

## Viscon HP Heater Modules

308771E

### For 3:1 President® Pump Modules

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

#### **Part No. 239850, Series B**

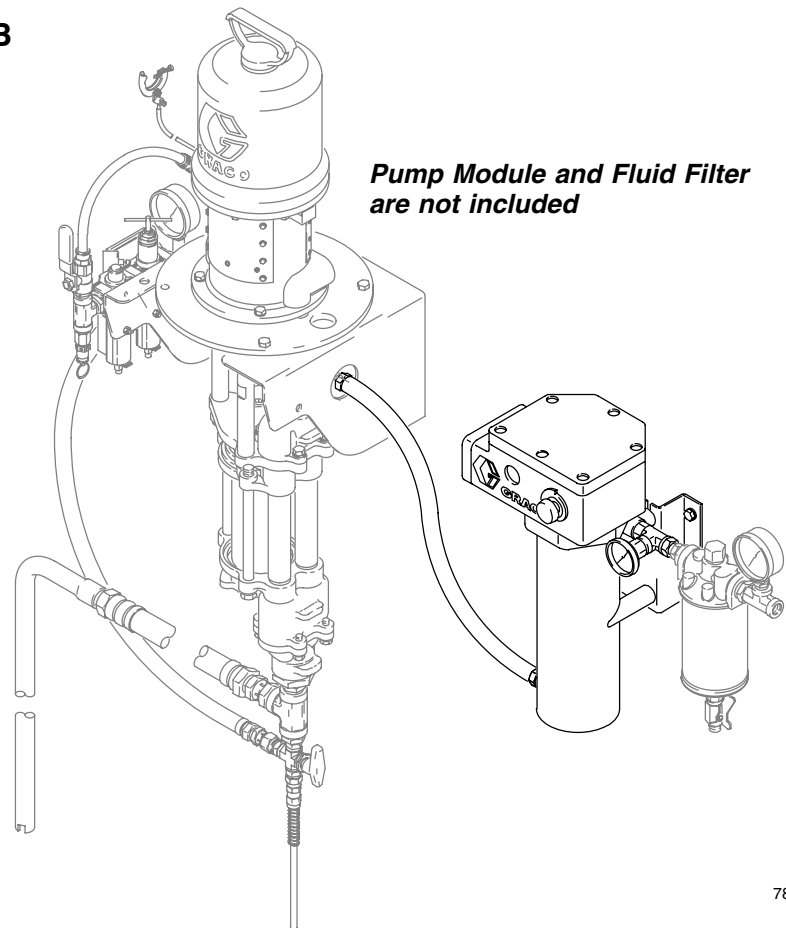
With 120V Viscon HP Heater

#### **Part No. 239851 and 239852 Series B**

With 240V Viscon HP Heater

#### **Part No. 241883, Series B**

With 200V Viscon HP Heater



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**Read warnings and instructions.**  
See page 2 for table of contents.

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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



INSTRUCTIONS

## 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 operating the equipment.
- Use the equipment only for its intended purpose. If you are uncertain about usage, call your Graco distributor.
- Do not alter or modify this equipment. Use only genuine Graco parts and accessories.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure stated on the equipment or in the **Technical Data** for your equipment. Do not exceed the maximum working pressure of the lowest rated component in your system.
- Use fluids and solvents which 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.
- Route hoses away from traffic areas, sharp edges, moving parts, and hot surfaces. Do not expose Graco hoses to temperatures above 180°F (82°C) or below -40°F (-40°C).
- Do not touch the heater during operation; it is very hot.
- Wear hearing protection when operating this equipment.
- Do not lift pressurized equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.



## MOVING PARTS HAZARD

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

- Keep clear of all moving parts when starting or operating the pump.
- Before servicing the equipment, follow the **Pressure Relief Procedure** on page 7 to prevent the equipment from starting unexpectedly.

# ⚠ WARNING



## PRESSURIZED EQUIPMENT HAZARD

Spray from the gun, hose leaks, or ruptured components can splash fluid in the eyes or on the skin and cause serious injury.

- Do not point the gun at anyone or at any part of the body.
- Do not stop or deflect leaks with your hand, body, glove or rag.
- Follow the **Pressure Relief Procedure** on page 7 whenever you: are instructed to relieve pressure; stop spraying; clean, check, or service the equipment; and install or clean the spray tip.
- Tighten all fluid connections before operating the equipment.
- Check the hoses, tubes, and couplings daily. Replace worn, damaged, or loose parts immediately. Permanently coupled hoses cannot be repaired; replace the entire hose.



## FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD

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

- The electric heater must be installed, operated, and serviced only by trained, qualified personnel who fully understand the requirements stated in the heater instruction manual (supplied).
- Ground the equipment and the object being sprayed. Refer to **Grounding** on page 6.
- If there is any static sparking or you feel an electric shock while using this equipment, **stop spraying 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 sprayed.
- Keep the spray area free of debris, including solvent, rags, and gasoline.
- Electrically disconnect all equipment in the spray area.
- Extinguish all open flames or pilot lights in the spray area.
- Do not smoke in the spray area.
- Do not turn on or off any light switch in the spray area while operating or if fumes are present.
- Do not operate a gasoline engine in the spray area.



## TOXIC FLUID HAZARD

Hazardous fluid 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.

# Installation

## General Information

**NOTE:** Reference numbers and letters in parentheses in the text refer to the callouts in the figures and the parts drawing.

## Prepare the Operator

All persons who operate the equipment must be trained in the safe, efficient operation of all system components as well as the proper handling of all fluids. All operators must thoroughly read all instruction manuals, tags, and labels before operating the equipment.

## Prepare the Site

Ensure that the wall is strong enough to support the weight of the heater and accessories, fluid, hoses, and stress caused during operation.

Keep the site clear of any obstacles or debris that could interfere with the operator's movement.

## Installing the Heater Module

### **WARNING**



#### **FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD**

The Viscon HP Heater must be installed by a qualified electrician in compliance with all state and local codes and regulations, to reduce the risk of electric shock or other serious injury during installation or operation.



When installing in a flammable atmosphere (hazardous location) refer to Article 500 of the US National Electric Code or other applicable agency standards to plan the work.

Refer to the **Technical Data** and to the supplied Viscon HP Heater manual for information on heater power supply requirements.

**Do not** plug in or unplug a power cord in any area containing flammable fluids or fumes, to avoid fire or explosion resulting in serious injury.

**Do not** put all flammable materials and debris on or near the heater. Keep the work area clean.

### **WARNING**

#### **COMPONENT RUPTURE HAZARD**



Heat causes fluid to expand. If the heated fluid is trapped with nowhere to expand, it can cause component rupture.

**Be sure** to keep the heated fluid circulating (turn the 3-way recirculation valve to the circulation position). **Do not** install a fluid shutoff device between the heater and the gun.

To convert a pump module to a heated package, install the heater module as follows.

**NOTE:** Refer to Fig. 1, and to the Mounting Hole Layout on page 11.

### **WARNING**

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 7.

1. Relieve the pressure.
2. Unscrew the swivel (A) from the nipple (B). Remove the fluid filter (C) and connected parts. Remove the nipple (B) and ball valve (F) from the filter and discard them. See the Disassembly Detail in Fig. 1.
3. Position the heater bracket (5) to the right of the pump bracket (D), at the same height. The two slots must face up. The center of the two outer left holes must be no more than 9 in. (228 mm) from the right edge of the pump bracket. See page 11.
4. Check that the heater bracket (5) is level. Using the bracket as a template, mark the four outer holes on the wall. Refer to the **Mounting Hole Layout** on page 11. The four outer holes are used to mount the bracket to the wall, and the two inner slots and two inner holes are to mount the heater (1) to the bracket.
5. Drill four holes in the wall.
6. Bolt the bracket (5) to the wall with 1/2 in. bolts and washers. Use bolts that are long enough to keep the bracket from vibrating during operation.
7. Install two screws (E, included with the heater) into the top two heater mounting posts until they are about 1/8 in. (3 mm) from fully installed.

# Installation

8. Using two people, lift the heater (1) onto the bracket (5) so the two screw heads (E) slide into the slots. Have one person hold the heater in place while the other installs the remaining two screws (supplied with the heater) through the bracket and into the bottom mounting posts. Tighten all four screws.
9. Connect the free end of the heater supply hose (2) to the swivel (A) at the pump fluid outlet. Tighten securely.
10. Screw the fluid filter (C) assembly onto the bushing (4) at the heater outlet.

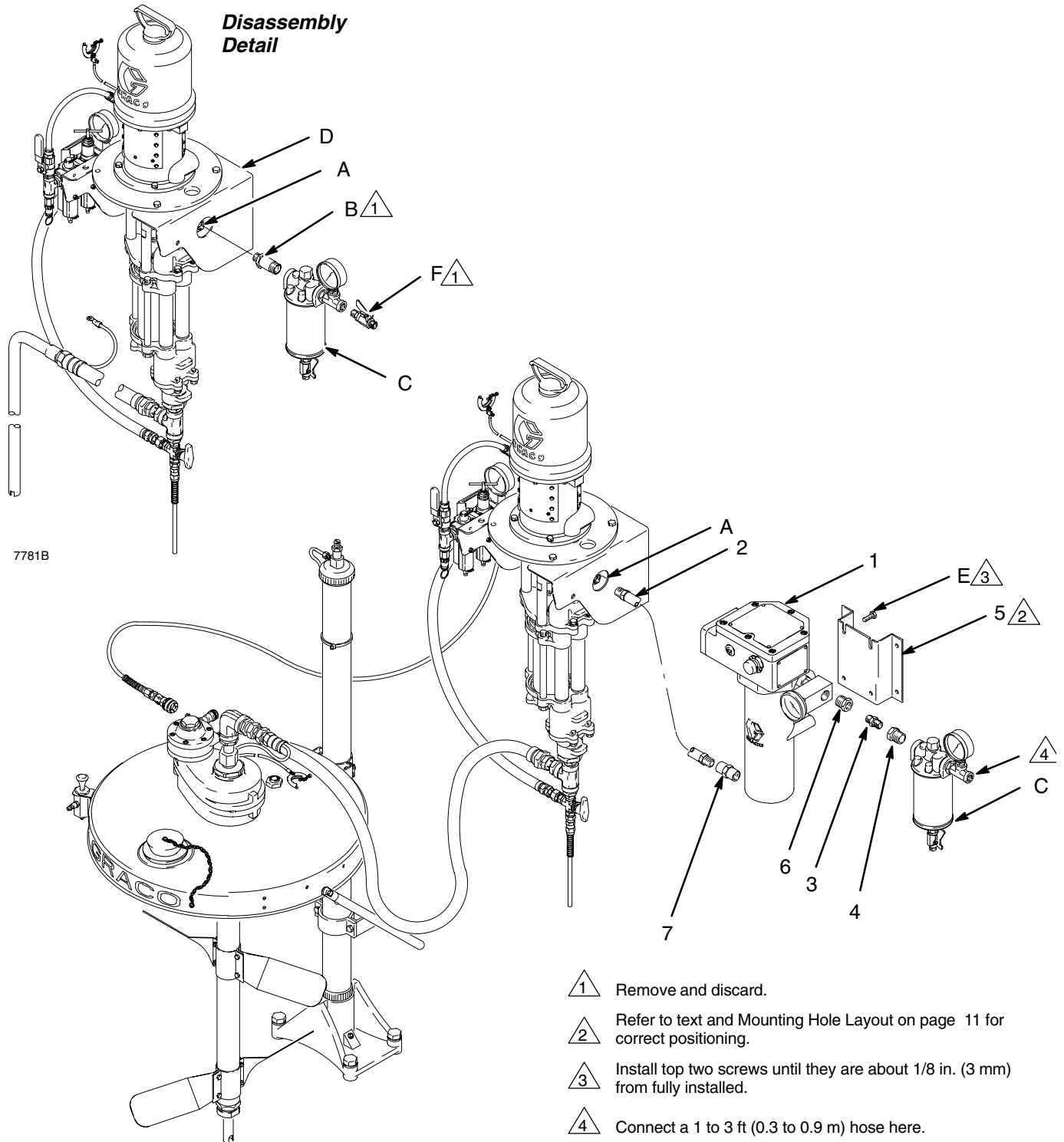


Fig. 1

# Installation


## Connect the Fluid Lines

Connect a 1 to 3 ft (0.3 to 0.9 m) hose to the tee at the outlet of the fluid filter, to isolate the pump module from the main fluid line. Connect the other end of the hose to the main fluid line.

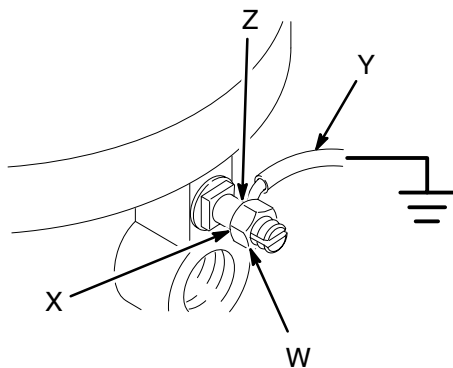
## Grounding

**⚠ WARNING**

**FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD**  
Before operating the pump, ground the system as explained below. Also read the section **FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD** on page 3.



1. *Pump*: use a ground wire and clamp. See Fig. 2. Loosen the grounding lug locknut (W) and washer (X). Insert one end of the ground wire (Y) into the slot in lug (Z) and tighten the locknut securely. Connect the ground clamp to a true earth ground.

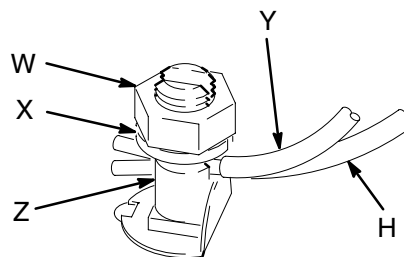


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Fig. 2

2. *Viscon HP Heater*: refer to the heater manual, supplied.

3. *Air and fluid hoses*: use only electrically conductive hoses.
4. *Air compressor*: follow manufacturer's recommendations.
5. *Spray gun*: ground through connection to a properly grounded fluid hose and pump.
6. *Agitator*: use a ground wire and clamp (Y). See Fig. 3. Loosen the grounding lug locknut (W) and washer (X). Insert one end of the ground wire (Y) into the slot in lug (Z) and tighten the locknut securely. Connect the ground clamp to a true earth ground.



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Fig. 3

7. *Suction hose*: attach the hose (H) ground wire to the ground lug on the agitator. See Fig. 3. If you are not using an agitator, attach the wire to the fluid supply container.
8. *Fluid supply container*: follow your local code.
9. *Object being sprayed*: follow your local code.
10. *Solvent pails used when flushing*: follow your local code. Use only metal pails, which are conductive, placed on a grounded surface. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts the grounding continuity.
11. *To maintain grounding continuity when flushing or relieving pressure*, hold a metal part of the spray gun firmly to the side of a grounded metal pail, then trigger the gun.

# Operation

## Pressure Relief Procedure

### WARNING

#### **PRESSURIZED EQUIPMENT HAZARD**

The system pressure must be manually relieved to prevent the system from starting or spraying accidentally. To reduce the risk of an injury from accidental spray from the gun, splashing fluid, or moving parts, follow the **Pressure Relief Procedure** whenever you:

- are instructed to relieve the pressure,
- stop spraying,
- check or service any of the system equipment,
- or install or clean the spray nozzle.

### WARNING



#### **HOT SURFACE HAZARD**

Do not touch the heater while it is operating. Allow the heater to cool for at least 10 minutes before flushing or servicing it.

### WARNING



#### **FIRE AND EXPLOSION HAZARD**

**Do not** plug in or unplug a power cord in any area containing flammable fluids or fumes, to avoid fire or explosion resulting in serious injury.

1. Disconnect the electric power to the heater (1).
2. Circulate the fluid for at least 10 minutes to cool the heated fluid and the heater.
3. Close the red-handled bleed-type master air valve (G, required in your system). See Fig. 4.
4. Place the drain hose (H) into a waste container. Turn the 3-way recirculation valve (J) to the drain position.
5. Trigger the gun at the last gun station to relieve fluid pressure. Maintain firm metal-to-metal contact between the gun and a grounded waste pail. Repeat for all gun stations.
6. Open the drain valve (K) to relieve fluid pressure which may be trapped in the pump or hose.

If you suspect that pressure is not fully relieved after following the steps above, wrap a fitting near the pump outlet with a rag, and slowly and carefully loosen the fitting to relieve pressure. Be careful to protect your eyes from splashing.

## Preventive Maintenance Schedule

The operating conditions of your particular system determine how often maintenance is required. Establish a preventive maintenance schedule by recording when and what kind of maintenance is needed, and then determine a regular schedule for checking your system.

# Operation

## Heater Operation

Before operating the heater, read the heater instruction manual 309524 which is supplied.

## Prime the Pump

1. Disconnect the electric power to the heater before priming the pump.
2. Open the fluid shutoff valve (L).
3. Open the back pressure regulator (M). Turn the 3-way recirculation valve (J) to the circulation position.
4. Open the spray gun at the last gun station and keep it open while starting the pump.
5. Open the bleed-type master air valves (G, N).
6. Slowly open the air filter/regulator (P) until the pump starts. The air filter/regulator controls the pump speed and fluid outlet pressure.
7. When fluid comes from the gun, release the gun trigger. The pump will continue to cycle as long as air is supplied and the back pressure regulator (M) is open.
8. One at a time, open any other guns in the system to purge air from the lines.

**NOTE:** In a circulating system, the pump will continue to cycle as long as air is supplied and the back pressure regulator is open. In a direct supply system, the pump starts when the gun is opened, and stops when the gun is closed.

## WARNING

### COMPONENT RUPTURE HAZARD



To reduce the risk of overpressurizing your system, which could cause component rupture and serious injury, *never exceed the specified maximum air input pressure to the package (see **Technical Data** on page 11).*

## CAUTION

Do not allow the pump to run dry. It will quickly accelerate to a high speed, causing damage. If your pump is running too fast, stop it immediately and check the fluid supply. If the container is empty and air has been pumped into the lines, refill the container and prime the pump and the lines, or flush and leave it filled with a compatible solvent. Eliminate all air from the fluid system.

## Adjust the Spray Pattern

1. Start the pump. Connect the electric power to the heater. Turn the 3-way recirculation valve (J) to the circulation position.
2. Set the heater control to a trial point (4 or 5).
3. Circulate fluid through the pump for at least 10 minutes, at very low pressure. Check the temperature on the heater thermometer.
4. Adjust the fluid pressure and temperature to the lowest settings necessary to get the desired results. Use the air filter/regulator (P) and the back pressure regulator (M) to adjust the pump speed and fluid pressure until the spray is completely atomized. Refer to the back pressure valve and heater manuals (supplied) for adjustment procedures. Higher pressures and temperatures may not improve the spray pattern and will cause premature component wear.
5. To adjust the spray pattern, follow the complete instructions in your gun manual.

## WARNING

### COMPONENT RUPTURE HAZARD

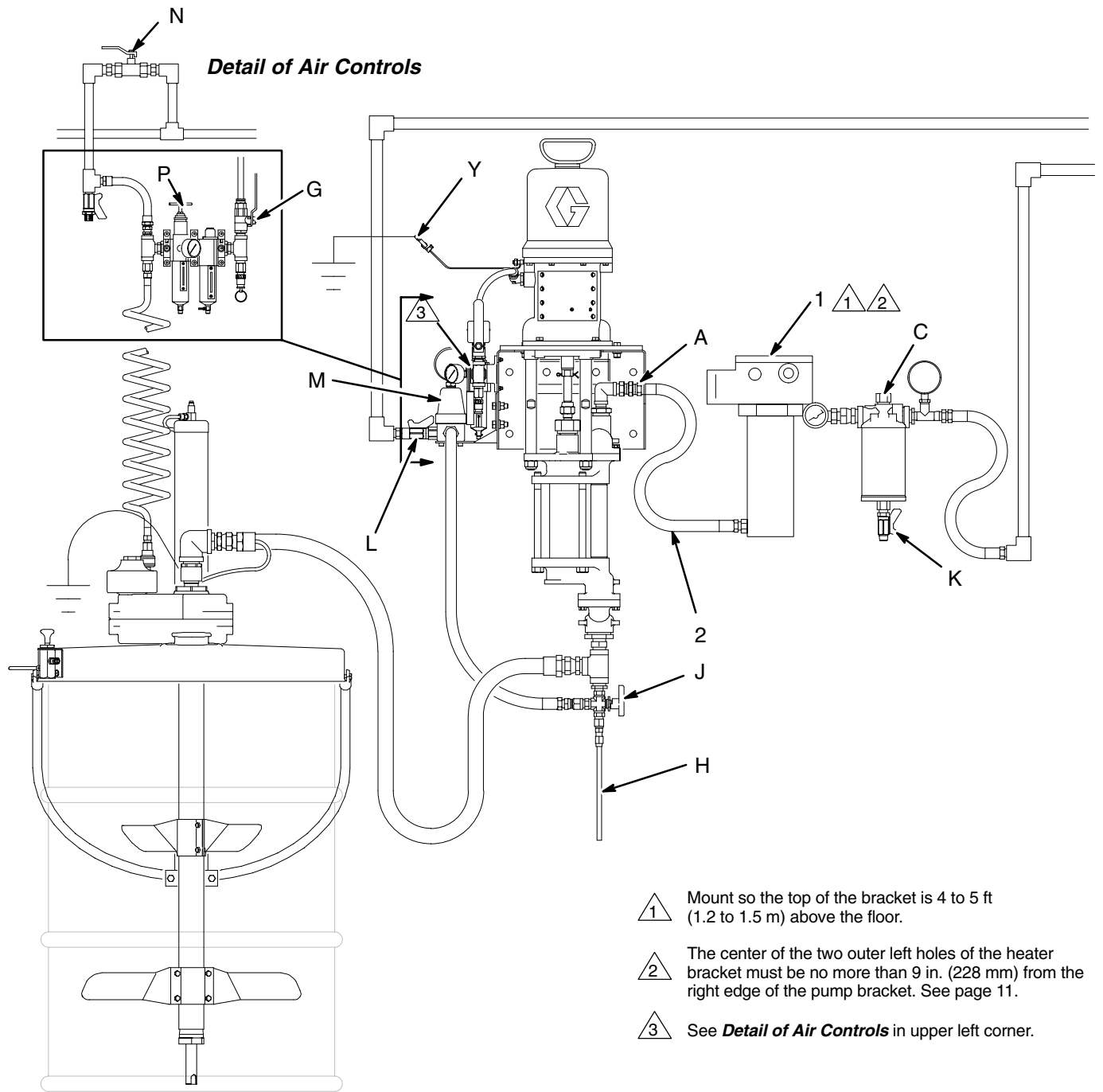


To reduce the risk of overpressurizing your package, which could cause component rupture and serious injury, *never exceed 100 psi (0.7 MPa, 7 bar) air input pressure to the package.* Also refer to the **Technical Data** on page 11 and to your separate component manuals.

Heat causes fluid to expand. If the heated fluid is trapped with nowhere to expand, it can cause component rupture. **Be sure** to keep the heated fluid circulating by turning the 3-way recirculation valve (J) to the circulation position. **Do not** install a fluid shutoff device between the heater and the gun.



# Operation



- 1 Mount so the top of the bracket is 4 to 5 ft (1.2 to 1.5 m) above the floor.
- 2 The center of the two outer left holes of the heater bracket must be no more than 9 in. (228 mm) from the right edge of the pump bracket. See page 11.
- 3 See *Detail of Air Controls* in upper left corner.

Fig. 4

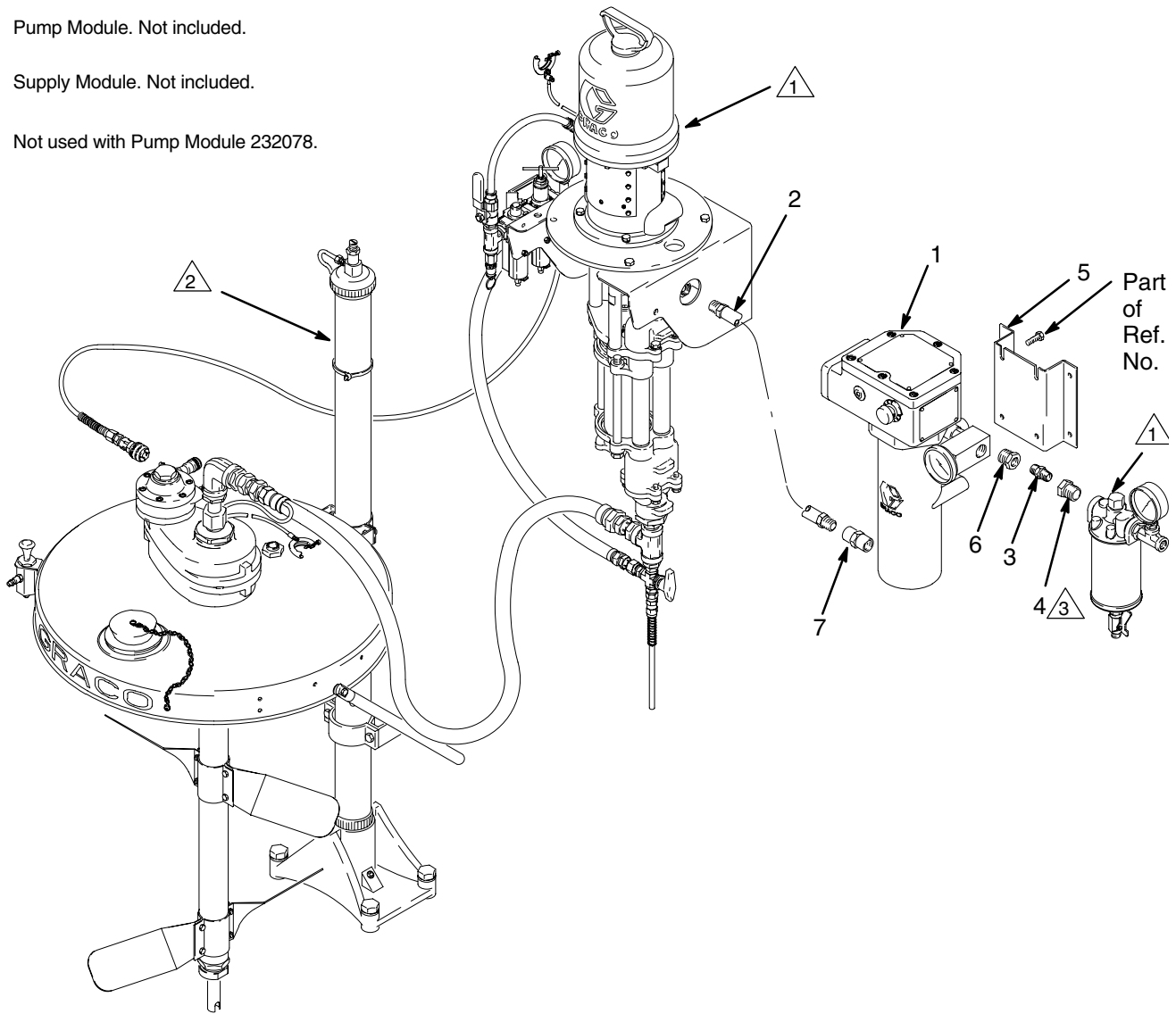
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# Parts

1 Pump Module. Not included.

2 Supply Module. Not included.

3 Not used with Pump Module 232078.



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Ref. No.	Description	Module 239850	Module 239851	Module 239852	Module 241883	Qty
1	HEATER, fluid, 120V; see manual 309524	245848				1
	HEATER, fluid, 240V; see manual 309524		245863	245863		1
	HEATER, fluid, 200V, see manual 309524				245862	1
2	HOSE, supply, heater; nylon; 1/2 in. (13 mm) ID; 1/2 npt(mbe) sst couplings; 2 ft (0.61 m)	114253	114253	114253	114253	1
3	NIPPLE; 3/8 npt; sst	111873	111873	111873	111873	1
4	BUSHING; 3/4 npt(m) x 3/8 npt(f); sst	500352	500352	500352	500352	1
5	BRACKET, heater	192585	192585		192585	1
6	BUSHING, reducer, pipe	502265	502265	502265	502265	1
7	FITTING, coupler	117627	117627	117627	117627	1

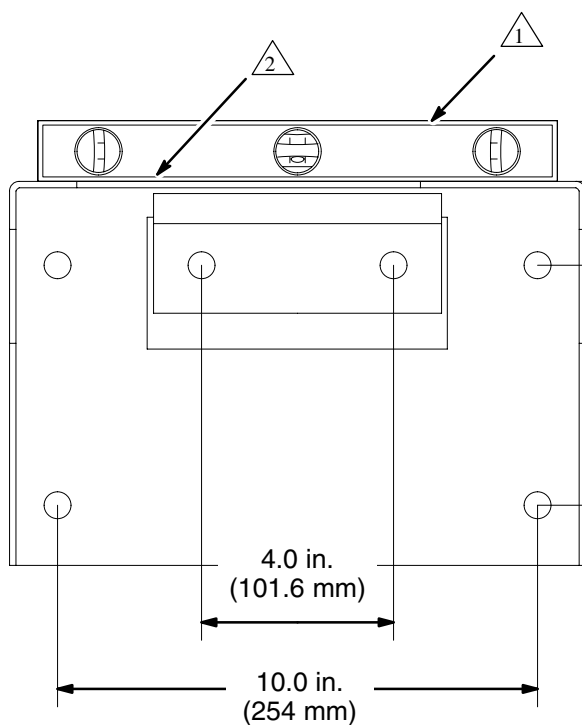
# Technical Data

Category	Data
Maximum fluid working pressure	300 psi (2.1 MPa, 21 bar)
Maximum operating temperature	150°F (66°C)
Maximum heater voltage and amperage	Part No. 239850: 120 VAC, 19.2 Ampere Part No. 241883: 200 VAC, 20.0 Ampere Part No. 239851 and 239852: 240 VAC, 16.7 Ampere
Wetted parts	Fluid Heater: See heater manual 309524. Fluid Fittings: Stainless steel. Fluid Hoses: Nylon.

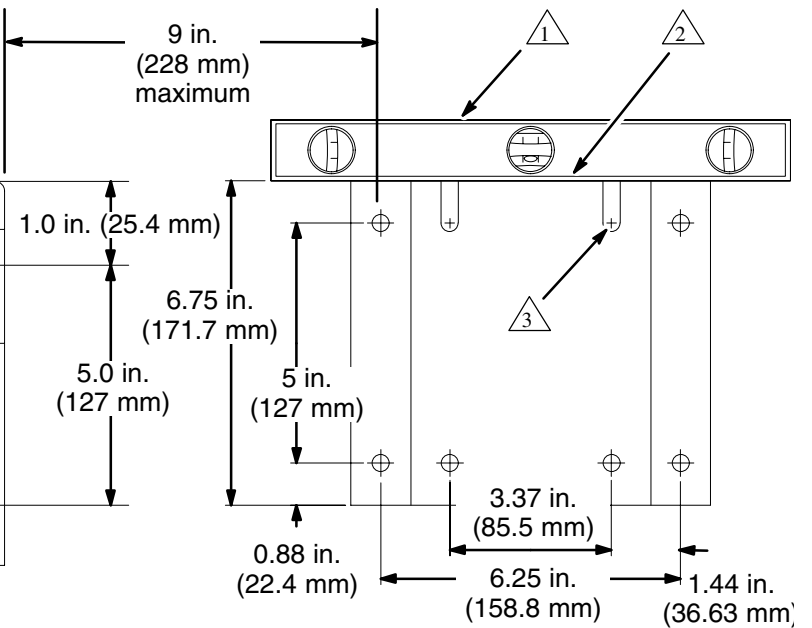
## Mounting Hole Layout

- 1 Check that the bracket is level before bolting it to the wall.
- 2 Mount the bracket so the top edge is 4 to 5 ft (1.2 to 1.5 m) above the floor.
- 3 Slots must face up..

**Pump Wall Bracket Mounting Diagram**



**Heater Wall Bracket Mounting Diagram**



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# 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.

## **FOR GRACO CANADA CUSTOMERS**

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## Graco Information

**TO PLACE AN ORDER**, contact your Graco distributor, or call this number to identify the distributor closest to you:

**1-800-367-4023 Toll Free**

**612-623-6921**

**612-378-3505 Fax**

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**Foreign Offices:** Belgium, Canada, England, Korea, France, Germany, Hong Kong, Japan

**GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441**

**<http://www.graco.com>**

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