

# Husky™ 3250 Air-Operated Diaphragm Pump

3A7661B

EN

***SST and aluminum pumps for fluid transfer applications, including high viscosity materials. For professional use only.***

**Not approved for use in European explosive atmosphere locations.**

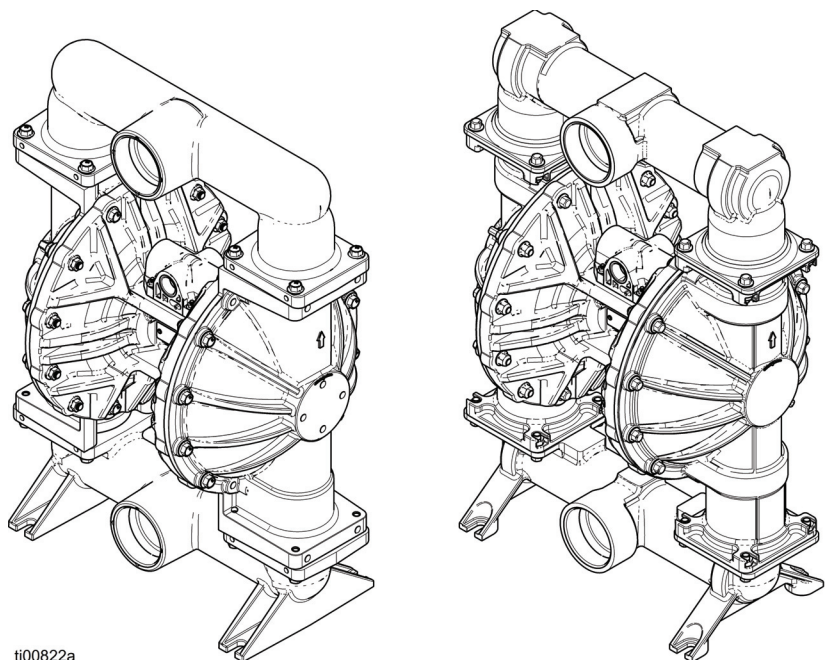
*125 psi (0.86 MPa, 8.6 bar) Maximum Fluid Working Pressure*

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



## **Important Safety Instructions**

Read all warnings and instructions in this manual before using the equipment. Be familiar with the proper control and usage of the equipment. Save these instructions.



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# Related Manuals

Manual Number	Title
3A7662	Husky 3250 Air-Operated Diaphragm Pump, Repair/Parts

# Safety Symbols

The following safety symbols appear throughout this manual and on warning labels. Read the table below to understand what each symbol means.

Symbol	Meaning
	Burn Hazard
	Cleaning Solvent Hazard
	Crush Hazard
	Equipment Misuse Hazard
	Fire and Explosion Hazard
	Pressurized Equipment Hazard
	Skin Injection Hazard
	Splash Hazard
	Toxic Fluid or Fumes Hazard

Symbol	Meaning
	Eliminate Ignition Sources
	Follow Pressure Relief Procedure
	Ground Equipment
	Ventilate Work Area
	Wear Personal Protective Equipment


















### Safety Alert Symbol







This symbol indicates: Attention! Become Alert! Look for this symbol throughout the manual to indicate important safety messages.

# Warnings

The following warnings apply throughout this manual. Read, understand, and follow the warnings before using this equipment. Failure to follow these warnings can result in serious injury.

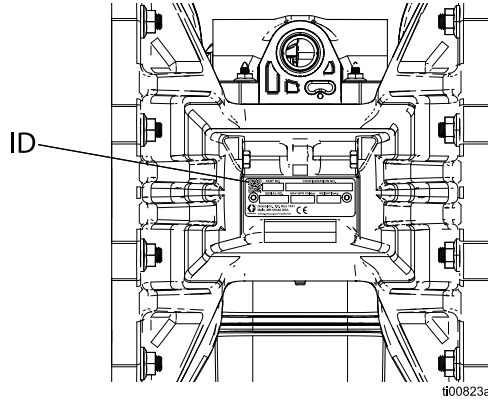
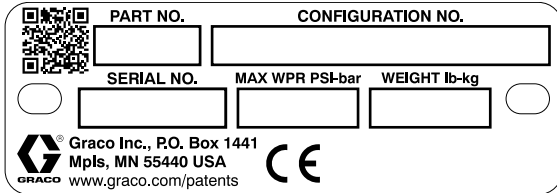
 <span style="font-size: 2em; font-weight: bold; margin-left: 10px;">WARNING</span>	
   	<p><b>FIRE AND EXPLOSION HAZARD</b></p> <p>Flammable fumes, such as solvent and paint fumes, in <b>work area</b> can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> <li>• Use equipment only in well-ventilated area.</li> <li>• Eliminate all ignition sources, such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking).</li> <li>• Ground all equipment in the work area. See <b>Grounding</b> instructions.</li> <li>• Keep work area free of debris, including solvent, rags and gasoline.</li> <li>• Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.</li> <li>• Use only grounded lines.</li> <li>• <b>Stop operation immediately</b> if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem.</li> <li>• Keep a working fire extinguisher in the work area.</li> <li>• Route exhaust away from all ignition sources. If diaphragm ruptures, fluid may be exhausted with air.</li> </ul>
  	<p><b>PRESSURIZED EQUIPMENT HAZARD</b></p> <p>Fluid from the equipment, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.</p> <ul style="list-style-type: none"> <li>• Follow the <b>Pressure Relief Procedure</b> when you stop spraying/dispensing and before cleaning, checking, or servicing equipment.</li> <li>• Tighten all fluid connections before operating the equipment.</li> <li>• Check lines, tubes, and couplings daily. Replace worn or damaged parts immediately.</li> </ul>

 <b>WARNING</b>	
 	<p><b>EQUIPMENT MISUSE HAZARD</b></p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> <li>• Do not operate the unit when fatigued or under the influence of drugs or alcohol.</li> <li>• Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See <b>Technical Specifications</b> in all equipment manuals.</li> <li>• Use fluids and solvents that are compatible with equipment wetted parts. See <b>Technical Specifications</b> 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.</li> <li>• Do not leave the work area while equipment is energized or under pressure.</li> <li>• Turn off all equipment and follow the <b>Pressure Relief Procedure</b> when equipment is not in use.</li> <li>• Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.</li> <li>• Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.</li> <li>• Make sure all equipment is rated and approved for the environment in which you are using it.</li> <li>• Use equipment only for its intended purpose. Call your distributor for information.</li> <li>• Route lines and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.</li> <li>• Do not kink or over bend lines or use lines to pull equipment.</li> <li>• Keep children and animals away from work area.</li> <li>• Comply with all applicable safety regulations.</li> </ul>
  	<p><b>THERMAL EXPANSION HAZARD</b></p> <p>Fluids subjected to heat in confined spaces, including lines, can create a rapid rise in pressure due to the thermal expansion. Over-pressurization can result in equipment rupture and serious injury.</p> <ul style="list-style-type: none"> <li>• Open a valve to relieve the fluid expansion during heating.</li> <li>• Replace lines proactively at regular intervals based on your operating conditions.</li> </ul>
	<p><b>PRESSURIZED ALUMINUM PARTS HAZARD</b></p> <p>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.</p> <ul style="list-style-type: none"> <li>• Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.</li> <li>• Do not use chlorine bleach.</li> <li>• Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.</li> </ul>

 <h1 style="margin: 0;">WARNING</h1>	
 	<p><b>PLASTIC PARTS CLEANING SOLVENT HAZARD</b></p> <p>Many cleaning solvents can degrade plastic parts and cause them to fail, which could cause serious injury or property damage.</p> <ul style="list-style-type: none"> <li>• Use only compatible solvents to clean plastic structural or pressure-containing parts.</li> <li>• See <b>Technical Specifications</b> in all equipment manuals for materials of construction. Consult the solvent manufacturer for information and recommendations about compatibility.</li> </ul>
	<p><b>TOXIC FLUID OR FUMES HAZARD</b></p> <p>Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.</p> <ul style="list-style-type: none"> <li>• Read Safety Data Sheets (SDSs) to know the specific hazards of the fluids you are using.</li> <li>• Route exhaust away from work area. If diaphragm ruptures, fluid may be exhausted into the air.</li> <li>• Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.</li> </ul>
	<p><b>BURN HAZARD</b></p> <p>Equipment surfaces and fluid that's heated can become very hot during operation. To avoid severe burns:</p> <ul style="list-style-type: none"> <li>• Do not touch hot fluid or equipment.</li> </ul>
	<p><b>PERSONAL PROTECTIVE EQUIPMENT</b></p> <p>Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. Protective equipment includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• Protective eyewear, and hearing protection.</li> <li>• Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.</li> </ul>

# Configuration Number Matrix

For the Configuration Number of your pump, see the identification plate (ID) on top of the center section. Use the following tables to determine the pump components.



Sample Configuration Number: **3250S-PP01AS1PPPTPSPT**

<b>3250</b>	<b>S</b>	<b>P</b>	<b>P01A</b>	<b>S1</b>	<b>PP</b>	<b>PT</b>	<b>PS</b>	<b>PT</b>
Pump Size	Fluid Section Material	Drive Type	Center Section and Air Valve	Fluid Covers and Manifolds	Seats	Balls	Diaphragms	Manifold and Seat Seals

Pump	Fluid Section Material		Drive Type		Center Section and Air Valve Material		For Use With	Fluid Covers and Manifolds	
	<b>3250</b>	<b>A</b>	Aluminum	<b>P</b>	Pneumatic	<b>P01A</b>		Polypropylene	Standard Diaphragms
<b>A2</b>							Aluminum, Center Port, 3-11 BSPT		
<b>S</b>		Stainless steel			<b>P01G</b>	Polypropylene	Overmolded Diaphragms	<b>S1</b>	SST, Center Port, 3-8 NPT
								<b>S2</b>	SST, Center Port, 3-11 BSPT

Configuration Number Matrix

Seat Material		Ball Material		Diaphragm Material		Manifold and Seat Seal Material	
<b>PP</b> ■	Polypropylene	<b>FK</b>	FKM	<b>FK</b>	FKM	<b>PT</b> ■	PTFE
<b>SP</b> ■	Santoprene	<b>PT</b> ■	PTFE	<b>PO</b> ■	PTFE/EPDM Overmolded		
<b>SS</b> ■	Stainless Steel	<b>SP</b> ■	Santoprene	<b>PS</b> ■	PTFE/Santoprene 2-Piece		
<b>AC</b>	Acetal	<b>AC</b>	Acetal	<b>SP</b> ■	Santoprene		
<b>AL</b>	Aluminum	<b>BN</b>	Buna	<b>BN</b>	Buna		
<b>BN</b>	Buna	<b>CR</b>	Polychloroprene	<b>CO</b>	Polychloroprene, Overmold		
<b>FK</b>	FKM	<b>CW</b>	Polychloroprene, Weighted	<b>CR</b>	Polychloroprene		
<b>GE</b>	Geolast	<b>GE</b>	Geolast	<b>GE</b>	Geolast		
<b>TP</b>	TPE	<b>TP</b>	TPE	<b>TP</b>	TPE		

■ These materials are FDA-Compliant and meet the United States Code of Federal Regulations (CFR) Title 21, Section 177 or are of a corrosion resistant grade Stainless Steel. **NOTE:** Rubber and Rubber-like materials comply with CFR Title 21, Section 177, Part 177.2600; Plastic materials comply with CFR Title 21, Section 177, Parts 177.2600, 177.1520, 177.1550.



# Installation

## General Information

Fig. 1, [Typical Installation](#), shows only a guide for selecting and installing system components. Contact your Graco distributor for assistance in planning a system to suit your needs. Always use Genuine Graco Parts and accessories. Be sure all accessories are adequately sized and pressure rated to meet the system's requirements.

Reference letters in the text, for example (A), refer to the callouts in the figures.

Variations in color between the plastic components of this pump are normal. Color variation does not affect the performance of the pump.

### **NOTICE**

Prolonged exposure to UV radiation will degrade natural polypropylene components of the pumps. To prevent potential injury or equipment damage, do not expose pump or the plastic components to direct sunlight for prolonged periods.

## Tighten Fasteners

Before mounting and using the pump for the first time, check and retorque all external fasteners. Follow [Torque Instructions, page 21](#), or see the torque tag on your pump. After the first day of operation, retorque the fasteners.

## Tips to Reduce Cavitation

### **NOTICE**

Cavitation in an AODD pump is the formation and collapse of bubbles in the pumped liquid. Frequent or excessive cavitation can cause serious damage, including pitting and early wear of fluid chambers, balls, and seats. It may result in reduced efficiency of the pump. Cavitation damage and reduced efficiency both result in increased operating costs.

Cavitation depends on the vapor pressure of the pumped liquid, the system suction pressure, and the velocity pressure. It can be reduced by changing any of these factors.

1. Reduce vapor pressure: Decrease the temperature of the pumped liquid.
2. Increase suction pressure:
  - a. Lower the installed position of the pump relative to the liquid level in the supply.
  - b. Reduce the friction length of the suction piping. Remember that fittings add friction length to the piping. Reduce the number of fittings to reduce the friction length.

## Installation

- c. Increase the size of the suction piping.

**NOTE:** Be sure the inlet fluid pressure does not exceed 25 % of the outlet working pressure.

3. Reduce liquid velocity: Slow the cyclic rate of the pump.

Pumped liquid viscosity is also very important but normally is controlled by factors that are process dependent and cannot be changed to reduce cavitation. Viscous liquids are more difficult to pump and more prone to cavitation.

Graco recommends taking all the above factors into account in system design. To maintain pump efficiency, supply only enough air pressure to the pump to achieve the required flow.




Graco distributors can supply site specific suggestions to improve pump performance and reduce operating costs.

Rubber Foot Mounting Kit 236452 is available to reduce noise and vibration during operation (purchase separately).

1. Ensure that the mounting surface is level and can support the weight of the equipment, lines, and accessories, as well as the stress caused during operation.
2. Mount the equipment on a level surface and secure the equipment to the mounting surface. For all mountings, ensure that the equipment is fastened directly to the mounting surface. See [Dimensions, page 22](#), for dimensions of the mounting holes for your equipment.

**NOTE:** For ease of operation and service, mount the equipment so the air valve cover, air inlet, and fluid inlet and outlet ports are easily accessible.

## Mount The Pump

					
<p>The equipment is heavy (see <a href="#">Technical Specifications, page 25</a> for specific weights). If the equipment must be moved, follow the <a href="#">Pressure Relief Procedure, page 17</a>, and have two people lift the equipment by grasping the outlet manifold securely, or use appropriate lifting equipment to lift by the outlet manifold. Never have one person move or lift the equipment.</p>					

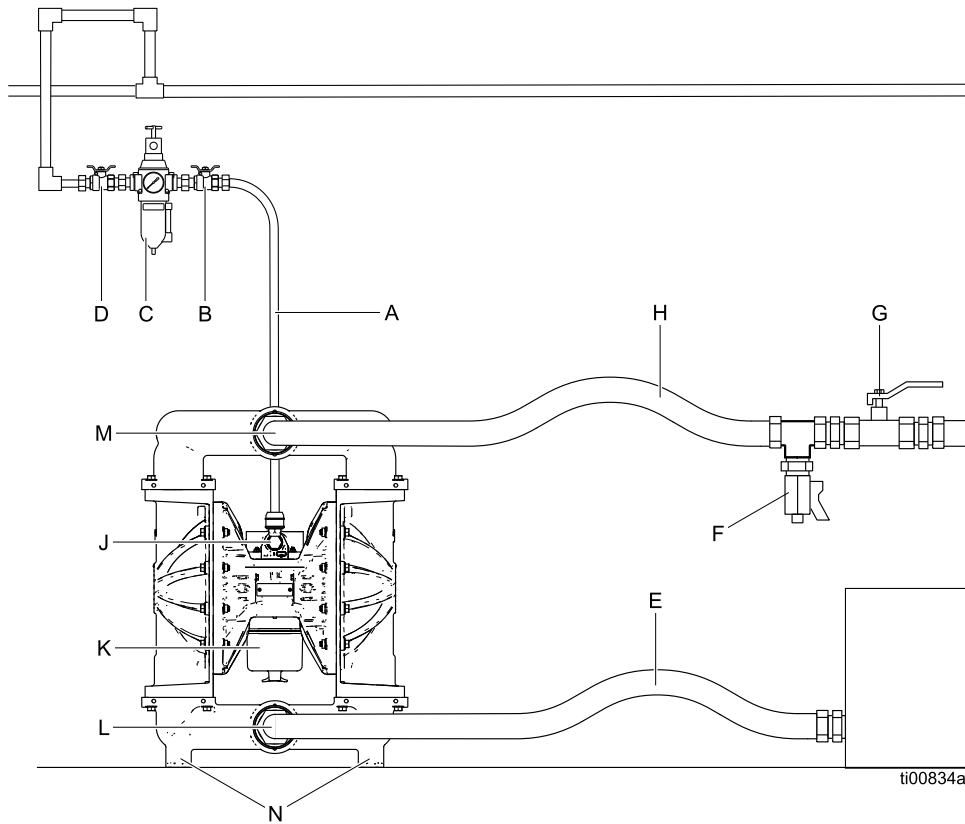


Figure 1 Typical Installation




**Accessories/Components Not Supplied**

- A Air supply line
- B Bleed-type master air valve (may be required for your pump)
- C Air filter/regulator assembly
- D Master air valve (to isolate the filter/regulator for service)
- E Conductive flexible fluid supply line
- F Fluid drain valve (may be required for your pump)
- G Fluid shutoff valve
- H Conductive, flexible fluid outlet line

**System Components**

- J Air inlet port (not visible)
- K Air exhaust port and muffler
- L Fluid inlet port
- M Fluid outlet port
- N Mounting feet

## Ground The System

					
<p>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 electrical current. Follow local codes and regulations.</p>					




Before operating the pump, ground the system as explained below.

- Air and fluid lines: Use only conductive lines with a maximum of 500 ft (150 m) combined line length to ensure grounding continuity. Check electrical resistance of lines. If total resistance to ground exceeds 29 megohms, replace line immediately.
- Air compressor: Follow manufacturer's recommendations.
- Fluid supply container: Follow local codes and regulations.
- Solvent pails used when flushing: Follow local codes and regulations. 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 Lines

1. Install an air filter/regulator assembly (C). The regulator controls the fluid pressure. The fluid stall pressure will be the same as the setting of the air regulator. The filter removes harmful dirt and moisture from the compressed air supply.
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.

				
<p>Trapped air can cause the equipment to cycle unexpectedly, which could result in serious injury from splashing fluid. To help prevent serious injury, install a bleed-type master air valve (B). See Fig. 1, <a href="#">Typical Installation</a>.</p>				

3. Locate another master air valve (D) upstream from all air line accessories and use it to isolate them during cleaning and repair.
4. Install a conductive, flexible air hose (A) between the accessories and the 3/4 npt(f) pump air inlet.

## Air Exhaust Ventilation

					
<p>Be sure the system is properly ventilated for your type of installation. Exhaust must be vented to a safe place, away from people, animals, food handling areas, and all sources of ignition when pumping toxic or hazardous fluids. Diaphragm rupture can cause the fluid being pumped to exhaust with the air. Place a conductive container at the end of the air exhaust line to catch the fluid. See Fig. 2, <a href="#">Typical Air Exhaust Ventilation</a>.</p>					

**NOTE:** The air exhaust port is 1 in. npt(f). Do not restrict the air exhaust port. Excessive exhaust restriction can cause erratic pump operation and reduce equipment performance.

### To provide a remote exhaust:

1. Remove the muffler (U) from the pump air exhaust port (K).
2. Install a conductive air exhaust hose (S) and connect the muffler to the other end of the hose. The minimum size for the air exhaust hose is 1 in. (26 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 conductive container (T) 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.

## Installation

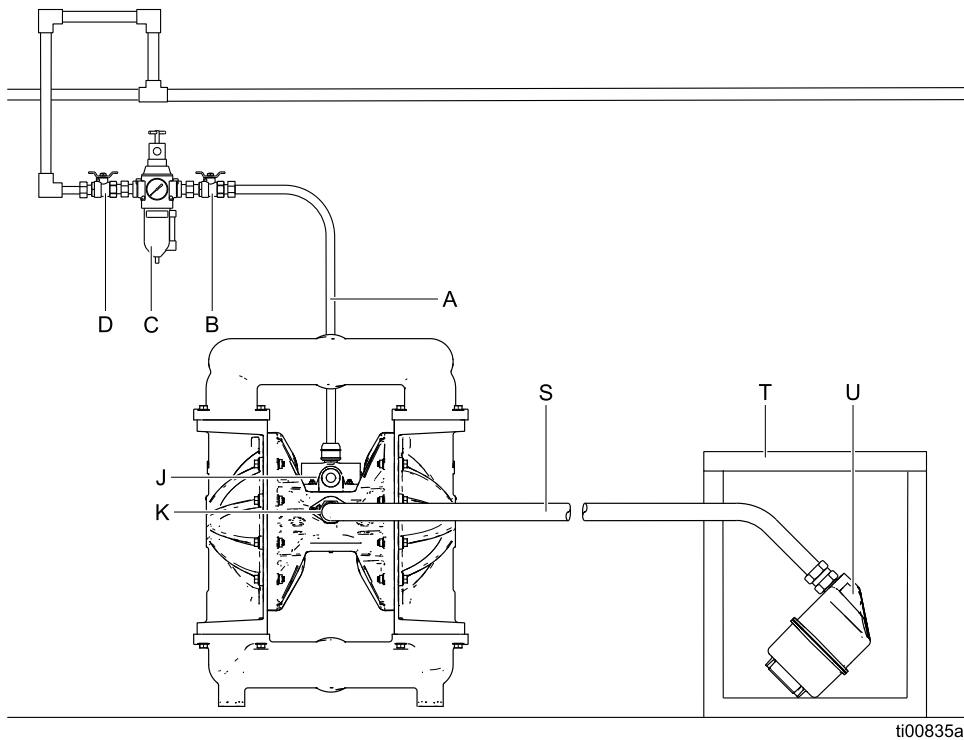





Figure 2 Typical Air Exhaust Ventilation

- |   |  |   |   |
|---|--|---|---|
| A | Air supply line  | K | Air exhaust port                            |
| B | Bleed-type master air valve (may be required for your pump installation) | S | Conductive air exhaust hose                 |
| C | Air filter/regulator assembly  | T | Conductive container for remote air exhaust |
| D | Master air valve (for accessories)                                       | U | Muffler                                     |
| J | Air inlet port (not visible)   |   |   |

## Fluid Supply Line

					
<p>This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury when relieving pressure, such as splashing fluid, install a fluid drain valve (F). See Fig. 1, <a href="#">Typical Installation</a>.</p>					

1. Use conductive, flexible fluid hoses (E). See [Ground The System, page 12](#).
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. Excessive inlet fluid pressure also will shorten diaphragm life. Approximately 3–5 psi (0.02–0.03 MPa, 0.21–0.34 bar) should be adequate for most materials.  
**NOTE:** For best results, always install the pump as close as possible to the material source. See the [Technical Specifications, page 25](#), for maximum suction lift (wet and dry). Minimize suction requirements to maximize pump performance.
3. If needed, install a fluid pressure relief valve (V). See [Fluid Pressure Relief Valve, page 15](#).




### NOTICE

The equipment can be damaged if flexible fluid lines are not used. If hard-plumbed fluid lines are used in the system, use a short length of flexible, conductive fluid line to connect to the equipment.

## Fluid Outlet Line

1. Use conductive, flexible fluid hoses. See [Ground The System, page 12](#).
2. Install a fluid drain valve (F) near the fluid outlet.
3. Install a shutoff valve (G) in the fluid outlet line.

## Fluid Pressure Relief Valve

					
<p>Some systems may require installation of a pressure relief valve (V) at the pump outlet to prevent overpressurization and rupture of the pump or fluid lines. 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 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. The pressure relief valve reduces the risk of serious injury, including splashing in the eyes or on the skin.</p>					

A fluid pressure relief valve is available (purchase separately). See [Related Manuals, page 2](#).

*Installation*

**KEY:**

- R Fluid inlet port
- S Fluid outlet port
- V Fluid pressure relief valve
- △1 Install valve between fluid inlet and outlet ports.
- △2 Connect fluid inlet line here.
- △3 Connect fluid outlet line here.

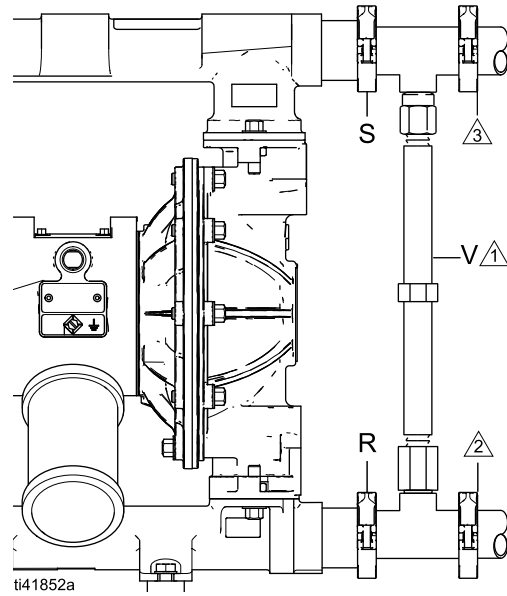


Figure 3 Fluid Pressure Relief Valve



# 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 splashing fluid, follow the **Pressure Relief Procedure** when you stop dispensing and before cleaning, checking, or servicing the equipment.

1. Close the bleed-type master air valve (B) to shut off the air to the equipment.
2. Open outbound fluid valve to relieve fluid pressure from the equipment.
  - a. For simple transfer applications, open either the fluid shutoff valve (G) or the fluid drain valve (F).
  - b. For circulating applications, ensure that the fluid shutoff valve (G) is closed and open the fluid drain valve (F).

## Before Each Use

### Tighten Fasteners

Check and tighten all fasteners before operating the equipment. Re-torque as needed. Follow [Torque Instructions, page 21](#).

#### **NOTICE**

To avoid pump damage, do not over-torque the fasteners on the equipment.

### Tighten Connections

Check and tighten all fluid connections before operating the equipment. Replace worn or damaged parts as needed.

#### **NOTICE**

Firmly tighten all connections to avoid leaks and damage to equipment parts.

## Flush the Equipment

Flush the equipment before each use. Determine whether to disassemble and clean individual parts or simply flush the equipment with a compatible solvent or sanitizing solution.

To simply flush the equipment with a compatible solvent or sanitizing solution, follow [Start and Adjust the Equipment, page 17](#), and [Flush the Equipment, page 15](#).

To disassemble and clean individual parts, see the applicable repair procedure. See [Related Manuals, page 2](#).

## Start and Adjust the Equipment

1. Confirm that the equipment is properly grounded. See [Ground The System, page 12](#).
2. Check and tighten all fasteners, air connections, and fluid connections before operating the equipment. Replace worn or damaged parts as needed.

#### **NOTICE**

Firmly tighten all fasteners and connections to avoid air or fluid leaks. To avoid equipment damage, do not over-torque the fasteners on the equipment. See [Torque Instructions, page 21](#)

3. Connect a flexible, conductive fluid supply line (E) from the fluid to be pumped to the fluid inlet port (L).
4. Connect the flexible, conductive fluid outlet line (H) to the fluid outlet port (M) and route the line to the end container.
5. Close the fluid drain valve (F).
6. Turn the air regulator (C) to the lowest air pressure setting and open the bleed-type master air valve (B).
7. If the fluid outlet line (H) has a dispensing device, hold it open while continuing with the following step.

## Operation

- To prime the pump, slowly increase air pressure with the air regulator (C) until pump starts to cycle. Do not exceed the maximum operating air pressure listed in the [Technical Specifications, page 25](#). Allow the pump to cycle slowly until all air is pushed out of the fluid lines and fluid exits the fluid outlet line (H).

**NOTE:** Use lowest possible air pressure to prime, just enough to cycle the pump. If the pump does not prime as expected, turn air pressure **DOWN**. Excessive fluid pressure can reduce diaphragm life.

### **NOTICE**

To avoid pump damage and inefficient operation, do not use a fluid inlet pressure greater than 25 percent of the outlet working pressure.

- If you are flushing, run the pump long enough to thoroughly clean the pump and hoses.
- Close the bleed-type master air valve.

## Shut Down the Equipment



- Follow the [Pressure Relief Procedure, page 17](#).
- Follow [Flush the Equipment, page 20](#).

# Maintenance

## Establish a Preventive Maintenance Schedule

**NOTICE**  
Regularly maintain the equipment to avoid pump damage due to spills, leaks, or diaphragm failure.

Establish a preventive maintenance schedule based on the equipment service history.

## Inspect the Equipment

Regularly inspect the equipment for worn or damaged parts. Replace as needed.

## Torque Fasteners

Regularly check and torque all fasteners. Follow [Torque Instructions, page 21](#).

**NOTICE**  
To avoid pump damage, do not over-torque the fasteners on the equipment.

## Tighten Connections

Check and tighten all fluid connections before operating the equipment. Replace worn or damaged parts as needed.

**NOTICE**  
Firmly tighten all connections to avoid leaks and damage to equipment parts.

## Lubricate the Equipment

The equipment is lubricated at the factory. It is designed to require no further lubrication for the life of the equipment. There is no need to add an inline lubricator under normal operating conditions.

The air valve is designed to operate unlubricated. If lubrication is desired, remove the line from the equipment air inlet and add two drops of machine oil to the air inlet every 500 hours of operation (or monthly).

**NOTICE**  
Do not over-lubricate the equipment. Lubricant is exhausted through the muffler and could contaminate your fluid supply or other equipment. Excessive lubrication can also cause the equipment to malfunction.

## Flush the Equipment


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

- Flush before changing fluid materials, before fluid can dry or freeze in the equipment, at the end of the day, before storing, and before repairing equipment.
  - Flush at the lowest pressure possible. Check and tighten all fasteners and fluid connections. Replace worn or damaged parts as needed.
  - Flush with a solvent that is compatible with the fluid being dispensed and the equipment wetted parts.
  - Flushing schedule will vary based on particular uses.
  - Always cycle the equipment during the entire flushing process.
1. Perform the [Pressure Relief Procedure, page 17](#).
  2. Insert the suction end of the supply line (E) into a compatible solvent.
  3. Open the air regulator (C) to supply low pressure air to the equipment.
  4. Run the equipment for enough time to thoroughly clean the equipment and lines.
  5. Close the air regulator (C).
  6. Remove the suction end of the supply line (E) from the compatible solvent and drain the equipment.

## Store the Equipment

--	--	--	--	--

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

1. Follow [Pressure Relief Procedure, page 17](#).
2. Follow [Flush the Equipment, page 20](#).

### NOTICE

Store the equipment at 32°F (0°C) or higher. Exposure to extreme low temperatures may result in damage to plastic parts.

## Recycling and Disposal

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

1. Perform the [Pressure Relief Procedure, page 17](#).
2. Drain and dispose of fluids according to applicable regulations. Refer to the material manufacturer's Safety Data Sheet.
3. Deliver remaining product to a recycling facility.

# Torque Instructions

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

**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 fasteners with new ones or apply medium-strength thread sealant to the threads.

**NOTE:** Always completely torque fluid covers before torquing manifolds.

1. Start all fluid cover fasteners a few turns. Then, turn down each fastener just until head contacts cover.
2. Turn each fastener by 1/2 turn or less working in a crisscross pattern to specified torque.

**Fluid cover fasteners:** 190 to 220 in-lb (21 to 25 Nm)

3. Repeat for manifolds.

**Manifold fasteners:** 305 to 335 in-lb (34 to 38 Nm)

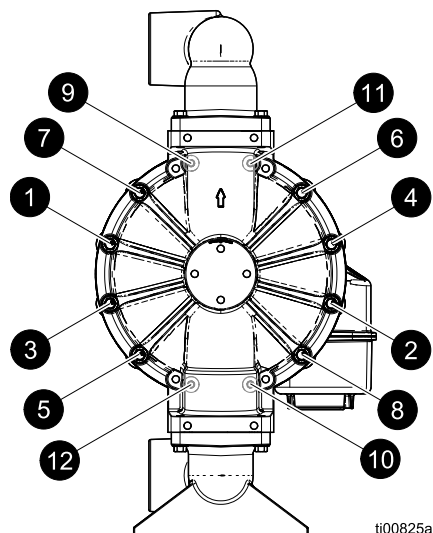
4. Retorque the air valve fasteners in a crisscross pattern to the specified torque.

**Air valve fasteners:** 45 to 55 in-lb (5 to 6 Nm)

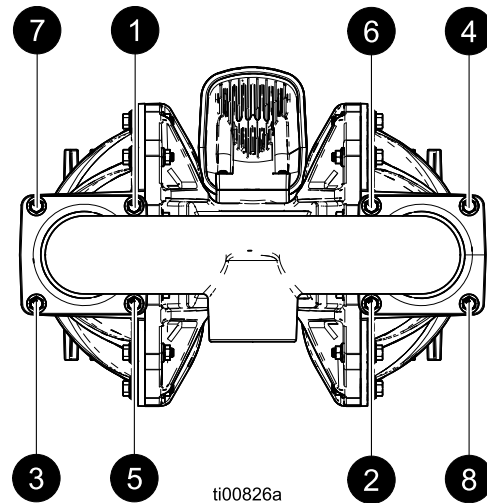
5. Retorque the pilot valves to the specified torque. **Do not over torque.**

**Pilot valves:** 20 to 25 in-lb (2 to 3 Nm)

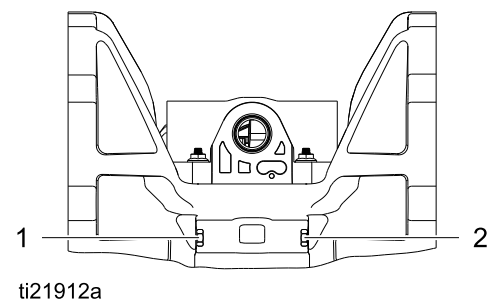
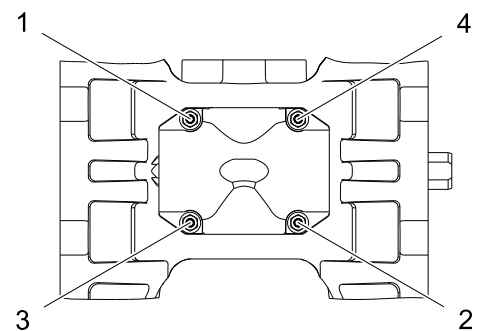
## Fluid Cover fasteners



## Inlet and Outlet Manifold fasteners



## Air Valve fasteners and Pilot Valves

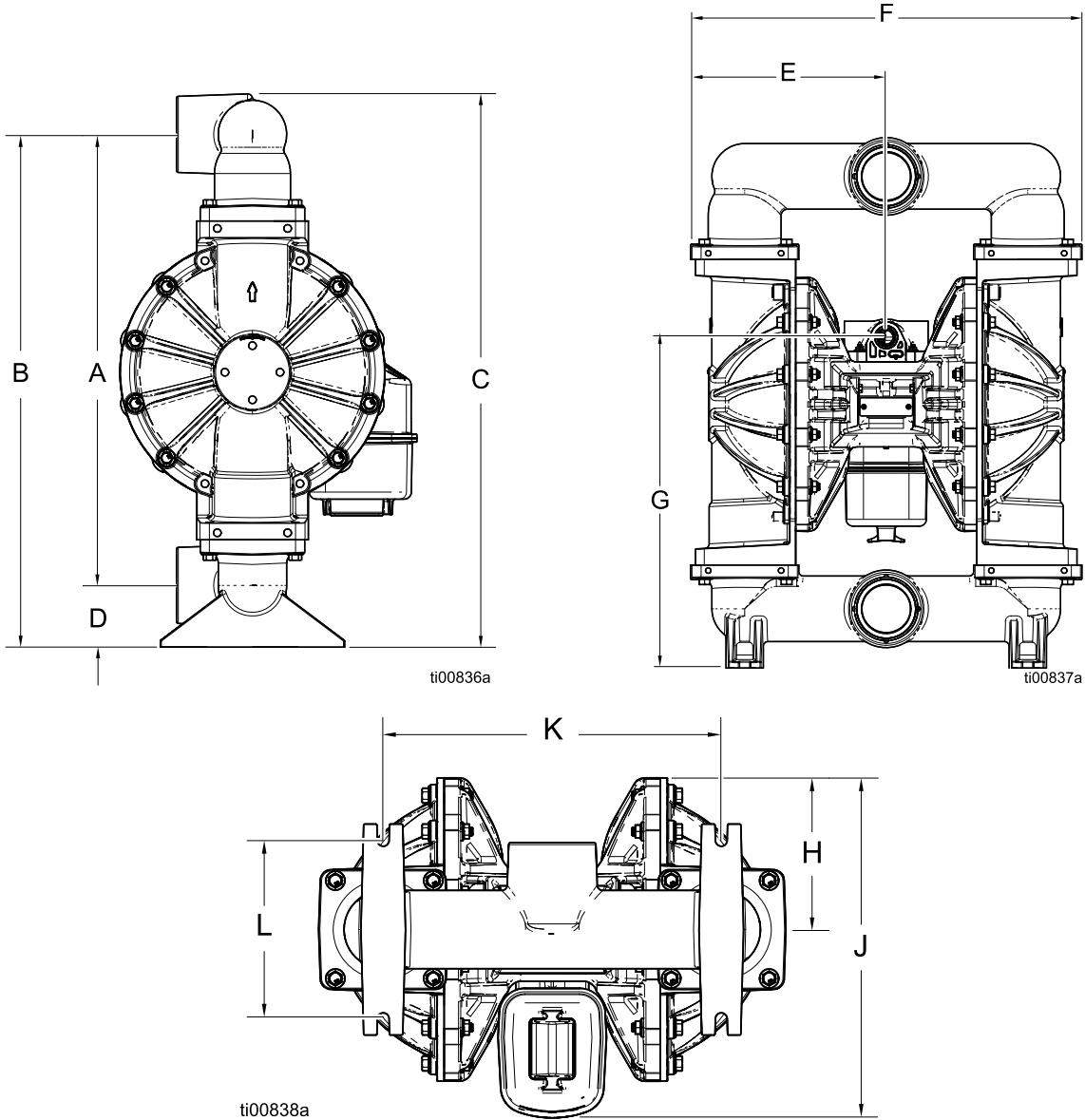


## NOTICE

To avoid pump damage, do not over-torque the fasteners on the equipment.

# Dimensions

## Center Port Models, Stainless Steel and Aluminum



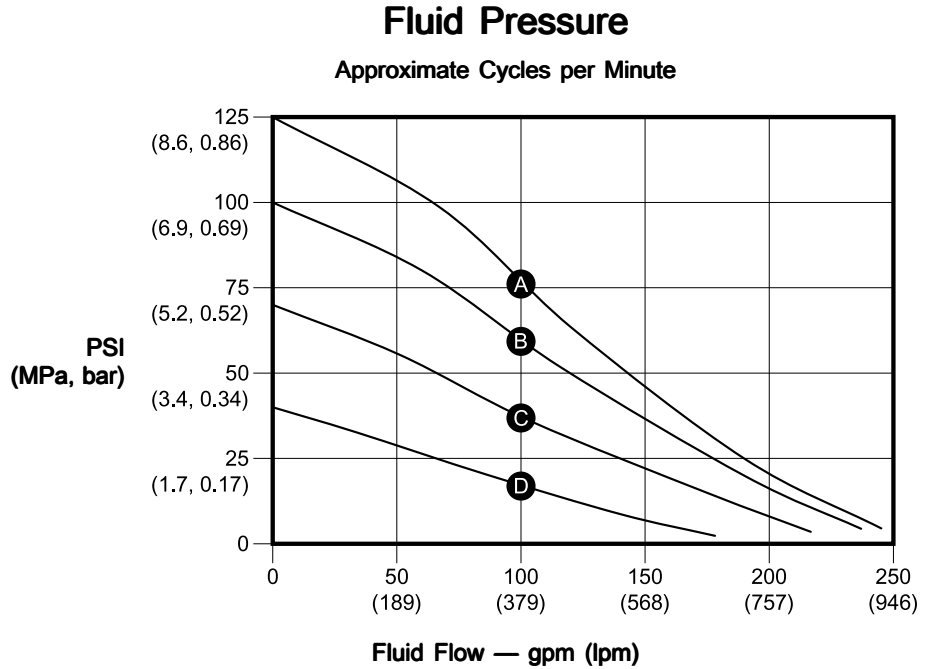
	Stainless Steel		Aluminum	
<b>A</b>	24.7 in.	62.7	23.7 in.	60.2
<b>B</b>	27.9 in.	70.9	27.0 in.	68.6
<b>C</b>	29.9 in.	75.9	29.1 in.	73.9
<b>D</b>	3.3 in.	8.4	3.3 in.	8.4
<b>E</b>	10.6 in.	26.9	10.7 in.	27.2
<b>F</b>	21.3 in.	54.1	21.5 in.	54.6

	Stainless Steel		Aluminum	
<b>G</b>	19.1 in.	48.5	18.2 in.	46.2
<b>H</b>	7.0 in.	17.8	7.0 in.	17.8
<b>J</b>	13.9 in.	35.3	13.9 in.	35.3
<b>K</b>	15.5 in.	39.3	15.5 in.	39.4
<b>L</b>	8.2 in.	20.8	8.2 in.	20.8

# Performance Charts

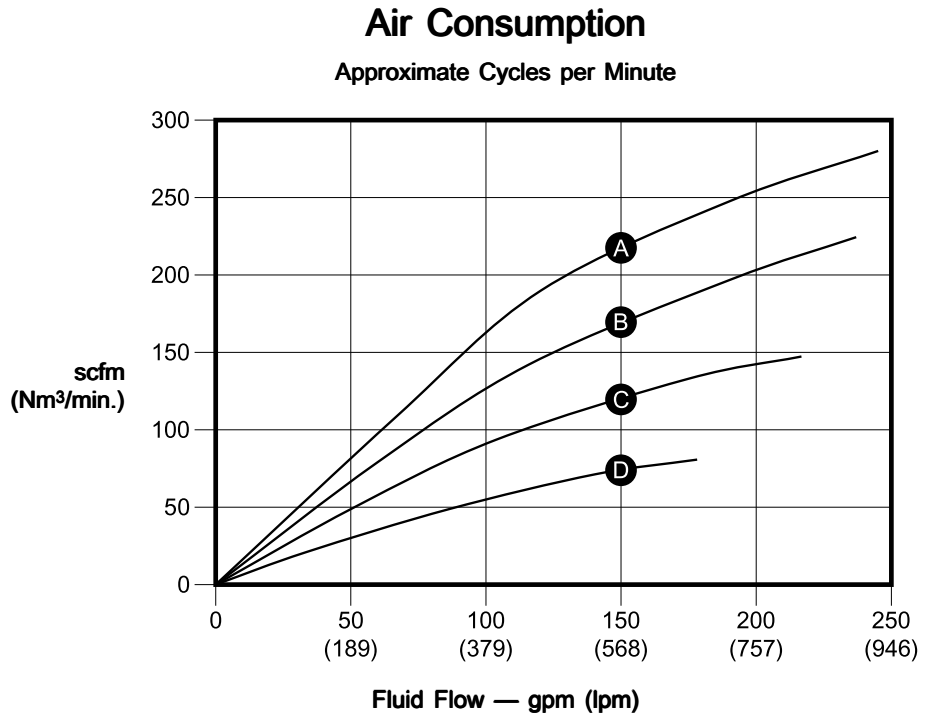
## Bolt-through Diaphragms

- Operating Air Pressure**
- A**  
125 psi (0.86 MPa, 8.6 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)



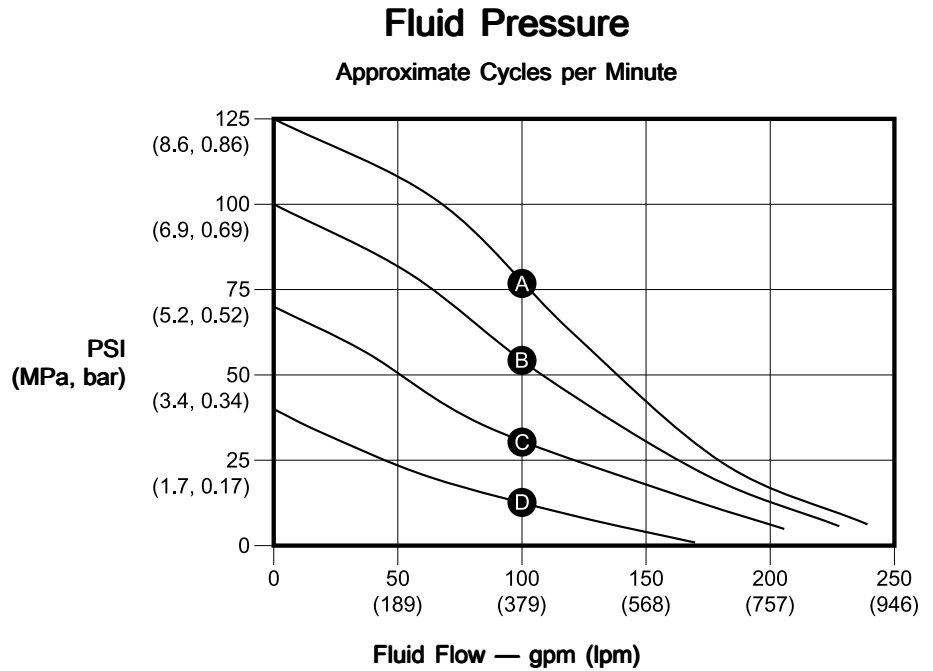
### How to Read the Charts

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)



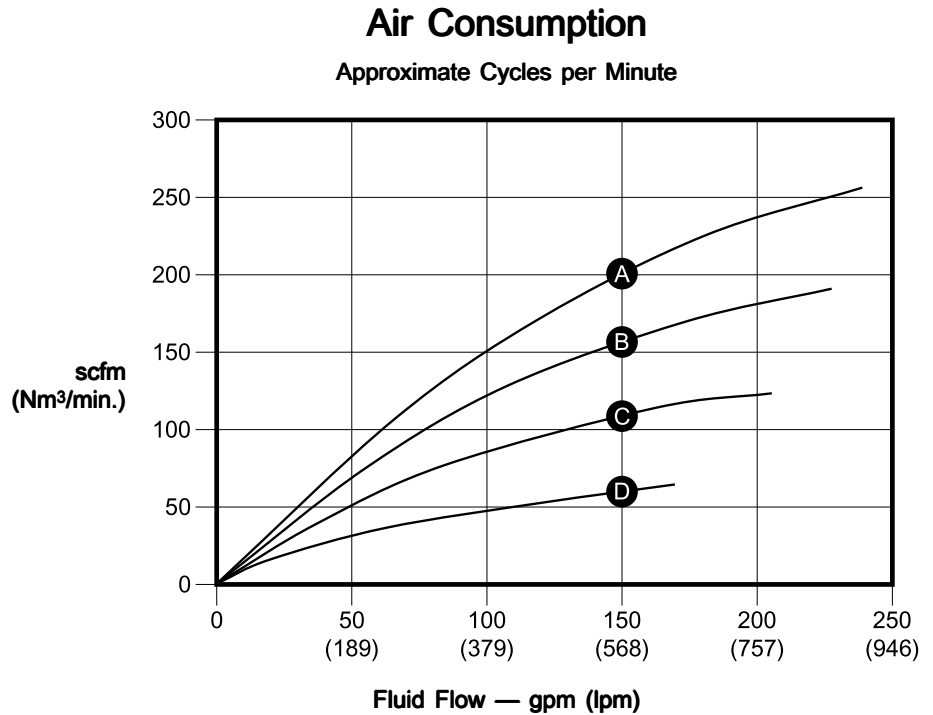
## Overmolded Diaphragms

- Operating Air Pressure**
- A**  
125 psi (0.86 MPa, 8.6 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 Specifications

<b>Husky 3250 Diaphragm Pump</b>		
	<b>US</b>	<b>Metric</b>
Maximum fluid working pressure	125 psi	0.86 MPa, 8.6 bar
Air pressure operating range	20 to 125 psi	0.14 to 0.86 MPa, 1.4 to 8.6 bar
Air inlet size	3/4 in. npt(f)	
Air exhaust size	1 in. npt(f)	
Fluid inlet and outlet size (NPT or BSPT)	3 in.	80 cm
Maximum suction lift (reduced if balls don't seat well due to damaged balls or seats, lightweight balls, or extreme speed of cycling)	Wet: 31 ft Dry: 16 ft	Wet: 9.4 m Dry: 4.9 m
Maximum size pumpable solids	3/8 in.	9.5 mm
Minimum ambient air temperature for operation and storage. <b>NOTE:</b> Exposure to extreme low temperatures may result in damage to plastic parts.	32° F	0° C
<b>Air consumption</b>		
Standard diaphragms	90 scfm at 70 psi; 100 gpm	2.5 m <sup>3</sup> /min at 0.48 MPa, 4.8 bar, 379 lpm
Overmolded diaphragms	85 scfm at 70 psi, 100 gpm	2.4 m <sup>3</sup> /min at 0.48 MPa, 4.8 bar, 379 lpm
<b>Maximum air consumption</b>		
Standard diaphragms	280 scfm	7.9 m <sup>3</sup> /min
Overmolded diaphragms	255 scfm	7.2 m <sup>3</sup> /min
<b>Noise (dBa)</b> Sound power measured per ISO-9614-2. Sound pressure was tested 3.28 ft (1 m) from equipment.		
Sound Power	99.1 at 50 psi and 50 cpm 106.1 at 125 psi and full flow	99.1 at 3.4 bar and 50 cpm 106.1 at 8.6 bar and full flow
Sound Pressure	91.5 at 50 psi and 50 cpm 98.2 at 125 psi and full flow	91.5 at 3.4 bar and 50 cpm 98.2 at 8.6 bar and full flow
<b>Fluid flow per cycle</b>		
Standard diaphragms	2.2 gallons	8.3 liters
Overmolded diaphragms	1.9 gallons	7.2 liters
<b>Maximum free-flow delivery</b>		
Standard diaphragms	245 gpm	927 lpm
Overmolded diaphragms	240 gpm	908 lpm

Maximum pump speed		
Standard diaphragms	112 cycles per minute	
Overmolded diaphragms	128 cycles per minute	
Weight		
Stainless steel	190.0 lb	86.2 kg
Aluminum	95.0 lb	43.1 kg
Wetted Parts		
Wetted parts include material(s) chosen for seat, ball, and diaphragm options, <b>plus the pump's material of construction: stainless steel or aluminum.</b>		
Non-wetted external parts	Stainless steel pumps: stainless steel, polypropylene Aluminum pumps: zinc plated CS, polypropylene	

### Fluid Temperature Range

Diaphragm/Ball/Seat Material	Fluid Temperature Range	
	Aluminum or Stainless Steel Pumps	
AC	-20° to 180°F	-29° to 82°C
BN	10° to 180°F	-12° to 82°C
FK	-40° to 275°F	-40° to 135°C
GE	-40° to 180°F	-40° to 82°C
CO, CR, or CW	14° to 176°F	-10° to 80°C
PP	32° to 175°F	0° to 79°C
PO or PS	-40° to 180°F	-40° to 82°C
PT	-40° to 220°F	-40° to 104°C
PV	10° to 225°F	-12° to 107°C
SP	-40° to 180°F	-40° to 82°C
TP	-20° to 150°F	-29° to 66°C

## California Proposition 65

#### CALIFORNIA RESIDENTS

 **WARNING:** Cancer and reproductive harm — [www.P65warnings.ca.gov](http://www.P65warnings.ca.gov).



# Graco Standard Husky Pump Warranty

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

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

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

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

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

**GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO.** These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

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

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For patent information, see [www.graco.com/patents](http://www.graco.com/patents).

**To place an order**, contact your Graco Distributor or call to identify the nearest distributor.

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

All written and visual data contained in this document reflects the latest product information available at the time of publication.

Graco reserves the right to make changes at any time without notice.  
Original Instructions. This manual contains English. MM 3A7661

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