

SL1500 PUMP PARTS DIAGRAM

FIG. 22

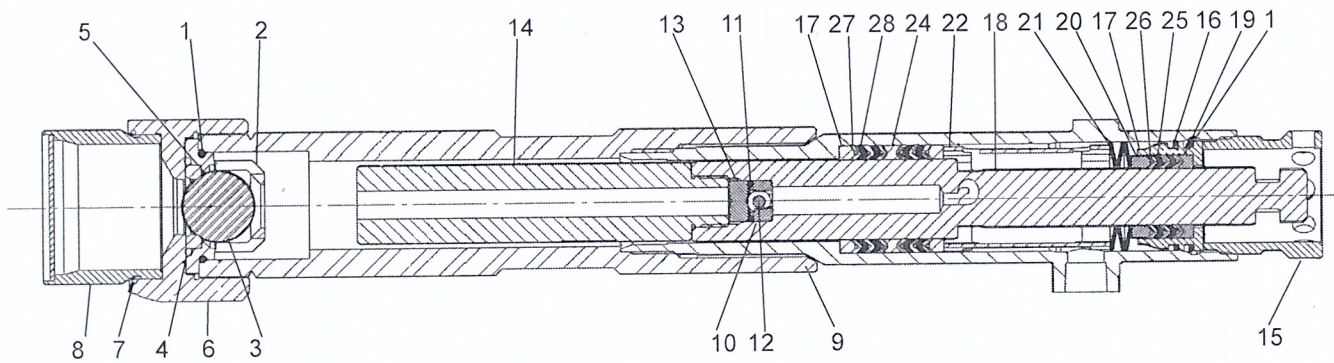
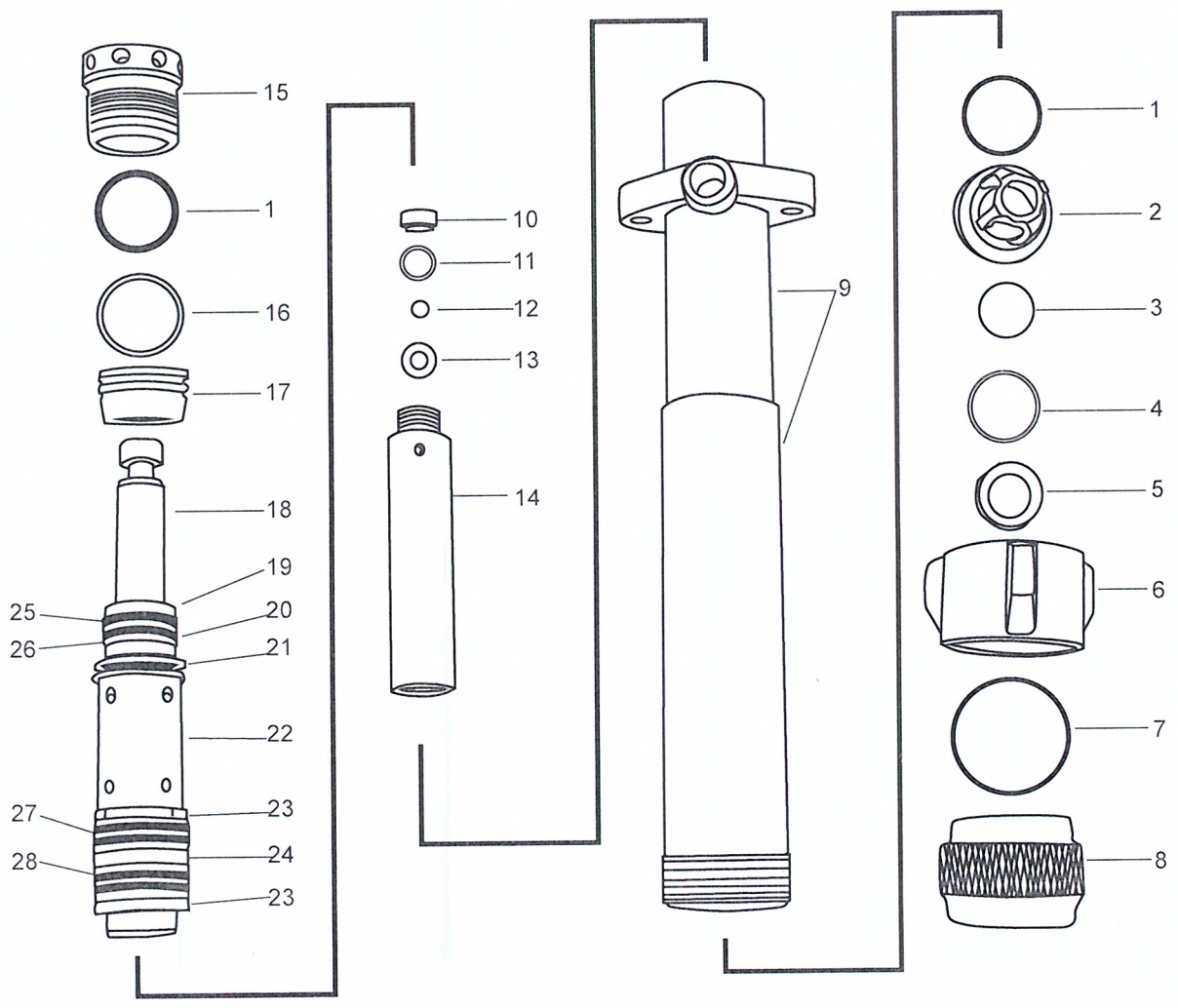
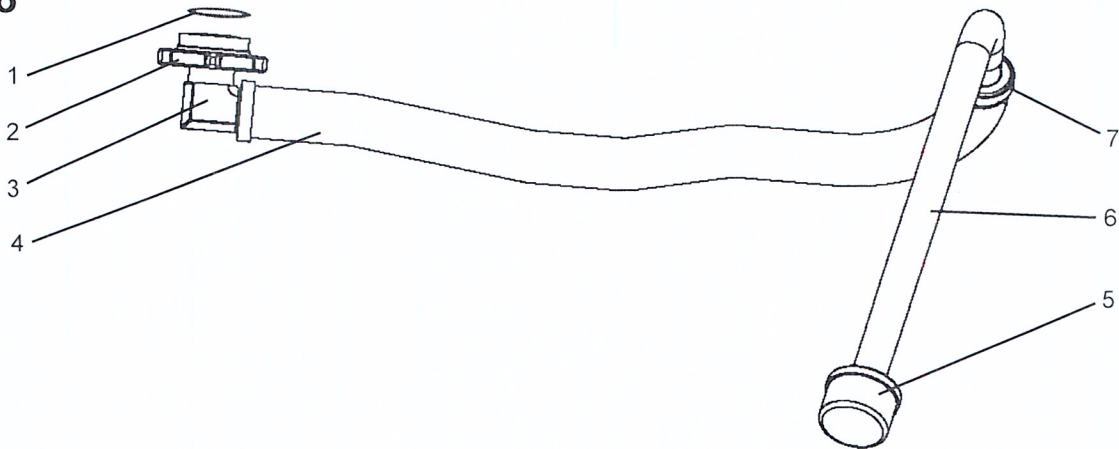


FIG. 23



SUCTION ASSEMBLY - 5 GALLON (119-108)

FIG. 28

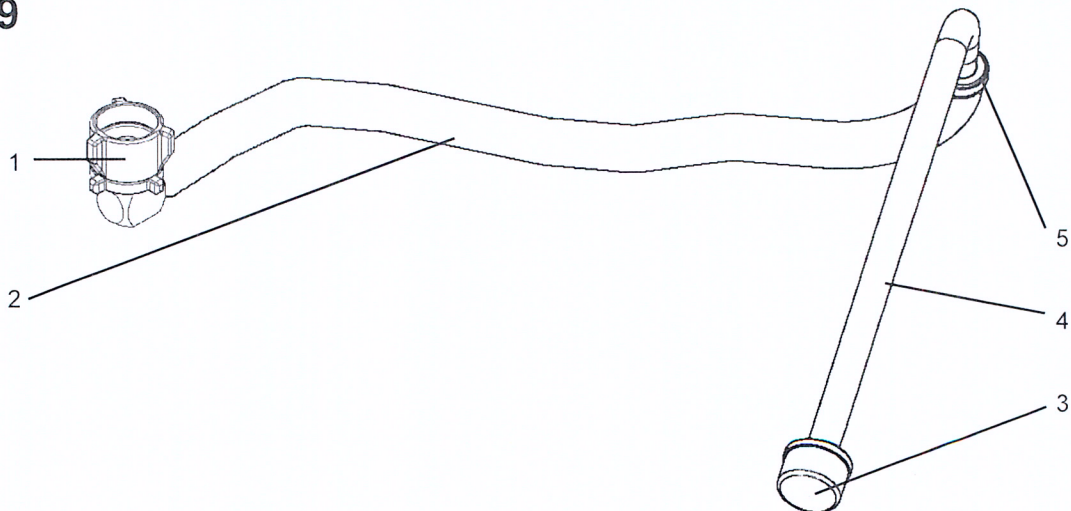


PARTS LIST FIGURE 28		
Item No.	Part No.	Description
1	119-110	Black O-Ring
2	189-587	Suction Nut
3	100-668	Suction Elbow
4	100-664	1" ID Suction Hose

PARTS LIST FIGURE 28 CONT		
Item No.	Part No.	Description
5	141-008	Filter Basket
5	301-514	5 Gal Suction Tube
7	250-116	Clamp (2)

SUCTION ASSEMBLY - 55 GALLON (119-087)

FIG. 29



PARTS LIST FIGURE 29		
Item No.	Part No.	Description
1	119-107	Swivel Fitting Assy
2	100-664	1" ID Suction Hose
3	141-008	Filter Basket

PARTS LIST FIGURE 29 CONT		
Item No.	Part No.	Description
4	301-545	55 Gal Suction Tube
5	250-116	Clamp

COMPLETE SPRAYER PARTS LIST

PARTS LIST FIGURE 30

Item No.	Part No.	Description
1	301-320	Cover
2	100-312	Screw (4)
3	100-360	Screw (2)
4	301-105	Hook
5	301-467	Front Shield
6	301-337	Screw (2)
7	100-028	Plug 1/4 NPT
8	111-044	Screw (2)
9	113-023	Lock Washer (2)
10	100-344	Washer (2)
11	301-193	Tensioner Assembly
13	301-675	Gearbox 1"
14	301-333	Connecting Rod Assy
16	301-046	Rod End
17	189-048	Retaining Ring (2)
18	189-046	Coupling Set
19	189-047	Retaining Sleeve
20	301-047	Sleeve Bearing
21	100-328	Stud (2)
22	301-139	Woodruff Key
23	100-332	Retaining Ring
24	301-059	Spacer (2)
25	301-173	Bracket-Return Tube
26	140-035	Lock Washer (2)
27	140-051	Nut (2)
28	301-134	Stopper (2)
29	113-056	Axle

PARTS LIST FIGURE 30 CONT

Item No.	Part No.	Description
30	143-029	Set Collar (2)
31	301-165	Wheel (2)
32	301-316	Rubber Edge 1.17' (makes 2)
33	111-037	Screw (4)
34	140-029	Washer
35	101-060	High Voltage Label
36	117-019	Fan
37	301-191	Retaining Clip Fan
38	117-052	Screw (3)
41	117-042	Fan Cover
42	301-321	Cover
43	113-022	Nut (4)
44	113-023	Lock Washer (4)
45	111-037	Screw (4)
46	301-135	Grommet (6)
47	301-231	Cog Belt
48	301-237	Cog Pully
49	301-206	Frame
50	136-652	Set Screw (2)
51	301-674	Sheave
52	112-029	Key
53	301-099	Retainer (3)
54	301-044	Screw (3)
55	119-092	Inlet Strainer

SL1500 Labels

Part No.	Description
101-281	SL1500 Decal, Left
101-283	SL1500 Decal, Right
101-232	Decal, Center Stripe

TROUBLESHOOTING - MACHINE DOES NOT START













Cause	Steps
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 Airlessco Technical Support 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 5/8" 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.

PACKING REPLACEMENT PROCEDURES

DISASSEMBLY OF THE FLUID PUMP

1. Unscrew & remove the packing nut.
 2. Push the piston rod down through the packings & out of the pump.
 3. Now push the packing removal tool up through the pump & remove from the top bringing the packings, spacer & springs along with it, leaving the fluid body empty.
- *NOTE: 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. Replace metal lower glands 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 PACKING KIT.**
6. Lubricate leather packing in lightweight oil for 10 minutes prior to reassembly.

REASSEMBLY

1. Take the lower metal male gland and place it down on the flat side. 
 2. Take three of the lower polyethylene V-packings and two of the leather V-packings 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, 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.
 8. Take the three Belleville Springs 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 and place it with the rounded side up. 
 10. Take the three upper polyethylene V-packings and two leather packings 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 & 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 and replace the white O-ring and the black O-ring 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.
- *NOTE: 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.**
17. Thread the packing nut into the top of the fluid body and tighten hand tight.
 18. Take the suction retainer and replace the black O-ring with a new one from the packing kit. Replace the suction ball with the new one from the kit into the suction retainer. Place the suction seat into the flat side of the ball guide, over the suction ball. Now place the white O-ring 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 and place the flat side down on to the suction valve assembly (threads will be facing upwards).
 21. Thread the suction nut, over the suction seat support.
 22. Tighten the packing nut (utilizing the packing nut adjustment tool) clockwise one full turn.

SERVICING THE INLET & OUTLET VALVES

SUCTION VALVE

1. Gently tap the inlet valve nut counter clockwise and remove.
2. Remove the inlet seat, O-rings, ball and ball guide with.
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 (187-086) IS REVERSIBLE.**

PISTON OUTLET VALVE

1. Place piston holder in a vise. Slide the piston into the holder & lock in place with the 1/4" dowel.
2. Use a rod to unscrew the piston extension support from the piston.
3. Remove the outlet seat, O-ring, outlet ball and ball guide.
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 piston extension. Apply two drops of Loctite No. 242 (blue) on the threads and torque to 20 ft-lbs.

FIG. 20

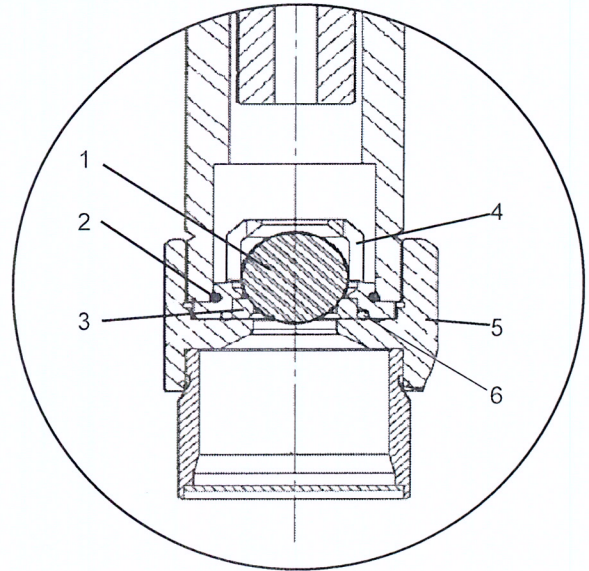
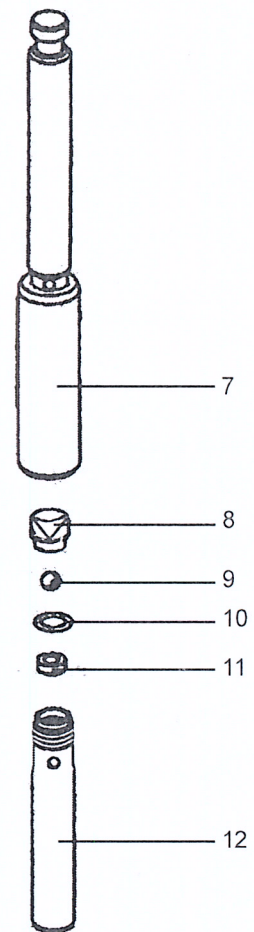


FIG. 21



PARTS LIST FIGURE 20 & 21

Item No.	Part No.	Description
1	187-092	Inlet Steel Ball
2	106-013	O-Ring
3	187-086	Inlet Seat
4	187-087	1" Ball Retainer
5	187-084	Inlet Valve Nut
6	106-008	O-Ring
7	187-330	Piston Rod
8	187-062	Ball Guide
9	115-022	Outlet Ball
10	106-021	O-Ring
11	187-061	Outlet Seat
12	187-314	Piston Extension

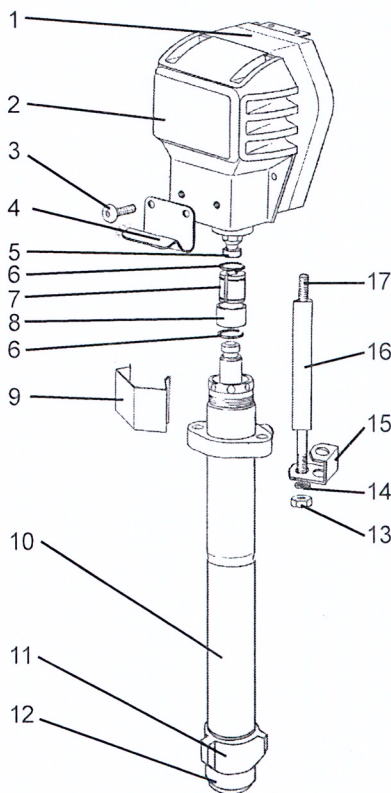
SERVICING THE FLUID PUMP

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 8. 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.

FIG. 14



FLUID PUMP REINSTALL

1. Loosen the packing nut & extend piston rod to fully up position. Slip sleeve over the piston rod. See fig. 15.
2. Insert one of the retaining rings through the packing nut and rest the sleeve on top of it. See fig. 16 & 17.
3. Connect the connecting rod with the fluid pump by installing the coupling halves. Slide sleeve over the coupling halves and secure with retaining ring. See figure 18.
4. Remove the retaining ring from the packing nut and insert into coupling halves. See figure 19
5. Secure the fluid pump housing to the tie rods and screw locknuts with washers on loosely.
6. 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.**
7. Tighten packing nut clockwise until resistance against the packings can be felt. Turn it one full turn more.
8. 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.
9. Prime the unit and run at maximum pressure for several minutes, then release the pressure & repeat step 6.
10. Fill the wet cup (packing nut) with five drops of TSO (Throat Seal Oil).

PARTS LIST FIGURE 14

Item No.	Part No.	Description
1	301-675	Gearbox 1"
2	301-320	Cover
3	100-360	Screw
4	301-105	Hook
5	301-046	Rod End
6	189-048	Retaining Ring
7	189-046	Coupling Set
8	198-047	Retaining Sleeve
9	301-467	Front Shield
10	187-411	Paint Pump Assy
11	187-002	Suction Nut
12	119-092	Filter
13	140-051	Nut (2)
14	140-035	Lock Washer (2)
15	301-173	Bracket-Return Tube
16	301-059	Spacer (2)
17	100-328	Stud (2)

FIG. 15

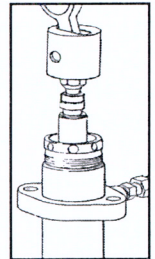


FIG. 16

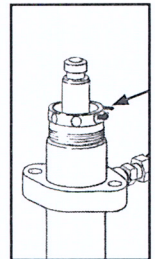


FIG. 17

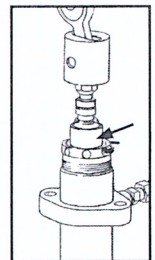


FIG. 18

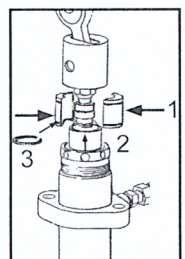
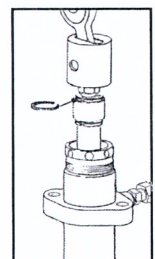


FIG. 19



SL PUMP PARTS LIST (187-411)

PARTS LIST FIGURE 22 & 23

Item No.	Part No.	Description
1	106-013*	Viton O-Ring (2)
2	187-087	1" Ball Retainer
3	187-092*	Stainless Steel Ball
4	106-008*	Teflon O-Ring
5	187-086	Tungsten Carbide Seat
6	187-084	Inlet Valve Nut
7	119-110*	Viton O-Ring
8	119-092	Strainer Assembly
9	187-335	Pump Body
10	187-062	Retainer
11	106-021*	Teflon O-Ring
12	115-022*	Tungsten Carbide Ball
13	187-061	Tungsten Carbide Seat
14	187-314	Piston Extension
15	187-046	Collar Screw
16	106-012*	O-Ring
17	187-047	V-Packing Holder

PARTS LIST FIGURE 22 & 23 CONT

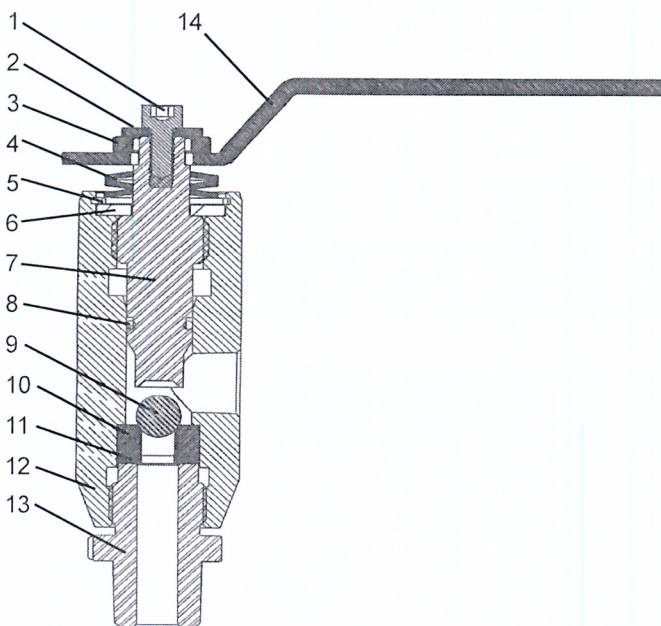
Item No.	Part No.	Description
18	187-330+	SL 2" Stroke Piston
19	187-026	Teflon Female Adapter
20	187-025	Male Adapter
21	187-031	Belleville Springs (3)
22	187-315	Stainless Steel Spacer
23	187-037	Short Male Adapter (2)
24	187-058*	Female Double Adapter
25	187-060*	Leather V-Packings (2)
26	187-030*	Polyethethylene V-Packings (3)
27	187-029*	Polyethethylene V-Packings (6)
28	187-059*	Leather V-Packings (4)

SL 1500 PUMP REPAIR KITS

Part No.	Description	
301-443	Packing Kit	*
301-444	Major Repair Kit	+*
187-411	Replacement Pump	

PRIME VALVE (119-083)

FIG. 24

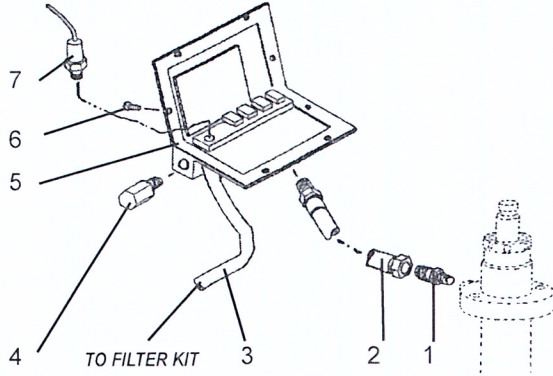


PARTS LIST FIGURE 24

Item No.	Part No.	Description
1	117-046	Screw
2	115-063	Washer
3	115-072	Spacer
4	115-064	Belleville Spring (3)
5	115-065	Retaining Ring
6	115-067	Washer
7	115-071	Valve Stem
8	115-068	O-Ring Black
9	115-069	Ball
10	115-029	Valve Seat
11	115-012	Washer
12	115-073	Valve Body
13	115-074	Inlet Fitting
14	115-303	Handle with Label

PAINT SYSTEM

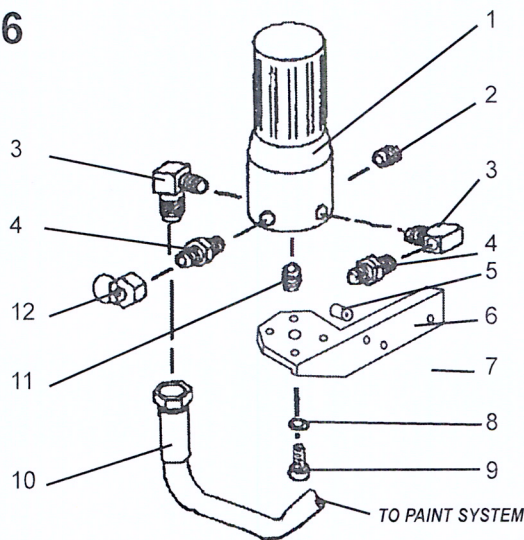
FIG. 25



PARTS LIST FIGURE 25		
Item No.	Part No.	Description
1	169-010	Nipple
2	301-308	Hose
3	100-123	Hose
4	100-280	Safety Valve
5	301-318-99 301-364-99	Pressure Control Assy (110V) Pressure Control Assy (230V)
6	111-034	Screw (8)
7	331-249-99	Sensor

OPTIONAL FILTER KIT (301-440)

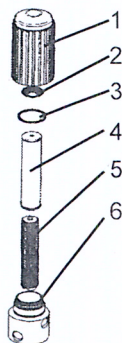
FIG. 26



PARTS LIST FIGURE 26		
Item No.	Part No.	Description
1	111-200	Manifold Filter
2	100-329	Plug (3/8")
3	169-013	Elbow
4	100-109	Nipple (3/8"-1/4")
5	301-290	Spacer
6	305-140	Filter Bracket
7	100-371	Screw
8	331-103	Washer
9	100-312	Screw
10	100-123	Hose
11	100-028	Plug (1/4")
12	100-160	Cap Plug Set

OPTIONAL MANIFOLD FILTER (111-200)

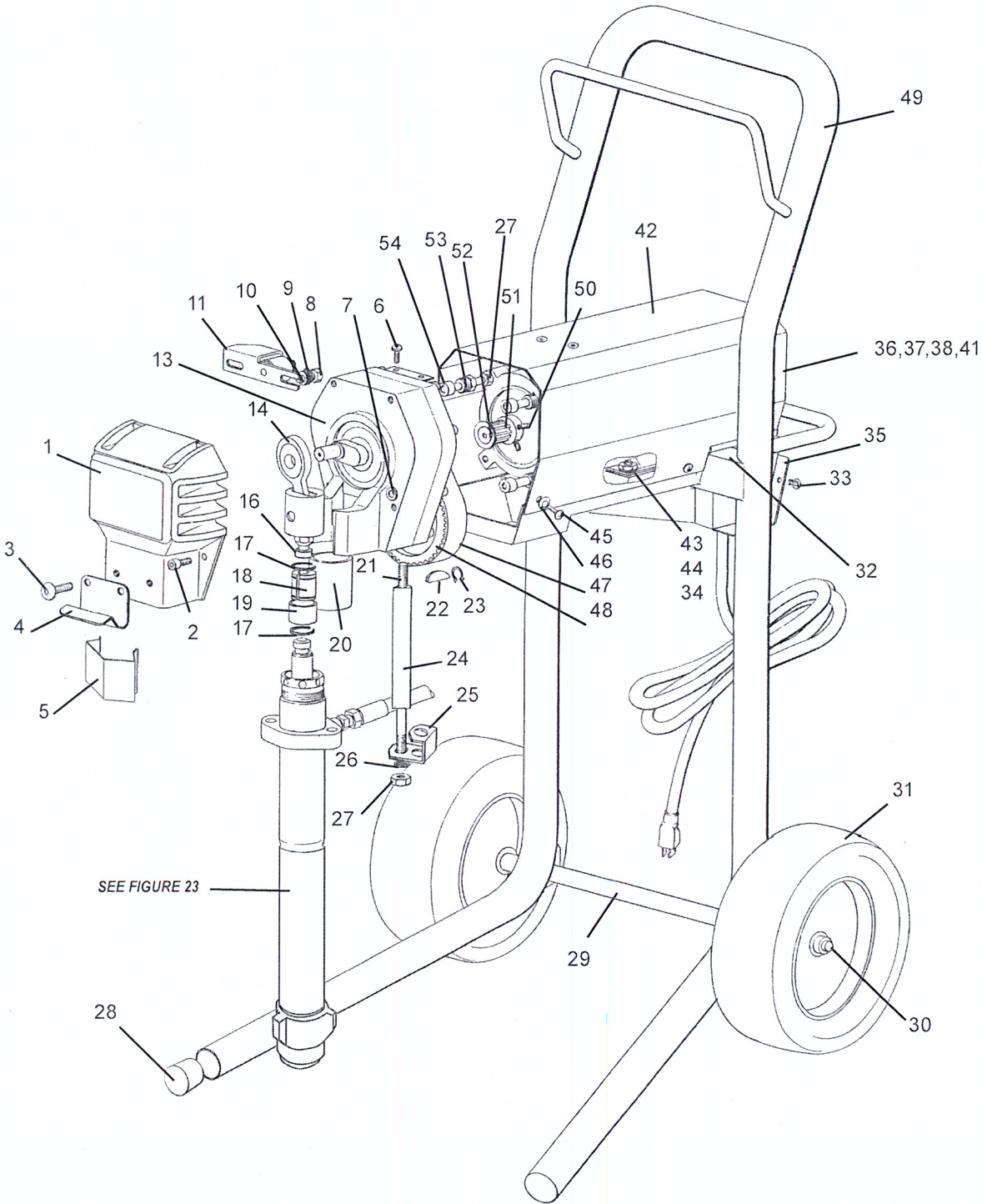
FIG. 27



PARTS LIST FIGURE 27		
Item No.	Part No.	Description
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

COMPLETE SPRAYER

FIG. 30



SEE FIGURE 23