INSTRUCTIONS-PARTS LIST

GRACO

306-743

Rev B
SUPERSEDES 9/74
and PCN B

307

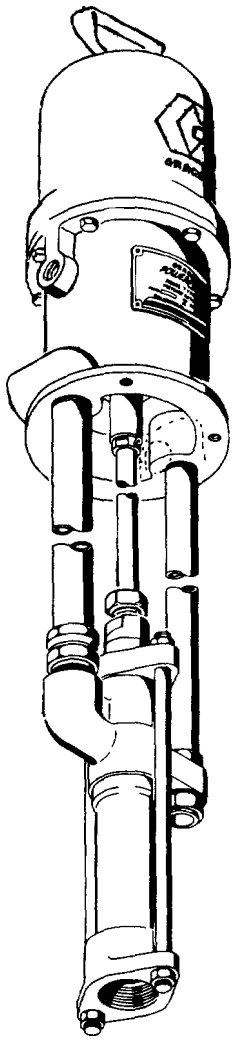
This manual contains **IMPORTANT WARNINGS** and **INSTRUCTIONS**
READ AND RETAIN FOR REFERENCE

55 Gallon Size

5:1 RATIO MONARK PUMP

900 psi (62 bar) MAXIMUM WORKING PRESSURE

Model 205-788, Series D



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WARNING

Hazard of Using Fluid Containing Halogenated Hydrocarbons
Never use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in this equipment. Such use could result in a serious chemical reaction, with the possibility of explosion, which could cause death, serious bodily injury and/or substantial property damage.

Consult your fluid suppliers to ensure that the fluids being used are compatible with aluminum and zinc parts.

GRACO INC. P.O. Box 1441 MINNEAPOLIS, MN 55440-1444

WARNING

FOR PROFESSIONAL USE ONLY. OBSERVE ALL WARNINGS.

Read and understand all instruction manuals before operating equipment.

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

This pump can develop *900 psi (62 bar) MAXIMUM WORKING PRESSURE,* at 180 psi (12 bar) MAXIMUM INCOMING AIR PRESSURE. Be sure that all spray equipment and accessories are rated to withstand the maximum working pressure of this pump. DO NOT exceed the maximum working pressure of any component or accessory used in the 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 fluid and solvent manufacturer's literature before using them in this pump.

Pressure Relief Procedure

To reduce the risk of serious bodily injury, including 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 fluid tips, and whenever you stop spraying.

1. Shut off the air to the pump.
2. Close the bleed-type master air valve (required in your system).
3. Hold a metal part of the gun firmly to the side of a grounded metal pail, and trigger the gun to relieve pressure.
4. Open the drain valve (required in your system), having a container ready to catch the drainage.
5. Leave the drain valve open until you are ready to spray again.

If you suspect that the fluid tip or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, VERY SLOWLY loosen the hose end coupling and relieve pressure gradually, then loosen completely. Now clear the fluid tip or hose.

FIRE OR EXPLOSION HAZARD

Static electricity is created by the 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 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 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 spray equipment:

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.
3. *Air compressor:* according to manufacturer's recommendations.
4. *Spray gun:* obtain grounding through connection to a properly grounded fluid hose and sprayer.
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 *grounded metal* pail, then trigger the gun.

To ground the pump, loosen the grounding lug locknut (W) and washer (X). Insert one end of a 12 ga (1.5 mm²) 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. Refer to page 10 to order a ground wire and clamp.

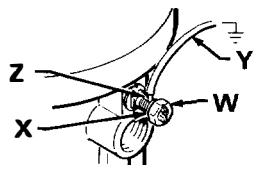


Fig 1

Flushing Safety

To reduce the risk of injury from splashing or static sparking,, always hold a metal part of the spray gun firmly to the side of a grounded metal pail, and use the lowest possible fluid pressure when flushing.

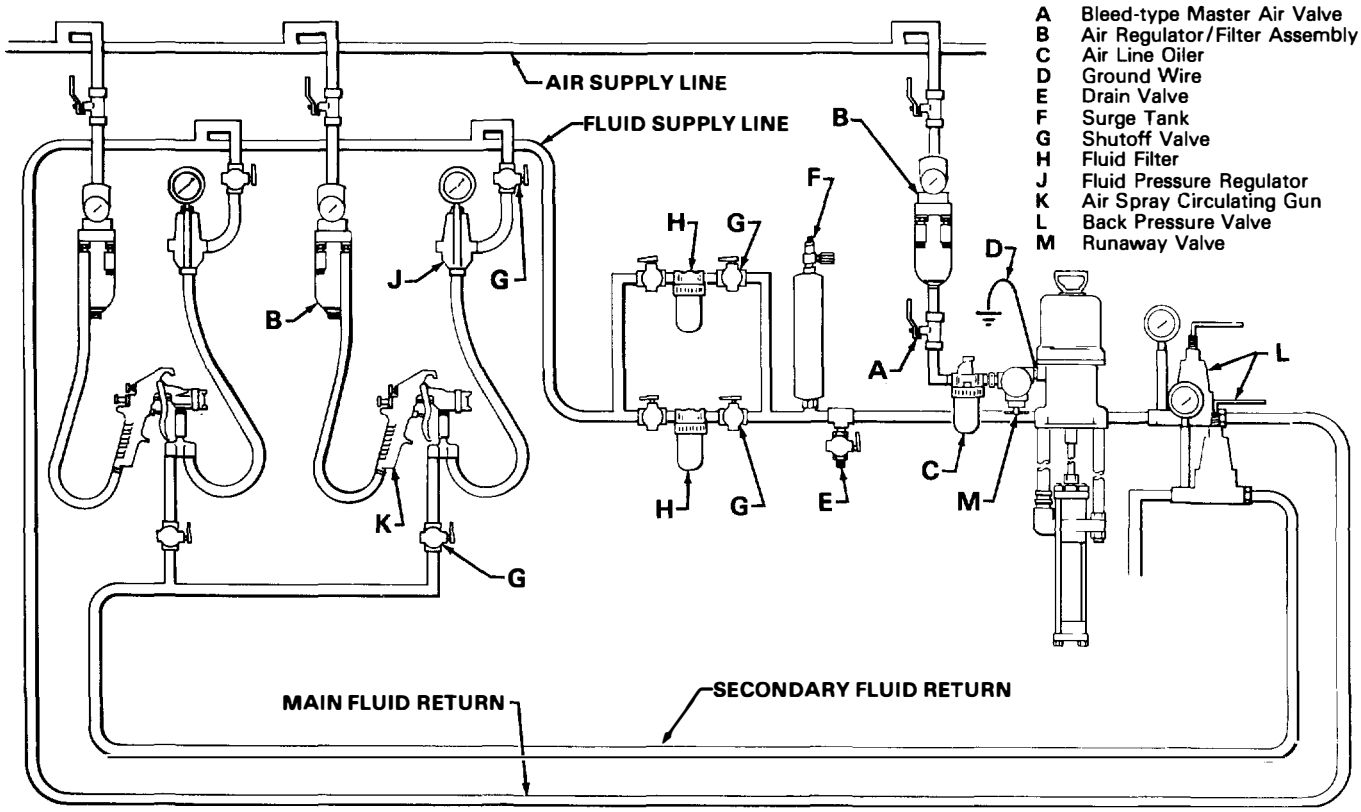
MOVING PARTS HAZARD

The piston in the air motor, located behind the air motor plates 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 plates removed. KEEP CLEAR of moving parts when starting or operating the pump. Before checking or servicing the pump, follow the **Pressure Relief Procedure** above 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



INSTALLATION

NOTE: Reference numbers and letters in parentheses in the text refer to the callouts in the figure illustrations and the parts drawing.

See pages 10 and 11 for accessories that are available from Graco.

The Typical Installation shown above is only a guide for selecting and installing system components. Contact your Graco representative for assistance in designing a system to suit your particular needs.

Mount the pump to suit the type of installation planned. Be sure the pump intake is 1/2 in. (13 mm) off the bottom of the drum or pail. The pump dimensions and mounting hole layout are shown on the back cover.

WARNING

Two accessories are required in your system: a bleed-type master air valve (A) and a fluid drain valve (E). These accessories help reduce the risk of serious bodily injury including fluid injection, splashing in the eyes or on the skin, and injury from moving parts if you are adjusting or repairing the pump.

The bleed-type master air valve relieves air trapped between this valve and the pump after the air is shut off. Trapped air can cause the pump to cycle unexpectedly. Locate the valve close to the pump.

The fluid drain valve assists in relieving fluid pressure in the displacement pump, hose and gun; triggering the gun to relieve pressure may not be sufficient.

Install the air line accessories in the approximate order shown in the Typical Installation. The pump air inlet is 3/8 npsm. Install an air line lubricator (C) close to the pump air inlet for automatic air motor lubrication. Install a pump runaway valve (M) shut the pump off automatically if it runs out of fluid. Install an air filter and regulator assembly (B) to remove harmful dirt and moisture from your compressed air supply, and to regulate the air pressure to the pump. Install a bleed-type master air valve (A) downstream from the regulator, and upstream from the lubricator, but within easy reach of the pump, to relieve air trapped between the valve and the pump.

An air line filter/regulator (B) should also be installed on the air line to each air spray gun (K).

On the fluid supply line, install a drain valve (E), a surge tank (F) to reduce line pulsations, and a fluid filter (H) with shutoff valves (G) to isolate it for cleaning.

Each fluid supply line to the air spray guns should also have a fluid regulator (J).

On each fluid return line, install a back pressure valve (L) after the last gun station, to provide constant system back pressure for all spray guns and proper pressure for fluid circulation.

Be sure all air and fluid hoses are properly sized for your system. Use only grounded air and fluid hoses.

Grounding

Proper grounding is essential to maintaining a safe system. Read **FIRE OR EXPLOSION HAZARD** on page 2, then ground the pump and system as explained in that section.

OPERATION

Flushing

Flush the supply lines and hoses with compatible solvent and blow dry with air before connecting them to the system. This is to purge any contaminants such as dirt, moisture or metal shavings that could damage the pump or system components.

Then flush the pump. The pump was tested in lightweight oil, which was left in to protect the pump from corrosion. Flush out the pump before connecting it to the system if the oil could contaminate the fluid you are pumping.

If the pump is not immersed, fill the packing nut/wet cup 1/2 full with Graco Throat Seal Liquid or a compatible solvent. Keep the cup filled at all times to help prevent the fluid you are pumping from drying on the displacement rod and damaging the throat packings.

Starting the Pump (Circulating System)

1. Close the pump air regulator (B).
2. Open the shutoff valves on one side of the filter (H) loop.
3. Set the pump runaway valve (M) at a high setting until after the system is operating.
4. Open the back pressure valves (L).
5. Open the bleed-type master air valves (A).
6. Slowly open the pump air regulator and allow the pump to run slowly until fluid is flowing freely from both return lines.
7. Trigger the last gun in the loop, holding a metal part of it firmly to the side of a grounded metal waste container to reduce the risk of sparking. When fluid is flowing freely, release the trigger.
8. Repeat Step 7 for all gun stations.
9. Adjust the pump runaway valve, accumulator, back pressure valves, and spray guns according to the instructions supplied with them.

Use an air regulator (B) to control pump speed and fluid pressure. Always use the lowest pressure necessary to get the desired results. Higher pressures cause premature pump wear, wastes fluid, and usually does not improve the spray pattern.

WARNING

To reduce the risk of overpressurizing your pump, which could result in component rupture and cause serious bodily injury, NEVER exceed 180 psi (12 bar) Maximum Incoming Air Pressure to the pump. Reduce the pump pressure, if necessary, to avoid overpressurizing any other system component.

In a circulating system, the pump runs continuously and slows down or speeds up as supply demands, until the air supply is shut off.

In a direct supply system, with adequate air pressure supplied to the motor, the pump starts when the gun or dispensing valve is opened, and stalls against pressure when it is closed.

If the pump accelerates quickly or is running too fast, stop it immediately. Check the fluid supply and refill it if necessary. Prime the pump to remove all air from the system, or flush the pump and relieve pressure. If you have a carbon steel pump, see **Corrosion Protection,** below. A pump runaway valve (M) installed on the air line to the pump will automatically shut off the pump if it is running too fast.

Fluid Piston and Intake Valve Adjustment

The fluid piston and intake valves are factory set for pumping medium viscosity fluids such as spray paint. See page 6 for how to adjust these valves for lighter or heavier viscosity fluid.

MAINTENANCE

Shutdown and Care of the Pump

Always stop the pump at the bottom of its stroke to prevent fluid from drying on the rod and damaging the throat packings.

WARNING

Always follow the **Pressure Relief Procedure Warning** on page 5 whenever you stop spraying and before checking or repairing any part of the system, to reduce the risk of serious bodily injury.

If you are pumping fluid which dries, hardens or sets up, flush the system with a compatible solvent as often as necessary to prevent a buildup of dried fluid in the pump or hoses.

Check the tightness of the packing nut weekly. It should be tight enough to stop leakage, but no tighter. To adjust the nut, first follow the **Pressure Relief Procedure Warning** on page 5, and then use a 1/4 in. (6.4 mm) dia. rod to adjust the nut.

Corrosion Protection for Carbon Steel Pumps

CAUTION

Water, or even moist air, can cause your pump to corrode. To help prevent corrosion, NEVER leave the pump filled with water or air. After normal flushing, flush the pump again with mineral spirits or oil-based solvent, relieve pressure, and leave the mineral spirits in the pump. Be sure to follow all steps of the **Pressure Relief Procedure Warning** on page 5.

SERVICE

WARNING

Pressure Relief Procedure
To reduce the risk of serious bodily injury, including 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 fluid tips, and whenever you stop spraying.

1. Shut off the air to the pump.
2. Close the bleed-type master air valve (required in your system).
3. Hold a metal part of the gun firmly to the side of a grounded metal pail, and trigger the gun to relieve pressure.
4. Open the drain valve (required in your system), having a container ready to catch the drainage.
5. Leave the drain valve open until you are ready to spray again.

If you suspect that the fluid tip or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, VERY SLOWLY loosen the hose end coupling and relieve pressure gradually, then loosen completely. Now clear the fluid tip or hose.

WARNING

NEVER operate the air motor with the muffler plates removed. Operating the air motor with these plates removed can result in amputation if your fingers are caught in a moving part, such as the air motor piston.

TROUBLESHOOTING CHART

PROBLEM	CAUSE	SOLUTION
Pump operates, but output low on both strokes	Restricted lines or inadequate air supply	Clear lines; increase air supply
	Closed or clogged air valves, etc.	Open; clean
	Exhausted fluid supply	Refill & reprime or flush
	Clogged fluid line, valves, gun, etc.	Clear*.
	Fluid check valves need adjustment	Adjust; see page 6.
	Loose packing nut or worn packings	Tighten; replace.
Pump operates, but output low on down stroke	Held open or worn fluid intake valve	Clear; service.
Pump operates, but output low on up stroke	Held open or worn fluid piston packing	Clear; service.
Erratic pump operation	Exhausted fluid supply	Refill & reprime or flush.
	Fluid check valves need adjustment	Adjust; see page 6.
	Held open or worn fluid intake valve	Clear; service.
	Held open or worn fluid piston or packing	Clear; service.
Pump fails to operate	Restricted lines or inadequate air supply	Clear lines; increase air supply.
	Closed or clogged air valves, etc.	Open; clean.
	Exhausted fluid supply	Refill & reprime or flush.
	Damaged air motor	Service; see 307-043.

*Follow the **Pressure Relief Procedure Warning** above. Disconnect the fluid line. If the pump starts when the air is turned on, the line, etc. is clogged.

Displacement Pump Repair

Before you start:

1. Be sure you have all necessary repair parts on hand to reduce down time. A packing repair kit, 206-926, is available. See page 8. Use all the new parts in the kit for the best results.

   Parts which are included in the kit are marked with an asterisk in the following procedures, for example, (21*).

2. Clean all parts thoroughly after disassembly and inspect them for wear or damage. Replace worn parts as necessary.

   Check the balls for nicks or scratches which could prevent them from completely sealing the intake or piston valves.

   Carefully inspect the outside of the displacement rod and the inside of the cylinder. Scoring or irregular surfaces on these smooth, polished parts causes premature packing wear and leaking. Check the parts by holding them up to a light at a slight angle and/or by rubbing a finger on the surface.

Repair Procedure

1. Flush the pump, if possible, and then follow the **Pressure Relief Procedure Warning** on page 5. Disconnect the hoses from the pump. Unscrew the swivel (29) from the tube (12), and the lower locknut (7) from the tube (11). Screw the coupling nut (30) up, off the displacement rod (39).

Intake Valve

2. Remove the lower tie rod locknuts (18). Slide the intake valve housing (33) off the cylinder. Remove the ball stop pin (36), ball (16), seat (44) and o-ring (21*). Take note of which hole the ball stop pin is in. Clean and inspect.

Piston

3. Pull the cylinder (37) down and off the pump housing (34).

4. Unscrew the piston seat (43). Remove all the packings. Remove one of the pins (17) and pull out the ball stop pin (40). Take note of which hole the ball stop pin is in. Clean and inspect.

5. Lubricate the packings and reassemble as follows: Install the ball stop pin (40) and cotter pin (17*). One at a time, stack the washer (42*), spreader (41*), leather cup packing (26*), spacer (27), o-ring (20*), leather cup packing (26*), spreader (41*), and washer (42*) on the piston (43). Place the ball (15) on the piston and screw the assembly into the displacement rod.

6. Replace the o-ring (35*) in the bottom of the pump housing (34) with a new one.

Throat Packings

7. Remove the locknuts (18) from the top of the tie plate (32). Remove the tie plate. Pull the displacement rod (39) down and out of the pump housing (34).

8. Remove all parts from the throat and clean and inspect.

9. Lubricate all parts and reassemble as follows: One at a time, install the spring (25), male gland (24*), six leather v-packings (23*) *(with the lips of the packings facing down)*, female gland (22*) and bearing (28*) in the pump housing. Place the tie plate (32) on the throat packings.

Reassembly

10. Install the cylinder (21) in the pump housing (34).

11. Lubricate the displacement rod and packings and slide the assembly through the cylinder.

12. Install the intake valve assembly and the two lower locknuts (18). Tighten the upper and lower locknuts (18) evenly to keep the pump balanced.

13. Position the pump mounting tubes (11, 12) on the pump housing (34). Thread the lockwasher (4) and locknut (7) onto the return tube (11) a few turns. Tighten the swivel union (29) onto the supply tube (12).

14. Butt the connecting rod (45) and displacement rod (39) together. Adjust the return tube lock nuts (7) to align the tubes. Without losing alignment, tighten the locknuts securely. Now tighten the coupling nut securely down onto the displacement rod.

15. Connect the air supply to the motor and apply about 50 psi (3.5 bar) of air. Adjust the locknuts on the return mounting tube (11) until the pump operates smoothly on 15 psi (1 bar) or less. Tighten the nuts securely.

16. Remount the pump, and be sure to reconnect the ground wire.

Adjusting the Piston and Intake Valve

The fluid and intake valves are factory set in the middle holes for pumping medium viscosity fluids. For heavier fluids, increase the ball travel by moving the ball stop pins to a higher set of holes in the intake valve and seat (44) and in the displacement rod (39). For very light fluids, decrease ball travel by moving the ball stop pins to a lower set of holes.

To adjust, follow the **Pressure Relief Procedure Warning** on page 5. Then follow Steps 2 to 4 at the left, except don't remove the packings. Install the pins in a different set of holes and reassemble.

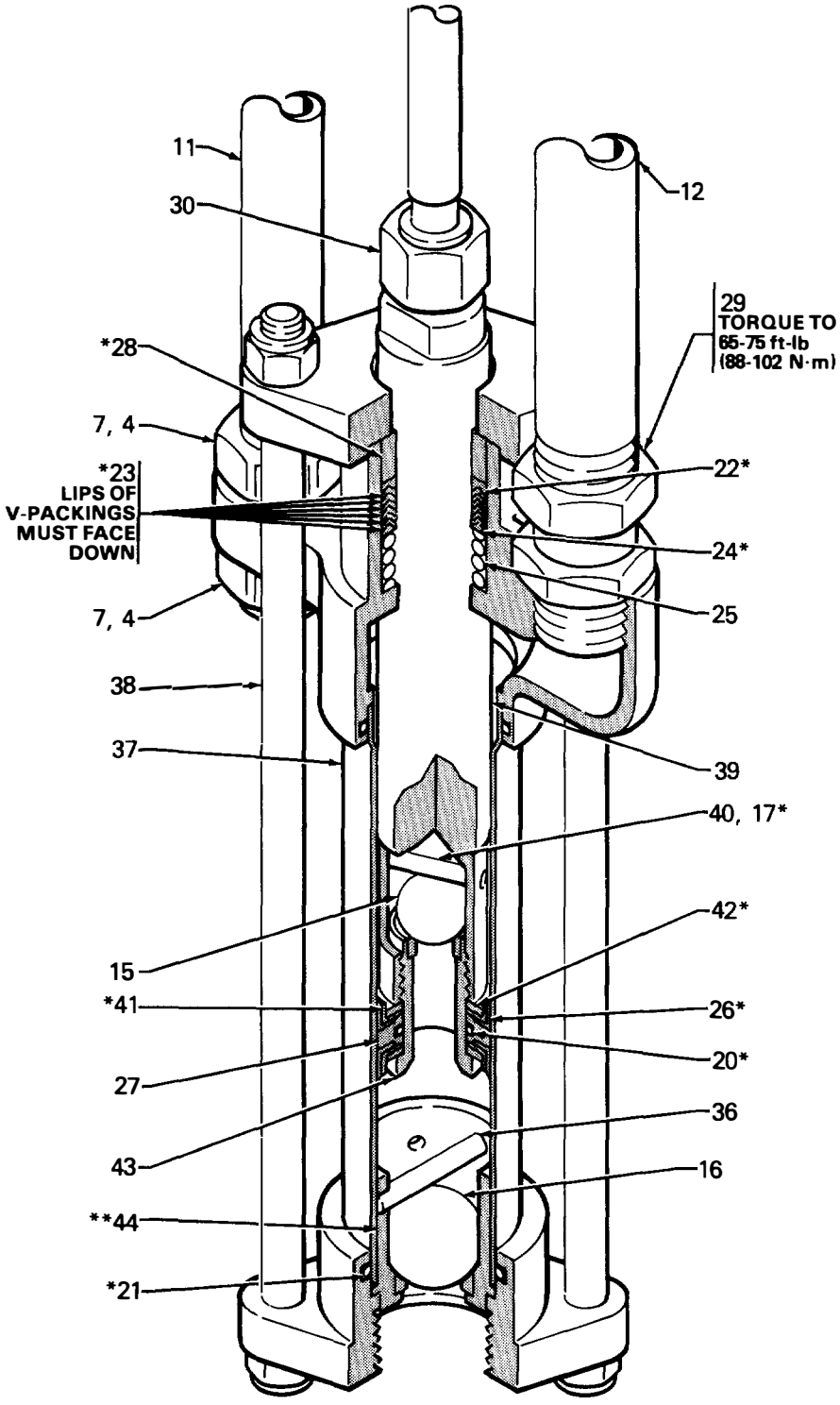
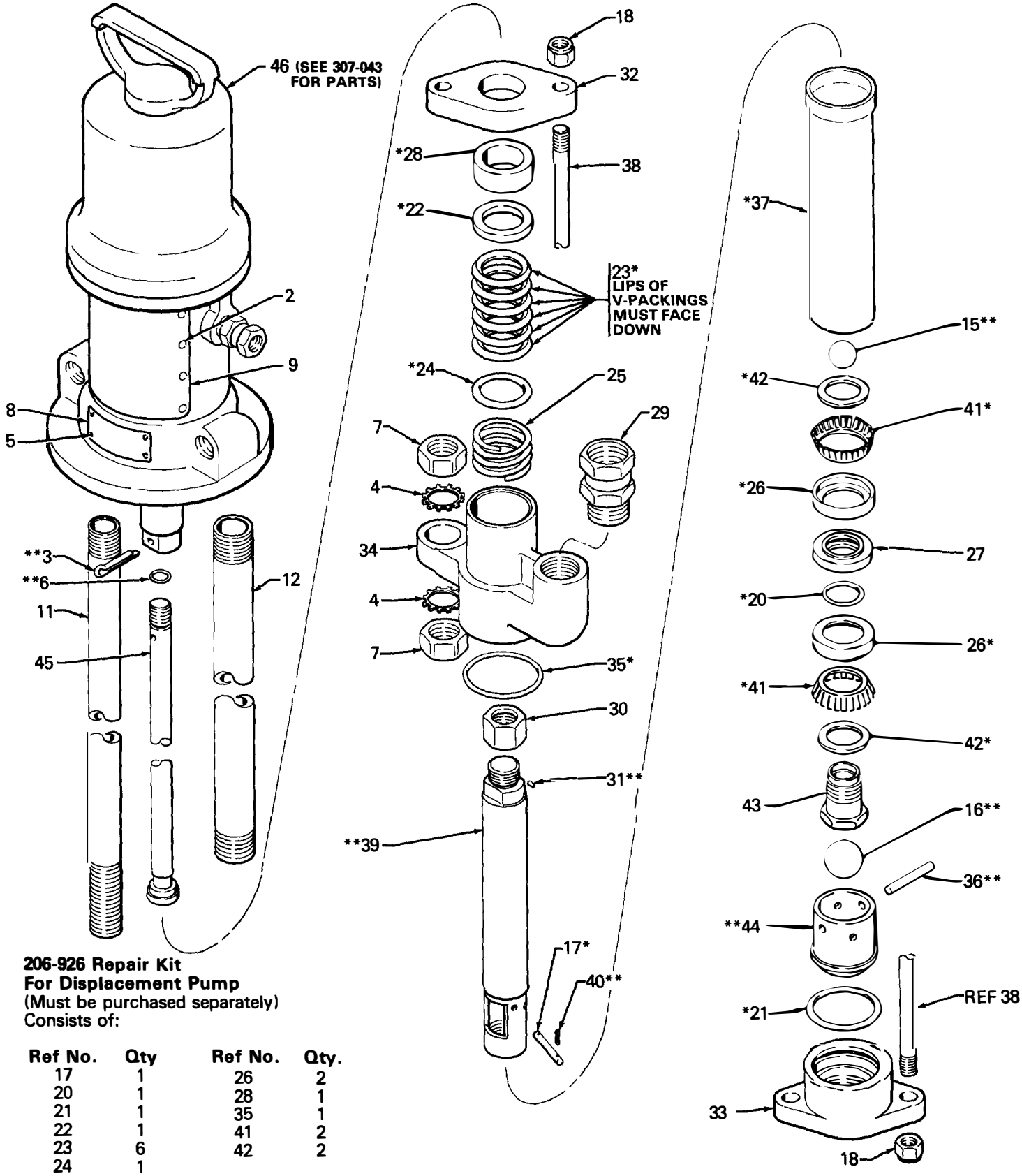

11
30
12
29
TORQUE TO
65-75 ft-lb
(88-102 N·m)
*28
7, 4
*23
LIPS OF
V-PACKINGS
MUST FACE
DOWN
22*
24*
25
7, 4
38
37
39
40, 17*
42*
15
*41
26*
20*
27
36
43
16
**44
*21

Fig 2

PARTS DRAWING

5:1 Ratio Monark Pump
Model 205-788, Series D

Ref No. 13
Displacement Pump, Series C
Includes items 15-44



206-926 Repair Kit
For Displacement Pump
(Must be purchased separately)
Consists of:

Ref No.	Qty	Ref No.	Qty.
17	1	26	2
20	1	28	1
21	1	35	1
22	1	41	2
23	6	42	2
24	1		

PARTS LIST

5:1 Ratio Monark Pump
Model 205-788, Series D
Includes items 2-46

REF NO.	PART NO.	DESCRIPTION	QTY
2	100-078	SCREW, rd hd mach; no. 8-32 x 0.38"	8
3	**100-579	PIN, cotter; 0.11" (2.8 mm) dia; 1" (25 mm) long	1
4	162-648	LOCKWASHER, int shkprf; 1"	2
6	**156-082	O-RING; nitrile rubber	1
7	160-026	NUT, lock	2
11	165-123	TUBE, return; 22.5" (572 mm)	1
12	165-124	TUBE, supply; 18.25" (463.6 mm)	1
13	205-812	DISPLACEMENT PUMP ASSEMBLY Series C Includes items 15-44	1
15	**100-279	.BALL, steel; 0.88" (22.4 mm) dia	1
16	**101-178	.BALL, steel; 1.25" (31.8 m) dia	1
17	*101-274	.PIN, cotter; 0.12" (3.2 mm) dia; 0.5" (13 mm) long	2
18	101-580	.NUT, lock; Nylock; 1/2 npt	4
20	*154-662	.O-RING, nitrile rubber	1
21	*156-641	.O-RING, nitrile rubber	1
22	*157-636	.GLAND; female packing	1
23	*157-637	.V-PACKING; leather	6
24	*157-638	.GLAND; male packing	1
25	158-388	.SPRING, compression	1
26	*158-402	.PACKING, leather cup	2
27	158-857	.SPACER, piston packing	1
28	159-045	.BEARING, throat	1
29	160-022	.UNION, str. adapter; 1"(m) x 1" npt(f) swivel	1
30	160-502	.NUT, coupling	1
31	**160-517	.PELLET, nylon	1
32	160-716	.PLATE, tie	1
33	160-717	.HOUSING, intake (foot) valve	1
34	160-718	.HOUSING, outlet	1
35	*160-721	.O-RING, nitrile rubber	1
36	**160-726	.PIN, ball stop	1
37	**165-120	.CYLINDER	1
38	165-121	.ROD, tie	2
39	**165-122	.ROD, displacement	1
40	**165-130	.PIN, ball stop	1
41	*171-590	.SPREADER, packing	2
42	*171-594	.WASHER, back-up	2
43	**203-973	.HOUSING, and SEAT, piston	1
44	**204-762	.VALVE and SEAT, intake	1
45	205-813	ROD, connecting	1
46	206-955	AIR MOTOR See 307-043 for parts	1

**Included in Repair Kit 206-926.*

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

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

SERVICE INFORMATION

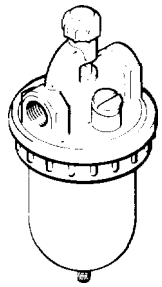
Listed below by the assembly changed are OLD, NEW and DELETED parts.

ASSEMBLY CHANGED	PART STATUS	REF NO.	PART NO.	NAME
205-788	OLD		101-527	Lockwasher
Pump to	NEW	4	162-648	Lockwasher
Series D	*DELETED		100-078	Screw
	*DELETED		162-406	Plate

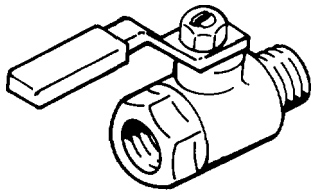
*These parts are now listed as part of the air motor assembly. See 307-043.

ACCESSORIES (Must be purchased separately)

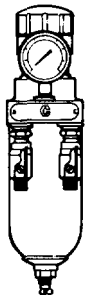
AIR LINE LUBRICATOR 218-848
250 psi (17.5 bar) MAXIMUM WORKING PRESSURE
For automatic air motor lubrication; install close to air motir, down stream from regulators and filters. 1/2 npt, 80 SCFM flow rate; 8 oz. oil capacity.



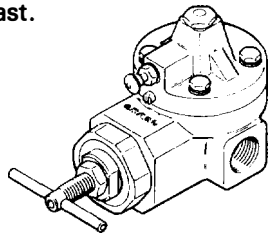
BLEED-TYPE MASTER AIR VALVE 107-142
300 psi (21 bar) MAXIMUM WORKING PRESSURE
Relieves air trapped in the air line between the air motor and this valve when closed. 1/2 npt(m × f).



AIR FILTER & REGULATOR 220-660
180 psi (12.6 bar) MAXIMUM WORKING PRESSURE
To regulate air and filter air. Has gauge and two 1/4 npt(m) air outlet valves. 50 micron filter element with 100 mesh inlet strainer. 1/2 npt(f) air inlet; CFM (m^3/min) is over 50 (1.4).



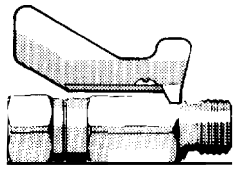
PUMP RUNAWAY VALVE 215-362
180 psi (12 bar) MAXIMUM WORKING PRESSURE
Automatically shuts off the air to the pump if the pump starts to run too fast.



FLUID DRAIN VALVE
500 psi (35 bar) MAXIMUM WORKING PRESSURE
For relieving fluid line pressure

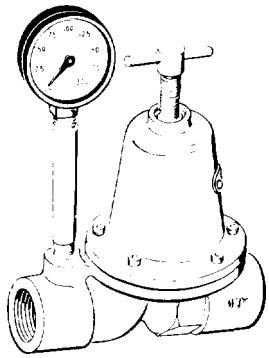
208-630 1/2(m) × 3/8(f) npt; for non-corrosive fluids; cst and PTFE

218-044 1/2(m) × 3/8(f) npt; for corrosive fluids; sst and PTFE



PTFE is a registered trademark of the Du Pont Co.

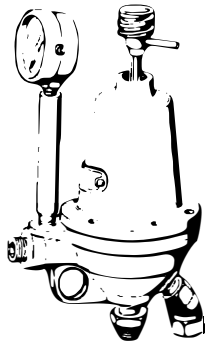
BACK PRESSURE VALVE 205-122
180 psi (13 bar) MAXIMUM WORKING PRESSURE
0-180 psi (0-13 bar) back pressure control range; 3/8 npt(m) inlet; 3/8 npt(f) outlet. Provides constant system back pressure for all spray stations while maintaining proper pressure for fluid circulation. 2 gpm (7.6 liter/min) flow capacity.



FLUID PRESSURE REGULATOR
250 psi (17.5 bar) MAXIMUM WORKING PRESSURE
Use on circulating line drops to regulate fluid pressure to one air spray gun or dispensing valve. 3/8 npsm(f) inlet; 3/8 npsm(m) and 3/8 npt(f) outlets.

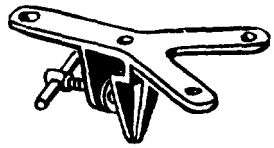
203-381 Carbon Steel; 0-60 psi (0-4 bar) regulated fluid fluid pressure range; 2 gpm (7.6 liter/min) maximum flow rate.

209-030 Stainless Steel; 5-100 psi (0.4-7 bar) regulated fluid pressure range; 3 gpm (11.3 liter/min) maximum flow rate.



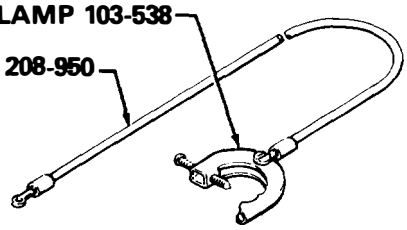
ACCESSORIES (Must be purchased separately)

STURDI-CLAMP 203-813
Holds pump securely to side of open head drum.



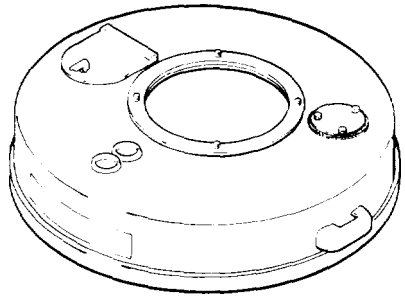
GROUNDING CLAMP 103-538

GROUND WIRE 208-950
25 ft (7.6 m) long



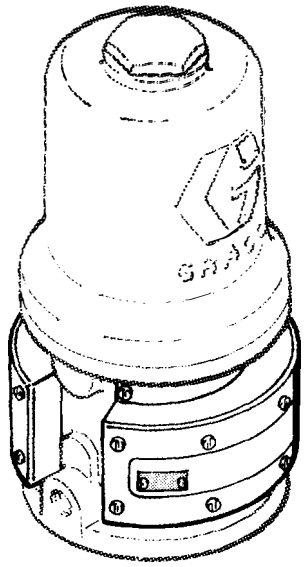
MOUNTING ADAPTER 161-251
Required for mounting pump on elevator kit 204-490.

DRUM COVER 203-723
For mounting 5:1 Ratio Monark Pump on 55 Gallon open head drum; includes hole for mounting agitator.



AGITATOR 203-771
For use in 55 Gallon drums; fits drum cover 203-723.

MUFFLER KIT 215-354
Replaces existing motor muffler to reduce noise and oil mist emissions. See the separate instruction manual for how to install.



SURGE TANK
Reduces line pulsations. 1/2 npt fluid inlet.

209-011 Stainless Steel; for corrosive fluids
300 psi (21 bar) MAX. WORKING PRESSURE

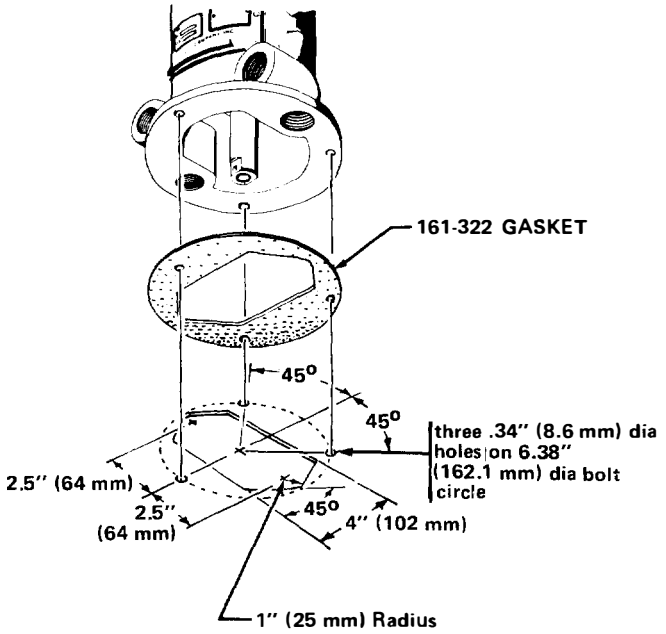
205-924 Carbon Steel; for non-corrosive fluids
250 psi (17.5 bar) MAX. WORKING PRESSURE

ELEVATOR & INDUCTOR KIT 204-490
Includes elevator, inductor plate, pump bracket, up and down control, air assist hose and steel base. Requires adapter.

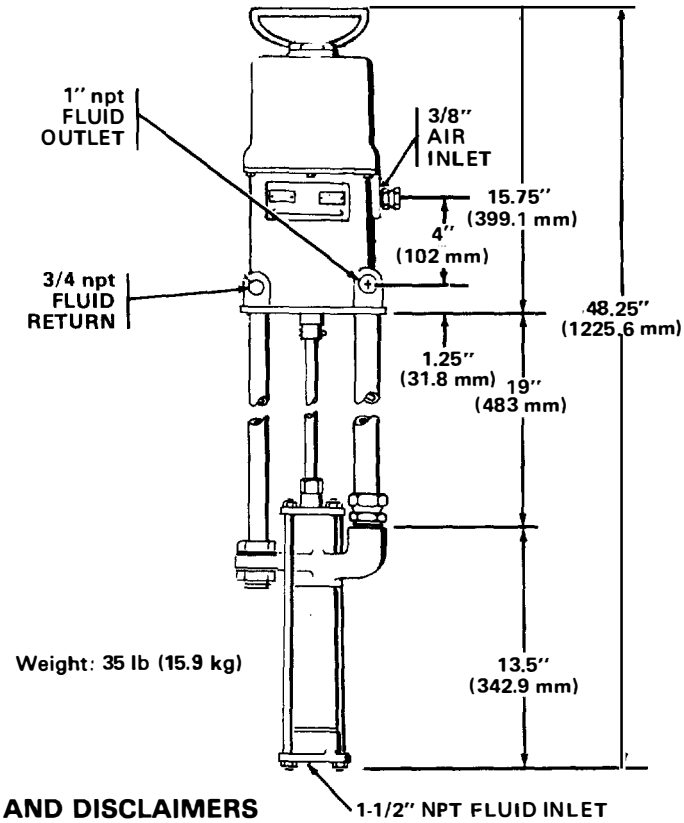
TECHNICAL DATA

Air operating range	:	20 to 180 psi (1.5 to 12 bar)
Air consumption	:	7 cfm per gallon pumped (0.05 m^3/min/liter) at 100 psi (7 bar) air supply pressure: *up to 16.5 cfm (0.45 m^3/min/liter) with pump operated within its recommended range.*
Pump cycles per gallon (3.8 liter)	:	28
Maximum recommended pump speed	:	60 cycles/min; 2.4 gpm (8.9 liter/min)
Recommended speed for optimum pump life	:	15 to 25 cycles/min; 0.5 to 0.9 gpm (1.9 to 3.4 liter/min)
Wetted parts	:	Steel, Aluminum, Nitralloy, Leather, Nitrile Rubber

MOUNTING HOLE LAYOUT



DIMENSIONAL DRAWING



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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