

Hydra-Spray®

Viscount I 3000 Supply Pump and Suction Kits

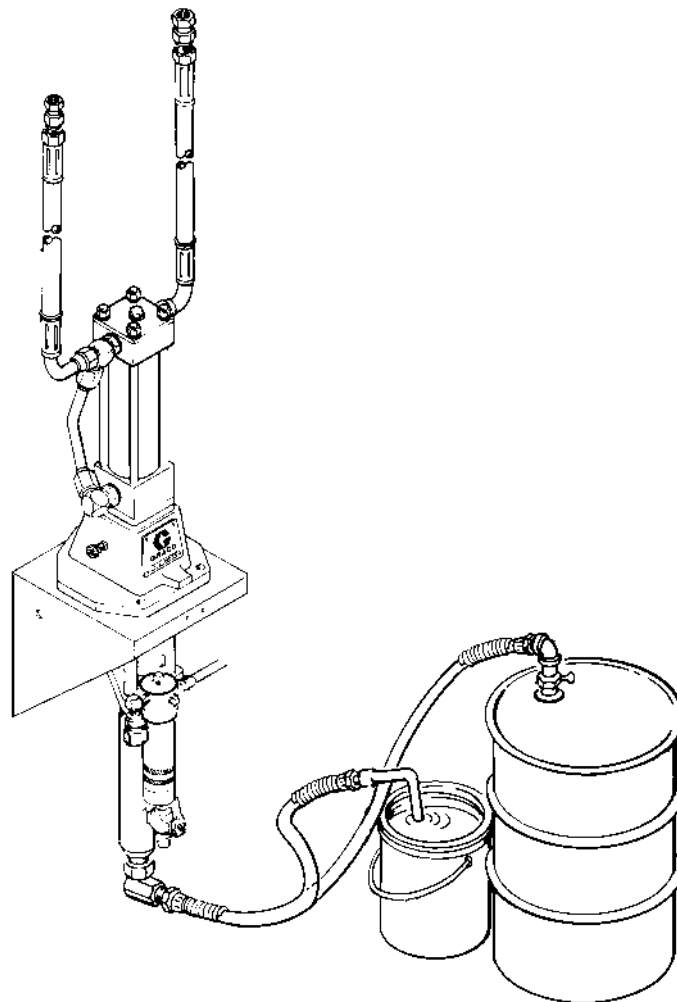
*1000 psi (70 bar) MAXIMUM HYDRAULIC INPUT PRESSURE**3000 psi (210 bar) MAXIMUM WORKING PRESSURE***Model 221-082, Series A**

With a Severe-Duty Displacement Pump*

*Severe-Duty displacement pumps have an abrasion- and corrosion-resistant displacement rod and cylinder. See the **Technical Data, Wetted Parts**, in the separate pump manual, 307-

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WARNINGS

HIGH PRESSURE SPRAY CAN CAUSE SERIOUS INJURY. FOR PROFESSIONAL USE ONLY.
OBSERVE ALL WARNINGS. Read and understand all instruction manuals before operating equipment.

FLUID INJECTION HAZARD

General Safety

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

NEVER point the spray gun at anyone or at any part of the body. NEVER put hand or fingers over the spray tip. NEVER try to “blow back” paint; this is NOT an air spray system.

If using a high pressure airless spray gun, have the tip guard in place 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 (if so equipped)

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 (on spray guns only)

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**, below, then remove the spray tip. Aim the gun into a 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.

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, splashing in the eyes or on the skin, or other serious bodily injury, or 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 wear protective eyewear, gloves, clothing and respirator as recommended by the fluid and solvent manufacturer.

Tip Guard (on spray guns only)

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 (on spray guns only)

Always have the trigger guard in place on the gun when spraying to reduce the risk of accidentally triggering the gun if it is dropped or bumped.

Spray Tip/Nozzle Safety

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

NEVER wipe off build-up around the spray tip/nozzle 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 fluid or solvent in the eyes or on the skin, or injury from moving parts or electric shock, always follow this procedure whenever you shut off the sprayer, when checking or servicing any part of the spray/dispensing system, when installing, cleaning or changing spray tips/nozzles, and whenever you stop spraying/dispensing.

1. Engage the gun safety latch.
2. Shut off the hydraulic power to the reciprocator.
3. Disengage the gun safety latch. Hold a metal part of the gun firmly to the side of a grounded metal pail, and trigger the gun to relieve pressure.
4. Engage the gun safety latch.
5. Open the fluid drain valve (required in your system), having a container ready to catch the drainage. Leave the 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 to relieve pressure gradually, then loosen completely. Now clear the tip or hose.

System Pressure

This sprayer can develop **3000 psi (210 bar) MAXIMUM WORKING PRESSURE** at 1000 psi (70 bar) MAXIMUM HYDRAULIC INPUT PRESSURE.

Be sure that all spray equipment and accessories used are rated to withstand this pressure. DO NOT exceed the maximum working pressure of any component or accessory used in the system.

Fluid and Solvent Compatibility

All chemicals used in the sprayer must be chemically compatible with the wetted parts shown in the **TECHNICAL DATA** on page 11. Consult your chemical supplier to ensure compatibility.

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 the 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.

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 or using a gasoline engine. 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 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 sprayer 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 a ground wire and clamp. See Fig 1.
2. *Fluid hoses:* use only grounded hoses with a maximum of 500 ft (150 m) combined hose length to ensure grounding continuity. See **Hose Grounding Continuity**.
3. *Hydraulic power supply:* follow the 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.

MOVING PARTS HAZARD

Moving parts can pinch or amputate your fingers or other body parts. **KEEP CLEAR** of moving parts when starting or operating the sprayer. Follow the **Pressure Relief Procedure** on page 2

HANDLE AND ROUTE HOSES CAREFULLY. Do not pull on hoses to move equipment. Keep hoses clear of moving parts and hot surfaces of the pump and gas engine. 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 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**.

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 (A) and washer (B). Insert one end of a 1.5 mm² (12 ga) minimum ground wire (D) into the slot in lug (C), and tighten the locknut securely. Connect the other end of the wire to a true earth ground. See **ACCESSORIES** on page 9 to order a ground wire and clamp.

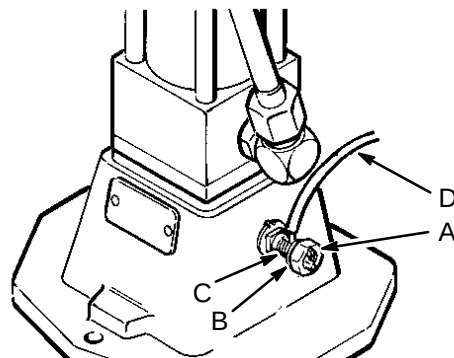


Fig 1

Flushing Safety

Reduce the risk of fluid injection injury, static sparking, or splashing by following the **Pressure Relief Procedure** on page 2, and removing the spray tip before flushing. Hold a metal part of the gun firmly to the side of a grounded metal pail and use the lowest possible fluid pressure during flushing.

before checking or servicing any part of the sprayer, to prevent it 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.

Installation

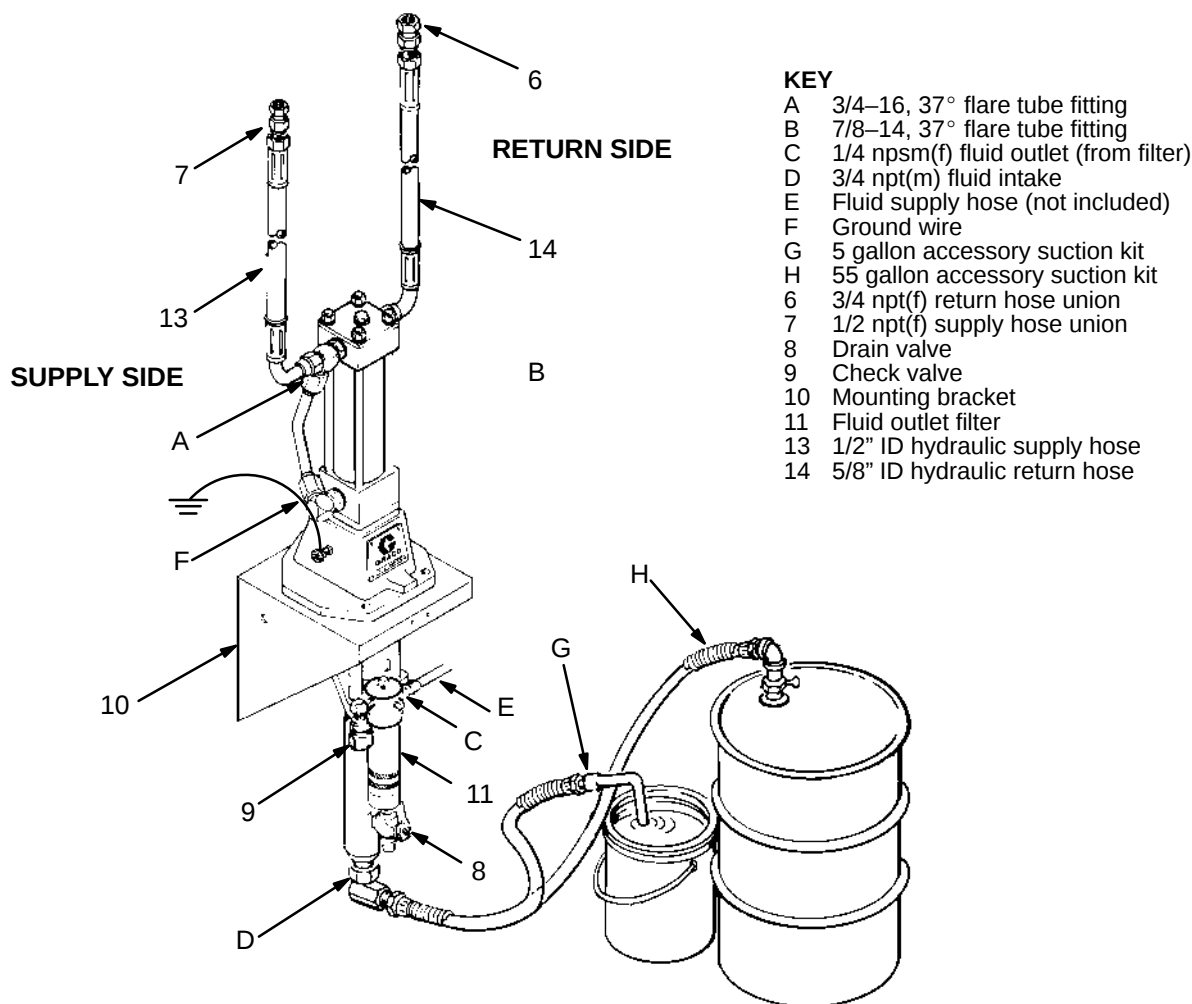


Fig 2

The Typical Installation shown above is only a guide. Contact your Graco representative or Graco Technical Assistance (see back page) for assistance in designing a system to meet your needs.

NOTE: Reference numbers and letters in the text refer to the callouts in the drawings.

NOTE: Use liquid sealant at all connections, except swivel connections.

Pump Mounting

Mount the pump bracket (10) so the base of the pump is 5 ft (1.5 m) from the floor. Use the dimensional drawing on page 11 as a guide in drilling the holes in the wall. The wall must be strong enough to support the weight of the system plus any stress caused by operation. Use anchor bolts, if necessary. The system weighs about 70 lb (31.75 kg).

WARNING

The fluid drain valve (8) is required in your system to help reduce the risk of serious bodily injury, including splashing fluid in the eyes or on the skin, and injury from moving parts if you are adjusting or repairing the pump.

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

Accessories

Some accessories are shown on pages 9 and 10. Also see the separate pump instruction manual, 307-623. If you supply your own accessories, be sure they are adequately sized to meet the system requirements.

Installation

Hydraulic System

CAUTION

The hydraulic supply system must be kept clean at all times to avoid damage to the motor and hydraulic power supply. Blow out all hydraulic lines with air and flush thoroughly with solvent before connecting the lines to the motor.

Always plug the hydraulic inlets, outlets and lines when disconnecting them for any reason, to avoid introducing dirt and other contaminants into the system.

Be sure your hydraulic power supply is equipped with a suction filter to the hydraulic pump and a system return line filter of 10 micron size. Carefully follow the manufacturer's recommendations on reservoir and filter cleaning and periodic changes of hydraulic fluid.

Install a properly sized, pressure-compensated flow control valve at the inlet to the motor. Refer to the pump manual, 307–623. Do not use more hydraulic fluid volume than necessary for satisfactory results.

Connect the 1/2 in ID hydraulic supply line (2) to the 3/4–16, 37° flare tube fitting (A) of the hydraulic motor. See Fig 2. Connect a 5/8 in. ID return line (4) to the 7/8–14, 37° flare tube fitting (B). Install the hydraulic shutoff valves in the supply and return lines for use when removing the pump for inspection or service.

Suction and Supply Hoses

Attach the suction hose (17 or 28) to the 3/4 npt fluid intake of the pump (D). See Fig 2. Place the other end of the suction tube into the drum, as shown.

Connect a fluid supply hose (E) to the 1/4 npsm(m) outlet (C) of the filter.

Install an appropriate spray gun or dispensing valve. Be sure it has at least a *3000 psi (210 bar) MAXIMUM WORKING PRESSURE*.

Grounding the System

WARNING

Before operating the pump, ground the system as explained under **FIRE OR EXPLOSION HAZARD** and **Grounding** on page 2.

Operation

Refer to the pump instruction manual 307–623, for operating and service instructions. Read and follow all warnings and cautions in the manuals supplied with this system, and any manual supplied with accessories you add to the system.

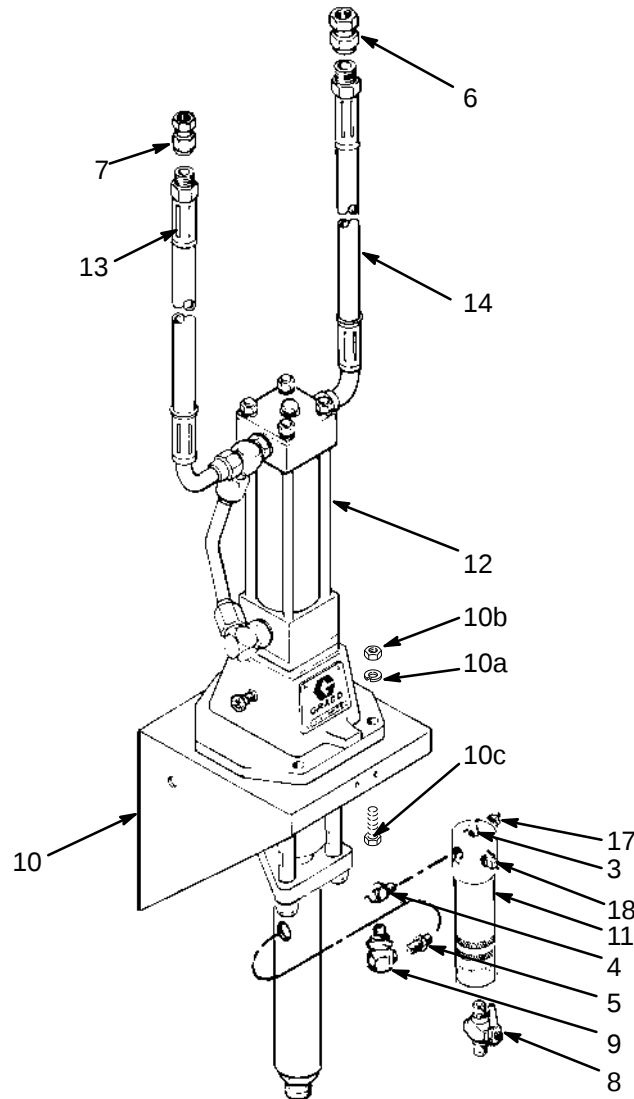
Flush the Pump Before Using

The pump was tested in lightweight oil, which was left in to protect pump parts. To prevent contamination of the fluid you are pumping, flush the pump with a compatible solvent before using it. See manual 307–623.

Check the Hydraulic Fluid Level

Check the hydraulic fluid level before each use. Add fluid to the fill lines as necessary.

Parts



Model 221-082, Series A

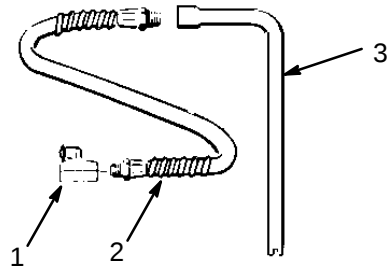
Includes items 3 to 18

Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
3	100-040	PLUG, pipe, 3/8 npt(f)	1	10c	100-022	. SCREW	2
4	155-699	ELBOW, 90°, 3/8 npt	1	11	218-209	FLUID OUTLET FILTER (see 307-273 for parts)	1
5	156-849	NIPPLE, 3/8 npt x 1-1/2	1	12	221-080	VISCOUNT I 3000 PUMP (see 307-623 for parts)	1
6	156-172	UNION, swivel, 3/4 npsm(f) x 3/4 npt(f)	1	13	180-090	HOSE, cpld 1/2-14 npt(m) x 3/4-16 unf, 90° swivel, 1/2" ID, Buna-N, 3' (1 m) long	1
7	155-865	UNION, swivel, 1/2 npt(f)	1	14	180-091	HOSE, cpld 3/4-14 npt(m) x 7/8-14, 90° swivel, 5/8" ID, Buna-N, 3' (1 m)	1
8	210-659	BALL VALVE (see 306-861 for parts)	1	17	162-453	NIPPLE, 1/4 npt	1
9	206-833	CHECK VALVE (see 306-861 for parts)	1	18	100-509	PLUG, pipe, 1/4 npt(f)	1
10	207-365	BRACKET, pump mounting Includes items 10a to 10c	1				
10a	100-016	. LOCKWASHER	2				
10b	100-015	. NUT	2				
6	307-039						

Accessories

5 GALLON SUCTION KIT 207-484

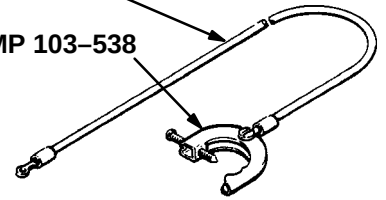
- | | | | |
|---|---------|--|---|
| 1 | 156-589 | UNION, 90° adapter, 3/4 npt(f) x 3/4 npt(f) swivel | 1 |
| 2 | 214-960 | HOSE, cpld 3/4 npt(mbe), 3/4" ID nylon, 3 1/2' (1.1 m) long, with spring guard | 1 |
| 3 | 165-767 | TUBE, suction | 1 |



GROUND WIRE 208-950

7.6 m (25 ft) long

GROUNDING CLAMP 103-538



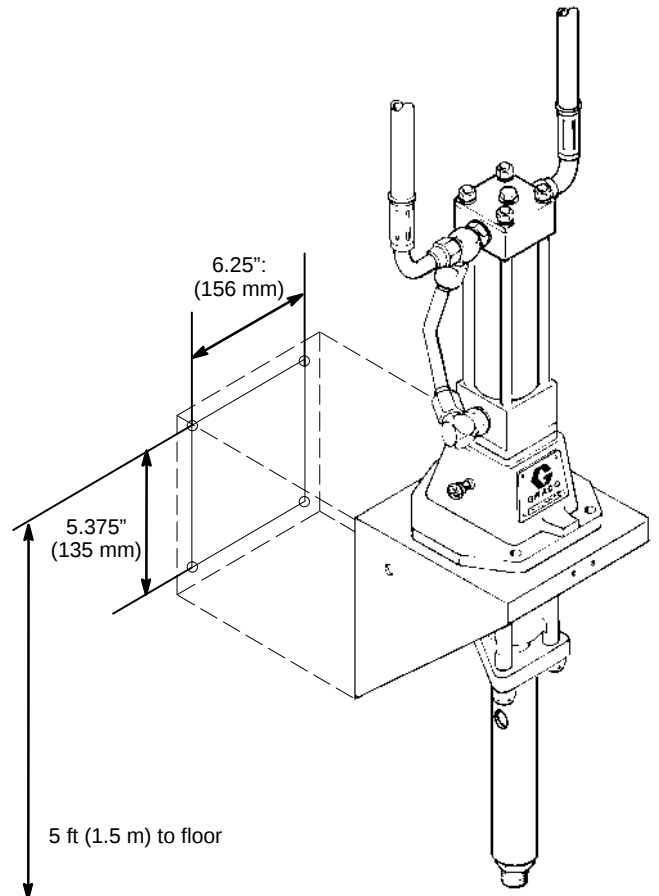
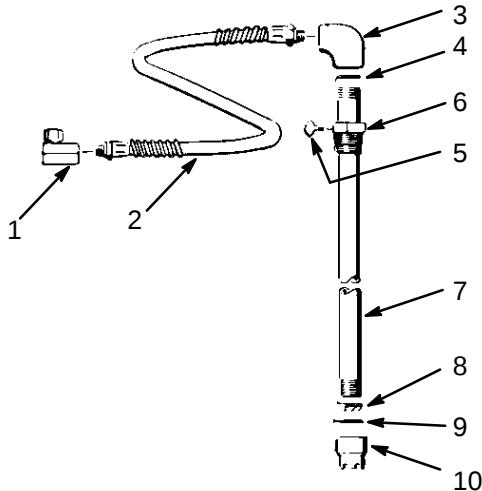
THROAT SEAL LIQUID (TSL) 206-994

Solvent for wet-cup. 0.24 liter (8 oz.).

Dimensions

55 GALLON SUCTION KIT 208-259

- | | | | |
|----|---------|---|---|
| 1 | 156-589 | UNION, 90° adapter, 3/4 npt(f) x 3/4 npt(f) swivel | 1 |
| 2 | 214-961 | HOSE, cpld 3/4 npt(mbe), 3/4" ID nylon, 6 ft (1.8 m) lg; w/spring guard | 1 |
| 3 | 156-591 | ELBOW, 90°, 3/4 npt x 1 1/2-24 ns | 1 |
| 4 | 156-593 | PACKING, o-ring, nitrile rubber | 1 |
| 5 | 100-220 | THUMBSCREW, 5/16-18 x 1 | 1 |
| 6 | 176-684 | ADAPTER, bung, 1.8" and 1.5" | 1 |
| 7 | 156-592 | TUBE, riser | 1 |
| 8 | 159-100 | RETAINER, screen | 1 |
| 9 | 161-377 | SCREEN, filter | 1 |
| 10 | 159-101 | NUT, screen retainer | 1 |



Technical Data

Maximum
outlet pressure 3000 psi (210 bar)
Maximum hydraulic
input pressure 1000 psi (70 bar)
Fluid delivery rate 5/8 gpm at 2500 psi
(3 liter/min at 170 bar)
Maximum recommended
pump speed 40 cycles per minute
Hydraulic fluid consumption 6.5 oz per cycle,
or 1 gallon per 19.5 cycles
(0.195 liter per cycle or 3.8 liters for 19.5 cycles)
Fluid outlet size 3/8 npt(f)
Fluid inlet size 3/4 npt(m)
Motor hydraulic
inlet size 3/4–16 unf–2A, 37° flare
Motor hydraulic
outlet size 7/8–14 unf–2A, 37° flare
Hydraulic supply hose inlet size 1/2–14 npt(m)
Hydraulic return hose outlet size 3/4–14 npt(m)
Weight 70 lb (32.75 kg)

Manual Change Summary

Assembly Changed	Part Status	Ref No.	Part No.	Name
221–082 Unit	Delete Delete	1 2	100–016 100–333	Washer Screw
207–365 Bracket	Add Add Add	10a 10b 10c	100–016 100–015 100–022	Washer Nut Screw

Graco Phone Numbers

TO PLACE AN ORDER, contact your Graco distributor, or call this number to identify the distributor closest to you: **1–800–328–0211 Toll Free**

FOR TECHNICAL ASSISTANCE, service repair information or assistance regarding the application of Graco equipment: **1–800–543–0339 Toll Free**

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 to an authorized Graco distributor for verification of the claim. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor and transportation.

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.

Sales Offices: Atlanta, Chicago, Dallas, Detroit, Los Angeles, Mt. Arlington (N.J.)
Foreign Offices: Canada; England; Korea; Switzerland; France; Germany; Hong Kong; Japan

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