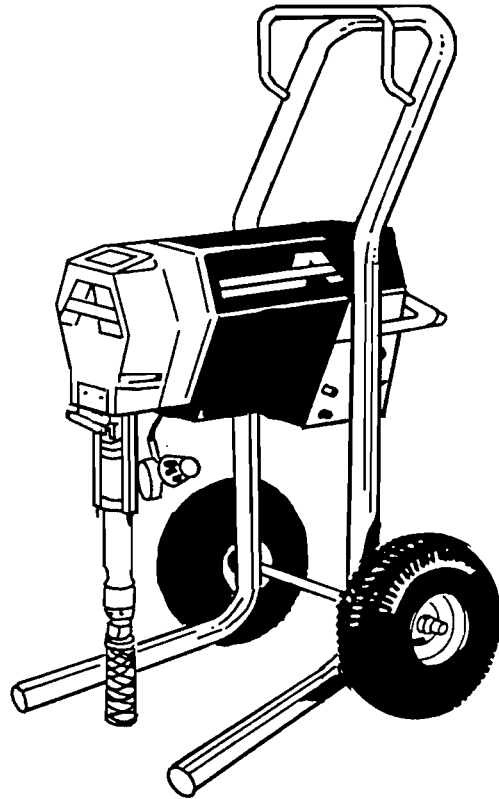


AIRLESSCO BY DUROTECH CO.®



WARNING: BEFORE DOING ANY SERVICE OR MAINTENANCE PROCEDURE, UNPLUG THE SPRAYER AND FOLLOW THE PRESSURE RELIEF PROCEDURE ON PAGE 6, TO REDUCE THE RISK OF AN INJURY, A FLUID INJECTION INJURY, AN INJURY FROM MOVING PARTS OR ELECTRIC SHOCK. ALL SERVICE PROCEDURES TO BE PERFORMED BY AUTHORIZED AIRLESSCO SERVICE CENTER ONLY.

OPERATION MANUAL AND PARTS LIST FOR 3600SL, 4100SL AND 5300SL

PO Box 8006, 5397 Commerce Ave. , Moorpark, CA, 93021 Tel: 805-523-0211 Fax: 805-523-1063
Subject to Change without notice.

Form No. 001-345 Rev. June 96

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NOTE: All service work must be performed by authorized factory trained service centers.

No modifications or alterations of any Airlessco equipment or any Airlessco part is allowed.

INTRODUCTION

AIRLESSCOS' SLOW STROKING DC POWERED PUMPS MODELS 3600SL, 4100SL & 5300SL

The AIRLESSCO SL SERIES of airless paint sprayers are a culmination of years of development work, resulting in a "New Class of Airless Sprayers."

Incorporated into the design is Airlesscos' Proven Slow Stroking Paint Pump, a new low speed gear system that's extremely quiet and a DC Motor that stays cool even when you run long extension cords.

The SL Series pumps' are severe duty pumps, designed to meet the needs of todays professional painting contractor.

SPECIFICATIONS

MODEL 3600 SL

Pressure 3000 PSI
Output 0.7 GPM
Tip Size - 1 Gun up to .023

MODEL 4100 SL

Pressure 3000 PSI
Output 0.8 GPM
Tip Size-1 Gun up to .026
2 Guns up to .017

MODEL 5300SL

Pressure 3000 PSI
Output 1.0 GPM
Tip Size-1 Gun up to .031
2 Guns up to .019

WARNING

Prior to starting, read, understand and observe all safety precautions & warnings on page 4, 5, 6 & 7.

FLUSHING READ PRIOR TO USING YOUR SPRAYER

1. New sprayer

Your new Airlessco Sprayer was factory tested in an Anti-freeze 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.

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

Oil-base paint: Flush with mineral spirits.

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 spirit and motor oil (half & half). Shut off the sprayer, follow Pressure Relief Procedure on page 6 to relieve pressure and make sure prime valve is left 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 .

HOW TO FLUSH

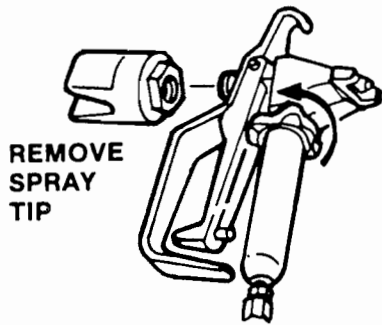


FIG. 1



FIG. 3

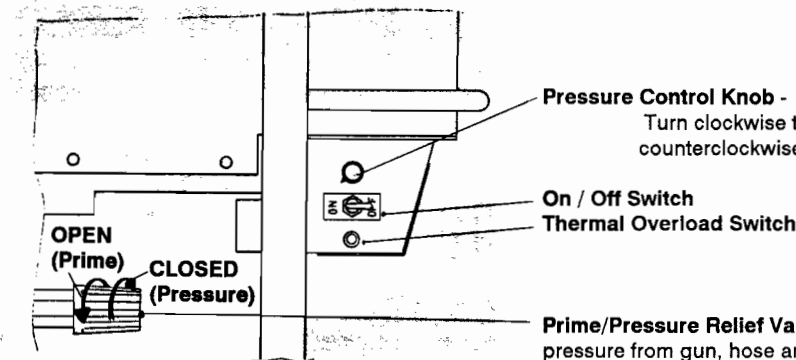


FIG. 2

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

On / Off Switch
Thermal Overload Switch

Prime/Pressure Relief Valve (Prime/PR Valve)- used to relieve pressure from gun, hose and tip and to prime the unit.

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 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 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 prime the pump.
12. 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**, force the solvent from the pump and hose. Engage the gun safety latch. Refer to "Storage" procedure on page 1.

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.

13. Whenever you shut off the sprayer follow the Pressure Relief Procedure Warning on Page 6.

SETTING UP

1. Connect the Hose and Gun

- Remove the plastic cap plug from the outlet tee and screw an accessory, conductive or grounded 3000 PSI spray hose onto fluid outlet.
 - Connect an accessory airless 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 as they are made to self seal.
Use thread seal on tapered male threads only.

2. Fill the Packing Nut/Wet Cup 1/3 full with Airlessco Throat Seal Oil (TSO) supplied. (Fig 4)

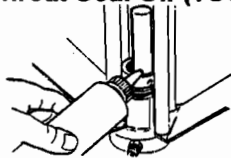


FIG. 4

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

4. Grounding

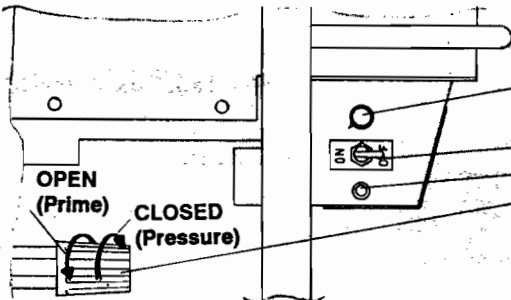
WARNING

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 on page 6.

5. Flush the sprayer as per "Flushing" - "New Sprayer" on page 1 and "How to Flush" on page 2.

SETTING UP AND STARTING

1. LEARN THE FUNCTIONS OF THE CONTROLS. FIG. 5



Pressure Control Knob - used to adjust pressure only. Turn clockwise to increase pressure & counterclockwise to decrease pressure.

On /Off Switch

Thermal Overload Switch

Prime/Pressure Relief Valve - used to relieve pressure from gun, hose & tip; and used to Prime machine. *Learn & follow Pressure Relief Procedure on Page 6 of this manual.*

2. Prepare the Material

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

3. Starting the Sprayer (see Fig.5 above)

- Prime Valve must be open - in priming position.
- Pressure control knob must be in Low Pressure position.
- Turn the motor ON/OFF switch to ON.

WARNING

To stop the unit in an emergency, turn motor off. Then relieve the fluid pressure in the pump and hose as instructed in the Pressure Relief Procedure on Page 6.

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 pumps' packing.

4. Prime the pump.

- Be sure gun safety latch is engaged.
- After the pump is primed, close the prime valve by turning it all the way to "close" position and tighten firmly so that no fluid will by-pass.
- 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. 3. Page 2.

CONTINUED NEXT PAGE

SETTING UP AND STARTING CONTINUED

4. Adjusting the Pressure

- a. Turn the pressure control knob clockwise to increase and counterclockwise to decrease pressure.
- b. 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.

- 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.

5. Cleaning a Clogged Tip

WARNING

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.

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

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

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

WARNING

Clogged standard (flat) tip - clean only after the tip is removed from the gun. Follow Pressure Relief Procedure Warning on Page 6.

6. When Shutting Off the Sprayer

- a. Whenever you stop spraying, even for a short break, follow the Pressure Relief Procedure Warning on page 6.
- b. Clean the tip and gun as recommended by your separate gun instruction manual.
- c. Flush the sprayer at the end of each work day if the material you are spraying is waterbased, or if it could harden in the sprayer overnight. See "Flushing page 1 & 2. Use a compatible solvent to flush, then fill the pump and hoses with an oil-based solvent such as mineral spirits.

WARNING

Be sure to relieve pressure in the pump after filling with mineral spirits.

- d. For long term shutdown or storage, refer to page 1.

WARNINGS

WARNING: HIGH PRESSURE SPRAY CAN CAUSE EXTREMELY SERIOUS INJURY.

- * Handle as you would a loaded firearm! Learn and follow the **PRESSURE RELIEF PROCEDURE ON PAGE 6**. Observe all warnings.
- * Read all instruction manuals, tags, warnings, users guides and labels on machine before operating equipment. Order new labels if unreadable.
- * **SAFETY IS THE RESPONSIBILITY OF THOSE WHO OPERATE THIS EQUIPMENT.**

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 & have him read the following **NOTE TO PHYSICIAN.**

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 reconstruction hand surgeon may be advisable.

WARNINGS CONTINUED

High pressure spray can cause extremely serious injury. Observe all warnings. This sprayer is for professional use only.

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 will penetrate through material and into the hand.

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

ALWAYS have gun tip guard in place when spraying.

ALWAYS lock 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**, as shown on page 6, before cleaning or removing the spray tip or servicing any system equipment.

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

Tighten all fluid connections 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.**

* 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 ON 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 material in spraying area.

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

Spraying area must be at least 20 ft. 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 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 & tip guard to clean **AFTER** pump is turned off and the pressure is relieved by following the **PRESSURE RELIEF PROCEDURE.**

TOXIC FLUID HAZARD

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 fluids according to manufacturer, local, state & national guidelines. *ALWAYS* wear protective eyewear, gloves, clothing and respirator as recommended by fluid manufacturer.

WARNINGS CONTINUED ON NEXT PAGE.....

WARNINGS

PRESSURE RELIEF PROCEDURE

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

1. Engage gun safety latch.



2. Turn motor off and unplug from electrical outlet.



3. Turn Prime Valve as marked open (priming), to relieve fluid pressure.



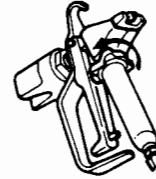
4. Disengage safety latch and trigger gun to relieve residual fluid pressure.



USE MINIMUM PRESSURE

Hold metal part of the gun in contact with grounded metal pail.

5. Re-engage gun safety latch



NOTE: Leave prime valve OPEN when machine is stored.

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, VERY SLOWLY loosen the tip guard retaining nut or hose end couplings to relieve pressure gradually, then loosen completely. Now clear the tip, gun or hose obstruction.

HOSES

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 cannot 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 & 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. Air Hoses; use only grounded hoses.
3. Fluid hose: 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.

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 on page 6.

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 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 & objects being sprayed are properly grounded. Always ground sprayer, paint bucket and object being sprayed. See grounding on page 6 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, 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 process. 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.

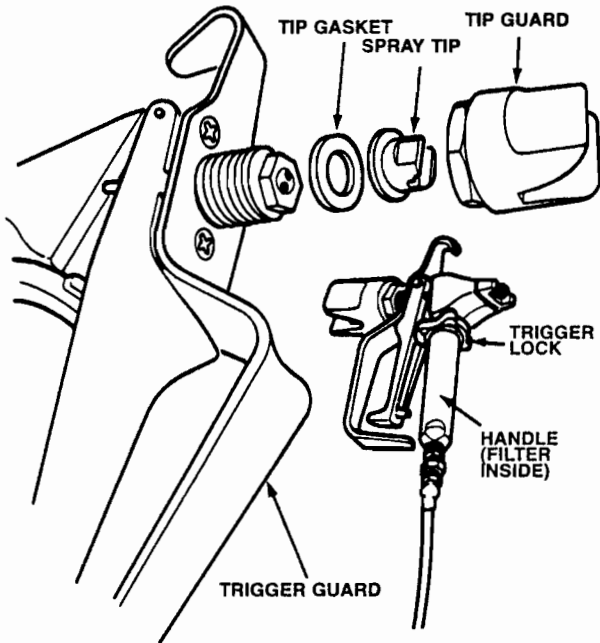
NEVER use cleaning solvents with flash points below 140 degrees F. Some of these are: acetone, benzene, ether, gasoline, naphtha. Consult your supplier to be sure. NEVER SMOKE in the spraying/cleaning area.

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 on pg. 6. 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

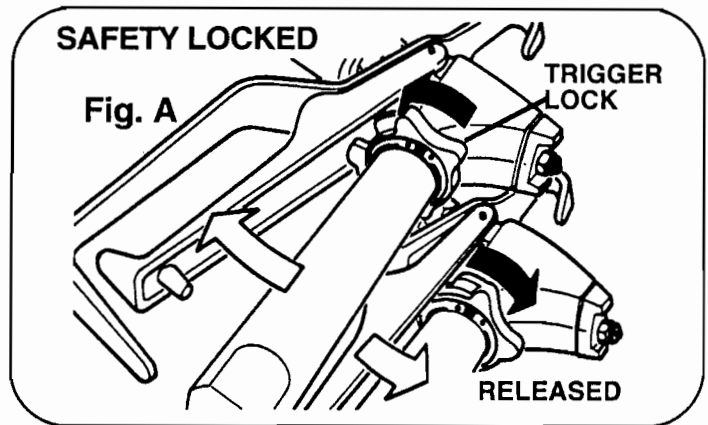


SPRAY GUN

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

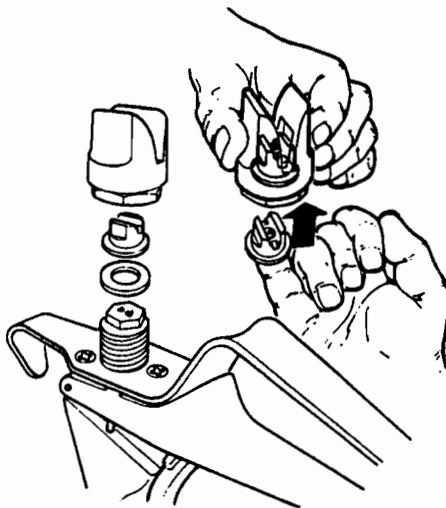
*The trigger lock should always be set when the gun is not being triggered.

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

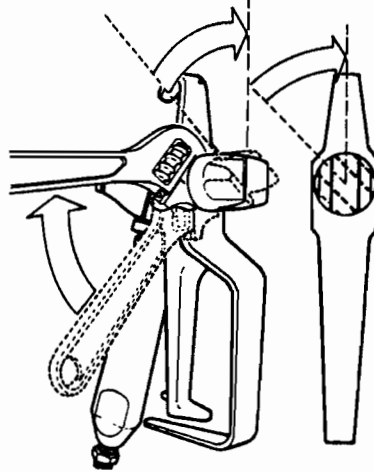


SPRAY TIP ASSEMBLY

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.



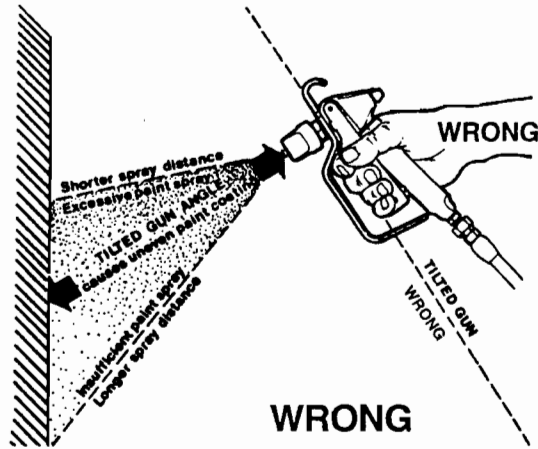
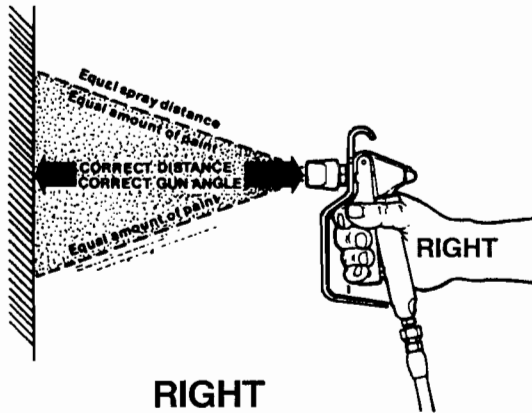
Insert tip guard. Place tip gasket in tip guard behind spray tip. Thread tip guard "assembly" onto spray gun, finger tight with "ears" on a 45° angle to vertical (see figure). When the tip guard nut is wrenched tight, the tip guard "ears" and spray tip pattern will be aligned for vertical spray pattern.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



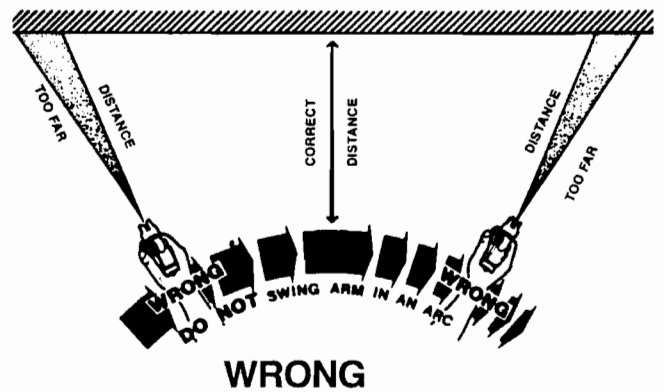
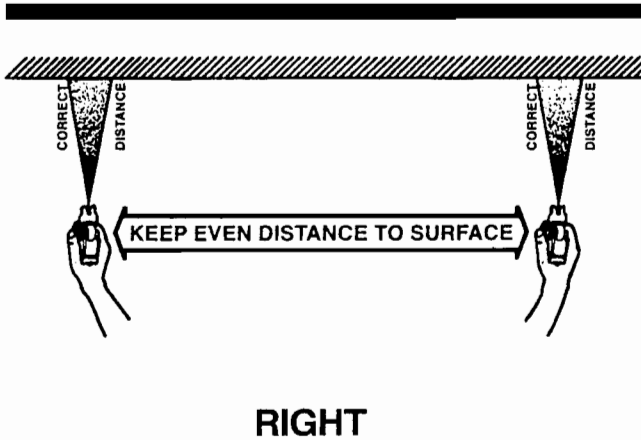
SPRAY TECHNIQUE

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.

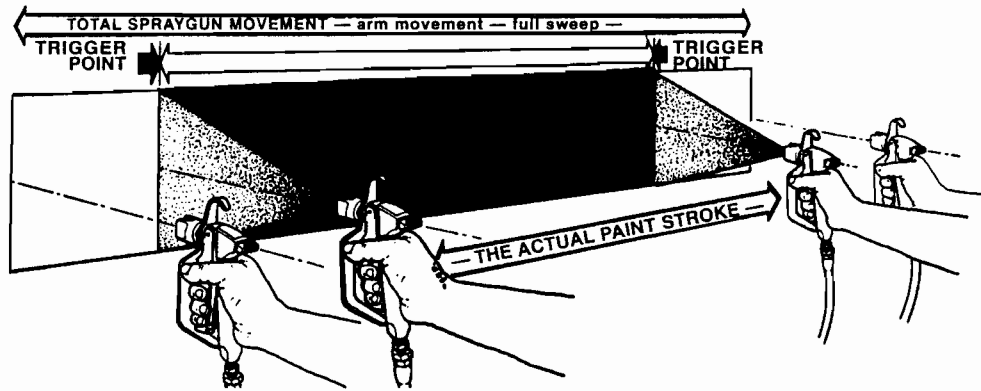


Move the gun at a steady rate in order to apply a good coverage. The wet coat should be just under the thickness at which a run or sag will occur. Slow gun movement or gun held too close will result in an overly wet or thick wet or thick coat coverage that is likely to run or sag.

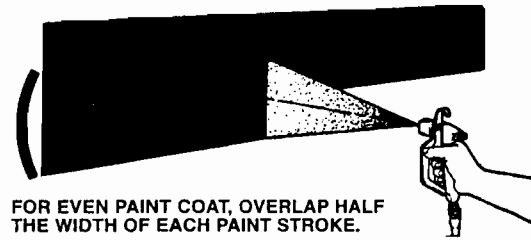
The closer the spray gun is held to the work, the thicker the paint is deposited and the faster the gun must be moved to prevent sags and runs. Holding the gun too far from the work will cause excessive fog, overspray, and a thin and grainy coat.

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 CONTINUED

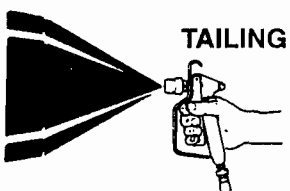


It is important to “trigger” the gun **after** gun movement (arm movement) has started and release trigger (shut gun off) **before** gun movement ends. Gun movement is always longer than actual paint (spray) stroke. In that manner, even blending and uniform paint coat thickness is achieved over the entire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

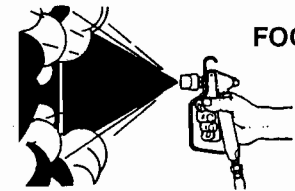
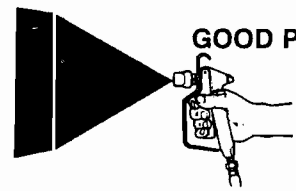


Spray with uniform strokes from left to right and from right to left, holding stroke speed, distance, lapping, and triggering as uniform as possible.

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

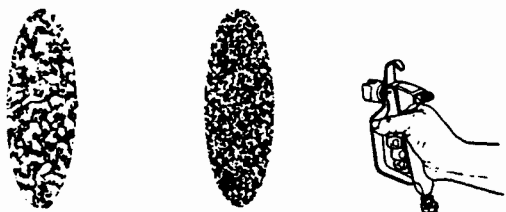


Adjust pressure control knob so that paint is atomized from the spray gun. Insufficient pressure will result in “tailing.”



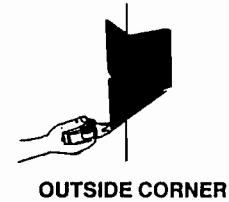
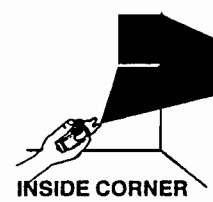
Too much pressure will result in excess fog and overspray, excessive tip wear, and increased sprayer wear and tear.

POOR PATTERN GOOD PATTERN



Always use the lowest possible pressure to obtain desirable results.

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



“Inside” and “outside” corners can be sprayed. Aim the spray gun toward the center of the corner. The spray pattern is divided in half, and the edges on the spray pattern on both walls are the same.

AIRLESS SPRAY GUN OPERATION

DEFECTS

CAUSE

CORRECTION

Coarse spray	Low pressure	Increase the pressure
Excessive fogging (Overspray)	High pressure	Reduce the pressure to satisfactory pattern distribution
	Material too thin	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 okay, try tip in same nozzle group)
Too much material	Nozzle too large 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 and 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	Clean screen
	Coarse pigments	Use coarse screen if orifice size allows
	Poorly milled pigments (paint pigments glocculate) cover screen. Incompatible paint mixture and thinners	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

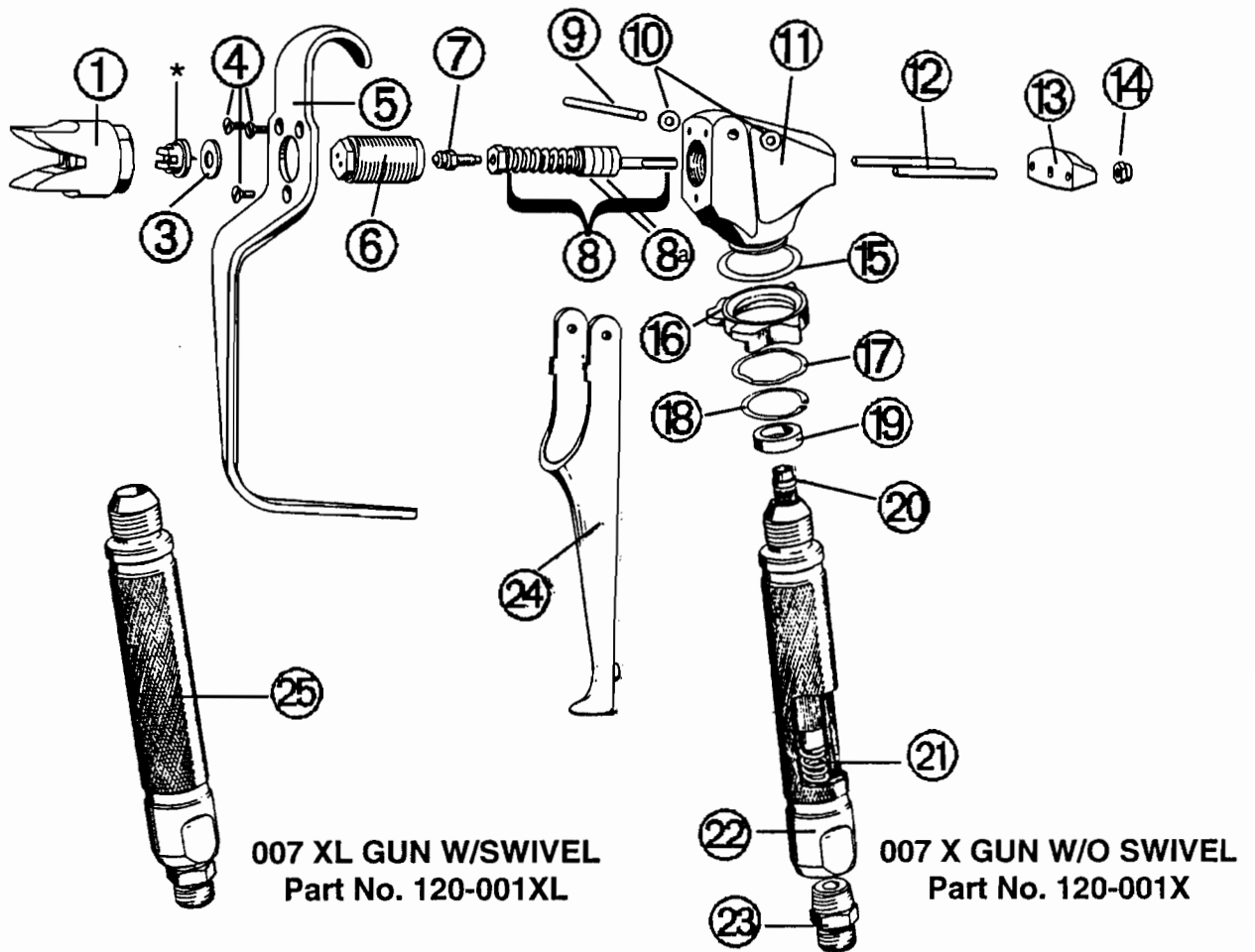
Good, Full Pattern



Spotty Pattern—
Increase Pressure



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 $1/32$ " 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 $7/8$ " open end wrench. Remove spray tip and washer (3).
2. Unscrew valve seat (16) with $1/2$ " 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 $3/16$ " 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 $1/8$ turn expanding the Teflon seals against body of gun.

◆ CAUTION ◆

Do not tighten beyond $1/8$ 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 PRODUCTION GUN

Part No. 122-001 DE

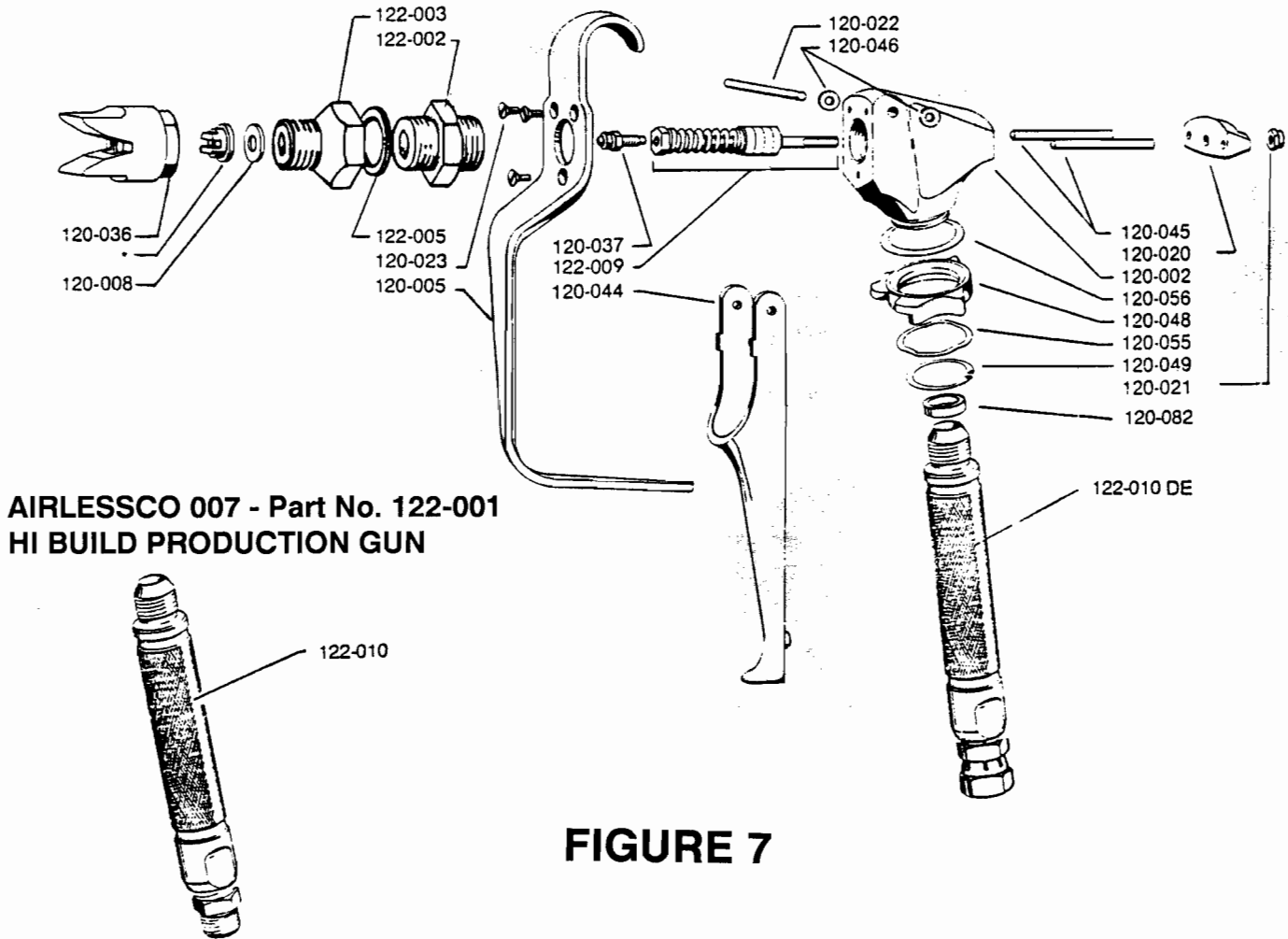


FIGURE 7

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.

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).

TIP NUMBER	ORIFICE SIZE	FAN WIDTH	LATEX			OIL BASE		FINE LACQUER & STAINS	STAINS LARGE AREAS	
			FLAT AREAS	LARGE FLAT	TRIMS	SMALL AREAS	LARGE AREAS			
311	.011	6-8"						X		PAINT MUST BE STRAINED USE FINE GUN FILTER 120-004F 120-090FX
411	.011	8-10"						X		
511	.011	10-12"						X		
413	.013	8-10"				X			X	
513	.013	10-12"				X			X	
613	.013	12-14"				X			X	
415	.015	8-10"					X			
515	.015	10-12"	X				X			
615	.015	12-14"	X				X			
317	.017	6-8"			X					
417	.017	8-10"	X							
517	.017	10-12"	X	X						
617	.017	12-14"	X	X						
318	.018	6-8"	X		X					
418	.018	8-10"	X	X						
518	.018	10-12"	X	X						
618	.018	12-14"		X						
521	.021	10-12"		X						
621	.021	12-14"		X						
721	.021	14-16"		X						

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.

LARGER SIZES AVAILABLE

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. The average life of a spray tip is 100 gallons of paint before tip replacement is required.

Use the chart above for selecting proper spray tips to meet your job needs.

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 cup 1/3 full 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. Over-tightening will damage the packings.

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
There is spitting from the gun.	The fluid supply is low or empty.	Refill the supply container
	Air entrained in the fluid pump of hose.	Check for loose connections on the siphon assembly, tighten, then re-prime 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 21.
The motor operates, but the paint pump doesn't.	The pressure setting is too low.	Increase the pressure. See page 4.
	The displacement is seized by dried paint.	Service the pump. See pages 20,21,22
The motor and displacement pump operates, but paint pressure is too low, or none.	The pressure setting is too low.	Increase the pressure, see page 4, step 4.
	The tip or gun filter is clogged.	Remove the tip and/or filter and clean them.
	Tip is worn.	Replace Tip.
	The fluid displacement pump filter (if used) is clogged.	Clean the filter.
The displacement pump operates, but the output is too low on the downstroke or both strokes.	There is a large pressure drop in the fluid hose.	Use a large diameter hose.
	The lower check valve ball check is not seating properly.	Service the lower check valve ball check See page 20.
The displacement pump operates, but the output is too low on the upstroke.	The upper check valve ball is not seating properly.	Service the upper check ball valve per page 20.
	The lower packings are worn or damaged.	Replace the packings. See Page 21.
The displacement pump operates but the pressure is too low.	Tip too large.	Use smaller tip.
	Long Extension cord causes power drop.	Use less extension cord.
Motor stops.		Reset overload switch.

IF NONE OF THE ABOVE CORRECT THE PROBLEM, PLEASE TAKE YOUR UNIT TO AN AUTHORIZED AIRLESSCO REPAIR CENTER.

SL SERIES TROUBLESHOOTING - Machine Does Not Start

<u>CAUSE</u>	<u>SOLUTION</u>
Unit Control Settings Incorrect	STEP 1: Ensure ON/OFF switch is "ON" and the Pressure Control Knob is in maximum CW position.
Check Reset Button	STEP 2: If reset button has popped out, wait approximately 30 mins. for machine to cool down. To reset button, push in. Button will remain inside the housing.
No Power Source	STEP 3: Check power source (Fuse, Circuit Breaker & Power Cord).
Electrical Board, Circuit Breaker or ON/OFF Switch is defective.	STEP 4: Remove electrical control box cover. Check for light on electrical board. If green light is not shining, check for 115 VAC between terminals L1 and L2. If 115 VAC is not available, check for voltage loss at Circuit Breaker or ON/OFF Switch and replace if defective. If 115 VAC is available at L1 and L2 and green light is out the Electrical Board is defective and must be replaced.
Sensor Defective	STEP 5: If light is on, unplug machine and disconnect Sensor lead from Electrical Board. Plug unit in. If unit starts, the sensor is bad. Replace as per "Replacement of Sensor" procedure, Page 30.
Potentiometer Ass'y Defective	STEP 6: With power cord unplugged, disconnect potentiometer Assy. (Item 8, Fig. 17) from Electrical Board. Using an ohmmeter measure resistance between "Blk" and "Red" terminals on "POT" lead. Resistance must be within 8 - 12 K-ohms. Measure resistance between "GRN" and either "RED" or "BLK" lead while turning pressure control knob. Resistance should change value from zero to the resistance measured between the "BLK" and "RED" leads. If above readings are not obtained, replace POT Assembly.

CONTINUED ON NEXT PAGE

SL SERIES TROUBLESHOOTING - Machine Does Not Start

CAUSE

SOLUTION

Pressure Calibration
Trimpot Setting
Incorrect or Sensor
Defective

STEP 7: Ensure Prime/Pressure Relief Valve is in the "Prime" position. Unplug sensor lead from electrical board, then turn unit ON and Pressure Control Knob to maximum position (CW). Using a small insulated screwdriver, turn the Pressure Calibration Trimpot on Electrical Board CCW to its limit (will click when reaches limit). If unit does not start, turn the trimpot CW to its limit (will click again). If unit starts during this adjustment procedure, unplug unit and reconnect the Sensor lead. Plug unit in, if unit does not run, the sensor is defective and should be replaced. If unit continues to run, stop and set pressure as per instruction under "Pressure Calibration", procedure, page 31.

Electrical Board
Defective

STEP 8: If the unit does not start with the sensor disconnected after the above adjustments in both directions, the electrical board is defective. Replace as per "Replacement of Electrical Bd.", page 30.

IMPORTANT: If either the sensor, electrical board or both are replaced, you must always reset the pressure as per "Pressure Calibration" procedures, page 31.

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 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. Remove the two snap rings and slip the sleeve of the coupling down and remove both coupling halves. This will disconnect fluid pump from the connecting rod.
5. Unscrew the two tie rod locknuts.
6. Pull the pump off the tie rods.

FLUID PUMP 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. Make sure that spacer tubes (301-048) are in place.
3. Connect connecting 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 (100-328) and screw locknuts with washers on loosely.
5. Tighten the tie rod locknuts evenly and lightly crosswise and retighten to 30 - 40 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 the packing set collar, just tight enough to stop leakage, but no tighter. Fill the wet cup of the packing nut 1/3 full with TSO.
7. Start the pump and operate it slowly (at low engine/motor speed) to check the tie rod for binding. Adjust tie rod locknuts if necessary to eliminate binding.

PAINT PUMP AND DRIVE ASSEMBLY PARTS LIST - REFER TO PAGES 22 & 26.

SERVICING UPPER AND LOWER CHECK VALVES

LOWER CHECK VALVE (SEE FIG. 8 & 10)

1. Screw the lower check valve nut (187-018) out of the pump housing (187-313) containing intake seat support (187-017).
2. Remove the intake seat (187-065), O-ring (187-034), 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 PN 187-028 is available in the following materials:
 Viton for waterbase paint - letter "V" after part no.
 Teflon for other fluids - letter "T" after part no.

4. Clean inside of pump housing (187-313).
5. Reassemble the valve and screw it onto the pump housing if no further pump service is needed.

PISTON-ROD, UPPER CHECK VALVE (SEE FIG. 8, 10, 14)

1. Stop piston rod in middle of it's stroke. Remove retaining rings (189-048).
2. Slip the sleeve (189-047) off the coupling halves (189-046) and remove both coupling halves. This will disconnect piston rod from pump drive.
3. Screw the lower check valve nut (187-018) off the pump and remove lower check valve.
4. Loosen the packing nut and push the piston rod down and out of the housing.
5. Place rod holder Part No. 187-248 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) out of rod, remove "O"ring (187-033T), seat (187-044) and ball (115-022) out of the piston rod (187-311).

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

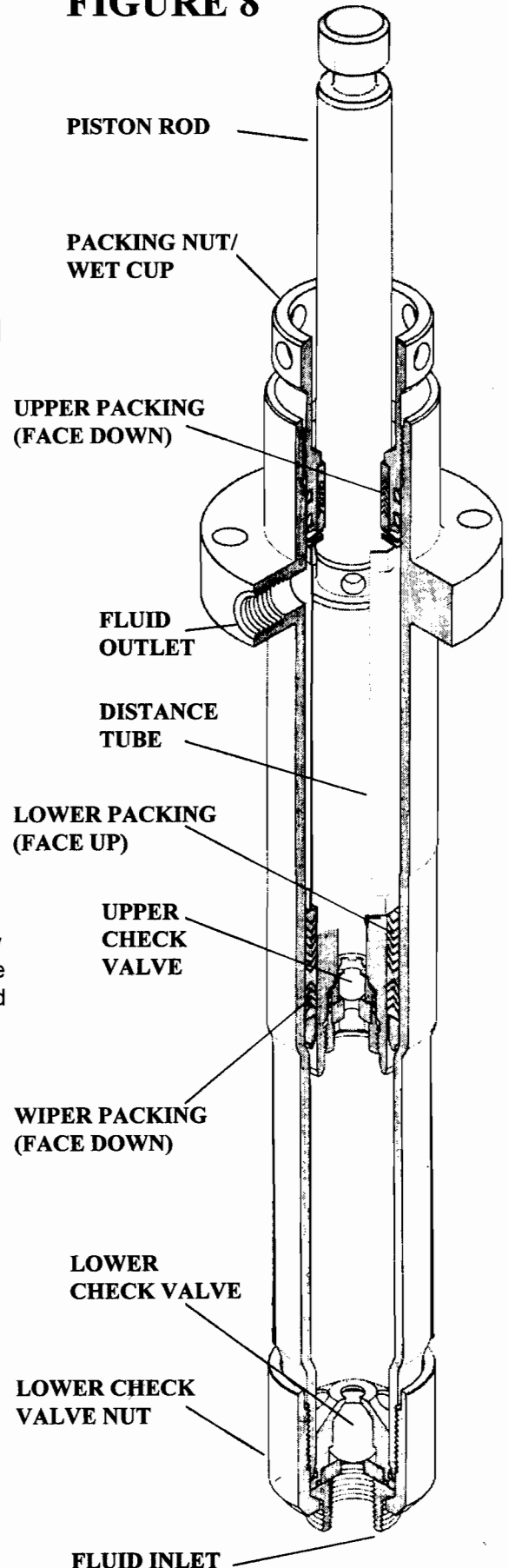
6. Clean all parts and inspect them carefully for wear or damage. Inspect the outside of the piston rod for scoring or wear. Replace these parts if needed. A worn piston rod will cause premature wear of packings.
7. Install parts back into piston rod as per Fig. 10, pg. 22 VIEW A as shown.

Note: Before installing discharge seat support (187-021), place two drops of loctite No. 242 (blue) on threads before assembling.

8. After installation and tightening of discharge seat support, check to ensure ball stop (PN 187-022) is properly installed in piston rod and has not fallen into piston bore. Check by pushing on the ball and feeling a positive stop against the ball stop.

NOTE: Piston rod can be replaced more economically through the ExchangeProgram.

FIGURE 8



V-PACKINGS REPLACEMENT

1. Remove the fluid pump as per the "Fluid Pump Disconnect" instructions on page 19.
2. Unscrew and remove the lower check valve per instructions on page 20.
3. Unscrew & remove the packing nut (187-046). Push the piston 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 (187-313) empty. Utilizing tool (PN 187-249) the complete packing set & piston can be removed quickly and easily.
4. Disassemble and clean all parts for reassembly. Discard old packings, but retain old glands for reuse.

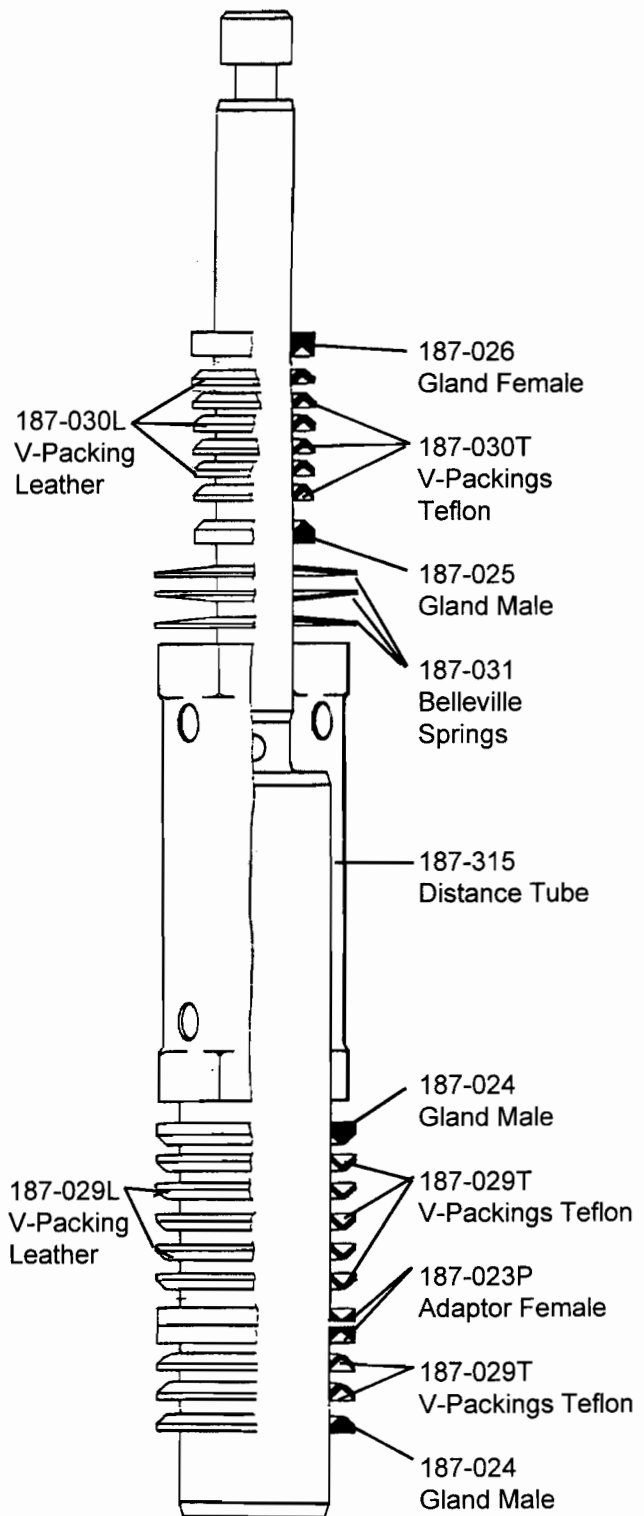
REASSEMBLY

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. 9 in the 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.(alternating Teflon & Leather)
 - e. Upper male gland (184-024)
 - f. Slide on distance tube (187-315).
 - g. Three Belleville Spring (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 (alternating Teflon & Leather)
 - j. Female Gland (187-026)
 - k. Slide on the V-Packing holder (187-047)over upper packings.
8. Lubricate inside of cylinder & outside of packings then slide complete assembly into the pump casing (187-313). Thread packing nut (187-046) into cylinder and tighten (hand tight 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 leaks.

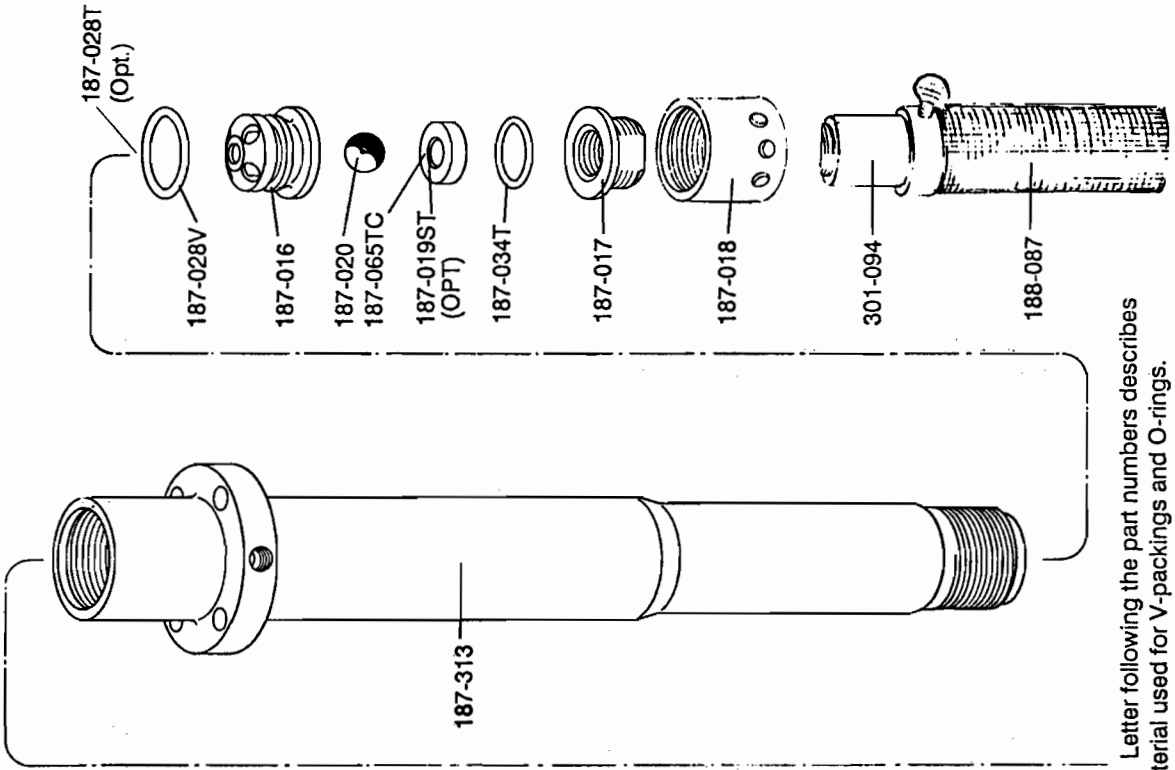
V-PACKING KIT - TEFLON AND LEATHER (187-040)

Note: 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 paints with high solvents.

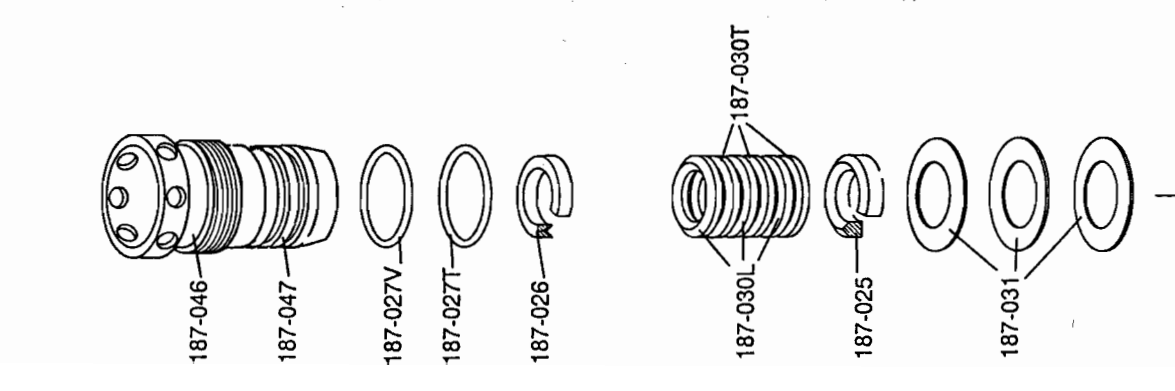
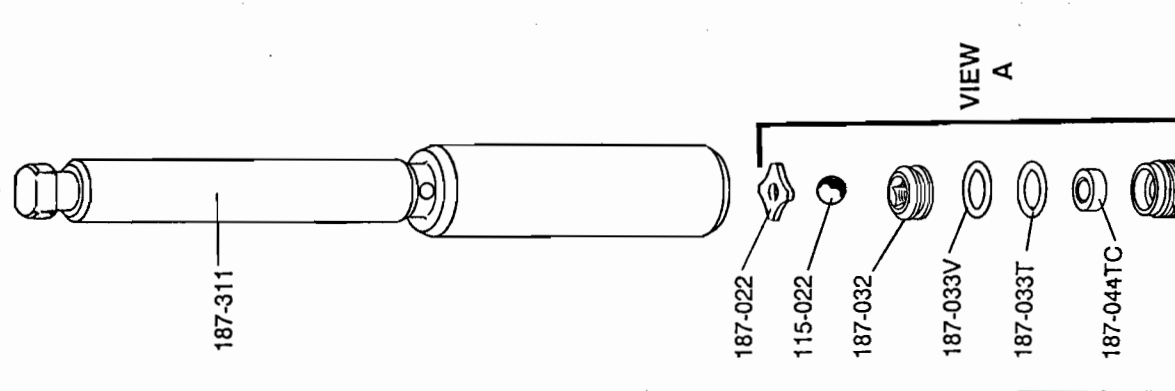
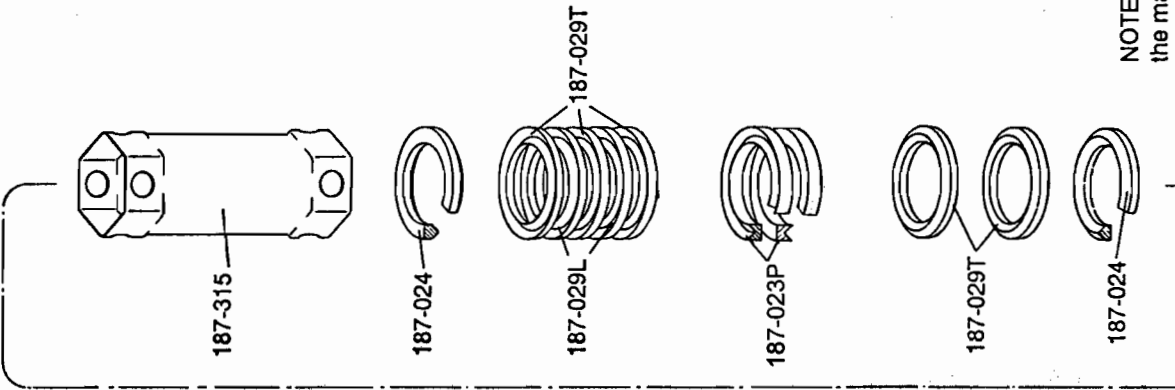
FIGURE 9



FLUID PUMP - 187-310 FIGURE 10



NOTE: Letter following the part numbers describes the material used for V-packings and O-rings.
 L - Leather
 T - Teflon
 V - Viton
 P - Plastic



PRIME VALVE AND MANIFOLD ASSEMBLY

FIGURE 11

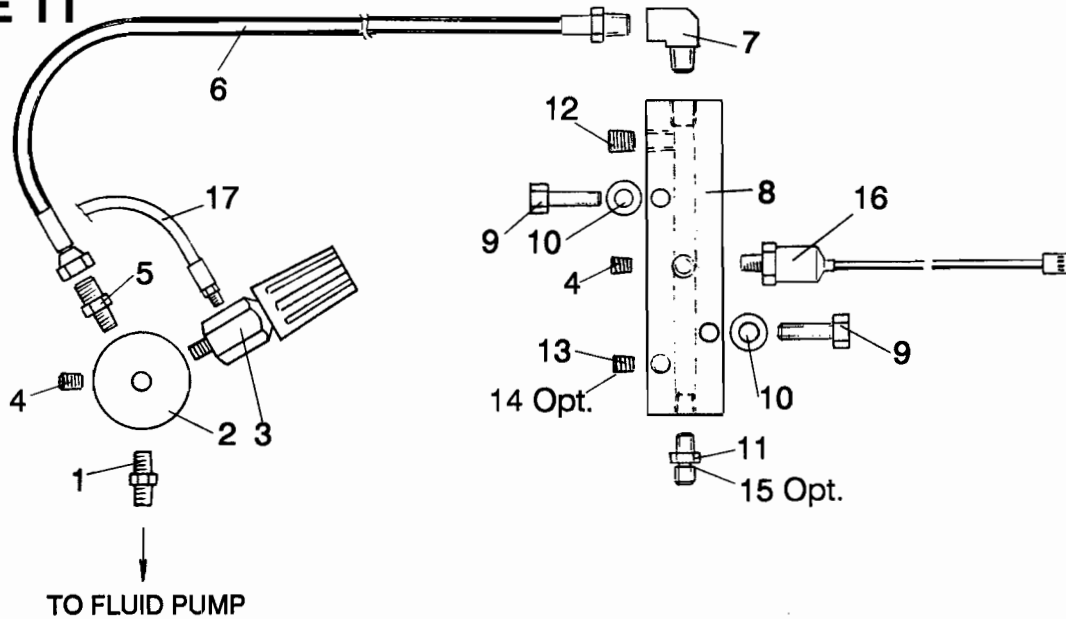


FIGURE 11 PARTS LIST

ITEM #	PART NO.	DESCRIPTION	ITEM #	PART NO.	DESCRIPTION
1	100-070	Nipple 1/4NPT	10	140-029	Washer 5/16 (2)
2	301-260	Manifold	11	115-019	Hose Conn, 1/4 NPSxNPT
3	331-050	Prime/Pres. Relief Valve	12	100-129	Plug 3/8 NPT
4	100-028	Plug 1/4 NPT	13	100-028	Plug 1/4 NPT
5	100-033	Hose Conn. 3/8NPSx1/4NPT	14	115-019	Hose Conn 1/4 NPSxNPT
6	301-257	Whip 3/8 x 15.5L	15	100-033	Hose Conn 3/8 NPS x 1/4NPT
7	169-013	Elbow 90, 3/8 NPT	16	331-073A	Sensor Ass'y
8	301-253	Manifold	17	301-314	Bypass Hose Ass'y
9	100-345	Screw 5/16-18x1 (2)			

SERVICING PRIME/PRESSURE RELIEF VALVE

SEE FIGURE 12

1. If fluid leaks from around Valve Body and the Knob Assembly, O-Ring, (9) needs to be replaced as follows:

- a. Remove Retaining Ring, (7). (See Fig. 13.) Unthread Knob Assembly (4) from Valve Body (13).

- b. Pull Shaft (8) out of Valve Body.

- c. Replace O-Ring. Ensure Items 10, 6, 5, and 3 are in place.

- d. Lubricate threads of Valve Body with multipurpose lube and reassemble in reverse order.

2. If Prime Valve is bypassing through the Prime Return Hose in the Pressure position, service Prime/P.R. Valve by installing Repair Kit (Part No. 331-211) as follows:

WARNING

DO NOT ADJUST SET SCREW (2) to stop bypassing without installing Repair Kit first. INSTALLING REPAIR KIT IS TO BE ACCOMPLISHED BY CERTIFIED WARRANTY CENTER ONLY!

- a. Remove Prime/P.R. Valve from unit with a 5/8" wrench by unthreading Seat Holder (12) from Manifold.

- b. Remove Seat Holder (12) from Valve Body (13).

- c. Remove old Seat (11) and O-Ring (16) and replace with new parts.

- d. Continue to disassemble Prime Valve as per steps 1.a. and 1.b. above.

- e. Replace O-Ring (9).

- f. Thread Seat Holder into Valve Body, two threads only. Place Loctite No. 242 on exposed threads of Seat Holder and thread into Valve Body. Torque to 40 ft.-lbs.

- g. Place new Ball into Valve Body. Lubricate O-ring and insert Shaft with Spring, Belleville Springs and guide back into Valve Body.

- h. Lubricate threads of Valve Body and thread Knob Assembly onto Valve Body. Replace Retaining Ring.

- i. Place Teflon tape on threads of Seat Holder and install Prime/P.R. Valve back onto Manifold.

— IMPORTANT —

This Prime/P.R. Valve serves also as a SAFETY VALVE by bypassing fluid back through prime hose if unit over-pressurizes. When Prime/P.R. Valve is serviced by placing Repair Kit No. 331-211 in Valve, the Prime/P.R. Valve MUST BE READJUSTED BY A CERTIFIED WARRANTY CENTER.

3. Adjust the Prime/P.R. Valve by following the below procedures:

- a. Connect 5000 psi pressure gauge on output of pump between hose and gun. Use 50 feet of ¼" Airless Hose and a .017 tip in gun. Place Suction Assembly into large container of clean water and Coro Chek.

- b. Pressurize the pump. With Pressure Control Knob at maximum position, confirm pressure is at 3000 psi ± 200 psi.

SERVICING PRIME/PRESSURE RELIEF VALVE

If pressure is not within limits, set pressure as per **"Pressure Calibration"** Procedure, Page 31.

c. Remove Label Cover (1) from back of Prime/P.R. Valve. Have unit in Pressure mode at 3000 psi. The unit's motor should have shut off at this point and holding at 3000 psi of pressure.

d. Insert $\frac{3}{16}$ " Allen Wrench into Set Screw (2). Turn CCW until Prime Valve starts bypassing back into bucket and motor is running continuously. At this point, turn Set Screw slowly CW until the Pressure Gauge reads 2800 psi of pressure.

AT THIS POINT, TURN SET SCREW ONE-HALF TURN CW AND STOP. This adjustment procedure will set the Prime/P.R. Valve to unload at approximately 4200 psi, providing a safety feature in case the unit inadvertently pressurizes to higher than normal operating pressures.

e. Place new Label on back of Valve.

WARNING

WHEN BALL, SEAT OR COMPLETE REPAIR KIT IS INSTALLED IN PRIME/P.R. VALVE, THE PRESSURE MUST BE RESET ON PRIME/P.R. VALVE BY CERTIFIED WARRANTY CENTER!

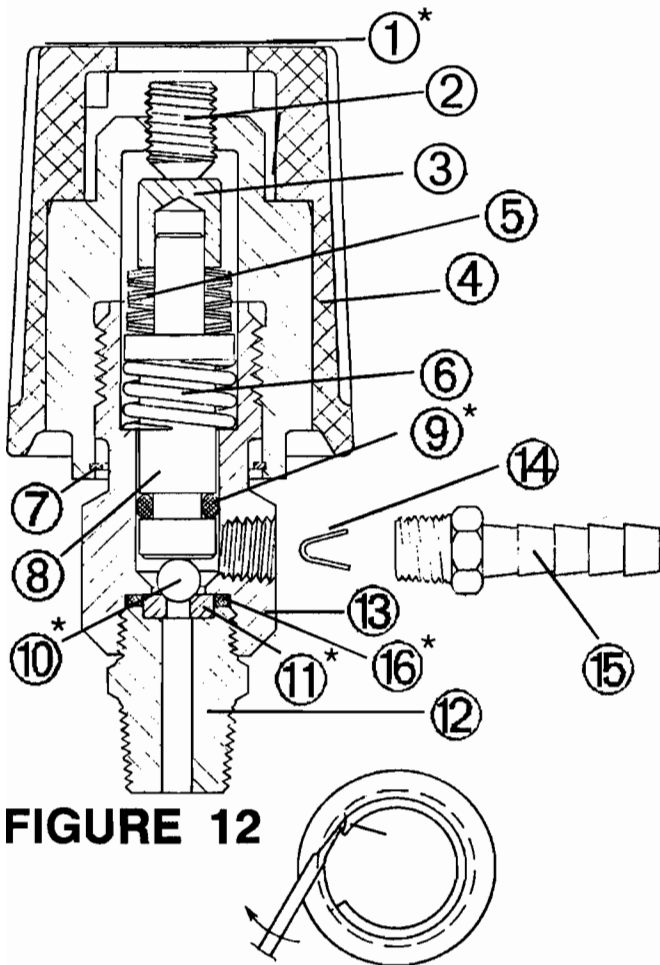


FIGURE 12

FIGURE 13

FIGURE 12 PARTS LIST

Item No.	Part No.	Description
1*	101-047	Label
2	115-037	Set Screw
3	331-119	Guide
4	331-053A	Knob Assembly
5	115-038	Belleville Springs (12 ea)
6	331-122	Spring
7	331-056	Retaining Ring
8	331-118	Shaft
9*	331-105	O-Ring—Viton
10*	115-017	Ball 7/32" dia
11*	120-007	Valve Seat
12	331-106	Seat Holder
13	331-051	Valve Body
14	331-134	Spring
15	331-090	Fitting
16*	331-100	O-Ring—Teflon
*	331-211	Prime Valve Repair Kit

FIGURE 14

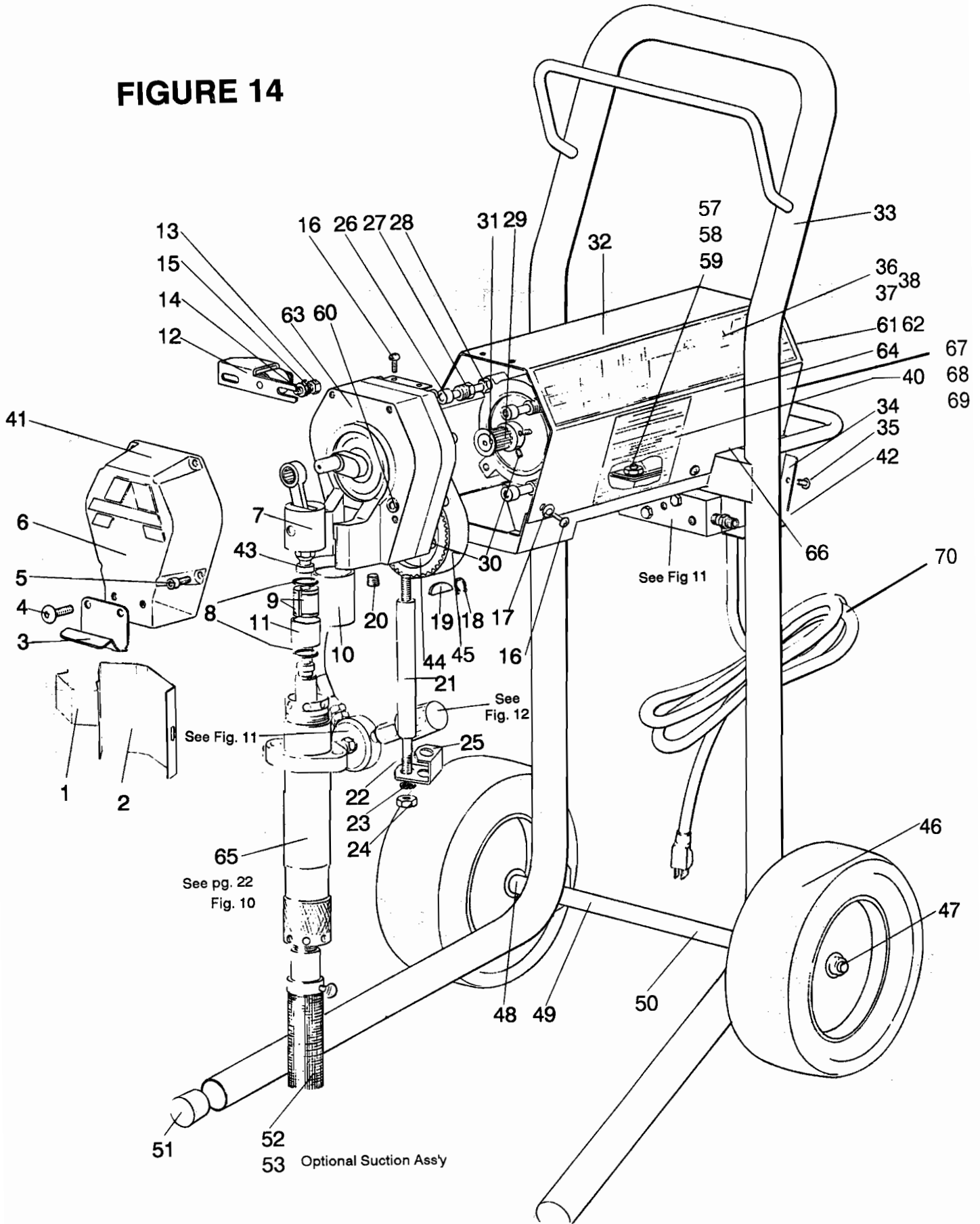


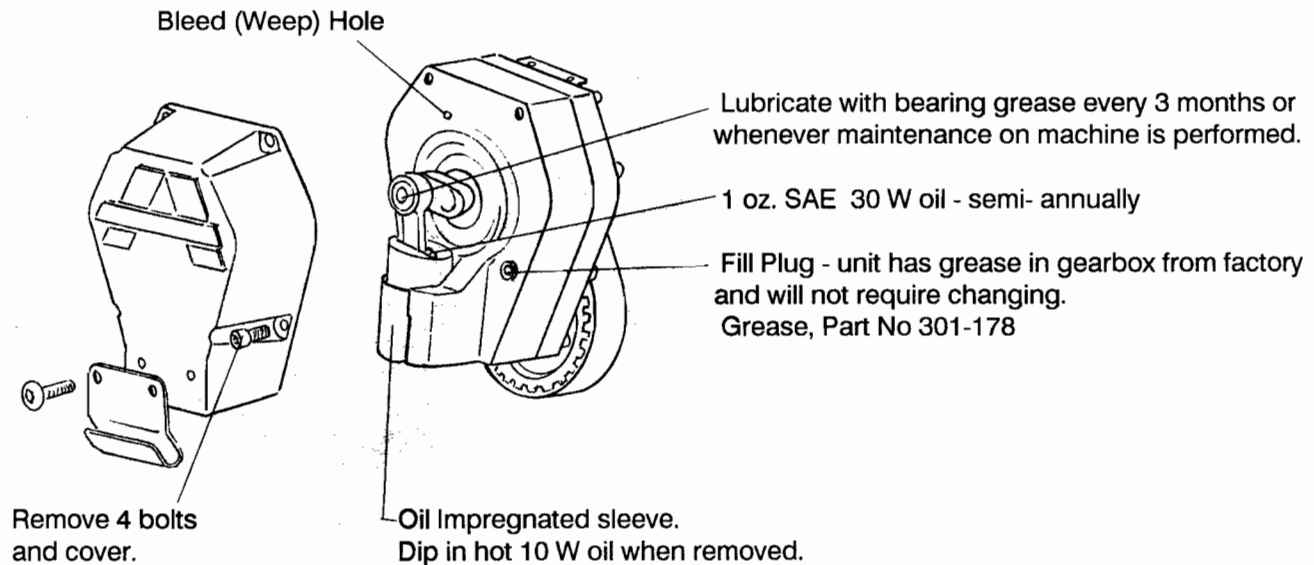
FIGURE 14 - PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	ITEM NO.	PART NO.	DESCRIPTION
1	301-189	Shield - Front	35	331-138	Screw (8)
2	301-092	Shield - Rear	36	101-057	Label 3600SL (2)
3	301-105	Hook	37	101-058	Label 4100SL (2)
4	100-360	Screw (2)	38	101-113	Label 5300SL (2)
5	100-312	Screw (4)	40	101-005	Warning Label
6	301-022	Cover	41	101-040	Label-The Efficient Machine
7	301-040	Connecting Rod Assy	42	101-060	Label- High Voltage
8	189-048	Retaining Ring (2)	43	301-046	Rod End
9	189-046	Coupling Set	44	301-237	Pulley, Cog
10	301-047	Sleeve Bearing			
11	189-047	Coupling Cover	45	301-231	Cog Belt
12	301-193	Tensioner Ass'y	46	301-073	Air Wheel (2)
13	111-044	Hex Hd. Screw (2)	47	143-029	Set Collar (2)
14	140-029	Washer (2)	48	167-014	Spacer (2)
15	113-023	Washer, Splitlock (2)	49	301-149	Spacer
16	111-037	Screw (6)	50	301-123	Axle
17	301-135	Grommet (6)	51	301-134	Stopper (2)
18	100-332	Retaining Ring	52	301-090	Suction Ass'y 16"
19	301-139	Woodruff Key	53	301-126	Suction Ass'y 36"
20	100-028	Plug, drain			
21	301-048	Spacer - Tube (2)	57	113-022	Fin. Hex Nut (4)
22	100-328	Stud (2)	58	113-023	Washer, Split lock (4)
23	140-035	Washer, Lock (2)	59	140-029	Washer (4)
24	140-051	Nut (2)	60	100-028	Plug 1/4 NPT
25	301-173	Bracket - Return Tube	61	301-190	Fan
26	136-033A	Screw (3)	62	301-191	Retaining Clip, Fan
27	301-099	Screw (3)	63	301-060A	Gearbox 3/4" (3600,4100)
28	140-051	Nut	63	301-060	Gearbox 1" (5300)
29	301-233	Sheave	64	101-114	3 Labels, Pressure, Th.Overld,ON/OFF Sticker
30	115-041	Set Screw (4)	65	187-310	Fluid Pump
31	112-029	Key	66	301-316	Rubber Edge (1.17') (makes two)
32	301-091	Cover			
33	301-240	Frame			
34	301-251A	Cover Ass'y			

67	301-089	Fan Cover
68	117-052	Fan Cover Screws
69a	301-107	3/4 HP Motor Ass'y (3600)
b	301-023A	1 HP Motor Ass'y (4100)
c	301-106A	1 1/4 HP Motor Ass'y (5300)
70	118-020	Power Cord

OIL AND LUBRICATION INSTRUCTIONS

FIGURE 15



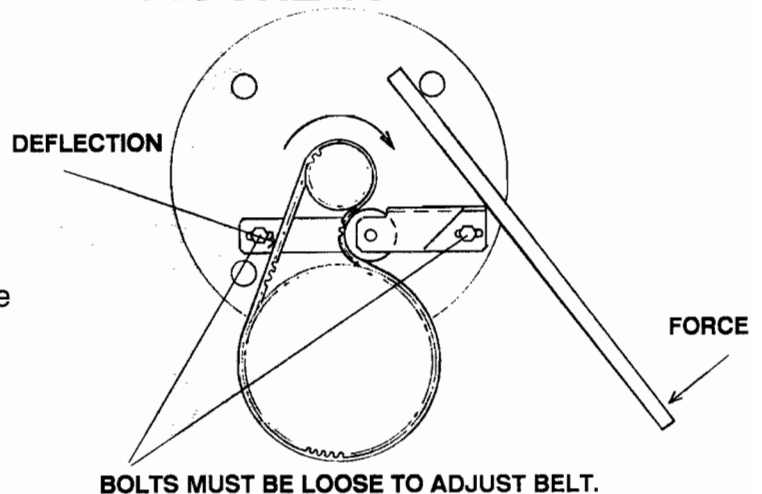
REPLACEMENT OF BELT / BELT ADJUSTMENT

FIGURE 16

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. 14, Items 30) are then loctited. The lower pulley is placed on gearbox and held in place with keyway and snap ring (Fig. 14, Items 18 & 19). The flange on upper sheave holds the belt in alignment and the belt self aligns on lower pulley eliminating having to align.

REPLACEMENT OF BELT:

1. Remove Tensioner Assembly (Fig 14. Item 12)
2. Loosen screws (Fig 14. Item 27) holding gearbox onto motor. Move gearbox forward to allow removal and replacement of belt.
3. Retighten screws into gearbox until they bottom out. 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 16. When properly tightened the deflection play should be 1/4 inch when pushing hard with thumb. (20 lbs)

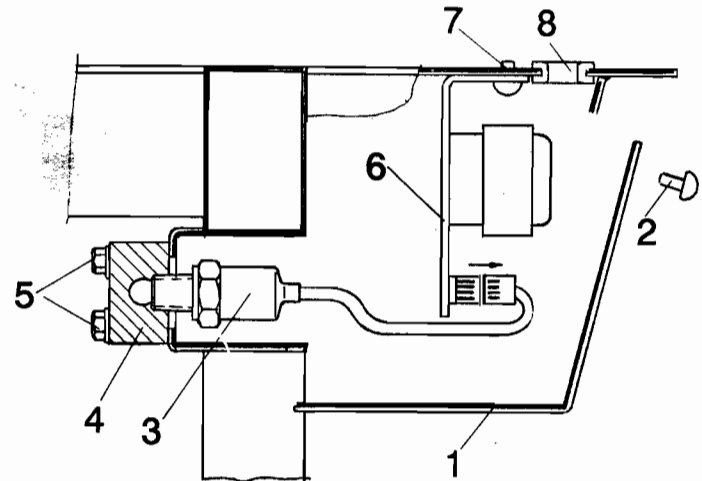


NOTE: When placing belt on pulleys and inserting the tensioner against belt, ensure cogs on belt are engaged into cogs on pulleys before tightening belts. Rotating upper pulley while holding the tensioner against the belt will allow proper engagement of cogs prior to tightening.

ELECTRICAL CONTROL BOX

FIGURE 18

FIGURE 18 PARTS		
ITEM NO.	PART NO.	DESCRIPTION
1	301-251A	Cover Assy
2	331-138	Screw 10 -24x1/4 (8)
3	331-073A	Sensor Assy
4	301-253	Manifold
5	100-345	Screw 5/16-18x1 1/4 (2)
6	301-077	Electr. Control Bd.
7	331-138	Screw 10-24x1/4 (2)
8	171-020	Grommet



WARNING

ALWAYS UNPLUG THE ELECTRICAL CORD BEFORE SERVICING MACHINE.

REPLACEMENT OF SENSOR

1. Ensure Prime/Pressure Relief Valve is in Prime Position.
2. Unplug Electrical Cord.
3. Remove Cover Ass'y (Item 1) by removing screws (Item 2).
4. Unplug Sensor Ass'y (Item 3) from Electrical Board (Item 6).
5. Remove 3/8 hose (Figure 11, pg 23, Item 6) from manifold.
6. Remove Screws (Item 5) from manifold and remove manifold (Item 4).
7. Unthread sensor from manifold.
8. Teflon tape threads on new sensor & reinstall into manifold assembly.
9. Reinstall manifold and sensor ass'y in reverse sequence.

REPLACEMENT OF ELECTRICAL BOARD

1. Unplug electrical cord.
2. Remove Cover Ass'y (Item 1) by removing screws (Item 2).
3. Carefully remove wires from electrical board (See Figure 17)
4. Remove the two mounting screws (Item 7) and remove electrical board.
5. Reinstall electrical system in reverse sequence.

NOTE: WHENEVER A SENSOR OR ELECTRICAL BOARD IS REPLACED, THE PRESSURE OF THE UNIT MUST BE RESET AS PER PRESSURE CALIBRATION PROCEDURE ON PAGE 31.

PRESSURE CALIBRATION of Electrical Control Board

NOTE: Anytime a sensor or electrical board or both are replaced, the pressure of unit must be reset following the Pressure Calibration procedures on this page.

1. Attach a 50' , 1/4" airless hose, airless gun, tip and 5000 psi pressure gauge (PN 111-045) to the pump.
2. Place pump into a bucket of CoroChek and water.
3. Open prime/PR valve (CCW), turn power switch "ON", turn pressure control knob CW to increase pressure (see Fig 2 pg. 2). The pump will now prime.
4. When pump has primed, turn pressure control knob at "Mid" pressure position. Close prime/PR valve (CW) to "pressure position". The unit will now pressurize.
5. Slowly increase pressure control setting by turning pressure control knob CW, while observing pressure gauge.
6. With pressure control knob at maximum setting, calibrate the pressure by adjusting the calibration adjusting POT on electrical board (see Fig 17, pg 29). Turn clockwise to increase pressure (max 3200 psi) or counterclockwise to decrease pressure (min. 2800 psi).
7. Trigger the gun to allow the pump to cycle a few times to ensure pump builds to maximum pressure.
8. When maximum pressure is set within above limits, turn prime/PR valve to prime position. Turn pressure control knob FULLY CCW to minimum pressure setting. The machine should shut off. Turn pressure control knob CW to increase pressure. The machine should start when turned approximately 1/4 turn.

CAUTION: If changing of sensor or electrical board is required, consult an authorized Airlessco Service Facility.

ELECTRIC MOTOR MAINTENANCE

1. **Lubrication** - This motor is supplied with pre-lubricated ball bearings, lubricated for life of 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 check at early intervals of operation in order to determine future required inspection. Standard Leeson brushes have an initial length of of 1 1/4" . **When the brushes are worn to a length of 5/8" they should be replaced.**

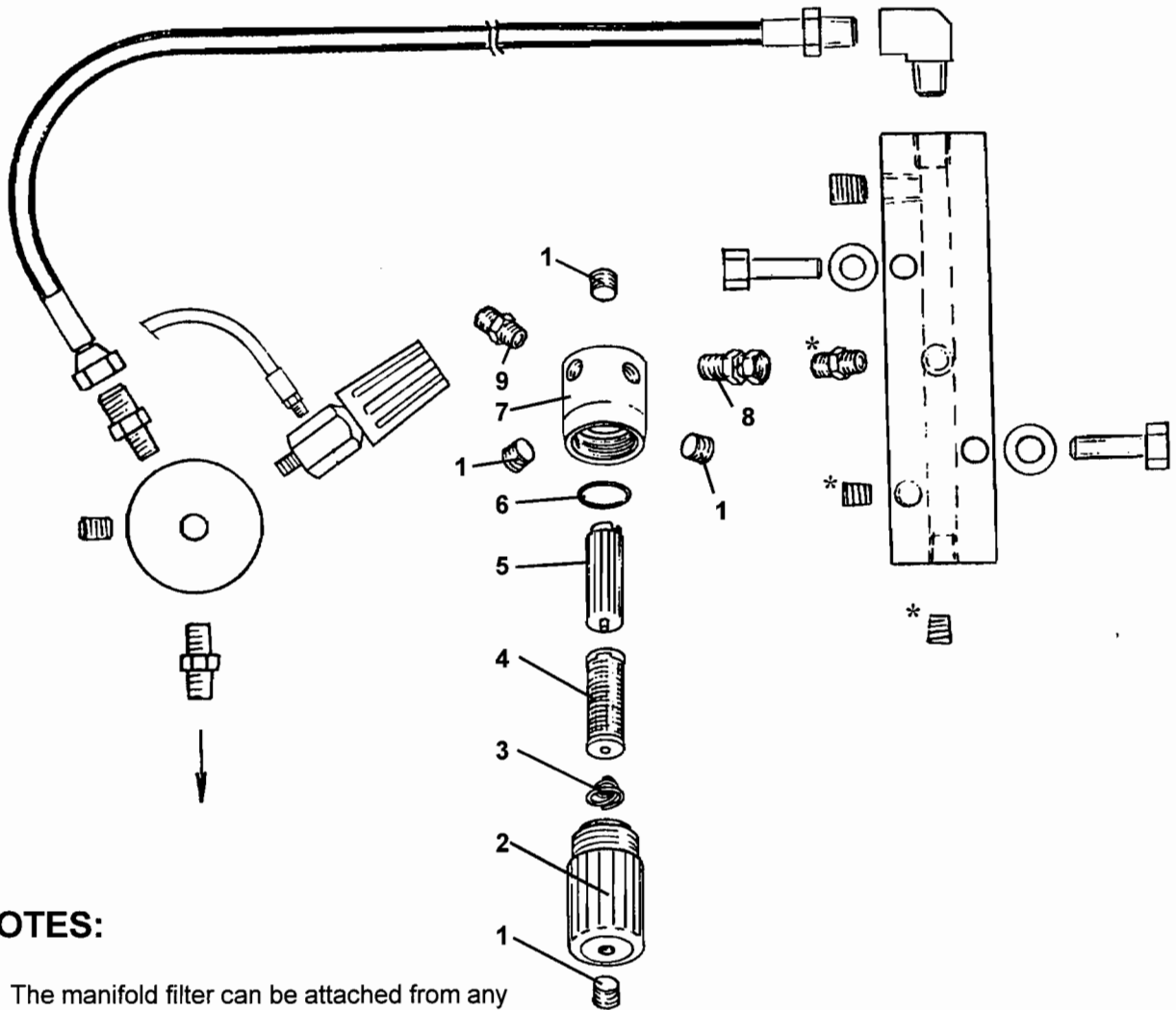
To change the brushes:

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 No. 301-146 for 110 V service, Part No. 301-147 for 220-240 V. service) need to have a run in period. After changing brushes, set the machine for spraying. With a bucket of Corochek and water, a 50' 1/4" airless hose, airless gun and tip onunit, open the prime valve and switch on. The pump will now prime. With the 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). Now run the pump for 20 minutes. **After 20 minutes, the brushes will be run in.**

OPTIONAL MAXI FILTER ASSEMBLY - PN 301-360

FIGURE 20



NOTES:

- 1) The manifold filter can be attached from any of the three indicated (*) outlets on the manifold block.
- 2) Two Gun Operation for Manifold Filter with Three Outlets: Loosen swivel (Item # 8) and turn filter until it is parallel to the ground. Tighten swivel and ensure that the filter does not move. Remove plug on bottom of base of filter and replace with 1/4" connector. Support filter with your hand or remove the filter from the unit while loosening the plug. Failure to do so will break the swivel (8). Attach hose and gun.
- 3) Two Gun Operation for Manifold Filter with Four Outlets: Remove plug from base of filter and replace with 1/4" connector. Attach hose and gun.

PARTS LIST FOR FIG.20		
ITEM	PART NO.	DESCRIPTION
1	301-357	Plug, 1/4" NPT (4)
2	301-361	Bowl
3	301-356	Spring
4	301-363	Screen (60 mesh)
5	301-362	Support
6	301-355	O-ring
7	301-352	Head
8	100-159	Swivel 3/8 NPS(M) X 1/4 NPT(F)
9	115-019	Connector 1/4 NPS(M) X 1/4 NPT(M)