INSTRUCTIONS-PARTS LIST

GRACO

306-793

Rev. G
SUPERSEDES F

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

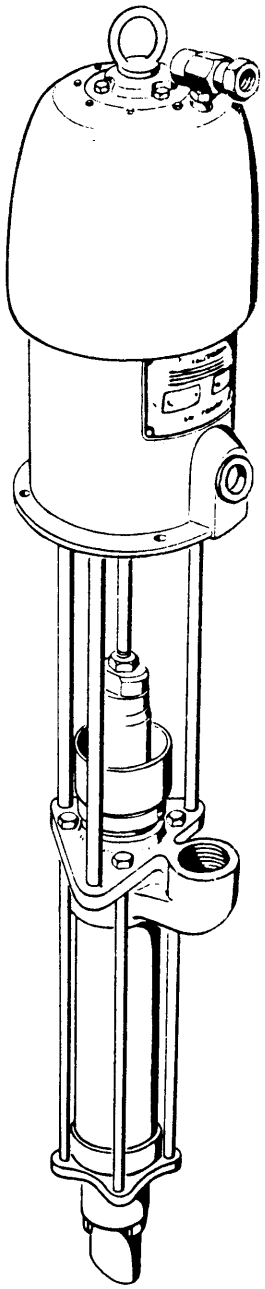
Polyethylene and Leather Packed, 55 Gal. (200 Liter) Drum Size

10:1 RATIO BULLDOG® PUMPS

1000 psi (70 bar) MAXIMUM WORKING PRESSURE

Model 206-281, Series D
With Standard Air Motor

Model 215-595, Series A
With Quiet Air Motor



MODEL 206-281
SHOWN

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

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 onto 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 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.

ALWAYS read and follow the fluid and solvent manufacturer's recommendations regarding the use of protective clothing and equipment.

System Pressure

The 10:1 ratio pump develops *1000 psi (70 bar) MAXIMUM WORKING PRESSURE* at 100 psi (7 bar) air pressure. NEVER exceed 100 psi (7 bar) air supply to the pump.

Be sure that 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 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.

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. Do not plug in or unplug any power supply cords in the spray area when there is any chance of igniting fumes still in the air.

If you experience any static sparking or even a slight shock while using this equipment, **STOP SPRAYING IMMEDIATELY.** Check the entire system for proper 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 a 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:* 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 *grounded metal* pail, then trigger the gun.

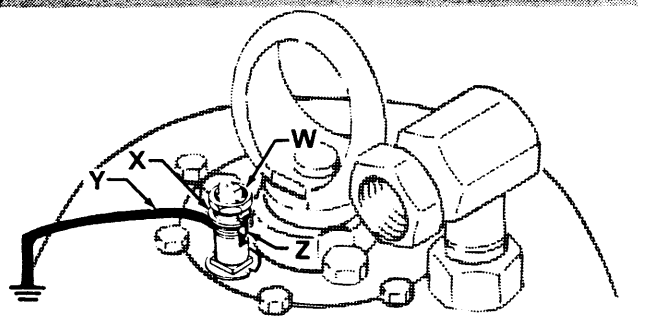


Fig 1

To ground the pump, loosen the grounding lug locknut (W) and washer (X). Insert one end of a 12 ga (1.5 mm^2) minimum ground wire (Y) into the slot in lug (Z) and tighten 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.

Flushing Safety

To reduce the risk of fluid injection injury, static sparking, or splashing in the eyes or on the skin, follow the **Pressure Relief Procedure** on page 2, and *remove the spray tip (spray guns or spray valves only) before flushing.* Hold a metal part of the gun/valve firmly to the side of a grounded *metal* pail and use the lowest possible fluid pressure during flushing.

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.

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

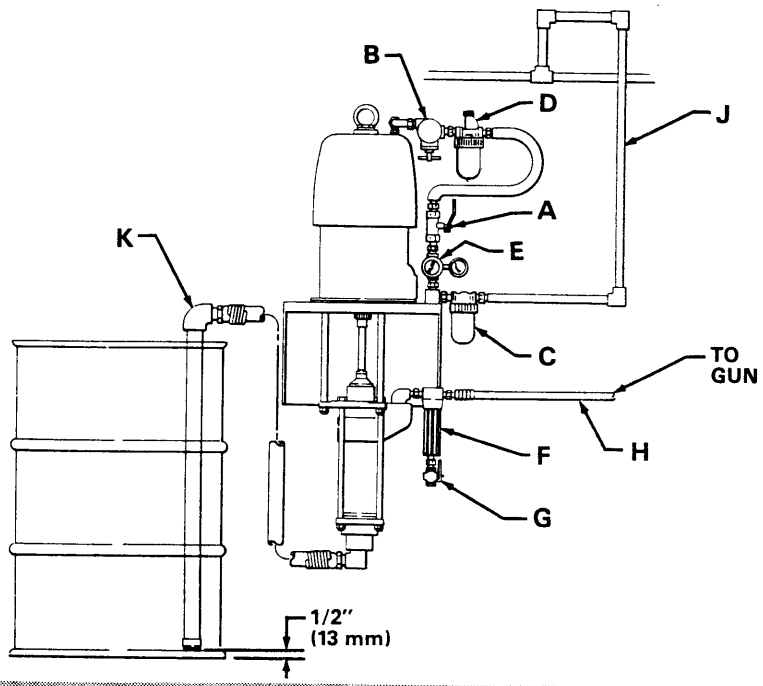
Proper hose grounding continuity is essential to maintaining a grounded spray system. Check the electrical resistance of your air and fluid hoses at least once a week. If your hose does not have a tag on it which specifies the maximum electrical resistance, contact the hose supplier or manufacturer for 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.

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
A Bleed-type Master Air Valve
B Pump Runaway Valve
C Air Line Filter
D Air Line Lubricator
E Air Regulator
F Fluid Filter
G Fluid Drain Valve
H Grounded Fluid Hose
J Grounded Air Line
K Suction Tube



INSTALLATION

NOTE: Reference numbers and letters in parentheses in the text refer to the callouts in the illustrations and the parts drawing on page 9.

See pages 10 and 11 for accessories that are available from Graco. Be sure all accessories are properly sized to withstand the pressures in the system.

The Typical Installation shown above is only a guide to selecting and installing required and optional accessories. For assistance in designing a system to suit your needs, contact your Graco representative.

Mount the pump to suit the type of installation planned. The dimensional drawings on page 11 give the measurements needed for installing the pump on a custom designed mounting. Use 3/8 in. bolts, lockwashers and nuts to attach the pump firmly to the mounting. If the pump is wall-mounted, be sure that the mounting is secure enough to support the weight of the pump and accessories, and the stress caused by operation.

System Accessories

WARNING

Two accessories are required in your system: a bleed-type master air valve (A) and a fluid drain valve (G). 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 regulator 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 order shown in the Typical Installation above. Closest to the pump air inlet, install a pump runaway valve (B), which senses when the pump is running too fast and shuts off the air supply to the motor. For automatic air motor lubrication, install an air line lubricator (D). Install a bleed-type master air valve (A) within easy reach of the pump. Next, install an air regulator (E) to control air to the motor and pump speed. Furthest from the pump inlet, install an air line filter (C) to remove harmful dirt and moisture from the compressed air supply.

Be sure the air supply line (J) is properly grounded, and is large enough to supply an adequate volume of air to the motor.

On the fluid line (H), install a fluid filter (F) and a fluid drain valve (G) close to the pump's fluid outlet. Connect a suitable grounded fluid hose from the filter's outlet to the gun or dispensing valve.

If the pump is not immersed, connect a suction tube (K) to the pump's intake.

Grounding

Proper grounding is essential to maintaining a safe system. Read **FIRE OR EXPLOSION HAZARD** on page 3, then ground the pump and system as explained in that section.

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 or changing spray tips, and whenever you stop spraying.

1. Engage the spray gun or dispensing valve safety latch.
2. Close the pump air regulator.
3. Close the bleed-type master air valve (required in your system).
4. Disengage the gun or dispensing valve safety latch.
5. Hold a metal part of the gun or valve firmly to a grounded metal waste container and trigger to relieve the fluid pressure.
6. Engage the safety latch again.
7. Open the pump drain valve (required in your system), having a container ready to catch the drainage.
8. Leave the drain valve open until you are ready to spray again.

If you suspect that the spray tip or hose is clogged or that fluid pressure is not fully relieved after following the steps above, VERY SLOWLY loosen the tip guard or hose end coupling and allow pressure to be relieved gradually, then remove completely. Now clear the tip or hose obstruction.

Flush the Pump Before Using

Pumps are tested with lightweight oil which is left in to protect pump parts. To prevent contamination of fluid, flush the pump with a compatible solvent before using it.

In non-immersion applications, fill the wet-cup (4) 1/2 full with Graco Throat Seal Liquid or a compatible solvent, to help prevent the fluid you are pumping from drying on the displacement rod and damaging the throat packings.

Starting and Adjusting the Pump

Open the bleed-type master air valve (A). Trigger the gun into a grounded metal pail, holding a metal part of the gun firmly to the pail. Slowly open the air regulator (E) until the pump starts running. Run the pump slowly until all the air is purged, release the gun trigger, and engage the safety latch—the pump will start and stop as the gun is opened and closed. In a circulating system the pump runs continuously and speeds up or slows down as the system demands. Always use the lowest pressure necessary to get the desired results.

WARNING

To reduce the risk of serious bodily injury, including fluid injection and splashing in the eyes or on the skin, and property damage, never exceed the maximum air and fluid working pressure of the lowest rated component in your system. See **EQUIPMENT MISUSE HAZARD, System Pressure,** on page 2.

Never allow the pump to run dry of fluid being pumped. A dry pump will quickly accelerate to a high speed, possibly damaging itself. 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 lines, prime pump and lines with fluid, or flush and leave filled with compatible solvent. Be sure to eliminate all air from fluid system.

NOTE: A pump runaway valve (B) can be installed on the air line to automatically shut off the pump if it starts to run too fast.

Check Valve Adjustment

Refer to the displacement pump instruction manual 307-845 for information on how to adjust the check valves.

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. When you finish pumping always follow the **Pressure Relief Procedure Warning** on page 7.

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 build up of dried fluid in the pump or hoses.

Every 40 hours of operation, check that the packing nut is tight. Follow **Pressure Relief Procedure Warning** on page 7, first. Tighten just snug—do not overtighten or the packings may be damaged.

Flushing

To reduce the risk of fluid injection injury, static sparking, or splashing, follow the **Pressure Relief Procedure Warning** on page 7, and *remove the spray tip (spray guns or spray valves only) before flushing.* Hold a metal part of the gun/valve firmly to the side of a grounded *metal* pail and use the lowest possible fluid pressure during flushing.

Lubrication

The accessory air line lubricator (D) provides automatic air motor lubrication. For daily, manual lubrication, disconnect the regulator, place about 15 drops of light machine oil in the pump air inlet, reconnect the regulator and turn on the air supply to blow oil into the motor.

Corrosion Protection

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 7.

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 or changing spray tips, and whenever you stop spraying.

1. Engage the spray gun or dispensing valve safety latch.
2. Close the pump air regulator.
3. Close the bleed-type master air valve (required in your system).
4. Disengage the gun or dispensing valve safety latch.
5. Hold a metal part of the gun or valve firmly to a grounded metal waste container and trigger to relieve the fluid pressure.
6. Engage the safety latch again.
7. Open the pump drain valve (required in your system), having a container ready to catch the drainage.
8. Leave the drain valve open until you are ready to spray again.

If you suspect that the spray tip or hose is clogged or that fluid pressure is not fully relieved after following the steps above, VERY SLOWLY loosen the tip guard or hose end coupling and allow pressure to be relieved gradually, then remove completely. Now clear the tip or hose obstruction.

WARNING

To reduce the risk of serious bodily injury, NEVER operate the pump with the air motor plate removed. The moving piston behind the plate can pinch or amputate fingers.

NOTE: Check all possible remedies before disassembling the pump.

TROUBLESHOOTING CHART

PROBLEM	CAUSE	SOLUTION
Pump operates, but output low on both strokes	Restricted line or inadequate air supply	Clean line; increase supply
	Insufficient air supply; closed or clogged air valves, etc.	Open; clean
	Exhausted fluid supply	Refill & reprime or flush
	Clogged fluid line, valves, etc.	Clear*
	Check valves need adjustment	Adjust; see 307-845
	Packing nut too tight	Loosen
	Loose packing nut or worn packings	Tighten; replace; see 307-845
	Loose tie bolts or damaged cylinder gaskets	Tighten; replace; see 307-845
Pump operates, but output low on down stroke	Loose tie bolts or damaged cylinder gaskets	Tighten; replace; see 307-845
	Held open or worn intake valve	Clear; service; see 307-845
Pump operates, but output low on upstroke	Held open or worn piston or packings	Clear; service; see 307-845
Erratic pump operation	Exhausted fluid supply	Refill and reprime or flush
	Check valves need adjustment	Adjust; see 307-845
	Held open or worn intake valve	Clear; service; see 307-845
	Held open or worn piston or packings	Clear; service; see 307-845
Pump fails to operate	Restricted line or inadequate air supply	Clear lines; increase air supply
	Insufficient air supply; closed or clogged valves, etc.	Open; clean
	Exhausted fluid supply	Refill and reprime or flush
	Damaged air valving mechanism	Service; see 307-049 or 307-304
	Dried fluid seizure of displacement rod	Service; see 307-845

*Follow the **Pressure Relief Procedure Warning**, above; disconnect the fluid line. If the pump starts when the hydraulic power is restored, the line, etc. is clogged.

DISPLACEMENT PUMP SERVICE

Solvent flush the fluid from the pump, if possible; stop it at the bottom of the stroke. Follow the **Pressure Relief Procedure Warning,** on page 7 before proceeding.

Disconnect the air and fluid hoses connected to the pump, remove the pump from its mounting and clamp it in a vise.

NOTES:

1. If you are using a repair kit to service the pump, use all the new parts even if the old ones look good for the best results.
2. Clean all the parts thoroughly when disassembling. Check them carefully for damage or wear, replacing parts as needed.
3. Refer to instruction manual 307-845 (supplied) for displacement pump service instructions.
4. Refer to instruction manual 307-049 or 307-304 (supplied) for air motor service instructions.

To disconnect the displacement pump (2) from the air motor (1), unscrew the locknuts (29) from the tie rods (41). See Fig 2. Remove the cotter pin (27), and screw the jam nut (31) up towards the air motor (1). Unscrew the displacement rod from the connecting rod (40), and remove the displacement pump (2) from the air motor.

To connect the displacement pump (2) to the air motor (1), screw the displacement rod onto the connecting rod (40) until the holes in both pieces are aligned. See Fig 2. Install the cotter pin (27). Tighten the jam nut (31) down against the displacement rod. Screw the locknuts (29) loosely onto the tie rods (41).

Start the pump, and run it at its lowest speed possible, about 40 psi (2.8 bar) while you tighten the tie rod locknuts evenly to 40-50 ft-lb (54-68 N·m). Adjust the tie rod locknuts, if necessary, to eliminate binding. Tighten the packing nut with the wrench (32) supplied, just enough to prevent leakage, no tighter. Fill the wet-cup half full with TSL.

NOTE: If the ground wire was disconnected before servicing, be sure to reconnect it before operating the pump. Check to be sure the entire system is properly grounded.

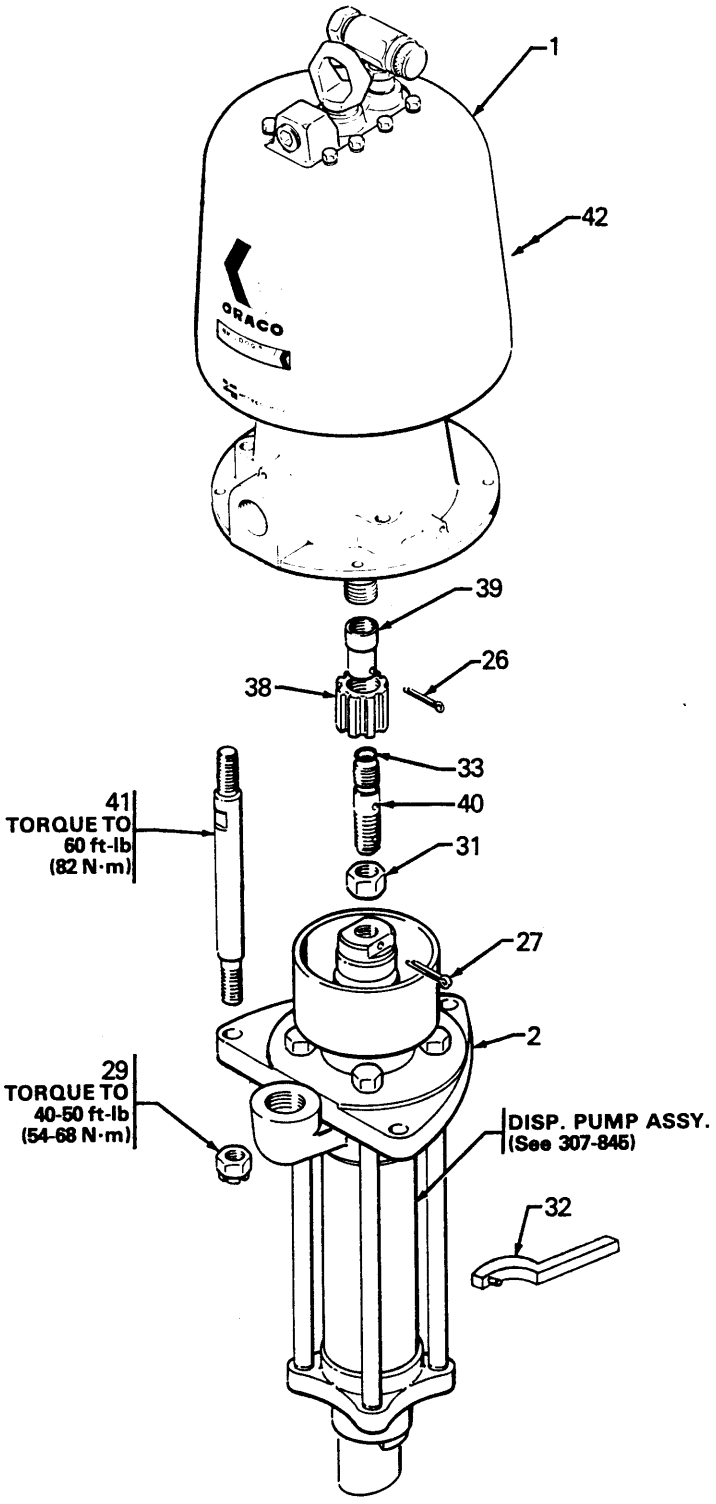
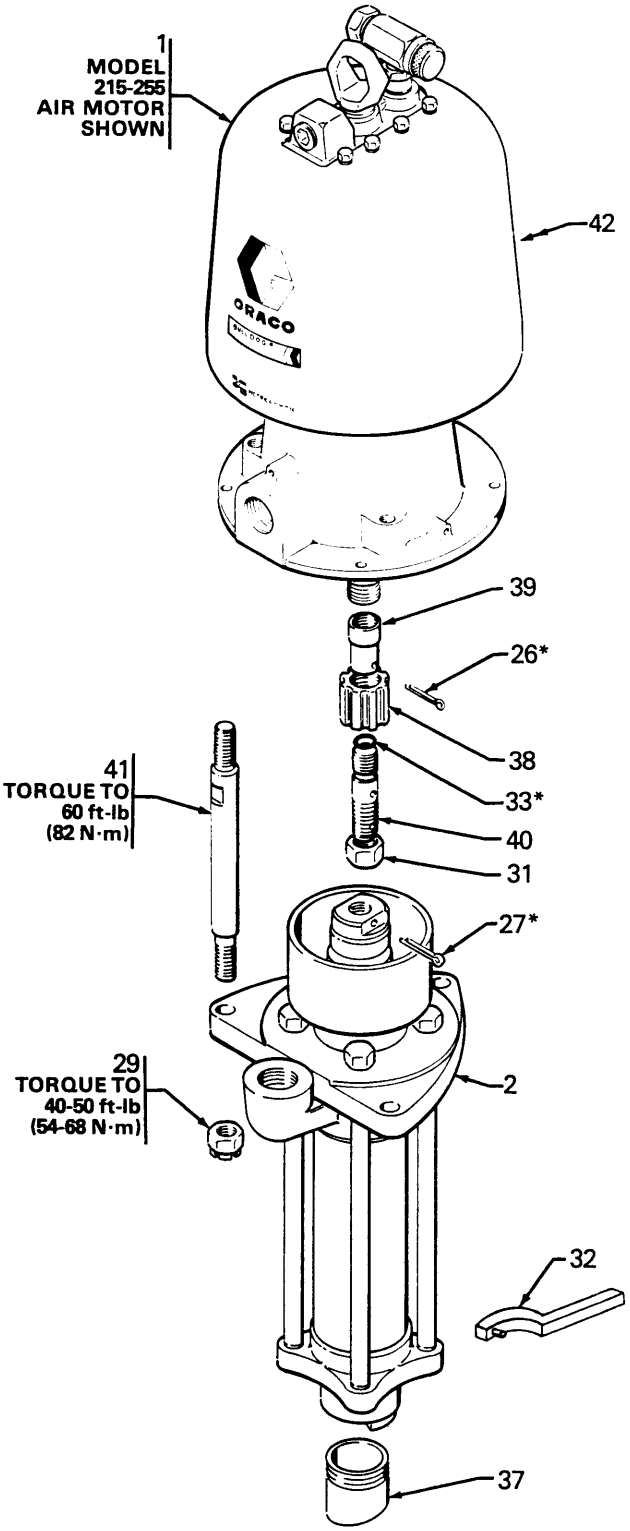


Fig 2

PARTS DRAWING



Model 206-281, Series D
Includes items 1, 2, 26-42

Model 215-595, Series A
Includes items 1, 2, 26-41

REF NO.	PART NO.	DESCRIPTION	QTY
1	215-255	AIR MOTOR (used with Model 215-595) See 307-304 for parts	1
	208-356	AIR MOTOR (used with Model 206-281) See 307-049 for parts	1
2	207-655	DISPLACEMENT PUMP See 307-845 for parts	1
26	*100-103	PIN, cotter; 1/8 x 1-1/2"	1
27	*100-104	PIN, cotter; 1/8 x 1-3/4"	1
29	101-712	LOCKNUT, 5/8-11 thd size	3
31	101-936	NUT, hex jam; 3/4"	1
32	102-743	WRENCH, spanner; 3-1/4" (73 mm) dia	1
33	*158-674	O-RING, nitrile rubber	1
37	165-950	TUBE, intake; 2" npt	1
38	168-210	NUT, shouldered	1
39	168-211	NUT, conn. rod	1
40	168-823	ROD, connecting	1
41	168-824	ROD, tie; 5/8 x 17-3/8" (441 mm)	3
42	172-447	LABEL, warning	1

307 number in description refers to separate instruction manual.

**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.

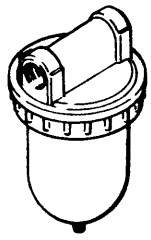
6 digit PART NUMBER	QTY	PART DESCRIPTION

EQUIPMENT SERIES LEVEL

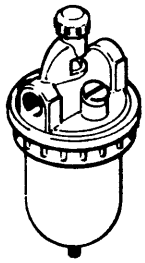
The parts information in this manual only covers models currently being manufactured. BEFORE ORDERING PARTS, refer to the parts list and note the Series letters of the assembly and its major subassemblies. Compare these Series letters with those stamped on your equipment. **If the Series letters match,** this manual applies to your equipment. **If they do not match,** a different revision of this manual applies, and you should contact your Graco distributor or the Graco Service Department in Minneapolis for parts information.

ACCESSORIES (Must be purchased separately)

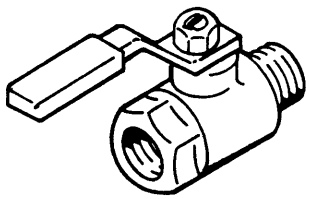
AIR LINE FILTER
250 psi (17.5 bar) MAXIMUM WORKING PRESSURE
106-149 1/2 npt inlet & outlet
106-150 3/4 npt inlet & outlet



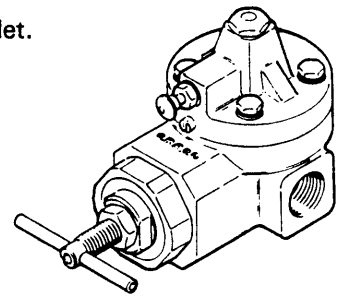
AIR LINE LUBRICATOR
250 psi (17.5 bar) MAXIMUM WORKING PRESSURE
214-848 1/2 npt inlet & outlet
214-849 3/4 npt inlet & outlet



BLEED-TYPE MASTER AIR VALVE (Required)
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



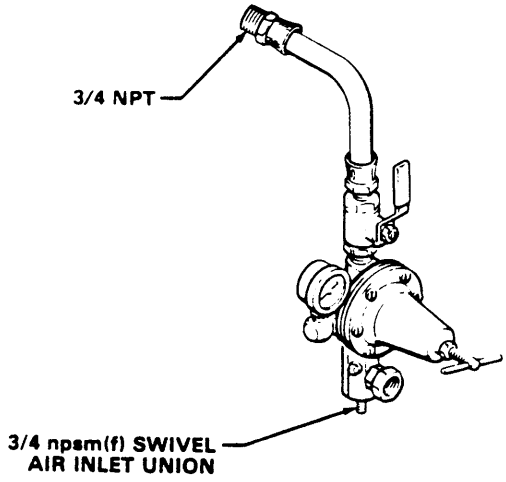
PUMP RUNAWAY VALVE 215-362
Shuts off air to pump automatically if it senses that the pump is running too fast, a condition caused by a depleted fluid supply.
3/4 npt(f) inlet & outlet.



GROUNDED BUNA-N AIR SUPPLY HOSE
175 psi (12 bar) MAXIMUM WORKING PRESSURE

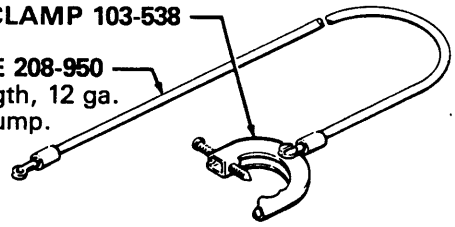
Part No.	ID	Length	Thd. Size
208-610	3/4" (19 mm)	6 ft (1.8 m)	3/4 npt(m)
205-548	3/4" (19 mm)	15 ft (4.5 m)	3/4 npt(m)
208-611	3/4" (19 mm)	25 ft (7.6 m)	3/4 npt(m)
208-612	3/4" (19 mm)	50 ft (15 m)	3/4 npt(m)

AIR PRESSURE REGULATOR KIT 205-712
200 psi (14 bar) MAXIMUM WORKING PRESSURE



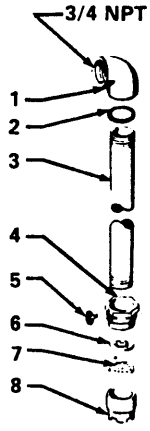
GROUNDING CLAMP 103-538

GROUND WIRE 208-950
25 ft (7.6 m) length, 12 ga.
For grounding pump.



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	NUT, screen retainer	1

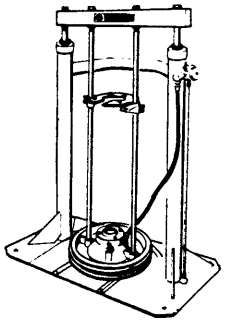


SUCTION HOSE 214-961
6 ft (1.8 m) long, coupled 3/4 npt(mbe). Spring guard both ends.

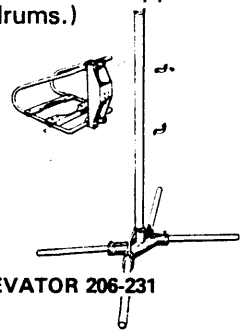
THROAT SEAL LIQUID (TSL)
Non-evaporating liquid for wet-cup.
206-995 1 quart (0.9 liter)
206-996 1 gallon (3.8 liter)

ACCESSORIES (Must be purchased separately)

55 GALLON (200 liter) RAM 207-279
For heavy materials that require additional forcing action to prime pump. Fits open 55 gallon (200 liter) drums.

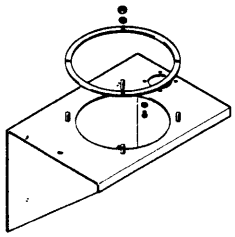


PUMP SUPPORT BRACKET 206-232
For mounting a Bulldog Pump in an immersed application. (Adjustable for full open-end drums.)



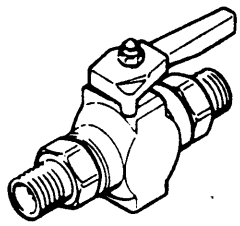
PORTABLE ELEVATOR 206-231

WALL MOUNTING BRACKET 206-221
For Bulldog Pump.

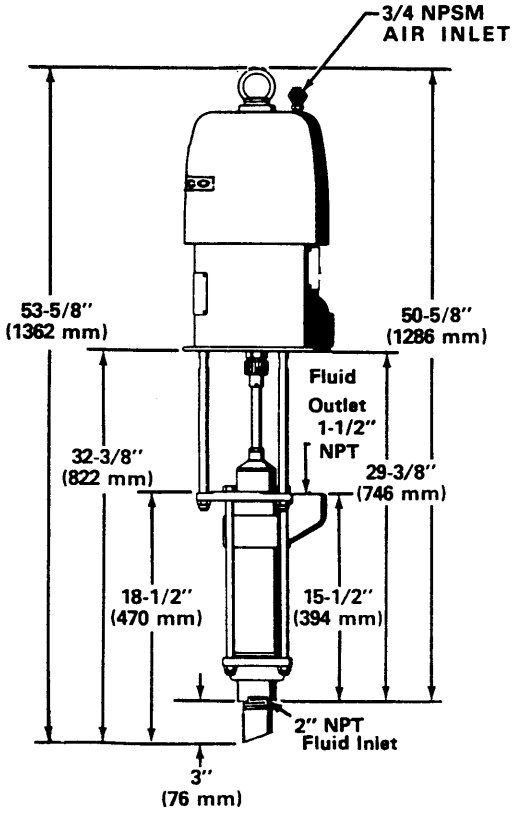


HIGH PRESSURE BALL VALVES, Viton® Seals
5000 psi (350 bar) MAXIMUM WORKING PRESSURE
Can be used as fluid drain valve.

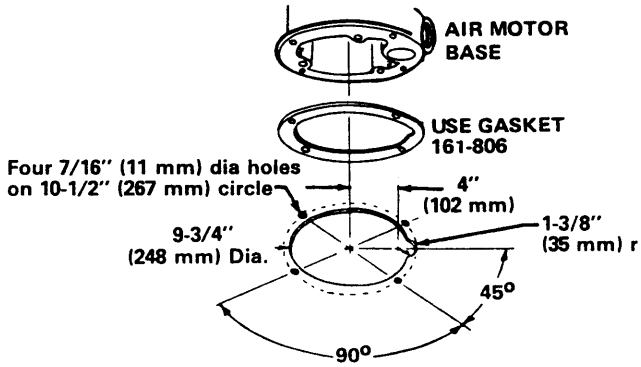
210-657 1/4 npt(m)
210-658 3/8 npt(m)
210-659 3/8 x 1/4 npt(m)



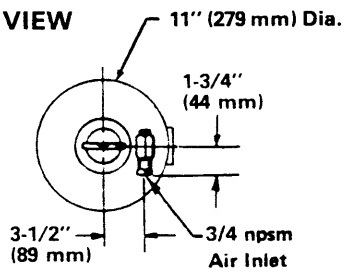
DIMENSIONAL DRAWING



MOUNTING HOLE LAYOUT



TOP VIEW



SERVICE INFORMATION

Parts and service information for displacement pump 207-655 has been removed from this manual. Refer to manual 307-845.

TECHNICAL DATA

Recommended air operating range:	40 psi (2.8 bar) min. to 100 psi (7 bar) max.
Air consumption:	10 cfm (0.28 m^3/min) at 1 gpm (3.8 liter/min) at 70 psi (5 bar), up to 85 cfm (2.4 m^3/min) at 8.5 gpm (32.3 liter/min)
Cycles per gallon (approx):	7
Max. recommended cycles per min.:	60 continuous duty
Continuous duty delivery:	8.5 gpm
Fluid pressure at pump outlet:	1000 psi (70 bar) maximum
Air inlet:	3/4 npsm(f)
Wetted parts:	Refer to displacement pump manual 307-845.

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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
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EQUIPMENT NOT COVERED BY GRACO WARRANTY
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