

# INSTRUCTIONS - PARTS LIST



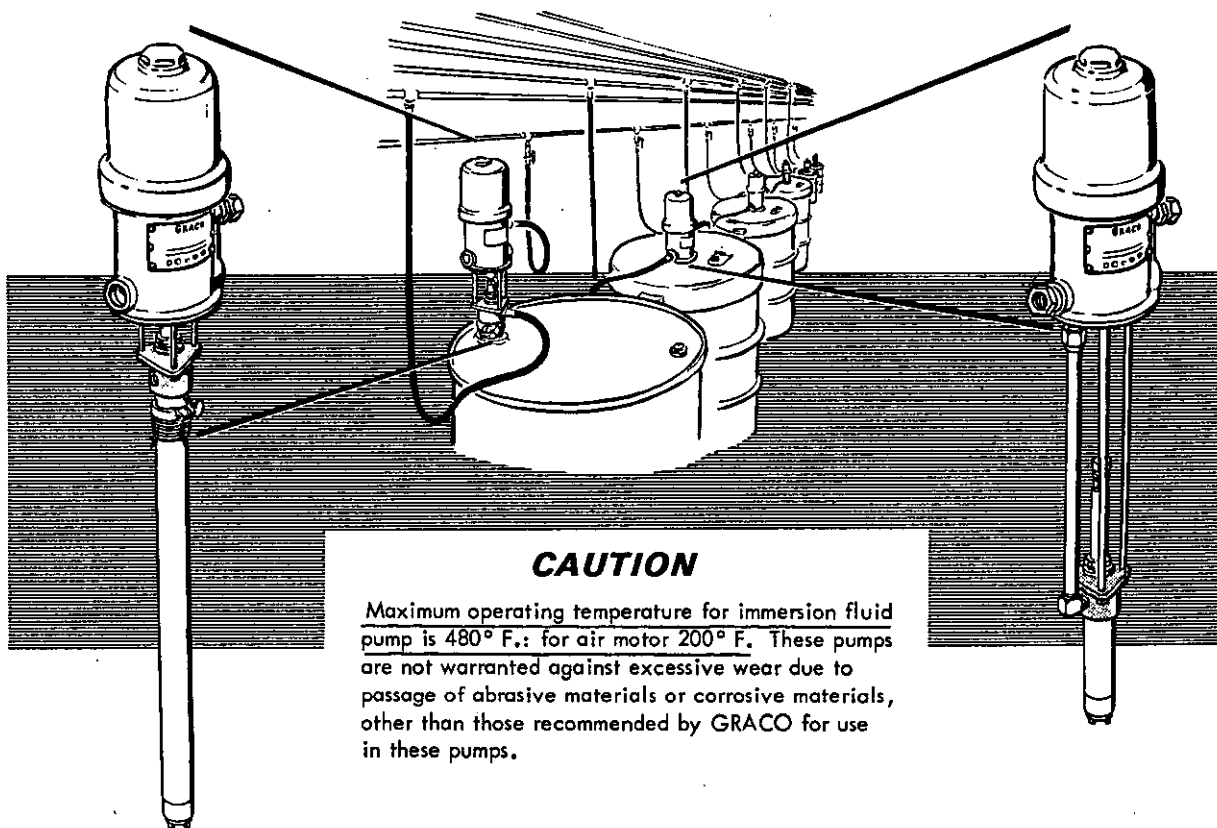
306-816

PUB. NOV. 1973

Supersedes FEB. 1969

KEEP  
FOR  
REFERENCE

## PRESIDENT 10:1 Ratio *stainless steel* PUMPS



### CAUTION

Maximum operating temperature for immersion fluid pump is 480° F.; for air motor 200° F. These pumps are not warranted against excessive wear due to passage of abrasive materials or corrosive materials, other than those recommended by GRACO for use in these pumps.

### 55 GALLON SIZE

**Model 206-421** SERIES "F"

'PTFE' PACKED COVER MOUNTING TYPE

**Model 206-445** SERIES "G"

'PTFE' PACKED BUNG MOUNTING TYPE

### STUBBY TYPE

**Model 206-420**

RUBBER PACKED

**Model 206-790** SERIES "F"

'PTFE' PACKED

**Model 206-842** SERIES "F"

RUBBER PACKED COVER MOUNTING TYPE

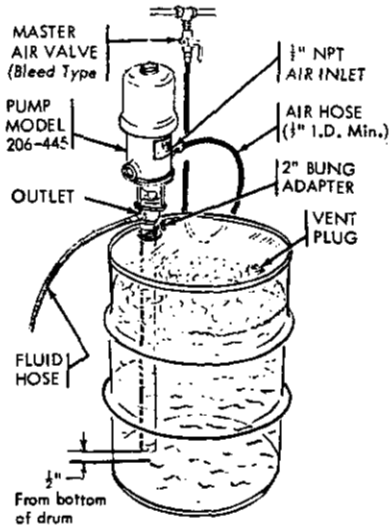


Fig 1

## INSTALLATION

### Mount

Mount pump to suit the type of installation planned. Pump dimensions and mounting hole layout are given on back page for customer prepared mounting. If mounted in a bung type drum, loosen vent plug to prevent a vacuum from forming.

### Connect Hoses

Attach air supply hose to  $\frac{1}{2}$  npt air inlet on pump. See Fig. 1. Main airline should include a bleed type air valve to stop pump and relieve it of air pressure. Attach material hose to pump outlet with suitable adapter--Models 206-420 and 206-790 have  $\frac{1}{2}$  npt outlets, Models 206-421, 206-445 and 206-842 have  $\frac{3}{4}$  npt outlets.

On Models 206-420 and 206-790, attach suction hose to  $\frac{3}{4}$  npt inlet.

## OPERATION

### Adjusting Pump Speed And Pressure

In a direct supply system, when the pump is supplied with sufficient air pressure and volume (see technical data on back page), it will start and stop automatically when the material valve is opened or closed. In a circulating system, it will run continuously and speed up or slow down as supply demands until air supply is shut off.

Use an air regulator to control material pressure and pump speed. Always use the lowest air pressure necessary to give you the results you want. Refer to back page for accessory Graco regulator.

### Lubrication And Care

Periodically oil the air motor by disconnecting the air hose and placing about 15 drops of light weight motor oil in the air inlet. For automatic lubrication, we recommend a Graco air line oiler. See ACCESSORIES on back page.

If your pump has a wet-cup, keep the wet-cup filled with Graco Throat Seal Lubricant (TSL). Check tightness of packing nut weekly. Packing nut should be just tight enough to stop leakage -- no tighter. See Fig 2.

Always stop the pump at the bottom of its stroke. See Fig 2.

**CAUTION:** Don't run the pump dry! Keep liquid in the container at all times to prevent the pump from running away. Costly damage will result if this happens.

Don't leave a pump shut off when the material supply has been exhausted and air has been pumped into lines. Prime pump and lines, and leave filled.

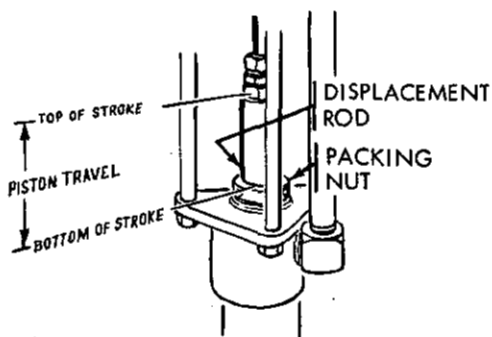
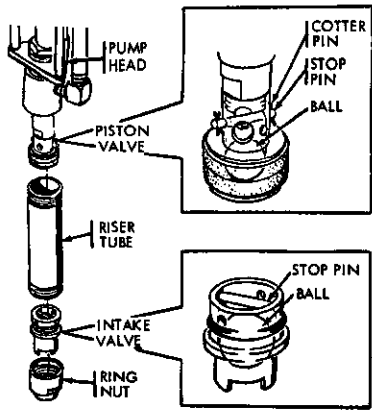


Fig 2



### Check Valve Adjustment

Piston and intake check valves are factory set for maximum intake volume with heavier materials. For light materials, the check valve stop pins can be moved to the lower holes to decrease ball travel and intake volume. See Fig 3. Decreasing the travel of balls minimizes the surge at stroke change over. Too short a ball travel restricts the flow and slows down the top speed of pump. See page 4 for disassembly instructions.

Fig 3

## MAINTENANCE

### WARNING

TO AVOID POSSIBLE PERSONAL INJURY:  
ALWAYS RELEASE AIR AND MATERIAL PRESSURES BEFORE SERVICING PUMP.

## TROUBLESHOOTING

### What's Wrong

Pump fails to operate

Pump operates but—output low on both strokes

—output low on down stroke

—output low on up stroke

Erratic or accelerated operation

\*Proper packing nut take-up will stop leakage. However, if your pump is Model 206-420 we recommend that after each 1000 hours of operation or delivery of 120,000 gallons of solution at 2gpm, you replace all the packings in the fluid displacement pump. Use repair kit 206-923.

### Why

### What To Do

Restricted line or inadequate air supply	.. Clear; increase
Insufficient air pressure—closed or clogged air valves, etc.	.. Open, clean
Exhausted material supply	.. Refill
Obstructed material line, valves, gun, etc.	.. Clear**
Fluid check valves need adjustment	.. Adjust
Loose throat packing nut or worn packings*	.. Tighten nut or replace packings
Held open or worn fluid intake valve	.. Clear, service
Held open or worn fluid piston or packing*	.. Clear, service
Damaged air valving mechanism	.. Service See 306-982
Damaged fluid pump riser tube "o" rings	.. Replace

\* Release pressures and disconnect material line. Turn on air - if pump starts, the line, etc. is clogged.

## SERVICE

Shut off air, relieve pressures and remove pump from mounting.

### Intake Valve

Unscrew the intake valve retainer from the cylinder and remove valve. See Fig 3. Remove the ball stop pin and clean and inspect all parts for wear or damage. Check the seat in housing for nicks. Replace parts as necessary and reassemble. Be sure to replace the ball stop pin in the proper holes.

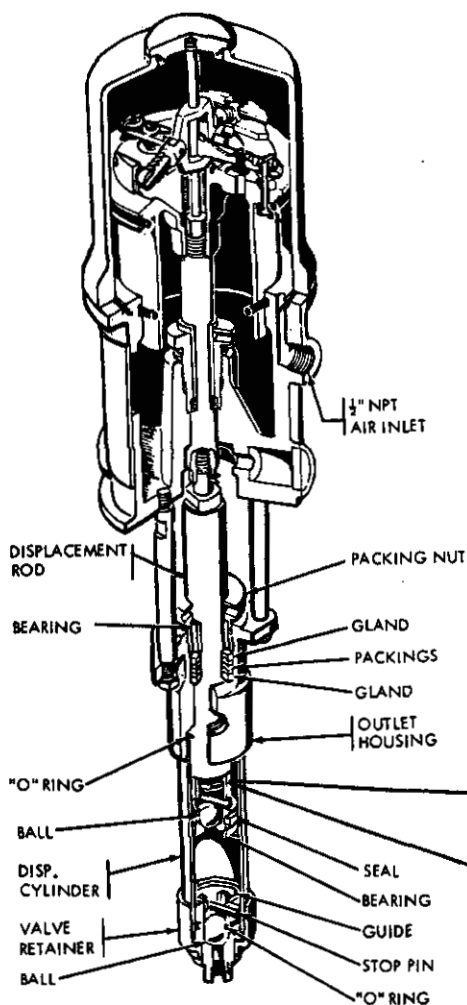
### Piston

Remove intake valve (above). Remove cotter pin from air motor connecting rod and screw displacement rod from connecting rod. See Fig 4.

NOTE: On Model 206-241, unscrew coupling nut to disconnect displacement rod from connecting rod.

Loosen the packing nut and push the displacement rod down until the piston clears the cylinder. Grasp piston and pull it and displacement rod from bottom of cylinder.

Remove the ball stop pin and use a 1/2 in. dia. pin in the large holes to screw piston housing off displ. rod. See Fig 4. Clean all parts and inspect for wear or damage, replacing parts as necessary. Unscrew the cylinder from the housing. Check the o-ring in the outlet housing and inside surface of displacement cylinder. Use "PTFE" tape on threads when reassembling pump. Be sure to replace the ball stop pin in the proper hole.



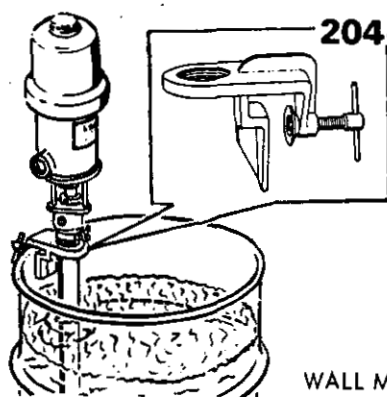
### Throat Packings

Remove intake valve and displacement rod (above). Screw the packing nut out of outlet housing and take the packings and glands out. Check the displacement rod for scratches or marring. Replace the glands and bearings, even if they appear to be good. Don't overtighten the packing nut when reassembling. The packing nut should be just tight enough to stop leakage -- no tighter.

Fig 4

## ACCESSORIES

(Must be purchased separately)



**204-858 PUMP CLAMP**  
For mounting Model 206-445  
in open 55 gal. drum.

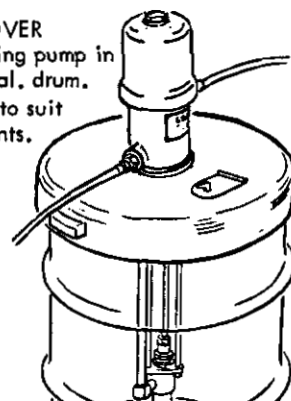


TSL Throat Seal Lubricant

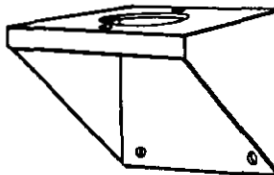
**206-995** 1 quart non-evaporation  
solvent for wet-cup.

**206-996** 1 gallon size.

**DRUM COVER**  
For mounting pump in  
open 55 gal. drum.  
available to suit  
requirements.

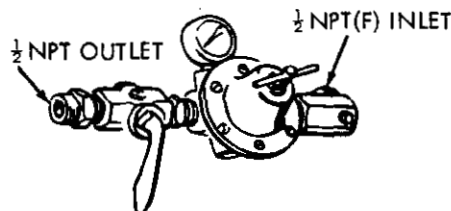


**WALL MOUNTING BRACKET 207-365**



**204-865 HIGH PRESSURE HOSE**  
"PTFE" (7000 lb. burst)  
6', 1/2 ID, cpld. 1/2" npt (mbe)

**207-469 AIR REGULATOR & GAUGE**



1/2 NPT INLET  
AND OUTLET

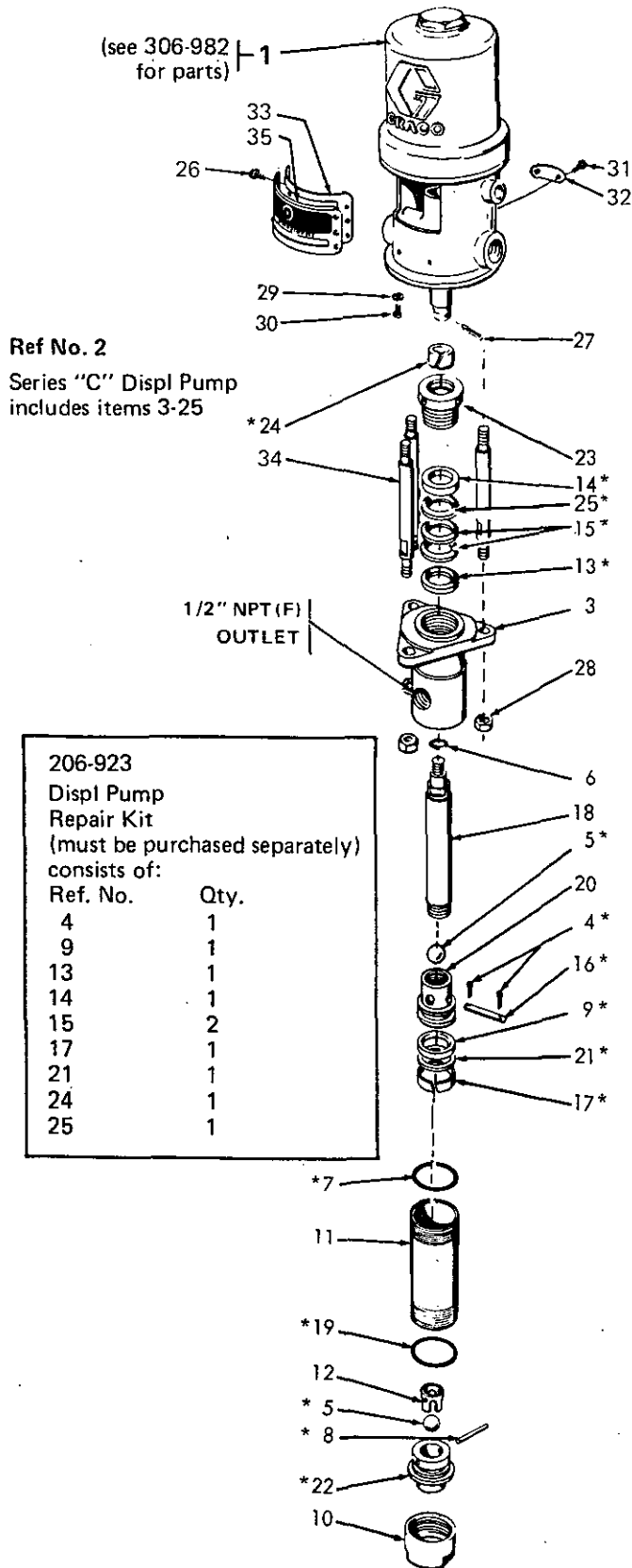


**206-652 AIR LINE OILER**

PARTS DRAWING

Model 206-420

10:1 PRESIDENT PUMP



PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	207-352	AIR MOTOR see 306-982 for parts	1
2	207-360	DISPLACEMENT PUMP Series "C" includes items 3-25	1
3	206-529	. HOUSING, outlet	1
4	* 100-063	. PIN, cotter; SST; 1/16 dia; 1" lg	2
5	* 101-917	. BALL; SST; 7/8 dia	2
6	156-082	. O-RING; nitrile rubber	1
7	* 162-942	. O-RING; nitrile rubber	1
8	* 162-947	. PIN, ball stop	1
9	* 164-627	. SEAL, piston; nitrile rubber	1
10	164-630	. RETAINER, intake valve	1
11	164-631	. CYLINDER, displacement	1
12	164-679	. GUIDE, ball	1
13	* 164-837	. GLAND, male	1
14	* 165-288	. GLAND, female	1
15	* 165-289	. V-PACKING, nitrile rubber	2
16	* 165-291	. PIN, ball stop	1
17	* 165-292	. BEARING, 'PTFE' tape	1
18	166-236	. ROD, displacement	1
19	* 166-238	. O-RING, nitrile rubber	1
20	166-510	. HOUSING, piston	1
21	* 166-512	. WASHER, flat; 'PTFE'	1
22	* 166-616	. HOUSING; intake valve; 3/4 npt (f)	1
23	168-284	. NUT, packing	1
24	* 168-285	. BEARING, split sleeve; 'PTFE'	1
25	170-625	. V-PACKING; plastic	1
26	100-078	SCREW, rd hd mach; no. 8-32 x 3/8	8
27	101-946	PIN, cotter; SST; 1/8 dia; 1-1/2 lg	1
28	102-021	LOCKNUT; hex; SST; 3/8-16	3
29	102-024	LOCKWASHER, spring; SST; 1/4"	2
30	102-234	SCREW, rd hd mach; 1/4-20 x 3/8	2
31	102-556	RIVET, blind	2
32	160-637	PLATE, serial	1
33	164-409	PLATE, muffler	1
34	166-237	ROD, tie; 4-3/4" lg	3
35	168-835	PLATE, instruction	1

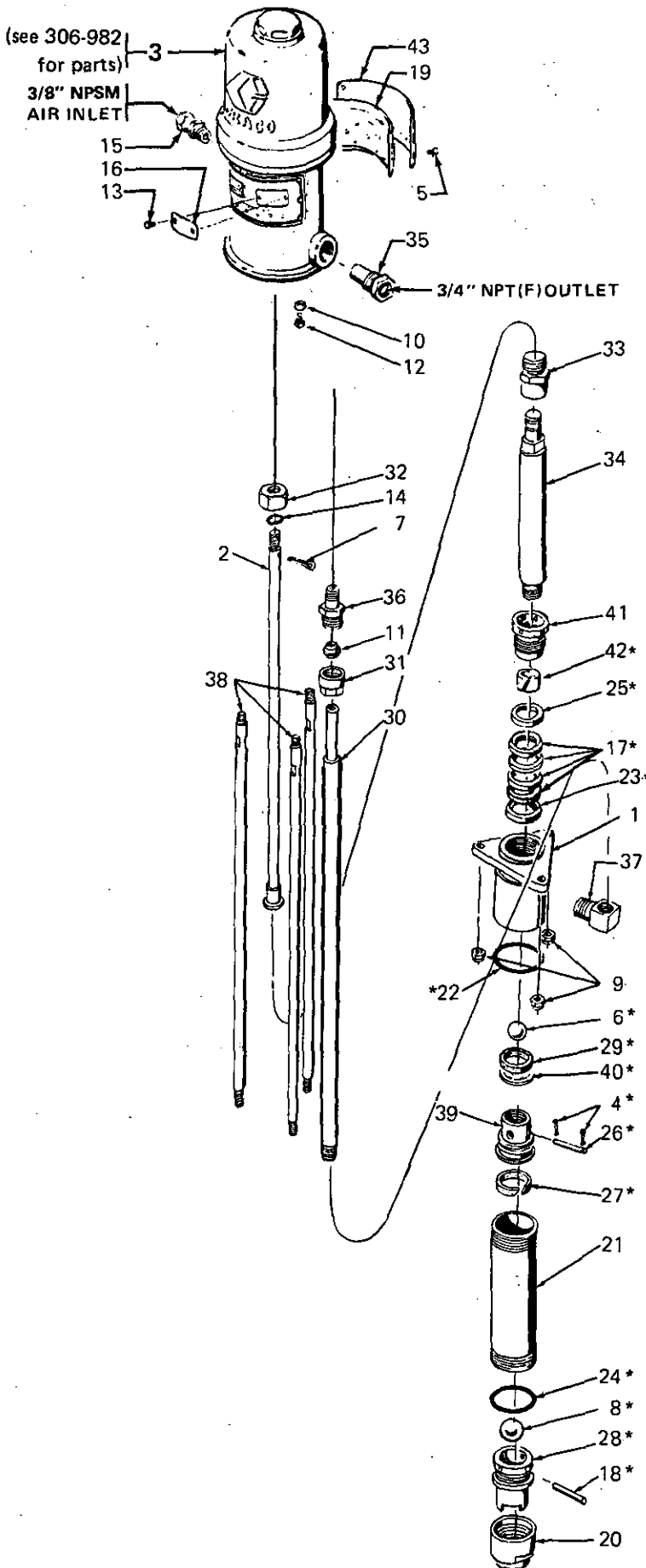
\*SUGGESTED REPLACEMENT PARTS

Order parts by number and name. Also give series letter and model number for which parts are ordered. Call or write your Graco distributor, nearest Graco factory branch or service depot for parts or service.

PARTS DRAWING

Model 206-421  
Series "F"

10:1 PRESIDENT PUMP



PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	205-999	HOUSING, outlet	1
2	206-446	ROD, displacement	1
3	207-352	AIR MOTOR	1
		see 306-982 for parts	1
4	* 100-063	PIN, cotter; SST; 1/16 dia; 1" lg	2
5	100-078	SCREW, rd hd mach; no. 8-32 x 3/8	8
6	* 101-917	BALL; SST; 7/8 dia	2
7	101-946	PIN, cotter; SST; 1/8 dia; 1-1/2" lg	1
8	* 101-968	BALL; SST; 1-1/4 dia	1
9	102-021	LOCKNUT, hex; SST; 3/8-16	3
10	102-024	LOCKWASHER, spring; SST; 1/4"	2
11	102-186	FERRULE; SST; 3/4 thd size	1
12	102-234	SCREW, rd hd mach; 1/4-20 x 3/8	2
13	102-556	RIVET, blind	2
14	156-082	O-RING; nitrile rubber	1
15	158-256	UNION, swivel; 1/2 npt x 3/8 npsm	1
16	160-637	PLATE, serial	1
17	* 162-866	V-PACKING; 'PTFE'	4
18	* 162-947	PIN, ball stop	1
19	164-409	PLATE, muffler	1
20	164-630	RETAINER, intake valve	1
21	164-631	CYLINDER	1
22	* 164-782	O-RING PTFE n"	1
23	* 164-837	GLAND; male	1
24	* 164-846	O-RING; 'PTFE'	1
25	* 165-288	GLAND, female	1
26	* 165-291	PIN, ball stop	1
27	* 165-292	BEARING; 'PTFE' tape	1
28	* 166-025	HOUSING, intake valve	1
29	* 166-026	SEAL, piston; 'PTFE'	1
30	166-028	TUBE, riser; 23-3/16" lg	1
31	166-029	NUT, flareless tube	1
32	166-033	NUT, coupling	1
33	166-034	ADAPTER, displacement rod	1
34	166-236	ROD, displacement	1
35	166-240	ELBOW, outlet	1
36	166-241	ADAPTER, riser tube	1
37	166-242	ELBOW, 90° street; 1/2 npt	1
38	166-243	ROD, tie; 23-7/8 lg	3
39	166-510	HOUSING, piston	1
40	* 166-512	WASHER, flat; 'PTFE'	1
41	168-284	NUT, packing	1
42	* 168-285	BEARING; split sleeve; 'PTFE'	1
43	168-835	PLATE, instruction	1

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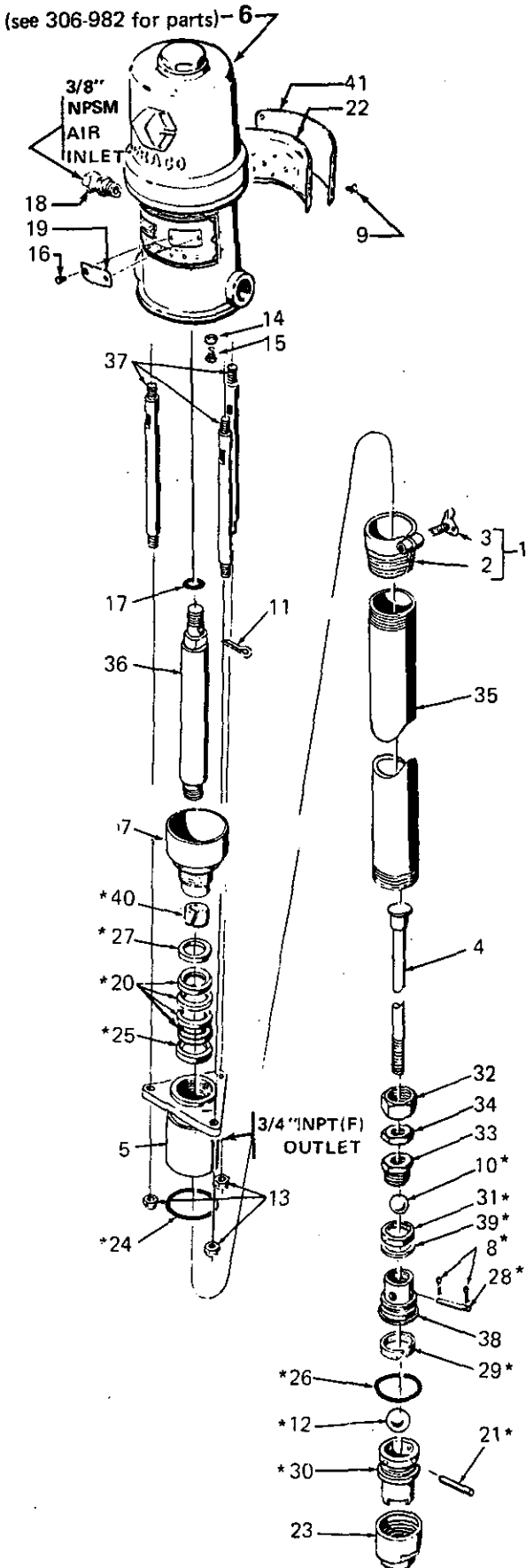
207-580 Repair Kit  
(must be purchased separately)  
consists of:

Ref No.	Qty.	Ref No.	Qty.
4	1	27	1
17	4	29	1
22	1	40	1
23	1	42	1
25	1		

PARTS DRAWING

Model 206-445  
Series "G"  
with wet cup

10:1 PRESIDENT PUMP



PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	205-573	BUNG ADAPTER Assy includes items 2 and 3	1
2	205-572	. ADAPTER, bung; bare	1
3	101-961	. SCREW, thumb; 1/4-20	1
4	206-449	ROD, connecting; 28-1/2 lg	1
5	207-210	HOUSING, outlet	1
6	207-352	AIR MOTOR see 306-982 for parts	1
7	207-708	NUT, packing; w/wet-cup	1
8	* 100-063	PIN, cotter; SST; 1/16 dia; 1" lg	2
9	100-078	SCREW, rd hd mach; no. 8-32 x 3/8	8
10	* 101-917	BALL, SST; 7/8 dia	1
11	101-946	PIN, cotter; SST; 1/8 dia; 1-1/2" lg	1
12	* 101-968	BALL, SST; 1-1/4 dia	1
13	102-021	LOCKNUT, hex; SST; 3/8-16	3
14	102-024	LOCKWASHER; spring; SST; 1/4"	2
15	102-234	SCREW, rd hd mach; 1/4-20 x 3/8	2
16	102-556	RIVET, blind	2
17	156-082	O-RING, nitrile rubber	1
18	158-256	UNION, swivel; 1/2 npt x 3/8 npsm	1
19	160-637	PLATE, serial	1
20	* 162-866	V-PACKING; "PTFE	4
21	* 162-947	PIN, ball stop	1
22	164-409	PLATE, muffler	1
23	164-630	RETAINER, intake valve	1
24	* 164-782	O-RING; PTFE "	1
25	* 164-837	GLAND, male	1
26	* 164-846	O-RING; 'PTFE '	1
27	* 165-288	GLAND; female	1
28	* 165-291	PIN, ball stop	1
29	* 165-292	BEARING; "PTFE" tape	1
30	* 166-025	HOUSING, intake valve	1
31	* 166-026	SEAL, piston; PTFE "	1
32	166-033	NUT, coupling	1
33	166-036	ADAPTER, conn rod	1
34	166-037	NUT, jam; SST; 5/8-11	1
35	166-038	CYLINDER	1
36	166-236	ROD, displacement	1
37	166-237	ROD, tie; 4-3/4" lg	3
38	166-510	HOUSING, piston	1
39	* 166-512	WASHER, PTFE eflon"	1
40	* 168-285	BEARING, split sleeve; 'PTFE '	1
41	168-835	PLATE, instruction	1

\*SUGGESTED REPLACEMENT PARTS

Order parts by number and name. Also give series letter and model number for which parts are ordered. Call or write your Graco distributor, nearest Graco factory branch or service depot for parts or service.

207-580 Repair Kit  
(must be purchased separately)  
consists of:

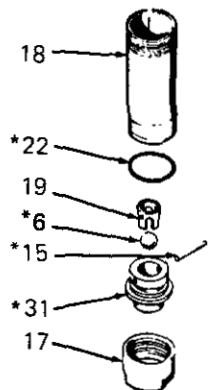
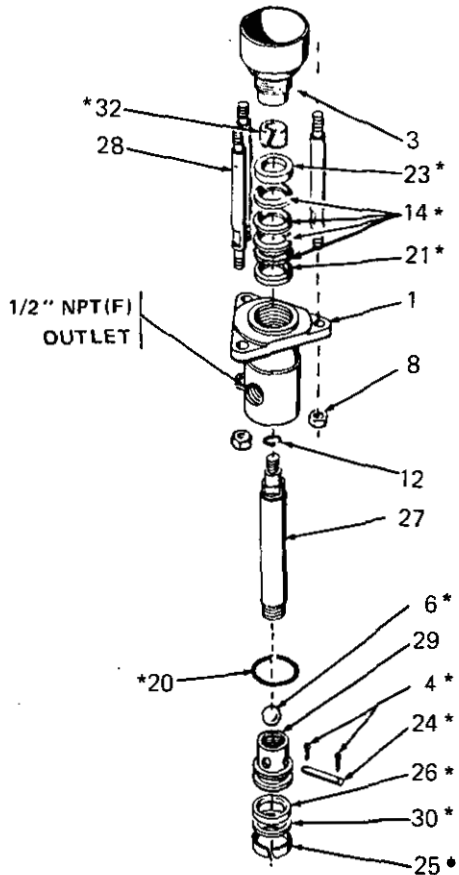
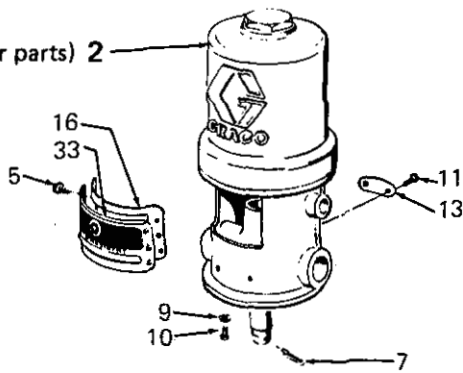
Ref No.	Qty.	Ref No.	Qty.
8	1	29	1
20	4	31	1
24	1	39	1
25	1	40	1
27	1		

PARTS DRAWING

Model 206-790  
Series "F"

10:1 PRESIDENT PUMP  
with wet cup

(see 306-982 for parts)



PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	205-999	HOUSING, outlet	1
2	207-352	AIR MOTOR see 306-982 for parts	1
3	207-708	NUT, packing; w/wet cup	1
4	* 100-063	PIN, cotter; SST; 1/16 dia; 1" lg	2
5	100-078	SCREW, rd hd mach; no. 8-32 x 3/8	8
6	* 101-917	BALL; SST; 7/8 dia	2
7	101-946	PIN, cotter; SST; 1/8 dia; 1-1/2" lg	1
8	102-021	LOCKNUT, hex; SST; 3/8-16	3
9	102-024	LOCKWASHER, spring; SST; 1/4"	2
10	102-234	SCREW, rd hd mach; 1/4-20 x 3/8	2
11	102-556	RIVET, blind	2
12	156-082	O-RING, nitrile rubber	1
13	160-637	PLATE, serial	1
14	* 162-866	V-PACKING; "PTFE"	4
15	* 162-947	PIN, ball stop	1
16	164-409	PLATE, muffer	1
17	164-630	RETAINER, intake valve	1
18	164-631	CYLINDER	1
19	164-679	GUIDE, ball	1
20	* 164-782	O-RING; 'PTFE'	1
21	* 164-837	GLAND, male	1
22	* 164-846	O-RING; PTFE "	1
23	* 165-288	GLAND, female	1
24	* 165-291	PIN, ball stop	1
25	* 165-292	BEARING, "PTFE" tape	1
26	* 166-026	SEAL, piston; 'PTFE'	1
27	166-236	ROD, displacement	1
28	166-237	ROD, tie; 4-3/4" lg	3
29	166-510	HOUSING, piston	1
30	* 166-512	WASHER, flat; 'PTFE'	1
31	* 166-616	HOUSING, intake valve	1
32	* 168-285	BEARING, split sleeve; 'PTFE'	1
33	168-835	PLATE, instruction	1

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207-580 Repair Kit  
(must be purchased separately)

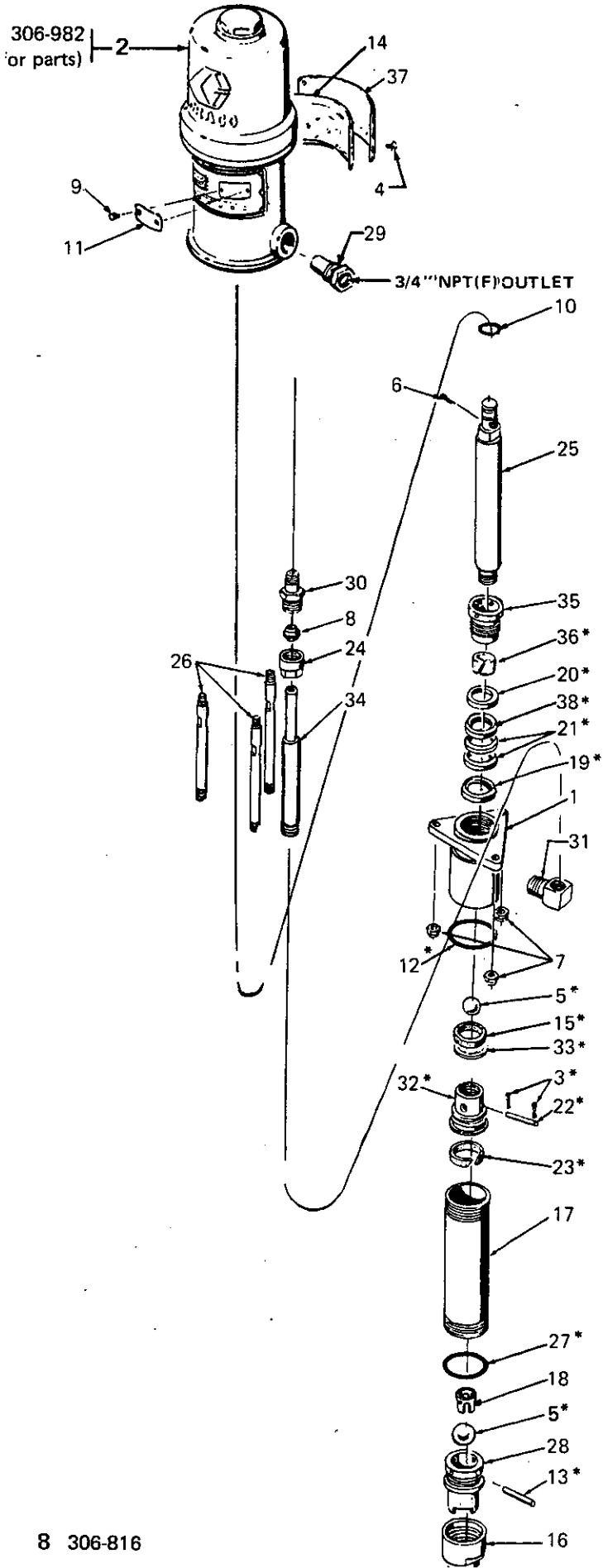
consists of:

Ref No.	Qty.	Ref No.	Qty.
4	1	25	1
14	4	26	1
20	1	30	1
21	1	32	1
23	1		

PARTS DRAWING

Model 206-842  
Series "F"

10:1 PRESIDENT PUMP



PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	205-999	HOUSING, outlet	1
2	207-352	AIR MOTOR	
		see 306-982 for parts	1
3	* 100-063	PIN, cotter; SST; 1/16 dia; 1" lg	2
4	100-078	SCREW, rd hd mach; no. 8-32 x 3/8	8
5	* 101-917	BALL; SST; 7/8 dia	2
6	101-946	PIN, cotter; SST; 1/8 dia; 1-1/2" lg	1
7	102-021	LOCKNUT, hex; SST; 3/8-16	3
8	102-186	FERRULE; SST; 3/4 thd size	1
9	102-556	RIVET, blind	2
10	156-082	O-RING; nitrile rubber	1
11	160-637	PLATE, serial	1
12	* 162-942	O-RING; nitrile rubber	1
13	* 162-947	PIN, ball stop; intake valve	1
14	164-409	PLATE, muffler	1
15	* 164-627	SEAL, piston; nitrile rubber	1
16	164-630	RETAINER, intake valve	1
17	164-631	CYLINDER, displacement	1
18	164-679	GUIDE, ball	1
19	• 164-837	GLAND, male	1
20	* 165-288	GALND, female	1
21	* 165-289	V-PACKING; nitrile rubber	2
22	• 165-291	PIN, ball stop	1
23	• 165-292	BEARING, "Teflon" tape	1
24	166-029	NUT, flareless tube	1
25	166-236	ROD, displacement	1
26	166-237	ROD, tie; 4-3/4" lg	3
27	* 166-238	O-RING, nitrile rubber	1
28	166-239	HOUSING, intake valve	1
29	166-240	ELBOW, outlet	1
30	166-241	ADAPTER, riser tube	1
31	166-242	ELBOW, 90° street; 1/2 npt	1
32	166-510	HOUSING, piston	1
33	* 166-512	WASHER, flat; 'PTFE'	1
34	166-719	TUBE, riser	1
35	168-284	NUT, packing	1
36	• 168-285	BEARING, split sleeve; PTFE	1
37	168-835	PLATE, instruction	1
38	170-625	V-PACKING; plastic	1

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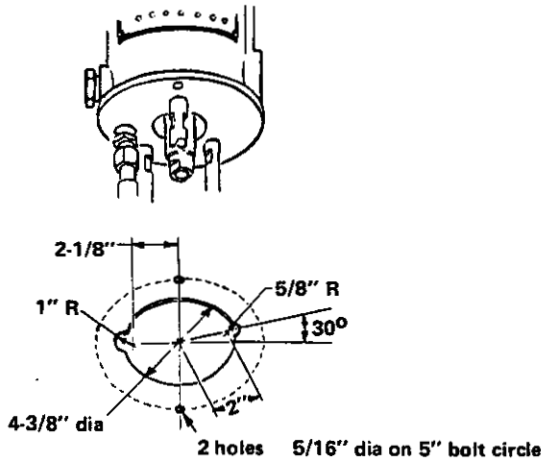
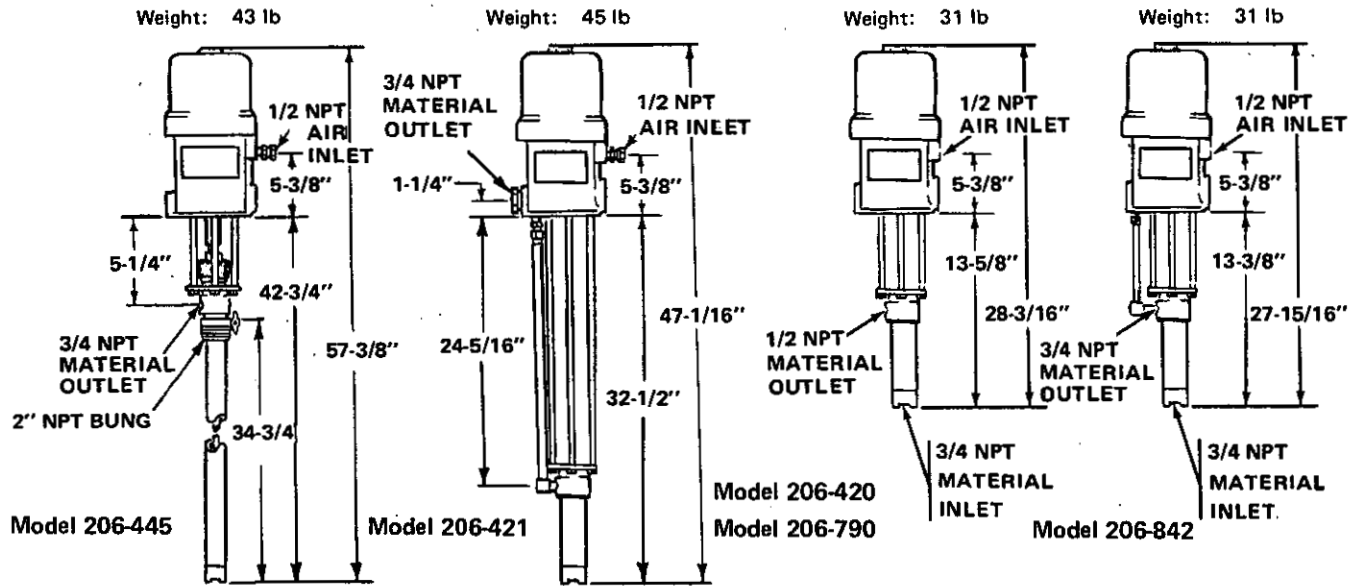
**206-923**  
**Displ Pump Repair Kit**  
 (must be purchased separately)  
 consists of:

Ref No.	Qty.
3	1
15	1
19	1
20	1
21	2
23	1
33	1
36	1
38	1

## TECHNICAL DATA

Recommended air operating range : 40 to 180 psi (2,8 to 12,4 bar)  
 Air consumption : 2 cfm air per 15 psi air  
 (rule of thumb) pressure at 1 gpm delivery  
 Pump cycles/gallon : 20  
 Recommended max. pump delivery  
 (continuous duty) : 3 gpm (60 cycles/min)  
 Material pressure at outlet : 1800 psi (124 bar)  
 Wetted part . . . .  
 on Models 206-421, : Stainless Steel, PTFE 1"  
 206-445, 206-790 : Stainless Steel, Nitrile  
 . . . . on Model 206-420 Rubber  
 206-842

## DIMENSIONAL DRAWING



## SERVICE INFORMATION

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

ASSEMBLY CHANGED	PART DESIGNATION	PART NO.	NAME
207-360	OLD	165-289	V-Packing (1)
DISPL PUMP	NEW	170-625	V-Packing (1)
Series to "C"			
ALL	OLD	101-855	Screw (2)
FINAL	NEW	102-556	Rivet (2)
Assy	OLD	167-692	Plate
	NEW	168-835	Plate

INTERCHANGEABILITY NOTE: NEW parts replace OLD parts listed directly above them.

## THE GRACO WARRANTY

Based on the logical assumption that manufacturing and material deficiencies will manifest themselves within twelve months' time, Graco Inc. warrants all equipment manufactured by it and bearing its name to be free from defects in material and workmanship under normal use and service. Scope of this warranty extends to the original purchaser for a period of 12 months from the date of purchase and is applicable only when the equipment is installed and operated in accordance with factory recommendations. The warranty does not extend to damage or wear caused by misuse, abrasion, corrosion, negligence, accident, faulty installation or tampering in a manner to impair its normal operation.

In the event the equipment supplied by Graco Inc. is found to be defective within the above-stated 12-month period, Graco Inc. will repair or replace free of charge such defective parts if rendered prepaid to the factory or to an authorized Graco service agency and is found by Graco Inc.'s inspection to be truly defective in workmanship or material. In the event said material is deemed defective in workmanship or material it will be corrected and shipped transportation prepaid within the continental U.S. If inspection of any such equipment by Graco Inc. does not disclose any defect in workmanship or material, repairs will be made at a reasonable charge. Purchased assemblies which are incorporated into Graco equipment, carry the manufacturer's regular warranty.

The foregoing warranties are exclusive, and are in lieu of all other warranties (whether written, oral or implied) including warranty of merchantability in other respects than expressly set forth above and warranty of fitness for a particular purpose. Except as herein provided, every form of liability for direct or consequential damages or loss is expressly excluded and denied.



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GRACO INC. P.O. BOX 1441 Minneapolis, MN 55440