

Instructions—Parts List



HIGH PRESSURE Surge Tanks and Fluid Filters

307296T
EN

For fluid surge reduction and for filtering of finishing materials.



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

Fluid Filters

5000 psi (350 bar, 35 MPa) Maximum Working Pressure

Model 238620, Series A

Exposed Mounting

Model 214724, Series E

Cover Mounting

Model 289310, Series A

Cover Mounting

Fluid Filter

7252 psi (500 bar, 50 MPa) Maximum Working Pressure

Model 237069, Series A

Exposed Mounting

Surge Tanks (with filter)

5000 psi (350 bar, 35 MPa) Maximum Working Pressure

Model 214624, Series C

Exposed Mounting

Model 238623, Series A

Exposed Mounting

Model 214726, Series E

Cover Mounting

Mastic Surge Tanks (without filter)

5000 psi (350 bar, 35 MPa) Maximum Working Pressure

Model 214623, Series A

Exposed Mounting; for use with high viscosity fluids

Model 214725, Series C

Covered Mounting; for use with low to medium viscosity fluids

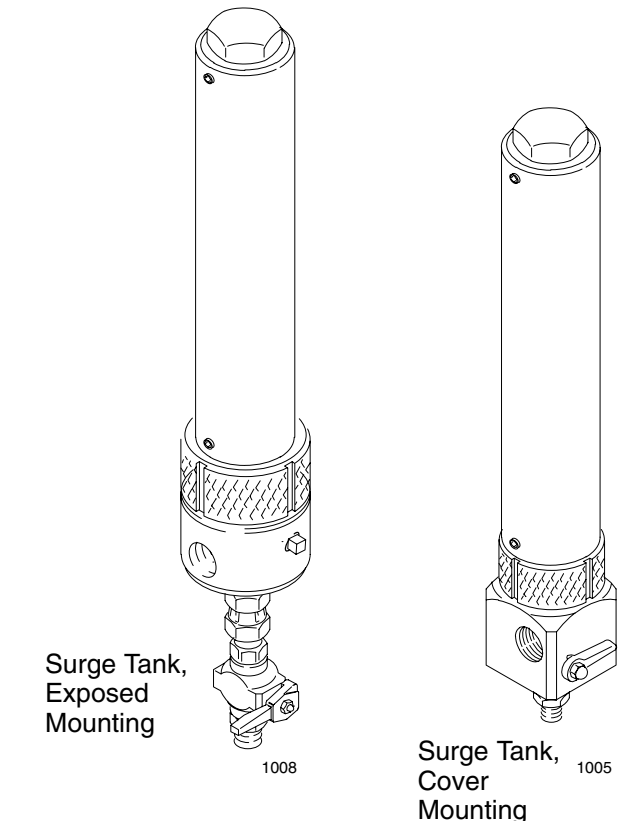
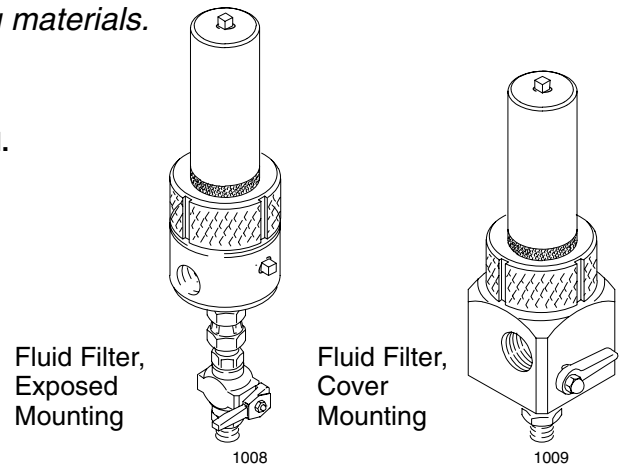


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Symbols

Warning Symbol



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

Caution Symbol



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

! WARNING



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 system component. Refer to the **Technical Data** on page 14 for the maximum working pressure of this equipment.
- Use fluids and solvents which are compatible with the equipment wetted parts. Refer to the **Technical Data** section of all equipment manuals. Read the fluid and solvent manufacturer's warnings.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.



SKIN INJECTION HAZARD

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



- Fluid injected into the skin might look like just a cut, but it is a serious injury. **Get immediate surgical treatment.**
- Do not stop or deflect leaks with your hand, body, glove or rag.
- Follow the **Pressure Relief Procedure** on page 6 before cleaning, checking or servicing the equipment.
- Tighten all fluid connections before operating the equipment.

Installation

Typical Mountings

See Fig. 1 for typical mountings. See page 14 for the mounting hole layout.

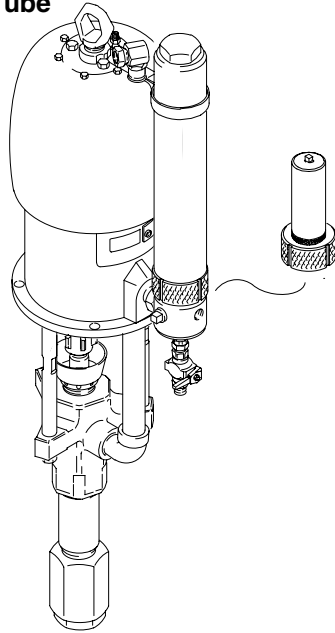
Install the surge tank or filter near the pump outlet. Position the surge tank so the labels face away from the pump and so the setscrews, near the top and bottom of the tank, face toward the pump.

The top of the surge tank must always be supported. See **Accessories** on page 13 for mounting clamps.

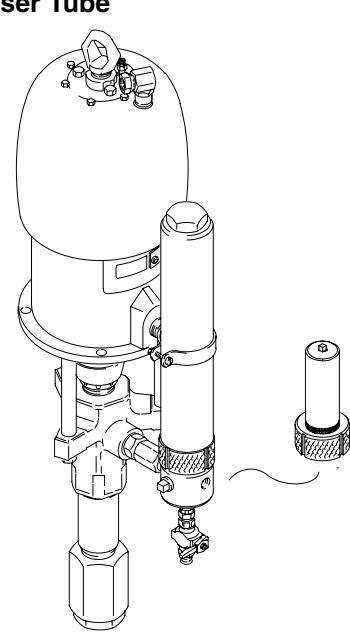
Surge tanks must always be mounted upright, as shown in Fig. 1, not horizontally.

Exposed Mountings

Detail A: With Riser Tube



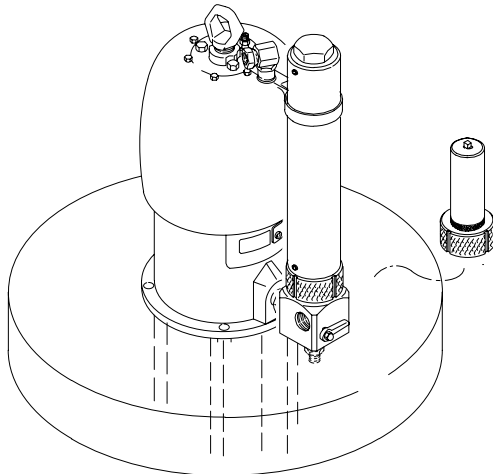
Detail B: No Riser Tube



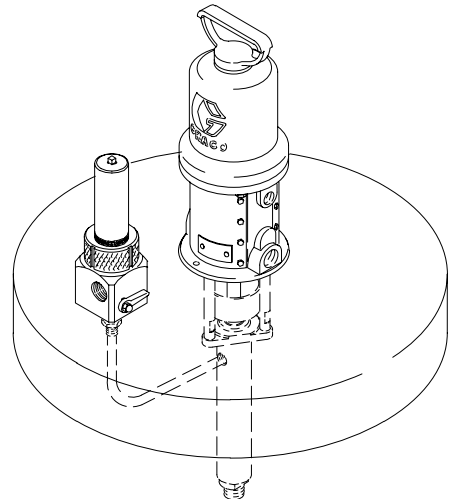
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Drum Cover Mountings

Detail C: Integral Riser Tube



Detail D: Separate Riser Tube



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Fig. 1

Surge Tank Conversion Kits

Surge Tank Conversion Kits 238634 and 237704

Use Conversion Kits 238634 or 237704 to add a surge tank to a pump. Kit 238634 includes surge tank 238623 (A) and clamp 238630 (B). Kit 237704 includes surge tank 214624 (A), clamp 238630 (B), and attaching hardware (C).

Connect the surge tank to the fluid outlet (F) of the displacement pump and install the clamp in the optional outlet (E) at the base of the air motor. See Fig. 2.

△ 1 These parts are included with Conversion Kit 237704 only.

△ 2 Model 238623 Surge Tank shown.

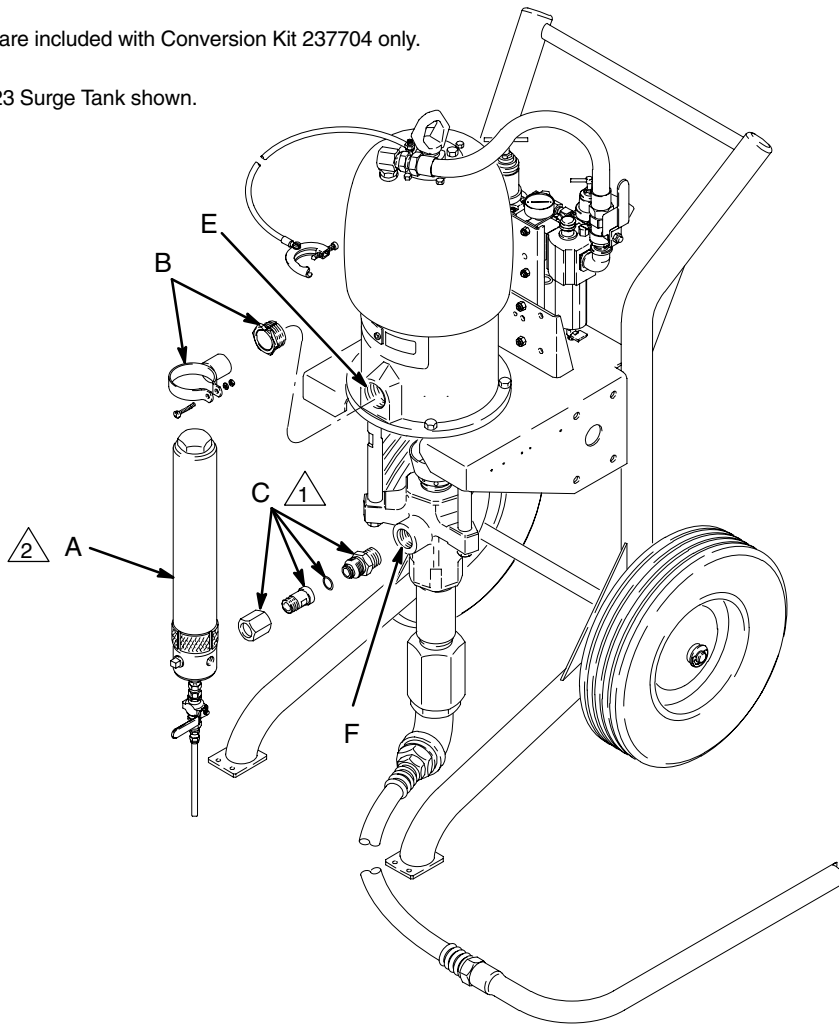


Fig. 2

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Operation

Before operating the equipment, be sure the drain valve is closed.

Flush the equipment with a compatible solvent to remove oil used for factory testing and rust prevention.

If you notice excessive surging at the spray gun, shut off the pump, trigger the gun to relieve fluid pressure, and open the drain valve (D) at the bottom of the surge tank. See Fig. 3. After the tank is drained, close the drain valve and resume operation.

Be sure the drain valve is fully closed when spraying and fully open when draining or circulating fluid to get the best results and reduce wear on the valve.

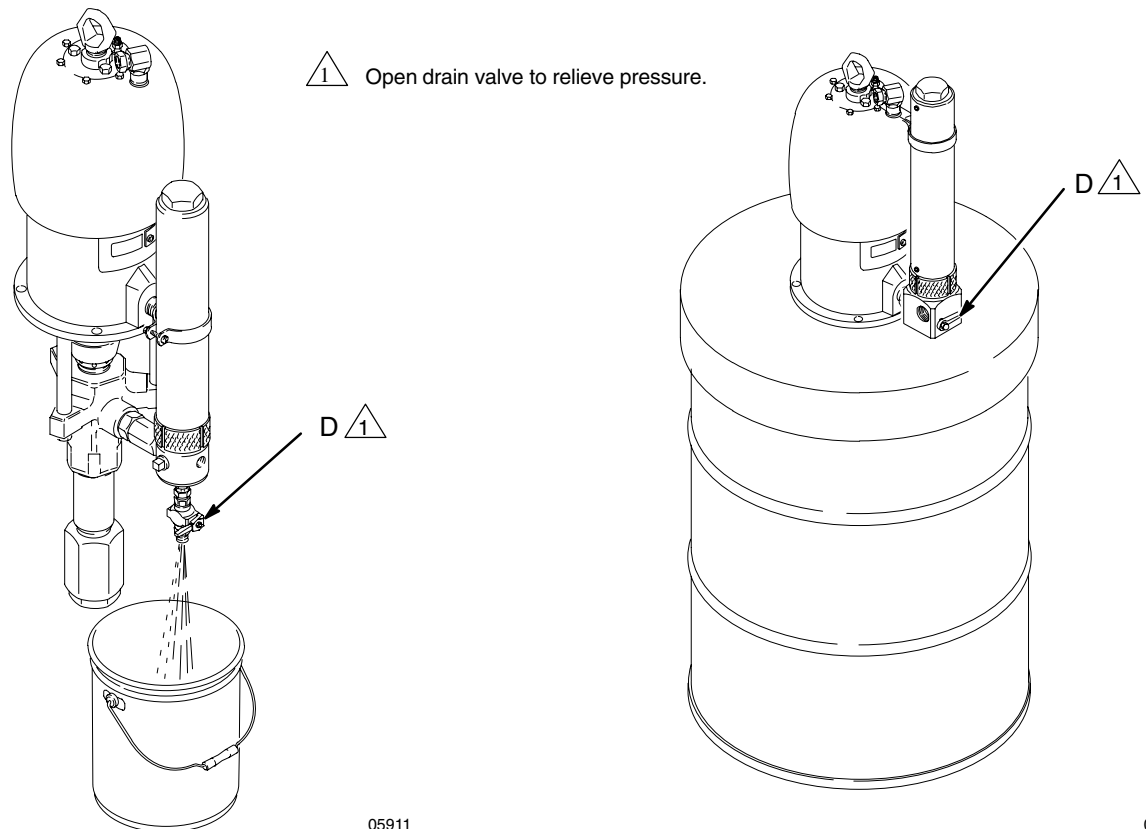


Fig. 3

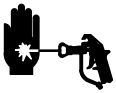
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Service

Pressure Relief Procedure

WARNING



SKIN INJECTION HAZARD

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

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

1. Lock the gun trigger safety.
2. Turn off the power to the pump.
3. Close any master bleed-type air valves.
4. Unlock the gun trigger safety.
5. Hold a metal part of the gun firmly to the side of a grounded metal pail, and trigger the gun to relieve pressure.
6. Lock the gun trigger safety.
7. Place a pail under the drain valve, and open the drain valve to be sure all fluid pressure is relieved. Keep hands away from the end of the drain valve when opening it.
8. Leave the drain valve open until you are ready to spray again.

*If you suspect that the spray tip or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, **very slowly** loosen the tip guard retaining nut or hose end coupling and relieve pressure gradually, then loosen completely. Now clear the tip or hose.*

Service Notes

Clean all parts thoroughly when disassembling. Check parts carefully for damage or wear, replace as needed.

Numbers in parentheses in the text refer to the parts drawings.

Check periodically for leakage from the small holes near the top and bottom of the surge tanks. If you find leakage at the holes or anywhere else, replace the seals promptly.

Before removing the end plug and adapter from the surge tank, loosen the setscrews (5) near the bottom of the tank (6). See the parts drawings on pages 7 through 12.

Inspect the sealing surfaces for nicks or scratches that might cause leakage. **Do not** damage the sealing surfaces.

When reassembling filters after cleaning or servicing, be sure to install the filter support as shown in the parts drawings. **Do not** install it upside down.

WARNING

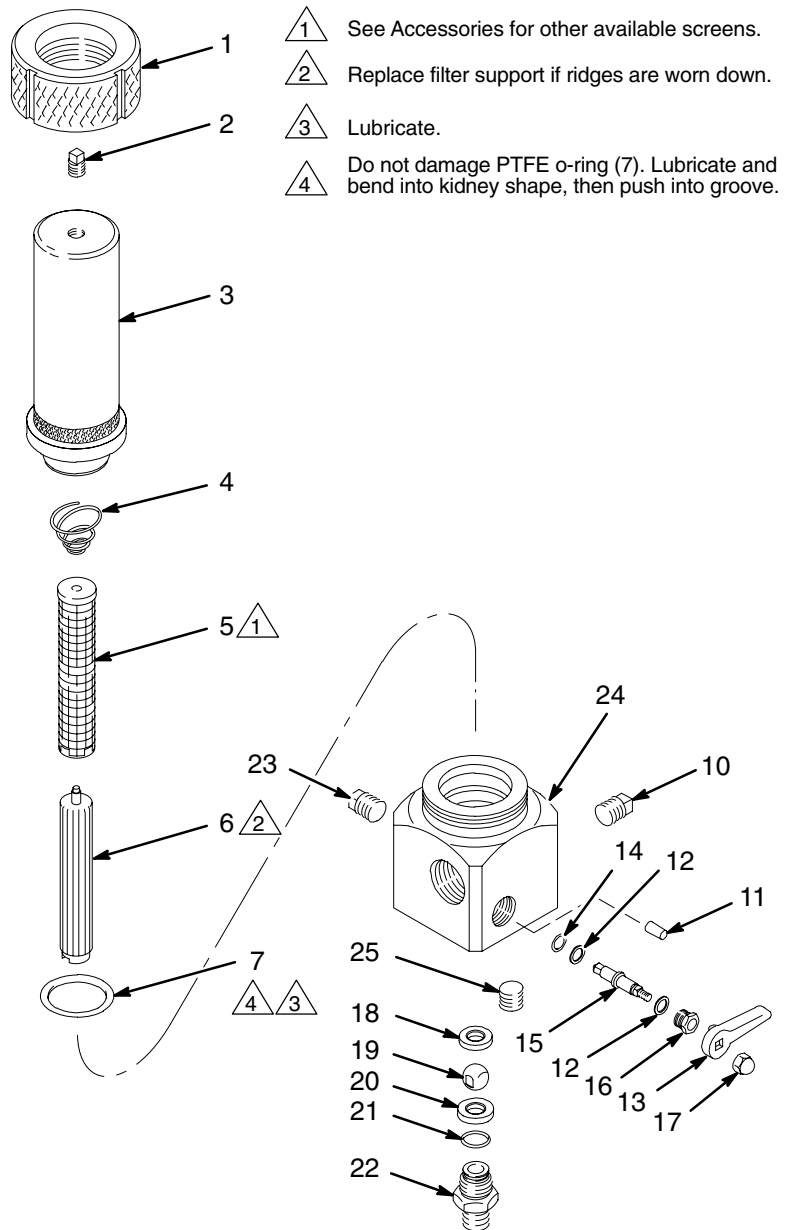
Tighten all threaded connections securely. High pressure fluid can dislodge a loose connection or allow high pressure fluid to be emitted from the connection and cause serious injury.

Parts

Model 214724, Series E

Model 289310, Series A

Includes items 1–25



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Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	174058	RING, lock	1	15	166697	STEM, valve	1
2	104813	PLUG, pipe, 3/8 npt	1	16	165964	NUT, packing	1
3✓	174056	BOWL, filter	1	17	102310	NUT, acorn, no. 10–32	1
4	171941	SPRING, conical compression	1	18	172094	SEAT, ball	1
5	167025	STRAINER, 60 mesh (Model 214724)	1	19	165273	BALL, valve	1
	167024	STRAINER, 30 mesh (Model 289310)	1	20	206481	SEAT, valve	1
6	186075	SUPPORT, filter	1	21	103648	PACKING, o-ring, fluoroelastomer	1
7✓	104804	PACKING, o-ring, PTFE	1	22	165274	NIPPLE, adapter	1
10	104839	PLUG, pipe, 1/2 npt	1	23	104663	PLUG, pipe, 3/4 npt	1
11	102291	PIN, drive	2	24	174080	MANIFOLD	1
12	164900	WASHER, flat	2	25	101754	PLUG, pipe, 3/8 npt	1
13	175043	LEVER	1				
14	103337	PACKING, o-ring, fluoroelastomer	1				

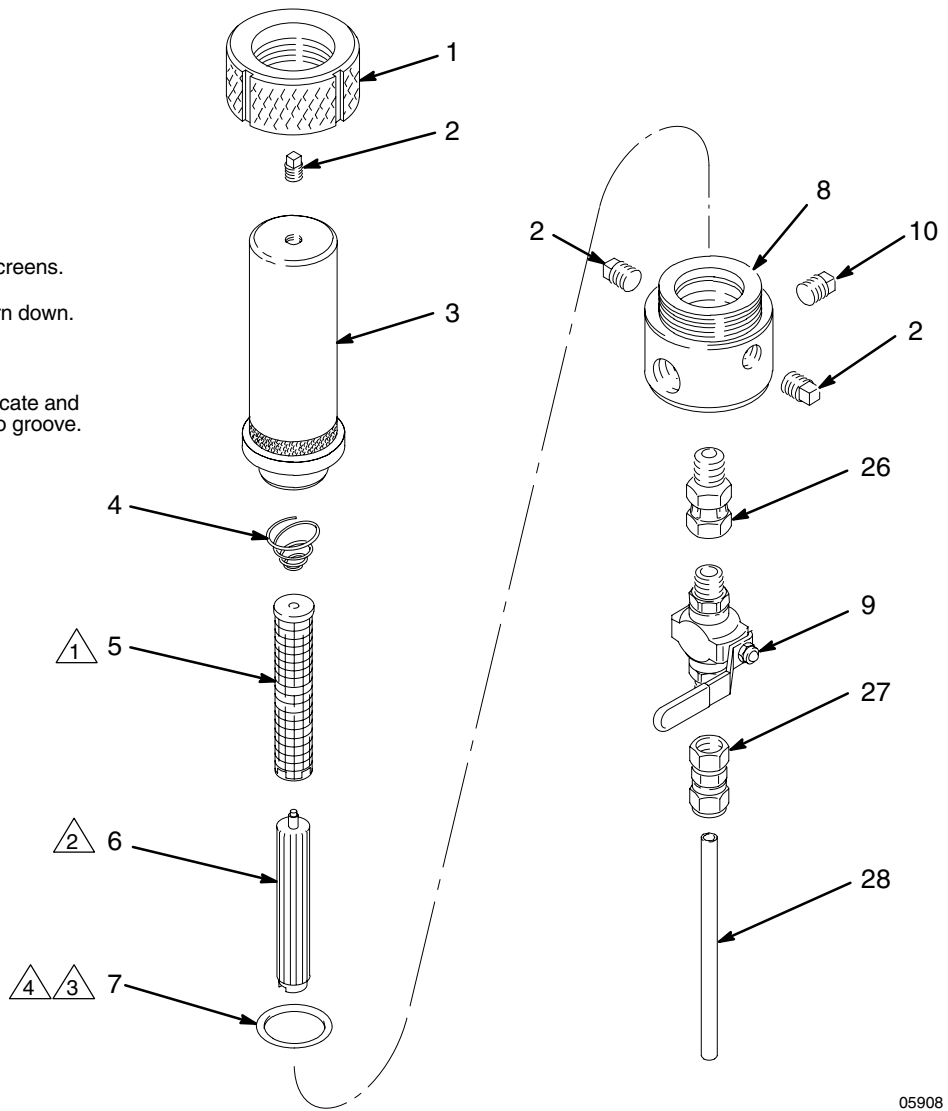
✓ Keep these spare parts on hand to reduce down time.

Parts

Model 238620, Series A

Includes items 1–28

- △ 1 See Accessories for other available screens.
- △ 2 Replace filter support if ridges are worn down.
- △ 3 Lubricate.
- △ 4 Do not damage PTFE o-ring (7). Lubricate and bend into kidney shape, then push into groove.







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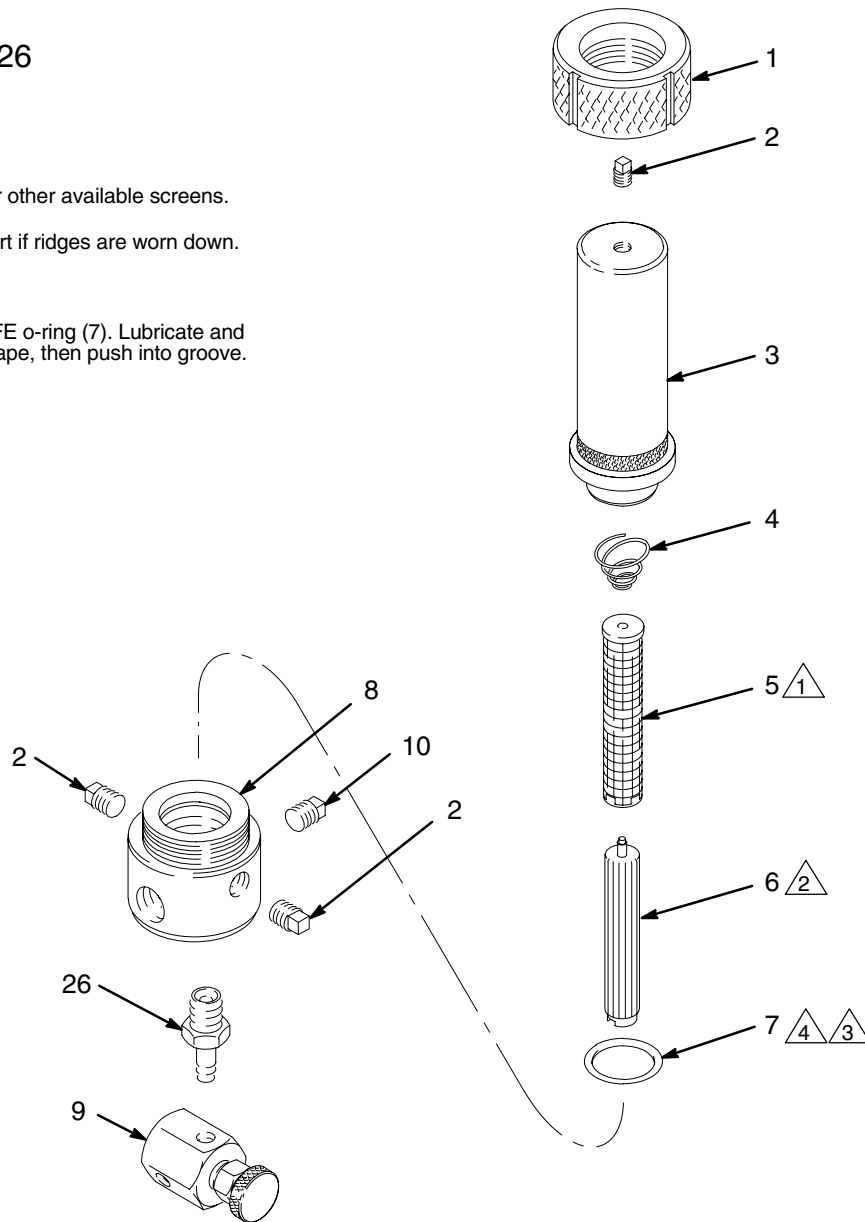
Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	174058	RING, lock	1	9	223960	BALL VALVE, <i>see 306861 for parts</i>	1
2	104813	PLUG, pipe, 3/8 npt	3	10	104839	PLUG, pipe, 1/2 npt	1
3✓	174056	BOWL, filter	1	26	155665	UNION, adapter	1
4	171941	SPRING, conical compression	1	27	205448	COUPLING, swivel; 3/8 npsm(f)	1
5	167025	STRAINER, 60 mesh	1	28	186447	TUBE, drain; nylon; 1/4 in. (0.6 mm) ID; 5 in. (127 mm)	1
6	186075	SUPPORT, filter	1				
7✓	104804	PACKING, o-ring, PTFE	1				
8	24C497	MANIFOLD, paint filter	1				

✓ Keep these spare parts on hand to reduce down time.

Parts

Model 237069 Includes items 1–26

-  See Accessories for other available screens.
-  Replace filter support if ridges are worn down.
-  Lubricate.
-  Do not damage PTFE o-ring (7). Lubricate and bend into kidney shape, then push into groove.



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Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	174058	RING, lock	1	8	24C497	MANIFOLD, paint filter	1
2	104813	PLUG, pipe, 3/8 npt	3	9	224774	DRAIN VALVE	1
3✓	174056	BOWL, filter	1	10	100737	PLUG, pipe, 1/2 npt	1
4	171941	SPRING, conical compression	1	26	156296	NIPPLE; 3/8 npt x 1/8 npt	1
5	167025	STRAINER, 60 mesh	1				
6	186075	SUPPORT, filter	1				
7✓	104804	PACKING, o-ring, PTFE	1				

✓ Keep these spare parts on hand to reduce down time.

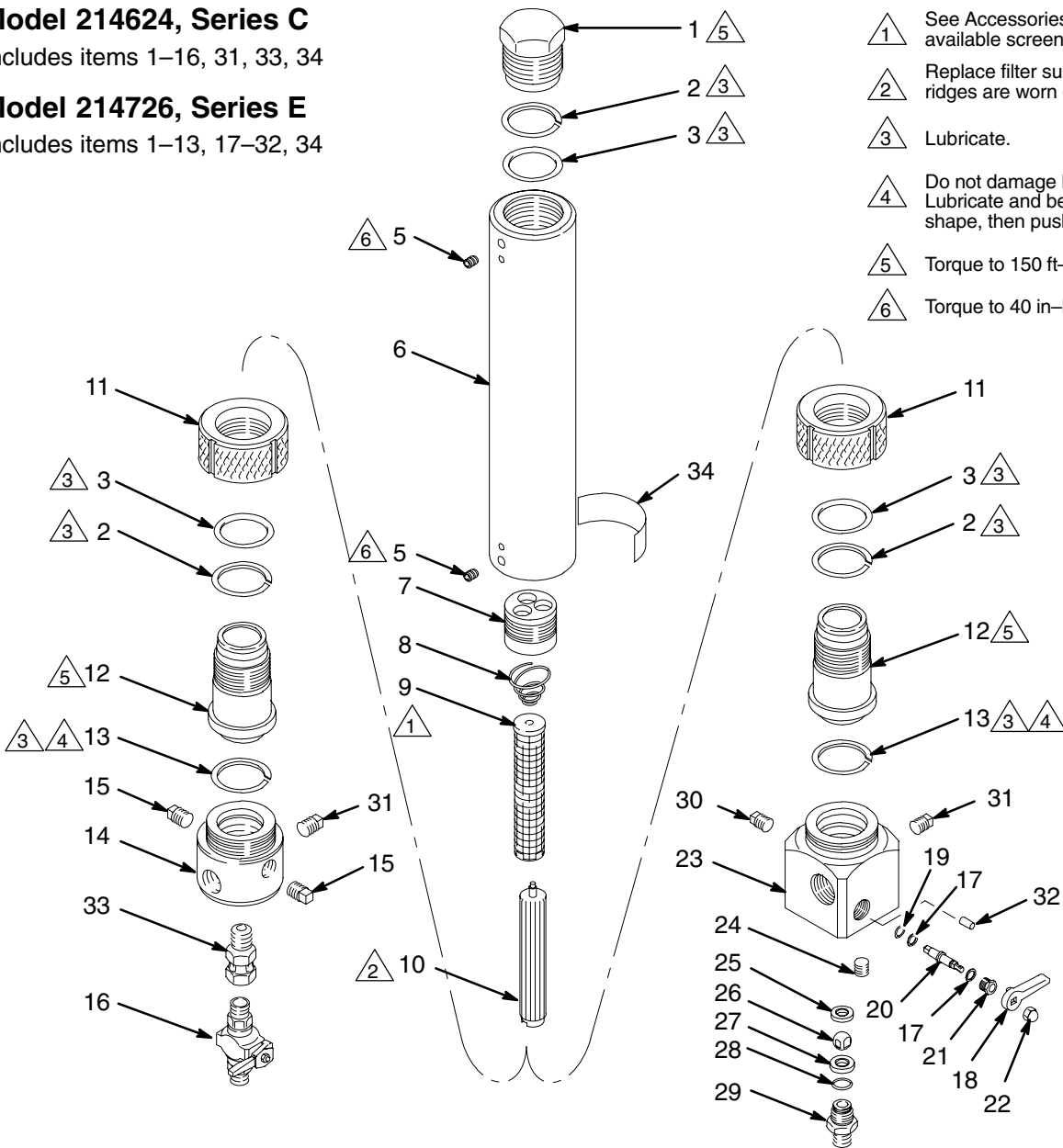
Parts

Model 214624, Series C

Includes items 1–16, 31, 33, 34

Model 214726, Series E

Includes items 1–13, 17–32, 34



- See Accessories for other available screens.
- Replace filter support if ridges are worn down.
- Lubricate.
- Do not damage PTFE o-ring (13). Lubricate and bend into kidney shape, then push into groove.
- Torque to 150 ft-lb (200 N.m).
- Torque to 40 in-lb (4.5 N.m).

Ref No.	Part No.	Description	Qty
1	174064	PLUG, end	1
2✓	104805	RING, backup, PTFE	2
3✓	166612	PACKING, o-ring, PTFE	2
5	111463	SETSCREW, 1/4–20 x 3/8"	2
6	none	TANK, accumulator <i>not sold separately</i>	1
7	174059	ADAPTER, filter	1
8	171941	SPRING, conical compression	1
9	167025	STRAINER, 60 mesh	1
10	186075	SUPPORT, filter	1
11	174058	RING, lock	1
12✓	174068	ADAPTER, accumulator	1
13✓	104804	PACKING, o-ring, PTFE	1
14	24C497	MANIFOLD, paint filter	1
15	104813	PLUG, pipe, 3/8 npt	2
16	210658	BALL VALVE, <i>see 306861 for parts</i>	1
17	164900	WASHER, flat	2
18	175043	LEVER	1
19	103337	PACKING, o-ring, fluoroelastomer	1
20	166697	STEM, valve	1
10	307296		

Ref No.	Part No.	Description	Qty
21	165964	NUT, packing	1
22	102310	NUT, acorn, No. 10–32	1
23	174080	MANIFOLD	1
24	101754	PLUG, pipe, 3/8 npt	1
25	172094	SEAT, ball	1
26	165273	BALL, valve	1
27	206481	SEAT, valve	1
28	103648	PACKING, o-ring, fluoroelastomer	1
29	165274	NIPPLE, adapter	1
30	104663	PLUG, pipe, 3/4 npt	1
31	104839	PLUG, 1/2 npt	1
32	102291	PIN, drive	2
33	155665	UNION, adapter	1
34▲	169579	LABEL, warning	1

✓ Keep these spare parts on hand to reduce down time.

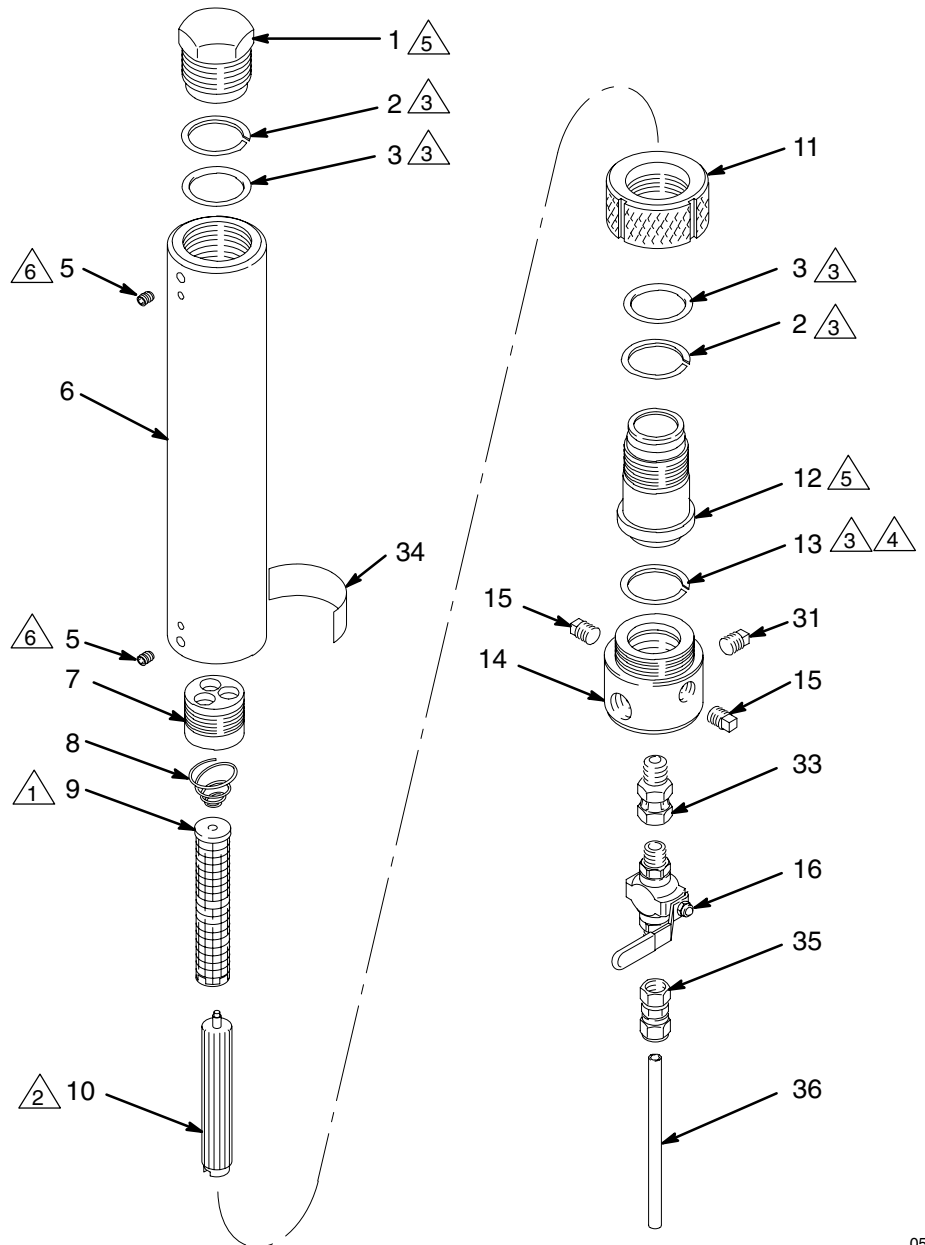
▲ Replacement Danger and Warning labels, tags and cards are available at no cost.

Parts

Model 238623, Series A

Includes items 1–36

- △1 See Accessories for other available screens.
- △2 Replace filter support if ridges are worn down.
- △3 Lubricate.
- △4 Do not damage PTFE o-ring (13). Lubricate and bend into kidney shape, then push into groove.
- △5 Torque to 150 ft-lb (200 N.m).
- △6 Torque to 40 in-lb (4.5 N.m).



05907

Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	174064	PLUG, end	1	15	104813	PLUG, pipe, 3/8 npt	2
2✓	104805	RING, backup, PTFE	2	16	238612	BALL VALVE, <i>see 306861 for parts</i>	1
3✓	166612	PACKING, o-ring, PTFE	2	31	104839	PLUG, 1/2 npt	1
5	111463	SETSCREW, 1/4–20 x 3/8"	2	33	155665	UNION, adapter	1
6	none	TANK, accumulator <i>not sold separately</i>	1	34▲	169579	LABEL, warning	1
7	174059	ADAPTER, filter	1	35	205448	COUPLING, swivel; 3/8 npsm(f)	1
8	171941	SPRING, conical compression	1	36	186447	TUBE, drain; nylon; 1/4 in. (0.6 mm) ID; 5 in. (127 mm)	1
9	167025	STRAINER, 60 mesh	1				
10	186075	SUPPORT, filter	1				
11	174058	RING, lock	1				
12✓	174068	ADAPTER, accumulator	1				
13✓	104804	PACKING, o-ring, PTFE	1				
14	24C497	MANIFOLD, paint filter	1				

✓ Keep these spare parts on hand to reduce down time.

▲ Replacement Danger and Warning labels, tags and cards are available at no cost.

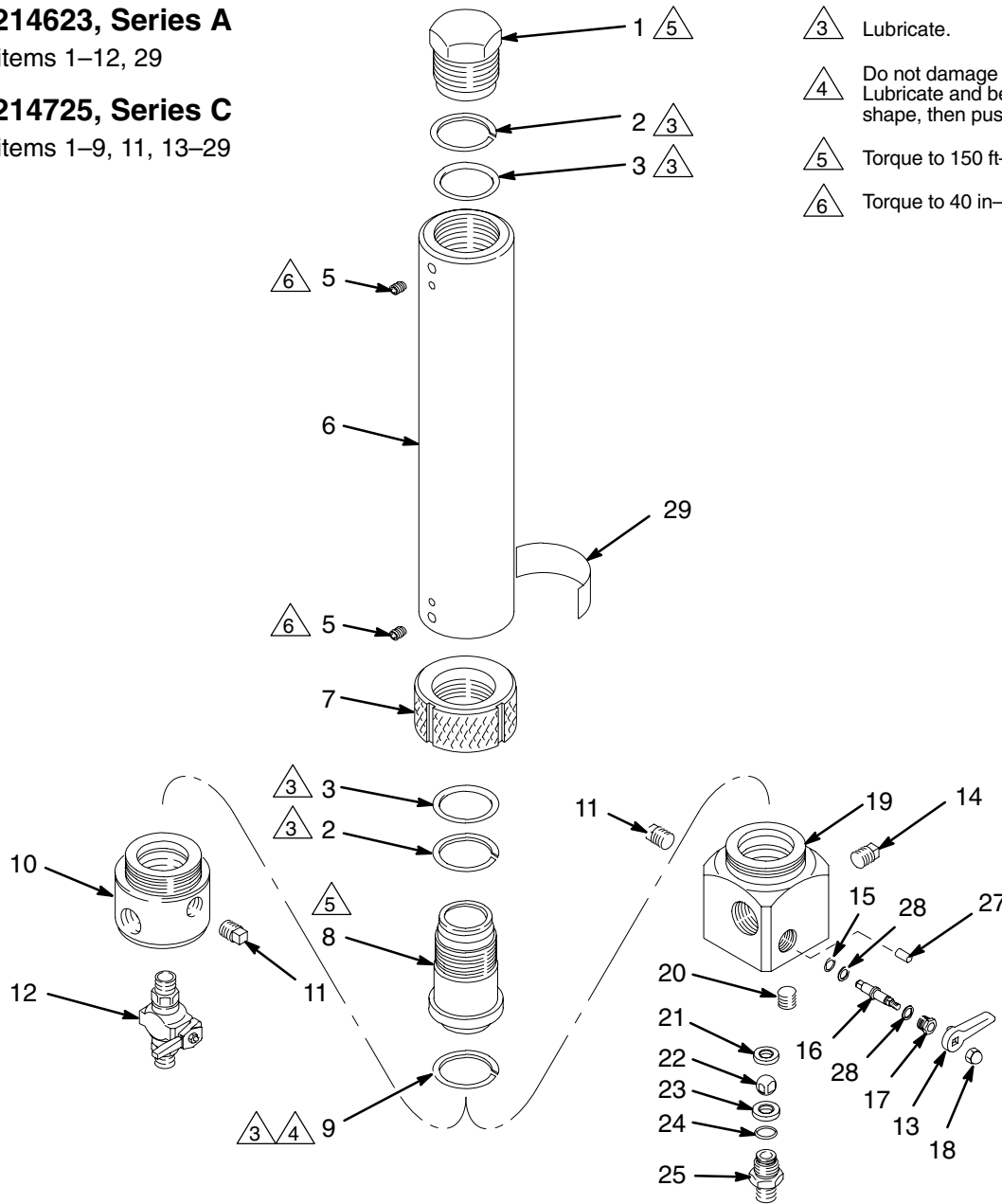
Parts

Model 214623, Series A

Includes items 1–12, 29

Model 214725, Series C

Includes items 1–9, 11, 13–29



- Lubricate.
- Do not damage PTFE o-ring (9). Lubricate and bend into kidney shape, then push into groove.
- Torque to 150 ft-lb (200 N.m).
- Torque to 40 in-lb (4.5 N.m).

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Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	174064	PLUG, end	1	18	102310	NUT, acorn, No. 10–32	1
2✓	104805	RING, backup, PTFE	2	19	174080	MANIFOLD	1
3✓	166612	PACKING, o-ring, PTFE	2	20	101754	PLUG, pipe, 3/8 npt	1
5	111463	SETSCREW, 1/4–20 x 3/8"	2	21	172094	SEAT, ball	1
6	none	TANK, accumulator <i>not sold separately</i>	1	22	165273	BALL, valve	1
7	174058	RING, lock	1	23	206481	SEAT, valve	1
8	174068	ADAPTER, accumulator	1	24	103648	PACKING, o-ring, fluoroelastomer	1
9✓	104804	PACKING, o-ring, PTFE	1	25	165274	NIPPLE, adapter	1
10	174060	MANIFOLD, accumulator	1	27	102291	PIN, drive	2
11	104663	PLUG, pipe, 3/4 npt	1	28	164900	WASHER, flat	2
12	210658	BALL VALVE, <i>see 306861 for parts</i>	1	29▲	169579	LABEL, warning	1
13	175043	LEVER	1				
14	104839	PLUG, 1/2 npt	1				
15	103337	PACKING, o-ring, fluoroelastomer	1				
16	166697	STEM, valve	1				
17	165964	NUT, packing	1				
12	307296						

✓ Keep these spare parts on hand to reduce down time.

▲ Replacement Danger and Warning labels, tags and cards are available at no cost.

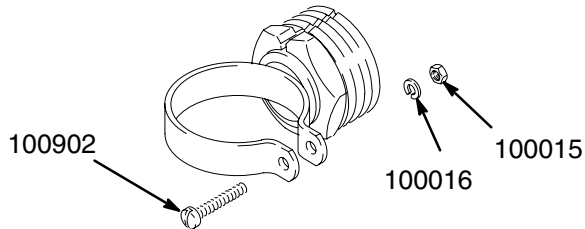
Accessories

Use Only Genuine Graco Parts and Accessories

SURGE TANK CLAMPS

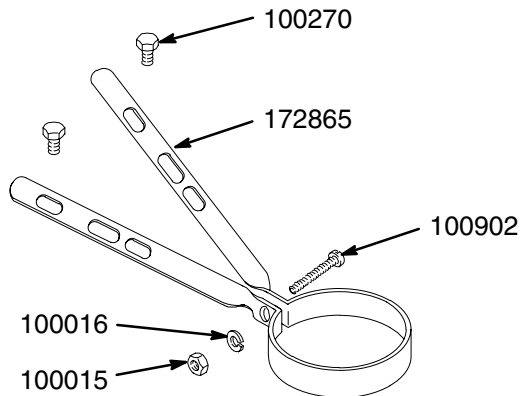
238630

For surge tanks mounted in the fluid outlet of the displacement pump. Install the clamp in the optional outlet at the base of the air motor. Requires 100902 screw, 100016 lockwasher and 100015 nut.



172865

For surge tanks mounted in the optional fluid outlet of Bulldog or King pumps when used with a riser tube. Attach the clamp to the top of the air motor shield. Requires 100902 screw, 100016 lockwasher, 100015 nut, and two 100270 screws.



PTFE SEALS

For ball valves and drain valves.

- 104892** to replace 103648 fluoroelastomer seal
- 104893** to replace 103337 fluoroelastomer seal

STAINLESS STEEL SCREENS

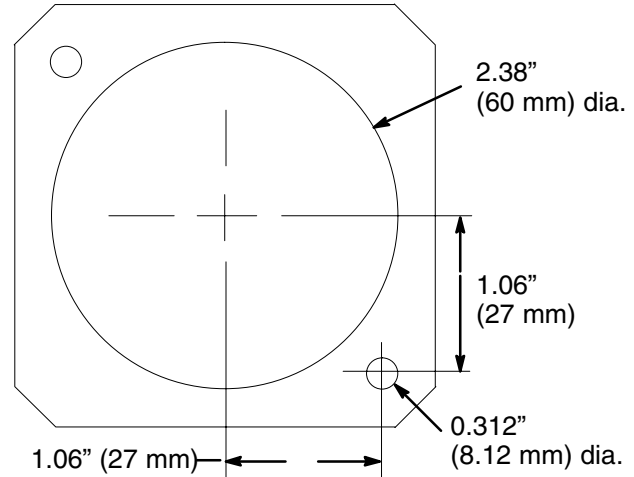
- 167024** 595 micron (30 mesh)
- 167025** 250 micron (60 mesh)
- 167026** 149 micron (100 mesh)
- 167027** 75 micron (200 mesh)

Technical Data

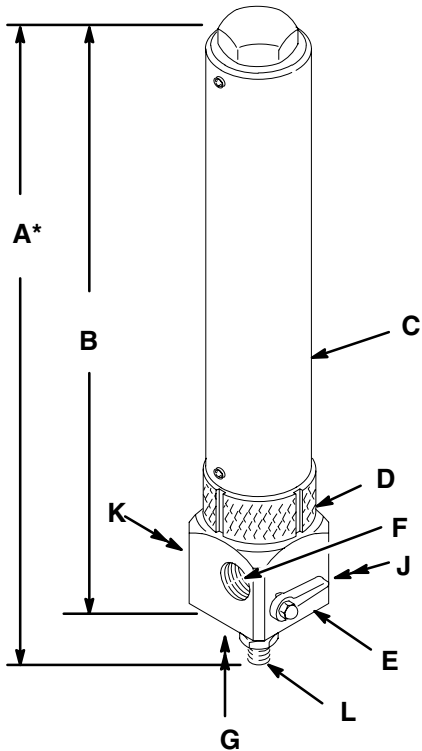
Category	Data
Maximum Working Pressure	<i>Model 237069:</i> 7252 psi (500 bar, 50 MPa) <i>All Other Models:</i> 5000 psi (350 bar, 35 MPa)
Weight	<i>Model 214623:</i> 30 lb (13 kg) <i>Model 214624:</i> 31.5 lb (14 kg) <i>Model 214724:</i> 13 lb (6 kg) <i>Model 214725:</i> 34 lb (15 kg) <i>Model 214726:</i> 34 lb (15 kg) <i>Model 237069:</i> 10.5 lb (4.5 kg) <i>Model 238620:</i> 10.5 lb (4.5 kg) <i>Model 238623:</i> 31.5 lb (14 kg) <i>Model 289310:</i> 13 lb (6 kg)
Surge Tank Volume	15 oz. (450 ml)
Filter Area	18 in ² (120 cm ²)
Wetted Parts	Stainless steel, zinc-plated steel, nylon, PTFE, fluoroelastomer

Mounting Hole Layout

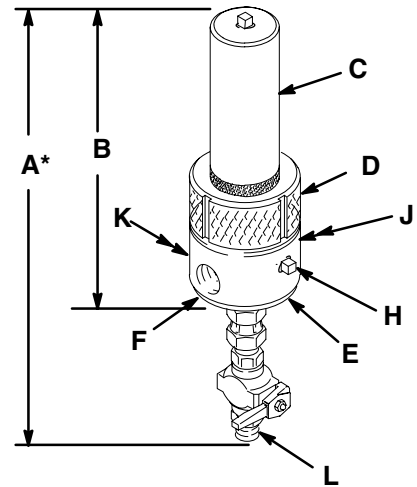
For mounting square base surge tanks and filters on a drum cover or other support.



Dimensions



* For models 238620 and 238623, add approximately 6 in. (152 mm) to the "A" dimension to account for the drain tube and fitting.



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	Filters			Paint Surge Tanks		Mastic Surge Tanks	
Dimensions	238620	237069	214724 & 289310	214624 & 238623	214726	214623	214725
A (see * note above)	11.63 in. (295 mm)	11.50 in. (292 mm)	10.38 in. (265 mm)	23.00 in. (585 mm)	21.75 in. (550 mm)	22.75 in. (578 mm)	21.75 in. (550 mm)
B	8.75 in. (222 mm)	8.75 in. (222 mm)	9.62 in. (245 mm)	20.12 in. (510 mm)	21.00 in. (535 mm)	19.88 in. (510 mm)	21.00 in. (535 mm)
C	2.06 in. (52 mm) dia.	2.06 in. (52 mm) dia.	2.06 in. (52 mm) dia.	3.00 in. (76 mm) dia.	3.00 in. (76 mm) dia.	3.00 in. (76 mm) dia.	3.00 in. (76 mm) dia.
D	3.12 in. (79 mm) dia.	3.12 in. (79 mm) dia.	3.12 in. (79 mm) dia.	3.12 in. (79 mm) dia.	3.12 in. (79 mm) dia.	3.12 in. (79 mm) dia.	3.12 in. (79 mm) dia.
E	3.00 in. (76 mm) dia.	3.00 in. (76 mm) dia.	3.00 in. (76 mm) dia.	3.00 in. (76 mm) dia.	3.00 in. (76 mm) dia.	3.00 in. (76 mm) dia.	3.00 in. (76 mm) dia.
Inlets							
F	3/4 npt(f)	3/4 npt(f)	3/4 npt(f)	3/4 npt(f)	3/4 npt(f)	3/4 npt(f)	3/4 npt(f)
G			3/8 npt(f)		3/8 npt(f)		3/8 npt(f)
Outlets							
H	3/8 npt(f)	3/8 npt(f)		3/8 npt(f)		3/4 npt(f)	
J	1/2 npt(f)	1/2 npt(f)	1/2 npt(f)	1/2 npt(f)	1/2 npt(f)	3/4 npt(f)	1/2 npt(f)
K	3/8 npt(f)	3/8 npt(f)	3/4 npt(f)	3/8 npt(f)	3/4 npt(f)		3/4 npt(f)
Drain							
L	3/8 npt(m)	1/8 npt(f)	1/4 npt(m)	3/8 npt(f)	1/4 npt(m)	3/8 npt(f)	1/4 npt(m)
Mtg. Holes							
M(2)			1/4-20		1/4-20		1/4-20

The Graco Standard Warranty

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

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

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

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

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

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

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

FOR GRACO CANADA CUSTOMERS

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Graco Information

For the latest information about Graco products, visit www.graco.com.

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.

For patent information, see www.graco.com/patents.

Original instructions. This manual contains English. MM 307296

Graco Headquarters: Minneapolis

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