Instructions–Parts List

GRACO

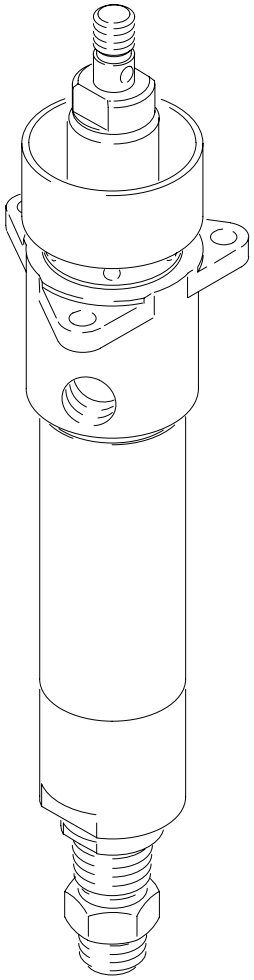
STAINLESS STEEL
Displacement Pump

307430U

For plural component materials.

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

See page 2 for **Table of Contents.**



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Model 215932, Series B
Short Stroke, with PTFE Packings
2000 psi (13.8 MPa, 138 bar) Maximum Working Pressure

Model 217339, Series A
Long Stroke, with PTFE Packings
2000 psi (13.8 MPa, 138 bar) Maximum Working Pressure

Model 904287, Series A
Short Stroke, Modified Intake, with PTFE Packings
1500 psi (10 MPa, 103 bar) Maximum Working Pressure

Model 965084, Series A
Short Stroke, with PTFE Packings
1500 psi (10 MPa, 103 bar) Maximum Working Pressure

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Symbols

Warning Symbol

⚠ WARNING

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

Caution Symbol

⚠ CAUTION

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

⚠ WARNING

INSTRUCTIONS

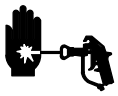
EQUIPMENT MISUSE HAZARD

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 of the lowest rated system component. See **Technical Data** on page 16 for the maximum working pressure of this equipment.
- Do not lift pressurized equipment.
- Route the hoses away from the 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).
- Do not use hoses to pull the equipment.
- Use only Graco approved hoses. Do not remove hose spring guards, which help protect the hose from rupture caused by kinks or bends near the couplings.
- 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.
- Wear hearing protection when operating this equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.

Warnings are continued on the next page.

⚠ WARNING



SKIN INJECTION HAZARD

Spray from the gun, hose 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 point the gun at anyone or at any part of the body.
- Do not put your hand or fingers over the spray tip/nozzle.
- Do not stop or deflect leaks with your hand, body, glove or rag.
- Do not “blow back” fluid; this is not an air spray system.
- Always have the trigger guard on the gun when spraying.
- Be sure the gun trigger safety operates before spraying.
- Lock the gun trigger safety when you stop spraying.
- Follow the **Pressure Relief Procedure** on page 6 whenever you: are instructed to relieve pressure; stop spraying; clean, check, or service the equipment; and install or clean the spray tip/nozzle.
- 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 air motor piston, can pinch or amputate your fingers.

- Keep clear of all moving parts when starting or operating the pump.
- Before servicing the equipment, follow the **Pressure Relief Procedure** on page 6 to prevent the equipment from starting unexpectedly.

Warnings are continued on the next page.

⚠ 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 5.
- Provide fresh air ventilation to avoid the buildup of flammable fumes from solvents or the fluid being sprayed.
- Extinguish all open flames or pilot lights in the spray area.
- Electrically disconnect all equipment in the spray area.
- Keep the spray area free of debris, including solvent, rags, and gasoline.
- Do not turn on or off any light switch in the spray area while operating or if fumes are present.
- Do not smoke in the spray area.
- Do not operate a gasoline engine in the spray area.
- 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.

PLURAL COMPONENT FLUID HAZARD

Before using this equipment, read the fluid manufacturer's warnings and determine all facts relating to the fluids used, including any of the potential hazards relating to toxic fumes, fires, explosions, reaction times, and exposure of human beings to the individual components or their resultant mixtures.

- 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.
- Graco does not manufacture or supply any of the reactive chemical components that may be used in this equipment and is not responsible for their effects. Graco assumes no responsibility for loss, damage, expense or claims for personal injury or property damage, direct or consequential, arising from the use of such chemical components.

Installation

Grounding

To reduce the risk of static sparking, ground the pump and all other spray equipment used or located in the spray area. Check your local electrical code for detailed grounding instructions for your area and type of equipment. Be sure to ground all of this equipment:

- *Pump:* use a ground wire and clamp as shown in Fig. 1.
- *Air or hydraulic hoses:* use only electrically conductive hoses.
- *Fluid hoses:* use only electrically conductive hoses.
- *Air compressor or hydraulic supply:* follow the manufacturer's recommendations.
- *Spray gun:* grounding is obtained through connection to a properly grounded fluid hose and pump.
- *Fluid supply container:* according to local code.
- *Object being sprayed:* according to your local code.
- *All solvent pails used when flushing,* according to 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.
- *To maintain grounding continuity when flushing or relieving pressure,* always hold a metal part of the spray gun firmly to the side of a grounded metal pail, then trigger the spray gun.

To ground the pump, loosen the grounding lug locknut (W) and washer (X). Insert one end of a 12 ga (1.5 mm^2) minimum ground wire (Y) into the slot in the lug (Z) and tighten the locknut securely. See Fig. 1. Connect the other end of the wire to a true earth ground. Order Part No. 237569, grounding wire and clamp.

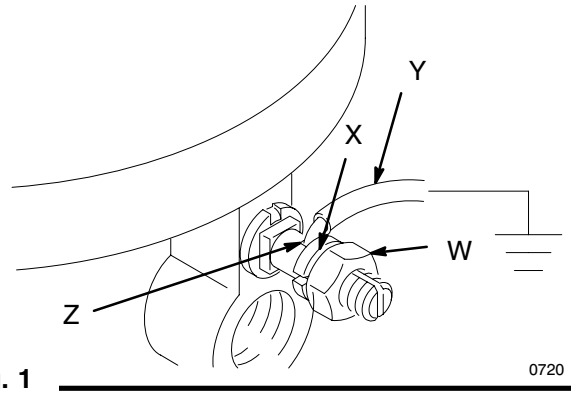


Fig. 1

Operation

Pressure Relief Procedure

⚠ WARNING

SKIN INJECTION HAZARD
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 fluid tips.

1. Lock the spray gun trigger safety.
2. Shut off the air or hydraulic fluid to the pump.
3. Close the bleed-type master air valve (required in air-powered systems).
4. Unlock the spray gun trigger safety.
5. Hold a metal part of the spray gun firmly to the side of a grounded metal pail, and trigger the gun to relieve pressure.
6. Lock the spray gun trigger safety.
7. Open the drain valve (required in your system), having a container ready to catch the drainage.
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 retaining nut or hose end coupling and relieve pressure gradually, then loosen completely, then clear the tip or hose.

Service

⚠ WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 6.

Disassembling Pump

NOTE: Packing Repair Kits are available. Refer to the Parts Drawing for your model. For the best results, use all the new parts in the kit. Parts included in the kit are marked with a dagger, for example (4†).

NOTE: For Model 904287, refer to the Parts List and Drawing on pages 12 and 13 when disassembling the pump.

1. Solvent flush the pump, if possible. Stop the pump at the bottom of its stroke and **relieve the pressure**. Disconnect all hoses from the pump. Disconnect the displacement pump from the motor.

2. Place the outlet housing (14) in a vise. Grip the cylinder (13) with a strap wrench, and unscrew the locking ring (9). If the locking ring is seized, squirt penetrating oil around its threads and gently tap around the ring with a light hammer to loosen. See Fig. 2.

⚠ CAUTION

Do not grip the cylinder (13) with a pipe wrench or vise, as this will collapse it.

3. Remove the pin (3), ball (1) and o-ring (6) from the intake housing (10). Clean all parts thoroughly and carefully inspect for damage or wear; replace parts as necessary. Inspect the seat in the intake housing (10); if it is chipped or worn, replace the housing.

4. Loosen the throat packing nut (15). Push the displacement rod (7) down until you can grasp the piston stud (25), then pull the piston and displacement rod out through the bottom of the cylinder (13).

⚠ CAUTION

Be careful not to scratch the polished inner surface of the cylinder, as this will cause premature packing wear.

5. Unscrew the cylinder (13) from the outlet housing (14). Remove the o-ring (4). Check the outer surface of the displacement rod (7) and the inner surface of the cylinder for scoring or damage, by running a finger over the surface or holding the part up to the light at an angle.

6. Unscrew the piston mounting stud (27) from the displacement rod (7). Note the placement of the ball stop pin (22) in the mounting stud (27). Remove one cotter pin (17) from the stop pin. Remove the stop pin and ball (18), then disassemble the piston. Clean all parts thoroughly and carefully inspect for damage or wear; replace parts as necessary. Inspect the seat in the piston stud (25); if it is chipped or worn, replace the stud.

7. Unscrew the throat packing nut (15) from the outlet housing (14). Remove the bearing (8), throat packings (11), and glands (5 and 12). Clean parts and replace worn or damaged parts as necessary.

Service

Assembling the Pump

NOTE: When assembling the pump, coat all o-rings and packings, the displacement rod, and the inside of the cylinder with a lithium-base grease.

NOTE: For Model 904287, refer to the Parts List and Drawing on pages 12–13 when assembling the pump. For Model 965084, refer to pages 14–15.

1. Refer to the Throat Packing Detail in Fig. 2. Install the throat packings, glands, bearing (8†), and packing nut (15) in the outlet housing (14) as shown, leaving the packing nut loose. The lips of the v-packings (11†) must face down.

2. Install the o-ring (4†) in the outlet housing (14). Place the housing in a vise and carefully screw the cylinder (13) into the housing.

3. Refer to the Piston Packing Detail in Fig. 2. Install the parts on the piston stud (25) in the order shown. Make sure the lips of the packings (23†) are facing up. Insert the ball stop pin (22) in the holes of the mounting stud (27), as noted under **Disassembling the Pump**. Secure with the cotter pins (17†).

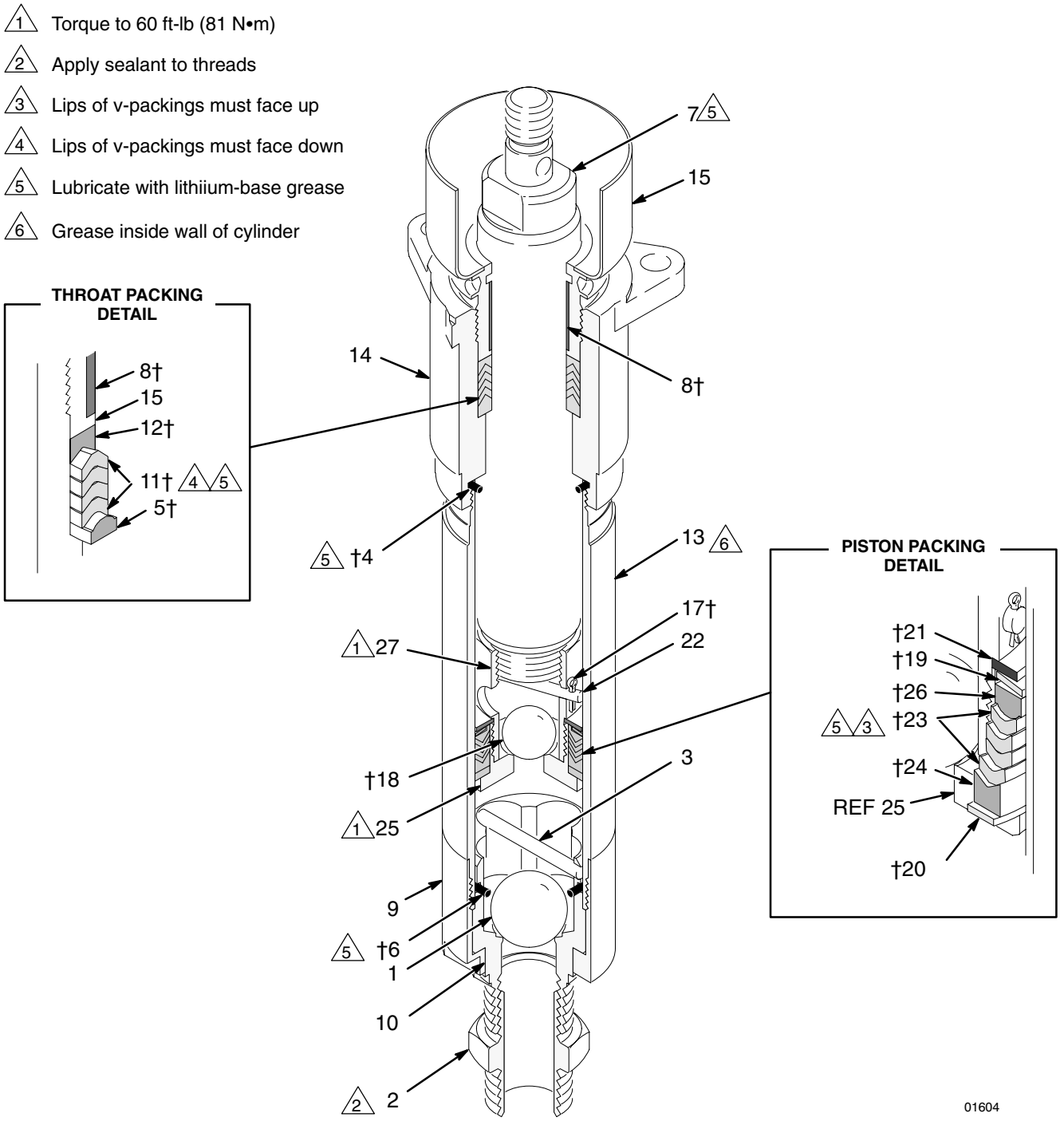
NOTE: The stop pin (22) was factory-set in the lower holes for pumping low to medium viscosity fluids. The upper holes are for pumping high viscosity fluids.

4. Place the ball (18) on the seat of the piston stud (25). Screw the piston stud onto the mounting stud (27) and torque to 60 ft-lb (81 N•m). Screw the mounting stud onto the displacement rod (7) and torque to 60 ft-lb (81 N•m). Carefully slide the rod up through the bottom of the cylinder (13).

5. Place the ball (1) on the seat of the intake housing (10). Install the o-ring (6†) and stop pin (3) in the intake housing. Install the intake housing in the cylinder (13) and screw the locking ring (9) onto the cylinder to secure. Tighten the packing nut (15) just tight enough to stop leakage – no tighter.

6. Install the displacement pump on the motor. Connect all hoses. Reconnect the pump ground wire if it was disconnected during service.

Service



Model 215932 Shown

Fig. 2

Parts

Model 215932, Series B
Short Stroke, with PTFE packings

Model 217339, Series A
Long Stroke, with PTFE packings

Ref No.	Part No.	Description	Qty
1*	104300	BALL, intake; 1–1/8" dia.; sst	1
2	190724	NIPPLE; 3/4 npt; sst	1
3*	162947	PIN; sst	1
4†	164782	O-RING; PTFE	1
5†	164837	GLAND, male; sst	1
6†	164846	O-RING; PTFE	1
7	24C506	ROD, displacement; sst	
		Model 215932 only	1
	178517	ROD, displacement; sst	
		Model 217339 only	1
8†	168285	BEARING, sleeve; PTFE	1
9	171311	RING, locking; sst	1
10	171312	HOUSING, intake;	
		3/4 npt(f) x 1" npt(m); sst	1
11†	162866	V-PACKING; PTFE	
		Models 215932 and 217339 only	4
12†	176641	GLAND, female; UHMWPE	1
13	24C505	CYLINDER; sst	
		Model 215932 only	1
	178519	CYLINDER; sst	
		Model 217339 only	1
14	206529	HOUSING, outlet; sst	1
15	207708	NUT, packing; sst	1
16	215339	PISTON ASSEMBLY; sst	
		Includes items 17–27	1
17†	100063	. PIN, cotter; sst	2
18†	101917	. BALL, piston; 7/8" dia.; sst	1
19†	105364	. SPRING, wave; sst	1
20†	176633	. WASHER, backup; sst	1
21†	176634	. WASHER; sst	1
22*	176637	. BALL STOP; sst	1
23†	176635	. V-PACKING; PTFE	4
24†	176640	. GLAND, female; UHMWPE	1
25	176642	. STUD, piston; sst	1
26†	176643	. GLAND, male; sst	1
27	176644	. STUD, mounting, piston; sst	1
28▲	172479	TAG, warning (not shown)	1

* *Recommended "tool box" spare parts. Keep on hand to reduce down time.*

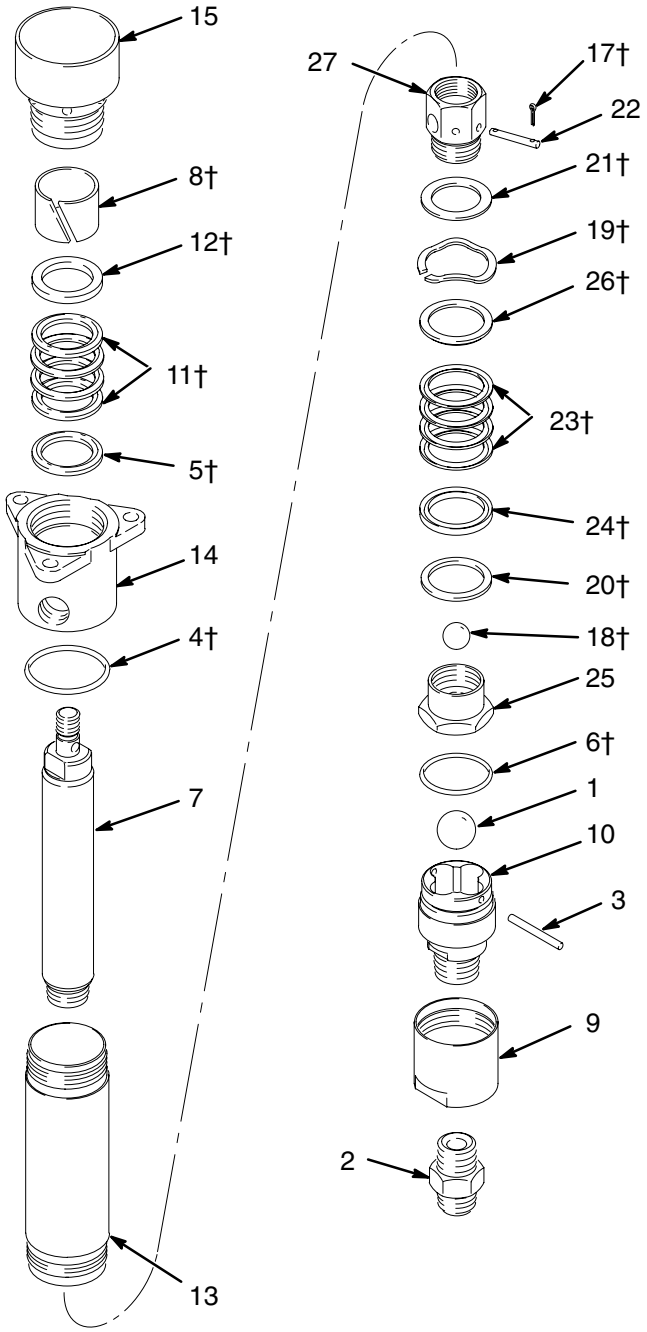
† *Supplied in repair kit 215336, which can be purchased separately.*

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

Parts

Model 215932, Series B
Short Stroke, with PTFE packings

Model 217339, Series A
Long Stroke, with PTFE packings



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Parts

Model 904287, Series A
Short Stroke, Modified Intake, with PTFE packings

Ref No.	Part No.	Description	Qty
1†	101178	BALL, intake; 1–1/8” dia.	1
4†	164782	O-RING; PTFE	1
5†	164837	GLAND, male; sst	1
6†	C38225	O-RING; PTFE	1
7	24C506	ROD, displacement; sst	1
8†	168285	BEARING, sleeve; PTFE	1
10	620856	HOUSING, intake; 1–1/2” npt(m); cst	1
11†	162866	V-PACKING; PTFE	4
12†	165288	GLAND, female; PTFE	1
13	24C505	CYLINDER; sst	1
14	206529	HOUSING, outlet; sst	1
15	207708	NUT, packing; sst	1
17†	100063	PIN, cotter; sst	2
18†	101917	BALL, piston; 7/8” dia.; sst	1
20†	166512	WASHER, backup, seal	1
22*	176637	BALL STOP; sst	1
23†	166026	SEAL, piston; PTFE	1
27	166510	PISTON; sst	1
28▲	172479	TAG, warning (not shown)	1
29	158279	BALL STOP	1
30†	165292	BEARING, piston; PTFE	1

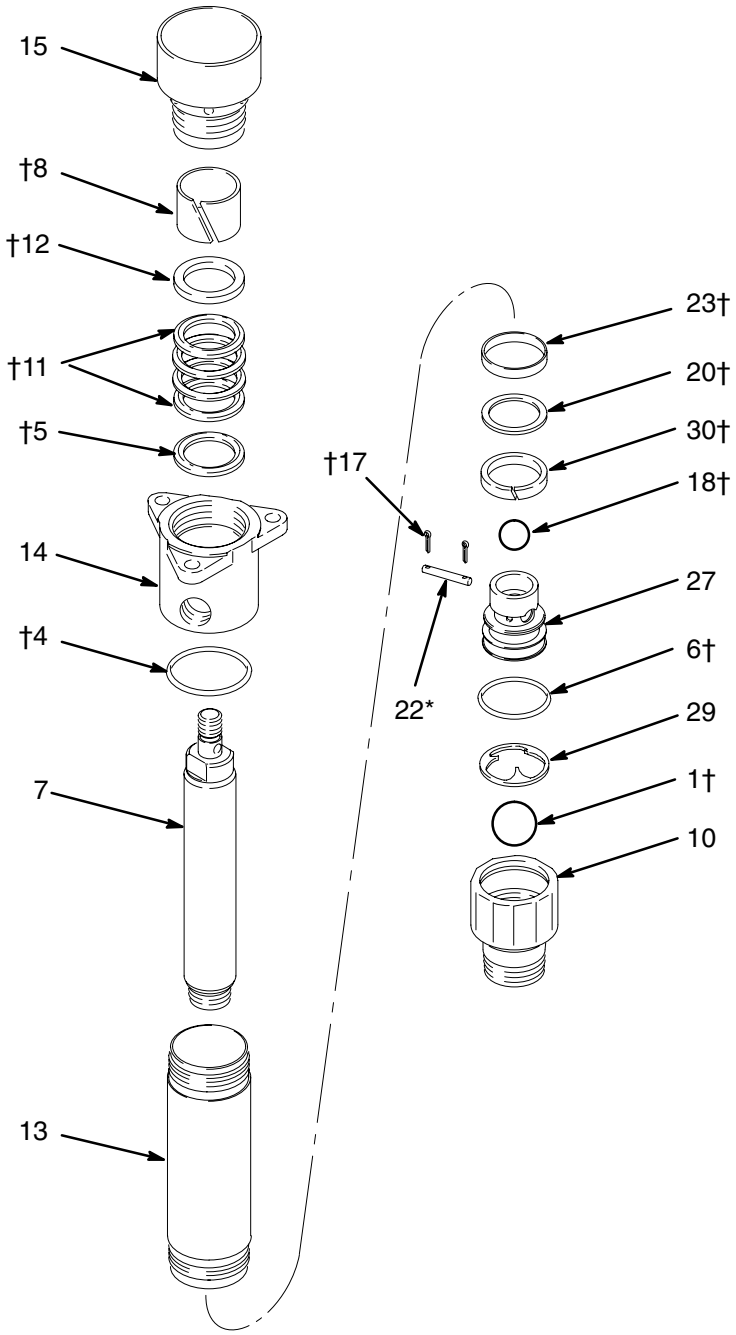
* *Recommended “tool box” spare parts. Keep on hand to reduce down time.*

† *Supplied in repair kit 948336. Purchase the kit separately.*

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

Parts

Model 904287, Series A
Short Stroke, Modified Intake, with PTFE packings



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Parts

Model 965084, Series A
Short Stroke, with PTFE packings

Ref No.	Part No.	Description	Qty
1*	104300	BALL, intake; 1–1/8” dia.; sst	1
3*	162947	PIN; sst	1
4†	164782	O-RING; PTFE	1
5†	164837	GLAND, male; sst	1
6†	164846	O-RING; PTFE	1
7	24C506	ROD, displacement; sst	1
8†	168285	BEARING, sleeve; PTFE	1
9	171311	RING, locking; sst	1
10	171312	HOUSING, intake; 3/4 npt(f) x 1” npt(m); sst	1
11†	162866	V-PACKING; PTFE	4
12†	176641	GLAND, female	1
13	24C505	CYLINDER; sst	1
14	206529	HOUSING, outlet; sst	1
15	207708	NUT, packing; sst	1
17†	100063	PIN, cotter; sst	2
18*	101917	BALL, piston; 7/8” dia.; sst	1
20	605285	WASHER, backup, sst	1
22	605287	BALL STOP; sst	1
23†	605281	PACKING, piston; PTFE	1
28▲	172479	TAG, warning (not shown)	1
30†	605286	BEARING, piston; acetal	1
31	605289	ADAPTER, piston head; sst	1
32	605326	SEAT, piston; sst	1

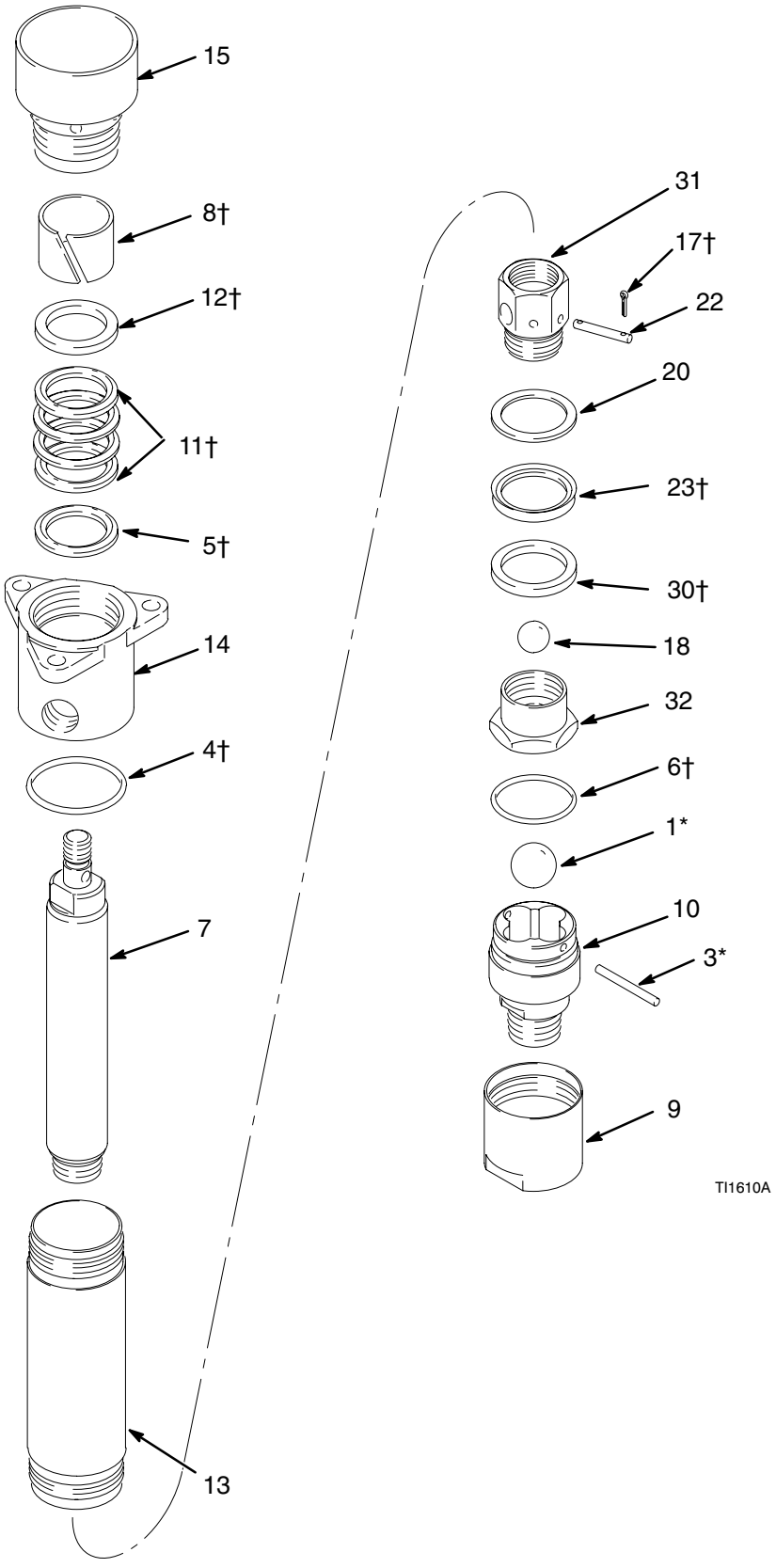
* *Recommended “tool box” spare parts. Keep on hand to reduce down time.*

† *Supplied in repair kit 904555, which can be purchased separately.*

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

Parts

Model 965084, Series A
Short Stroke, with PTFE packings

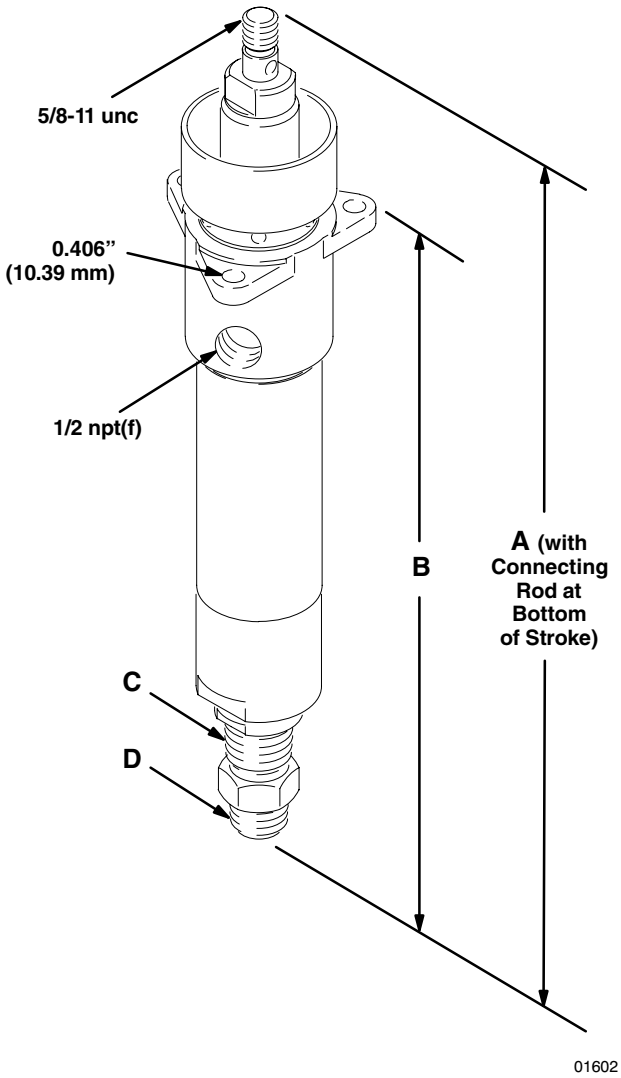


Technical Data

Category	Data
Maximum Working Pressure	*Models 215932 and 217339:* 2000 psi (13.8 MPa, 138 bar) *Models 904287 and 965084:* 1500 psi (10 MPa, 103 bar)
Wetted Parts	Chrome-Plated and Electropolished Stainless Steel, Stainless Steel, PTFE, acetal, Ultra-High Molecular Weight Polyethylene

Displacement Pump Number	Cylinder ID Area in.^{2} (mm^2)	Displacement Rod OD area in.^{2} (mm^2)	% of Difference	Effective Area in.^{2} (mm^2)	Maximum Stroke in. (mm)
215932	2.956 (1907.2)	1.480 (954.9)	0.20	1.478 (953.6)	4.25 (108.0)
217339	2.956 (1907.2)	1.480 (954.9)	0.20	1.478 (953.6)	4.75 (120.65)
904287	2.956 (1907.2)	1.480 (954.9)	0.20	1.478 (953.6)	4.25 (108.0)
965084	2.956 (1907.2)	1.480 (954.9)	0.20	1.478 (953.6)	4.25 (108.0)

Dimensions



Model	A	B	C		D
			Intake Housing Outside Thread	Intake Housing Inside Thread	Intake Nipple Thread
215932	13.69” (348 mm)	11.0” (279 mm)	1” npt (m)	3/4 npt (f)	3/4 npt (m)
217339	15.375” (391 mm)	12.75” (324 mm)	1” npt (m)	3/4 npt (f)	3/4 npt (m)
904287	13.69” (348 mm)	11.0” (279 mm)	1–1/2” npt (m)	none	not used
965084	12.56” (319 mm)	9.87” (251 mm)	1” npt (m)	3/4 npt (f)	not used

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

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This manual contains English. MM 307430

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Revised 07/2009