

## T4

3A8502B

### 3:1 Pneumatic Transfer Pump

EN

***For use with polyurethane foam, polyurea, and similar non-flammable materials. For professional use only.***

***Not approved for use in European explosive atmospheres.***

See page 2 for model information.

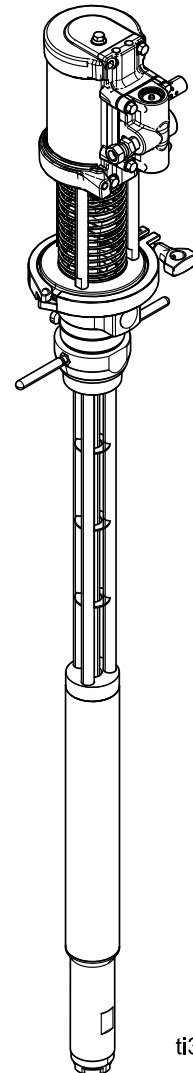
*100 psi (0.69 MPa, 6.9 bar) Maximum Air Working Pressure*

*315 psi (2.17 MPa, 21.7 bar) Maximum Fluid Working Pressure*



#### **Important Safety Instructions**

Read all warnings and instructions in this manual before using the equipment.  
Save these instructions.



ti39754a

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## Models

Part	Description	Pump Ratio	Pump Lower Material	Fluid Supply Accessories		Air Supply Accessories	
				Swivel Fitting 157785	10 ft Fluid Hose 217382	Air Supply Kit 246483	Desiccant Dryer Kit 247616
26D001	T4 Pump	3:1	Carbon Steel				
26D002	Two T4 Pumps with Fluid			✓	✓		
26D003	Two T4 Pumps with Fluid and Air			✓	✓	✓	✓






## Related Manuals












Manuals are available at [www.graco.com](http://www.graco.com).

Part	Manual Description
3A8598	ProConnect® CS Pump Lower - Parts
3A8500	Reactor® 3 Proportioning Systems - Operation
3A8501	Reactor® 3 Proportioning Systems - Repair and Parts
3A7683	Internally Heated Hose - Operation

# 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.

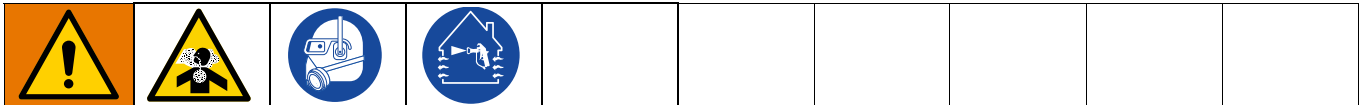
 <h1 style="margin: 0;">WARNING</h1>	
	<p><b>TOXIC FLUID OR FUMES HAZARD</b></p> <p>Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled or swallowed.</p> <ul style="list-style-type: none"> <li>• Read Safety Data Sheets (SDSs) for handling instructions and to know the specific hazards of the fluids you are using, including the effects of long-term exposure.</li> <li>• When spraying, servicing equipment, or when in the work area, always keep work area well-ventilated and always wear appropriate personal protective equipment. See <b>Personal Protective Equipment</b> warnings in this manual.</li> <li>• Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.</li> </ul>
	<p><b>PERSONAL PROTECTIVE EQUIPMENT</b></p> <p>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:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Protective eyewear and hearing protection.</li> </ul>
 	<p><b>EQUIPMENT MISUSE HAZARD</b></p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> <li>• Do not operate the unit when fatigued or under the influence of drugs or alcohol.</li> <li>• Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See <b>Technical Specifications</b> in all equipment manuals.</li> <li>• Use fluids and solvents that are compatible with equipment wetted parts. See <b>Technical Specifications</b> in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) from distributor or retailer.</li> <li>• Do not leave the work area while equipment is energized or under pressure.</li> <li>• Turn off all equipment and follow the <b>Pressure Relief Procedure</b> when equipment is not in use.</li> <li>• Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.</li> <li>• Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.</li> <li>• Make sure all equipment is rated and approved for the environment in which you are using it.</li> <li>• Use equipment only for its intended purpose. Call your distributor for information.</li> <li>• Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.</li> <li>• Do not kink or over bend hoses or use hoses to pull equipment.</li> <li>• Keep children and animals away from work area.</li> <li>• Comply with all applicable safety regulations.</li> </ul>

 <h1 style="margin: 0;">WARNING</h1>	
   	<p><b>FIRE AND EXPLOSION HAZARD</b></p> <p>Flammable fumes, such as solvent and paint fumes, in <b>work area</b> can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> <li>• Use equipment only in well-ventilated area.</li> <li>• Eliminate all ignition sources, such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking).</li> <li>• Ground all equipment in the work area. See <b>Grounding</b> instructions.</li> <li>• Never spray or flush solvent at high pressure.</li> <li>• Keep work area free of debris, including solvent, rags and gasoline.</li> <li>• Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.</li> <li>• Use only grounded hoses.</li> <li>• Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive.</li> <li>• <b>Stop operation immediately</b> if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem.</li> <li>• Keep a working fire extinguisher in the work area.</li> </ul>
  	<p><b>PRESSURIZED EQUIPMENT HAZARD</b></p> <p>Fluid from the equipment, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.</p> <ul style="list-style-type: none"> <li>• Follow the <b>Pressure Relief Procedure</b> when you stop spraying/dispensing and before cleaning, checking, or servicing equipment.</li> <li>• Tighten all fluid connections before operating the equipment.</li> <li>• Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.</li> </ul>
 	<p><b>MOVING PARTS HAZARD</b></p> <p>Moving parts can pinch, cut or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> <li>• Keep clear of moving parts.</li> <li>• Do not operate equipment with protective guards or covers removed.</li> <li>• Equipment can start without warning. Before checking, moving, or servicing equipment, follow the <b>Pressure Relief Procedure</b> and disconnect all power sources.</li> </ul>
	<p><b>BURN HAZARD</b></p> <p>Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:</p> <ul style="list-style-type: none"> <li>• Do not touch hot fluid or equipment.</li> </ul>

# Important Isocyanate (ISO) Information

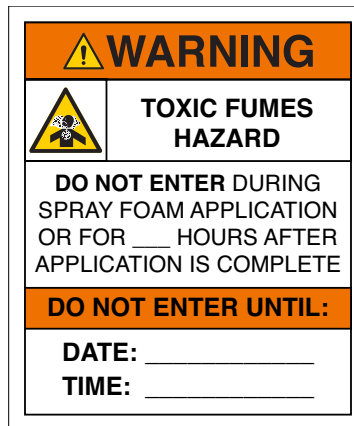
Isocyanates (ISO) are catalysts used in two component materials.

## 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, which could cause off gassing and offensive odors. 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.
- Hazard from exposure to isocyanates continues after spraying. Anyone without appropriate personal protective equipment must stay out of the work area during application and after application for the time period specified by the fluid manufacturer. Generally this time period is at least 24 hours.
- Warn others who may enter work area of hazard from exposure to isocyanates. Follow the recommendations of the fluid manufacturer and local regulatory authority. Posting a placard such as the following outside the work area is recommended:



## Material Self-Ignition

				
Some materials may become self-igniting if applied too thick. Read material manufacturer's warnings and Safety Data Sheets (SDSs).				

## 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:				
<ul style="list-style-type: none"><li>• <b>Never</b> interchange component A and component B wetted parts.</li><li>• Never use solvent on one side if it has been contaminated from the other side.</li></ul>				

## Moisture Sensitivity of Isocyanates

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

<b>NOTICE</b>
Partially cured ISO will reduce performance and the life of all wetted parts.
<ul style="list-style-type: none"><li>• Always use a sealed container with a desiccant dryer in the vent, or a nitrogen atmosphere. <b>Never</b> store ISO in an open container.</li><li>• Use only moisture-proof hoses compatible with ISO.</li><li>• Never use reclaimed solvents, which may contain moisture. Always keep solvent containers closed when not in use.</li><li>• Always lubricate threaded parts with an appropriate lubricant when reassembling.</li></ul>

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

## Foam Resins with 245 fa Blowing Agents

Some foam blowing agents will froth at temperatures above 90 °F (33 °C) when not under pressure, especially if agitated. To reduce frothing, minimize preheating in a circulation system.

## Changing Materials

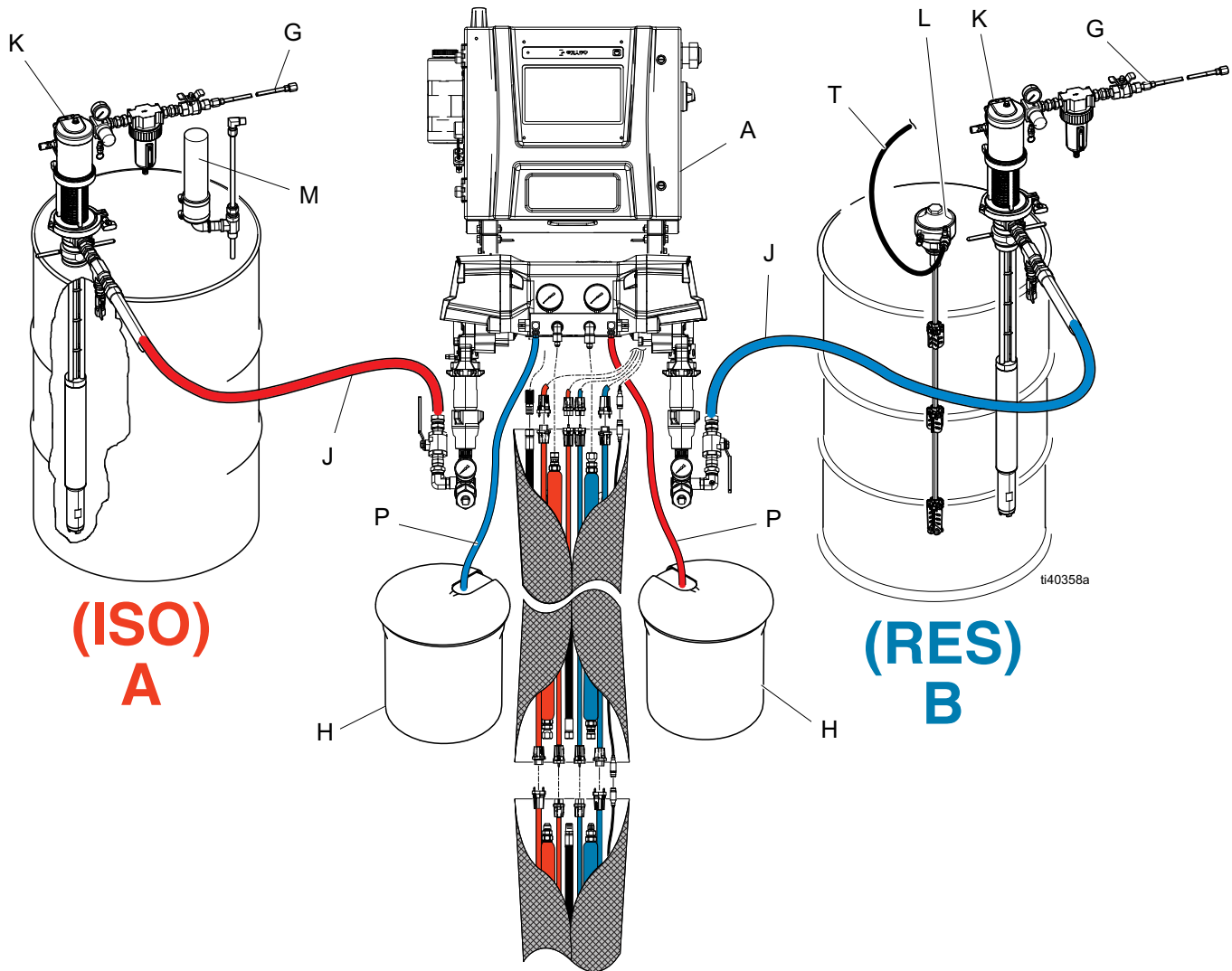
### **NOTICE**

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.
- 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.

# Typical Installation

## Typical Installation without Circulation



**FIG. 1: Typical Installation without Circulation**

**NOTE:** See **Typical Pump Installation**, page 10, for required components.

**Ref. Description**

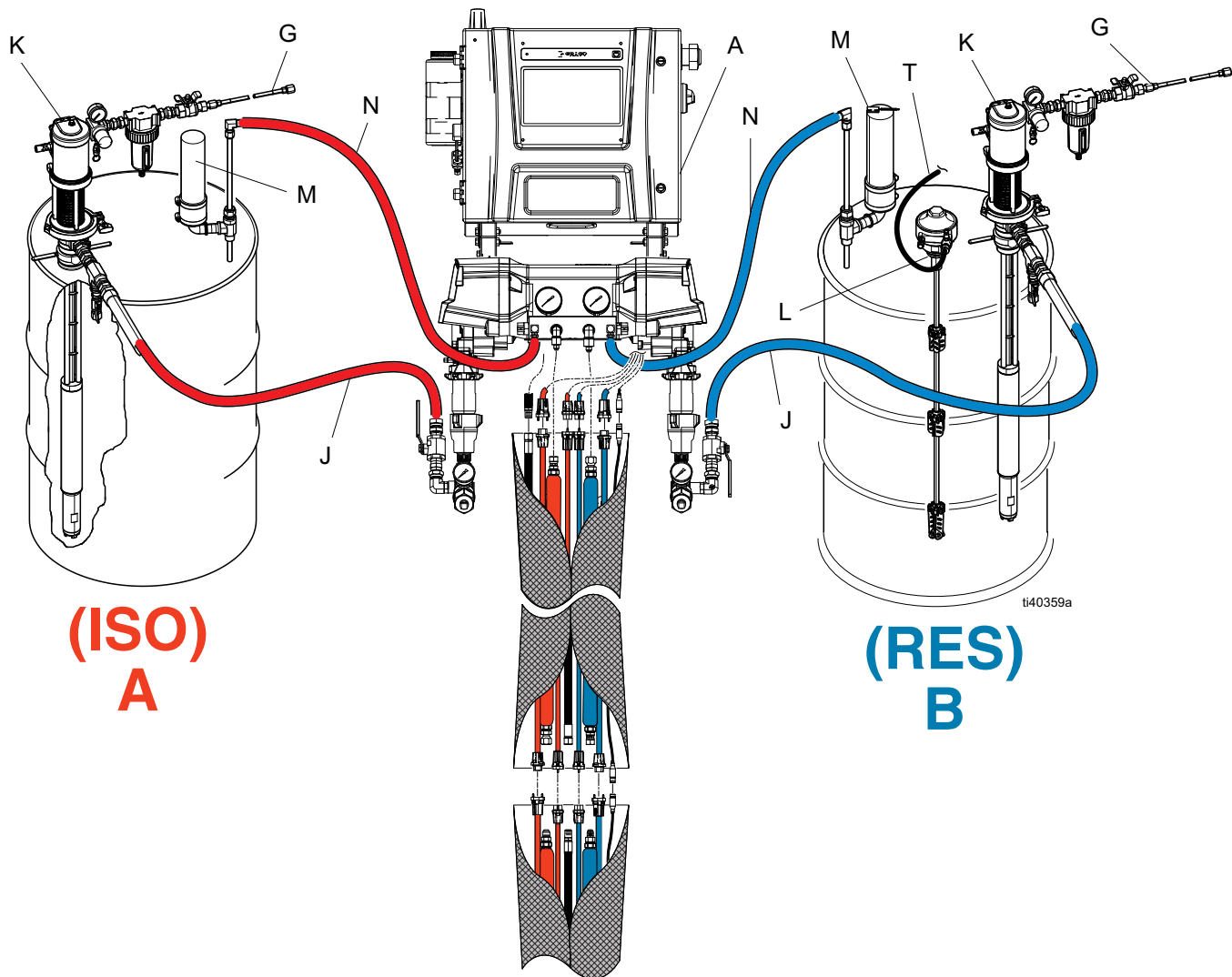
- A Proportioner
- G Transfer Pump Air Supply Lines
- H Waste Containers
- J Fluid Supply Lines

**Ref. Description**

- K Transfer Pumps (other items purchased separately)
- L Agitator
- M Desiccant Dryer
- P Bleed Lines
- T Agitator Air Supply Line



## Typical Installation with Circulation

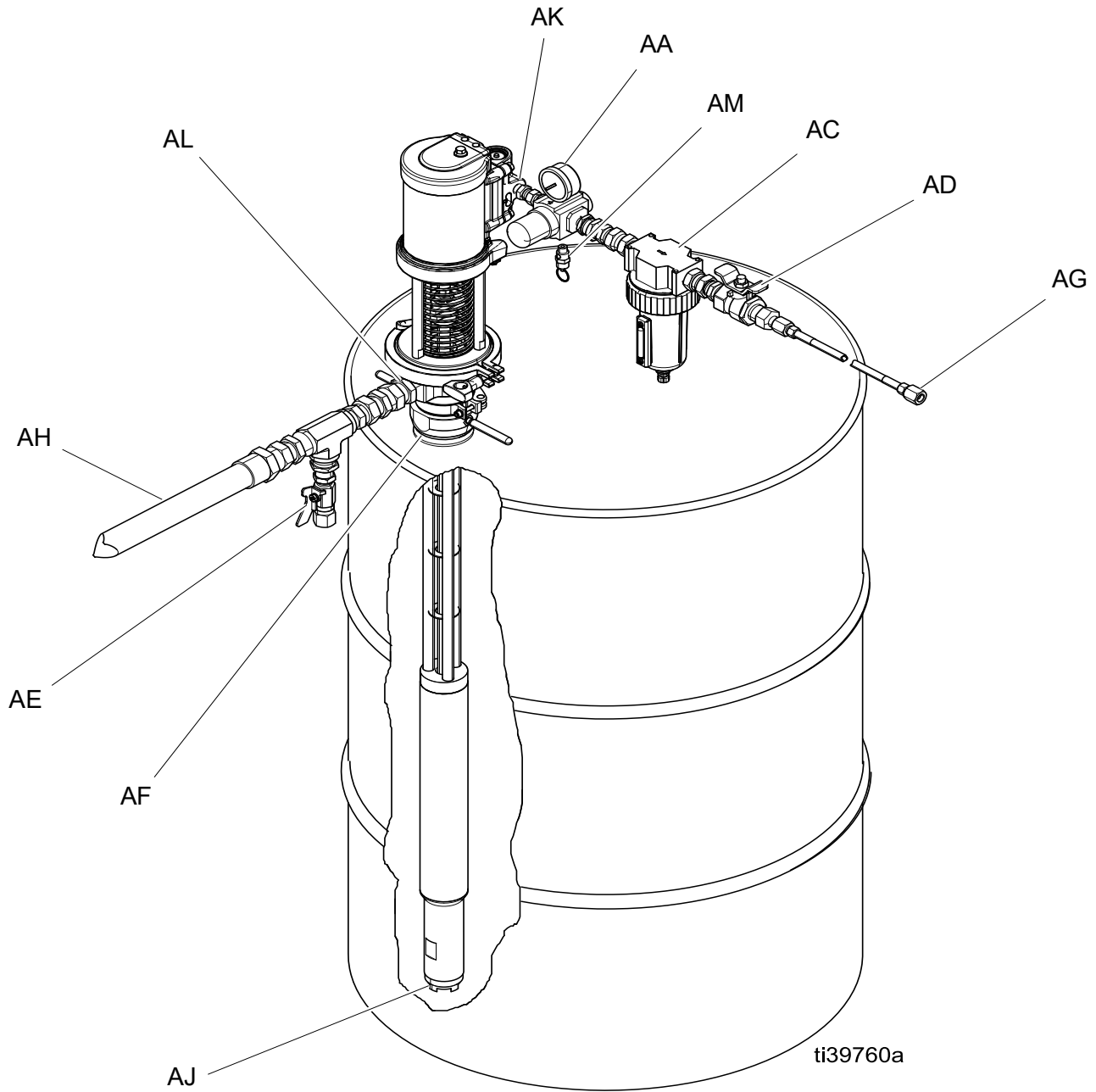


**FIG. 2: Typical Installation with Circulation**

**NOTE:** See **Typical Pump Installation**, page 10, for required components.

Ref.	Description
A	Proportioner
G	Transfer Pump Air Supply Lines
J	Fluid Supply Lines
K	Transfer Pumps (other items purchased separately)
L	Agitator
M	Desiccant Dryer
N	Circulation Lines
T	Agitator Air Supply Line

# Typical Pump Installation



**FIG. 3: Typical Pump Installation**

**Ref. Description**

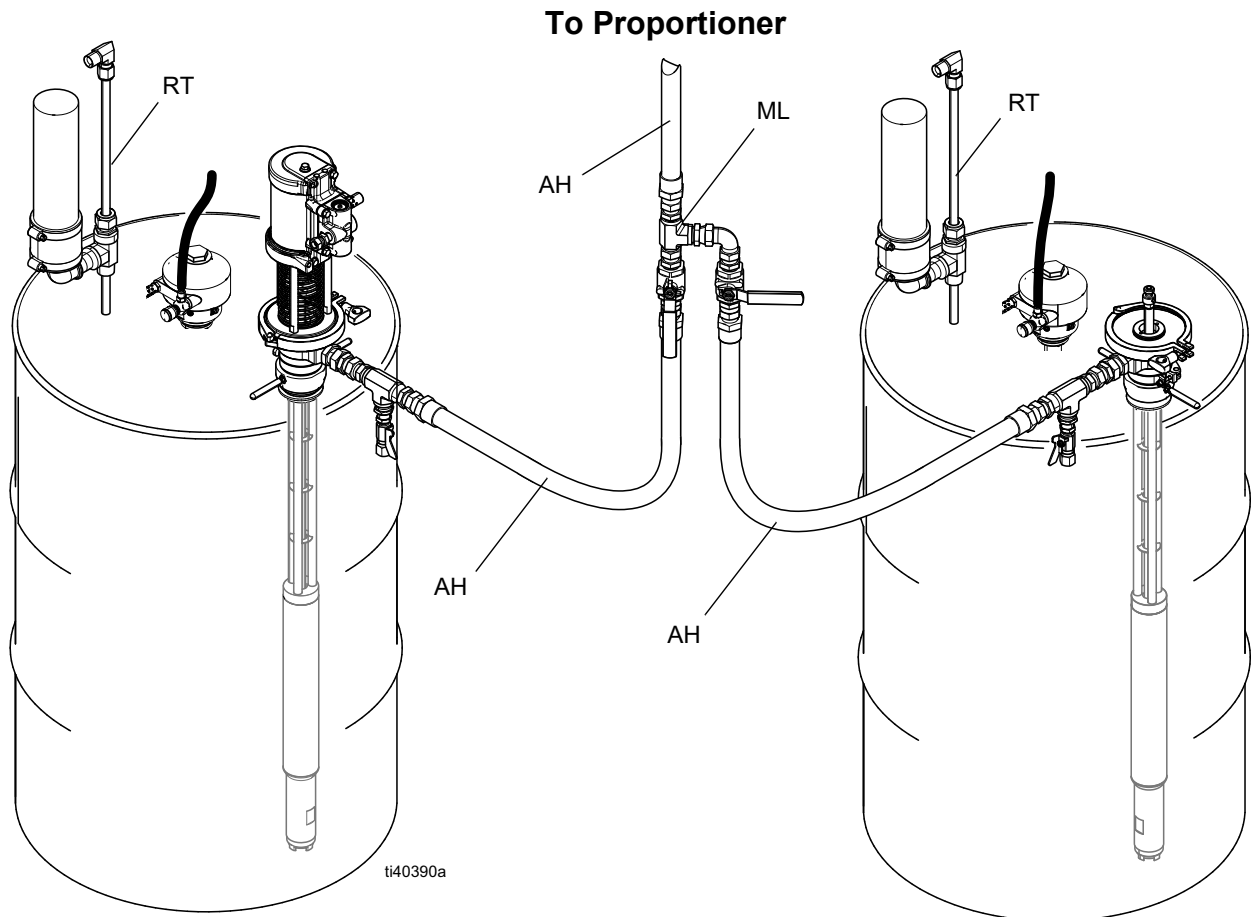
- AA Pump Air Regulator
- AC\* Air Line Filter
- AD\* Bleed-Type Master Air Valve (required)
- AE\* Fluid Drain Valve (required)
- AF Bung Adapter
- AG\* Grounded Air Hose 3/8 in. (9.5 mm) ID Minimum
- AH\* Grounded Fluid Hose

**Ref. Description**

- AJ Pump Fluid Inlet
- AK Pump Air Inlet, 1/4 npt(f)
- AL Pump Fluid Outlet, 3/4 npt(f)
- AM Pressure Relief Valve (100 psi, 6.8 bar, 0.68 MPa)

\*Sold Separately

# Typical Multiple Pump Lowers Installation



**FIG. 4: Typical Multiple Pump Lowers Installation**

Ref.	Description
RT	Return Tube Kit
ML	Multiple Pump Lowers Fluid Kit
AH	Grounded Fluid Hose

# Installation



A bleed-type master air valve (AD) and a fluid drain valve (AE) are required in your system to help reduce the risk of serious injury, including splashing fluid in the eyes or on the skin, and injury from moving parts when you are adjusting or repairing the pump.

- The bleed-type master air valve (AD) relieves air trapped between this valve and the pump after the pump is shut off. Trapped air can cause the pump to cycle unexpectedly and result in serious injury, including amputation. Install the valve close to the pump.
- The fluid drain valve (AE) helps relieve pressure in the displacement pump and fluid supply lines when shutting off the pump. Actuating the gun to relieve pressure may not be sufficient, especially if there is a clog in the hose or the spray gun.

## The following items are sold separately:

**Air compressor:** Ground according to manufacturer recommendations.

**Air and fluid hoses:** Use only electrically conductive hoses with a maximum of 300 ft (91 m) combined hose length to ensure grounding continuity. Check electrical resistance of hoses. If total resistance to ground exceeds 29 megohms, replace the hose immediately.

**Fluid supply container:** Follow local code.

**Solvent pails used when flushing:** Follow local code. Use only conductive metal pails, placed on a grounded surface. Do not place the pail on a non-conductive surface, such as paper or cardboard, which interrupts grounding continuity.

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

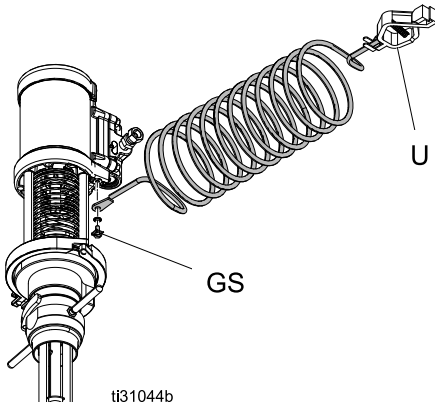
## Grounding



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

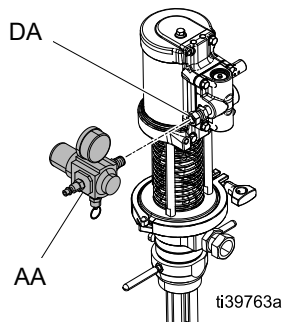
**Pump:** Verify that the ground screw (GS) is attached and tightened securely to the pump body. Connect the other end of the ground wire (U) to a true earth ground.

When installed in a truck or trailer, connect the ground wire (U) to the frame of the truck or trailer.

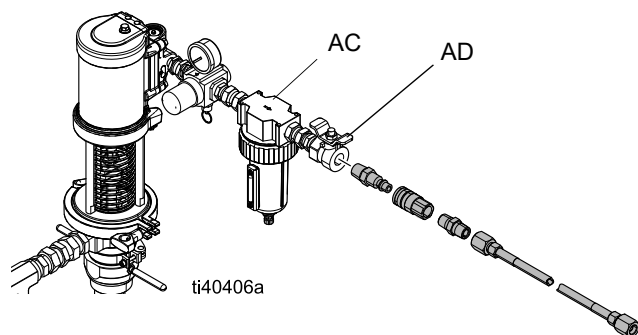


## Pump Setup

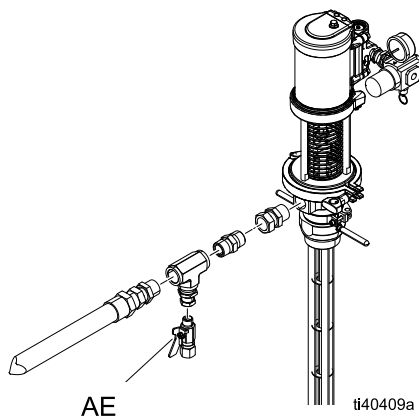
1. Connect the supplied pump air regulator (AA) to the air motor inlet (DA).



2. It is recommended to install a filter (AC) with the required bleed-type master valve (AD) and air line with a 3/8 in. (9.5 mm) ID minimum to the quick disconnect air coupler provided.

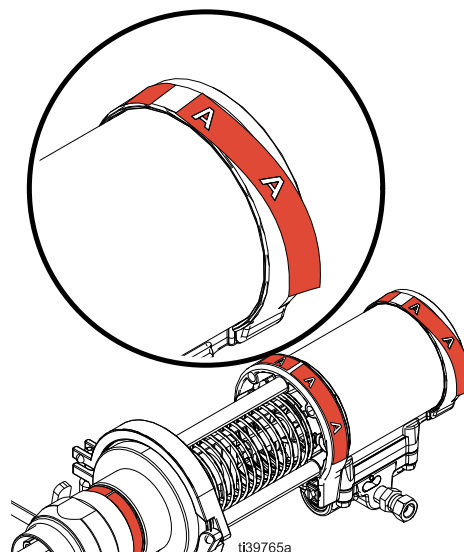


3. Apply thread sealant to all non-swivel connections and install the outlet fitting (not supplied) and required fluid drain valve (AE) to the pump outlet.



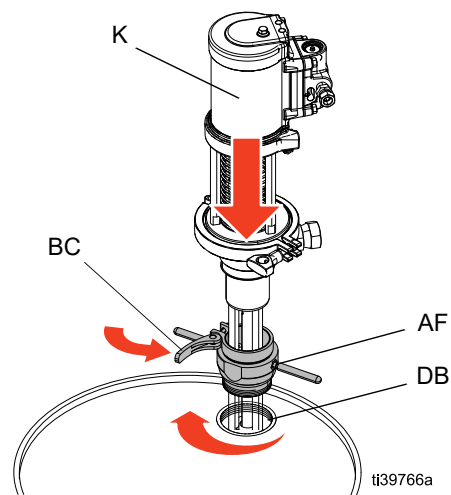
See **Accessories** on page 23 for more information on the filter and valves.

4. Use the pump identification labels and bands provided to identify the appropriate pump for your material.



## Install the Pump

1. Connect the bung adapter (AF) to the bung and tighten securely.



2. Lubricate the o-ring on the outside of the bung adapter (AF) and screw the bung adapter securely into the bung hole (DB) of the drum.
3. Insert the pump (K) through the bung adapter (AF) and lock the bung adapter clamp (BC) into place.

# Operation

## Flush Before Using Equipment



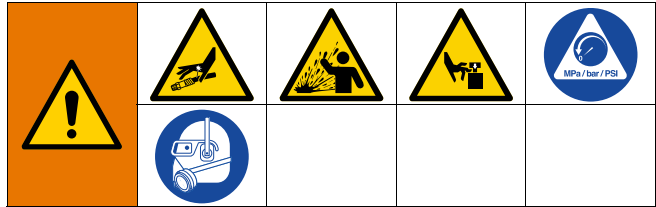
To avoid fire and explosion, always ground equipment and waste container. To avoid static sparking and injury from splashing, always flush at the lowest possible pressure.

The equipment 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 your system operation manual for instructions to flush the system equipment.

## Pressure Relief Procedure

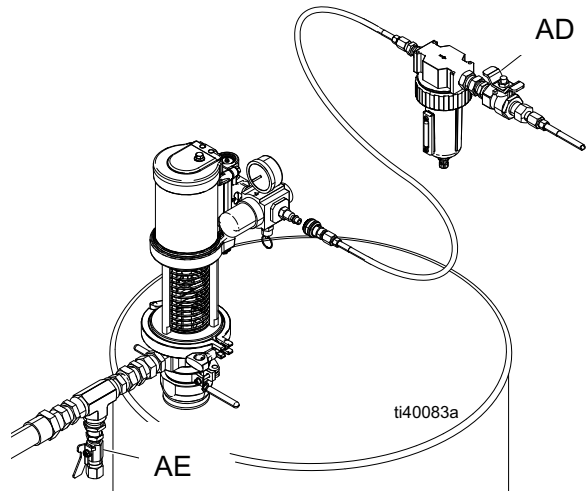


Follow the Pressure Relief Procedure whenever you see this symbol.



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. Shut off the air to the pump.
2. Close the bleed-type master air valve (AD).



3. Open the fluid drain valve (AE).

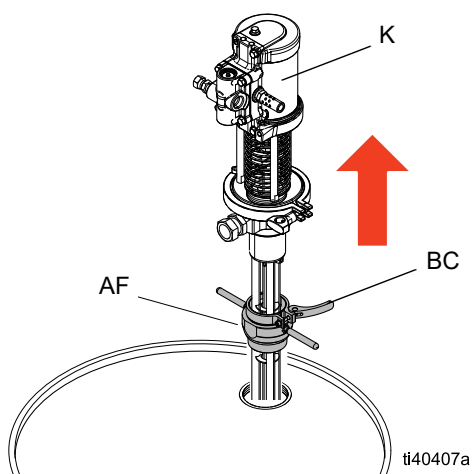
**NOTE:** Follow the pressure relief procedure in your proportioner manual to relieve pressure downstream from the transfer pump.

## Changing Material Drums

**NOTE:** If the height of your ceiling or trailer prohibits the removal of the pump, the air motor and pump lower can be uncoupled. See **Remove the Air Motor**, page 15.

### Remove the Pump

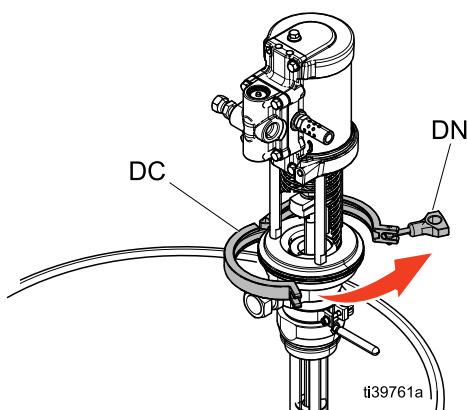
1. Follow **Pressure Relief Procedure**, page 14.
2. Loosen the bung adapter clamp (BC).
3. Carefully lift the pump (K) up and out of the bung adapter (AF) and completely remove it from the drum. **Pump Setup**



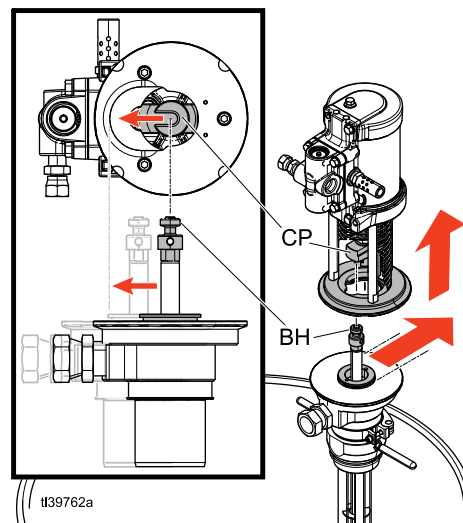
**NOTE:** To reinstall the pump, see **Install the Pump** on page 13.

### Remove the Air Motor

1. Follow **Pressure Relief Procedure**, page 14.
2. Disconnect air supply from the air motor.
3. Loosen the clamp nut (DN) on the pump clamp (DC), then remove the clamp.

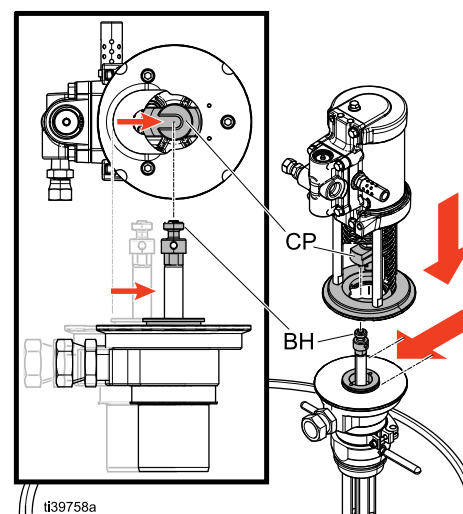


4. Slide the air motor away from the pump and remove the air motor.



### Install the Air Motor

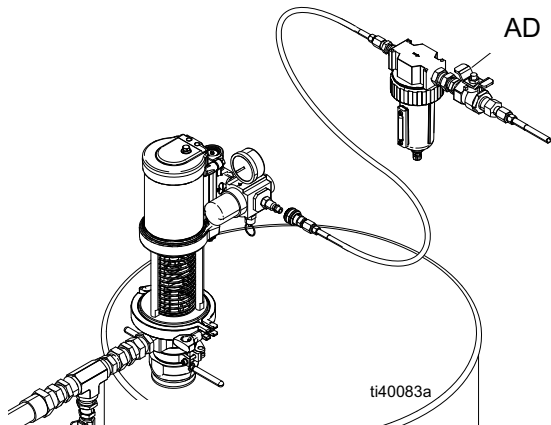
1. Follow **Pressure Relief Procedure**, page 14.
2. Align the notch on the bottom of the air motor plate with the groove on the pump lower.
3. Align the notch of the air motor coupler (CP) with the button head (BH) of the pump lower.
4. Slide the air motor onto the pump lower. Verify that the button head (BH) is inside the groove of the air motor coupler (CP) and the notch of the motor plate is inside the groove of the pump lower.



5. Install the pump clamp (DC). Use a screwdriver or rod to tighten the clamp nut (DN) 1/2 turn past finger tight.
6. Connect air supply to the air motor.

## Daily Startup

1. Verify that the air regulator is set to zero.
2. Open the bleed-type master air valve (AD).



3. Turn on the main air supply.
4. Slowly tighten the air regulator until the transfer pump runs slowly.
5. Use the air regulator to control the pump pressure. See the **Pressure Conversion Chart**, page 27.

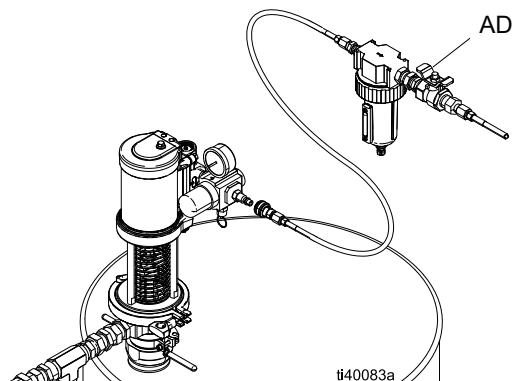
### NOTICE

Never allow the pump to run dry of the fluid being pumped. A dry pump will quickly accelerate to a high speed and could cause damage to the pump. If the pump accelerates quickly or starts running too fast, stop it immediately and check the fluid supply. If the supply container is empty or air has been pumped into the lines, refill the container and prime the pump and the lines with fluid, or flush and leave it filled with a compatible solvent. Be sure to eliminate all air from the fluid system.

Do not attempt to operate unless it is securely mounted in a drum.

## Daily Shutdown

1. Turn off air supply to the pump.
2. Close the bleed-type master air valve (AD).



3. When air pressure is bled off, set the air regulator to zero.



# Troubleshooting



1. Follow **Pressure Relief Procedure**, page 14, before checking or repairing pump.
2. Check all possible problems and causes before disassembling pump.

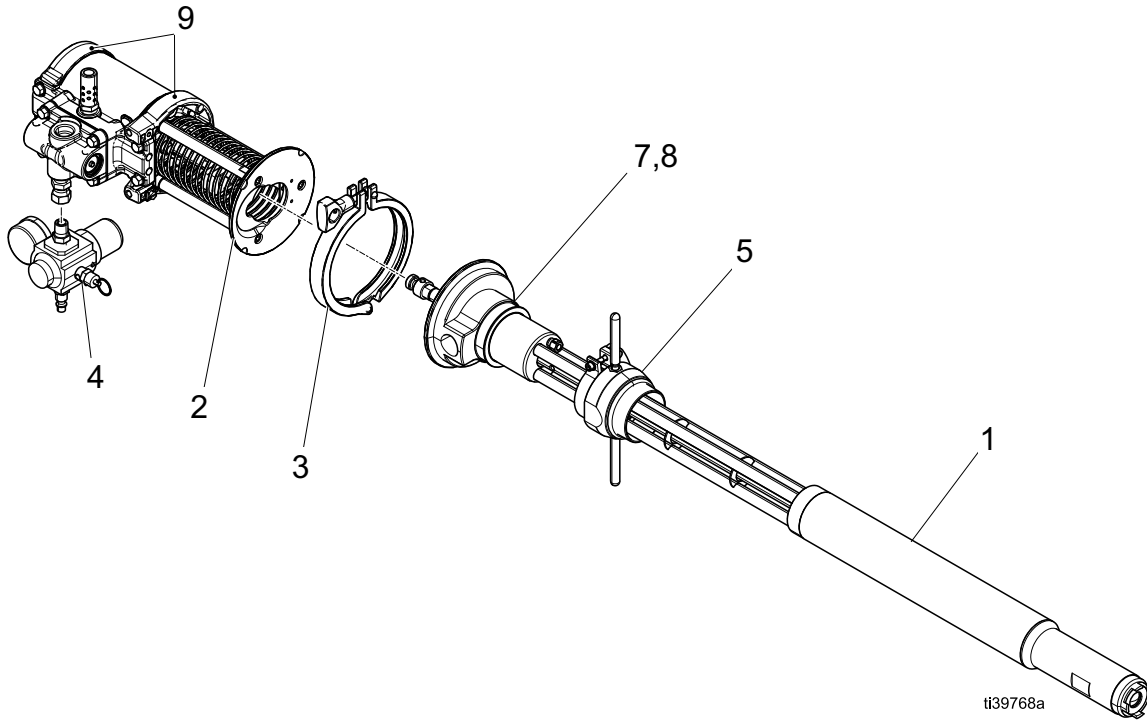
Problem	Cause	Solution
The pump fails to operate	Damaged air valve	Replace or service air valve (314).
	Damaged pilot valve	Replace pilot valves (313).
	Inadequate air supply or restricted lines.	Clean lines or increase the air supply. See <b>Technical Specifications</b> , page 30.
	Closed or clogged air valves	Open or clear the valves.
	Clogged fluid hose or valve	Clear the hose or valve.
The pump operates, but the output is low on both strokes	Clogged fluid hose or valve	Clear the hose or valves.
	Exhausted fluid supply	Refill the fluid supply and reprime the pump.
	Worn or damaged valves or seals	Service the valves or seals.
The pump operates, but the output is low on the downstroke	Held open or worn intake valve	Clear or service the valve.
	Worn or damaged valves or seals	Service the valves or seals.
The pump operates, but the output is low on the upstroke	Held open or worn piston valve	Clear or service the valve.
	Worn or damaged valves or seals	Service the valves or seals.
Erratic or accelerated operation	Exhausted fluid supply	Refill the fluid supply and reprime the pump.
Pump slowly moves after fluid shutoff in the downstroke	Clogged or dirty intake valve check ball	Clean ball and seat.
	Worn or damaged valves or seats	Install repair kit.
Pump moves slowly after fluid shutoff in the upstroke	Clogged or dirty piston ball or seat	Clean ball and seat.
	Worn or damaged valves or seats	Install repair kit.
Air continuously escapes around piston rod	Damaged U-cups (307)	Replace piston rod U-cup (307).
Air continuously escapes from muffler	Damaged air valve plate (413) or cup (414)	Replace or service air valve (314).
Air motor “bounces” at top of stroke	Damaged bottom valve	Replace bottom pilot valve (313).
Air motor “bounces” at bottom of stroke	Damaged top valve	Replace top pilot valve (313).
Icing inside motor	Air motor operating at high pressure or high cycle rate	Reduce pressure, cycle rate, or duty cycle of motor. Reduce dew point of compressed air in moisture-coalescing filter.

## Daily Maintenance

Check the clamp nut (DN) on a daily basis and tighten if necessary.

# Parts

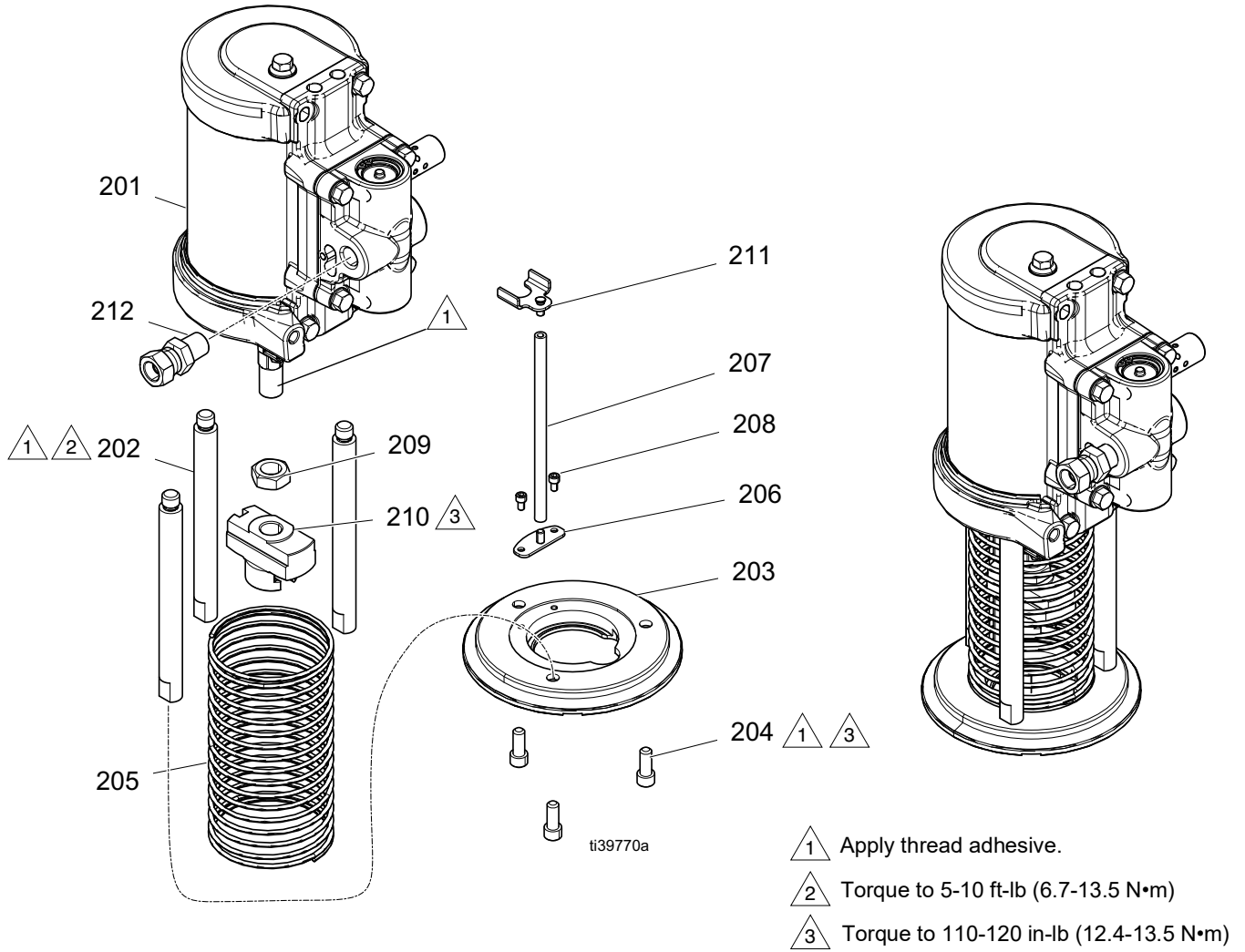
## Pump (26D001)



### Pump (26D001) Parts List

Ref.	Part	Description	Qty.
1	273295	PUMP, lower	1
2	273294	AIR MOTOR, T4	1
3	510490	CLAMP, pump	1
4	24Z963	REGULATOR, quick connect	1
5	25B395	ADAPTER, bung, 2 in., EZ removal	1
7	26D216	BAND, identity, res (blue)	1
8	26D216	BAND, identity, iso (red)	1
9	15K008	LABEL, material identification	1

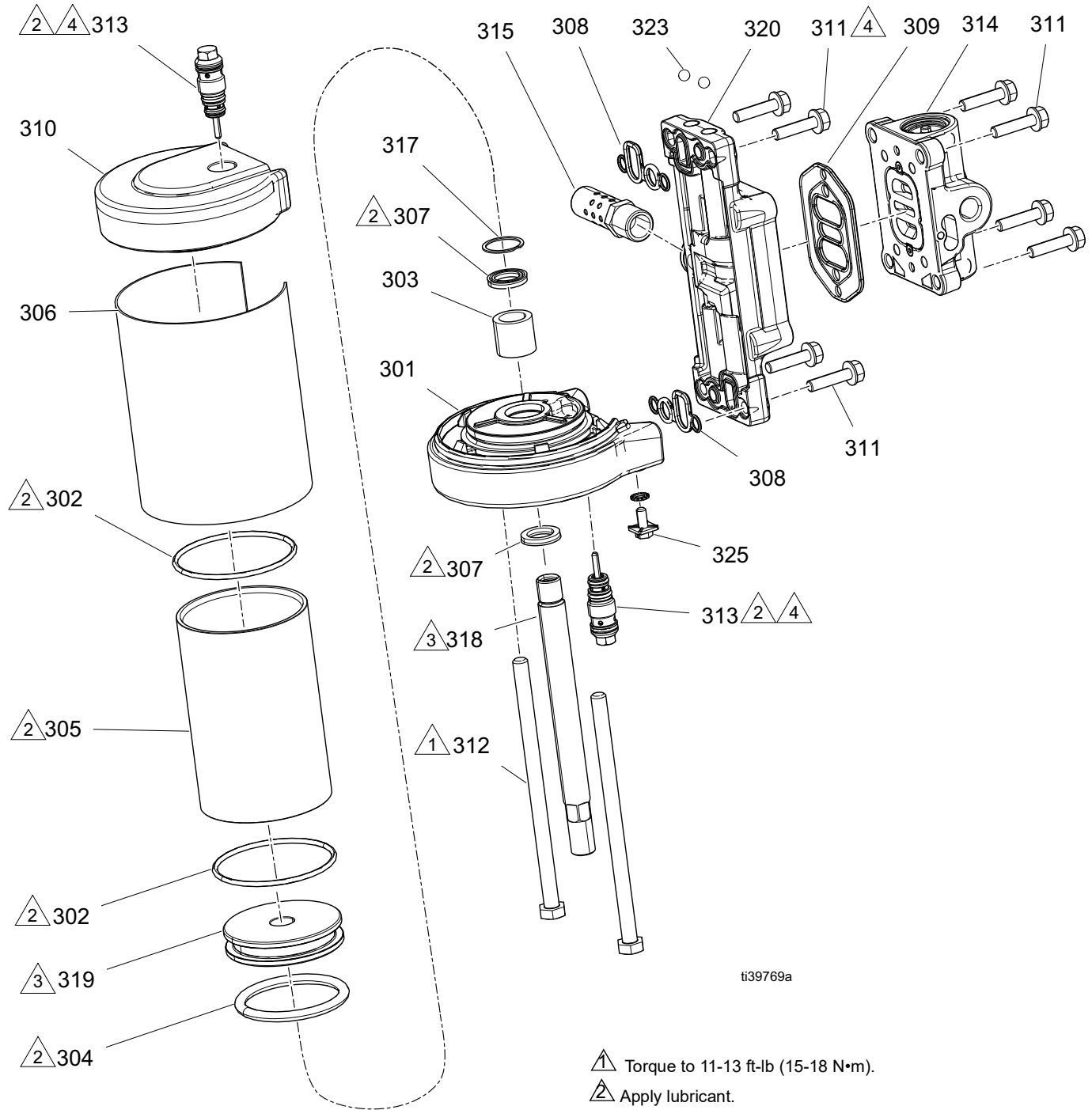
# Air Motor (273294)



## Air Motor (273294) Parts List

Ref.	Part	Description	Qty.
201	-----	MOTOR, air, 2.5 in, d pulse	1
202	-----	ROD, tie	3
203	-----	RING, mounting clamp, air	1
204	101682	SCREW, cap, sch	3
205	17R693	SPRING, guard, T3	1
206	-----	BRACKET, clocking	1
207	-----	ROD, clocking	1
208	124781	SCREW, cap, sh, 6-32 x 0.25 lg, sst	2
209	-----	NUT, lock, 1/2-20	1
210	-----	COUPLER, air motor	1
211	-----	BRACKET CLOCKING, top	1
212	U09995	FITTING, swivel	1

# Air Motor (273294) continued



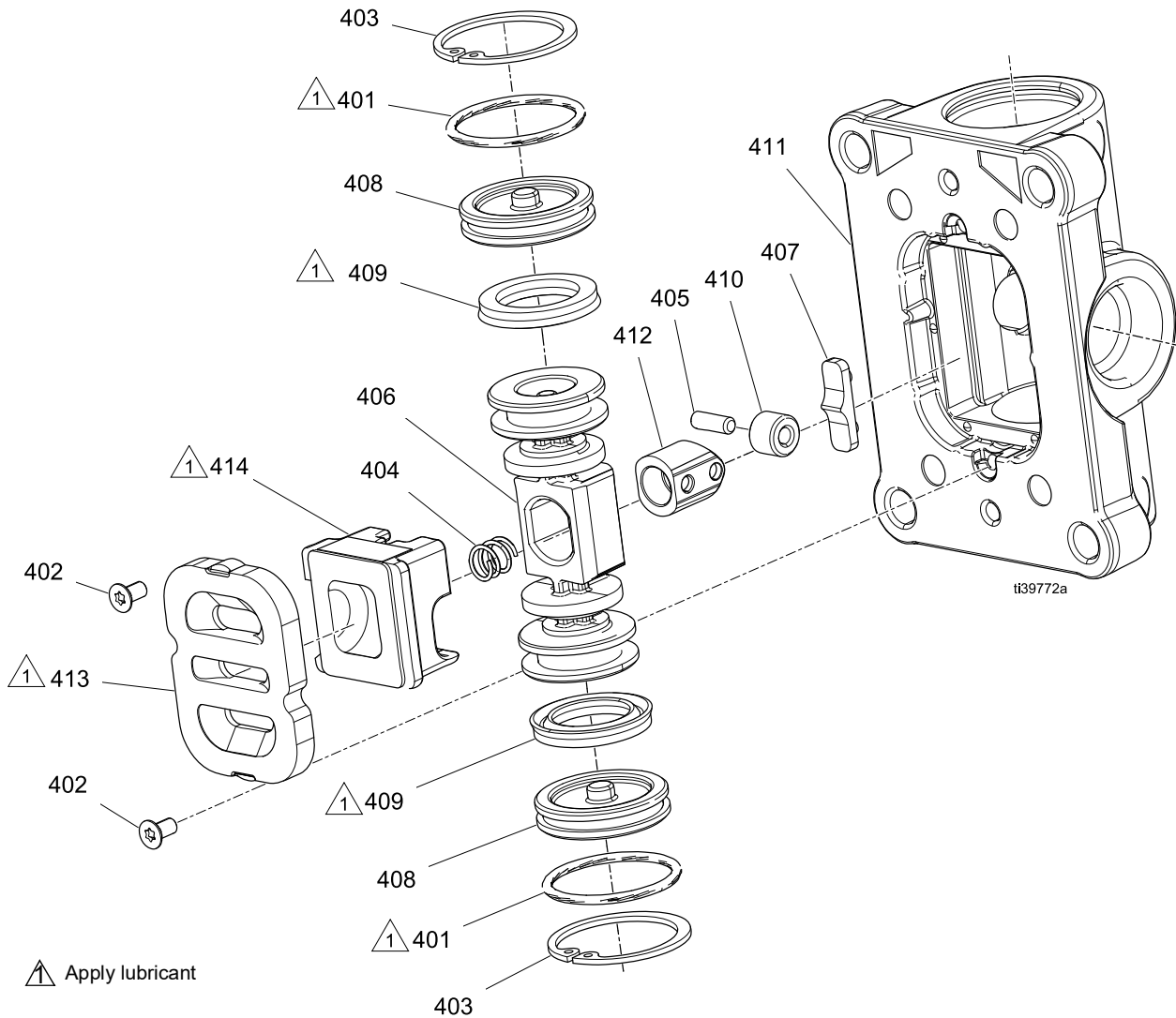
ti39769a

- $\triangle 1$  Torque to 11-13 ft-lb (15-18 N•m).
- $\triangle 2$  Apply lubricant.
- $\triangle 3$  Apply adhesive and then torque to 35-40 ft-lb (47.4-54.2 N•m).
- $\triangle 4$  Torque to 95-105 in-lb (10.7-11.8 N•m).

**Air Motor (273294) Parts List continued**

Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
301†	-----	COVER, lower, 2.5	1	317†	-----	RING, retaining	1
302†	108993	PACKING, o-ring	2	318†	-----	ROD, piston, air motor	1
303†	-----	BEARING, 9/16	1	319†	-----	PISTON, motor, 2.5	1
304†	117370	PACKING, o-ring	1	320*	-----	MANIFOLD, medium, short	1
305	15M289	CYLINDER, motor, 2.5	1	323*	105444	BALL, (.31250)	4
306	-----	COVER, bolt, t4 core, 2.5 motor	1	325†	116343	SCREW, ground	1
307†	-----	SEAL, u-cup, .562	2				
308*	-----	GASKET, cover, small	2	†	<i>Parts included in air motor rebuilt kit 26D217 (purchase separately).</i>		
309‡*	-----	SEAL, air valve, manifold	1	‡	<i>Parts included in valve replacement kit 24A351 (purchase separately).</i>		
310	15M291	COVER, motor, 2.5	1	◆	<i>Parts included in pilot valve kit 24A366 (2 pack, purchase separately).</i>		
311‡*	-----	SCREW, m6 x 25, thread forming	8	*	<i>Parts included in motor manifold kit 24A579 (purchase separately).</i>		
312	15M314	SCREW, cap	2				
313◆	-----	VALVE, pilot	2				
314‡	-----	VALVE, air, small	1				
315	15M213	MUFFLER, 3/8	1				

## Air Valve (Included in kit 24A351)



### Air Valve Parts List

Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
401††	124796	O-RING, 018 buna	2	408†	-----	PLUG, air valve, small	2
402††	-----	SCREW, m3, thread forming	2	409††	-----	SEAL, u-cup, bevel lip	2
403†	-----	RING, snap, 1.0	2	410	-----	ROLLER, detent, small	1
404†	-----	SPRING, detent, small	1	411	-----	HOUSING, air valve, small, npt	1
405†	-----	PIN, detent, small	1	412†	-----	PISTON, detent, small	1
406†	15K903	PISTON, air valve, small	1	413†	-----	PLATE, air valve, machined	1
407†	-----	CAM, detent	1	414†	-----	CUP, air valve, machined	1

† Parts included in valve rebuild kit 25M552 (purchase separately).

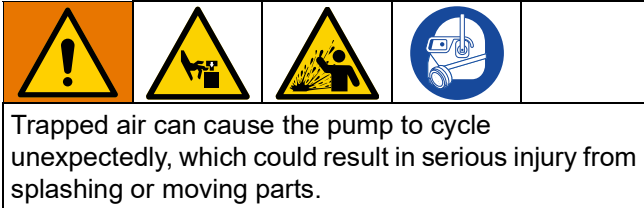
‡ Parts included in valve seal kit 25M553 (purchase separately).

## Accessories

To ensure maximum pump performance, make sure all accessories are properly sized to meet your system requirements.

### Air Line

Install the following accessories in the order shown in **Typical Pump Installation**, page 10, using adapters as necessary.



**NOTE:** Be sure the air valves are easily accessible from the pump and located downstream from the air regulator.

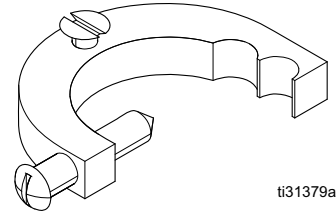
- **Air line lubricator:** Provides automatic air motor lubrication.
- **Air line filter (AC):** Removes harmful dirt and moisture from compressed air supply.
- **Bleed-type air valve (AD):** Isolates air line accessories for servicing. Locate upstream from all other air line accessories.

### Fluid Line

**Fluid drain valve (AE):** Required in your system to relieve fluid pressure in the fluid supply lines. Install the drain valve so that it points down and the handle points up when the valve is opened.

### Grounding Clamp (not included)

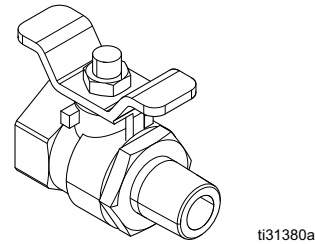
Part	Description	Qty.
103538	CLAMP, ground	1



### Bleed-Type Master Air Valve (not included)

*Maximum Working Pressure: 300 psi (2.1 MPa, 21 bar)*

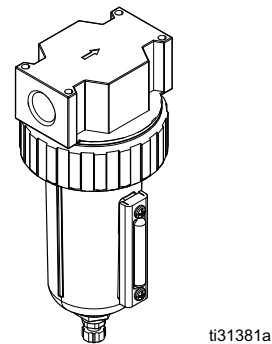
Part	Description	Qty.
107142	VALVE, ball, vented; 1/2 npt(m) inlet x 1/2 npt(f) outlet	1



### Air Line Filter (not included)

*Maximum Working Pressure:  
250 psi (1.7 MPa, 17.5 bar)*

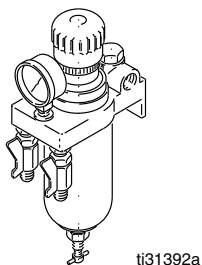
Part	Description	Qty.
106149	FILTER, air line; 1/2 npt(f) inlet and outlet	1



### Air Line Filter and Regulator (not included)

Maximum Working Pressure: 180 psi (1.3 MPa, 13 bar)

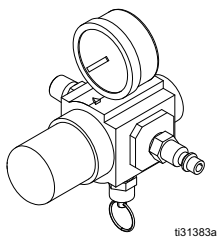
Part	Description	Qty.
202660	FILTER, air; includes gauge and two 1/4 npt(m) outlet valves, 50 micron filter element with 100 mesh inlet strainer; 1/2 npt(f) inlet; flow rate is over 50 scfm (1.4 m <sup>3</sup> /min)	1



### Air Regulator and Gauge (included)

Maximum Working Pressure: 100 psi (0.7 MPa, 7 bar)

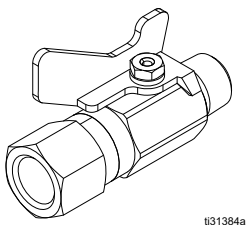
Part	Description	Qty.
24Z963	REGULATOR, quick connect	1



### Fluid Drain Valve (not included)

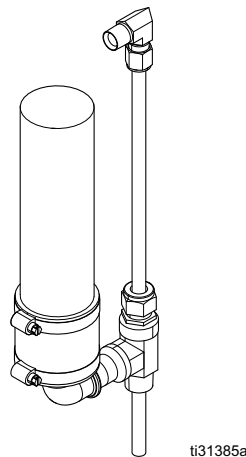
Maximum Working Pressure: 500 psi (3.5 MPa, 35 bar)

Part	Description	Qty.
208630	VALVE, ball; 1/2 npt(m) x 3/8 npt(f) for non-corrosive fluids; carbon steel and PTFE	1
237534	VALVE, ball; 3/8 npt(m) x 3/8 npt(f) for corrosive fluids; SST and PTFE	1



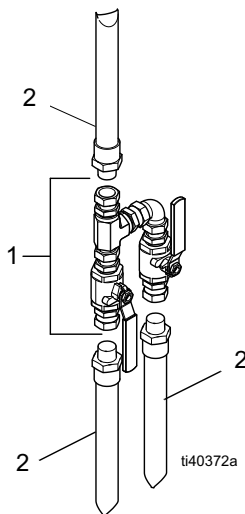
### Return Tube Kit (not included)

Part	Description	Qty.
246477	KIT, carbon steel return tube	1
24D106	KIT, stainless steel return tube	1
246978	KIT, carbon steel return tube; with hose	1
24E379	KIT, carbon steel return tube; with moisture-loc hose	1
24D107	KIT, stainless steel return tube; with moisture-loc hose	1
247616	KIT, desiccant dryer, no return tube	1



### Multiple Lower Fluid Kit (not included)

Ref.	Part	Description	Qty.
1	26D219	Fluid Coupling Kit	1
2	217382	Fluid Supply Hose (10 ft)	1

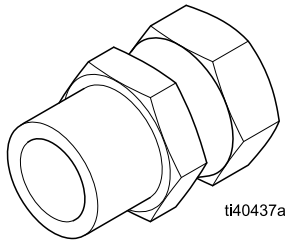


**NOTE:** For Multiple Pump Lowers Fluid Kit installation, see FIG. 4 on page 11.



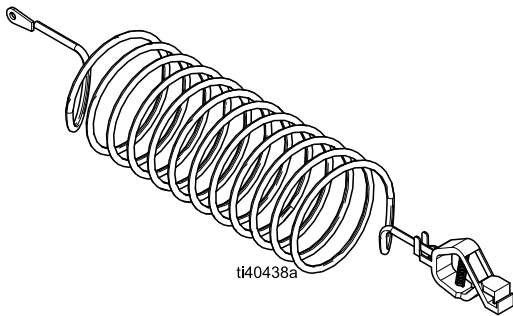
**Swivel Fitting (not included)**

Part	Description
157785	FITTING, swivel



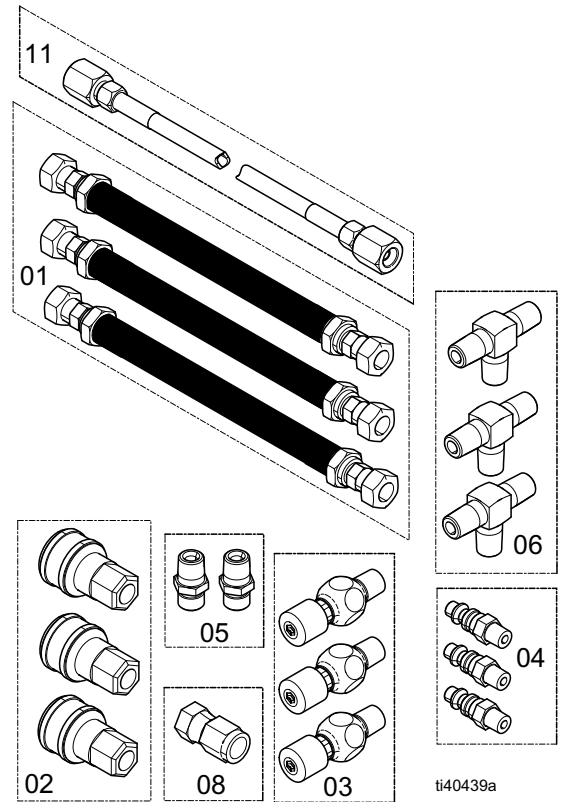
**Ground Wire Assembly (not included)**

Part	Description
244524	WIRE, ground assembly



**Air Supply Kit 246483 (not included)**

Qty.	Ref.	Description	Qty.
1	1	HOSE, coupled, 15 ft	3
	2	COUPLER, line, air	3
	3	VALVE, needle	3
	4	FITTING, line air	3
	5	FITTING, 1/4 npsm x 1/4 npt	2
	6	FITTING, tee, 1/4 in.	3
	8	SWIVEL, union	1
	11	HOSE, coupled, 4 ft	1



# Performance Chart

## Calculate Fluid Outlet Pressure

To calculate fluid outlet pressure (psi) at a specific fluid flow (gpm) and operating air pressure (psi), use the following instructions and FIG. 5.

Locate desired fluid flow along bottom of chart.

Follow the vertical line to the intersection with the selected air pressure curve (black). Refer to the Fluid Pressure measurements at left to determine fluid outlet pressure.

## Calculate Pump Air Consumption

To calculate pump air consumption (scfm) at a specific fluid flow (gpm) and air pressure (psi), use the following instructions and FIG. 5.

Locate desired fluid flow along bottom of chart.

Follow the vertical line to the intersection with the selected air pressure curve (grey). Follow horizontally right to read air consumption.

### Key: Air Pressure

- A 100 psi (0.7 MPa, 7 bar)
- B 70 psi (0.5 MPa, 4.8 bar)
- C 40 psi (0.3 MPa, 2.8 bar)

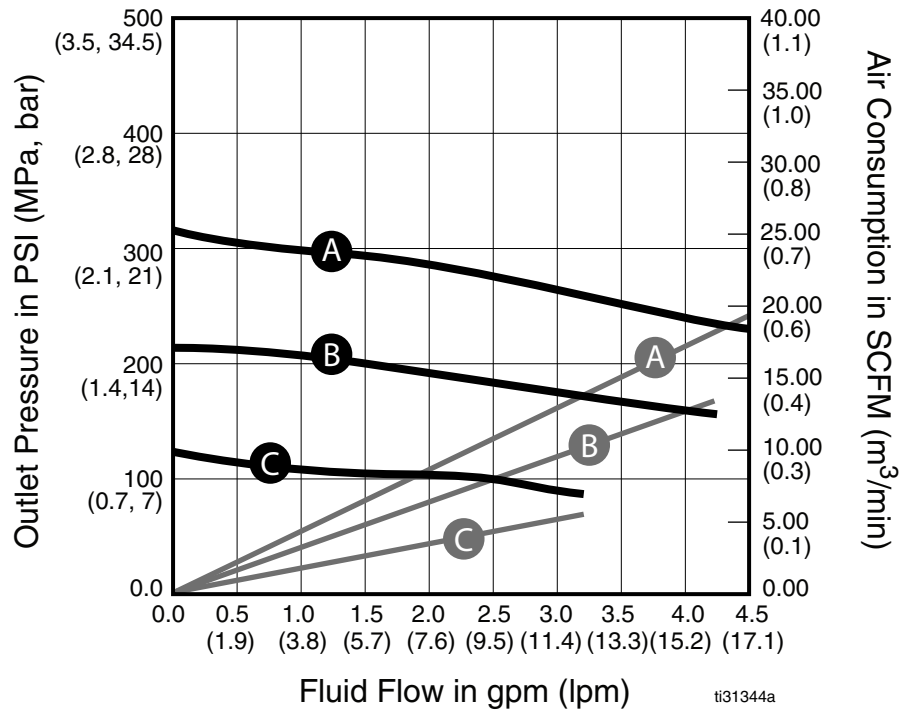


Fig. 5: Pump Performance

## Pressure Conversion Chart

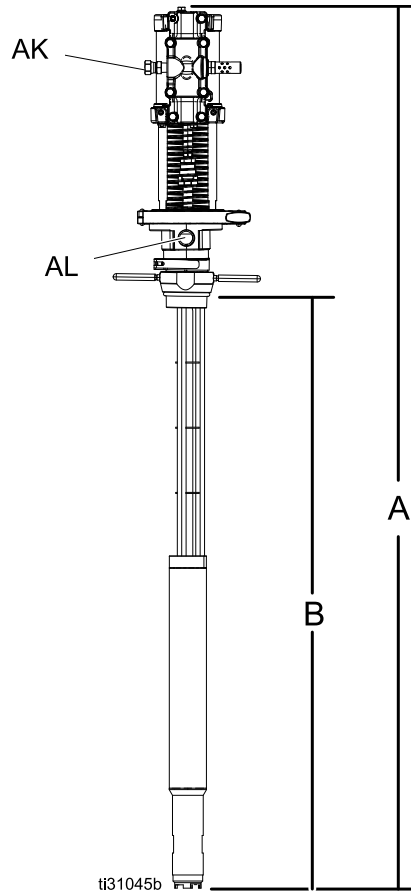
Fluid Pressure	Air Pressure
50 psi (3.4 bar, 0.34 MPa)	16.7 psi (1.1 bar, 0.11 MPa)
75 psi (5.1 bar, 0.51 MPa)	25.0 psi (1.7 bar, 0.17 MPa)
100 psi (6.8 bar, 0.68 MPa)	33.3 psi (2.2 bar, 0.22 MPa)
125 psi (8.6 bar, 0.86 MPa)	41.7 psi (2.8 bar, 0.28 MPa)
150 psi (10.3 bar, 1.03 MPa)	50.0 psi (3.4 bar, 0.34 MPa)
200 psi (13.7 bar, 1.37 MPa)	66.7 psi (4.5 bar, 0.45 MPa)
250 psi (17.2 bar, 1.72 MPa)	83.3 psi (5.7 bar, 0.57 MPa)
300 psi (20.6 bar, 2.06 MPa)	100.0 psi (6.8 bar, 0.68 MPa)

## Standard Cubic Feet/Minute (SCFM) Requirement Chart

\*Air flow at typical application pressure. See fluid performance chart for more details.

Fluid Pressure	Air Pressure	Fluid Flow	*Air Flow
60 psi (4.1 bar, 0.41 MPa)	20 psi (1.4 bar, 0.14 MPa)	1 gpm (3.8 lpm)	3 scfm (85.0 lpm)
120 psi (8.3 bar, 0.83 MPa)	40 psi (2.8 bar, 0.28 MPa)	2 gpm (7.6 lpm)	6 scfm (170.0 lpm)
180 psi (12.4 bar, 1.24MPa)	60 psi (4.1 bar, 0.41 MPa)	3 gpm (11.4 lpm)	11 scfm (311.5 lpm)

# Dimensions



Ref.	Dimension	Measurement
A	Overall Length	50.1 in. (127.2 cm)
B	Pump Length	33.9 in. (86.1 cm)
AK	Air Inlet	1/4 in. npt(f)
AL	Fluid Outlet	3/4 in. npt(f)

## Recycling or Disposal

### End of Product Life

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

## California Proposition 65

### CALIFORNIA RESIDENTS

 **WARNING:** Cancer and reproductive harm – [www.P65warnings.ca.gov](http://www.P65warnings.ca.gov).

# Technical Specifications

<b>T4 3:1 Ratio Transfer Pump</b>		
	<b>US</b>	<b>Metric</b>
Pressure ratio	3:1	
Maximum fluid working pressure	315 psi	2.17 MPa, 21.7 bar
Maximum air inlet pressure	100 psi	0.68 MPa, 6.8 bar
Maximum continuous outlet flow	4.5 gpm	17.03 lpm
Pump cycles per 1 gallon (3.8 liters)	30	
Maximum recommended pump speed for continuous operation	120 cpm	
Volume per pump cycle	0.034 gallons	0.128 liters
Maximum ambient operating temperature	120° F	49° C
Maximum fluid temperature	190° F	88° C
<b>Inlet/Outlet Sizes</b>		
Air inlet size	1/4-18 in. npt(f)	
Fluid outlet size	3/4-14 in. npt(f)	
<b>Materials of Construction</b>		
Wetted materials on 26D001	Carbon steel, stainless steel, PTFE	
<b>Weight</b>		
All models	24 lb.	10.8 kg
<b>Noise (dBa)</b>		
Maximum sound pressure*	72.9 dBa @ 70 psi (0.48 MPa, 4.8 bar)	
Maximum sound power**	82.8 dBS @ 70 psi (0.48 MPa, 4.8 bar), 20 cpm	
*Sound pressure measured 3.28 feet (1 meter) from equipment.		
**Sound power measured per ISO-9614-2.		
<b>Notes</b>		
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Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

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 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.

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For patent information, see [www.graco.com/patents](http://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 3A8502

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Revision B, September 2021