

Instructions – Parts List



Husky™ Leak Detectors 308702 rev.D

For use with air operated double diaphragm pumps. Shuts off pump and prevents fluid from escaping.

60 psi (0.41 MPa, 4.1 bar) Maximum Incoming Air Pressure

Model 239080, Series A

polypropylene housing, PVC wetted parts

Model 239081, Series A

acetal housing, stainless steel wetted parts

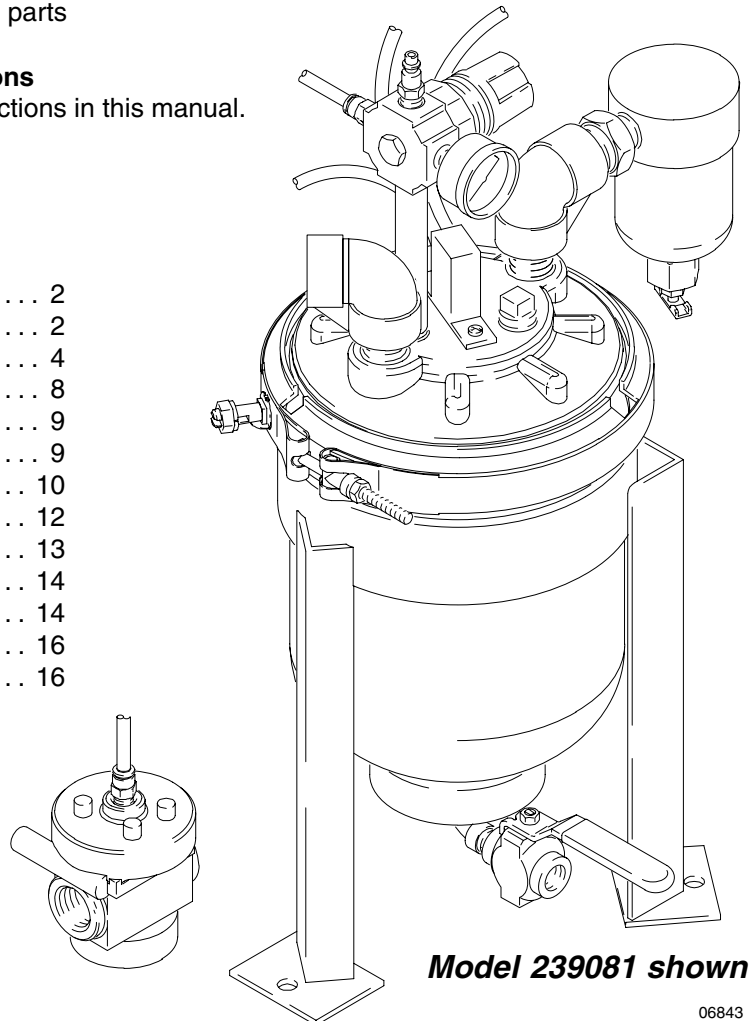


Important Safety Instructions

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

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PROVEN QUALITY. LEADING TECHNOLOGY.



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.

Warnings

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 not sure, call your Graco distributor.
- Do not alter or modify this equipment.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure of the lowest rated component in your system. This equipment has a **60 psi (0.41 MPa, 4.1 bar) maximum incoming air pressure.**
- Use fluids and solvents that are compatible with the equipment wetted parts. Refer to the **Technical Data** section of all equipment manuals. Read the fluid and solvent manufacturer's warnings.
- Do not lift pressurized equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.

WARNING



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.
- **Never** use an acetal pump or leak detector with acids. Take precautions to avoid acid or acid fumes from contacting the pump housing exterior. Stainless steel parts will be damaged by exposure to acid spills and fumes.



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. Refer to **Grounding** on pages 5 and 6.
- **Never** use a polypropylene pump or leak detector with non-conductive flammable fluids as specified by your local fire protection code. Refer to **Grounding** on pages 5 and 6 for additional information. Consult your fluid supplier to determine the conductivity or resistivity of your fluid.
- If there is any static sparking or you feel an electric shock while using this equipment, **stop pumping 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 pumped.
- Pipe and dispose of the exhaust air safely, away from all sources of ignition.
- Keep the work area free of debris, including solvent, rags, and gasoline.
- Electrically disconnect all equipment in the work area.
- Extinguish all open flames or pilot lights in the work area.
- Do not smoke in the work area.
- Do not turn on or off any light switch in the work area while operating or if fumes are present.
- Do not operate a gasoline engine in the work area.

Installation

Reference numbers and letters in parentheses refer to the callouts in the figures and in the **Parts Lists** on page 12 and the **Parts Drawing** on page 13.

CAUTION

A second shut-off valve is recommended for any pressure- or gravity-fed applications. It is shown in Fig. 1. See **Inlet Shut-Off Valve Kit** on page 11.

1. Mount the leak detector securely and in an upright position as shown in Fig. 1.
2. Install the shut-off valve (1) directly to the air inlet port of the air-operated diaphragm pump. It makes no difference whether the shut-off valve is installed before or after any air regulator installed in the system.

NOTE: Install the shut-off valve (1) so that the IN port points toward the source air line and the OUT port points toward the pump.

3. Install a hose, with a maximum pressure rating at least as high as the system air pressure, from the pump exhaust port to the leak detector inlet port. See the list in Fig. 1 for hose part numbers.

NOTE: You may use rigid piping; however, you should use at least 6 in. (150 mm) of flexible hose to connect the rigid pipe to the leak detector port.

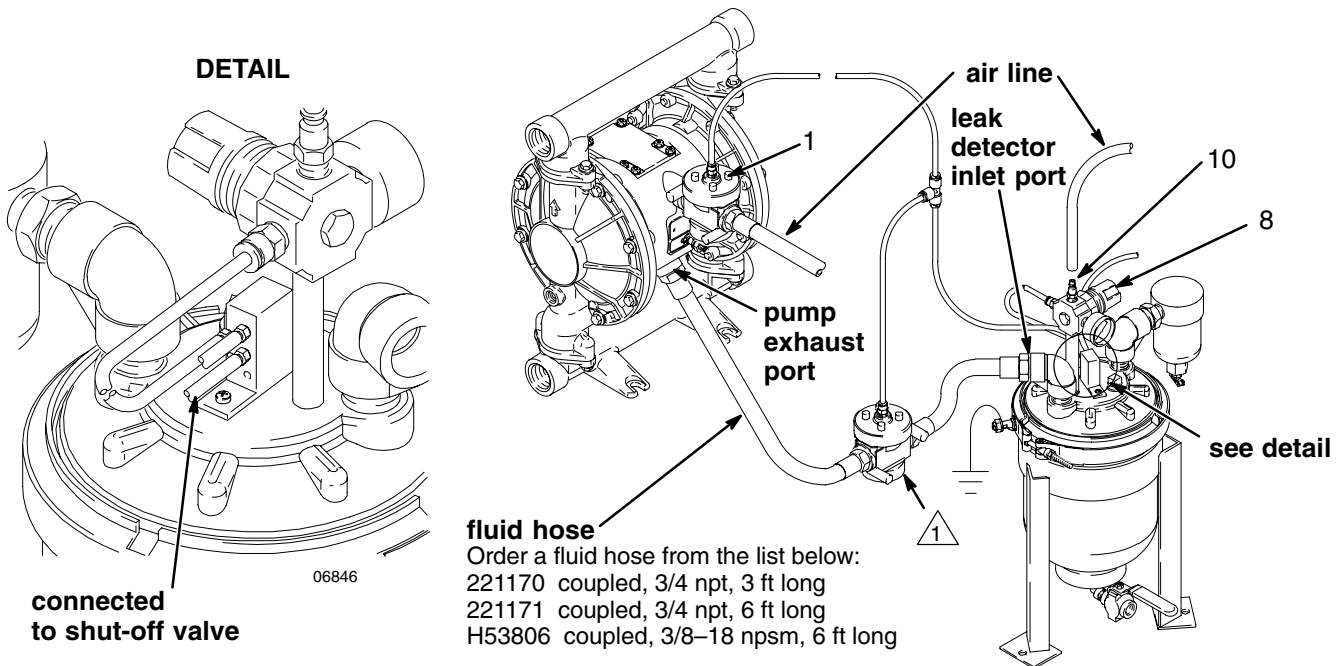
4. Connect a 1/4-in. air line to the quick-connect male air line fitting (10) on the regulator (8).
5. Adjust the regulator (8) pressure to 50 to 60 psi (0.34 to 0.41 MPa, 3.4 to 4.1 bar).


NOTE: Because the shut-off valve (1) is a normally closed valve, the pump will not operate unless an air line is connected to the leak detector air line fitting (10).

6. Ground the leak detector and, if appropriate, the fluid containers. See **Grounding** on pages 5 and 6.

7. See **Operating Instructions** on page 8.

The installation shown in Fig. 1 is only a guide for connecting the leak detector to your system. Contact your Graco distributor for assistance in planning a system to suit your needs.




 Second shut-off valve is part of Inlet Valve Shut-Off kit 239114, which may be purchased separately.


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Fig. 1

Installation

Grounding

**WARNING**



FIRE AND EXPLOSION HAZARD

When pumping flammable fluids, this leak detector must be grounded. Before pumping, ground the system as explained below. Also read the section **FIRE OR EXPLOSION HAZARD** on page 3.

*The polypropylene leak detectors are **not** conductive. Attaching the ground wire to the lug (15) grounds only the clamp (see Fig. 2). When pumping conductive flammable fluids, **always** ground the entire fluid system by making sure the fluid has an electrical path to a true-earth ground.*

To reduce the risk of static sparking, ground the leak detector and all other equipment in the pumping area. Check your local electrical code for detailed grounding instructions for your area and type of equipment.

Ground all of this equipment:

- **Leak detector:** Attach a ground wire to the grounding lug (15) as shown in Fig. 2. Connect the clamp end of the ground wire to a true earth ground. *To order a ground wire and clamp, order Part No. 222011.*

NOTE: To connect the ground wire to the leak detector, first remove the copper connector from the non-clamp end of the ground wire and discard it, then push the bare wire through the grounding lug on the leak detector.

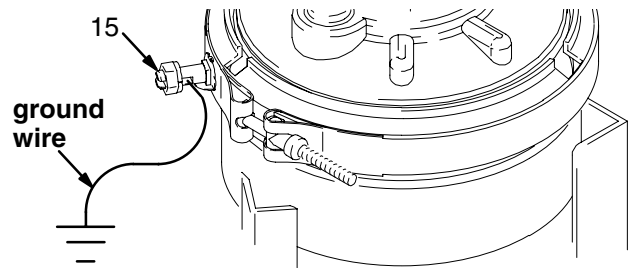


Fig. 2

- **Fluid supply container:** Follow your local code.

NOTE: When pumping conductive flammable fluids, **always** ground the entire fluid system. See the **WARNING** at left. Fig. 3 shows a recommended method of grounding fluid containers during filling. This is only a guide; contact your Graco distributor for assistance in grounding your system.

- **Air compressor:** Follow the manufacturer's recommendations.
- **Solvent pails used when flushing:** Follow your local code. Use only grounded metal pails, which are conductive. Do not place the pail on a non-conductive surface, such as paper or cardboard, which interrupts the grounding continuity.

Installation

Grounding a Leak Detector

- A Husky pump
- B Husky leak detector
- H Fluid drain valve (required)
- S Dispense valve
- T Fluid drain line
- Y Air motor ground wire (required)
- W Leak detector ground wire (required)
See page 5 for installation instructions.
- Z Container ground wire (required)

- 1 Hose must be conductive.
- 2 Dispense valve nozzle must be in contact with the container.

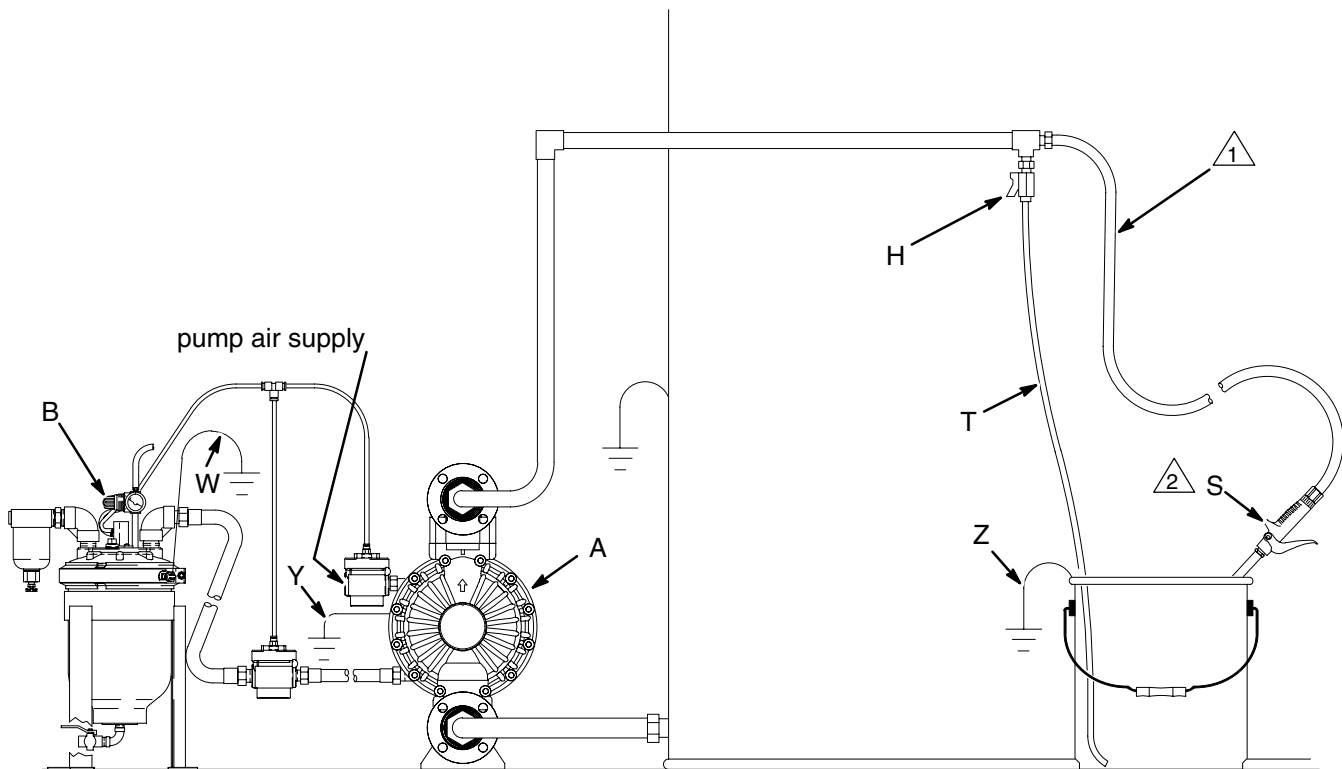


Fig. 3

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Operation

Pressure Relief Procedure

WARNING

PRESSURIZED EQUIPMENT HAZARD

The equipment stays pressurized until pressure is manually relieved. To reduce the risk of serious injury from pressurized fluid, accidental spray, or splashing fluid, follow this procedure whenever you:

- Are instructed to relieve pressure
- Stop pumping
- Check, clean, or service any system equipment
- Install or clean fluid nozzles

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

WARNING

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.

- Read **TOXIC FLUID HAZARD** on page 3.
- Use fluids and solvents that 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.

WARNING

FIRE AND EXPLOSION HAZARD



Never pump flammable fluids with polypropylene units. Such use could cause a fire or an explosion.

Operating Instructions

See **Parts Drawing** on page 13.

- When compressed air is applied to the pump **and** the leak detector, the pump operates as it would under normal operating conditions. Exhaust air from the pump flows into the leak detector and out of the leak detector silencer (R). See the **Parts Drawing** on page 13.
- If the pump diaphragm leaks, liquid may enter the pump's air exhaust and be carried to the leak detector. When liquid accumulates in the leak detector, the float (4) rises, and air flow is diverted to a different hose in the the three-way valve (M). As a result, air pressure is removed from the shut-off valve (1), which closes it and stops the pump.

When the leak detector triggers a pump shutdown, you should suspect that a pump diaphragm has failed, and you should respond as follows:

1. Shut off all air to the pump and the leak detector.
2. Shut off the fluid supply to the pump.
3. Drain the liquid from the leak detector through the drain valve (B) into a suitable container, depending on the liquid being pumped.
4. If the liquid that comes out of the drain valve (B) is only water condensation, no corrective action is necessary. Close the drain valve, open the fluid supply line, and resume pumping.

If the liquid being pumped comes out of the drain valve (B), repair the pump immediately to minimize internal damage to the pump. Additionally, the leak detector must be serviced. See **Cleanup After a Leak**.

Cleanup After a Leak

If a spill occurs with tacky or viscous fluid, the fluid could solidify and interfere with the action of the moving parts. It is recommended that you check the following parts for cleaning or replacement any time the leak detector is activated (See **Parts Drawing** on page 13):

- Concentrator (3)
- Float (4)
- Push rod (5)
- Compression nut (6)
- Converter o-ring (12)
- Drain valve (B)

Maintenance

For instructions on cleaning the inside of the leak detector and performing an actuator valve test, see **Routine Cleaning and Test** on page 10. For a function test that does not involve any disassembly, perform the following steps (See **Parts Drawing** on page 13):

1. **Relieve the pressure**, and turn off the air supply to the pump and the leak detector.

WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 8.

2. Remove the test port plug (G) on the leak detector, and half fill the unit with water.
3. Turn on the air supply to the pump and the leak detector.

The pump should not operate. If the pump operates, the the leak detector actuator valve (M) may be defective and may need to be replaced. Contact your Graco distributor. Another possibility is that the compression nut (6) may be too tight and is not allowing the float to slide up the rod guide (A).

If the pump does not operate, go to step 4.

4. Turn off the air supply to the pump and the leak detector, drain the leak detector through the drain valve (B), and replace the test port plug (G).
5. Turn on the air supply to the pump and the leak detector.

The pump should function normally.

Troubleshooting

WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 8.

Relieve the pressure before checking or servicing the equipment.

Check all possible problems and causes before disassembling the leak detector.

PROBLEM	CAUSE	SOLUTION
Leak detector does not cause pump to shut off during a leak and float is raised.	Actuator valve (M) is faulty and needs to be replaced.	Contact your Graco distributor.
	Shut-off valve (1) should be installed at pump inlet with IN port toward the source air line and the OUT port toward the pump.	Make sure shut-off valve (1) is installed correctly.
Leak detector does not cause pump to shut off during a leak and float does not rise.	Compression nut (6) is too tight.	Loosen nut slightly.
	Push rod (5) is dirty.	Clean push rod.
	Drain valve (B) has been left open.	Close drain valve.
	Fluid from pump leak has accumulated in hose that runs from pump exhaust to leak detector.	Adjust installation so that fluid from pump will drain down into leak detector.
Leak detector shuts down pump, but there is no diaphragm failure in pump.	Water condensation from pump exhaust has collected in leak detector and raised the float, which simulates a leak and shuts down the pump.	Shut off air to pump and leak detector, drain water out of leak detector by opening the drain valve (B), turn air back on, and resume pumping.

Service

Routine Cleaning and Test

See the **Parts List** on page 13.

1. **Relieve the pressure**, and disconnect the compressed air supply to the pump and leak detector.

WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 8.

2. Remove the clamp (7), and remove the leak detector lid (L).
3. Flush the inside of the leak detector with water or a cleaner compatible with the liquid that has been pumped.

4. To test the leak detector, connect an air line to the leak detector air line fitting (10), and disconnect the vinyl tube (2) at the pump shut-off valve (1).

5. Turn on the air.

Air should be flowing through the tube (2).

6. Push the float (4) up to simulate a detected leak.

Air should stop flowing through the shut-off valve tube (2) and be redirected to flow out the alternate air outlet. If air does not stop flowing, the leak detector actuator valve (M) is defective and needs to be replaced. Contact your Graco distributor.

If air flow through the shut-off valve tube (2) stops when you raise the float, the leak detector is operating correctly. Reassemble the leak detector, and set the regulator at 50 to 60 psi (0.34 to 0.41 MPa, 3.4 to 4.1 bar).

Service

Inlet Shut-Off Valve Kit

Inlet Shut-Off Valve Kit 239114 is available. Parts included in the kit are marked with a dagger, for example (2†), in the **Parts Lists** on page 12 and in Fig. 4. In addition to the part marked with a dagger, the kit includes the following: 1/4-in tube x 1/8 npt tube connector, 3/4-in close SST nipple, brass tube tee, and sleeveless bushing.

You should use this second shut-off valve kit for any pressure- or gravity-fed applications. If a diaphragm failure occurs in a pressure- or gravity-fed application, even after the leak detector shuts off the air supply to the pump it is possible for fluid to be pushed through the failed diaphragm and through the pump exhaust, and it could overflow the leak detector. The second shut-off valve in Inlet Shut-Off Valve Kit 239114, when activated, stops any fluid from entering the leak detector when the pump is shut down.

WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 8.

Relieve the pressure. Install the new shut-off valve (1†) at the leak detector inlet. Run the original air line (2) from the tee (Z) to the original shut-off valve (1). Run the new air line (2†) from the tee to the new shut-off valve (1†) as shown in Fig. 4. Connect the pump exhaust line to the new shut-off valve.

If a spill occurs, see **Cleanup After a Leak** on page 8.

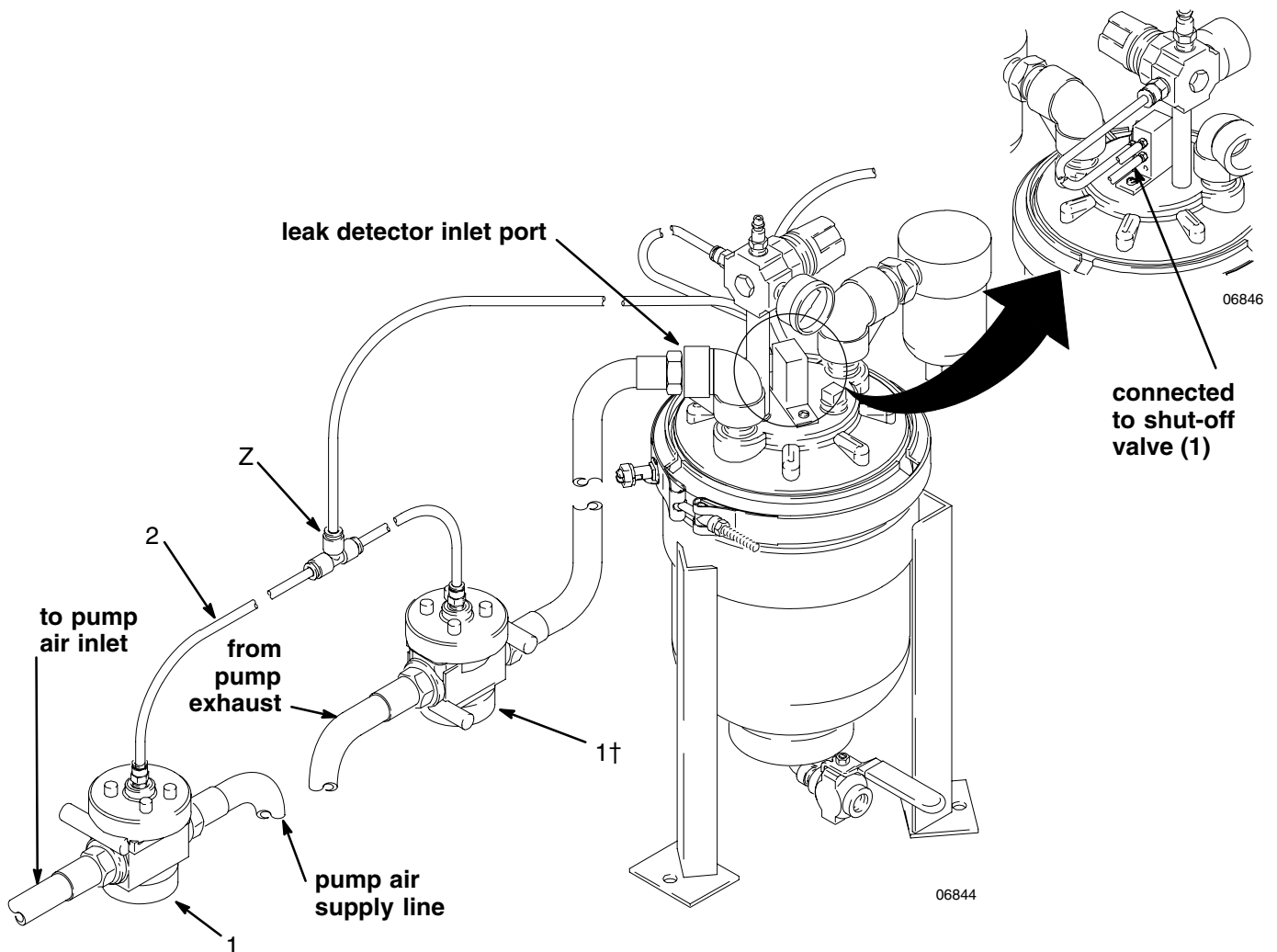


Fig. 4

Parts Lists

Model 239080, Series A

polypropylene housing, PVC wetted parts

A	Rod guide, TFE-coated SST; 1/8" x 3" nipple
B	Drain valve, PVC
C	Elbow, PVC; 3/4"
D	Nipple, PVC; 1/2"
E	Stand, painted mild steel
F	Nipple, PVC; 3/4"
G	Hex plug, brass
H	Reducer bushing, PVC
J	Regulator stand, SST; 1/4" x 4" nipple
K	Housing, polypropylene
L	Lid, thermoplastic
M	Actuator valve, aluminum
N	Machine screw, SST; 7/8" #8
P	Sleeveless bushing, zinc-plated steel; 1/8" x 1/4"
R	Silencer reclassifier, cast aluminum, brass, and polycarbonate; 1/2"
S	Barbed tube connector, brass; 1/4" x 10–32
T	Push-in tube connector, brass; 1/4 x 1/8 npt
U	O-Ring cord, buna–N
Z	Tee, brass

Replacement Parts

Ref No.	Part No.	Description	Qty
1†	113870	VALVE, shut-off, cast aluminum	1
2†	113871	TUBE, vinyl; 1/4" O.D. x 8' long	2
3	113873	CONCENTRATOR, PVC	1
4	113900	FLOAT, polypropylene; 5"	1
5	113898	ROD, push, TFE-coated SST	1
6	113897	NUT, cmprssn, TFE-coated brass	1
7	113872	CLAMP, band, SST	1
8	110318	REGULATOR; 1/4" & 1/8" ports	1
9	108190	PRESSURE GAUGE, air	1
10	169970	FITTING, air line, quick-connect	1
11	108000	NUT, lock, SST; 5/16-24	1
12	156454	O-RING, buna–N	1
13	186620	STICKER, grounding symbol	1
15	104029	LUG, grounding	1
16	104582	WASHER TAB, grounding	1
18	290305	LABEL, product (<i>not shown</i>)	1
19	290306	TAG, identification (<i>not shown</i>)	1
20	290321	LABEL, warning (<i>not shown</i>)	1

† Part of Inlet Shut-Off Valve Kit 239114, which may be purchased separately. See page 11.

Model 239081, Series A

acetal housing, stainless steel wetted parts

A	Rod guide, TFE-coated SST; 1/8" x 3" nipple
B	Drain valve, SST
C	Elbow, SST; 3/4"
D	Nipple, SST; 1/2"
E	Stand, painted mild steel
F	Nipple, SST; 3/4"
G	Hex plug, SST
H	Reducer bushing, SST
J	Regulator stand, SST; 1/4" x 4" nipple
K	Housing, acetal (conductive)
L	Lid, thermoplastic
M	Actuator valve, aluminum
N	Machine screw, SST; 7/8" #8
P	Sleeveless bushing, zinc-plated steel; 1/8" x 1/4"
R	Silencer reclassifier, cast aluminum, brass, and polycarbonate; 1/2"
S	Barbed tube connector, brass; 1/4" x 10–32
T	Push-in tube connector, brass; 1/4 x 1/8 npt
U	O-Ring cord, buna–N
V	Drain plug, SST; 2"
W	Nipple, SST; 1/4"
Y	Drain elbow, SST
Z	Tee, brass

Replacement Parts

Ref No.	Part No.	Description	Qty
1†	113870	VALVE, shut-off, cast aluminum	1
2†	113871	TUBE, vinyl; 1/4" O.D. x 8' long	2
3	113921	CONCENTRATOR, SST	1
4	113899	FLOAT, SST; 5"	1
5	113988	ROD, push, TFE-coated SST	1
6	113897	NUT, cmprssn, TFE-coated brass	1
7	113872	CLAMP, band, SST	1
8	110318	REGULATOR; 1/4" & 1/8" ports	1
9	108190	PRESSURE GAUGE, air	1
10	169970	FITTING, air line, quick-connect	1
11	108000	NUT, lock, SST; 5/16–24	1
12	156454	O-RING, buna–N	1
13	186620	STICKER, grounding symbol	1
15	104029	LUG, grounding	1
16	104582	WASHER TAB, grounding	1
18	290305	LABEL, product (<i>not shown</i>)	1
19	290306	TAG, identification (<i>not shown</i>)	1
20	290321	LABEL, warning (<i>not shown</i>)	1

† Part of Inlet Shut-Off Valve Kit 239114, which may be purchased separately. See page 11.

Parts Drawing

Model 239080, Series A

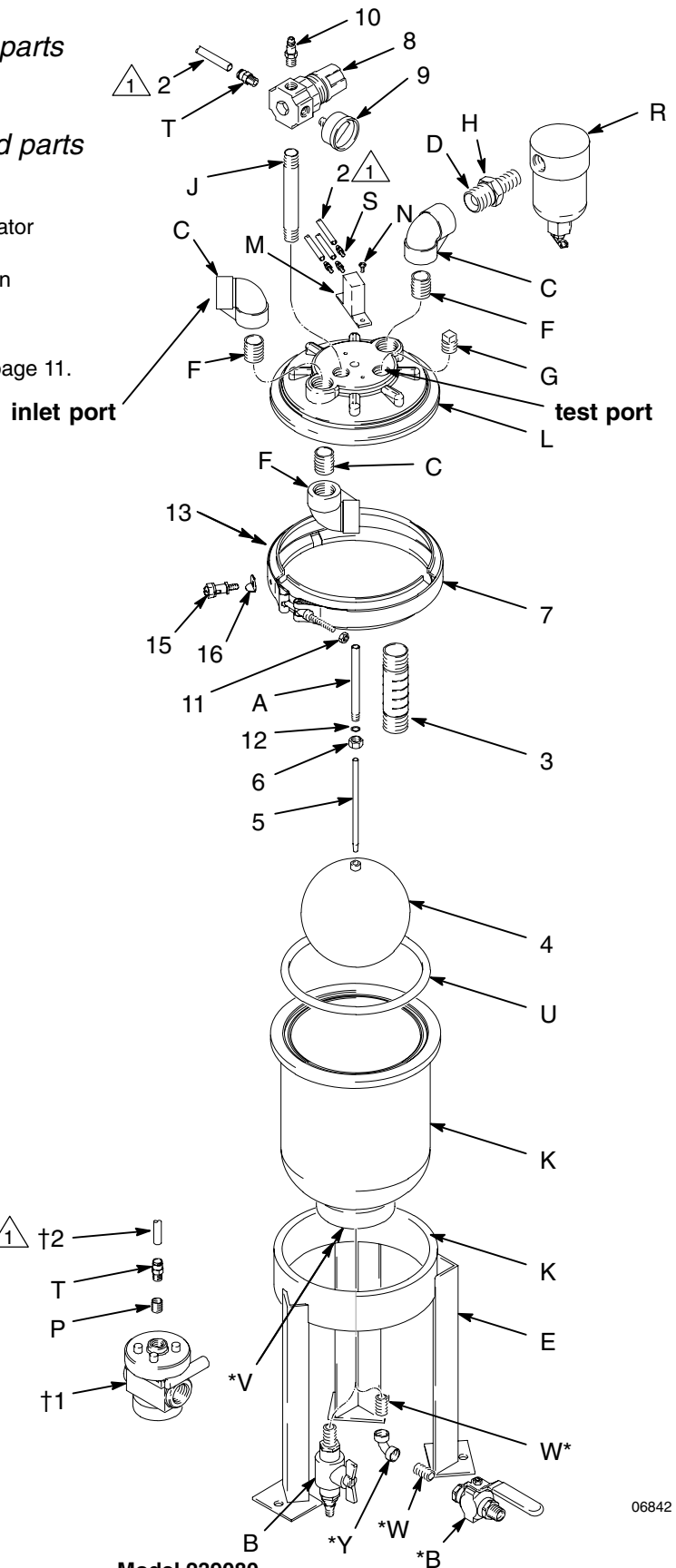
polypropylene housing, PVC wetted parts

Model 239081, Series A

acetal housing, stainless steel wetted parts

△ 1 Vinyl tube (2) runs from regulator (8) to actuator valve (M) and runs separately from shut-off valve (1) to actuator valve (M). See Fig. 1 on page 4.

† Part of Inlet Shut-Off Valve Kit 239114. See page 11.



Model 239081, Series A shown

Model 239080

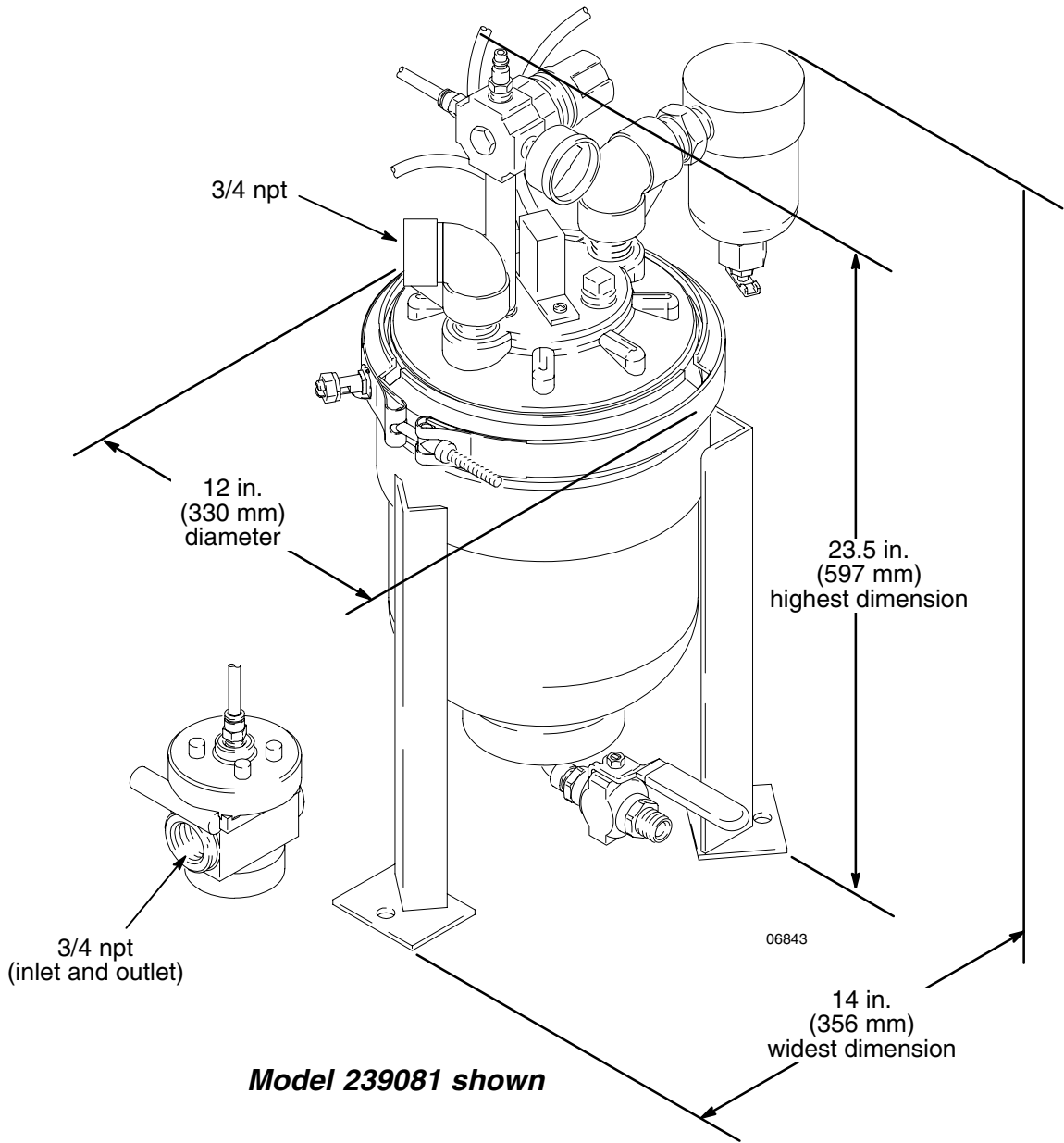
*** Model 239081**

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Technical Data

Maximum working pressure	60 psi (0.41 MPa, 4.1 bar)
Air line connection	quick-connect male air line fitting
Inlet size	3/4 npt
Actuator valve inlet size	3/4 npt
Actuator valve outlet size	3/4 npt
Wetted parts	
Model 239080	polypropylene, TFE-coated SST, TFE-coated brass, buna-N, PVC
Model 239081	SST, TFE-coated SST, TFE-coated brass, buna-N
Non-wetted external parts	
Model 239080	polypropylene, thermoplastic, aluminum, brass, painted mild steel
Model 239081	acetal, thermoplastic, aluminum, brass, painted mild steel
Weight	
Model 239080	18 lb (8.2 kg)
Model 239081	23 lb (10.4 kg)

Dimensions



This image shows a single page from a notebook or ledger. The page is white and features approximately 20 evenly spaced horizontal grey lines running across its width. There are no vertical margin lines, headers, footers, or other markings present on the page.

Graco Standard Warranty

Graco warrants all equipment manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale by an authorized Graco distributor 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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Graco Information

TO PLACE AN ORDER, contact your Graco distributor, or call one of the following numbers to identify the distributor closest to you:

1-800-328-0211 Toll Free

612-623-6921

612-378-3505 Fax

*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.*

MM 308702

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