3500

INSTRUCTIONS-PARTS LIST

GRACO

306-981
Rev. J
SUPERSEDES H

This manual contains **IMPORTANT WARNINGS** and **INSTRUCTIONS**
READ AND RETAIN FOR REFERENCE

HYDRA-SPRAY®

30:1 RATIO PRESIDENT™ PUMP

3600 psi (250 bar) MAXIMUM WORKING PRESSURE

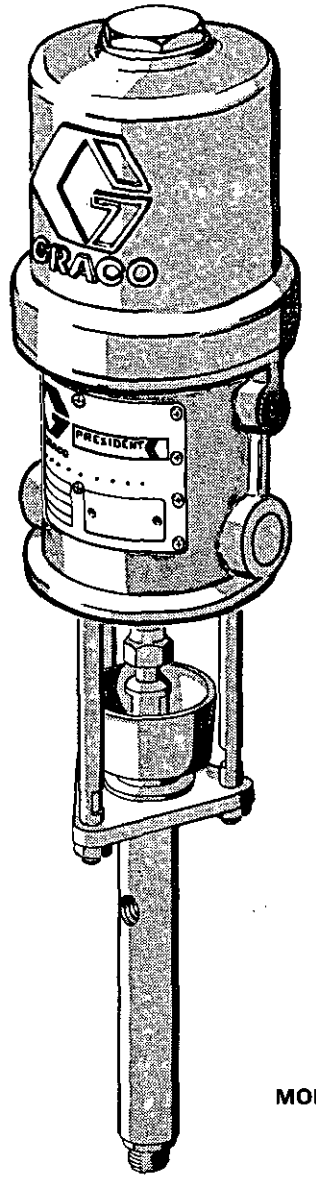
Model 207-706 Series E
55 Gallon (200 liter) Size

Model 207-707 Series D
10 Gallon (38 liter) Size

Model 217-578 Series A
10 Gallon (38 liter) Size, with Severe-Duty Displacement Pump*

*Severe-Duty Displacement Pumps have an abrasion and corrosion resistant displacement rod and sleeve. Refer to **Technical Data** on the back cover for "wetted parts" information.

NOTE: Conversion Kit 217-544 and Displacement Pump 217-528 are available to convert pumps 207-706 or 207-707 to severe-duty. Refer to Accessories, page 14.



MODEL 207-707 SHOWN

INDEX

WARNING

HIGH PRESSURE SPRAY CAN CAUSE SERIOUS INJURY.

FOR PROFESSIONAL USE ONLY. OBSERVE ALL WARNINGS.

Read and understand all instruction manuals before operating equipment.

FLUID INJECTION HAZARD

General Safety

This equipment generates very high fluid pressure. Spray from the gun, leaks or ruptured components can inject fluid through your skin and into your body and cause extremely serious bodily injury, including the need for amputation. Also, fluid injected or splashed into the eyes or on the skin can cause serious damage.

NEVER point the spray gun at anyone or at any part of the body. NEVER put hand or fingers over the spray tip.

ALWAYS have the tip guard in place on the spray gun when spraying.

ALWAYS follow the **Pressure Relief Procedure**, below, *before* cleaning or removing the spray tip or servicing any system equipment.

NEVER try to stop or deflect leaks with your hand or body.

Be sure equipment safety devices are operating properly before each use.

Medical Alert—Airless Spray Wounds

If any fluid appears to penetrate your skin, get **EMERGENCY MEDICAL CARE AT ONCE. DO NOT TREAT AS A SIMPLE CUT.** Tell the doctor exactly what fluid was injected.

Note to Physician: *Injection in the skin is a traumatic injury.* **It is important to treat the injury surgically as soon as possible.** *Do not delay treatment to research toxicity. Toxicity is a concern with some exotic coatings injected directly into the blood stream. Consultation with a plastic surgeon or reconstructive hand surgeon may be advisable.*

Spray Gun Safety Devices

Be sure all gun safety devices are operating properly before each use. Do not remove or modify any part of the gun; this can cause a malfunction and result in serious bodily injury.

Safety Latch

Whenever you stop spraying, even for a moment, always set the gun safety latch in the closed or "safe" position, making the gun inoperative. Failure to set the safety latch can result in accidental triggering of the gun.

Diffuser

The gun diffuser breaks up spray and reduces the risk of fluid injection when the tip is not installed. Check diffuser operation regularly. Follow the **Pressure Relief Procedure**, to the right, then remove the spray tip. Aim the gun into a grounded metal pail, holding the gun firmly to the pail. Using the lowest possible pressure, trigger the gun. If the fluid emitted *is not* diffused into an irregular stream, replace the diffuser immediately.

Tip Guard

ALWAYS have the tip guard in place on the spray gun while spraying. The tip guard alerts you to the fluid injection hazard and helps reduce, **but does not prevent,** the risk of accidentally placing your fingers or any part of your body close to the spray tip.

Trigger Guard

NEVER operate the gun with the trigger guard removed. The trigger guard reduces the risk of accidentally triggering the gun if it is dropped or bumped.

Spray Tip Safety

Use extreme caution when cleaning or changing spray tips. If the spray tip clogs while spraying, engage the gun safety latch immediately. ALWAYS follow the **Pressure Relief Procedure** below, and then remove the spray tip to clean it.

NEVER wipe off build-up around the spray tip until pressure is fully relieved and the gun safety latch is engaged.

Pressure Relief Procedure

To reduce the risk of serious bodily injury, including fluid injection, splashing in the eyes or on the skin, or injury from moving parts, always follow this procedure whenever you shut off the pump, when checking or servicing any part of the spray system, when installing, cleaning or changing spray tips, and whenever you stop spraying.

1. Engage the gun safety latch.
2. Shut off the air to the pump.
3. Close the bleed-type master air valve (required in your system).
4. Disengage the gun safety latch.
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. Engage the gun safety latch.
7. Open the drain valve (required in your system), having a grounded metal 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 tip guard retaining nut or hose end coupling and relieve pressure gradually, then loosen completely. Now clear the tip or hose.

EQUIPMENT MISUSE HAZARD

General Safety

Any misuse of the spray equipment or accessories, such as overpressurizing, modifying parts, using incompatible chemicals and fluids, or using worn or damaged parts, can cause them to rupture and result in fluid injection or other serious bodily injury, fire, explosion or property damage.

NEVER alter or modify any part of this equipment; doing so could cause it to malfunction.

CHECK all spray equipment regularly and repair or replace worn or damaged parts immediately.

Read and follow the fluid and solvent manufacturer's literature regarding the use of protective clothing and equipment.

System Pressure

The 30:1 pump develops *3600 psi (250 bar) MAXIMUM WORKING PRESSURE* at 120 psi (8 bar) air pressure. NEVER exceed 120 psi (8 bar) air supply pressure to the pump.

Be sure all system components and accessories are rated to withstand the maximum working pressure of the pump. DO NOT exceed the maximum working pressure of any component or accessory used in your system.

Fluid Compatibility

BE SURE that all fluids and solvents used are chemically compatible with the wetted parts shown in the Technical Data on the back cover. Always read the manufacturer's literature before using fluid or solvent in this pump.

FIRE OR EXPLOSION HAZARD

Static electricity is created by the high velocity flow of fluid through the pump and hose. If every part of the spray equipment is not properly grounded, sparking may occur, and the system may become hazardous. Sparking may also occur when plugging in or unplugging a power supply cord. Sparks can ignite fumes from solvents and the fluid being sprayed, dust particles and other flammable substances, whether you are spraying indoors or outdoors, and can cause a fire or explosion and serious bodily injury and property damage.

If you experience any static sparking or even a slight shock while using this equipment, **STOP SPRAYING/DISPENSING IMMEDIATELY.** Check the entire system for positive grounding. Do not use the system again until the problem has been identified and corrected.

Grounding

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

1. *Pump:* use ground wire and clamp as shown in Fig 1.
2. *Air and fluid hoses:* use only grounded hoses with a maximum of 500 feet (150 m) combined hose length to ensure grounding continuity. Refer to **Hose Grounding Continuity.**
3. *Air compressor:* follow air compressor manufacturer's recommendations.
4. *Spray gun or dispensing valve:* obtain grounding through connection to a properly grounded fluid hose and pump.
5. *Object being sprayed:* according to local code.
6. *Fluid supply container:* according to local code.
7. *All solvent pails used when flushing,* according to local code. *Use only 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.
8. *To maintain grounding continuity when flushing or relieving pressure,* always hold a metal part of the gun firmly to the side of a *metal* pail, then trigger the gun.

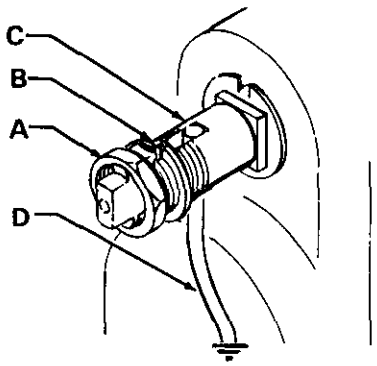


Fig 1

To ground the pump, loosen the grounding lug locknut (A) and washer (B). Insert one end of a 12 ga (1.5 mm^2) minimum ground wire (D) into the slot in lug (C) and tighten locknut securely. See Fig 1. Connect the other end of the wire to a true earth ground. Refer to page 13 to order a ground wire and clamp.

Flushing Safety

Before flushing, be sure the entire system and flushing pails are properly grounded. Refer to **Grounding,** above. Follow the **Pressure Relief Procedure** on page 2, and *remove the spray tip from the gun.* Always use the lowest possible fluid pressure, and maintain firm metal-to-metal contact between the gun and the pail during flushing to reduce the risk of fluid injection injury, static sparking and splashing.

HOSE SAFETY

High pressure fluid in the hoses can be very dangerous. If the hose develops a leak, split or rupture due to any kind of wear, damage or misuse, the high pressure spray emitted from it can cause a fluid injection injury or other serious bodily injury or property damage.

ALL FLUID HOSES MUST HAVE SPRING GUARDS ON BOTH ENDS! The spring guards help protect the hose from kinks or bends at or close to the coupling which can result in hose rupture.

TIGHTEN all fluid connections securely before each use. High pressure fluid can dislodge a loose coupling or allow high pressure spray to be emitted from the coupling.

NEVER use a damaged hose. Before each use, check entire hose for cuts, leaks, abrasion, bulging cover, or damage or movement of the hose couplings. If any of these conditions exist, replace the hose immediately. DO NOT try to recouple high pressure hose or mend it with tape or any other device. A repaired hose cannot contain the high pressure fluid.

HANDLE AND ROUTE HOSES CAREFULLY. Do not pull on hoses to move equipment. Do not use fluids or solvents which are not compatible with the inner tube and cover of the hose. DO NOT expose Graco hose to temperatures above 180°F (82°C) or below -40°F (-40°C).

Hose Grounding Continuity

Proper hose grounding continuity is essential to maintaining a grounded spray system. Check the electrical resistance of your air and fluid hoses at least once a week. If your hose does not have a tag on it which specifies the maximum electrical resistance, contact the hose supplier or manufacturer for the maximum resistance limits. use a resistance meter in the appropriate range for your hose to check the resistance. If the resistance exceeds the recommended limits, replace it immediately. An ungrounded or poorly grounded hose can make your system hazardous. Also read **FIRE OR EXPLOSION HAZARD,** above.

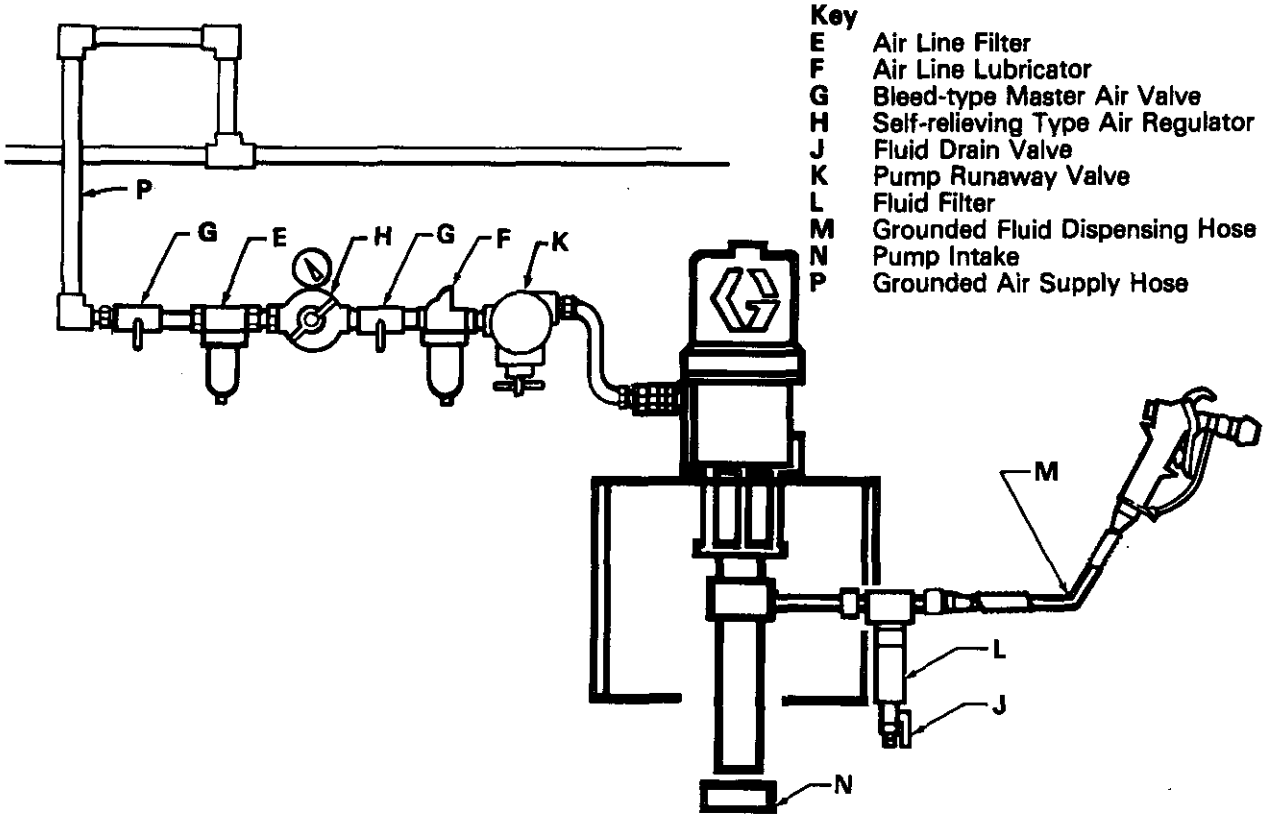
MOVING PARTS HAZARD

The piston in the air motor, located behind the air motor shield, moves when air is supplied to the motor. Moving parts can pinch or amputate your fingers or other body parts. Therefore, NEVER operate the pump with the air motor shield removed. KEEP CLEAR of moving parts when starting or operating the pump. Before checking or servicing the pump, follow the **Pressure Relief Procedure** on page 2 to prevent the pump from starting accidentally.

IMPORTANT

United States Government safety standards have been adopted under the Occupational Safety and Health Act. These standards—particularly the General Standards, Part 1910, and the Construction Standards, Part 1926—should be consulted.

TYPICAL INSTALLATION



Key

E	Air Line Filter
F	Air Line Lubricator
G	Bleed-type Master Air Valve
H	Self-relieving Type Air Regulator
J	Fluid Drain Valve
K	Pump Runaway Valve
L	Fluid Filter
M	Grounded Fluid Dispensing Hose
N	Pump Intake
P	Grounded Air Supply Hose

INSTALLATION

The dimensional drawing on page 14 gives the measurements needed for installing the pump on a custom designed mounting. See ACCESSORIES on page 13 for available Graco mounting accessories.

NOTE: Reference numbers and letters in parentheses in the text refer to the Typical Installation, Fig 1-4, and the Parts Drawing.

Ground the Pump and Other System Components

WARNING

Ground the pump, all other components in the system, and the object being sprayed as instructed in **FIRE AND EXPLOSON HAZARD** on page 3.

System Accessories

Refer to the Typical Installation drawing and the ACCESSORIES section on page 13 for assistance in setting up your system. If you supply your own accessories, be sure they are adequately sized to meet your system requirements. Contact a Graco representative for assistance in designing a system to meet your needs.

Install an air line filter (E) to remove harmful dirt and moisture from your compressed air supply and an air line lubricator (F) for automatic pump lubrication. Install a bleed-type master air valve (G), and a self-relieving type air regulator (H) to control pump speed and fluid pressure.

Install a pump runaway control valve (K) to shut off the air supply to the pump if the pump accelerates beyond the pre-adjusted setting. A pump which operates too fast can be seriously damaged.

Install a fluid filter (L) and drain valve (J) on the fluid dispensing line.

WARNING

Two accessories, the bleed-type master air valve (G), and the fluid drain valve (J) are **required** for your system to reduce the risk of serious bodily injury from moving parts, fluid injection or splashing in the eyes or on the skin, when shutting off the pump.

The bleed-type air valve relieves air trapped between the valve and the pump, after the pump is shut off. Trapped air can cause the pump to cycle unexpectedly and result in serious bodily injury if you are adjusting or repairing the pump.

The fluid drain valve helps relieve fluid pressure in the displacement pump, hose and gun/dispensing valve when shutting off the pump. Triggering the gun/dispensing valve to relieve pressure may not be sufficient, especially if there is a clog in the hose, gun/dispensing valve, or tip/nozzle.

Connect Hoses

Connect a grounded fluid dispensing hose (M) to the 1/2 npt(f) fluid outlet.

Connect a suction hose or siphon tube to the 3/4 npt(m) intake (N) of the pump.

Connect a grounded 1/2 in. ID (minimum) air supply hose (P) to the pump's 1/2 npt(f) air inlet or the air regulator's inlet fitting.

Fill the wet-cup one half full with Graco Throat Seal Liquid (TSL) before operating the pump to help prolong the packing life. See ACCESSORIES on page 13.

WARNING

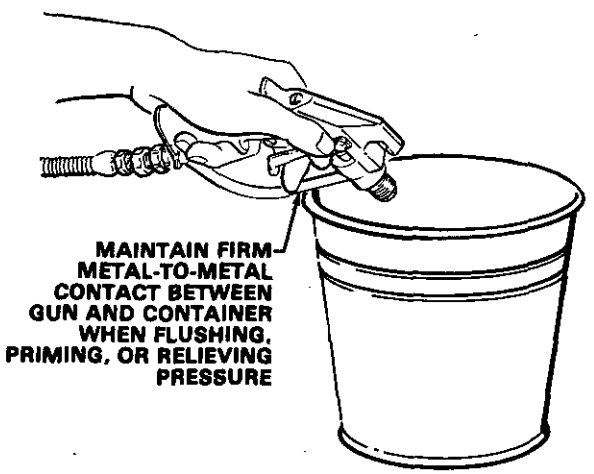
To reduce the risk of serious bodily injury, including fluid injection, splashing in the eyes or on the skin, or injury from moving parts, always follow the **Pressure Relief Procedure** on page 2 when checking or servicing any part of the spray system, when installing, cleaning or changing spray tips, and whenever you stop spraying.

Flush the Pump Before Using

Pumps are tested with light weight motor oil which is left in to protect the pump parts. To prevent contamination of the fluid, flush the pump with a compatible solvent before using it. If the pump is being used to supply a circulating system, allow the solvent to circulate until the pump is thoroughly flushed.

WARNING

Before flushing, be sure the entire system and flushing pails are properly grounded. Refer to **Grounding** on page 3. Follow the **Pressure Relief Procedure** on page 2, and *remove the spray tip from the gun.* Always use the lowest possible fluid pressure, and maintain firm metal-to-metal contact between the gun and the pail during flushing to reduce the risk of fluid injection injury, static sparking and splashing.



MAINTAIN FIRM METAL-TO-METAL CONTACT BETWEEN GUN AND CONTAINER WHEN FLUSHING, PRIMING, OR RELIEVING PRESSURE

Starting and Adjusting Pump

Trigger the spray gun and slowly open the air supply valve until the pump starts, about 40 psi (3 bar). Allow the pump to cycle slowly until all the air is pushed out of the lines. Release the trigger; the pump will stall against the pressure.

With the pump and lines primed, and with adequate air pressure and volume supplied, the pump will start and stop as the spray gun is triggered and released. In a circulating system, it will run continuously and speed up or slow down as supply demands until the air supply is shut off.

Use an adequately sized air regulator to control the pump speed and fluid pressure. See ACCESSORIES, page 13. Always use the lowest air pressure necessary to obtain the desired results. Higher pressures waste fluid and cause premature wear of the pump packings and spray tip.

Keep the wet-cup (36) filled with Graco Throat Seal Liquid (TSL) to help prolong the packing life. Check the tightness of the packing nut (36) weekly. The packing nut should be tight enough to prevent leakage—no tighter. See Fig 2. Always follow the **Pressure Relief Procedure** on page 2 before adjusting the packing nut.

Never allow the pump to run dry of the fluid being pumped. A dry pump will quickly accelerate to a high speed, possibly damaging itself. (A pump runaway valve automatically alerts you to this problem, see INSTALLATION.) If your pump accelerates quickly, or is running too fast, stop it immediately and check the fluid supply. If the supply container is empty and air has been pumped into the lines, refill the supply container and prime the pump and lines with fluid, being sure to eliminate all air from fluid system, or flush the pump as described in "Shutdown and Care", below.

Shutdown and Care of Pump

Always follow the **Pressure Relief Procedure,** on page 2, whenever you shut off the pump. Stop the pump at the bottom of its stroke to keep fluid from drying on the exposed displacement rod and damaging throat packings.

Always flush the pump with a compatible solvent before the fluid can dry on the displacement rod. At the end of each day, if you are pumping water based fluid, first flush with water, then with mineral spirits to protect the pump parts. Relieve pressure and leave the mineral spirits in the pump to prevent corrosion.

WARNING

Pressure Relief Procedure
To reduce the risk of serious bodily injury, including fluid injection, splashing in the eyes or on the skin, or injury from moving parts, always follow this procedure whenever you shut off the pump, when checking or servicing any part of the system, when installing, cleaning or changing spray tips, and whenever you stop spraying.

1. Engage the gun safety latch.
2. Turn off the air to the pump.
3. Close the bleed-type master air valve (required).
4. Disengage the gun safety latch.
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. Engage the gun safety latch.
7. Open the drain valve (required), having a container ready to catch the drainage.
8. Leave the drain valve open until you are ready to spray again.

If you suspect 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.

WARNING

Never operate the pump with the air motor plates removed to reduce the risk of accidentally pinching or amputating your fingers on moving parts in the air motor.

CHECK ALL POSSIBLE PROBLEMS AND SOLUTIONS BEFORE DISASSEMBLING PUMP.

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Pump operates but output low on both strokes	Restricted line or inadequate air supply	Clear; increase air
	Insufficient air pressure, closed or clogged air valve, etc.	Clean; open
	Exhausted fluid supply	Refill; purge all air from pump and fluid lines
	Clogged fluid line; valves, etc.	Clear*
	Tight throat packing nut (36)	Loosen (see page 5)
	Loose throat packing nut or worn packings (18, 23)	Tighten (see page 5), replace
Pump operates but output low on down stroke	Held open or worn intake valve ball (28)	Clear, service
Pump operates but output low on up stroke	Held open or worn fluid piston ball (17) or packings (18, 23)	Clear; service
Erratic or accelerated operation	Exhausted fluid supply	Refill; purge all air from pump and fluid lines
	Held open or worn intake valve ball (28)	Clear, service
	Held open or worn fluid piston	Clear, service

TROUBLESHOOTING CHART CONTINUED ON NEXT PAGE

PROBLEM	CAUSE	SOLUTION
Pump fails to operate	Restricted line or inadequate air supply	Clear, increase air
	Insufficient air pressure; closed or clogged air valves, etc.	Open, clean
	Exhausted fluid supply	Refill; purge all air from pump and fluid lines
	Damaged air valving mechanism; stalling	Service air motor (see 306-982)
	Dried fluid seizure of displacement rod (26)	Clean, check or replace throat packings (18, 23); always stop pump at bottom of stroke and keep TSL in wet-cup

*Follow **Pressure Relief Procedure Warning** on page 6, and disconnect fluid line. If pump starts again when air is turned on, the line, etc., is clogged.

Removing Air Motor or Displacement Pump
Flush the pump if possible, then stop it at the bottom of its stroke.

Follow the **Pressure Relief Procedure Warning** on page 6, before proceeding.

Disconnect the air and fluid lines connected to the pump, and remove the pump from its mounting.

Loosen the tie rod locknuts (4), then remove the cotter pin (3*) and pull the displacement pump away from the motor. See Fig 2.

See manual 306-982, supplied, for repairing the air motor.

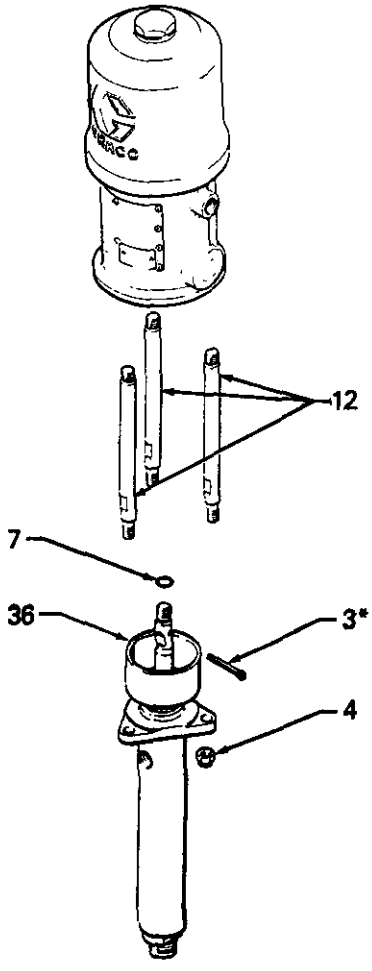


Fig 2

Displacement Pump Service

NOTES: 1. If you are using a repair kit to service the pump, use all the new parts, even if the old one looks good, for best results. Repair Kit No. 206-733 is available for Pump Models 207-706 and 207-207. Repair Kit No. 220-397 is available for Pump Model 217-578.

2. Clean all the parts thoroughly when disassembling. Check them carefully for damage or wear, replacing parts as needed.

3. Reference numbers in the text with a star, for example (30*), indicate that this part is included in the repair kit.

Intake Valve

Screw the intake valve housing (33) out of the outlet housing (35). If the valve is seized in the housing, squirt penetrating oil around the threads and *gently* tap around the housing with a plastic hammer to loosen. See Fig 3 or 4.

Remove the ball stop pin (29) and the o-ring retainer (31), o-ring (30*), guide (32) and the ball (28*). Reassemble the valve, using new parts as necessary, and screw it back into the pump housing.

Piston, Sleeve or Displacement Rod

Screw the intake valve housing (33) out of the outlet housing (35). Loosen the tie rod locknuts (4). Disconnect the displacement rod (26) from the air motor (14) piston rod by removing the cotter pin (3*), then unscrewing the connecting rod (37) or displacement rod. Remove from the tie rods (12). Loosen the packing nut (36) and push the displacement rod down out of the housing. Secure the flats of the rod in a vise. Screw the piston seat (34) out of the rod. Remove the ball (17*), retainer (22), packings (18*, 23*) and glands (24*, 25*).

Scoring or irregular surfaces on the displacement rod or polished inner wall of the sleeve cause premature packing wear and leaking. Check these parts by rubbing a finger on the surfaces or by holding the parts up to a light at an angle. Replace worn parts. If the sleeve needs replacing, be sure to install a new sleeve with the *tapered end down.* If you can't remove the sleeve easily, contact your nearest Graco Factory Branch or Service Depot.

Install the packings on the piston as instructed below. **Be sure** the lips of the v-packings face UP, against fluid pressure. Lubricate the packings with grease compatible with the fluid being pumped. Always use new glands with new packings for a good seal.

Models 207-706 and 207-707

One at a time, install a female gland (25*), one PTFE® v-packing (23*), five leather v-packings (18*), a male gland (24*), and the packing retainer (22) onto the piston (34). See Fig 3.

Model 217-578

One at a time, install a female gland (25*), a UHMWPE v-packing (23*), a leather v-packing (18*), a UHMWPE v-packing (23*), two leather v-packings (18*), a UHMWPE v-packing (23*), a male gland (24*), and the packing retainer (22) onto the piston (34). See Fig 4.

Use thread sealer on the piston seat and stud. Install the piston, packings, and ball (17*) into the displacement rod (26). Torque the piston to 65-75 ft-lb (88-102 N·m).

Models 207-706 and 207-707

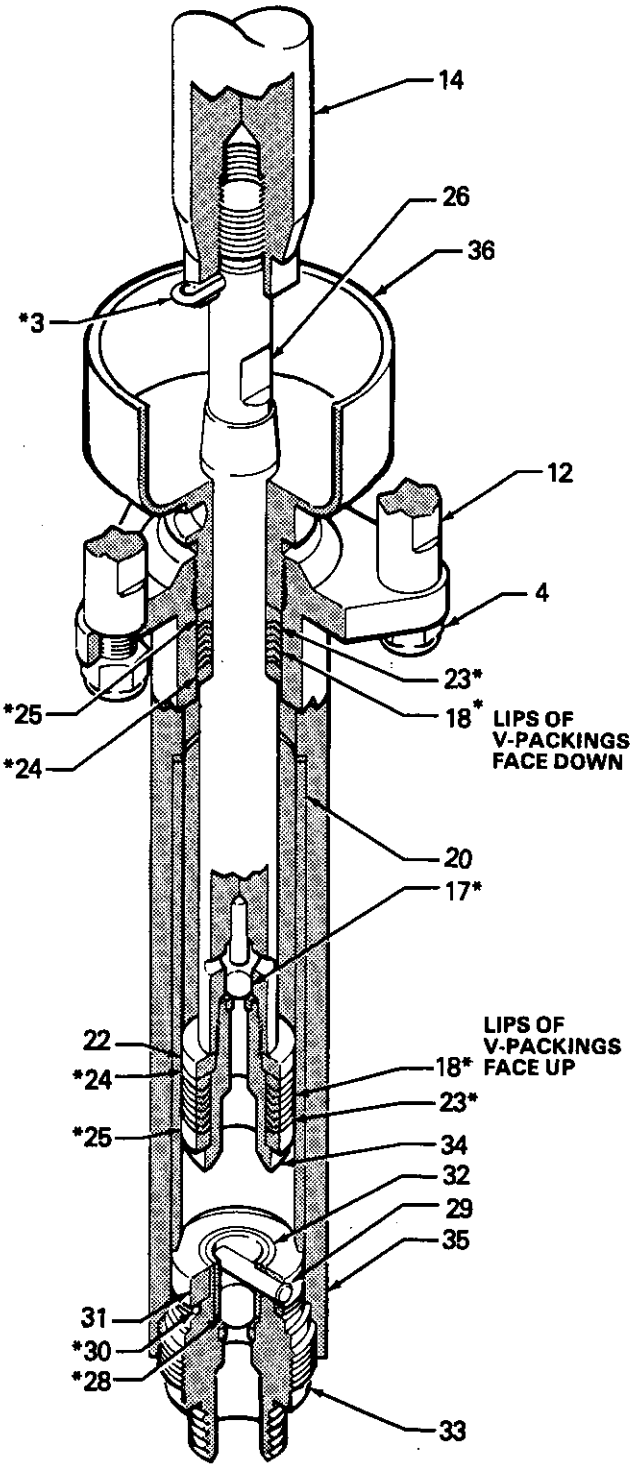


Fig 3

Throat Packings
Screw the intake valve housing (33) out of the outlet housing (35) and remove the piston and displacement rod as explained on page 8. Then screw the packing nut (36) out of the housing (35) and take the packings (18*, 23*) and glands (24*, 25*) out of the cavity.

Install the throat packings as instructed to the right. **Be sure** the lips of the v-packing face DOWN, against fluid pressure. Lubricate the packings with grease compatible with the fluid being pumped. Always use new glands with new packings.

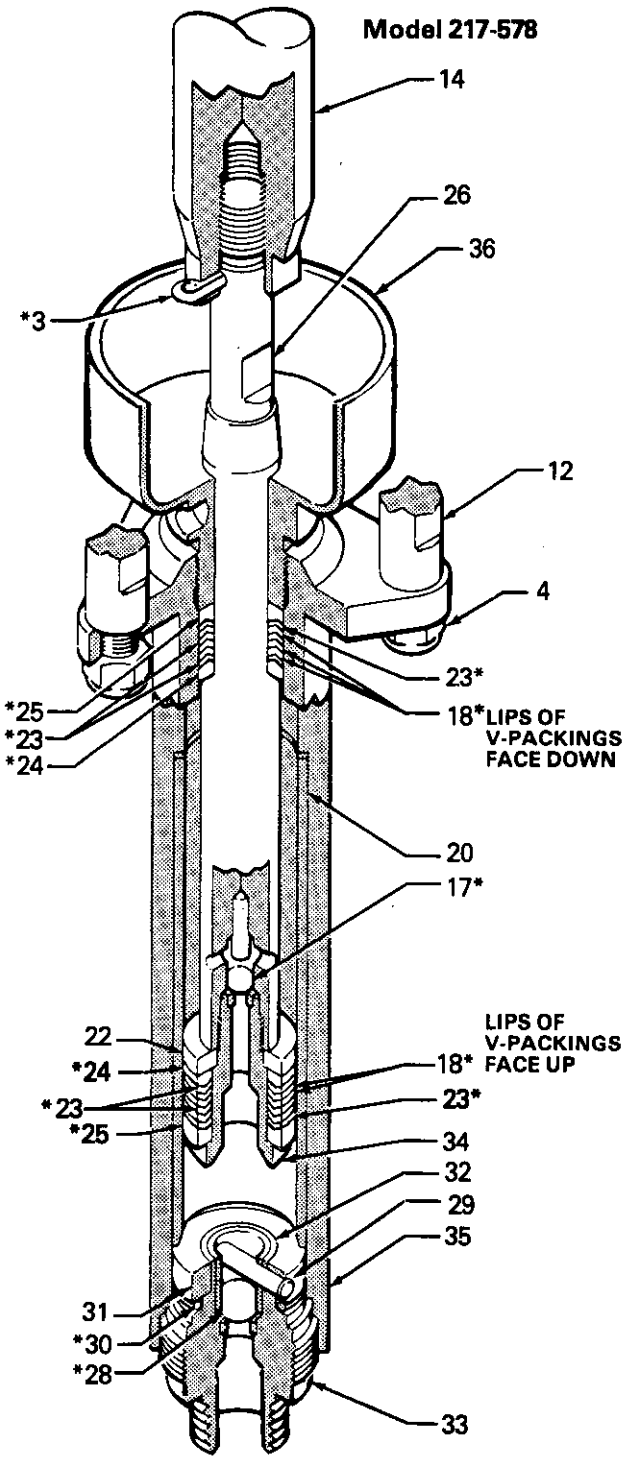


Fig 4

Models 207-706 and 207-707
One at a time, install a male gland (24*), five leather v-packings (18*), one PTFE® v-packing (23*), and a female gland (25*) into the throat of the pump housing (35). See Fig 3.

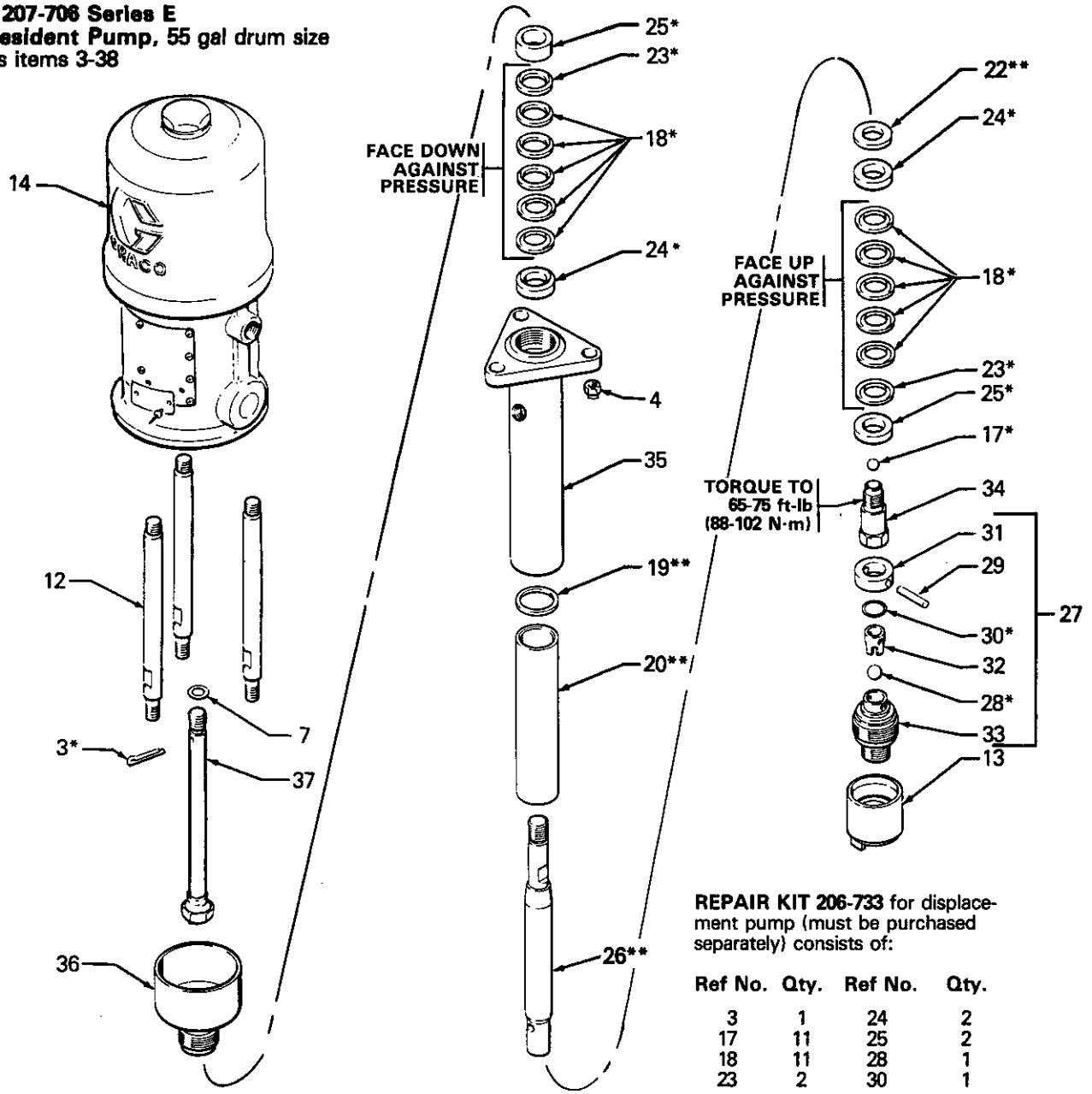
Model 217-578
One at a time, install a male gland (24*), a UHMWPE v-packing (23*), two leather v-packings (18*), a UHMWPE v-packing (23*), a leather v-packing (18*), a UHMWPE v-packing (23*), and a female gland (25*), into the throat of the pump housing (35). See Fig 4.

Reassemble the pump in reverse order of disassembly. Check the tie rods to be sure that they are tightened securely into the air motor base. Assemble the connecting rod to the air motor and screw the locknuts loosely onto the tie rods. Tighten the packing nut until it's just snug. Finish tightening the locknuts evenly to 35-50 ft-lb (47-68 N·m). Then tighten the packing nut just enough to stop leakage—no tighter. Start the pump and run it at 40 psi (3 bar) minimum air pressure to check the tie rods for signs of binding. Adjust if necessary.

NOTE: If the grounding wire was disconnected before servicing, be sure to reconnect it before operating the pump.

PARTS DRAWING

Model 207-706 Series E
30:1 President Pump, 55 gal drum size
Includes items 3-38



REPAIR KIT 206-733 for displacement pump (must be purchased separately) consists of:

Ref No.	Qty.	Ref No.	Qty.
3	1	24	2
17	11	25	2
18	11	28	1
23	2	30	1

Ref No. 15 Displacement Pump Assy
Includes items 17-36, 38

REF NO.	PART NO.	DESCRIPTION	QTY
3	*101-946	PIN, cotter; stainless steel; 0.12" (3.2 mm) x 1.5" (13 mm)	1
4	101-566	NUT, lock; 3/8-16	3
7	156-082	SEAL, o-ring; nitrile rubber	1
12	168-220	ROD, tie; 21.25" (540 mm) lg.	3
13	168-222	TUBE, intake extension	1
14	207-352	AIR MOTOR (See 306-982 for parts)	1
15	207-732	DISPLACEMENT PUMP Assy	
	Series B	Includes items 17-36, 38	1
17	*101-823	. BALL; stainless steel; 0.31" (7.9 mm) dia	1
18	*164-477	. V-PACKING; leather	10
19	**164-480	. GASKET, flat; PTFE	1
20	**164-481	. SLEEVE, housing	1
22	**164-484	. RETAINER, packing	1
23	*164-882	. V-PACKING PTFE	2
24	*165-894	. GLAND; male	2
25	*165-895	. GLAND; female	2
26	**210-041	. ROD, displacement	1
27	206-982	. INTAKE VALVE Assy	
		Includes items 28-33	1
28	*101-874	. . BALL; stainless steel; 0.5" (13 mm) dia	1

Ref No. 27 Intake Valve Assy
Includes items 28-33

REF NO.	PART NO.	DESCRIPTION	QTY
29	165-049	. . PIN, ball stop	1
30	*165-052	. . SEAL, o-ring; Teflon®	1
31	165-279	. . RETAINER, o-ring	1
32	170-257	. . GUIDE, ball	1
33	205-981	. . HOUSING	1
34	206-345	. SEAT, piston	1
35	207-011	. HOUSING, outlet	1
36	207-731	. NUT, packing; w/wet cup	1
37	207-698	ROD, connecting	1
38	172-479	. TAG, warning (not shown)	1

306 Number in description refers to separate instruction manual.

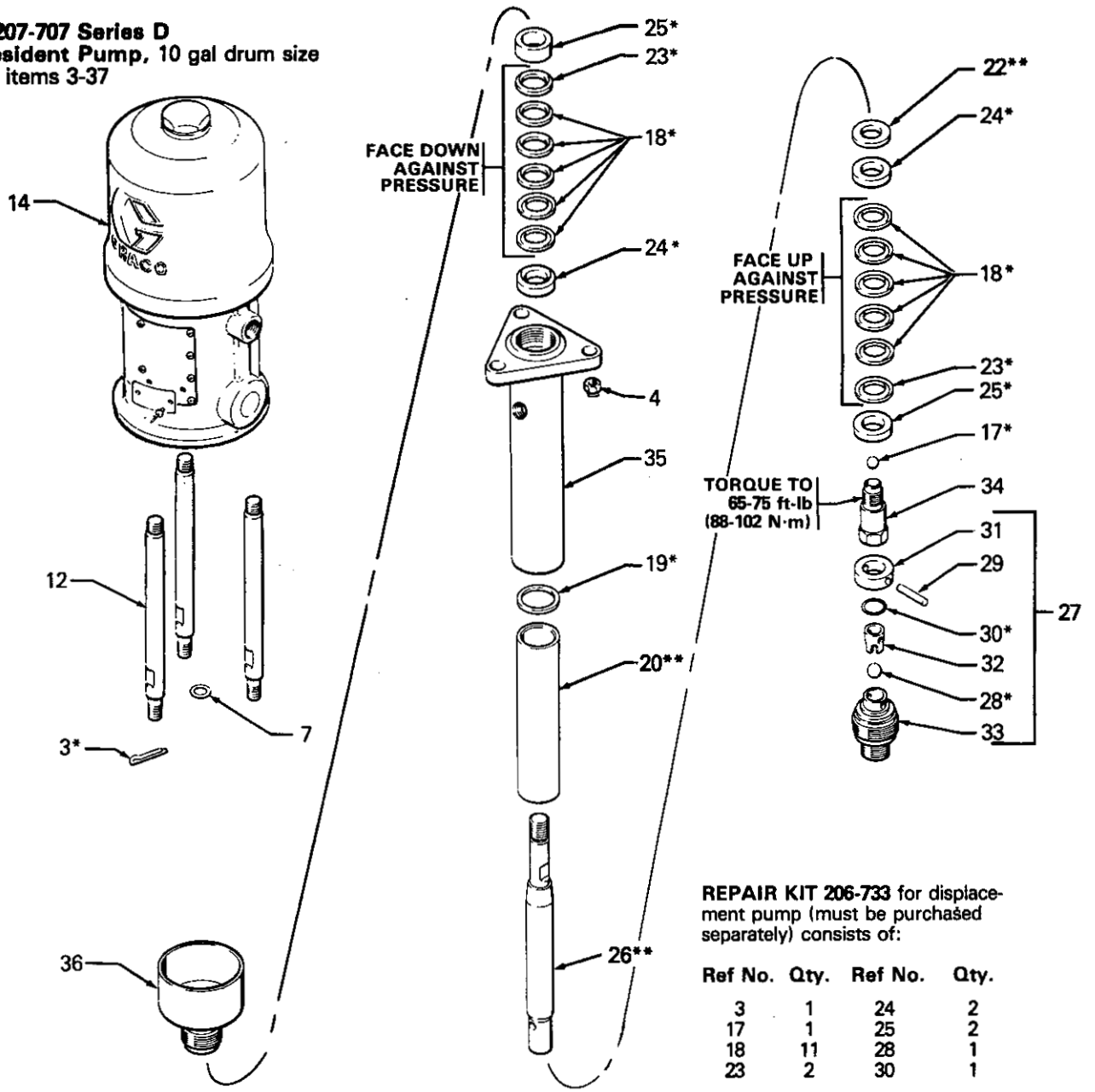
**Included in Repair Kit 206-733.*

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

See "How To Order Replacement Parts" on page 14.

PARTS DRAWING

Model 207-707 Series D
30:1 President Pump, 10 gal drum size
Includes items 3-37



REPAIR KIT 206-733 for displacement pump (must be purchased separately) consists of:

Ref No.	Qty.	Ref No.	Qty.
3	1	24	2
17	1	25	2
18	11	28	1
23	2	30	1

Ref No. 15 Displacement Pump Assy
Includes items 17-37

REF NO.	PART NO.	DESCRIPTION	QTY
3	*101-946	PIN, cotter; stainless steel; 0.12" (3.2 mm) x 1.5" (13 mm)	1
4	101-566	NUT, lock; 3/8-16	3
7	156-082	SEAL, o-ring; nitrile rubber	1
12	168-221	ROD, tie; 5.75" (146 mm) lg.	3
14	207-352	AIR MOTOR (See 306-982 for parts)	1
15	207-732 Series B	DISPLACEMENT PUMP Assy Includes items 17-37	1
17	*101-823	. BALL; stainless steel; 0.31" (7.9 mm) dia	1
18	*164-477	. V-PACKING; leather	10
19	**164-480	. GASKET, flat; Teflon®	1
20	**164-481	. SLEEVE, housing	1
22	**164-484	. RETAINER, packing	1
23	*164-862	. V-PACKING, Teflon®	2
24	*165-894	. GLAND, male	2
25	*165-895	. GLAND, female	2
26	**210-041	. ROD, displacement	1
27	205-982	. INTAKE VALVE Assy Includes items 28-33	1
28	*101-874	. . BALL; stainless steel; 0.5" (13 mm) dia	1

Ref No. 27 Intake Valve Assy
Includes items 28-33

REF NO.	PART NO.	DESCRIPTION	QTY
29	165-049	. . PIN, ball stop	1
30	*165-052	. . SEAL, o-ringPTFE ®	1
31	165-279	. . RETAINER, o-ring	1
32	170-257	. . GUIDE, ball	1
33	205-981	. . HOUSING	1
34	208-345	. SEAT, piston	1
35	207-011	. HOUSING, outlet	1
36	207-731	. NUT, packing; w/wet cup	1
37	172-479	. TAG, warning (not shown)	1

306 Number in description refers to separate instruction manual.

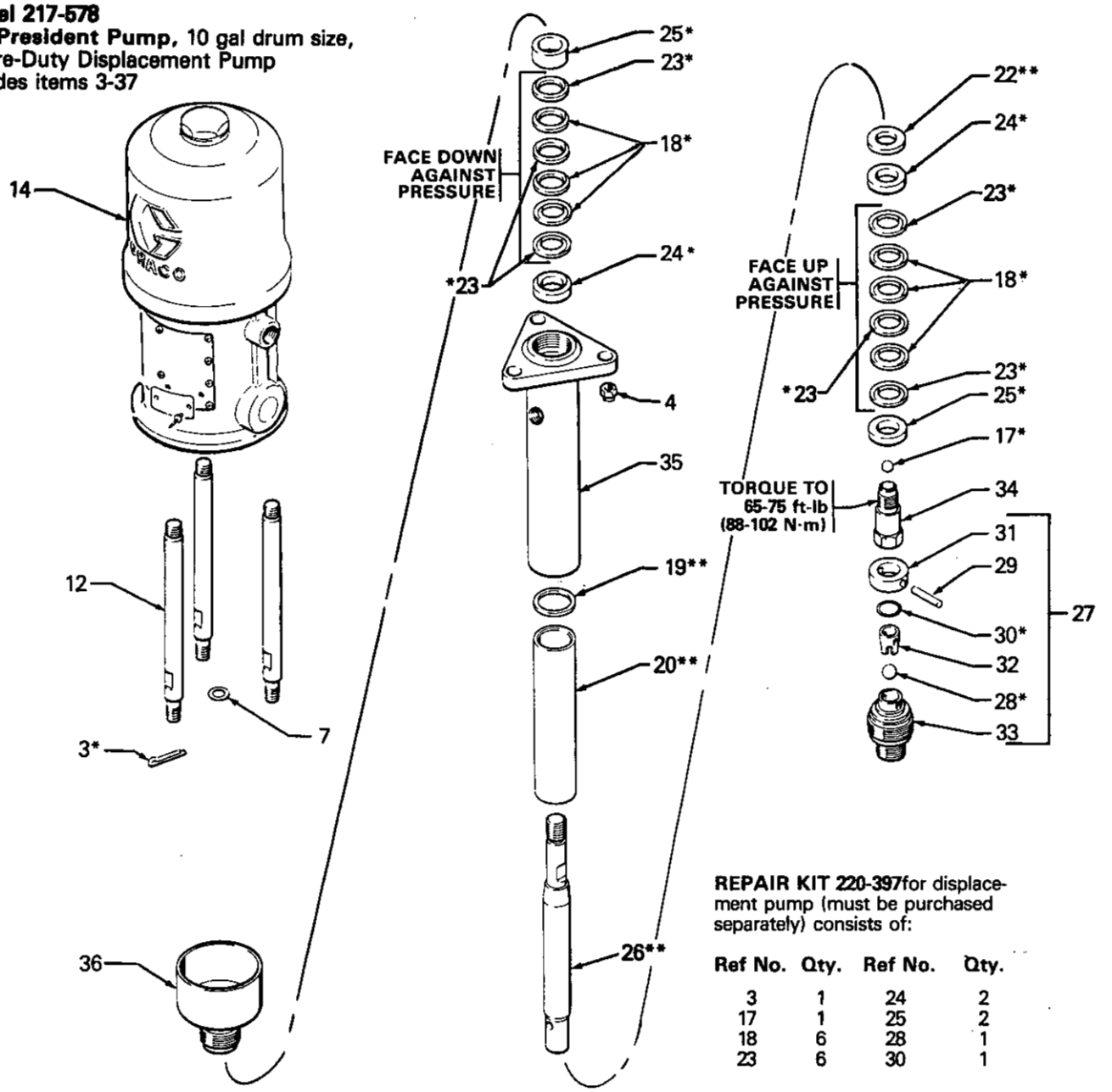
**Included in Repair Kit 206-733.*

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

See "How To Order Replacement Parts" on page 14.

PARTS DRAWING

Model 217-578
30:1 President Pump, 10 gal drum size,
Severe-Duty Displacement Pump
Includes items 3-37



REPAIR KIT 220-397 for displacement pump (must be purchased separately) consists of:

Ref No.	Qty.	Ref No.	Qty.
3	1	24	2
17	1	25	2
18	6	28	1
23	6	30	1

Ref No. 15 Displacement Pump Assy
Includes items 17-37

REF NO.	PART NO.	DESCRIPTION	QTY
3	*101-946	PIN, cotter; stainless steel; 0.12" (3.2 mm) x 1.5" (13 mm)	1
4	102-021	NUT, lock; 3/8-16	3
7	156-082	SEAL, o-ring; nitrile rubber	1
12	168-221	ROD, tie; 5.75 in. (146 mm) lg.	3
14	207-352	AIR MOTOR (See 306-982 for parts)	1
15	217-528	DISPLACEMENT PUMP Assy Series C Includes items 17-37	1
17	*101-823	. BALL, stainless steel; 0.31" (7.9 mm) dia	1
18	*164-477	. V-PACKING; leather	6
19	**164-480	. GASKET, flat; Teflon®	1
20	**178-902	. SLEEVE, housing	1
22	**164-484	. RETAINER, packing	1
23	*108-453	. V-PACKING, UHMW polyethylene	6
24	*183-621	. GLAND, packing; male	2
25	*183-622	. GLAND, packing; female	2
26	**217-541	. ROD, displacement	1
27	205-982	. INTAKE VALVE Assy Includes items 28-33	1
28	*101-874	. . BALL, stainless steel; 0.5" (13 mm) dia	1

Ref No. 27 Intake Valve Assy
Includes items 28-33

REF NO.	PART NO.	DESCRIPTION	QTY
29	165-049	. . PIN, ball stop	1
30	*165-052	. . SEAL, o-ring; PTFE	1
31	165-279	. . RETAINER, o-ring	1
32	170-257	. . GUIDE, ball	1
33	205-981	. . HOUSING	1
34	206-345	. SEAT, piston	1
35	207-011	. HOUSING, outlet	1
36	207-731	. NUT, packing; w/wet cup	1
37	172-479	. TAG, warning (not shown)	1

306 Number in description refers to separate instruction manual.

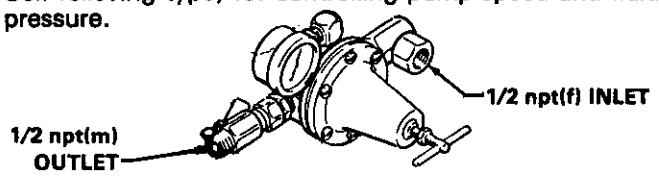
**Included in Repair Kit 220-397.*

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

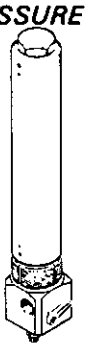
See "How To Order Replacement Parts" on page 14.

ACCESSORIES (Must be purchased separately)

AIR REGULATOR KIT 207-468
200 psi (14 bar) MAXIMUM WORKING PRESSURE
Self-relieving type, for controlling pump speed and fluid pressure.

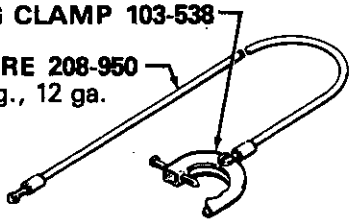


SURGE TANK with FILTER 214-726
5000 psi (350 bar) MAXIMUM WORKING PRESSURE
With 60 mesh (250 micron) screen.



GROUNDING CLAMP 103-538

GROUND WIRE 208-950
25 ft (7.6 m) lg., 12 ga.

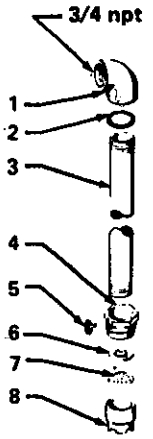


SUCTION HOSE 214-961
500 psi (35 bar) MAXIMUM WORKING PRESSURE
6 ft (1.8 m) long, coupled 3/4 npt(mbe), neoprene. Spring guard both ends.

FILTER, REGULATOR, LUBRICATOR 217-073
200 psi (14 bar) MAXIMUM WORKING PRESSURE
Bracket mounted air filter, high capacity air regulator and air motor oiler.

55 GAL. (200 liter) SIPHON TUBE 206-266

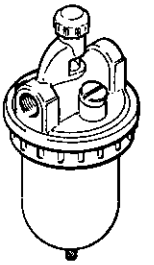
REF NO.	PART NO.	DESCRIPTION	QTY
1	156-591	ELBOW, 90°; 3/4 npt; 1-1/2-24 ns thd	1
2	156-593	PACKING, o-ring	1
3	156-592	TUBE, riser	1
4	176-684	ADAPTER, bung	1
5	100-220	THUMBSCREW	1
6	159-100	RETAINER, screen	1
7	161-377	SCREEN, filter	1
8	159-101	HOUSING, valve, intake	1



BLEED-TYPE MASTER AIR VALVE
300 psi (21 bar) MAXIMUM WORKING PRESSURE
Relieves air trapped in the air line between the pump air inlet and this valve when closed.

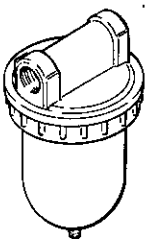
107-141 3/4 npt(m x f) inlet & outlet
107-142 1/2 npt(m x f) inlet & outlet

AIR LINE LUBRICATOR 214-848
250 psi (17.5 bar) MAXIMUM WORKING PRESSURE
For automatic air motor lubrication.
1/2 npt INLET & OUTLET

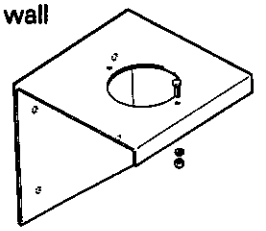


AIR LINE FILTER 106-149
250 psi (17.5 bar) MAXIMUM WORKING PRESSURE
Without gauge. For removing harmful dirt and moisture from the compressed air supply (shown).

AIR LINE FILTER 217-074
250 psi (17.5 bar) MAXIMUM WORKING PRESSURE
With gauge (not shown).



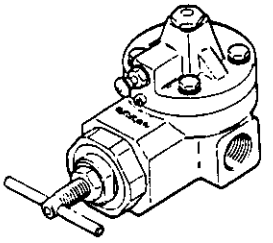
WALL BRACKET 206-778
For mounting President pump to wall



AIR SUPPLY HOSE, with Static Ground Wire
175 psi (12 bar) MAXIMUM WORKING PRESSURE
3/4 in. ID, 3/4 npt(m) Couplings, buna-N

208-610 6 ft (1.8 m)
205-548 15 ft (4.6 m)
208-611 25 ft (7.6 m)
208-612 50 ft (15.2 m)

PUMP RUNAWAY VALVE 215-362
180 psi (12 bar) MAXIMUM WORKING PRESSURE
Shuts off air supply to the pump if the pump accelerates beyond the pre-adjusted setting due to an empty supply container, interrupted fluid supply to the pump, or excessive cavitation. 3/4 npt(f).



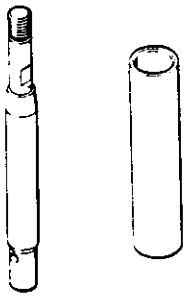
Accessories continued on page 14.

ACCESSORIES (continued)

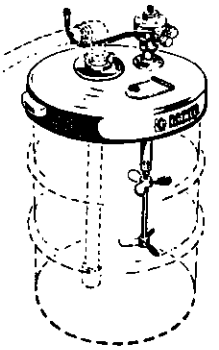
GRACO THROAT SEAL LIQUID
Non-evaporating solvent for wet cup.

206-995 1 quart (0.95 liter)
206-996 1 gallon (3.8 liter)

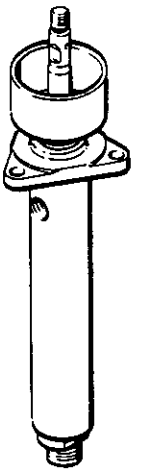
CONVERSION KIT 217-544
For converting pumps 207-706 or 207-707 to a severe-duty pump. Includes a displacement rod and sleeve to replace 210-041 (26) and 164-481 (20).



COVER & AGITATOR 207-199
Fits 55 gallon drum.



DISPLACEMENT PUMP 217-528
For replacing displacement pump 207-732 (15) to convert pumps 207-706 or 207-707 to a severe-duty pump.



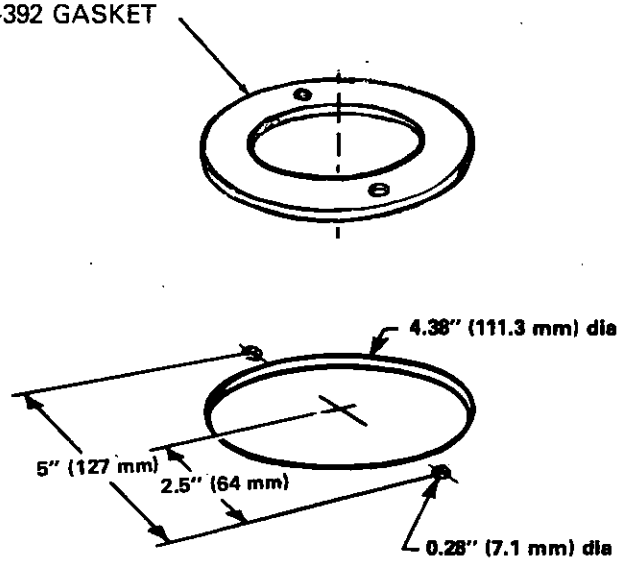
HOW TO ORDER REPLACEMENT PARTS

1. To be sure you receive the correct replacement parts, kit or accessories, always give all of the information requested in the chart below.
2. Check the parts list to identify the correct part number; ***do not use the ref. no. when ordering.***
3. Order all parts from your nearest Graco distributor.

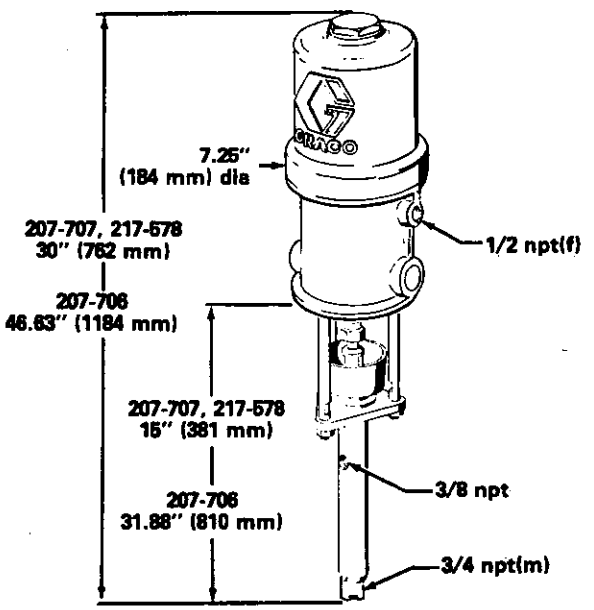
6 digit PART NUMBER	QTY	PART DESCRIPTION

MOUNTING HOLE LAYOUT

162-392 GASKET



DIMENSIONAL DRAWING



SERVICE INFORMATION

Listed below by the assembly changed are OLD and NEW parts.

ASSEMBLY CHANGED	PART STATUS	REF NO.	PART NO.	NAME
217-528	OLD		165-894	Gland
Disp.	NEW	24	183-621	Gland
Pump to	OLD		165-895	Gland
Series C	NEW	25	183-622	Gland

TECHNICAL DATA

Air operating range	: 40-120 psi (3 to 8 bar)
Maximum air consumption	: Approximately 35 cfm (0.98 m^3/min) at 1 gpm (3.8 liter/min) at 100 psi (7 bar)
Maximum recommended pump speed	: 60 cycles/minute: 1 gpm (3.8 liter/min)
Recommended speed for optimum pump life	: 15-25 cycles/min.: 0.15 to 0.25 gpm (0.6 to 0.9 liter/min)
Maximum working pressure	: 3600 psi (250 bar)
Wetted parts	: *Models 207-706 & 207-707;* Tungsten Carbide; Stainless Steel; Steel, Nitralloy; PTFE® ; Leather *Model 217-578;* Tungsten Carbide; Stainless Steel; Chrome over Stainless Steel; PTFE® ; Leather; Ultra High Molecular Weight Polyethylene
Weight	: *207-706:* 30 lb (14 kg) *207-707:* 24 lb (11 kg) *217-578:* 24 lb (11 kg)

PTFE is a registered trademark of the Du Pont Company.

THE GRACO WARRANTY AND DISCLAIMERS

WARRANTY

Graco warrants all equipment manufactured by it 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. As purchaser's sole remedy for breach of this warranty, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment proven 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, 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 with Graco equipment of 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 for examination by Graco to verify 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 the costs of parts, labor and transportation.

DISCLAIMERS AND LIMITATIONS

THE TERMS OF THIS WARRANTY CONSTITUTE PURCHASER'S SOLE AND EXCLUSIVE REMEDY AND ARE IN LIEU OF ANY OTHER WARRANTIES (EXPRESS OR IMPLIED), INCLUDING WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND OF ANY NON-CONTRACTUAL LIABILITIES, INCLUDING PRODUCT LIABILITIES, BASED ON NEGLIGENCE OR STRICT LIABILITY. EVERY FORM OF LIABILITY FOR DIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES OR LOSS IS EXPRESSLY EXCLUDED AND DENIED. IN NO CASE SHALL GRACO'S LIABILITY EXCEED THE AMOUNT OF THE PURCHASE PRICE. ANY ACTION FOR BREACH OF WARRANTY MUST BE BROUGHT WITHIN TWO (2) YEARS OF THE DATE OF SALE.

EQUIPMENT NOT COVERED BY GRACO WARRANTY

GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO ACCESSORIES, EQUIPMENT, MATERIALS, OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO. These items sold, but not manufactured by Graco (such as electric motor, 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.

Factory Branches: Atlanta, Dallas, Detroit, Los Angeles, West Caldwell (N.J.)
Subsidiary and Affiliate Companies: Canada; England; Switzerland; France; Germany; Hong Kong; Japan
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