



AIRLESS PAINT SPRAYER SERVICE/OPERATION MANUAL



**AIRLESSCO - SL810, 1100, 1500
ALLPRO - 910E & 1110E**

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INTRODUCTION



Your new Airlessco or ALLPRO airless series paint sprayers are designed to meet the demands of the professional painting contractor as well as the homeowner. The famous Airlessco slow-stroking stainless steel piston pump delivers extra long life for the piston, packings, valve seats and balls. The patented Triple-Life packing system is externally adjustable, extending packing life and reducing repacking costs. Its large high-torque electric motor runs slower reducing heat. The motor is fan cooled and totally enclosed to reduce brush wear and to prevent the ignition of paint fumes in the motor.

Model 810, 910E, 1100, and 1110E spray a wide range of coatings from latex to block filler, elastomerics, and epoxy.

The SL1500 pump has the foot valve at the very bottom of the pick-up tube. This change along with the removal of the external filter allows it to pump and spray even heavier materials, such as dry wall mud.

AIRLESSCO ALLPRO	SL810 910E	SL1100 1110E	SL1500
Max. Pressure	3300	3300 psi	3300psi
Output (FreeFlow)	0.9 gpm	1.1 gpm	1.1gpm
Output (At Pressure)	0.8 gpm	1.0 gpm	1.0gpm
Tip Size	1 gun to 0.029"	1 gun to 0.031"	1 gun to 0.031"
Motor- Output	DC TEFC 1 HP	DC TEFC 1.25 HP	DC TEFC 1.25 HP
Weight	135 lbs	141 lbs.	138 lbs.

WARNING

**HANDLE THIS UNIT AS YOU WOULD A LOADED FIREARM!
High pressure spray can cause extremely serious injury.
OBSERVE ALL WARNINGS!**

Before operating this unit, read and follow all safety warnings and instructions related to the usage of this equipment on pages 2, 3 & 4. READ, LEARN, and FOLLOW the Pressure Relief Procedure on Page 10 of this manual.

All Service Procedures to be performed by an Authorized Airlessco Service Center ONLY.

NO MODIFICATIONS or alterations of any AIRLESSCO Equipment or part is allowed.

MANUAL NOTATIONS

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

CAUTION - Alerts user to avoid or correct conditions that could cause damage to or destruction of equipment.

IMPORTANT - Alerts users to steps or procedures that are essential to proper equipment repair and maintenance.

NOTE - Identifies essential procedures or extra information.

SAFETY WARNINGS

HIGH PRESSURE SPRAY CAN CAUSE EXTREMELY SERIOUS INJURY.

Handle as you would a loaded firearm.

Follow the PRESSURE RELIEF PROCEDURE.

DO NOT USE HALOGENATED SOLVENTS IN THIS SYSTEM.

The prime valve, 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.

MEDICAL ALERT - Airless Spray Wounds

If any fluid appears to penetrate your skin, get **EMERGENCY MEDICAL CARE AT ONCE.**

DO NOT TREAT AS A SIMPLE CUT.

Tell the doctor exactly what fluid was injected.

NOTE TO PHYSICIAN: Injection in the skin is a traumatic injury. **It is important to treat the injury surgically as soon as possible. DO NOT DELAY treatment to research toxicity.** Toxicity is a concern with some exotic coatings injected directly into the blood stream. Consultation with a plastic surgeon or reconstructive hand surgeon may be advisable.

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 your hand or fingers over the spray tip. Do not use a rag or any other materials over your fingers. Paint will penetrate through these materials & into the hand.
- **NEVER** try to stop or deflect leaks with your hand or body.
- **ALWAYS** have the tip guard in place when spraying.
- **ALWAYS** lock the gun trigger when you stop spraying.
- **ALWAYS** remove tip from the gun to clean it.
- **NEVER** try to "blow back" paint, this is not an air spray sprayer.
- **ALWAYS** follow the **PRESSURE RELIEF PROCEDURE** before cleaning or removing the spray tip or servicing any system equipment.
- Be sure the equipment safety devices are operating properly before each use.
- Tighten all of the fluid connections before each use.

MEDICAL TREATMENT

- If any fluid appears to penetrate your skin, get **EMERGENCY CARE AT ONCE! DON'T TREAT AS A SIMPLE CUT.**
- Go to an emergency room immediately.
- Tell the doctor you suspect an injection injury.
- Tell him what kind of material you were spraying with and have him **read NOTE TO PHYSICIAN above.**

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 and given this operators manual to read.
- **ALWAYS** wear a spray mask, gloves and protective eye wear 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.

NOTE: United States Government safety standards have been adopted under the Occupational Safety & Health Act. These standards, particularly the General Standards, Part 1910 & Construction Standards, Part

SAFETY WARNINGS

ALWAYS INSPECT SPRAYING AREA

- Keep the spraying area free from obstructions.
- Make sure the spraying area has good ventilation to safely remove vapors and mists.
- **NEVER** keep flammable material in spraying area.
- **NEVER** spray in vicinity of open flame or other sources of ignition.
- The spraying area must be at least 20 ft. away from spray unit.

SPRAY GUN SAFETY

- **ALWAYS** set gun safety lock in the "LOCKED" position when not in use & before servicing or cleaning.
- **NEVER** remove or modify any part of the gun.
- **ALWAYS** REMOVE THE SPRAY TIP when cleaning. Flush unit at the **LOWEST POSSIBLE PRESSURE**.
- **ALWAYS** check operation of all gun safety devices before each use.
- Be very careful when removing the spray tip or hose from the gun. A plugged line will contain fluid under pressure. If the tip or line is plugged, follow the **PRESSURE RELIEF PROCEDURE**.

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.

TOXIC FLUID HAZARD

- **ALWAYS** remove tip guard & tip to clean **AFTER** pump is turned off and the pressure is relieved by following the **PRESSURE RELIEF PROCEDURE**.
- Hazardous fluid or toxic fumes can cause serious injury or death if splashed in eyes or on skin, inhaled or swallowed. Know the hazards of the fluid you are using. Store & dispose of hazardous fluid according to manufacturer, local, state & national guidelines.
- **ALWAYS** wear protective eyewear, gloves, clothing and respirator as recommended by fluid manufacturer.

HOSES

- Tighten all of the 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.
- Only use hoses with 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, abrasions, bulging of the 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 cannot contain the high pressure fluid. **NEVER ATTEMPT TO RECOUPLE THE HOSE**. A high pressure hose is not recoupleable.

GROUNDING

- Ground the sprayer & 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 a properly grounded outlet. **DO NOT USE AN ADAPTER**. Use only a 3 wire extension cord that has a 3 blade grounding plug, and a 3 slot receptacle that will accept the plug on the product. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. (**Note:** The table on the top of the next page shows the correct size to use depending on cord length and name plate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.)
 2. **Fluid hose:** use only grounded hoses.
 3. **Spray gun or dispensing valve:** grounding is obtained through connection to a properly grounded fluid hose and pump.
 4. **Object being sprayed:** according to your local code.
 5. **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 cord length to assure electrical continuity.

SAFETY WARNINGS

UL RECOMMENDATION FOR MINIMUM GAUGE EXTENSION CORD

AMPERAGE RATING RANGE	VOLTAGE	LENGTH OF CORD IN FEET								
		25	50	100	150	200	250	300	400	500
5 - 6	120	18	16	12	12	10	10	8	8	6
6 - 8	120	18	16	12	10	10	8	6	6	6
8 - 10	120	18	14	12	10	8	8	6	6	4
10 - 12	120	16	14	10	8	8	6	6	4	4

Always Follow Recommended Pressure and Operating Instructions

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 on hot parts. Precaution is the best insurance against an accident. When starting the motor, 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.

AVOID COMPONENT RUPTURE

- This sprayer operates at 3000 psi (205 bar). 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, damaged, or non-conductive paint hose. Do not allow kinking or crushing of hoses or allow it to vibrate against rough, sharp or hot surfaces. Before each use, check your hoses for damage and wear and ensure all of the fluid connections are secure.
- **ALWAYS** 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.

WHEN SPRAYING & CLEANING WITH FLAMMABLE PAINTS AND 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 & spraying object. See GROUNDING. Use only high pressure airless hoses approved for 3000 psi which is conductive.
3. Remove the spray tip before flushing. Hold the metal part of the gun firmly to the side of a metal pail & use the lowest possible fluid pressure during flushing.
4. Never use high pressure in the cleaning process. **USE MINIMUM PRESSURE.**
5. Do not smoke in spraying/cleaning area.

- **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 of the equipment & objects being sprayed are properly grounded. Always ground sprayer, paint bucket and object being sprayed. See the grounding section of this manual for 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 spray area. Do not plug in or unplug any electrical cords in the spray area. Doing so can cause sparks which can ignite any vapors still in the air. Follow the coating & solvent manufacturers safety warnings and precautions.
- Use only conductive fluid hoses for airless applications. Be sure the gun is grounded through the 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 process.
- **ALWAYS** follow the PRESSURE RELIEF PROCEDURE.
- **ALWAYS** remove the spray tip before flushing. Hold the metal part of the gun firmly to the side of a metal pail & 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.

FLUSHING

1. New Sprayer

Your sprayer was factory tested in an oil solution which was 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 or water.

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

Always relieve pressure (See pressure relief procedure on page 10) prior to storage or when machine is unattended.

Oil-base Paint: Flush with mineral spirits. Ensure that there is no pressure in the unit, then close the prime/pressure relief valve.

Water-base Paint: Flush with water, then mineral spirits. For longer term storage use a 50/50 mixture of mineral spirits and motor oil. Always ensure that there is no pressure in the unit, and close the prime/pressure relief valve for storage.

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.

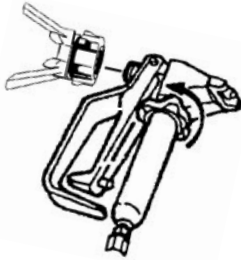
WARNING

NEVER leave pump unattended while under pressure!

HOW TO FLUSH

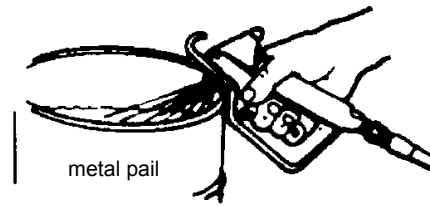
FIG. 1

REMOVE
SPRAY
TIP



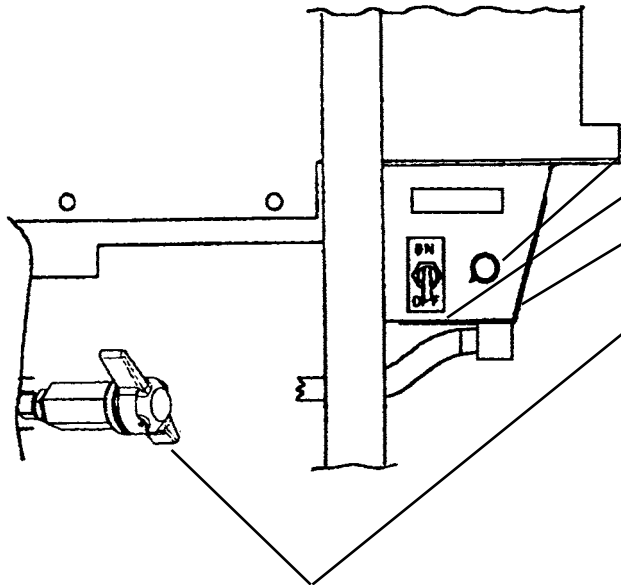
ENGAGE GUN
SAFETY LATCH
(LOCK GUN) as
per gun instruc-
tion manual.

FIG. 3



metal pail

FIG. 2



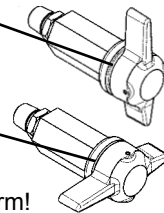
Pressure Control Knob: used to adjust pressure only. Turn clockwise to increase pressure and counterclockwise to decrease pressure.

On/Off Switch

35 AMP Circuit Breaker

Prime/Pressure Relief Valve (Prime/PR Valve)
Used to relieve pressure from gun/hose/tip and to prime the unit when in OPEN position. (It is in open position when there is a wider gap between valve handle and cam body).

When in CLOSED position, there is only a very slight gap between handle & body. When closed the system is pressurized. Handle as a loaded firearm!



1. Be sure the gun safety latch is engaged and there is no spray tip in the gun. Refer to your separate instruction manual provided with your gun on its safety features and how to engage safety latch. 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 place the pail under the pump.
4. Turn the pressure control knob to low pressure. Refer to Fig. 2.
5. Open the prime valve to the open- priming position. This will allow an easy start. Refer to Fig. 2.
6. Turn the motor ON/OFF switch to ON.
7. Point the gun into the metal pail and hold a metal part of the gun firmly against the pail. Refer to Fig. 3.
8. 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.
9. Allow the pump to operate until clean solvent comes from the gun.
10. Release the trigger and engage the gun safety latch.
11. If you are going to start spraying, place the 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 prime the pump.
12. If you are going to store the sprayer, remove the suction tube from the solvent pail, holding a metal part of the gun firmly against the metal pail, force the solvent from the pump and hose, Engage the gun safety latch. Refer to "Storage" procedure on page 5.
13. Whenever you shut off the sprayer follow the Pressure Relief Procedure Warning on Page 10.

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. 3.

SETTING UP

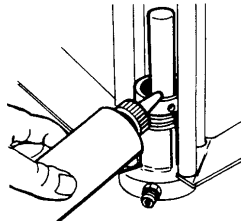
1. Connect the hose and gun.

- a. Remove the plastic cap plug from the outlet tee and screw a conductive or grounded 3000 psi airless spray hose onto fluid outlet.
- b. Connect an airless spray gun to the other end of the hose.
- c. Do not use steel braided airless hose. Use nylon braided airless hose only.

NOTE: Do not use thread sealer on swivel unions as they are made to self-seal. Use thread seal on tapered male threads only.

2. Fill the packing nut/wet cup with 5 drops of Airlessco Throat Seal Oil (TSO). See (Figure 4).

FIGURE 4



3. Check the electrical service.

Be sure the electrical service is 120 VAC, 15 amp minimum, and that the outlet you use is properly grounded.

NOTE: *For Generator power, a minimum 7000 watt generator with voltage regulation must be used.

4. 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 and system components and the object being sprayed, as instructed in the safety warning section of this manual.

5. Flush the sprayer

As per "Flushing Procedure" in this manual.

STARTING UP

1. Learn the functions of the controls.

PRIME/PRESSURE (PR) RELIEF VALVE is used to prime pump and to relieve pressure from gun, hose and tip.

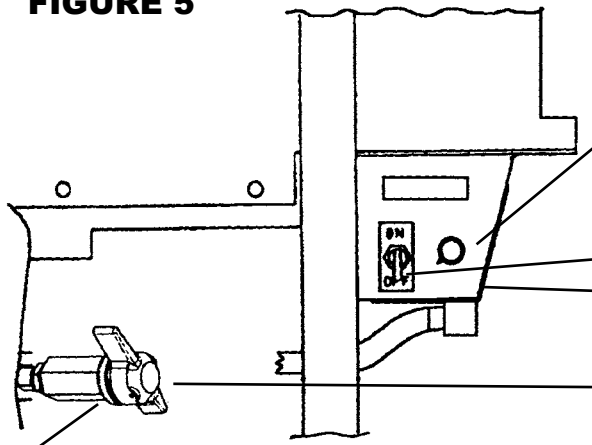
2. Prepare the material

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

3. Starting the sprayer

- a. Prime/PR Valve must be "OPEN" in the priming position.
- b. When you have ensured that the gun safety latch is engaged, attach tip and safety guard.
- c. Turn the ON-OFF Toggle Switch to the "ON" position.
- d. Turn Pressure Control Knob clockwise to prime the pump.
- e. After the pump is primed, turn Prime/PR Valve to the "Closed" position.
- f. Turn Pressure Control Knob to the desired spray pressure. Optional LCD displays pressure.
- g. Disengage the gun safety latch and you are ready to spray.

FIGURE 5



Pressure Control Knob

-used to adjust pressure only. Turn clockwise to increase pressure and counterclockwise to decrease pressure.

On/Off Switch

35A Circuit Breaker

Prime/Pressure Relief Valve- used both to relieve pressure from gun/hose/ tip, and to prime the pump when in the open position (a wider gap shows between the valve handle and cam body.) Learn and follow **Pressure Relief Procedure** on page 10 of this manual. When in closed position (very slight gap) the system is pressurized and ready to spray.

When you turn the valve handle and the gap between the valve handle and the cam body becomes wider - this means the valve is in the open position. It is in the closed position when the gap becomes very small.

STARTING UP

4. Adjusting the pressure

- a. Turn the Pressure Control Knob Clockwise to increase pressure and counterclockwise to decrease pressure.
- b. Always use the lowest pressure necessary to completely atomize the material.

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

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

WARNING

Follow the "Pressure Relief Procedure". 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.

WARNING

When you spray into the paint bucket, always use the lowest spray pressure and maintain firm metal to metal contact between gun and container.

WARNING

To stop the unit in an emergency, turn the motor off. Then relieve the fluid pressure in the pump and hose as instructed in the Pressure Relief Procedure.

Avoiding Tip Clogs

There is an 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 it into a small bucket of thinner suitable for 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 doesn't have time to dry out completely.

WARNING

Be sure to relieve pressure in the pump after filling with Airlessco Pump Conditioner.

5. When Shutting off the Sprayer

- a. Whenever you stop spraying, even for a short break, follow the "Pressure Relief Procedure".
- b. Clean the tip & gun as recommended in the spray gun instruction manual.
- c. Flush the sprayer at the end of each work day, if the material you are spraying is water-based, or if it could harden in the sprayer overnight. See "Flushing". Use a compatible solvent to flush, then fill the pump and hoses with an oil based solvent such as mineral spirits.
- d. For long term shutdown or storage, refer to the "Flushing" section of this manual.

PRESSURE RELIEF PROCEDURE

IMPORTANT!

To avoid possible serious body injury, always follow this procedure whenever the sprayer is shut off, when checking it, when installing, changing or cleaning tips, whenever you stop spraying, or when you are instructed to relieve the pressure.

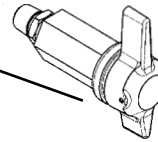
1. Engage the gun safety latch. Refer to the separate instruction manual provided with your gun on its safety features and how to engage safety latch.
2. Turn the unit off & unplug it from the electrical outlet.
3. Disengage the gun safety latch and trigger the gun to relieve residual fluid pressure.

Hold metal part of the gun in contact with grounded metal pail. USE MINIMUM PRESSURE !



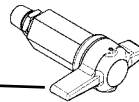
4. Turn Prime/Pressure Relief Valve (PR Valve) to the open (priming) position to relieve residual fluid pressure.

There will be a wider gap between valve handle and cam body when in open position. In the closed position there is only a very slight gap.



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

5. Re-engage gun safety latch and close Prime/Pressure Relief Valve.



If the **SPRAY TIP OR HOSE IS CLOGGED**, follow Step 1 through 5 above. Expect paint splashing into the bucket while relieving pressure during Step 4.

If you suspect that pressure hasn't been relieved due to damaged Prime/Pressure Relief Valve or other reason, engage the gun safety latch and take your unit to an authorized Airlessco Service Center.

DAILY MAINTENANCE

1. Keep the displacement pump packing nut/wet cup lubricated with Airlessco TSO (Throat Seal Oil) at all times. The TSO helps protect the rod and the packings.
2. Inspect the packing nut daily. Your pump has a patented Triple Life Packing System. *Packing life will be extended a minimum of three times if the following "Packing Adjustment" procedure is followed:*

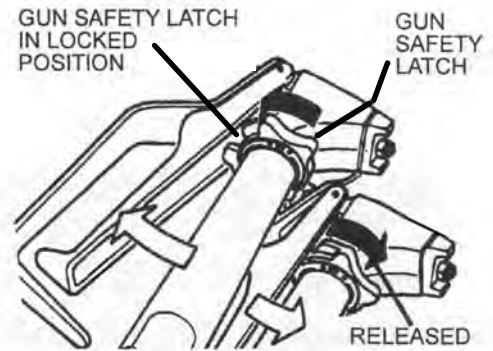
If seepage of paint into the packing nut and/or movement of the piston upward is found (while not spraying), the packing nut should be tightened enough to stop leakage only, but not any tighter. Overtightening will damage the packings and reduce the packing life.

SPRAY GUN OPERATION

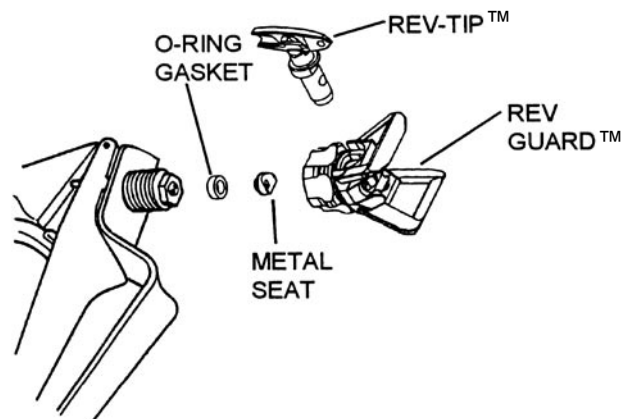
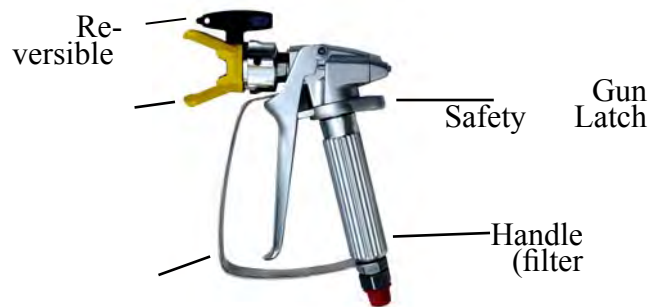
SPRAY GUN

Attach spray gun to airless unit and tighten fittings securely. Set the gun safety latch. (Also may be called gun safety lock, or trigger lock)

* The gun safety latch should always be set when the gun is not being triggered.

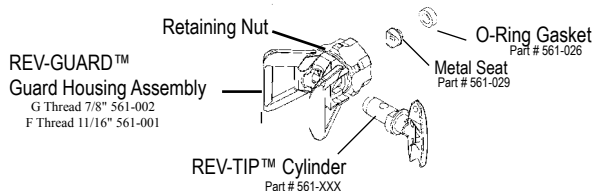


MAJOR COMPONENTS OF SPRAY GUN AND REVERSIBLE SPRAY TIP



SPRAY TIP ASSEMBLY

1. Be sure pressure relief procedure is followed before assembling tip and housing to the gun.
2. Lock gun safety latch.
3. Insert REV-TIP™ cylinder into the REV-GUARD™ (guard housing assembly).
4. Guide metal seat into REV-GUARD™ (guard housing assembly) through retaining nut & turn until it seats against the cylinder.
5. Insert O-Ring gasket on metal seat so it fits in the grooves.
6. Finger tighten REV-GUARD™ retaining nut onto the gun.
7. Turn guard in the desired position.
8. Completely tighten the retaining nut.



CLEANING SPRAY GUN

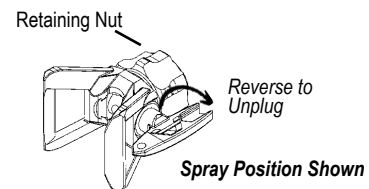
Immediately after the work is finished, flush the gun out with a solvent. Brush pins with solvent and oil them lightly so they will not collect dried paint.

CLEANING FILTER IN GUN HANDLE

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.

TO REMOVE CLOGS FROM SPRAY TIP

1. Lock gun safety latch.
2. Turn REV-TIP™ handle 180 degrees.
3. Disengage trigger lock & trigger gun into pail.
4. If the REV-TIP™ handle appears locked (resists turning), loosen the retaining nut. The handle will now turn easily.
5. Engage gun safety latch & return handle to the spray position.



CLOGGED FLAT TIP

Should the spray tip become clogged, relieve pressure from hose by following the "Pressure Relief Procedure." Secure gun with the safety latch, take off guard, take out the tip, soak in appropriate solvent & clean with a brush. (Do not use a needle or sharp pointed instrument to clean the tip. The tungsten carbide is brittle and can chip.)

AIRLESS SPRAY TROUBLESHOOTING

Problem	Cause	Correction
Coarse Spray, Spotty Pattern	Pressure setting low Irratic spray gun/hand motion	Increase pressure setting Use a steady, parallel pass
Excessive Overspray (Fogging)	Pressure setting high Paint over thinned/reduced/cut	Reduce pressure setting Use less thinner/water/reducer
Spray Pattern Excessively Wide	Incorrect fan width selection	Select narrower fan width tip*
Spray Pattern Excessively Narrow	Incorrect fan width selection	Select wider fan width tip*
Excessive Paint Delivery Paint Film Runs/Sags	Large tip orifice for application Paint over thinned/reduced/cut Excessive pressure Spray gun/hand speed slow	Select smaller tip orifice* Use less thinner/water/reducer Reduce pressure setting Increase pass speed
Spray Pattern Rounded and Heavy: Pump Does Not Keep Up	Tip worn beyond use	Replace with new tip*
Spray Pattern Pulsates/Irratic: Pump Does Not Keep Up	Pump worn or malfunctioning	Service pump
Thin or Spotty Coverage (Holidays)	Small tip orifice Spray gun/hand speed fast	Select larger tip orifice* Decrease pass speed
Thin Coverage in Center of Pattern (Fingers)	Tip size larger than pump specs Low pressure setting Pump worn or malfunctioning	Replace with correct tip for pump* Increase pressure setting Service pump
Spray Pattern Irregular, Deflected	Tip orifice partialy clogged Tip damaged	Clean tip carefully Replace with new tip*
Excess Paint Builds on Tip Guard	Spray gun excessively close to surface Pressure setting high	Hold gun further from surface sprayed Reduce pressure setting
Drips, Spits From Tip	Valve seat and/or ball in gun head damaged or worn	Service spray gun, replace valve assembly
Tip Clogs Continually	Debris in paint Gun filter missing Coarse filter mesh	Thouroughly strain paint before use Insure gun filter is in handle Use fine mesh filter in gun handle
Gun Filter Clogs Quickly	Debris in paint Pump inlet strainer missing	Thouroughly strain paint before use Do not operate without intlet strainer

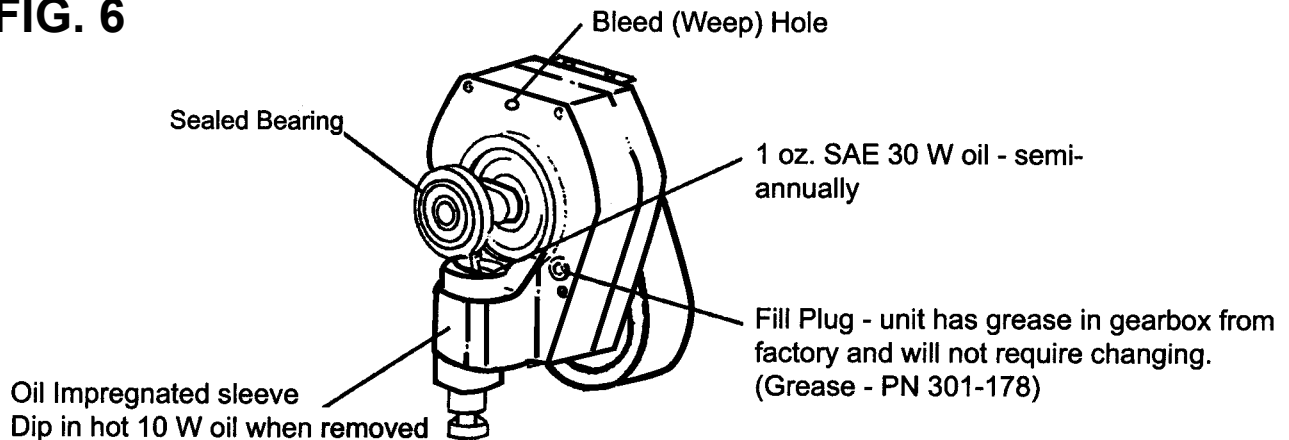
*See "Tip Selection Guide" in this manual

REGULAR MAINTENANCE

1. Always stop the pump at the bottom of its' stroke when you take a break 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 with five drops of TSO at all times. The TSO helps protect the packings and rod.
3. Inspect the packing nut daily. It should be tight enough to stop leakage, but no tighter. Overtightening will damage the packings.

OIL AND LUBRICATION INSTRUCTIONS

FIG. 6



ELECTRIC MOTOR MAINTENANCE

1. **LUBRICATION** - This motor is supplied with pre-lubricated ball bearings, lubricated for the life of the bearing.
2. **MOTOR BRUSHES** - need periodic inspection and replacement as wear indicates. Brush wear is greatly influenced by individual application. It is recommended that brush wear be checked at early intervals of operation in order to determine future required inspection. Standard Leeson brushes have an initial length of 1 and 1/4". When the brushes are worn to a length of 5/8" they should be replaced.

TO CHANGE THE BRUSHES:

1. Unplug the machine.
2. Remove the cover over the motor.
3. Open the two covers at the rear of the motor.
4. Loosen the screw under the brush.
5. Pull out the wire.
6. Push the brush retainer clip in and withdraw.
7. Remove the worn brushes.
8. Install new brushes in the reverse order.

For long life, new brushes (Part # 301-146 for 110 volt, Part # 301-147 for 220 - 240 volts) need to have a run in period. After changing brushes, set the machine for spraying. With a bucket of Pump Conditioner and water, a 50' 1/4" airless hose, airless gun and tip on unit, open the prime valve and switch on. The pump will now prime. With pump running in the prime mode, turn the pressure control knob to high pressure. (The pump has to cycle fast with no pressure in the pump). Run the pump for 20 minutes and the brushes will be run in.

FIELD TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Unit doesn't prime.	Airleak due to: 1. Loose Suction Nut 2. Worn O-Rings	1. Tighten Suction Nut 2. Replace O-Rings (106-018 & 106-017) on inlet valve.
	Stuck or Fouled Balls	Service inlet and outlet valves.
	Prime/Pressure Relief valve not opening.	Clean or replace Prime Valve (100-180).
Unit primes, but has no or poor pressure.	Pressure set too low. Filter(s) are clogged.	Turn up pressure. Clean or replace gun filter, inlet filter and/or manifold filter.
	Outlet Valve fouled or worn.	Service Outlet Valve.
	Prime/Pressure Relief valve bypassing.	Clean or replace Prime Valve (100-180).
	Packings and/or piston worn.	1. Tighten Packing Nut. 2. Repack unit.
Unit does not maintain good spraying pressure.	Blown spray tip.	Replace Spray Tip.
	Packings and/or piston worn.	Repack unit. Replace Piston.
	Outlet seat & ball worn.	Replace Outlet seat and ball.
Unit does not run.		See electrical troubleshooting.

SERVICING FLUID PUMP

Note: Check everything in the Troubleshooting Chart before disassembling the sprayer.

FLUID PUMP DISCONNECT

1. Flush out the material you are spraying, if possible.
2. Follow the Pressure Relief Procedure on page 10. 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. Remove the connecting rod shield from the pump.
5. Remove 2 retaining rings and slip the sleeve of the coupling down and remove both coupling halves. This will disconnect fluid pump from the connecting rod.
6. Using a 7/8" box wrench, disconnect the high pressure fluid line from the pump.
7. Using a 9/16" wrench, unscrew the two tie rod locknuts.
8. Pull the pump off the tie rods.

FLUID PUMP REINSTALL

1. Loosen the packing nut & extend piston rod to fully up position. Slip sleeve (187-047) over the piston rod.
2. Make sure that the spacer tubes (301-048) are in place.
3. Connect the connecting rod with fluid the fluid pump by installing the coupling halves (189-046). Slide sleeve over the coupling halves and secure with retaining ring (189-048).
4. Secure the fluid pump housing to the tie rods (100-328) and screw locknuts with washers on loosely.
5. Tighten the tie rod locknuts evenly to 30 ft. lb.

Note: After all the rod locknuts are tight, the alignment of both rods should allow easy assembly and disassembly of the coupling. If any binding, loosen and retighten all the rod locknuts to improve the alignment. Misalignment causes premature wear of seal and packings.

6. Tighten packing nut clockwise until resistance against the packings can be felt. Turn it one full turn more.
7. Start the pump and operate it slowly (at low engine speed) to check the piston rod for binding. Adjust tie rod lock nuts if necessary to eliminate binding.
8. Prime the unit and run at maximum pressure for several minutes, then release the pressure & repeat step 6.
9. Fill the wet cup (packing nut) with five drops of TSO (Throat Seal Oil).

SERVICING SUCTION NUT & OUTLET VALVE

SUCTION VALVE (SEE FIG. 7 & 10)

1. Using the rod collar tool (189-211), unscrew the suction nut (187-018), containing suction seat support (187-017), off of the fluid body (187-313).
2. Remove the suction seat (187-065), O-ring (106-017), suction ball (187-020) and suction ball guide (187-016) with O-ring (106-014).
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: Suction seat (187-065) is reversible.*

PISTON, OUTLET VALVE (SEE FIG. 8)

1. Place piston holder (187-248) in a vise. Slide the piston into the holder & lock in place with the 1/4" dowel.
2. Use a 3/8" allen wrench to unscrew the outlet seat support (187-051) from the piston.
3. Remove the outlet seat (187-061), O-ring (106-021), outlet ball (115-022) and ball guide (187-062).
4. Inspect the outlet ball and seat for wear. Replace as required.

**Note: Outlet seat (187-061) is reversible.*

5. While piston is still locked in the holder, install parts back into the piston in the following order: ball guide, ball, O-ring, outlet seat. Before reinstalling the outlet seat support apply two drops of Loctite No. 242 (blue) on the threads and torque to 20 ft-lbs.

FIG. 7

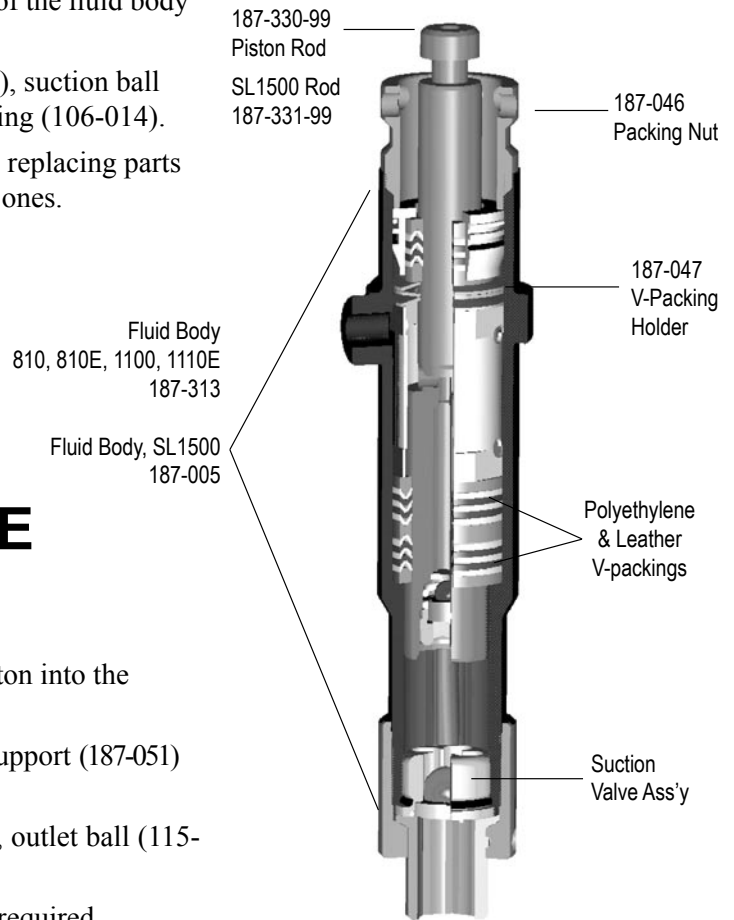
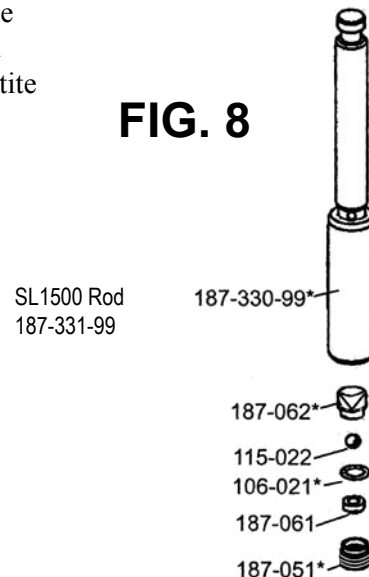


FIG. 8



PACKING REPLACEMENT

Replacement Instructions:

REFER TO FIGURE 13

Remove the Fluid Pump

1. Flush out the material you are spraying, if possible.
2. Follow the Pressure Relief Procedure on page 6t. 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. Remove the connecting rod shield from the pump.
5. Remove 2 retaining rings and slip the sleeve of the coupling down and remove both coupling halves. This will disconnect fluid pump from the connecting rod.
6. Using a 7/8" box wrench, disconnect the high pressure fluid line from the pump.
7. Using a 9/16" wrench, unscrew the two tie rod locknuts.
8. Pull the pump off the tie rods.

Remove the Suction Valve

1. Using the rod collar tool (189-211), unscrew the suction nut (187-018), containing suction seat support (187-017), off of the fluid body (187-313).
 2. Remove the suction seat (187-065), O-ring (106-017), suction ball (187-020) and suction ball guide (187-016) with O-ring (106-014).
 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: Suction seat (187-065) is reversible.*

DISASSEMBLY OF THE FLUID PUMP

1. Unscrew & remove the packing nut (187-046).
2. Push the piston rod down through the packings & out of the pump.
3. Now push the packing removal tool (187-249) up through the pump & remove from the top bringing the packings, spacer & springs along with it, leaving the fluid body (187-313) empty.

**Make sure all packings & glands have been removed from the fluid pump.*

4. Clean inside of fluid body.
5. Disassemble all parts & clean for reassembly. Discard any old packings. **Save the metal upper glands (187-026 & 187-025).** Replace metal lower glands (187-037) with new metal glands from the packing kit.

** Note: If the old packing had a metal gland for (187-058), discard & replace with a new plastic one from the packing kit.*

6. Lubricate leather packing in lightweight oil for 10 minutes prior to reassembly.

DISASSEMBLY OF THE OUTLET VALVE REFER TO FIGURE 8






1. Place piston holder (187-248) in a vise. Slide the piston into the holder & lock in place with the 1/4" dowel.
2. Use a 3/8" allen wrench to unscrew the outlet seat support (187-051) from the piston (187-330).
3. Remove the outlet seat (187-061), O-ring (106-021), outlet ball (115-022) and ball guide (187-062).
4. Inspect the outlet ball and seat for wear. Replace as required.

**Note: Outlet seat (187-061) is reversible.*

5. While piston is still locked in the holder, install parts back into the piston in the following order: ball guide, ball, O-ring, outlet seat. Before reinstalling the outlet seat support apply two drops of Loctite No. 242 (blue) on the threads and torque to 20 ft-lbs.

REASSEMBLY

Refer to Figure 9 & 10

1. Take the lower metal male gland (187-037) and place it down on the flat side. 
2. Take three of the lower polyethylene V-packings (187-029) and two of the leather V-packings (187-059) and place onto your male gland in the following order with the inverted side down :  polyethylene, leather, polyethylene, leather, polyethylene.
3. Take the female adaptor (187-058), which is inverted on both sides , and place it on top of your assembled lower packings.
4. Follow step 2 above but with packings inverted side up. 
5. Take the second lower male gland and place it on top of your assembled packings with the rounded side down. 
6. Take your assembled glands & packings (13 pieces all together) and slide on to the lower half of the piston.
7. Take the spacer and slide over the top of the piston (it doesn't matter which direction it sits), falling onto the lower packings.

PACKING REPLACEMENT (Continued)







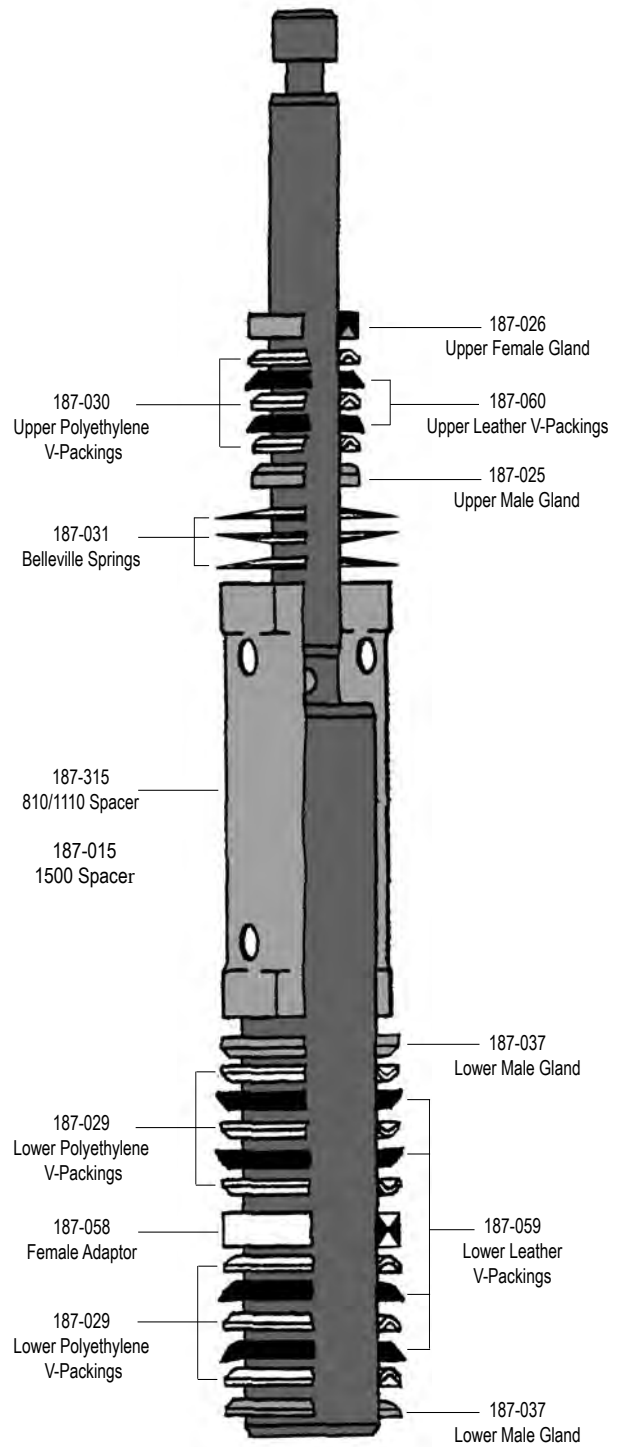
8. Take the three Belleville Springs (187-031) and slide over the top of the piston in the following order:
 - * First spring, curve facing down 
 - * Second spring, curve facing up 
 - * Third spring, curve facing down 
9. Take the upper male gland (187-025) and place it with the rounded side up. 
10. Take the three upper polyethylene V-packings (187-030) and two leather packings (187-060) and assemble with the inverted side down , on to the male gland in the following order: polyethylene, leather, polyethylene, leather, polyethylene.
11. Take the upper female gland (187-026) & place on top of your assembled upper packings with the inverted side down. 
12. Take your assembled upper glands and packings (7 pieces) and slide on over the top of the piston, making sure the inverted sides are facing down.
13. Take the V-packing holder (187-047) and replace the white O-ring (106-012) and the black O-ring (106-013) with new ones from the packing kit.
14. Slide the V-packing holder over the top of the upper packings so they fit inside.
15. Lubricate the inside of the fluid pump body and the outside of the packings with a light weight oil.
16. Slide the completed assembly into the fluid pump body.
 - * **To keep packings secured in the correct position, hold the pump body upside down and push the completed assembly upwards into the pump body. Once placed inside, tilt the pump body back up to keep all pieces in.**
17. Thread the packing nut (187-046) into the top of the fluid body and tighten hand tight.
18. Take the suction retainer (187-016) and replace the black O-ring (106-014) with a new one from the packing kit. Replace the suction ball (187-020) with the new one from the kit into the suction retainer. Place the suction seat (187-065) into the flat side of the ball guide, over the suction ball. Now place the white O-ring (106-017) into the groove around the suction seat.
19. Take the completed suction valve assembly and place it into the bottom of the fluid body, with the rounded side fitting inside.
20. Take the suction seat support (187-017) and place the flat side down on to the suction valve assembly (threads will be facing upwards).
21. Thread the suction nut (187-018), over the suction seat support.
22. Tighten the packing nut (utilizing the packing nut adjustment tool) clockwise one full turn.

FIG. 9



PACKING REPLACEMENT (Continued)

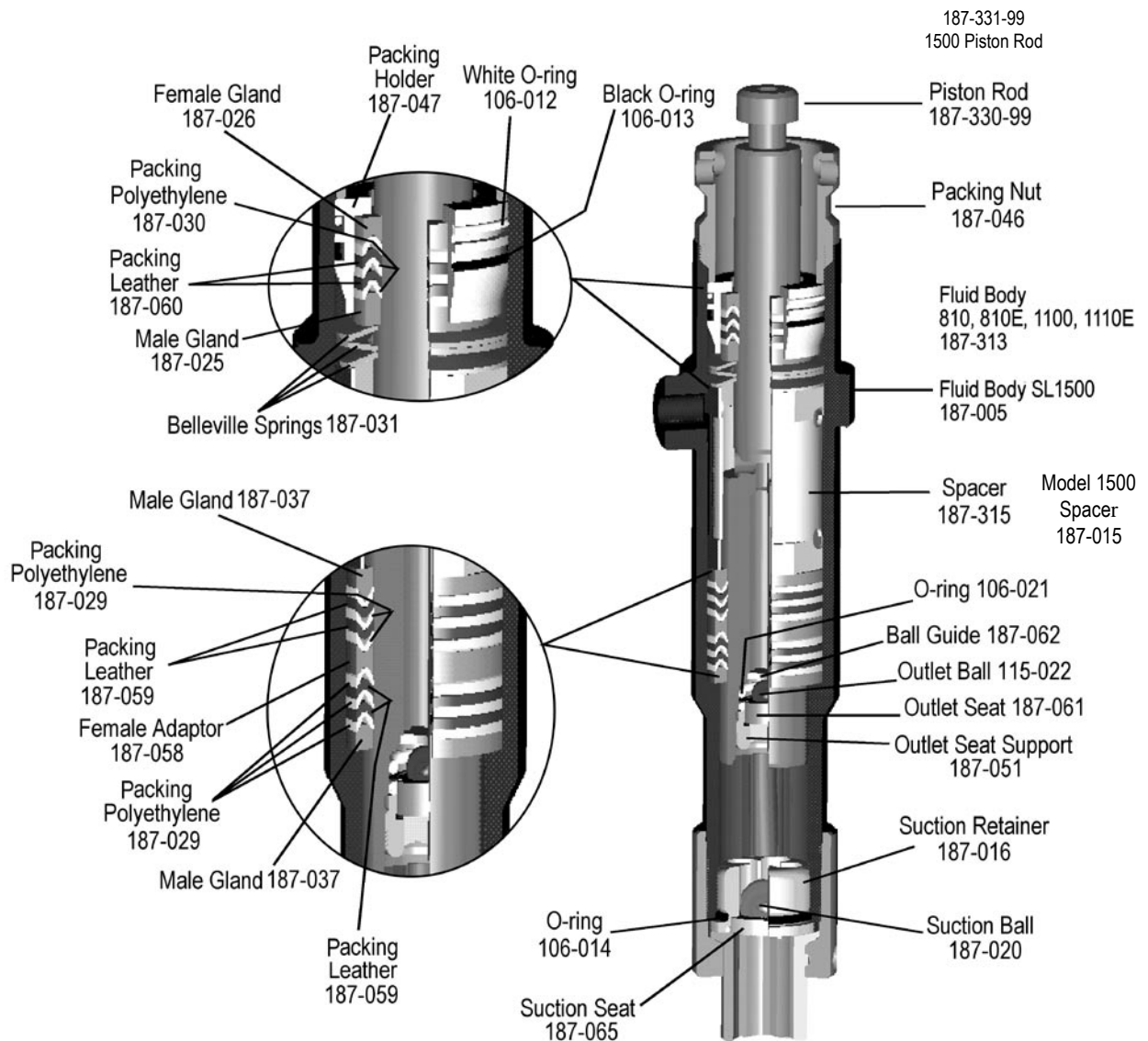
FLUID PUMP REINSTALL

1. Loosen the packing nut and extend piston rod to fully up position. Slip sleeve (187-047) over the piston rod.
2. Make sure that the spacer tubes (301-048) are in place.
3. Connect the connecting rod with fluid the fluid pump by installing the coupling halves (189-046). Slide sleeve over the coupling halves and secure with retaining ring (189-048).
4. Secure the fluid pump housing to the tie rods (100-328) and screw locknuts with washers on loosely.
5. Tighten the tie rod locknuts evenly to 30 ft. lb.
6. Tighten the packing nut clockwise until resistance against the packings can be felt. Turn it one full turn more.
7. Start the pump and operate it slowly (at low engine speed) to check the piston rod for binding. Adjust tie rod lock nuts if necessary to eliminate binding.
8. Prime the unit and run at maximum pressure for several minutes, then release the pressure and repeat step 6.
9. Fill the wet cup (packing nut) about 1/3 full of TSO (Throat Seal Oil).

NOTE: After all the rod locknuts are tight, the alignment of both rods should allow easy assembly and disassembly of the coupling. If any binding, loosen and retighten all the rod locknuts to improve the alignment. Misalignment causes premature wear of seal and packings.

See Page 22 for SL1500

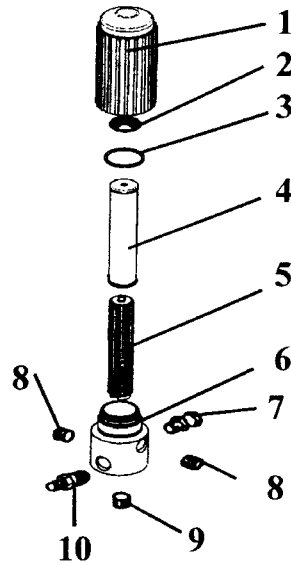
FIG. 10



MANIFOLD FILTER - PN 111-200-99

FIG. 11

FIGURE 11 PARTS LIST		
ITEM #	PART #	DESCRIPTION
	111-200-99	Filter Ass'y
1	111-202	Base
2	301-356	Spring
3	106-007	O-Ring
4	111-204	Filter 60 Mesh
5	111-203	Support
6	111-201	Base
*7	100-159	Swivel
8	100-129	Plug 3/8" (2)
9	100-028	Plug 1/4"
10	100-109	Nipple 3/8 x 1/4



SL810/1100 PAINT SYSTEM - PN 301-454

FIG. 12
SL810/1100, 710E/1110E

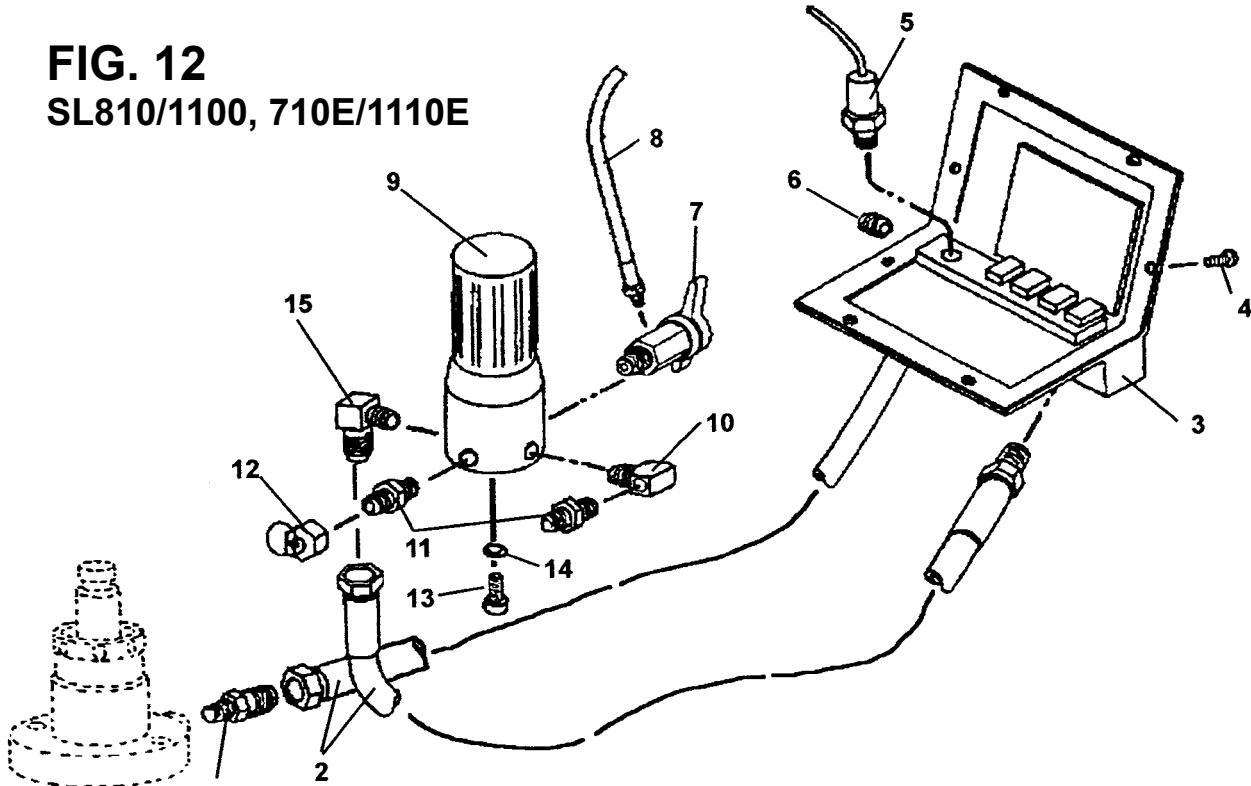
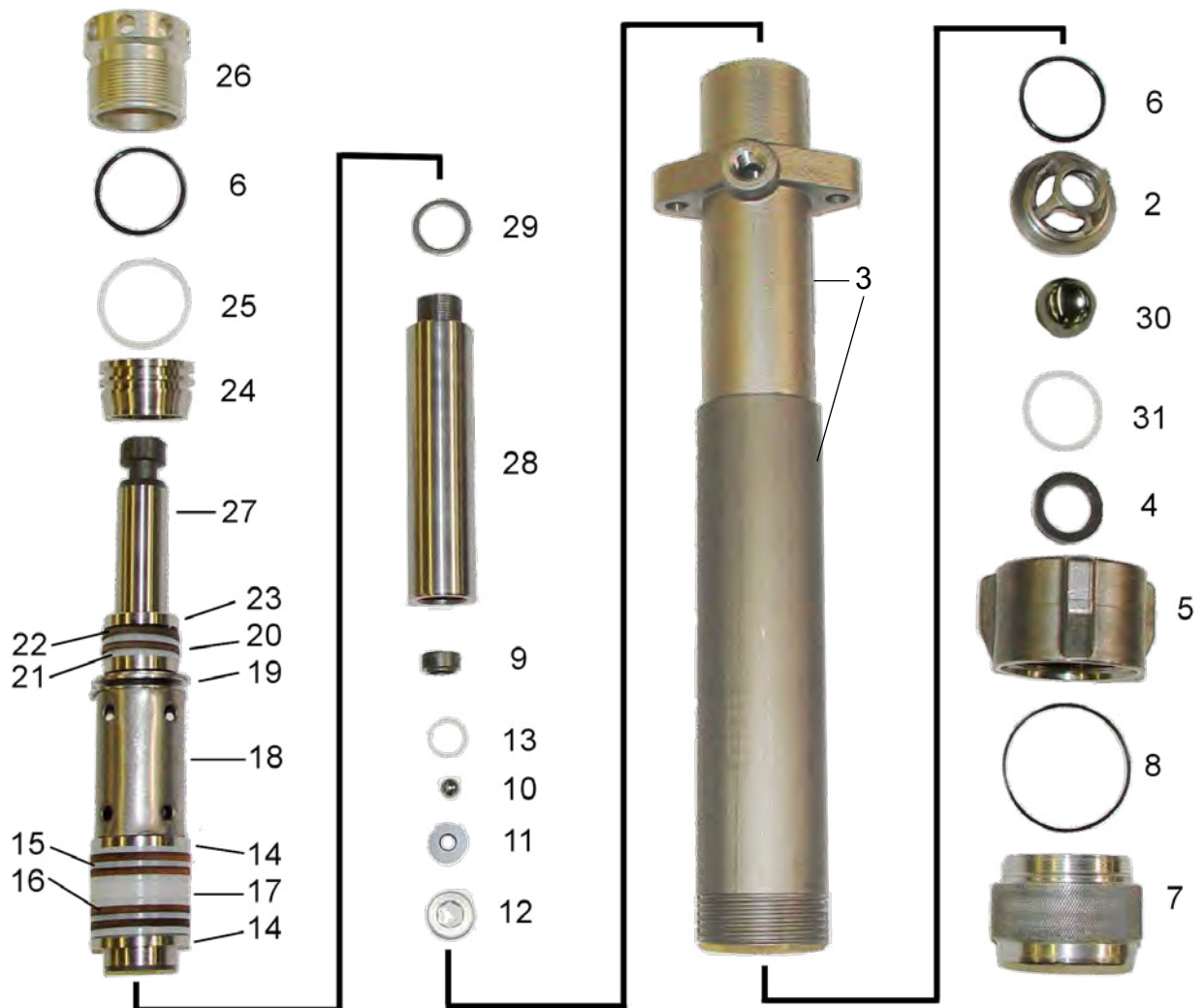
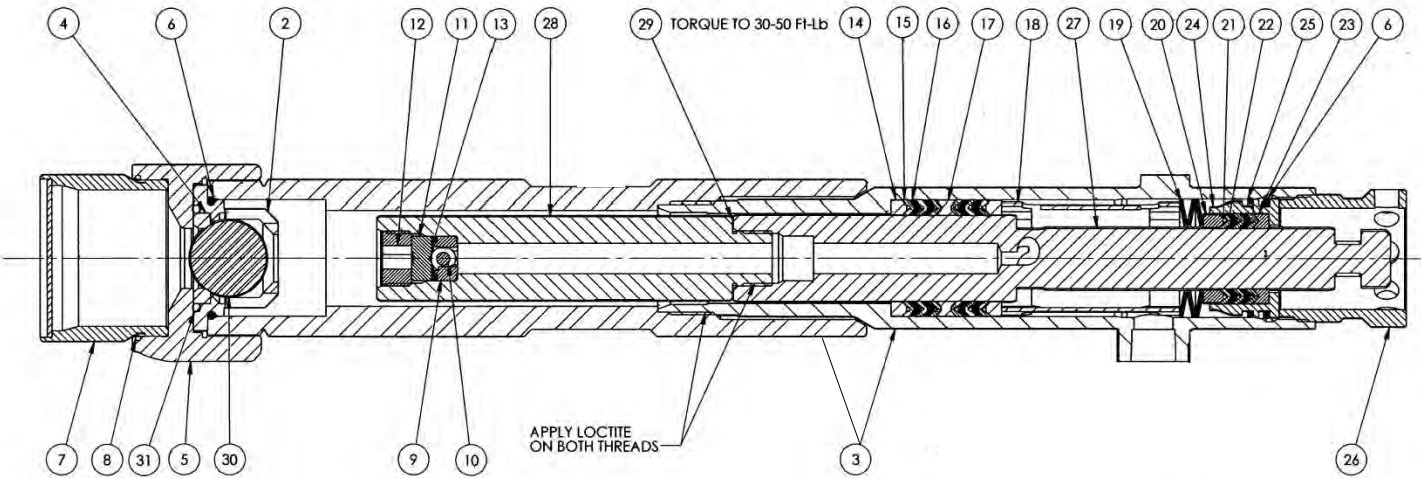


FIG. 12 PARTS LIST					
ITEM #	PART #	DESCRIPTION	ITEM #	PART #	DESCRIPTION
1	100-109	Nipple 1/4	11	100-109	Nipple (2)
2	301-308	Hose (2)	12	100-160	Plug
3	301-318-99	Pressure Control Ass'y	13	100-312	Screw (2)
4	111-037	Screw (8)	14	331-103	Washer (2)
5	331-294-99	Sensor	15	167-016	Elbow
6	100-028	Plug 1/4"	not shown	100-050	Reducer (1)
7	100-180	Prime/Pres. Relief Valve			
8	301-348	Bypass Tube			
9	111-200	Manifold Filter			
10	169-013	Elbow			

SL1500 Pump Parts Diagram



SL1500 Pump, Part # 187-411 Parts List

SL1500 Pump Repair Kits

PART #	DESCRIPTION
301-443	Packing Kit
301-444	Major Repair Kit
187-411	Replacement Pump

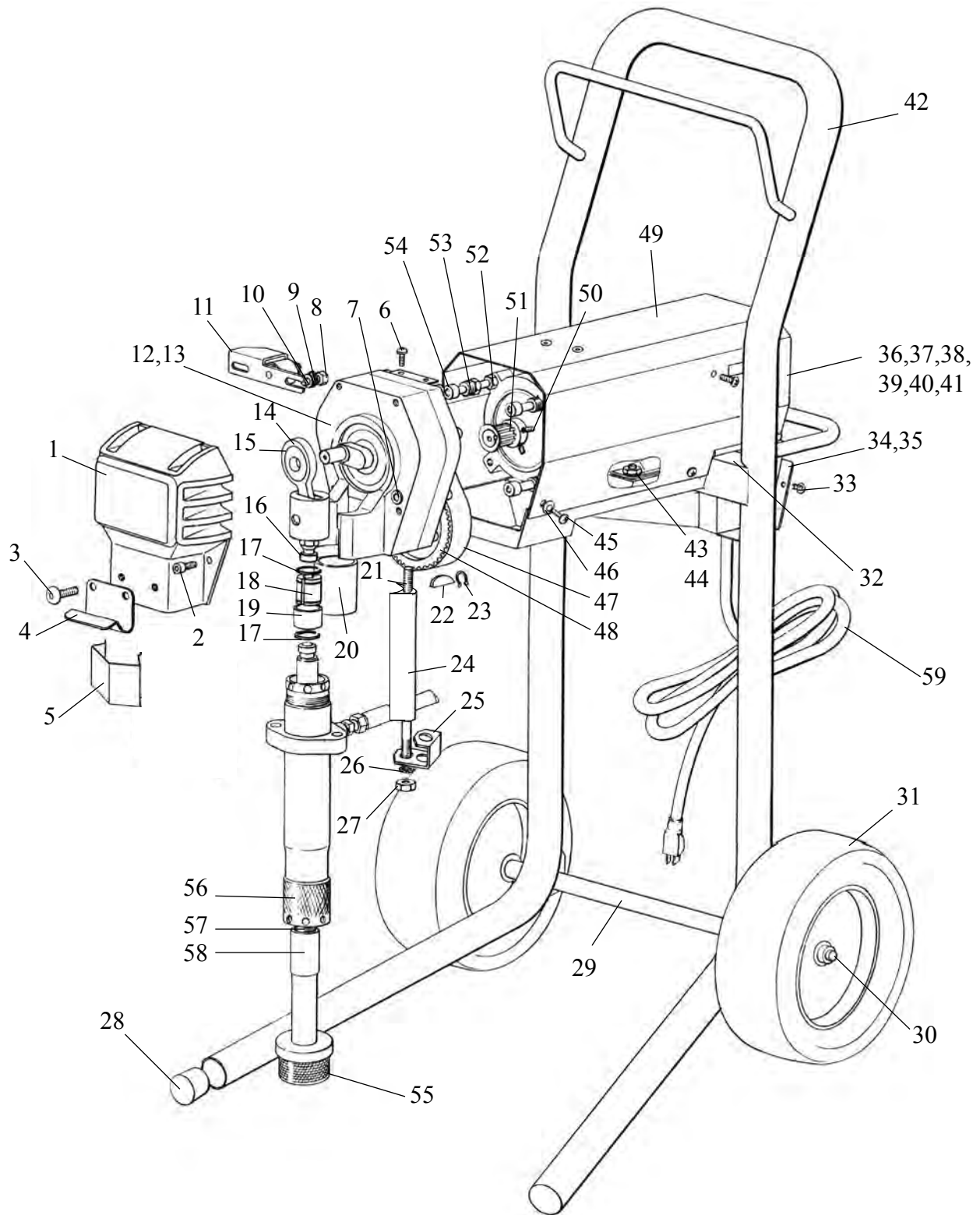
MATERIAL ABBREVIATIONS

L	Leather
P	Polyethylene
SS	Stainless Steel
TC	Tungsten Carbide
TF	PTFE
VT	Viton

Item #	Part #	Packing Kit	Major Kit	Description	Qty
1	187-095			Cylinder, Pump	1
2	187-087			Retainer for 1" Ball	1
3	187-313			Pump Body	1
4	187-086			Seat, TC	1
5	187-084			Nut Inlet Valve	1
6	106-013	*	*	O-Ring, VT	2
7	119-092			Strainer Assembly	1
8	119-110	*	*	O-Ring, VT	1
9	187-062			Retainer	1
10	115-022	*	*	Ball, TC	1
11	187-061			Seat, TC	1
12	187-051			Plug	1
13	106-021	*	*	O-Ring, TF	1
14	187-037			Adapter, Male, Short	2
15	187-029	*	*	V-Packing - P	6
16	187-059	*	*	V-Packing - L	4
17	187-058	*	*	Double Adapter, Fem.	1
18	187-315			Spacer, SS	1
19	187-031			Belleville Spring	3
20	187-025			Adapter, Male	1
21	187-030	*	*	V-Packing - P	3
22	187-060	*	*	V-Packing - L	2
23	187-026			Adapter, Female, TF	1
24	187-047			V-Packing Holder	1
25	106-012	*	*	O-Ring	1
26	187-046			Collar Screw	1
27	187-330		*	Piston, SL 2" Stroke	1
28	187-314			Piston, Extension	1
29	100-194			Washer	1
30	187-092	*	*	Ball, stainless steel	1
31	106-008	*	*	O-Ring....TF	1

COMPLETE SPRAYER

FIG. 13



COMPLETE SPRAYER PARTS LIST

FIG. 12 PARTS LIST					
ITEM #	PART #	DESCRIPTION	ITEM #	PART #	DESCRIPTION
1	301-320	Cover	30	143-029	Set Collar (2)
2	100-312	Screw (4)	31	189-427	Solid Wheel (2)
3	100-360	Screw	32	301-316	Rubber Edge 1.17'-makes two
4	301-105	Hook	33	111-037	Screw (4)
5	301-467	Front Shield	34	301-318-99	Pressure Control Assembly
6	301-337	Screw (2)	35	101-060	Label High Voltage
7	100-028	Plug 1/4 NPT	36	301-190	Fan
8	111-044	Screw (2)	37	301-191	Retaining Clip Fan
9	113-023	Lock Washer (2)	38	117-052	Screws (3)
10	100-349	Washer (2)	39	301-106A	1.25 HP Motor (1100/1500 Series)
11	301-193	Tensioner Assembly	40	301-023A	1 HP Motor (810 Series)
12	301-203-99	Gearbox 3/4" (810)	41	301-089	Fan Cover
13	301-204-99	Gearbox 1" (1100/1500)	42	113-022	Nut (4)
14	301-333	Connecting Rod Assly (1100/1500)	43	113-023	Washer Lock (4)
15	301-291	Connecting Rod Assly (810)	44	111-037	Screw (4)
16	301-046	Rod End	45	301-135	Grommet (6)
17	189-048	Retaining Ring (2)	46	301-231	Cog Belt
18	189-046	Coupling Set	47	301-237	Cog Pulley
19	189-047	Retaining Sleeve	48	301-205	Frame W/filter Bracket
20	301-047	Sleeve Bearing	49	301-321	Retaining Ring
21	100-328	Stud (2)	50	115-041	Set Screw (4)
22	301-139	Woodruff Key	51	301-233	Sheave
23	100-332	Retaining Ring	52	112-029	Key
24	301-059	Spacer Tube (2)	53	301-099	Screw (3)
25	301-173	Bracket-Return Tube	54	301-044	Screw (3)
26	140-035	Washer Lock (2)	55	141-010	Inlet Strainer
27	140-051	Nut (2)	56	187-018	Suction Nut
28	301-134	Stopper (2)	57	187-017	Suction Fitting
29	113-056	Axle	58	301-094	Suction Tube (810/1100)
			58	301-571	Suction Tube (1500)
			59	331-168	Power Cord

REPLACEMENT LABEL KITS

PART #	LABEL KIT
301-430	AIRLESSCO SL810
301-435	ALLPRO (910E)
301-431	AIRLESSCO SL1100
301-436	ALLPRO (1110E)

SL1500 LABELS

PART #	LABEL
101-281	SL1500 Decal, Left
101-283	SL1500 Decal, Right
101-232	Decal, Center Stripe

PRESSURE CONTROL ASS'Y CALIBRATION

NOTE: Anytime a sensor, pressure control assembly or both are replaced, the these calibrations must be performed.

1. ZERO CALIBRATION

1. Place prime/pressure relief valve in the prime (open) position.
2. Set the pressure control knob to the minimum setting (CCW).
3. Detach the pressure control assembly.
4. Place the jumper (PN 117-207) on both prongs of the "P-ZR" terminal. Note: This jumper comes with a new Pressure Control Assembly and is installed on the "P-ZR" terminal. If you are "Zero Calibrating" a Pressure Control Assembly presently in the unit, remove the jumper from one prong of the "P-ZR" terminal and place on both prongs of the "P-ZR".
5. Turn machine "ON" and ensure it is not cycling.
6. If the yellow light on the electrical board is on, use an insulated screwdriver to turn the "LCD ZERO" trim pot (P501) counter-clockwise until the light goes out. Then turn it clockwise until the light just comes back on. At this point, the "Zero" Calibration is complete.
7. If the yellow light is OFF, turn the "Zero" trimpot clockwise, just until the light comes on and stop. At this point "Zero" Calibration is complete.
NOTE: If your machine is equipped with the optional LCD, as a double check to confirm that the pump is at true zero the LCD should read "0000" when the yellow light just comes on.
NOTE: If the yellow light remains constantly "ON", or "OFF" during this calibration, the sensor is defective and should be replaced.
8. When calibration is complete, move jumper from both prongs of the "P-ZR" terminal to single prong of the "P-ZR" Terminal.

2. PRESSURE CALIBRATION

1. Attach a 50', 1/4" airless hose, airless gun with 0.017 tip and a 5000 psi pressure gauge to the pump.
2. Place the suction tube into a bucket of Coro-chek and water.
3. Turn prime/pressure relief valve to the prime (open) position.
4. Complete the ZERO calibration, as per "ZERO CALIBRATION".
5. Turn pressure control knob clockwise until machine starts to prime.
6. Place the prime/pressure relief valve in the pressure (closed) position.
7. While watching pressure glycerine gauge (not the LCD), slowly adjust the Pressure Trimpot (P502) (clockwise to increase and counter-clockwise to decrease) until the maximum static pressure is 3300 psi, with the pressure control knob fully clockwise. Trigger the gun several times to ensure pressure returns to 3300 psi.

3. LIQUID CRYSTAL DISPLAY CALIBRATION - (If so equipped)

1. Complete the "ZERO CALIBRATION" and "PRESSURE CALIBRATION" procedures prior to commencing this calibration.
2. Turn pressure control knob up until system pressure is above 2500 psi (as indicated on glycerin filled pressure gauge) and the machine is not cycling.
3. Use an insulated screwdriver to adjust the LCD Set trimpot (P503). Turn Trimpot CCW until it clicks. Then adjust to match pressure against pressure gauge reading.
4. Move the pressure control knob to different settings and trigger the gun several times to ensure that the LCD continues to match the pressure gauge reading.
5. Reattach Pressure Control Assembly.

PRESSURE CONTROL ASS'Y CALIBRATION

4. PHASE LIMIT CALIBRATION

Formerly known as the Low Voltage or Master Voltage Calibration

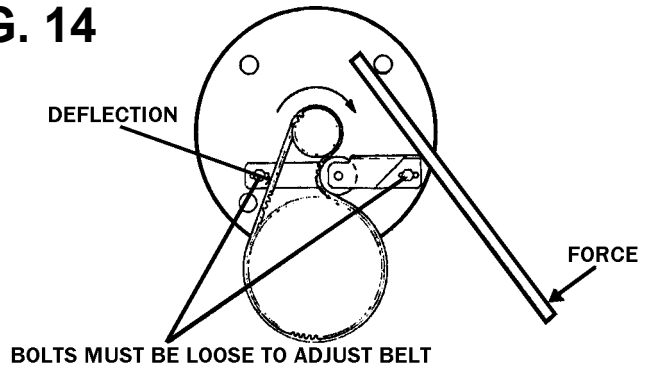
1. Attach a 50', 1/4" airless hose, airless gun with .017 tip and a 5000 psi glycerin filled pressure gauge to the pump.
2. Place the suction tube into a bucket of anti-freeze and water.
3. Turn pump on and turn up pressure control until the machine starts to prime.
4. Place the prime/pressure relief valve in the pressure (closed) position.
5. Pressurize pump to 600 psi.
6. Trigger the gun several times noting the deadband (the amount of pressure drop before the pump rebuilds to set pressure).
7. If deadband is greater than 150 psi, adjust the phase limit trimpot so that the deadband is less than 150 psi and the pressure increase after the gun trigger is released is less than 250 psi. These pressures are guidelines and may vary slightly from pump to pump.
8. Reattach pressure control assembly to unit.

Note: The 301-318 Revision "E" pressure control assembly has a reddish brown terminal labeled "Inhibit Switch". There should be a jumper on the two left terminals, which are the closest to the "S2" connection. Also on the Revision E is a terminal labeled "ON-SL" which should always have a jumper on it.

REPLACEMENT OF BELT/BELT ADJUSTMENT

NOTE: The Cog Belt System does not require alignment. When upper sheave is placed on motor shaft it is pushed on until a positive stop is reached. The set screws (Fig. 13, Item 115-041) are then loctited. The lower pulley is placed on gearbox and held in place with keyway and snap ring (Fig. 13, Item 100-332) The flange on upper sheave holds the belt in alignment and the belt self aligns on lower pulley eliminating having to align.

FIG. 14



REPLACEMENT OF BELT:

1. Remove cover (Fig. 13, Item 301-321) from unit.
2. Remove Tensioner Assembly (Fig 14). Then loosen screws (Fig. 13, Item 301-099). Move gearbox forward to allow removal and replacement of belt.
3. Retighten screws into gearbox until they bottom out. (Fig. 13, Item 301-099) This will align gearbox correctly.
4. Replace tensioner with bolts and leave loose to allow adjusting belt tension.
5. Tighten belt as shown in Figure 14. When properly tightened the deflection play should be 1/4 inch when pushing hard with thumb. (20 ft/lbs)

NOTE: When placing belt on pulleys and inserting the tensioner against belt, ensure cogs on belt are engaged into cogs on pulleys before tightening belts. Rotating upper pulley while holding the tensioner against the belt will allow proper engagement of cogs prior to tightening.

SUCTION Assly. (810/1100) 5 gal. - P.N. 301-090-99

FIG. 15

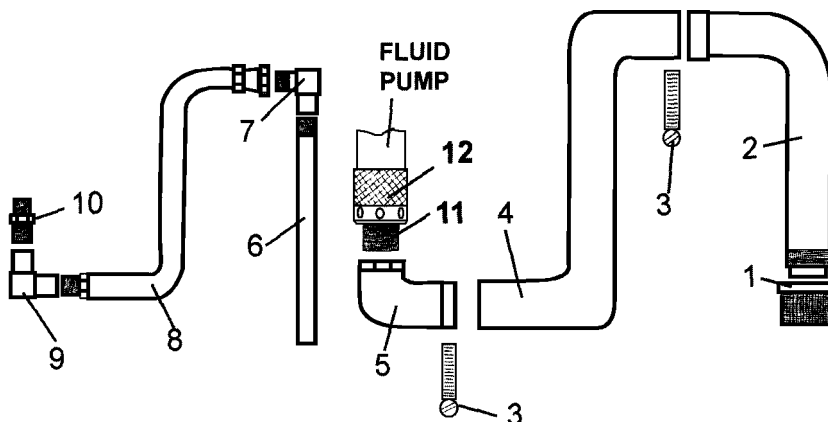


FIG. 14 PARTS LIST

ITEM #	PART #	DESCRIPTION
*	301-517-99	Suction Hose Ass'y (includes items 1-5)
1	141-008	Inlet Strainer
2	301-514	Suction Tube
3	301-516	Hose Clamps (2)
4	301-513A	Hose
5	100-165	Elbow
6	188-377	Return Pipe
7	100-128	Elbow
8	100-012	Whip
9	100-126	Elbow **
10	100-385	Reducer**
11	187-017	Fitting
12	187-018	Suction Nut

SUCTION Assly. (810/1100)- 55 gal. - P.N. 301-543-99

FIG. 16

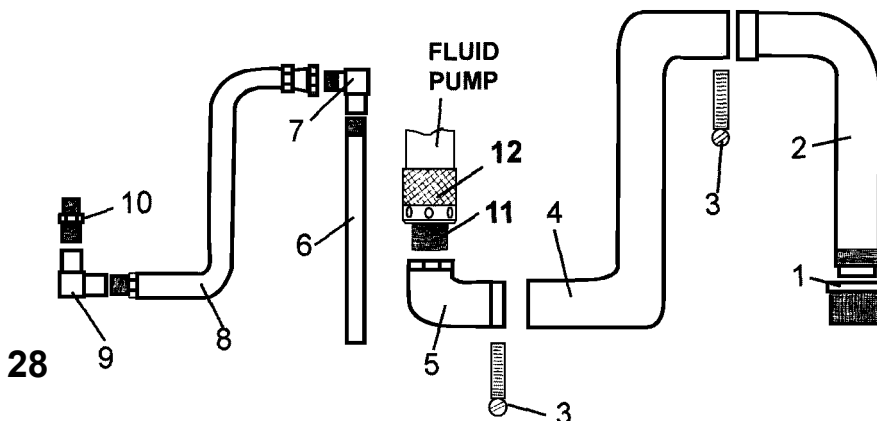
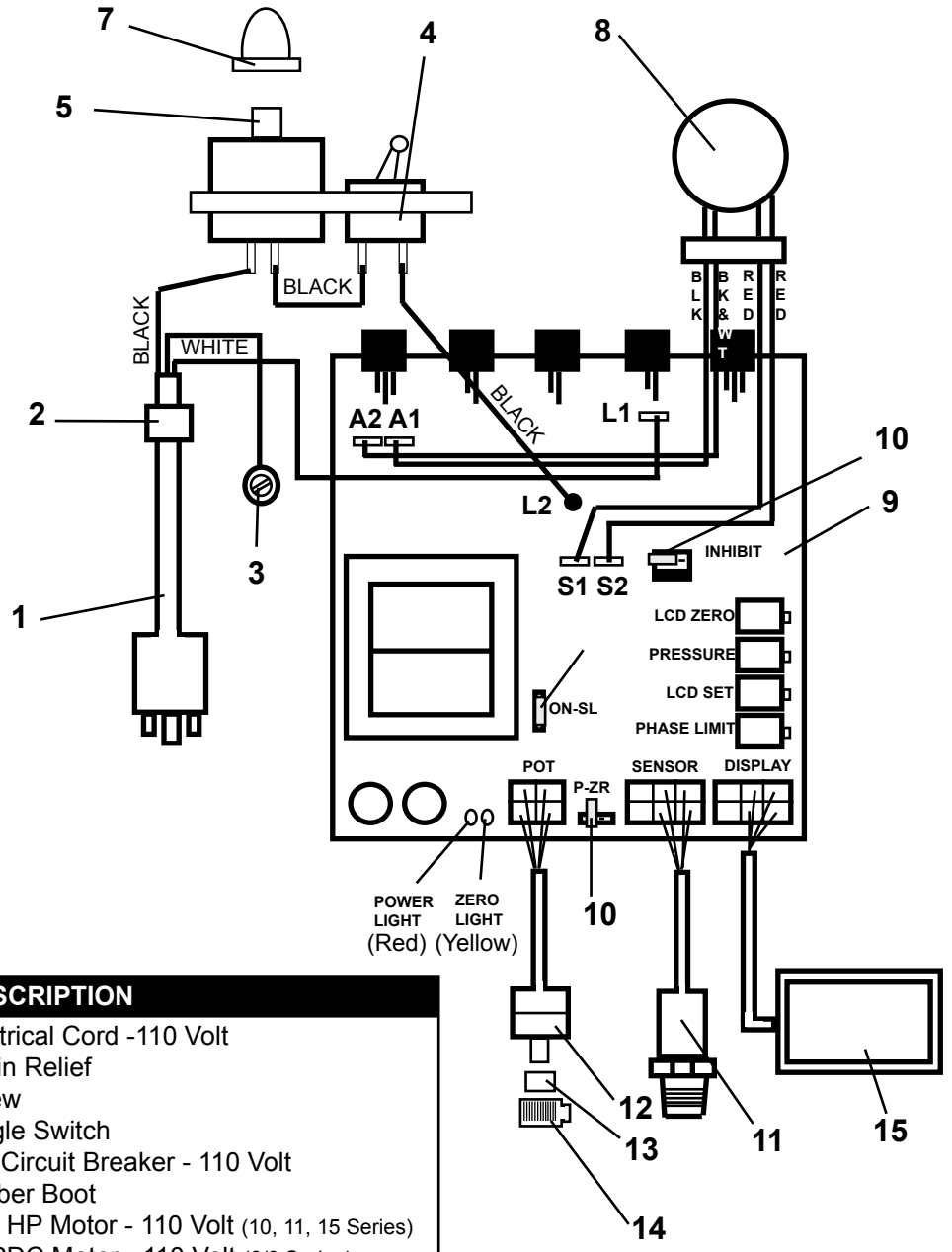


FIG. 16 PARTS LIST

ITEM #	PART #	DESCRIPTION
1	141-008	Inlet Strainer
2	301-545	Suction Tube
3	301-516	Hose Clamps (2)
4	301-544	Hose
5	100-165	Elbow
6	188-377	Return Pipe
7	100-128	Elbow
8	100-012	Whip
9	100-126	Elbow **
10	100-385	Reducer**
11	187-017	Fitting
12	187-018	Suction Nut

ELECTRICAL SYSTEM - 110 Volt

FIG. 17



ITEM #	PART #	DESCRIPTION
1	331-168	Electrical Cord -110 Volt
2	331-185	Strain Relief
3	331-138	Screw
4	301-083	Toggle Switch
5	301-518	35A Circuit Breaker - 110 Volt
7	117-035	Rubber Boot
8	301-106A	1.25 HP Motor - 110 Volt (10, 11, 15 Series)
	301-023A	1 HPDC Motor - 110 Volt (8/9 Series)
9	301-318-99	Pressure Control Ass'y - 110 Volt
10	117-207	Jumper
11	331-294-99	Sensor
12	331-297	Potentiometer
13	331-184	Spacer
14	117-044	Knob
15	331-377	LCD - PSI Display

TROUBLESHOOTING - Machine does not start

CAUSE	STEPS (SEE FIGURE 17)
Control Settings	STEP 1: After making sure that the machine is plugged into the wall, verify that the on-off switch is in the ON position and that the pressure control knob is turned all the way to the right (clockwise for maximum pressure).
35A Circuit Breaker	STEP 2: Using your multi-meter, test the breaker for continuity or replace with a new breaker. If the breaker reads good, move on to step three.
Power Source	STEP 3: Using a Phillips Head screwdriver, remove the eight screws holding the pressure control assembly. Locate the light on the board indicating that there is power (it will be red or green). If the light is OFF proceed to step four. If the light is ON go to step six.
Power Source	STEP 4: Locate the L1 and L2 terminals on the board, and then using your multi-meter check to make sure you have 110 volts AC across the two terminals (the cord wires will still be attached). If there is no voltage at these leads, there is no power getting to the machine. Check your power source (outlet, circuit breaker, extension cord, and power cord). If you have AC voltage at the L1 and L2 terminals, go to step 5.
Thermal Overload	STEP 5: Disconnect the two red motor leads (S1 & S2) and test for continuity between them. No continuity means that the thermal coupler has opened due to excessive motor heat. If the motor is still hot to the touch, allow it to cool and then retest. If the motor is cool and there is not continuity on the red leads, contact your local Leeson repair facility to repair/replace the thermal coupler. Continuity shows that the motor's thermal coupler has not tripped. Proceed to step six.
Pressure Control Assembly (Board)	STEP 6: If everything checks out in steps one through five and the power indicating light is still out, replace the pressure control assembly.
Motor	STEP 7: Remove the motor brush covers and turn the machine on. Set the potentiometer (POT) at maximum pressure and check for DC voltage across both brush terminals. You should read greater than 80 volts DC. IF YOU DO NOT HAVE DC VOLTAGE GO TO STEP EIGHT. If you have DC voltage, turn the machine off and unplug it from the wall. Check to make sure that the brushes are making good contact with the armature. Replace the brushes if they are less than 3/8" long. If the brushes are good, replace the motor.
Sensor	STEP 8: Plug another sensor into the board and perform the zero calibration procedure. If the machine starts to run, the sensor was bad. If there is no replacement sensor available, use a multi-meter to test the resistance across the red and black wires of the sensor (be sure to test at the plug). You should read 1.5 - 3.5k ohms. A faulty sensor usually reads no continuity (open). If the sensor passes all the tests move to step nine.
Pressure Control Knob (Potentiometer)	STEP 9: Plug another potentiometer (POT) into the control board. If the machine starts, the old POT is bad. When a replacement POT is not available, remove the POT lead (with the machine turned off) from the control board and test the resistance between the red and black wires (be sure to test at the plug). The resistance should read between 8-12k ohms if it is outside of this range replace the POT.
Pressure Control Assembly (Board)	STEP 10: If you have DC voltage at the motor brushes and all of the components check out fine in steps eight and nine, replace the pressure control assembly.

REPLACEMENT OF ELECTRICAL COMPONENTS

WARNING: Always unplug the electrical cord before servicing machine!

NOTE: Anytime the pressure control assembly, sensor, or both are replaced, perform the calibrations.

PRESSURE CONTROL ASSEMBLY (Electrical Control Board)

1. Unplug machine's power cord.
2. Remove eight screws (Fig. 13, Item 33) and lower the pressure control assembly.
3. Disconnect all leads from pressure control assembly.
4. Reassemble in reverse order.

SENSOR

1. Remove the screws (Fig. 13, Item 33) and lower the pressure control assembly.
2. Disconnect sensor lead from the board.
3. Unscrew sensor (Fig. 17 Item 11) from pressure control assembly using a 7/8" wrench.
4. Reassemble in reverse order. Use telfon tape on the sensor threads prior to reinstalling it into the pressure control assembly.

POTENTIOMETER

1. Lower pressure control assembly as described above.
2. Disconnect potentiometer lead from pressure control assembly.
3. Use a 1/16" allen wrench, loosen set screw in the potentiometer knob (Fig. 17, Item 14) and remove knob and spacer. (Fig. 17, Item 13).
4. Using a 1/2" wrench or deep socket, remove the nut from the potentiometer shaft assembly.
5. Pull entire potentiometer assembly out of the frame.
6. Replace in reverse order.

ON-OFF TOGGLE SWITCH

1. Lower the pressure control assembly as described above.
2. Disconnect the two wires on the toggle switch (Fig. 17, Item 4).
3. Use a 9/16" wrench to loosen the nut on the toggle switch shaft.
4. Reassemble in reverse order.

35 AMP CIRCUIT BREAKER

1. Lower pressure control assembly as described above.
2. Disconnect the two wires on the breaker (Fig. 17, Item 5).
3. Unscrew rubber boot (Fig. 17, Item 7) from breaker shaft.
4. Use 1/2" wrench to remove the bushing (Fig. 17, Item 6) from the breaker shaft.
5. Remove breaker from frame.

REPLACEMENT OF ELECTRICAL COMPONENTS

LIQUID CRYSTAL DISPLAY (LCD)

1. Ensure that the power switch is OFF and that the machine is unplugged.
2. Detach the pressure control assembly (Fig. 12, Item 301-318-99) from the frame by unscrewing the eight screws (Fig. 13, Item 111-037).
3. Disconnect the LCD lead from the the pressure control assembly.
4. Separate the LCD assembly from the frame by undoing the four screws (Fig. 18 Item 6)
5. Disassemble Items 1-6 (Fig 18)
6. Remove and replace LCD Display (Fig. 18 Item 3).
7. Reassemble in reverse order.

**NOTE: Do not over tighten the screw and nuts (Fig 18, Item 1 & 6).
This can warp the LCD and damage it.**

8. Perform "LCD Calibration Procedure". See page 25.

FIGURE 18

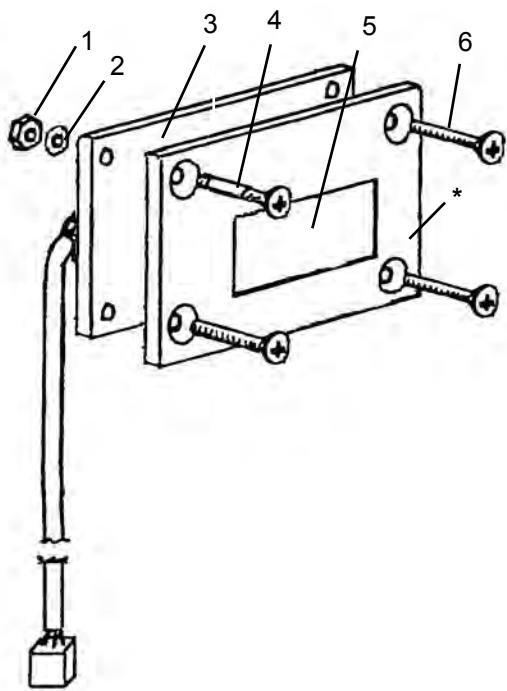
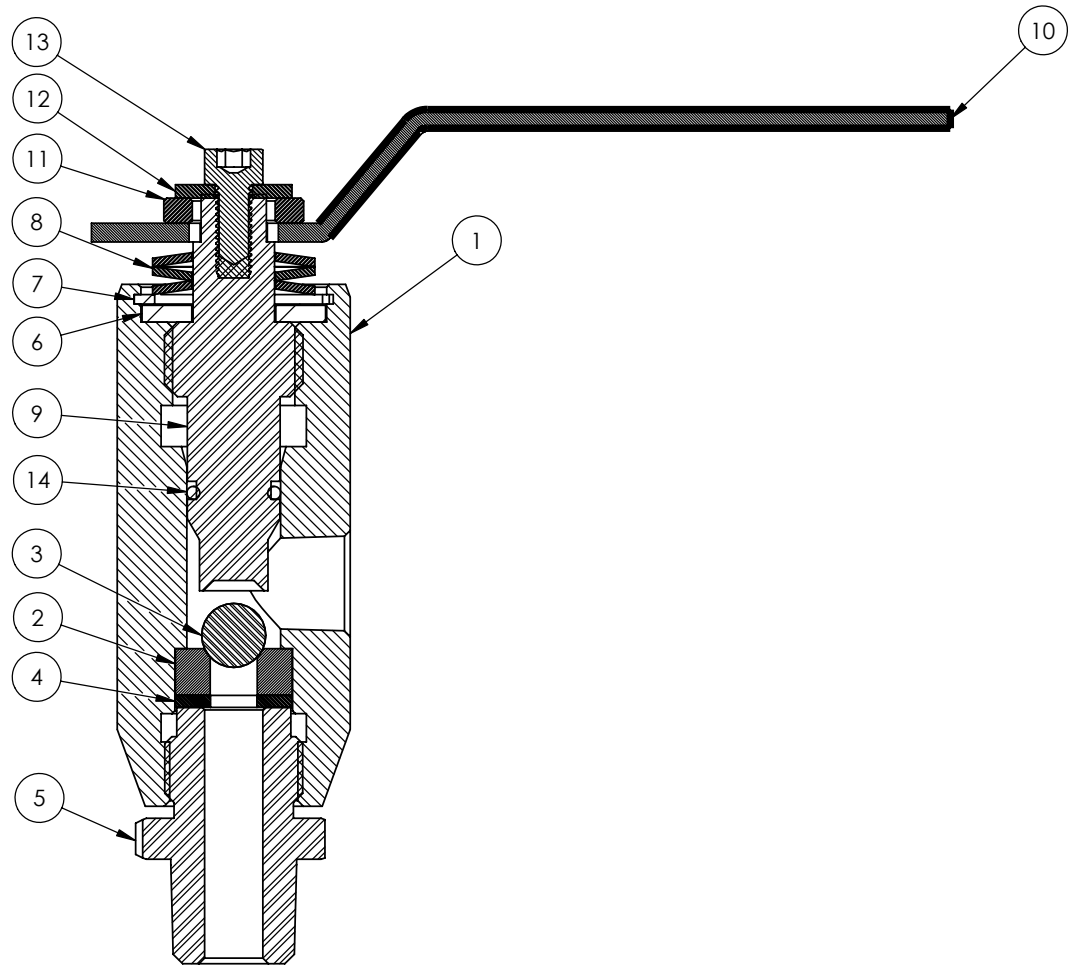


FIGURE 18 PARTS LIST		
ITEM #	PART #	DESCRIPTION
1	117-126	Nut (4)
2	120-046	Plastic Washer (4)
3	331-377	Display Board Ass'y
4	117-281	Spacer (4)
5	331-360	Window
6	100-362	Screw (4)
*		Frame

SL1500 Prime Valve Assly. - 119-083



PARTS LIST

ITEM #	PART #	DESCRIPTION	ITEM #	PART #	DESCRIPTION
1	115-073	Valve Body	8	115-064	Bellville Spring
2	115-029	Valve Seat	9	115-071	Valve Stem
3	115-069	Ball	10	115-303	Handle W/Label
4	115-012	Washer	11	115-072	Spacer
5	115-074	Inlet Fitting	12	115-063	Washer
6	115-067	Washer	13	117-046	Screw
7	115-065	Retaining Ring	14	115-068	O-Ring, Viton

AIRLESSCO ACCESSORIES

Quick Flush™

- The only clean water flushing system
- Cuts sprayer clean-up time in half!
- Connects garden hose to spray gun to backflush sprayer
- Includes "F" adapter to work with all brands of gun



Part # **170-005**



PAINT HOPPER

For use on small jobs where paint is kept in smaller than 5 gallon containers. Threads onto pick up tube of carry or LoBoy framed Airlessco sprayers.

331-775 6 Liter Paint Hopper



PUMP CONDITIONER

Should be used on piston pumps between uses to prevent paint from drying on the piston & causing packing wear.

010-001 Display of 48 - 1 oz. bottles
010-009 1 quart bottle
010-019 1 Gallon bottle

Case quantity: 12 on quarts, 4 on gallons



PAINT STRAINERS

Pre-filter your paint using strainer bags. One dozen per pack.

100-064 Used to cover suction filter
100-065 5 Gallon strainer



HOSE COVER

4 mil poly protects your airless hose from paint and abrasion damage. Comes in 1000' roll with perforations each 50'.

100-219 Hose Cover Roll
100-426 Case of 6 Rolls

HIGH PRESSURE AIRLESS HOSE

Strong yet flexible, for airless sprayers up to 3300 PSI



Part No:	Hose Description
100-012	3/16" Whip Hose, 4 Ft.
100-040	1/4" Whip Hose, 3 Ft.
100-204	1/4" Whip Hose, 5 Ft.
100-199	3/8" Whip Hose, 6 Ft.
100-011	1/4" Hose, 50 Ft.
100-023	3/8" Hose, 50 Ft.
100-037	1/2" Hose, 50 Ft.
100-010	1/4" Hose Connector
100-009	3/8" Hose Connector



STAY CLEAN™

Spray protectant for machine to prevent paint from sticking to it. Keeps your sprayer looking new for years!

114-030 20 oz. can, Case quantity: 12 cans

THROAT SEAL OIL

Used in the wet cup of a piston pump to prevent paint from drying on the piston & causing damage to the upper packing. Use with all piston pumps.

188-187 6 oz. Bottle
188-392 1 qt. Bottle

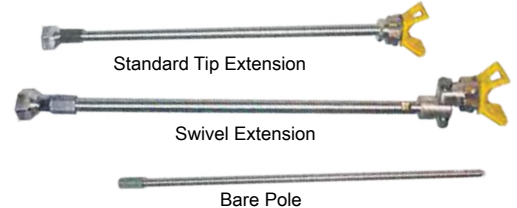


MagiCLEAN™

Safely removes paint from sprayers, hose, tips and guns.

100-658 Starter kit with 3 gal. MagiCLEAN, strainer basket & residue tray
100-659 Refill bottle for starter kit
100-666 Case of 12-8 oz. jars for cleaning tips, guards, and gun filters

XTEND-A-POLE™



STANDARD TIP EXTENSION, "G" Thread

032-170 6" Long
032-171 12" Long
032-172 18" Long
032-173 24" Long

SWIVEL EXTENSION, "G" Thread

032-184 36" Long

BARE POLE

Add Tip Extension or Swivel Extension to create desired length

032-053 24" Long
032-054 36" Long

SWIVEL "G" THREAD

032-035-55 7/8" x 14 Swivel

ADAPTERS



90° Pole to Gun Adapter
032-042

Gun Nut "F" Thread 11/16-16
032-010
 Gun Nut "G" Thread 7/8-14
032-011

"F" to "G" Gun adapter to attach Graco® tips to Airlessco guns.
032-012