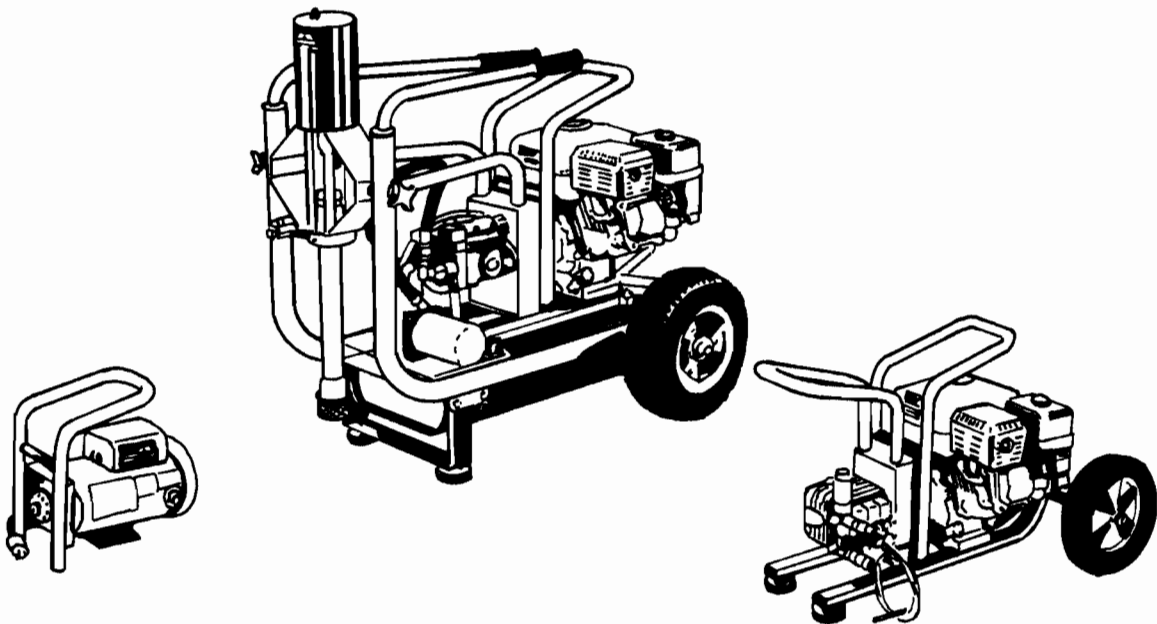




**6100 HYDRAULIC MODULAR SPRAY SYSTEM
PISTON PUMP AIRLESS SPRAYERS**



AIRLESS SPRAYER - GAS AND ELECTRIC

PRESSURE WASHER

PART NO.	DESCRIPTION	WEIGHT
188-301	1.2 GPM PISTON PUMP BASE MODULE *WEIGHT INCLUDES 4 GALS. HYDRAULIC OIL	*130 LBS.
188-302	HONDA 5 H.P. POWER MODULE WITH OIL ALERT	48 LBS.
188-304	BRIGGS-STRATTON 5 H.P. POWER MODULE WITH OIL GUARD	48 LBS.
188-303	ELECTRIC 2 H.P. POWER MODULE	56 LBS.

PART NO.	DESCRIPTION	WEIGHT
188-305	PRESSURE WASHER 1500 P.S.I./4 G.P.M. BASE MODULE WITH CHEMICAL INJECTOR, 50 FT. HOSE, GUN, WAND AND THREE NOZZLES. FOR USE WITH 188-302 OR 188-304 GASOLINE POWER MODULES ONLY.	32LBS.

OPERATION MANUAL AND PARTS LIST

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INTRODUCTION

THE AIRLESSCO 6100 HIGH OUTPUT CONTRACTOR PUMP

The **AIRLESSCO 6100** is a Modular Spray System. It has been designed to give you the most versatile paint sprayer and cleaning system possible. You can quickly change from electric to gas power by interchanging the gas and electric power modules, then use the gas engine to power the pressure washer module.

The **AIRLESSCO 6100** is a heavy duty hydraulic airless sprayer for painters working with extra large tips or two guns. It covers the entire range of use from lacquers and stains at low pressure to high pressure applications of latex, heavy block fillers and other specialized coatings not normally suited for other equipment.

Specially treated thick, hard chromed piston rod, reversible seats, teflon packings preloaded for wear compensation and stainless steel pump body are ideal components for the pumping of extremely abrasive fluids. This combined with a slow stroking paint pump gives you more reliable equipment and low operating costs.

The 2 HP electric motor used on the **AIRLESSCO 6100** was chosen because it can run on 15 and 20 amp circuits. To use tips up to 0.031 at high pressure you

need a 20 amp circuit. When you use smaller tips or lower pressure the amp draw is less. You are able to spray most paint on a 15 amp circuit. Should you want to spray heavy products the only requirement you need is a 20 amp circuit.

DO NOT USE ELECTRIC MODULE ON THE PRESSURE WASHER BASE MODULE.

SPECIFICATIONS:

6100 with Electric Power Module: 1 GPM, 0 - 3000 psi, spray tips with 1 gun up to .031, 2 guns up to .019, 2 HP electric motor with variable amp draw, 110 volt, 60 cycles totally enclosed, fan cooled, thermal protected.

6100 with Gas Power Module: 1.25 GPM, 0-3000 psi, spray tips with 1 gun up to .031, 2 guns up to .021, 5 hp Honda engine with low oil shut off.

Pressure Washer Base Module: 1500 psi, 4 GPM, direct drive, adjustable pressure control, chemical injector, 50 ft. hose, gun, wand and 3 nozzles. For use with gas power module only.

IMPORTANT WARNING

Handle this unit as you would a loaded firearm. High pressure spray can cause extremely serious injury. Learn and follow the **PRESSURE RELIEF PROCEDURE** on page 6 before operating, before doing any service or maintenance work on the gun or the unit, and whenever you stop spraying.

WARNING - PRIOR TO STARTING: READ, UNDERSTAND AND OBSERVE ALL SAFETY PRECAUTIONS AND WARNINGS ON PAGE 5, 6 & 7.

FLUSHING GUIDELINES

1. **New Sprayer:** Your new Airlessco sprayer was factory tested in an antifreeze solution which has been left in the pump. **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 flush.
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. For longer storage, use mixture of mineral spirits and motor oil (half & half). Shut off the sprayer, open the fluid bypass valve to relieve pressure and leave open.

Oil-base paint: Flush with mineral spirits. Shut off the sprayer, open the fluid prime (bypass) valve to relieve pressure and leave open.

6. **Start up after storage: Before using water-base paint**, flush 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 and the sprayer is ready to use.

HOW TO FLUSH

FIG. 1

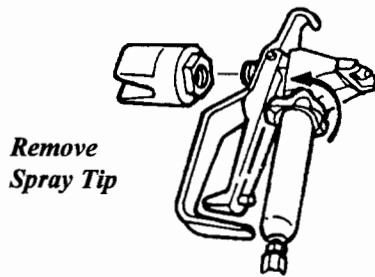


FIG. 2

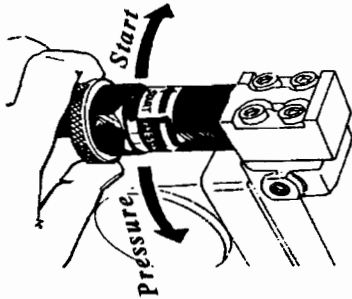


FIG. 3

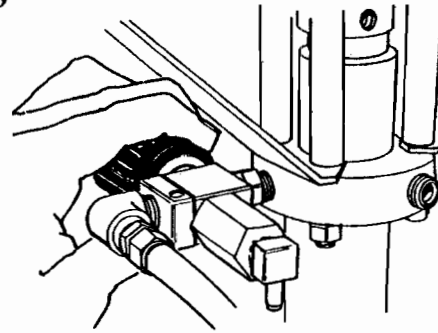


FIG. 4

Maintain firm metal
to metal contact between
gun and container



1. Be sure the gun safety latch is engaged and there is no spray tip in the gun. Refer to Fig. 1
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 swivel the pump forward and place the pail under the pump. Then swivel the pump back to lower the pump into the pail.
4. Turn the pressure control knob as marked "start" until all spring tension is relieved. The sprayer is now set at the lowest pressure setting. Refer to Fig. 2.
5. Open the fluid prime (bypass) valve to "priming" position. (ccw). This will allow an easy start. Refer to Fig. 3.
6. Turn the motor (engine) ON/OFF switch to ON.
7. Turn the choke on as per engine manual.
8. Turn the ON/OFF switch to 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 ROPE.** Hold onto the handle while rewinding, or the rope may rewind improperly and jam the assembly. If the engine does not start, open the choke a little more. If the engine floods, open the choke all the way and continue cranking.
9. After the engine is warm, gradually open the choke lever, close the fluid prime (bypass) valve by turning the valve all the way clockwise. (Refer to Fig. 3).
10. Point the gun into the metal pail and hold a metal part of the gun firmly against the pail. Refer to Fig. 4.

WARNING

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. Refer to Fig. 4.

11. Disengage the gun safety latch and squeeze the gun trigger. At the same time, slowly turn the pressure control knob clockwise just enough to start the pump. Refer to Fig. 2.
12. Allow the pump to operate until clean solvent comes from the gun.
13. Release the trigger and engage the gun safety latch.
14. If you are going to start spraying, place the pump or suction tube into the supply container. Release the gun safety latch and trigger the gun into another empty, metal container, holding a metal part of the gun firmly against the metal pail, and force the solvent from the pump and hose. Engage the gun safety latch until you are ready to use the pump.
15. If you are going to store the sprayer, remove the suction tube or pump from the solvent pail, holding a metal part of the gun firmly against the metal pail, and force the solvent from the pump and hose. Engage the gun safety latch. Refer to the "Storage Procedure" in the section "How to Flush" on page 1.
16. Whenever you shut off the sprayer, follow the **PRESSURE RELIEF PROCEDURE WARNING** on page 6.

SETTING UP

THE INFORMATION BELOW IS COMMON TO BOTH GAS AND ELECTRIC PUMPS

1. Connect the Hose and Gun.

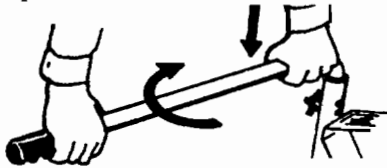
- Remove the plastic cap plug from the outlet tee and screw an accessory, conductive or grounded spray hose onto fluid outlet.
- Connect an accessory spray gun to the other end of the hose.
- Don't use thread sealant on the swiveling nut of hose couplings, and don't install the spray tip yet!

NOTE: DO NOT use thread sealer on swivel unions - they are made to self seal.

USE thread seal on TAPERED male threads only.

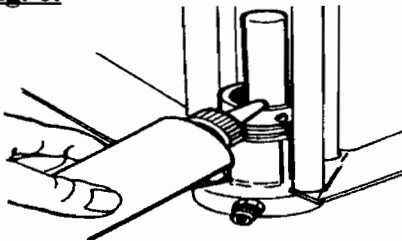
NOTE: To reverse position of handles, push down near pivot point to release detent and then rotate.

FIG. 5



- Fill the Packing Nut/Wet Cup 1/3 full with Airlessco Throat Seal Oil (TSO) supplied. Refer to Fig. 6.

FIG. 6



3. Check the Electrical Service.

- Be sure the electrical service is 120V, 60 HZ AC, 15 amp (minimum) and that the outlet you use is properly grounded.

NOTE: For 220V, single phase service, you must have a certified motor service center rewire the cord connections. Motor is supplied with dual winding but is always connected for 110 V service only.

- If you must use extension cord, use only 3 wires of a minimum 12 guage size wire and a maximum of 25 ft. long. Longer lengths may affect sprayer performance particularly if larger size tips are used.

4. Check the Engine Oil Level

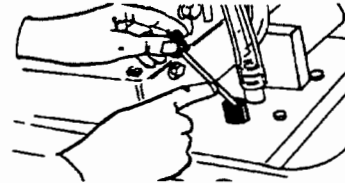
- Unscrew the oil fill plug. The dipstick is attached to the plug.
- Without threading the plug into place, check to be sure the oil is up to the top mark on the dipstick.
- If oil is need, refer to engine manual.

5. Priming the Hydraulic Pump

Before starting unit, check oil level, make sure hydraulic suction hose is full. (if hose is empty follow the directions, Steps a - c, top of next column.)

- Check that hydraulic oil is between marks on the dipstick.
- Check all fittings to be sure they are tight.
- Open Hydraulic Bypass Valve.
- With gas units, pull the starter cord several times (with the engine switched off) until the suction hose is full, then switch on and start. The pump will then self prime. With electric units, switch the motor on and off several times until the suction hose is full.
- Check and add hydraulic oil if necessary.

FIG. 7



CAUTION

To prevent damage to the cooling system and hydraulic pump, use ONLY AIRLESSCO HYDRAULIC OIL, Part No. 188-391. Other types of hydraulic oil (as recommended by other manufacturers) may damage the hydraulic components.

6. 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 3A to 3C., below, being sure not to spill any fuel.

- Close the fuel shutoff valve. (If engine so equipped).
- Use only clean, fresh, well-known brands of unleaded regular grade gasoline.
- 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.

7. 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 & system components and the object being sprayed as instructed on page 6.

- Flush the Sprayer See flushing guidelines, pages 1 & 2. Your new pump was factory tested in antifreeze solution which must be flushed out before using.

OPERATION

1. Prepare the Material

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

2. Starting the Sprayer

- Fluid prime (bypass) valve must be open-in priming position. (CCW)
- Pressure control knob must be in "start" position until all spring tension is relieved. You will be able to feel it. The sprayer is now set at the lowest pressure setting.

c. Open Hydraulic bypass valve.

d. Turn the motor ON/OFF switch to ON.

Note: In very cold weather, run the motor for about 15 minutes with the pressure control knob at "start" position before starting the displacement pump to help avoid hydraulic motor stalling.

e. Follow the Pressure Relief Warning, page 6, to shut off the sprayer.

WARNING

To stop the unit in an emergency, turn motor off and open the fluid bypass valve. See Fig. 3, page 2. Then relieve the fluid pressure in the pump and hose as instructed in the Pressure Relief Warning, on Page 6.

3. Prime the Pump

CAUTION

Do not turn motor on without fluid pump having enough fluid so that it can be primed. Running fluid pump dry will decrease life of pump's packings.

- Be sure the gun safety latch is engaged.
- If the engine has not been started, follow the procedure "Starting Sprayer" Step 2 above.
- After engine/motor is running, close hydraulic bypass valve, adjust pressure control knob to its' very minimum pressure, just to move the pumps rod very slowly. Fluid prime bypass valve is still open in "priming position". Wait until pump is primed - when fluid is bypassing back into the bucket without air bubbles.
- After the pump is primed, close the fluid prime bypass valve by turning it all the way to "close" position. (CW)
- Turn the pressure control knob to desired spray pressure.
- Disengage the gun safety lock and you are ready to start spraying.

WARNING

If you spray into the paint bucket, always use lowest spray pressure and maintain firm metal to metal contact between gun and container. See Fig. 4, page 2.

4. Adjusting the Pressure

- Turn the pressure control knob to "Pressure to increase pressure and to "Start" (CCW) to decrease pressure.
- Always use the lowest pressure necessary to completely atomize the material.

CAUTION

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

- If more coverage is needed, use a larger tip rather than increasing the pressure.
- Check the spray pattern. The tip size and angle determines the pattern width and flow rate. Refer to the separate gun instruction manual.

5. Cleaning a Clogged Tip

WARNING

To reduce the risk of an injection, NEVER hold your hand, body or 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 was cleared or when using a self-cleaning tip.

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

There is a easy way to keep the outside of the tip clean from material build up:

Every time you stop spraying for even a minute, lock the gun and submerge the gun into small bucket of thinner comparable with the material sprayed. Thinner will dissolve the buildup of paint on the outside of tip, tip guard and gun much more effectively if the paint does not have time to dry out completely.

WARNING

Clogged standard (flat) tip - clean only after the tip is removed from the gun.

6. When Shutting Off the Sprayer.....

- Whenever you stop spraying, even for a short break, follow the pressure relief procedure Warning on pg.6.
- Clean the tip & gun as recommended by your gun instruction manual.
- Flush sprayer at end of work day if the material you are spraying is water-based, or if it could harden in the sprayer overnight. See "Flushing" on Pages 1 & 2. Use a compatible solvent to flush, then fill the pump & hoses with an oil-based solvent such as mineral spirits. **WARNING:** Be sure to relieve pressure in the pump after filling with mineral spirits.
- For longterm shutdown or storage refer to pg 1, Step 5.

WARNINGS AND SAFETY PRECAUTIONS

**HIGH PRESSURE SPRAY CAN CAUSE EXTREMELY SERIOUS INJURY.
OBSERVE ALL WARNINGS. THIS SPRAYER IS FOR PROFESSIONAL USE ONLY.**

WARNING: High pressure spray can cause extremely serious injury - HANDLE AS YOU WOULD A LOADED FIRE-ARM!! LEARN AND FOLLOW PRESSURE RELIEF PROCEDURE. Read and understand all instruction manuals, tags, warnings, users guides and labels on machine before operating equipment Order new labels from Durotech Co. if unreadable.

SAFETY IS THE RESPONSIBILITY OF THOSE WHO OPERATE THIS EQUIPMENT.

INJECTION HAZARD

Fluids under high pressure from spray or leaks can penetrate the skin and cause extremely serious injury, including the need for amputation.

NEVER point the spray gun at anyone or any part of the body. NEVER put hand or fingers over the spray tip. Do not use rag or other materials over your fingers - paint would penetrate through and into the finger.

NEVER try to stop or deflect leaks with your hand or body.

ALWAYS have gun tip guard in place when spraying.

ALWAYS remove tip from gun to clean it.

NEVER try to "blow back" paint, this is not an air spray sprayer.

ALWAYS follow the Pressure Relief Procedure, as shown in this manual, before cleaning or removing the spray tip or servicing any system of the equipment.

Be sure equipment safety devices are operating properly before each use.

MEDICAL TREATMENT

If any fluid appears to penetrate your skin,

GET EMERGENCY CARE AT ONCE!

DO NOT TREAT AS A SIMPLE CUT!

Tell the doctor exactly what fluid was injected. For treatment instructions have your doctor call the NATIONAL POISON CENTER NETWORK

GENERAL PRECAUTIONS

NEVER alter equipment in any manner.

NEVER smoke while in spraying area.

NEVER spray highly flammable materials.

NEVER use around children.

NEVER allow another person to use sprayer unless he is thoroughly instructed on its safe use.

ALWAYS wear a suitable face mask while spraying.

ALWAYS ensure fire extinguishing equipment is readily available and properly maintained.

NEVER LEAVE SPRAYER UNATTENDED WITH PRESSURE IN THE SYSTEM. Follow Pressure Relief Procedures as outlined in this manual. (page 6)

ALWAYS INSPECT SPRAYING AREA

Keep spraying area free from obstructions.

Make sure area has good ventilation to safely remove vapors and mists.

NEVER keep flammable materials in spraying area.

NEVER spray in vicinity of open flame or other sources of ignition.

Spraying area must be at least 20' away from spray unit.

SPRAY GUN SAFETY

ALWAYS set safety lock on the gun in "LOCKED" position when not in use and before servicing or cleaning.

DO NOT remove or modify any part of the gun.

ALWAYS REMOVE SPRAY TIP when cleaning. Flush unit with LOWEST POSSIBLE PRESSURE.

CHECK operation of all gun safety devices before each use.

BE VERY CAREFUL WHEN REMOVING the spray tip or hose from gun. A plugged line contains fluid under pressure. If the tip or line is plugged, follow the PRESSURE RELIEF PROCEDURE as outlined on page 6.

TIP GUARD

ALWAYS have the tip guard in place on the spray gun while spraying. The tip guard alerts you to the injection hazard and helps prevent accidentally placing your fingers or any part of your body close to the spray tip.

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.

ALWAYS remove tip and tip guard to clean after pump is turned off and pressure relieved.

KEEP CLEAR OF MOVING PARTS

Keep clear of moving parts when starting or operating the sprayer. Do not put your fingers into any openings to avoid amputation by moving parts or burns from hot parts.

Precaution is the best insurance against an accident. When starting the engine, maintain a safe distance from moving parts of the equipment.

Before adjusting or servicing any mechanical part of the sprayer, follow the PRESSURE RELIEF PROCEDURE, Page 6, and remove the ignition cable from the spark plug to prevent accidental starting of the sprayer.

ALWAYS follow AIRLESSCOS recommendations on machine pressure and operating instructions.

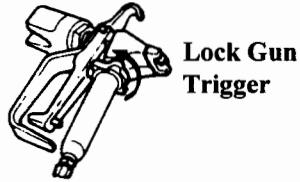
**NOTE: WARNINGS CONTINUED ON
NEXT PAGE.**

WARNINGS AND SAFETY PRECAUTIONS

PRESSURE RELIEF PROCEDURE

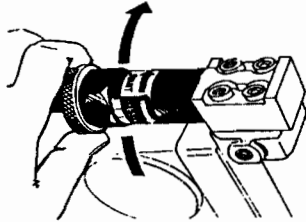
To avoid possible serious bodily injury, always follow this procedure whenever the sprayer is shut off, when checking or servicing it, when installing, changing or cleaning spray tips and whenever you stop spraying.

1. Engage gun safety latch.

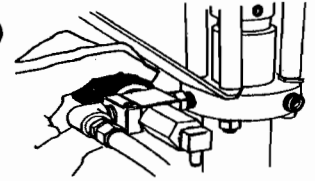


2. Turn engine/motor off.

3. Turn pressure control knob out of the pump as marked "Start".



4. Open Fluid Prime (bypass) valve as marked "OPEN" (priming) to relieve fluid pressure.



5. Disengage gun safety latch & trigger gun to relieve fluid pressure.



6. Engage gun safety latch.



If the spray tip or hose is clogged, follow Step 1 through 6 above. Expect paint splashing into the bucket while relieving pressure during Step 5. After following all 6 steps above it is safe to remove the tip from the gun to clean.

HOSES

Use only high pressure airless hoses with static wire approved for 3000 psi.

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 and result in an injection injury or serious bodily injury.

Use only hose having a spring guard. The spring guard helps protect the hose from kinks or other damage which could result in hose rupture and cause an injection injury.

NEVER use a damaged hose, which can result in hose failure or rupture and cause an injection injury or other serious bodily injury or property damage. Before each use, check entire hose for cuts, leaks, abrasion or bulging of cover, or damage or movement of couplings. If any of these conditions exist, replace the hose immediately, **Never use tape or any device to try to mend the hose as it can not contain the high pressure fluid. NEVER attempt to recouple the hose.** High pressure hose is not recoupleable.

Help prevent damage to the hose by handling and routing carefully. Do not move the sprayer by pulling it with the hose.

GROUNDING

Ground the sprayer and other components in the system to reduce the risk of static sparking, fire or explosion which can result in serious bodily injury and property damage. For detailed instructions on how to ground, check your local electrical code

ALWAYS ensure switch is in "OFF" position before plugging unit in.

Always ground all of these components:

1. Sprayer: Plug the power supply cord, or extension cord, each equipped with an undamaged three-prong plug, into an approved, properly grounded outlet. **DO NOT USE AN ADAPTER.**
2. Air hoses: use only grounded hoses.
3. Fluid hoses: use only grounded hoses.
4. Spray gun or dispensing valve; grounding is obtained through connection to a properly grounded fluid hose and pump.
5. Object being sprayed; according to your local code.
6. All solvent pails used when flushing.

Once each week, check electrical resistance of hose (when using multiple hose assemblies, check overall resistance). Overall (end to end) resistance of unpressurized hose must not exceed 29 megohms (max.) for any coupled length or combination of hose lengths. If hose exceeds these limits, replace it immediately.

Never exceed 500 ft. (150 m) overall combined hose length to assure electrical continuity.

NOTE: WARNINGS CONTINUED ON NEXT PAGE.

WARNINGS AND SAFETY PRECAUTIONS

AVOID COMPONENT RUPTURE

This sprayer can develop 3000 psi fluid pressure. Always be sure that all components and accessories have a maximum working pressure of at least 3000 psi to avoid rupture which can result in serious bodily injury including injection and property damage.

NEVER leave a pressurized sprayer unattended to avoid accidental operation of it which could result in serious bodily injury.

ALWAYS follow the PRESSURE RELIEF PROCEDURE whenever you stop spraying and before adjusting, removing or repairing any part of the sprayer.

NEVER alter or modify any part of the equipment to avoid possible component rupture which could result in serious bodily injury and property damage.

NEVER use weak or damaged or non-conductive paint hose. Do not allow kinking or crushing of hoses or allow it to vibrate against rough or sharp or hot surfaces. Before each use, check hoses for damage and wear and ensure all fluid connections are secure.

REPLACE any damaged hose. NEVER use tape or any device to mend the hose.

NEVER attempt to stop any leakage in the line or fittings with your hand or any part of the body. Turn off the unit and release pressure by following PRESSURE RELIEF PROCEDURE,

ALWAYS use approved high pressure fittings and replacement parts.

ALWAYS ensure fire extinguishing equipment is readily available and properly maintained.

PREVENT STATIC SPARKING FIRE/ EXPLOSIONS

ALWAYS be sure all equipment and objects being sprayed are properly grounded. Always ground sprayer, paint bucket and object being sprayed. See "grounding" on page 6 for detailed grounding information.

Vapors created when spraying can be ignited by sparks. To reduce the risk of fire, always locate the sprayer at least 20 feet (6 m.) away from the spray area. Do not plug in or unplug any electrical cords in the spray area, which can create sparks, when there is any chance of igniting vapors still in the air. Follow the coating & solvent manufacturers safety warnings and precautions.

Use only conductive fluid hoses for airless applications. Be sure gun is grounded through hose connections. Check ground continuity in hose & equipment. Overall (end to end) resistance of unpressurized hose must not exceed 29 megohms for any coupled length or combination of hose length. Use only high pressure airless hoses with static wire approved for 3000 psi.

FLUSHING

Reduce the risk of injection injury, static sparking or splashing by following the specific cleaning procedure on pg. 7.

ALWAYS follow the PRESSURE RELIEF PROCEDURE on page 6.

ALWAYS remove the spray tip before flushing. Hold a metal part of the gun firmly to the side of a metal pail and use the lowest possible fluid pressure during flushing.

NEVER use cleaning solvents with flash points below 140 degrees F. Some of these are: acetone, benzene, ether, gasoline, naphtha. Consult your supplier to be sure.

NEVER SMOKE IN THE SPRAYING/CLEANING AREA.

GAS ENGINE PRECAUTIONS

Locate unit 25 feet away from spray area in well ventilated area. NEVER operate in closed building unless exhaust is piped outside. NEVER allow hose to lay against engine mufflers of hot parts. NEVER refill fuel tank while engine is hot or is running.

WARNING

Do not use halogenated solvents in this system. Airlessco prime valve, 2 gun manifold and most airless guns have aluminum parts and may explode. Cleaning agents, coatings, paints or adhesives may contain halogenated hydrocarbon solvents. DON'T TAKE CHANCES! Consult your material suppliers to be sure. Some of the most common of these solvents are: Carbontetrachloride, Chlorobenzene, Dichloroethane, Dichloroethyl Ether, Ethylbromide, Ethylchloride, Tetrachloroethane. Alternate valves and guns are available if you need to use these solvents.

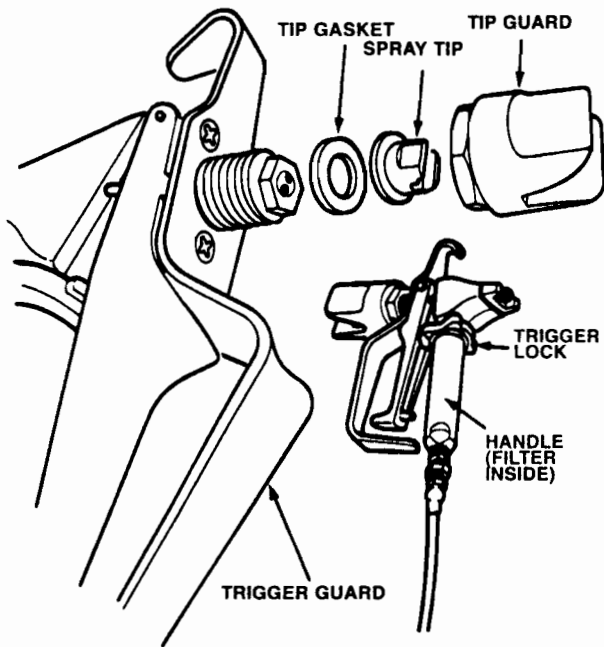
Important: United States Government safety standards have been adopted under the Occupational Safety & Health Act. These standards, particularly the General Standards, Part 1910, & the Construction Standards, part 1926 should be consulted.

WHEN SPRAYING & CLEANING WITH FLAMMABLE PAINTS OR THINNERS:

1. When spraying with flammable liquids, the unit must be located a minimum of 25 feet away from the spraying area in a well ventilated area. Ventilation must be sufficient enough to prevent the accumulation of vapors.
2. To eliminate electrostatic discharge, ground the spray unit, paint bucket and spraying object. Use only high pressure airless hoses approved for 3000 psi which is conductive.
3. Remove spray tip before cleaning gun and hose. Make contact of gun with bucket and spray without the tip in a well ventilated area, into the grounded steel bucket.
4. Never use high pressure in the cleaning process. USE MINIMUM PRESSURE.
5. Do not smoke in spraying/cleaning area.

AIRLESSCO 007 SPRAY GUN

MAJOR COMPONENTS OF SPRAY GUN

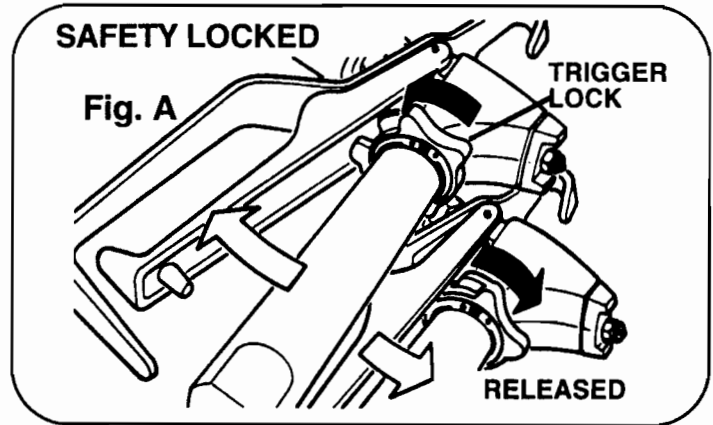


SPRAY GUN

Attach spray gun to whip hose and tighten fittings securely. Set the trigger lock.* Refer to Fig. A.

* The trigger lock should always be set when the gun is not being triggered.

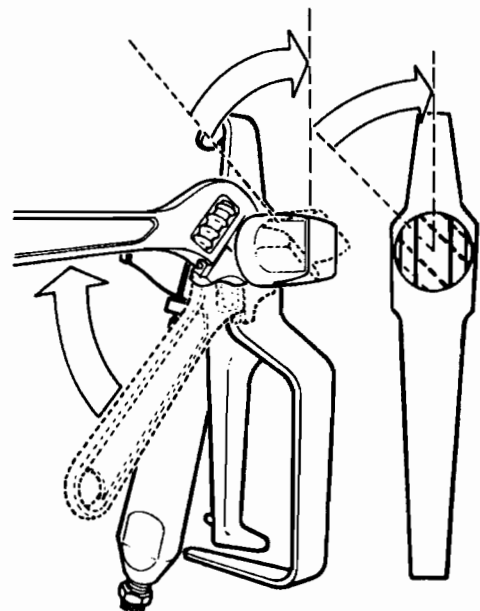
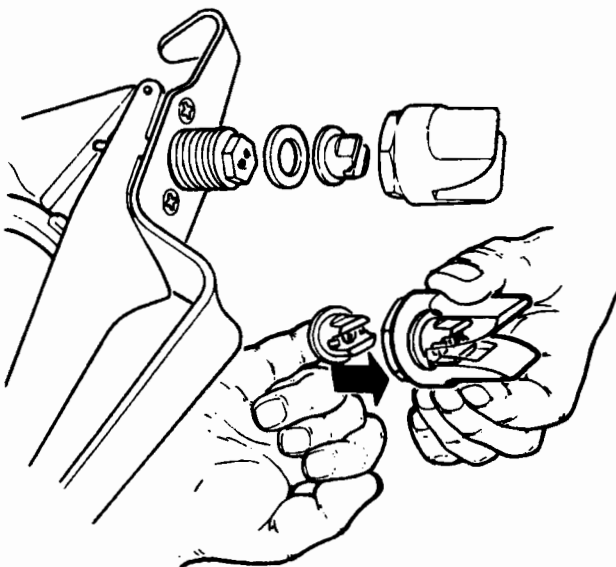
Read all warnings and safety precautions supplied with the spray gun and in product manual.



SPRAY TIP ASSEMBLY

Remove tip guard from spray gun. While holding tip guard upright, slide spray tip into tip guard. Make sure "flats" on spray tip are aligned with "ears" of tip guard. spray tip is installed properly when "flats" recess into tip guard cavity.

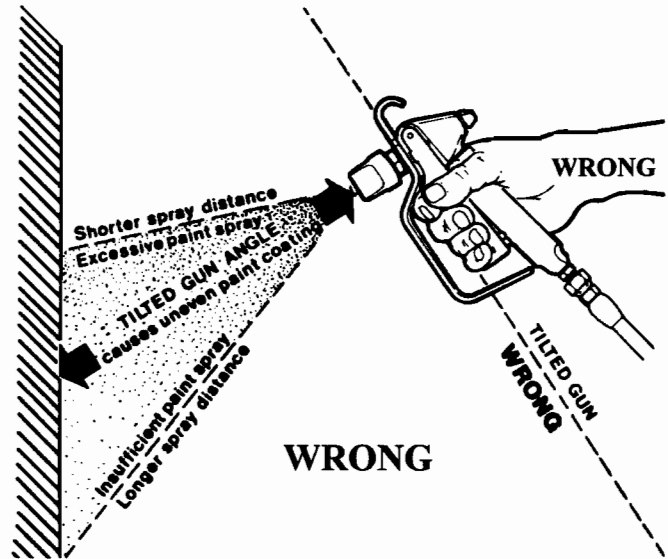
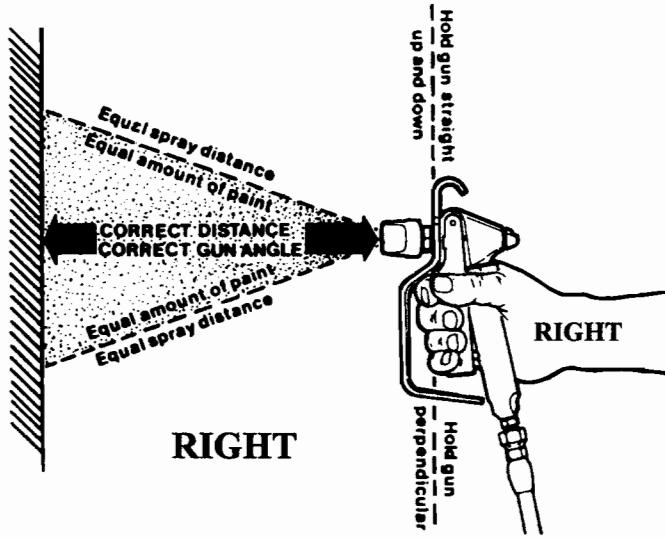
Insert tip guard. Place tip gasket in tip guard behind spray tip. Thread tip guard "assembly" onto spray gun, finger tight with "ears" on a 45 degree angle to vertical (see figure). When the tip guard nut is wrenched tight, the tip guard "ears" and spray tip pattern will be aligned for vertical spray pattern. (Spray pattern may be adjusted to horizontal if preferred.)



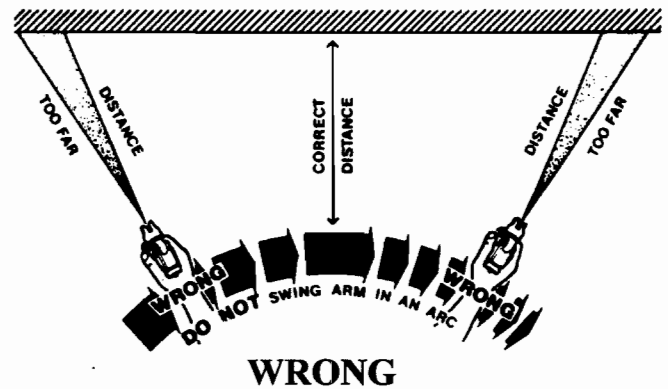
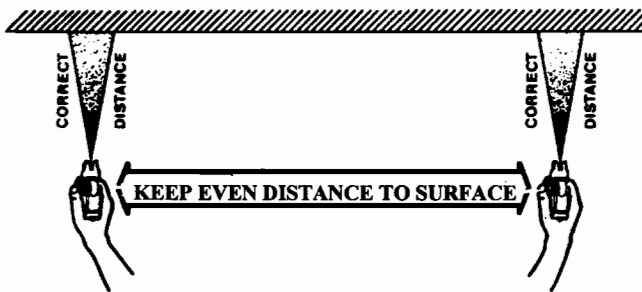
SPRAY TECHNIQUE

Good Spray Gun Technique is at the core of any spray paint operation. Operator skill and efficiency is as important as good equipment and good paint. Good spray technique is a skill that can be quickly learned by following these simple instructions.

If you are not familiar with spraying techniques, we recommend that you study this section of your manual and practice the proper technique on pieces of cardboard or a suitable surface.



Hold the spray gun 12 - 15 inches away from the work surface and keep it perpendicular (straight) to the surface. Move the spray gun parallel to the work and at a right angle to the surface.

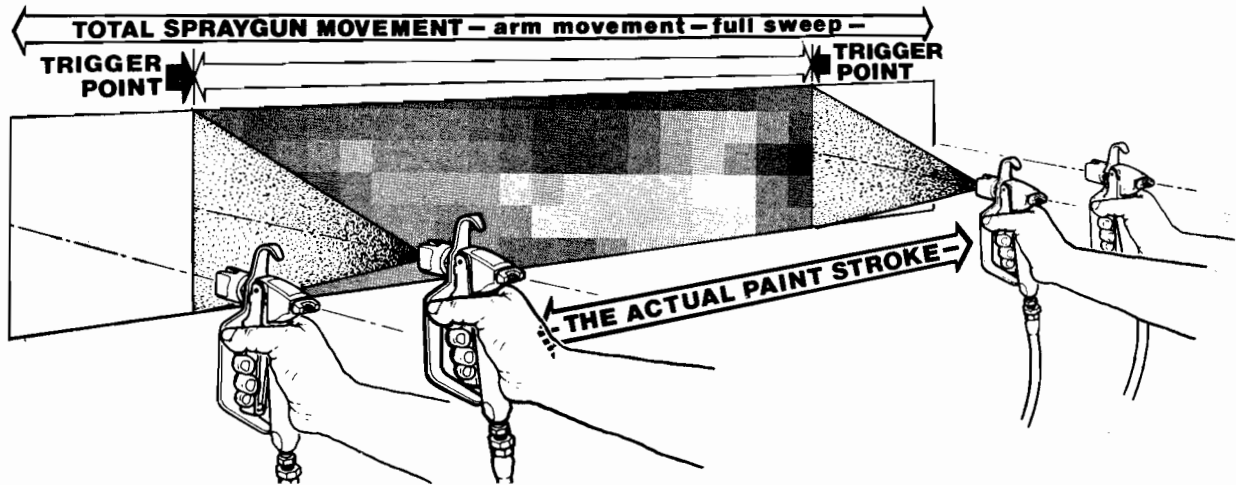


Move the gun at a steady rate in order to apply a good coverage. The wet coat should be just under the thickness at which a run or sag will occur. slow gun movement or gun held too close will result in an overly wet or thick wet or thick coat coverage that is likely to run or sag.

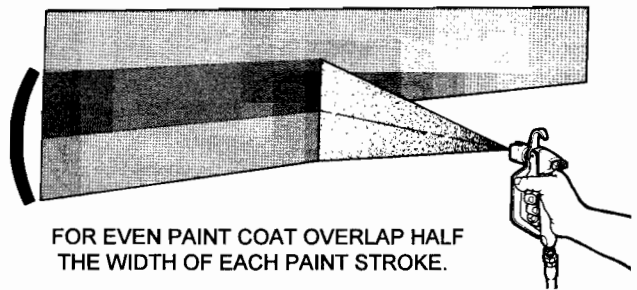
The closer the spray gun is held to the work, the thicker the paint is deposited and the faster the gun must be moved to prevent sags and runs. Holding the gun too far from the work will cause excessive fog, overspray, and a thin and grainy coat.

Do not wave the spray gun. This waving is called arching. Instead, hold the spray gun at a 12 to 15 inch distance perpendicular from the work.

SPRAY TECHNIQUE

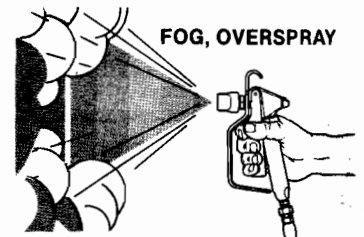
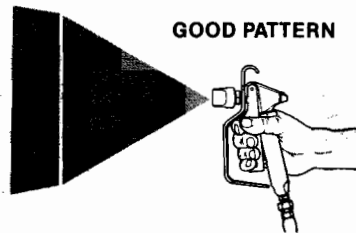
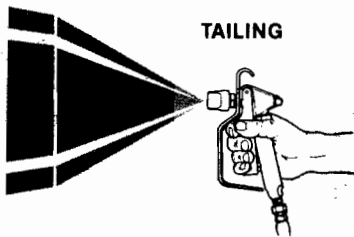


It is important to "trigger" the gun after gun movement (arm movement) has started and release trigger (shut gun off) before gun movement ends. Gun movement is always longer than actual paint (spray) stroke. In that manner, even blending and uniform paint coat thickness is achieved over the entire surface. When the gun is in motion as the trigger is pulled, it deposits an even amount of paint.



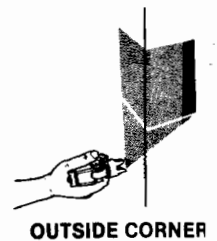
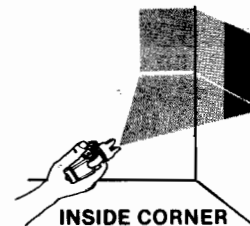
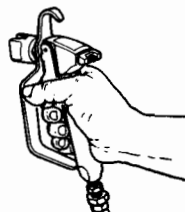
Overlap the previous pass by half the width of the spray pattern. Aim at the bottom of the previous pass.

Spray with uniform strokes from left to right and from right to left, holding stroke speed, distance, lapping, and triggering as uniform as possible.



Adjust pressure control knob so that paint is completely atomized from the spray gun. Insufficient pressure will result in "tailing".

Too much pressure will result in excess fog and overspray, excessive tip wear, and increased sprayer wear and tear.



Always use the lowest pressure possible to obtain desirable results.

"Inside" and "outside" corners can be sprayed.

Test the spray pattern on a piece of cardboard or other surface.

Aim the spray gun toward the center of the corner. The spray pattern is divided in half, and the edges of the spray pattern on both walls are the same.

AIRLESS SPRAY GUN OPERATION

<u>DEFECTS</u>	<u>CAUSE</u>	<u>CORRECTION</u>
Coarse spray	Low pressure	Increase the pressure.
Excessive fogging (overspray)	High pressure Material too thin	Reduce the pressure to satisfactory pattern distribution. Use less thinner.
Pattern too wide	Spray angle too large	Use smaller spray angle tip.
Pattern too narrow	Spray angle too small	Use larger spray angle tip (if coverage is OK, try tip in same nozzle group)
Too much material	Nozzle too small Material too thin Pressure too high	Use next smaller nozzle. Reduce pressure
Too little material	Nozzle too small Material too thick	Use next larger nozzle
Thin distribution in center of pattern "horns".	Worn tip Wrong tip	Change for new tip. Use nozzle with a narrow spray angle.
Thick skin on work	Material too viscous Application too heavy	Thin cautiously. Reduce pressure and/or use tip in next larger nozzle group.
Coating fails to close & smooth over	Material too viscous	Thin cautiously.
Spray pattern irregular, deflected	Orifice clogged. Tip damaged	Clean carefully. Replace with new tip.
Craters or pock marks, bubbles on work	Solvent balance	Use 1 to 3% "short" solvents remainder "long" solvents (this is most likely to happen with material of low viscosity, lacquers etc.)
Clogged screens	Extraneous material in paint. Coarse pigments Poorly milled pigments (paint pigments glocculate cover screen. Incompatible paint mixture & thinners.	Clean screen Use coarse screen if orifice size allows. Use coarser screen, larger orifice tips. Obtain ball milled paint. If thinner has been added, test to see if a drop placed on top of paint mixes or flattens out on the surface. If not, try different thinner in fresh batch of paint.

TEST THE PATTERN

Good, full pattern.



Spotty Pattern -
Increase pressure.



SPRAY TIP SELECTION

Spray tip selection is based on paint viscosity, paint type, and job needs. For light viscosities (thin paints), use a smaller tip; for heavier viscosities (thicker paints), use a larger tip size.

Spray tip size is based on how many gallons of paint per minute can be sprayed through the tip. Do not use a tip larger than the maximum pump flow rate or capacity the sprayer can accommodate. Pump flow rate is measured in gallons per minute (GPM).

HEAVY COATINGS	LATEX		OIL BASED		LACQUER & STAIN	ORIFICE SIZE	FAN WIDTH	TIP NO. FLAT TIP	TIP NO. REV. ZIP TIP
	LARGE AREAS	TRIM	LARGE AREAS	TRIM					
					X X	0.011	6 - 8 8 - 10	102-311* 102-411	550-411
				X X	X X	0.013	6 - 8 10 - 12	102-313* 102-513	550-313* 550-513
			X X X	X X		0.015	4 - 6 6 - 8 8 - 10 10 - 12 12 - 14	102-215 102-315* 102-415 102-515* 102-615	550-315* 550-515*
	X X X	X				0.017	6 - 8 8 - 10 10 - 12 12 - 14	102-317 102-417 102-517* 102-617	550-417 550-517* 550-617
	X					0.018	10 - 12	102-518	
	X X	X				0.019	6 - 8 10 - 12 12 - 14	102-519* 102-619	550-319 550-519*
X X	X X X					0.021	6 - 8 10 - 12 12 - 14	102-321 102-521* 102-621	550-521* 550-621
X	X					0.023	12 - 14	102-623	550-623
X X						0.027	10 - 12 14 - 16	102-527 102-727	550-527
X						0.031	10 - 12	102-531	550-531
X						0.035	12 - 14		550-635
X						0.041	12 - 14	102-641	550-641

PATTERN WIDTH

Thickness of the paint coat per stroke is determined by spray tip "fan width", rate of the spray gun movement, and distance to surface.

SPRAY TIP SELECTION

Two tips having the same tip size, but different pattern widths will deliver the same amount of paint over a different area (wider or narrower strip).

A spray tip with a narrow pattern width makes it easy to spray in tight places.

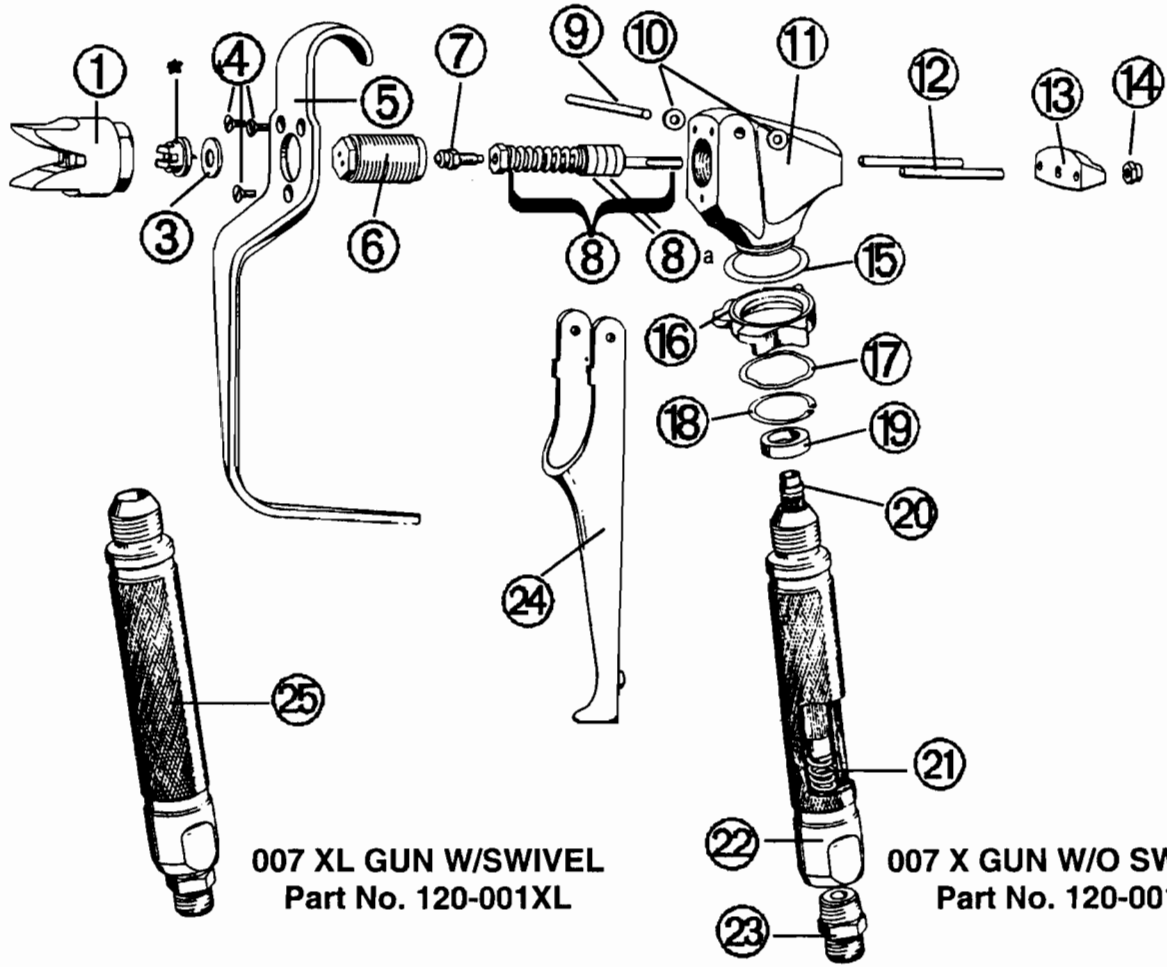
Use only good quality, high pressure tungsten carbide spray tips.

SPRAY TIP REPLACEMENT

During use, especially with latex paint, high pressure will cause the orifice to grow larger. This destroys the pattern.

Replace tips before they become excessively worn. Worn tips waste paint, cause overspray, make cutting-in difficult, and decrease sprayer performance.

AIRLESSCO 007X & 007XL SPRAY GUNS



007 XL GUN W/SWIVEL
Part No. 120-001XL

007 X GUN W/O SWIVEL
Part No. 120-001X

Spray Guns PART LIST

Item No.	Part No.	Description	Item No.	Part No.	Description
1	120-036	Tip Holder With Guard	14	120-021	Nut
2		Deliberately Omitted	15	120-056	Washer
3	120-008	Tip Washer	16	120-048	Lock
4	120-023	Screw (3)	17	120-055	Wave Washer
5	120-005	Guard	18	120-049	Retaining Ring
6	120-035	Valve Seat Complete	19	120-082	Seal
7	120-037	Valve Ball With Holder	20	120-090 CX	Filter-Complete—Coarse
8	120-011	Valve Spring Unit	20	120-090 FX	Filter-Complete—Fine
8a	120-033	Seals Teflon (2)	21	120-088	Spring
9	120-022	Trigger Pin	22	120-087	Handle Complete 007X
10	120-046	Washer (2)	23	115-019	Connector
11	120-002	Gun Head	24	120-044	Trigger
12	120-045	Retainer Pin (2)	25	120-085	Handle with Swivel 007XL
13	120-020	Retainer	*	TUNGSTEN CARBIDE SPRAY TIP (SEE SEPARATE LIST, Page 16)	

AIRLESSCO 007X & 007XL SPRAY GUNS

ADJUSTING SPRAY GUN

Hold gun with trigger locked (24) and push trigger against the lock (16). Then adjust nut (14) so that retainer (13) will move freely back and forth approximately $\frac{1}{32}$ " to allow valve spring unit (8) to seat the valve ball (7).

—IMPORTANT—

Readjust nut (14) periodically for wear of valve seat (6) and valve ball (7); otherwise, leakage will occur.

KIT #2-007

- | | |
|-------------------------|---------------------|
| 3 Tip Washers (3) | 1 Valve Seat (6) |
| 1 Valve Ball Holder (7) | 2 Seals—Teflon (8a) |

TO REPLACE THE VALVE BALL HOLDER (7)

DISMANTLING:

1. Unscrew tip holder (1) with a $\frac{7}{8}$ " open end wrench. Remove spray tip and washer (3).
2. Unscrew valve seat (6) with $\frac{1}{2}$ " socket wrench.

◆ CAUTION ◆

When removing and replacing valve seat (6), hold the trigger (24) in the open position so that the valve ball (7) is lifted off the valve seat. Failure to lift the ball off the seat will result in a scratched leaky valve.

3. Unscrew valve ball (7) together with the brass part of the assembly (8). Do not pull on the parts or the packing may get damaged.
4. Unscrew the valve ball (7) from the brass part of the assembly (8).

REASSEMBLING is done in reverse sequence. Screw the new valve ball with holder (7) into the brass part (8).

◆ CAUTION ◆

Tighten valve ball and brass part on threaded end of the shaft by hand until you feel a positive stop. Do not tighten with a wrench since this could result in breaking the shaft.

••• NOTE •••

It is recommended that you change the valve seat (6) and valve ball (7) at the same time.

KIT #3-007

- | | |
|-------------------------|-------------------------|
| 3 Tip Washers (3) | 1 Valve Seat (6) |
| 1 Valve Ball Holder (7) | 1 Valve Spring Unit (8) |

REPLACING THE VALVE SPRING UNIT (8)

1. Repeat dismantling procedure as outlined above under Steps 1 through 3.
2. Unscrew nut (14) remove retainer (13) with retainer pins (12) and push shaft of the valve spring unit (8) out of the gun head (11).
3. Clean gun head (11) bore with solvent and small brush. Do not use any sharp objects to scrape away dried paint, as they would cause leakage around the seal.

REASSEMBLING is done in reverse sequence.

—IMPORTANT—

When reassembling, install valve spring unit (8) with spring loose.

Push firmly into gun head by hand. Install retainer pins (12) retainer (13) and nut (14) loosely onto valve spring unit (8). Place a $\frac{3}{16}$ " nut driver on front of valve spring unit and turn clockwise, tightening the valve spring unit until you feel a positive stop. At that point, continue tightening the valve spring another $\frac{1}{8}$ turn expanding the Teflon seals against body of gun.

◆ CAUTION ◆

Do not tighten beyond $\frac{1}{8}$ turn as this can result in breaking the valve spring unit shaft. Continue reassembly and adjustment as described above.

CLEANING 007 SPRAY GUN:

Immediately after the work is finished, flush the gun out with a solvent. Brush pins (12) with solvent and oil them lightly so they will not collect dried paint.

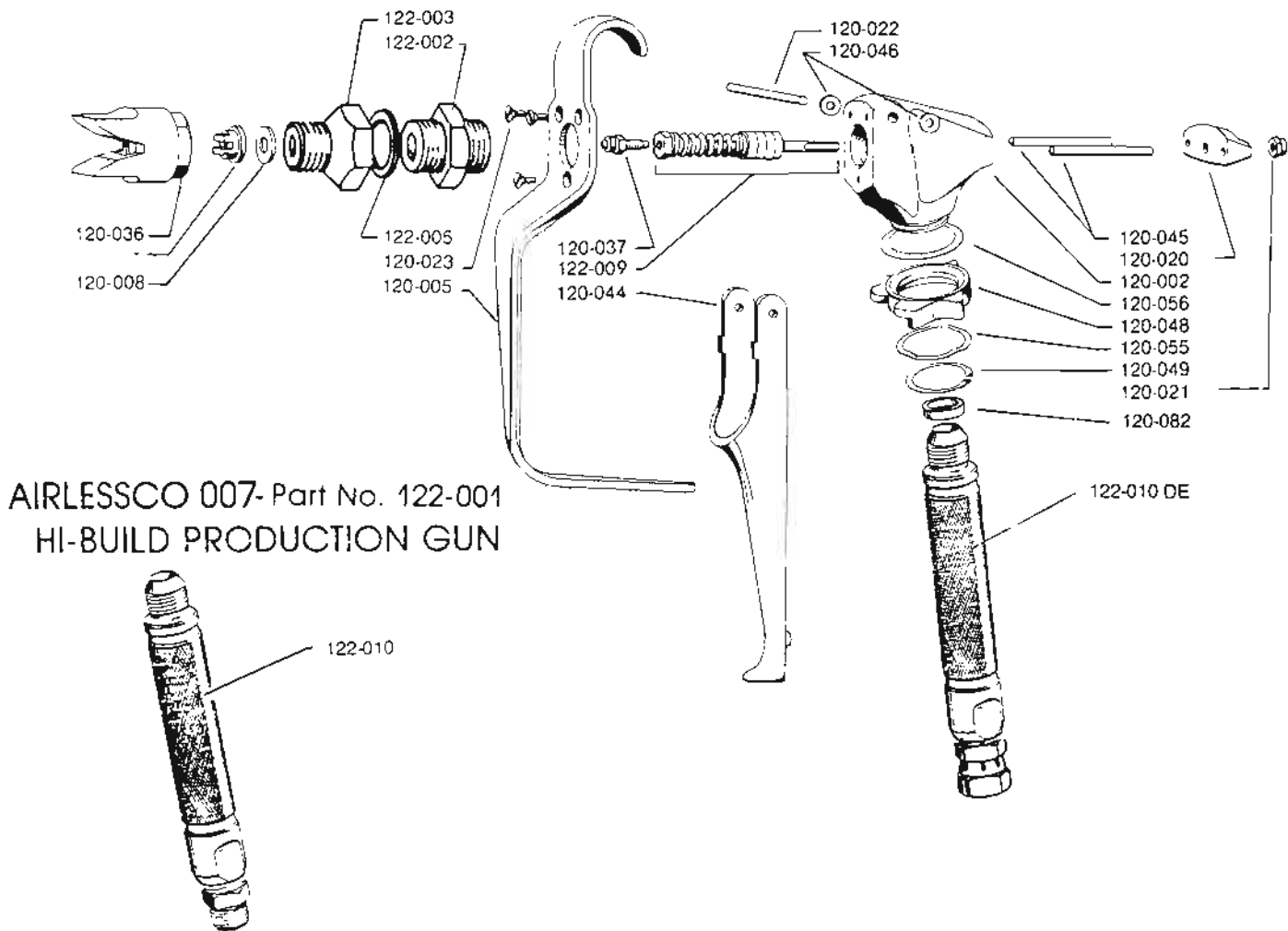
CLEANING SPRAY TIP:

Should the spray tip become clogged, relieve pressure from hoses by following the "Pressure Relief" Procedure on Page 8 of Operation Manual, secure the gun with safety lock (16), take off tip holder (1), take out the tip, soak in appropriate solvent and clean with brush. (Do not use a needle or sharp-pointed instrument to clean the tip. The hard tungsten carbide is brittle and can chip.)

CLEANING FILTER:

To clean the filter, use a brush dipped in an appropriate solvent. Change or clean filters at least once a day. Some types of latex may require a filter change after four hours of operation.

AIRLESSCO 007 HI BUILD MASTIC GUN



PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
122-001DE	Airlessco 007 Hi Build Gun	120-022	Trigger Pin
122-001	Airlessco 007 Hi Build Gun	120-023	Screw
120-002	Gun Head	122-003	Valve Seat Complete
122-005	Washer	120-036	Tip Holder with guard
122-002	Adapter	120-037	Valve Ball with Holder
120-005	Guard	120-044	Trigger
120-008	Tip Washer	120-045	Retainer Pin
122-009	Valve Spring Unit	120-046	Washer
120-020	Retainer	120-048	Lock
120-021	Nut	120-049	Retaining Ring
120-082	Seal	120-055	Wave Washer
122-010DE	Handle complete 3/8 NPSF	120-056	Washer
122-010	Handle complete 3/8 NPSM		
			* Tungsten Carbide Spray Tip - see separate list.

REGULAR 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 material from drying on the rod and damaging the packings.

2. Keep the displacement pump packing nut/wet cup 1/3 full of TSO at all time. The TSO helps protect the packings and rod. (#188-187 - 6 oz).

3. Inspect the packing nut daily. It should be tight enough to stop leakage, but no tighter. Overtightening will damage the packings. **CAUTION**

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

4. Check the hydraulic oil level daily. The oil must be up to the top mark on the dipstick. (See Fig. 7, pg 3) Use only Airlessco Hydraulic Oil Part No. 188-391.

5. Check the engine oil level daily. The oil must be up to the top mark of 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. Replace the return line filter (Item 11, Fig 9) after every 500 hours of operation or every six 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 six months of use. Refer to Step 9 below for procedure.

8. Change the O-rings in Hydraulic Suction System every 2000 hours of operation or every 12 months, whichever comes first, or when changing oil. If O-rings allow leakage, the Hydraulic System will suck air and cause damage to Hydraulic pump. (See Figure 10)

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 hydraulic components.

9. To change the hydraulic fluid:

*Follow the pressure relief procedure on page 6.

*Place hose of any simple transfer pump into oil fill opening of the tank. Pump all oil out of the tank.

*Replace return filter, part no. 188-020.

*Inspect the inlet filter by disconnecting both ends of hydraulic suction line. Clean or replace. Check O-rings.

*Pour in Airlessco Hydraulic Oil, Part No. 188-391, through the oil fill opening. (Approx. 4 gal or 15 litres) Check dipstick for proper level. Refer to page 3, Fig. 7. *Reprime as per Step 5, Page 3.

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
The motor doesn't start.	Electric power not available.	Check power source.
	Thermal overload switch protects motor against overheating.	Wait about 5 -10 mins., then press thermal overload button firmly.
	Capacitor failed.	Change capacitor.
The engine doesn't work properly.		Consult the engine manual supplied.
There is spitting from the gun.	The fluid supply is low or empty.	Refill the supply container.
	Air entrained in the fluid pump or hose.	Check for loose connections on the siphon assembly, tighten, then reprime pump.
Paint leaks into the wet cup.	The wet cup is loose.	Tighten just enough to stop leakage.
	The throat packings are worn or damaged.	Replace the packings. See page 22.
The engine operates, but the paint pump doesn't	The pressure setting is too low.	Increase the pressure. See page 4.
	The hydraulic motor has stalled in down position.	Shut off sprayer, check hydraulic fluid level. Override hydr. motor (pg 17)
	The displacement is seized by dried paint	Service the pump. See pages 19,21,22
	Hydraulic bypass valve open	Close valve.

TROUBLESHOOTING CONTINUED.....

PROBLEM	CAUSE	SOLUTION
The engine operates but the paint pump doesn't	<p>The hydraulic suction tube is sucking air at entrance to hydraulic tank.</p> <p>Sucking air at connection to pump</p> <p>The hydraulic pump is worn or damaged.</p> <p>The hydraulic motor is worn or damaged.</p>	<p>Replace O-rings on suction filter. See Fig. 10</p> <p>Check hose clamps, replace if needed.</p> <p>Replace O-rings (2) in suction nut if needed. (see Fig. 10)</p> <p>Replace the pump. See page 19.</p> <p>Replace as per instructions on page 19.</p>
There is excessive leakage around the hydraulic motor piston rod.	<p>The piston seal is worn or damaged.</p>	<p>Replace hydraulic motor piston seal, O-ring and Wiper. See Fig. 12, page 20.</p>
The engine and displacement pump operates, but the paint pressure is too low or none.	<p>The pressure setting is too low.</p> <p>The tip or tip filter is clogged.</p> <p>The fluid displacement pump outlet filter (if used) is clogged.</p> <p>There is a large pressure drop in the fluid hose.</p> <p>Hydraulic Bypass Valve defective or open.</p>	<p>Increase the pressure. See page 4, Step 4.</p> <p>Remove the tip and/or filter and clean them.</p> <p>Clean the filter.</p> <p>Use a larger diameter paint hose. Should use 3/8" for first 50'.</p> <p>Close valve.</p> <p>Check valve for leakage.</p>
The displacement pump operates, but the output is low on the down stroke or on both strokes.	<p>The lower check valve (ball & seat) is not seating properly.</p>	<p>Service the lower check valve. (ball & seat). See page 21.</p>
The displacement pump operates, but the output is too low on the upstroke.	<p>The upper check valve is not seating properly.</p> <p>The lower packings are worn or damaged.</p>	<p>Service the upper check valve (ball & seat) See page 21.</p> <p>Replace the packings. See page 22,23</p>
Hydraulic Motor stopped.	<p>Pressure setting too low.</p> <p>Low oil level - lost prime.</p> <p>Oil contamination.</p> <p>Hydraulic motor stalled in down position.</p>	<p>Increase the pressure.</p> <p>Add oil and reprime.</p> <p>Change hydraulic oil</p> <p>Override (bleed) hydraulic motor to return to up position. (see below)</p>

OVERRIDING THE HYDRAULIC MOTOR

1. Follow the Pressure Relief Procedure on page 6.
2. Check hydraulic oil level.
3. Check that hydraulic pump is primed.
4. If not primed, follow instruction 5, page 3.
5. Run a hose from the bleed valve (Fig. 8) below to the hydraulic tank.
6. Start gas engine or turn electric motor on.
7. Loosen the bleed valve 1/2 turn.
8. Slowly close the hydraulic ball valve slightly to move displacement pump. This will allow oil to

- flow through the hose, allowing the pump to move up.
9. Close the bleed valve. Pump will now operate as normal.

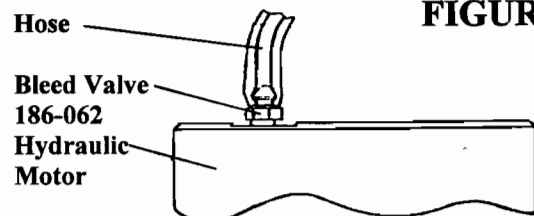
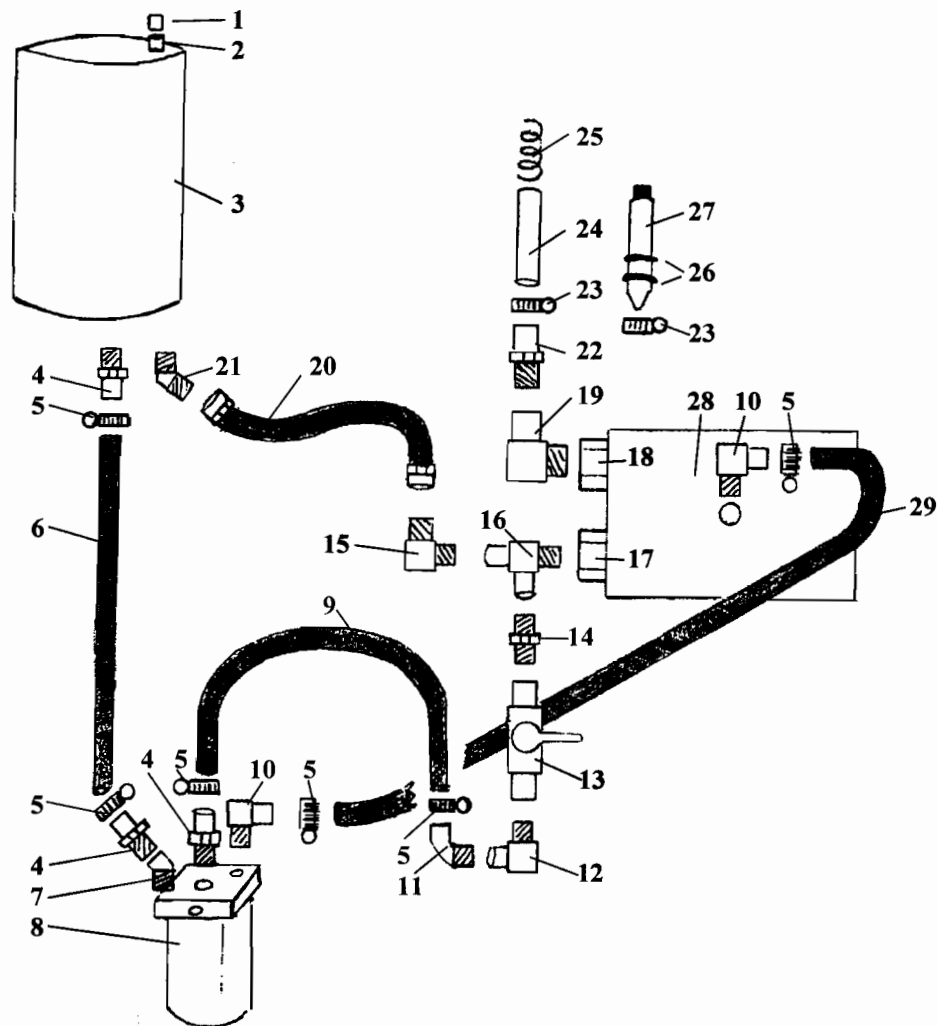


FIGURE 8

HYDRAULIC SYSTEM - FIGURE 9

FIGURE 9



PARTS LIST - FIGURE 9			PARTS LIST - FIGURE 9		
Item No.	Part No.	Description	Item No.	Part No.	Description
1	186-063	Plastic Cap	16	100-115	Tee
2	186-062	Bleeder Screw	17	100-068	Reduction Nut
3	186-010	Hydraulic Motor	18	188-062R	Reduction Nut
4	100-078	Barb Fitting	19	100-024	Elbow 90
5	141-015M	Hose Clamp	20	188-123	Hydr. Supply Line
6	188-103	Hydr. Return Line	21	100-081	Elbow 45
7	100-081A	Elbow 45	22	100-144	Barb Fitting
8	188-020	Hyd. Filter	23	188-076	Hose Clamp
9	188-390	Hydr. Bypass Line	24	188-356	Hydr. Suction Hose
10	100-090	Elbow 90	25	188-134	Spring
11	100-130	Elbow 90	26	188-097	O-Ring
12	100-004	Elbow 90	27	188-119	Hydraulic Suction Filter
13	100-119	Ball Valve	28	188-312	Hydr. Pump
14	100-070	Nipple	29	188-102	Hydr. Overflow Line
15	100-133	Elbow 90			

REMOVING HYDRAULIC MOTOR & FLUID PUMP

CAUTION: Check hydraulic fluid level often. Do not allow it to become low.

Fluid Pump and Hydraulic Motor - Disconnect

1. Flush out the material you are spraying. (if possible)
2. Follow the Pressure Relief Procedure on page 6. Stop the pump in the middle of down stroke.
3. Remove the suction tube and fluid hose (if so equipped) from the fluid pump.
4. Slip the sleeve of the coupling down and remove both coupling halves. This will disconnect fluid pump from hydraulic motor.
5. Unscrew the four tie rod locknuts.
6. Pull the pump and/or hydraulic motor off the tie rods.

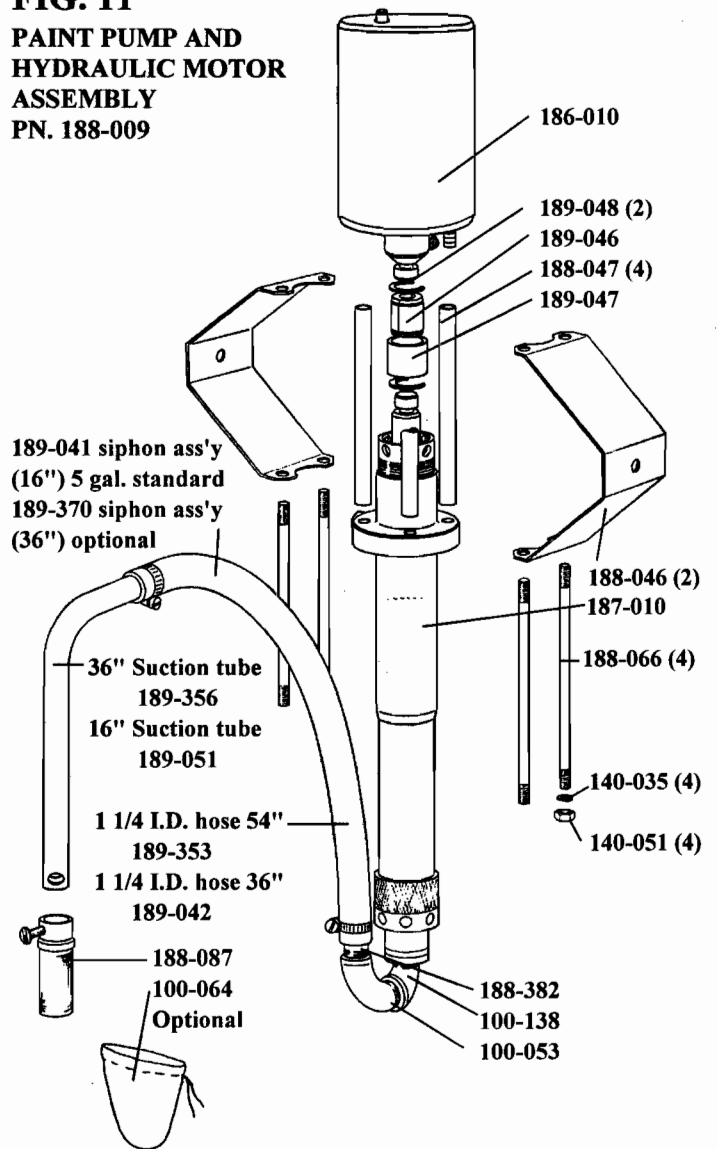
Fluid Pump and Hydraulic Motor - Reinstall

1. Loosen the packing set collar and extend plunger-rod fully out of the fluid pump. Slip sleeve (189-047) over the plunger-rod.
2. Pivot hydraulic motor (186-010) to vertical position & make sure that spacer tubes (188-047) are in place.
3. Connect hydraulic motor rod with fluid pump by installing coupling halves (189-046). Slide sleeve over coupling halves. Secure with retaining rings (189-048).
4. Secure the fluid pump housing to the tie rods (188-066) and screw locknuts with washers on loosely.
5. Tighten the tie rod locknuts evenly and lightly cross-wise and retighten to 30 - 40 ft. lbs.
6. Tighten the packing set collar, just tight enough to stop leakage, but no tighter. Fill the wet cup of the set collar 1/3 full with TSO.
7. Start the pump and operate it slowly to check the tie rod for binding. Adjust tie rod locknuts if necessary to eliminate binding. Misalignment causes premature wear of packings and piston.

REPLACEMENT OF HYDRAULIC PUMP

1. Disconnect all hoses from hydraulic pump.
2. Remove engine/motor and coupling from hydraulic pump shaft. (See Fig. 19)
3. Remove bolts (9/16 hex) holding hydraulic pump. (See Fig. 24, Item 12).
4. Remove support screws from the front of pump. (See Fig 24, Item 46).
5. See pg. 20 for procedure to change spring in pump before installing new pump.
6. Replace pump.
7. Replace coupling on pump shaft. (See Fig 19)
8. Replace engine/motor. Lubricate coupling driver. (See Fig. 19)
9. Connect all hoses.
10. Change hydraulic fluid, filter (PN 188-020) and hydraulic suction O-rings. (see Fig. 10).
11. Prime hydraulic pump by quickly switching the motor on and off or by pulling the starter cord with engine off.

FIG. 11
PAINT PUMP AND
HYDRAULIC MOTOR
ASSEMBLY
PN. 188-009



12. Loosen jam nut (3/4") and turn volume control screw on front of pump (See Fig. 9) fully in.
13. Prepare sprayer for flushing. Follow procedures on page 2, steps 1-8.
14. Ensure Fluid Prime Valve is in prime position (fully counterclockwise.)
15. Close Hydraulic Bypass Valve (Fig. 9, Item 23) to operate fluid pump.
16. Turn the Pressure Control Knob fully clockwise to maximum pressure position (See Figure 2).
17. Turn volume control screw counterclockwise until paint piston reaches speed of: Electric Module: 50 cycles (complete stroke up and down.) Gasoline Module: 80 cycles
18. When cycle rate is correct tighten jam nut. (Oil leakage on volume screw during this procedure is inevitable.)

HYDRAULIC MOTOR SEAL REPLACEMENT

When excessive leakage occurs around the Hydraulic Motor and the Piston Rod, and tightening of the seal nut does not stop leakage, the seal should be replaced.

A new replacement seal and nut are available that can be replaced in the field by Service/Warranty Centers instead of returning the Hydraulic Motor to Airlessco for repair. Also, available is a tool for removing the old style nut from the hydraulic motor.

REPLACEMENT PARTS:

KIT-1-9100 Seal - 186-040
 Nut - 186-044
 Wiper - 186-031
 O-Ring - 186-042
 Tool - 186-044T

REPLACEMENT PROCEDURES:

Step 1: Disconnect the paint pump from the Hydraulic Motor. (See Fig. 11) Remove the four tie rod locknuts. Remove the paint pump from the tie rods. Replace two of the locknuts on the tie rods to prevent the Hydraulic Motor from coming off the holders. (thread only a few threads)

Step 2: Push the Hydraulic Motor Piston to the upper position. (Open the Hydraulic Bypass Valve to allow the piston to move easier). Pull Hydraulic Motor up as far as tie rods will allow to enable easier access to Seal Nut.

Step 3: Utilize tool to remove old nut by inserting the two pins of tool into the holes in bottom of nut. Insert a metal pin (Part No. 189-211) into tool for leverage and loosen the nut and remove. (Refer to Fig. 12)

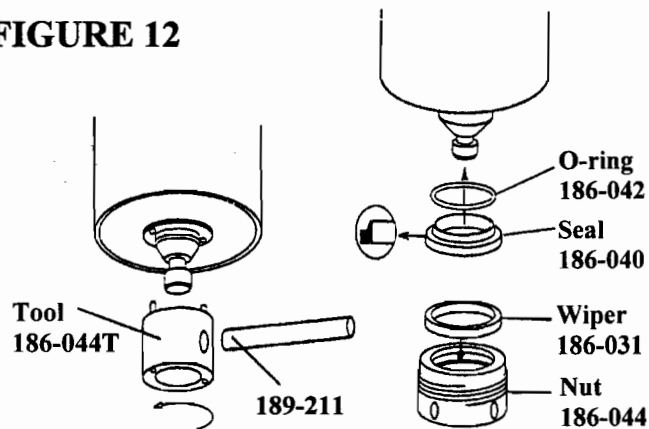
Step 4: Remove old O-Ring and Seal from Hydraulic Motor. (Pull piston down for easier removal) Note: The older model motors may have a thin metal shim behind the seal. Leave this shim in Motor.

Step 5: Replace the O-Ring and Seal. Note: Ensure O-Ring and Seal are all the way up around piston as far as they will go. (Refer to Figure 12)

Step 6: Place the wiper into the recessed inside diameter of new nut. Thread nut into Hydraulic Motor and tighten utilizing the holes in nut for inserting a leverage tool. (Refer to Figure 12).

Step 7: Reconnect Paint Assembly and tie rod locknuts. Connect paint piston to Hydraulic Piston. Test unit for leakage.

FIGURE 12



PROCEDURE FOR CHANGING SPRING IN HYDRAULIC PUMP

All Airlessco piston pumps use the same hydraulic pump with one minor change, the 6100 has a lighter spring in the control housing. All Hydraulic Pumps (PN 188-312) are shipped with the heavier spring installed and can be mounted on the 8100 and 9100 without modification.

When installing a Hydraulic Pump (188-312) on a Model 6100 you will need to replace the spring with the spring PN 188-311 supplied. Figure 12 is an exploded view of the control housing and assembly instructions.

TO REPLACE THE PRESSURE CONTROL SPRING:

1. Remove the pressure control knob.
2. Hold the housing in a vise with the retaining cup facing up.
3. Unscrew the retaining cup.
4. Remove the Spring.
5. Replace the spring with the new spring. (188-311)
6. Reassemble in reverse order.
7. Fit pressure control assembly back onto the pump.

PRESSURE ADJUSTMENT PROCEDURE:

1. Turn pressure control knob to "Start" position (ccw).
2. Hold pin (PN 188-140, Fig. 13) with pliers and turn pressure control knob clockwise toward pressure position until pin is removed from knob.
3. Install pressure gauge on output of pump before

- connecting fluid hose (min. 4000 psi)
4. Prime unit, then turn prime valve to pressure position (fully clockwise).
5. Turn pressure control knob to max. pressure position.
6. Insert 3/16" Allen Wrench into the pressure control knob and adjust pressure to maximum of 3000 psi. (CW to increase & CCW to decrease). Trigger gun several times to verify pressure setting is correct.
7. Reinstall pin into pressure control knob.

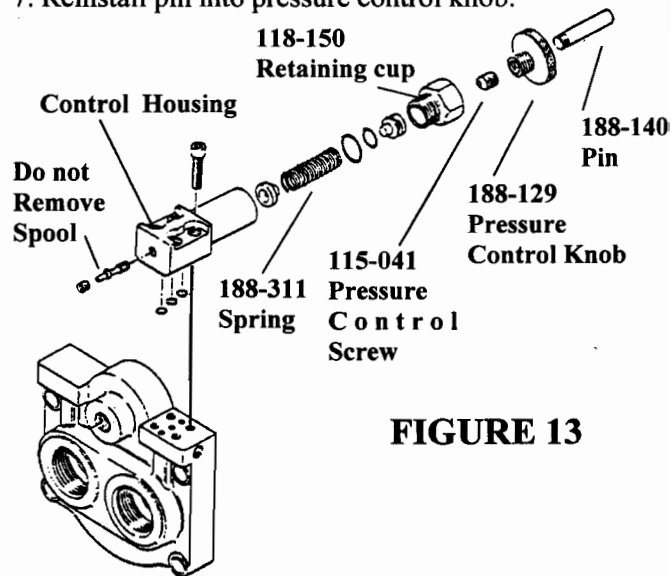


FIGURE 13

SERVICING UPPER AND LOWER CHECK VALVES

Lower Check Valve (See Fig. 14)

1. Unscrew the intake valve nut (187-018) out of the pump body (187-005) containing intake seat support (187-017).
 2. Remove the intake seat (187-065TC), O-Ring (187-034T) intake ball (187-020), and retainer (187-016).
 3. Clean all parts and inspect them for wear or damage, replacing parts as needed. Old "O" rings should be replaced with new ones.
- NOTE: O-Ring 187-027 is available in the following materials:
Viton for waterbase paint -letter "V" after part number.
Teflon for other fluids - letter "T" after part number.
4. Clean inside of pump body (187-005).
 5. Reassemble the valve and reinstall back into the pump housing if no further pump service is needed.

Plunger Rod, Upper Check Valve (See Fig. 14 & 16)

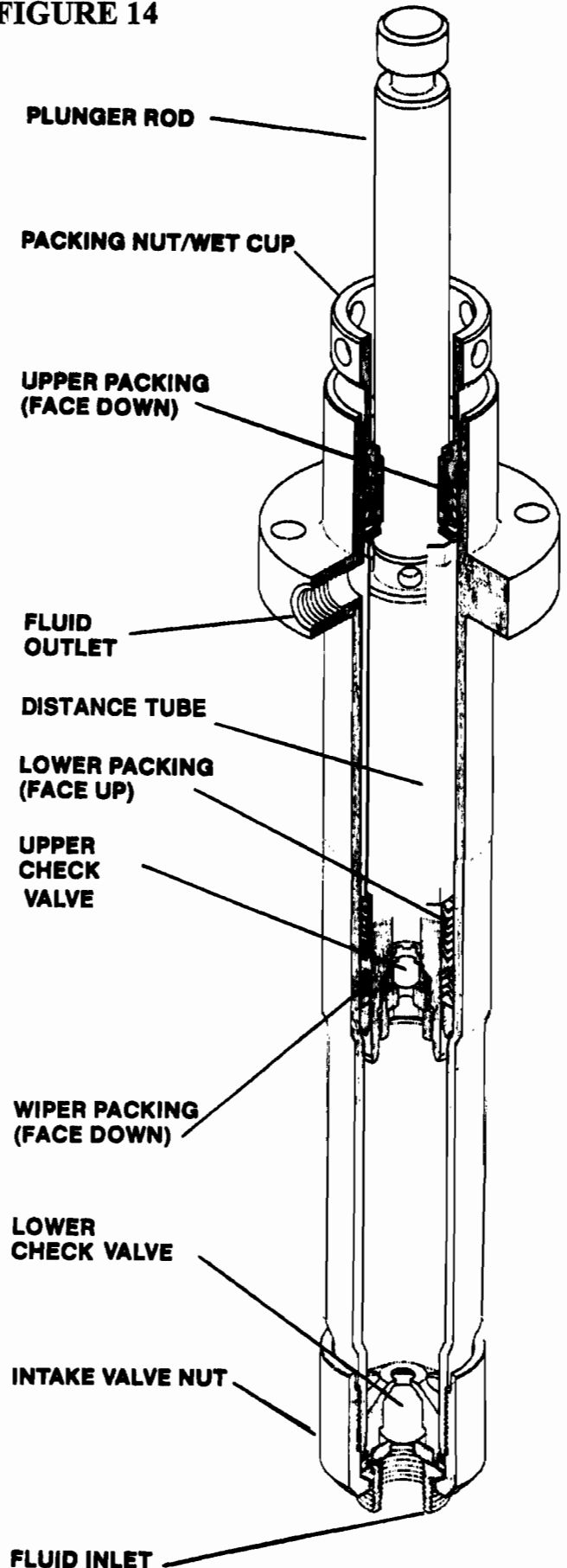
1. Stop plunger (displacement rod) in middle of it's stroke. Remove the retaining rings. (189-048)
2. Slip the sleeve (189-047) off the coupling halves (189-046) and remove both coupling halves. This will disconnect fluid pump from hydraulic motor (186-010)
3. Screw the intake valve nut (187-018) out of the pump and remove lower check valve.
4. Loosen the packing nut and push the plunger-rod down and out of the housing.
5. Remove the rod holder from the pump and place in a vise. Slide the rod into the holder and lock in place with a 1/4" pin. Push the pin through the holder and the rod. Screw the seat support (187-021) together with upper seat (187-044TC), O-ring (187-033T) and ball (187-045) out of the plunger rod (187-011).

Note: Retainer (187-032) with O-ring (187-033V) and ball stop (187-022) may remain in the plunger-rod. Clean and check visually the ball stop (187-022) for excessive wear. If ball stop (187-022) needs to be replaced, install any screw with thread 1/2-13 NC into the threaded hole of retainer (187-032) and pull straight out. If retainer has square hole, use 3/8-13NC screw to pull out.

6. Clean all parts and inspect them carefully for wear or damage. Inspect the outside of the plunger-rod for scoring or wear. Replace these parts if needed. A worn plunger-rod will cause premature wear of packings.

NOTE: Plunger-rod can be replaced more economically through the AIRLESSCO "EXCHANGE PROGRAM".

FIGURE 14



V-PACKING REPLACEMENT

V-PACKING KIT-SEVERE DUTY # 1 8 8 - 0 4 0
(Leather and teflon - shown below)

Also available: All Teflon V-Packing Kit #187-042

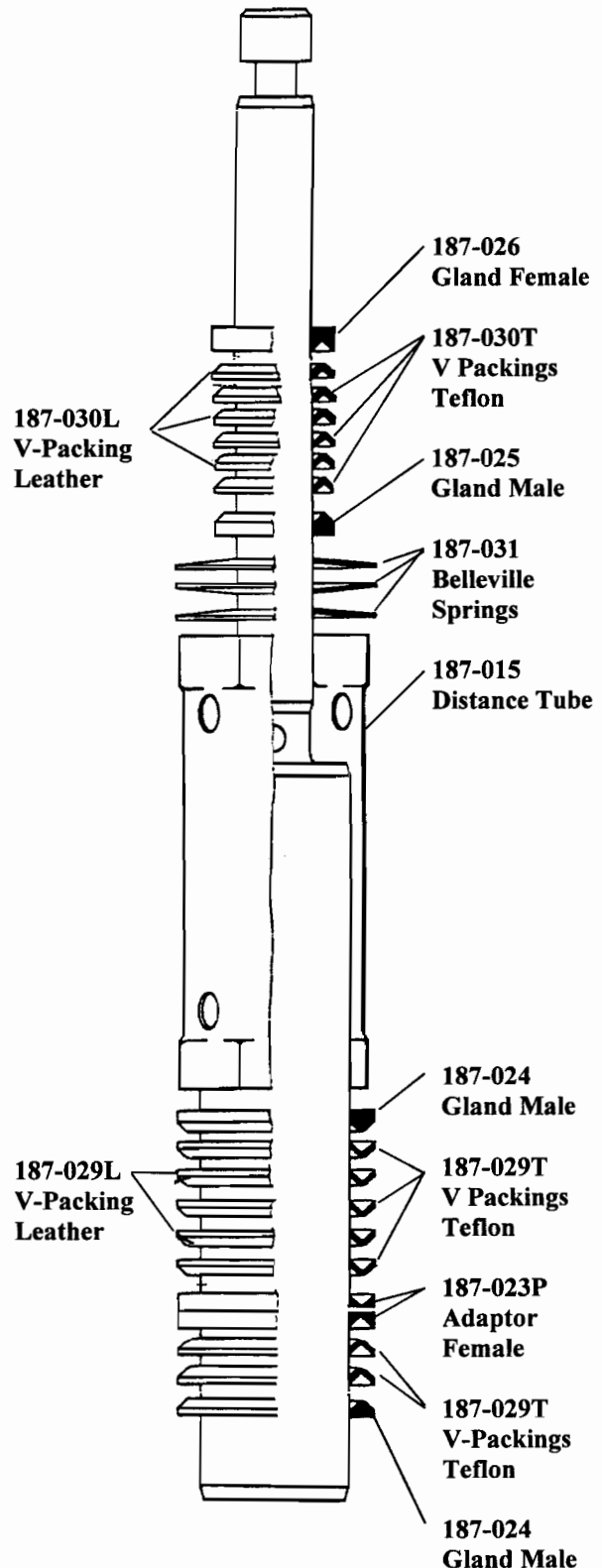
1. Remove the fluid pump as per 'Fluid Pump Disconnect instructions on page 19.
2. Unscrew and remove the lower check valve per instructions on page 21.
3. Unscrew the packing nut (187-046). Push the plunger rod down through the packings and out of the pump. Wrap some masking tape around the bottom of the piston. Now push the piston back through the pump and remove through the top. The packings and glands will be removed with the piston rod, leaving the pump casing empty. Utilizing tool (PN 187-249) the complete packing set and piston can be removed quickly and easily.
4. Disassemble and clean all parts for reassembly. Discard old packings.

REASSEMBLY

5. Lubricate leather packings in lightweight oil for 10 min. prior to assembly.
6. Remove masking tape from piston (if used).
7. Reassemble all parts onto piston as per drawing Fig. 15 in following order:
 - a. Start with lower male gland (187-024)
 - b. Two new V-Packings face down. (187-029T)
 - c. Female Adaptors (187-023P)
 - d. Five V-Packings face up.
 - e. Upper male gland (184-024)
 - f. Slide on Distance Tube (187-015)
 - g. Three Belleville Springs (187-031) starting with the first spring facing down and next facing up and the third facing down.
 - h. Slide on upper male gland (187-025) with bevel facing up.
 - i. Six V-Packings faced down.
 - j. Female gland (187-026)
 - k. Slide on the V-Packing holder (187-047)
8. Slide complete assembly into the pump casing (187-005). Thread packing nut (187-046) into cylinder and tighten (handtight only).
9. Install the lower check valve and tighten the lower check valve nut (187-018).
10. Connect the pump to the machine as per fluid pump reinstall procedure (page 19).
11. Tighten the packing nut just enough to stop leakage.

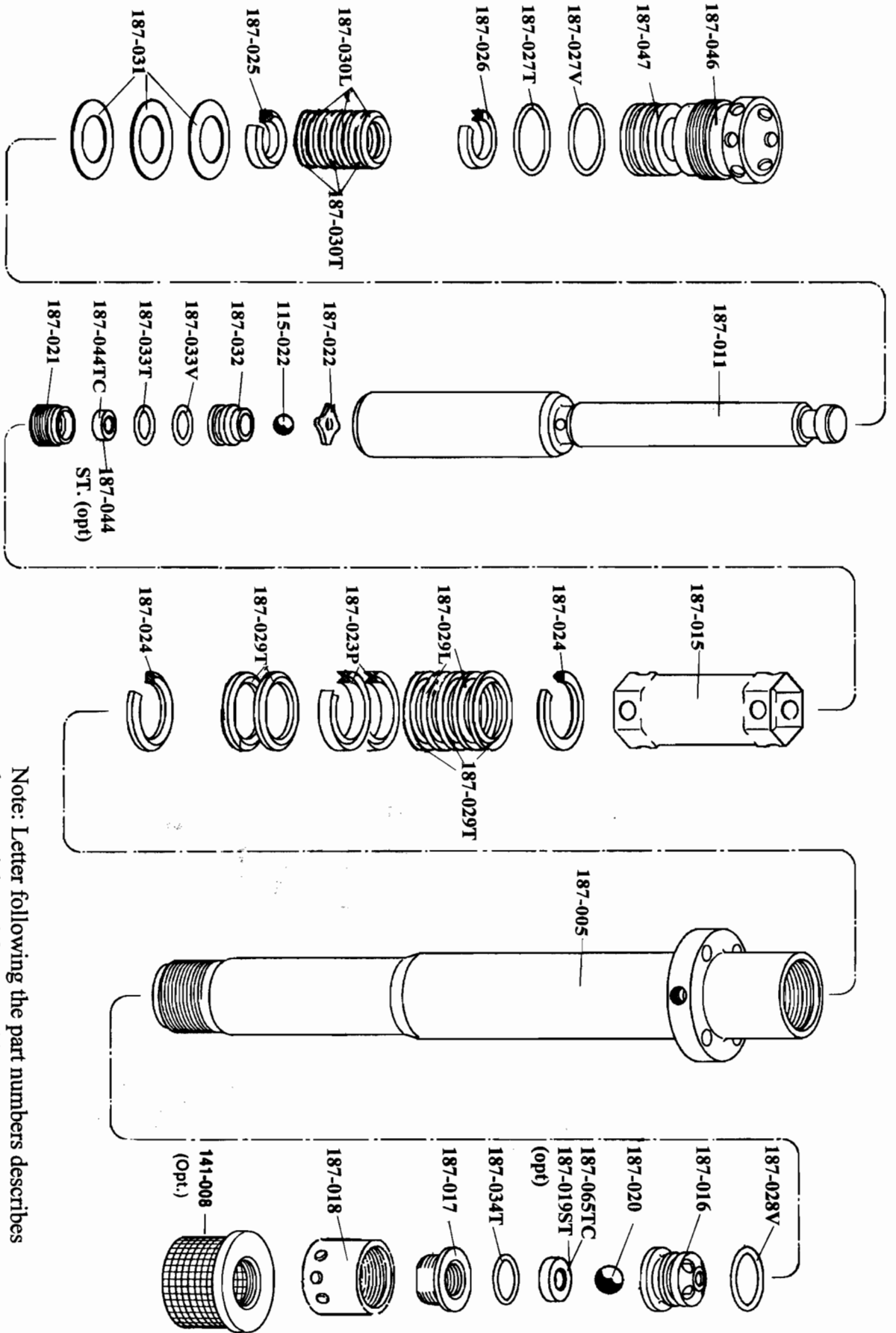
NOTE: V-Packing Kit Severe Duty #187-040, O-ring (187-028) on lower ball cage is supplied in Teflon and Viton. Use Viton when spraying latex or oil based paints and Teflon when spraying paint with high solvents.

FIGURE 15



FLUID PUMP PN 187-010

FIG. 16



Note: Letter following the part numbers describes the material used for V-Packings & O-rings.

L - Leather
 V - Viton
 T - Teflon
 P - Plastic

MARATHON VALVE

Marathon Valve - Part No. 138-001, is being used as a high pressure relief valve. Turn the handle fully counter-clockwise to open the valve & relieve pressure. Turn clockwise to close the valve & supply pressure to the gun.

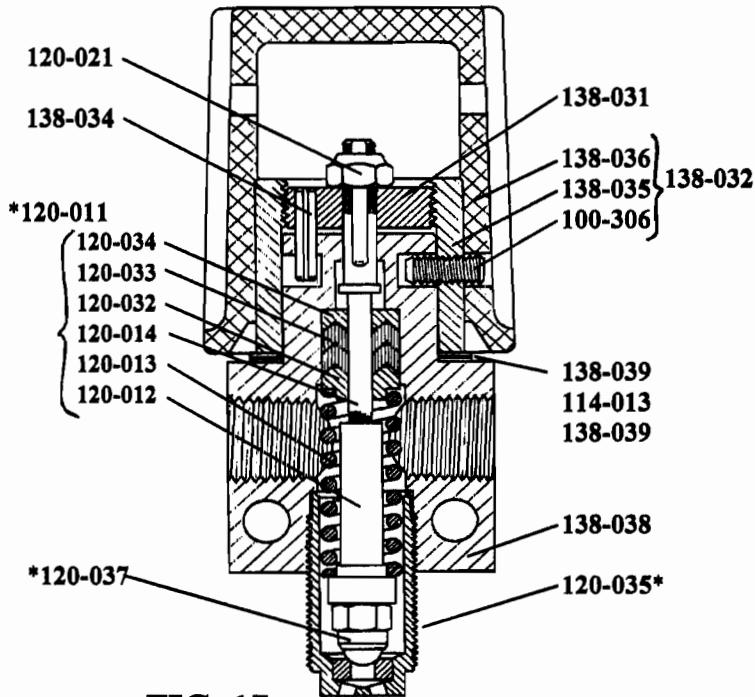


FIG. 17

* - Kit -3-007

HIGH PRESSURE FILTER

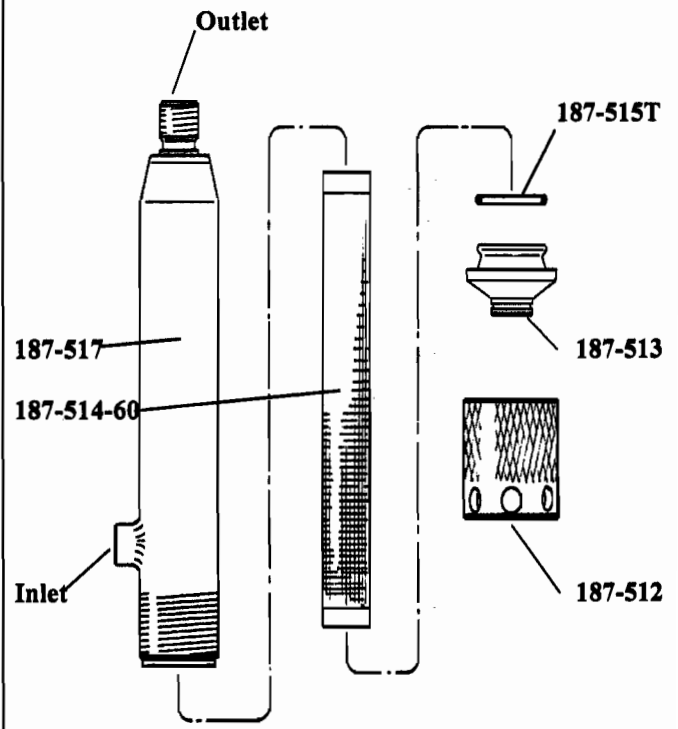


FIG. 18

COUPLING

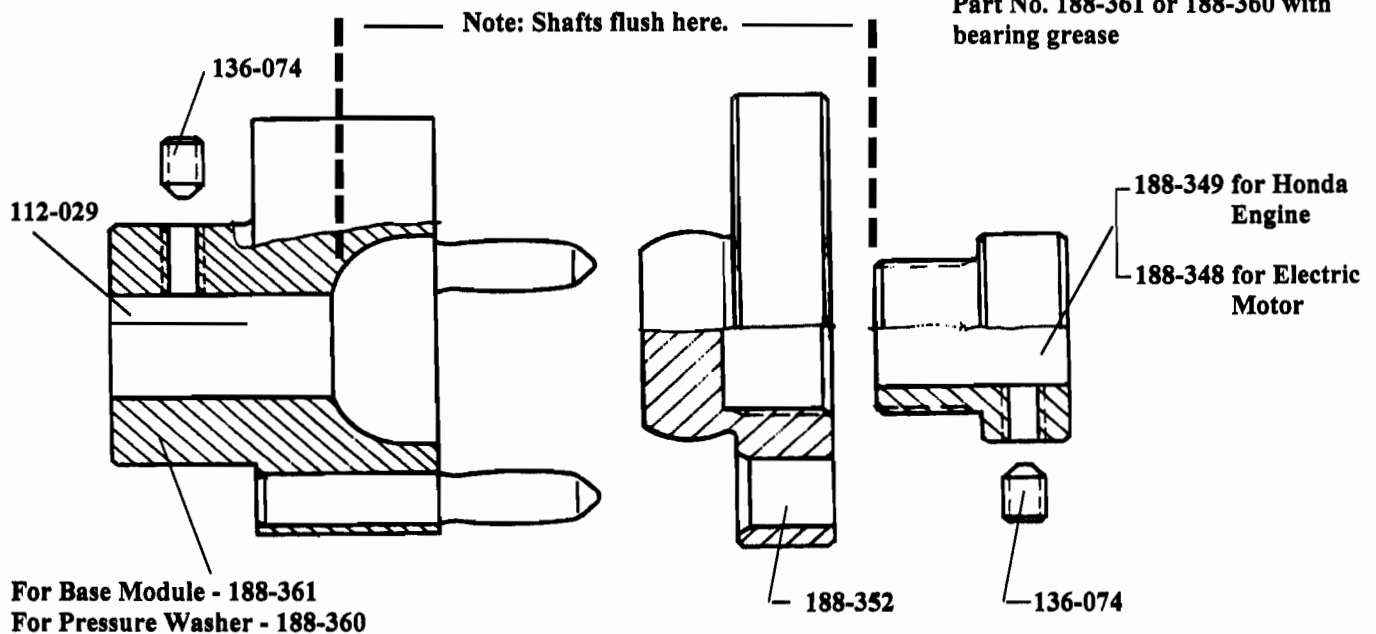


FIG. 19

PAINT SYSTEM 6100

STANDARD

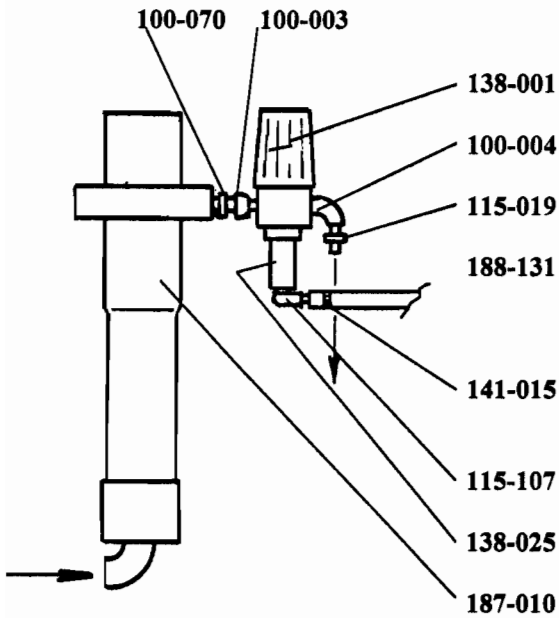


FIG. 20

WITH ACCESSORY HIGH PRESSURE FILTER P.N. 188-366

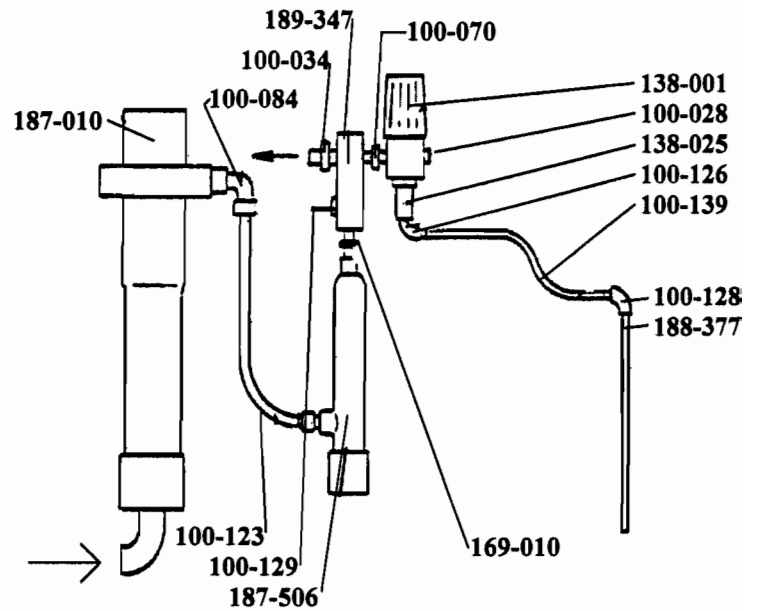


FIG. 21

POWER MODULES

ELECTRIC 2 HP POWER MODULE PART NO. 188-303

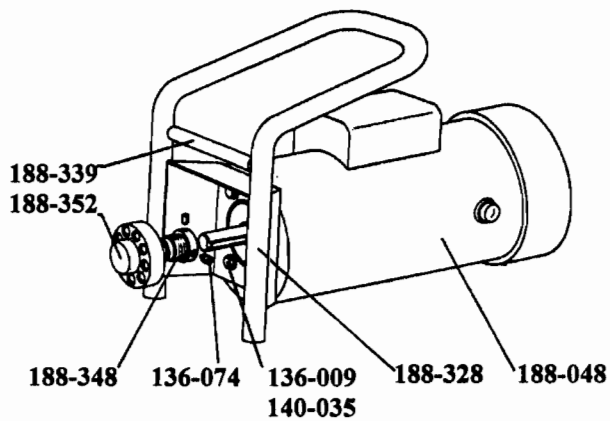


FIG. 22

HONDA 5 HP POWER MODULE WITH OIL ALERT P.N. 188-302 BRIGGS 5 HP POWER MODULE WITH OIL GUARD P.N. 188-304

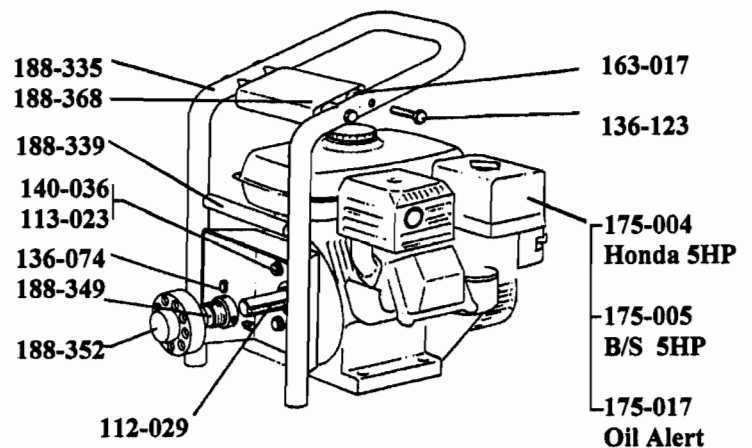


FIG. 23

6100 PARTS LIST

FIGURE 24

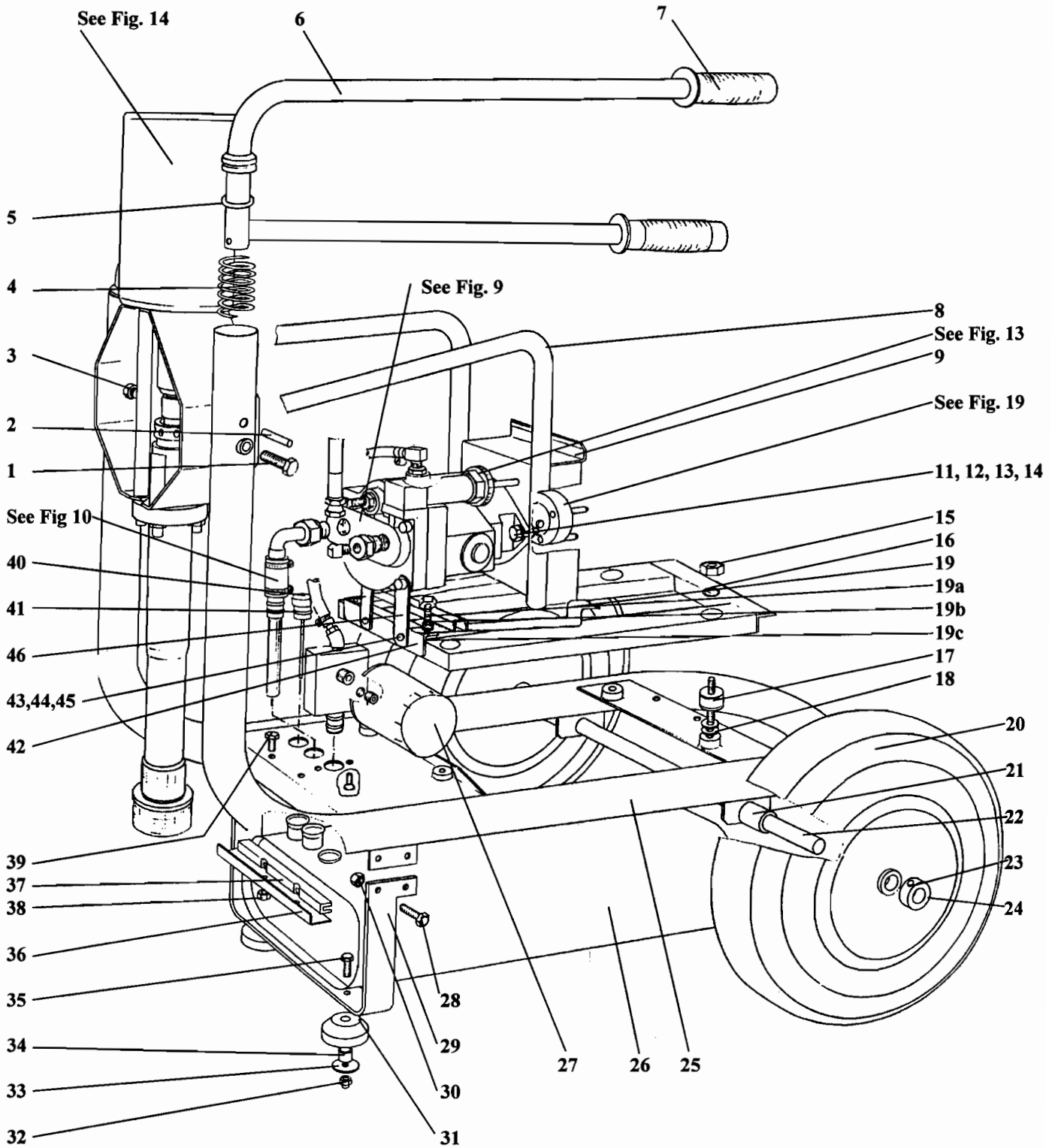


FIGURE 24 - PARTS LIST

Item No.	Part No.	Description	Item No.	Part No.	Description
1	100-316	Cap Screw (2)	23	143-030	Screw, Soc (2)
2	188-072	Dowel Pin (2)	24	143-029	Set Collar (2)
3	188-118	Lock Nut (2)	25	188-005	Frame Weldment
4	188-073	Spring, Handle (2)	26	188-035	Tank, Hyd.
5	188-091	O-Ring (2)	27	188-020	Filter, Oil
6	188-071	Handle (2)	28	111-044	Bolt (4)
7	171-019A	Grip, Rubber (2)	29	188-364	Leg Weldment
8	189-327	Hyd. Pump Holder	30	100-317	Nut (2)
9	188-346	Engine/Motor Holder	31	163-008a	Rubber Foot (2)
11	140-051	Nut, Hex (2)	32	100-317	Nut (4)
12	188-125	Bolt (2)	33	163-011A	Washer (2)
13	140-034	Washer (2)	34	188-185	Spacer (2)
14	140-035	Lockwasher (2)	35	140-037	Bolt (2)
15	188-148	Jam Nut (4)	36	188-014	Bracket, Hydr. Tk. (2)
16	113-023	Lockwasher (4)	37	188-045	Edge, rubber (2)
17	140-030	Shockmount (4)	38	188-042	Lock Nut (4)
18	163-011A	Washer (8)	39	188-041	Bolt (4)
19	188-369	Lock Bar	40	188-093	Dipstick
19a	115-039	Spring (2)	41	187-033B	O-Ring
19b	169-050	Bolt (2)	42	188-343	Bracket, Hydr. Pump
19c	100-317	Nut (2)	43	169-050	Bolt (2)
20	188-116	Wheel (2)	44	113-022	Nut (2)
21	143-011	Spacer (2)	45	113-023	Lockwasher (2)
22	188-367	Axle	46	189-314	Support (2)