



MAGNUM[®] TRUEAIRLESS[™]

Electric Airless Sprayer



OWNERS MANUAL *Project Painter™ Plus*

3A4421A

EN



WARNING

FIRE AND EXPLOSION HAZARD

Do not spray or clean with flammable materials.
Use water-based materials only.

**Not approved for use in explosive atmospheres or hazardous locations.
For portable airless spraying of architectural paints and coatings.**



Important Safety Instructions

Read all warnings and instructions in this manual, related manuals, and on the unit including the power cord. Be familiar with the controls and the proper usage of the equipment. Save these instructions.

DIY SERIES

BEFORE YOU SPRAY

Review Warnings for Important Safety Information

Important! Read carefully and practice good safety habits.

Related Manuals



Gun: 312830 (SG2)

Quick Guide:

- 3A4463 English
- 3A4463 Spanish
- 3A4423 Portuguese (Portugal)
- 3A4467 Korean
- 3A4468 Chinese

Model

3000 psi (207 bar, 20.7 MPa) Maximum Working Pressure

	VAC	Model
 	110	17N431
	230 Schuko	16W119

Important User Information

Thank You for Your Purchase!

Before using your sprayer read this Owners Manual for complete instructions on proper use and safety warnings.

This sprayer is designed to provide superior spray performance with water-based architectural paints and coatings. This user information is intended to help you understand the types of materials that can be used with your sprayer.

Paints, coatings and clean-up materials generally fit into one of the following **3 basic categories**:



WATER-BASED: The container label should indicate that the material can be cleaned up with soap and water. Your sprayer is compatible with this type of material. Your sprayer is **NOT** compatible with harsh cleaners such as chlorine bleach.



OIL-BASED: The container label should indicate that the material is COMBUSTIBLE and can be cleaned up with mineral spirits or paint thinner. The Safety Data Sheet (SDS) must indicate that the flash point of the material is above 100° F. Your sprayer is not compatible with this type of material. Use oil-based material outdoors or in a well-ventilated indoor area with a flow of fresh air. See the safety warnings in this manual.



FLAMMABLE: This type of material contains flammable solvents such as xylene, toluene, naphtha, MEK, lacquer thinner, acetone, denatured alcohol, and turpentine. The container label should indicate that this material is FLAMMABLE. This type of material is **NOT** compatible with your sprayer and **CANNOT** be used.

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Warnings

The following warnings are for the 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. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

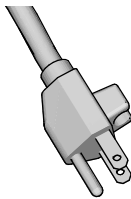
WARNING



GROUNDING

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 is able to result in a risk of electric shock.
- When repair or replacement of the cord or plug is required, do not connect the grounding wire to either flat blade terminal.
- The wire with insulation having an outer surface that is green with or without yellow stripes is the grounding wire.
- Check with a qualified electrician or serviceman when the grounding instructions are not completely understood, or when in doubt as to whether the product is properly grounded.
- Do not modify the plug provided; if it does not fit the outlet, have the proper outlet installed by a qualified electrician.
- This product is for use on a nominal 110V or 230V circuit and has a grounding plug similar to the plugs illustrated below.



ti24583b

- Only connect the product to an outlet having the same configuration as the plug.
- Do not use an adapter with this product.

Extension Cords:

- Use only a 3-wire extension cord that has a grounding plug and a grounding receptacle that accepts the plug on the product.
- Make sure your extension cord is not damaged. If an extension cord is necessary use 12 AWG (2.5mm²) minimum to carry the current that the product draws.
- An undersized cord results in a drop in line voltage and loss of power and overheating.

Conductor Size		Length
AWG (American Wire Gauge)	Metric	Maximum
16	1.5 mm ²	25 ft. (8 m)
12	2.5 mm ²	50 ft. (15 m)

WARNING



FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent, in work area can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well ventilated area.
- 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.
- Keep work area free of debris, including solvent, rags and gasoline.
- Ground equipment in the work area. See **Grounding** instructions.
- **Stop operation immediately** if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.



ELECTRIC SHOCK HAZARD

This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.

- Turn off and disconnect power cord before servicing equipment.
- Connect only to grounded electrical outlets.
- Use only 3-wire extension cords.
- Ensure ground prongs are intact on power and extension cords.
- Do not expose to rain. Store indoors.



WARNING

SKIN INJECTION HAZARD



High-pressure spray is able to inject toxins into the body and cause serious bodily injury. In the event that injection occurs, **get immediate surgical treatment**.



- Do not aim the gun at, or spray any person or animal.
- Keep hands and other body parts away from the discharge. For example, do not try to stop leaks with any part of the body.



- Always use the nozzle tip guard. Do not spray without nozzle tip guard in place.



- Use Graco nozzle tips.



- Use caution when cleaning and changing nozzle tips. In the case where the nozzle tip clogs while spraying, follow the **Pressure Relief Procedure** for turning off the unit and relieving the pressure before removing the nozzle tip to clean.

- Equipment maintains pressure after power is shut off. Do not leave the equipment energized or under pressure while unattended. Follow the **Pressure Relief Procedure** when the equipment is unattended or not in use, and before servicing, cleaning, or removing parts.

- Check hoses and parts for signs of damage. Replace any damaged hoses or parts.

- This system is capable of producing 3000 psi (207 bar, 20.7.MPa). Use Graco replacement parts or accessories that are rated a minimum of 3000 psi (207 bar, 20.7.MPa).

- Always engage the trigger lock when not spraying. Verify the trigger lock is functioning properly.

- Verify that all connections are secure before operating the unit.

- Know how to stop the unit and bleed pressure quickly. Be thoroughly familiar with the controls.

EQUIPMENT MISUSE HAZARD



Misuse can cause death or serious injury.



- Always wear appropriate gloves, eye protection, and a respirator or mask when painting.
- Do not operate or spray near children. Keep children away from 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.

- Do not kink or over-bend the hose.

- Do not expose the hose to temperatures or to pressures in excess of those specified by Graco.

- Do not use the hose as a strength member to pull or lift the equipment.

- Do not spray with a hose shorter than 25 feet.

- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.

- Make sure all equipment is rated and approved for the environment in which you are using it.

PRESSURIZED ALUMINUM PARTS HAZARD



Use of fluids that are incompatible with aluminum in pressurized equipment can cause serious chemical reaction and equipment rupture. Failure to follow this warning can result in death, serious injury, or property damage.

- Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.

- Do not use chlorine bleach.

- Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.

Warnings

WARNING



MOVING PARTS HAZARD

Moving parts can pinch, cut, or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** and disconnect all power sources.



TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- Read MSDSs to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.



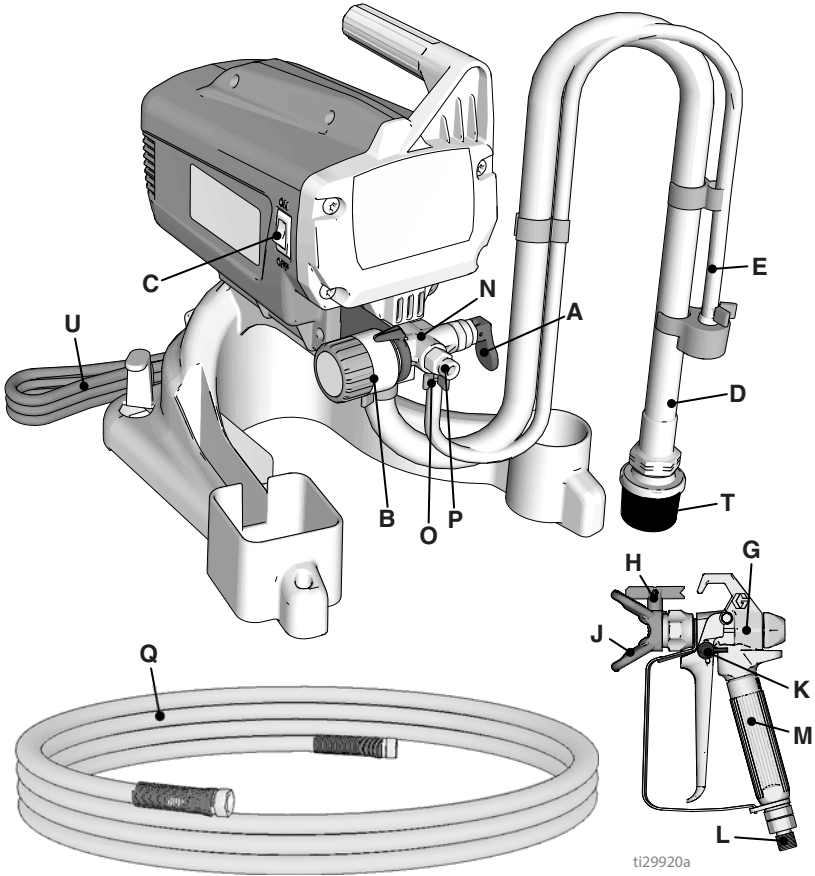
PERSONAL PROTECTIVE EQUIPMENT

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. This protective equipment includes but is not limited to:

- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

Know Your Sprayer

Stand Models



ti29920a

A	Prime/Spray Valve
B	Pressure Control Knob
C	ON/OFF Switch
D	Suction Tube
E	Drain Tube (with diffuser)
G	Airless Spray Gun
H	Reversible Spray Tip
J	Tip Guard
K	Gun Trigger Lock
L	Gun Fluid Inlet Fitting
M	Gun Filter (inside handle)

N	Pump
O	Inlet Valve
P	Outlet Valve (airless hose connection)
Q	Airless Hose
T	Inlet Strainer
U	Power Cord
	Model/Serial Tag (Not Shown, located on bottom of unit)
See Quick Reference , page 28 for more information.	

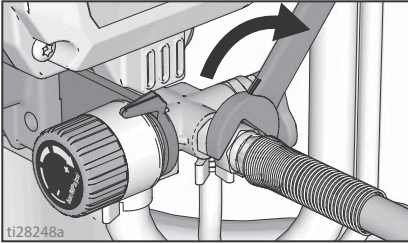
Setup

Setup

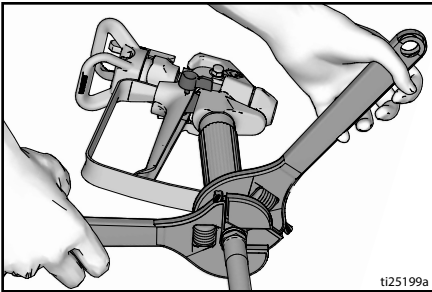
When unpacking sprayer for the first time or after long term storage perform setup procedure.

Assemble Your Sprayer

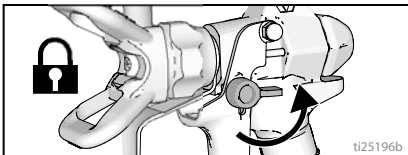
1. Connect Graco airless hose to outlet valve. Use wrench to tighten securely.



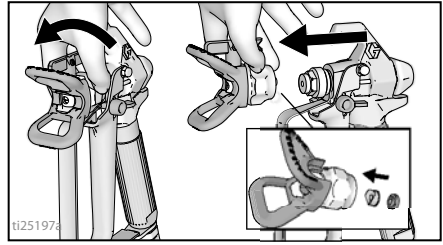
2. Connect other end of hose to gun.



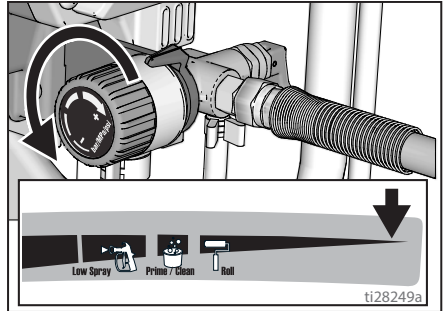
3. Use two wrenches to tighten securely. If hose is already connected, make sure connections are tight.
4. Engage trigger lock.



5. Remove tip guard. Be careful tip seal may fall out when tip guard is removed.



6. Turn pressure control knob all the way left (counter-clockwise) to lowest setting.



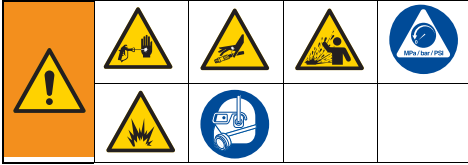
7. After long term storage check inlet strainer for clogs and debris.

Strain the Paint

Previously opened paint may contain dried paint or other debris. To avoid priming problems and spray tip clogs it is recommended to strain the paint before using. Paint strainers are available where paint is sold. Stretch a paint strainer over a clean pail and pour the paint through the strainer to capture any dried paint and debris before spraying.



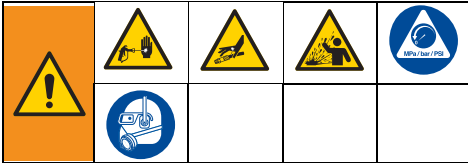
Start Up



Pressure Relief Procedure

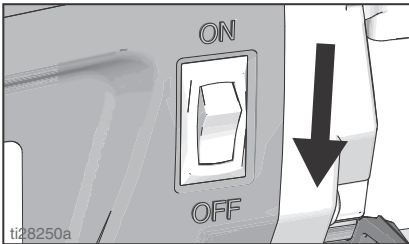


Follow the Pressure Relief Procedure whenever you see this symbol.

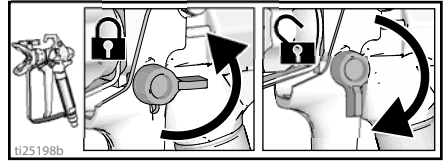


This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection or splashed fluid, follow the **Pressure Relief Procedure** whenever sprayer is stopped and before sprayer is cleaned or checked, and before equipment is serviced.

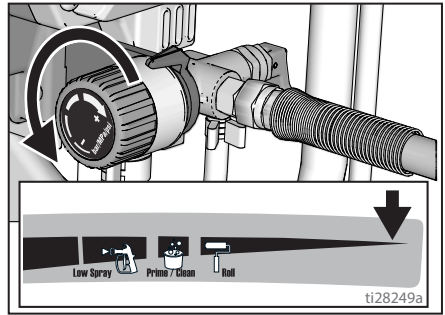
1. Turn ON/OFF switch to the **OFF** position.



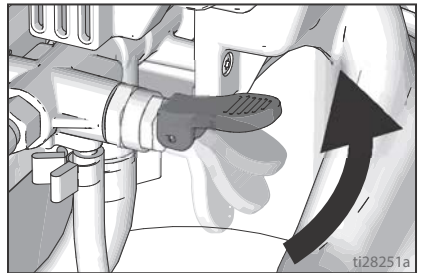
2. Engage the trigger lock. Always engage the trigger lock when sprayer is stopped to prevent the gun from being triggered accidentally.



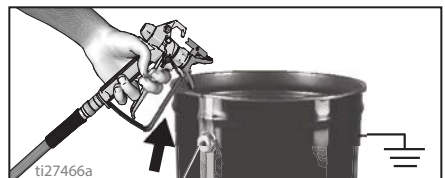
3. Turn pressure control knob to lowest setting.



4. Put drain tube into a waste pail and lift Prime/Spray valve to PRIME position to relieve pressure.

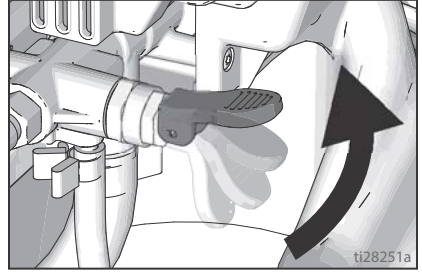


5. Hold the gun firmly to a pail. Point gun into pail. Disengage the trigger lock and trigger the gun to relieve pressure.



Start Up

- Engage the trigger lock.
- If you suspect the spray tip or hose is clogged or that pressure has not been fully relieved:
 - VERY SLOWLY** loosen the tip guard retaining nut or the hose end coupling to relieve pressure gradually.
 - Loosen the nut or coupling completely.
 - Clear airless hose or spray tip obstruction. See **Clear Tip Clog**, page 19.

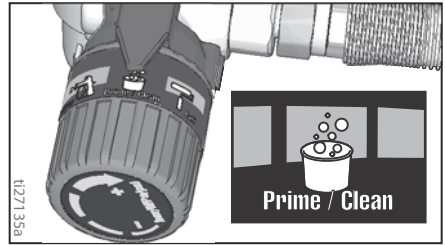


- Plug power supply cord into a properly grounded electrical outlet.
- Align setting indicator with Prime/Clean setting on pressure control knob.

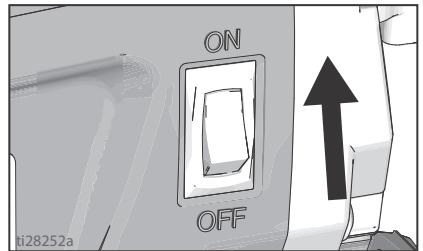
Flush Storage Fluid

This sprayer arrives from the factory with a small amount of test material in the system. **It is important that you flush this material from the sprayer before using it.** See **Cleaning Fluid Compatibility**, page 27.

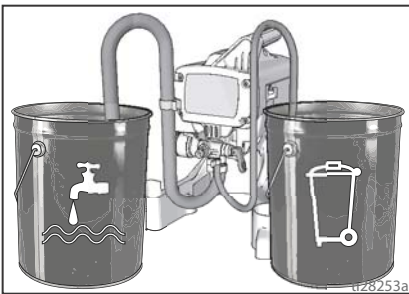
- Perform **Pressure Relief Procedure**, page 11.
- Make certain ON/OFF switch is **OFF**.
- Separate drain tube (smaller) from suction tube (larger).
- Place drain tube in a waste pail.
- Submerge suction tube in a pail partially filled with water.



- Turn ON/OFF switch to **ON** position.



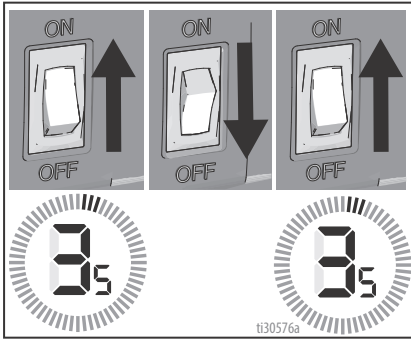
- When sprayer starts pumping, test material and air will be purged from the sprayer. Allow fluid to flow out of drain tube, into waste pail, for 30 to 60 seconds.
- Turn ON/OFF switch to **OFF** position.



- Lift Prime/Spray valve to **PRIME** position.

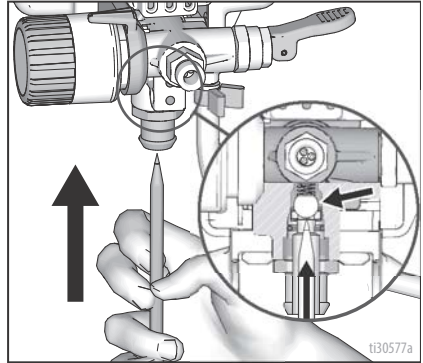
If water fails to come out of the drain tube, perform the steps below until water flows up the suction tube and out the drain tube.

1. Some fluids prime faster if the ON/OFF switch is toggled on and off so the pump can slow and stop. Turn ON/OFF switch ON for three seconds, then OFF until motor stops, then ON again for three seconds, then OFF until motor stops. Continue until sprayer is primed. If water does not flow up the suction tube, see the next step.



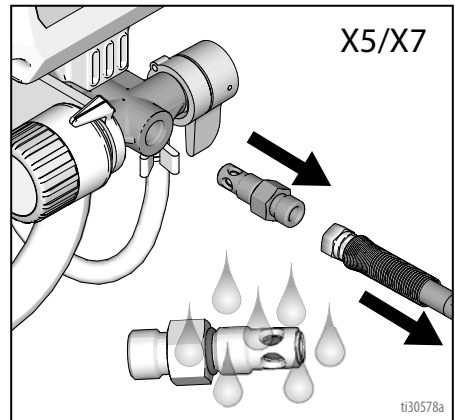
2. Remove suction tube. Insert pointed end of a pencil into the inlet and push up to free the inlet valve ball.

Install suction tube and repeat **Flush Storage Fluid**, page 12. If water does not flow up the suction tube, see the next step.



3. Remove outlet valve and clean. Make certain outlet ball moves free in the housing.

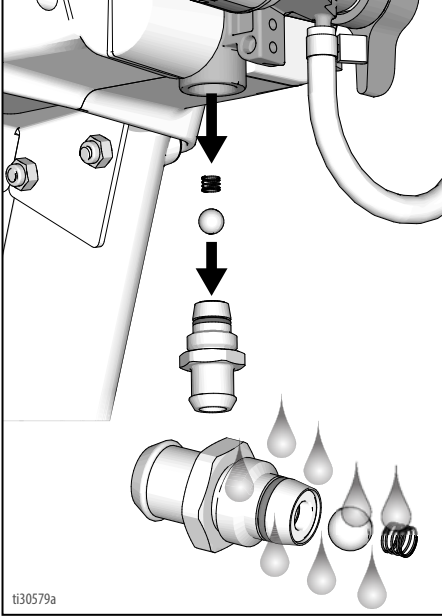
Install outlet valve and repeat **Flush Storage Fluid**, page 12. If water does not flow up the suction tube, see the next step.



Start Up

4. Remove suction tube. Remove inlet valve and clean. Make certain the spring is facing up when the inlet ball and valve are installed.

Install inlet valve and suction tube and repeat **Flush Storage Fluid**, page 12.



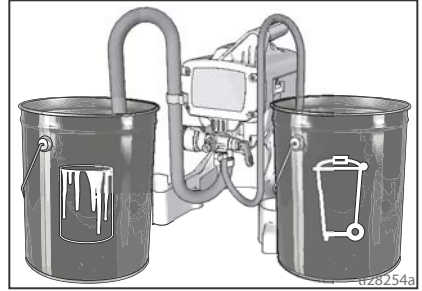
5. Perform a power flush. See **Cleanup with Power Flush Adapter**, page 21.

High-pressure spray is able to inject toxins into the body and cause serious bodily injury. Do not stop leaks with hand or rag.				

Inspect for leaks. If leaks occur, perform **Pressure Relief Procedure**, page 11, then tighten all fittings and repeat **Start Up**. If there are no leaks continue with the next step.

Fill Pump (Prime Pump)

1. Move suction tube to paint pail and submerge suction tube in paint.



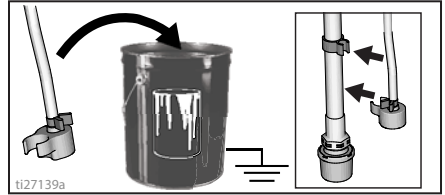
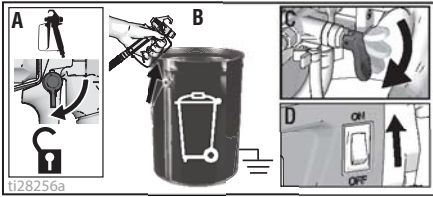
2. Turn ON/OFF switch to **ON** position.
3. Wait to see paint coming out of drain tube.
4. Turn ON/OFF switch to **OFF** position.

NOTE: If paint does NOT flow up the suction tube and out the drain tube, repeat **Flush Storage Fluid**, page 12 procedure.

Fill Gun and Hose

1. Hold gun against waste pail. Point gun into waste pail.
 - a. Disengage trigger lock.
 - b. Pull and hold gun trigger.
 - c. Lower Prime/Spray valve to SPRAY position.
 - d. Turn ON/OFF switch to **ON** position.

2. Trigger gun into waste pail until only paint comes out of the gun.
3. Release trigger. Engage trigger lock.
4. Transfer drain tube to paint pail and clip to suction tube.



NOTE: When motor stops, sprayer is ready to paint. If motor continues to run, sprayer is not properly primed. Repeat **Fill Pump (Prime Pump)** and **Fill Gun and Hose**.

How to Spray

How to Spray

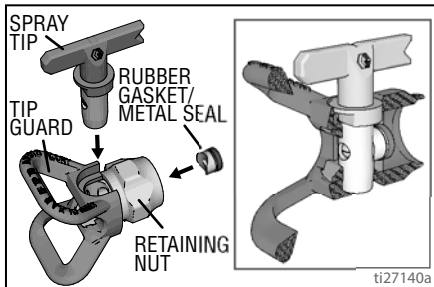


To avoid serious injury from skin injection do not put your hand in front of the spray tip when installing or removing the spray tip and tip guard.

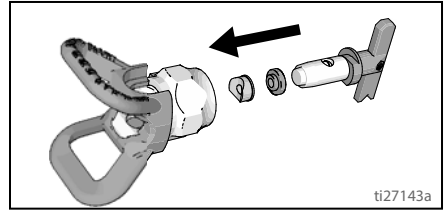
Spray Tip Installation

To prevent spray tip leaks make certain spray tip and tip guard are installed properly.

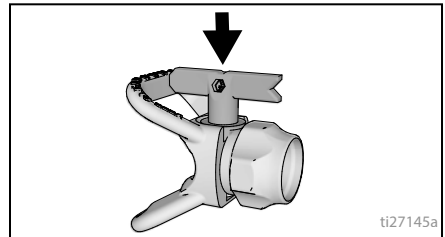
1. Perform **Pressure Relief Procedure**, page 11.
2. Engage trigger lock.
3. Verify spray tip and tip guard parts are assembled in the order shown.



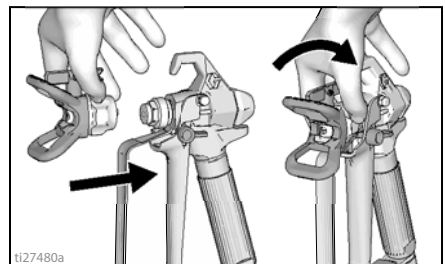
- a. Use spray tip to align gasket and seal in the tip guard.



- b. Spray tip must be pushed all the way into the tip guard. Turn spray tip to push down.



- c. Turn the arrow shaped handle on the spray tip forward to the spray position.
4. Screw spray tip and tip guard assembly onto the gun and tighten.



Adjust Pressure Control

The pressure control knob allows for infinite pressure adjustment. To reduce overspray, always start at the lowest pressure setting and increase pressure to the minimum setting that results in an acceptable spray pattern.



To select function, align symbol on pressure control knob with setting indicator on sprayer.

Tip and Pressure Selection

See table for recommended spray pressure for your material. Refer to paint (material) can for manufacturer's recommendations.

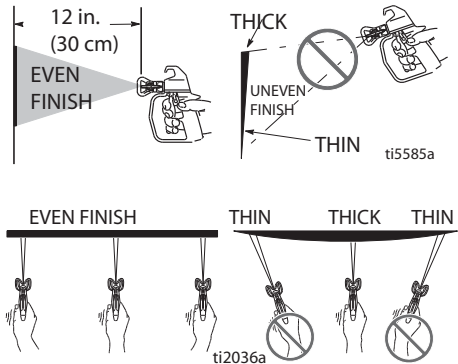
Maximum tip hole size supported by the sprayer: 0.015 in. (0.38mm)

	Coatings				
	Interior Stains/ Interior & Exterior Clears	Exterior Solid Stains	Primers	Interior Latex Paints	Exterior Latex Paints
Spray Pressure	Low Spray	High Spray	High spray	High Spray	High Spray
Tip hole Size					
0.011 in. (0.28 mm)	✓				
0.013 in. (0.33 mm)	✓	✓	✓	✓	
0.015 in. (0.38 mm)		✓	✓	✓	✓

Spray Techniques

Use a piece of scrap cardboard to practice these basic spraying techniques before you begin spraying the surface.

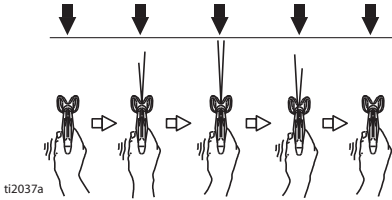
- Hold gun 12 in. (30 cm) from surface and aim straight at surface. Tilting gun to direct spray angle causes an uneven finish.
- Flex wrist to keep gun pointed straight. Fanning gun to direct spray at angle causes uneven finish.



How to Spray

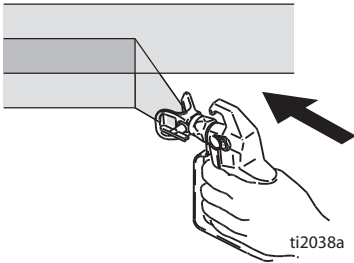
Triggering Gun

Pull trigger after starting stroke. Release trigger before end of stroke. Gun must be moving when trigger is pulled and released.



Aiming Gun

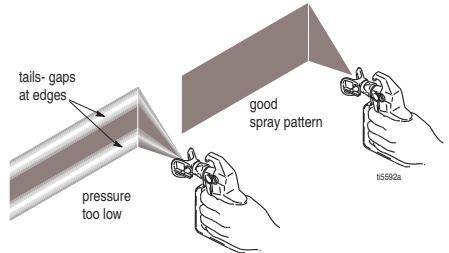
Aim center of spray of gun at bottom edge of previous stroke, overlapping each stroke by half.



Spray Pattern Quality

A good spray pattern is evenly distributed as it hits the surface.

- Spray should be atomized (evenly distributed, no gaps at edges).



If tails persist when spraying at the highest spray pressure:

- Spray tip may be worn. See **Tip and Pressure Selection**, page 17.
- A smaller spray tip may be needed.
- Material may need to be thinned. If material needs to be thinned follow manufacturer's recommendations.

Clear Tip Clog

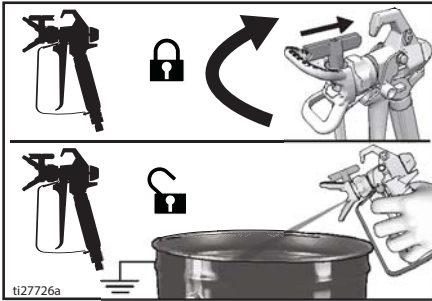


In the event that particles or debris clog the spray tip, this sprayer is designed with a reversible spray tip that quickly and easily clears the particles without disassembling the sprayer.

See **Strain the Paint**, page 10 for additional information.

1. Engage trigger lock. Rotate spray tip to unclog position. Disengage trigger lock. Trigger gun at waste area to clear clog.

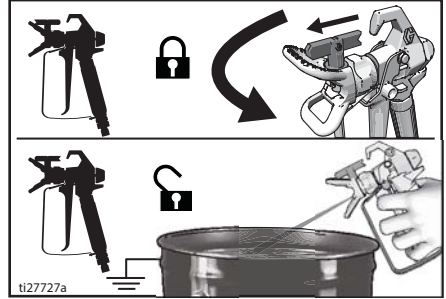
UNCLOG



NOTE: If spray tip is difficult to rotate when turning to the unclog position perform, **Pressure Relief Procedure**, page 11, then lower Prime/Spray valve to spray position and repeat step 1.

2. Engage trigger lock. Rotate spray tip back to spray position. Disengage trigger lock and continue spraying.

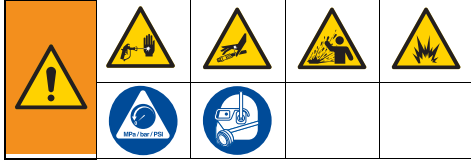
SPRAY



Cleanup

Cleanup

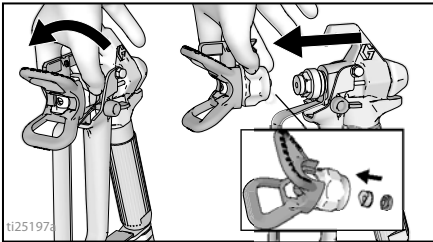
Cleaning the sprayer after each use results in a trouble free start up the next time the sprayer is used.



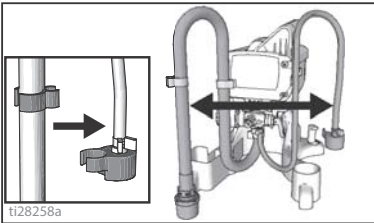
Cleaning from a Pail

- For short term shutdown periods (overnight to two days) refer to **Short Term Storage**, page 24.
- Use water only to clean/flush the sprayer.

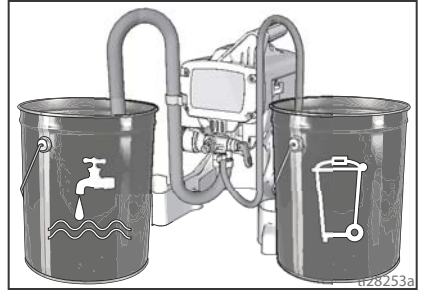
1. Perform **Pressure Relief Procedure**, page 11.
2. Remove spray tip and tip guard assembly from gun and place in waste pail.



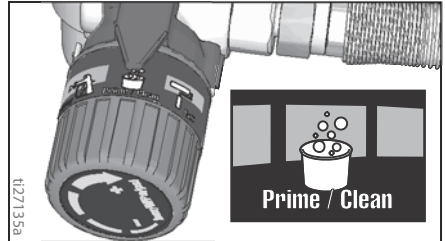
3. Lift suction tube and drain tube from paint pail. Let paint drain into the pail.
4. Separate drain tube (smaller) from suction tube (larger).



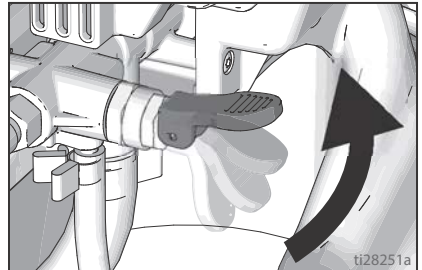
5. Place empty waste and water pails side by side.
6. Place suction tube in water. Use water for flushing water based paint. Place drain tube in waste pail.



7. Turn pressure control knob to the Prime/Clean setting.



8. Lift Prime/Spray valve to PRIME position.

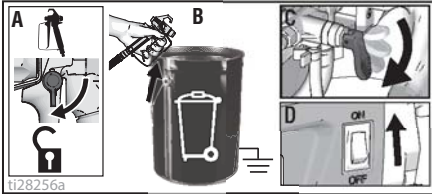


9. Turn ON/OFF switch to **ON** position.
10. Hold gun against waste pail. Point gun into waste pail.
11. Flush until approximately 1/3 of the water is emptied from the waste pail.

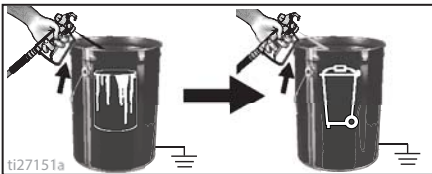
- Turn ON/OFF switch to **OFF** position.

NOTE: Step 13 is for returning paint in hose to paint pail. One 50 ft (15 m) hose holds approximately 1 quart (1 liter) of paint.

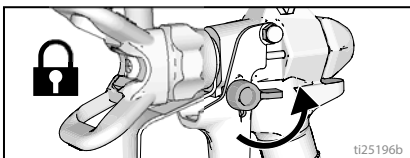
- To recover paint in hose, point gun into paint pail while holding gun firmly to the pail.
 - Disengage trigger lock.
 - Pull and hold gun trigger.
 - Lower Prime/Spray valve to **SPRAY** position.
 - Turn ON/OFF switch to **ON** position.
 - Continue to hold gun trigger until you see paint diluted with water starting to come out of gun.



- While continuing to trigger gun, quickly move gun to redirect spray into waste pail. Continue triggering gun into waste pail until water dispensed from gun is relatively clear.



- Turn pressure control knob to the lowest setting.
- Stop triggering gun. Engage the trigger lock.



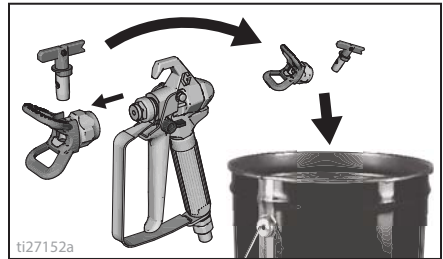
- Lift Prime/Spray valve to **PRIME** position.
- Turn ON/OFF switch to **OFF** position.
- Clean outlet filter.
- Fill unit with Pump Armor™ fluid. See **Long Term Storage**, page 24.

Cleanup with Power Flush Adapter

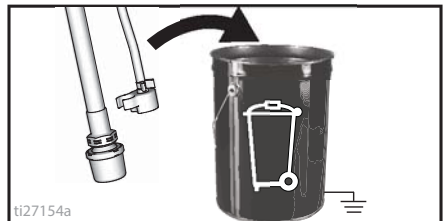
(Water-based materials only)

Power flushing is a faster method of cleanup. It can only be used after spraying water-based coatings.

- Perform **Pressure Relief Procedure**, page 11.
- Remove spray tip and tip guard assembly from gun and place in waste pail.

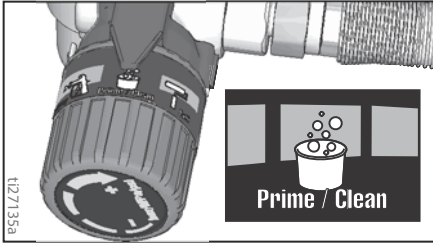


- Place empty waste and paint pails side by side.
- Lift suction tube and drain tube from paint pail. Let paint drain into the pail.
- Place suction and drain tube in waste pail.

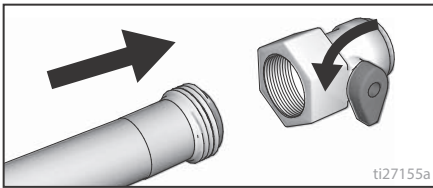


Cleanup

- Turn pressure control knob to the Prime/Clean setting.

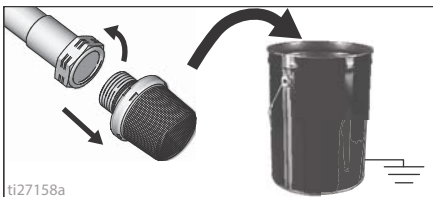


- Screw Power Flush attachment valve to garden hose. Close valve.

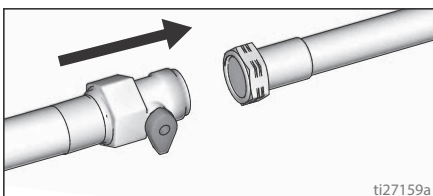


- Turn on water. Open valve. Rinse paint off suction tube, drain tube and inlet strainer. Close valve.

- Unscrew inlet strainer from suction tube. Place inlet strainer in waste pail.



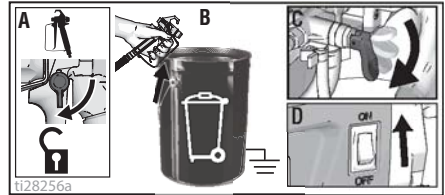
- Connect garden hose to suction tube with Power Flush attachment valve. Leave drain tube in waste pail.



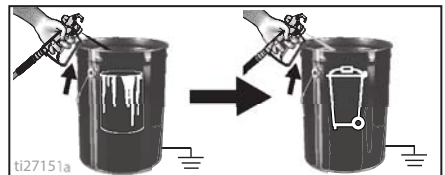
- Turn ON/OFF switch to **ON** position.
- Open Power Flush attachment valve.
- Circulate water through sprayer, into waste pail, for 20 seconds.
- Turn ON/OFF switch to **OFF** position.

NOTE: Step 15 is for returning paint in hose to paint pail. One 50 ft (15 m) hose holds approximately 1 quart (1 liter) of paint.

- To recover paint in hose, point gun into paint pail while holding gun firmly to the pail.
 - Disengage trigger lock.
 - Pull and hold gun trigger.
 - Lower Prime/Spray valve to **SPRAY** position.
 - Turn ON/OFF switch to **ON** position.
 - Continue to hold gun trigger until you see paint diluted with water starting to come out of gun.

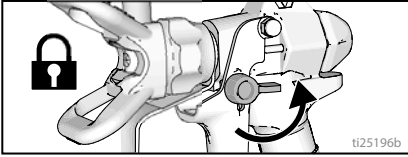


- While continuing to trigger gun, quickly move gun to redirect spray into waste pail. Continue triggering gun into waste pail until water dispensed from gun is relatively clear.

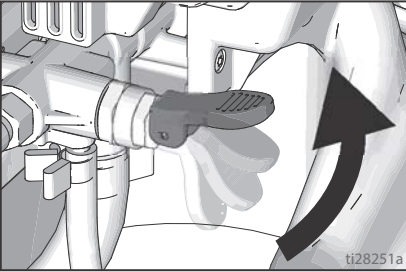


- Turn pressure control knob to the lowest setting.

18. Stop triggering gun. Engage the trigger lock.



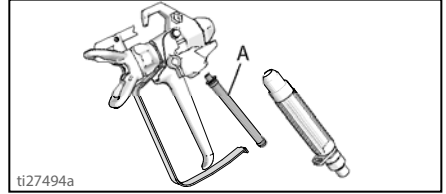
19. Lift Prime/Spray valve to PRIME position.



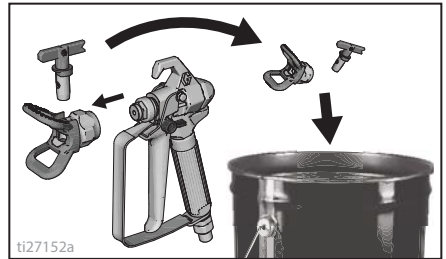
20. Turn ON/OFF switch to **OFF** position.

Clean the Gun

1. Clean gun filter (A) with water and a brush every time you flush the system. Replace gun filter if damaged.



2. Remove spray tip and tip guard and clean with water and a brush.

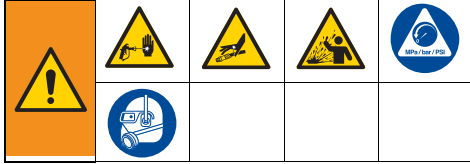


3. Wipe paint off outside of gun using a soft cloth moistened with water.

Storage

Storage

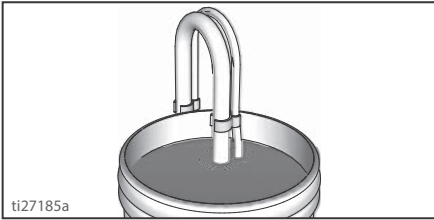
With proper storage, the sprayer will be ready to use the next time it is needed.



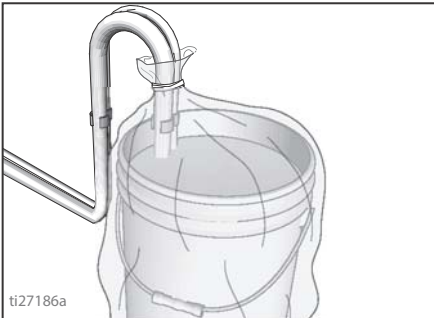
Short Term Storage

(up to 2 days)

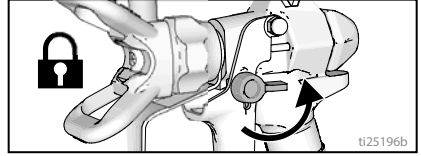
1. Perform **Pressure Relief Procedure**, page 11.
2. Leave suction tube and drain tube in paint pail.



3. Cover paint and pail tightly with plastic wrap.



4. Engage trigger lock.



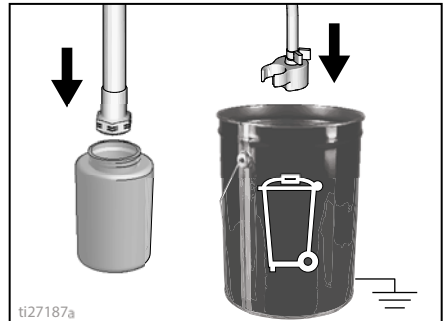
5. Leave gun attached to hose.
6. Remove tip and guard and clean with water and a brush.
7. Wipe paint off outside of gun using a soft cloth moistened with water.

Long Term Storage

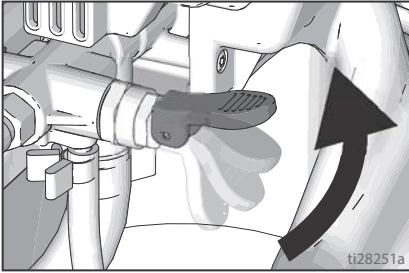
(more than 2 days)

Pump Armor fluid protects the sprayer against freezing and corrosion.

- Before storing sprayer make sure all water is drained out of sprayer.
 - Do not allow water to freeze in sprayer.
 - Do not store sprayer under pressure.
 - Store sprayer indoors.
1. Perform **Pressure Relief Procedure**, page 11.
 2. Place suction tube in Pump Armor fluid bottle and drain tube in waste pail.

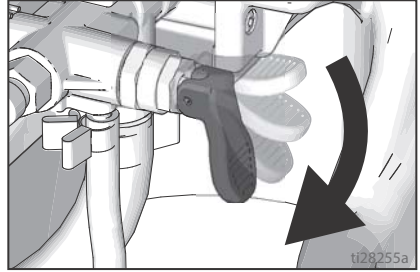


3. Lift Prime/Spray valve to PRIME position.

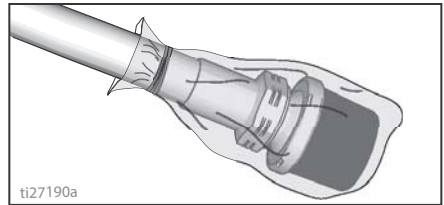


4. Turn ON/OFF switch to **ON** position.
5. Turn pressure control knob clockwise until the pump turns on.
6. When storage fluid comes out of drain tube (5-10 seconds) turn ON/OFF switch to **OFF** position.

7. Lower Prime/Spray valve to **SPRAY** position to keep storage fluid in sprayer during storage.



8. Leave gun attached to hose.
9. Remove tip and guard and clean with water and a brush.
10. Wipe paint off outside of gun using a soft cloth moistened with water.



11. Secure a plastic bag around suction and drain tube to catch any drips.

Reference

Spray Tip Selection

Selecting Tip Size

Spray tips come in a variety of hole sizes for spraying a range of fluids. Your sprayer includes a tip for use in most paint spraying applications. Use the coatings table on page 17 to determine the range of recommended tip hole sizes for each fluid type. If you need a tip other than the one supplied, see the **Reversible Spray Tip Selection Chart**, page 26.

Hints:

- As you spray, the tip wears and enlarges. Starting with a tip hole size smaller than the maximum will allow you to spray within the rated flow capacity of the sprayer.
- Use larger tip hole sizes with thicker coatings and smaller tip hole sizes with thinner coatings.
- Tips wear with use and need periodic replacement.
- Tip hole size controls flow rate - the amount of paint that comes out of the gun.

Fan Width

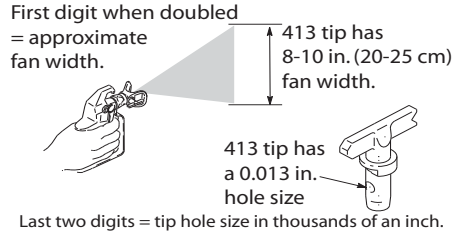
Fan width is the size of the spray pattern, which determines the area covered with each stroke.

Hints:

- Select a fan width best suited to the surface being sprayed.
- Wider fans allow provide better coverage on broad, open surfaces.
- Narrower fans provide better control on small, confined surfaces.

Understanding Tip Number

The last three digits of tip number (i.e.: 286**413**) contain information about hole size and fan width on surface when gun is held 12 in. (30.5 cm) from surface being sprayed.



Reversible Spray Tip Selection Chart

Tip Part #	Fan Width *		Hole Size	
	Inches	mm	Inch	mm
286311	6 – 8	152 – 203	0.011	0.28
286411	8 – 10	203 – 254	0.011	0.28
286313	6 – 8	152 – 203	0.013	0.33
286413	8 – 10	203 – 254	0.013	0.33
286415	8 – 10	203 – 254	0.015	0.38
286515	10 – 12	254 – 305	0.015	0.38

* – 12 in. (305 mm) from surface

Example: For an 8 to 10 in. (203 to 254 mm) fan width and 0.013 (0.33 mm) hole size, order Part No. 286413.

Cleaning Fluid Compatibility



- The water flowing out of drain tube should be clear **before** you begin spraying the water-based material.
- To avoid fluid splashing back on your skin or into your eyes, always aim gun at inside wall of pail.

Water-Based Materials

- When spraying **water-based** materials, flush the system thoroughly with water.

Quick Reference

Page 9	Name	Description
A	Prime/Spray valve	<ul style="list-style-type: none">• In PRIME position directs fluid to prime tube.• In SPRAY position directs pressurized fluid to paint hose.• Automatically relieves system pressure in over-pressure situations.
B	Pressure control knob	Increases (clockwise) and decreases (counter-clockwise) fluid pressure in pump, hose, and spray gun.
C	ON/OFF Switch	Turns sprayer ON and OFF.
D	Suction tube	Draws fluid from paint pail into pump.
E	Drain tube (with diffuser)	Drains fluid in system during priming and pressure relief.
G	Airless spray gun	Dispenses fluid.
H	Reversible spray tip	<ul style="list-style-type: none">• Atomizes fluid being sprayed, forms spray pattern and controls fluid flow according to hole size.• Reverse unclogs plugged tips without disassembly.
J	Tip guard	Reduces risk of fluid injection injury.
K	Gun trigger lock	Prevents accidental triggering of spray gun.
L	Gun fitting	Threaded connection for paint hose.
M	Gun filter (inside handle)	Filters fluid entering spray gun to reduce tip clogs.
N	Pump	Pumps and pressurizes fluid and delivers it to paint hose.
O	Inlet Valve	Allows paint to flow from the paint bucket into the sprayer.
P	Outlet Valve	Threaded connection for paint hose. Allows paint to flow from the sprayer to the gun.
Q	Airless hose	Transports high-pressure fluid from pump to spray gun.
T	Inlet strainer	Prevents debris from entering pump.
U	Power cord	Supplies Project Painter Plus with electricity.

Maintenance

Routine maintenance is important to ensure proper operation of your sprayer.



Activity	Interval
Inspect motor shroud openings for blockage.	Daily or each time you spray
Inspect/clean fluid inlet strainer and gun filter.	Daily or each time you spray

NOTICE

Protect the internal drive parts of this sprayer from water. Openings in shroud allow cooling of mechanical parts and electronics inside. If water gets into these openings, the sprayer could malfunction or be permanently damaged.

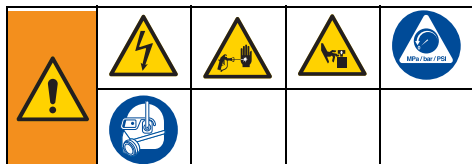
Spray Tips

- Always clean tips with water and brush after spraying.
- Tips may require replacement after 15 gallons (57 liters) or they may last through 60 gallons (227 liters) depending on abrasiveness of paint.

Airless Hoses

Check hose for damage every time you spray. Do not attempt to repair hose if hose jacket or fittings are damaged. Do not use hoses shorter than 25 ft (7.6 m). Wrench tighten, using two wrenches.

Troubleshooting



1. Follow **Pressure Relief Procedure**, page 11, before checking or repairing.
2. Solutions at the beginning of each problem listed are the most common.
3. Check everything in this Troubleshooting Table before you bring the sprayer to an authorized service center.

Problem	Cause	Solution
Motor does not run: (verify sprayer is plugged in, and ON/OFF switch is on)	Pressure control is set at zero pressure.	Turn pressure control knob clockwise to increase pressure setting.
	Electric outlet is not providing power.	Test outlet with known working device. Find working outlet. Reset building circuit breaker or replace fuse.
	Extension cord is damaged.	Replace extension cord. See page 5.
	Sprayer electric cord is damaged.	Check for broken insulation or wires. Replace electric cord if damaged.
	Pump is seized (Paint has hardened in pump or Water is frozen in pump.)	Turn ON/OFF switch off and unplug sprayer from outlet. If frozen do NOT try to start sprayer until it is completely thawed or it may damage the motor, control board and/or drive train. Place sprayer in warm area for several hours. Plug in power cord and turn ON/OFF switch to ON. Slowly increase pressure setting to see if motor will start. If not frozen, check for hardened paint in pump. If paint has hardened in pump. See page 31.
	Motor or control is damaged.	Consult a Graco/ Magnum authorized retailer, distributor, or service center.

Problem	Cause	Solution
Sprayer runs, but pump does not prime or looses prime while in use. (Pump cycles but does not pump paint or build pressure.)	Prime/Spray valve is in SPRAY position.	Lift Prime/Spray valve to PRIME position until paint exits drain tube. The pump is now primed.
	Inlet strainer is clogged or suction tube is not immersed in paint.	Clean debris off inlet strainer and make sure suction tube is immersed in paint.
	Inlet valve check ball is stuck or dirty.	Remove suction tube and place a pencil into the inlet section to dislodge the ball, see page 13. Clean inlet valve ball, see page 14, OR Power Flush Sprayer, see page 21.
	Thick or "sticky" paint.	Some fluids may prime faster if the ON/OFF switch is momentarily turned off so the pump can slow and stop. Turn ON/OFF switch on and off several times if necessary, see page 13.
	Suction tube is leaking.	Inspect suction tube connection for cracks or vacuum leaks.
	Outlet valve check ball is stuck.	Unscrew outlet valve, remove, and clean assembly, see page 13.
	Debris in paint.	Strain the paint. See page 10.
	Prime/Spray valve is worn or obstructed with debris.	Take sprayer to Graco/MAGNUM authorized service center.

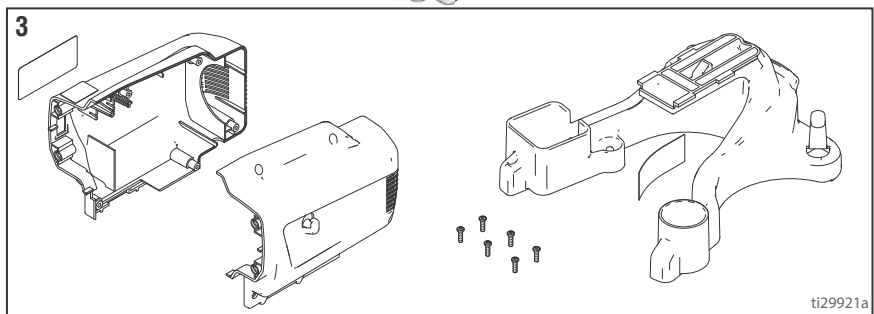
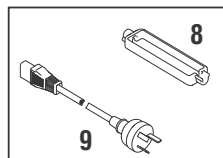
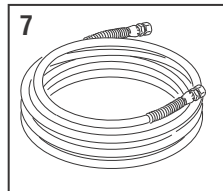
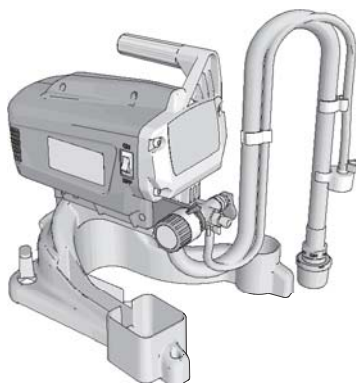
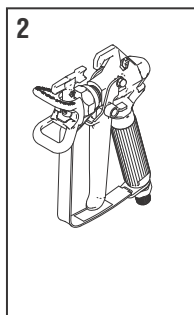
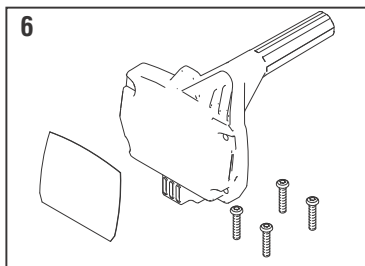
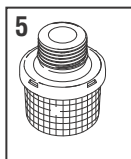
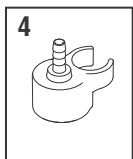
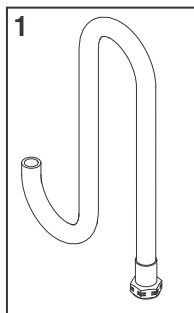
Troubleshooting

Problem	Cause	Solution
Pump is primed, but can not achieve good spray pattern.	Spray tip may be partially clogged.	Clear spray tip clog. See page 19.
	Reversible spray tip is in UNCLOG position.	Rotate arrow-shaped handle on spray tip so it points forward to SPRAY position. See page 19.
	Debris in paint.	Strain the paint. See page 27.
	Pressure is set too low.	Align pressure control knob setting indicator to desired spray setting. See page 17.
	Spray gun filter is clogged.	Clean or replace gun filter. See page 23.
	Spray tip selected is too large for capability of sprayer.	Replace tip. See page 17.
	Spray tip is worn beyond the capability of sprayer.	Replace tip. See page 17.
	Spray tip gasket and seal worn or missing.	Replace gasket and seal. See page 16.
	Inlet strainer is clogged or suction tube is not immersed in paint.	Clean debris off inlet strainer and make sure suction tube is immersed in paint.
	Extension cord is too long or not heavy enough gauge.	Replace extension cord. See page 5.
	Inlet valve or outlet valve is worn or clogged with debris.	Check for worn or contaminated inlet valve or outlet valve. <ul style="list-style-type: none"> - Prime sprayer with paint - Trigger gun momentarily - When trigger is released, pump should cycle momentarily and stop - If pump continues to cycle, pump valves may be worn or contaminated with debris - Remove valves. Clean and reinstall valve assemblies.
	Material is too thick.	Thin material. Follow manufacturers recommendations.
Airless hose is too long (if extra section was added).	Remove section of airless hose.	
Spray gun stopped spraying while trigger is pulled.	Spray tip is clogged.	Clear spray tip clog. See page 19.
	Sprayer lost prime.	See troubleshooting section "Sprayer runs, but pump does not prime or loses prime while in use." on page 31.

Problem	Cause	Solution
When paint is sprayed, it runs down the wall or sags.	Material is going on too thick.	Move gun faster.
		Choose a spray tip with smaller hole size.
		Choose spray tip with wider fan.
		Make sure gun is far enough from surface.
When paint is sprayed, coverage is inadequate.	Material is going on too thin.	Move gun slower.
		Choose spray tip with larger hole size.
		Choose spray tip with narrower fan.
		Make sure gun is close enough to surface.
Fan pattern varies dramatically while spraying.	Pressure control switch is worn and causing excessive pressure variation.	Take sprayer to Graco/MAGNUM authorized service center.
Cannot trigger spray gun.	Spray gun trigger lock is engaged.	Rotate trigger lock to disengage trigger lock. See page 10.
Paint is coming out of pressure control switch.	Pressure control switch is worn.	Take sprayer to Graco/MAGNUM authorized service center.
Paint is leaking through drain tube.	Sprayer is over pressurizing.	Take sprayer to Graco/MAGNUM authorized service center.
Paint leaks down outside of pump.	Pump packings are worn.	Replace sprayer.
Motor is hot and runs intermittently. Motor automatically shuts off due to excessive heat. Damage can occur if cause is not corrected.	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 page 5.
	Unregulated electrical generator being used has excessive voltage.	Use electrical generator with a proper voltage regulator.
	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.

Sprayer Parts

Sprayer Parts



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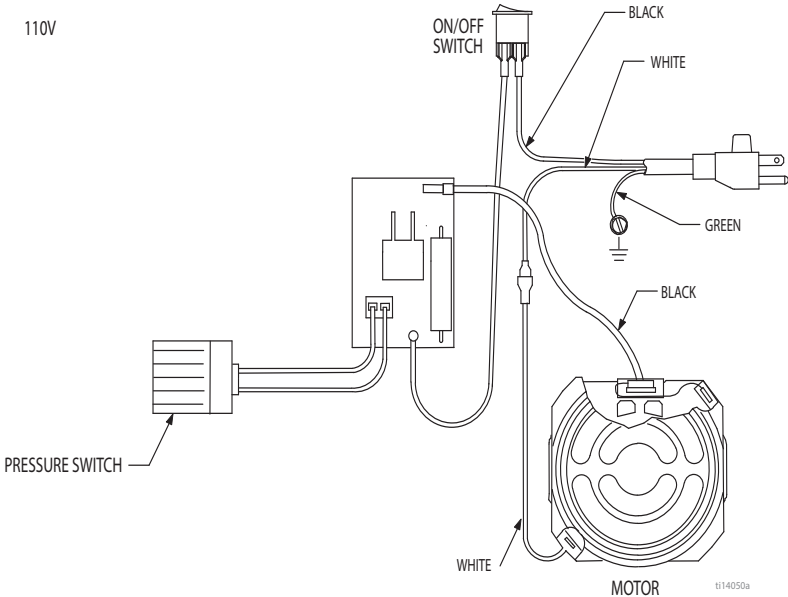
Ref.	Part	Description	Qty.
1	197607	KIT, suction tube	1
2	243011	GUN, SG2	1
3	24D616	KIT, enclosure and stand	1
4	244035	DEFLECTOR, barbed	1
5	288716	STRAINER	1
6	24D617	KIT, front cover	1
7	247339	HOSE, 1/4 in. x 25 ft	1
8	195551	RETAINER, plug	1
9	242005	CORDSET, 230V AU	1
	16E842	CORDSET, 120V	1

Ref.	Part	Description	Qty.
		Parts not shown	
	16E845	VALVE, outlet	1
	16E844	KIT, repair, pump, inlet	1
	115648	VALVE, power flush	1
	246187	FITTING, garden hose	1
	17K631	TAG, hang, tip	1
▲		LABEL, warning	
	17K627	EN, FR, ES	1
	17A134	EN, KO, ZH	1
▲		CARD, medical wallet	
	179960	EN, FR, ES	1
	17A134	EN, KO, ZH	1
	17R476	EN, ES, PT	1

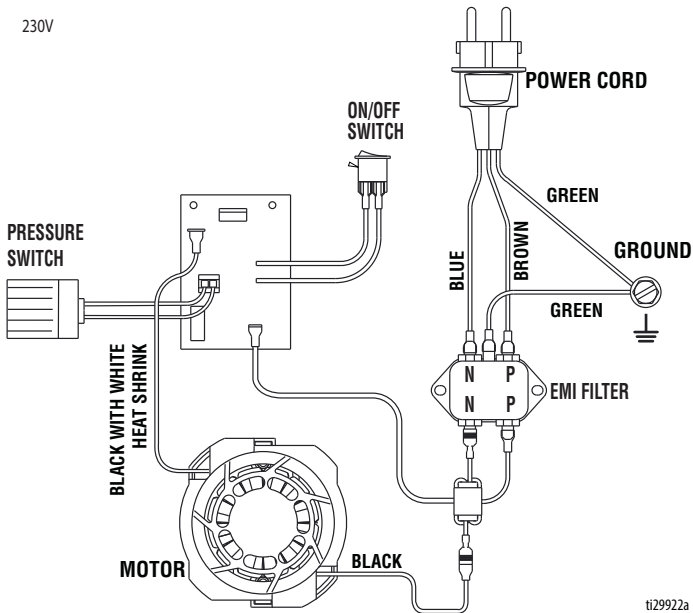
▲ Replacement Danger and Warning labels, tags, and cards are available at no cost.

Wiring Diagrams

110V



230V



Technical Specifications

Technical Specifications

	US	Metric
Sprayer		
Maximum fluid working pressure	3000 psi	20.7 MPa, 207 bar
Maximum delivery	0.24 gpm	0.91 lpm
Maximum tip size	0.015 in.	0.38 mm
Generator minimum	1500 W	
Power requirement		
17N431	110–120V, 9 A, 1Ø	
16W119	220–240 V, 7A, 1Ø	
Dimensions		
Height	13.8 in.	35.1 cm
Length	13.8 in.	35.1 cm
Width	12.1 in.	30.7 cm
Weight (sprayer, hose & gun)	13.2 lb	5.9 kg
Storage temperature range ♦❖	–30° to 160°F	–35° to 71°C
Operating temperature range ✓	40° to 115°F	4° to 46°C
Materials of Construction		
Wetted materials on all models	stainless steel, brass, leather, ultra-high molecular weight polyethylene (UHMWPE), carbide, nylon, aluminum, PVC, polypropylene, fluoroelastomer, plated steel	

- ♦ **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.

Graco Standard Warranty

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

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Graco Information

For the latest information about Graco products, visit www.graco.com.

For patent information, see www.graco.com/patents.

TO PLACE AN ORDER, contact your Graco distributor or call 1-800-690-2894 to identify the nearest distributor.

PROVEN QUALITY. LEADING TECHNOLOGY.

All written and visual data contained in this document reflects the latest product information available at the time of publication.

Graco reserves the right to make changes at any time without notice.

Original instructions. This manual contains English. MM 3A4421

Graco Headquarters: Minneapolis

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