Husky® 1050 Air-Operated Diaphragm Pump

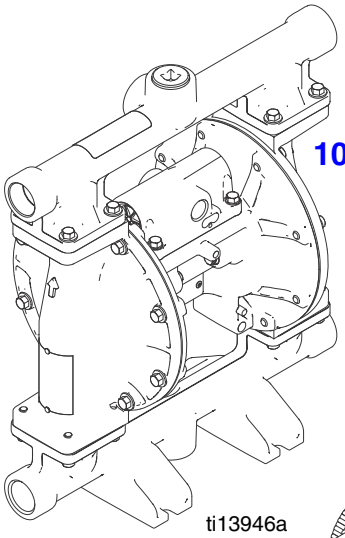
312877C
ENG

1-inch pump with modular air valve for fluid transfer applications
See page 3 for model information, including approvals.

125 psi (0.86 MPa, 8.6 bar) Maximum Fluid Working Pressure
125 psi (0.86 MPa, 8.6 bar) Maximum Air Input Pressure

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

1050A Aluminum



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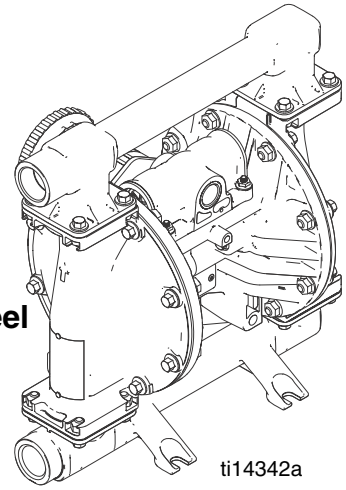
1050S Stainless Steel



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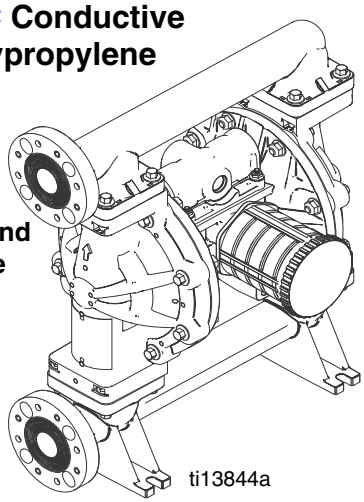
1050P Polypropylene
1050C Conductive Polypropylene
with End Flange



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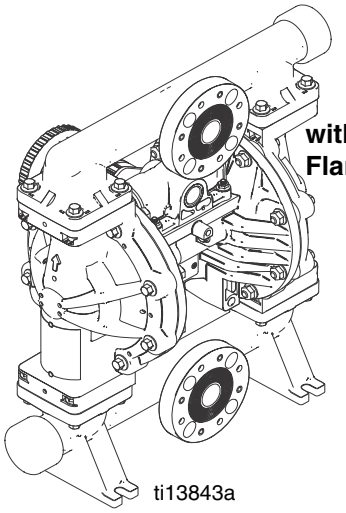
with Center Flange



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PROVEN QUALITY. LEADING TECHNOLOGY.

Contents

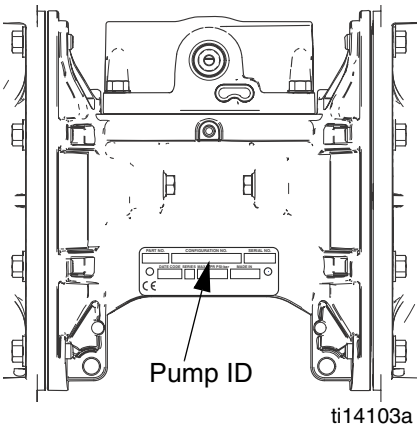
Related Manuals

Manual	Description
313435	Husky 1050 Air-Operated Diaphragm Pump, Repair/Parts
313597	Husky 1050A UL-Listed Diaphragm Pump, Operation
313598	Husky 1050A CSA-Certified Diaphragm Pump, Operation
313840	DataTrak, Instructions/Parts
406824	Pulse Count Kits, Instructions

Pump Matrix

Check the identification plate (ID) for the 20-digit part number of your pump. Use the following matrix to define the components of your pump. For example, pump number **1050A-A01AA1SSBNBNPT** represents a Husky 1 inch, 50 gpm aluminum pump (**1050A**), with aluminum center section (**A01**), a standard air valve (**A**), aluminum fluid covers (**A**) and manifolds with standard ports in inches (**1**). The pump has stainless steel seats (**SS**), buna-N check balls (**BN**), buna-N diaphragms (**BN**), and PTFE manifold o-rings (**PT**).

NOTE: Options for seats, check balls, diaphragms, and seals vary for the 1050A, 1050C, 1050P, and 1050S pump models. To build a pump, use the selector tool at www.graco.com or speak with your distributor.



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Pump (1 inch ports, 50 gpm)	Center Section and Air Valve Material		Air Valve/Monitoring
1050A★ Aluminum **1050C**★ Conductive Polypropylene **1050P** Polypropylene **1050S**‡ Stainless Steel	Aluminum	**A01A**	Standard
		A01B	Pulse Count✖
		A01C	DataTrak✖
		A01D	Remote
	Conductive Polypropylene	**C01A**	Standard
		C01B	Pulse Count✖
		C01C	DataTrak✖
		C01D	Remote
	Polypropylene	**P01A**	Standard
		P01B	Pulse Count✖
		P01C	DataTrak✖
		P01D	Remote
★, ‡, or ✖: See **ATEX Certifications** below.			

Fluid Covers and Manifolds	
A1	Aluminum, standard ports, inch
A2	Aluminum, standard ports, metric
C1	Conductive polypropylene, center flange
C2	Conductive polypropylene, end flange
P1	Polypropylene, center flange
P2	Polypropylene, end flange
S1	Stainless steel, standard ports, inch
S2	Stainless steel, standard ports, metric

Check Valve Seats	
AC	Acetal
AL	Aluminum
BN	Buna-N
FK	FKM Fluoroelastomer
GE	Geolast®
PP	Polypropylene
PV	PVDF
SP	Santoprene®
SS	316 Stainless Steel
TP	TPE

Check Valve Balls	
AC	Acetal
BN	Buna-N
CR	Polychloroprene Standard
CW	Polychloroprene Weighted
FK	FKM Fluoroelastomer
GE	Geolast
PT	PTFE
SP	Santoprene
SS	316 Stainless Steel
TP	TPE

Diaphragm	
BN	Buna-N
CO	Polychloroprene Overmolded
FK	FKM Fluoroelastomer
GE	Geolast
PO	PTFE/EPDM Overmolded
PT	PTFE/EPDM Two-Piece
SP	Santoprene
TP	TPE

Manifold O-Rings	
—	None
PT	PTFE

ATEX Certifications

★ *All 1050A (Aluminum) and 1050C (Conductive Polypropylene) pumps are certified:*

II 2 GD c IIC T4

‡ *1050S (Stainless Steel) pumps with aluminum or conductive polypropylene centers are certified:*

II 2 GD c IIC T4

✖ *DataTrak and Pulse Count are certified:*

II 1 G

EEx ia IIA T3
Nemko
06ATEX1124

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 symbol refers to procedure-specific risk. Refer back to these warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.

⚠ WARNING

FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. To help prevent fire and explosion:

- 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 arc).
- 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.
- Ground all equipment in the work area. See **Grounding** instructions.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail.
- If there is static sparking or you feel a shock, **stop operation immediately.** Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.

Static charge may build up on plastic parts during cleaning and could discharge and ignite flammable materials and gases. To help prevent fire and explosion:

- Clean plastic parts in a well ventilated area.
- Do not clean with a dry cloth.

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 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 MSDS from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure. Turn off all equipment and follow the **Pressure Relief Procedure** in this manual 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.
- 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.

PRESSURIZED EQUIPMENT HAZARD

Fluid from the gun/dispense valve, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.

- Follow **Pressure Relief Procedure** in this manual, when you stop spraying 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.

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.
- Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.

PLASTIC PARTS CLEANING SOLVENT HAZARD

Use only compatible water-based solvents to clean plastic structural or pressure-containing parts. Many solvents can degrade plastic parts and cause them to fail, which could cause serious injury or property damage. See **Technical Data** in this and all other equipment instruction manuals. Read fluid and solvent manufacturer's warnings.

⚠ 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 MSDS's to know the specific hazards of the fluids you are using.
- Route exhaust away from work area. If diaphragm ruptures, fluid may be exhausted with air.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.
- Always wear impervious gloves when spraying or cleaning equipment.

BURN HAZARD

Equipment surfaces and fluid that's heated can become very hot during operation. To avoid severe burns:

- Do not touch hot fluid or equipment.
- Wait until equipment/fluid has cooled completely.

PERSONAL PROTECTIVE EQUIPMENT

You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. This equipment includes but is not limited to:

- Clothing and respirator as recommended by the fluid and solvent manufacturer
- Protective eyewear, gloves, and hearing protection

Installation

The Typical Installations shown in FIG. 3 and FIG. 4 are only guides for selecting and installing system components. Contact your Graco distributor for assistance in planning a system to suit your needs.

Tighten Fasteners Before Setup

Before using the pump for the first time, check and retorque all external fasteners. Follow **Torque Instructions**, page 16.

Mounting

- The pump exhaust air may contain contaminants. Ventilate to a remote area. See **Air Exhaust Ventilation** on page **8.**
- Never move or lift a pump under pressure. If dropped, the fluid section may rupture. Always follow the **Pressure Relief Procedure** on page **14** before moving or lifting the pump.

1. Be sure the mounting surface can support the weight of the pump, hoses, and accessories, as well as the stress caused during operation.
2. For all mountings, be sure the pump is bolted directly to the mounting surface.
3. For ease of operation and service, mount the pump so air valve, air inlet, fluid inlet and fluid outlet ports are easily accessible.
4. Rubber Foot Mounting Kit 236452 is available to reduce noise and vibration during operation.

Grounding

The equipment must be grounded. Grounding reduces the risk of static and electric shock by providing an escape wire for the electrical current due to static build up or in the event of a short circuit.

Pump: See FIG. 1. Loosen the grounding screw (GS). Insert one end of a 12 ga. minimum ground wire (R) behind the grounding screw and tighten the screw securely. Connect the clamp end of the ground wire to a true earth ground. A ground wire and clamp, Part 238909, is available from Graco.

Polypropylene: Only conductive polypropylene pumps have a ground screw. Standard polypropylene pumps are **not** conductive. **Never** use a non-conductive polypropylene pump with non-conductive flammable fluids. Follow your local fire codes. When pumping conductive flammable fluids, **always** ground the entire fluid system as described.

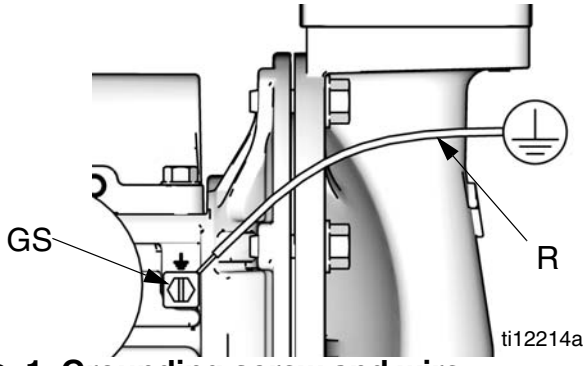


FIG. 1. Grounding screw and wire

Air and fluid hoses: Use only grounded hoses with a maximum of 500 ft (150 m) combined hose length to ensure grounding continuity.

Air compressor: Follow manufacturer's recommendations.

Fluid supply container: Follow local code.

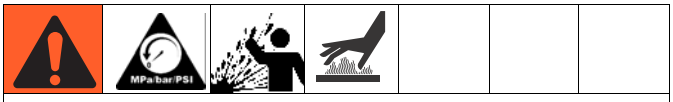
Solvent pails used when flushing: Follow local code. Use only conductive metal pails, placed on a grounded surface. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts grounding continuity.

Check your system electrical continuity after the initial installation, and then set up a regular schedule for checking continuity to be sure proper grounding is maintained.

Air Line

See FIG. 3 and FIG. 4, pages 10 and 11.

1. Install an air regulator (C) and gauge to control the fluid pressure. The fluid stall pressure will be the same as the setting of the air regulator.
2. Locate a bleed-type master air valve (B) close to the pump and use it to relieve trapped air. Be sure the valve is easily accessible from the pump and located downstream from the regulator.



Trapped air can cause the pump to cycle unexpectedly, which could result in serious injury from splashing.

3. Locate another master air valve (E) upstream from all air line accessories and use it to isolate them during cleaning and repair.
4. An air line filter (F) removes harmful dirt and moisture from the compressed air supply.
5. Install a grounded, flexible air hose (A) between the accessories and the 1/2 npt(f) pump air inlet (D). Use a minimum 3/8 in. (10 mm) ID air hose.

Remote option: Insert 5/32 OD tubing into the push-to-connect fitting at each pilot and route to your control.

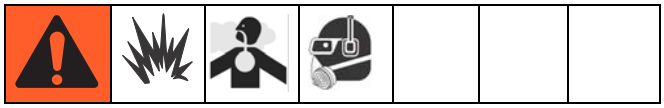
NOTICE

Pilot supply pressure should not exceed main air supply pressure. If pilot supply pressure is too high, the pump could leak air or exhaust excessive air at stall.

Reed Switch

Pulse Count models are intended for use with customer-supplied fluid management or inventory tracking systems. Attach an M12, 5-pin female cable to connect the reed switch to your data monitoring system. *See Manual 406824.*

Air Exhaust Ventilation



The air exhaust port is 3/4 npt(f). Do not restrict the air exhaust port. Excessive exhaust restriction can cause erratic pump operation.

To provide a remote exhaust:

1. Remove the muffler (T) from the pump air exhaust port.
2. Install a grounded air exhaust hose (U) and connect the muffler (T) to the other end of the hose. The minimum size for the air exhaust hose is 3/4 in. (19 mm) ID. If a hose longer than 15 ft (4.57 m) is required, use a larger diameter hose. Avoid sharp bends or kinks in the hose.
3. Place a container at the end of the air exhaust line to catch fluid in case a diaphragm ruptures. If the diaphragm ruptures, the fluid being pumped will exhaust with the air.

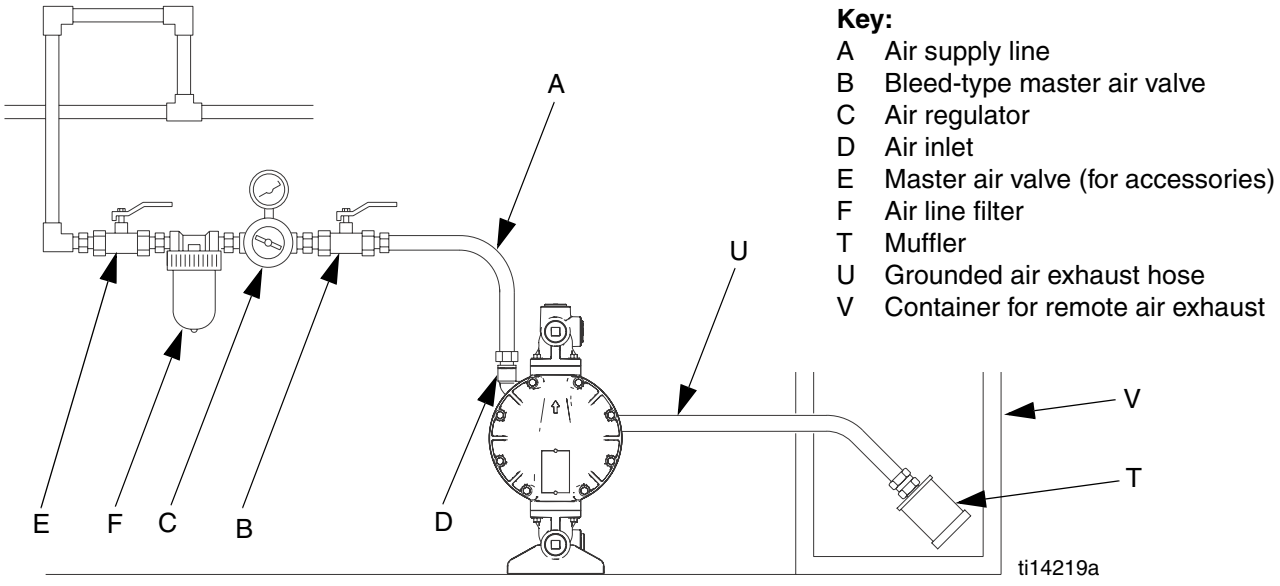


FIG. 2. Vent exhaust air

Fluid Supply Line

See FIG. 3 and FIG. 4, pages 10 and 11.

1. Use grounded fluid supply lines (G). See **Grounding**, page 7.
2. If the inlet fluid pressure to the pump is more than 25% of the outlet working pressure, the ball check valves will not close fast enough, resulting in inefficient pump operation.
3. At inlet fluid pressures greater than 15 psi (0.1 MPa, 1 bar), diaphragm life will be shortened.
4. For maximum suction lift (wet and dry), see **Technical Data**, page 22.

Fluid Outlet Line

See FIG. 3 and FIG. 4, pages 10 and 11.

1. Use grounded fluid hoses (L). See **Grounding**, page 7.
2. Install a fluid drain valve (J) near the fluid outlet.
3. Install a shutoff valve (K) in the fluid outlet line.

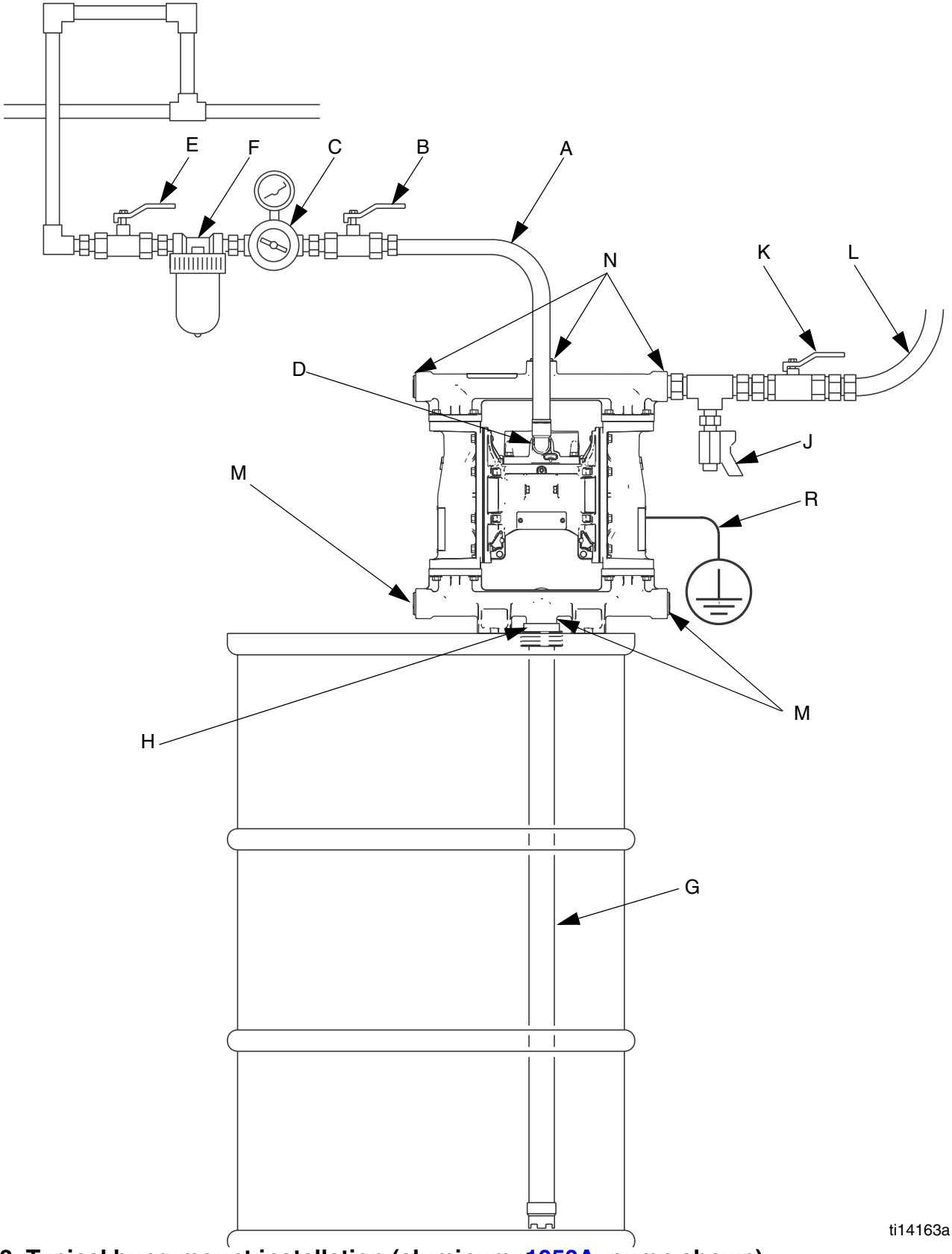


FIG. 3. Typical bung-mount installation (aluminum, 1050A, pump shown)

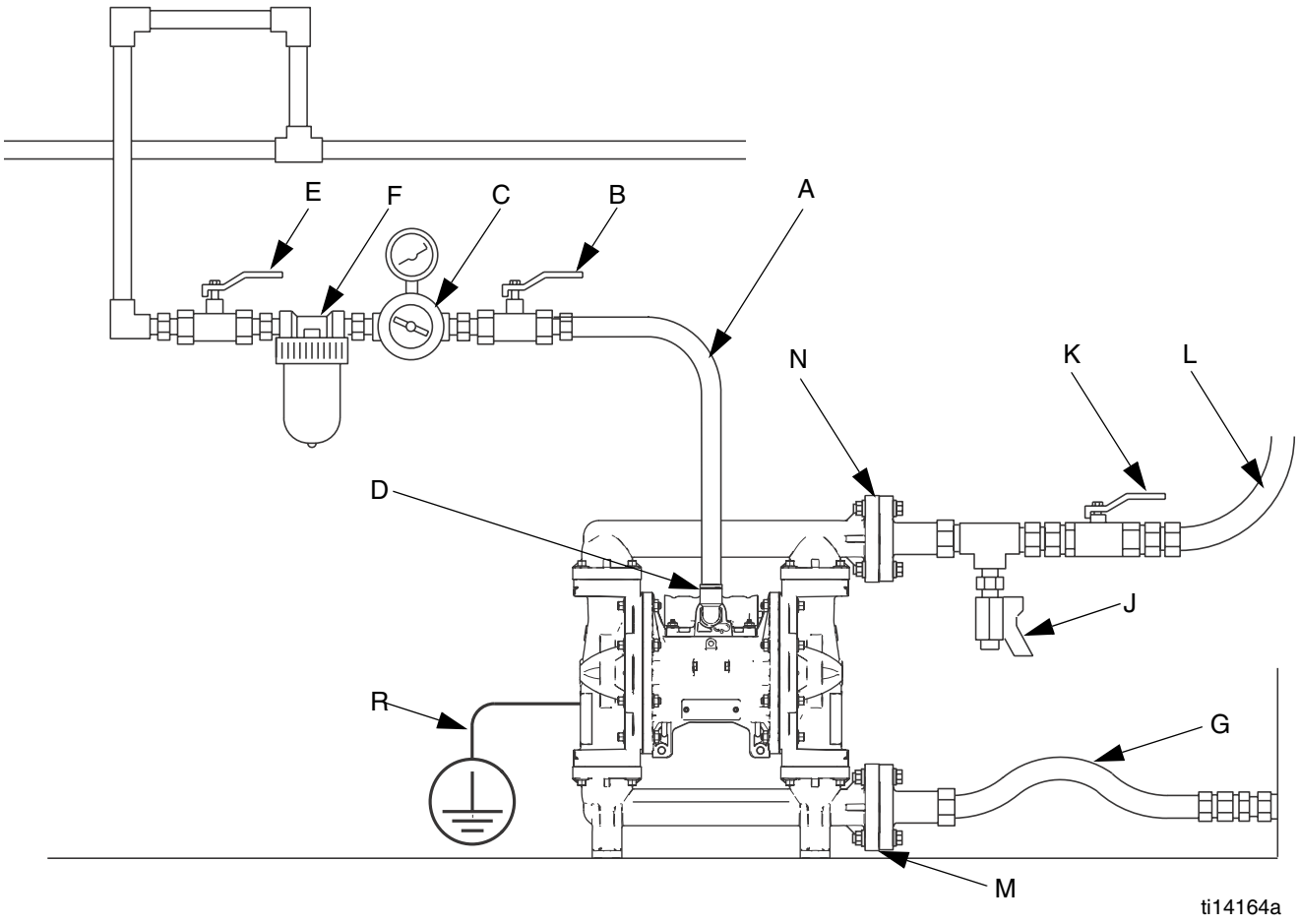


FIG. 4. Typical floor-mount installation (polypropylene, 1050P, pump shown)

Key for FIG. 3 and FIG. 4:

A Air supply line
B Bleed-type master air valve (required for pump)
C Air regulator
D Air inlet
E Master air valve (for accessories)
F Air line filter
G Fluid suction line
H Bung adapter
J Fluid drain valve (required)
K Fluid shutoff valve
L Fluid line
M Fluid inlet (Aluminum, FIG. 3, four ports, one not visible; Plastic, FIG. 4, center or end flanges available; Stainless Steel, not pictured, one port)
N Fluid outlet (Aluminum, FIG. 3, four ports, one not visible; Plastic, FIG. 4, center or end flanges available; Stainless Steel, not pictured, one port)
R Ground wire (required for aluminum, conductive polypropylene, and stainless steel pumps; see page 7 for installation instructions)

Fluid Inlet and Outlet Ports

NOTE: Remove and reverse the manifold(s) to change the orientation of inlet or outlet port(s). Follow **Torque Instructions** on page 16.

Aluminum (1050A)

The fluid inlet and outlet manifolds each have four 1 in. npt(f) or bspt threaded ports (FIG. 3, M, N). Close off the unused ports, using the supplied plugs.

Plastic (1050P, 1050C)

The fluid inlet and outlet manifolds each have a 1 in. raised face ANSI/DIN flange (FIG. 4, M, N) in either a center or end location. Connect 1 in. standard flanged plastic pipe to the pump. See FIG. 5.

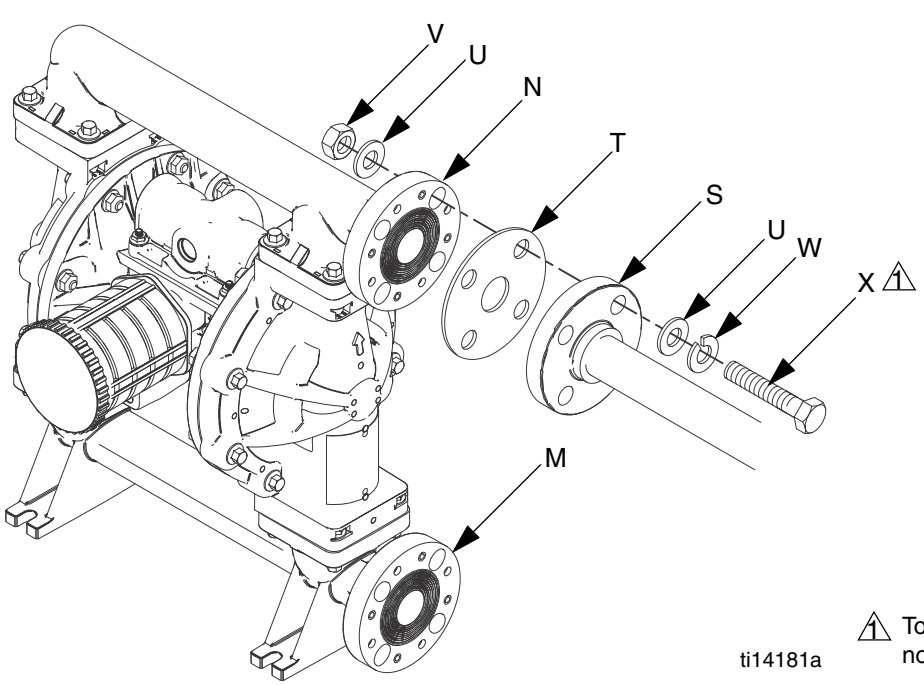
Graco standard pipe flange kits are available in polypropylene (239005), stainless steel (239008), and PVDF (239009). These kits include:

- the pipe flange
- a PTFE gasket
- four 1/2 in. bolts, spring lock washers, flat washers and nuts.

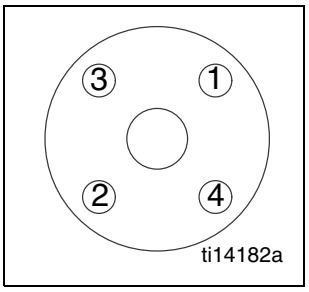
Be sure to lubricate the threads of the bolts and torque to 10-15 ft-lb (14-20 N•m). Follow the bolt tightening sequence and **do not over-torque.**

Stainless Steel (1050S)

The fluid inlet and outlet manifolds each have one 1 in. npt (f) or bspt threaded port.



Bolt tightening sequence



Key:

M	1 in. fluid inlet flange
N	1 in. fluid outlet flange
S	1 in. standard pipe flange
T	PTFE gasket
U	Flat washer
V	Nut
W	Lock washer
X	Bolt

1 Torque to 10-15 ft-lb (14-20 N•m). Do not over-torque.

FIG. 5. Flange connections (plastic pumps only, 1050P and 1050C models)

Fluid Pressure Relief Valve

Some systems may require installation of a pressure relief valve at the pump outlet to prevent overpressurization and rupture of the pump or hose.

Thermal expansion of fluid in the outlet line can cause overpressurization. Thermal expansion can occur when using long fluid lines exposed to sunlight or ambient heat, or when pumping from a cool to a warm area (for example, from an underground tank).

Overpressurization also can occur if the Husky pump is used to feed fluid to a piston pump, and the intake valve of the piston pump does not close, causing fluid to back up in the outlet line.

FIG. 6 shows Fluid Pressure Relief Kit 238428 for aluminum pumps. Use Fluid Pressure Relief Kit 112119, not shown, for plastic pumps.

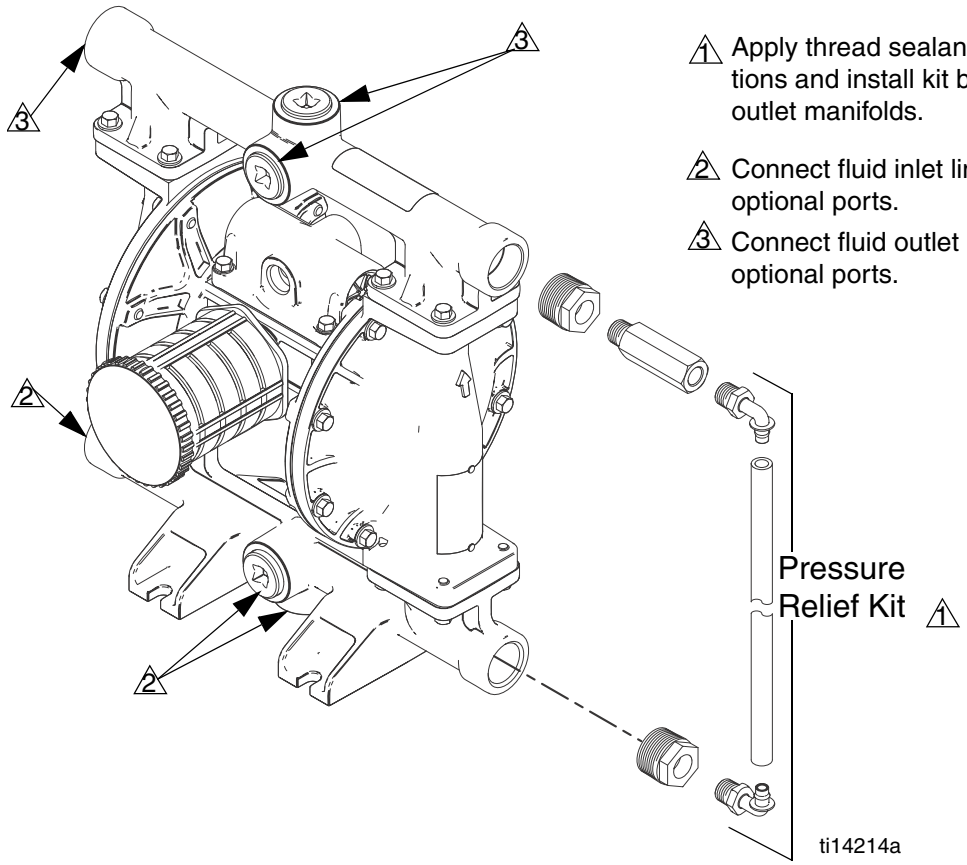


FIG. 6. Fluid pressure relief kit (Aluminum pumps only, 1050A models)

Operation

Pressure Relief Procedure

Trapped air can cause the pump to cycle unexpectedly, which could result in serious injury from splashing.

1. Shut off the air supply to the pump.
2. Open the dispensing valve, if used.
3. Open the fluid drain valve to relieve fluid pressure. Have a container ready to catch the drainage.

Flush the Pump Before First Use

The pump was tested in water. If water could contaminate the fluid you are pumping, flush the pump thoroughly with a compatible solvent. See **Flushing and Storage**, page 15.

Tighten Fasteners Before Setup

Before using the pump for the first time, check and retorque all external fasteners. Follow **Torque Instructions**, page 16. After the first day of operation, retorque the fasteners.

Starting and Adjusting the Pump

1. Be sure the pump is properly grounded. Refer to **Grounding** on page 7.
2. Check fittings to be sure they are tight. Use a compatible liquid thread sealant on male threads. Tighten fluid inlet and outlet fittings securely.
3. Place the suction tube (if used) in fluid to be pumped.

NOTE: If fluid inlet pressure to the pump is more than 25% of outlet working pressure, the ball check valves will not close fast enough, resulting in inefficient pump operation.

4. Place the end of the fluid hose into an appropriate container.
5. Close the fluid drain valve.
6. Back out the air regulator knob, and open all bleed-type master air valves.
7. If the fluid hose has a dispensing device, hold it open.
8. *Pumps with runaway protection:* Enable the prime/flush function by pushing the prime/flush button on the DataTrak.
9. Slowly increase air pressure with the air regulator until the pump starts to cycle. Allow the pump to cycle slowly until all air is pushed out of the lines and the pump is primed.

10. If you are flushing, run the pump long enough to thoroughly clean the pump and hoses.

11. Close the dispensing valve, if used.

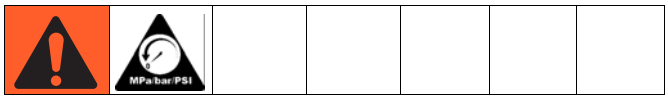
12. Close the bleed-type master air valve.

13. *Pumps with runaway protection:* Disable the prime/flush function by pushing the prime/flush button on the DataTrak.

DataTrak Operation

See DataTrak manual 313840 for all DataTrak information and parts, including detailed operation instructions.

Pump Shutdown



At the end of the work shift and before you check, adjust, clean or repair the system, follow **Pressure Relief Procedure**, page 14.

Maintenance

Maintenance Schedule

Establish a preventive maintenance schedule, based on the pump's service history. Scheduled maintenance is especially important to prevent spills or leakage due to diaphragm failure.

Lubrication

The pump is lubricated at the factory. It is designed to require no further lubrication for the life of the pump.

Tighten Threaded Connections

Before each use, check all hoses for wear or damage and replace as necessary. Check to be sure all threaded connections are tight and leak-free. Check fasteners. Tighten or retorque as necessary. Although pump use varies, a general guideline is to retorque fasteners every two months. See **Torque Instructions**, page 16.

Flushing and Storage

- Flush 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.

Flush the pump often enough to prevent the fluid you are pumping from drying or freezing in the pump and damaging it. Use a compatible solvent.

Always flush the pump and relieve the pressure before storing it for any length of time.

Torque Instructions

NOTE: Fluid cover and manifold fasteners have a thread-locking adhesive patch applied to the threads. If this patch is excessively worn, the fasteners may loosen during operation. Replace screws with new ones or apply medium-strength (blue) Loctite or equivalent to the threads.

If fluid cover or manifold fasteners have been loosened, it is important to torque them using the following procedure to improve sealing.

NOTE: Always completely torque fluid covers before torquing manifolds.

Start all fluid cover screws a few turns. Then turn down each screw just until head contacts cover. Then turn each screw by 1/2 turn or less working in a crisscross pattern to specified torque. Repeat for manifolds.

Fluid cover and manifold fasteners:
100 in-lb (11.3 N•m)

Retorque the air valve fasteners (V) in a criss-cross pattern to specified torque.

Plastic center sections: 55 in-lb (6.2 N•m)
Metal center sections: 80 in-lb (9.0 N•m)

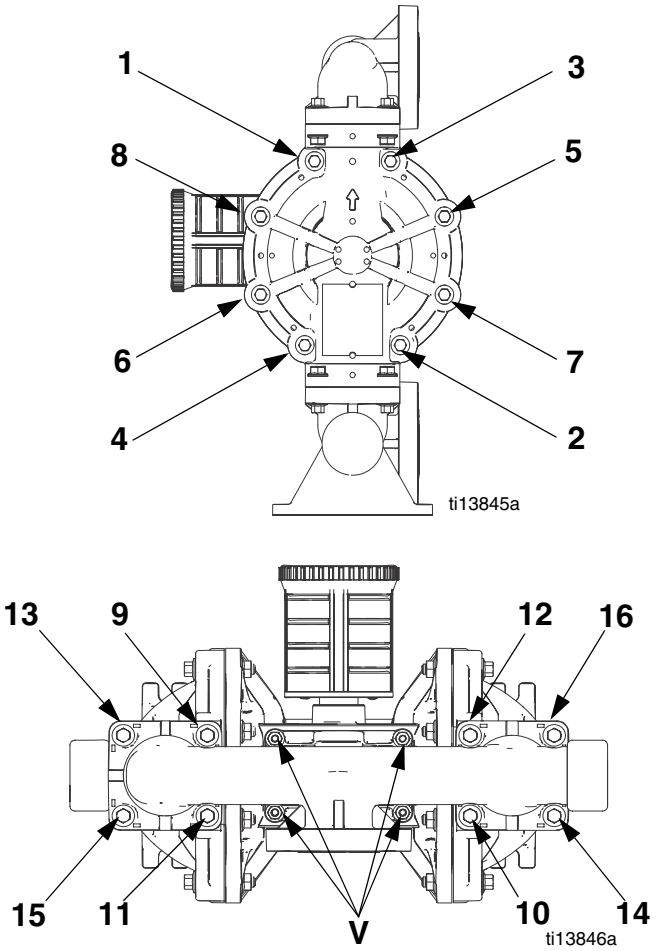
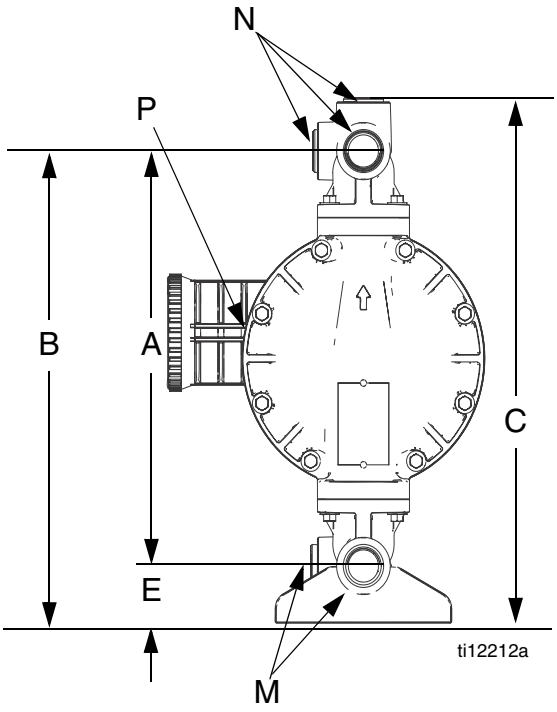
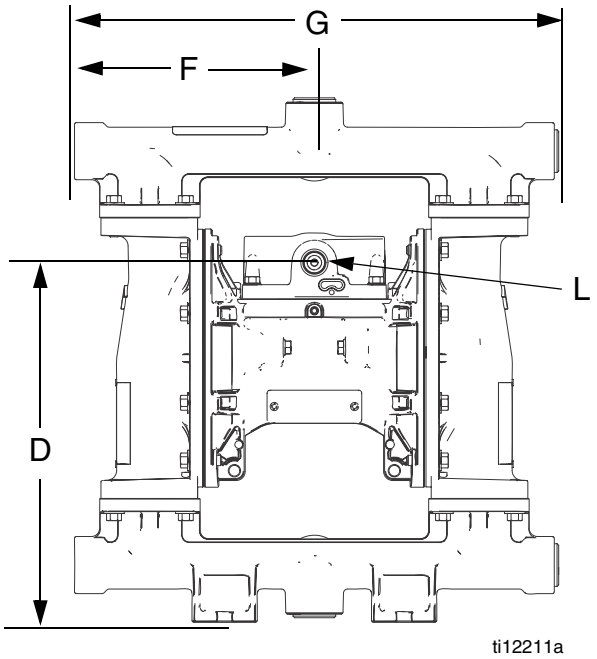


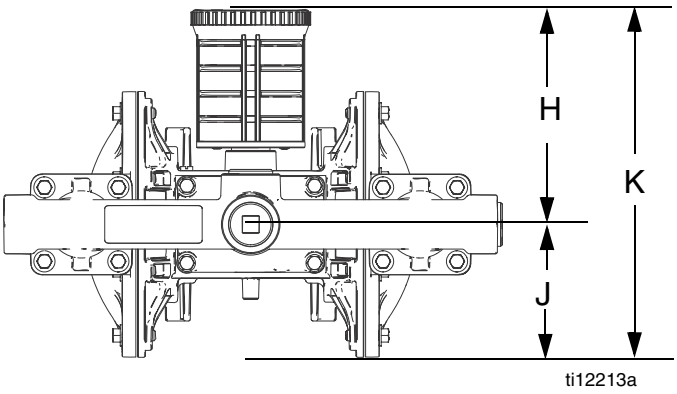
FIG. 7. Torque sequence

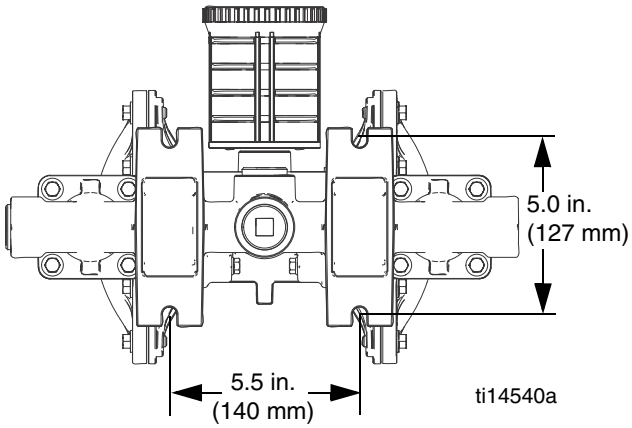
Dimensions and Mounting

Aluminum (1050A)





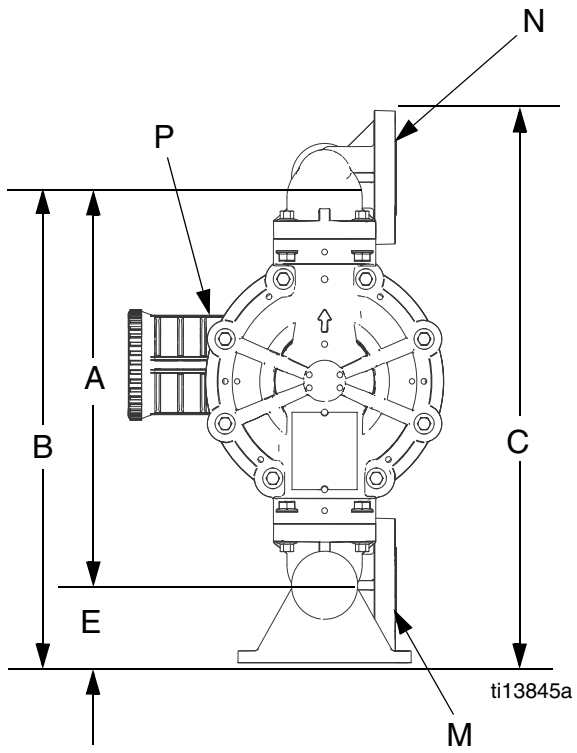


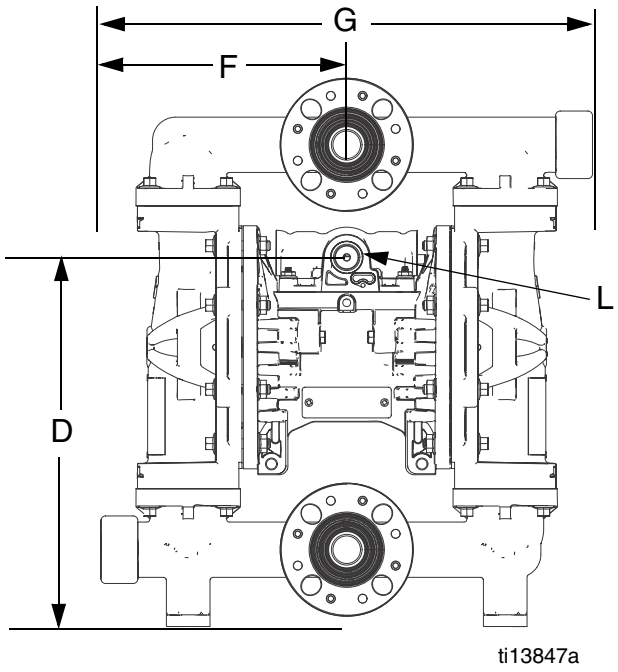


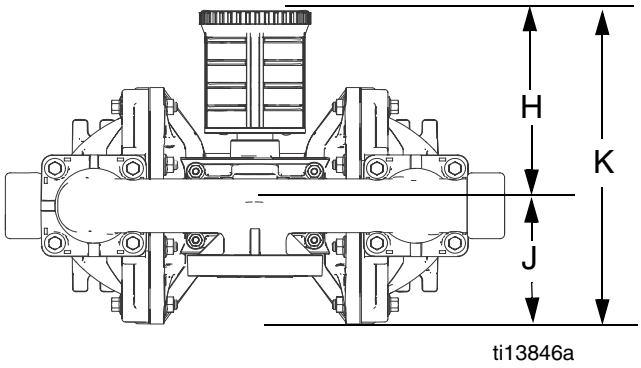
A ..... 12.7 in. (323 mm)
B ..... 14.4 in. (366 mm)
C ..... 15.9 in. (404 mm)
D ..... 10.9 in. (277 mm)
E..... 1.8 in. (46 mm)
F..... 7.3 in. (185 mm)
G ..... 14.7 in. (373 mm)
H ..... 6.1 in. (155 mm)

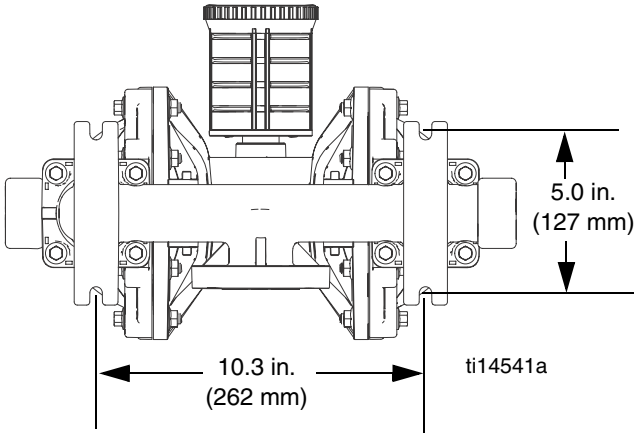
J ..... 3.9 in. (99 mm)
K..... 10.0 in. (254 mm)
L ..... 1/2 npt(f) air inlet
M .... 1 in. npt(f) or 1 in. bspt fluid inlet ports (4)
N..... 1 in. npt(f) or 1 in. bspt fluid outlet ports (4)
P ..... 3/4 npt(f) air exhaust port

Polypropylene (1050P) and Conductive Polypropylene (1050C)



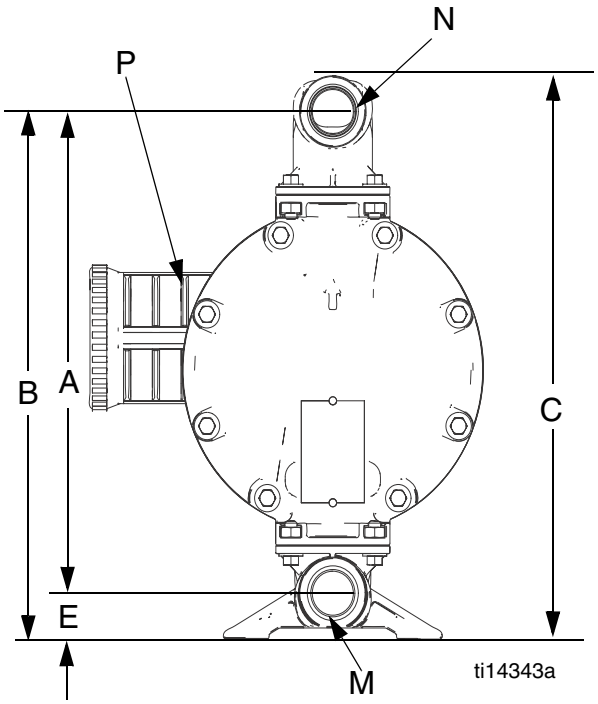


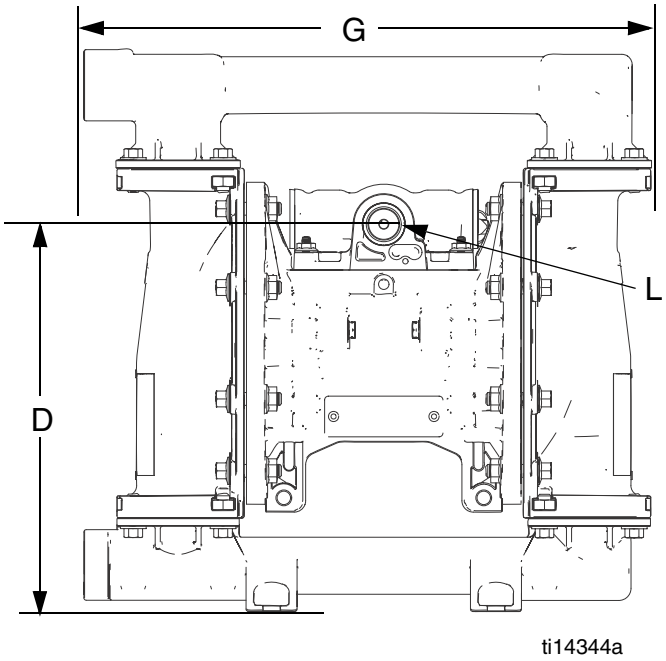


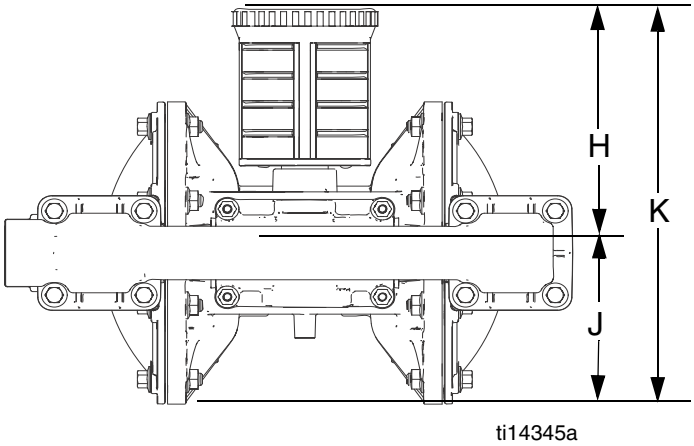


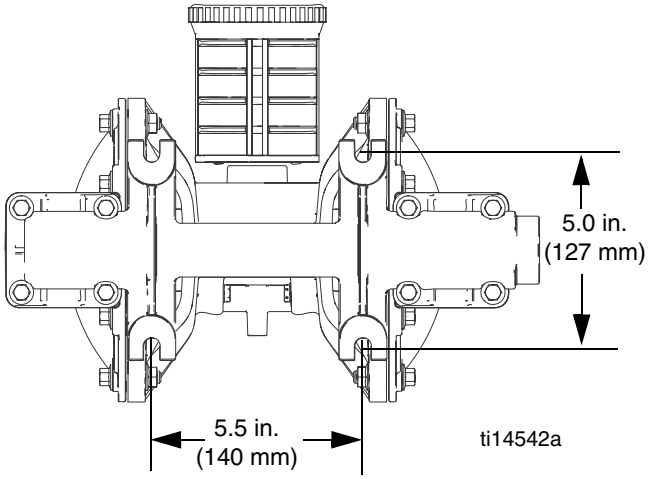
A ..... 13.2 in. (335 mm)
B ..... 15.7 in. (399 mm)
C ..... 17.8 in. (452 mm)
D ..... 12.0 in. (305 mm)
E ..... 2.5 in. (63.5 mm)
F..... 8.0 in. (203 mm)
G ..... **Center Flange:** 16.0 in. (406 mm)
End Flange: 15.2 in. (386 mm)
H ..... 5.6 in. (142 mm)
J ..... 3.9 in. (99 mm)
K..... 9.6 in. (244 mm)
L ..... 1/2 npt(f) air inlet
M .... 1 in. ANSI/DIN flange
N..... 1 in. ANSI/DIN flange
P ..... 3/4 npt(f) air exhaust port

Stainless Steel (1050S)









A ..... 11.8 in. (300 mm)
B ..... 12.9 in. (328 mm)
C ..... 13.7 in. (348 mm)
D ..... 9.5 in. (241 mm)
E..... 1.1 in. (28 mm)
G ..... 13.9 in. (353 mm)
H ..... 5.7 in. (145 mm)
J..... 4.0 in. (102 mm)
K ..... 9.6 in. (245 mm)

L ..... 1/2 npt(f) air inlet
M .... 1 in. npt(f) or 1 in. bspt fluid inlet ports (4)
N..... 1 in. npt(f) or 1 in. bspt fluid outlet ports (4)
P ..... 3/4 npt(f) air exhaust port

Performance Charts

Test Conditions: Pump tested in water with inlet submerged.

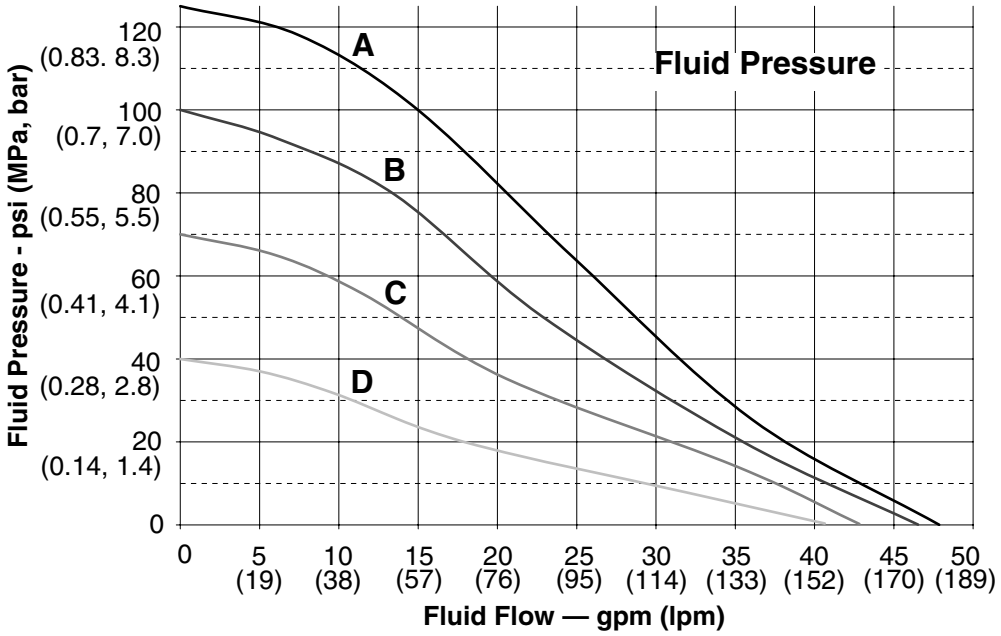
Operating Air Pressure

A
125 psi (0.83 MPa, 8.3 bar)

B
100 psi (0.7 MPa, 7.0 bar)

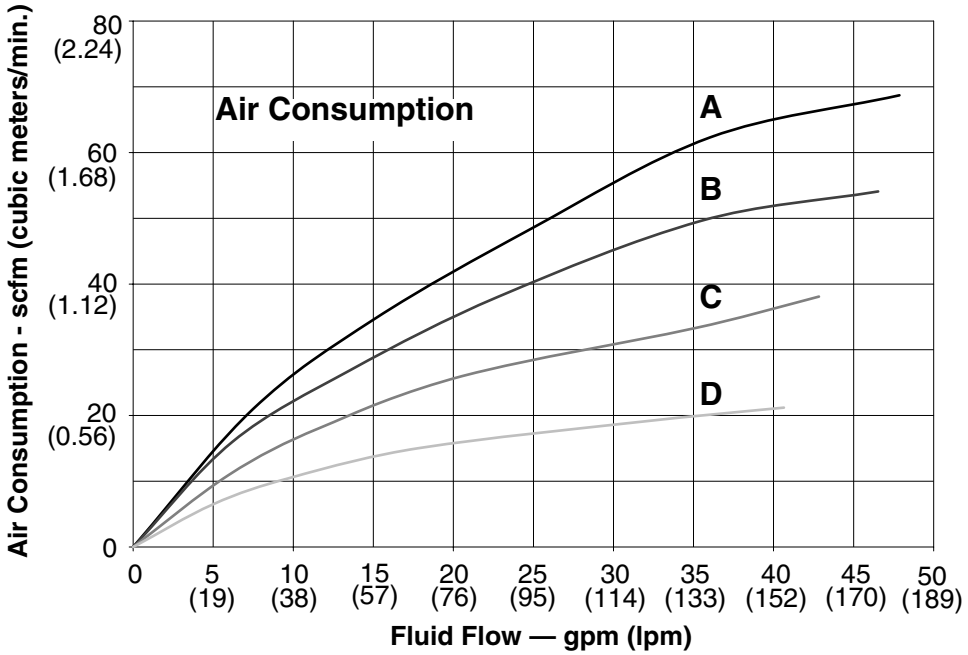
C
70 psi (0.48 MPa, 4.8 bar)

D
40 psi (0.28 MPa, 2.8 bar)



How to Read the Charts

1. Locate fluid flow rate along bottom of chart.
2. Follow vertical line up to intersection with selected operating air pressure curve.
3. Follow left to scale to read **fluid outlet pressure** (top chart) or **air consumption** (bottom chart).



Technical Data

Maximum fluid working pressure	125 psi (0.86 MPa, 8.6 bar)
Air pressure operating range	20-125 psi (0.14-0.86 MPa, 1.4-8.6 bar)
Maximum air consumption	67 scfm
Air consumption at 70 psi (0.48 MPa, 4.8 bar), 20 gpm (76 lpm)	25 scfm
Maximum free-flow delivery	50 gpm (189 lpm)
Maximum pump speed	280 cpm
Fluid displacement per cycle	0.17 gal. (0.64 liters)
Maximum suction lift	16 ft (4.9 m) dry, 29 ft (8.8 m) wet
Maximum size pumpable solids	1/8 in. (3.2 mm)
Sound Power*	
at 70 psi (0.48 MPa, 4.8 bar) and 50 cpm	78 dBa
at 100 psi (0.7 MPa, 7.0 bar) and full flow	90 dBa
Sound Pressure**	
at 70 psi (0.48 MPa, 4.8 bar) and 50 cpm	84 dBa
at 100 psi (0.7 MPa, 7.0 bar) and full flow	96 dBa
Operating temperature range	see page 23
Air inlet size	1/2 npt(f)
Fluid inlet size	
Aluminum (1050A)	1 in. npt(f) or 1 in. bspt
Plastic (1050P and 1050C)	1 in. raised face ANSI/DIN flange
Stainless Steel (1050S)	1 in. npt(f) or 1 in. bspt
Fluid outlet size	
Aluminum (1050A)	1 in. npt(f) or 1 in. bspt
Plastic (1050P and 1050C)	1 in. raised face ANSI/DIN flange
Stainless Steel (1050S)	1 in. npt(f) or 1 in. bspt
Weight	
Aluminum (1050A)	23 lb. (10.5 kg)
Plastic (1050P and 1050C)	18 lb. (8.2 kg)
Stainless Steel (1050S)	
with conductive polypropylene center	36.3 lb. (16.5 kg)
with polypropylene center	37.3 lb. (16.9 kg)
with aluminum center	41.4 lb. (18.8 kg)
Wetted parts	
Aluminum (1050A)	aluminum and material(s) chosen for seat, ball, and diaphragm options
Plastic (1050P and 1050C)	polypropylene and material(s) chosen for seat, ball, and diaphragm options
Stainless Steel (1050S)	stainless steel and material(s) chosen for seat, ball, and diaphragm options
Non-wetted external parts	
Aluminum (1050A)	aluminum, coated carbon steel
Plastic (1050P and 1050C)	stainless steel, polypropylene
Stainless Steel (1050S)	stainless steel, polypropylene or aluminum (if used in center section)

** Sound power measured per ISO-9614-2.*
*** Sound pressure was tested 3.28 ft (1 m) from equipment.*

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Fluid Temperature Range

NOTICE

Temperature limits are based on mechanical stress only. Certain chemicals will further limit the fluid temperature range. Stay within the temperature range of the most-restricted wetted component. Operating at a fluid temperature that is too high or too low for the components of your pump may cause equipment damage.

Diaphragm/Ball/Seat Material	Fluid Temperature Range			
	Aluminum or Stainless Steel Pumps		Polypropylene or Conductive Polypropylene Pumps	
	Fahrenheit	Celsius	Fahrenheit	Celsius
Acetal (AC)	10° to 180°F	-12° to 82°C	32° to 180°F	0° to 82°C
Buna-N (BN)	10° to 180°F	-12° to 82°C	32° to 180°F	0° to 82°C
FKM Fluoroelastomer (FK)*	-40° to 275°F	-40° to 135°C	32° to 180°F	0° to 82°C
Geolast® (GE)	-40° to 150°F	-40° to 66°C	32° to 150°F	0° to 66°C
Neoprene overmolded diaphragm (CO) or Neoprene check balls (CR or CW)	0° to 180°F	-18° to 82°C	32° to 180°F	0° to 82°C
Polypropylene (PP)	32° to 180°F	0° to 82°C	32° to 180°F	0° to 82°C
PTFE overmolded diaphragm (PO)	40° to 180°F	4.0° to 82°C	40° to 180°F	4° to 82°C
PTFE check balls or two-piece PTFE/EPDM diaphragm (PT)	40° to 220°F	4° to 104°C	40° to 180°F	4° to 82°C
PVDF (PV)	10° to 225°F	-12° to 107°C	32° to 180°F	0° to 82°C
Santoprene® (SP)	-40° to 180°F	-40° to 82°C	32° to 180°F	0° to 82°C
TPE (TP)	-20° to 150°F	-29° to 66°C	32° to 150°F	0° to 66°C

** The maximum temperature listed is based on the ATEX standard for T4 temperature classification. If you are operating in a non-explosive environment, FKM fluoroelastomer's maximum fluid temperature in aluminum or stainless steel pumps is 320°F (160°C).*

Graco Standard Husky Pump Warranty

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

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