Instructions - Parts List

3:1 Fire-Ball® 425 Pump

308485T

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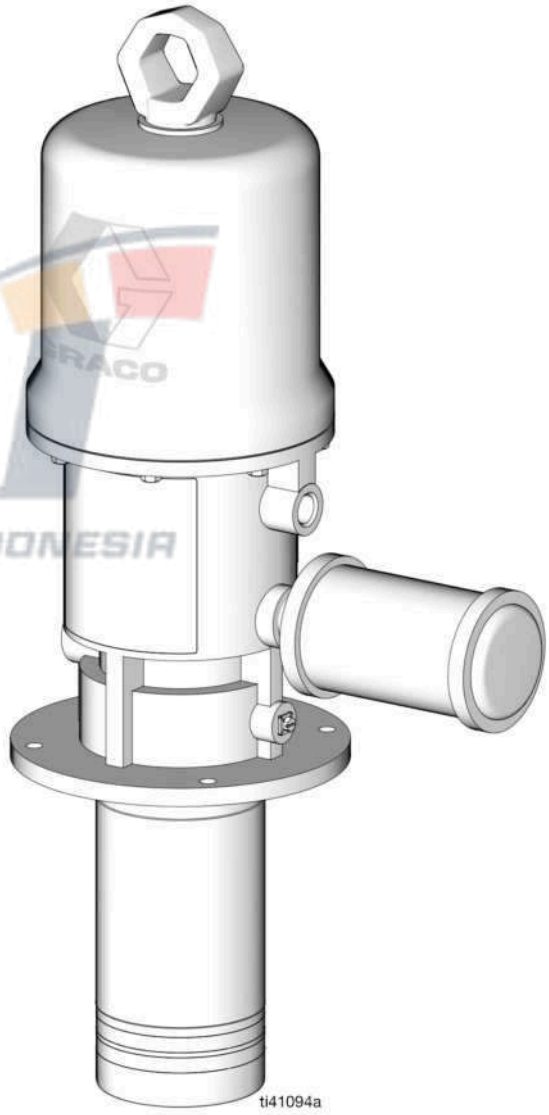
For pumping non-corrosive and non-abrasive oils and lubricants only. For professional use only.

Model 237526, Series B

540 psi (3.7 MPa, 37 bar) Maximum Working Pressure
180 psi (1.2 MPA, 12 bar) Maximum Air Input Pressure

Important Safety Instructions

Read all warnings and instructions in this manual before using the equipment. Save these instructions.



Related Manuals

Manual in English	Description
308201	Pump Runaway Valve

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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.

⚠WARNING




EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- 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 Specifications** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Specifications** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) from distributor or retailer.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- 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.







SKIN INJECTION HAZARD

High-pressure fluid from dispensing device, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Do not point dispensing device at anyone or at any part of the body.
- Do not put your hand over the fluid outlet.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Use only extensions and no-drip tips that are designed for use with your dispensing valve.
- Do not use a low-pressure flexible nozzle with this equipment.
- Follow the **Pressure Relief Procedure** when you stop dispensing and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses and couplings daily. Replace worn or damaged parts immediately.
- Fluid hoses must have spring guards on both ends to help protect them from rupture caused by kinks or bends near the couplings.

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⚠WARNING



TOXIC FLUID OR FUMES HAZARD

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

- Read Safety Data Sheets (SDSs) 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.



PRESSURIZED ALUMINUM PARTS HAZARD

Use of fluids that are incompatible with aluminum in pressurized equipment can cause serious chemical reaction and equipment rupture. Failure to follow this warning can result in death, serious injury, or property damage.

- Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.
- Do not use chlorine bleach.
- Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.





FIRE AND EXPLOSION HAZARD

When flammable fluids are present in the work area, such as gasoline and windshield wiper fluid, be aware that flammable fumes can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well-ventilated area.
- Eliminate all ignition sources, such as cigarettes and portable electric lamps.
- Ground all equipment in the work area.
- Keep work area free of debris, including rags and spilled or open containers of solvent and gasoline.
- Do not plug or unplug power cords or turn lights on or off when flammable fumes are present.
- Use only grounded hoses.
- **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.





MOVING PARTS HAZARD

Moving parts can pinch, cut or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** and disconnect all power sources.



PERSONAL PROTECTIVE EQUIPMENT

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:

- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

Typical Installation

The typical installation shown in FIG. 1 is only a guide for selection and installation of a pump. It is not an actual system design. Contact your Graco representative or Graco distributor for assistance in the design of a suitable system.

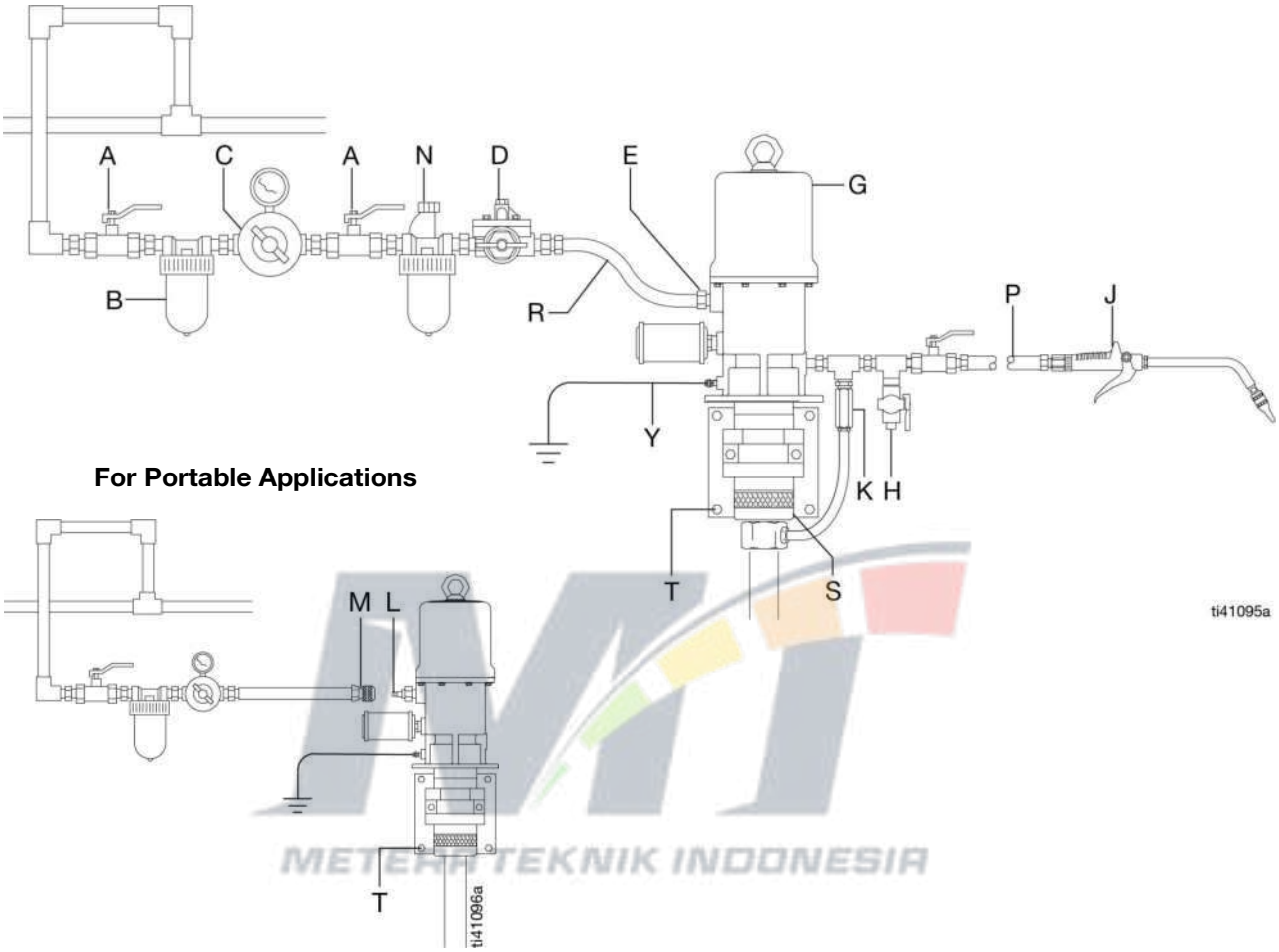


FIG. 1: Typical Installation

Key:

A Bleed-type master air valve (required)
B Air line filter
C Air regulator and gauge
D Pump runaway valve (shown for position) - not needed if using a low-level cut-off valve
E Air inlet
G Pump (Model 237526 shown)
H Fluid drain valve (required)
J Dispensing valve (model 222411 shown)
K Thermal relief kit (required) Part No. 237601
L Male quick-disconnect pin fitting (alternative to A)
M Female quick-disconnect coupler (alternative to A)
N Air line lubricator
P Fluid hose
R Electrically conductive air hose (218093 shown)
S Fluid inlet, 1-1/2 npt
T Wall mounting bracket Part No. 238245
Y Ground wire (required)

NOTICE

Always mount the pump firmly to a bracket or a tank cover. Do not operate the pump if it is not mounted, doing so could damage the pump and the fittings.

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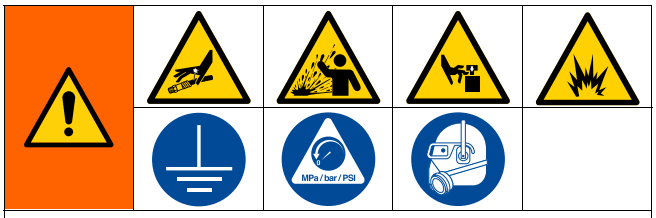
Installation

System Accessories

NOTICE

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

Install the accessories shown in FIG. 1.



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

The air bleed device relieves air trapped between it and the air motor after the air supply is shut off. Trapped air can cause the air motor to cycle unexpectedly, causing serious bodily injury when adjusting or repairing the pump. Use either a bleed-type master air valve (A) or a quick-disconnect coupler (M) with male quick-disconnect pin fitting (L). Install near the pump air inlet, within easy reach of the pump.

The fluid drain valve (H) assists in relieving fluid pressure in the displacement pump, hoses and dispensing valve. Triggering the dispensing valve (J) to relieve pressure may not be sufficient.

The thermal relief kit (K) assists in relieving pressure in the pump, hose, and dispensing valve due to heat expansion.

The ground wire (Y) reduces the risk of static sparking.

- Install an air line lubricator (N) for automatic air motor lubrication.
- Install bleed-type master air valves (A) to relieve air trapped between it and the motor when the valve is closed, and to isolate the accessories for servicing. See FIG. 1. To order a 1/2 npt, 300 psi (2.1 MPa, 21 bar) maximum working pressure bleed-type master air valve, order Part No.107142.

  As an alternative to a bleed-type master air valve, installation of an air line female quick-disconnect coupler (M) and a male quick-disconnect pin fitting (L) (see FIG. 1) can serve as an air-bleed device.
- Install an air regulator (C) to control the pump speed and pressure.
- Install an air line filter (B) to remove harmful dirt and contaminants from the compressed air supply.
- Install a drain valve (H) near the pump fluid outlet to relieve fluid pressure in the hoses and gun when opened. To order a fluid drain valve, order Part No. 210658.
- Install a suitable fluid hose (P) and dispensing valve (J).
- Install a pump runaway valve (D) to shut off the air to the pump if the pump accelerates beyond the pre-adjusted setting, which can be caused by a depleted fluid supply. A pump that runs too fast can be seriously damaged. To order a 3/4 npt(f) inlet and outlet pump runaway valve, order Part No. 215362.
- Install a thermal relief kit (K) to relieve pressure in the fluid line caused by heat expansion. To order a 600 psi (4.1 MPa. 41 bar) minimum relief pressure, 630 psi (4.4 MPa, 44 bar) maximum relief pressure thermal relief kit, order Part No. 237601.

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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.

Follow local electrical code for detailed grounding instructions.

Pump:

Refer to FIG. 2 for the following instructions.

1. Remove the ground screw (Z) located on the side of the pump base.
2. Insert the ground screw (Z) through the eye of the ring terminal (W) located at the end of the ground wire (Y).
3. Fasten the ground screw (Z) back onto the back of the pump and tighten the screw securely.
4. Connect the other end of the ground wire (Y) to a true earth ground. To order a ground wire and clamp, order Part No. 222011.

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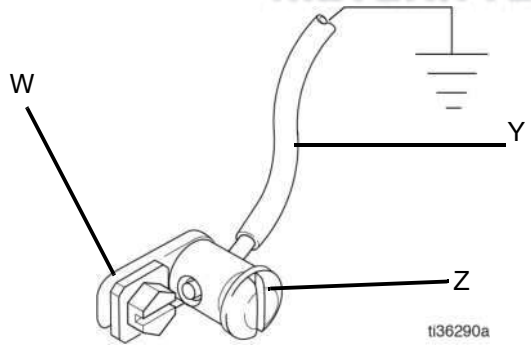


FIG. 2

Air and fluid hoses: use only electrically conductive hoses.

Air compressor: follow manufacturer's recommendations.

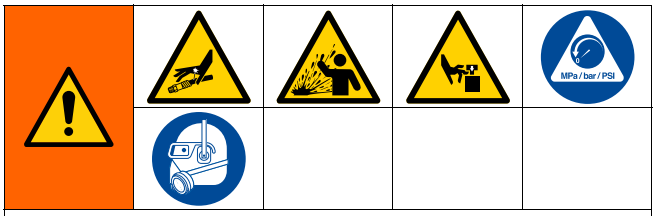
Fluid supply container: follow local code.

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

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 pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop dispensing and before cleaning, checking, or servicing the equipment.

Do not lift pressurized equipment.

1. Close the pump air regulator (C) and the bleed-type master air valves (A) (required in the system) or disengage the female quick-disconnect coupler (M).
2. Hold a metal part of the dispensing valve (J) firmly to a grounded metal waste container and trigger the valve to relieve the fluid pressure.
3. Open the drain valve (H).

If it is suspected that the nozzle or hose is completely clogged, or that pressure has not been fully relieved after following the **Pressure Relief Procedure**:

Wrap a rag around the hose and coupling and relieve pressure gradually by very slowly partially loosening the fitting. Then loosen completely and clear the obstruction.

Start Up and Adjustment



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

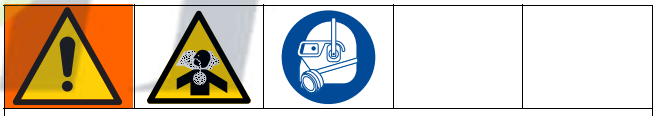
Limit the air to the pump so that no air line or fluid line component or accessory is over-pressurized.

To determine the fluid output pressure using the air regulator reading, multiply the ratio of the pump by the air pressure shown on the regulator gauge. For example:

3 (:1) ratio x 180 psi air = 540 psi fluid output

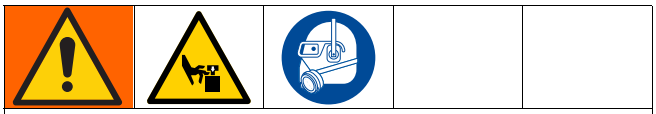
3 (:1) ratio x 12 bar air = 36 bar fluid output

3 (:1) ratio x 1.2 MPa air = 3.6 MPa fluid output



The air motor exhaust coming out of the muffler could contain harmful materials, such as oil, anti-freeze, or some of the material being pumped.

Wear appropriate protective equipment when in the work area to help prevent serious injury, including inhalation of toxic fumes.



Do not operate the pump without the muffler installed. When the muffler is not installed, the air motor is exposed, and it could cut your fingers if they are pushed into the muffler opening

1. With the air regulator (C) closed, open the bleed-type master air valve (A), or, if so equipped, join the female quick-disconnect coupler (M) to the male quick-disconnect pin fitting (L).
2. Open the dispensing valve (J) into a grounded metal waste container, making firm metal-to-metal contact between the container and valve.

3. Open the pump air regulator (C) slowly, just until the pump is running. When the pump is primed and all of the air has been pushed out of the lines, close the dispensing valve.

NOTE: When the pump is primed, and with sufficient air supplied, the pump starts when the dispensing valve is opened and shuts off when it is closed.

4. If the system is equipped with a runaway valve (D), set it for the system configuration. See Pump Runaway Valve manual for setting instructions.

5. Adjust the air regulator (C) until there is sufficient flow from the dispensing valve (J). Always run the pump at the lowest speed necessary for the desired results, making sure not to exceed the maximum working pressure of any component in the system.

NOTE: Stop the pump if it is accelerating too quickly or is running too fast, and check the fluid supply. If the supply container is empty and air has been pumped into the lines, prime the pump and lines with fluid, or flush it and leave filled with a compatible solvent. Ensure that all air is eliminated from the fluid lines. If the system has a runaway valve, reset it according to the instructions in the Pump Runaway Valve manual.



Do not allow the pump to run dry of the fluid being pumped. A dry pump will quickly accelerate to a high speed, possibly damaging itself, and it may become very hot.

6. Read and follow the instructions supplied with each of your system components.

7. If the pump will be unattended for any period of time, if there is an air supply interruption, or to shut off the system at the end of the work shift, relieve pressure following the **Pressure Relief Procedure**, page 8.

8. Periodically check that the pump's mounting is secure.

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Recycling and Disposal

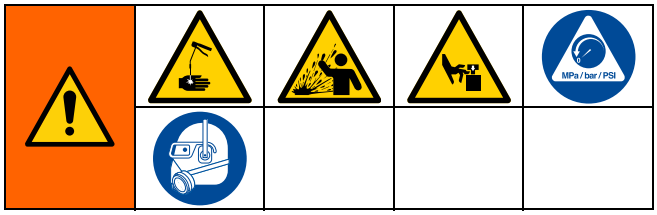
End of Product Life

At the end of the product's useful life, dismantle and recycle it in a responsible manner.

- Follow the **Pressure Relief Procedure**, page 8.
- Drain and dispose of fluids according to applicable regulations. Refer to the material manufacturer's Safety Data Sheet.
- Deliver remaining product to a recycling facility.

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Troubleshooting



Follow **Pressure Relief Procedure**, page 8, before checking or repairing the pump.

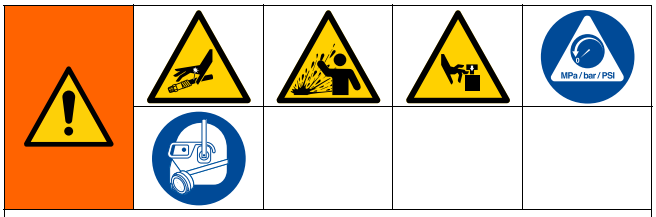
Check all possible problems and causes before disassembling pump.

Problem	Cause	Solution
Pump fails to operate.	Inadequate air supply pressure or restricted air lines	Increase air supply; clear
	Closed or clogged dispensing valve	Open; clear
	Clogged fluid lines, hoses, valves, or other components	Clear*
	Damaged air motor	Service air motor
	Exhausted fluid supply	Refill and re-prime or flush
Continuous air exhaust	Worn or damaged air motor gasket, packing, seal, or other components.	Service air motor
Erratic pump operation	Exhausted fluid supply	Refill and re-prime or flush
	Held open or worn intake valve or piston packings	Clear; service
Pump operates, but output low on up stroke	Held open or worn piston packings	Clear; service
Pump operates, but output low on down stroke	Held open or worn intake valve	Clear; service
Pump operates, but output low on both strokes	Inadequate air supply pressure or restricted air lines	Increase air supply; clear
	Closed or clogged valves	Open; clear

*Follow the **Pressure Relief Procedure**, page 8, then disconnect the fluid line. If the pump starts when the air is turned on again, there is a clog in the line, hose, valve, or other components.

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Repair



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

Air Motor and Throat

Refer to FIG. 3 for the following instructions.

Disassembly

Two accessory tools should be used: Padded Pliers, 207579, are used to grip the trip rod without damaging the surface, and a 0.125 in. (3.18 mm) Gauge, 171818, is used to assure the proper clearance between the poppets and seat of the piston.

1. Flush the pump.
2. Relieve pressure. Follow the **Pressure Relief Procedure**, page 8.
3. Disconnect the hoses, remove the pump from its mounting, and clamp the air motor base (28) in a vise horizontally by closing the vise jaws on the flange.
4. Use a strap wrench on the displacement pump cylinder (110) to unscrew it out of the air motor base (28).
5. Remove the air motor base from the vise, and place the piston rod (29) flats in the vise with the air motor facing up.
6. Loosen the lift ring (24). Pull up the lift ring, grip the trip rod (31) with the padded pliers, and screw the lift ring off of the rod.

NOTICE

Do not damage the plated surface of the trip rod (31). Damaging the surface of the trip rod can result in erratic air motor operation. Use the padded pliers (207579) to grasp the rod.

7. Remove the piston ball (103), the u-cup packing (107†), and the piston washer (113).
8. Remove the six screws (3) holding the cylinder (30) to the base (28). Carefully pull the cylinder straight up off of the piston assembly (27).

NOTICE

Lift the cylinder straight up off of the piston to avoid damaging the cylinder wall. Never tilt the cylinder as it is being removed.

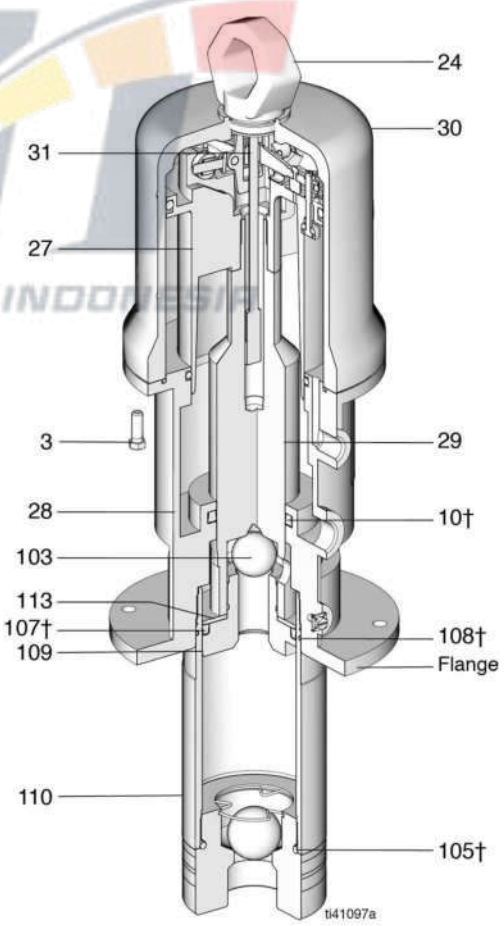


FIG. 3

†Included in Pump Repair Kit 238225, which may be purchased separately.

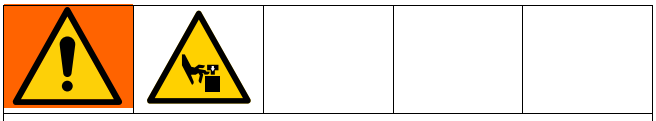
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9. Pull the piston assembly from the air motor base (28) and set it aside.

10. Remove the pump seal (10†) with a pick, and clean the groove in the air motor base (28). Remove any dirt from the groove and wipe the groove clean with a cloth.

11. Inspect the air motor for damaged or worn inlet valve grommets (17*), o-rings (19*, 20*), valve nuts (21*), lock wires (22*), exhaust valve poppets (26*), or inlet valve poppets (32*).

    If any of these parts need to be replaced, continue with the remaining Disassembly steps. Otherwise, go to **Reassembly**, page 14.



To reduce the risk of pinching or amputation of fingers, keep fingers clear of the toggle assemblies when snapping the toggles (M in FIG. 4) up or down.

12. Using a screwdriver, push down on the trip rod yoke (13), and snap the toggles down (FIG. 4).

13. For this step, while prying with the screwdriver with one hand, cover the toggle assemblies with the other hand to catch the spring-loaded toggle assemblies as they snap out of the lugs. Place the tip of the screwdriver into the piston between the piston lugs (L) below the pivot pins (16) on the toggles, pry up using the screwdriver handle to compress the springs on the toggle assembly (M) up and away from the piston lugs, and remove the parts (FIG. 4).

14. Straighten the lock wires (22*) and remove them from the valve nuts (21*). Screw the top nuts off. Remove the trip rod yoke (13), actuator (12), and trip rod (31). Unscrew the bottom nuts (21*) and remove the poppets. Make sure the valve bar spring clips (14) are not worn or damaged, and that they properly guide the actuator (12).

15. Remove the exhaust valve poppets (26) by cutting them with a side cutter, then pull them out of the actuator (12).

16. Clean all of the parts carefully in a compatible solvent and inspect them for wear or damage. Use all of the repair kit parts during reassembly, and replace other parts as necessary.

17. Check the surfaces of the piston, piston rod, and cylinder wall for scratches or wear. A scored rod will cause premature packing wear and leaking.

18. Lubricate all of the parts with a light, waterproof grease.

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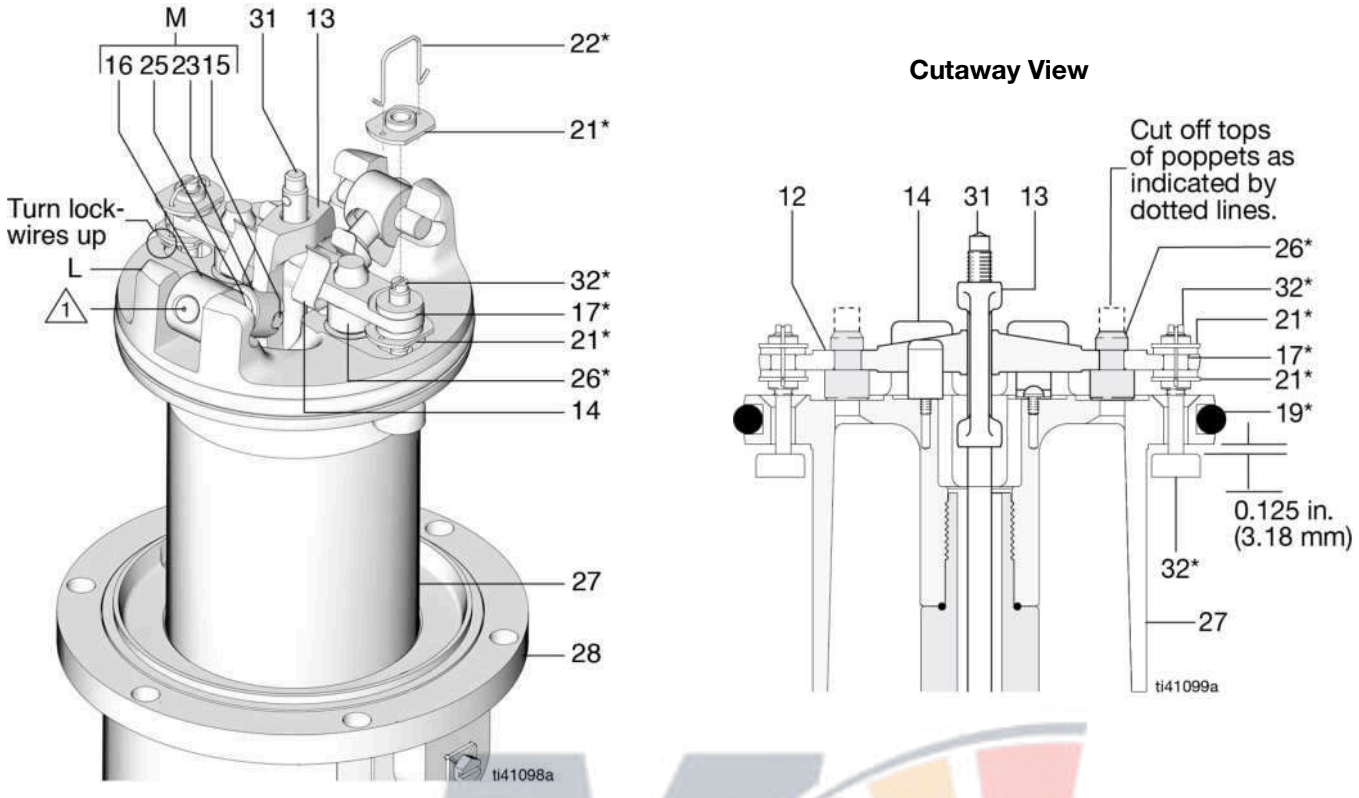


FIG. 4 Air Motor and Throat

Reassembly

Ensure that all necessary parts are on hand. Air Motor Repair Kit 207385 includes repair parts for the motor. For best results, use all of the parts in the kit. Parts included in the kit are marked with an asterisk in the text and drawings, for example (19*). See **Air Motor Parts List**, page 19.

1. Place the piston rod (29) flats in the vise with the air motor facing up.
2. Pull the exhaust valve poppets (26*) into the valve actuator (12), and clip off the top parts of the poppets (shown with dotted lines in the Cutaway View in FIG. 4).
3. Install the grommets (17*) in the actuator (12), place the inlet valve poppets (32*) in the piston, and thread the bottom valve nuts (21*) onto the inlet valve poppets until there are a few threads left before the threads run out.

NOTE: If the valve nuts are threaded too far down onto the poppets, they will run off of the threaded part of the poppets.

4. Grease heavily and place the trip rod (31) in the piston, place the actuator (12) in the yoke (13), and place the well-greased actuator/yoke assembly in the piston, with the trip rod going through the center holes of the actuator and yoke and the inlet valve poppets (32*) going through the grommets (17*).
5. Thread the top valve nuts (21*) onto the inlet valve poppets (32*) until one thread of the inlet valve poppets is exposed above the valve nuts.
6. Install the toggle pins (15) in the yoke (13), place the toggle arm (23) ends of the toggle assembly (M) onto the toggle pins, and snap the pivot pin (16) ends of the toggle assembly into the lugs (L).
7. Measuring with the gauge (Part No. 171818), create 0.125 in. (3.18 mm) of clearance between the inlet valve poppets (32*) and the piston seat when the inlet valve is open. See the Cutaway View in FIG. 4.

NOTE: Adjust the distance between the inlet valve poppets and the piston seat by turning the top valve nuts (21*).

8. Hand-tighten the bottom valve nuts (21*) securely.

NOTICE

Do not reuse the old lock wires. They become brittle and break from too much bending. During installation of new lock wires, avoid bending too severely to prevent breaking.

9. Align the holes in the valve nuts (21*) and the slots on the top of the inlet valve poppets (32*), and drop the lock wires (22*) through the holes in the valve nuts and into the slots in the inlet valve poppets. Pull the lock wires down tightly, and bend the ends with pliers so that they cannot be pulled back out of the holes.
10. Grease and install the new o-rings (19*, 20*) on the piston assembly (27) and in the groove in the air motor base (28).
11. Grease and reinstall the pump seal (10†) in the groove in the air motor base (28).
12. Slide the piston rod (29) down through the packing, and lower the piston assembly (27) into the air motor base (28).
13. Clamp the air motor base (28) in a vise horizontally by closing the vise jaws on the flange.
14. Install the u-cup packing (107†) with the lips facing up, and place the piston washer (113) on the piston/valve sear (109). Make sure that the lips of the u-cup packing face up (FIG. 3).
15. Place the piston ball (103) in the piston rod (29).
16. Clean the threads of the piston/valve seat. Apply thread locking compound to the threads (109), and thread the assembly from step 14. onto the piston rod (29).
17. Clamp the flats of the piston/valve sear (109) in a vise. Using a crow's foot wrench, torque the piston rod (29) to the piston valve seat to 40 to 60 ft.-lbs (54 to 81 N•m)
18. Clamp the air motor base (28) in a vise horizontally by closing the vise jaws on the flange.
19. Use a strap wrench to screw the displacement pump cylinder (110) to the air motor base (28). Using a crow's foot wrench, and torque to 95 to 105 ft.-lbs (129 to 142 N•m).
20. Before remounting the pump, connect an air hose and run the air motor slowly, at about 40 psi (0.28 MPa, 2.8 bar), to make sure that it operates smoothly.
21. Reconnect the ground wire before regular operation of the pump.

Displacement Pump

Disassembly

Displacement Pump Repair Kit 237602 includes repair parts for the pump throat and piston. For best results, use all of the parts in the kit. Parts included in the kit are marked with a dagger, for example (7†), in the text and drawings. See **Parts List**, page 17.

1. Flush the pump.
2. Relieve pressure. Follow the **Pressure Relief Procedure**, page 8.
3. Disconnect the hoses, remove the pump from its mounting, and clamp the air motor base (28) in a vise horizontally by closing the vise jaws on the flange.

Intake Valve

Refer to FIG. 5 for the following instructions.

1. Relieve pressure. Follow the **Pressure Relief Procedure**, page 8.
2. Unscrew the valve housing (111). Remove the o-ring (105†), retainer (112), and ball (104).
3. Inspect the parts for wear or damage. If the ball is nicked, replace it. Reassemble, using grease on the male threads.

Displacement Pump

Refer to FIG. 5 for the following instructions.

Clean and inspect all parts for wear or damage during disassembly. Replace parts as needed. For best results, always replace all of the o-rings and packings during disassembly of the pump.

1. Relieve pressure. Follow the **Pressure Relief Procedure**, page 8.
2. Follow steps 1 to 5. of **Air Motor and Throat Disassembly**, page 12.
3. Carefully inspect the smooth inner surface of the cylinder (110) for scoring or irregular surfaces. Such damage causes premature seal wear and leaking. Replace the cylinder as needed.

Reassembly

Follow steps 14 through 21 of **Air Motor and Throat Reassembly**, beginning on page 15.

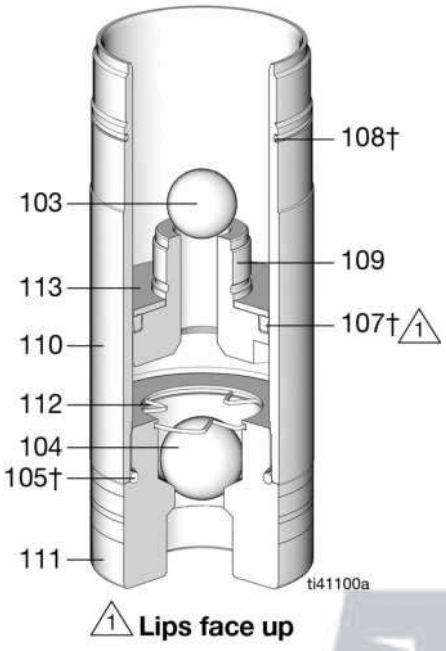


FIG. 5

†Included in Pump Repair Kit 237602, which may be purchased separately.

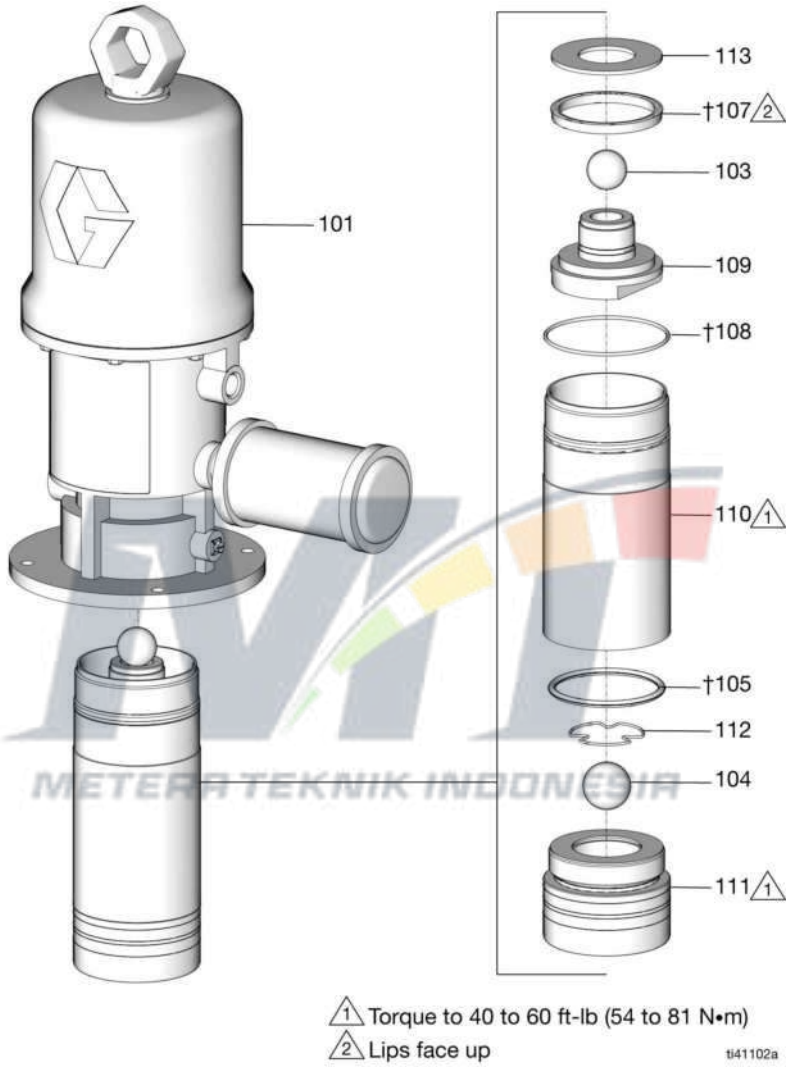
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Parts

Pump

Model 237526, Series B

Air motor not listed or shown here. See pages 18 and 19.



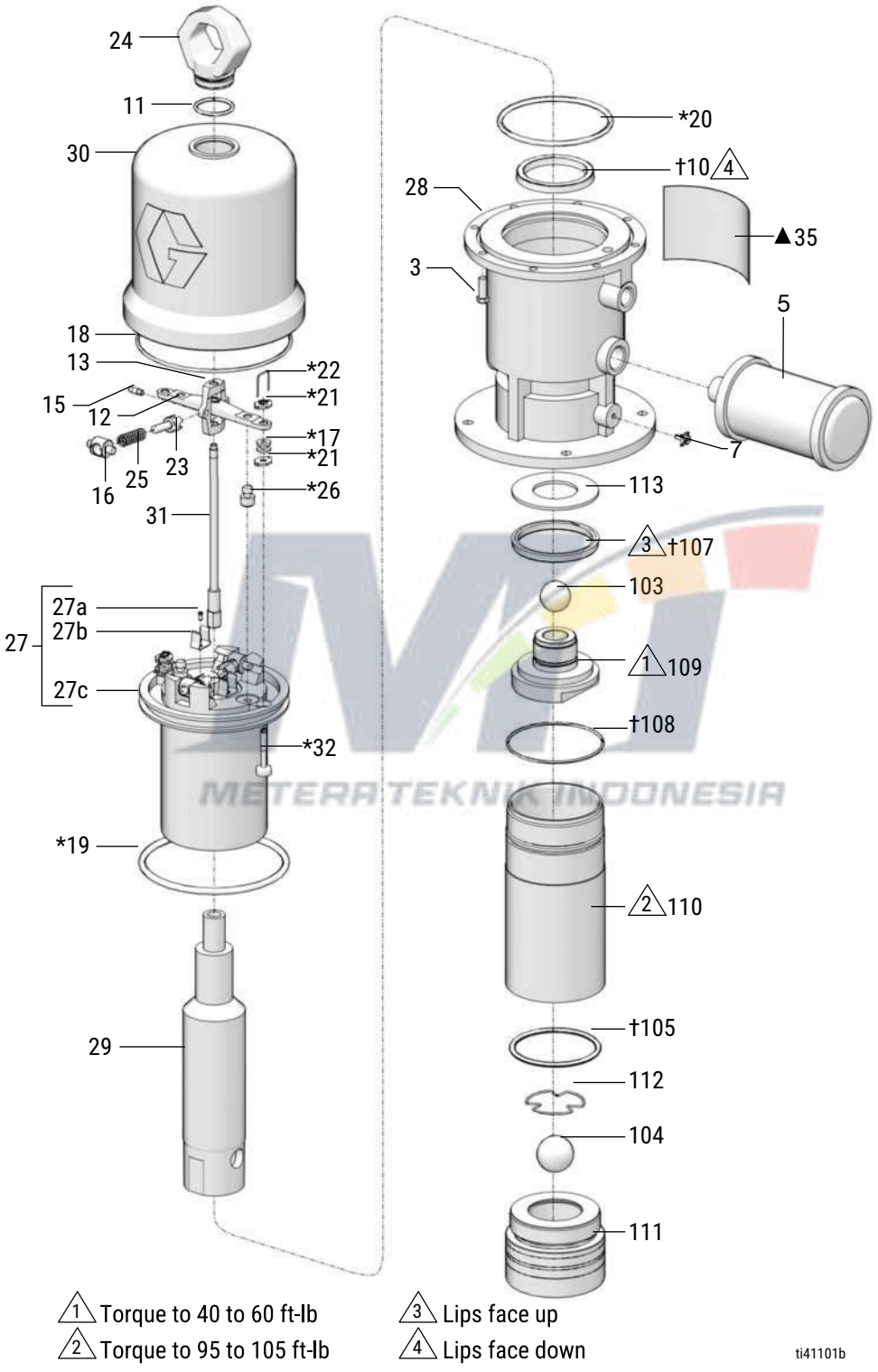
Parts List

Ref.	Part	Description	Qty.
10†	112130	SEAL, u-cup (shown on page 18)	1
101		MOTOR, air, see page 18	1
103	101178	BALL, piston; metallic	1
104	108001	BALL; sst	1
105†	110828	PACKING, o-ring	1
107†	112565	PACKING, u-cup	1
108†	166071	PACKING, o-ring	1
109	189707	PISTON	1
110	189708	CYLINDER, pump	1
111	189709	VALVE HOUSING	1
112	189710	RETAINER, ball	1
113	189711	WASHER, piston	1

† *Parts included in Pump Repair Kit 237602 (purchase separately).*

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Air Motor



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Air Motor Parts List

Ref.	Part	Description	Qty.
3	101578	SCREW, cap, hex hd	8
5	102656	MUFFLER, air exhaust	1
7	116343	SCREW, ground	1
10†	112130	SEAL, u-cup	1
11	156698	PACKING, o-ring	1
12	158359	ACTUATOR, air valve	1
13	158360	YOKE, trip rod	1
15	158362	PIN, toggle	2
16	158364	PIN, pivot	2
17*	158367	GROMMET, inlet valve	2
18	158377	PACKING, ring seal	1
19*	158378	PACKING, o-ring	1
20*	158379	PACKING, o-ring	1
21*	160261	NUT, valve	4
22*	160618	WIRE, lock	2
23	160623	ARM, toggle	2
24	190929	RING, lift	1
25	167585	SPRING, helical compression	2
26*	170709	POPPET, exhaust valve	2
27	207391	PISTON, includes items 27a to 27c (also includes 207385 Repair Kit when ordered as a new replacement part)	1
27a	102975	SCREW, rd hd mach; 6 - 32x 1/4 in.	2
27b	158361	CLIP, spring	2
27c		BARE PISTON (not sold separately)	1
28	190229	BASE, air motor	1
29	190233	ROD, piston	1
30	15E954	CYLINDER, air motor	1
31	207150	ROD, trip	1
32*	236079	POPPET, inlet valve	2
33	119344	LABEL, designation	1
35▲	290259	LABEL, warning	1

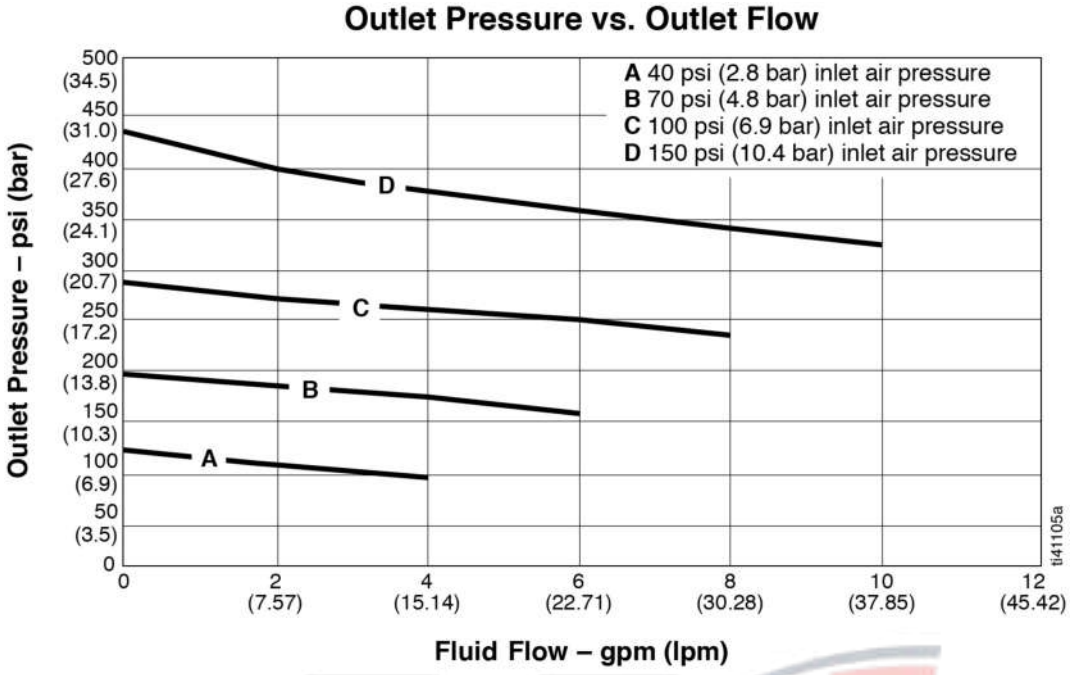
† *Parts included in Pump Repair Kit 237602 (purchase separately).*

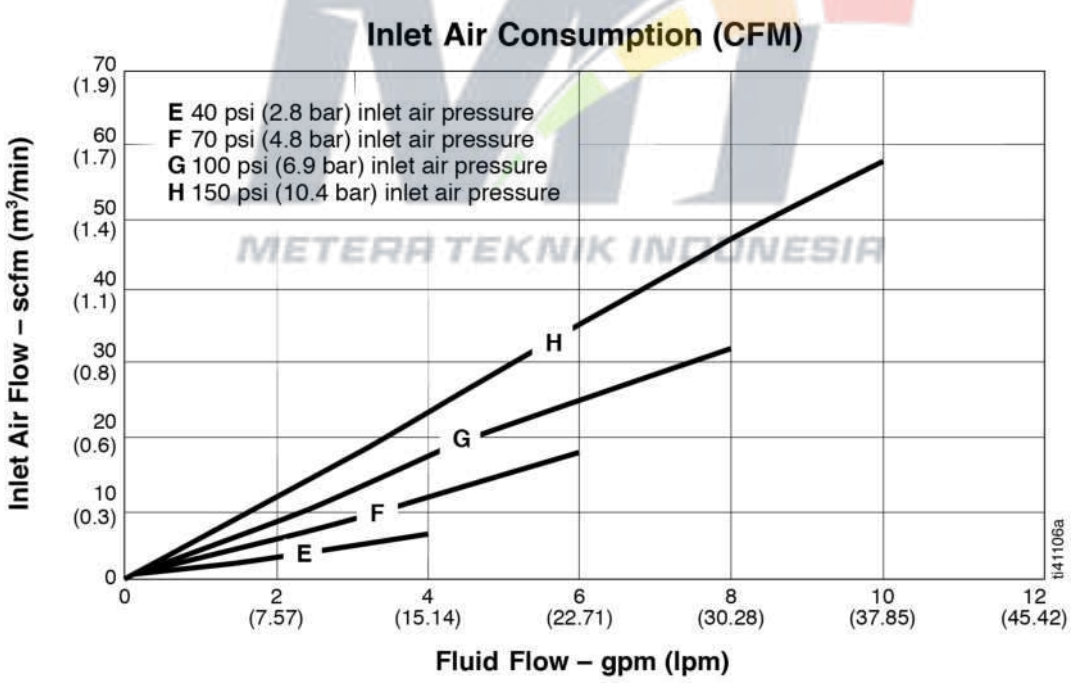
* *Parts included in Air Motor Repair Kit 207385 (purchase separately).*

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

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Performance Charts

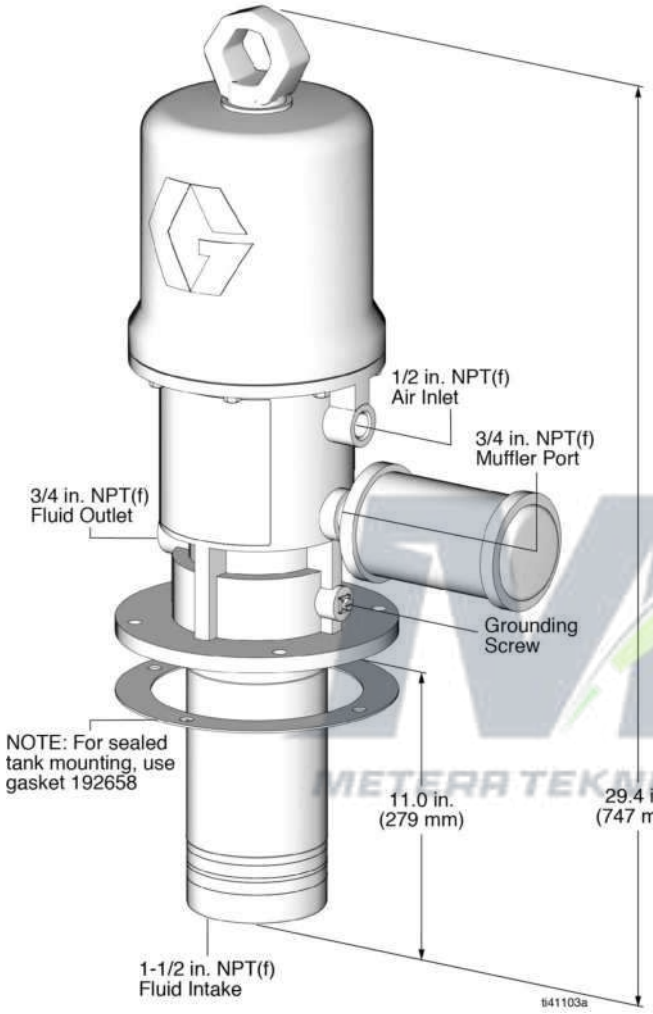




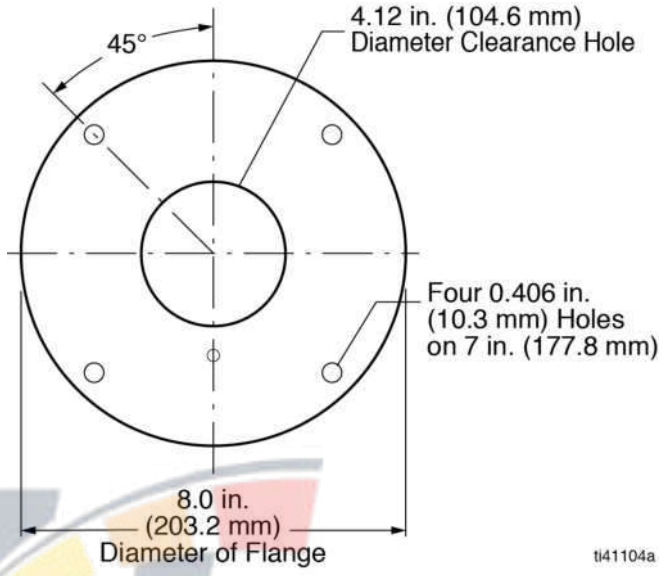
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Dimensions

Model 237526 Pump, Series B



Mounting Hole Layout



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Technical Specifications

3:1 Fire-Ball 425 Pump		
	US	**Metric**
Maximum working pressure	540 psi	3.7 MPa, 37bar
Fluid pressure ratio	3:1	
Air operating range	40 to 180 psi	0.28 MPa to 1.24 MPa, 2.76 bar to 12.4 bar
Air consumption at 100 psi (0.7 MPa, 7 bar)	3 ft^3/min per gallon pumped	0.022 m^3/min per liter pumped
Pump cycles	6.0 per gallon	6.6 per liter
Maximum recommended pump speed	66 cycles/min.; 12 gpm (45 l/min.)	
Recommended speed for optimum pump life	15 to 25 cycles per min.	
Wetted Parts	Piston seals: polyurethane Rod seals: nitrile Pump: aluminum, steel, polyurethane, nitrile	
Approximate weight	46 lbs	21 kg
Sound pressure level*	82 dBa	
*Sound pressure measured at 60 cycles per minute at 100 psi (0.7 MPa, 7 bar) air inlet pressure per ISO Standard 3744 All trademarks or registered trademarks are the property of their respective owners.		

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