

Instructions – Parts List



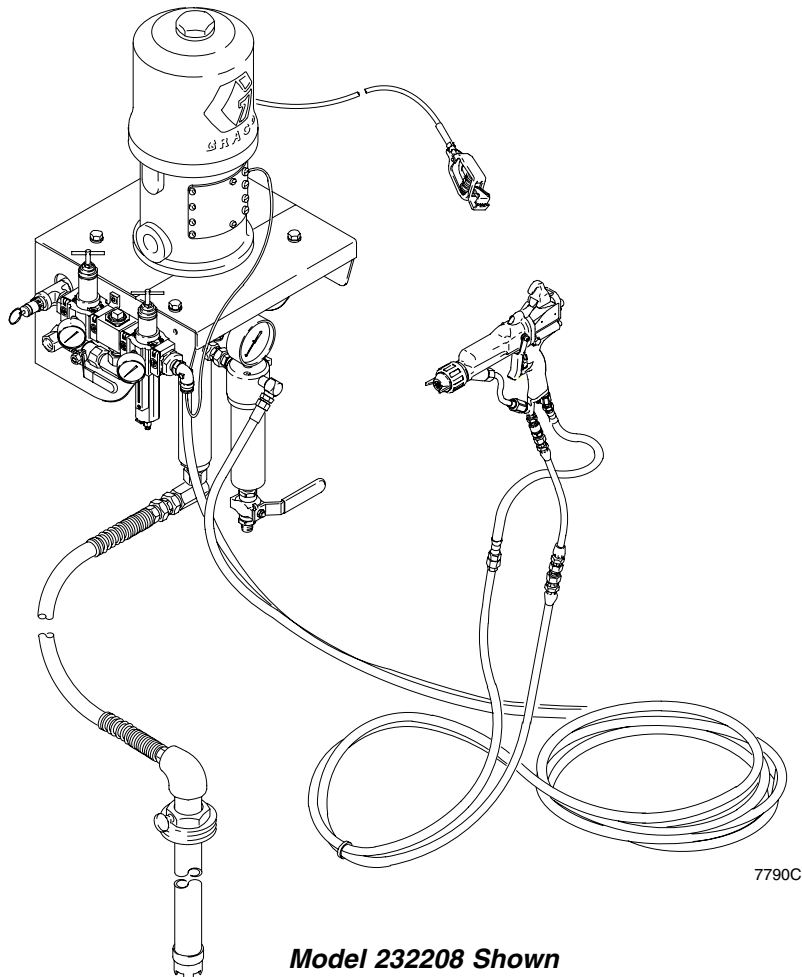
Wall Mount Electrostatic Air-Assisted Packages 308758 Rev.C

For use with Class I, Group D paint spray materials



Read warnings and instructions.

See page 2 for model numbers and maximum working pressures.



Model 232208 Shown

PROVEN QUALITY. LEADING TECHNOLOGY.

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List of Models

Package Part No.	Series	Pump Model	Ratio	Maximum Fluid Working Pressure	Maximum Air Input Pressure
232208	A	President®, carbon steel	30:1	3000 psi (21 MPa, 210 bar)	100 psi (0.7 MPa, 7 bar)
232219	A	President®, stainless steel	30:1	3000 psi (21 MPa, 210 bar)	100 psi (0.7 MPa, 7 bar)
232230	A	Monark®, carbon steel	23:1	2300 psi (16 MPa, 160 bar)	100 psi (0.7 MPa, 7 bar)
232241	A	Monark®, stainless steel	23:1	2300 psi (16 MPa, 160 bar)	100 psi (0.7 MPa, 7 bar)
232248	A	President®, carbon steel	15:1	1500 psi (10 MPa, 100 bar)	100 psi (0.7 MPa, 7 bar)

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 of the lowest rated system component. Refer to the **Technical Data** on page 20 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).
- 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.

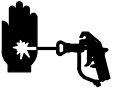


MOVING PARTS HAZARD

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 10 to prevent the equipment from starting unexpectedly.

WARNING



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 medical attention.**
- 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 10 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.



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.

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.

- Electrostatic equipment must be used only by trained, qualified personnel who understand the requirements stated in this instruction manual.
- Ground the equipment, personnel in or close to the spray area, the object being sprayed, and all other electrically conductive objects in the spray area. Refer to **Grounding** on page 7.
- Check the spray gun resistance daily. See **Test Gun Resistance** in your separate gun manual.
- 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 or toxic vapors. Interlock the gun turbine air supply to prevent operation of the power supply unless the ventilating fans are on. See **Ventilate the Spray Booth** on page 6.
- When flushing or purging electrostatic equipment, use solvents with a flash point equal to or greater than that of the fluid being sprayed.
- To clean the exterior of the electrostatic equipment, use solvents with a flash point higher than 100°F (38°C).
- Use only non-sparking tools to clean residue from the booth and hangers.
- Do not flush the system with the gun electrostatics turned on.
- Do not turn on the gun electrostatics until all solvent is removed from the system.
- Keep the spray area free of debris, including solvent, rags, and gasoline.
- Do not store any flammable fluids 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.

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. If you supply your own accessories, be sure they are adequately sized and pressure-rated for your system.

Fig. 3 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:

- 308758, Wall Mount Electrostatic 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
- 306982, President Air Motor, or 307043, Monark Air Motor
- 308686, Air Regulator Kit
- 307273, Fluid Filter
- 309295, 309296, Electrostatic Air-Assisted 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, fluid, hoses, and stress caused during pump operation.

Ensure that you have an adequate compressed air supply. Refer to the performance charts on page 21 to find the air consumption of your pump.

Refer to Fig. 3. 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.

Ventilate the Spray Booth

WARNING



FLAMMABLE OR TOXIC VAPOR HAZARD




Provide fresh air ventilation to avoid the buildup of flammable or toxic vapors. Do not operate the gun unless ventilation fans are operating.


Electrically interlock the gun air supply with the ventilators to prevent gun operation without ventilating fans operating. Check and follow all National, State, and Local codes regarding air exhaust velocity requirements.

NOTE: High velocity air exhaust will decrease the operating efficiency of the electrostatic system. Air exhaust velocity of 100 ft/min (31 linear meters/minute) should be sufficient.

Installation


Grounding


WARNING



FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD

Installing and servicing this equipment requires access to parts which may cause electric shock or other serious injury if work is not performed properly.



- Do not install or service this equipment unless you are trained and qualified.
- Be sure your installation complies with National, State and Local codes for the installation of electrical apparatus in a Class I, Group D Hazardous Location.
- Check and follow all local safety and fire codes, NFPA 33, NEC 504 and 516, and OSHA standard 1910.107.

The following are minimum requirements for grounding a basic electrostatic system. Your system may include other equipment or objects which must also be grounded. Always check your local electrical code for detailed grounding instructions. Be sure your system is connected to a true earth ground.

1. *Pump*: use the ground wire and clamp (supplied). See Fig. 1. 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.
2. *Electrostatic Spray Gun*: obtain grounding through connection to a properly grounded air supply hose. Use only the Graco Electrically Conductive Air Supply Hose (supplied). Connect the air hose ground wire (Y) and the pump ground wire (22) to the grounding lug as shown in Fig. 1, then connect the other end of the pump ground wire to a true earth ground.

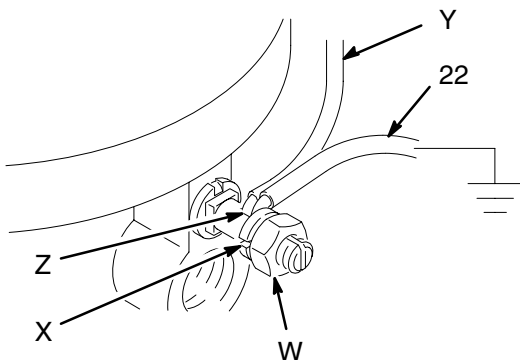


Fig. 1

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3. *Air compressor*: follow manufacturer's recommendations.
4. *All air and fluid lines* must be properly grounded. Use only grounded hoses with a maximum of 500 feet (150 m) combined hose length to ensure grounding continuity.
5. *All electric cables* must be properly grounded.
6. *Object being sprayed*: keep the workpiece hangers clean and grounded at all times. Contact points must be sharp points or knife edges.
7. *All electrically conductive objects or devices* in the spray area, including paint containers and wash cans, must be properly grounded.
8. *All persons entering the spray area*: shoes must have conductive soles, such as leather, or personal grounding straps must be worn. Rubber or plastic soles are not conductive. The operator must not wear gloves that insulate the hand from the spray gun. The gloves must be conductive or modified as shown in Fig. 2.

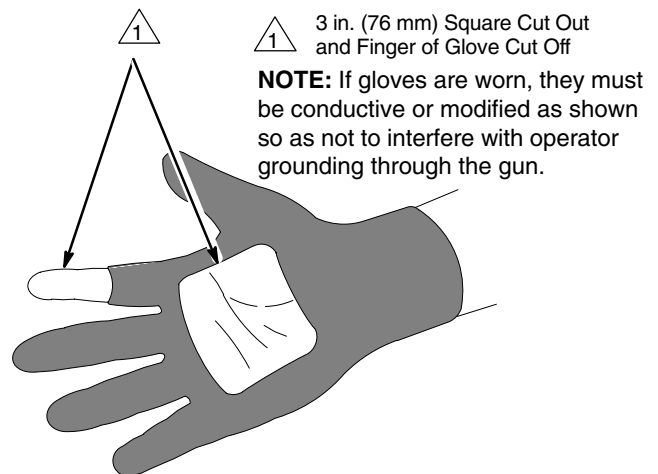


Fig. 2

9. *The floor of the spray area* must be electrically conductive and grounded. Do not cover the floor with cardboard or any non-conductive material which would interrupt grounding continuity.
10. *Flammable liquids* in the spray area must be kept in approved, grounded containers. Do not store more than the quantity needed for one shift.
11. *All solvent pails*: use only grounded metal pails, which are conductive. Do not place the pail on any non-conductive surface, such as cardboard or paper, which would interrupt grounding continuity.

Installation

Supplied Components

Refer to Fig. 3.

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 electrostatic 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 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** above).

- **The electrostatic 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 **twin hose (101)** includes a **gun air supply hose (101a)** and a **gun fluid supply hose (101b)**. The gun air supply hose is a left-hand thread and includes a **ground wire (Y)**. The **fluid whip hose (103)** allows greater gun maneuverability.
- **The gun swivel (104)** allows greater gun maneuverability.

Installing the Pump

NOTE: Refer to Fig. 3 and to the Dimension drawing on page 22 and the Mounting Hole Layout on page 23.

1. Ensure that the wall is strong enough to support the weight of the pump and accessories, 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 23. 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

KEY

SUPPLIED COMPONENTS

- 1 Wall Bracket
- 10 Pump
- 15 Fluid Filter (includes fluid drain valve F)
- 22 Pump Ground Wire (required; see page 7 for installation instructions)
- 30 Suction Hose
- 33 Suction Tube
- 34 Bung Adapter (carbon steel models only)
- 101 Electrically Conductive Gun Air/Fluid Hose (includes items 101a and 101b)
- 101a Gun Air Supply Hose (includes ground wire Y)
- 101b Gun Fluid Supply Hose
- 103 Fluid Whip Hose
- 104 Gun Fluid Hose Swivel
- 106 Electrostatic 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
- Y Gun Air Hose Ground Wire (required; see page 7 for installation instructions)
- * 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 232208 Shown

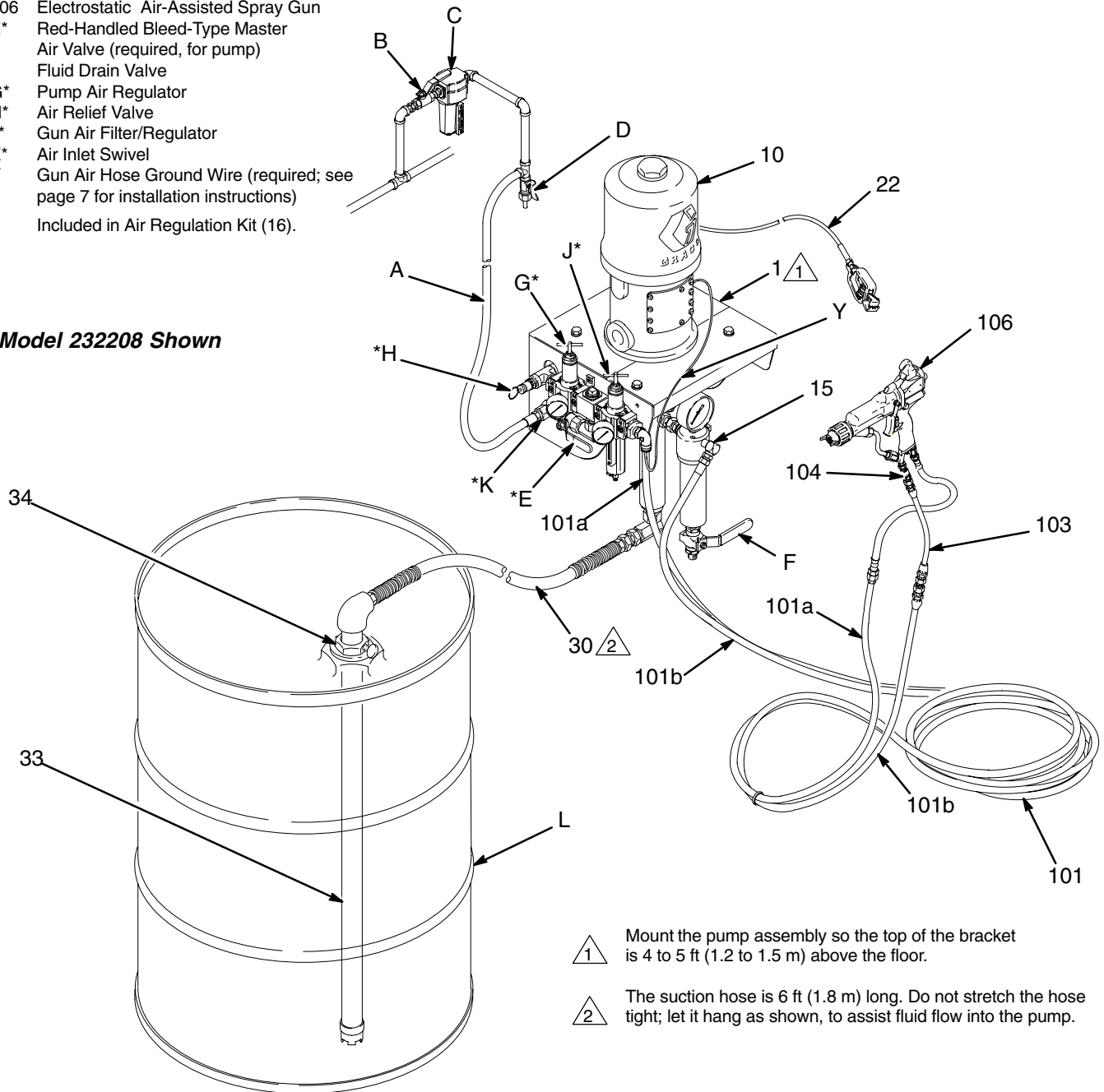


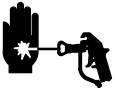
Fig. 3

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Operation

Pressure Relief Procedure

WARNING



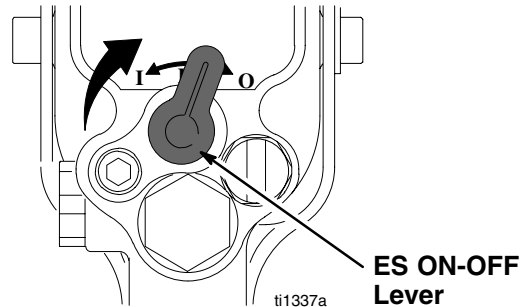
INJECTION HAZARD

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:

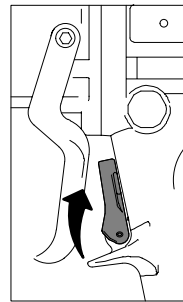
- are instructed to relieve the pressure,
- stop spraying,
- check or service any of the system equipment,
- or install or clean the spray tip.

7. Open the drain valve (F, required in your system), having a container ready to catch the drainage.
8. Leave the drain valve open until you are ready to spray again.

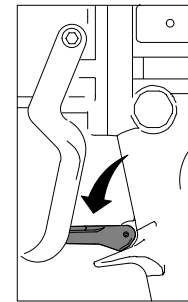
*If you suspect that the spray tip or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, **very slowly** loosen the tip guard retaining nut or hose end coupling and relieve pressure gradually, then loosen completely. Now clear the tip or hose.*



1. Lock the gun trigger safety. See Fig. 4.
2. Turn the gun's ES ON-OFF lever to the OFF position.
3. Close the red-handled bleed-type master air valve (E, required in your system). See Fig. 5.
4. Unlock the gun trigger safety.
5. Trigger the gun into a grounded metal waste container to relieve fluid and air pressure.
6. Lock the gun trigger safety.



**Trigger Safety
Latch Unlocked**



**Trigger Safety
Latch Locked**

Fig. 4

Operation

Packing Nut

Before starting, fill the packing nut (M) 1/3 full with Graco Throat Seal Liquid (TSL) or compatible solvent. See Fig. 5.

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 15.

Using the Electrostatic Air-Assisted Spray Gun

WARNING



FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD

Proper electrical grounding of every part of your system is essential. For your safety, read the warning section, **FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD**, on page 5 and **Grounding** on page 7. Ground the system as explained there. Then check the gun resistance as explained in your separate gun manual.

Check the spray gun resistance daily. See **Test Gun Resistance** in your separate gun manual.

The gun air filter/regulator (J, see Fig. 5) controls the air pressure to the spray gun. Air is supplied to the gun through a special electrically conductive air hose.

Adjust the air pressure to the pump to control the fluid pressure at the gun. For more precise fluid pressure control, install a fluid regulator.

Spray some test patterns before doing any finished work. Refer to the gun manual for detailed information on gun setup, operation, correct spraying technique, troubleshooting, maintenance, and repair. To change pattern width, a new tip size must be used. Refer to the separate gun manual for available tip sizes.

Operation

Prime the Pump

1. Turn the gun's ES ON-OFF lever to the OFF position.
2. Remove the tip guard and spray tip from the gun (106). Refer to the gun manual.
3. See Fig. 5. 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. 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. 5, to assist fluid flow into the pump.
8. Place the pump suction tube (33) into the drum. 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.
9. Point the gun (106) into a grounded metal pail and hold the trigger open.
10. Open the bleed-type air valves (B, E) and the gun air filter/regulator (J). Slowly open the pump air regulator (G) until the pump starts.
11. Cycle the pump slowly until all air is pushed out and the pump and hoses are fully primed.
12. Release the gun trigger and lock the trigger safety. The pump should stall against pressure.
13. 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 10.

Relieve the pressure. Install the spray tip and tip guard as explained in your separate gun manual, supplied. Be careful not to bend the electrode wire.

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)	B	Bleed-Type Master Air Valve (for accessories)
30	Suction Hose	E*	Red-Handled Bleed-Type Master Air Valve (required, for pump)
33	Suction Tube	F	Fluid Drain Valve
34	Bung Adapter (carbon steel models only)	G	Pump Air Regulator
101	Electrically Conductive Gun Air/Fluid Hose (includes items 101a and 101b)	J	Gun Air Filter/Regulator
101a	Gun Air Supply Hose (includes ground wire Y)	K	Air Inlet Swivel
101b	Gun Fluid Supply Hose	L	55 Gallon (200 Liter) Drum
103	Fluid Whip Hose	M	Packing Nut/Wet-Cup (hidden)
104	Gun Air Hose Swivel	Y	Gun Air Hose Ground Wire (required; see page 7 for installation instructions)
106	Electrostatic Air-Assisted Spray Gun		
A	Electrically Conductive Air Supply Hose		

Model 232208 Shown

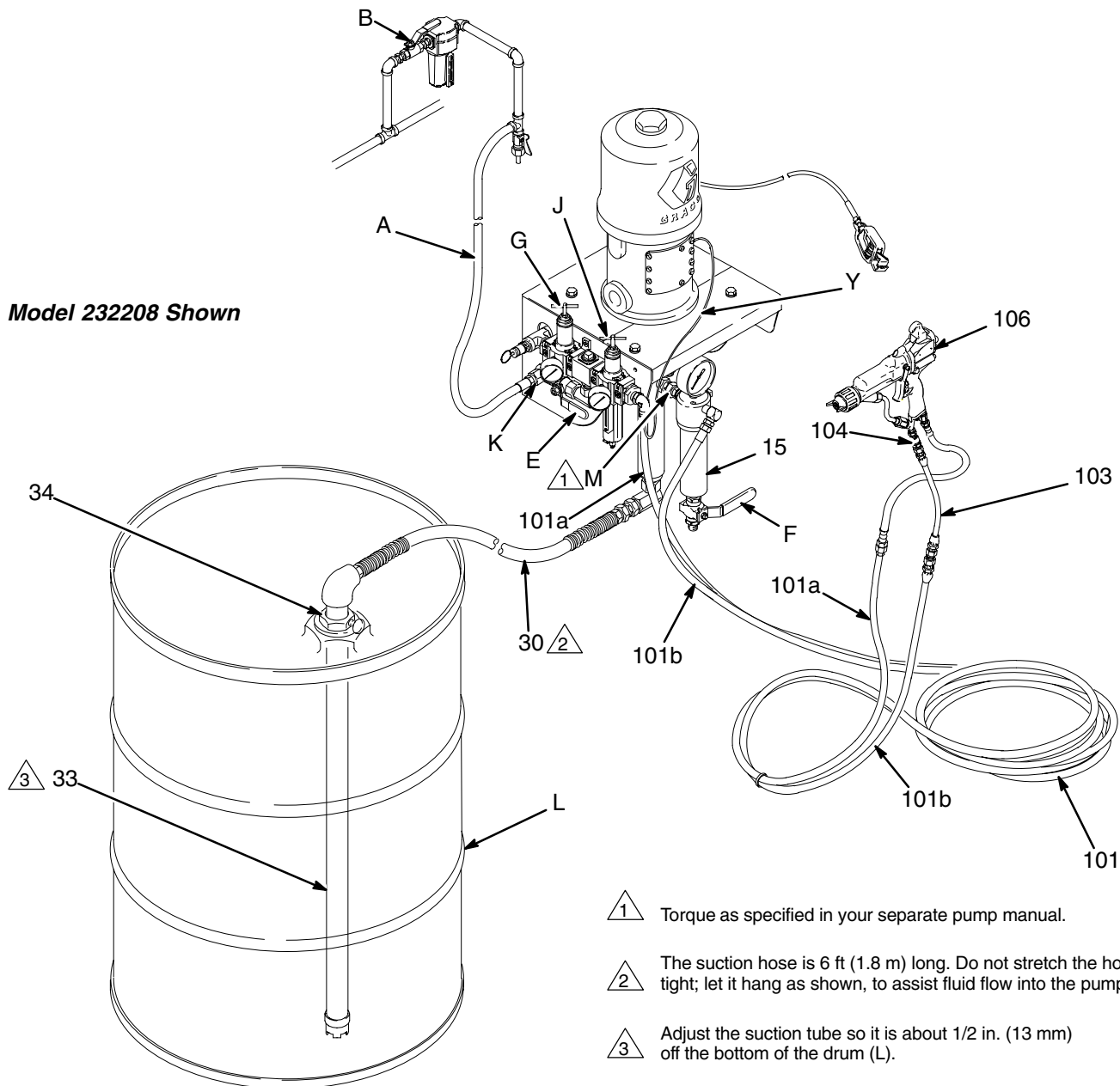


Fig. 5

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Operation

Adjust the Spray Pattern

1. To adjust the spray pattern, follow the complete instructions in your gun manual, supplied.
2. Start the pump. Use the pump air regulator (G) to adjust the pump speed and fluid pressure. Use the lowest pressure necessary to get the desired results. Higher pressure may not improve the spray pattern and will cause premature tip and pump 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 20 and to your separate component manuals.

3. With the pump and lines primed, and with adequate air pressure and volume supplied, the pump will start and stop as you open and close the gun.

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 10.

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 15.


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 AND EXPLOSION 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 7.


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.

**WARNING**

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 10.

**WARNING**

**ELECTRIC SHOCK HAZARD**
To reduce the risk of fire, explosion, or electric shock, be sure the ES ON-OFF lever is turned to OFF before flushing the gun.

**CAUTION**

Always hang the gun with its nozzle pointing down to avoid having solvent run into the gun air passages. Solvent in the gun air passages can cause poor atomization and excessive current demands and can damage the gun.

1. Relieve the pressure. Be sure the ES ON-OFF lever is turned to OFF.
2. Remove the tip guard and spray tip from the gun. Refer to the gun instruction manual.
3. Remove the filter element from the fluid filter (15). Reinstall the filter bowl.
4. Place the suction tube (33) in a container of solvent.
5. Point the gun down into a grounded *metal* pail.
6. Start the pump. Always use the lowest possible fluid pressure when flushing.
7. Trigger the gun. Flush the system until clear solvent flows from the gun.
8. Relieve the pressure.
9. Clean the tip guard, spray tip, and fluid filter element separately, then reinstall them.
10. Clean the inside and outside of the suction tube (33).

Parts

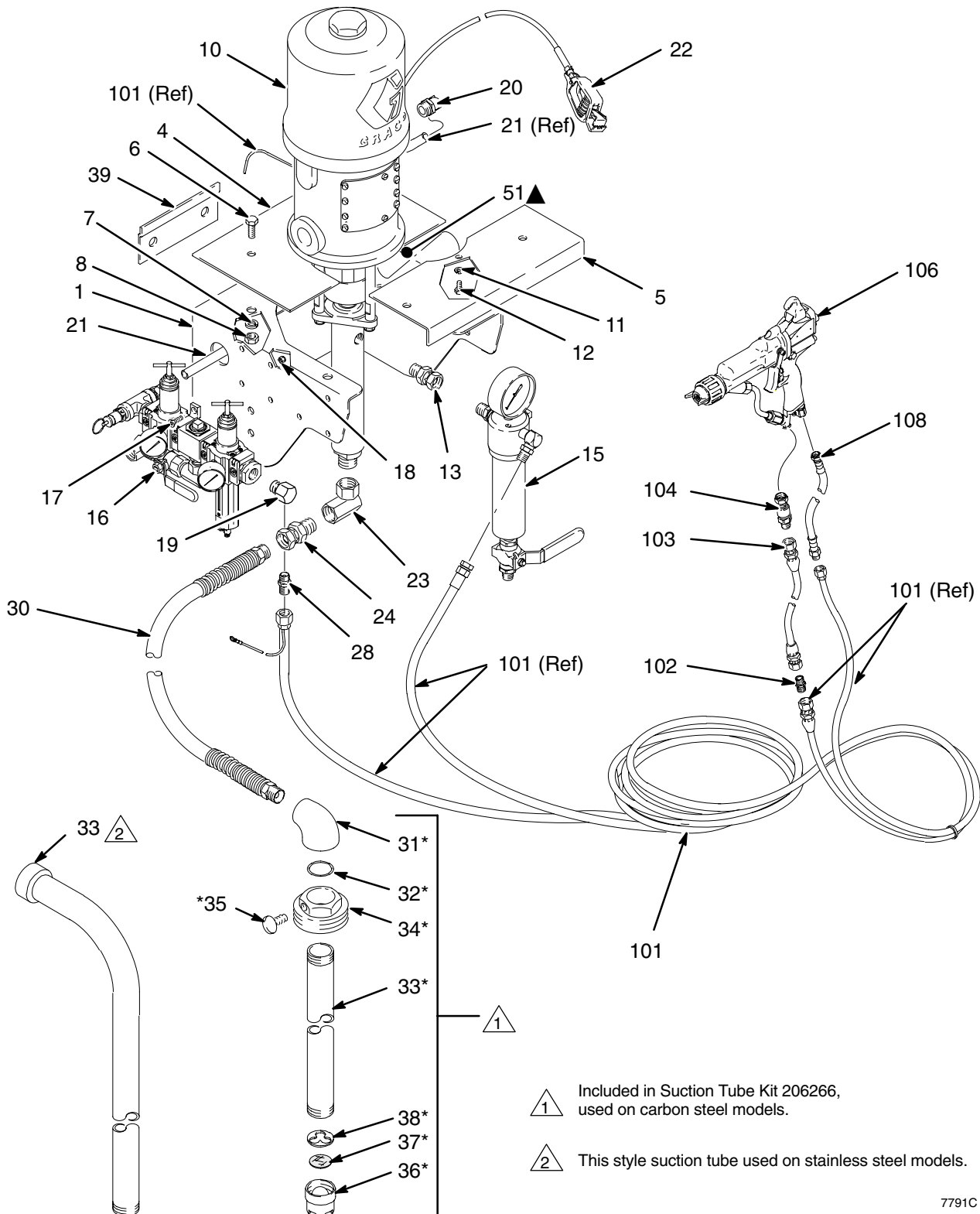
Part No. 232208, Series A, 30:1 President, carbon steel (shown)

Part No. 232219, Series A, 30:1 President, stainless steel

Part No. 232230, Series A, 23:1 Monark, carbon steel

Part No. 232241, Series A, 23:1 Monark, stainless steel

Part No. 232248, Series A, 15:1 President, carbon steel



Parts

Part No. 232208, Series A, 30:1 President, carbon steel (shown)

Part No. 232219, Series A, 30:1 President, stainless steel

Part No. 232230, Series A, 23:1 Monark, carbon steel

Part No. 232241, Series A, 23:1 Monark, stainless steel

Part No. 232248, Series A, 15:1 President, carbon steel

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 232208	SST 232219	CST 232230	SST 232241	CST 232248	
1	BRACKET, pump	192584	192584	192584	192584	192584	1
4	ADAPTER, bracket, rear	192768	192768	192768	192768	192768	1
5	ADAPTER, bracket, front	192767	192767	192767	192767	192767	1
6	SCREW, cap, hex hd; 3/8–16 x 3/4 in. (19 mm)	100469	100469	100469	100469	100469	4
7	LOCKWASHER; 3/8 in.	100133	100133	100133	100133	100133	4
8	NUT, hex; 3/8–16	100307	100307	100307	100307	100307	4
9	GROMMET; not shown	114269	114269	114269	114269	114269	1
10	PUMP, 30:1 President; cst; <i>see manual 306981</i>	223586					1
	PUMP, 30:1 President; sst; <i>see manual 308106</i>		223843				1
	PUMP, 23:1 Monark; cst; <i>see manual 307619</i>			223596			1
	PUMP, 23:1 Monark; sst; <i>see manual 307619</i>				237958		1
	PUMP, 15:1 President; cst; <i>see manual 306936</i>					217580	1
11	LOCKWASHER; 1/4 in.	100016	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	100022		2
13	UNION, swivel, straight; cst; 3/8 npt(m) x 3/8 npsm(f)	155665		155665			1
	UNION, swivel, 45°; sst; 3/8 npt(m) x 3/8 npsm(f)		209029		209029		1
	UNION, swivel; cst; 1/2 npt(m) x 3/8 npsm(f)					158256	1
15	FLUID FILTER; cst; <i>see manual 307273</i>	239964		239964		239964	1
	FLUID FILTER; sst; <i>see manual 307273</i>		239961		239961		1
16	AIR REGULATOR KIT; <i>see manual 308686</i>	239956	239956	239956	239956	239956	1
17	SCREW, socket; M5 x 0.8; 16 mm (5/8 in.)	113768	113768	113768	113768	113768	6
18	NUT, hex, self-locking; M5 x 0.8	105332	105332	105332	105332	105332	6
19	ELBOW, 90°; 3/8 npt(m) x 1/4 npt(f)	164259	164259	164259	164259	164259	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	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	Obtain locally	1
22	GROUND WIRE AND CLAMP	238909	238909	238909	238909	238909	1
23	UNION, swivel, 90°; cst; 3/4 npt(f) x 3/4 npsm(f)	156589		156589		156589	1
	UNION, swivel, 90°; sst; 3/4 npt (fbe)		112572		112572		1
24	UNION, swivel; cst; 3/4 npt(m) x 3/4 npsm(f)	157785		157785		157785	1
28	NIPPLE; 1/4 npt x 1/4 npsm	162453	162453	162453	162453	162453	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		221171		1

Parts

Part No. 232208, Series A, 30:1 President, carbon steel (shown)

Part No. 232219, Series A, 30:1 President, stainless steel

Part No. 232230, Series A, 23:1 Monark, carbon steel

Part No. 232241, Series A, 23:1 Monark, stainless steel

Part No. 232248, Series A, 15:1 President, carbon steel

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 232208	SST 232219	CST 232230	SST 232241	CST 232248	
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		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	192589	1
44	THROAT SEAL LIQUID; 1 pint (0.5 liter); not shown	206994	206994	206994	206994	206994	1
48	NUT, hex; 1/4–20; not shown			100015	100015		2
51▲	LABEL, warning	193145	193145	193145	193145	193145	1

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

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

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 232208	SST 232219	CST 232230	SST 232241	CST 232248	
101	HOSE, twin, air/fluid, with ground wire; nylon; 1/4 npsm (fbe); air hose is left-hand thread; 1/4 in. (6 mm) ID; 24.6 ft (7.5 m) long; cst fluid fittings	239362		239362		239362	1
	HOSE, twin, air/fluid, with ground wire; nylon; 1/4 npsm (fbe); air hose is left-hand thread; 1/4 in. (6 mm) ID; 24.6 ft (7.5 m) long; sst fluid fittings		239098		239098		1
102	NIPPLE; cst; 1/4 npt x 1/4 npsm	162453		162453		162453	1
	NIPPLE; sst; 1/4 npt x 1/4 npsm		166846		166846		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		239069		1
104	SWIVEL, gun	189018	189018	189018	189018	189018	1
106	ELECTROSTATIC AIR-ASSISTED SPRAY GUN; with GG3413 tip; see manual 309295 and 309296	244573	244573	244573	244573	244573	1
107	SPRAY TIP; customer's choice; not shown	GG3xxx	GG3xxx	GG3xxx	GG3xxx	GG3xxx	1
108	HOSE, air; 1/4 npsm (m x f) left-hand thread; 3 ft (0.9 m) long	236130	236130	236130	236130	236130	1

[illegible]

Technical Data

Category	Data
Maximum fluid working pressure	<i>Part Nos. 232208, 232219:</i> 3000 psi (21 MPa, 210 bar) <i>Part Nos. 232230, 232241:</i> 2300 psi (16 MPa, 160 bar) <i>Part No. 232248:</i> 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	<i>Part Nos. 232208, 232219:</i> 30:1 <i>Part Nos. 232230, 232241:</i> 23:1 <i>Part No. 232248:</i> 15:1
Maximum operating temperature	120°F (50°C)
Weight	<i>Part Nos. 232208, 232219, 232248:</i> 75 lb (34 kg) <i>Part Nos. 232230, 232241:</i> 65 lb (30 kg)
Wetted parts	<i>Pump:</i> See applicable pump manual <i>Spray Gun:</i> See gun manual 309295 and 309296 <i>Fluid Filter:</i> See filter manual 307273 <i>Fluid Hoses:</i> Nylon

Sound Pressure Levels (dBa) (measured at 1 meter from unit)

Air Motor	Input Air Pressures at 15 cycles per minute		
	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)

Air Motor	Input Air Pressures at 15 cycles per minute		
	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):

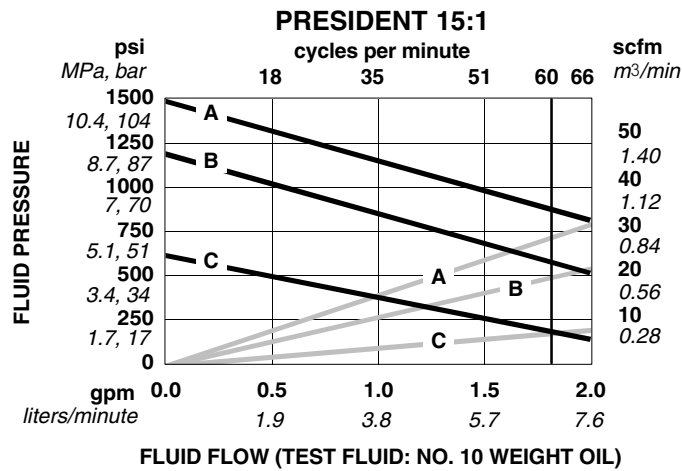
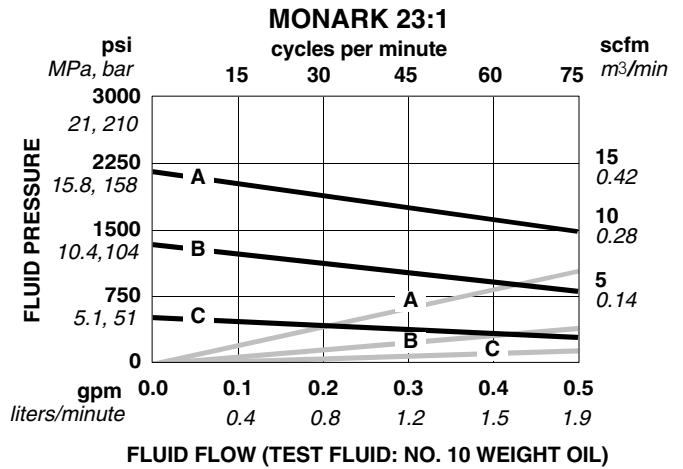
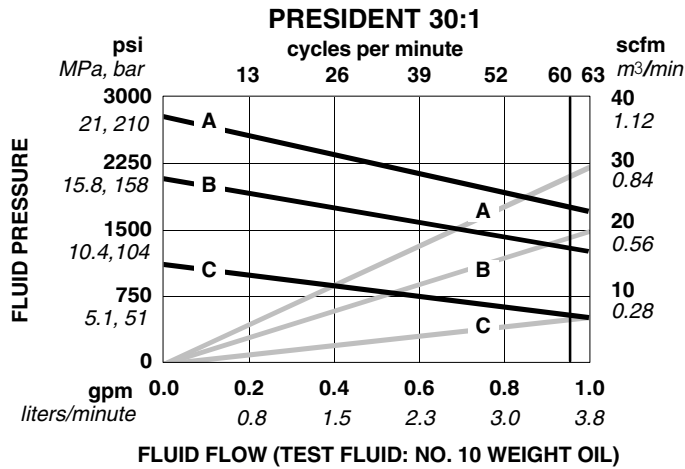
1. Locate desired flow along bottom of chart.
2. Follow vertical line up to intersection with selected fluid outlet pressure curve (black). Follow left to scale to read fluid outlet pressure.

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

To find Pump Air Consumption (m³/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

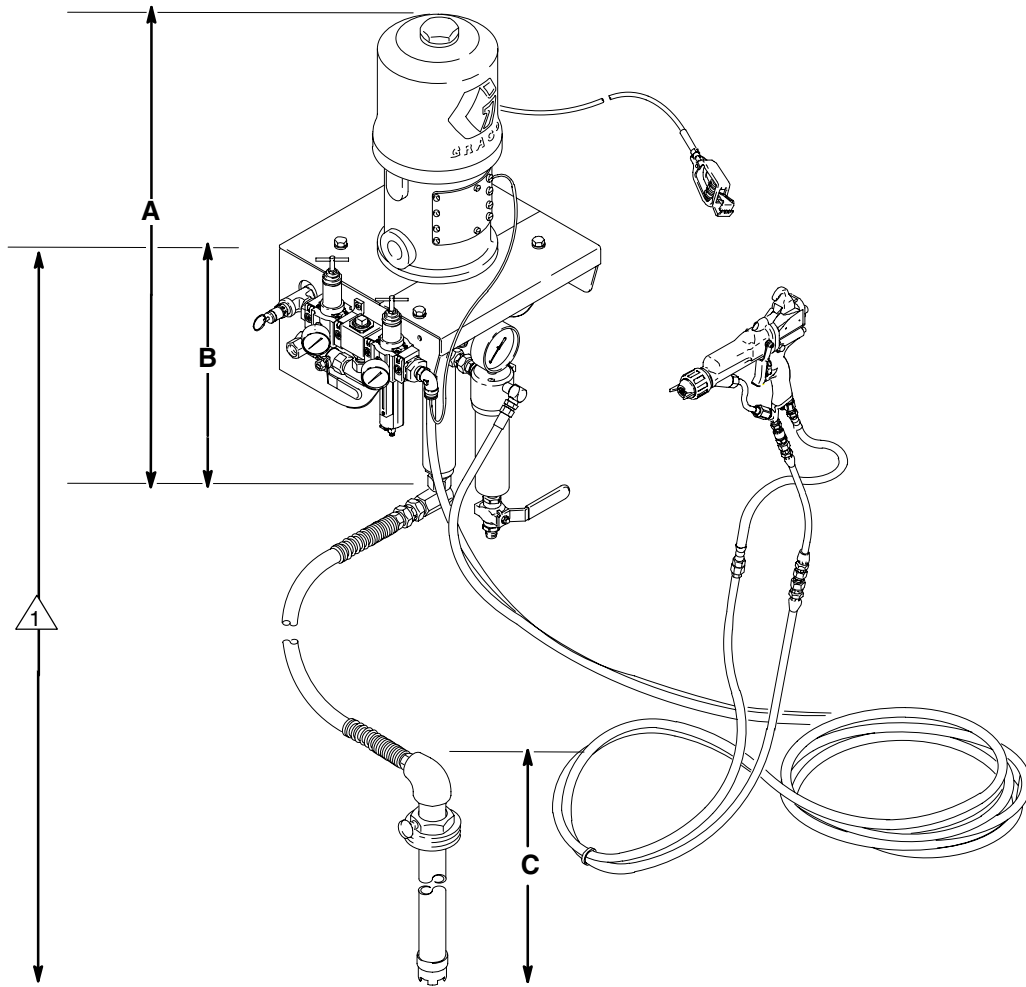


Dimensions

Model 232204 Shown





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

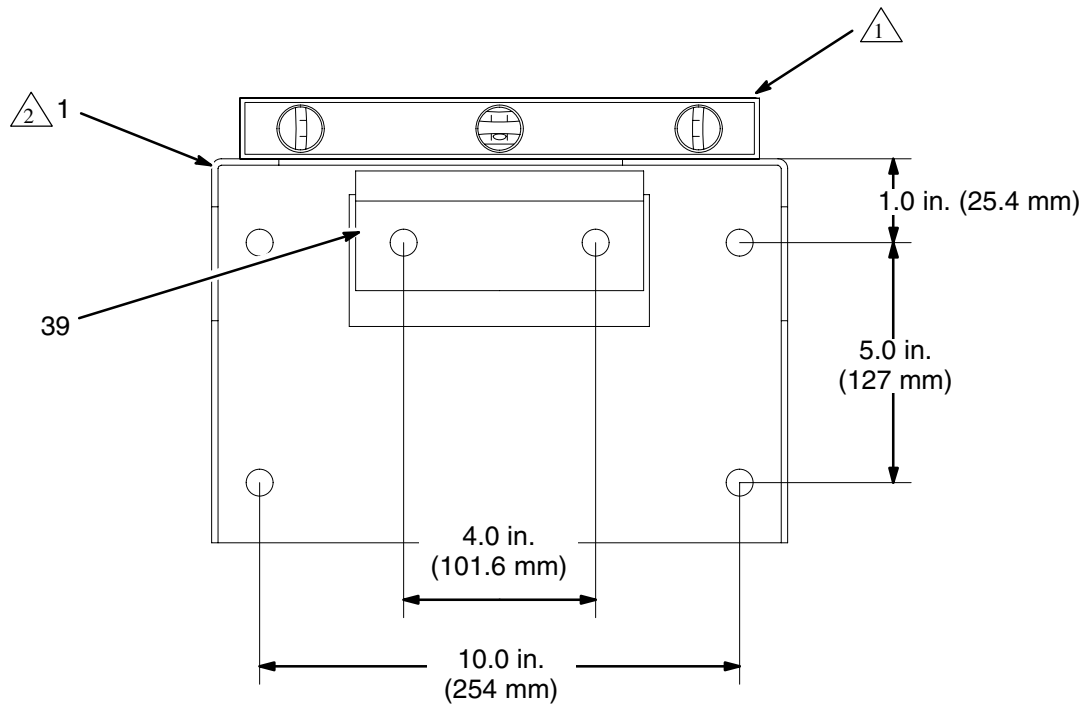


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Pump Model	A	B	C
232208 President 30:1 Carbon Steel	32 in. (813 mm)	17 in. (432 mm)	36 in. (914 mm)
232219 President 30:1 Stainless Steel	32 in. (813 mm)	17 in. (432 mm)	36 in. (914 mm)
232230 Monark 23:1 Carbon Steel	31 in. (787 mm)	16 in. (406 mm)	36 in. (914 mm)
232241 Monark 23:1 Stainless Steel	31 in. (787 mm)	16 in. (406 mm)	36 in. (914 mm)
232248 President 15:1 Carbon Steel	32 in. (813 mm)	17 in. (432 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 assembly so the top of the bracket (1) is 4 to 5 ft (1.2 to 1.5 m) above the floor.



7687A

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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.

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

www.graco.com

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