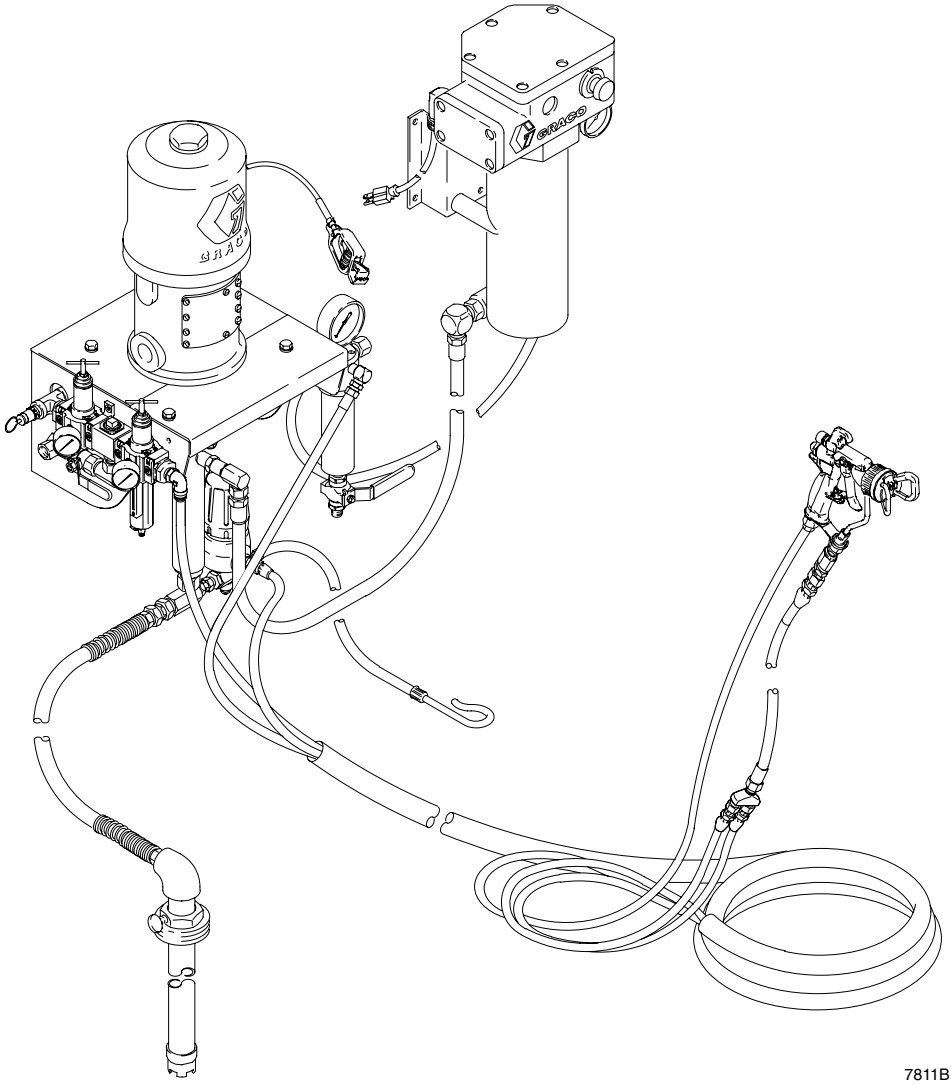
Instructions – Parts List

Parts

Wall Mount Heated Air–Assisted Packages

308760 rev.F

Important Safety Instructions
Read all warnings and instructions in this manual.
Save these instructions.



7811B

Model 232275 Shown

PROVEN QUALITY. LEADING TECHNOLOGY.

GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440–1441

CE

Table of Contents

List of Models

Package Part No.	Series	Pump Model	Ratio	Maximum Fluid Working Pressure	Maximum Air Input Pressure	Voltage/ Amps
232275	D	President®, carbon steel	30:1	3000 psi (21 MPa, 210 bar)	100 psi (0.7 MPa, 7 bar)	240/16.7
232276	D	President®, carbon steel	30:1	3000 psi (21 MPa, 210 bar)	100 psi (0.7 MPa, 7 bar)	480/8.30
232315	D	Monark®, carbon steel	15:1	1500 psi (10 MPa, 100 bar)	100 psi (0.7 MPa, 7 bar)	240/16.7
232316	D	Monark®, carbon steel	15:1	1500 psi (10 MPa, 100 bar)	100 psi (0.7 MPa, 7 bar)	480/8.30

Package Part No.	Series	Pump Model	Ratio	Maximum Fluid Working Pressure	Maximum Air Input Pressure	Voltage/ Amps
232339	D	President®, carbon steel	15:1	1500 psi (10 MPa, 100 bar)	100 psi (0.7 MPa, 7 bar)	240/16.7
232340	D	President®, carbon steel	15:1	1500 psi (10 MPa, 100 bar)	100 psi (0.7 MPa, 7 bar)	480/8.30
232341●	D	President®, carbon steel	15:1	1500 psi (10 MPa, 100 bar)	100 psi (0.7 MPa, 7 bar)	200/20.0
232363	D	President®, stainless steel	30:1	3000 psi (21 MPa, 210 bar)	100 psi (0.7 MPa, 7 bar)	240/16.7
232364	D	President®, stainless steel	30:1	3000 psi (21 MPa, 210 bar)	100 psi (0.7 MPa, 7 bar)	480/8.30

● These 200V packages are only available in Asia.

Symbols

Warning Symbol

⚠ WARNING

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

Caution Symbol

⚠ CAUTION

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

⚠ WARNING

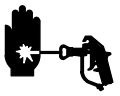
INSTRUCTIONS

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 of the lowest rated system component. Refer to the **Technical Data** on page 26 for the maximum working pressure of this equipment.
- 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.

⚠ WARNING



SKIN INJECTION HAZARD

Spray from the gun, hose 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 surgical treatment.**
- Do not point the gun at anyone or at any part of the body.
- Do not put your hand or fingers over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove or rag.
- Do not “blow back” fluid; this is not an air spray system.
- Always have the tip guard and the trigger guard on the gun when spraying.
- Check the gun diffuser operation weekly. Refer to the gun manual.
- Be sure the gun trigger safety operates before spraying.
- Lock the gun trigger safety when you stop spraying.
- Follow the **Pressure Relief Procedure** on page 14 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.
- Use only Graco approved hoses. Do not remove any spring guard that is used to help protect the hose from rupture caused by kinks or bends near the couplings.

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 14 to prevent the equipment from starting unexpectedly.

⚠ WARNING

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 13.
- 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.

NOTE: Always use Genuine Graco Parts and Accessories, available from your Graco distributor. Refer to Product Data Sheet 305899. If you supply your own accessories, be sure they are adequately sized and pressure-rated for your system.

Fig. 1 is only a guide for selecting and installing system components and accessories. Contact your Graco distributor for assistance in designing a system to suit your particular needs.

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.

The following manuals are included with this equipment:

- 308760, Wall Mount Heated Air-Assisted Packages
- 306981, President 30:1 CST Pump, or
  308106, President 30:1 SST Pump, or
  307619, Monark 23:1 CST and SST Pumps, or
  306936, President 15:1 CST Pump, or
  308106, Monark 15:1 SST Pump, or
  308739, Monark 15:1 CST Pump
- 306982, President Air Motor, or
  307043, Monark Air Motor
- 309524, Viscon HP Heater
- 308686, Air Regulator Kit
- 307273, Fluid Filter
- 306860, Back Pressure Regulator
- 311001, AA Series Spray Gun

Prepare the Site

NOTE: The compressed air supply to the gun must be clean and dry, to prevent damage to the finish. Use a coalescing air filter in the main air supply line.

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

Ensure that you have an adequate compressed air supply. Refer to the performance charts on page 27 to find the air consumption of your pump.

Refer to Fig. 1. Bring a compressed air supply line from the air compressor to the pump location. Be sure all air hoses are properly sized and pressure-rated for your system. Use only electrically conductive hoses. The air hose (A) should have a 3/8 npsm(m) thread.

Install a bleed-type shutoff valve (B) in the air line to isolate the air line components for servicing. Install an air line filter (C) and a moisture trap and drain valve (D) to help remove moisture and contaminants from the compressed air supply.

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

Have a grounded, metal pail available for use when flushing the system.

Installation

Supplied Components

Refer to Fig. 1.

⚠ WARNING

A red-handled bleed-type master air valve (E) and a fluid drain valve (F) are supplied. These components help reduce the risk of serious injury, including fluid injection and splashing of fluid in the eyes or on the skin, and injury from moving parts if you are adjusting or repairing the pump.

The bleed-type master air valve relieves air trapped between this valve and the pump after the valve is closed. Trapped air can cause the pump to cycle unexpectedly. Locate the valve close to the pump.

The fluid drain valve assists in relieving fluid pressure in the displacement pump, hose, and gun. Triggering the gun to relieve pressure may not be sufficient.

- **The red-handled bleed-type master air valve (E)** is required in your system to relieve air trapped between it and the air motor and gun when the valve is closed (see the **WARNING** above). Do not block access to the valve.
- **The pump air regulator (G)** controls pump speed and outlet pressure by adjusting the air pressure to the pump.
- **The air relief valve (H)** opens automatically to prevent overpressurization of the pump.
- **The gun air filter/regulator (J)** adjusts the air pressure to the air-assisted spray gun (106).
- **The air inlet swivel (K)** connects incoming air to the pump and to the gun.
- **The suction hose (30) and tube (33)** allow the pump to draw fluid from a 55 gallon (200 liter) drum (L). Carbon steel models include a **bung adapter (34)** which screws into the drum's bung hole.
- **The fluid heater (50)** heats the fluid as it passes through, to maintain the correct spraying viscosity. Read and understand all instructions in the supplied heater manual 309524 before operating the heater.
- **The fluid filter (15)** includes a 60 mesh (250 micron) stainless steel element to filter particles from the fluid as it leaves the pump. It also includes the **fluid drain valve (F),** which is required in your system to relieve fluid pressure in the hose and gun (see the **WARNING** at left).
- The **air/fluid hose (101)** consists of three hoses in a sheath. The air hose (101a) supplies air to the gun. The two fluid hoses (101b and 101c) are connected to a **manifold (102)** and a **whip hose (103).** Fluid is supplied to the gun by the fluid supply hose (101b) and the whip hose (103). Unused fluid is returned to the back pressure regulator (46) through the fluid return hose (101c).
- **The gun filter/swivel (104)** provides a final filtering of fluid before it enters the gun, and allows greater gun maneuverability.
- **The air-assisted spray gun (106)** dispenses the fluid. The gun houses the **spray tip (107),** which is available in a wide range of sizes for different spray patterns and rates of flow.
- **The back pressure regulator (46)** controls back pressure to the gun and maintains proper circulation pressure.
- **The 3-way recirculation valve (28)** receives fluid from the back pressure regulator and recirculates it to the pump or to the fluid container, as desired.

Installation

KEY

SUPPLIED COMPONENTS

1 Pump Wall Bracket
10 Pump
15 Fluid Filter (includes fluid drain valve F)
22 Ground Wire (required; see page 13 for installation instructions)
28 3-Way Recirculation Valve
30 Suction Hose
33 Suction Tube
34 Bung Adapter (carbon steel models only)
46 Back Pressure Regulator
49 Heater Wall Bracket
50 Fluid Heater

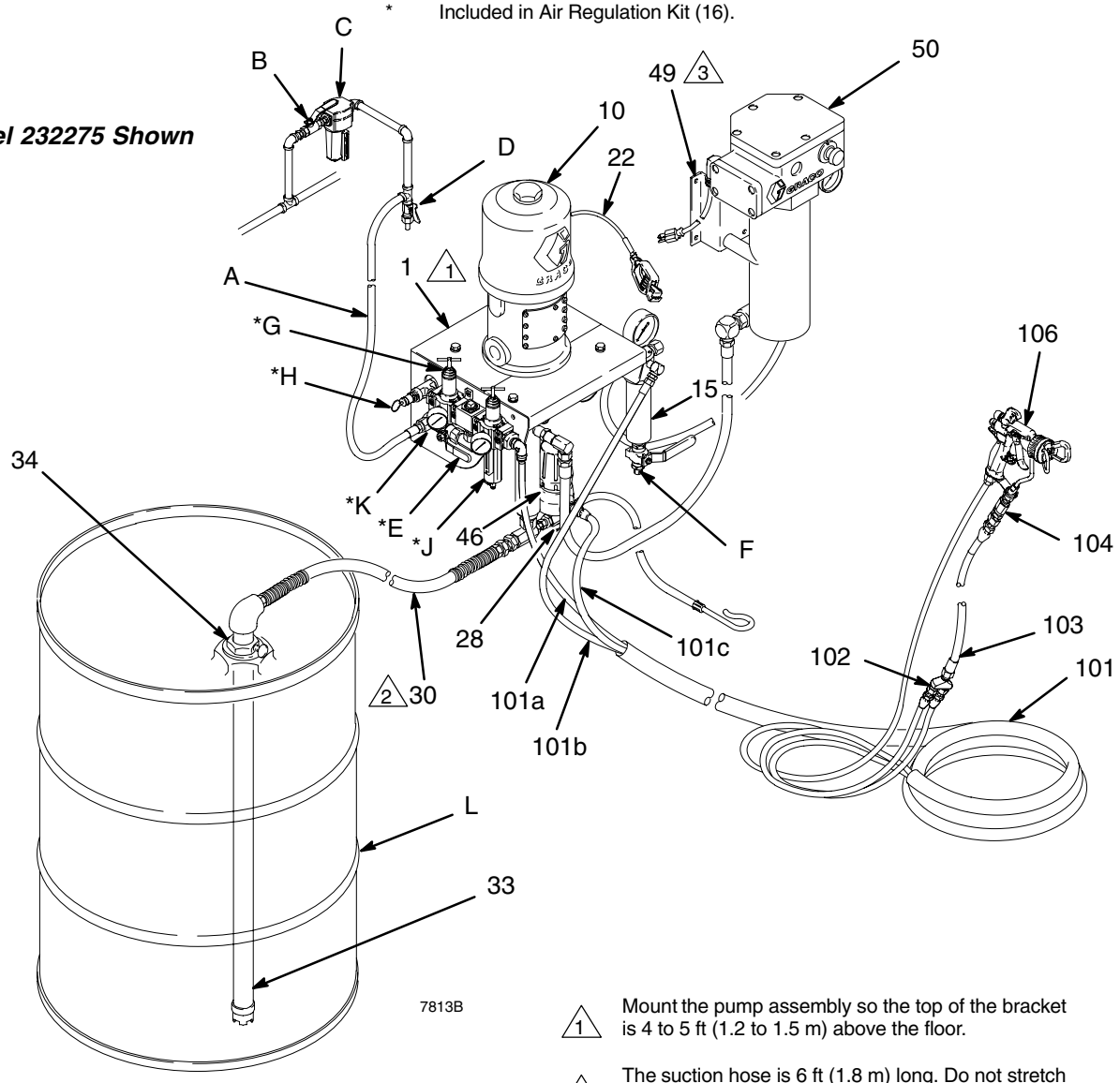
SUPPLIED COMPONENTS

101 Electrically Conductive Air/Fluid Hose (includes 101a, 101b, and 101c)
101a Air Supply Hose
101b Fluid Supply Hose
101c Fluid Return Hose
102 Fluid Manifold
103 Fluid Whip Hose
104 Gun Filter/Swivel
106 Air-Assisted Spray Gun
E* Red-Handled Bleed-Type Master Air Valve (required, for pump)
F Fluid Drain Valve
G* Pump Air Regulator
H* Air Relief Valve
J* Gun Air Filter/Regulator
K* Air Inlet Swivel
* Included in Air Regulation Kit (16).

COMPONENTS YOU MUST SUPPLY

A Electrically Conductive Air Supply Hose
B Bleed-Type Master Air Valve (for accessories)
C Air Line Filter
D Air Line Moisture Trap and Drain Valve
L 55 Gallon (200 Liter) Drum

Model 232275 Shown



1 Mount the pump assembly so the top of the bracket is 4 to 5 ft (1.2 to 1.5 m) above the floor.

2 The suction hose is 6 ft (1.8 m) long. Do not stretch the hose tight; let it hang as shown, to assist fluid flow into the pump.

3 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 (1). See page 29.

Fig. 1

Notes

Installation

Installing the Pump

NOTE: Refer to Fig. 1 and to the Dimension drawing on page 28 and the Mounting Hole Layout on page 29.

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

2. Position the bracket mounting plate (39) on the wall so the edge with the hook is facing up. Refer to page 29. Mount the plate so the top edge is 4 to 5 ft (1.2 to 1.5 m) above the floor. Check that the plate is level. Mark two holes on the wall, using the plate as a template. Drill two holes and attach the plate with 1/2 in. bolts and washers.

3. Using two people, lift the pump assembly into position and hang the pump bracket (1) on the bracket mounting plate (39). Have one person hold the assembly in place while the other checks that the pump bracket (1) is level. Mark four holes on the wall, using the pump bracket as a template. Lift the bracket off the mounting plate (39).

4. Drill four holes in the wall.

⚠ WARNING

The pump bracket (1) must be bolted to the wall with four bolts. Do not simply hang the pump bracket on the bracket mounting plate (39).

5. Lift the pump assembly back into position, hang it on the bracket mounting plate (39), and bolt the pump bracket (1) to the wall. Use 1/2 in. bolts and washers to mount the pump module to the wall. Use bolts that are long enough to keep the pump bracket (1) from vibrating during operation.

Installation

Installing the Heater

⚠ 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 309524 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 (28) to the circulation position). **Do not** install a fluid shutoff device between the heater and the gun.

NOTE: Refer to Fig. 2, and to the Dimension drawing on page 28 and the Mounting Hole Layouts on page 29.

1. Position the heater bracket (49) to the right of the pump bracket (1), 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 29.
2. Check that the heater bracket (49) is level. Using the bracket as a template, mark the four outer holes on the wall. 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 (50) to the bracket.
3. Drill four holes in the wall.
4. Bolt the bracket (49) to the wall with 1/2 in. bolts and washers. Use bolts that are long enough to keep the bracket from vibrating during operation.
5. Install two screws (S, included with the heater) into the top two heater mounting posts until they are about 1/8 in. (3 mm) from fully installed.
6. Using two people, lift the heater (50) onto the bracket (49) so the two screw heads (S) 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.
7. Connect the heater supply hose (41) from the heater inlet elbow (40) to the swivel (13) at the pump fluid outlet. Tighten securely.
8. Connect the heater outlet hose (45) from the heater outlet nipple (43) to the inlet fitting (R) of the fluid filter (15). Tighten securely.

Installation

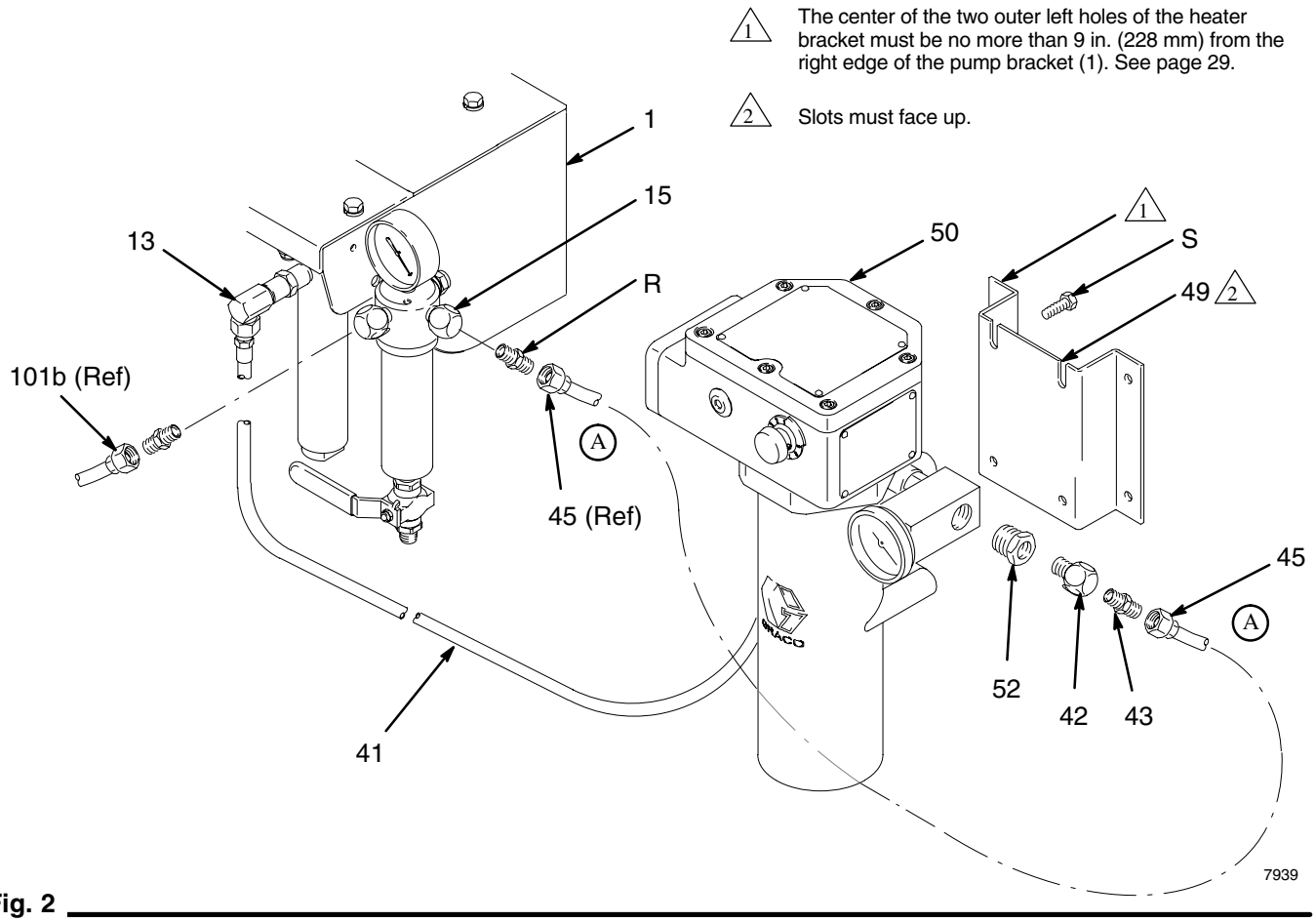


Fig. 2

Installation

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 5.

1. *Pump:* use the ground wire and clamp (supplied). See Fig. 3. Loosen the grounding lug locknut (W) and washer (X). Insert one end of the ground wire (22) into the slot in lug (Z) and tighten the locknut securely. Connect the other end of the wire to a true earth ground.

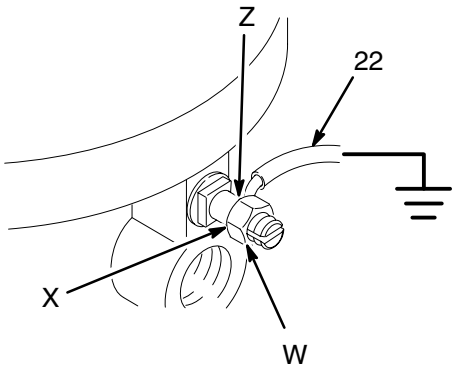


Fig. 3

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. *Fluid supply container:* follow your local code.

7. *Object being sprayed:* follow your local code.

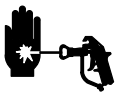
8. *Solvent pails used when flushing:* follow your local code. Use only metal pails, which are conductive, placed on a grounded surface. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts the grounding continuity.

9. *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



SKIN INJECTION HAZARD
The system pressure must be manually relieved to prevent the system from starting or spraying accidentally. Fluid under high pressure can be injected through the skin and cause serious injury. To reduce the risk of an injury from injection, 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 tip.

⚠ 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. Lock the gun trigger safety.
2. Disconnect the electric power to the heater (50).
3. Circulate the fluid for at least 10 minutes to cool the heated fluid and the heater.
4. Close the red-handled bleed-type master air valve (E, required in your system). See Fig. 4.
5. Hook the drain hose (29) onto a waste container. Turn the 3-way recirculation valve (28) to the drain position.
6. Unlock the gun trigger safety.
7. Hold a metal part of the gun firmly to the side of a grounded metal pail, and trigger the gun to relieve pressure.
8. Lock the gun trigger safety.
9. Open the drain valve (F, required in your system), having a container ready to catch the drainage.
10. Leave the drain valve open until you are ready to spray again.

If you suspect that the spray tip or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, ***very slowly*** loosen the tip guard retaining nut or hose end coupling and relieve pressure gradually, then loosen completely. Now clear the tip or hose.

Packing Nut

Before starting, fill the packing nut (M) 1/3 full with Graco Throat Seal Liquid (TSL) or compatible solvent. See Fig. 4.

⚠ WARNING

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

The packing nut is torqued at the factory and is ready for operation. If it becomes loose and there is leaking from the throat packings, relieve pressure, then torque the nut as specified in your separate pump manual. Do this whenever necessary. Do not overtighten the packing nut.

Flush the Pump Before First Use

The pump is tested with lightweight oil, which is left in to protect the pump parts. If the fluid you are using may be contaminated by the oil, flush it out with a compatible solvent. See **Flushing** on page 18.

Operation

Prime the Pump

1. See Fig. 4. Disconnect the electric power to the heater before priming the pump.

2. Remove the tip guard and spray tip from the gun (106). Refer to the gun manual.

3. Close the gun air filter/regulator (J), pump air regulator (G), and bleed-type air valves (B, E).

4. Close the fluid drain valve (F).

5. Connect the air line (A) to the air inlet swivel (K).

6. Check that all fittings throughout the system are tightened securely.

7. Hook the drain hose (29) onto a waste container. Turn the 3-way recirculation valve (28) to the circulation position.

8. Position the drum (L) close to the pump. The suction hose (30) is 6 ft (1.8 m) long. Do not stretch the hose tight; let it hang as shown in Fig. 4, to assist fluid flow into the pump.

9. Place the pump suction tube (33) into the drum (L). On carbon steel models, screw the bung adapter (34) into the drum's bung hole. Adjust the suction tube so it is about 1/2 in. (13 mm) off the bottom of the drum, then tighten the thumbscrew.

10. Open the back pressure regulator (46) (fully counterclockwise).

11. Open the bleed-type air valves (B, E) and the gun air filter/regulator (J).

12. Hold a metal part of the gun (106) firmly to the side of a grounded metal pail and hold the trigger open.

13. Slowly open the pump air regulator (G) until the pump starts.

14. Cycle the pump slowly until all air is pushed out and the pump and hoses are fully primed.

15. Release the gun trigger and lock the trigger safety. The pump will continue to cycle as long as air is supplied and the back pressure regulator (46) is open.

16. If the pump fails to prime properly, open the drain valve (F). Use the drain valve as a priming valve until the fluid flows from the valve. Close the valve.

NOTE: When changing fluid containers with the hose and gun already primed, open the drain valve (F) to help prime the pump and vent air before it enters the hose. Close the drain valve when all air is eliminated.

Install the Spray Tip

⚠ WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 14.

Relieve the pressure. Install the spray tip and tip guard as explained in your separate gun manual, supplied.

The fluid output and pattern width depend on the size of the spray tip, the fluid viscosity, and the fluid pressure. Use the **Spray Tip Selection Chart** in your gun instruction manual as a guide for selecting an appropriate spray tip for your application.

Operation

KEY

15	Fluid Filter (includes fluid drain valve F)	101	Electrically Conductive Air/Fluid Hose (includes 101a, 101b, and 101c)	B	Bleed-Type Master Air Valve (for accessories)
28	3-Way Recirculation Valve	101a	Air Supply Hose	E	Red-Handled Bleed-Type Master Air Valve (required, for pump)
29	Drain Hose	101b	Fluid Supply Hose	F	Fluid Drain Valve
30	Suction Hose	101c	Fluid Return Hose	G	Pump Air Regulator
33	Suction Tube	103	Fluid Whip Hose	J	Gun Air Filter/Regulator
34	Bung Adapter (carbon steel models only)	104	Gun Filter/Swivel	K	Air Inlet Swivel
46	Back Pressure Regulator	106	Air-Assisted Spray Gun	L	55 Gallon (200 Liter) Drum
50	Fluid Heater	A	Electrically Conductive Air Supply Hose	M	Packing Nut/Wet-Cup (hidden)

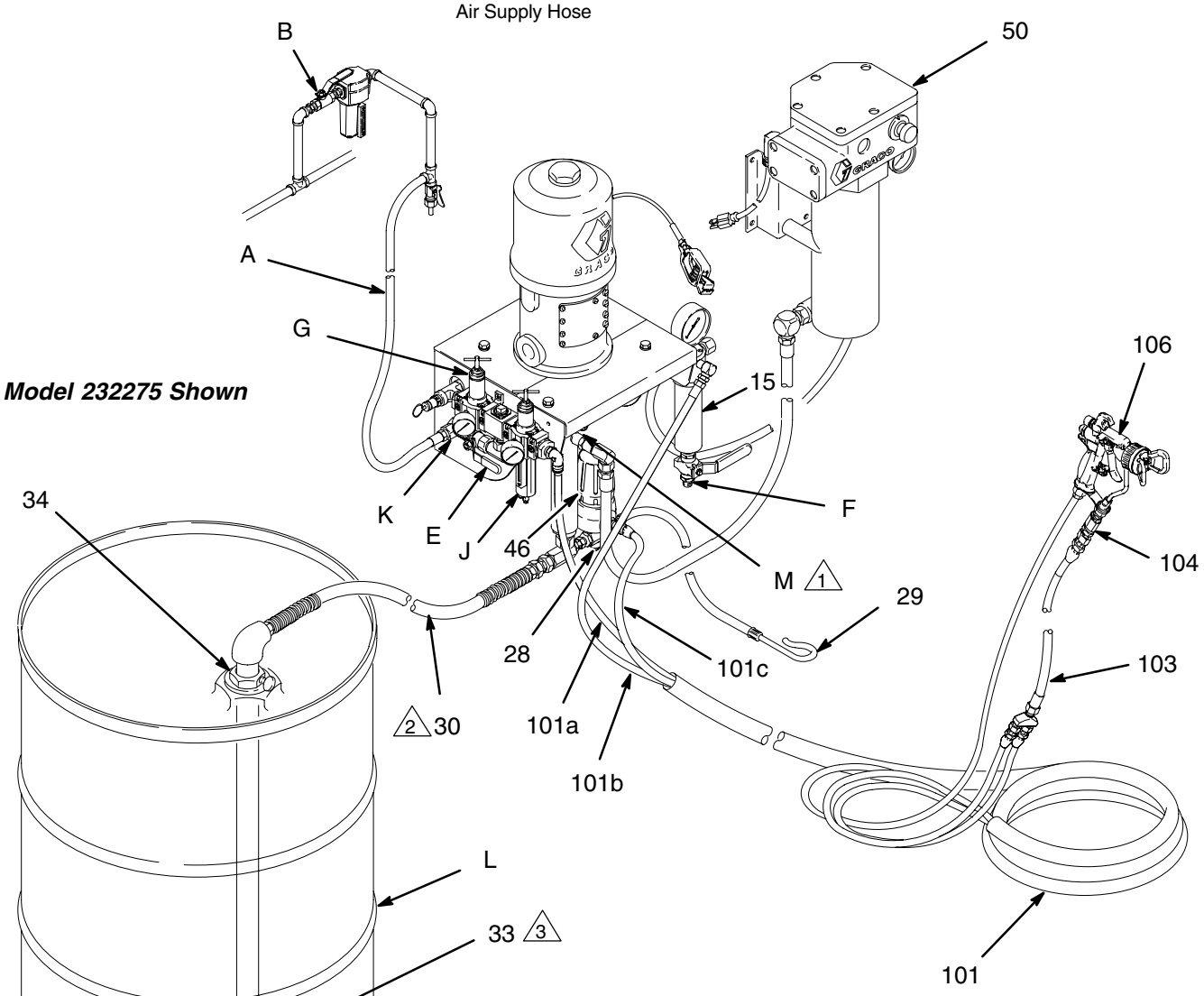


Fig. 4

Operation

Adjust the Spray Pattern

1. Start the pump. Connect the electric power to the heater (50). Turn the 3-way recirculation valve (28) 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 regulator (G) 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.

⚠ 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. Never exceed 100 psi (0.7 MPa, 7 bar) air input pressure to the spray gun.* Also refer to the **Technical Data** on page 26 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 (28) to the circulation position. **Do not** install a fluid shutoff device between the heater and the gun.

5. When applying the fluid, keep the gun a consistent distance, about 8 to 12 inches (200 to 300 mm) from the surface of the object being sprayed. Always hold the gun at a right angle from the surface. Do not make an arc with the gun, as it causes an uneven coat of fluid. Use a full-open, full-close triggering action. Practice to find the best length and speed of stroke.

6. To adjust the spray pattern, follow the instructions in your gun manual, supplied.

7. With the pump and lines primed, and with adequate volume supplied, the pump will continue to cycle as long as air is supplied and the back pressure regulator (46) is open.

⚠ 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.

Shutdown and Care of the Pump

⚠ WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 14.

For overnight shutdown, stop the pump at the bottom of its stroke to prevent fluid from drying on the exposed displacement rod and damaging the throat packings. Relieve the pressure.

Always flush the pump before the fluid dries on the displacement rod. See **Flushing** on page 18.

Maintenance

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.

Flushing

⚠ WARNING

FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD
Before flushing, read the section **FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD** on page 5. Be sure the entire system and flushing pails are properly grounded. Refer to **Grounding** on page 13.

Flush the pump:

- Before the first use
- When changing colors or fluids
- Before fluid can dry or settle out in a dormant pump (check the pot life of catalyzed fluids)
- Before storing the pump.

Flush with a fluid that is compatible with the fluid you are pumping and with the wetted parts in your system. Check with your fluid manufacturer or supplier for recommended flushing fluids and flushing frequency.

⚠ CAUTION

If you have a carbon steel package, never leave water or water-base fluid in the pump overnight. If you are pumping water-base fluid, flush with water first, then with a rust inhibitor such as mineral spirits. Relieve the pressure, but leave the rust inhibitor in the pump to protect the parts from corrosion.

⚠ WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 14.

⚠ 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.

1. Disconnect the electric power to the heater and circulate the fluid for at least 10 minutes to cool the heated fluid and the heater.
2. Relieve the pressure.
3. Remove the tip guard and spray tip from the gun. Refer to the gun manual.
4. Remove the filter element from the fluid filter (15). Reinstall the filter bowl.
5. Open the back pressure regulator (46). Set the 3-way recirculation valve (28) to the circulation position.
6. Place the suction tube (33) in a container of solvent.
7. Hold a metal part of the gun firmly to the side of a grounded *metal* pail.
8. Start the pump. Always use the lowest possible fluid pressure when flushing.
9. Trigger the gun. Flush the system until clear solvent flows from the gun.
10. Release the gun trigger and lock the trigger safety. The pump will continue to cycle as long as air is supplied and the back pressure regulator (46) is open.
11. Hook the drain hose (29) onto a waste container. Set the 3-way recirculation valve (28) to the drain position. Continue flushing until clear fluid comes from the hose.
12. Relieve the pressure.
13. Clean the tip guard, spray tip, and fluid filter element separately, then reinstall them.
14. Clean the inside and outside of the suction tube (33).

Maintenance

Clean the In-Line Fluid Filter Element

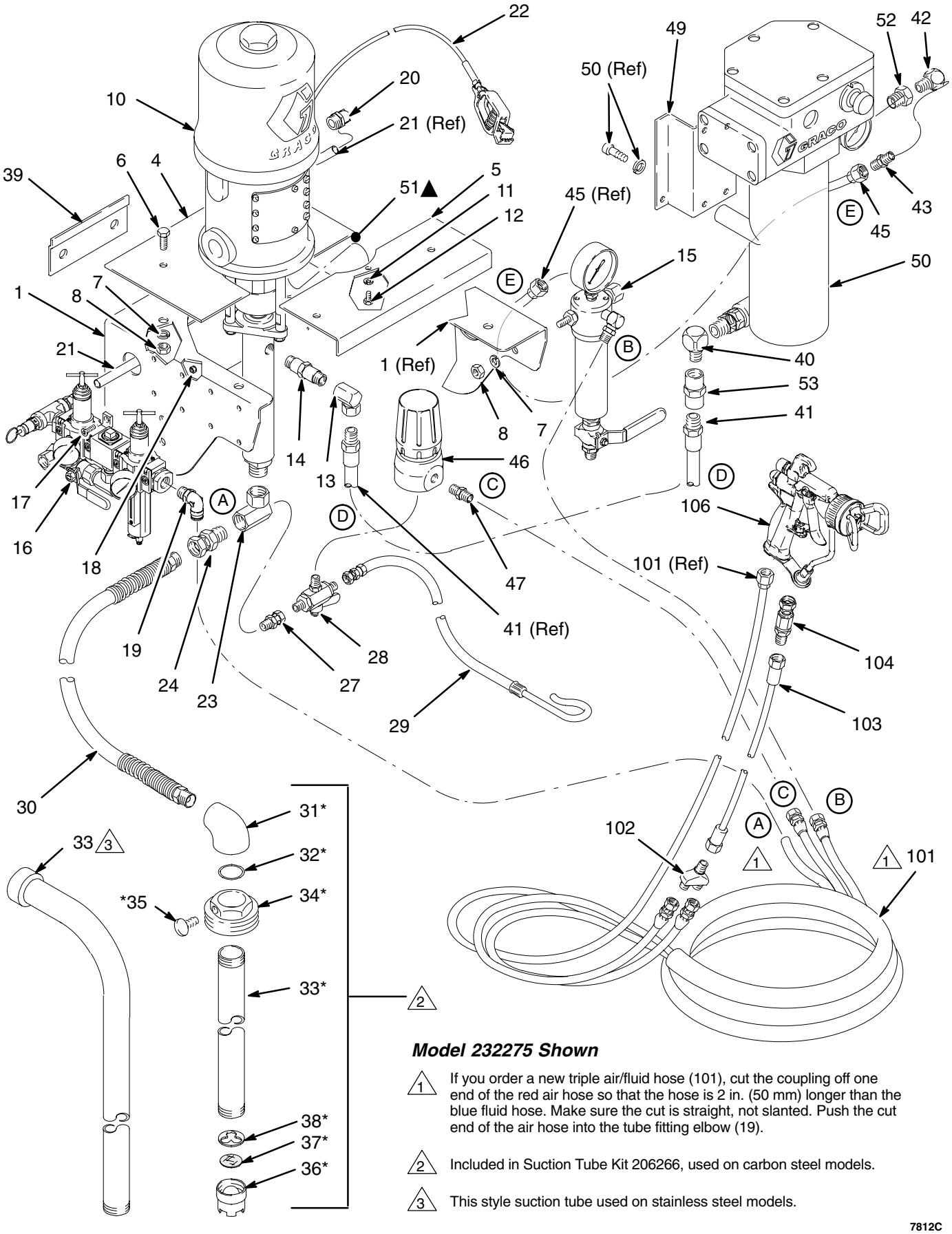
The filter/swivel (104) includes a 100 mesh stainless steel filter element (105). Clean the element periodically with a compatible solvent, as follows.

⚠ WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 14.

1. Relieve the pressure.
2. Disassemble the filter/swivel (104) and remove the filter element (105).
3. Clean or replace the element, as necessary.
4. Reassemble. Torque the two halves of the filter/swivel to 10–15 ft-lb (14–20 N•m).

Parts



Model 232275 Shown

1 If you order a new triple air/fluid hose (101), cut the coupling off one end of the red air hose so that the hose is 2 in. (50 mm) longer than the blue fluid hose. Make sure the cut is straight, not slanted. Push the cut end of the air hose into the tube fitting elbow (19).

2 Included in Suction Tube Kit 206266, used on carbon steel models.

3 This style suction tube used on stainless steel models.

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Parts

NOTE: Part numbers vary by package. To find the part number used in your package, read down the chart to find the desired ref. no., then read left to right to find the part number for your package.

Ref. No.	Description	Packages				Qty
		CST 232275 232276	**SST 232363 232364**	**CST 232339 232340 232341**	**CST 232315 232316**	
1	BRACKET, pump	192584	192584	192584	192584	1
4	ADAPTER, bracket, rear	192768	192768	192768	192768	1
5	ADAPTER, bracket, front	192767	192767	192767	192767	1
6	SCREW, cap, hex hd; 3/8–16 x 3/4 in. (19 mm)	100469	100469	100469	100469	4
7	LOCKWASHER; 3/8 in.	100133	100133	100133	100133	5
8	NUT, hex; 3/8–16	100307	100307	100307	100307	5
9	GROMMET; not shown	114269	114269	114269	114269	1
10	PUMP, 30:1 President; cst; *see manual 306981*	223586				1
	PUMP, 30:1 President; sst; *see manual 308106*		223843			1
	PUMP, 15:1 President; cst; *see manual 306936*			217580		1
	PUMP, 15:1 Monark; cst; *see manual 308739*				239327	1
	PUMP, 10:1 Monark; cst; *see manual 307595*					1
11	LOCKWASHER; 1/4 in.	100016	100016	100016	100016	2
12	CAPSCREW, hex hd; 1/4–20 x 5/8 in. (16 mm)	100270	100270	100270		2
	CAPSCREW, hex hd; 1/4–20 x 3/4 in. (19 mm)				100022	2
13	UNION, swivel, 90°; cst; 3/8 npt(f) x 1/2 npsm(f)	159801		159801	159801	1
	UNION, swivel, 90°; sst; 1/2 npt(fbe)		113934			1
14	NIPPLE; cst; 3/8 npt	156850			156850	1
	NIPPLE; sst; 3/8 npt x 1/2 npt		112027			1
	NIPPLE; cst; 3/8 npt x 1/2 npt			188577		1
15	FLUID FILTER; cst; *see manual 307273*	239962		239962	239962	1
	FLUID FILTER; sst; *see manual 307273*		239963			1

Parts

NOTE: Part numbers vary by package. To find the part number used in your package, read down the chart to find the desired ref. no., then read left to right to find the part number for your package.

Ref. No.	Description	Packages				Qty
		CST 232275 232276	**SST 232363 232364**	**CST 232339 232340 232341**	**CST 232315 232316**	
16	AIR REGULATOR KIT; *see manual 308686*	239956	239956	239956	239956	1
17	SCREW, socket; M5 x 0.8; 16 mm (5/8 in.)	113768	113768	113768	113768	6
18	NUT, hex, self-locking; M5 x 0.8	105332	105332	105332	105332	6
19	ELBOW, tube fitting, 90°; 3/8 npt(m) x 3/8 in. (10 mm) OD tube	114316	114316	114316	114316	1
20	ELBOW, tube fitting, 90°; 1/2 npt(m) x 1/2 in. (13 mm) OD tube	114110	114110	114110		1
	ELBOW, tube fitting, 90°; 3/8 npt(m) x 1/2 in. (13 mm) OD tube				114114	1
21	TUBE; polyurethane; 1/2 in. (13 mm) OD; 1.3 ft (0.4 m) long	Obtain locally	Obtain locally	Obtain locally	Obtain locally	1
22	GROUND WIRE AND CLAMP	238909	238909	238909	238909	1
23	MANIFOLD, inlet; cst; 1/4 npt(f) x 3/4 npt(f) x 3/4 npsm(f)	166998		166998	166998	1
	MANIFOLD, inlet; sst; 1/4 npt(f) x 3/4 npt(f) x 3/4 npsm(f)		113927			1
24	UNION, swivel; cst; 3/4 npt(m) x 3/4 npsm(f)	157785		157785	157785	1
	UNION, swivel; sst; 3/4 npt(m) x 3/4 npsm(f)		112268			1
27	UNION, swivel; cst; 1/4 npt(m) x 1/4 npsm(f)	156823		156823	156823	1
	UNION, swivel; sst; 1/4 npt(m) x 1/4 npsm(f)		114339			1
28	VALVE, 3-way; 1/4 npt(m); cst	214711		214711	214711	1
	VALVE, 3-way; 1/4 npt(m); sst		113834			1
29	HOSE, drain; nylon; 1/4 npsm(f) cst fittings; 1/4 in. (6 mm) ID	206965		206965	206965	1
	HOSE, drain; nylon; 1/4 npsm(f) sst fittings; 1/4 in. (6 mm) ID		239062			1
30	HOSE, suction, nylon; 3/4 npt (mbe) cst fittings; 6 ft (1.8 m) long	214961		214961	214961	1
	HOSE, suction, nylon; 3/4 npt (mbe) sst fittings; 6 ft (1.8 m) long		221171			1

Parts

NOTE: Part numbers vary by package. To find the part number used in your package, read down the chart to find the desired ref. no., then read left to right to find the part number for your package.

Ref. No.	Description	Packages				Qty
		CST 232275 232276	**SST 232363 232364**	**CST 232339 232340 232341**	**CST 232315 232316**	
31*	ELBOW, 90°; 3/4 npt x 1 1/2–24 uns–2b (fbe); aluminum	156591		156591	156591	1
32*	O-RING; buna-N	156593		156593	156593	1
33*	TUBE, suction; cst	156592		156592	156592	1
	TUBE, suction; sst		188867			1
34*	ADAPTER, bung	176684		176684	176684	1
35*	THUMBSCREW	100220		100220	100220	1
36*	HOUSING, valve, intake; cst	159101		159101	159101	1
37*	SCREEN, filter; cst	161377		161377	161377	1
38*	STOP, ball; cst	159100		159100	159100	1
39	PLATE, mounting, bracket	192589	192589	192589	192589	1
40	ELBOW, 90°; cst; 1/2 npt (m x f)	158683		158683	158683	1
	ELBOW, 90°; sst; 1/2 npt (m x f)		166242			1
41	HOSE, fluid; nylon; 1/2 npt (mbe) sst fittings; 1/2 in. (13 mm) ID; 36 in. (0.9 m) long	239149		239149	239149	1
	HOSE, fluid; nylon; 1/2 npt (mbe) cst fittings; 1/2 in. (13 mm) ID; 36 in. (0.9 m) long		239154			1
42	ELBOW, reducing, 90°; cst; 3/8 npt (m) x 1/4 npt (f)	164259		164259	164259	1
	ELBOW, 90°; sst; 3/8 npt (m x f)		112026			1
43	NIPPLE; cst; 1/4 npt x 1/4 npsm	162453		162453	162453	1
	NIPPLE, reducing; sst; 3/8 npt x 1/4 npsm		113070			1
44	THROAT SEAL LIQUID; 1 pint (0.5 liter); not shown	206994	206994	206994	206994	1

* *These parts are included in Suction Tube Kit 206266, which is used on carbon steel packages only.*

Parts

NOTE: Part numbers vary by package. To find the part number used in your package, read down the chart to find the desired ref. no., then read left to right to find the part number for your package.

Ref. No.	Description	Packages				Qty
		CST 232275 232276	**SST 232363 232364**	**CST 232339 232340 232341**	**CST 232315 232316**	
45	HOSE, fluid; nylon; cst fittings; 1/4 npsm (fbe); 1/4 in. (6 mm) ID; 3 ft (0.9 m) long	H42503		H42503	H42503	1
	HOSE, fluid; nylon; sst fittings; 1/4 npsm (fbe); 1/4 in. (6 mm) ID; 23.6 in. (0.6 m) long		239108			1
46	REGULATOR, back pressure; cst; *see manual 306860*	206819		206819	206819	1
	REGULATOR, back pressure; sst; *see manual 306860*		238926			1
47	NIPPLE; cst; 1/4 npt x 1/4 npsm	162453		162453	162453	1
	NIPPLE; sst; 1/4 npt x 1/4 npsm		166846			1
48	NUT, hex; 1/4–20; not shown				100015	2
49	BRACKET, wall, heater	192585	192585	192585	192585	1
51▲	LABEL, warning	193145	193145	193145	193145	1
52	BUSHING, reducer, pipe	502265	502265	502265	502265	1
53	FITTING, coupler	117627	117627	117627	117627	1

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

Heater Parts

NOTE: This chart includes the heater and related parts which vary by package. The packages are grouped by heater voltage, so they are in different columns from the preceding charts. To find the part number used in your package, read down the chart to find the desired ref. no., then read left to right to find the correct part number.

Ref. No.	Description	Packages			Qty
		240V PACKAGES: 232275, 232315, 232339, 232363,	**480V PACKAGES: 232276, 232316, 232340, 232364,**	● **200V PACKAGES: 232341**	
50	HEATER, fluid, 240V; *see manual 309524*	245863			1
	HEATER, fluid, 480V; *see manual 309524*		245864		1
	HEATER, fluid, 200V; *see manual 309524*			245862	1

● These 200V packages are only available in Asia.

Hose and Gun Parts

NOTE: Part numbers vary by package. To find the part number used in your package, read down the chart to find the desired ref. no., then read left to right to find the part number for your package.

Ref. No.	Description	Packages				Qty
		CST 232275 232276	**SST 232363 232364**	**CST 232339 232340 232341**	**CST 232315 232316**	
101	HOSE, air/fluid, triple; 1/4 in. (6 mm) ID; nylon; 1/4 npsm (fbe) cst fittings; 24.6 ft (7.5 m) long	239347		239347	239347	1
	HOSE, air/fluid, triple; 1/4 in. (6 mm) ID; nylon; 1/4 npsm (fbe) sst fittings; 24.6 ft (7.5 m) long		239311			1
102	MANIFOLD, fluid	239864	239864	239864	239864	1
103	HOSE, whip, fluid; nylon; cst fittings; 1/4 npsm (fbe); 3/16 in. (5 mm) ID; 23.6 in. (0.6 m) long	238708		238708	238708	1
	HOSE, whip, fluid; nylon; sst fittings; 1/4 npsm (fbe); 3/16 in. (5 mm) ID; 23.6 in. (0.6 m) long		239069			1
104	FILTER/SWIVEL, gun; includes replaceable item 105	239394	239394	239394	239394	1
105	. ELEMENT, filter; 100 mesh sst; not shown	205264	205264	205264	205264	1
106	AA SERIES SPRAY GUN; with AAM413 tip; *see manual 311001*	249242	249242	249242	249242	1
107	SPRAY TIP; customer's choice; not shown	AAMxxx	AAMxxx	AAMxxx	AAMxxx	1

Technical Data

Category	Data
Maximum fluid working pressure	*Part Nos. 232275, 232276, 232363, 232364:* 3000 psi (21 MPa, 210 bar) *Part Nos. 232315, 232316, 232339, 232340, 232341:* 1500 psi (10 MPa, 100 bar)
Maximum air input pressure	100 psi (0.7 MPa, 7 bar)
Maximum gun air input pressure	100 psi (0.7 MPa, 7 bar)
Ratio	*Part Nos. 232275, 232276, 232363, 232364:* 30:1 *Part Nos. 232315, 232316, 232339, 232340, 232341:* 15:1
Maximum Heater Voltage and Amperage	*Part Nos. 232275, 232315, 232339, 232363:* 240V, 16.7 Ampere *Part Nos. 232276, 232316, 232340, 232364:* 480V, 8.30 Ampere ●*Part Nos. 232341:* 200V, 20.0 Ampere
Maximum operating temperature	120°F (50°C)
Weight	*President Pumps:* 125 lb (57 kg) *Monark Pumps:* 115 lb (52 kg)
Wetted parts	*Pump:* See applicable pump manual *Spray Gun:* See gun manual 311001 *Fluid Filter:* See filter manual 307273 *Fluid Heater:* See heater manual 309524 *Back Pressure Regulator:* See BPR manual 306860 *Fluid Hoses:* Nylon

● These 200V packages are only available in Asia.

Sound Pressure Levels (dBa)

(measured at 1 meter from unit)

	Input Air Pressures at 15 cycles per minute		
Air Motor	**40 psi (0.28 MPa, 2.8 bar)**	**70 psi (0.48 MPa, 4.8 bar)**	**100 psi (0.7 MPa, 7 bar)**
President	73.6 dB(A)	78.3 dB(A)	80.9 dB(A)
Monark	73.3 dB(A)	75.9 dB(A)	77.7 dB(A)

Sound Power Levels (dBa)

(tested in accordance with ISO 9614–2)

	Input Air Pressures at 15 cycles per minute		
Air Motor	**40 psi (0.28 MPa, 2.8 bar)**	**70 psi (0.48 MPa, 4.8 bar)**	**100 psi (0.7 MPa, 7 bar)**
President	87.4 dB(A)	92.1 dB(A)	94.7 dB(A)
Monark	87.0 dB(A)	89.7 dB(A)	91.4 dB(A)

Technical Data

Performance Charts

To find Fluid Outlet Pressure (psi/MPa/bar) at a specific fluid flow (lpm/gpm) and operating air pressure (psi/MPa/bar):

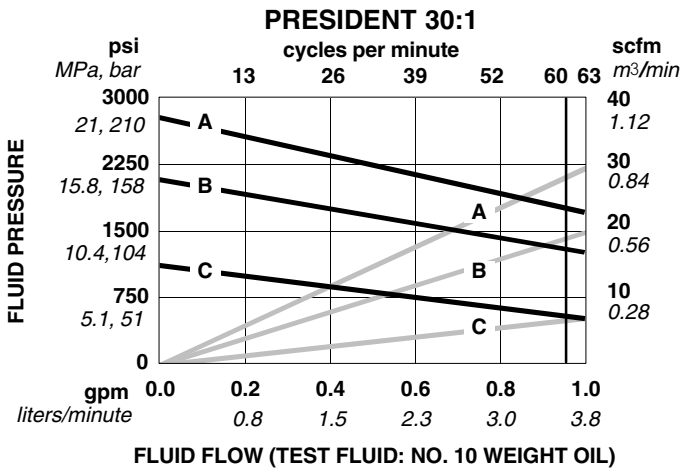
1. Locate desired flow along bottom of chart.
2. Follow vertical line up to intersection with selected fluid outlet pressure curve (black). Follow left to scale to read fluid outlet pressure.

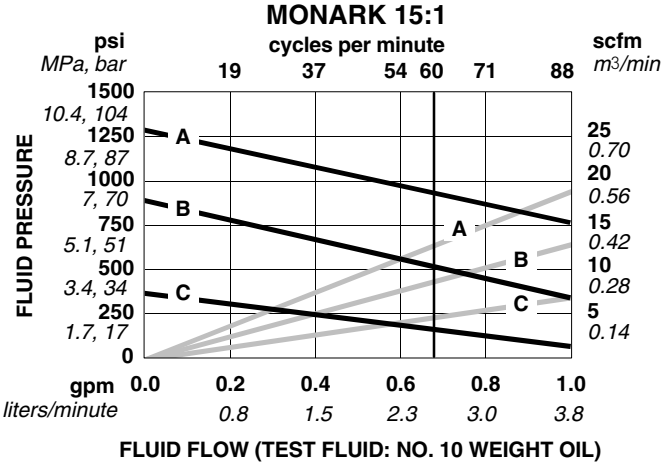
KEY: Fluid Outlet Pressure – Black Curves
Air Consumption – Gray Curves

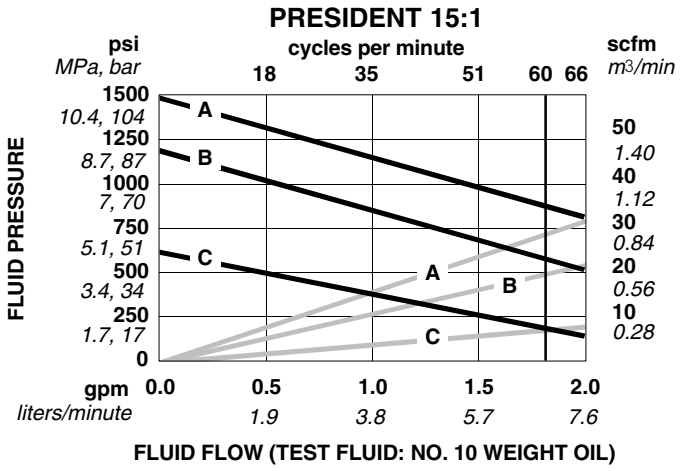
To find Pump Air Consumption (m^3/min or scfm) at a specific fluid flow (lpm/gpm) and air pressure (psi/MPa/bar):

1. Locate desired flow along bottom of chart.
2. Read vertical line up to intersection with selected air consumption curve (gray). Follow right to scale to read air consumption.

A 100 psi (0.7 MPa, 7 bar) air pressure
B 70 psi (0.49 MPa, 4.9 bar) air pressure
C 40 psi (0.28 MPa, 2.8 bar) air pressure

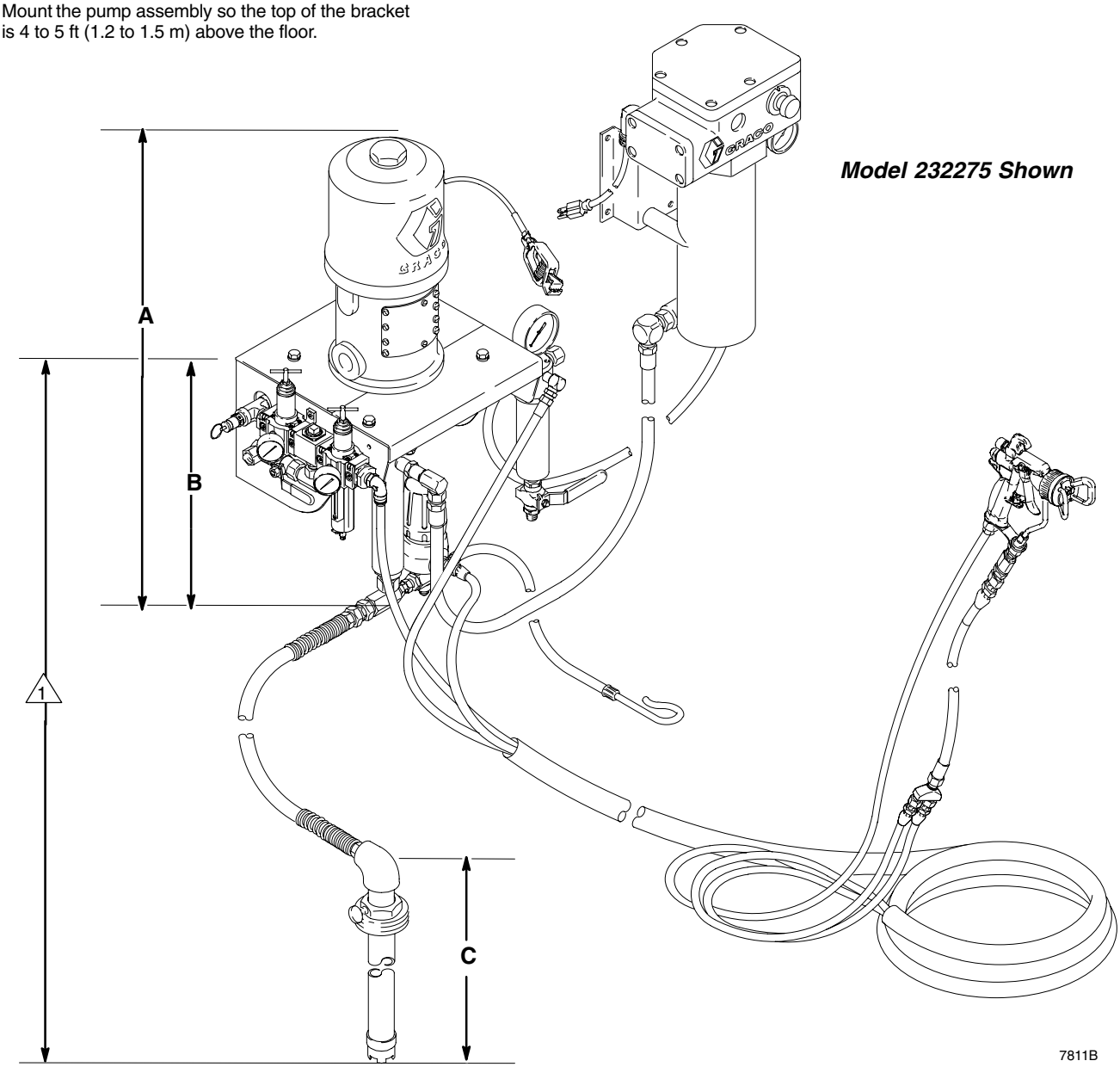






Dimensions

1 Mount the pump assembly so the top of the bracket is 4 to 5 ft (1.2 to 1.5 m) above the floor.



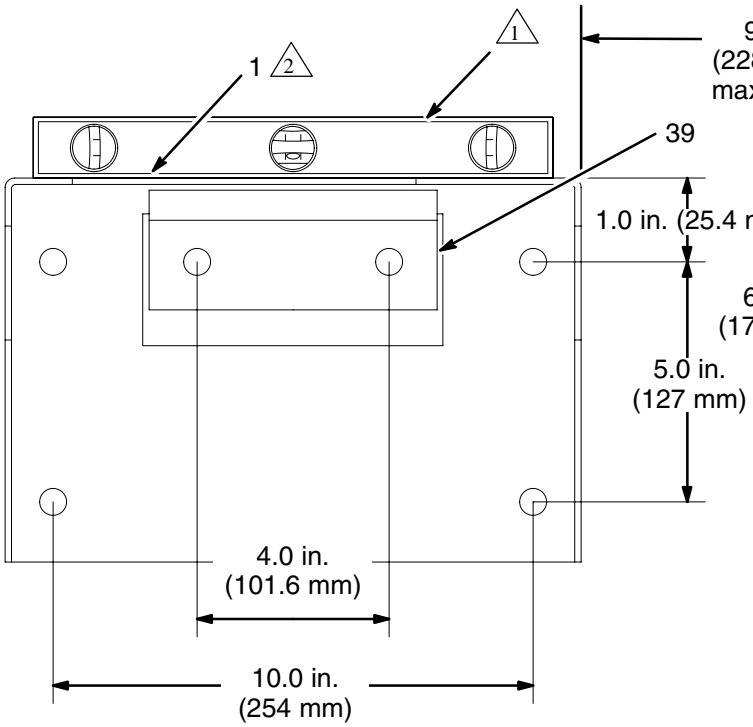
Model 232275 Shown

Pump Model	A	B	C
232275, 232276 President 30:1 Carbon Steel	32 in. (813 mm)	17 in. (432 mm)	36 in. (914 mm)
232363, 232364 President 30:1 Stainless Steel	32 in. (813 mm)	17 in. (432 mm)	36 in. (914 mm)
232339, 232341 President 15:1 Carbon Steel	32 in. (813 mm)	17 in. (432 mm)	36 in. (914 mm)
232315, 232316 Monark 15:1 Carbon Steel	31 in. (787 mm)	16 in. (406 mm)	36 in. (914 mm)

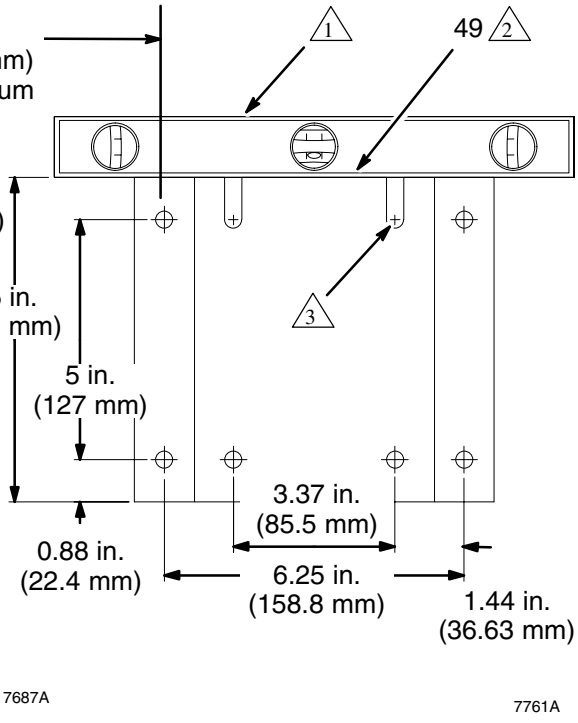
Mounting Hole Layout

1. Check that the bracket is level before bolting it to the wall.
2. Mount the pump and heater brackets (1, 49) so the tops of the brackets are 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



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.

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MM 308760

Graco Headquarters: Minneapolis
International Offices: Belgium, China, Japan, Korea

GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440–1441

www.graco.com

PRINTED IN U.S.A. 308760 03/2001 Rev. 03/2006