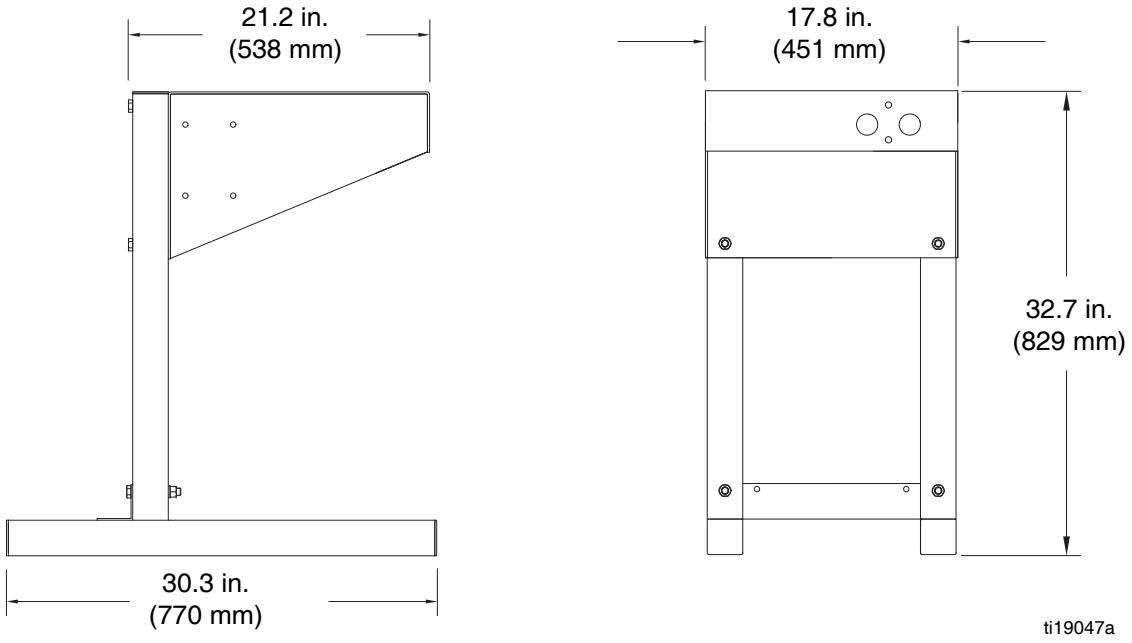


Wall Mount Bracket 262812 Dimensions



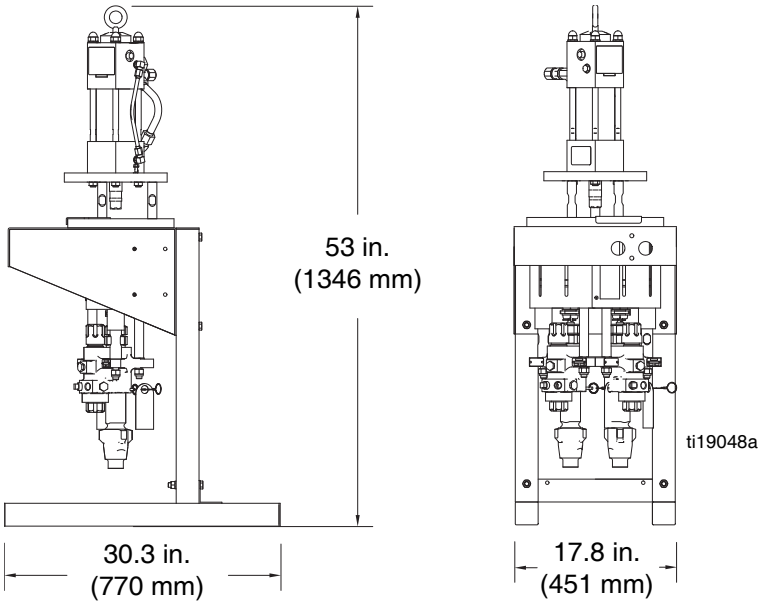


Floor Stand 24M281 Dimensions



Hydraulic Unit Dimensions

Shown installed on floor stand



Technical Specifications

XP Proportioners		
	U.S.	**Metric**
Maximum Fluid Working Pressure	See **Bare Proportioning Pump Packages** (page 20).	
Maximum Air/Hydraulic Oil Working Pressure	See **Bare Proportioning Pump Packages** (page 20).	
Combined Fluid Output (cc/cycle)	See **Bare Proportioning Pump Packages** (page 20).	
Pressure Ratio	See **Bare Proportioning Pump Packages** (page 20).	
Fluid Flow at 40 cpm	See **Bare Proportioning Pump Packages** (page 20).	
Hydraulic Fluid Consumption (XP-h models only)	0.2 gallons per cycle	0.76 liters per cycle
Air inlet size	3/4 npsm(f)	
Maximum air pressure supply to the system	175 psi	12 bar, 1 MPa
Fluid pump inlets without hoppers	1-1/4 in. npsm(m)	
Fluid gauge manifold outlets	1/2 in. npt(f)	
Fluid mix manifold inlets	1/2 in. npt(f) ball valves	
Mix manifold material outlet	1/2 in. npt(f)	
Maximum feed pressure from remote source	250 psi	17 bar, 1.7 MPa
Sound pressure	86 dBA at 100 psi (7 bar, 0.7 MPa)	
Sound power	98 dBA at 100 psi (7 bar, 0.7 MPa)	
Maximum Storage Time	5 years (To maintain original performance, replace soft seals after 5 years of inactivity.)	
Power Efficiency Factor (XP70)	75 cu. ft compressed air/1 gallon sprayed material at 100 psi	2.12 cubic meters compressed air/1 liter sprayed material at 7 bar (0.7 MPa)
Air consumption per 1 gallon (3.78 l) of flow		
XP70	75 scfm at 100 psi/gpm	2.12 m^3/min at 7 bar, 0.7 MPa
XP50	60 scfm at 100 psi/gpm	1/min at 7 bar, 0.7 MPa
XP35	50 scfm at 100 psi/gpm	1.42 cubic meters/min at 7 bar, 0.7 MPa
Electrical Specifications:		
Configurable Voltage / Phase / Hz	See **Connect Power** on page 29	
Full Load Amps	See **Power Cord Requirements** on page 29	
Filtration:		
Air inlet filtration	40-micron filter/separator included	
XP pump outlets	30 mesh	
XTR Spray Gun	60 mesh	
Fluid Viscosity Range:		
Gravity feed with 7 gallon (26 liter) hoppers	200 to 20,000 cps (pourable)	
Pressure feed	Any viscosity that will not require feed pressure more than 15% of outlet pressure	
Ambient Temperature Range:		
Operating	40-130°F	4-54°C
Storage	30-160°F	-1-71°C
Maximum Fluid Temperature	160°F	71°C
Wetted materials:		
Housings and manifolds	Carbon steel with electroless nickel plating	
Miscellaneous parts	Plated carbon steel, stainless steels, carbide, acetal, UHMWPE, nylon, PTFE solvent resistant plastics	
Pump packings	Carbon filled PTFE, proprietary UHMWPE	
Flush pump suction tube	Aluminum	
Hoses	Nylon core	

Weight:		
XP35, XP50, or XP70 Pump only	286 lb	130 kg
XP-h Pump only	290 lb	132 kg
XP35, XP50, or XP70 Cart system with no heaters, solvent flush pump, or hoppers	425 lb	193 kg
XP-h Cart system with no heaters, solvent flush pump, or hoppers	450 lb	204 kg
Full XP35, XP50, or XP70 System with heaters, solvent flush pump, and hoppers	575 lb	261 kg
Full XP-h System with heaters, solvent flush pump, and hoppers	600 lb	273 kg
Complete unit with hoppers, solvent pump, A/B non-hazardous location HP heaters, junction box (57xxx5)	665 lb	302 kg
Complete unit with A/B/hose hazardous location HP heaters, hose circulation pump, PressureTrak (57xxx6)	685 lb	311 kg
Complete unit with A/B/hose non-hazardous location HP heaters, junction box, hose circulation pump, Pressure-Trak (57xxx7)	725 lb	329 kg

Notes

Graco Standard Warranty

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

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

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

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Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

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For patent information, see www.graco.com/patents.

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Phone: 612-623-6921 or Toll Free: 1-800-328-0211 Fax: 612-378-3505

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Original instructions. This manual contains English. MM 3A4381
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