

# Airless Paint Sprayer

3A1188E

EN

For application of architectural paints and coatings. For professional use only.

**HSS9000 Models: 24F577, 16M530, 16M614, 865903**

**HSS11000 Models: 24F578, 16M615**

*3300 psi (22.8 MPa, 228 bar) Maximum Working Pressure*

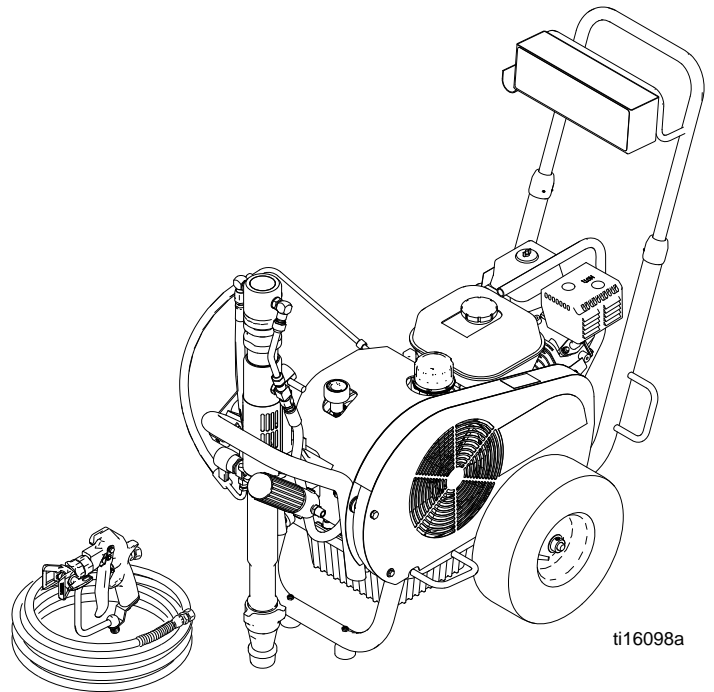


## Important Safety Instructions

Read all warnings and instructions in this manual and in your gun manual. Save all instructions.



**Gun Manual 3A0413**



ti16098a

# Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

## **WARNING**



### **FIRE AND EXPLOSION HAZARD**

Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well ventilated area.
- Do not fill fuel tank while engine is running or hot; shut off engine and let it cool. Fuel is flammable and can ignite or explode if spilled on hot surface.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Ground all equipment in the work area. See **Grounding** instructions.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail.
- If there is static sparking or you feel a shock, **stop operation immediately**. Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.

# ! WARNING



## SKIN INJECTION HAZARD

High-pressure spray is able to inject toxins into the body and cause serious bodily injury. In the event that injection occurs, **get immediate surgical treatment.**

- Do not aim the gun at, or spray any person or animal.
- Keep hands and other body parts away from the discharge. For example, do not try to stop leaks with any part of the body.
- Always use the nozzle tip guard. Do not spray without nozzle tip guard in place.
- Use Airlessco nozzle tips.
- Use caution when cleaning and changing nozzle tips. In the case where the nozzle tip clogs while spraying, follow the **Pressure Relief Procedure** for turning off the unit and relieving the pressure before removing the nozzle tip to clean.
- Do not leave the unit energized or under pressure while unattended. When the unit is not in use, turn off the unit and follow the **Pressure Relief Procedure** for turning off the unit.
- Check hoses and parts for signs of damage. Replace any damaged hoses or parts.
- This system is capable of producing 3300 psi. Use Airlessco replacement parts or accessories that are rated a minimum of 3300 psi.
- Always engage the trigger lock when not spraying. Verify the trigger lock is functioning properly.
- Verify that all connections are secure before operating the unit.
- Know how to stop the unit and bleed pressure quickly. Be thoroughly familiar with the controls.



## EQUIPMENT MISUSE HAZARD

**Misuse can cause death or serious injury.**








- Always wear appropriate gloves, eye protection, and a respirator or mask when painting.
- Do not operate or spray near children. Keep children away from equipment at all times.
- Do not overreach or stand on an unstable support. Keep effective footing and balance at all times.
- Stay alert and watch what you are doing.
- Do not leave the unit energized or under pressure while unattended. When the unit is not in use, turn off the unit and follow the **Pressure Relief Procedure** for turning off the unit.
- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not kink or over-bend the hose.
- Do not expose the hose to temperatures or to pressures in excess of those specified by Airlessco.
- Do not use the hose as a strength member to pull or lift the equipment.



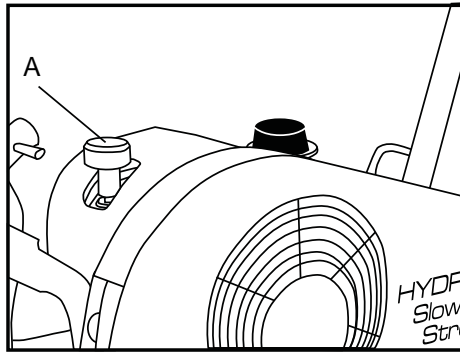
## PRESSURIZED ALUMINUM PARTS HAZARD

Use of fluids that are incompatible with aluminum in pressurized equipment can cause serious chemical reaction and equipment rupture. Failure to follow this warning can result in death, serious injury, or property damage.

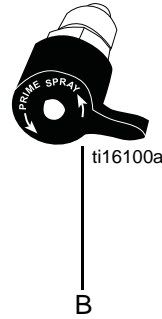
- Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.
- Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.

 <b>WARNING</b>	
 	<p><b>MOVING PARTS HAZARD</b>                      Moving parts can pinch, cut or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> <li>Keep clear of moving parts.</li> <li>Do not operate equipment with protective guards or covers removed.</li> <li>Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the <b>Pressure Relief Procedure</b> and disconnect all power sources.</li> </ul>
	<p><b>CARBON MONOXIDE HAZARD</b>                      Exhaust contains poisonous carbon monoxide, which is colorless and odorless. Breathing carbon monoxide can cause death.</p> <ul style="list-style-type: none"> <li>Do not operate in an enclosed area.</li> </ul>
	<p><b>TOXIC FLUID OR FUMES HAZARD</b>                      Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.</p> <ul style="list-style-type: none"> <li>Read MSDSs to know the specific hazards of the fluids you are using.</li> <li>Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.</li> </ul>
	<p><b>BURN HAZARD</b>                      Equipment surfaces and fluid that's heated can become very hot during operation. To avoid severe burns:</p> <ul style="list-style-type: none"> <li>Do not touch hot fluid or equipment.</li> </ul>
	<p><b>PERSONAL PROTECTIVE EQUIPMENT</b>                      You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. This equipment includes but is not limited to:</p> <ul style="list-style-type: none"> <li>Protective eyewear, and hearing protection.</li> <li>Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.</li> </ul>
	<p><b>CALIFORNIA PROPOSITION 65</b>                      This product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm. Wash hands after handling.</p>

# Component Identification



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**NOTE:** The valve handle can move both clockwise and counter clockwise and can face different directions.

A	Pressure Control Knob	Adjusts pressure. Turn clockwise to increase pressure and counterclockwise to decrease pressure.
B	Prime/Pressure (PR) Relief Valve Open Position	Relieves pressure from gun, hose and tip and primes the unit when in the open position. It is in the Open position when there is a wider gap between valve handle and cam body.
C	Prime/Pressure (PR) Relief Valve Closed Position	Pressurizes system when closed. It is in the Closed position when there is only a slight gap between handle and body.

# Operation

## Pressure Relief Procedure



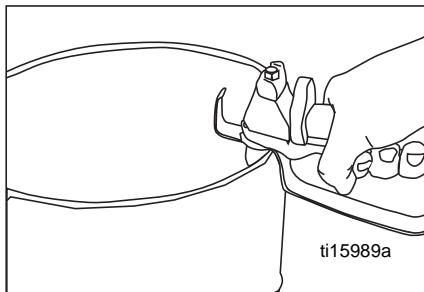
Follow the Pressure Relief Procedure whenever you see this symbol.



This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

1. Engage the gun trigger lock. Refer to the separate instruction manual provided with gun for safety features and how to engage the trigger lock.
2. Turn the unit off.
3. Disengage the gun trigger lock and trigger the gun to relieve residual fluid pressure.

**Hold metal part of the gun in contact with grounded metal pail. Use minimum pressure.**



4. Turn Prime/Pressure Relief Valve (PR Valve) to the open (priming) position to relieve residual pressure.



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5. Re-engage gun trigger lock and close Prime/Pressure Relief Valve.

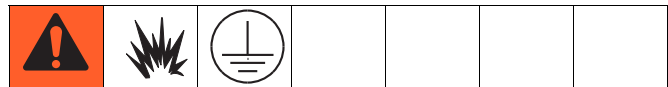


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If the **spray tip or hose is clogged**, follow Steps 1 through 5 above. Expect paint to splash into the bucket while relieving pressure during Step 4.

**NOTE:** If you suspect that pressure hasn't been relieved due to damaged Prime/Pressure Relief Valve, or other reason, slowly loosen the tie nut or hose coupling nut.

## Setup



## Grounding

Always ground the following components:

- Sprayer - Connect a ground wire and clamp (supplied) to a true earth ground.
- Fluid Hose - Use only grounded hoses.
- Spray Gun or Dispensing Valve - Grounding is obtained through connection to a properly grounded fluid hose and pump.
- Object being sprayed - According to local code.

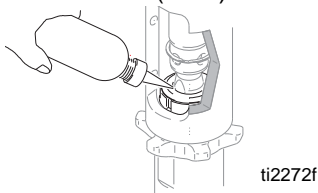
## Connect the hose and gun

1. Remove the plastic cap plug from the outlet and screw a conductive or grounded 3000 psi spray hose onto fluid outlet.
2. Connect an airless spray gun to the other end of the hose. Do not install spray tip.

**NOTE:** Do not use thread sealer on swivel unions as they are made to self seal.

### Fill the Packing Nut/Wet Cup

1. Fill the Packing Nut/Wet Cup with 5 drops of Airlessco Throat Seal Oil (TSO).



### Check the Engine Oil Level

1. Unscrew the oil fill plug. The dipstick is attached to the plug.
2. Without threading the plug into place, check to be sure the oil is up to the top mark of the dipstick.
3. If oil is needed, refer to engine manual.

### Fill the Fuel Tank

<ul style="list-style-type: none"> <li>• Fuel spilled on a hot surface can cause a fire or explosion and cause serious bodily injury and property damage.</li> <li>• Always shut off the engine and let it cool before filling the tank.</li> <li>• Carefully fill the fuel tank to avoid spilling any fuel.</li> </ul>						

1. Close the fuel shutoff valve.
2. Use only clean, fresh, well-known brands of unleaded regular grade gasoline.
3. Remove the fuel cap and fill tank. Be sure the air vent in the fill cap is not plugged so fuel can flow to the carburetor, then replace the cap.

### Prime and Flush Storage Fluid

NOTICE
<p>The equipment was tested with lightweight oil, which is left in the fluid passages to protect parts. To avoid contaminating your fluid with oil, flush the equipment with a compatible solvent before using the equipment for the first time.</p>

Before beginning a new spraying project you need to prime the sprayer and flush the storage fluid out of the sprayer.

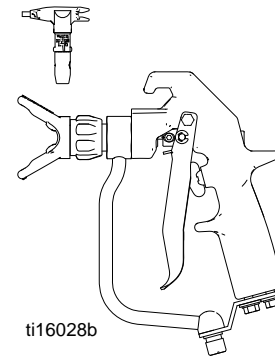
### Oil- or Water-based Materials

- When changing from water-based material to oil based material, flush with soapy water and then mineral spirits.
- When changing from oil based material to water base material, flush with mineral spirits, followed by soapy water, then a clean water flush.
- When flushing with solvents, ground pail and gun.
- Flush before changing colors, before fluid can dry in the equipment, at the end of the day, before storing, and before repairing equipment.

### Flushing

<ul style="list-style-type: none"> <li>• To reduce the risk of static sparking, which can cause fire or explosion. Always hold a metal part of the gun firmly against the metal pail when flushing. This also reduces splashing.</li> <li>• Always remove the spray tip before flushing.</li> <li>• Only metal pails, which are conductive, should be used as solvent pails when flushing.</li> </ul>					

1. Make sure the gun trigger lock is engaged and there is no spray tip in the gun. Refer to the separate instruction manual provided with gun for safety features and how to engage the trigger lock.



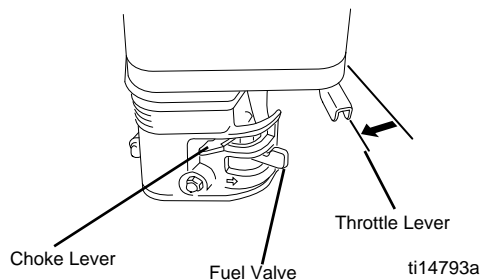
2. Pour enough clean, compatible solvent into a large, empty metal pail to fill the pump and hoses.
3. Place the suction tube into the pail or place the pail under the pump.
4. Turn Pressure Control Knob to low pressure.

- Open the prime valve to the open - "Priming Position". This will allow an easy start.

Open  
(Priming and Pressure Relief)



- Turn the engine ON/OFF switch to ON.
- Move the choke toward the closed position.
- Move the throttle lever slightly to the left.
- Turn the fuel valve ON. Pull the start rope. Pull the engine over against compression stroke and then let the rope rewind slowly into the starter. Pull firmly and rapidly to start the engine. Do NOT drop the rope. Hold on to the handle while rewinding, or the rope may rewind improperly and jam the assembly. If the engine does not start, open the choke all the way and continue cranking.

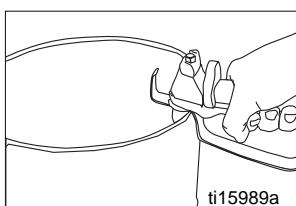


- After the engine is warm, gradually close the choke lever, raise the RPM of engine slightly by moving throttle to the left. Close the prime valve.

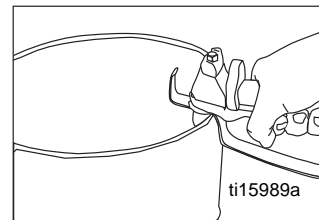
Closed (Pressure)



- Point the gun into the metal pail and hold a metal part of the gun firmly against the pail. Maintain firm metal to metal contact between gun and container.



- Disengage the gun trigger lock and squeeze the trigger. At the same time, slowly turn the pressure control knob clockwise, just enough to move liquid at low pressure.
- Allow the pump to operate until clean solvent comes from the gun.
- Release the trigger and engage the gun trigger lock.
- If you are going to start spraying, place the pump or suction tube into the supply container. Release the gun trigger lock and trigger the gun into another empty, metal container, holding a metal part of the gun firmly against the metal pail, forcing the solvent from the pump and hose. When paint starts coming from gun, turn pressure control knob to minimum pressure, place prime valve in prime (open) position and engage the gun trigger lock.



- If you are going to store the sprayer, remove the suction tube or pump from the solvent pail, force the solvent from the pump and hose. Engage the gun trigger lock. See **Storage**, 10.
- Whenever shutting down the sprayer, follow **Pressure Relief Procedure**, page 6.

#### NOTICE

To prevent damage and freezing during storage, never leave water in the fluid pump

## Startup

#### NOTICE

Do not start the engine without fluid pump having enough fluid so that it can be primed. Running fluid pump dry will decrease life of the pump packings.

Operating the sprayer at higher pressure than needed wastes material, causes early tip wear, and shortens sprayer life.

- Prepare the material according to the material manufacturer's recommendations.



2. Place the pump or suction tube into the material container.
3. Start the sprayer.
  - a. Prime/PR Valve must be "OPEN" in the priming position.
  - b. Pressure Control Knob must be in low pressure.
  - c. Turn the engine ON/OFF switch to ON.
  - d. Move the choke toward the closed position.
  - e. Move the throttle lever slightly to the left.
  - f. Turn the fuel valve ON. Pull the start rope. Pull the engine over against compression stroke and then let the rope rewind slowly into the starter. Pull firmly and rapidly to start the engine. Do NOT drop the rope. Hold on to the handle while rewinding, or the rope may rewind improperly and jam the assembly. If the engine does not start, open the choke all the way and continue cranking.
  - g. After the engine is warm, gradually close the choke lever, raise the RPM of engine slightly by moving throttle to the left. Close the prime valve.
  - h. Point the gun into the metal pail and hold a metal part of the gun firmly against the pail. Maintain firm metal to metal contact between gun and container.
  - i. Disengage the gun trigger lock and squeeze the trigger. At the same time, slowly turn the pressure control knob clockwise, just enough to move liquid at low pressure.
4. Prime the Pump
  - a. Allow pump to operate until paint comes from gun.
  - b. Release the trigger and engage the gun trigger lock.
  - c. Turn Prime Valve OPEN to the prime position ensuring the pressure is released from the system.
  - d. Turn Pressure Control Knob to minimum pressure.
  - e. Install spray tip onto gun.
  - f. Close the prime valve to the pressure position.

- g. Turn the pressure control knob to desired spray pressure.
- h. Disengage the gun safety lock and you are ready to start spraying.

## Adjusting the Pressure



- To reduce the risk of injection, never hold your hand, body, fingers or hand in a rag in front of the spray tip when cleaning or checking for a cleared tip. Always point the gun toward the ground or into a waste container when checking to see if the tip is cleared or when using a self cleaning tip.
- When you spray into the paint bucket, always use the lowest spray pressure and maintain firm metal to metal contact between the gun and container.
- To stop the unit in an emergency, turn the engine off. Then relieve the fluid pressure in the pump and hose. See **Pressure Relief Procedure**, page 6

1. Turn the Pressure Control Knob Clockwise to increase pressure and counterclockwise to decrease pressure.
2. Always use the lowest pressure necessary to completely atomize the material.
3. If more coverage is needed, use a larger tip rather than increasing the pressure.
4. Check the spray pattern. The tip size and angle determines the pattern width and flow rate.

## Shutdown

1. **Relieve Pressure**, page 6.
2. Clean the tip and gun as recommended in the separate Gun Manual supplied with the gun.
3. If spraying water-based material or a material that could harden in the sprayer overnight, flush the sprayer after use. See **Flushing**, page 7.

## Storage

### Short Term

1. Flush sprayer with compatible solvent before storing, then fill the pump and hoses with an oil based solvent such as mineral spirits or Graco or Airlessco Pump Armor.
  - For oil base paint: flush with mineral spirits
  - For water-base paint: flush with water, then mineral spirits and leave the pump, hose and gun filled with mineral spirits.

### Long Term




For longer storage, use Graco or Airlessco Pump Armor. Shut off sprayer, **Relieve Pressure**, page 6, and make sure prime valve is left open.

### Start Up After Storage

Before using water-base paint, flush sprayer with soapy water and then a clean water flush. When using oil-base paint, flush out the mineral spirits with the material to be sprayed.

**NOTE:** Always store unit indoors.

# Maintenance

						
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The system pressure must be manually relieved to prevent the system from starting or spraying accidentally. Fluid under high pressure can be injected through the skin and can cause serious injury. To reduce the risk of injury from injection, splashing fluid, or moving parts, follow the **Pressure Relief Procedure**, page 6, whenever you:

- are instructed to relieve the pressure,
- stop spraying,
- check or service any of the system equipment,
- or install or clean the spray tip.

1. Lock gun trigger safety.
2. Turn engine ON/OFF switch to OFF.
3. Move pump valve to OFF (down) and turn pressure control knob fully counter clockwise.
4. Unlock trigger safety. Hold metal part of gun firmly to side of grounded metal pail, and trigger gun to relieve pressure.
5. Lock gun trigger safety.
6. Open pressure drain valve. Leave valve open until 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 tip guard retaining nut or hose end coupling to relieve pressure gradually, then loosen completely. Now clear tip or hose.

**NOTE:** For detailed engine maintenance and specifications, refer to separate Honda Engines Owner's Manual.

## Daily Maintenance

The following maintenance procedures should be performed daily:

- Check engine oil level and fill as necessary.
- Check hydraulic oil level and fill as necessary.
- Check hose for wear and damage.
- Check gun safety for proper operation.
- Check pressure drain valve for proper orientation.
- Check pressure drain valve for proper operation.
- Check and fill the gas tank.
- Check that displacement pump is tight.
- Check level of Throat Seal Liquid (TSL) in displacement pump packing nut. Fill nut, if necessary. Keep TSL in nut to help prevent fluid buildup on piston rod and premature wear of packings and pump corrosion.
- Remove any debris or media from hydraulic rod.

## Other Maintenance

After the first 20 hours of operation:

- Drain engine oil and refill with clean oil. Refer to the Honda Engines Owner's Manual for correct oil viscosity.

On a weekly basis:

- Remove engine air filter cover and clean element. Replace element, if necessary. If operating in an unusually dusty environment: check filter daily and replace, if necessary. Replacement elements can be purchased from your local Honda dealer.
- Remove any debris or media from hydraulic rod.

After each 100 hours of operation:

- Change engine oil. Reference Honda Engines Owner's Manual for correct oil viscosity.

Semi-Annually:

- Check belt wear, replace if necessary.




Yearly or 2000 hours:

- Replace hydraulic oil and filter with Graco hydraulic oil 169236 (5 gallon/20 liter) or 207428 (1 gallon/3.8 liter) and filter 116919. Replace belt.

Spark Plug:

- Use only BPR6ES (NGK) or W20EPR-U (NIPPON-DENSO) plug. Gap plug to 0.028 to 0.031 in (0.7 to 0.8 mm) Use spark plug wrench when installing and removing plug.

## Cleaning a Clogged Tip

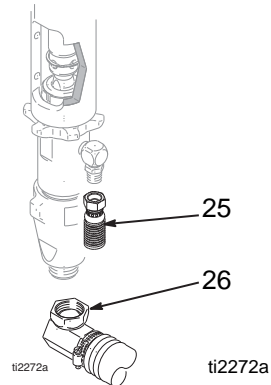
						
<ul style="list-style-type: none"> <li>• Clogged standard flat tip - clean only after the tip is removed from the gun. See <b>Pressure Relief Procedure</b>, page 6</li> </ul>						

1. Follow **Pressure Relief Procedure**, page 6.
2. Clean the front of the tip frequently (with toothbrush only) during the day to keep material from building up and clogging the tip.
3. To clean and clear a tip if it clogs, refer to the separate instruction manual received with your gun and nozzle.

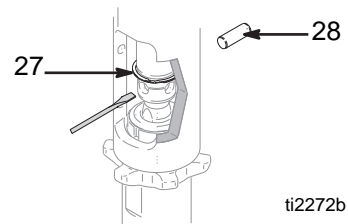
## Servicing the Fluid Pump

### Fluid Pump Removal

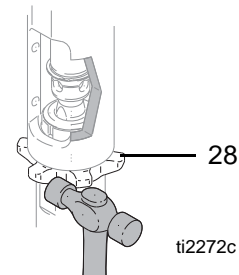
1. **Relieve Pressure**, page 6.
2. Flush the material you are spraying out of the machine.
3. Remove the front cover.
4. Remove the suction tube (25) and paint hose (26) (remove at swivel end).



5. Push retaining ring up (27); push out pin (28).



6. Loosen jam nut (28). Unscrew pump.

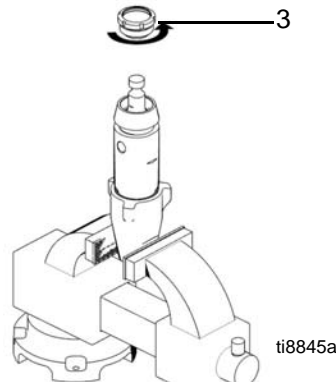


## Disassembly of the Fluid Pump

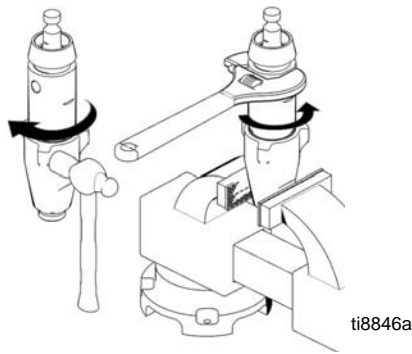
### NOTICE

Do not clean or wipe piston valve threads. Cleaning the piston valve threads could destroy the special sealing patch and cause the piston valve to come loose during operation.

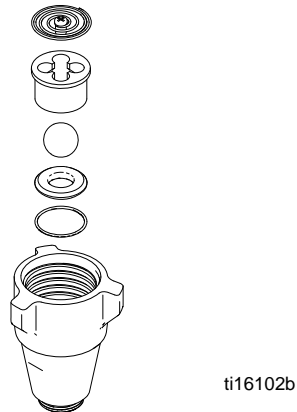
1. Remove packing nut (3).



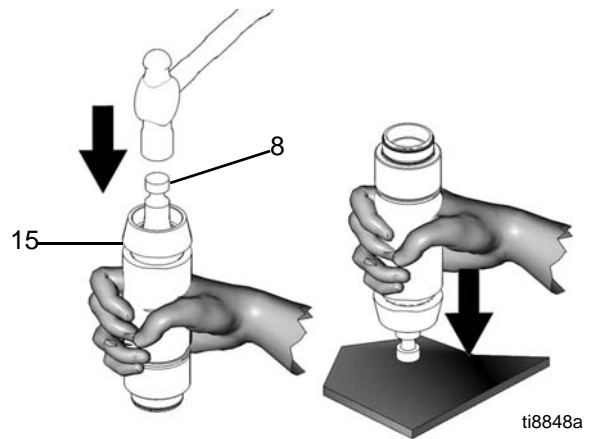
2. Unscrew intake valve from cylinder.



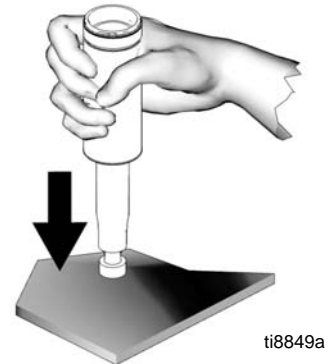
3. Disassemble intake valve. Clean and inspect O-ring. You may need to use a pick to remove O-ring.



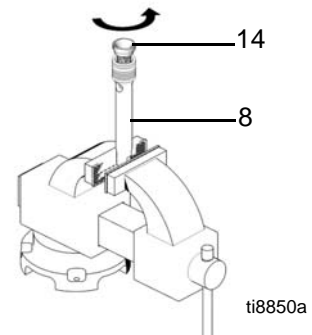
4. Use a hammer to tap piston rod (8) out of cylinder (15), or flip pump over and tap piston rod against work bench.



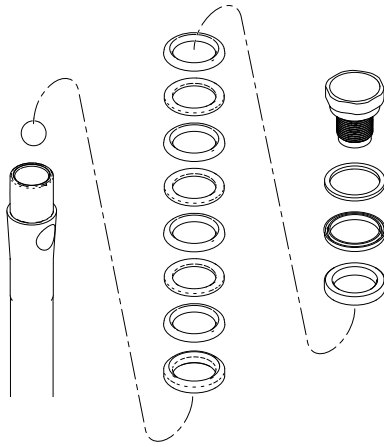
5. Remove piston rod from sleeve.



6. Unscrew piston valve (14) from piston rod (8). Clean and inspect parts. The piston has a special thread locking/sealing patch. Do not remove the patch. The patch allows for disassembly/assembly procedures before it is necessary to apply Loctite® to the threads.

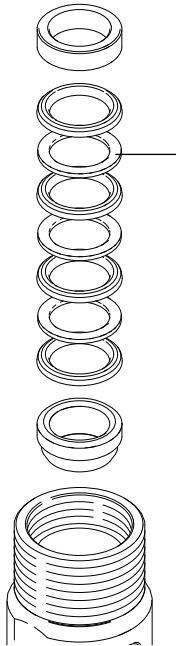


- Remove packing and glands from piston rod. Note orientation for installation.



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- Remove throat packings and glands from cylinder. Discard throat packings and glands.



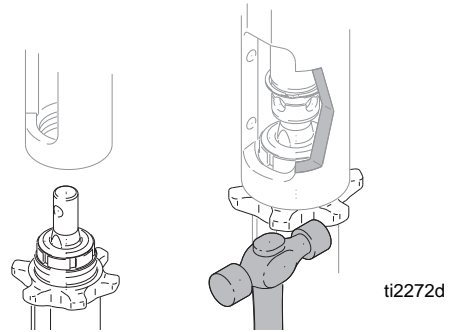
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## Reassembly of the Fluid Pump

<p>If pin works loose, parts could break off and project through the air, resulting in serious injury or property damage. Make sure pin is properly installed.</p>					

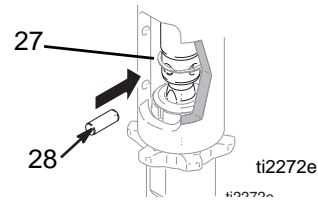
<b>NOTICE</b>
<p>If the pump jam nut loosens during operation, the threads of the bearing housing and drive train will be damaged. Tighten jam nut as specified.</p>

- Screw jam nut to bottom of pump threads. Screw pump completely into manifold. Unscrew pump from manifold until pump outlet aligns with hose. Hand tighten jam nut, then tap 1/8 to 1/4 turn with hammer to torque to 75 ft-lb (101 N-m).



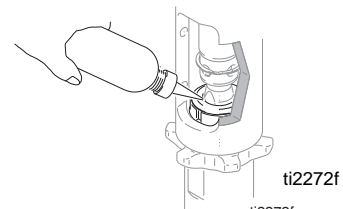
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- Slowly pull engine starter rope (27) until pump rod pin hole is aligned with hydraulic rod hole. Push pin (28) into hole. Push retaining ring into groove.



ti2272e

- Fill packing nut with Throat Seal Oil.

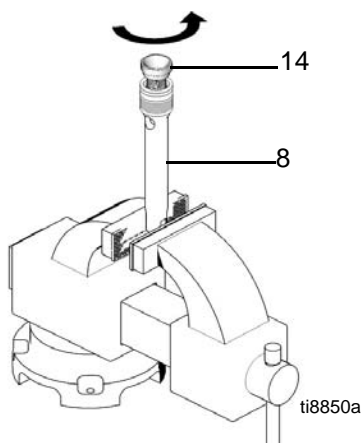


ti2272f

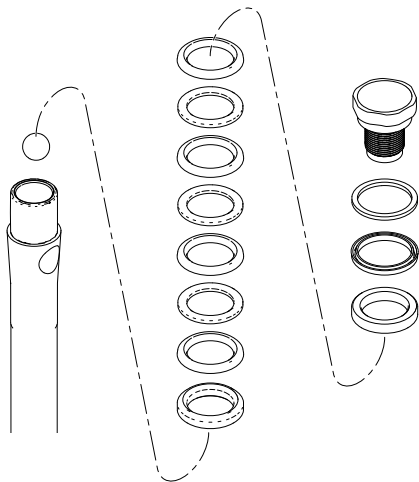
## Servicing Valve Assemblies

### Disassembly of the Outlet Valve

1. Remove Fluid Pump from machine. See Fluid Pump Removal, page 12
2. Remove Outlet Valve Assembly. See Disassembly of the Fluid Pump, page 13.
3. Unscrew piston valve (14) from piston rod (8). Clean and inspect parts. The piston has a special thread locking/sealing patch. The patch allows for disassembly/assembly procedures before it is necessary to apply Loctite® to the threads.



4. Remove packing glands from piston rod. Note orientation for installation.



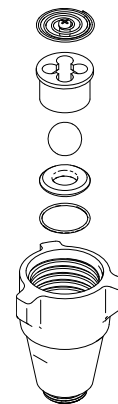
5. Clean and inspect parts for wear or damage, replace parts as necessary. PTFE O-ring will always be replaced in this procedure.

### Reassembly of the Outlet Valve

1. Mount piston in vise.
2. Place ball into piston.
3. Install packings, wiper and glands. See Packing Replacement Procedures, page 16.
4. Apply Loctite to valve seat threads, if special thread locking/sealing patch is insufficient. (Normally good for 4 repacks.)
5. Torque valve seat into piston to 55 ft-lbs.

### Disassembly of the Inlet Valve

1. **Relieve pressure**, see page 6.
2. Disassemble intake valve. Clean and inspect O-ring. You may need to use a pick to remove O-ring.

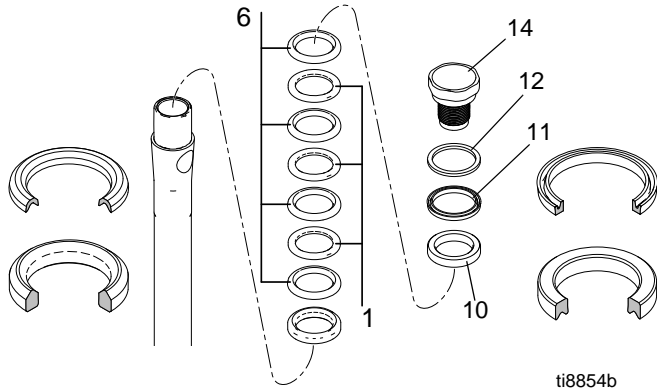


### Reassembly of the Inlet Valve

1. Reinstall inlet parts in correct order. Reverse inlet seat if necessary.
2. Run the machine at pressure for several minutes, inspect for leaks and proper orientation.

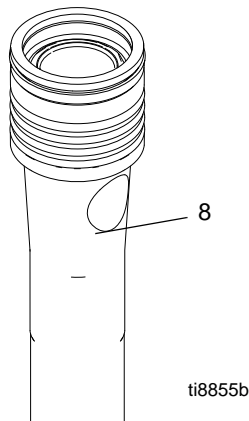
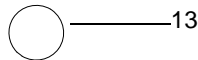
# Packing Replacement Procedures

1. Soak all Leather Packings in oil for 5-10 minutes before assembly.
2. Place glands and packing on inverted piston in the following order and orientation.
  - a. Male gland (10)
  - b. Alternate blue UHMWPE (6) and leather packings (1)
  - c. Female gland (11)
  - d. Backup washer (12)
  - e. Piston wiper

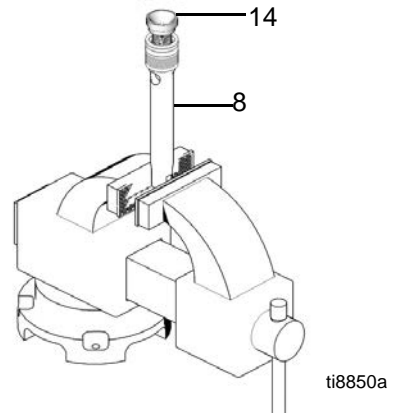


**NOTE:** The special sealing patch on piston valve threads is good for 4 repackings. Use Loctite on piston valve threads after 4 repackings.

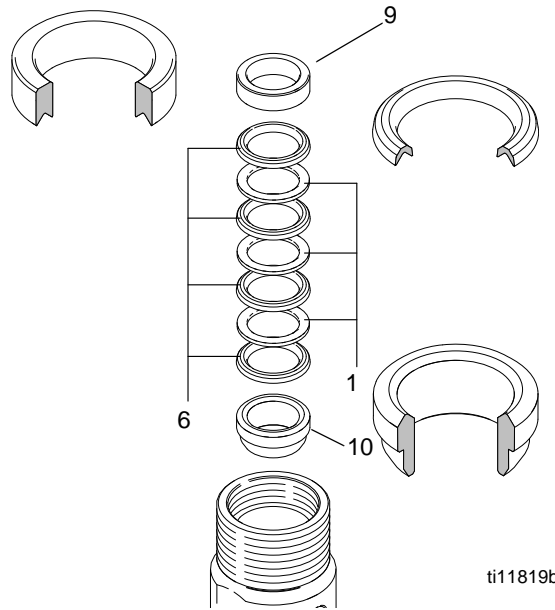
3. Insert ball (13) in piston rod (8). If Loctite is applied to piston threads, insure that none gets on ball.



4. Install piston valve (14) to piston rod(8). Torque to 55 +/-3 ft-lb (74.57 +/- 4 N-m).

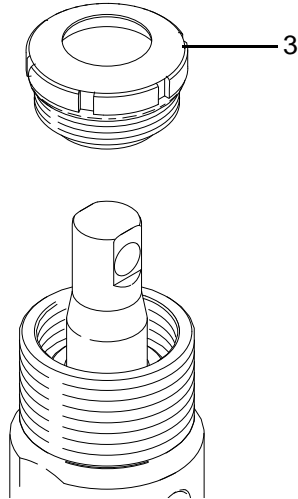


5. Place male gland (9) in cylinder.
6. Alternately stack UHMWPE (6) and leather packings (1). Note orientation.
7. Place female gland (10) in top of cylinder. Seat packings.





8. Install packing nut (3) into cylinder and hand tighten.

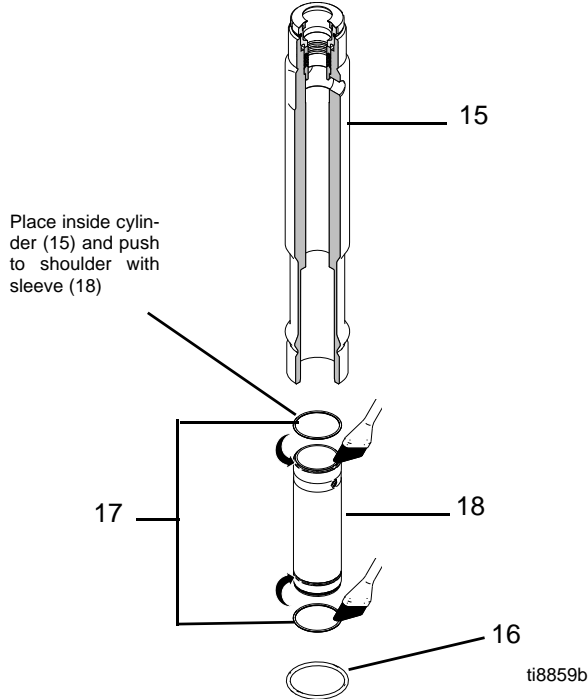


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**NOTICE**

Never slide piston assembly into top of sleeve as this may damage piston packings.

9. Install O-rings inside cylinder and on sleeve. Slide sleeve into bottom of cylinder. Replace O-ring if desired.

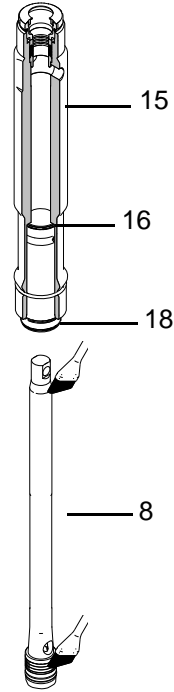


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**NOTE:** O-ring is not required for safe pump operation.

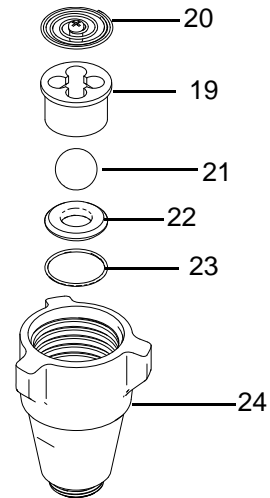
10. Grease top inch or two of piston rod that goes through the sleeve/cylinder assembly and throat packings. Grease piston packings at bottom of piston pump.

Carefully slide piston assembly into bottom of sleeve/cylinder assembly until pump rod protrudes out the top and piston packings are totally inside the sleeve.



ti11860b

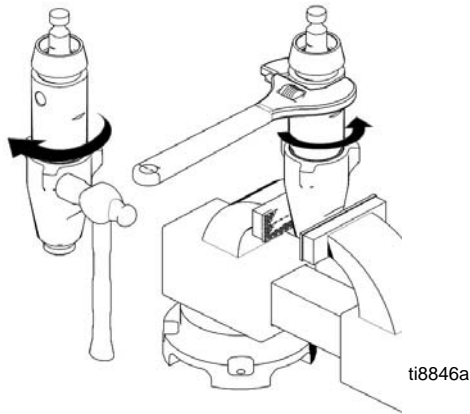
11. Reassemble intake valve with new O-ring, seat and ball. Seat may be flipped over and used on the other side. Clean seat thoroughly.



ti16102b

12. Install intake valve on cylinder. Torque to 200 +/- 5 ft-lb (271 +/- 7 N.m)

- Torque packing nut to: 140+/- 10 in-lb (15+/-1 N-m)



**NOTE:** When pump packings begin to leak, tighten packing nut down until leakage stops or lessens. This allows approximately 100 gallons of additional operation before repacking is required.

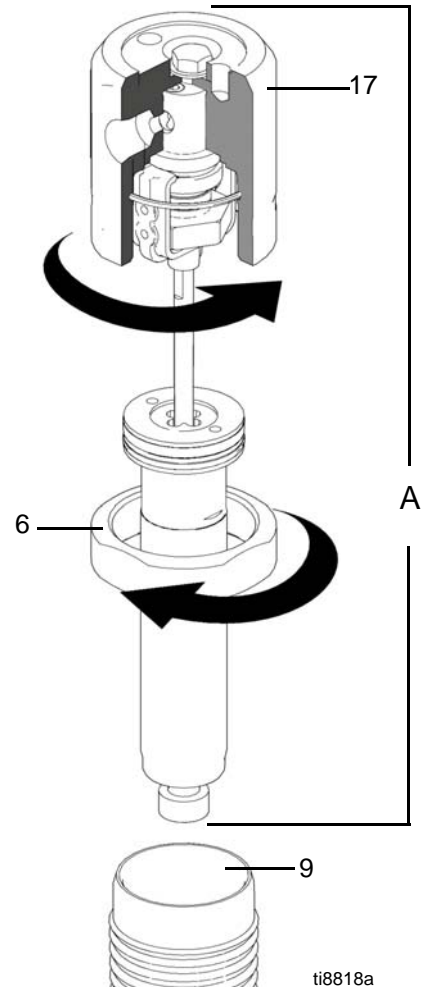
## Hydraulic Motor Rebuild

### Removal

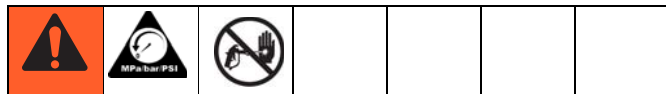
- Relieve Pressure**, page 6.
- Place drip pan or rags under sprayer to catch hydraulic oil that leaks out during repair.
- Flush the material you are spraying out of the machine.
- Remove the front cover.
- Remove the suction tube and paint hose (remove at swivel end).
- Push retaining ring up; push out pin.
- Remove hydraulic lines from fittings at top left and right side of hydraulic motor.
- Loosen jam nut.
- Unscrew and remove hydraulic motor cap.
- Slide piston rod/hydraulic motor cap assembly (A) from hydraulic motor cylinder.

### Installation

- Slide piston rod assembly into hydraulic motor cylinder.
- Screw down hydraulic motor cap. Unscrew hydraulic motor cap until inlet and outlet align with hydraulic line fittings and test hole in hydraulic motor cap points toward belt guard.
- Torque jam nut against hydraulic motor cap to 140ft-lb (17 N.m).
- Install hydraulic lines to fittings to top left and right side of hydraulic motor; torque to 40 ft-lb (54.2 N.m).
- Slowly pull engine starter rope until pump rod pin hole is aligned with hydraulic rod hole. Push pin into hole. Push retaining spring into groove.
- Start engine and operate pump for 30 seconds. Turn engine OFF. Check hydraulic oil level and fill with Airlessco hydraulic oil.



# Troubleshooting



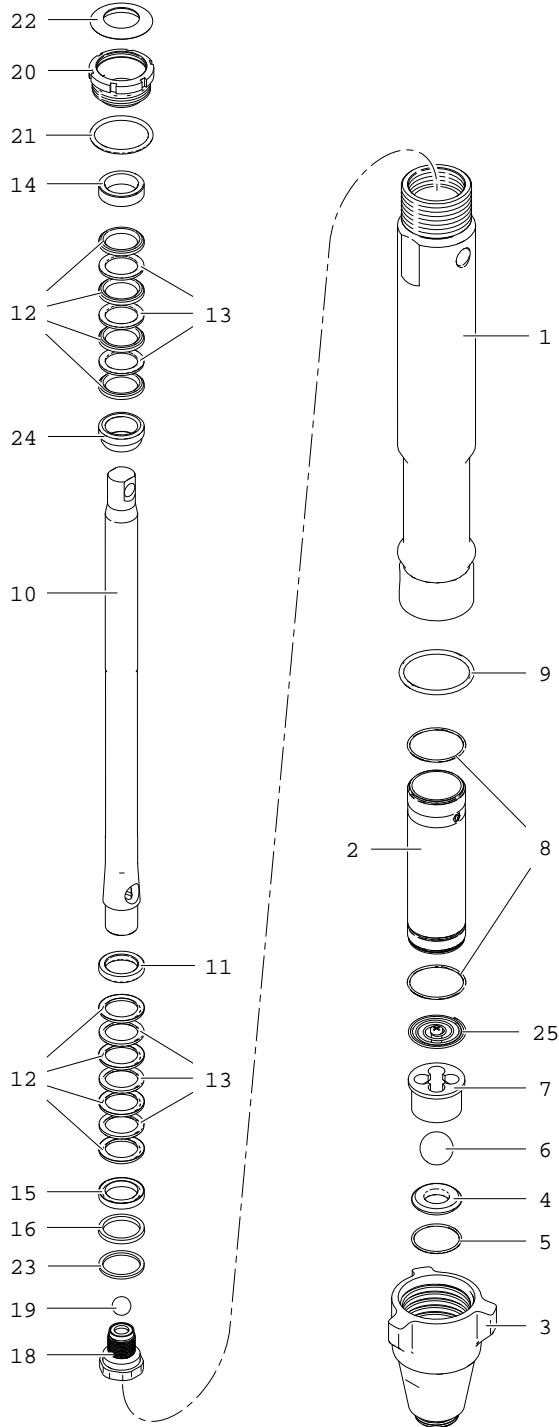
General		
Problem	Cause	Solution
Gas engine pulls hard (won't start)	Hydraulic pressure is too high	Turn hydraulic pressure knob counter clockwise to lowest setting.
Gas engine does not start	Switch OFF, low oil, no gaso-line	Consult engine manual, supplied
Gas engine doesn't work properly	Faulty engine, Elevation	Consult engine manual, supplied
Gas engine operates, but displacement pump doesn't operate	Hydraulic pump valve is OFF	Set hydraulic pump valve ON
	Pressure setting too low	Increase pressure
	Displacement pump outlet filter (if used) is dirty or clogged	Clean the filter
	Tip or tip filter (if used) is clogged	Remove tip and/or filter and clean
	Hydraulic fluid too low	Shut off sprayer. Add fluid*.
	Belt worn, broken, or off	Replace belt
	Hydraulic pump not working or damaged	Bring sprayer to Airlessco distributor for repair.
	Dried paint seized paint pump rod	Service pump
	Hydraulic motor not shifting	Set pump valve OFF. Turn pressure down. Turn engine OFF. Pry rod up or down until hydraulic motor shifts.
Displacement pump operates, but output is low on upstroke	Piston ball check not seating properly	Service piston ball check.
	Piston packings worn or damaged	Replace packings. See <b>Packing Replacement Procedure</b> , page 16.
Displacement pump operates but output is low on down-stroke and/or on both strokes	Piston packings worn or damaged	Tighten packing nut or replace packings. See <b>Packing Replacement Procedure</b> , page 16.
	Intake valve ball check not seating	Service intake valve ball check.
	Suction tube air leak	
Paint leaks and runs over side of wet-cup	Loosen wet-cup	Tighten wet-cup enough to stop leakage
	Throat packings worn or damaged	Replace packings. See <b>Packing Replacement Procedure</b> , page 16.

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
Excessive leakage around hydraulic motor piston rod wiper	Piston rod seal worn or damaged	Replace these parts
Fluid delivery is low	Pressure setting too low	Increase pressure
	Displacement pump outlet filter (if used) is dirty or clogged	Clean filter
	Intake line to pump inlet is not tight	Tighten
	Hydraulic motor is worn or damaged	Bring sprayer to Airlessco distributor for repair
The sprayer overheats	Paint buildup on hydraulic components	Clean
Spitting from gun	Air in fluid pump or hose	Check for loose connections on siphon assembly, tighten, then reprime pump
	Loose intake suction	Tighten
	Fluid supply is low or empty	Refill supply container
Excessive Hydraulic pump noise	Low hydraulic fluid level	Turn sprayer OFF. Add fluid.*

\*Check hydraulic fluid level often. Do not allow it to become too low. Use only Airlessco approved hydraulic fluid.

# Parts

## Pump (24E350)

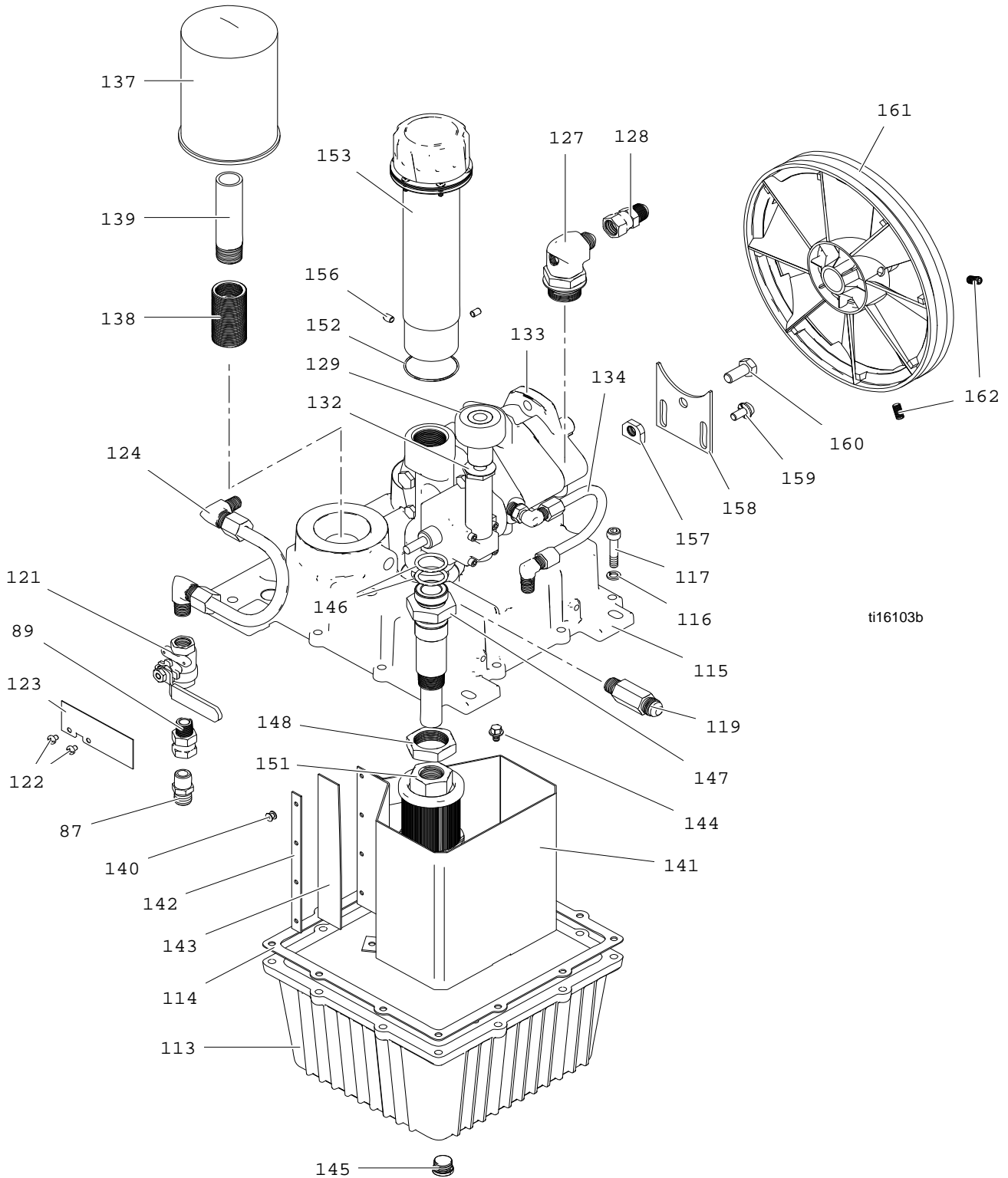


Ref. Part	Description	Qty
1	16C204 CYLINDER, PUMP	1
2	244975 SLEEVE, CYLINDER	1
3	15A303 HOUSING, INTAKE	1
4	193395 SEAT, CARBIDE	1
5+	107098 PACKING, O-RING	1
6+	107167 BALL, SST	1
7	198505 GUIDE, BALL	1
8+	108822 PACKING, O-RING	2
9+	160325 PACKING, O-RING	1
10	24E352 ROD, PISTON	1
11+	189585 GLAND, PACKING, MALE	1
12+	198701 PACKING, VEE	8
13+	198718 PACKING, VEE	6
14+	15G657 GLAND, FEMALE	1
15+	189588 GLAND, PACKING, FEMALE	1
16+	119636 WIPER, PISTON	1
18	249177 VALVE, PISTON	1
19+	107203 BALL, VALVE, CHECK	1
20	15J792 NUT, PACKING	1
21	157195 PACKING, O-RING, BUNA-N	1
22	112590 PLUG, THROAT SEAL	1
23+	15F183 WASHER, BACKUP	1
24+	15G658 GLAND, MALE	1
25+	233698 SPRING, INTAKE BALL	1

+ Included in Packing Repair Kit 24E351

ti21337a

# Hydraulic Pump and Reservoir (866205)



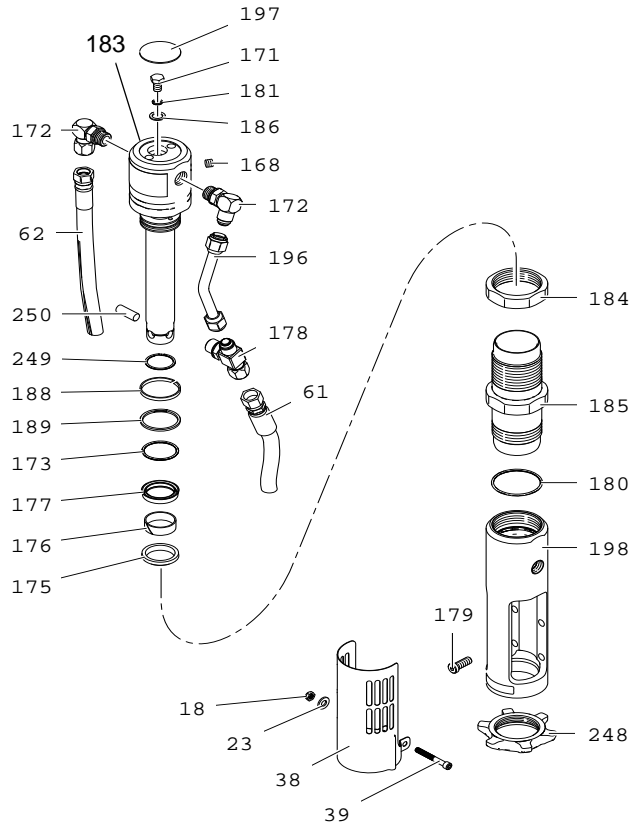
ti16103b

**NOTE:** Hydraulic Reservoir and Hydraulic System requires 3.5 gallons of Hydraulic Oil #46. The minimum Oil Level must be approximately halfway up the Filler Tube. Never below.

Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
87	867311	FITTING,NIPPLE, HX 3/8 X 3/8	1	141	867039	BAFFLE,PLATE	1
89	867017	SWIVEL, 3/8 x 38 NPT M	1	143	866027	BAFFLE,SEAL	1
113	867657	TANK, BOTTOM	1	142	867040	BAFFLE,CLAMP	1
114	119074	GASKET	1	143	866027	BAFFLE,SEAL	1
115	867656	TANK TOP	1	144	866701	SCREW,FL HEX,1/4-20 x .375	3
116	100214	WASHER,LOCK	12	145	189505	PLUG,TANK	1
117	113467	SCREW,CAP,SOCKET HD	12	146	867386	O-RING,2-215	2
119	867226	FITTING,3/8-18 x 3/4-16	1	147	866296	TUBE,PUMP INLET	1
121	867062	VALVE,BALL 3/8"	1	148	866236	NUT,HEX	1
122	116807	SCREW,MACH,PAN HD,	2	151	867644	STRAINER,SUCTION	1
123	867411	PLATE	1	152	867347	O-RING	1
124	866202	TUBE,HYD PRESSURE	1	153	866121	FILLER,BREATHER CAP	1
127	119070	FITTNG,3/4-16 x 1/4-18	1	156	101962	SCREW,SET,SCH 1/4-20	2
128	867654	FITTING,SWIVEL 3/4-16 JIC	1	157	136235	NUT, 7/16-20	1
129*	866279	CONTROL,PRESSURE	1	158	867093	BRACKET,PUMP	1
132*	867700	WASHER,PLAIN	1	159	111800	SCREW,CAP, HEX HD	2
133*	867288	PUMP,HYDRAULIC	1	160	116645	SCREW,CAP, HEX HD	1
134	866201	TUBE,HYDR.BYPASS	1	161	867442	PULLEY,ASSEMBLY	1
137	867218	FILTER,OIL	1	162	867587	SCREW,SET, 4/16-18 x .625	2
138	866129	FITTING,1 3/8-12 UNF 2A	1				
139	119093	TUBE,OIL FILTER	1				
140	136134	RIVET,POP,3/16	4				

\* 866204 Pump Assembly Includes 129, 132, 133

# Hydraulic Motor



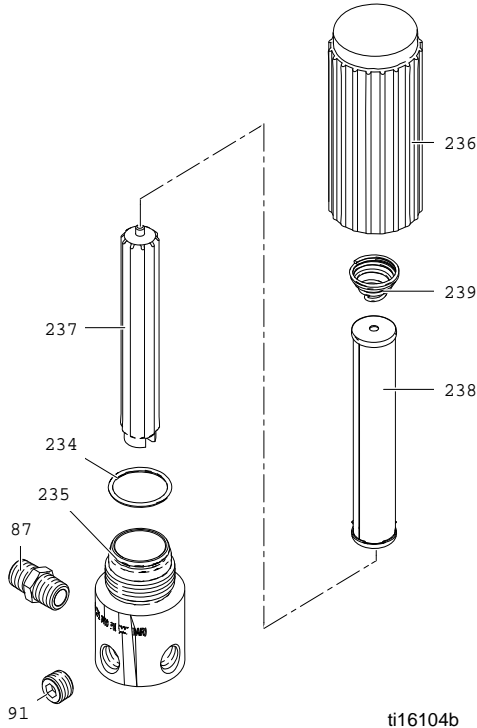
ti16105b

Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
18	136217	NUT,JAM,NY-LOC,1/4-20	1	180*+	117283	PACKING,O-RING	1
23	140047	WASHER,,686x.341	1	181*+	155685	PACKING,O-RING	1
38	15F911	GUARD,PUMP ROD	1	183*	288755	TRIP ROD/PISTON	1
39	305088	SCRW, SC HD,1/4-20 x2.00	1	184*	15A726	NUT,JAM	1
61	867284	HOSE,HYDR PRESSURE	1	185*	248991	SLEEVE,HYDR. CYLINDER (includes 180)	1
62	867285	HOSE,HYD RETURN		186*+	178179	WASHERIN,SEALING	1
168*+	100139	PLUG,PIPE	1	188*+	178207	BEARING,PISTON	1
171*+	106276	SCRE,CAP,HEX HEAD	1	189*+	178226	SEAL,PISTON	1
172*	117607	FITTING, ELBOW	1	196*	15E596	TUBE,HYDR. SUPPLY	1
173*+	108014	PACKING,O-RING	2	198*	15E243	MANIFOLD,ADAPTER	1
175*	117739	WIPER,ROD	1	248	193394	NUT,RETAINER	1
176*	112342	BEARING,ROD	1	249	116551	RING,RETAINING	1
177*	112561	PACKING,BLOCK	1	250	197443	PIN	1
178*	117609	FITTING,TEE,BRANCH	1				
179*	15B564	SCREW,CAP	4				

\* Included in 24E360 Hydraulic Motor Kit  
 +Included in 288755 Trip Rod/Piston Repair Kit

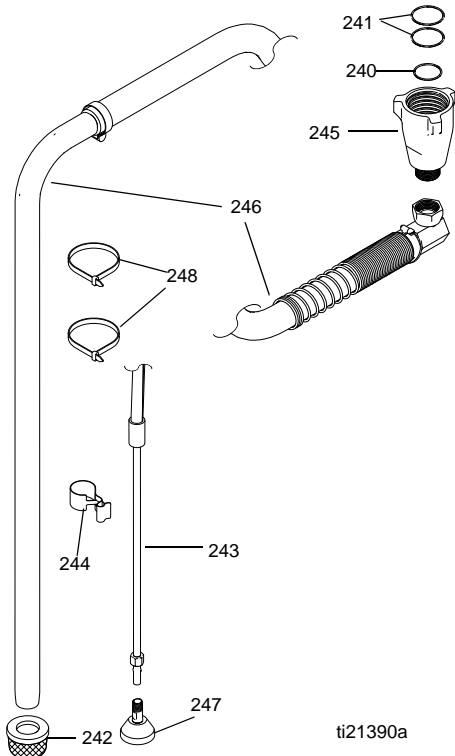


## Manifold Filter (866123)



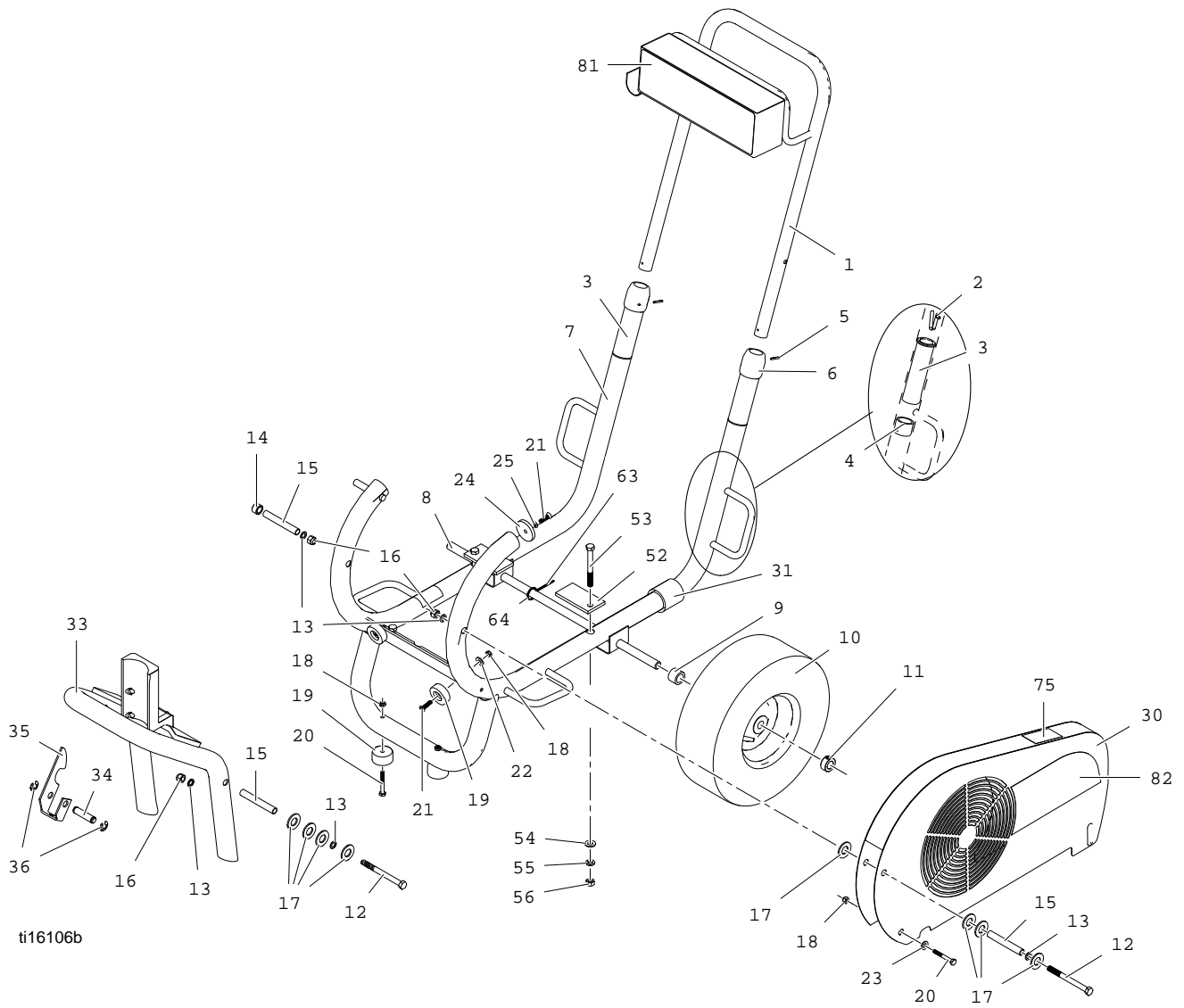
Ref.	Part	Description	Qty
87	867311	FITTING,NIPPLE HX 3/8 x 3/8	1
91	867420	PLUG, 3/8 NPT	1
234	867377	O-RING,2-125	1
235	867077	BASE,FILTER	1
236	867145	COVER,FILTER	1
237	867647	SUPPORT,FILTER ELEMENT	1
238	867214	FILTER,ELEMENT	1
239	301356	SPRING	1

## Kit,Siphon, 30-55 Gallon (289669)



Ref.	Part	Description	Qty
240	107098	PACKING, O-RING	1
241	108822	PACKING, O-RING	2
242	189920	STRAINER	1
243	15B746	HOSE, DRAIN	1
244	196723	CLIP, SPRING	1
245	198219	HOUSING, INTAKE	1
246	241269	TUBE, SUCTION, 30 GAL	1
247	241920	DEFLECTOR, THREADED	1
248		STRAP, TIE	2

# Frame Assembly

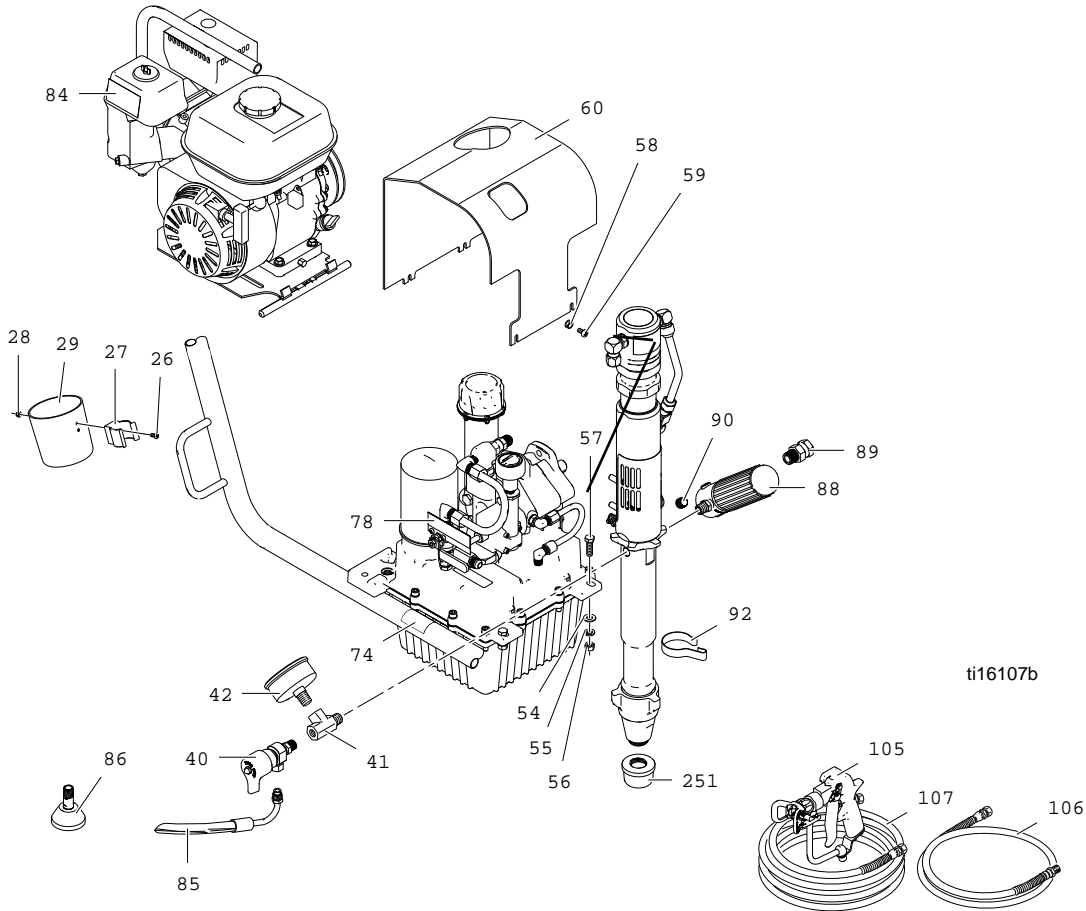


Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
1	867262	HANDLE	1	21	867501	SCREW,PH FL HD,1/4-20 x 1.0	3
2	867605	BUTTON,SNAP .25	2	22	100527	WASHER,PLAIN	2
3	866156	GUIDE	2	23	140047	WASHER	2
4	866344	SLIDE	2	24	866370	SPACER	1
5	331222	PIN,ROLL,.125 x 1.000	4	25	C19209	WASHER,LOCK	1
6	866050	CAP	2	30	867086	COVER,BELT ASSY	1
7		FRAME	1	31	866321	HOSE,RUBBER, 3"	1
	867236	HSS9000		33	866780	FRAME,SWING ARM	1
	189507	HSS1000	1	34	866262	PIN,LOCK PIVOT	1
8	301170	AXLE	2	35	867292	LOCK,LATCH	1
9	866356	SPACER	2	36	113983	RING,RETAINING,EXT	2
10	301165	WHEEL,PNEUMATIC	2	52	867305	SUPPORT,MOTOR	1
11	143029	COLLAR,SCREW,SET	2	53	867517	SCREW,HEX HEAD 3/8-16 x 3.5	2
12	867519	SCREW,HEX HEAD	4	54	140034	WASHER,.820x.411x.062	4
13	867707	WASHER,.39 x .625	1	55	100133	WASHER,LOCK,3/8	4
14	866353	SPACER	2	56	100307	NUT,HEX	4
15	866412	TUBE, 3.50" LG	2	63	136131	CHAIN,SASH,#8 x 7"	1
16	101566	NUT,LOCK	4	64	136133	RING,RETAINING	1
17	111841	WASHER,PLAIN 5/8	5	75▲	342404	LABEL,BELT GUARD WARNING	1
18	136217	NUT,JAM NY-LOCK,1/4-20	4	81		LABEL,FRONT	1
19	867098	BUMPER,W/WASHER	3		16F590	HSS9000	
20	119049	SCREW, HS HC 1/4-20 x 1.875	3		16F592	HSS11000	

(Swing Arm KIT 866880 includes hydraulic moter, paint pump, and swing arm frame.)

▲ Additional warning labels are available at no cost

# Sprayer Assembly

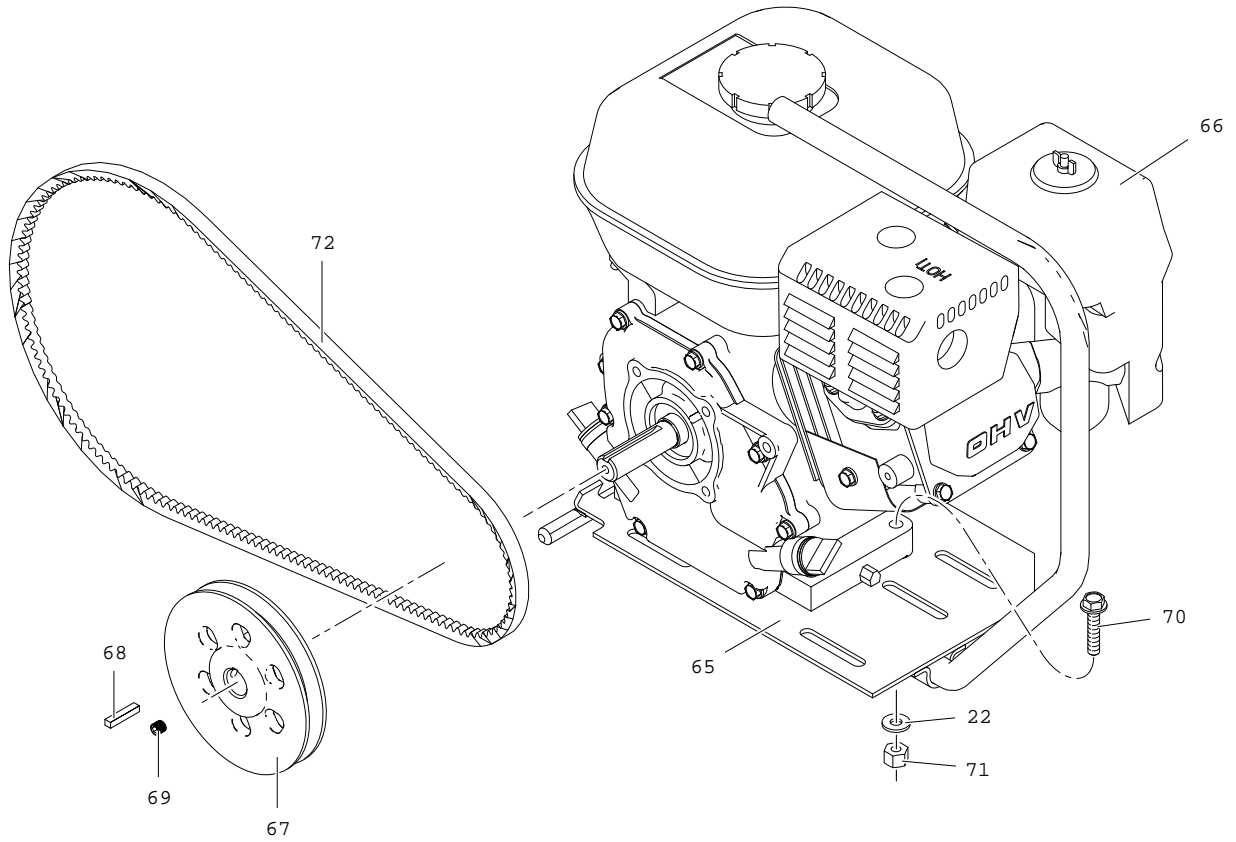


ti16107b

Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
26	331342	SCREW,PH PN HD	2	60	867155	COVER,PUMP	1
27	301522	SPRING,CLIP	1	74▲	342402	LABEL,WARNING	1
28	116969	NUT,LOCK	1	78	342588	LABEL,HYD VALVE CONTROL	1
29	866085	CUP	1	84	342445	LABEL,CAUTION	1
40	865719	PRIME VALVE	1	85	248217	DRAIN HOSE (includes 86)	1
41	116504	FITTING,TEE	1	86	241920	DEFLECTOR	1
42	804582	GAUGE,PRESSURE (Models 16M530, 16M614, 16M615, 865903)	1	88	866123	FILTER,ASSY	1
54	140034	WASHER,.820x.411x.062	4	89	867017	SWIVEL,3/8x3/8NPT	1
55	100133	WASHER,LOCK,3/8	4	90	557391	PLUG,1/4 NPTF	1
56	100307	NUT,HEX	4	92	198542	CLIP,SPRING	1
57	100004	SCREW,CAP,HEX HD	2	105	24F690	GUN,MASTIC (Models 24F577,24F578)	1
58	331184	SPACER	2	106	255439	HOSE,1/4"x3" (Models 24F577,24F578)	1
59	113783	SCREW,MACHINE,PN HD	4	107	HSE3850	HOSE,3/8" x 50' (Models 24F577,24F578)	1
				251	189920	STRAINER	1

▲ Additional warning labels are available at no cost.

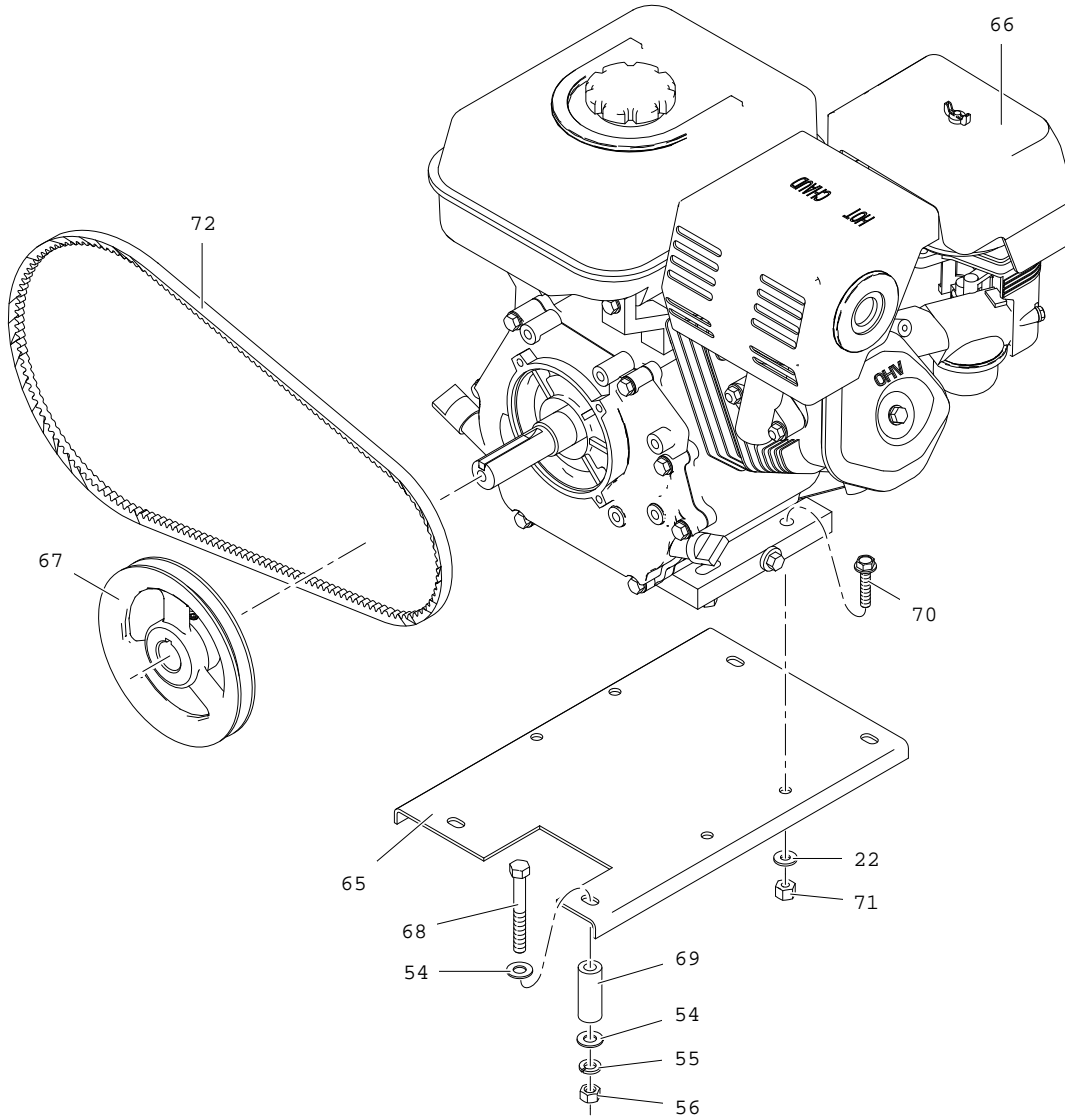
# Power Unit - HSS 9000



ti16108b

Ref.	Part	Description	Qty
22	100527	WASHER,PLAIN	4
65	867299	FRAME,LIFTING HANDLE	1
66	116080	ENGINE,GAS,HONDA	1
67	867441	PULLEY	1
68	866212	KEY,SQUARE	1
69	555516	SCREW,SOC,5/16-18x.31	1
70	110837	SCREW,FLANGE,HEX	4
71	110838	NUT,LOCK	4
72	189524	BELT,V	1

# Power Unit - HSS 11000



ti16109b

Ref. Part	Description	Qty
22	100527 WASHER,PLAIN	4
54	140034 WASHER,.820x.411x.062	4
55	100133 WASHER,LOCK,3/8	4
56	100307 NUT,HEX	4
65	867299 FRAME,LIFTING HANDLE	1
66	803900 ENGINE,GAS,HONDA	1
67	867441 PULLEY	1
68	100454 SCREW,CAP,HEX HD	4
69	866358 SPACER	4
70	110837 SCREW,FLANGE,HEX	4
71	110838 NUT,LOCK	4
72	867687 BELT.V	1

# Technical Data

Airless Paint Sprayer		
	US	Metric
Maximum working pressure	3300 psi	22.8 MPa, 228 bar
Honda GX200 Engine	6.5 Horsepower	
Honda GX270 Engine	9.0 Horespower	
Maximum delivery	2.76 gpm	10.2 lpm
Maximum tip size	0.052	
Fluid outlet npsm	3/8 in.	
Weight		
HSS9000	140 lb	63.5 kg
HSS11000	232 lb	105.2 kg
Noise Level (measured at maximum load conditions)		
Sound Power	110 dBa	
Sound Pressure	96 dBa	
Wetted Parts	zinc and nickel-plated carbon steel, nylon, stainless steel, PTFE, acetal, leather, UHMWPE, aluminum, tungsten carbide	

# Airlessco Standard Warranty

Airlessco warrants all equipment referenced in this document which is manufactured by Airlessco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Airlessco, Airlessco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Airlessco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Airlessco's written recommendations.

This warranty does not cover, and Airlessco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Airlessco component parts. Nor shall Airlessco be liable for malfunction, damage or wear caused by the incompatibility of Airlessco equipment with structures, accessories, equipment or materials not supplied by Airlessco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Airlessco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Airlessco distributor for verification of the claimed defect. If the claimed defect is verified, Airlessco 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.

**THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.**

Airlessco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

**AIRLESSCO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY Airlessco.** These items sold, but not manufactured by Airlessco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Airlessco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Airlessco be liable for indirect, incidental, special or consequential damages resulting from Airlessco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Airlessco, or otherwise.

## **FOR AIRLESSCO CANADA CUSTOMERS**

The Parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés, à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

**TO PLACE AN ORDER OR FOR SERVICE**, contact your Airlessco distributor,  
or call 1-800-223-8213 to identify the nearest distributor.

*All written and visual data contained in this document reflects the latest product information available at the time of publication.  
Airlessco reserves the right to make changes at any time without notice.*

*For patent information, see [www.graco.com/patents](http://www.graco.com/patents)*

Original Instructions. This manual contains English. MM 3A1188

**GRACO INC. AND SUBSIDIARIES • P.O. BOX 1441 • MINNEAPOLIS MN 55440-1441 • USA**

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[www.airlessco.com](http://www.airlessco.com)  
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