



# Instructions – Parts List

WALL MOUNT, STAINLESS STEEL

## 1:1 Ratio Husky®

# 1040 Pump Modules and Circulation Package

308773E

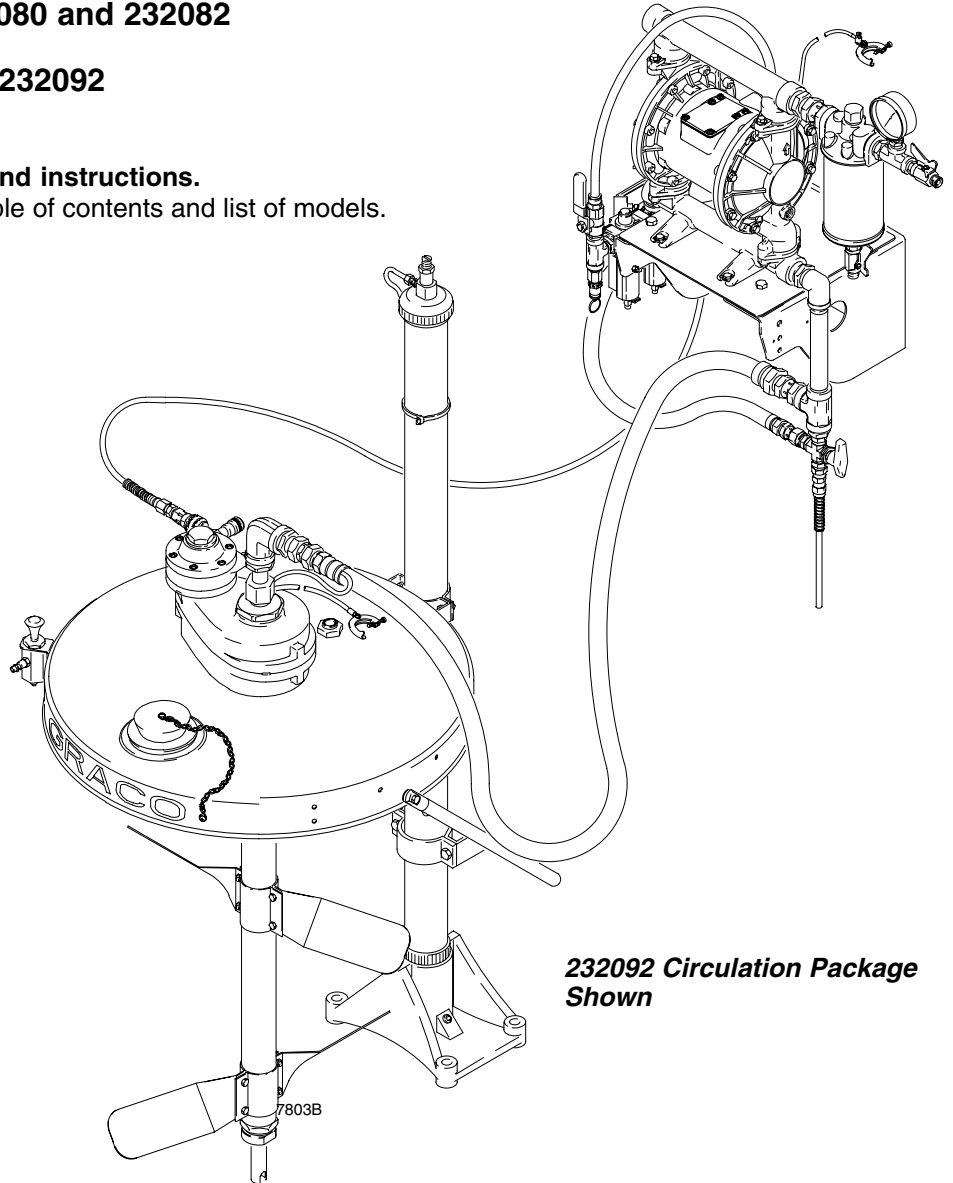
\* Pump Modules 232080 and 232082

Circulation Package 232092



**Read warnings and instructions.**

See page 2 for table of contents and list of models.



**232092 Circulation Package Shown**

\*These models are    certified.

HO03

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## List of Models

Part No.	Series	Description	Ratio	Maximum Fluid Working Pressure	Maximum Air Input Pressure
<b><i>Circulation Package</i></b>					
232092	A	Includes stainless steel pump module 232082, elevator, stainless steel drum cover, and back-gearred agitator	1:1	100 psi (0.7 MPa, 7 bar)	100 psi (0.7 MPa, 7 bar)
<b><i>Pump Modules</i></b>					
*232080	A	Stainless steel pump with wall bracket, air controls, back pressure regulator, and stainless steel fluid filter	1:1	100 psi (0.7 MPa, 7 bar)	100 psi (0.7 MPa, 7 bar)
*232082	A	Stainless steel pump with wall bracket, air controls, back pressure regulator, and stainless steel fluid filter	1:1	100 psi (0.7 MPa, 7 bar)	100 psi (0.7 MPa, 7 bar)



\*These models are CE Ex II 2 G certified.

# 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



INSTRUCTIONS

### 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 stated on the equipment or in the **Technical Data** section for your equipment. Do not exceed the maximum working pressure of the lowest rated component in your system.
- 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.
- Route hoses away from traffic areas, sharp edges, moving parts, and hot surfaces. Do not expose Graco hoses to temperatures above 180°F (82°C) or below -40°F (-40°C).
- Wear hearing protection when operating this equipment.
- Do not lift pressurized equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.

# WARNING



## PRESSURIZED EQUIPMENT HAZARD

Spray from the gun, hose leaks, or ruptured components can splash fluid in the eyes or on the skin and cause serious injury.

- Do not point the gun at anyone or at any part of the body.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Follow the **Pressure Relief Procedure** on page 12 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.



## MOVING PARTS HAZARD

Moving parts, such as the elevator and agitator blades, can pinch or amputate your fingers.

- Keep clear of all moving parts when starting or operating the pump.
- Keep your hands away from the elevator, pump support, drum cover, and the lip of the drum while the elevator is operating or is charged with air.
- Always shut off the agitator and disconnect the air line before you remove the agitator from the drum or check or repair any part of the agitator.
- Before servicing the equipment, follow the **Pressure Relief Procedure** on page 12 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 11.
- 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.
- Pipe and dispose of the exhaust air safely, away from all sources of ignition. If the diaphragm fails, the fluid is exhausted along with the air. See **Air Exhaust Ventilation** on page 7.
- 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.



## 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.
- Pipe and dispose of the exhaust air safely, away from people, animals, and food handling areas. If the diaphragm fails, the fluid is exhausted along with the air. See **Air Exhaust Ventilation** on page 7.

# 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. Refer to Product Data Sheet 305896. If you supply your own accessories, be sure they are adequately sized and pressure-rated for your system.

## Prepare the Operator

All persons who operate the equipment must be trained in the safe, efficient operation of all system components as well as the proper handling of all fluids. All operators must thoroughly read all instruction manuals, tags, and labels before operating the equipment.

The following manuals are included with this equipment:

- 308479, Husky 1040 Pump
- 307273 or 308918, Fluid Filter
- 307068, Fluid Ball Valves
- 308401, Back Pressure Regulator

These manuals are included only with Circulation Package 232092:

- 308769, Supply Module
- 306287, Elevator
- 308466, Drum Cover
- 308609, Back-Geared Agitator

## Prepare the Site

If you are installing Package 232092, select a site with at least 9 ft (2.8 m) overhead clearance for the elevator when fully raised.

Ensure that the wall is strong enough to support the weight of the pump and accessories, fluid, hoses, and stress caused during pump operation.

Ensure that you have an adequate compressed air supply. Refer to the performance chart on page 23 to find the air consumption.

Refer to Fig. 2 on page 9. Bring a compressed air supply line (A) from the air compressor to the pump location. Be sure all air hoses are properly sized and pressure-rated for your system. Use only electrically conductive hoses. The air hose should have a 3/8 npt(m) thread.

Install a bleed-type shutoff valve (B) in the air line to isolate the air line components for servicing. Install a moisture trap and drain valve (C) to help remove moisture and contaminants from the compressed air supply.

Keep the site clear of any obstacles or debris that could interfere with the operator's movement.

Have a grounded, metal pail available for use when flushing the system.

# Installation

## Installing the Pump Module

The pump module consists of the pump mounted on the pump bracket, the air controls, back pressure regulator, hoses, and plumbing.

**NOTE:** Refer to Fig. 2 on page 9, and to the Dimension drawing on page 24 and the Mounting Hole Layouts on page 25.

1. Ensure that the wall is strong enough to support the weight of the pump and accessories, fluid, hoses, and stress caused during pump operation.
2. Position the bracket mounting plate (34) on the wall so the edge with the hook is facing up. Mount the plate so the top edge is 4 to 5 ft (1.2 to 1.5 m) above the floor. Check that the plate is level. Mark two holes on the wall, using the plate as a template. Drill two holes and attach the plate with 1/2 in. bolts and washers.
3. Using two people, hang the pump module on the bracket mounting plate (34). Have one person hold the module in place while the other checks that the pump bracket (32) is level. Mark four holes on the wall, using the pump bracket as a template. Remove the pump module.
4. Drill four holes in the wall.

### **WARNING**

The pump bracket (32) must be bolted to the wall with four bolts. Do not simply hang the pump bracket on the bracket mounting plate (34).

5. Lift the pump module back into position, hang it on the bracket mounting plate (34), and bolt the pump bracket (32) to the wall. Use 1/2 in. bolts and washers to mount the pump module to the wall. Use bolts that are long enough to keep the pump bracket (32) from vibrating during operation.

## Air Exhaust Ventilation

### **WARNING**



#### **FIRE AND EXPLOSION HAZARD**

Before operating the pump, be sure to read and follow the warnings and precautions regarding **TOXIC FLUID HAZARD** and **FIRE AND EXPLOSION HAZARD** on page 5.



Be sure the system is properly ventilated for your type of installation. You must vent the exhaust to a safe place, away from people, animals, food handling areas, and all sources of ignition when pumping flammable or hazardous fluids.

Diaphragm failure will cause the fluid being pumped to exhaust with the air. Place an appropriate container at the end of the air exhaust line to catch the fluid.

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 from the pump air exhaust port.
2. Install a grounded air exhaust hose and connect the muffler 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.

# Installation

## Installing the 239857 Supply Module (Circulation Package 232092 only)

**NOTE:** Refer to Fig. 2 on page 9, and to the Dimension drawing on page 24 and the Mounting Hole Layouts on page 25.

1. Ensure that there is at least 9 ft (2.8 m) overhead clearance for the elevator (150) when fully raised.

### **⚠ WARNING**

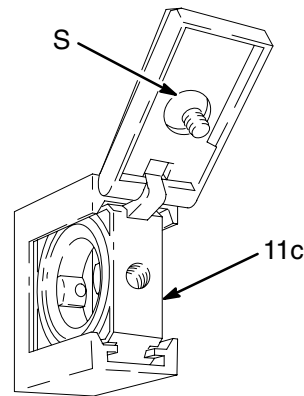
To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 12.

2. If you are converting an existing pump module to a circulation package, relieve the pressure. Remove the suction tube (54) from the pump module. See the Parts Drawing on page 20. This tube is not used in a circulation package.
3. Locate the elevator (150) so the pump module's suction hose (8) will reach the swivel (101) at the top of the agitator (102). The suction hose is 6 ft (1.8 m) long. Do not stretch the hose tight; let it hang as shown in Fig. 2, to assist fluid flow into the pump.
4. See page 25. Using the elevator base as a template, mark the floor. Drill four holes in the floor for 1/2 in. bolts. Make sure the bolts are long enough to prevent the elevator from tipping.
5. Connect the suction hose (8) to the swivel outlet (101) of the agitator (102). Connect the suction hose ground wire to the ground lug on the agitator as shown on page 11.
6. Loosen the captive screw and open the quick connector (11c) on the air filter/regulator/lubricator assembly (11). Refer to **Using the Quick Connectors**, at right.
7. Slide the pipe adapter (11d) out of the quick connector. Remove and discard the pipe plug (11m) from the bottom port of the tee (11k).

8. Bring the coiled hose (105) up through the large hole in the back pressure regulator's bracket (33).
9. Screw the adapter (159) at the end of the coiled hose (105) into the tee (11k).
10. Slide the pipe adapter (11d) into the quick connector (11c), close, and tighten the captive screw.

## Using the Quick Connectors

To open a quick connector (11c), loosen the captive screw (S) and open the connector. Slide the desired component into the connector, close, and tighten the screw. See Fig. 1.



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Fig. 1

## Connect the Fluid Lines

Connect a 1 to 3 ft (0.3–0.9 m) hose (E) to the ball valve (5) at the outlet of the fluid filter (4), to isolate the pump module from the main fluid line. Connect the other end of the hose to the main fluid line (F).

Connect the fluid return line (G) to the ball valve (14) at the inlet of the back pressure regulator (12). The return hose (18) connects the back pressure regulator to the 3-way recirculation valve (46). As an option, the return hose may be connected to the return line fitting (155) on the drum cover (114).

## Connect the Air Line

Connect the main air supply line (A) to the tee (11k) of the air filter/regulator/lubricator assembly (11).

# Installation

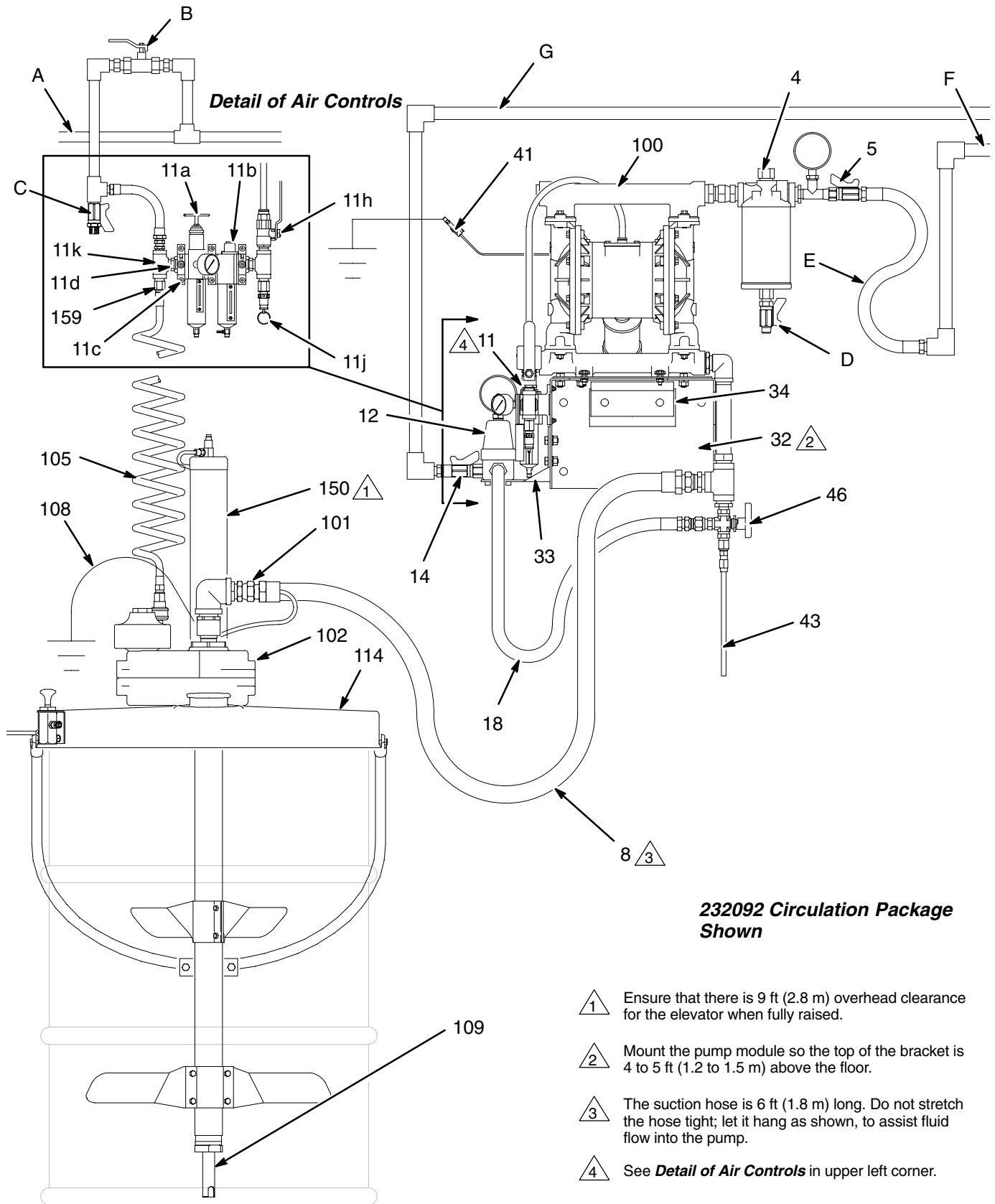


Fig. 2

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# Installation

## Supplied Components

Refer to Fig. 2.

### **WARNING**

A red-handled bleed-type master air valve (11h) and a fluid drain valve (D) are supplied. These components help reduce the risk of serious injury, including 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.

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.

- **The red-handled bleed-type master air valve (11h)** is required in your system to relieve air trapped between it and the air motor when the valve is closed (see the **WARNING** above). Be sure the bleed valve is easily accessible from the pump, and is located **downstream** from the pump air filter/regulator (11a).
- **The pump air filter/regulator (11a)** controls pump speed and outlet pressure by adjusting the air pressure to the pump. It includes an air filter with a 40 micron polypropylene element, to remove harmful dirt and moisture from the compressed air supply. Locate close to the pump, but **upstream** from the bleed-type master air valve (11h).
- **The air line lubricator (11b)** provides automatic lubrication of the air motor.
- **The air relief valve (11j)** opens automatically to prevent overpressurization of the pump.
- Fluid is supplied to the pump through the **suction hose (8) and tube (54 or 109)**. *On Circulation Package 232092*, the tube (109) is installed in the shaft of the agitator (102). See Fig. 2.
- **The fluid filter (4)** includes a 60 mesh (250 micron) stainless steel element to filter particles from the fluid as it leaves the pump.
- **The fluid drain valve (D)**, is mounted in the bottom of the fluid filter bowl, and is required in your system to relieve fluid pressure in the hose and gun (see the **WARNING** at left).
- **The back pressure regulator (12)** controls back pressure to the gun and maintains proper circulation pressure.
- **The back-gearred agitator (102)** keeps the fluid in suspension and also includes a suction tube (109) to draw fluid from a 55 gallon drum. *Included with Circulation Package 232092 only.*
- **The air-operated elevator (150)** allows you to raise the drum cover and agitator from an empty drum, replace the drum, and lower the agitator into the new drum. *Included with Circulation Package 232092 only.*

## Conversion Modules

### Supply Module 239857

**NOTE:** Module 239857 is included in Circulation Package 232092. Refer to page 8 for installation instructions.

Part No. 239857 Supply Module is available to convert a pump module to a circulation package. The supply module includes an elevator, stainless steel drum cover, back-gearred agitator with suction tube, and connecting hardware. Instructions are included.

### Heater Modules 239850 (120V), 239851 (240V), and 239852 (220/240V)

Three Heater Modules are available to convert a pump module or a circulation package to a heated system. Each module includes a heater configured to the desired voltage, and mounting hardware. Instructions are included.

### Surge Tank Module 239858

Part No. 239858 Surge Tank Module is available as an accessory for pump modules, circulation packages, or heated packages. The module includes a surge tank, stand, and connecting hardware. Instructions are included.

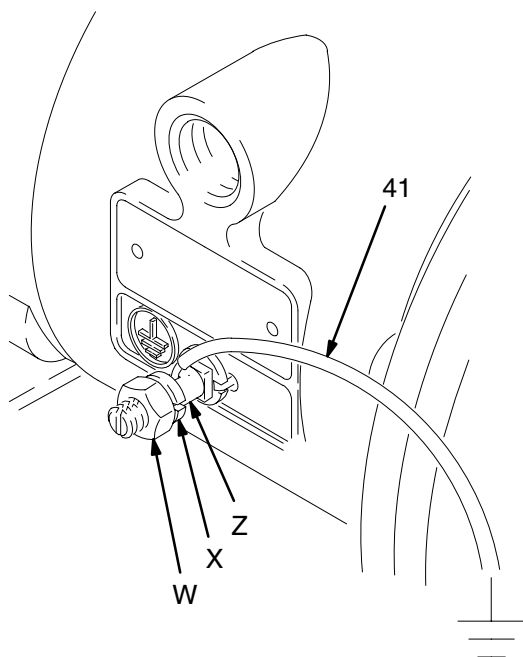
# Installation

## 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 5.

1. *Pump*: use the ground wire and clamp (41, supplied). See Fig. 3. Loosen the grounding lug locknut (W) and washer (X). Insert one end of the ground wire (Y) into the slot in lug (Z) and tighten the locknut securely. Connect the ground clamp to a true earth ground.

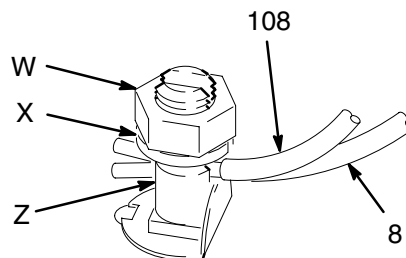


**Fig. 3**

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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. *Agitator*: use the ground wire and clamp (108, supplied). See Fig. 4. Loosen the grounding lug locknut (W) and washer (X). Insert one end of the ground wire (108) into the slot in lug (Z) and tighten the locknut securely. Connect the ground clamp to a true earth ground.



0720

**Fig. 4**

6. *Suction hose*: attach the hose (8) ground wire to the ground lug on the agitator. See Fig. 4. If you are not using an agitator, attach the wire to the fluid supply container.
7. *Fluid supply container*: follow your local code.
8. *Object being sprayed*: follow your local code.
9. *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.
10. *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

## Pressure Relief Procedure

### **WARNING**

#### **PRESSURIZED EQUIPMENT HAZARD**

The system pressure must be manually relieved to prevent the system from starting or spraying accidentally. To reduce the risk of an injury from accidental spray from the gun, 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 nozzle.

1. Close the red-handled bleed-type master air valve (11h, required in your system). See Fig. 5 on page 15.

2. Place the drain hose (43) into a waste container. Turn the 3-way recirculation valve (46) to the drain position.
3. Trigger the gun at the last gun station to relieve fluid pressure. Maintain firm metal-to-metal contact between the gun and a grounded waste pail. Repeat for all gun stations.
4. Open the drain valve (D) to relieve fluid pressure which may be trapped in the pump or hose.

If you suspect that pressure is not fully relieved after following the steps above, wrap a fitting near the pump outlet with a rag, and slowly and carefully loosen the fitting to relieve pressure. Be careful to protect your eyes from splashing.

### **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 **Flushing** on page 16.

# Operation

## Starting and Adjusting the Pump

1. Open all fluid shutoff valves (14, 5). Refer to Fig. 2 on page 9, and to Fig. 5.
2. Place the suction tube (if used) in the fluid to be pumped.

**NOTE:** If the fluid inlet 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. Open the back pressure regulator (12). Turn the 3-way recirculation valve (19) to the circulation position.
4. Open the spray gun at the last gun station and keep it open while starting the pump.
5. Open the bleed-type master air valves (11h, B). Refer to Fig. 2 on page 9.
6. Slowly open the air filter/regulator (11a) until the pump starts. The air filter/regulator controls the pump speed and fluid outlet pressure.
7. Adjust the fluid pressure to the lowest setting necessary to get the desired results. Higher pressures may not improve the spray pattern and will cause premature component wear. Use the air filter/regulator (11a) and the back pressure regulator (12) to adjust the pump speed and fluid pressure until the spray is completely atomized. Refer to the back pressure valve manual (supplied) for adjustment procedures.
8. To adjust the spray pattern, follow the complete instructions in your gun manual.

9. When you have achieved the desired spray pattern, release the gun trigger. The pump will continue to cycle as long as air is supplied and the back pressure regulator (12) is open.

10. One at a time, open any other guns in the system to purge air from the lines.

**NOTE:** In a circulating system, the pump will continue to cycle as long as air is supplied and the back pressure regulator is open. In a direct supply system, the pump starts when the gun is opened, and stops when the gun is closed.

## WARNING

### COMPONENT RUPTURE HAZARD



To reduce the risk of overpressurizing your system, which could cause component rupture and serious injury, *never exceed the specified maximum air input pressure to the pump (see **Technical Data** on page 23).*

## CAUTION

Do not allow the pump to run dry. It will quickly accelerate to a high speed, causing damage. If your pump is running too fast, stop it immediately and check the fluid supply. If the container is empty and air has been pumped into the lines, refill the container and prime the pump and the lines, or flush and leave it filled with a compatible solvent. Eliminate all air from the fluid system.

# Operation

## Elevator Operation

1. To raise the elevator (150), connect the quick coupler (124) on the end of the coiled hose (105) to the male fitting (J) on the air control valve (K). Pull up the air control valve button to raise the elevator to its full height.

### **WARNING**



#### **MOVING PARTS HAZARD**

Moving parts can pinch or amputate your fingers. When raising or lowering the elevator, keep your fingers and hands away from the elevator (150), cover support (125), drum cover (114), and lip of the drum.

Do not remove the quick coupler (124) from the male fitting (J) until the elevator is completely lowered.

2. Position a full drum under the drum cover (114).
3. To lower the elevator (150), press down the air control valve (K) button. Lower the elevator until the cover (114) rests properly on the lip of the drum. Disconnect the quick coupler (124) from the male fitting (J).
4. Refer to manual 306287 for further elevator operating instructions.

## Agitator Operation

1. Close the agitator's needle valve (L).
2. Connect the quick coupler (124) on the end of the coiled hose (105) to the male fitting (M) on the agitator (102).

3. Slowly open the needle valve (L) to start the agitator (102). Use the valve to adjust the speed. Do not operate the agitator too fast. If the fluid foams or a vortex forms on the fluid surface, reduce the speed of the agitator.
4. Refer to manual 308609 for further agitator operating instructions.

## Shutdown

### **WARNING**

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 12.

1. Lower the elevator (150).
2. Shut off the agitator (102).
3. Relieve the pressure.

For overnight shutdown, stop the pump at the bottom of its stroke to prevent fluid from drying on the exposed displacement rod and damaging the throat packings. Relieve the pressure.

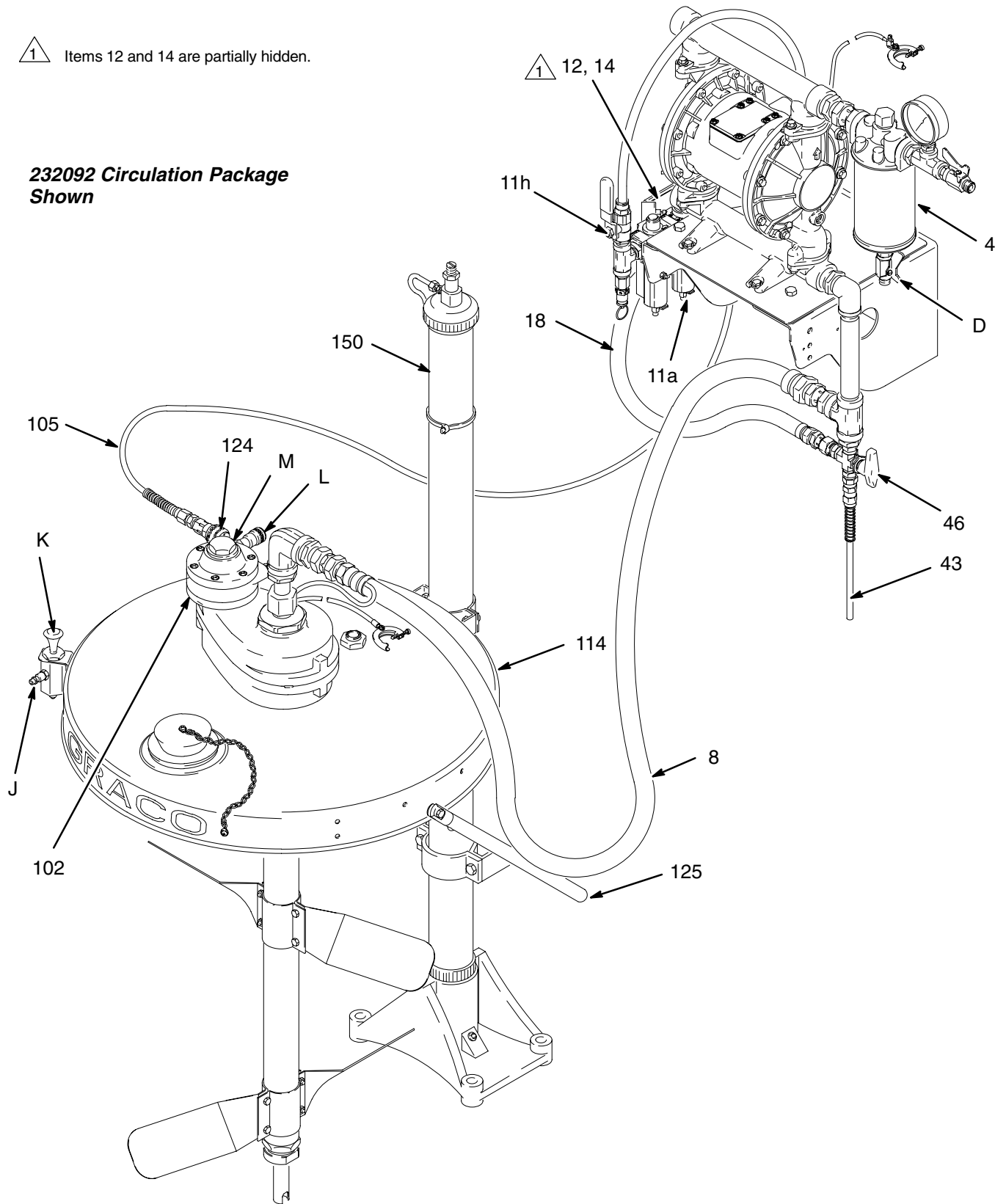
Always flush the pump before the fluid dries on the displacement rod. See **Flushing** on page 16.

**NOTE:** When changing fluid containers with the hose and gun already primed, open the drain valve (D) to help prime the pump and vent air before it enters the hose. Close the drain valve when all air is eliminated.

# Operation

1 Items 12 and 14 are partially hidden.

**232092 Circulation Package  
Shown**



**Fig. 5**

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# Maintenance

## Preventive Maintenance Schedule

The operating conditions of your particular system determine how often maintenance is required. Establish a preventive maintenance schedule by recording when and what kind of maintenance is needed, and then determine a regular schedule for checking your system.

## Flushing

### **WARNING**



#### **FIRE AND EXPLOSION HAZARD**

Before flushing, read the section **FIRE AND EXPLOSION HAZARD** on page 5. Be sure the entire system and flushing pails are properly grounded. Refer to **Grounding** on page 11.



Flush the pump:

- Before the first use
- When changing colors or fluids
- Before fluid can dry or settle out in a dormant pump (check the pot life of catalyzed fluids)
- Before storing the pump.

Flush with a fluid that is compatible with the fluid you are pumping and with the wetted parts in your system. Check with your fluid manufacturer or supplier for recommended flushing fluids and flushing frequency.

### **WARNING**

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 12.

1. Relieve the pressure.
2. Remove the spray tip from the gun. See the gun manual.
3. Remove the filter element from the fluid filter (4). Reinstall the filter bowl.
4. Open the back pressure regulator (12). Set the 3-way recirculation valve (19) to the circulation position.

5. Place the suction tube (54) in a container of solvent, or lower the agitator (102) into a container of solvent. Start the agitator and run it slowly.
6. Hold a metal part of the gun firmly to the side of a grounded *metal* pail.
7. Start the pump. Always use the lowest possible fluid pressure when flushing.
8. Trigger the gun. Flush the system until clear solvent flows from the gun.
9. Release the gun trigger and lock the trigger safety. The pump will continue to cycle as long as air is supplied and the back pressure regulator (12) is open.
10. Direct the drain hose (43) into a waste container. Set the 3-way recirculation valve (46) to the drain position. Continue flushing until clear fluid comes from the hose.
11. Relieve the pressure.
12. Clean the air cap, spray tip, and fluid filter element separately, then reinstall them.

## Air Filter Service

Repair Kits are available. Refer to page 17.

Every day, drain contaminants from the bowl before reaching the baffle level by opening the drain (P) at the bottom of the bowl (N).

### **WARNING**

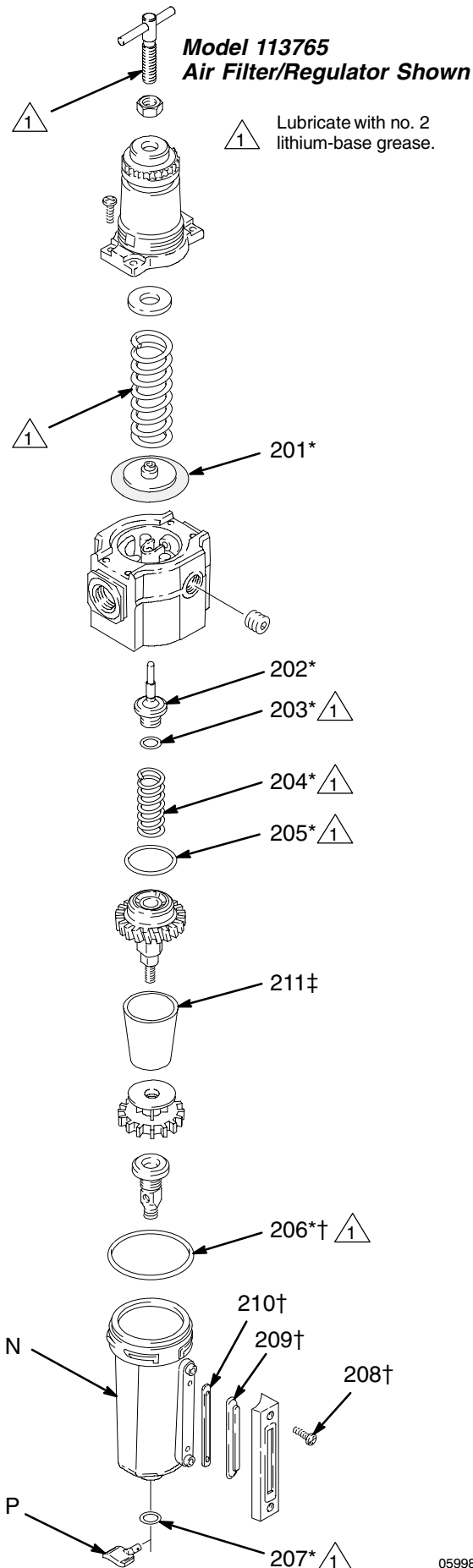
To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 12.

Clean the air filter regularly to maximize filtering efficiency and to avoid excessive pressure drop. Fully relieve pressure to remove the bowl (N).

Clean the filter element (211) and bowl using household soap and water or denatured alcohol. Use compressed air to blow out the filter body. Blow the filter element out from the inside.

Clean the sight glass (209) thoroughly. Do not leave solvent residue in the sight glass as it may attack or weaken the glass. If the sight glass appears damaged, replace it immediately.

# Maintenance



## Repair Kit 239383 (includes items 201 to 207). For Part No. 113765 Air Filter/Regulator.

Kit parts are marked with an asterisk (201\*). Individual parts are not available separately.

Ref. No.	Part No.	Description	Qty.
201*	N/A	DIAPHRAGM	1
202*	N/A	VALVE ASSEMBLY	1
203*	N/A	O-RING, valve	1
204*	N/A	SPRING, valve	1
205*	N/A	O-RING, center post	1
206*	N/A	O-RING, bowl assembly	1
207*	N/A	GASKET, drain	1

## Sight Glass Kit 239385 (includes items 206 to 210). For Part No. 113765 Air Filter/Regulator.

Kit parts are marked with a symbol (208†). Individual parts are not available separately.

Ref. No.	Part No.	Description	Qty.
206†	N/A	O-RING, bowl assembly	1
208†	N/A	SCREW	2
209†	N/A	LENS, sight glass	1
210†	N/A	SEAL, lens	1

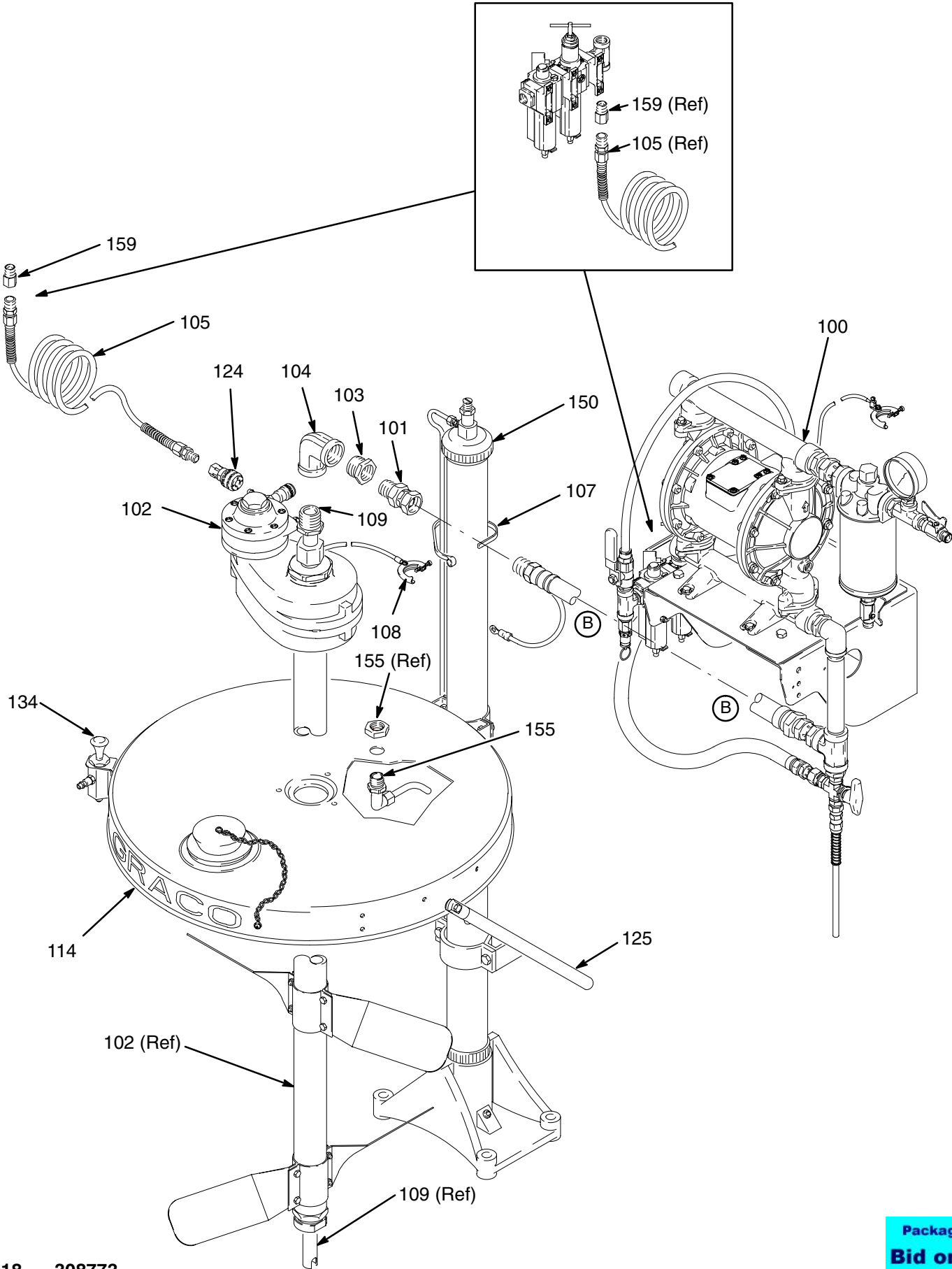
## Filter Element Kit 239384 (includes item 211). For Part No. 113765 Air Filter/Regulator.

Kit parts are marked with a symbol (211‡). Individual parts are not available separately.

Ref. No.	Part No.	Description	Qty.
211‡	N/A	ELEMENT, 40 micron; polypropylene	1

# Parts

Part No. 232092, Series A, stainless steel package



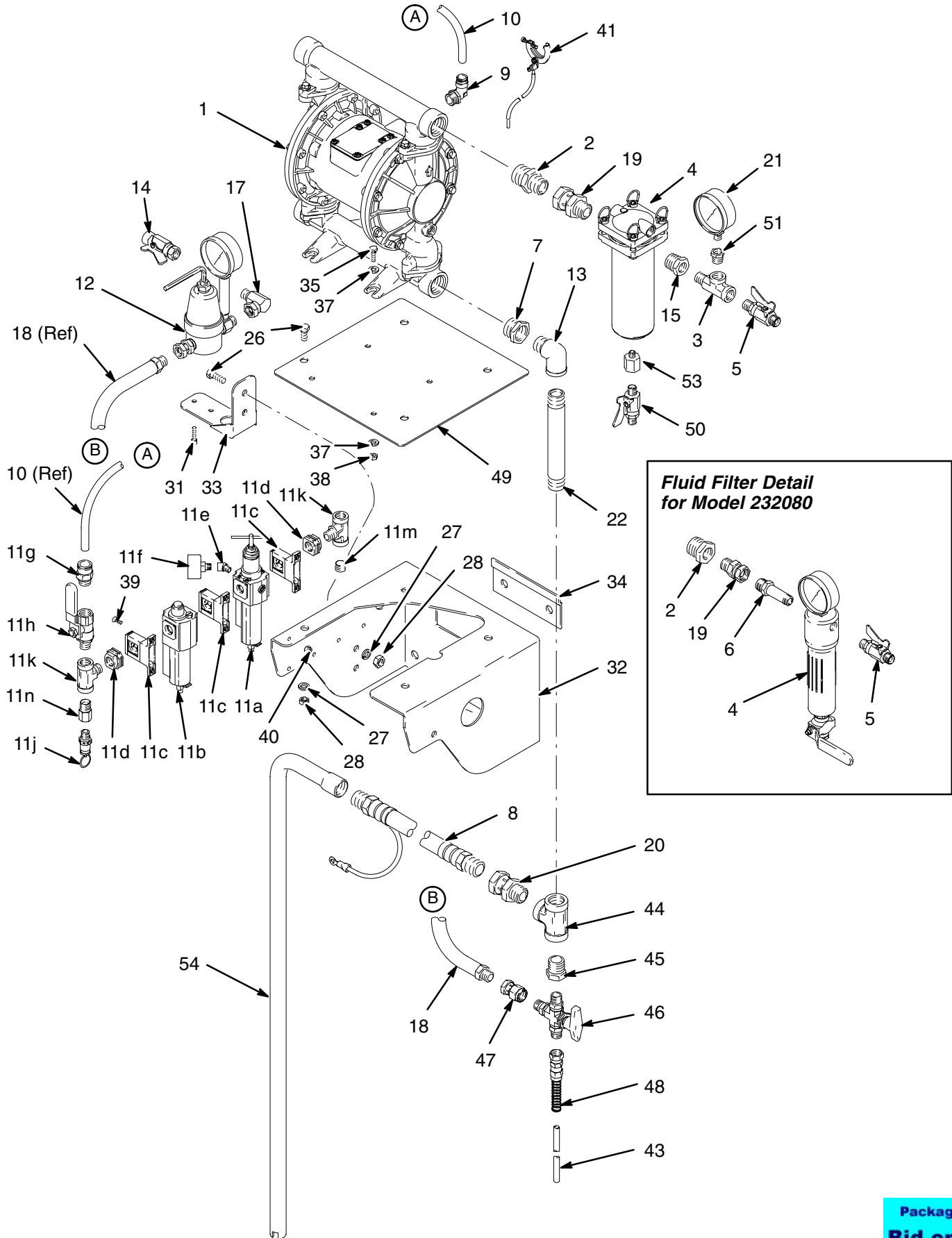
# Parts

## Part No. 232092, Series A, stainless steel package

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
100	232082	MODULE, pump; stainless steel; <i>includes items shown on page 20</i>	1	109	238250	RISER TUBE KIT; see manual 308609	1
101	112268	SWIVEL; stainless steel; 3/4 npt (m x f)	1	114	238283	COVER, drum; stainless steel; see manual 308466	1
102	238157	AGITATOR, back-geared; see manual 308609	1	124	208536	COUPLER, quick disconnect, female	1
103	502851	BUSHING; stainless steel; 1 in. npt(m) x 3/4 npt(f)	1	125	237578	ASSEMBLY, cover support; see manual 306287	1
104	500251	ELBOW, 90°; stainless steel; 1 in. npt (fbe)	1	134	237579	KIT, air control, elevator; see manual 306287	1
105	205600	HOSE, air; nylon; 1/4 in. (6 mm) ID; 1/4 npt (mbe); 50 ft (15.2 m) long	1	150	204385	ELEVATOR, drum; see manual 306287	1
107	103546	STRAP, tie	3	155	238884	KIT, return tube	1
108	237569	GROUND WIRE AND CLAMP	1	159	159841	ADAPTER; 3/8 npt(m) x 1/4 npt(f)	1

# Parts

Part No. 232080, Series A, stainless steel pump module  
 Part No. 232082, Series A, stainless steel pump module (shown)



# Parts

## Part No. 232080, Series A, stainless steel pump module

## Part No. 232082, Series A, stainless steel pump module (shown)

**NOTE:** Part numbers vary by module. To find the part number used in your module, read down the chart to find the desired ref. no., then read left to right to find the part number for your module.

Ref. No.	Description	Module		Qty
		232080 SST Module	232082 SST Module	
1	PUMP, Husky 1040; 1:1 ratio; sst; <i>see manual 308479</i>	D74331	D74331	1
2	BUSHING; sst; 1" x 1/2 npt	513299		1
	NIPPLE; sst; 1" x 3/4 npt		171439	1
3	TEE; sst; 3/8 npt(m) x 3/8 npt(f) run; 3/8 npt(f) branch		108673	1
4	FLUID FILTER; sst; <i>see manual 307273</i>	239853		1
	FLUID FILTER; sst; <i>see manual 308918</i>		244053	1
5	VALVE, ball; sst; 1/4 npt(m) x 3/8 npsm(m); <i>see manual 307068</i>	237529		1
	VALVE, ball; sst; 3/8 npt(m) x 3/8 npsm(m); <i>see manual 307068</i>		237533	1
6	NIPPLE; sst; 1/2 npt x 3/8 npt	111874		1
7	BUSHING; sst; 1" npt(m) x 3/4 npt(f)	502851	502851	1
8	HOSE, suction; nylon; 3/4 npt(mbe) sst couplings; 1/2 in. (13 mm) ID; 6 ft (1.8 m) long	221171	221171	1
9	ELBOW, tube fitting, 90°; 1/2 npt(m) x 1/2 in. (13 mm) OD tube	114110	114110	1
10	HOSE; polyurethane; 0.328 in. (8 mm) ID; 20 in. (508 mm) long	Purchase locally	Purchase locally	1
11	AIR FILTER/REGULATOR/LUBRICATOR; <i>includes items 11a to 11n</i>	239849	239849	1
11a	. AIR FILTER/REGULATOR	113765	113765	1
11b	. LUBRICATOR	114005	114005	1
11c	. CONNECTOR, quick	113763	113763	3
11d	. ADAPTER, pipe; 3/8 npt(f)	113767	113767	2
11e	. ELBOW, 45°; 1/8 npt (m x f)	113630	113760	1
11f	. GAUGE, air	113911	113911	1
11g	. ADAPTER, tube fitting; 1/2 npt(m) x 1/2 in. (13 mm) OD tube	114129	114129	1
11h	. VALVE, ball, bleed-type; 3/8 npt (m x f)	113333	113333	1
11j	. VALVE, relief; 110 psi (7.6 bar, 0.76 MPa)	113498	113498	1
11k	. TEE; 3/8 npt(f) run x 3/8 npt(m) branch	113777	113777	2
11m	. PLUG; 3/8 npt	101754	101754	1
11n	. ADAPTER; 3/8 npt(m) x 1/4 npt(f)	159841	159841	1
12	REGULATOR, back pressure; <i>see manual 308401</i>	236770	236770	1
13	ELBOW, 90°; sst; 3/4 npt (m x f)	500263	500263	1
14	VALVE, ball; sst; 3/8 npt(fbe); <i>see manual 307068</i>	237532	237532	1
15	BUSHING; sst; 3/4 npt(m) x 3/8 npt(f)		500352	1
17	SWIVEL, 90°; sst; 3/8 npt(m) x 3/8 npsm(f)	207123	207123	1

**NOTE:** The Parts List is continued on page 22.

# Parts

## Part No. 232080, Series A, stainless steel pump module

## Part No. 232082, Series A, stainless steel pump module (shown)

**NOTE:** Part numbers vary by module. To find the part number used in your module, read down the chart to find the desired ref. no., then read left to right to find the part number for your module.

Ref. No.	Description	Module		Qty
		232080 SST Module	232082 SST Module	
18	HOSE, fluid return; nylon; 3/8 npt(mbe) sst couplings; 1/4" (6 mm) ID; 6 ft (1.8 m) long	114198	114198	1
19	SWIVEL; 1/2 npt (m x f); sst	114190		1
	SWIVEL; 3/4 npt (m x f); sst		112268	1
20	SWIVEL; 3/4 npt (m x f); sst	112268	112268	1
21	GAUGE, fluid pressure; sst; 0–300 psi (0–21 bar, 0–2.1 MPa)		187876	1
22	NIPPLE; sst; 3/4 npt; 7 in. (178 mm) long	513507	513507	1
26	SCREW, cap, hex head; sst; 3/8–16 x 1 in. (25 mm) long	102471	102471	6
27	LOCKWASHER, spring; 3/8	112922	112922	6
28	NUT, hex; 3/816	112913	112913	6
31	SCREW, cap, socket hd; 1/4–20; 1/2 in. (13 mm) long	101550	101550	2
32	BRACKET, pump	192584	192584	1
33	BRACKET, back pressure regulator	192586	192586	1
34	PLATE, mounting, bracket	192589	192589	1
35	SCREW, cap, hex hd; sst; 1/4–20 x 3/8 in. (10 mm) long	104119	104119	4
37	LOCKWASHER; 1/4 in. size	104123	104123	8
38	NUT, hex; sst; 1/4–20	102025	102025	4
39	SCREW, machine, socket, flat head; M5 x 0.8; 16 mm long	113768	113768	6
40	NUT, hex, with nylon insert; M5 x 0.8	105332	105332	6
41	GROUND WIRE AND CLAMP	237569	237569	1
42	TUBE; nylon; 1/4 in. (6 mm) ID; 8 in. (203 mm) long	Purchase locally	Purchase locally	1
44	TEE; sst; 3/4 npt(f) run x 3/4 npt(f) branch	113833	113833	1
45	BUSHING; sst; 3/4 npt(m) x 3/8 npt(f)	500352	500352	1
46	VALVE, recirculation, 3-way; sst; 3/8 npt(m)	114189	114189	1
47	SWIVEL, straight; 3/8 npt(f) x 3/8 npsm(f)	207152	207152	1
48	COUPLING, hose, with spring guard; sst; 3/8 npsm(f)	111914	111914	1
49	PLATE, mounting	192592	192592	1
50	VALVE, ball; sst; 3/8 npt(m) x 3/8 npsm(m); <i>see manual 307068</i>		237533	1
51	BUSHING; sst; 3/8 npt(m) x 1/4 npt(f)		168160	1
53	ADAPTER; sst; 1/8 npt(m) x 3/8 npt(f)		108415	1
54	TUBE, suction, 90°; sst; 3/4 npt(f) x 3/4 npsm(m)	188867	188867	1

# Technical Data

Category	Data
Maximum fluid working pressure	100 psi (0.7 MPa, 7 bar)
Maximum air input pressure	100 psi (0.7 MPa, 7 bar)
Ratio	1:1
Maximum operating temperature	150°F (66°C)
Weight	76 lb (34.5 kg)
Wetted parts	<i>Pump:</i> See pump manual 308479. <i>Fluid Filter:</i> See filter manual 307273 or 308918. <i>Back Pressure Regulator:</i> See back pressure regulator manual 308401. <i>Back-Geared Agitator:</i> See agitator manual 308609. <i>Fluid Hoses:</i> Nylon

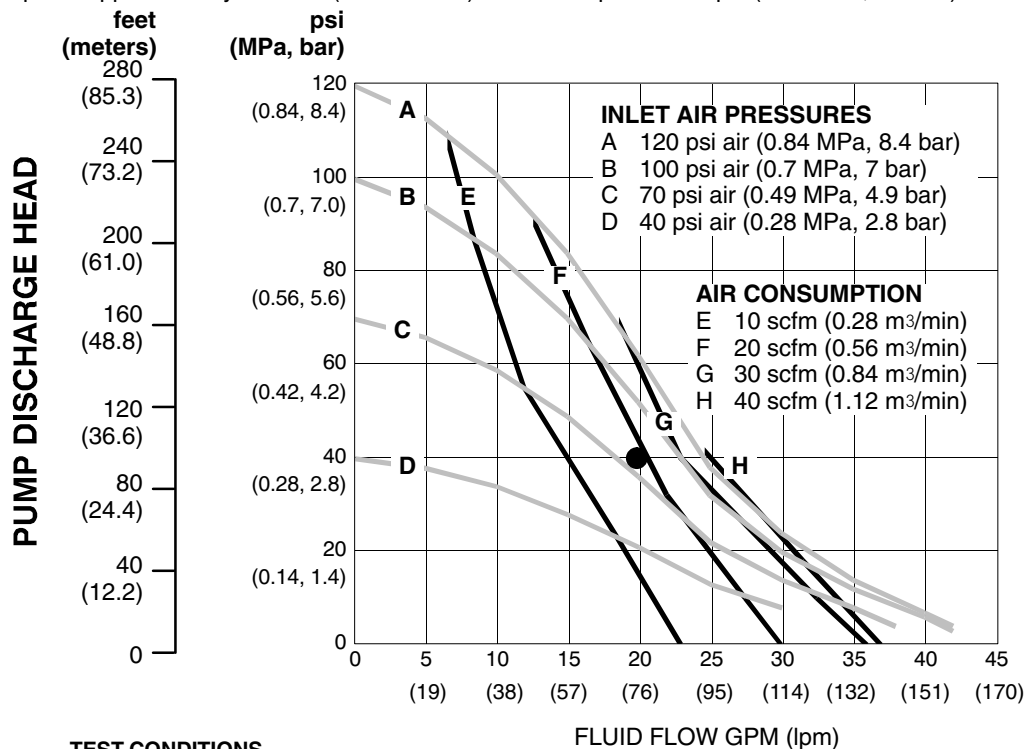
## Sound Data

Sound Pressure Level, measured at 1 meter from unit, at 70 psi (0.48 MPa, 4.8 bar), 50 cycles/min	Sound Pressure Level, measured at 1 meter from unit, at 100 psi (0.7 MPa, 7 bar), full flow	Sound Power Level, measured per ISO 9614-2, at 100 psi (0.7 MPa, 7 bar), full flow
78 dB(A)	89 dB(A)	100 dB(A)

## Performance Chart

### Example of Finding Pump Air Consumption and Air Pressure at a Specific Fluid Delivery and Discharge Head:

To supply 20 gpm (76 liters) fluid flow (horizontal scale) at 40 psi (0.28 MPa, 2.8 bar) discharge head pressure (vertical scale) requires approximately 20 scfm (0.56 m<sup>3</sup>/min) air consumption at 70 psi (0.49 MPa, 4.9 bar) inlet air pressure.



### TEST CONDITIONS

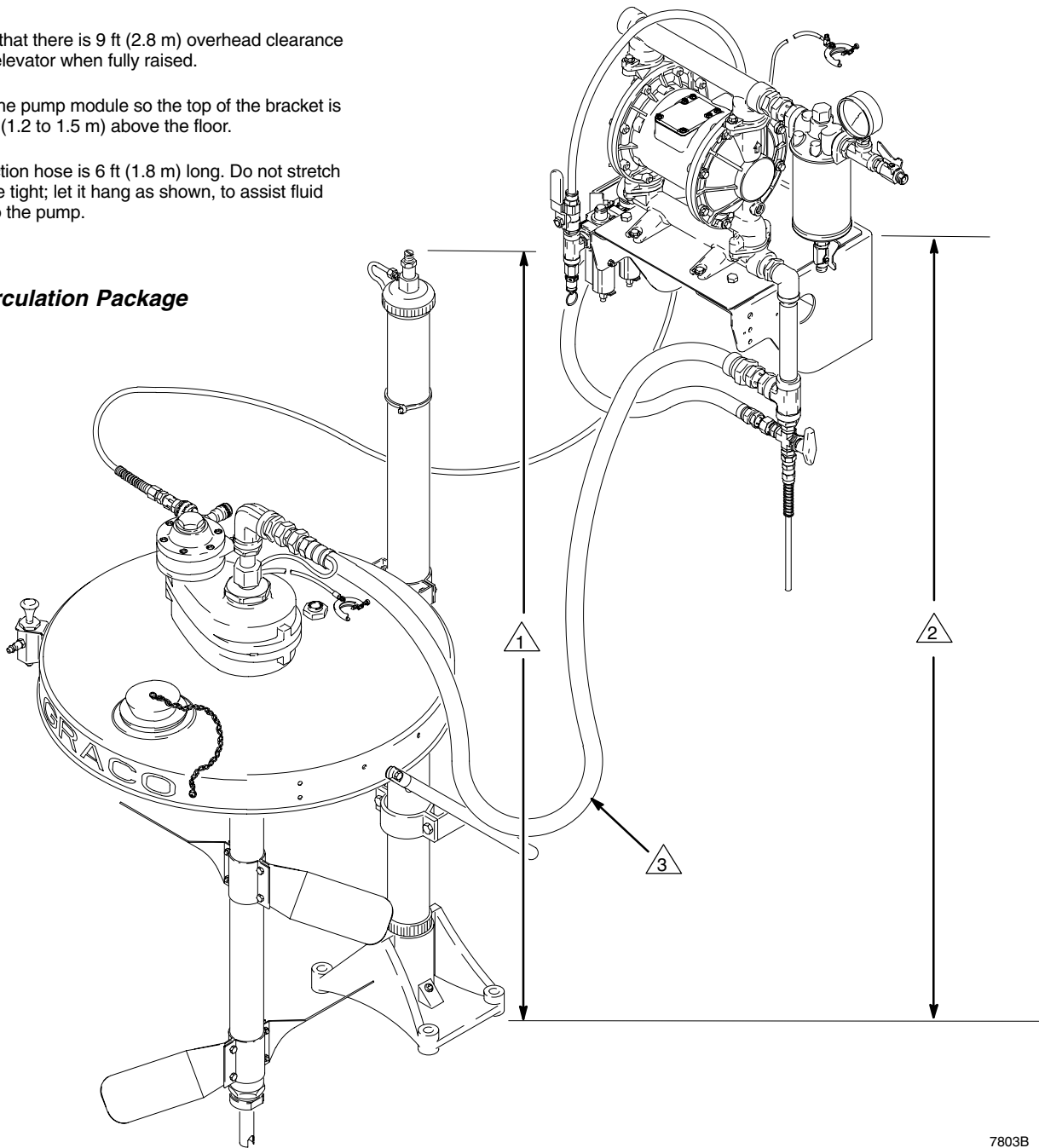
Pump tested in water with Teflon® diaphragm and inlet submerged.

**KEY** ——— FLUID PRESSURE AND FLOW  
 ——— SCFM AIR CONSUMPTION

# Dimensions

- 1 Ensure that there is 9 ft (2.8 m) overhead clearance for the elevator when fully raised.
- 2 Mount the pump module so the top of the bracket is 4 to 5 ft (1.2 to 1.5 m) above the floor.
- 3 The suction hose is 6 ft (1.8 m) long. Do not stretch the hose tight; let it hang as shown, to assist fluid flow into the pump.

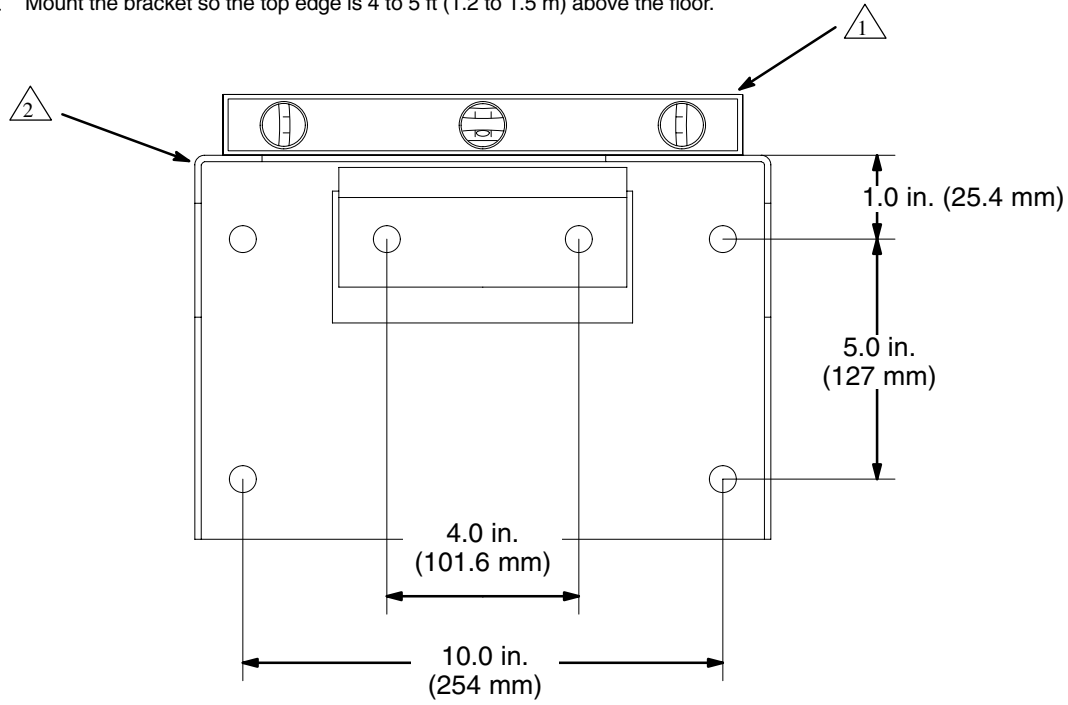
**232092 Circulation Package  
Shown**



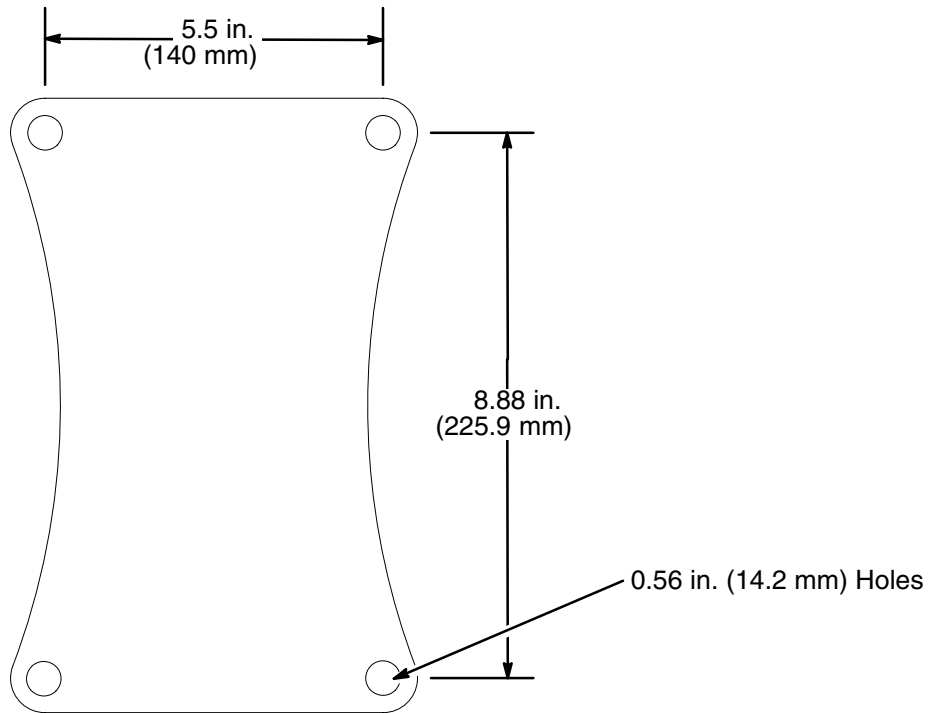
7803B

# Mounting Hole Layout

- 1 Check that the bracket is level before bolting it to the wall.
- 2 Mount the bracket so the top edge is 4 to 5 ft (1.2 to 1.5 m) above the floor.



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