

President[®] 4-Ball Pumps

3A3383E

EN

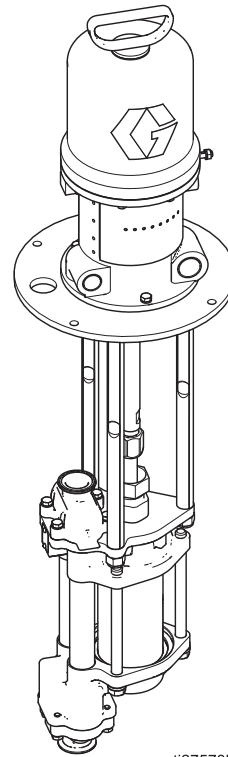
Air-powered pumps for low pressure, high volume circulation of finishing materials. Do not use for flushing or purging lines with caustics, acids, abrasive line strippers, and other similar fluids. For professional use only.



Important Safety Instructions

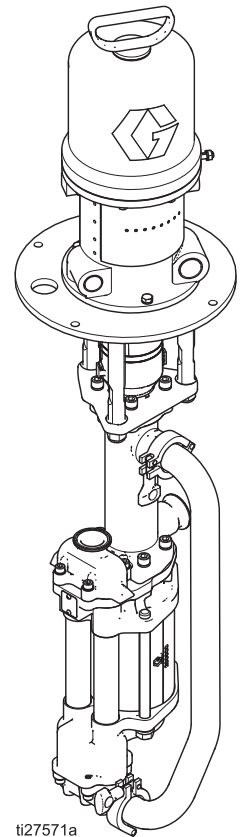
Read all warnings and instructions in this manual. Save these instructions.

See page 3 for model information, including maximum working pressure.



ti27573b

**President Pump
with Open 4 Ball
Lower**



ti27571a

**President Pump
with Sealed 4 Ball
Lower**



II 2 G Ex h IIB T3 Gb

Contents

Related Manuals	2	Troubleshooting	12
Models	3	Repair	13
Warnings	4	Disassembly	13
Installation	6	Reassembly	13
Grounding	6	Parts	15
Mounting	7	Dimensions	17
Plumbing	7	Mounting Hole Layouts	18
Flush Before Using Equipment	7	255143 Wall Bracket Accessory	18
Accessories	8	Model 253692 Floor Stand Accessory	19
Operation	10	Performance Charts	20
Pressure Relief Procedure	10	Technical Data	21
Prime the Pump	10	Graco Standard Warranty	22
Stop Pump at Bottom of Stroke	10	Graco Information	22
Shutdown	10		
Maintenance	11		
Preventive Maintenance Schedule	11		
Flushing	11		
Air Line Filter	11		
Mix Tank Volume	11		
Stall Test	11		
Changing the TSL On Wet Cup Models	11		

Related Manuals




Part No.	Description
306982	President Air Motor manual
333022	Sealed 4-Ball Lower manual (750cc, 1000cc, 1500cc, and 2000cc)
3A3452	4-Ball Open Wetcup Lower manual (750cc, 1000cc, 1500cc, and 2000cc)

Models







Model No.	Series	Ratio	Pump Length	Lower Size	Lower Material	Lower Style	Connection Style	Maximum Fluid Working Pressure psi (MPa, bar)	Maximum Air Inlet Pressure psi (MPa, bar)
17E222	A	2:1	standard	1000cc	sst	Sealed	tri-clamp	460 (3.2, 32.0)	180 (1.2, 12)
17E223	A	2:1	standard	1000cc	sst	Open	npt	460 (3.2, 32.0)	180 (1.2, 12)
17E224	A	2:1	standard	1000cc	cs	Open	npt	460 (3.2, 32.0)	180 (1.2, 12)
17E225	A	3:1	standard	750cc	sst	Sealed	tri-clamp	460 (3.2, 32.0)	150 (1.0, 10)
17E226	A	3:1	standard	750cc	sst	Open	npt	460 (3.2, 32.0)	150 (1.0, 10)
17E227	A	3:1	standard	750cc	cs	Open	npt	460 (3.2, 32.0)	150 (1.0, 10)
17E228	A	3:1	stubby	750cc	sst	Open	npt	460 (3.2, 32.0)	150 (1.0, 10)
17E229	A	3:1	stubby	750cc	cs	Open	npt	460 (3.2, 32.0)	150 (1.0, 10)

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

 <h1 style="margin: 0;">WARNING</h1>	
	<p>FIRE AND EXPLOSION HAZARD</p> <p>Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> • Use equipment only in well ventilated area. • Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking). • Ground all equipment in the work area. See Grounding instructions. • Never spray or flush solvent at high pressure. • Keep work area free of debris, including solvent, rags and gasoline. • Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present. • Use only grounded hoses. • Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive. • Stop operation immediately if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem. • Keep a working fire extinguisher in the work area.
	<p>PRESSURIZED EQUIPMENT HAZARD</p> <p>Fluid from the equipment, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.</p> <ul style="list-style-type: none"> • Follow the Pressure Relief Procedure when you stop spraying/dispensing and before cleaning, checking, or servicing equipment. • Tighten all fluid connections before operating the equipment. • Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.

WARNING

 	<p>EQUIPMENT MISUSE HAZARD</p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> • Do not operate the unit when fatigued or under the influence of drugs or alcohol. • Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See Technical Data in all equipment manuals. • Use fluids and solvents that are compatible with equipment wetted parts. See Technical Data in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheet (SDS) from distributor or retailer. • Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only. • Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards. • Make sure all equipment is rated and approved for the environment in which you are using it. • Use equipment only for its intended purpose. Call your distributor for information. • Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces. • Do not kink or over bend hoses or use hoses to pull equipment. • Keep children and animals away from work area. • Comply with all applicable safety regulations.
 	<p>MOVING PARTS HAZARD</p> <p>Moving parts can pinch, cut or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> • Keep clear of moving parts. • Do not operate equipment with protective guards or covers removed. • Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the Pressure Relief Procedure and disconnect all power sources.
	<p>TOXIC FLUID OR FUMES HAZARD</p> <p>Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.</p> <ul style="list-style-type: none"> • Read Safety Data Sheet (SDS) to know the specific hazards of the fluids you are using. • Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.
	<p>PERSONAL PROTECTIVE EQUIPMENT</p> <p>Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. Protective equipment includes but is not limited to:</p> <ul style="list-style-type: none"> • Protective eyewear, and hearing protection. • Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

Installation

Grounding



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

Pump: use a ground wire and clamp (Y). See FIG. 1. Loosen the grounding lug locknut (W) and washer. Insert one end of the ground wire into the slot in the lug and tighten the locknut securely. Connect the ground clamp to a true earth ground. Order Part No. 237569, Ground Wire and Clamp.

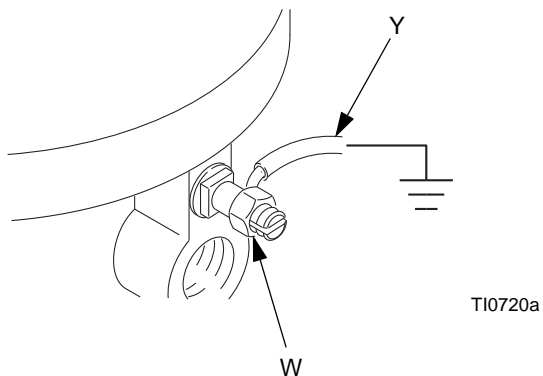


FIG. 1. Ground Wire

Air and fluid hoses: use only electrically conductive hoses with a maximum of 500 ft. (150 m) combined hose length to ensure grounding continuity. Check the electrical resistance of hoses. If total resistance to ground exceeds 25 megohms, replace hose immediately.

Air compressor: follow manufacturer's recommendations.

Surge tank: use a ground wire and clamp.

Dispense valve: ground through a connection to a properly grounded fluid hose and pump.

Fluid supply container: follow local code.

Object being sprayed: follow local code.

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

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

Mounting

Stand Mount

Order Part No. 253692 Pump Stand Kit (accessory). Mount the pump in the pump stand and secure with the four screws and lock washers supplied in the kit.

See **Mounting Hole Layouts** on page 18. Secure the stand to the floor with M19 (5/8 in.) bolts which engage at least 152 mm (6 in.) into the concrete floor to prevent the pump from tipping.

Wall Mount

Order Part No. 255143 Wall Bracket Kit (accessory).

1. Ensure the wall is strong enough to support the weight of the pump assembly and accessories, fluid, hoses, and stress caused during pump operation.
2. Ensure that the mounting location has sufficient clearance for easy operator access.
3. Position the wall bracket at a convenient height, ensuring that there is sufficient clearance for the fluid connection line and for servicing the lower.
4. Drill four 7/16 in. (11 mm) holes using the bracket as a template. Use either of the two mounting hole groupings in the bracket. See **Mounting Hole Layouts**, page 18.
5. Bolt the bracket securely to the wall using bolts and washers designed to hold in the wall's construction.
6. Attach the pump assembly to the mounting bracket.
7. Connect air and fluid hoses.

Plumbing

See FIG. 2. Install a fluid shutoff valve (D) between the mix tank (A) and the pump.

When using a stainless steel pump, use stainless steel plumbing to maintain a corrosion-resistant system.

Flush Before Using Equipment

The equipment was tested with lightweight oil, which is left in the fluid passages to protect parts. To avoid contaminating your fluid with oil, flush the equipment with a compatible solvent before using the equipment. See **Flushing**, page 11.

Accessories

Install the following accessories in the order shown in FIG. 2, using adapters as necessary.

Air Line

- **Bleed-type master air valve (M):** required in your system to relieve air trapped between it and the air motor when the valve is closed.



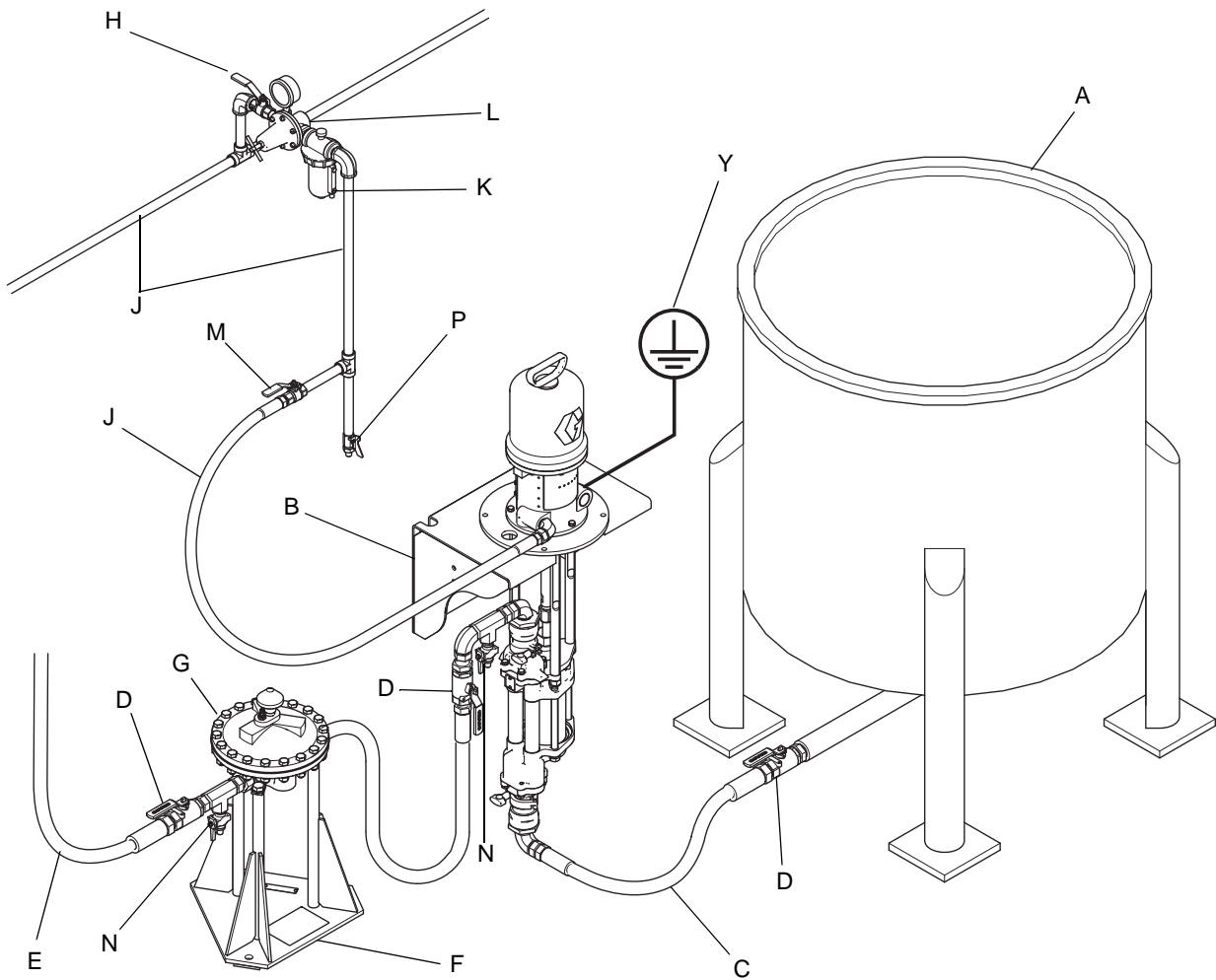
Trapped air can cause the pump to cycle unexpectedly, which could result in serious injury from splashing or moving parts. Be sure the valve is easily accessible from the pump and located downstream from the air regulator. Be sure the air bleed hole points away from the operator.

To help prevent fluid over pressurization, do not exceed the maximum air inlet pressure rating to the air motor (see page 2). If you can apply more than the maximum air input pressure to the system, install a safety relief valve between the bleed-type master air valve and the air motor. The safety relief valve must be set to open if the air inlet pressure to the motor exceeds the motor rating.

- **Pump air regulator (L):** to control pump speed and outlet pressure. Locate close to the pump.
- **Air line filter (K):** removes harmful dirt and moisture from compressed air supply.
- **Second bleed-type air valve (H):** isolates air line accessories for servicing. Locate upstream from all other air line accessories.

Fluid Line

- **Fluid filter:** with a 60 mesh (250 micron) stainless steel element to filter particles from the fluid as it leaves the pump.
- **Fluid drain valve (N):** required in your system, to relieve fluid pressure in the hose and gun.
- **Fluid shutoff valve (D):** shuts off fluid flow.



ti27736b

FIG. 2. Typical Installation

Key:

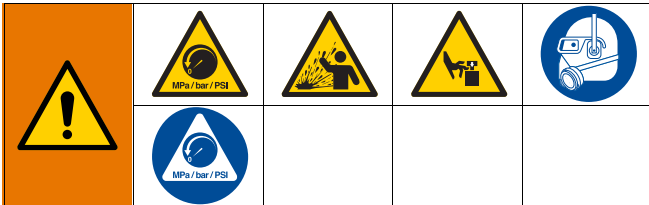
- | | | | |
|---|---|---|---|
| A | Mix Tank | H | Air Shutoff Valve (bleed-type) |
| B | 255143 Wall Bracket Accessory (253692 Pump Stand Accessory is also available) | J | Air Supply Line |
| C | Fluid Supply Line; 1-1/2 in. (38 mm) minimum diameter | K | Air Line Filter |
| D | Fluid Shutoff Valve | L | Air Regulator and Gauge |
| E | Fluid Line | M | Bleed-Type Master Air Valve |
| F | Surge Tank Stand | N | Fluid Drain Valve |
| G | Surge Tank | P | Air Line Drain Valve |
| | | Y | Pump Ground Wire (required see page 6 for installation) |

Operation

Pressure Relief Procedure



Follow the Pressure Relief Procedure whenever you see this symbol.



This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

1. Close the bleed-type master air valve (M).
2. Open the dispensing valve, if used.
3. Open all fluid drain valves (N) in the system, having a waste container ready to catch drainage. Leave drain valve(s) open until you are ready to pump again.

Prime the Pump

1. Fill the wet cup with Throat Seal Liquid (TSL).

NOTE: Sealed 4 ball lowers with bellows do not require TSL.

NOTE: During operation the TSL level in the wet cup will fluctuate slightly at pump changeover.

2. Close pump air regulator (L) by turning knob counterclockwise reducing pressure to zero. Close bleed-type air valve (M). Also verify that all drain valves (N) are closed.
3. Connect air line (J) to bleed type air valve (M).
4. Check that all fittings throughout system are tightened securely.
5. Connect the fluid supply line (C) from the mix tank shutoff valve (D) to the pump.

6. Connect the fluid line (E) to the pump outlet.
7. Open bleed-type air valve (M). Slowly turn pump air regulator (L) clockwise, increasing pressure until pump starts.
8. Cycle pump slowly until all air is pushed out and pump and hoses are fully primed.
9. Close the fluid shutoff valve (D) downstream of the pump. The pump should stall against pressure.

NOTE: In a circulation system, the pump operates continuously until the power supply is shut off. In a direct-supply system, the pump starts when the dispense valve is opened, and stops when the dispense valve is closed.

Stop Pump at Bottom of Stroke



Relieve the pressure when you stop the pump for any reason. Stop the pump on the down stroke, before the air motor changes over.

NOTICE

Failure to stop the pump at the bottom of its stroke allows fluid to dry on the piston rod, which can damage the throat seal.

Shutdown



Follow the **Pressure Relief Procedure**, page 10.

Always flush the pump before the fluid dries on the displacement rod. See **Flushing** on page 11.

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. Your maintenance schedule should include the following:

Flushing



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

- Flush before changing colors, before fluid can dry in the equipment, at the end of the day, before storing, and before repairing equipment.
- Flush at the lowest pressure possible. Check connectors for leaks and tighten as necessary.
- Flush with a fluid that is compatible with the fluid being dispensed and the equipment wetted parts.

Air Line Filter

Drain and clean as necessary.

Mix Tank Volume

Do not let the mix tank run dry. When the tank is empty, the pump demands more power as it tries to suck in some fluid. This causes the pump to run too fast, which can seriously damage the pump.

Stall Test

Perform a stall test periodically to ensure the piston seal is in good working condition and prevent system pressurization:

Close the fluid shutoff valve (D) closest to the pump on the down stroke and be sure that the pump stalls. Open the fluid shutoff valve to restart the pump. Close the fluid shutoff valve (D) closest to the pump on the upstroke and be sure that the pump stalls.

NOTICE

Do not allow the pump to run quickly for a long period of time as this may damage the seal.

Stop the pump on the down stroke, before the air motor changes over.

NOTICE

Failure to stop the pump at the bottom of its stroke allows fluid to dry on the piston rod, which can damage the throat seal when the pump is restarted.

Changing the TSL On Wet Cup Models

On Wet Cup Models check the condition of the TSL and the level in the wet cup every week, minimum. TSL should be changed at least every month.

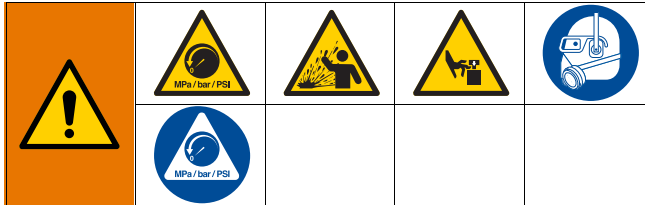
Troubleshooting



Problem	Cause	Solution
Pump output low on both strokes.	Restricted air supply lines.	Clear any obstructions; be sure all shutoff valves are open; increase pressure, but do not exceed maximum working pressure.
	Exhausted fluid supply.	Refill and reprime pump.
	Clogged fluid outlet line, valves, etc.	Clear.
	Worn piston packing.	Replace. See lower manual.
Pump output low on only one stroke.	Held open or worn ball check valves.	Check and repair.
	Worn piston packings.	Replace. See lower manual.
No output.	Improperly installed ball check valves.	Check and repair.
Pump operates erratically.	Exhausted fluid supply.	Refill and reprime pump.
	Held open or worn ball check valves.	Check and repair.
	Worn piston packing.	Replace. See lower manual.
Pump will not operate.	Restricted air supply lines.	Clear any obstructions; be sure all shut off valves are open; increase pressure, but do not exceed maximum working pressure.
	Exhausted fluid supply.	Refill and reprime pump.
	Clogged fluid outlet line, valves, etc.	Clear.
	Damaged air motor.	See air motor manual.
	Fluid dried on piston rod.	Disassemble and clean pump. See lower manual. In future, stop pump at bottom of stroke.

Repair

Disassembly



This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

1. Follow the **Pressure Relief Procedure**, page 10.
2. Disconnect the hoses from the lower and plug the ends to prevent fluid contamination.
3. **Models with Sealed 4-Ball Lowers:** Remove the 2-piece shield (9) by inserting a screwdriver straight into the slot, and using it as a lever to release the tab. Repeat for all tabs. **Do not** use the screwdriver to pry the shields apart. See FIG. 3.
4. Loosen the coupling nut (10) and remove the collars (11). Remove the coupling nut (10) from the piston rod (R). Unscrew the lock nuts (5) from the tie rods (4). Separate the motor (1) and lower (2).
5. To repair the air motor or lower, see the separate manuals listed under **Related Manuals** on page 2.

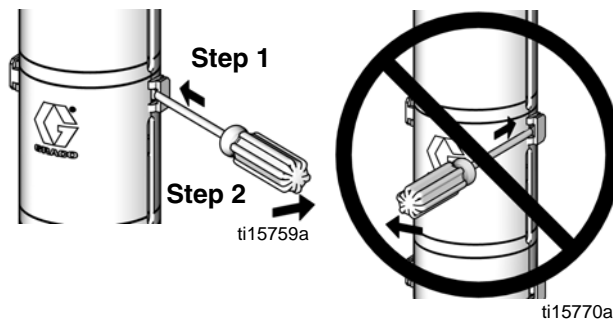


FIG. 3. Shield Disassembly

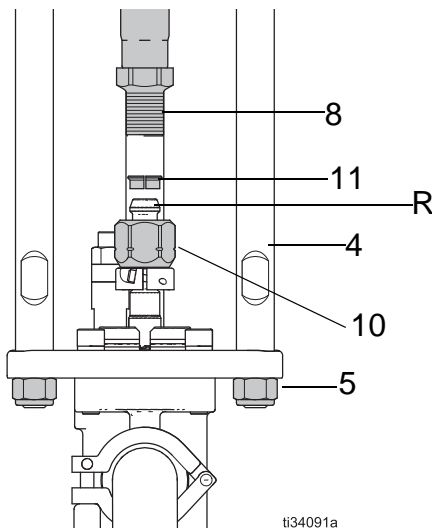
Reassembly

1. If the coupling adapter (8) and tie rods (4) have not been disassembled from the adapter plate (3), skip to step 2.

If the coupling adapter (8) and tie rods (4) have been disassembled from the adapter plate (3), follow these steps:

- a. Screw the tie rods (4) into the adapter plate (3) and torque to 50-55 ft-lb (68-75 N•m). See FIG. 5.
 - b. Install o-ring (14) into o-ring groove on coupling adapter.
 - c. Fill the cavity in the bottom of the motor shaft with grease. Lubricate the threads of the coupling adapter (8). Screw the adapter (8) into the motor shaft until the pin holes align and install the pin (6).
 - d. Continue to step 2.
2. Assemble the coupling nut (10) over the piston rod (R).
 3. Orient the lower (2) to the motor (1). Position the lower (2) on the tie rods (4).
 4. If you are reusing lock nuts (5) and the nylon of the lock nut is worn or cut, add blue thread locker to the tie rod threads.

- Screw the lock nuts (5) onto the tie rods. Leave the lock nuts (5) loose enough to allow the lower to move so that it can be aligned correctly.



- Insert the collars (11) into the coupling nut (10). Tighten the coupling nut (10) onto the coupling adapter (8) and torque to 90-100 ft-lb (122-135 N•m) to allow the pump rod to align the lower on the tie rods.
- Tighten the lock nuts and torque to 50-60 ft-lb (68-81 N•m).
- Models with Sealed 4-Ball Lower:** Install the shields (9) by engaging the bottom lips with the groove in the top plate. Snap the two shields together.

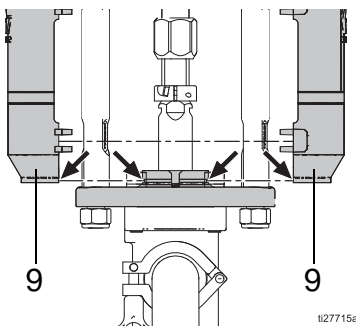
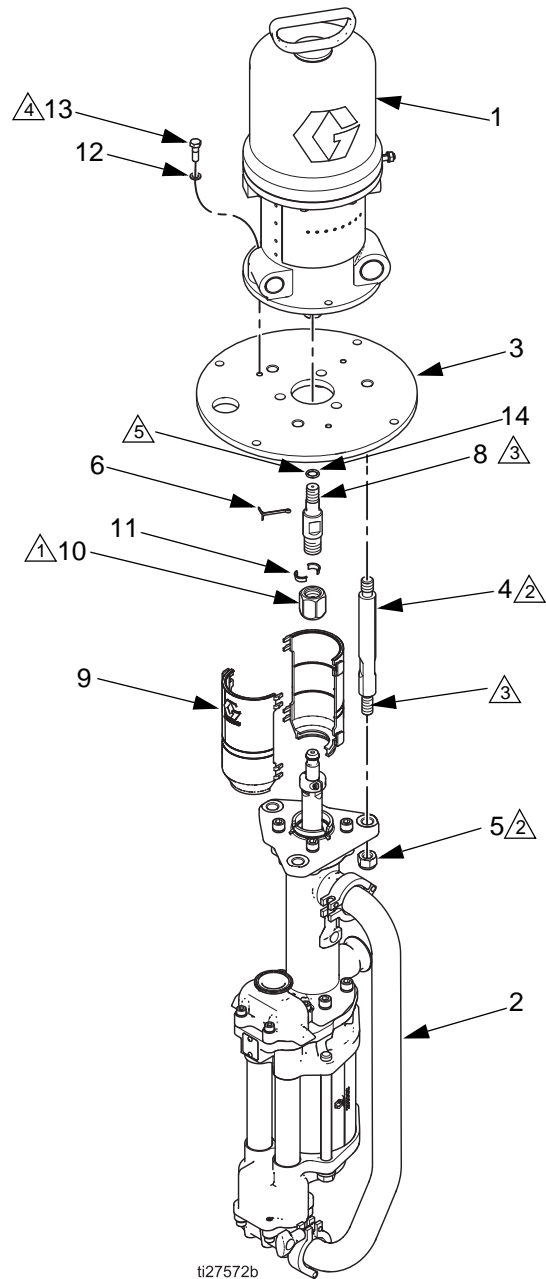


FIG. 4. Shield Reassembly

- Flush and test the pump before reinstalling it in the system. Connect hoses and flush the pump. While it is pressurized, check for smooth operation and leaks. Adjust or repair as necessary before reinstalling in the system.
- Reconnect the pump ground wire before operating.

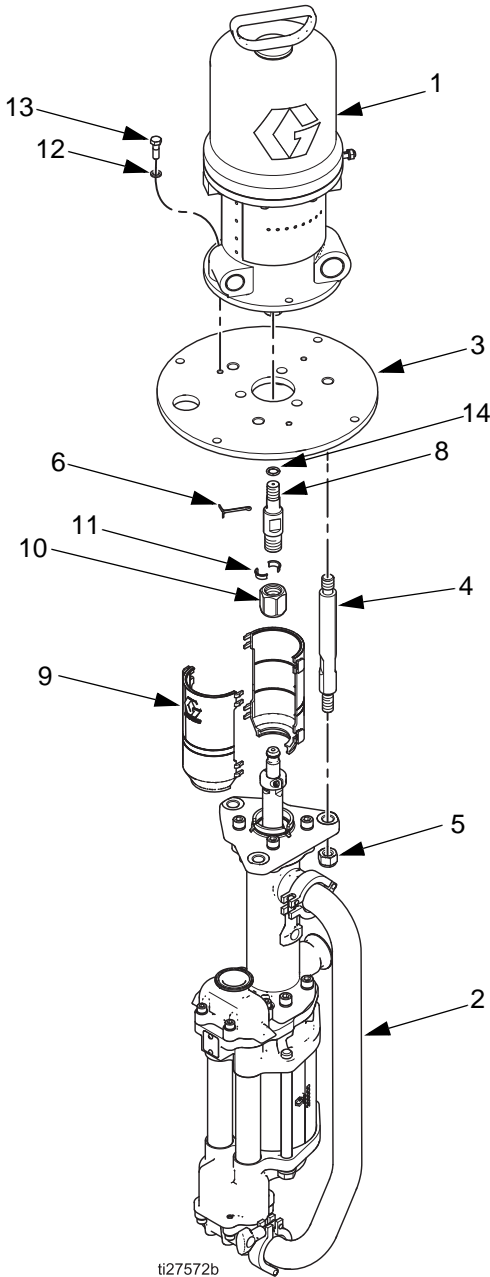


- ① Torque to 75-80 ft-lb (102-109 N•m).
- ② Torque to 50-55 ft-lb (68-75 N•m).
- ③ Apply lubricant.
- ④ Torque to 15-17 ft-lb (20-23 N•m).
- ⑤ Fill cavity with grease.

FIG. 5. Reassembly

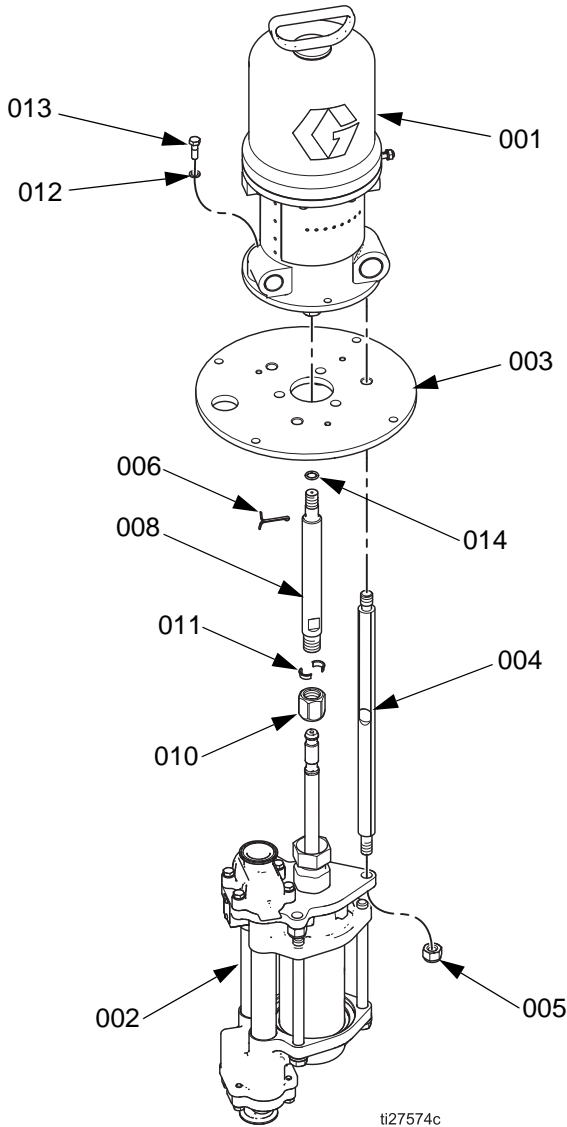
Parts

17E222 President Pump, 2:1 Ratio, Sealed, with 1000cc SST Lower
17E225 President Pump, 3:1 Ratio, Sealed, with 750cc SST Lower



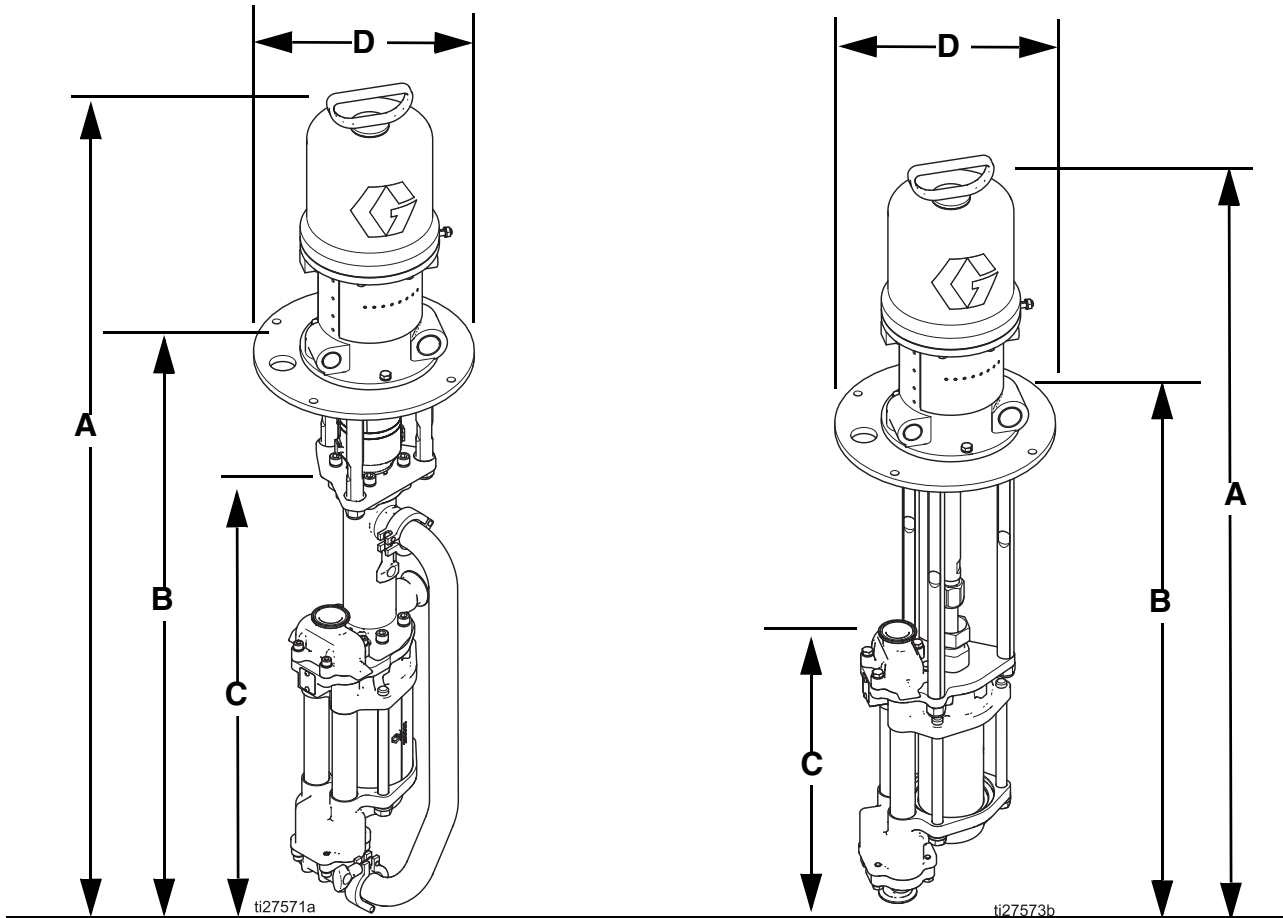
Ref. No.	Part No.	Description	Qty.
1	205038	MOTOR, air, President; see manual 306982	1
2	17K657 17K656	LOWER, 4-Ball, see manual 333022A Used on model 17E222 Used on Model 17E225	1
3	186071	PLATE, adapter	1
4	17C261	TIE ROD, 8.49 in. (215.7 mm) - 6.21 in.(157.8 mm) between shoulders	3
5	108683	NUT, lock, hex; 9/16-12 unc	3
6	101946	PIN, cotter; stainless steel	1
8	16H375	ADAPTER, coupling	1
9	24A640	SHIELD KIT; includes 2 shields	1
10	17F000	NUT, coupling	1
11	184128	COLLAR, coupling	2
12	100214	WASHER, lock	3
13	100450	SCREW, cap, hex hd; 5/16-18 x 1 in.	3
14	156082	PACKING, o-ring, 112	1

- 17E223 President Pump, 2:1 Ratio, Open, with 1000cc SST Lower
- 17E224 President Pump, 2:1 Ratio, Open, with 1000cc CST Lower
- 17E226 President Pump, 3:1 Ratio, Open, with 750cc SST Lower
- 17E227 President Pump, 3:1 Ratio, Open, with 750cc CST Lower
- 17E228 President Pump, 3:1 Ratio, Open, Stubby, with 750cc SST Lower
- 17E229 President Pump, 3:1 Ratio, Open, Stubby, with 750cc CST Lower



Ref. No.	Part No.	Description	Qty.
001	205038	MOTOR, air, President; see manual 306982	1
002		LOWER, 4-Ball, see manual 333022A	1
	17K669	Used on model 17E223	
	17K661	Used on model 17E224	
	17K668	Used on model 17E226	
	17K660	Used on model 17E227	
	17K668	Used on model 17E228	
	17K660	Used on model 17E229	
003	186071	PLATE, adapter	1
004	15G924	TIE ROD, 16.55 in. (420 mm) -14.25 in. (362 mm) between shoulders)	3
	16H434	TIE ROD, 8.37 in. (210 mm) - 10.8 in.(274 mm) between shoulders. (Used on Models 17E228 and 17E229.)	3
005	108683	NUT, lock, hex; 9/16-12 UNC	3
006	101946	PIN, cotter; stainless steel	1
008	16H544	ADAPTER, coupling	1
	16H375	ADAPTER, coupling (Used on Models 17E228 and 17E229)	
010	17F000	NUT, coupling	1
011	184128	COLLAR, coupling	2
012	100214	WASHER, lock	3
013	100450	SCREW, cap, hex hd; 5/16-18 x 1 in.	3
014	156082	PACKING, o-ring, 112	1

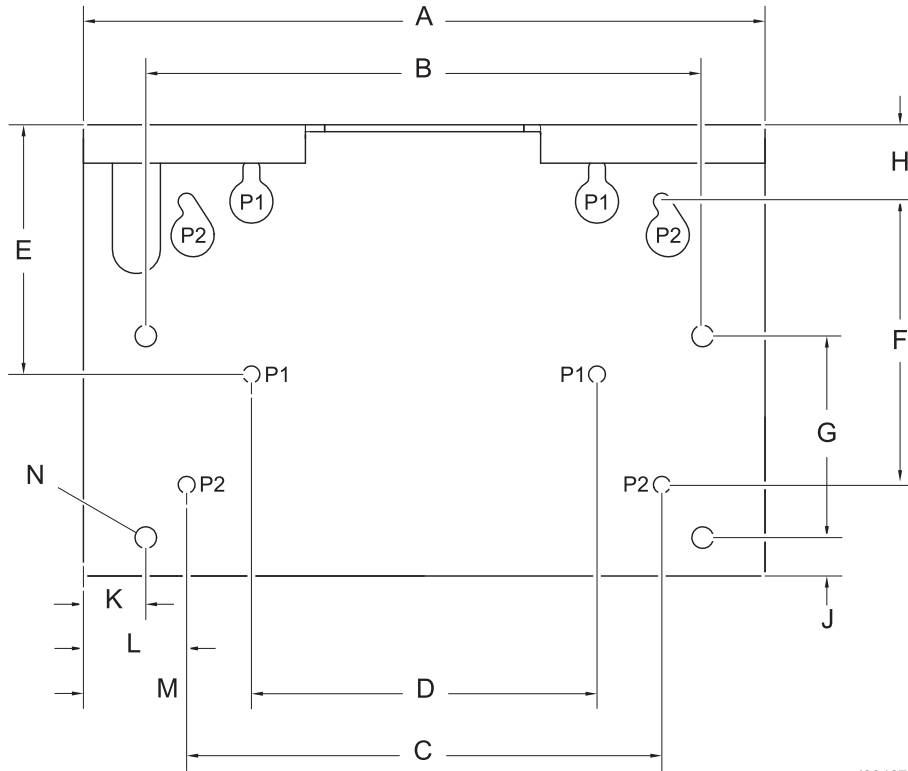
Dimensions



Model	Lower Size	Type	Length	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	Approx. Weight lb (kg)
17E222	1000cc	Sealed	Standard	49 (1244)	32 (813)	25 (635)	11.5 (292)	102 (46)
17E225	750cc	Sealed	Standard					101 (45)
17E228	750cc	Open	Stubby	40 (1016)	21 (533)	14 (355)		71 (32)
17E229	750cc	Open	Stubby					74 (34)
17E223	1000cc	Open	Standard	46 (1168)	29 (736)	14 (355)		74 (34)
17E224	1000cc	Open	Standard					73 (33)
17E226	750cc	Open	Standard					
17E227	750cc	Open	Standard					

Mounting Hole Layouts

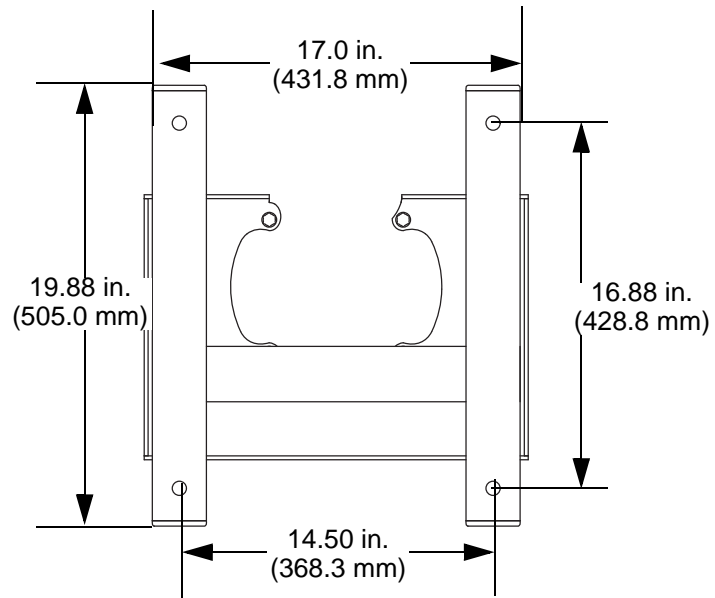
255143 Wall Bracket Accessory



ti20467a

A	17.8 in. (451 mm)
B	14.5 in. (368 mm)
C	12.4 in. (314 mm)
D	9.0 in. (229 mm)
E	5.4 in. (137 mm)
F	7.4 in. (187 mm)
G	5.3 in. (133 mm)
H	2.0 in. (51 mm)
J	1.0 in. (25 mm)
K	1.6 in. (41 mm)
L	2.7 in. (69 mm)
M	4.4 in. (112 mm)
N	Four 0.562 in. (14 mm) diameter holes for mounting to stand
P	Four 0.438 in. (11 mm) diameter holes for mounting to wall

Model 253692 Floor Stand Accessory



TI15859a

Performance Charts

Fluid Outlet Pressure

To find fluid outlet pressure (MPa/bar/psi) at a specific flow (lpm/gpm) and operating pressure (A/B/C):

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

Air Consumption

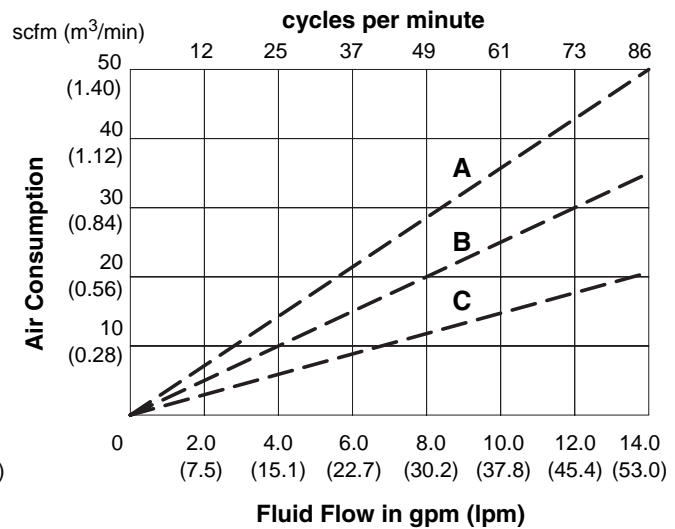
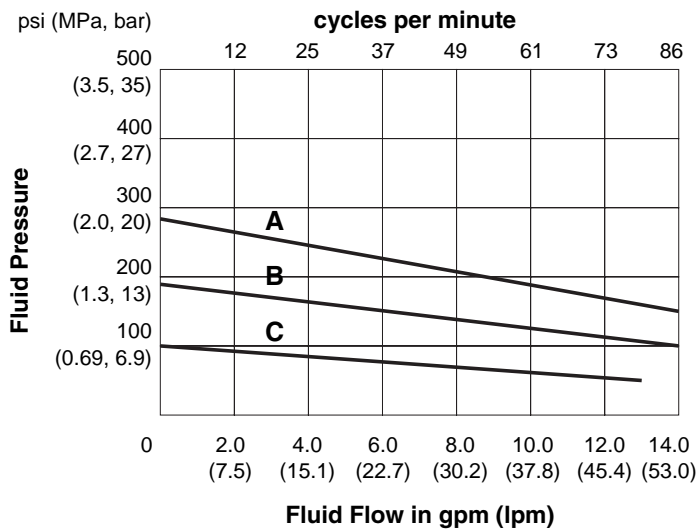
To find air consumption (l/min. or gpm) at a specific fluid flow (l/min. or gpm) and operating pressure (A/B/C):

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

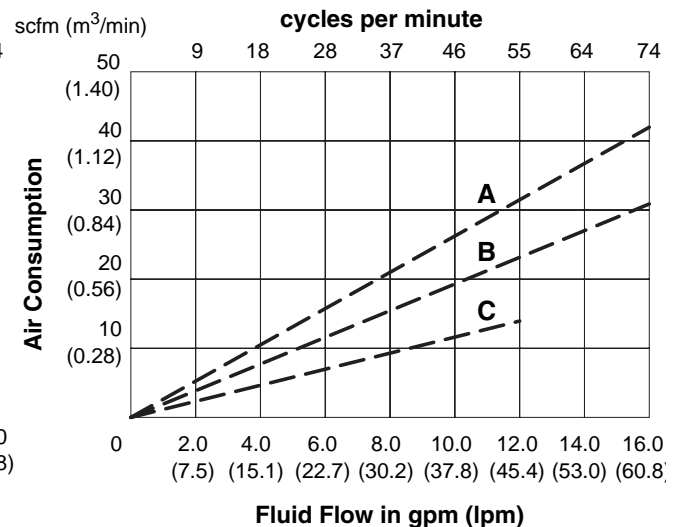
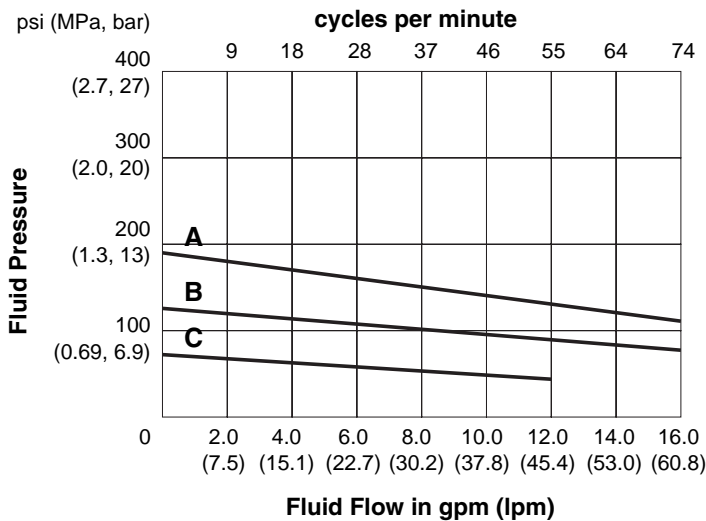
Key

- A** 0.7 MPa, 7 bar (100 psi) air pressure
 - B** 0.5 MPa, 4.9 bar (70 psi) air pressure
 - C** 0.3 MPa, 2.8 bar (40 psi) air pressure
- Test Fluid:** No. 10 Weight Oil

3:1 President with 750cc Lower



2:1 President with 1000cc Lower



Technical Data

President 4 Ball Pumps		
	U.S.	Metric
Lower Size		
17E222,17E223, 17E224	1000cc	1000cc
17E225,17E226 17E227, 17E228, 17E229	750cc	750cc
Maximum Fluid Working Pressure	460 psi	3.2 MPa, 32.0 bar
Maximum Air Input Pressure		
17E222,17E223, 17E224	180 psi	1.2 MPa, 12 bar
17E225,17E226 17E227, 17E228, 17E229	150 psi	1.0 MPa, 10 bar
Air Consumption	See Performance Charts in Manual	See Performance Charts in Manual
Fluid Flow at 60 cycles per minute gpm (lpm)		
17E222,17E223, 17E224	14.1 gpm	53.5 lpm
17E225,17E226 17E227, 17E228, 17E229	9.6 gpm	36.4 lpm
Output per Cycle gal (cc)		
17E222,17E223, 17E224	0.23 gal	890cc
17E225,17E226 17E227, 17E228, 17E229	0.16 gal	610cc
Maximum Fluid Temperature Rating	150°F	66°C
Sound Pressure Levels: Input Air Pressures at 15 cycles per minute (measured at 1 meter from unit)		
President Air Motor at 40 psi (0.28 MPa, 2.8 bar)	73.6 dB(A)	73.6 dB(A)
President Air Motor at 70 psi (0.48 MPa, 4.8 bar)	78.3 dB(A)	78.3 dB(A)
President Air Motor at 100 psi (0.7 MPa, 7.0 bar)	80.9 dB(A)	80.9 dB(A)
Sound Power Levels: Input Air Pressures at 15 cycles per minute (tested in accordance with ISO 9614-2)		
President Air Motor at 40 psi (0.28 MPa, 2.8 bar)	87.4 dB(A)	87.4 dB(A)
President Air Motor at 70 psi (0.48 MPa, 4.8 bar)	92.1 dB(A)	92.1 dB(A)
President Air Motor at 100 psi (0.7 MPa, 7.0 bar)	94.6 dB(A)	94.6 dB(A)

Air inlet size: 1/2 npt(f), Fluid inlet size: 1-1/2 npt(f), Fluid outlet size: 1 npt(f),
Wetted parts: See 4-Ball Lower manual 3A3452 (Open Wet Cup) or 333022 (Sealed).

NOTE: See President motor manual (306982) for sound data at higher air pressures.

Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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

The Parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés, à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

Graco Information

For the latest information about Graco products, visit www.graco.com.

For patent information, see www.graco.com/patents.

TO PLACE AN ORDER, contact your Graco distributor or call to identify the nearest distributor.

Phone: 612-623-6921 **or Toll Free:** 1-800-328-0211 **Fax:** 612-378-3505

All written and visual data contained in this document reflects the latest product information available at the time of publication. Graco reserves the right to make changes at any time without notice.

Original instructions. This manual contains English. MM 3A3383

Graco Headquarters: Minneapolis

International Offices: Belgium, China, Japan, Korea

GRACO INC. AND SUBSIDIARIES • P.O. BOX 1441 • MINNEAPOLIS MN 55440-1441 • USA

Copyright 2015, Graco Inc. All Graco manufacturing locations are registered to ISO 9001.

www.graco.com

Revision E, November 2019