



# ASM™ Zip-Spray™ Airless Sprayers

US Patent No. 1184US3

311140B

**- For portable spray applications of architectural  
paints and coatings - (Specifications, page 2.)**

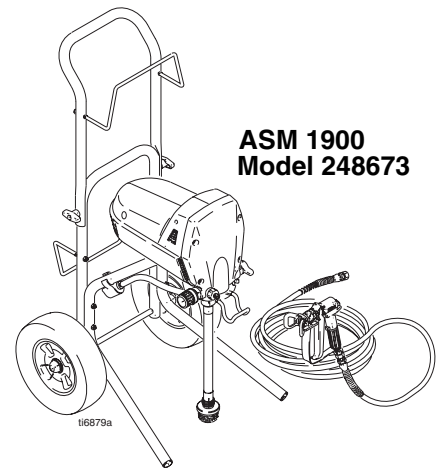
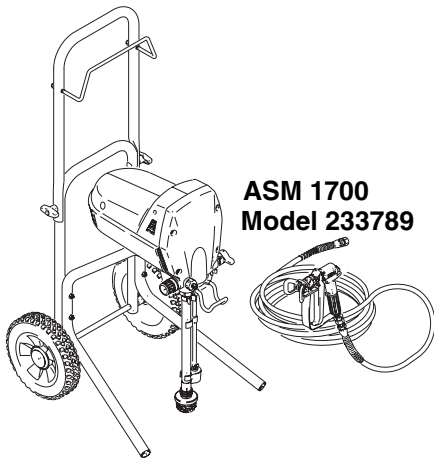
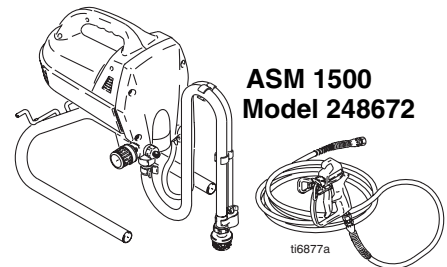
						
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ESP Model Only: Use water based or mineral spirit-type material only. Do not use with materials having flash points lower than 70°F (21°C). For more information about your material, request MSDS from the distributor or retailer.



### Important Safety Instructions

Read all warnings and instructions in this manual. Save these instructions. See page 2 for models and series information, including dispense rates, recommended hose length, guns and maximum working pressure.



PROVEN QUALITY. LEADING TECHNOLOGY.



## Models





Model Name, Model No.	Series	Dispense Rate gpm (lpm)	Hose Length and Diameter	Gun Model	Maximum Working Pressure		
					PSI	MPa	bar
<b>ASM ESP 248772</b>	A	0.24 gpm (0.91 lpm)	25 ft x 1/4 in. (8 m x 4.8 mm)	200	2800	19	193
<b>ASM 1500 248672</b>	A	0.27 gpm (1.02 lpm)	25 ft x 1/4 in. (8 m x 6.3 mm)	200	3000	21	207
<b>ASM 1700 233789</b>	A	0.34 gpm (2.17 lpm)	50 ft x 1/4 in. (15.2 m x 6.3 mm)	300	3000	21	207
<b>ASM 1900 248673</b>	A	0.38 gpm (1.44 lpm)	50 ft x 1/4 in. (15.2 m x 6.3 mm)	300	3000	21	207

## Specifications







This equipment is not intended for use with flammable or combustible materials used in places such as cabinet shops or other “factory”, or fixed locations. If you intend to use this equipment in this type of application, you must comply with NFPA 33 and OSHA requirements for the use of flammable and combustible materials.

# Warnings

The following Warnings are for the safe setup, use, grounding, maintenance and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. Refer back to these Warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.

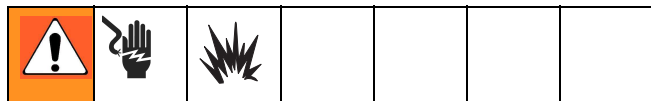
 <b>WARNING</b>	
	<p><b>FIRE AND EXPLOSION HAZARD</b></p> <p>Flammable fumes, such as solvent and paint fumes, in <b>work area</b> can ignite or explode. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> <li>• Use equipment only in well ventilated area.</li> <li>• Sprayer generates sparks. When flammable liquids are used near the sprayer or for flushing or cleaning, keep sprayer at least 20 feet (6 meters) away from explosive vapors.</li> <li>• Do not clean with materials having flash points lower than 70° F (21° C). Use water-based material or mineral spirits-type material only. For complete information about your fluid, request the MSDS from the fluid distributor or retailer.</li> <li>• Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).</li> <li>• Keep work area free of debris, including solvent, rags and gasoline.</li> <li>• Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.</li> <li>• Ground all equipment in the work area. See <b>Grounding</b> instructions.</li> <li>• Use only grounded hoses.</li> <li>• Hold gun firmly to side of grounded pail when triggering into pail.</li> <li>• If there is static sparking or you feel a shock, <b>stop operation immediately</b>. Do not use equipment until you identify and correct the problem.</li> <li>• Keep a working fire extinguisher in the work area.</li> </ul>
	<p><b>ELECTRIC SHOCK HAZARD</b></p> <p>Improper grounding, setup, or usage of the system can cause electric shock.</p> <ul style="list-style-type: none"> <li>• Turn off and disconnect power cord before servicing equipment.</li> <li>• Use only grounded electrical outlets.</li> <li>• Use only 3-wire extension cords.</li> <li>• Ensure ground prongs are intact on sprayer and extension cords.</li> <li>• Do not expose to rain. Store indoors.</li> </ul>
	<p><b>SKIN INJECTION HAZARD</b></p> <p>High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. <b>Get immediate surgical treatment.</b></p> <ul style="list-style-type: none"> <li>• Do not point gun at anyone or at any part of the body.</li> <li>• Do not put your hand over the spray tip.</li> <li>• Do not stop or deflect leaks with your hand, body, glove, or rag.</li> <li>• Do not spray without tip guard and trigger guard installed.</li> <li>• Engage trigger lock when not spraying.</li> <li>• Follow <b>Pressure Relief Procedure</b> in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.</li> </ul>

 **WARNING**

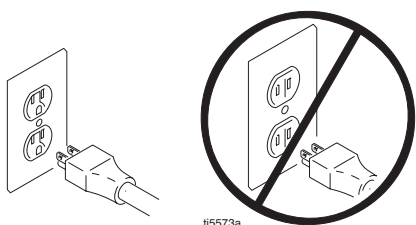
	<p><b>EQUIPMENT MISUSE HAZARD</b></p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> <li>• Do not operate the unit when fatigued or under the influence of drugs or alcohol.</li> <li>• Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See <b>Technical Data</b> in all equipment manuals.</li> <li>• Use fluids and solvents that are compatible with equipment wetted parts. See <b>Technical Data</b> in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS forms from distributor or retailer.</li> <li>• Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.</li> <li>• Do not alter or modify equipment.</li> <li>• Use equipment only for its intended purpose. Call your distributor for information.</li> <li>• Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.</li> <li>• Do not kink or over bend hoses or use hoses to pull equipment.</li> <li>• Keep children and animals away from work area.</li> <li>• Comply with all applicable safety regulations.</li> </ul>
	<p><b>PRESSURIZED EQUIPMENT HAZARD</b></p> <p>Fluid from the gun/dispense valve, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.</p> <ul style="list-style-type: none"> <li>• Follow <b>Pressure Relief Procedure</b> in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.</li> <li>• Tighten all fluid connections before operating the equipment.</li> <li>• Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.</li> </ul>
	<p><b>PRESSURIZED ALUMINUM PARTS HAZARD</b></p> <p>Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminum equipment. Such use can cause serious chemical reaction and equipment rupture, and result in death, serious injury, and property damage.</p>
	<p><b>TOXIC FLUID OR FUMES HAZARD</b></p> <p>Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.</p> <ul style="list-style-type: none"> <li>• Read MSDS's to know the specific hazards of the fluids you are using.</li> <li>• Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.</li> <li>• Always wear impervious gloves when spraying or cleaning equipment.</li> </ul>
	<p><b>BURN HAZARD</b></p> <p>Equipment surfaces and fluid that's heated can become very hot during operation. To avoid severe burns, do not touch hot fluid or equipment. Wait until equipment/fluid has cooled completely.</p>
	<p><b>PERSONAL PROTECTIVE EQUIPMENT</b></p> <p>You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. This equipment includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• Protective eyewear</li> <li>• Clothing and respirator as recommended by the fluid and solvent manufacturer</li> <li>• Gloves</li> <li>• Hearing protection</li> </ul>

# Installation

## Grounding and Electric Requirements



**The sprayer requires** a 120V AC, 60 Hz, 15A circuit with a grounding receptacle. Never use an outlet that is not grounded or an adapter.




Do not use the sprayer if the electrical cord has a damaged ground prong. Only use an extension cord with an undamaged, 3-prong, plug.



**Recommended extension cords** for use with this sprayer:

- 25 ft (7.6 m) 18 AWG
- 50 ft (15.2 m) 16 AWG
- 100 ft (30.5 m) 14 AWG
- 150 ft (45.7 m) 12 AWG

 Smaller gauge or longer extension cords may reduce sprayer performance.

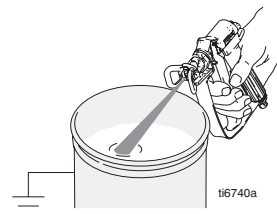
**Spray gun:** ground through connection to a properly grounded fluid hose and pump.

**Fluid supply container:** follow local code.

**Solvent pails used when flushing:** follow local code. Use only conductive metal pails, placed on a grounded surface such as concrete. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts grounding continuity.


**Grounding the metal pail:** connect a ground wire to the pail by clamping one end to pail and other end to ground such as a water pipe.

**Maintaining grounding continuity when flushing or relieving pressure:** hold metal part of the spray gun firmly to the side of a grounded metal pail, then trigger the gun.



## Thermal Overload

Motor has a thermal overload switch to shut itself down if overheated.

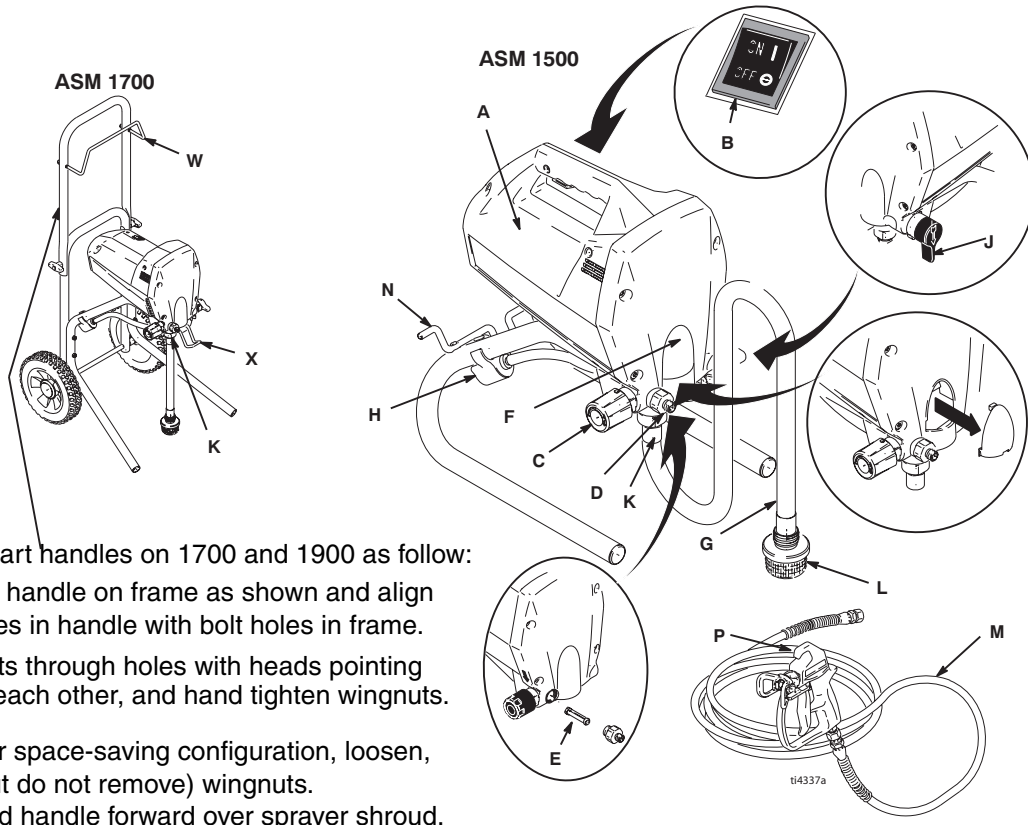
 **WARNING**

To reduce risk of injury from motor starting unexpectedly when it cools, always turn power switch OFF if motor shuts down.

# Component Identification

A	Electric motor (inside enclosures)	Provides mechanical power to pump.
B	Power switch	Manually turns ON and OFF electric power to motor (I is ON and 0 is OFF).
C	Pressure control knob	Manually increases (turn clockwise) and decreases (turn counter-clockwise) fluid pressure in pump, hose, and spray gun.
D	Pump fluid outlet fitting	Threaded connection for paint hose.
E	Pump fluid filter (1500, 1700, 1900 models only)	<ul style="list-style-type: none"> <li>Filters fluid coming out of pump to reduce tip plugging and improve finish.</li> <li>Self cleans only during pressure relief.</li> </ul>
F	Durable piston pump (behind Easy Access door)	Pumps and pressurizes fluid and delivers it to paint hose. Easy Access door permits quick removal of outlet valve.
G	Suction tube	Draws fluid from paint pail into pump.
H	Prime tube (with diffuser)	Drains fluid in system during priming and pressure relief.
J	Spray- Prime/Drain valve control	<ul style="list-style-type: none"> <li>In SPRAY position (pointing forward) directs pressurized fluid to paint hose.</li> <li>In PRIME/DRAIN position (pointing down) directs fluid to drain tube.</li> <li>Automatically relieves system pressure in overpressure situations.</li> </ul>
K	Fluid inlet connection and inlet valve	Suction tube connection to pump and inlet valve.
L	Inlet screen	Prevents debris from entering pump.
M	Paint hose	Transports high-pressure fluid from pump to spray gun.
N	Cord wrap bracket	Stows electrical cord (1500 model only).
P	Airless spray gun	Dispenses pumped fluid.
Q	Tip guard	Reduces risk of fluid injection injury.
R	Reversible spray tip	<ul style="list-style-type: none"> <li>Atomizes fluid being sprayed, forms spray pattern and controls fluid flow according to hole size.</li> <li>Reverses for unclogging plugged tips without disassembly.</li> </ul>
S	Trigger safety lever	Prevents accidental triggering of spray gun.
T	Gun fluid inlet fitting	Threaded connection for paint hose.
U	In-handle gun swivel (300 & 400 Series spray gun only)	Allows spray gun to swivel without twisting paint hose.
V	Gun fluid filter (in handle)	Filters fluid entering spray gun to reduce tip clogs and improve finish.
W	Hose/cord wrap bracket	Stows paint hose and electrical cord (1700 and 1900 models only).
X	Pail hanger	For transporting pail by its handle (1700 and 1900 models only).
Y	Zip-Flush™ attachment (included)	Connects garden hose to suction tube for quick flush of water-base fluids.

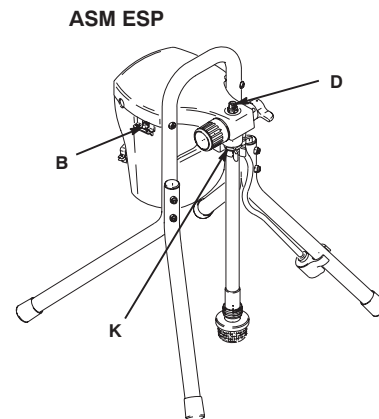
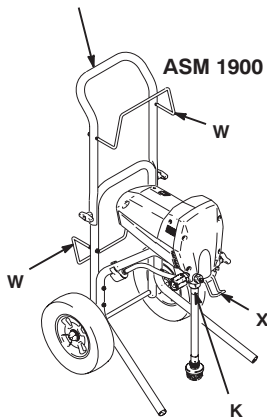
## Sprayers



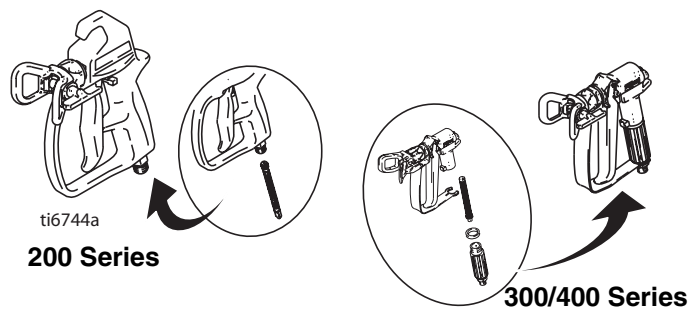
Connect cart handles on 1700 and 1900 as follow:

1. Position handle on frame as shown and align bolt holes in handle with bolt holes in frame.
2. Run bolts through holes with heads pointing toward each other, and hand tighten wingnuts.

**NOTE:** For space-saving configuration, loosen, (but do not remove) wingnuts. Fold handle forward over sprayer shroud.



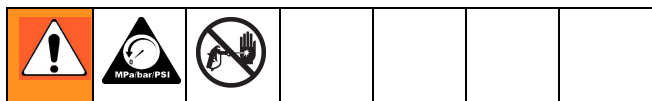
## Spray Guns



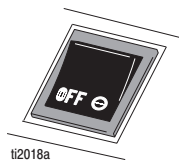
# Operation

## Pressure Relief Procedure

Follow this procedure when you stop spraying and before cleaning, checking, servicing, or transporting equipment.



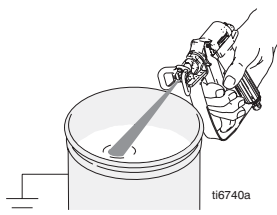
1. Turn power switch (B) OFF and unplug power cord.



2. Turn Spray-Prime/Drain valve (J) to PRIME/DRAIN to relieve pressure.



3. Hold a metal part of the gun firmly to a grounded metal pail. Trigger the gun to relieve pressure.



4. Engage trigger lock. See Trigger Lock, page 8.

Leave Spray-Prime/Drain valve in the PRIME/DRAIN position until you are ready to spray again.

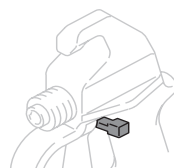


If you suspect the spray tip or hose is clogged or that pressure has not been fully relieved after following the steps above, **VERY SLOWLY** loosen tip guard retaining nut or hose end coupling to relieve pressure gradually, then loosen completely. Clear hose or tip obstruction.

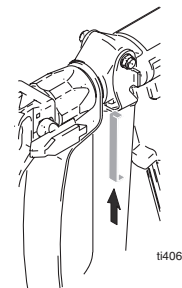
## Trigger Lock

Always engage the trigger lock when you stop spraying to prevent the gun from being triggered accidentally by hand or if dropped or bumped.

Trigger Locked Position

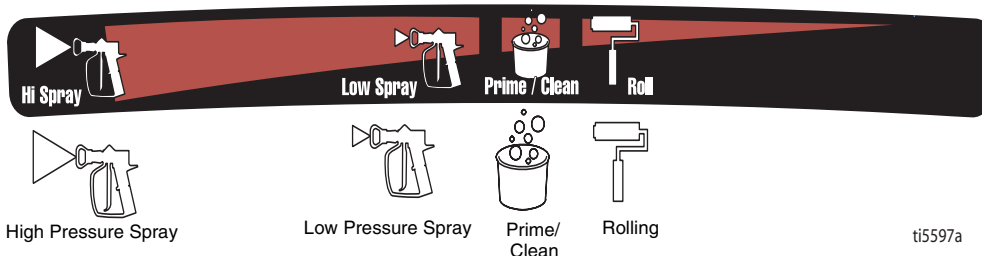


200 Series



300/400 Series




## Pressure Control Knob Settings






To select function, align arrow on sprayer within range of function symbol on pressure control knob.



# General Repair Information

						
<p>Flammable materials spilled on hot, bare, motor could cause fire or explosion. To reduce risk of burns, fire or explosion, do not operate sprayer with cover removed.</p>						

- Keep all screws, nuts, washers, gaskets, and electrical fittings removed during repair procedures. These parts usually are not provided with replacement kits.
- Test repairs after problems are corrected.
- If sprayer does not operate properly, review repair procedure to verify you did it correctly. See **Basic Troubleshooting**, page 10 and **Advanced Troubleshooting**, page 13.
- Overspray may build up in the air passages. Remove any overspray and residue from air passages and openings in the enclosures whenever you service sprayer.
- Do not operate the sprayer without the cover in place. Replace if damaged. Covers direct cooling air around motor to prevent overheating.

						
<p>To reduce risk of serious injury, including electric shock:</p> <ul style="list-style-type: none"> <li>• Do not touch moving or electric parts with fingers or tools while testing repair.</li> <li>• Unplug sprayer when power is not required for testing.</li> <li>• Install all covers, gaskets, screws and washers before you operate sprayer.</li> </ul>						

<b>CAUTION</b>						
<ul style="list-style-type: none"> <li>• Do not run sprayer dry for more than 30 seconds. Doing so could damage pump packings.</li> <li>• Protect the internal drive parts of this sprayer from water. Openings in the cover allow for air cooling of the mechanical parts and electronics inside. If water gets in these openings, the sprayer could malfunction or be permanently damaged.</li> <li>• Prevent pump corrosion and damage from freezing. Never leave water or water-base paint in sprayer when its not in use in cold weather. Freezing fluids can seriously damage sprayer. Store sprayer with Pump Defender to protect sprayer during storage.</li> </ul>						

# Basic Troubleshooting



The following troubleshooting guidelines from the Operating Instructions are included here as a preemptive measure against **Advanced Troubleshooting**, page 13. Refer to **Component Identification**, page 6 for reference letters used in table.

Problem	Cause	Solution
Power switch is on and sprayer is plugged in, but motor does not run, and pump does not cycle.	Pressure is set at zero pressure.	Turn Pressure Control Knob (C) clockwise to increase pressure setting.
	Motor or control is damaged.	See <b>Motor Does Not Operate</b> , page 13.
	Electric outlet is not providing power.	<ul style="list-style-type: none"> <li>Try a different outlet or plug in something that you know is working to test outlet.</li> <li>Reset building circuit breaker or replace fuse.</li> </ul>
	Extension cord is damaged.	Replace extension cord. See Grounding and Electric Requirements, page 5.
	Sprayer electric cord is damaged.	Check for broken insulation or wires. Replace electric cord if damaged.
	Paint is frozen or hardened in pump.	See <b>Motor Does Not Operate</b> , page 13.
Pump does not prime.	Spray-Prime/Drain Valve (J) is in SPRAY position.	Turn Spray-Prime/Drain Valve to PRIME/DRAIN position (pointing down).
	Inlet screen (L) is clogged or suction tube (G) is not immersed.	Clean debris off inlet screen and make sure suction tube is at bottom of paint pail.
	Balls in check valve are stuck or check valves are damaged.	Clean or replace check valves. See <b>Pump Service</b> , page 21. Do not store check valves in water.
	Suction tube is leaking.	Tighten suction tube connection (K). Inspect for cracks or vacuum leaks.
Spray gun stopped spraying.	Spray tip is clogged.	Unclog spray tip. See Operation Manual, 311139.
Pump cycles but does not build up pressure.	Pump is not primed.	Prime pump.
	Inlet screen (L) is clogged or suction tube (G) is not immersed.	Clean debris off inlet screen and make sure suction tube is at bottom of paint pail.
	Paint pail is empty.	Refill paint pail. Reprime sprayer.
	Suction tube is leaking.	Tighten suction tube connection (K). Inspect for cracks or vacuum leaks.
	Pump check valves are dirty or damaged. (Usually only one valve).	Clean or replace check valves. See <b>Pump Service</b> on page 21.
	Spray-Prime/Drain Valve (J) is worn or obstructed with debris.	Check Spray-Prime/Drain valve for debris trapped on seat or worn parts. Torque to 185 in-lbs (21 N•m). Replace if parts are worn.

Problem	Cause	Solution
Pump cycles, but paint only dribbles or spurts when spray gun is triggered.	Pressure is set too low.	Slowly turn Pressure Control Knob (C) clockwise to increase pressure setting and verify if sprayer pressure increases.
	Spray tip is clogged.	Unclog spray tip. See Operation Manual 311139.
	Pump fluid filter is clogged (1500, 1700, and 1900 models only).	Clean or replace pump fluid filter (E).
	Spray gun fluid filter is clogged.	Clean or replace gun fluid filter (V).
Spray pattern is inconsistent or is leaving stripes.	Pressure is set too low.	Turn Pressure Control Knob (C) clockwise, to increase pressure.
	Spray tip is worn beyond capability of sprayer.	Replace spray tip.
Pressure is set at maximum but cannot achieve a good spray pattern.	Spray tip is too large for sprayer.	Select smaller spray tip.
	Spray tip is worn beyond capability of sprayer.	Replace spray tip.
	Extension cord is too long or not heavy enough gauge.	Replace extension cord. <b>Grounding and Electrical Requirements</b> , page 5.
	Spray gun fluid filter is clogged.	Clean or replace spray gun fluid filter.
	Pump fluid filter is clogged (1500, 1700, 1900 models only).	Clean or replace pump fluid filter.
	Inlet screen is clogged.	Clean debris off inlet screen.
	Pump valves are worn.	See <b>Low or Fluctuating Output</b> , page 16.
Motor is hot and runs intermittently. This is NOT a thermal overload condition. Motor automatically shuts off due to excessive heat. Damage can occur if cause is not corrected. <b>Startup Hazard After Thermal Overload</b> , page 5.	Vent holes in enclosure are plugged or sprayer is covered.	Keep vent holes clear of obstructions and overspray and keep sprayer open to air.
	Extension cord is too long or not a heavy enough gauge.	Replace extension cord. See <b>Grounding and Electrical Requirements</b> , page 5.
	Unregulated electrical generator being used has excessive voltage.	Use electrical generator with a proper voltage regulator. Sprayer requires 120VAC, 60 Hz, 1500-Watt generator.
	Sprayer was operated at high pressure with very small tip which causes frequent motor starts and excessive heat build up.	Decrease pressure setting or increase tip size.
Building circuit breaker opens after sprayer operates for 5 to 10 minutes.	Too many appliances are plugged in on same circuit.	Free up circuit (unplug things), or use a less busy circuit.
	Sprayer electrical cord is damaged.	Check broken insulation or wires. Replace electrical cord if damaged.
Fan pattern varies dramatically while spraying.  OR  Sprayer does not turn on promptly when resuming spraying.	Pressure control switch is worn and causing excessive pressure variation.	Replace pressure control knob using <b>Pressure Control Switch Kit</b> , page 19.
Cannot trigger spray gun.	Spray gun trigger safety is unlocked.	Rotate trigger safety lever to lock SAFETY, page 8.
Spray comes out of spray gun in two thick streams.	Reversible spray tip is in UNCLOG position.	Rotate arrow-shaped handle on spray tip so it points forward in SPRAY position.
Paint is coming out of pressure control switch.	Pressure control switch is worn.	Replace pressure control using <b>Pressure Control Switch Kit</b> , page 19.

Problem	Cause	Solution
Spray-Prime/Drain valve actuates automatically relieving pressure through drain tube.	System is over pressurizing.	See <b>Excessive Pressure Build Up</b> , page 18.
Paint leaks down outside of pump.	Pump packings are worn.	Replace pump packings. See <b>Pump Service</b> , page 21.

# Advanced Troubleshooting



See Basic Troubleshooting first, page 10 for problems that are more easily remedied.

## General Problem: Motor Does Not Operate

Specific Problem	Cause	Solution
Power switch is on and sprayer is plugged in; pump does not cycle.	See <b>Basic Troubleshooting</b> , page 10.	
Basic mechanical problems.	Paint is frozen or hardened in pump.	Unplug sprayer from electrical outlet.  <b>If paint is frozen in sprayer:</b> <ul style="list-style-type: none"> <li>• Do NOT try to start sprayer until completely thawed or you may damage the motor, control board, and/or drivetrain.               <ol style="list-style-type: none"> <li>1. Turn OFF power switch.</li> <li>2. Place sprayer in warm area for several hours.</li> <li>3. Plug in and turn on sprayer.</li> <li>4. Slowly increase pressure until motor starts.</li> </ol> </li> </ul> <b>If paint hardened in sprayer:</b> <ol style="list-style-type: none"> <li>1. Replace pump packings.</li> <li>2. Remove all residue from valves.</li> </ol> <b>Pump Service</b> , page 21.
	Motor is damaged.	Remove gear and try to rotate motor shaft by hand. See <b>Motor Diagnostics</b> , page 20. If shaft will not turn, replace motor using <b>Motor Kit</b> , page 19.
	Yoke is broken because pump is locked up due to dried paint or worn packings (1500, 1700, 1900 models only).	Repair or replace using <b>Gear/Yoke Kit</b> , page 19. Repair pump. See <b>Pump Service</b> , page 21.

Specific Problem	Cause	Solution
Basic electrical problems.	Motor overheated.	Allow motor to cool for 30 minutes. Retry.
	Electrical outlet is damaged.	Reset building circuit breaker or replace fuse. Try another outlet. Check electric supply with volt meter. Meter must read 85 to 130V AC. If voltage is too high, do not plug sprayer in until outlet is corrected.
	Control board leads are improperly fastened or improperly mated.	Replace any loose terminals. Make sure all leads and harnesses are firmly connected. Check pressure control harness connection on front side of drive housing. Clean control board terminals. Securely reconnect leads.
	Motor brushes are worn.	Check length of BOTH brushes (brushes do not wear evenly on both sides of the motor). Brush length must be 0.25 in. (6.4mm). If brushes are worn replace motor using <b>Motor Kit</b> , page 19.
	Motor armature commutator damaged.	Check for burn spots, gouges and extreme roughness. Have motor shop resurface commutator if possible, or replace motor using <b>Motor Kit</b> , page 19.
	Fuse is blown.	Replace fuse using <b>Fuse Kit</b> , page 19.
	Motor armature shorting.	Check for shorts using armature tester (growler) or perform spin test, <b>Motor Diagnostic</b> , page 20. If shorts are evident, replace motor using <b>Motor Kit</b> , page 19.
	Control board damaged. <b>CAUTION:</b> Do not perform control board diagnostics until you have determined the armature is good. A bad armature can burn out a good control board.	See <b>Control Board Diagnostics</b> , page 21. Replace control board if damaged using <b>Control Board Kit</b> , page 19.
Sprayer Wiring Problems  <b>NOTE:</b> Remove enclosure mounting screws and pull enclosure away from drive housing. Take care not to pull on leads from electrical cord and power switch.	Sprayer electrical cord damaged.	<ol style="list-style-type: none"> <li>1. Unplug sprayer electrical cord.</li> <li>2. Disconnect black electrical cord wire at power switch.</li> <li>3. Unplug in-line connection white cord wire.</li> <li>4. Plug in electrical cord.</li> <li>5. Test voltage between black and white wires. Meter must read 85 to 130V AC.</li> <li>6. Replace electrical cord if no voltage.</li> </ol>
	Sprayer power switch damaged.	<ol style="list-style-type: none"> <li>1. Unplug sprayer electrical cord.</li> <li>2. Disconnect black control board wire at power switch.</li> <li>3. Unplug in-line connection white cord wire.</li> <li>4. Plug in electrical cord.</li> <li>5. Turn power switch ON.</li> <li>6. Test voltage between open terminal of power switch and white electrical cord wire. Meter must read 85 to 130V AC.</li> <li>7. Replace power switch if no voltage.</li> </ol>

Specific Problem	Cause	Solution
Sprayer Wiring Problems (cont.)	Motor thermal overload cutoff switch damaged. <b>Startup Hazard After Thermal Overload</b> , page 5.	<ol style="list-style-type: none"> <li>1. Unplug sprayer electrical cord.</li> <li>2. Remove motor harness from control card.</li> <li>3. Check for continuity between yellow leads or motor harness.</li> <li>4. If thermal relief switch is open (no continuity) allow motor to cool.</li> <li>5. If switch remains open after motor cools, replace motor using <b>Motor Kit</b>, page 19.</li> <li>6. If thermal relief switch closes after motor cools, find correct cause of overheating.</li> </ol>
	Terminals are damaged or loose.	Replace any damaged terminals. Make sure all terminal connections are tight.

## General Problem: Circuit Breaker is Tripping

Specific Problem	Cause	Solution
Building circuit breaker opens as soon as sprayer is turned on.	Sprayer electrical wiring is pinched or insulation is damaged.	Repair or replace any damaged wiring or terminals. Securely reconnect wires.
	Wires between pressure control switch and control board are pinched.	
	Motor armature is shorting.	Check for shorts using armature tester (growler) or perform spin test, <b>Motor Diagnostics</b> , page 20. If shorts are evident, replace motor using <b>Motor Kit</b> , page 19.
	Control board is damaged. <b>CAUTION:</b> Do not perform control board diagnostics until you have determined the armature is good. A bad motor armature can burn out a good motor control board.	See <b>Control Board Diagnostics</b> , page 21. Replace control board if damaged using <b>Control Board Kit</b> , page 19.
Building circuit breaker opens as soon as sprayer is plugged into outlet and sprayer is NOT turned on. <b>NOTE:</b> Remove enclosure mounting screws and pull enclosure away from drive housing. Take care not to pull on leads from electrical cord and power switch.	Sprayer electrical cord is damaged.	<ol style="list-style-type: none"> <li>1. Unplug sprayer electrical cord.</li> <li>2. Disconnect black electrical cord wire at power switch.</li> <li>3. Unplug in-line connection white cord wire.</li> <li>4. Plug in electrical cord.</li> <li>5. Test voltage between black and white wires. Meter must read 85 to 130V AC.</li> <li>6. Replace electrical cord if no voltage.</li> </ol>
	Sprayer power switch damaged.	<ol style="list-style-type: none"> <li>1. Unplug sprayer electrical cord.</li> <li>2. Disconnect black control board wire at power switch.</li> <li>3. Check resistance of switch with ohmmeter.</li> <li>4. Reading must be infinity with power switch OFF.</li> <li>5. Reading must be zero with power switch ON.</li> <li>6. Replace power switch if damaged.</li> </ol>
<i>Also see Basic Electrical Problems and Sprayer Wiring Problems, page 14.</i>		

## General Problem: Low or Fluctuating Output

Specific Problem	Cause	Solution
Pump cycles, but output is low or surging.	See <b>Basic Troubleshooting</b> , page 10.	
	Worn or obstructed pump valves.	Check for worn pump valves as follows: <ol style="list-style-type: none"> <li>1. Prime sprayer with paint.</li> <li>2. Trigger spray gun momentarily.</li> <li>3. When spray gun trigger is released pump should cycle momentarily and stop.</li> <li>4. If pump continues to cycle, pump valves may be worn or obstructed.</li> <li>5. <b>Pump Service</b>, page 21.</li> </ol>
	Spray-Prime/Drain valve is leaking.	Check Spray-Prime/Drain valve for debris trapped on seat and for worn parts. Torque to 185 in-lb (21 N•m). Replace if parts are worn using <b>Prime/Spray Drain Valve Kit</b> , page 19.
	Voltage from electrical outlet is too low. Low voltages reduce sprayer performance.	Check voltage of outlet. Meter must read 85 to 130V AC. Reset building circuit breaker or replace building fuse. Repair electrical outlet or try another outlet.
	Extension cord is too long or not heavy enough gauge.	Replace extension cord. <b>Grounding and Electrical Requirements</b> , page 5.
	Leads from motor or pressure switch to control board are damaged, loose, pinched, or overheated.	Be sure terminals are centered and firmly connected. Inspect for pinched wiring and wiring insulation and terminals for signs of overheating. Replace any loose terminals or damaged wiring. Securely reconnect terminals.
	Motor brushes are worn.	Check length of BOTH brushes (brushes to not wear evenly on both sides of the motor). Brush length must be 0.25 in. (6.4mm). If brushes are worn replace motor using <b>Motor Kit</b> , page 19.
	Motor brush springs are broken.	If springs are broken replace motor using <b>Motor Kit</b> , page 19.
	Motor brushes are binding in brush holders.	Clean brush holders. Remove carbon dust with small cleaning brush.
	Motor stops before sprayer reaches correct pressure (stall pressure is too low).	Replace pressure control using <b>Pressure Control Switch Kit</b> , page 19.
Motor armature shorted.	Check for shorts using armature tester (growler) or perform spin test, <b>Motor Diagnostics</b> , page 20. If shorts are evident, replace motor using <b>Motor Kit</b> , page 19.	
Control board is damaged. <b>CAUTION:</b> Do not perform control board diagnostics until you have determined the armature is good. A bad motor can burn out a good control board.	See <b>Control Board Diagnostics</b> , page 21. If damaged replace control board using <b>Control Board Kit</b> , page 19.	



Specific Problem	Cause	Solution
Motor runs and pump cycles, but pressure does not build up.	Intake valve ball or outlet valve ball is not seating properly.	Remove and clean valves and check balls and seats for nicks; replace if necessary. Strain paint before spraying to remove particles that could clog pump. <b>Pump Service</b> , page 21.
	Pump packings are worn or damaged.	Check for leaking around throat packing nut. Replace pump packings if there are leaks. <b>Pump Service</b> , page 21.
	Prime/Spray Valve leaking.	Check Prime/Spray Valve for debris trapped on seat and for worn parts. Torque to 185 in-lb (21 N•m). If parts are worn, replace valve using <b>Prime/Spray Drain Valve Kit</b> , page 19.
Spray pattern has variations, pressure fluctuates excessively, or motor runs very slowly.	Leads from motor or pressure switch to control board are damaged, loose or overheated	Be sure terminals are centered and firmly connected. Inspect wiring insulation and terminals for signs of overheating. Replace any loose terminals or damaged wiring. Securely reconnect terminals.
	Pressure control switch leads are pinched between pump and drive housing or between front cover and drive housing (1500, 1700, 1900 models only)	Make sure pressure control harness is routed behind pump, through retention clip and connected to control board connector on control board (connect with tab to right).
	Control board is damaged. <b>CAUTION:</b> Do not perform control board diagnostics until you have determined the armature is good. A bad armature can burn out a good control board.	See <b>Control Board Diagnostics</b> , page 21. If damaged, replace control board using <b>Control Board Kit</b> , page 19.
	Pressure control switch is damaged or worn out.	Replace pressure control switch using <b>Pressure Control Switch Kit</b> , page 19.

## General Problem: No Output

Specific Problem	Cause	Solution
Power switch is on and sprayer is plugged in but pump does not cycle	See <b>Basic Troubleshooting</b> , page 10.	
Motor runs but pump does not cycle.	Gear and/or yoke are damaged (1500, 1700, 1900 models only).	Replace gear and yoke using <b>Gear/Yoke Repair Kit</b> , page 19.
Motor does not run.	Water or paint entered pressure control switch or shorted control board.	Clean out and/or dry out and retry. Replace if necessary using <b>Pressure Control Switch Kit</b> , page 19.

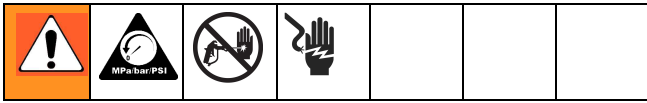
## General Problem: Excessive Pressure Buildup

Specific Problem	Cause	Solution
Prime/Spray Valve actuates automatically, relieving pressure through drain tube.	Pressure control switch is worn.	Replace pressure control switch using <b>Pressure Control Switch Kit</b> , page 19.
	Water or paint entered pressure control switch or shorted control board.	Clean out and/or dry out and retry. Replace if necessary using <b>Pressure Control Switch Kit</b> , page 19.
	Control board failed.	See <b>Control Board Diagnostics</b> , page 20. Replace damaged control board using <b>Control Board Kit</b> , page 19.

## List of Kits

Kit Number	Models/Series	Kit Description
288147	1500, 1700 and 1900	10 mm Shaft, gear, yoke, guides (ball bearing equipped cover and motor castings)
	1500, 1700 and 1900	Combo Kit (Includes motor, gears, front cover for 3/8 in. bronze bearing configuration)
288154	ESP	Control Board
288143	1500 and 1700	Control Board
288144	1900	Control Board
244035	All models	Drain Tube Diffuser
287782	1500	Enclosure (includes both sides, labels and screws)
287783	1700 and 1900	Enclosure (includes both sides, labels and screws)
288148	1500, 1700 and 1900	Fan, shroud, brace
233791	1500, 1700 and 1900	Front cover (10 mm ball bearing)
119276	1500 and 1700	Fuse, 12.5 Amp
119277	1900	Fuse, 16 Amp
245578	All models	Inlet Strainer (or inlet of suction tube)
288155	ESP	Motor repair
288149	1500, 1700 and 1900	Motor, drive housing (10 mm ball bearing motor casting - includes fan, shroud and brace)
288150	ESP	Pressure Control Switch
288145	1500, 1700 and 1900	Pressure Control Switch
235014	All models	Prime/Spray Drain Valve
288152	ESP	Pump Inlet Valve Module
243070	1500, 1700 and 1900	Pump Inlet Valve Module (use with Suction Tube 197607, 197608 or 15D671)
288151	ESP	Pump Outlet Valve Module
243094	1500, 1700 and 1900	Pump Outlet Valve Module
288153	ESP	Pump repair
245569	1500, 1700 and 1900	Pump Repair (pump packing module)
288146	1500, 1700 and 1900	Pump replacement (complete pump*)  * Does not include Pressure Control Switch 288145. Reuse Pressure Control Switch from pump being replaced, or order separately.
196582	ESP	Suction Tube
197607	1500	Suction Tube (Inlet valve with integral hose barb; no elbow) (Use with Pump Inlet Valve Module 245070 only)
15D671	1700 and 1900	Suction Tube (inlet valve with integral hose barb)

# Motor Diagnostics



Check for electrical continuity in motor armature, windings and brush as follows:

If Motor Diagnostics reveal a damaged motor or if motor brushes are shorter than 1/4 in. (6.4 mm) or if the motor shaft cannot turn, replace the motor using **Motor Kit**, page 19.

## Setup

1. **Relieve pressure**, page 8.
2. Unplug electric cord.
3. Remove enclosure and disconnect motor leads from control card.
4. Remove fan brace.
5. Remove four screws and front cover.
6. Remove yoke and guide rods.
7. Remove gear.

## Armature Short Circuit Spin Test (1500, 1700 and 1900 models only)

Quickly turn motor fan by hand. There should not be electrical shorts and fan should coast two or three revolutions before stopping. If fan does not spin freely, armature is shorted. Replace motor using **Motor Kit**, page 19.

## Armature, Brushes and Motor Wiring Open Circuit Test (Continuity) (1500, 1700 and 1900 models only)

1. Connect red and black motor leads together with test lead.
2. Turn motor fan by hand, about two revolutions per second.
3. If there is an uneven resistance or no resistance, replace motor using **Motor Kit**, page 19.


# Control Board Diagnostics



Check for motor problems before replacing control board. A damaged motor may burn out a good control card

Check for a damaged control board or pressure control switch as follows:



1. **Relieve pressure**, page 8.
2. Unplug electrical cord.
3. Remove four cover screws and front cover (1900). Remove motor enclosure (ESP).
4. Remove yoke and guide rods (1500, 1700 and 1900 models only).
5. Remove gear (1500, 1700 and 1900 models only).
6. Remove pressure control harness from control board. Using tip of small, flat blade screwdriver, press tab on right side connector to release.
7. Attach harness from a control board you know is functioning correctly to control board.
  -  Pressure control switch does not have to be installed in pump.
8. Turn pressure control adjustment knob (C) +to maximum pressure setting.
9. Plug electrical cord into 120VAC receptacle.
10. Turn power switch (B) ON.
  - If motor runs, replace pressure switch. **Pressure Control Switch Kit**, page 19.
  - If motor does not run, replace control board repeat test. **Control Board Kit**, page 19.

## Pump Diagnostics

### CAUTION

When repairing or cleaning the pump, never submerge pump in water or allow fluid to enter pressure control.

When pump packings wear, paint begins to leak down outside of pump. Replace pump packings at the first sign of leaking or additional damage to drive train could occur. Use **Pump Repair Kit**, page 19.

## Pump Service

### CAUTION

When repairing or cleaning pump, never submerge pump in water or allow fluid to enter pressure control.

If sprayer continues to cycle (motor and pump run) when the spray gun trigger is released, or if performance is poor even with new spray tips and clean filters, the pump inlet or outlet valve may be obstructed or worn. If a pump is worn, replace it. **List of Kits**, page 19.

# Parts


## ESP Sprayer Model 248772

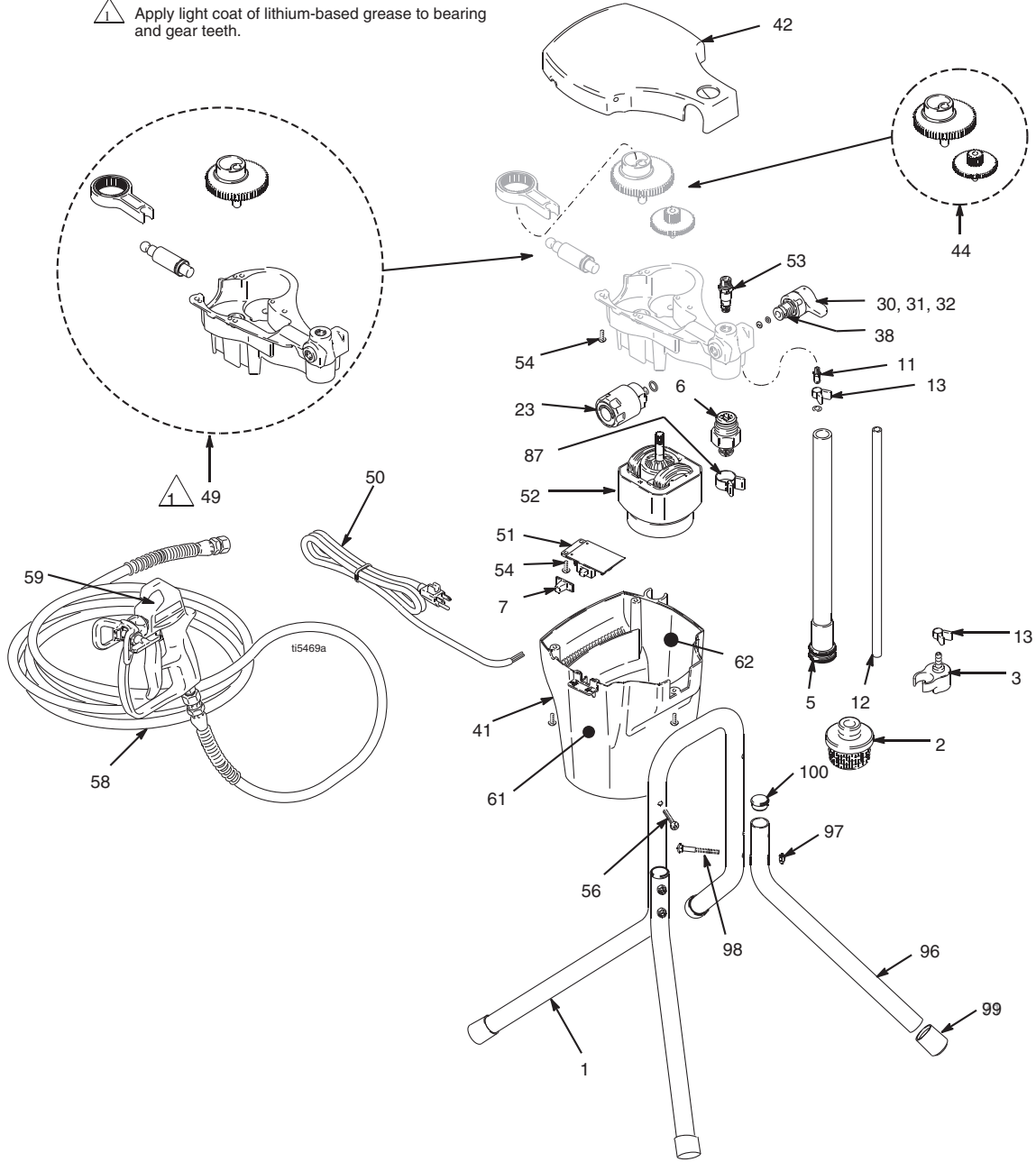
Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	15A680	FRAME, includes two #100	1	53	288151	KIT, outlet valve	1
2	245578	STRAINER	1	54	115477	SCREW, machine, pan head	9
3	244035	DEFLECTOR, barbed	1	56	115478	SCREW, machine, pan head	2
5	15A473	TUBE, suction	1	58	277197	HOSE, paint, DuraFlex 1/4 in. x 25 ft (available from service center only)	1
6	288152	KIT, inlet valve	1	59	246821	GUN, spray, 200 Series	1
7	196586	COVER, switch	1	61▲	15G180	LABEL, warning	1
11	196574	FITTING, drain	1	62▲	15G179	LABEL, warning	1
12	15A475	TUBE, spray,	1	69	115648	VALVE, shutoff, Zip-Flush (not shown)	1
13	115489	CLAMP, drain tube	2	96	15A683	FRAME, support	2
23	288150	KIT, pressure switch repair	1	97	102040	NUT, lock, hex	4
30	224807	CAM, drain valve	1	98	116630	SCREW, carriage	4
31	187625	HANDLE, drain valve	1	99	112759	CAP, tubing	4
32	111600	DRIVE PIN, drain valve	1	87	116295	CLAMP, spring, 0.88 in. diameter.	1
38	235014	KIT, valve repair	1	100	105521	PLUG, tubing	2
41	246531	KIT, motor enclosure (includes enclosure and 2 warning labels)	1	101	248680	FLUID, Pump Defender (6 pack)	1
42	248798	KIT, cover, housing (includes 3 labels, 2 dowel pins and 2 bushings)	1	102	248681	FLUID, piston lube (6 pack)	1
44	288156	KIT, gear (includes 2 gears and connecting rod)	1				
49	288153	KIT, pump repair	1				
50	196594	CORD, power	1				
51	288154	KIT, control board	1				
52	288155	KIT, motor repair	1				

▲ Replacement Danger and Warning labels are available at no charge

# Parts

## ESP Sprayer Model 248772

 Apply light coat of lithium-based grease to bearing and gear teeth.



# Parts

## 1500 Sprayer Model 248672

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	195126	PUMP, housing	1	40	235014	KIT, valve, drain/prime, repair	1
2	287782	ENCLOSURE (includes label 39, 43, and 44 and screws)	1	41	195811	LABEL, instruction	1
3	115477	SCREW, machine	10	42	118900	CORD, power	1
6	245569	KIT, pump repair	1	43▲	15G188	LABEL, warning, left	1
8	111600	DRIVE PIN, drain valve	1	44▲	15G187	LABEL, warning, right	1
9	224807	CAM, drive valve	1	47	288149	KIT, motor repair, (includes fan kit #48)	1
10	187625	HANDLE, drain valve	1	48	288148	KIT, fan and shield	1
11	246821	GUN, 200 Series	1	49	119275	CLIP, retainer	1
13	243094	KIT, outlet valve (includes #17)	1	51	288143	CONTROL BOARD, 1500	1
14	233791	COVER	1	52	118899	SWITCH, rocker	1
15	115478	SCREW, torx/slt pan hd, 1/4 in.	8	54	288147	KIT, gear, yoke, guide, repair	1
16	197211	COVER, pump outlet	1	60	103338	PACKING, o-ring	1
17	15D642	HANGER, cord	1	61	195947	FILTER, adapter	1
18	245578	STRAINER	1	62	245571	FILTER, Pump	1
19	197607	TUBE, suction barb (includes #90)	1	63	245070	KIT, inlet valve, integral hose barb (includes #25)	1
20	195400	CLIP, spring	2	64	288146	KIT, pump replacement (includes #1, 6, 10, 13, 25, 40, 49, 60, 61, 62, 63. Item #36 must be purchased separately)	1
21	195084	TUBE, drain	1	65	115642	BUSHING, strain relief (not shown)	1
22	116295	CLAMP, spring, 0.88 in diameter	1	101	248680	FLUID, Pump Defender (6 pack)	1
23	115489	CLAMP, drain tube	2	102	115719	PACKING, o-ring, filter adapter	1
25	103413	PACKING, o-ring, inlet valve	1	103	248681	FLUID, piston lube (6 pack)	1
26	244035	DEFLECTOR, barbed	1	104	115628	ELBOW, inlet (not shown)	1
27	196001	SPACER, pump	2	105	119276	FUSE	1
28	194507	DOWEL, pin, 5/16 in.	2				
29	15D921	LEG, right	1				
30	105521	PLUG	2				
31	15D922	LEG, left	1				
36	288145	KIT, pressure switch, repair	1				
37	277197	HOSE, 1/4 in. x 25 ft.	1				
39▲	195833	LABEL, danger	1				

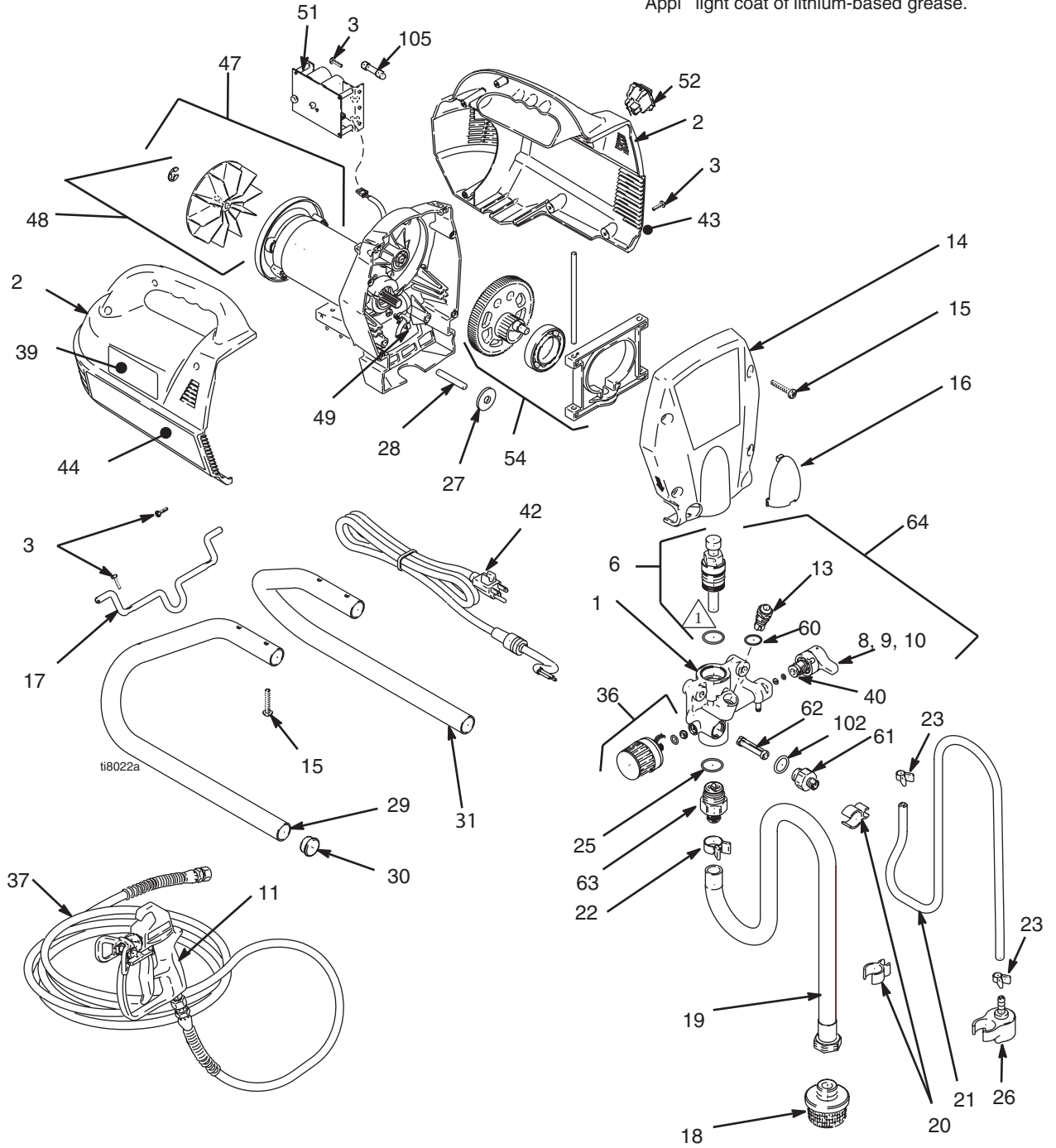
▲ Replacement Danger and Warning labels, tags, and cards are available at no cost.



# Parts

## 1500 Sprayer Model 248672

Appl light coat of lithium-based grease.



# Parts


## 1700 Sprayer Model 233789

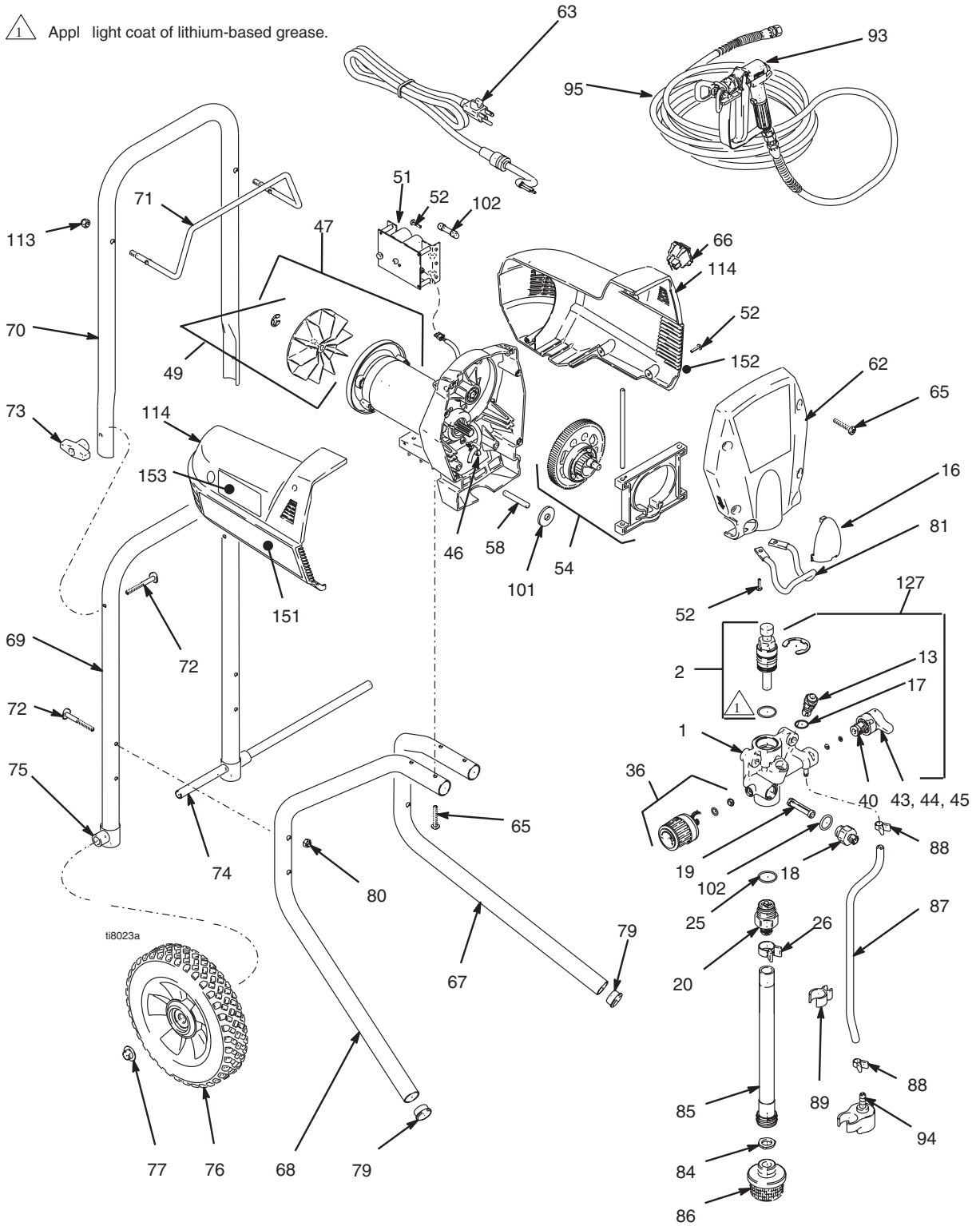
Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	195126	PUMP, housing	1	73	115480	KNOB, t-handle	1
2	245569	KIT, pump repair	1	74	197285	AXLE	1
13	243094	KIT, outlet valve (includes #17)	1	75	195367	SPACER	2
16	197211	COVER, pump outlet	1	76	115095	WHEEL, 9 in.	2
17	103338	PACKING, o-ring	1	77	112612	CAP	2
18	195947	FILTER, adapter	1	79	105521	PLUG	2
19	245571	FILTER, Pump	1	80	102040	NUT, lock	4
20	245070	KIT, inlet valve, integral hose barb (includes #25)	1	81	15D658	HANGAR, pail	1
25	103413	PACKING, o-ring, inlet valve	1	84	115099	WASHER, inlet strainer	1
36	288145	KIT, pressure switch, repair,	1	85	197608	TUBE, suction, barb, (Includes #84)	1
40	235014	KIT, valve, drain/prime, repair	1	86	245578	STRAINER	1
43	224807	CAM, drive valve	1	87	195108	TUBE, drain	1
44	187625	HANDLE, drain valve	1	88	115489	CLAMP, drain tube	1
45	111600	DRIVE PIN, drain valve	1	89	195400	CLIP, spring	1
46	119275	CLIP, retainer	1	93	233788	GUN, 300 Series	1
47	288149	KIT, motor repair, (includes fan kit #49)	1	94	244035	DEFLECTOR, barbed	1
48	116295	CLAMP, spring, 0.88 in. diameter	1	95	277201	HOSE, 1/4 in. x 50 ft.	1
49	288148	KIT, fan and shield	1	102	115719	PACKING, o-ring, filter adapter	1
51	288143	CONTROL BOARD	1	113	115651	NUT, acorn	2
52	115477	SCREW, machine	10	114	287783	ENCLOSURE, (includes labels 151, 152, 153 and screws)	1
54	288147	KIT, gear, yoke, guide, repair	1	101	196001	SPACER, pump	2
58	194507	DOWEL, pin, 5/16 in.	2	102	119276	FUSE	1
61	111348	BUSHING, strain relief (not shown)	1	127	288146	KIT, pump replacement (includes 1, 2, 13, 17, 18, 19, 20, 25, 40, 44, 45, 46, 88. Item #36 must be purchased separately)	1
62	233791	COVER	1	128	248680	FLUID, Pump Defender (6 pack)	1
63	118901	CORD, power	1	129	248681	FLUID, piston lube (6 pack)	1
65	115478	SCREW, torx/slt pan hd, 1/4 in.	8	151▲	15G187	LABEL, danger	1
66	118899	SWITCH, rocker	1	152▲	15G188	LABEL, warning	1
67	195433	LEG, right	1	153▲	195833	LABEL, warning	1
68	195434	LEG, left	1				
69	195436	FRAME, cart	1				
70	195435	HANDLE, cart	1				
71	15D650	RACK, hose	1				
72	115097	SCREW, curved head	2				

▲ Replacement Danger and Warning labels, tags, and cards are available at no cost.

# Parts

## 1700 Sprayer Model 233789

 Appl light coat of lithium-based grease.



# Parts

## 1900 Sprayer Model 248673

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	195126	PUMP, housing	1	45	115651	NUT, acorn	2
2	245569	KIT, pump repair	1	46	119275	CLIP, retainer	1
3	115477	SCREW, machine	11	47	288149	KIT, motor repair, (includes fan kit #49)	1
8	111600	DRIVE PIN, drain valve	1	48	15D650	RACK, hose	1
9	224807	CAM, drive valve	1	49	288148	KIT, fan and shield	1
10	187625	HANDLE, drain valve	1	51	288144	CONTROL BOARD, 1900	1
11	233788	GUN, 300 Series	1	52	118899	SWITCH, rocker	1
13	243094	KIT, outlet valve (includes #17)	1	54	288147	KIT, gear, yoke, guide, repair,	1
15	115478	SCREW, torx/slt pan hd, 1/4 in.	8	61	111348	BUSHING, strain relief (not shown)	1
16	197211	COVER, pump outlet	1	62	233791	COVER	1
17	103338	PACKING, o-ring	1	66	277201	HOSE, 1/4 in. x 50 ft.	1
18	195947	FILTER, adapter	1	72	115097	SCREW, curved head	2
19	245571	FILTER, Pump	1	73	115480	KNOB, t-handle	1
20	245070	KIT, inlet valve, integral hose barb (includes #25)	1	81	15D658	HANGER, pail	1
21	195108	TUBE, drain	1	84	115099	WASHER, inlet strainer	1
22	116295	CLAMP, spring, 0.88 in. diameter	1	85	15D671	TUBE, suction, barb (includes #21)	1
23	115489	CLAMP, drain tube	1	86	245578	STRAINER	1
25	103413	PACKING, o-ring, inlet valve	1	89	195400	CLIP, spring	1
26	244035	DEFLECTOR, barbed	1	90	195367	SPACER	2
28	194507	DOWEL, pin, 5/16 in.	2	101	115719	PACKING, o-ring, filter adapter	1
29	15D923	LEG, right	1	102	119277	FUSE	1
30	105221	PLUG	2	124	287783	ENCLOSURE, (includes labels 151, 152, 153 and screws)	1
31	15D924	LEG, left	1	127	288146	KIT, pump replacement (includes 1, 2, 13, 17, 18, 19, 20, 40. Item #36 must be purchased separately)	1
33	195366	AXLE	1	128	248680	FLUID, Pump Defender (6 pack)	1
34	115094	WHEEL, 10 in.	2	129	248681	FLUID, piston lube (6 pack)	1
35	112612	CAP	2	151▲	15G187	LABEL, danger	1
36	288145	KIT, pressure switch, repair,	1	152▲	15G188	LABEL, warning	1
37	195439	FRAME, cart	1				
39▲	195833	LABEL, warning	1				
40	235014	KIT, valve, drain/prime, repair	1				
41	195438	HANDLE, cart	1				
42	118902	CORD, power	1				

▲ Replacement Danger and Warning labels, tags, and cards are available at no cost.



# Technical Data

	ESP	1500	1700	1900
Working pressure range	0-2800 psi (0-19 MPa, 0 -193 bar)	0-3000 psi (0-21 MPa, 0-207 bar)	0-3000 psi (0-21 MPa, 0-207 bar)	0-3000 psi (0-21 MPa, 0-207 bar)
Electric motor	6.5 AMP (open frame, universal)	5.8 AMP (open frame, DC)	permanent magnet	9.4 AMP (open frame, permanent magnet DC)
Operating horsepower	3/8	5/8	3/4	7/8
Maximum delivery (with tip)	0.24 gpm (0.91 lpm)	0.27 gpm (1.02 lpm)	0.31 gpm (1.17 lpm)	0.38 gpm (1.44 lpm)
Paint hose	25 ft (7.6 m) x 1/4 in.	25 ft (7.6 m) x 1/4 in.	50 ft (15.2 m) x 1/4 in.	50 ft (15.2 m) x 1/4 in.
Maximum tip hole size	0.015 in. (0.38 mm)	0.015 in. (0.38 mm)	0.017 in. (0.43 mm)	0.019 in. (0.48 mm)
Weight, sprayer only	15 lb (7 kg)	21 lb (10 kg)	31 lb (14 kg)	35 lb (16 kg)
Weight, sprayer, hose & gun	18 lb (8 kg)	24 lb (11 kg)	36 lb (17 kg)	40 lb (18 kg)
Dimensions:				
Length	17.5 in. (44.5 cm)	13.75 in. (34.9 cm)	19.5 in. (49.5 cm)	19.5 in. (49.5 cm)
Width	18 in. (46 cm)	11 in. (27.9 cm)	17.25 in. (43.8 cm)	19 in. (48.3 cm)
Height	21 in. (53 in.)	19 in. (48.3 cm)	40.75 in. (103.5 cm)* <i>*Height with folded handle is 26 in. (66 cm)</i>	40 in. (101.6 cm)* <i>*Height with folded handle is 26 in. (66 cm)</i>
Power cord	16 AWG, 3-wire, 6 ft (1.8 m)			16 AWG, 3-wire, 10 ft (3.05 m)
Fluid inlet fitting	3/4 in. internal thread (standard garden hose thread)			
Fluid outlet fitting	1/4 NPSM external thread			
Inlet screen on suction tube	35 mesh (450 micron)			
Wetted parts, pump & hose	stainless steel, brass, ultra-high molecular weight polyethylene (UHMWPE), carbide, nylon, aluminum, PVC, polypropylene, fluoroelastomer	stainless steel, brass, leather, ultra-high molecular weight polyethylene (UHMWPE), carbide, nylon, aluminum, PVC, polypropylene, fluoroelastomer		
Wetted parts, gun	200 Series: plated steel, nylon, aluminum, tungsten carbide, stainless steel, brass, fluoroelastomer		300/400 Series: aluminum, brass, carbide, nylon, plated steel, stainless steel, UHMWPE, zinc	
Generator requirement	1500 Watt minimum			
Electrical power requirement	120VAC, 60 Hz, 1 phase, 15A			
Storage temperature range ♦❖	-30° to 160°F (-35° to 71°C)			
Operating temperature range ✓	40° to 115°F (4° to 46°C)			

♦ **When pump is stored with non-freezing fluid. Pump damage will occur if water or latex paint freezes in pump.**

❖ Damage to plastic parts may result if impact occurs in low temperature conditions.

✓ Changes in paint viscosity at very low or very high temperatures can affect sprayer performance.

# Notes



A series of 20 horizontal lines for writing notes.

# ASM Standard Warranty

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

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

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized ASM distributor for verification of the claimed defect. If the claimed defect is verified, ASM will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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