



This manual contains important warnings and information.
READ AND KEEP FOR REFERENCE.

INSTRUCTIONS

First choice when quality counts.™

For Automatic Lubrication Systems Only

50:1 Fire-Ball® Pump Module

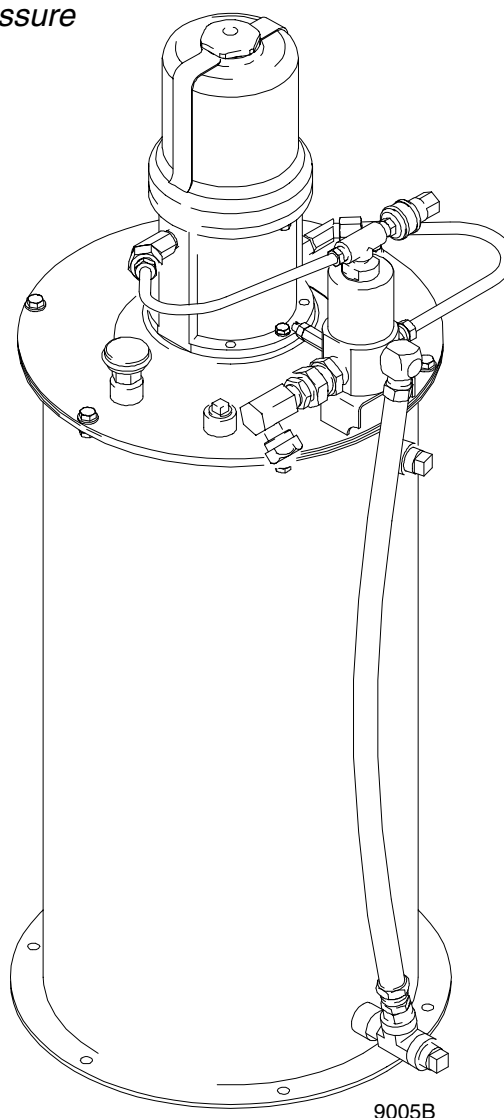
Part No. 241573, Series B

3500 psi (24.1 MPa, 241 bar) Maximum Fluid Outlet Pressure

70 psi (0.48 MPa, 4.8 bar) Maximum Air Input Pressure

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Symbols

Warning Symbol



This symbol alerts you to the possibility of serious injury or death if you do not follow the instructions.

Caution Symbol



This symbol alerts you to the possibility of damage to or destruction of equipment if you do not follow the instructions.

WARNING



EQUIPMENT MISUSE HAZARD

Equipment misuse can cause the equipment to rupture or malfunction and result in serious injury.

- This equipment is for professional use only.
- Read all instruction manuals, tags, and labels before you operate this equipment.
- Use the equipment only for its intended purpose. If you are not sure, call your Graco distributor.
- Do not alter or modify this equipment. Use only Graco approved repair parts.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure of the lowest rated component in your system.
- Use fluids and solvents that are compatible with the equipment wetted parts. Refer to the **Technical Data** section of all equipment manuals. Read the fluid and solvent manufacturer's warnings.
- Handle hoses carefully. Do not pull on hoses to move equipment.
- Route hoses away from traffic areas, sharp edges, moving parts, and hot surfaces. Do not expose Graco hoses to temperatures above 82°C (180°F) or below -40°C (-40°F).
- Do not lift pressurized equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.
- Be sure breather is not plugged before filling reservoir.
- Be sure unit is securely mounted before operation.

WARNING



INJECTION HAZARD

Fluid from the dispensing valve, leaks or ruptured components can inject fluid into your body and cause extremely serious injury, including the need for amputation. Fluid splashed in the eyes or on the skin can also cause serious injury.

- Fluid injected into the skin might look like just a cut, but it is a serious injury. **Get immediate medical attention.**
- Do not put your hand or fingers over the end of grease outlet.
- Do not stop or deflect leaks with your hand, body, glove or rag.
- Follow the **Pressure Relief Procedure** on page 7 if the injector clogs and before you clean or service this equipment.
- Tighten all fluid connections before you operate this equipment.
- Check the hoses, tubes, and couplings daily. Replace worn or damaged parts immediately. Do not repair high pressure couplings; you must replace the entire hose.
- Fluid hoses must have spring guards on both ends to protect them from rupture caused by kinks or bends near the couplings.



TOXIC FLUID HAZARD

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

- Know the specific hazards of the fluid you are using.
- Store hazardous fluid in an approved container. Dispose of hazardous fluid according to all local, state and national guidelines.
- Always wear protective eyewear, gloves, clothing and respirator as recommended by the fluid and solvent manufacturer.
- Contaminants in air supply will be exhausted through the air motor.

WARNING



FIRE AND EXPLOSION HAZARD

Improper grounding, poor ventilation, open flames or sparks can cause a hazardous condition and result in a fire or explosion and serious injury.

- Ground the equipment and the object being dispensed to. See **Grounding** on page 5.
- If there is any static sparking or you feel an electric shock while using this equipment, **stop dispensing immediately**. Do not use the equipment until you identify and correct the problem.
- Provide fresh air ventilation to avoid the buildup of flammable fumes from solvents or the fluid being dispensed.
- Keep the dispensing area free of debris, including solvent, rags, and gasoline.
- Do not smoke in the dispensing area.



MOVING PARTS HAZARD

Moving parts, such as the air motor piston, can pinch or amputate your fingers.

- Do not operate the pump with the air motor plates removed.
- Do not insert fingers in overflow port when filling reservoir.
- Keep clear of all moving parts when you start or operate the pump.
- Before you service this equipment, follow the **Pressure Relief Procedure** on page 7 to prevent the equipment from starting unexpectedly.

Installation

Reservoir

Fig. NO TAG. Mount reservoir (P) on sturdy flat surface with 6, 3/8 in. diameter bolts. Note location of fill port (K) for easy access once installed.

Air and Fluid Line Accessories

⚠ WARNING

Two accessories are **required** in your system: an air shut-off valve/air bleed device and ground wire. These accessories help reduce the risk of serious bodily injury, including fluid injection, splashing in the eyes or on the skin, injury from moving parts if you are adjusting or repairing the pump, and explosion from static sparking.

- The air bleed device relieves air trapped between it and the air motor after the air supply is shut off. Trapped air can cause the air motor to cycle unexpectedly, causing serious injury if you are adjusting or repairing the pump. Use a bleed-type master air valve (T). Install them near the pump air inlet within easy reach from the pump.
- The ground wire (R) reduces the risk of static sparking (required for non-mobile installation).

⚠ CAUTION

Do not hang the air accessories directly on the air inlet. The fittings are not strong enough to support the accessories and may cause one or more to break. Provide a bracket on which to mount the accessories.

NOTE: Install the air line accessories as shown in Fig. NO TAG.

1. Install an air line filter (B1) to remove harmful dirt and contaminants from your compressed air supply.

2. Install air regulator (B2) to control pump speed and pressure (see **WARNING** at left).
3. Install an air line lubricator (B3) for automatic air motor lubrication.
4. Install air solenoid valve (C). Air solenoid valve turns pump on and off using signal from automatic lube timer.
5. Install bleed-type master air valve (F) upstream from all other accessories, to isolate accessories for servicing.
6. Connect air supply from air solenoid valve via air hose to quick disconnect air fitting (N) located at tee on top of vent valve.
7. Connect supply line (G) to vent valve (U).
8. Ground system (see **Grounding** below). Mount reservoir to grounded chassis member.

Grounding (for non-mobile installation)

Fig. 1. Loosen grounding lug locknut (A) and washer (B). Insert one end of a 12 ga (1.5 mm²) minimum ground wire (C) into slot in lug (D) and tighten locknut securely. Connect other end of wire to true earth ground. To order a ground wire and clamp, order part number 222011.

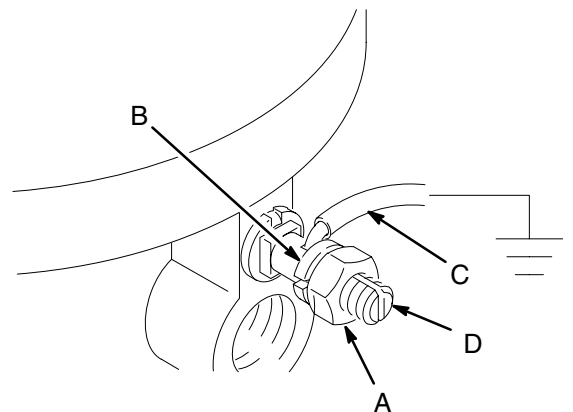


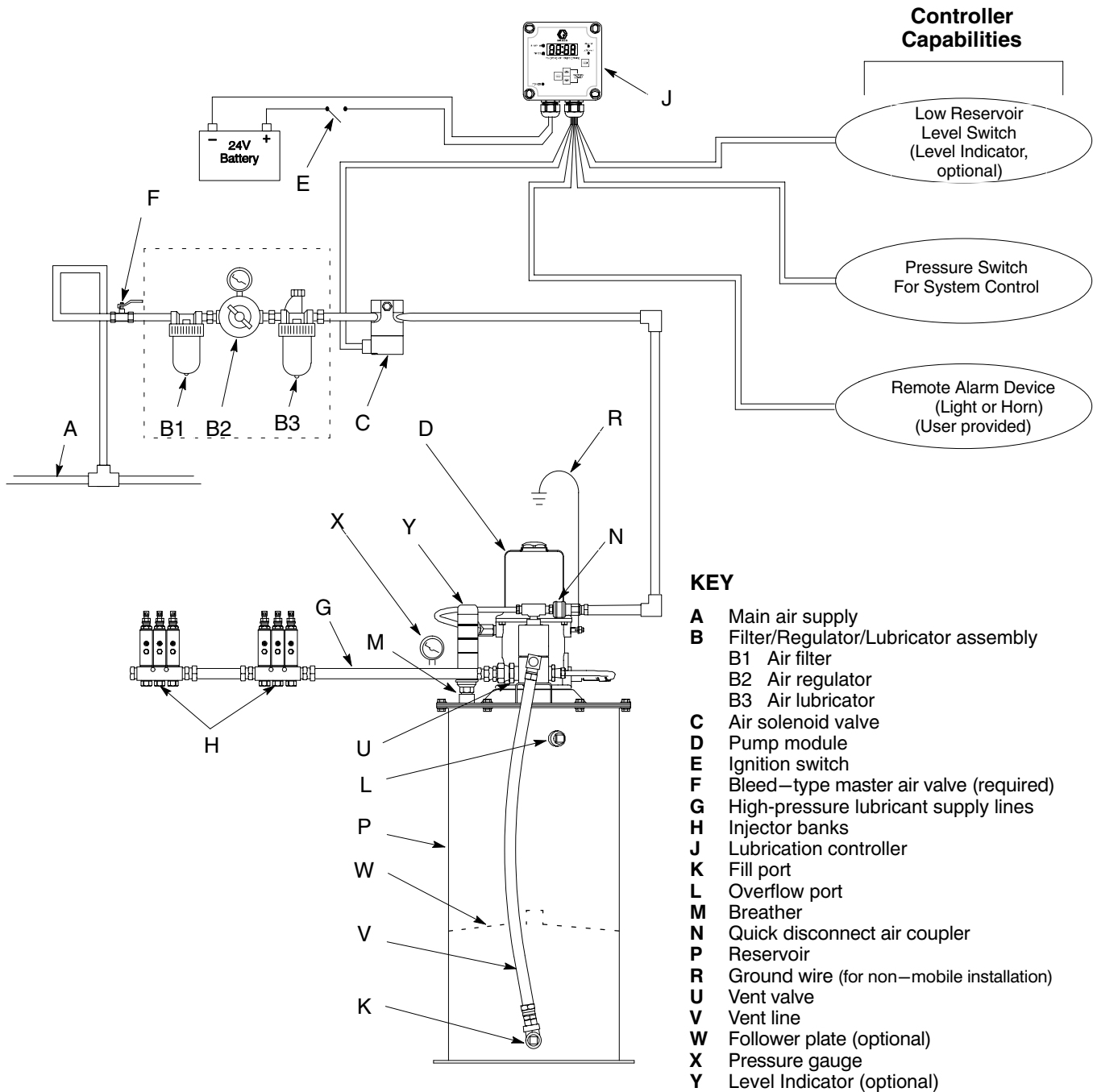
Fig. 1

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Installation

Typical Installation

The installation shown in Fig. 2 is only a guide for selecting and installing system components. Contact your Graco distributor for assistance in planning a system to suit your needs.



8853B

Operation

Pressure Relief Procedure

WARNING



INJECTION HAZARD

To reduce the risk of serious injury, including fluid injection or splashing in the eyes or on the skin, always follow the

Pressure Relief Procedure whenever you

- Are instructed to relieve the pressure
- Shut off the pump
- Check, clean, or service any of the system equipment
- Install or clean the dispensing devices

1. Fig. NO TAG. Disconnect power from Lubrication Controller (J).
2. Disable air supply to pump (D) by one of the following means:
 - Close bleed-type air valve (F).
 - Disconnect quick disconnect air coupler (N) from tee on vent valve.

WARNING



MOVING PARTS HAZARD

Do not insert finger into the overflow port while filling a reservoir equipped with a follower plate. Injury or amputation could result.

Start-up

Prime Vent Line. Fig. NO TAG. The first time the reservoir is filled, use the vent valve outlet. This removes all air from the vent line (V).

1. Connect lubricant supply hose from remote filling station pump unit to outlet of vent valve (U).
2. Remove plug in fill port (K) located at bottom of reservoir.
3. Slowly turn on supply lubricant until lubricant appears in fill port.
4. Remove lubricant supply hose from vent valve.

Fill Reservoir.

1. Fig. NO TAG. Connect lubricant supply hose from remote filling station pump to fill port (K).
2. Connect automatic lube system main supply line (G) to vent valve (U).
3. Remove plug from overflow port (L).
4. Slowly turn on supply lubricant until level of lubricant reaches overflow port.

Note: For systems with a follower plate, fill until the follower plate reaches the overflow port.

Note: Refer to Automatic Lube System Design Guidelines Manual 309015 for instructions on priming remaining system lubricant lines and further operating instructions.

5. Set air pressure to pump at lowest pressure needed to get desired results.

WARNING



COMPONENT RUPTURE HAZARD

The maximum working pressure of each component in the system may not be the same. To reduce the risk of overpressurizing any component in the system, be sure you know the maximum working pressure of each component. **Never** exceed the maximum working pressure of the lowest rated component in the system. Overpressurizing any component can result in rupture, fire, explosion, property damage, and serious injury.

Regulate air to the pump so that no air line or fluid line component or accessory is overpressurized.

6. Read and follow instructions supplied with each system component.

Note: With a primed pump and sufficient air supply, the pump starts when the timer activates the air solenoid valve. The pump stops when the timer deactivates the air valve.

Operation

Shut Down.

1. To shut off system, disconnect power to lubricator controller (J), and turn off air supply (F and N).

In an emergency situation, any of the following methods can be used to shut down the system:

- Turn off the electrical power (E) to system.
- Disconnect the air line quick disconnect (N) from the air line fitting on the vent valve (U) tee.

CAUTION

Never allow the pump to run dry of the fluid being pumped. A dry pump will quickly accelerate to a high speed, possibly damaging itself. If your pump accelerates quickly, or is running too fast, stop it immediately and check the fluid supply.

Troubleshooting

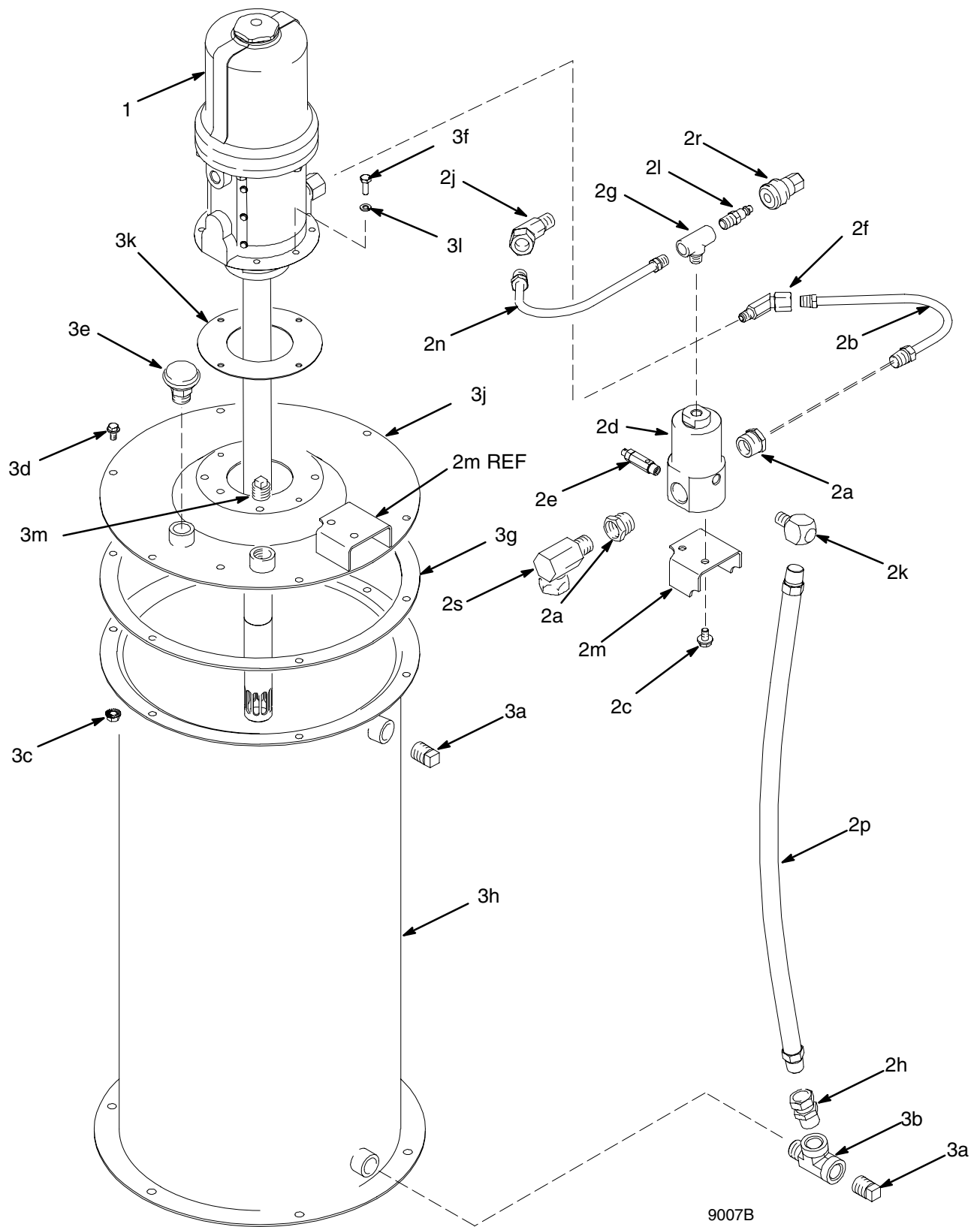
Problem	Cause	Solution
System does not build sufficient pressure	Pump malfunction	Refer to manual 308883
	Pump turned off too soon	Increase timer "pump on" setting
	Air solenoid malfunction	Repair or replace
	Too low or no air supply	Turn air pressure up or supply on
	Vent valve seal failure	Replace seal
	Vent valve needle/seat failure	Replace needle and seat
	Reservoir out of grease	Fill reservoir
	Broken or leaky supply/branch line	Tighten connections and/or replace line(s)
	Injector failure	Repair or replace
Lubricant dispensed from pressure relief valve	System pressure set too high	Decrease air pressure to pump
Pump runs too fast	Reservoir out of lubricant	Fill reservoir
	Pump cavitation	Install a follower plate
	Leak in distribution system	Repair leak
Lubricant coming out of breather	Reservoir overfilled	Drain lubricant until overflow stops
Pump will not start	No air supply	Verify/check air supply
	Air solenoid malfunction	Replace air solenoid
	No electrical supply to lubrication controller	Turn on electrical supply
	Lubrication controller malfunction	Refer to controller manual 308950
	Pump malfunction	Refer to pump manual 308883

Service

Service Instructions

See separate system component manuals for service instructions. For pump service see manual 308883. For vent valve service see manual 309954.

Parts Drawing



Parts List

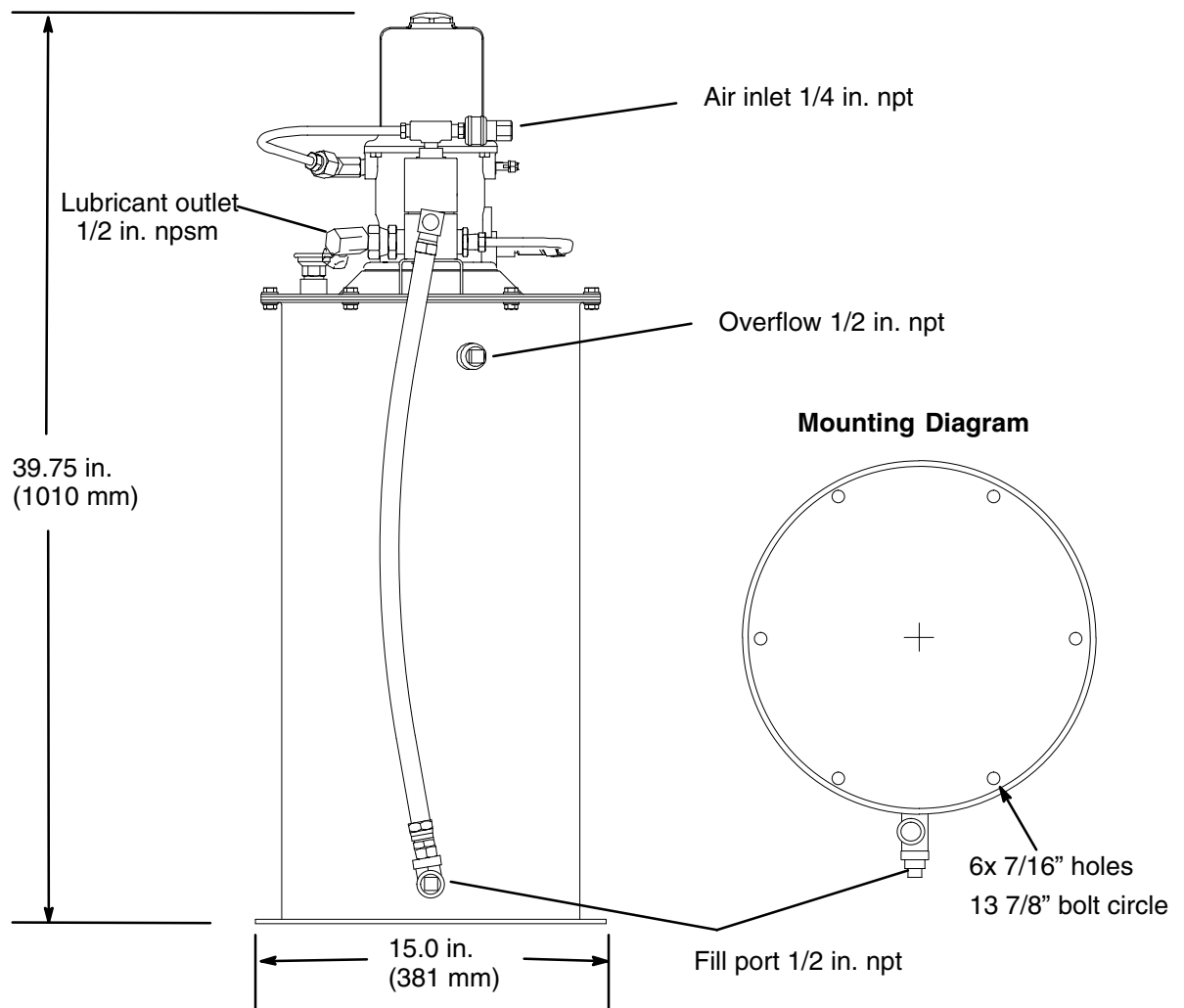
Model 241573, 50:1 Fire-Ball Pump Module

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	239887	PUMP, Fire-Ball, 50:1 <i>See manual 308883</i>	1	2n	194994	. HOSE, air; $\frac{1}{4}$ in.	1
2	241572	KIT, installation, vent valve	1	2p	194995	. HOSE, vent; $\frac{1}{2}$ in.	1
2a	100896	. BUSHING, pipe	2	2r	208536	. COUPLER, line, air	1
2b	195218	. HOSE, coupled	1	2s	155470	. UNION, swivel	1
2c	111801	. SCREW, cap, flange head	2	3	241486	KIT, reservoir, 90 # grease	1
2d	115121	. VALVE, vent (see manual 308954)	1	3a	100737	. PLUG, pipe	2
2e	115122	. VALVE, pressure relief (see manual 308954)	1	3b	108126	. TEE, pipe	1
2f	109106	. UNION, swivel, 45°	1	3c	110996	. NUT, flanged, hex	6
2g	108638	. TEE, pipe	1	3d	111800	. SCREW, cap, flange head	6
2h	156684	. UNION, adapter	1	3e	115254	. BREATHER	1
2j	161889	. FITTING, 45° union, swivel	1	3f	112166	. SCREW, cap, soc hd.	2
2k	162667	. ELBOW, street, pipe	1	3g	194868	. GASKET, cover	1
2l	169970	. FITTING, line, air	1	3h	194907	. PAIL, reservoir	1
2m	194867	. BRACKET, vent valve	1	3j	196804	. COVER, reservoir	1
				3k	161023	. GASKET	1
				3l	100016	. WASHER, lock	2
				3m	104663	. PLUG, pipe	1

Technical Data

Pump wetted parts	See manual 308883
Vent valve wetted parts	See manuals 308953
Reservoir wetted parts	steel, buna-n rubber
Maximum delivery	30 oz/min (54 in ³ /min, 885 cm ³) at 60 psi (0.41 MPa, 4.1 bar) air
Air pressure operating range	50 to 70 psi (0.34 to 0.48 MPa, 3.4 to 4.8bar)
Air consumption	10 scfm (0.283 m ³ /min) at 60 psi air pressure (0.41 Mpa, 4.1 bar) with flow rate of 20 oz./min (0.59 liter/ min)
Fluid outlet pressure range	1850 to 3500 psi (13 to 24 MPa, 128 to 241 bar)
Reservoir overflow port size	1/2 npt(f)
Reservoir fill port size	1/2 npt(f)
Air inlet port size	1/4 npt(f) (coupler provided)
Lubricant outlet port size	swivel adapter 1/2 npsm(f)
Grease capacity	90 lb
Mounting holes for pump module	Six 7/16" holes on 13 7/8" bolt circle
Reservoir diameter	12 3/4" (324 mm)
Pump module height	37 3/4" (959 mm)
For sound data see pump manual 308883.	

Dimensions



9245A

Graco Standard Warranty

Graco warrants all equipment manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale by an authorized Graco distributor 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.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

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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Graco Phone Number

TO PLACE AN ORDER, contact your Graco distributor, or call this number to identify the distributor closest to you:
1-800-533-9655 Toll Free

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