

Polymak[®]

Solutions Provider For Industry & Trade

AIRLESS PAINT SPRAYER

PM-APS-1.5L

INSTRUCTION MANUAL

Polymak[®]

Solutions Provider For Industry & Trade

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Read and follow all safety precautions in instruction manual.

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Warning symbol

	WARNING-To reduce the risk of injury, user must read instruction manual.
	Always wear ear protection
	Always wear goggles
	Always wear a breathing mask
	In accordance with essential applicable safety standards of European directives
	Class II product



the risks of fire or explosion, electrical shock and the injury to persons, read and understand all instructions included in this manual. Be familiar with the controls and proper usage of the equipment.



Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



HAZARD: INJECTION INJURY

A high pressure paint stream produced by this equipment can pierce the skin and underlying tissues, leading to serious injury and possible amputation. SEE A PHYSICIAN IMMEDIATELY

DO NOT TREAT AN INJECTION INJURY AS A SIMPLE CUT!

Injection can lead to amputation. See a physician immediately. The maximum operating range of the gun is 3000 PSI/20.68 MPa fluid pressure.

PREVENTION:

- NEVER aim the gun at any part of the body.
- Do not aim the gun at, or spray any person or animal.
- NEVER allow any part of the body to touch the fluid stream. DO NOT allow body to touch a leak in the fluid hose.
- NEVER put your hand in front of the gun. Gloves will not provide protection against an injection injury.
- ALWAYS lock the gun trigger, shut the pump off, and release all pressure before servicing, cleaning the tip or guard, changing tip, or leaving unattended. Pressure will not be released by turning off the motor. The PRIME/SPRAY knob must be turned to PRIME to relieve the pressure. Refer to the PRESSURE RELIEF PROCEDURE (page 7) described in the pump manual.

- ALWAYS keep the tip guard in place while spraying. The tip guard provides some protection but is mainly a warning device.
- ALWAYS remove the spray tip before flushing or cleaning the system.
 - Paint hose can develop leaks from wear, kinking and abuse. A leak can inject material into the skin. Inspect the hose before each use. Do not use hose to lift or pull equipment.
- NEVER use a spray gun without a working trigger lock and trigger guard in place.
- All accessories must be rated at or above 3000 PSI/20.68 Mpa. This includes spray tips, guns, extensions, and hose.

NOTE TO PHYSICIAN:

Injection into the skin is a traumatic injury. It is important to treat the injury as soon as possible. DO NOT delay treatment to research toxicity. Toxicity is a concern with some coatings injected directly into the blood stream. Consultation with a plastic surgeon or reconstructive hand surgeon may be advisable.



HAZARD: HAZARDOUS VAPORS

Paints, solvents, insecticides, and other materials can be harmful if inhaled or come in contact with the body. Vapors can cause severe nausea, fainting, or poisoning.

PREVENTION:

- Use a respirator or mask if vapors can be inhaled. Read all instructions supplied with the mask to be sure it will provide the necessary protection.
- Wear protective eyewear.
- Wear protective clothing as required by coating manufacturer.



HAZARD: EXPLOSION OR FIRE

Solvent and paint fumes can explode or ignite. Property damage and/or severe injury can occur.

PREVENTION:

- Provide extensive exhaust and fresh air introduction to keep the air within the spray area free from accumulation of flammable vapors. Solvent and paint fumes can explode or ignite.
- Do not spray in a confined area.
- Avoid all ignition sources such as static electric sparks, open flames, pilot lights, electrical appliances, and hot objects. Connecting or disconnecting power cords or working light switches can make sparks. Paint or solvent flowing through the equipment is able to result in static electricity.
- Do not smoke in spray area.
- Fire extinguisher must be present and in good working order.
- Place paint pump at least 20 feet from the spray object in a well-ventilated area (add more hose if necessary). Flammable vapors are often heavier than air. Floor area must be extremely well ventilated.
- The equipment and objects in and around the spray area must be properly grounded to prevent static sparks.



- Keep area clean and free of paint or solvent containers, rags and other flammable materials.
- Use only conductive or grounded high pressure fluid hose. Gun must be grounded through hose connections.
- Power cord must be connected to a grounded circuit.
- Always flush unit into a separate metal container, at low pump pressure, with spray tip removed. Hold gun firmly against side of container to ground container and prevent static sparks.
- Follow the material and solvent manufacturer's warnings and instructions. Know the contents of the paints and solvents being sprayed. Read all Material Safety Data Sheets (MSDS) and container labels provided with the paints and solvents. Follow the paint and solvent manufacturer's safety instructions.
- Use extreme caution when using materials with a flashpoint below 70°F (21°C). Flashpoint is the temperature that a fluid can produce enough vapors to ignite.
- Plastic can cause static sparks. Never hang plastic to enclose a spray area. Do not use plastic drop cloths when spraying flammable materials.
- Use lowest possible pressure to flush equipment.
- Do not spray onto pump assembly.



HAZARD: EXPLOSION HAZARD DUE TO INCOMPATIBLE MATERIALS

Will cause property damage or severe injury

PREVENTION:

- Do not use materials containing bleach or chlorine.
- Do not use halogenated hydrocarbon solvents such as bleach, mildewcide, methylene chloride and 1,1,1-trichloroethane. They are not compatible with aluminum.
- Contact your coating supplier about the compatibility of material with aluminum.

HAZARD: GENERAL

Can cause severe injury or property damage.

PREVENTION:

- Read all instructions and safety precautions before operating equipment.
- Follow all appropriate local, state, and national codes governing ventilation, fire prevention, and operation.
- Use only manufacturer authorized parts. User assumes all risks and liabilities when using parts that do not meet the minimum specifications and safety requirements of the pump manufacturer.
- Before each use, check all hoses for cuts, leaks, abrasion or bulging of cover. Check for damage or movement of couplings. Immediately replace the hose if any of these conditions exist. Never repair a paint hose. Replace it with another grounded high-pressure hose.
- All hoses, fittings, and filter caps must be secured before operating spray pump. Unsecured parts may eject at great force or leak a high pressure fluid stream causing severe injury.
- All hoses, swivels, guns, and accessories must be pressure rated at or above 3000 PSI/20.68 Mpa.
- Do not spray outdoors on windy days.
- Wear clothing to keep paint off skin and hair.
- Do not operate or spray near children. Keep children away from the equipment at all times.

- Do not overreach or stand on an unstable support. Keep effective footing and balance at all times.
- Stay alert and watch what you are doing.
- Do not operate the unit when fatigued or under the influence of drugs or alcohol.

Important Electrical Information

NOTICE

This machine is provided with a non-resetable thermal overload.

- Always disconnect the motor from the power supply before working on the equipment.

The cause of the overload should be corrected before restarting. Take unit to Service Center.

Grounding Instructions

This product must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This product is equipped with a cord having a grounding wire with an appropriate grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.



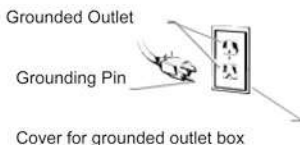
Improper installation of the grounding plug can result in a risk of electric shock.



If repair or replacement of the cord or plug is necessary, do not connect the green grounding wire to either flat blade terminal. The wire with insulation having a green outer surface with or without yellow stripes is the grounding wire and must be connected to the grounding pin.

Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if you are in doubt as to whether the product is properly grounded. Do not modify the plug provided. If the plug will not fit the outlet, have the proper outlet installed by a qualified electrician.

This product is for use on a nominal 220 volt circuit and has a grounding plug that looks like the plug illustrated below. Make sure that the product is connected to an outlet having the same configuration as the plug. **No adapter should be used with this product.**



Components and Description

Components

The shipping carton for your painting system contains the following:

- Suction tube and return tube
- Separating Oil
- Spray gun with filter
- Spray tip assembly (see chart on next page)
- 1/4" diameter pressure hose
- Instruction manual

Controls and Functions

ON/OFF Switch The ON/OFF switch turns the power to the sprayer on and off (O=OFF, I=ON).

Suction tube Fluid is drawn through the suction tube into the pump.

Fluid Section A piston in the fluid section moves up and down to create the suction that draws fluid through the suction tube.

Spray Gun

..... The spray gun controls the delivery of the fluid being pumped. The gun model you have depends on your sprayer model.

Spray Hose The spray hose connects the gun to the pump.

Return Tube Fluid is sent back out through the return tube to the original container when PRIME/SPRAY knob is in PRIME position.

PRIME/SPRAY Knob The PRIME/SPRAY knob directs fluid to the spray hose when set to SPRAY or the return tube when set to PRIME. The arrows on the PRIME/SPRAY knob show the rotation directions for PRIME and SPRAY. The PRIME/SPRAY knob is also used to relieve pressure built up in the spray hose (see **Pressure Relief Procedure**).

Pressure Control Dial The pressure control dial regulates the amount of force the pump uses to push the fluid.

Oiler The oiler is designed to provide lubrication to the fluid section of the pump.

Pusher stem The pusher stem is designed to keep the inlet valve open and from sticking due to dried materials.

Specifications

Capacity: Up to 1.50 liters / minute

Power source: 1010W universal motor

Power requirement: 15 amp minimum circuit on 220 VAC, 50 Hz current

Generator requirement: 8000 Watt

Safety features: Spray gun trigger lock and pressure diffuser; built-in tip safety guard;

PRIME/SPRAY knob for safe pressure release.

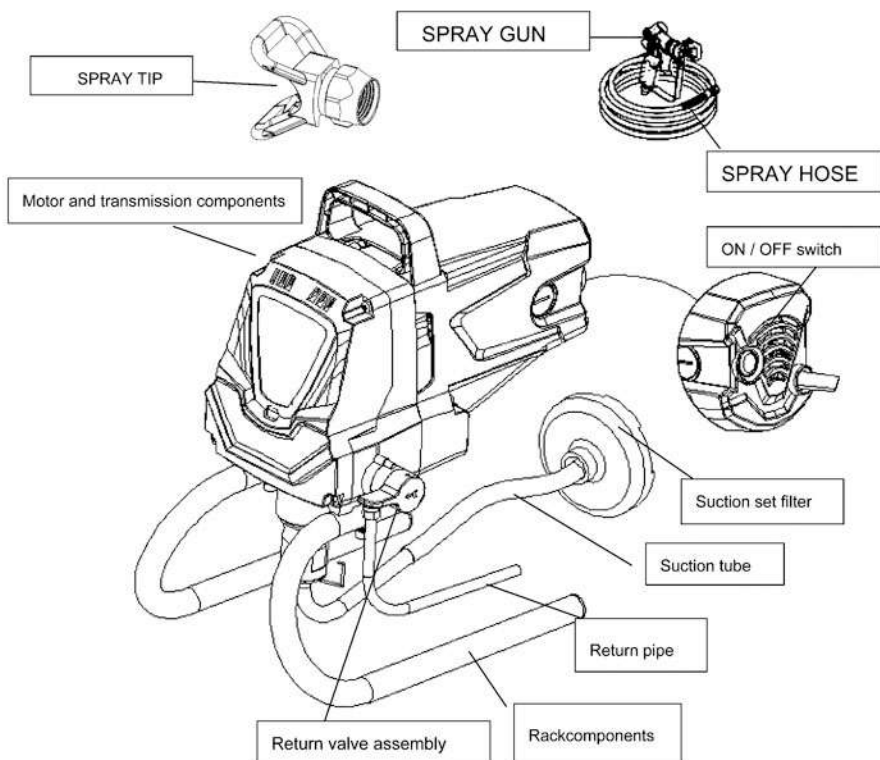
Capability: Sprays a variety of paints, oil base latex, primers, stains, preservatives and other nonabrasive materials, including pesticides and liquid fertilizers.

This pump should not be used with textured materials, block filler, or asphalt sealer.

This pump is available in this machine. All information given for the stand model applies to the cart models except where indicated.

Important

Some of the graphics in this manual may not exactly match your sprayer and spray gun. All information and instructions given in this manual applies to all models except where noted.



Assembly



Do not plug in the sprayer until setup is complete.

Tools needed for assembly:

1. Two adjustable wrenches
2. 3/16" Allen wrench
3. Extension cord (refer to Important Electrical Information)

4. Thread the high pressure hose to the spray hose port.

Tighten with an adjustable wrench.



5. Thread the other end of the hose to the spray gun. Hold the gun with one adjustable wrench, and tighten the hose nut with the other

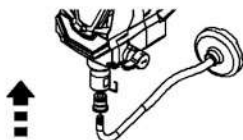
The spray tip **SHOULD NOT** be attached until after the sprayer and spray hose have been purged and primed.



6. Thread the suction tube onto the inlet valve and tighten firmly by hand. Be sure that the threads are straight so that the fitting turns freely.



7. Press the return tube onto the return tube fitting. Squeeze the clip over the return tube fitting to secure the return tube.



8. Verify that the seal is present inside the suction tube. Thread the inlet filter into the end of the suction tube.



Before You Begin

This section contains instructions that will be repeated throughout this manual.

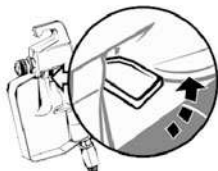
Locking the Spray Gun:



Always lock the trigger off when attaching the spray tip or when the spray gun is not in use.

SprayGun

The gun is locked when the trigger lock is at a 90° angle. (perpendicular to the trigger in either direction).

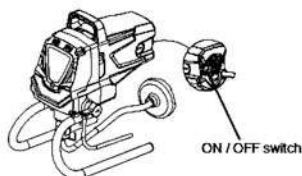


To lock the gun, turn the trigger lock forward and slightly down until it stops.

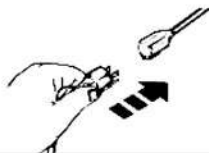


Plugging in the Sprayer:

1. Check that the ON/OFF switch is in the OFF (O) position.



2. Plug the power cord into a grounded outlet or heavy duty grounded extension cord. Plug in the extension cord. Refer to **Important Electrical Information**.

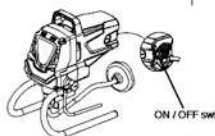


Pressure Relief Procedure:

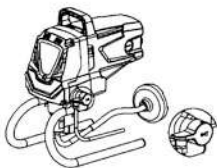


Be sure to follow the **Pressure Relief Procedure** when shutting the unit off FOR ANY PURPOSE. This procedure is used to relieve pressure from the spray hose.

1. Lock the spray gun off (see directions above). Flip the ON/OFF switch to the OFF position.



2. Turn the PRIME/SPRAY knob to PRIME.



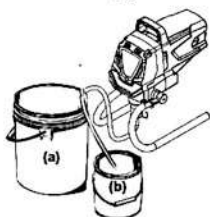
3. Unlock the spray gun and trigger spray gun into the side of the material bucket. Lock the spray gun.



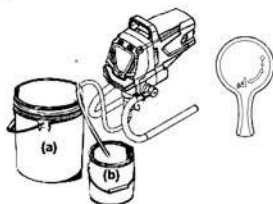
Purging and Priming the Sprayer

All new units are performance-tested at the factory and are shipped with test fluid in the fluid section to prevent corrosion during shipment and storage. If you have already used your pump, some water or solvent used in cleaning may remain in the fluid section. Whether your sprayer is new or if you have already used it, this fluid must be purged and thoroughly cleaned out of the system prior to use. Follow the steps below.

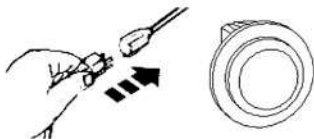
1. Place a full container of spraying material underneath the suction tube (a). Secure the return tube (b) into a waste container.



2. Turn the pressure control dial to maximum pressure. Turn the PRIME/SPRAY knob to PRIME.

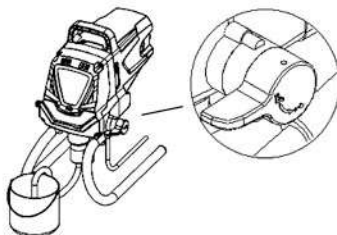


3. Plug in the sprayer and move the ON/OFF switch to the ON (I) position.



The unit will begin to draw material up the suction tube, into the pump, and out the return tube. Let the unit cycle long enough to remove test fluid from the pump, or until spray material is coming from the return tube.

4. Switch the pump OFF (O). Remove the return tube from the waste container and place it in its operating position above the container of spraying material. Use the metal



Purging and Priming the Spray Hose

1. Unlock the spray gun and turn the PRIME/SPRAY knob to PRIME.

The spray tip **SHOULD NOT** be attached to your spray gun when purging your spray hose.



2. **PULL** the trigger and aim the spray gun at the side wall of a waste container. **If using oil-based materials, the spray gun must be grounded while purging (see warning below).**



Keep hands clear from fluid stream. Ground the gun by holding it against the edge of a metal container while flushing. Failure to do so may lead to a static electric discharge which may cause a fire.

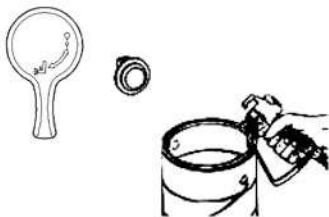
3. While pulling the trigger, switch the pump ON (I), **AND** turn the PRIME/SPRAY knob to SPRAY. Hold the trigger until all air, water, or solvent is purged from the spray hose and material is flowing freely.



If the PRIME/SPRAY knob is still on SPRAY, there will be high pressure in the hose and spray gun until the PRIME/SPRAY knob is turned to PRIME.

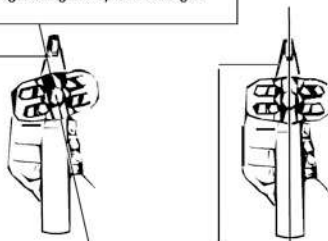


4. Release trigger. Turn the PRIME/SPRAY knob to PRIME. Turn the pump OFF (O). Trigger the gun into the waste container to be sure that no pressure is left in the hose.



5. Lock the spray gun off. **Make sure the saddle and black seal are in place inside the tip guard nut** (refer to **Components and Description**, page 5). Thread the spray tip guard assembly onto the gun. Tighten by hand.

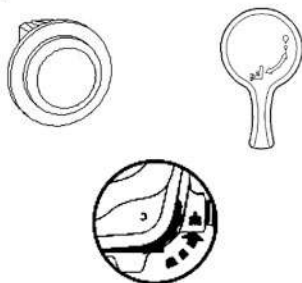
Begin tightening the tip at this angle



To achieve the desired spray angle when tight

NOTE - Be sure that the paint hose is free of kinks and clear of objects with sharp cutting edges.

1. Switch the pump ON (I). Turn the PRIME/SPRAY knob to SPRAY. Turn the pressure control dial to maximum pressure (+). The spray hose should stiffen as paint begins to flow through it.



2. When motor shuts off, unlock the spray gun and spray a test area to check the spray pattern.

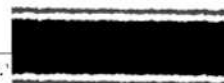
The motor will cycle on and off automatically as it needs pressure.

The pressure control dial can be adjusted up or down to achieve the desired spray pattern.

Good spray pattern



Paint tailing pattern (pressure too low, clogged tip)



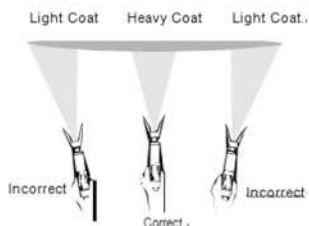
The key to a good job is an even coating over the entire surface.

This is done by using even strokes. Follow the TIPS, below.

Tip:

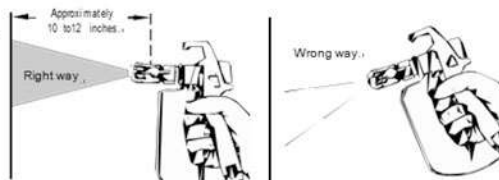
Keep the spray gun at right angles to the surface.

This means moving your entire arm back and forth rather than just flexing your wrist.



Tip:

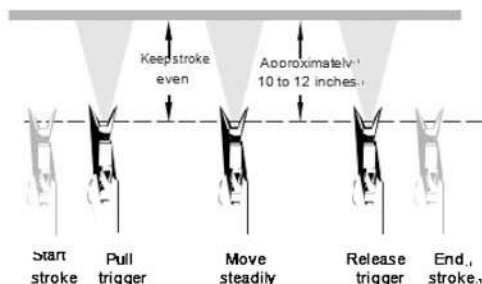
Keep the spray gun perpendicular to the surface. Otherwise one end of the pattern will be thicker than the other.



Tip:

Trigger gun after starting the stroke. Release the trigger before ending the stroke. The spray gun should be moving when the trigger is pulled and released. **Overlap each stroke by about 30%. This will ensure an even coating.**

If you expect to be away from your sprayer for more than one hour, follow the [Short-Term Storage](#) instructions



Spraying Troubleshooting - Unclogging the Spray Tip

If the spray pattern becomes distorted or stops completely while the gun is triggered, follow these steps.



Do not attempt to unclog or clean the tip with your finger.

NOTE - Do not use a needle or other sharp pointed instrument to clean the tip. The hard tungsten carbide can chip.

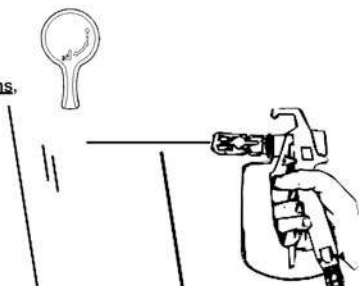
1. Release the trigger and lock the gun off. Rotate the reversible tip arrow 180° so that the point of the arrow is toward the rear of the gun (CLEAN position). **Gun locked**

Under pressure, the spray tip may be very difficult to turn. Turn the **PRIME/SPRAY** knob to **PRIME** and trigger the gun. This will relieve pressure and the tip will turn more easily.



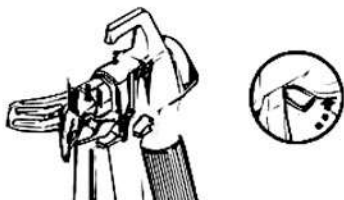
2. Turn the PRIME/SPRAY knob to SPRAY.
3. Unlock the gun and squeeze the trigger, pointing the gun at a scrap piece of wood or cardboard. This allows pressure in the spray hose to blow out the obstruction. When the nozzle is clean, material will come out in a straight, high pressure stream.

If material still will not spray from the spray tip, follow the Cleaning the spray gun filter instructions.



4. Release the trigger and lock the gun off. Reverse the tip so the arrow points forward again (SPRAY position). Unlock the gun and resume spraying.

Gun locked



Spraying Troubleshooting - Cleaning the Spray Gun

Filter

The filter must be cleaned every time you use your sprayer. When using thicker spray materials, the filter might need to be cleaned more often.

1. Perform Pressure Relief Procedure

2a. 1 - Unscrew the fitting from the bottom of the spray gun using an adjustable wrench, making sure not to lose the spring.

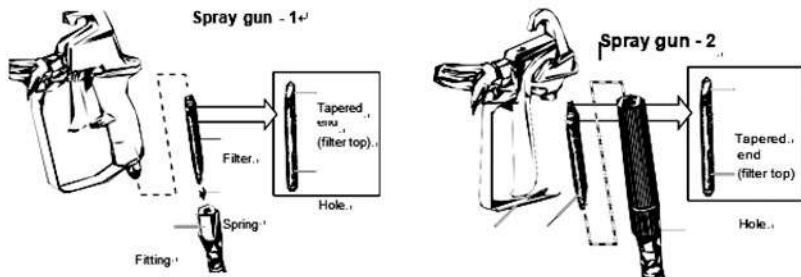
2b. 2 - Unclip the trigger guard from the filter housing by pulling outward from the filter housing. Unscrew the filter housing.

4. Remove the filter from the spray gun housing and clean with the appropriate cleaning solution (warm, soapy water for latex paints, mineral spirits for oil-based materials).

5. Inspect the filter for holes (see inset, right). Replace if holes are found.

NOTE - Never poke the filter with a sharp instrument.

- Replace the cleaned filter, tapered end first, into the gun housing. The tapered end of the filter must be loaded properly into the gun. Improper assembly will result in a plugged tip or no flow from the gun.
- Reassemble the spraygun.

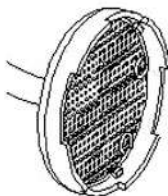


Spraying Troubleshooting - Cleaning the Inlet Filter

The filter at the bottom of the suction tube may also need cleaning. Check it every time you change spray containers.

- Remove the filter by unscrewing it from the suction tube. Clean the filter with the appropriate cleaning solution (warm, soapy water for latex materials, mineral spirits for oil-based materials).
- Thread the filter back into place.

If after completing all of the steps in Spraying Troubleshooting you are still experiencing problems spraying, refer to the Troubleshooting section.



Important Cleaning Notes - Read before cleanup

- When using latex materials, clean your sprayer and components with water. When using oil-based materials, use mineral spirits.
- Do not use mineral spirits on latex materials, or the mixture will turn into a jelly-like substance which is difficult to remove.
- No matter which cleaning solution you use, make sure to dispose of it properly when finished cleaning your sprayer.
- Thorough cleaning and lubrication of the sprayer is the most important step you can take to ensure proper operation after storage.



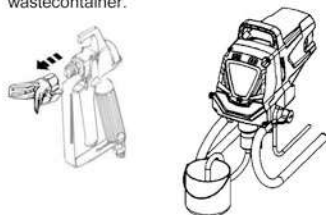
Follow these steps whenever cleaning with mineral spirits:

- Always flush spray gun at least one hose length away from spray pump.
 - If collecting flushed solvents in one gallon metal container, place it into an empty five gallon container, then flush.
 - Area must be free from vapors.
5. Follow all cleanup instructions.
- **DO NOT** use gasoline to clean your sprayer.

Cleanup-Latex materials

Follow these steps if you used latex materials AND if you have a garden hose available. If you do not have a garden hose available, follow the [Cleanup for Oil-Based Materials](#) instructions.

1. Lock the gun and remove the spray tip assembly. Place the suction tube and return tube into an empty waste container.

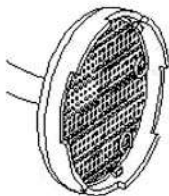


Empty waste container

2. Using a garden hose, rinse off the suction tube, return tube and inlet filter. Empty the waste container.



3. Remove the inlet filter from the suction tube and place into a waste container (**do not discard**).

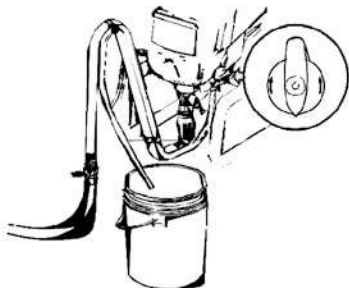


4. Verify that the seals are present inside the adapter and suction tube. Thread the pump cleaning adapter onto a garden hose. Connect hose and adapter to the fitting on the end of the suction tube.



Continued on next page.

6. Unclip the return tube from the suction tube and place it into the waste container. Turn the PRIME/SPRAY knob to PRIME.

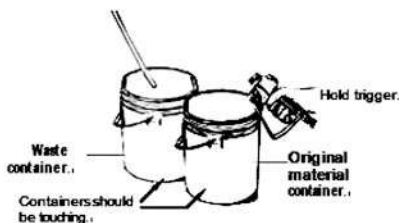


7. Turn water supply on. Turn pump ON (I). Water will go into the suction tube and out through the return tube. Let pump run for a few minutes to allow the return tube to be flushed.

Leave pump running through steps 7 and 8



8. Place the original material container next to the waste container. Aim the spray gun into the side of the **original material container** and hold the trigger.

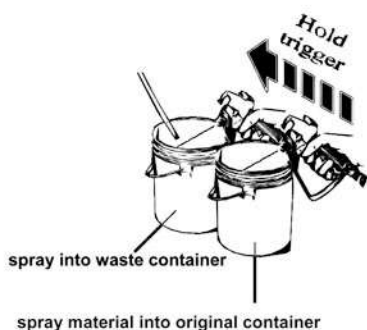


9. While pulling the trigger, turn the PRIME/SPRAY knob to SPRAY to purge material from the hose back into the original container.



Keep holding trigger through next steps.

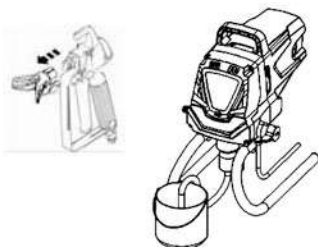
10. When cleaning solution comes from the spray gun, keep holding the trigger and aim the spray gun into the side of the waste container.
11. Trigger the gun until the fluid coming out of the gun is clear. You may need to empty the waste container and continue flushing.
12. Turn the PRIME/SPRAY knob to PRIME and trigger gun once more to relieve pressure.



Move on to Cleaning the Spray Gun Components.

Cleanup - Oil-based materials

1. Lock the gun and remove spray tip assembly. Submerge suction set into a bucket with appropriate cleaning solution.



Bucket with cleaning solution

2. Place a waste container next to the original material container. Aim the spray gun into the side of the **original material container** and hold the trigger.



3. While pulling the gun trigger, turn the pump ON (I), and turn the PRIME/ SPRAY knob to SPRAY to purge material from the hose back into the original container.

- Hold trigger
- Turn pump ON(I)
- Turn PRIME/SPRAY knob to SPRAY

Keep holding trigger through next steps.



4. When cleaning solution comes from the spray gun, keep holding the trigger and aim the spray gun into the side of the waste container (**ground gun with a metal container if flushing with flammable solvent**).

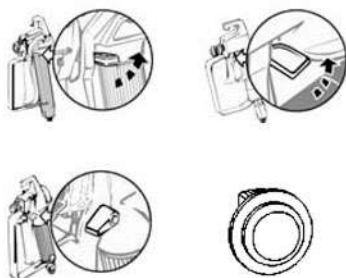
5. Trigger the gun until the fluid coming out of the gun is clear. You may need to dispose and obtain new cleaning solution.
6. Turn the PRIME/SPRAY knob to PRIME and trigger gun **once** to relieve pressure.



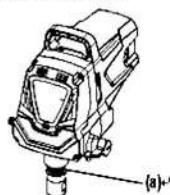
Move on to Cleaning the Suction Set.

Cleanup - Cleaning the Suction Set

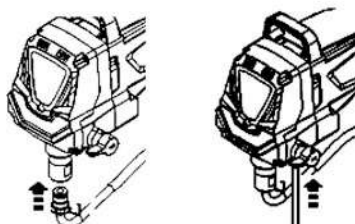
1. Lock the gun and turn the pump OFF (O).



2. Remove the suction hose and return tube and clean it using the appropriate cleaning solution. You should also wipe the threads of the inlet nut (a) and remove and clean the solution set inlet filter.



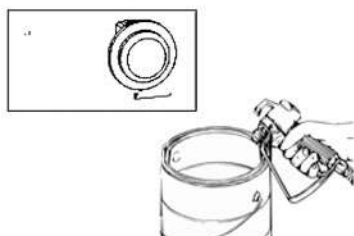
3. When suction set is clean, thread the suction tube back into the inlet valve, and replace the return tube onto the return tube fitting. Replace clip.



4. Submerge the suction set into a bucket of **NEW** cleaning solution.



5. Turn the PRIME/SPRAY knob to PRIME. Turn the pump ON (I), and trigger the gun once into a waste container to relieve pressure.



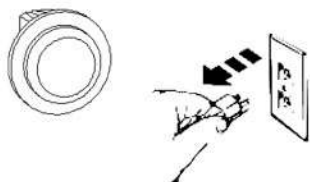
- Let the pump circulate cleaning solution through the suction set for 2-3 minutes. Turn the pump OFF.



Note-If you used oil-based material, you must flush the pump again using water to prepare it for storage.
Move on to Cleaning the Spray Gun Components

Cleanup - Cleaning the Spray Gun Components

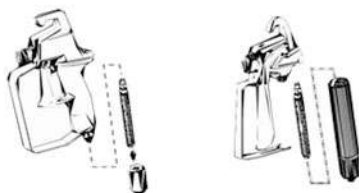
1. Make sure the pump is switched OFF (O).
Make sure the PRIME/SPRAY knob is turned to PRIME. Unplug the sprayer.



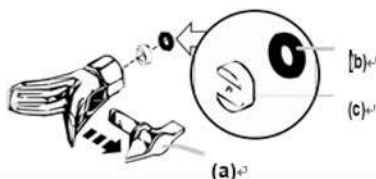
2. Remove spray gun from the paint hose using adjustable wrenches.



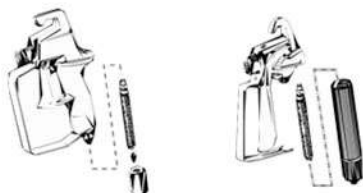
3. Remove filter from spray gun (refer to Cleaning the Spray Gun Filter).



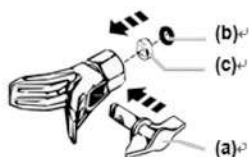
4. Remove spray tip (a) from spray guard assembly. Clean spray tip with a soft-bristled brush and the appropriate cleaning solution. Be sure to remove and clean the washer (b) and saddle seat (c) located in the rear of the spray guard assembly.



5. Install gun filter tapered-end first.
Reassemble spray gun.



6. Install spray tip (a), saddle seat (c) and washer (b), and replace spray guard assembly.



7. Thread the spray gun back onto the paint hose. Tighten with a wrench.



Short-Term Storage (up to 16 hours)

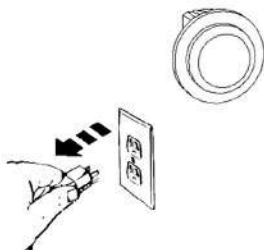
Follow these steps when using latex materials only. If using materials that are oil-based, follow the Cleanup and Long-Term Storage steps.

Shutdown

1. Lock the spray gun off



2. Turn the PRIME/SPRAY knob to PRIME.
Switch the pump OFF (O). Unplug the sprayer.



3. Pour 1/2 cup water slowly on the top of the paint to prevent the paint from drying. Wrap the spray gun assembly in a damp cloth and place it in a plastic bag. Seal the bag shut. Place the sprayer in a safe place out of the sun for short-term storage.



Startup

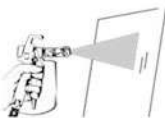
1. Remove the gun from the plastic bag. Stir the water into the paint.



2. Turn the PRIME/SPRAY knob to PRIME. Plug sprayer in. Turn the switch to ON (I).



3. Turn the PRIME/SPRAY knob to SPRAY. Test the sprayer on a practice piece and begin spraying.

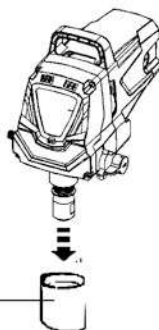


Long-Term Storage

Follow these instructions only after all cleanup steps have been performed.

1. Fill a cup or other container with separating oil (approximately 2 ounces) supplied with the unit and submerge the inlet valve into the oil.

Separating oil



2. Place a rag over the spray hose port, and turn the switch ON (I). When the oil has been sucked from the cup, turn the pump OFF (O).



3. Wipe the entire unit, hose and gun with a damp cloth to remove accumulated paint. Replace the high pressure hose to the paint hose port.

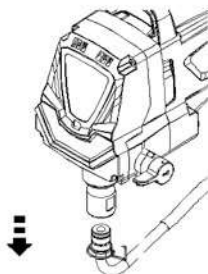


Cleaning the Inlet Valve

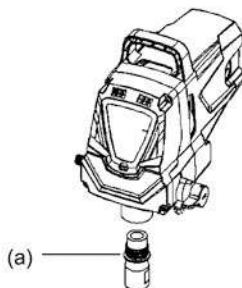
Cleaning or servicing the inlet valve may be required if the unit has priming problems. Priming problems may be prevented by properly cleaning the sprayer and following the Long-Term

Storage steps.

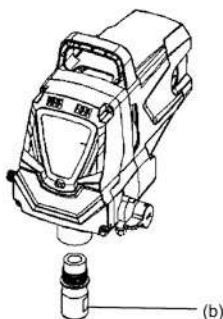
1. Remove the suction set.



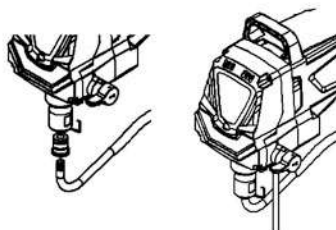
2. Unscrew the inlet valve assembly (a) from the sprayer. Visually inspect the inside and outside of the inlet valve assembly. Clean any paint residue with the appropriate cleaning solution.



3. Lubricate the O-ring on the inlet valve (b). Replace inlet valve assembly by screwing it into the sprayer. Torque to 23-27 ftlbs.



4. Replace suction set and hand-tighten.



If priming problems persist, you may need to replace the inlet valve assembly. Call Customer Service to order new inlet valve assembly.

Fluid Section Seal Replacement Instructions



Always wear protective eye wear while servicing the pump. Be sure to follow the Pressure

Relief Procedure when shutting the unit down for any purpose, including servicing or adjusting.

After performing the Pressure Relief Procedure, be sure to unplug the unit before servicing or adjusting. Area must be free of solvents and paint fumes.

Disassembly of the Fluid Section

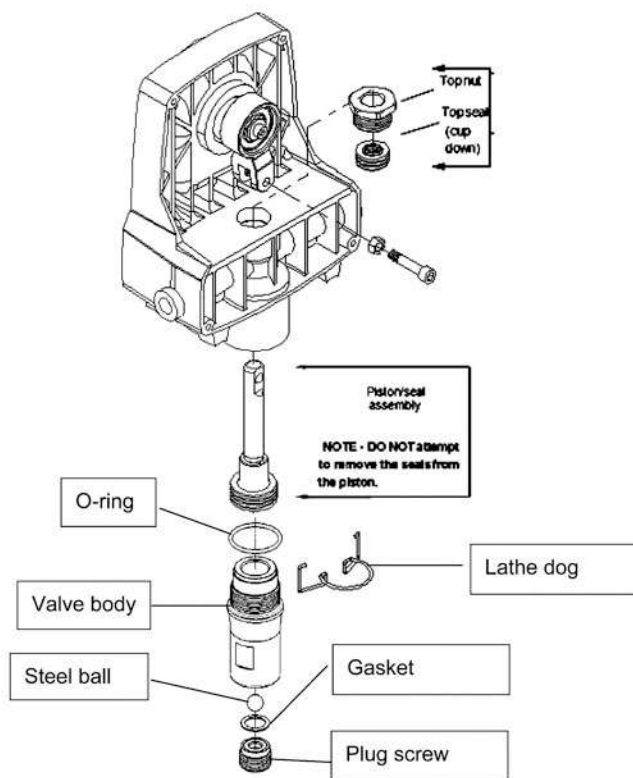
1. Remove the suction set.
2. Remove the front cover and the four screws that secure it using a T20 Torx head driver.
3. using a T20 Torx head driver.
4. Remove the yoke screw and washer that secures the dowel pin. The dowel pin connects the yoke to the piston.
5. a). **For this machine**, rotate the pump shaft so the piston is in the top dead center position. This can be done by pushing on the yoke. This is required to disassemble all the parts.
b). **For other models**, inspect the yoke assembly and piston. In order to remove all the necessary parts, the piston must not be in the bottom dead center position. If the piston is at the bottom of the stroke, install the front cover and screws, turn the pump on briefly to index the piston, unplug the unit, and repeat step 2.
6. Unscrew and remove the inlet valve assembly.
7. Remove the piston assembly by pushing down on the piston near the yoke.
8. Unscrew and remove the top nut using an adjustable wrench.
9. Remove the worn seals using a flat head screwdriver or punch. Remove the top seal from the top and the bottom seal from the bottom by pressing against the side of the seal and popping it out. Be sure not to scratch the housing where the seals are located.
10. Clean the area where the new seals are to be installed.

Assembly of the Fluid Section

1. Lubricate the new top seal with Separating Oil or light household oil and by hand place the seal (cup side of seal down) into the top port of the housing.
2. Place a small amount of anti-seize on the threads of the top nut. Place the top nut into the top of the housing and tighten with an adjustable wrench. This will drive the top seal into the correct position.
3. Turn the pump upside down. Lubricate the seal on the piston/seal assembly similar to the top seal. Place the piston/seal assembly into the bottom of the housing. Insert the plastic insertion tool and thread into position to properly seat the piston/seal. Thread fully until tight. Remove the insertion tool.
4. Install the new O-ring on the inlet valve assembly, lubricate with Separating Oil, thread into

the bottom (inlet) of the housing, and tighten with an adjustable wrench. This will drive the bottom seal into the correct position.

5. Align the piston with the yoke. Be careful not to damage the piston.
6. Apply any type of household grease to the piston and yoke area to prolong life. Apply to the holes in the yoke where the dowel is inserted.
7. Install the dowel pin to connect the yoke to the piston. The piston may have to be moved up or down to do this.
8. Install the yoke screw and washer to secure the dowel pin.
9. Turn pump right side up and apply a few drops of Separating Oil or light household oil between the top nut and piston. This will prolong the seal life.
10. Install front cover and four (4) screws.
11. Replace inlet valve. Install the suction set.



Troubleshooting / Maintenance

Problem	Cause	Solution
A. The sprayer does not start.	1. The sprayer is not plugged in. 2. The ON/OFF switch is set to OFF. 3. The sprayer was turned off while still under pressure. 4. No voltage is coming from the wall plug. 5. The extension cord is damaged or has too low a capacity. 6. A fuse is blown in the sprayer. 7. There is a problem with the motor.	1. Plug the sprayer in. 2. Turn the ON/OFF switch to ON. 3. Turn the pressure control knob to maximum pressure (+), or relieve pressure by turning the PRIME/SPRAY valve to PRIME. 4. Properly test the power supply voltage. 5. Replace the extension cord. 6. Take sprayer to Authorized Service Center. 7. Take sprayer to Authorized Service Center.
B. The sprayer starts but does not draw in paint when the PRIME/SPRAY knob is set to PRIME.	1. The paint bucket is empty or the suction tube is not totally immersed in the paint. 2. The suction set is clogged. 3. The suction tube is loose at the inlet valve. 4. The inlet valve is stuck. 5. The outlet valve is stuck. 6. The inlet valve is worn or damaged. 7. The PRIME/SPRAY valve is plugged.	1. Refill the bucket or immerse the suction tube in paint. 2. Clean the suction set. 3. Clean the tube connection and tighten it securely. 4. Clean the inlet valve. Inlet may be stuck from old paint. Depress pusher stem to release. 5. Outlet may be stuck from old paint. Remove inlet valve. Insert pen or pencil in housing to release. 6. Replace the inlet valve.* 7. Take sprayer to Authorized Service Center.
C. The sprayer draws up paint but the pressure drops when the gun is triggered.	1. The spray tip is worn. 2. The suction set screen is clogged. 3. The gun filter is plugged. 4. 5. The paint is too heavy or coarse. 6. The inlet valve assembly is damaged or worn. 7. The suction tube is loose.	1. Replace the spray tip with a new tip.** 2. Clean the suction set screen. 3. Clean or replace the proper filter. Always keep extra filters on hand. 4. Thin or strain the paint. 5. Replace the inlet valve.* 6. Tighten the suction tube.
D. The PRIME/SPRAY valve is on SPRAY and there is flow through the return tube.	1. The PRIME/SPRAY valve is dirty or worn.	1. Take sprayer to Authorized Service Center.
E. The spray gun leaks	1. Internal parts of the gun are worn or dirty.	1. Take the sprayer to a Authorized Service Center.
F. The tip guard assembly leaks.	1. The tip was assembled incorrectly. 2. The washer is worn.	1. Check the tip assembly and assemble properly 2. Replace the washer.*
G. The spray gun will not spray.	1. The spray tip or the gun filter is plugged. 2. The spray tip is not fully in the SPRAY position.	1. Clean the spray tip or gun filter. 2. Put the tip in the SPRAY position.
H. The paint pattern is tailing.	1. The pressure is set too low. 2. The gun or the suction filter is plugged. 3. The suction tube is loose at the inlet valve. 4. The tip is worn. 5. The paint is too thick. 6. Pressure loss.	1. Increase the pressure. 2. Clean the filters. 3. Tighten the suction tube fitting. 4. Replace the spray tip. 5. Thin the paint. 6. Refer to Causes and Solutions for problem C.

* Special repair kits with instructions are available for these procedures.

** Additional parts are available for this procedure.

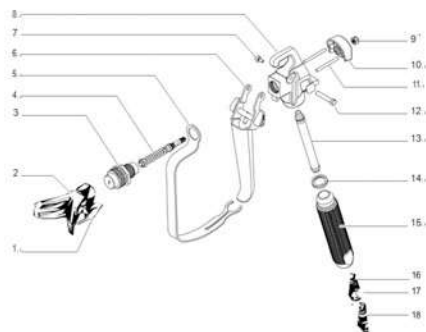
Daily Maintenance

The only daily maintenance necessary is thorough cleaning and lubricating after usage. Follow the cleaning and lubricating procedures in this manual.

Extended Maintenance

Some pump parts eventually wear out from use and must be replaced. The following list indicates the available repair kits for the parts replaced by each kit. However, pump performance is the only reliable indicator of when to replace wear parts. Refer to the **Troubleshooting** section for more information on when to use these kits.

Parts List



Item Article	English - Description	Qty
1)	Spray tip, 415/515	1
2)	Guard assembly	1
3)	Diffuser, 7/8"	1
4)	Valve spring unit	1
5)	Trigger guard	1
6)	Trigger assembly	1
7)	Trigger screw (short)	1
8)	Gun housing	1
9)	Hex nut	1
10)	Retainer block	1
11)	Sliding pin	1
12)	Trigger screw (long)	1
13)	Filter, white	1
14)	Washer	1
15)	Handle	1
16)	Spring	1
17)	Sealing ring	1
18)	Fitting	1

