

INSTRUCTIONS-PARTS LIST



307-615

Rev S
Supersedes R

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

Gas-Powered Supply Pump GH 533 HYDRA-SPRAY® SPRAYER

3000 psi (210 bar) MAXIMUM WORKING PRESSURE

U.S. Patent Pending



Model 231-533, Series B

Sprayer only. Has Severe-Duty* Displacement Pump

Model 230-974

Includes Sprayer 231-533, Hose, Swivel, Gun, RAC® IV, DripLess™ Tip Guard and SwitchTip™

*Severe-duty displacement pumps have an abrasion and corrosion-resistant displacement rod and sleeve. Refer to the Technical Data in manual 307-862.

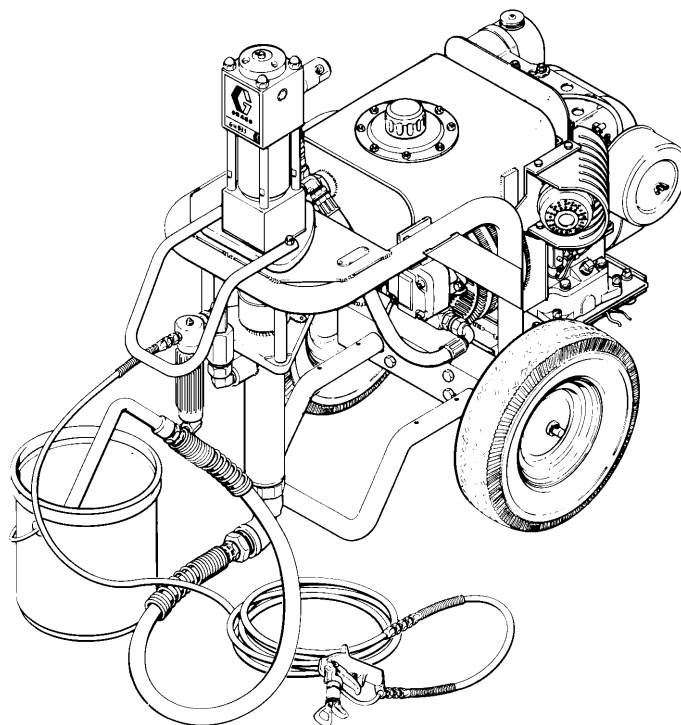




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NOTE: This is an example of the DANGER label on your sprayer. This label is available in other languages, free of charge. See page 20 to order.

|  DANGER  | |
|---|--|
|  | FIRE AND EXPLOSION HAZARD |
|  | SKIN INJECTION HAZARD |
| <p>Spray painting, flushing or cleaning equipment with flammable liquids in confined areas can result in fire or explosion.</p> <p>Use outdoors or in extremely well ventilated areas. Ground equipment, hoses, containers and objects being sprayed.</p> <p>Avoid all ignition sources such as static electricity from plastic drop cloths, open flames such as pilot lights, hot objects such as cigarettes, arcs from connecting or disconnecting power cords or turning light switches on and off.</p> <p>Failure to follow this warning can result in death or serious injury.</p> | <p>Liquids can be injected into the body by high pressure airless spray or leaks – especially hose leaks.</p> <p>Keep body clear of the nozzle. Never stop leaks with any part of the body. Drain all pressure before removing parts. Avoid accidental triggering of gun by always setting safety latch when not spraying.</p> <p>Never spray without a tip guard.</p> <p>In case of accidental skin injection, seek immediate “Surgical Treatment”.</p> <p>Failure to follow this warning can result in amputation or serious injury.</p> |
| READ AND UNDERSTAND ALL LABELS AND INSTRUCTION MANUALS BEFORE USE | |

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.

ALWAYS have the tip guard 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 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** 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.

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**, below. 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.

Tip Guard

ALWAYS have the tip guard in place on the 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

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.

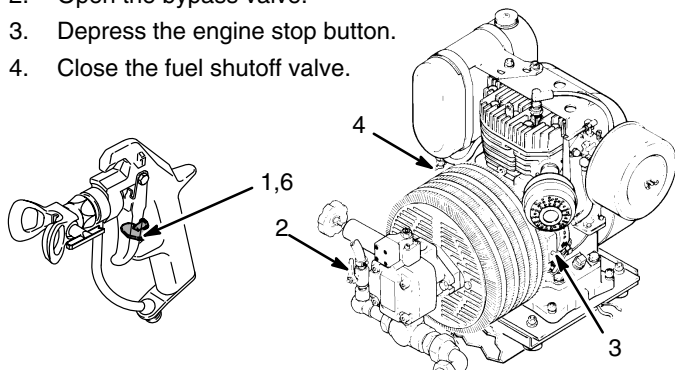
MOVING PARTS HAZARD

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**, below, before checking or servicing the sprayer to prevent it from starting accidentally.

Pressure Relief Procedure

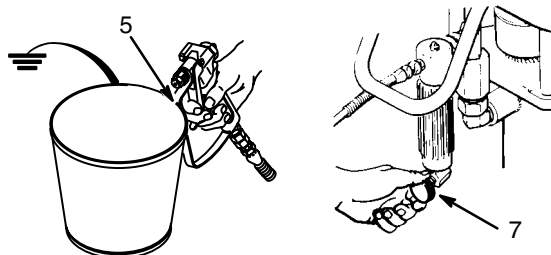
To reduce the risk of serious bodily injury, including fluid injection, splashing fluid or solvent in the eyes or on the skin, or injury from moving parts or electric shock, follow this procedure whenever you shut off the sprayer, check or service any part of the spray system, install, clean or change spray tips, and whenever you stop spraying.

1. Engage the gun safety latch.
2. Open the bypass valve.
3. Depress the engine stop button.
4. Close the fuel shutoff valve.



5. 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.
6. Engage the gun safety latch.
7. Open the pressure drain valve, 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.



EQUIPMENT MISUSE HAZARD

General Safety

Misuse of the equipment or accessories, such as overpressurizing, modifying parts, using incompatible chemicals and fluids, or worn or damaged parts, can cause them to rupture and result in fluid injection, splashing on the eyes or 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 ear protection, protective eyewear, gloves, clothing and respirator as recommended by the fluid and solvent manufacturer.

System Pressure

This sprayer can develop **3000 psi (195 bar) MAXIMUM WORKING 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 part used in the system.

Fluid and Solvent Compatibility

BE SURE that all fluids and solvents used are chemically compatible with the wetted parts shown in the **TECHNICAL DATA** on page 20. Always read the fluid and solvent manufacturer's literature before using them in this sprayer.

Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in this equipment, which contains aluminum and/or zinc parts. 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.

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.

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**.

FIRE OR EXPLOSION HAZARD

Static electricity is created by the flow of fluid through the pump and hose. If all spray equipment is not properly grounded, sparking may occur and the system may become hazardous. Sparking may also occur when plugging or unplugging a power cord. Sparks can ignite fumes from solvents, the fluid being sprayed, dust particles and other flammable substances, whether 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. *Sprayer*: connect the ground wire and clamp (provided) to a true earth ground. See Fig 1.

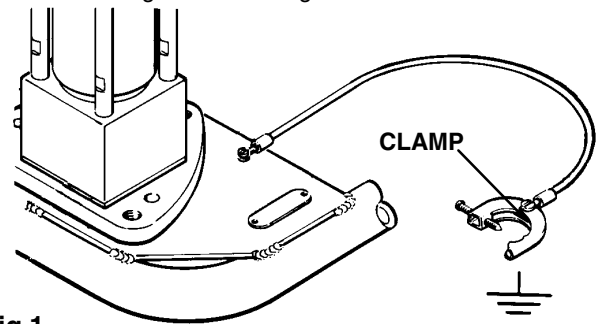


Fig 1

2. *Fluid hoses*: use only grounded hoses with a maximum of 150 m combined hose length to ensure grounding continuity. See **Hose Grounding Continuity**.
3. *Spray gun*: obtain grounding through connection to a properly grounded fluid hose and sprayer.
4. *Object being sprayed*: according to local code.
5. *Fluid supply container*: according to local code.
6. *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.
7. *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.

Flushing Safety

Reduce the risk of fluid injection injury, static sparking, or splashing by following the flushing procedure on page 6 of this manual.

GASOLINE ENGINE HAZARDS

NEVER fill the fuel tank while the engine is running or hot. Fuel spilled on a hot surface can ignite and cause a fire. ALWAYS pour fuel in slowly to avoid spilling.

NEVER operate the engine in a closed building unless the engine exhaust is piped outside. The exhaust contains carbon monoxide, a poisonous, odorless and invisible gas which can cause serious illness and even death if inhaled.

NEVER alter the throttle setting which is factory set at the maximum full load engine speed of 2800 RPM. Tampering with this can change the sprayer and will void the warranty.

IMPORTANT

United States Government safety standards have been adopted under the Occupational Safety and Health Act. These standards – particularly the General Standards, Part 1920 and the Construction Standards, Part 1926 – should be consulted.

TERMS

WARNING: Alerts user to avoid or correct conditions that could cause bodily injury.

CAUTION: Alerts user to avoid or correct conditions that could damage or destroy equipment.

NOTE: Identifies essential procedures or addition information.

INSTALLATION

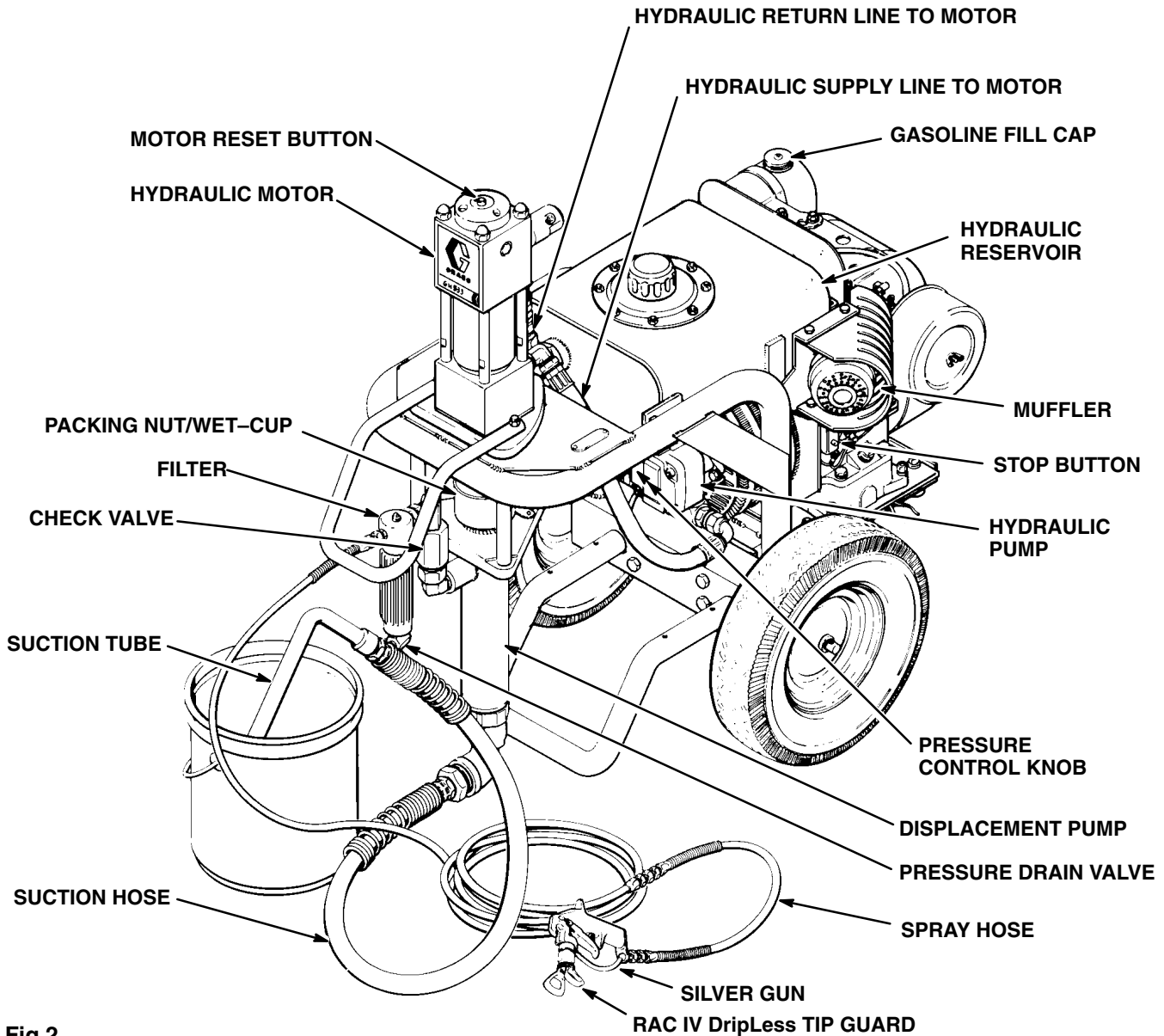


Fig 2

SETUP

1. Connect the Hose and Gun

- Remove the plastic cap plug from the outlet tee and screw an accessory, conductive or grounded spray hose onto the 1/4 npsm(f) outlet nipple. See Fig 2.
- Connect a small diameter, 3 ft (0.9 m) whip hose between the main hose and a spray gun, if desired, for more flexible gun movement. See Fig 2.

- Don't use thread sealant on the swiveling nut of the hose couplings, and **don't install the spray tip yet.**

NOTE: Use thread sealant on all male threads except at swivel unions. Swivel unions are made to self-seal, and using thread sealant prevents the swivel from turning freely.

- Fill the Packing Nut/Wet Cup** 1/3 full with Graco Throat Seal Liquid (TSL), supplied. See 2.

SETUP

3. Check the Hydraulic Oil Level

- a. Unscrew the oil fill cap. See Fig 3. The dipstick is attached to the cap. The oil should be up to the full line on the dipstick.

CAUTION

To prevent damage to the cooling system and hydraulic pump, use *only* Graco Hydraulic Oil, part no. 169-236 (5 gal./20 liter) or part no. 207-428 (1 gal/3.8 liter). Other types of hydraulic oil may damage the hydraulic components.

- b. Add oil as needed to the proper level. A completely full hydraulic system contains about 5 gallons (20 liters) of oil.

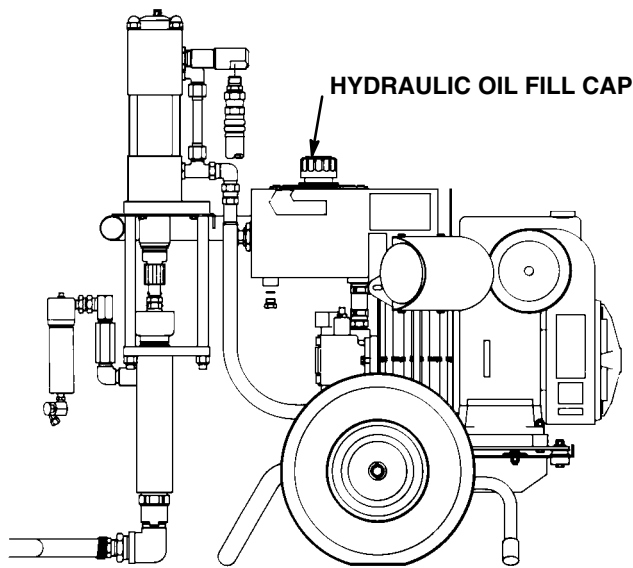


Fig 3

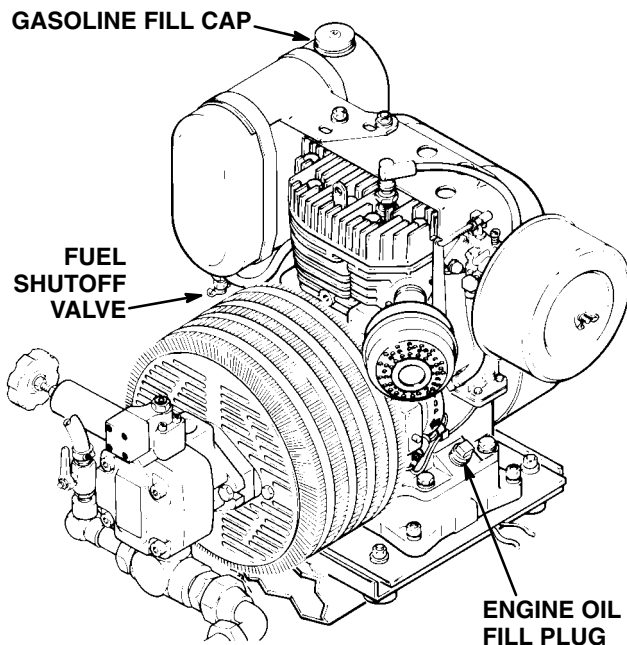


Fig 4

4. Check the Engine Oil Level

- a. Unscrew the oil fill plug. See Fig 4. The dipstick is attached to the plug.
- b. Without threading the plug into place, check to be sure the oil is up to the top mark on the dipstick.
- c. If oil is needed, see the chart below for the recommended oil type and weight.
- d. Crank case capacity: 2 quarts (1.9 liters)

RECOMMENDED LUBRICATION OIL: Use a high quality, detergent oil classified **FOR SERVICE SD OR SE** for regular use and for breaking in a new engine.

| GRADE OF OIL CHART | |
|------------------------|--------------|
| SEASON OR TEMPERATURE | GRADE OF OIL |
| Spring, Summer, Autumn | SAE 30 |
| 30°F to 0° Winter | SAE 10W-30 |

5. Fill the Fuel Tank

WARNING

Fuel spilled on a hot surface can cause a fire or explosion and cause serious bodily injury and property damage. Always shut off the engine and let it cool before filling the tank, and carefully follow steps 5.a. to 5.c., below, being sure not to spill any fuel.

- a. Close the fuel tank valve. See Fig 4.
- b. Use only clean, fresh, well-known brands of *unleaded regular grade gasoline*. The minimum octane requirements are 86 octane in the U.S.A. and 96 octane elsewhere.
- c. Remove the fuel fill cap and fill the tank. Be sure the air vent in the fill cap is not plugged so fuel can flow to the carburetor, then replace the cap. See Fig 4.
- d. Fuel tank capacity: 1.5 gallons (6 liters)
- e. Gasoline consumption at the maximum operating speed of 2800 RPM is about 1.3 gallons/hour (4.9 liters/hour).

6. Grounding

WARNING

To reduce the risk of static sparking, fire or explosion which can result in serious bodily injury and property damage, always ground the sprayer, all system components, and the object being sprayed as instructed under **FIRE OR EXPLOSION HAZARD** on page 3.

7. **Flush the sprayer** to remove the oil which was left in the pump after factory testing to protect the pump from corrosion. See **Flushing Guidelines** on page 6.

FLUSHING GUIDELINES

When to Flush

1. **New sprayer.** Your new sprayer was factory tested with lightweight oil which was left in to protect pump parts from corrosion.
Before using oil-base paint, flush with mineral spirits only.
Before using water-base paint, flush with mineral spirits, followed by soapy water, then a clean water rinse.
2. **Changing colors.** Flush with a compatible solvent such as mineral spirits.
3. **Changing from water-base to oil-base paint.** Flush with soapy water, then mineral spirits.

4. **Changing from oil-base to water-base paint.** Flush with mineral spirits, followed by soapy water, then a clean water flush.
5. **Storage.**
Water-base paint: flush with water, then mineral spirits and leave the pump, hose and gun filled with mineral spirits. Follow the **Pressure Relief Procedure Warning**, page 8.
Oil-base paint: flush with mineral spirits. Follow the **Pressure Relief Procedure Warning**, page 8.
6. **Startup after storage.**
Before using water-base paint, flush out mineral spirits with soapy water and then clean water.
When using oil-base paint, flush out mineral spirits with fluid to be sprayed.

How to Flush

WARNING

Follow the **Pressure Relief Procedure Warning** on page 8. Remove the spray tip before flushing.

1. Engage the gun safety latch. Remove the spray tip from the gun.
2. Pour enough clean, compatible solvent to fill the pump and hoses into a large, grounded metal pail.
3. Place the suction tube into the pail or tilt the sprayer back (it will support itself) and place the pail under the pump. Then tilt the sprayer forward to lower the pump into the pail.
4. Turn the pressure control knob *counterclockwise* until all spring tension is relieved. You will be able to feel it. The sprayer is now set at the lowest pressure setting. Turning the knob further will remove it. Tighten the knob locknut to set. See Fig 5.
5. Open the bypass valve. The valve lever will be parallel to the body of the valve. See 5.
6. Open the fuel shutoff valve by screwing it out as far as it will go. See 5.
7. Disengage the foot brace from the hitch and lower it. See Fig 5.
8. Close the choke by turning the lever to the ON position (horizontal). See Fig 6.
9. Brace one foot against the foot brace and gently pull the starter rope until you feel it engage, the continue pulling all the way out and let it recoil slowly into the starter. Then, holding the starter rope firmly, rapidly pull the rope to start the engine. If it does not start after one or two attempts, open the choke a little (turn lever toward OFF position). If the engine floods, open the choke all the way and continue pulling the rope.

WARNING

Always hold the starter rope firmly while pulling or recoiling it to reduce the chance of being hit and injured by the rope or of jamming and damaging the starter assembly.

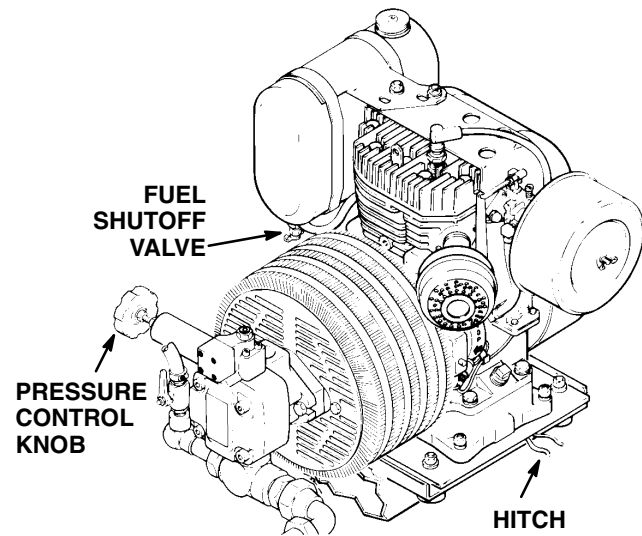


Fig 5

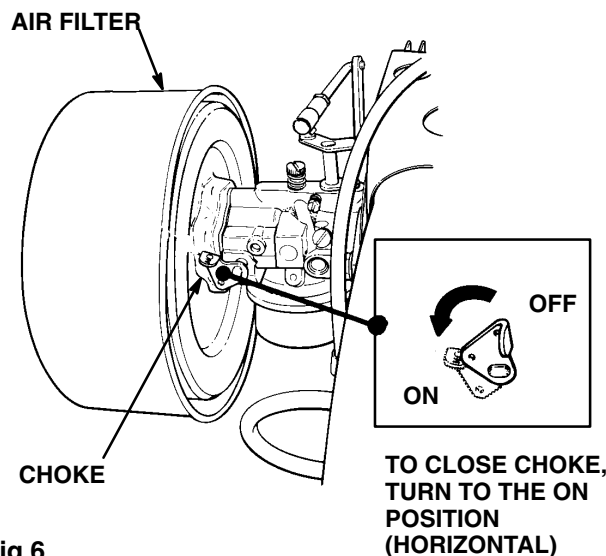


Fig 6

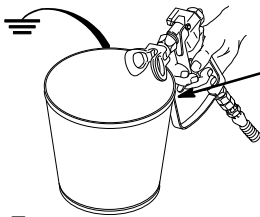
How to Flush (continued)

10. Raise the foot brace and engage it in the hitch.
11. After the engine is warm, gradually open the choke lever (turn to OFF position) and close the bypass valve. See Fig 5 and 6.
12. Point the gun into the grounded metal pail and hold a metal part of the gun firmly against the pail.

NOTE: To save the fluid in the pump and hose, trigger the gun into the paint container or a separate clean container. At the same time, slowly turn the pressure control knob clockwise just enough to start the pump. When solvent appears, release the trigger and continue as below.

WARNING

To reduce the risk of static sparking and splashing when flushing, always remove the spray tip from the gun and hold a metal part of the gun firmly to the side of a grounded metal pail.



**MAINTAIN FIRM
METAL-TO-METAL
CONTACT BETWEEN GUN
AND GROUNDED PAIL**

Fig 7

0143

13. Making firm metal-to-metal contact, hold the gun firmly to the side of the grounded solvent pail. Trigger the gun. At the same time, slowly turn the pressure control knob clockwise just enough to start the pump.
14. Circulate the solvent until the system is thoroughly flushed.
15. Release the trigger and engage the gun safety latch.
16. **If you are going to start spraying**, place the pump or suction tube into the supply container. Follow the **Pressure Relief Procedure** on page 2. Engage the gun safety latch until you are ready to prime the pump. See Step 3, page 9.
17. **If you are going to store the sprayer**, be sure your final flush is with an oil-based solvent, such as mineral spirits. Remove the suction tube or pump from the solvent pail. Follow the **Pressure Relief Procedure** on page 2. Engage the gun safety latch, but leave the drain valve open.

OPERATION

WARNING

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, follow this procedure whenever you shut off the sprayer, check or service any part of the spray system, install, clean or change spray tips, and whenever you stop spraying.

1. Engage the gun safety latch.
2. Open the bypass valve.
3. Depress the engine stop button.
4. Close the fuel shutoff valve.
5. 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.
6. Engage the gun safety latch.
7. Open the pressure drain valve, 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, wrap a rag around the tip guard retaining nut or hose end coupling and VERY SLOWLY loosen the part to relieve pressure gradually, then loosen completely. Now clear the tip or hose.

1. Prepare the Fluid

- a. Prepare the fluid according to the fluid manufacturer's recommendations.
- b. Place the pump or suction tube into the fluid container.

2. Starting the Sprayer

- a. Open the bypass valve to make startup easier. In the open position, the valve lever is parallel to the body of the valve. See Fig 8. Close the filter drain valve.
- b. Turn the pressure control knob *counterclockwise* until all spring tension is relieved. You will be able to feel it. The sprayer is now set at the lowest pressure setting. Turning the knob further will cause it to fall off.
- c. Open the fuel shutoff valve by screwing it out as far as it will go. See Fig 8.
- d. If the engine is cold, close the choke by turning the lever to the ON position (horizontal). See Fig 9.
- e. Disengage the foot brace from the hitch and lower it. See Fig 8.

- f. Brace one foot against the foot brace and gently pull the starter rope until you feel it engage, the continue pulling all the way out and let it recoil slowly into the starter. Then, holding the starter rope firmly, rapidly pull the rope to start the engine. If it does not start after one or two attempts, open the choke a little (turn lever toward OFF position). If the engine floods, open the choke all the way and continue pulling the rope.

WARNING

Always hold the starter rope firmly while pulling or recoiling it to reduce the chance of being hit and injured by the rope or of jamming and damaging the starter assembly.

- g. After the engine is warm, gradually open the choke lever (turn to OFF position) and close the bypass valve. See Fig 8 and 9.
- h. Raise the foot brace and engage it in the hitch.

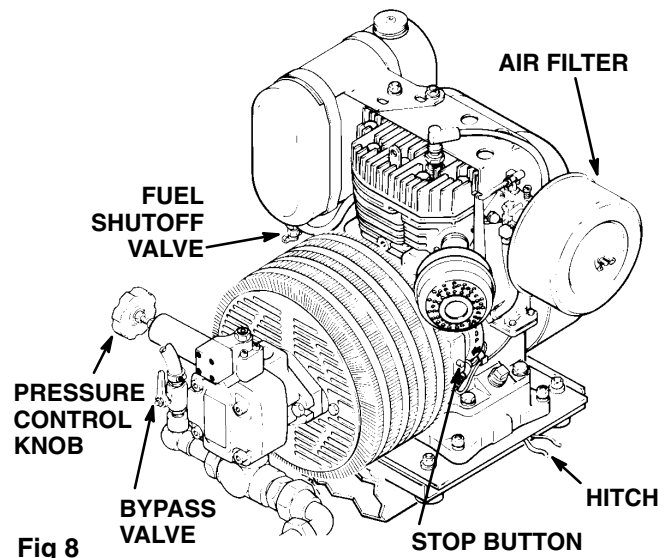


Fig 8

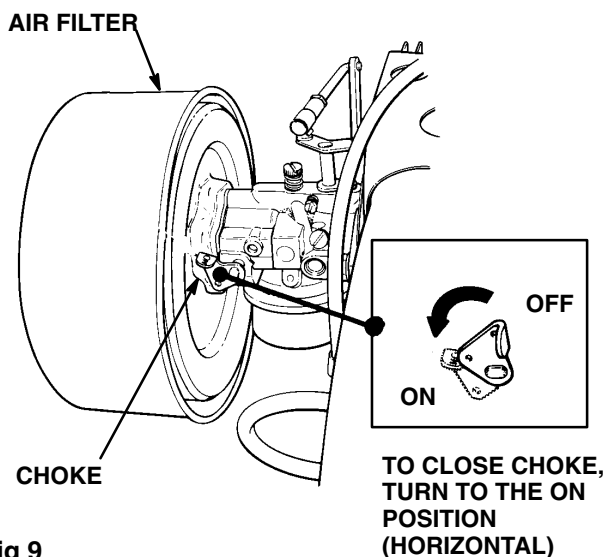


Fig 9

NOTE: In cold weather , run the engine for about 15 minutes with the bypass valve open before starting the displacement pump, to help avoid hydraulic motor stalling.

- i. Follow the **Pressure Relief Procedure Warning** on page 8, to shut off the sprayer.

WARNING

To stop the engine in an emergency , depress the engine STOP button. Close the bypass valve if possible. See Fig 8. Then follow the **Pressure Relief Procedure Warning** on page 8.

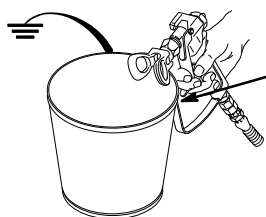
If the motor stalls during operation, depress the engine stop button turn OFF the ON/OFF switch. With your hand, firmly press straight down on the motor reset button. Now try to restart the sprayer . If it will not start, refer to the separate motor manual, 307–158.

CAUTION

Never use a hammer to depress the reset button, as it could cause serious internal motor damage.

3. Prime the Pump

- a. Be sure the gun safety latch is engaged.
- b. Don't install the spray tip yet!
- c. If the engine has not been started, follow the procedure in Step 2, page 8.
- d. Disengage the gun safety latch.
- e. Point the gun into a grounded metal pail and hold a metal part of the gun *firmly* against the pail. See the WARNING below.
- f. Squeeze the trigger and *slowly* turn the pressure control knob *clockwise* just enough to start the pump. See Fig 8.
- g. Operate the pump until all air is purged from the pump and hoses and the fluid is flowing freely from the gun.
- h. Release the trigger and engage the safety latch.
- i. Turn the pressure control knob *counterclockwise* until all spring tension is relieved. You will be able to feel it. The sprayer is now at the lowest pressure setting. Turning the knob further will remove it.
- j. Follow the **Pressure Relief Procedure** on page 8. Then install the spray tip in the gun as instructed in the separate gun or tip instruction manual. If you are using the RAC IV supplied with this sprayer, see manual 307–848.



MAINTAIN FIRM METAL-TO-METAL CONTACT BETWEEN GUN AND GROUNDED PAIL

Fig 10

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4. Adjusting the Pressure

- a. Turn the pressure control knob *clockwise* to increase and *counterclockwise* to decrease the pressure. Tighten the knob locknut to set.

- b. Always use the lowest pressure that is necessary to completely atomize the fluid.

CAUTION

Operating the sprayer at a higher pressure than necessary wastes fluid, causes early tip wear, and shortens the sprayer life.

- c. If more coverage is needed, use a larger tip rather than increasing the pressure.
- d. Check the spray pattern. The tip size and angle determines the pattern width and flow rate. See the separate manual received with your gun.

CAUTION

The engine throttle has been set and locked at 2800 RPM. The sprayer warranty will be voided and the hydraulic pump life shortened if this adjustment is changed.

5. Cleaning a Clogged Tip

WARNING

To reduce the risk of a fluid injection injury, NEVER hold your hand, body or a rag in front of the spray tip when cleaning or checking for a cleared tip. To reduce the risk of a fire or explosion, always hold the gun firmly against the side of a grounded metal waste container when checking to see if the tip was cleared or when using a self-clearing tip.

- a. Follow the **Pressure Relief Procedure Warning** on page 8.
- b. Clean the front of the tip frequently during the day to keep the fluid from building up and clogging the tip. To clean, and to clear a tip if it clogs, refer to your separate gun instruction manual. If you are using the RAC IV tip guard and SwitchTip, refer to manual 307–848.

6. Shutting Off the Sprayer

- a. Whenever you stop spraying, even for a short break, follow the **Pressure Relief Procedure Warning** on page 8.
- b. Clean the tip and gun as recommended in your separate gun or tip manual.
- c. Flush the sprayer at the end of each work day if using water-based fluid or if it could harden in the sprayer over night. See **FLUSHING GUIDELINES**, page 6. Use a compatible solvent to flush, then fill the pump and hoses with solvent such as mineral spirits to help prevent pump corrosion. **Relieve pressure!**
- d. For long term shutdown or storage, *always* flush the sprayer with mineral spirits to prevent pump corrosion. **Relieve pressure!**

7. Adjusting the Intake Valve Ball Travel.

- a. The pump is set to handle medium volume, low viscosity fluid. To adjust the pump for higher flow or heavier viscosity fluid, disassemble the intake valve as instructed in manual 307–862 and move the ball stop pin to a higher set of holes. This increases the ball travel.

MAINTENANCE

1. **Always stop the pump at the bottom of its stroke** when you take a break and at the end of the day. This helps keep fluid from drying on the rod and damaging the packings.
2. **Keep the displacement pump packing nut/wet cup 1/3 full of TSL** at all times. The TSL helps protect the packings and rod.
3. **Check the tightness of the packing nut daily** . It should be tight enough to stop leakage but no tighter.

WARNING

Proper engine and hydraulic oil level is important to prevent costly damage to the sprayer. Check it as often as recommended in Steps 4 and 5, below.

4. **Check the hydraulic oil level weekly.** The oil must be up to the top mark on the dipstick. Use only Graco Hydraulic Oil.
5. **Check the engine oil level at least weekly.** The oil must be up to the top mark on the dipstick with the fill cap unthreaded. The engine should not use more than one ounce of oil per hour of operation. Consult the engine manual, supplied, for additional recommended maintenance.
6. **Inspect the return line filter frequently** for clogging. Replace it after every 500 hours of operation or every 6 months, whichever comes first. A clogged or worn out filter reduces filter capability and will damage the hydraulic pump.
7. **Change the hydraulic oil after every 2000 hours** of operation or every 12 months, whichever comes first. For continuous operation in temperatures above 85°F (30°C), change the oil after every 1000 hours or 6 months of use. See Step 8 for the procedure.

CAUTION

Cleanliness is essential when servicing the hydraulic system. Use special care to avoid getting dust or dirt into the hydraulic system to prevent damage to the hydraulic components.

8. **To change the hydraulic oil:**
 - a. Follow the **Pressure Relief Procedure Warning** on page 8.
 - b. Place a waste container under the drain plug of the hydraulic reservoir. See Fig 11. Unscrew the plug and drain the reservoir . Reinstall the plug before proceeding.
 - c. Remove the nuts and reservoir cover.
 - d. Remove the return line filter and install a new filter assembly.
 - e. Inspect the inlet filter and replace it if needed.
 - f. Install the reservoir cover and nuts. Then pour in five gallons (19 liters) of Graco Hydraulic Oil through the intake filter. See Fig 11. Install the fill cap.

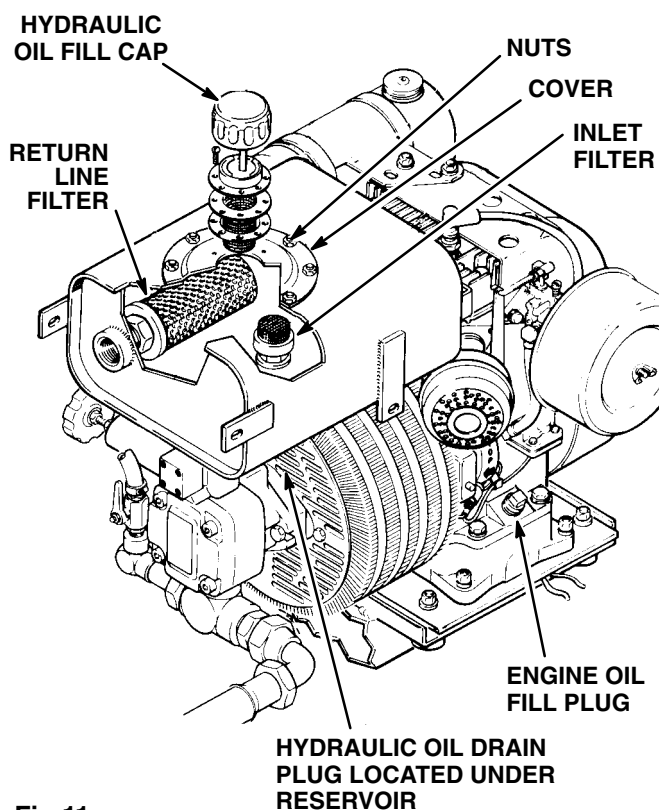


Fig 11

TROUBLESHOOTING

WARNING

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, follow this procedure whenever you shut off the sprayer, check or service any part of the spray system, install, clean or change spray tips, and whenever you stop spraying.

1. Engage the gun safety latch.
2. Open the bypass valve.
3. Depress the engine stop button.
4. Close the fuel shutoff valve.

5. 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.
6. Engage the gun safety latch.
7. Open the pressure drain valve, 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 retaining nut or hose coupling to relieve pressure gradually, then loosen completely. Now clear the tip or hose.

Check everything in the Troubleshooting Chart before disassembling the sprayer.

| PROBLEM | CAUSE | SOLUTION |
|--|---|---|
| Gas engine doesn't work properly. | | Consult engine manual, supplied. |
| Gas engine operates, but displacement pump doesn't operate. | Hydraulic motor stalled. Pressure setting too low. Displacement pump outlet filter (if used) is dirty or clogged. Tip or tip filter (if used) is clogged. Hydraulic fluid too low. Hydraulic pump worn or damaged. Hydraulic motor worn or damaged. Displacement pump rod seized by dried paint. | Depress the engine stop button. Firmly press straight down on motor reset button. Restart sprayer, see page 8. If it doesn't start, see manual 307-158. Increase pressure. See page 9. Clean the filter. Remove tip and/or filter and clean. Shut off sprayer and add fluid immediately*. See page 5. Return sprayer for repair. Return sprayer for repair. Service pump. See manual . |
| Displacement pump operates, but output is low on upstroke. | Piston ball check not seating properly. Piston packings worn or damaged. | Service piston ball check. See manual 307-862. Replace packings. See manual |
| Displacement pump operates but output is low on downstroke and/or on both strokes. | Piston packings worn or damaged. Intake valve ball check not seating properly. | Replace packings. See manual 307-862 Service intake valve ball check. See manual 307-862. |
| Paint leaks into wetcup | Loose wet-cup Throat packings worn or damaged. | Tighten just enough to stop leakage. Replace packings. See manual 307-862 |
| Excessive leakage around hydraulic motor piston rod wiper. | Piston rod seal worn or damaged. | Replace these parts. See manual 307-158. |
| Fluid delivery is low. | Pressure setting too low. Displacement pump outlet filter (if used) is dirty or clogged. Hydraulic pump is worn or damaged. Hydraulic motor is worn or damaged. Large pressure drop in fluid hose. | Increase pressure. See page 9. Clean filter Return sprayer for repair. Return sprayer for repair. Use larger diameter hose. |
| The sprayer overheats. | Cooler or blower is worn or damaged. | Replace. See page 13. |
| Spitting from gun. | Air in fluid pump or hose. Fluid supply is low or empty. | Check for loose connections on siphon assembly, tighten, then reprime pump. Refill supply container. |

*Check hydraulic fluid level often. Do not allow it to become too low. Use only Graco approved hydraulic fluid. See pages 5 and 20.

Replacing the Hydraulic Pump

1. Follow the **Pressure Relief Procedure Warning** on page 11. Let the hydraulic system cool before beginning the service procedure.
2. Unscrew the reservoir drain plug (51), having a container ready to catch the draining fluid.
3. Disconnect the hose (7) from the bypass valve (9) by loosening the hose clamp (8). See Fig 12.
4. Loosen the hose clamp (8) and pull the hose (85) off the hose insert (5) near the elbow (3). See Fig 12.
5. Loosen the hose clamp (54) on the hose (53) just above the hydraulic pump (107). See Fig 12.
6. Loosen the tube fitting nut (18) of hose (22). See Fig 12.
7. Remove the two capscrews (150), lockwashers (66) and washers (64) holding the pump (107) to the support (117). See Fig 12.

8. Pull the pump straight off the pump support.
9. Loosen the setscrews (108) on the pump half of the coupler (109). See Fig 13.
10. Remove all fittings from the old pump and install them on the new pump in the same order.
11. Check Dimension A as shown in Fig 13. When the dimension is correct, tighten the setscrews (108), slide the new pump assembly onto the pump support (117) and recheck the dimension.

CAUTION

The correct coupling dimension is critical to avoid improper coupler engagement to the coupler spider which will damage the coupler and make the sprayer inoperable.

12. Reconnect the hoses. Reinstall the reservoir plug (51), and refill the reservoir with clean, Graco approved hydraulic oil.

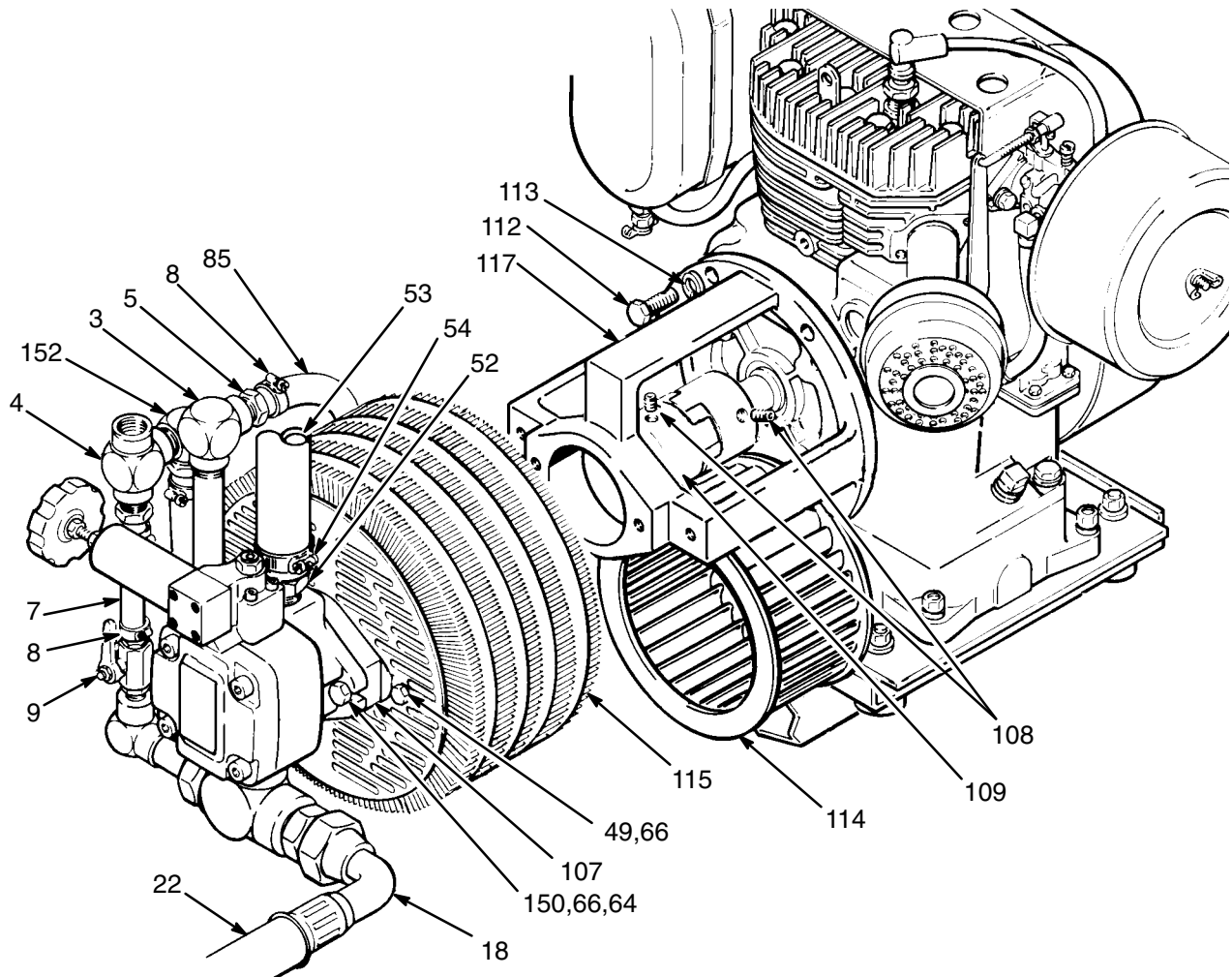


Fig 12

Replacing the Cooler and Blower

1. Follow the **Pressure Relief Procedure Warning** on page 11. Let the hydraulic system cool before beginning the service procedure.
2. Remove the hydraulic pump as instructed in the previous section.
3. Disconnect the cooler to reservoir return hose (7.) by loosening the hose clamp (8). See Fig 12.
4. Remove the cooler capscrews (49) and lockwashers (66). See Fig 12.
5. Remove the fan guard (23). See Fig 12.
6. Pull the cooler (115) straight out.
7. Inspect the rubber pad (116) for wear and replace if necessary. See Fig 13.
8. Inspect the blower wheel (114) for wear. See Fig 12. If it needs to be replaced, follow Steps 8a–8e.
 - a. Unscrew the setscrews (108) from the engine half of the coupler (109). Unscrew the blower setscrews (B). See Fig 13.
 - b. Remove the capscrews (112) and lockwashers (113) holding the pump support (1 17) to the engine and pull the support off. See Fig 12.
 - c. Pull the pump support and blower off far enough for the blower to fall out of the bottom of the housing.
 - d. Install a new blower. Secure the pump support (117) to the engine. See Fig 12.
 - e. Check Dimension A as shown in Fig 13 and tighten the coupler setscrews (108). Butt the blower hub up to the coupler half, keeping the blower in full contact with the coupler, and tighten the blower setscrews (B).
9. Install the cooler.
10. Fold the flaps of the pad (116) toward the cooler fins and install the fan guard (23), capscrews (49) and lockwashers (66). See Fig 12.
11. Reinstall the hydraulic pump and reconnect all hoses.

CAUTION

The correct coupling dimension is critical to avoid improper coupler engagement to the coupler spider which will damage the coupler and make the sprayer inoperable.

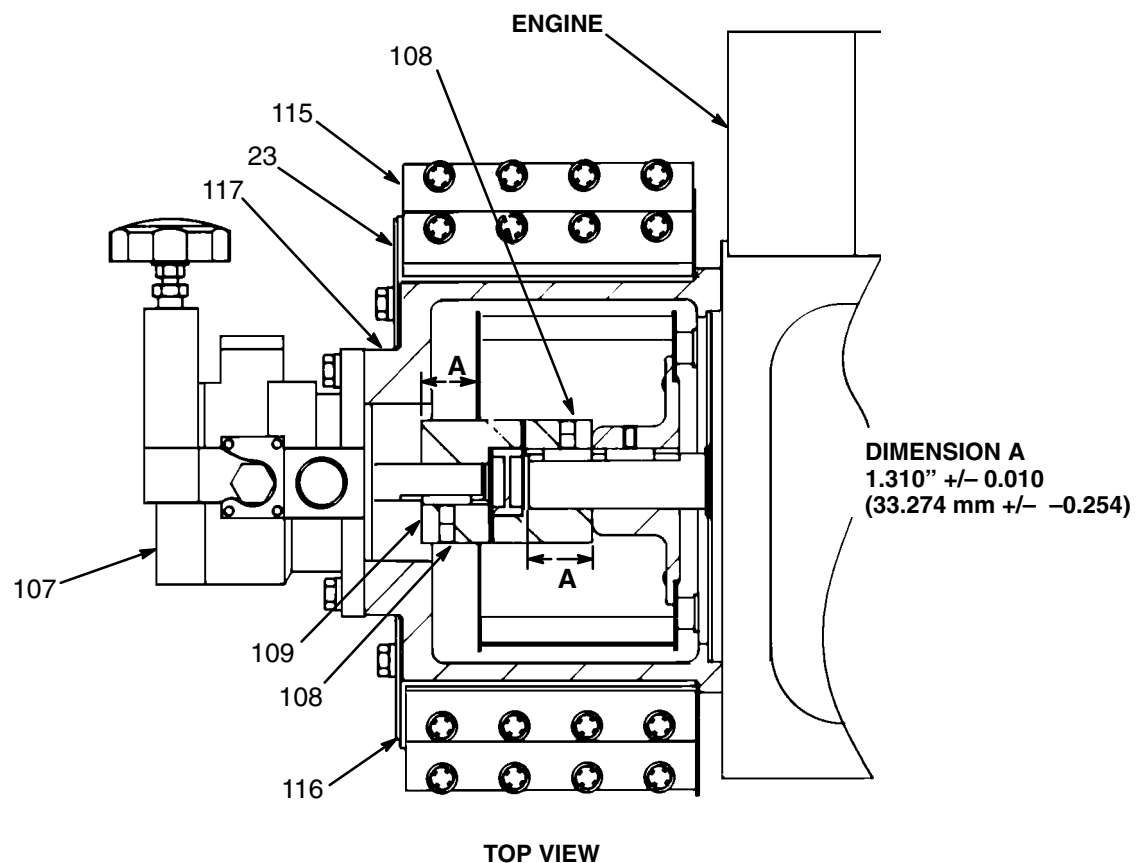


Fig 13

DISPLACEMENT PUMP SERVICE

Disconnect the Displacement Pump

1. Flush the pump if possible. Stop the pump on the down stroke.
2. Follow the **Pressure Relief Procedure Warning** on page 11.
3. Remove the suction tube and fluid hose from the displacement pump.
4. Unscrew the three tie rod locknuts (48). See Fig 14.
5. Unscrew the shouldered nut (35). Pull the displacement pump (46) off the tie rods (47).
6. Screw the jam nut (90) up onto the connecting rod (91).
7. Remove the lower cotter pin (89) and unscrew the connecting rod (91) from the displacement rod (A).
8. Refer to separate manual 307–862 for displacement pump repair instructions. Repair kit 206–735 is available.

Reconnecting the Displacement Pump

1. Screw the connecting rod (91) into the displacement rod (A) and replace the lower cotter pin (89). Screw the jam nut (90) all the way down. See Fig 14.
2. Mount the displacement pump (46) onto the tie rods (47).
3. Screw the shouldered nut (35) onto the hydraulic motor (29). Screw the tie rod locknuts (48) onto the tie rods (47) and torque to 35–50 ft-lb (47–68 N.m).
4. Reattach the hoses to the displacement pump.
5. If the grounding wire was disconnected before service, be sure to reconnect it before operating the sprayer.
6. Start the pump and operate it slowly to check the tie rods for binding. Adjust the tie rod locknuts, if necessary to eliminate binding.

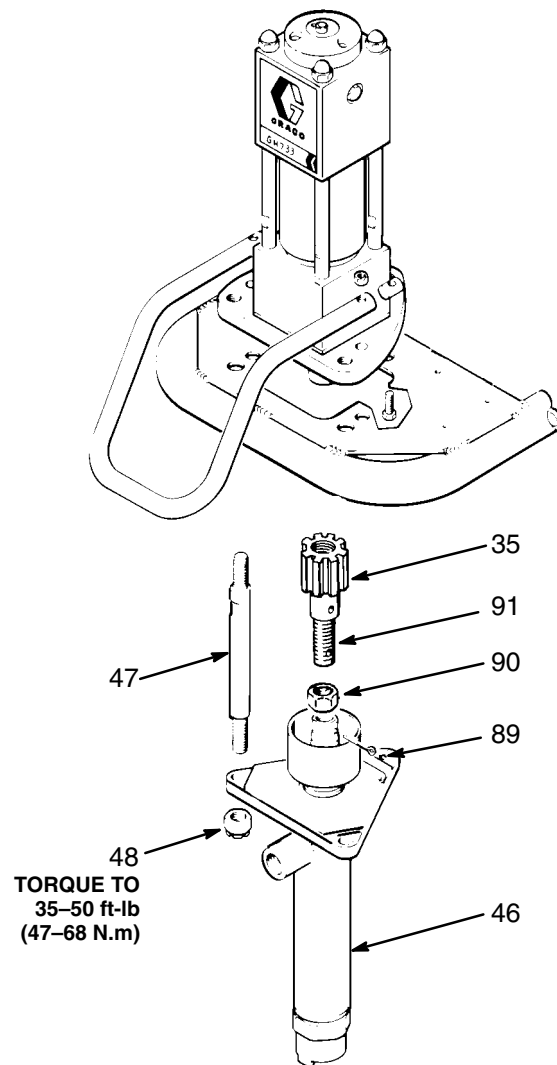


Fig 14

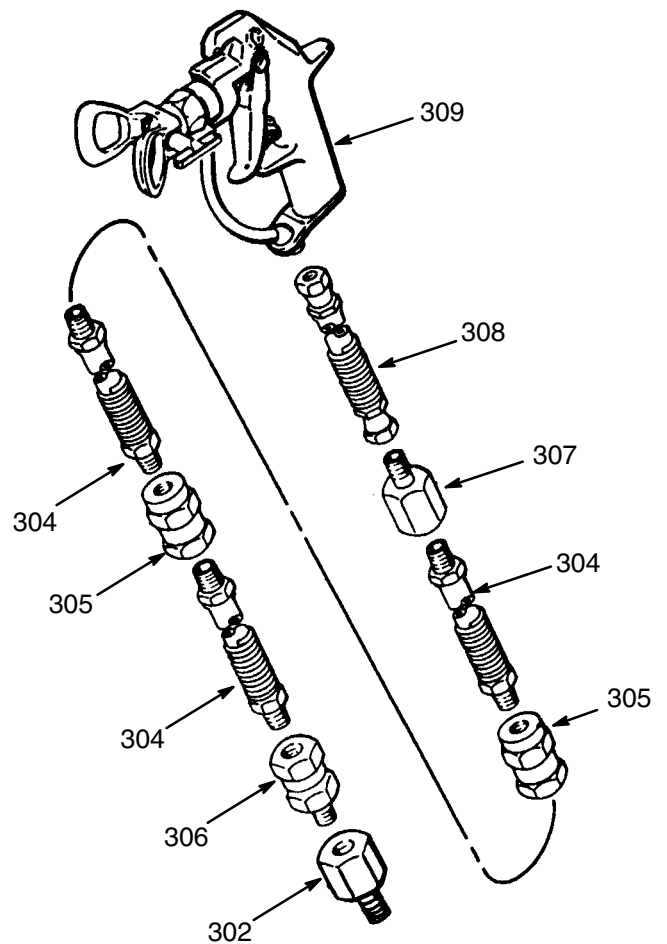
PARTS DRAWING

Model 230-974, GH 533 Sprayer

Includes items 301 to 309 as listed

| REF NO. | PART NO. | DESCRIPTION | QTY |
|---------|----------|---|-----|
| 301 | 231-533 | GH533 SPRAYER | 1 |
| 302 | 150-287* | ADAPTER, 1/4 npt(m) x 3/8 npt(f) | 1 |
| 304 | 214-705 | HOSE, nylon, 3/8" dia., cpld 3/8 npt(mbe) 50 ft. (15 m) long | 3 |
| 305 | 156-173 | ADAPTER, 3/8 npt(f) x 3/8 npsm swivel | 2 |
| 306 | 155-665 | ADAPTER, 3/8 npt(m) x 3/8 npsm swivel | 1 |
| 307 | 150-287 | ADAPTER, 1/4 npt(m) x 38 npt(f) | 1 |
| 308 | 214-635 | HOSE, nylon, 1/4" dia. cpld 1/4 npsm(fbe), 28" (0.7 m) long | 1 |
| 309 | 235-463 | SILVER PLUS SPRAY GUN See manual 308-236 for parts | 1 |

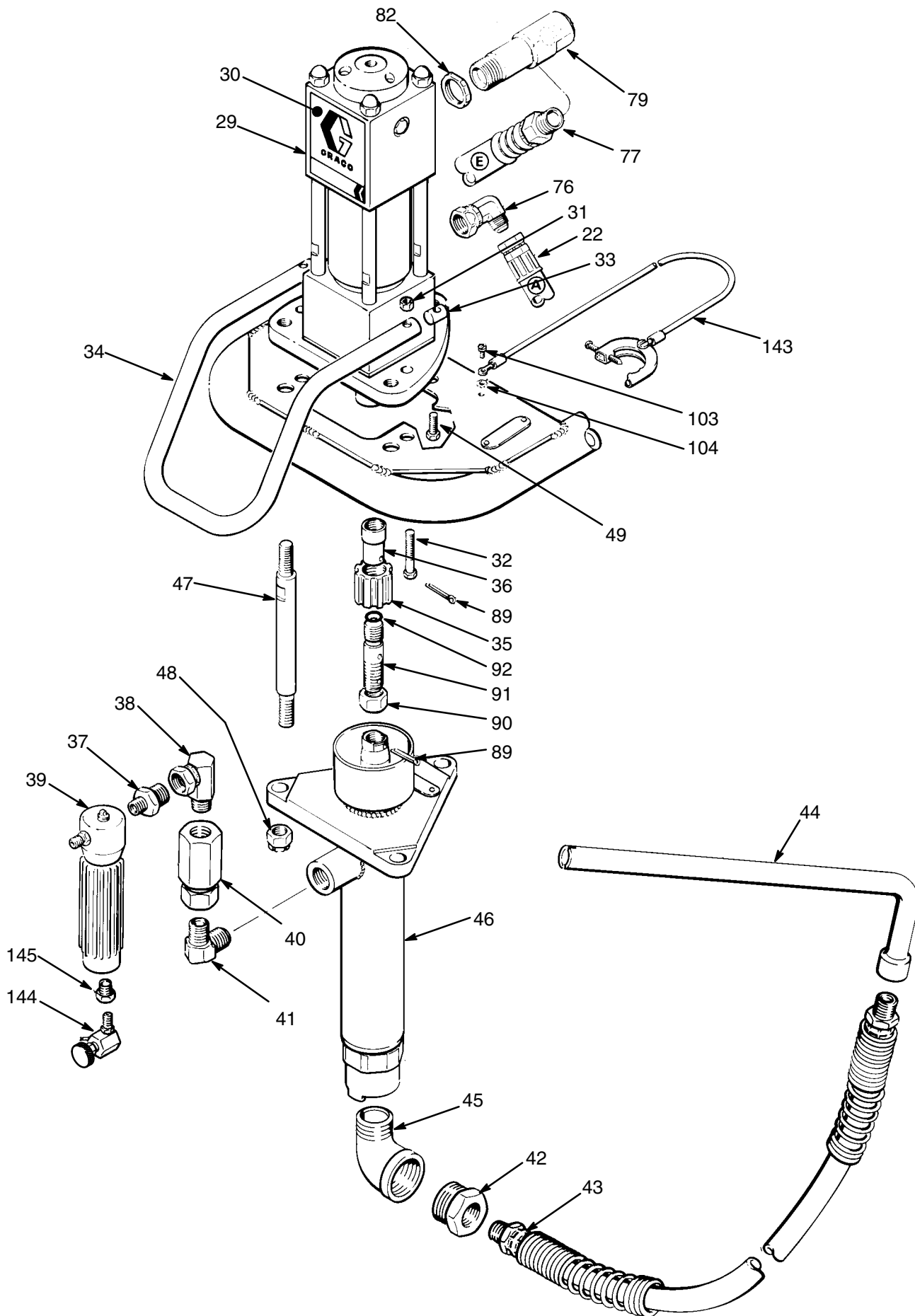
*Install this adapter in place of the fluid outlet nipple in the fluid filter.



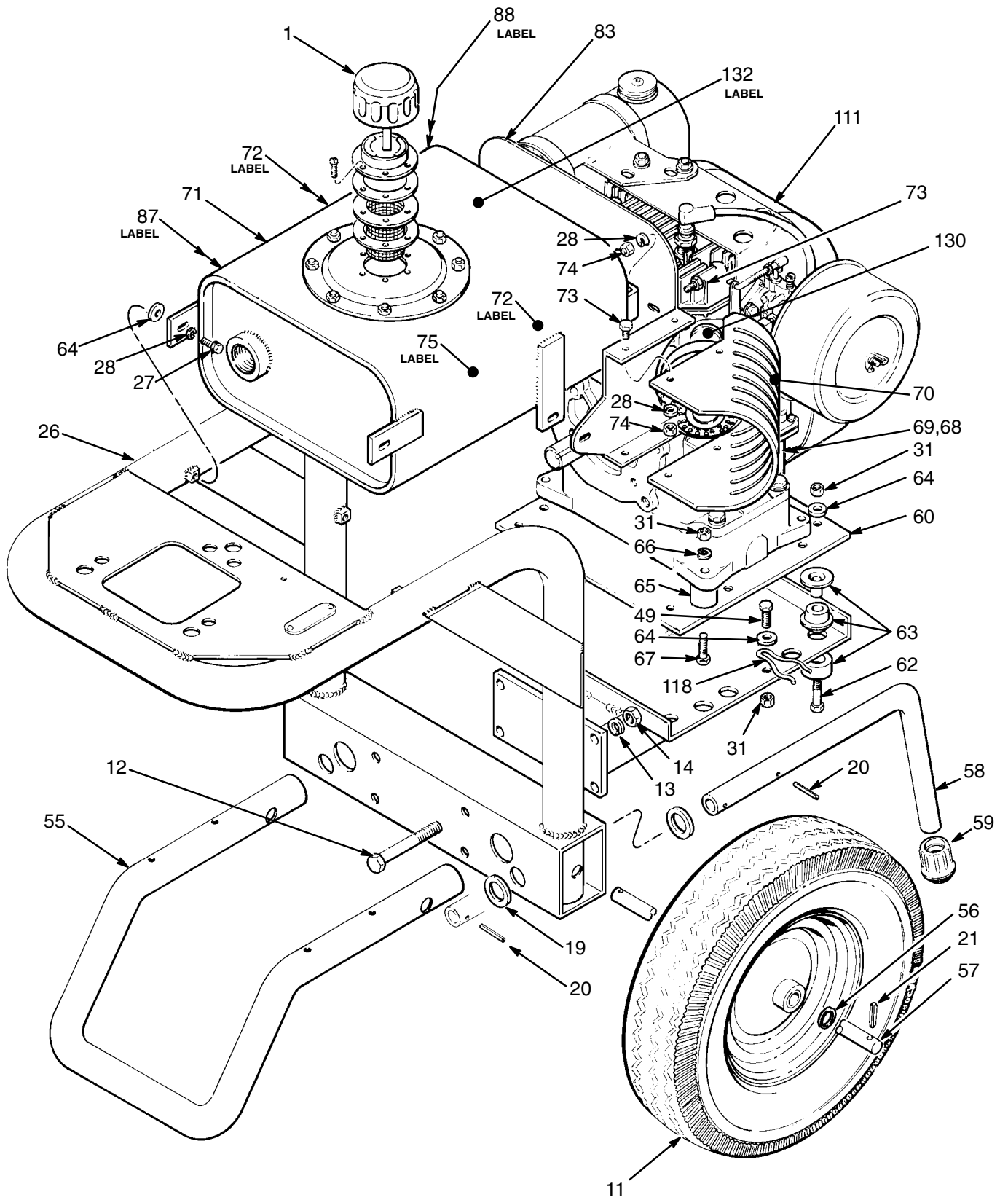
MANUAL CHANGE SUMMARY

The CE symbol was added to the first page and the **Technical Data** section was updated to add the Sound Level data. Instruction to wear ear protection was added to **EQUIPMENT MISUSE HAZARD** of **WARNINGS**.

PARTS DRAWING



PARTS DRAWING



PARTS LIST

Model 231–533, Series B

Includes items 1–145

REF

| REF NO. | PART NO. | DESCRIPTION | QTY |
|---------|----------|--|-----|
| 1 | 107-074 | BREATHER, fill cap | 1 |
| 2 | 106-114 | STRAINER, inlet | 1 |
| 3 | 107-053 | ELBOW, pipe, 90°, 1/2 x 3/8 npt | 1 |
| 4 | 107-128 | TEE, service | 1 |
| 5 | 107-050 | INSERT, hose, 1/2 npt(f) | 3 |
| 7 | 178-859 | HOSE, rubber, 5" (125 mm) | 1 |
| 8 | 102-473 | CLAMP, hose | 6 |
| 9 | 210-658 | VALVE, ball 3/8 npt(m) | 1 |
| 10 | 165-472 | ELBOW, pipe, 90°, 3/8 npt(f) | 1 |
| 11 | 106-039 | WHEEL | 2 |
| 12 | 106-123 | CAPSCREW, hex hd, 1/2 x 4" | 4 |
| 13 | 100-018 | LOCKWASHER, spring, 1/2" | 4 |
| 14 | 100-321 | NUT, hex, 1/2" thread | 4 |
| 15 | 188-344 | NIPPLE, pipe, reducing, 3/8 x 1/2 npt | 1 |
| 16 | 103-475 | TEE, pipe, 1/2 npt(f) | 1 |
| 17 | 158-491 | NIPPLE, short, 1/2 npt | 1 |
| 18 | 107-052 | FITTING, tube, flared | 1 |
| 19 | 158-884 | SPACER, flange, leather | 2 |
| 20 | 103-420 | PIN, spring | 2 |
| 21 | 101-354 | PIN, straight, spring | 2 |
| 22 | 217-468 | HOSE, hydraulic supply, nylon, 3/4" ID, cpld 1-1/16" fbe, 24.75" (628 mm) | 1 |
| 23 | 178-751 | GUARD, fan | 1 |
| 24 | 179-714 | SPACER | 1 |
| 25 | 100-213 | NIPPLE, pipe, 3/8 npt x 3" | 1 |
| 26 | 217-469 | FRAME, pump | 1 |
| 27 | 101-578 | CAPSCREW, hex head, no. 8-32 x 0.38" | 4 |
| 28 | 100-214 | LOCKWASHER, spring, 5/16" | 1 |
| 29 | 217-022 | MOTOR, hydraulic <i>see manual 307-158 for parts</i> | 1 |
| 30 | 177-757 | LABEL, identification | 1 |
| 31 | 101-566 | NUT, lock, 3/8-16 | 1 |
| 32 | 106-212 | CAPSCREW, 3/8-16 x 2-3/4" | 2 |
| 33 | 177-765 | PLUG | 2 |
| 34 | 177-652 | HANDLE | 1 |
| 35 | 168-210 | NUT, shouldered | 1 |
| 36 | 168-211 | COUPLING, connecting rod | 1 |
| 37 | 160-327 | ADAPTER, 90° union; 3/4 npt(m) x 3/4 npt(f) swivel | 1 |
| 38 | 161-800 | ADAPTER, 3/4 npt x 3/8 npsm (fbe) | 1 |
| 39 | 214-570 | FLUID FILTER <i>SEE 307-273 FOR PARTS</i> | 1 |
| 40 | 235-497 | CHECK VALVE, cpld 3/4 npt(fbe) | 1 |
| 41 | 501-175 | ELBOW, pipe, 3/4 npt (mbe) | 1 |
| 42 | 102-000 | BUSHING, 1-1/2" x 1" npt | 1 |
| 43 | 214-959 | HOSE, suction, 1" npt(mbe), 1" ID, 6 ft (1.8 m) long, spring guard both ends | 1 |
| 44 | 169-528 | TUBE, suction, 1" npt | 1 |
| 45 | 101-552 | ELBOW, street, 90°, 1-1/2" npt | 1 |
| 46 | 217-530 | DISPLACEMENT PUMP ASSY, <i>see manual 307-862 for parts</i> | 1 |
| 47 | 609-822 | ROD, tie, 13.88" (351 mm) | 3 |
| 48 | 101-712 | NUT, lock, type "E" 5/8"- 11 | 3 |
| 49 | 100-101 | CAPSCREW, hex head, 3/8-16 x 1" | 5 |
| 50 | 104-444 | O-RING, VITON® | 1 |
| 51 | 104-126 | PLUG, box, 3/4" | 1 |
| 52 | 107-049 | INSERT, hose, 3/4 npt(f) | 1 |
| 53 | 178-791 | HOSE, suction, 1" ID, 3' (9.9 m) | 1 |
| 54 | 101-818 | CLAMP, hose, for 13/16" to 1-1/2" OD | 2 |
| 55 | 178-773 | LEG, frame | 1 |
| 56 | 177-641 | WASHER, flat | 2 |
| 57 | 177-570 | AXLE | 1 |
| 58 | 177-656 | FOOT BRACE | 1 |
| 59 | 101-725 | TIP, rubber | 1 |
| 60 | 177-585 | PLATE, engine | 1 |
| 61 | 216-141 | SUPPORT, engine | 1 |
| 62 | 100-468 | CAPSCREW, hex hd, 3/8 x 1.5" | 4 |
| 63 | 104-766 | MOUNT, motor | 4 |
| 64 | 100-023 | WASHER, 3/8" | 1 |
| 65 | 178-754 | SPACER, engine | 4 |
| 66 | 100-133 | LOCKWASHER, 3/8" | 8 |
| 67 | 100-531 | CAPSCREW, hex hd, 3/8 x 2.5" | 4 |
| 69 | 178-932 | LABEL, caution | 1 |
| 70 | 178-753 | GUARD, muffler | 1 |
| 71 | 218-125 | RESERVOIR KIT | 1 |
| 72 | 185-951* | LABEL, DANGER | 1 |
| 73 | 100-538 | SCREW, hex head, 5/16-18 x 1/2" | 6 |
| 74 | 100-188 | NUT, heavy hex, 5/16-18 unc-2a | 1 |
| 75 | 178-137 | LABEL, identification | 1 |
| 76 | 106-053 | ELBOW, 90°, 1-1/16" thread | 1 |
| 77 | 217-504 | HOSE, hydraulic return 1" ID, cpld 1-5/16" x 1/2" | 1 |
| 78 | 107-127 | ADAPTER, male, 1-5/16" x 3/4" | 1 |
| 79 | 620-188 | ADAPTER, manifold, 1" (m) x 3/4 x 1/2 x 3/8 (f) | 1 |
| 82 | 105-430 | NUT, seal, 1" npt | 1 |
| 83 | 179-715 | SHIELD, heat | 1 |
| 85 | 178-795 | HOSE, cooler, 0.625", 10.5" lg | 1 |
| 87 | | LABEL, identification | 1 |
| 88 | 178-935 | LABEL, caution | 1 |
| 89 | 100-103 | PIN, cotter, 0.125" dia, 1.5" long | 2 |
| 90 | 101-936 | NUT, hex jam, 3/4"-10 | 1 |
| 91 | 168-212 | ROD, connecting | 1 |
| 92 | 158-674 | PACKING, o-ring, buna-n | 1 |
| 93 | 107-125 | ELBOW, 90° street, 3/4 npt(m) | 1 |
| 94 | 105-429 | NUT, seal, 3/4 npt | 1 |
| 95 | 178-750 | FITTING, return, 1" npt(m) x 3/4 npt(f) | 1 |
| 96 | 178-794 | FILTER, fluid | 1 |
| 97 | 500-054 | BUSHING, hex hd | 1 |
| 98 | 107-067 | O-RING, buna-n | 1 |
| 103 | 101-845 | SCREW, self-tapping, no. 6 x 3/8" | 1 |
| 104 | 103-181 | LOCKWASHER, ext., no. 6 | 1 |
| 105 | 219-099 | KNOB, pump | 1 |
| 106 | 100-187 | NUT, hex, 5/16" | 1 |
| 107 | 178-873 | PUMP, vane, hydraulic | 1 |
| 108 | 100-421 | SETSCREW, 5/16" X 3/8" | 2 |
| 109 | 106-063 | COUPLER | 2 |
| 110 | 605-358 | KEY, 1/4" | 2 |
| 111 | 217-284 | ENGINE, 10 HP | 1 |
| 112 | 107-143 | CAPSCREW, sch, 7/16 x 1.25" | 4 |
| 113 | 100-052 | LOCKWASHER, spring, 7/16" | 4 |
| 114 | 178-792 | BLOWER | 1 |
| 115 | 178-788 | COOLER | 1 |
| 116 | 178-861 | PAD | 2 |
| 117 | 178-786 | SUPPORT, pump | 1 |
| 118 | 106-106 | HITCH, foot brace | 1 |
| 130 | 106-229 | NIPPLE | 1 |
| 131 | 206-994 | TSL, 8 oz. <i>not shown</i> | 1 |
| 132 | 185-016 | LABEL, Caution | 1 |
| 137 | 100-004 | CAPSCREW, hex hd, 3/8-16" x 1.25" | 2 |
| 138 | 107-032 | ELBOW, 90° street, 3/8 npt (m x f) | 1 |
| 139 | 158-683 | ELBOW, 90°, 3/8 npt(mxf) | 1 |
| 140 | 108-426 | O-RING, buna-n | 1 |
| 141 | 183-574 | HOSE, rubber tube, 4.5" | 1 |
| 142 | 183-575 | NIPPLE, barbed hose, 3/8-18 npt(f) | 1 |
| 143 | 222-011 | GROUND WIRE & CLAMP | 1 |
| 144 | 222-198 | VALVE, pressure drain | 1 |
| 145 | 100-176 | REDUCER, pipe, 3/8 m x 1/4 f | 1 |

*Replacement DANGER and WARNING labels are available at no charge.

TECHNICAL DATA

| | |
|----------------------------|---|
| Engine | KOHLER Model K241-T, 4 cycle single cylinder, air cooled, 10 HP, (7.5 Kw) |
| Gasoline | 1.5 gallon (5.7 liter capacity) consumes 1.3 gal/hr (4.9 liter/hr) |
| Hydraulic Fluid Sump | 5 gallon (19 liters) |
| Hydraulic Pressure | 900 psi (62 bar) 10.2 gpm (39 l/min) |
| Displacement Pump | 3000 psi (210 bar) Maximum Working Pressure 2 GPM (7.5 liter/min) output, 20 cycles/gallon |
| Pump Fluid Outlet Size | 3/4 npsm(m) |
| Fluid Filter Outlet Size | 1/4 npt(f) |
| Wetted Parts: | |
| Displacement Pump | Steel, Nitralloy, Tungsten Carbide, PTFE, Leather |
| Filter | Aluminum, Carbon steel, Stainless Steel, |
| Weight (dry w/o packaging) | 500 lb (225 Kg) |
| Height | 48 in. (1.2 m) |
| Length | 48 in. (1.2 m) |
| Width | 29 in. (736 mm) |
| Sound Levels*: | |
| Sound Pressure | 100 dB(A) |
| Sound Power | 109 dB(A) |

* Measured at maximum normal load conditions.

NOTE: PTFE®

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

ACCESSORIES

Must be purchased separately.

GRACO-APPROVED HYDRAULIC OIL

| | |
|----------------|-----------------------|
| 169-236 | 5 Gallons (20 liters) |
| 207-428 | 1 Gallon (3.8 liters) |

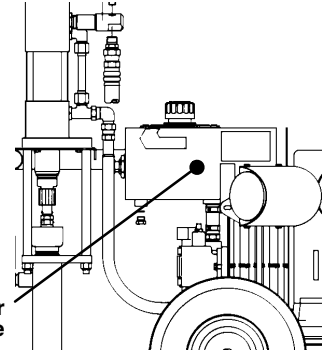
DANGER LABELS

The English language DANGER label shown on page 1 is also on your sprayer. If you have painters who do not read English, order one of the following labels to apply to your sprayer. The drawing below shows the best placement of these labels for good visibility.

Order the labels directly from Graco, free of charge. Toll Free: 1-800-328-0211

| | |
|----------------|----------------|
| French | 186-956 |
| Spanish | 185-961 |
| German | 186-041 |
| Greek | 186-045 |
| Korean | 186-049 |
| English | 185-593 |

Apply other
language here



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, with the exception of defects in parts on the drive train/gear box on EM and GM sprayers or power train on EH and GH sprayers, which will be repaired or replaced for twenty-four months from the date of sale for Gas-Hydraulic (GH) and Gas-Mechanical (GM) sprayers and for thirty-six months from the date of sale for Electric-Mechanical (EM), Electric-Hydraulic (EH), 390st and 490st sprayers. 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

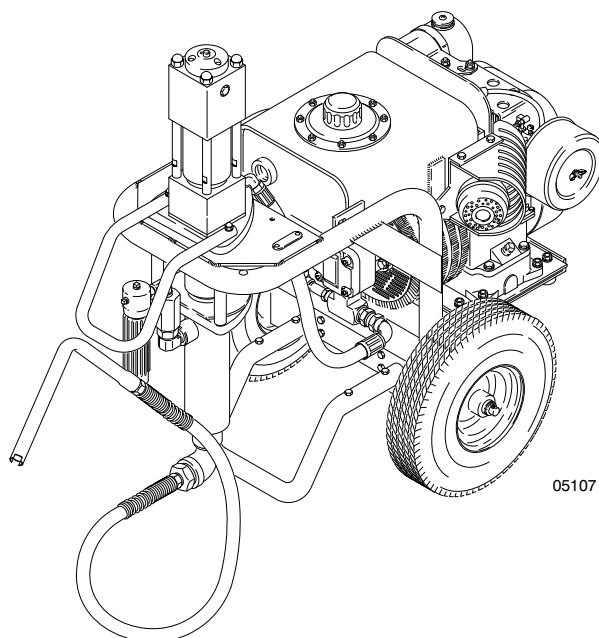
Graco makes no warranty, and disclaims all implied **warranties of merchantability and fitness for a particular purpose**, with respect to accessories, equipment, materials, or components sold but not manufactured by Graco. These items sold, but not manufactured by Graco (such as electric motor, switches, 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, Detroit, Los Angeles

Foreign Offices: Belgium; Canada; England; Korea; Switzerland; France; Germany; Hong Kong; Japan

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

PRINTED IN U.S.A. 307-615 6-83 Revised August 1995



05107

Model 231-533, Basic Sprayer
Model 230-974, Complete Sprayer
With 50 ft (15.2 m), 3/8 in. I.D. hose or 100 ft (30.5 m) hose, 3 ft (0.9 m) 3/16 in. I.D. whip hose, and Silver gun with RAC IV DripLess™ Tip Guard and 517 SwitchTip™

Technical Data

Maximum Working Pressure 3000 psi (210 bar)
Gasoline Engine Kohler, 10 HP, fan cooled
4-stroke, single cylinder
Fuel Tank Capacity 1.5 gal (5.7 liter)
Delivery 2.0 gpm (7.6 lpm)
Cycles Per Gallon (liter) 20 (5.3)
Tip Size one gun with 0.043 in. tip
two guns with 0.031 in. tip
with latex at 2000 psi (138 bar)
Pump Fluid Outlet Size 3/4 npsm (m)
Fluid Filter Outlet Size 1/4 npt(m)
Fluid Filter Material aluminum, stainless steel,
carbon steel
60 mesh (250 micron) reusable SST screen
Spray Hose Requirements grounded,
50 ft (15 m) minimum, non-wire braid,
spring guards on both ends

Pump Material steel, nitralloy, tungsten carbide
Pump Packing Material UHMWPE, leather

Application

Sprays fluids from stains to most high builds and roof coatings. **Do not** use with solvents such as methylene chloride or other HHCs.

Dimensions

Height 48 in. (1219 mm)
Length 48 in. (1219 mm)
Width 29 in. (736 mm)
Weight 465 lb (211 kg)



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

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TO PLACE AN ORDER, call
1-800-367-4023 Toll Free

FOR TECHNICAL ASSISTANCE, call
1-800-543-0339 Toll Free

3Z7-615

Rev B

E-Z REFERENCE

Supplement to instruction manual 307-615.

GH533 Hydra-Spray[®] Sprayer

⚠ WARNING



INJECTION HAZARD

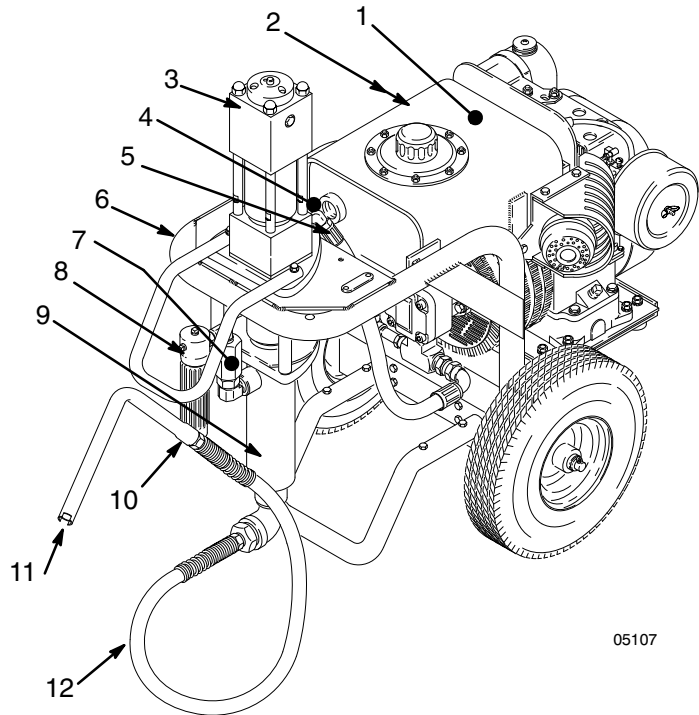
This form is only a quick reference to the features and frequently ordered parts of this sprayer. To reduce the risk of serious injury, including fluid injection, while operating or repairing this sprayer, follow the warnings and instructions in manual 307-615.

Model 231-533, Series B

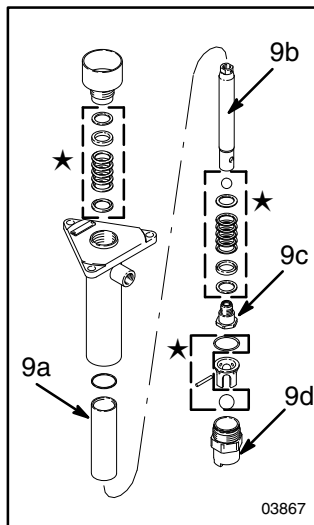
| Ref No. | Part No. | Description |
|---------|----------|-----------------------|
| 1 | 218-717 | Reservoir Kit |
| 2 ▲ | 185-951 | Danger Label |
| 3 | 217-022 | Hydraulic Motor |
| 4 | 217-504 | Hydraulic Return Hose |
| 5 | 217-468 | Hydraulic Supply Hose |
| 6 | 217-469 | Frame |
| 7 | 235-497 | Check Valve |
| 8 | 214-570 | Fluid Filter |
| 9 | 217-530 | Displacement Pump |
| 9a | 178-900 | .Sleeve |
| 9b | 178-899 | .Piston Rod |
| 9c | 205-516 | .Piston Valve |
| 9d | 217-476 | .Intake Valve |
| 10 | 222-198 | Pressure Drain Valve |
| 11 | 169-528 | Suction Tube |
| 12 | 214-959 | Suction Hose |
| 13 | 217-284 | Engine |
| 14 | 106-063 | Coupler |
| 15 | 178-788 | Cooler |
| 16 | 178-873 | Vane Pump |

▲ Extra danger labels are available for free.

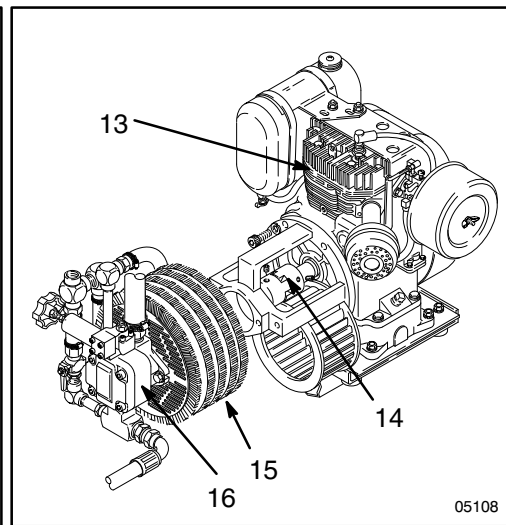
Packing Repair Kit 220-399
Includes all parts marked with a ★



05107



03867



05108