

STAINLESS STEEL

Dura–Flo™ 1200 Pumps

308812G

EN

With Severe-Duty Rod and Cylinder

Used for dispensing or spraying low- to medium-viscosity paints, coatings, sealants or adhesives. For professional use only.

Part No. 24Y223, Series A

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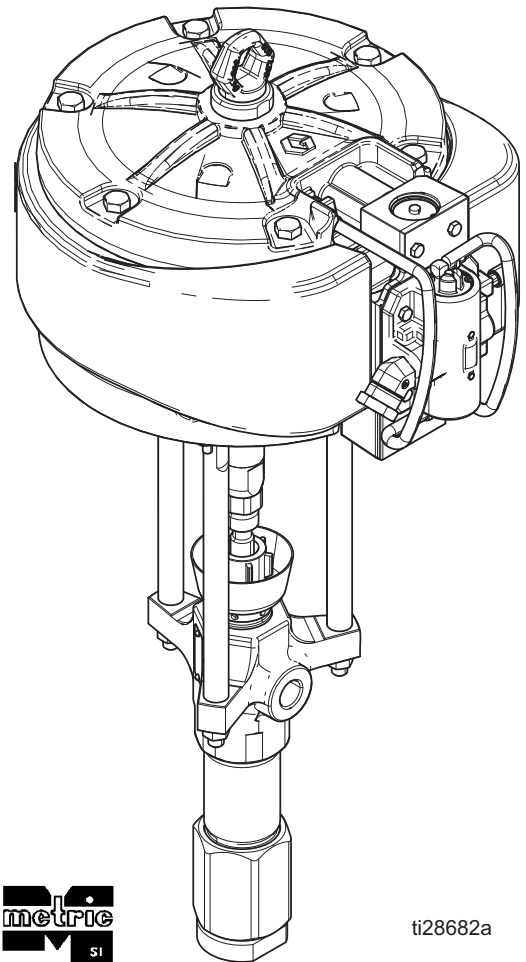
5000 psi (34 MPa, 345 bar) Maximum Fluid Working Pressure

70 psi (0.48 MPa, 4.8 bar) Maximum Air Inlet Working Pressure



Important Safety Instructions

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



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Symbols

Warning Symbol



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

Caution Symbol



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

WARNING

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 10 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.
- Do not kink or overbend hoses or use hoses to pull equipment.
- Route hoses away from traffic areas, sharp edges, moving parts, and hot surfaces. Do not expose Graco hoses to temperatures above 82°C (180°F) or below -40°C (-40°F).
- Wear hearing protection when operating this equipment.
- Do not lift pressurized equipment.
- Do not use the air motor lift ring to lift equipment weighing more than 250 kg (550 lb).
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.

! WARNING



SKIN INJECTION HAZARD

Spray from the gun, hose leaks or ruptured components can inject fluid into your body and cause extremely serious injury, including the need for amputation. Fluid splashed in the eyes or on the skin can also cause serious injury.

- Fluid injected into the skin might look like just a cut, but it is a serious injury. **Get immediate surgical treatment.**
- Do not point the gun at anyone or at any part of the body.
- Do not put your hand or fingers over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove or rag.
- Do not "blow back" fluid; this is not an air spray system.
- Always have the tip guard and the trigger guard on the gun when spraying.
- Check the gun diffuser operation weekly. Refer to the gun manual.
- Be sure the gun trigger safety operates before spraying.
- Lock the gun trigger safety when you stop spraying.
- Follow the **Pressure Relief Procedure** on page 6 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 the spring guard that is used to help protect the hose from rupture caused by kinks or bends near the couplings.



MOVING PARTS HAZARD

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

- Keep clear of all moving parts when starting or operating the pump.
- Before servicing the equipment, follow the **Pressure Relief Procedure** on page 6 to prevent the equipment from starting unexpectedly.

WARNING



FIRE AND EXPLOSION HAZARD

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

- Ground the equipment and the object being sprayed. Refer to **Grounding** on page 5.
- If there is any static sparking or you feel an electric shock while using this equipment, **stop spraying immediately**. Do not use the equipment until you identify and correct the problem.
- Provide fresh air ventilation to avoid the buildup of flammable fumes from solvents or the fluid being sprayed.
- Keep the spray area free of debris, including solvent, rags, and gasoline.
- Electrically disconnect all equipment in the spray area.
- Extinguish all open flames or pilot lights in the spray area.
- Do not smoke in the spray area.
- Do not turn on or off any light switch in the spray area while operating or if fumes are present.
- Do not operate a gasoline engine in the spray area.
- Keep a fire extinguisher in the work area.



TOXIC FLUID HAZARD

Hazardous fluid or toxic fumes can cause serious injury or death if splashed in the eyes or on the skin, inhaled, or swallowed.

- Know the specific hazards of the fluid you are using.
- Store hazardous fluid in an approved container. Dispose of hazardous fluid according to all local, state and national guidelines.
- Always wear protective eyewear, gloves, clothing and respirator as recommended by the fluid and solvent manufacturer.

Installation

General Information

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

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

WARNING

A bleed-type master air valve and a fluid drain valve are required in your system. These accessories 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 air is shut off. Trapped air can cause the pump to cycle unexpectedly. Locate the valve close to the pump. Order Part No. 113163.

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. Order Part No. 238612.

Grounding

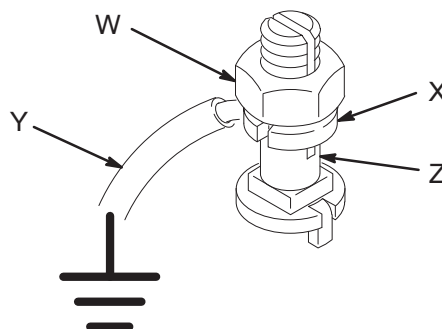
WARNING



FIRE AND EXPLOSION HAZARD

Before operating the pump, ground the system as explained below. Also read the section **FIRE AND EXPLOSION HAZARD** on page 4.

1. *Pump:* use a ground wire and clamp. See Fig. 1. Loosen the grounding lug locknut (W) and washer (X). Insert one end of a 1.5 mm² (12 ga) minimum ground wire (Y) into the slot in lug (Z) and tighten the locknut securely. Connect the other end of the wire to a true earth ground. Order Part No. 237569 Ground Wire and Clamp.



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Fig. 1

2. *Air and fluid hoses:* use only electrically conductive hoses.
3. *Air compressor:* follow manufacturer's recommendations.
4. *Spray gun:* ground through connection to a properly grounded fluid hose and pump.
5. *Fluid supply container:* follow your local code.
6. *Object being sprayed:* follow your local code.
7. *Solvent pails used when flushing:* follow your local code. Use only metal pails, which are conductive, placed on a grounded surface. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts the grounding continuity.
8. *To maintain grounding continuity when flushing or relieving pressure,* hold a metal part of the spray gun firmly to the side of a grounded metal pail, then trigger the gun.

Operation/Maintenance

Pressure Relief Procedure

⚠ WARNING

SKIN INJECTION HAZARD



The system pressure must be manually relieved to prevent the system from starting or spraying accidentally. Fluid under high pressure can be injected through the skin and cause serious injury. To reduce the risk of an injury from injection, splashing fluid, or moving parts, follow the **Pressure Relief Procedure** whenever you:

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

1. Lock the gun trigger safety.
2. Shut off the air supply to the pump.
3. Close the bleed-type master air valve (required in your system).
4. Unlock the gun trigger safety.
5. Hold a metal part of the gun firmly to the side of a grounded metal pail, and trigger the gun to relieve pressure.
6. Lock the gun trigger safety.
7. Open the drain valve (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.

Packing Nut/Wet-Cup

Before starting, fill the packing nut (A) 1/3 full with Graco Throat Seal Liquid (TSL) or compatible solvent. See Fig. 2.

⚠ 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 the pressure, then torque the nut to 136-149 N•m (100-110 ft-lb) using the supplied wrench (108). Do this whenever necessary. Do not overtighten the packing nut.

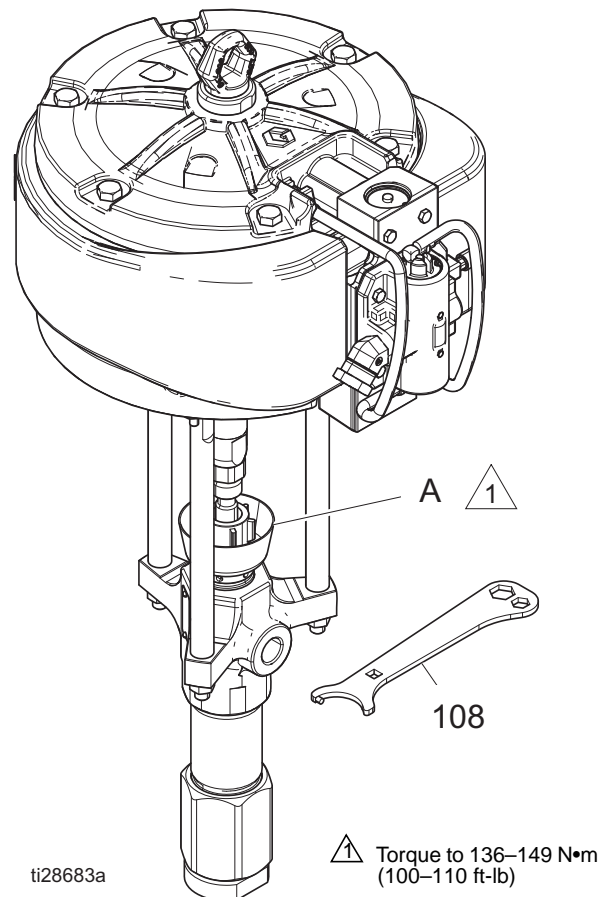


Fig. 2

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 manual 308359.

Troubleshooting

1. Relieve the pressure.
2. Check all possible causes and problems before disassembling 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 6.

PROBLEM	CAUSE	SOLUTION
The pump fails to operate.	Restricted air line or an inadequate air supply; closed or clogged valves.	Clear the line; increase the air supply. Check that the valves are open.
	Obstructed fluid hose or gun; the fluid hose ID is too small.	Open, clear*; use a hose with a larger ID.
	Fluid has dried on the displacement rod.	Clean the rod; always stop the pump at the bottom of its stroke; keep the wet-cup 1/3 filled with a compatible solvent.
	Dirty, worn, or damaged motor parts.	Clean or repair; see 308213.
The pump operates, but the output is low on both strokes.	Restricted air line or an inadequate air supply; closed or clogged valves.	Clear the line; increase the air supply. Check that the valves are open.
	Obstructed fluid hose or gun; the fluid hose ID is too small.	Open, clear*; use a hose with a larger ID.
	Worn packings in the displacement pump.	Replace the packings. See 308359.
The pump operates, but the output is low on the downstroke.	Held open or worn intake valve.	Clear the valve; service. See 308359.
The pump operates, but the output is low on the upstroke.	Held open or worn piston valve or packings.	Clear the valve; replace the packings. See 308359.
Erratic or accelerated pump speed.	Exhausted fluid supply.	Refill the supply and prime the pump.
	Held open or worn piston valve or packings.	Clear the valve; replace the packings. See 308359.
	Held open or worn intake valve.	Clear the valve; service. See 308359.

* To determine if the fluid hose or gun is obstructed, follow the **Pressure Relief Procedure** on page 6. Disconnect the fluid hose and place a container at the pump fluid outlet to catch any fluid. Turn on the air just enough to start the pump. If the pump starts when the air is turned on, the obstruction is in the fluid hose or gun.

NOTE: If you experience air motor icing, call your Graco distributor.

Service

Disconnecting the Displacement Pump

1. Flush the pump, if possible. Stop the pump at the bottom of its stroke.

WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 6.

2. Relieve the pressure.
3. Disconnect the air hose and fluid hose.
4. Disconnect the displacement pump (102) from the motor (101) as follows. Note the relative position of the pump's fluid outlet (B) to the air inlet (C) of the motor. If the motor does not require servicing, leave it attached to its mounting. See the Parts drawing.

CAUTION

Be sure to use *at least* two people when lifting, moving, or disconnecting the pump. This pump is too heavy for one person. If you are disconnecting the displacement pump from a motor which is still mounted (for example, on a wall bracket), *be sure* to support the displacement pump while it is being disconnected, to prevent it from falling and causing injury or property damage. Do this by securely bracing the pump, or by having at least two people hold it while another disconnects it.

5. Using an adjustable wrench (or hammer and punch), unscrew the coupling nut (105) from the connecting rod adapter (104). Do not lose or drop the coupling collars (106).
6. Hold the tie rod flats with a wrench to keep the rods from turning. Unscrew the nuts (107) from the tie rods (103). Carefully remove the displacement pump (102) from the motor (101).
7. Refer to manual 308359 for displacement pump service. To service the air motor, refer to manual 308213.

Reconnecting the Displacement Pump

1. Ensure that the rod adapter (104) has not loosened during maintenance. Proper torque is necessary to prevent the rod adapter from loosening during pump operation.

If the rod adapter (104) has loosened, remove it and apply Loctite® 2760™ (or equivalent) to the rod adapter and air motor piston threads.

Screw the adapter (104) into the air motor shaft. Hold the motor shaft flats with a wrench to keep it from turning, and torque the adapter to 312-340 N•m (230-250 ft-lb). See the Parts drawing.

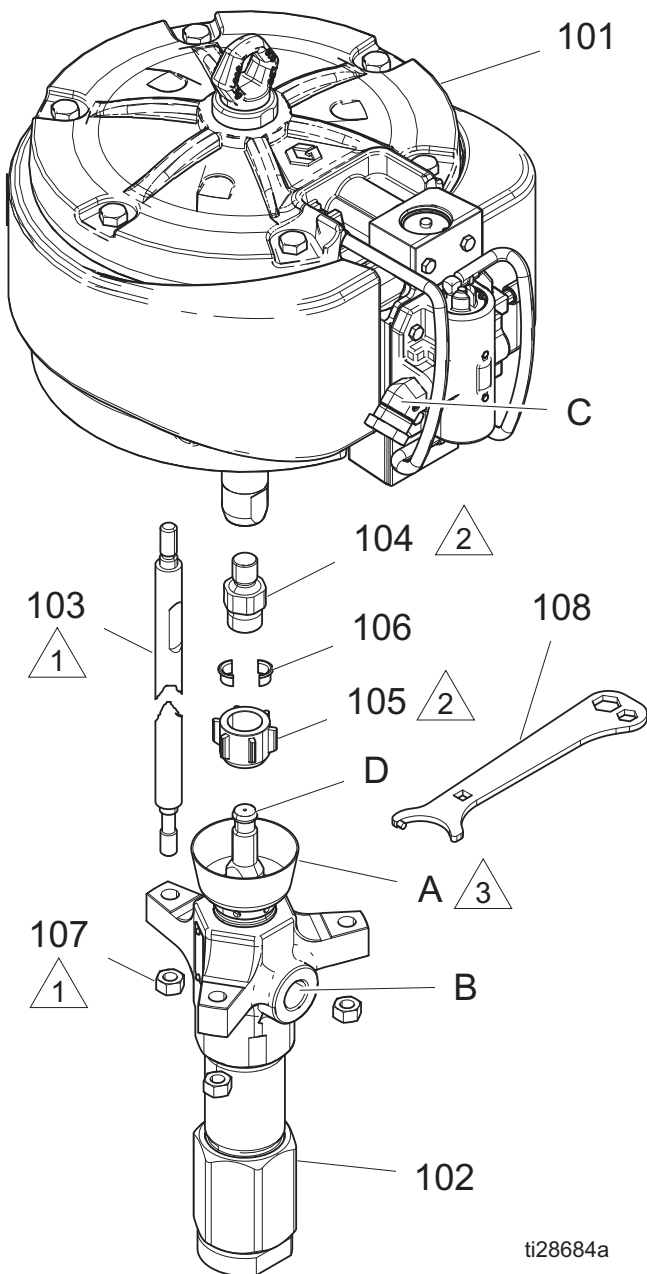
2. Screw the tie rods (103) into the base of the air motor (101). Using a wrench on the tie rod flats, torque to 129-142 N.m (95-105 ft-lb).
3. Make sure the coupling nut (105) and the coupling collars (106) are in place on the displacement rod (D).
4. Use at least two people to hold the displacement pump while another reconnects it to the motor (see the **CAUTION** at left). Orient the pump's fluid outlet (B) to the air inlet (C) as was noted in step 4 under **Disconnecting the Displacement Pump**. Position the displacement pump (102) on the tie rods (103).
5. Screw the nuts (107) onto the tie rods (103) and torque to 129-142 N•m (95-105 ft-lb).
6. Screw the coupling nut (105) onto the connecting rod adapter (104) loosely. Hold the adapter flats with a wrench to keep it from turning. Torque the coupling nut to 312-340 N•m (230-250 ft-lb).
7. Reconnect all hoses. Reconnect the ground wire if it was disconnected. Fill the packing nut (A) 1/3 full of Graco Throat Seal Liquid or compatible solvent.
8. Turn on the air supply. Run the pump slowly to ensure proper operation.

WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 6.

9. Before returning the pump to production, relieve the pressure and retorque the packing nut (A) to 128-156 N•m (95-115 ft-lb).

Parts

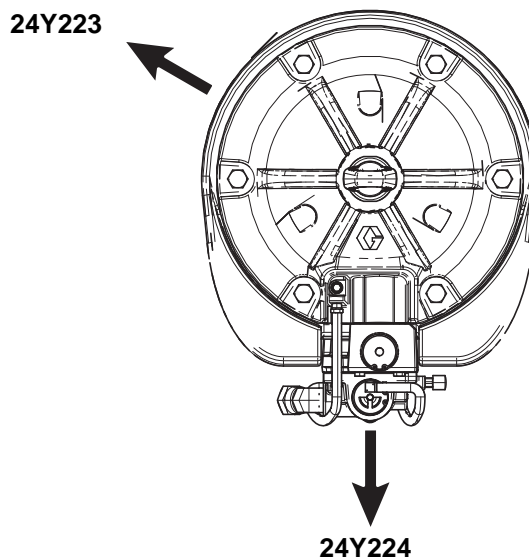


- 1 Torque to 129–142 N•m (95–105 ft-lb)
- 2 Torque to 312–340 N•m (230–250 ft-lb)
- 3 Torque to 128–156 N•m (95–115 ft-lb)

Models 24Y223 and 24Y224

Ref. No.	Part No.	Description	Qty
101	24X856	AIR MOTOR, Xtreme XL See 334644	1
102	237514	PUMP, displacement See 308360 for parts	1
103	184382	ROD, tie; 380 mm (14.96 in.) shoulder to shoulder	3
104	184583	ADAPTER, connecting rod	1
105	184098	NUT, coupling	1
106	184129	COLLAR, coupling	2
107	106166	NUT, hex; M16 x 2.0	3
108	112887	WRENCH, spanner	1

Fluid Outlet Port Orientation by model number

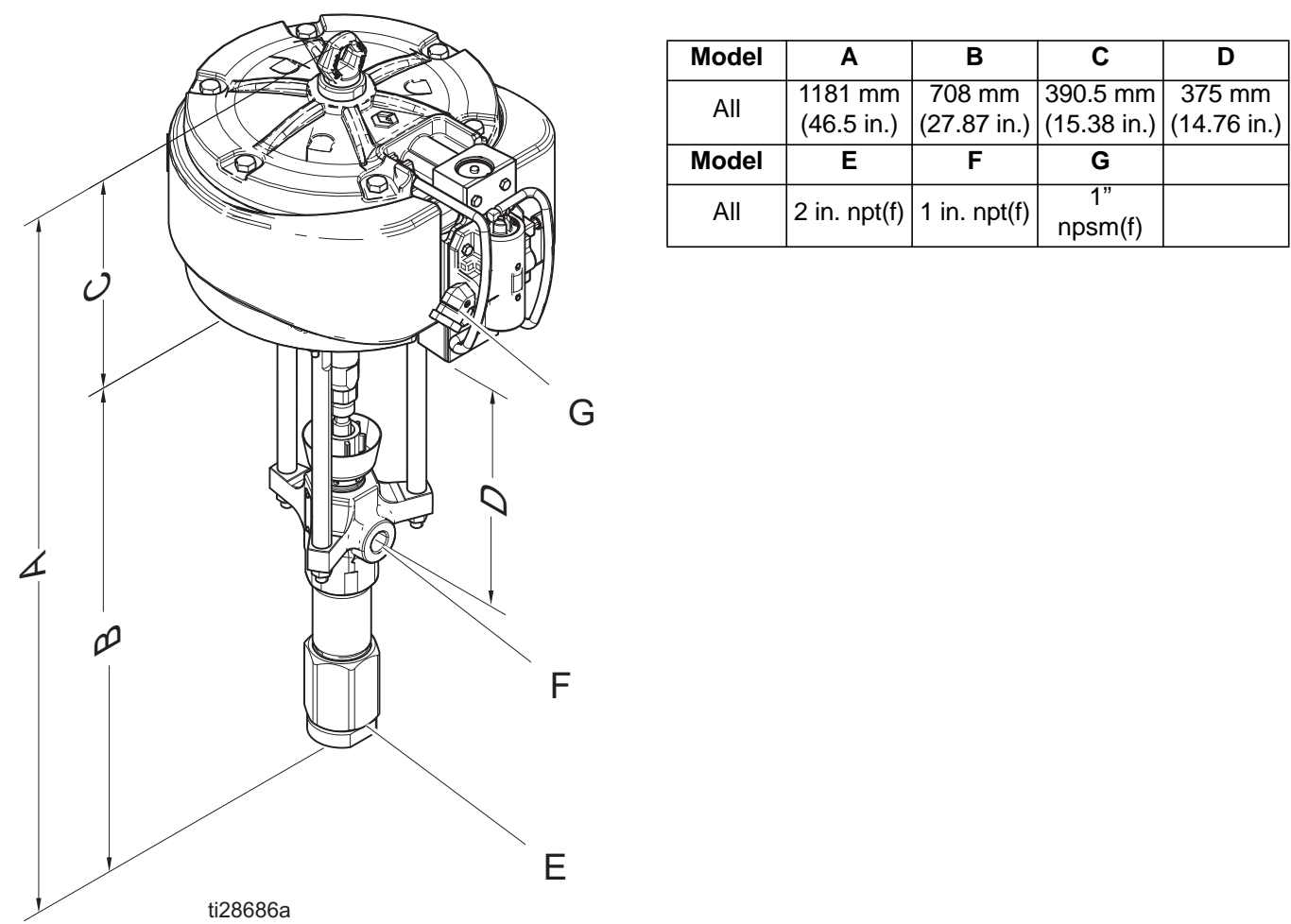


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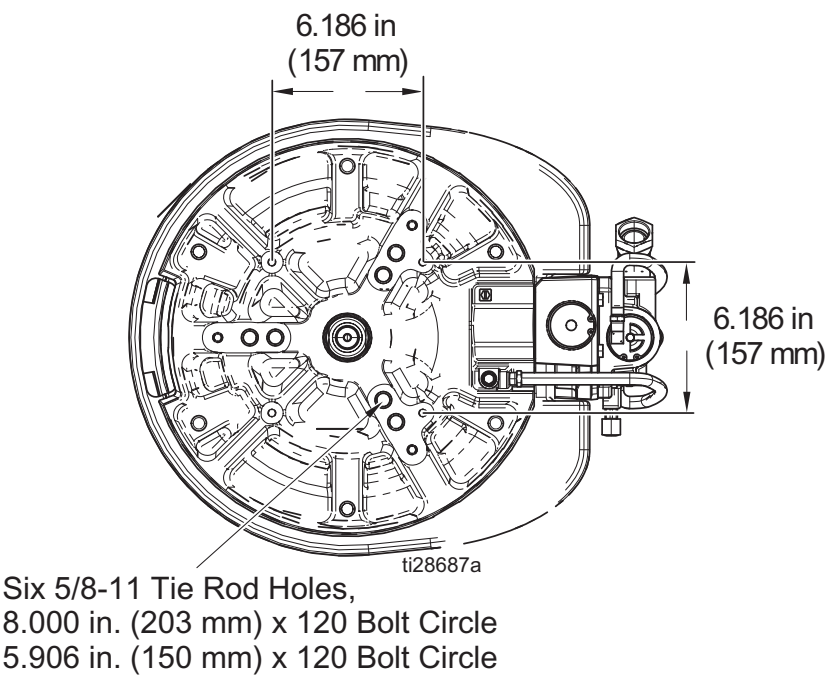
Technical Data

Category	Data
Maximum fluid working pressure	34 MPa, 345 bar (5000 psi)
Maximum air input pressure	0.48 MPa, 4.8 bar (70 psi)
Ratio	71:1
Pump cycles per 3.8 liters (1 gal.)	12.5
Fluid flow at 60 cycles per minute	18.2 liters/min (4.8 gpm)
Maximum operating temperature	71°C (160°F)
Weight	88.5 kg (195 lb)
Wetted parts	440 and 17-4 PH Grades of Stainless Steel; PTFE; Glass-Filled PTFE; Leather

Dimensions



Mounting Hole Layout



Graco Standard Warranty

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

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

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

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

Graco makes no warranty, and disclaims all implied warranties of merchantability and fitness for a particular purpose in connection with accessories, equipment, materials or components sold but not manufactured by Graco. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

FOR GRACO CANADA CUSTOMERS

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Graco Information

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.*

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