

Corded Airless HandHeld Sprayers

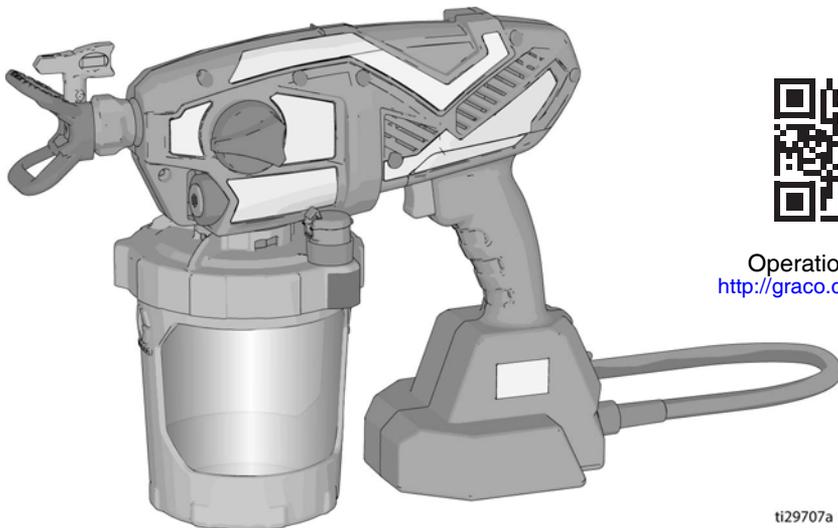
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Important Safety Instructions

Read all warnings and instructions in this manual and on the unit. Be familiar with the controls and the proper usage of the equipment. Save these instructions.



Operational video.
<http://graco.com/hhsupport>

ti29707a

WARNING

FIRE AND EXPLOSION HAZARD

Use only non-flammable or water-based materials, or non-flammable paint thinners. Do not use materials having flash points below 100°F (38°C). This includes, but is not limited to, acetone, xylene, toluene, and naphtha. For more information about your material, request Safety Data Sheet (SDS) from the supplier.

Use oil-based materials outdoors or in a well-ventilated indoor area with a flow of fresh air.



 **Questions?**
844-241-9499
SERVICE www.graco.com/techsupport 
to every customer, every time

For portable spray applications of water-based and oil-based non-flammable architectural paints and coatings only.

Not approved for use in explosive atmospheres or hazardous locations.

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Models – Corded Airless HandHelds

Models – Corded Airless HandHelds

Model	Sprayer Name	Voltage	Tip Family	Tip Size
17M359	Ultra	120V	FFLPxxx	0.008 – 0.016 in. (0.20 – 0.41 mm)
17N162	Ultimate	120V	FFLPxxx	
17N163	TC Pro	120V	TCPxxx	

Operating pressure range: 500-2000 psi (35 – 138 bar, 3.5 MPa – 14 MPa)

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.

Congratulations! You have purchased a high-quality paint sprayer made by Graco Inc. This sprayer is designed to provide superior spray performance with water-based and oil-based (mineral spirit-type) architectural paints and coatings. This user information is intended to help you understand the types of materials that can be used with your sprayer.

Please read the information on the material container label to determine if it can be used with your sprayer. Ask for a Safety Data Sheet (SDS) from your supplier. The container label and SDS will explain the contents of the material and the specific precautions related to it.

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 non-flammable paint thinner. The SDS must indicate that the flash point of the material is above 100°F (38°C). Your sprayer is 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.

Warnings

The following warnings are for the setup, use, 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.

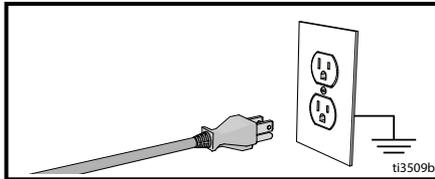
WARNING



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 120V circuit and has a grounding plug similar to the plug illustrated below.



- 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.
- An undersized cord results in a drop in line voltage and loss of power and overheating. When in doubt use the next heavier gauge. The smaller the gauge number the heavier the cord.
- When using the sprayer outdoors, use an extension cord suitable for outdoor use.
- Make sure your extension cord is not damaged. When using an extension cord, be sure to use a cord heavy enough to carry the current that your sprayer draws. See chart for appropriate sizes and lengths:

Conductor Size		Length
AWG (American Wire Gauge)	Metric	Maximum
18	1.0 mm ²	50 ft. (15 m)
16	1.5 mm ²	100 ft. (30 m)
14	2.5 mm ²	200 ft. (61 m)

WARNING



FIRE AND EXPLOSION HAZARD

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



- Sprayer generates sparks. Do not spray or flush with flammable liquids.
- Do not spray or clean with materials having a flash point lower than 100° F (38° C).
- Use only non-flammable or water-based materials, or non-flammable paint thinners.
- Keep spray area well-ventilated. Keep a good supply of fresh air moving through the area.
- When spraying oil-based material, use outdoors or in a well-ventilated indoor area with a flow of fresh air.
- Do not spray combustible materials near an open flame or sources of ignition such as cigarettes, motors, and electrical equipment.
- Paint or solvent flowing through the equipment is able to result in static electricity. Static electricity creates a risk of fire or explosion in the presence of paint or solvent fumes.
- Keep sprayer at least 10 in. (25 cm) away from objects while spraying or flushing.
- Verify all containers and collection systems are grounded to prevent static discharge.
- Connect to a grounded outlet and use grounded extension cords. Do not use a 3 to 2 adapter.
- Do not use paints or solvents containing halogenated hydrocarbons.
- Do not smoke in the spray area.
- Do not operate light switches, engines, or similar spark producing products in the spray area.
- Keep area clean and free of paint or solvent containers, rags, and other flammable materials.
- Know the contents of the paints and solvents being sprayed. Read all Safety Data Sheets (SDS) and container labels provided with the paints and solvents. Follow the paint and solvents manufacturer's safety instructions.
- Fire extinguisher equipment shall be present and working.



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 sprayer 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.
- Disconnect power when not spraying.
- Always use the spray tip guard. Do not spray without spray tip guard in place. Use only Graco spray tips.
- Use caution when cleaning and changing spray tips. In the case where the spray tip clogs while spraying, follow the **Pressure Relief Procedure**, page 10 for relieving the pressure before removing the spray tip to clean.
- Do not leave the unit energized or under pressure while unattended. Unplug the sprayer and follow the **Pressure Relief Procedure**, page 10 when the equipment is unattended or not in use and before servicing, cleaning, or removing parts.
- Check parts for signs of damage. Replace any damaged parts.
- This system is capable of producing 2000 psi (138 bar, 14 MPa). Use replacement parts or accessories that are rated a minimum of 2000 psi (138 bar, 14 MPa).
- Do not carry the unit with a finger on the trigger.
- 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 alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Use only in dry locations. Do not expose to water or rain.
- Use in well-lit areas.
- 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



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 Safety Data Sheets (SDSs) 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

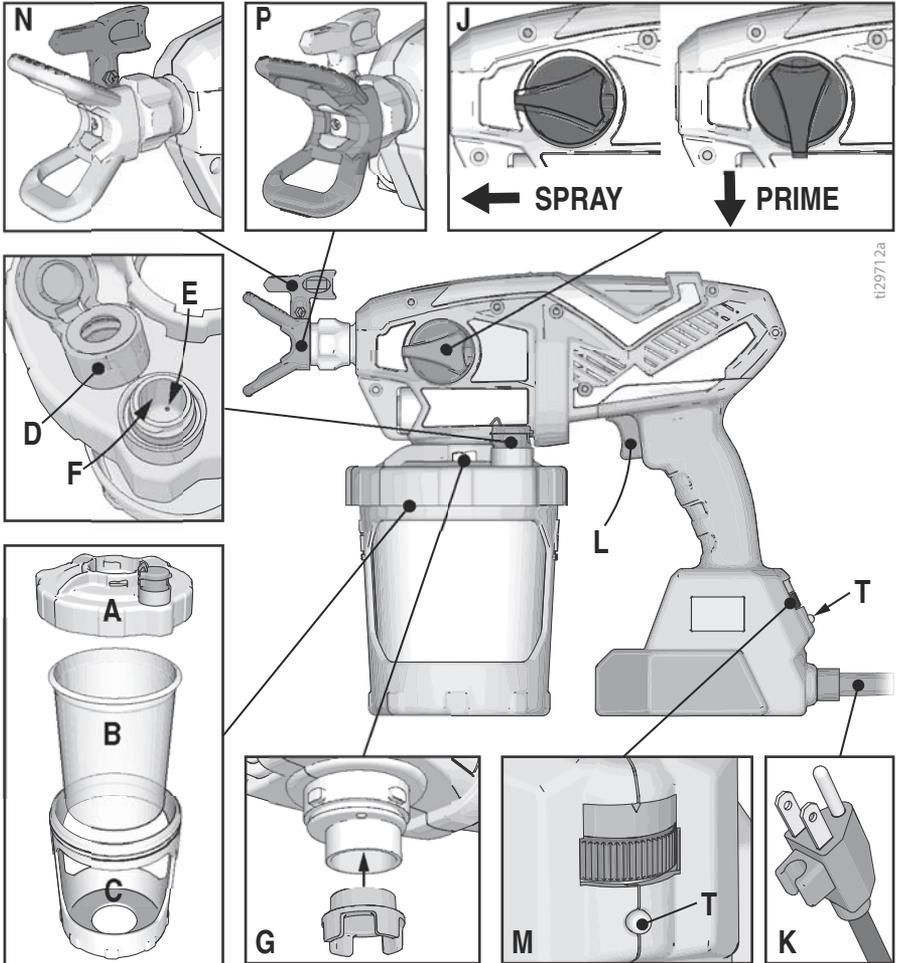
Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. This protective equipment includes but is not limited to:

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

CALIFORNIA PROPOSITION 65

This product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm. Wash hands after handling.

Know Your Sprayer



A	Cup Cover
B	FlexLiner
C	Cup Support
D	VacuValve Cap
E	VacuValve Air Hole
F	VacuValve Reservoir
G	Pump Filter

J	Prime Pump/Spray Knob
K	Power Cord
L	Sprayer Trigger
M	Speed Control, ProControl II
N	Spray Tip. Reverse-A-Clean (RAC)
P	Spray Tip Guard
T	Diagnostic Light

Start Up



Use only oil-based (non-flammable) or water-based materials, or non-flammable paint thinners. Do not use materials having flash points below 100°F (38°C).

Do not use materials which state "FLAMMABLE" on the packaging. For more information about your material, request SDS from distributor or retailer.

When spraying oil-based material, use outdoors or in a well-ventilated indoor area with a flow of fresh air.

Keep spray area well-ventilated. Keep a good supply of fresh air moving through the area.

NOTICE

Your sprayer is **NOT** compatible with harsh cleaners such as chlorine bleach. Using these cleaners will cause damage to the sprayer.

Pressure Relief Procedure



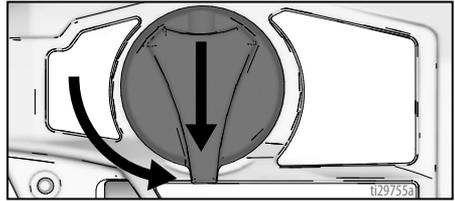
Follow the Pressure Relief Procedure whenever you see this symbol.



This sprayer builds up an internal pressure of 2000 psi (14 MPa, 138 bar) during use. Follow this Pressure Relief Procedure whenever you stop spraying and before cleaning, checking, servicing, or transporting equipment to prevent serious injury.

1. Disconnect power (unplug power cord).

2. Turn Prime Pump/Spray Knob down to PRIME PUMP position to relieve pressure.



Starting a New Job

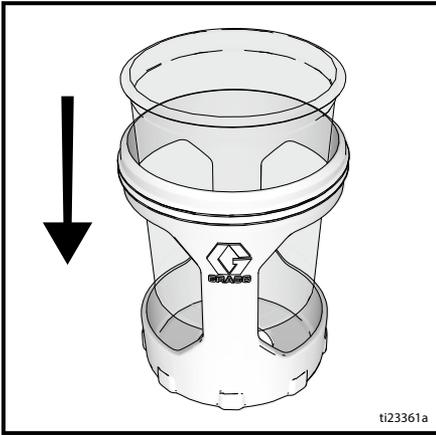
If you are using the sprayer for the very first time, see **Flush a New Sprayer**, page 23.

Strain the Paint

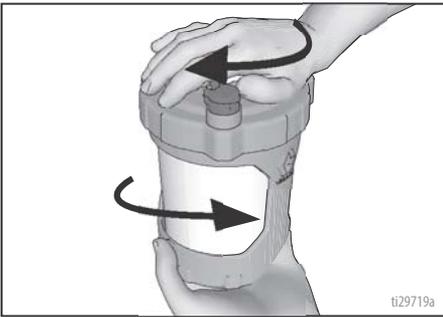
Previously opened paint may contain dried paint or other debris. To avoid priming problems and tip clogs it is advisable to strain the paint before using. Paint strainers are available where paint is sold. Stretch a paint strainer over a clean pail and pour the paint through the strainer to capture any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



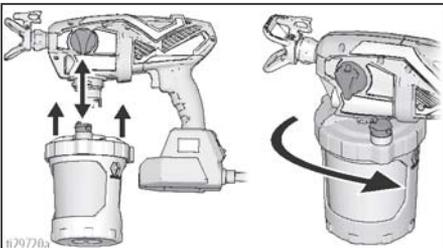
1. Install FlexLiner in the cup support.



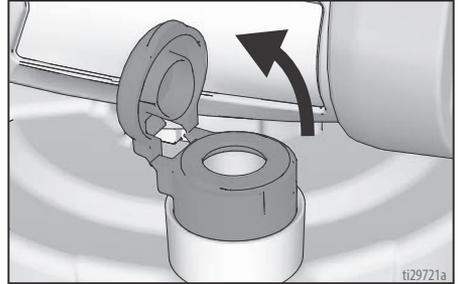
2. Fill FlexLiner with material. Securely tighten cup cover onto cup support. For proper sprayer operation lid must seal tightly with the cup.



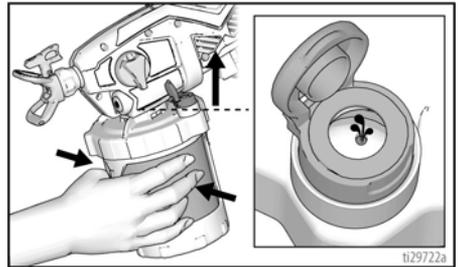
3. Align VacuValve on cup cover with Prime Pump/Spray knob. Push cup assembly onto sprayer and twist to lock.



4. The VacuValve is an important part of your new sprayer. It is used to evacuate the air out of the FlexLiner. Your sprayer will not spray if there is air in the FlexLiner.



5. Open VacuValve cap. Tilt the sprayer so the VacuValve is the highest point, causing any air in the FlexLiner to rise to the VacuValve. Gently squeeze the FlexLiner to evacuate all air through the VacuValve air hole. Once you see material enter the VacuValve reservoir, all air should be evacuated from the FlexLiner.

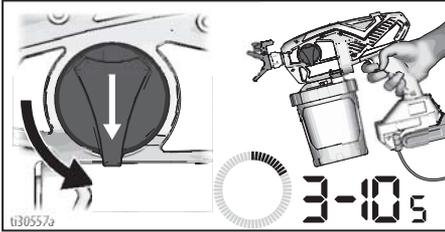


6. Stop squeezing the FlexLiner and snap the VacuValve cap closed. You will hear the cap click when it is closed properly.

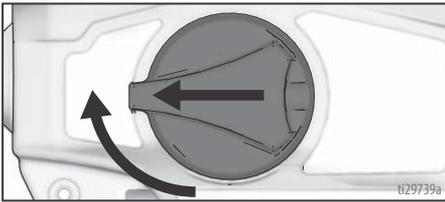


Start Up

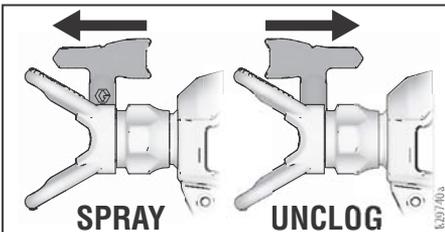
7. Plug sprayer into power source.
8. Turn Prime Pump/Spray knob down to Prime Pump position. Turn spray tip to UNCLOG position. To fill sprayer with fluid, point sprayer into a waste area and hold the trigger in for 3 – 10 seconds.



9. Air from pump may have entered the FlexLiner during priming. Repeat Steps 4 – 6 to ensure all air is evacuated.
10. Turn Prime Pump/Spray knob forward to spray position.



11. Make certain spray tip is in the spray position.

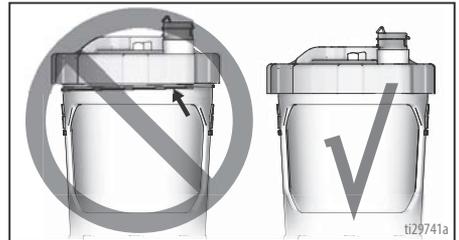


12. You are now ready to spray.

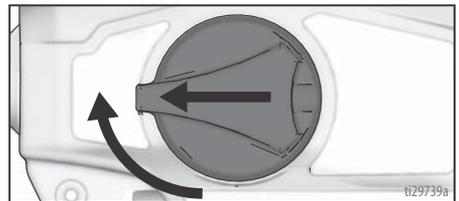
NOTE: For best results; to evacuate all material from the FlexLiner when the material is nearly gone, gently squeeze the bottom of the FlexLiner to push the last of the material up to the cup lid.

If sprayer does not spray, try one of the steps below:

- Make certain there is only one FlexLiner in cup support. It is possible for two liners to nest tightly together and appear as only one.
- Make certain the cup cover is properly threaded to the cup support. If threads are visible below the cup cover when tight, then the cover is cross-threaded. Fully remove the cup cover and reinstall to the cup support so no threads are visible when tight.



- Repeat steps 2 – 6 on pages 11 – 11 to ensure all the air is evacuated from the FlexLiner.
- Make certain the Prime Pump/Spray knob is in the Spray position.

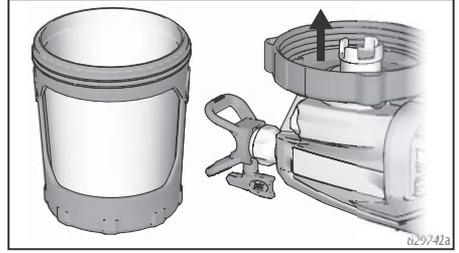


- If sprayer still does not spray, see **Sprayer Diagnostics**, page 32. If material sprays while upside down there is air in the cup. Repeat steps above.
- Replace VacuValve cap. Two new VacuValve caps came with your sprayer.

Refilling FlexLiner

If sprayer runs out of paint simply separate the cup support from the cup cover/sprayer and refill the FlexLiner.

1. Unplug sprayer from power source and open the VacuValve to allow air into the FlexLiner.
2. Separate the cup support from the cup cover/sprayer. Set the sprayer upside down on a flat surface. This will keep the wet paint in the cup cover.



3. Follow steps 2 – 12 in **Starting a New Job**, page 10.

How to Spray



Take a few moments prior to spraying and review these simple tips to ensure your spraying project is a success.

NOTE: For proper sprayer operation use only a tip from the same tip family that came with your sprayer.

Sprayer Name	Tip Family	Tip Part No.
Ultra	FFLP	FFLPxxx
Ultimate	FFLP	FFLPxxx
TC Pro	TCP	TCPxxx

Tip and Pressure Selection

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

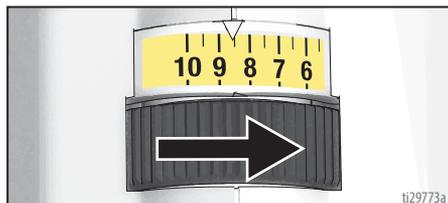
	Coatings					
	Interior Stains/ Interior & Exterior Clears	Exterior Solid Stains	Primers	Enamels	Interior Latex Paints	Exterior Latex Paints
Speed Control	1 – 5	6 – 10	6 – 10	6 – 10	6 – 10	6 – 10
Tip hole Size						
0.008 in. (0.20 mm)	✓					
0.010 in. (0.25 mm)	✓	✓				
0.012 in. (0.30 mm)		✓		✓		
0.014 in. (0.36 mm)		✓	✓	✓	✓	
0.016 in. (0.41 mm)		✓	✓	✓	✓	✓

Spray Techniques

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

- Hold sprayer 12 in. (30 cm) from surface and aim straight at surface. Tilting the sprayer to direct the spray angle causes an uneven finish.

Speed Control



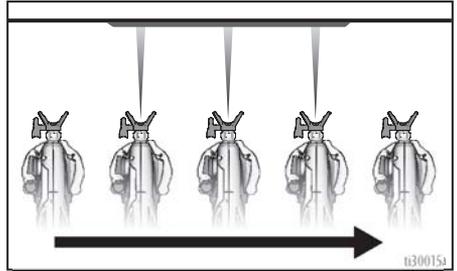
The speed control allows for infinite pressure adjustment. To reduce overspray, always start at lowest speed setting and increase speed to the minimum setting that results in an acceptable spray pattern.

- Flex wrist to keep sprayer pointed straight. Fanning sprayer to direct spray at angle causes uneven finish.

NOTE: How fast you move the sprayer will affect spray application. If material is uneven, you are moving too fast. If material drips, you are moving too slow. See **Troubleshooting**, page 32.

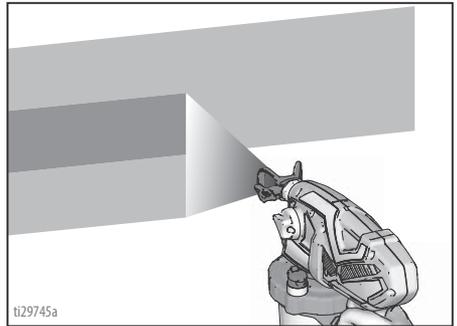
Triggering Sprayer

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

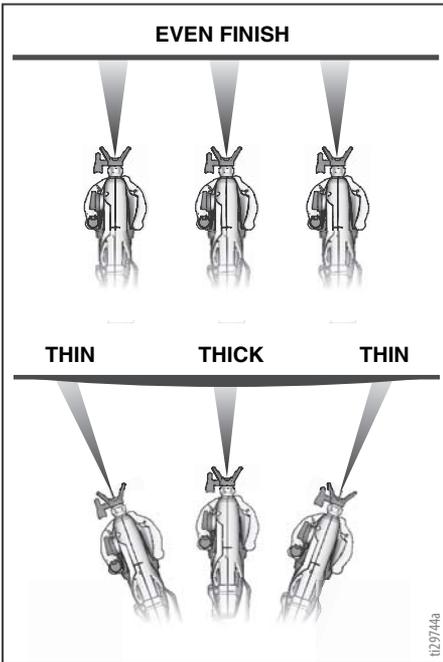
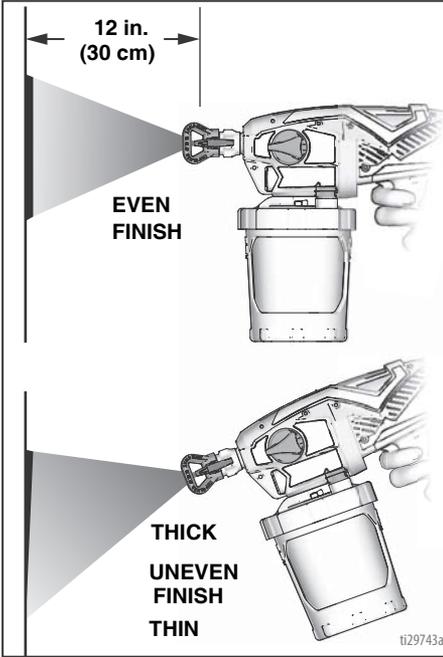


Aiming Sprayer

Aim sprayer at bottom edge of previous stroke, overlapping each stroke by half.

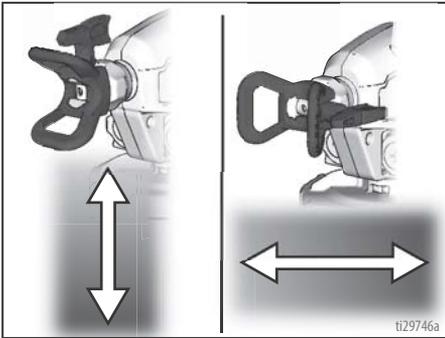


Rotating the spray tip guard changes the pattern to either the vertical or horizontal orientations.



How to Spray

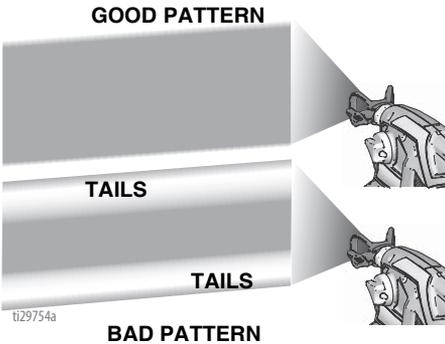
When spraying vertical corners turn spray tip guard to the horizontal orientation and move sprayer up and down.



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:

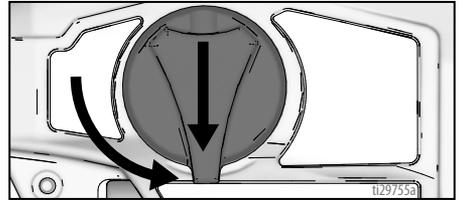
- Spray tip may be worn. See **Tip and Pressure Selection**, page 14.
- A smaller spray tip may be needed.
- Material may need to be thinned. Follow manufacturers recommendations.

Clear Tip Clog

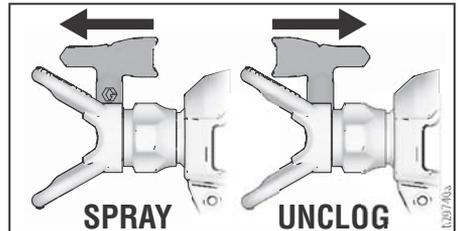


In the event that particles or debris clog the spray tip, this sprayer is designed with a reversible spray tip that quickly and easily clears the particles without disassembling the sprayer. See for **Strain the Paint**, page 10 for additional information.

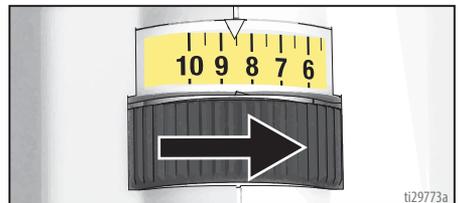
1. To unclog spray tip, turn Prime Pump/Spray knob down to Prime Pump position.



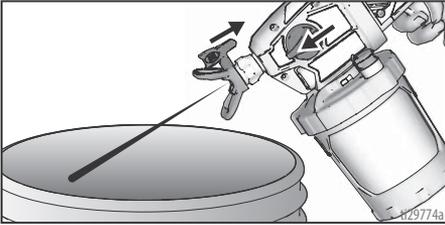
2. Reverse spray tip to UNCLOG position.



3. Set speed control to 10.



4. Aim sprayer at waste area, turn Prime Pump/Spray knob forward to spray position. Pull trigger to clear clog.



5. Turn Prime Pump/Spray knob down to Prime position. Rotate spray tip back to SPRAY position. Turn Prime Pump/Spray knob forward to SPRAY position, and resume spraying.
6. If spray tip is still clogged, you may have to repeat steps 1 – 5, or replace with new spray tip assembly. See **Spray Tip Installation**, page 23.

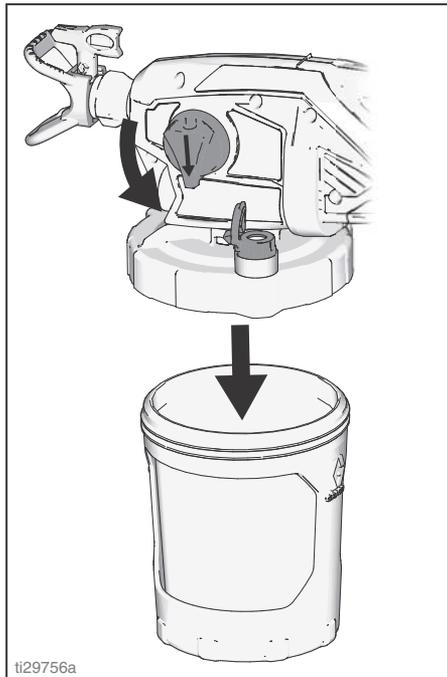
Cleanup



Use only oil-based (non-flammable) or water-based materials, or non-flammable paint thinners. Do not use materials having flash points below 100°F (38°C). Do not use materials which state "FLAMMABLE" on the packaging. For more information about your material, request SDS from distributor or retailer.

Clean in a well-ventilated area. Keep a good supply of fresh air moving through the area.

To avoid serious injury or damage to equipment, do not expose the sprayer electronics to cleaning fluids. Keep sprayer at least 10 in. (25 cm) above the rim of the container when cleaning.

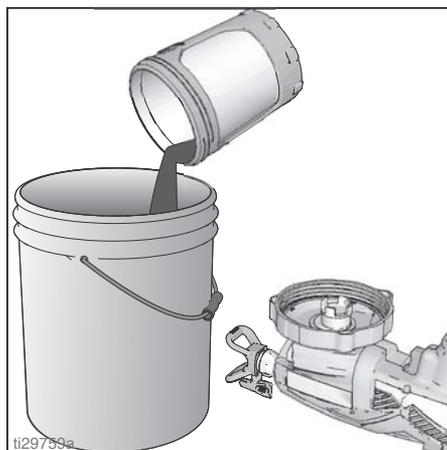


Cleaning Sprayer

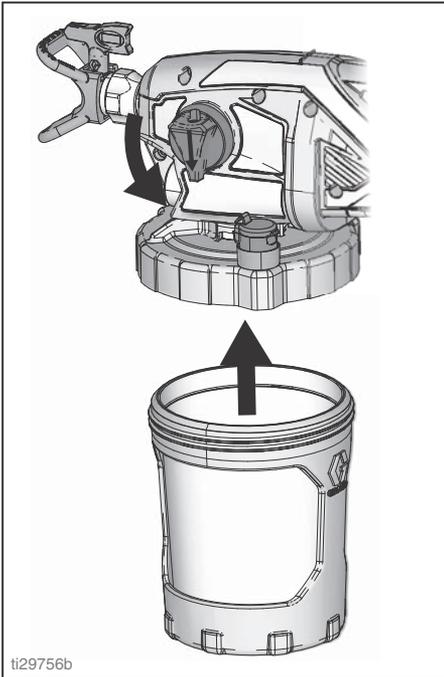
Cleaning your sprayer properly and after every spray job is of the utmost importance! Proper care and maintenance will make your paint sprayer last and work for you trouble free. See **Cleaning Fluid Compatibility**, page 27 and **Static Grounding Instructions (Oil-Based materials)**, page 27 for additional information when using oil-based materials.

1. Turn Prime Pump/Spray knob to Prime Pump to relieve pressure.
2. Open the VacuValve to allow air into the FlexLiner.
3. Separate the cup support with FlexLiner from the cup cover/sprayer.

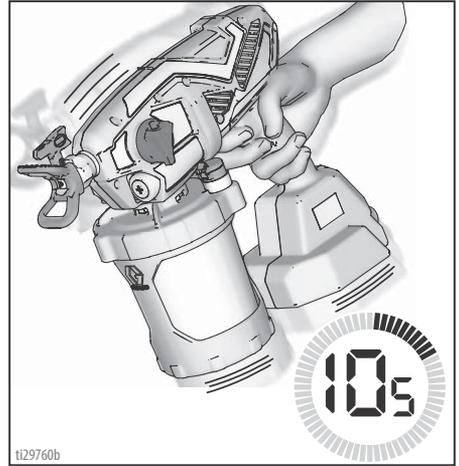
4. Set the sprayer upside down on a flat surface. This will keep the wet paint in the cup cover. Return excess material to original container. Hold the FlexLiner in place when pouring.



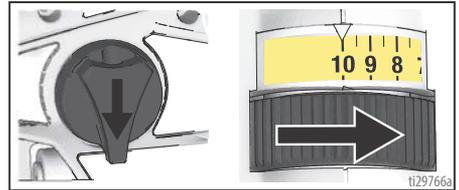
5. You can either dispose of the used FlexLiner and install a new FlexLiner or clean a used FlexLiner.
6. To clean the sprayer, fill FlexLiner approximately half-full with appropriate cleaning fluid (warm water or mineral spirits).
7. Securely tighten cup support with FlexLiner to cup cover/sprayer and close VacuValve.



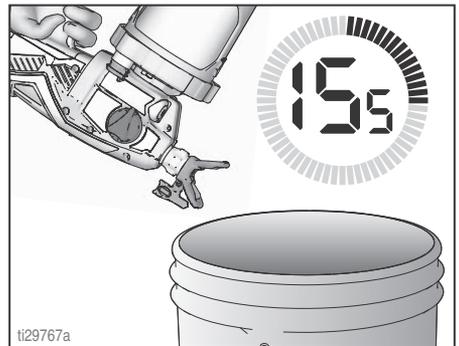
8. To clean the cup cover and pump filter and shake the entire sprayer for ten seconds.



9. Make certain the Prime Pump/Spray knob is in the Prime Pump position (pointed down). Set speed control to 10.

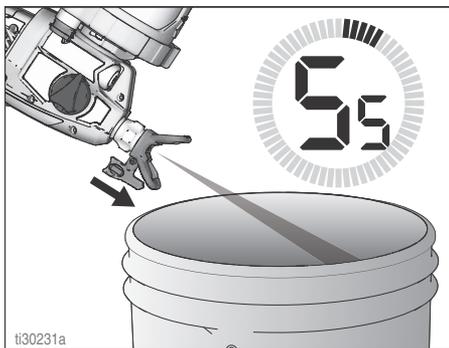


10. Turn the sprayer upside down and point the sprayer into a waste pail. Pull the trigger for 15 seconds.

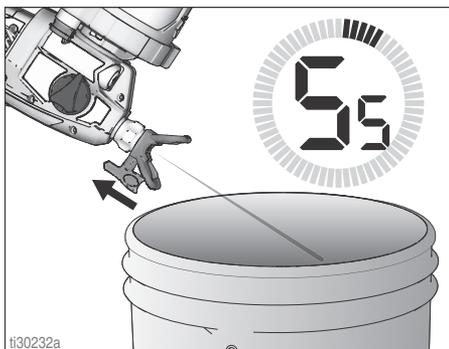


Cleanup

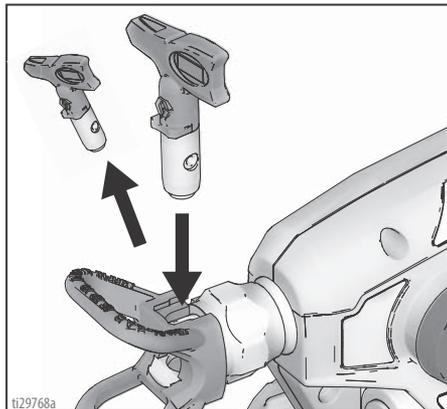
11. Turn Prime Pump/Spray knob forward to SPRAY position.
12. While holding the sprayer upside down point the sprayer into a waste pail.
 - a. With the spray tip in the SPRAY position, pull the trigger for five seconds. Release the trigger.



- b. Reverse the spray tip to UNCLOG position, pull the trigger for five seconds. Release the trigger.



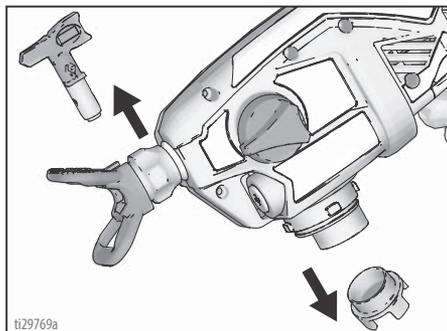
13. If second spray tip was used, remove cleaned spray tip from spray tip guard and install second spray tip. See **Spray Tip Installation**, page 23. Repeat steps 11 and 12 to clean second spray tip.



14. Remove cup assembly and discard used fluid. Dispose of used cleaning fluid properly.
15. Replace cleaning fluid and repeat steps 6 – 14 until spray output is clean.

IMPORTANT! For best results, do not spray more than one cup of water through the tip while cleaning. If more flushing is needed, remove the tip from the sprayer to avoid excessive wear.

16. Remove spray tip, spray tip guard, and pump filter. Clean with appropriate cleaning fluid (water or mineral spirits). A soft brush can be used to loosen and remove dried material if needed.



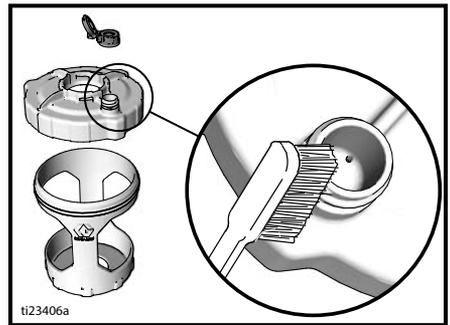
17. Use a soft cloth to clean the cup support and cup cover.



Cleaning VacuValve

The VacuValve is an important part of your sprayer and it should be cleaned after every use.

1. Remove VacuValve cap from cup cover and clean it.
2. Clean VacuValve reservoir in lid.
3. Clean VacuValve air hole. If VacuValve air hole becomes clogged, use a paper clip to clean the hole.



Storage

Storage

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

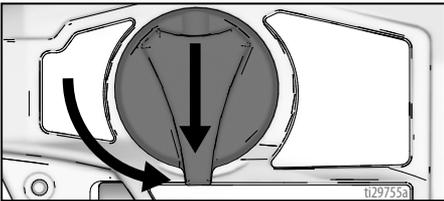


NOTICE

Failure to store sprayer with Pump Armor can result in operational problems the next time you spray. Always circulate Pump Armor through the sprayer after cleaning. **Water or solvents other than mineral spirits left in the sprayer will corrode and damage the pump.**

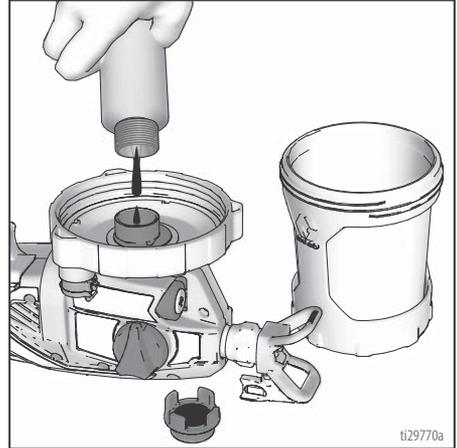
Pump Armor fluid protects the sprayer while in storage. It helps protect sprayer against freezing and corrosion when not in use.

1. Clean the sprayer and cup assembly. See **Cleanup**, page 18.
2. Turn Prime Pump/Spray knob down to the Prime Pump position. Make certain that VacuValve cap is closed.

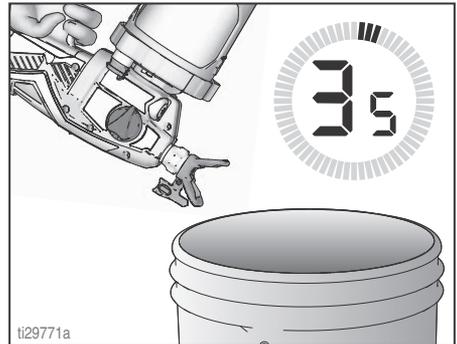


3. Separate the cup support with FlexLiner from the cup cover/sprayer. Set the sprayer upside down on a flat surface.
4. Remove pump filter from pump opening.

5. With the sprayer upside-down pour approximately 2 oz. (60 ml) PUMP ARMOR into pump opening.



6. Install a clean pump filter into pump opening.
7. With sprayer upside-down attach cup support with FlexLiner to sprayer.
8. Holding sprayer upside-down over a waste container, pull sprayer trigger for three seconds.



9. Turn Prime Pump/Spray knob forward to spray position. Remove cup assembly and pour any remaining Pump Armor back into Pump Armor bottle. Replace child-resistant cap and tighten securely for storage.
10. Store sprayer indoors in a cool, dry place. Store in an **upright position only**.

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Common Procedures

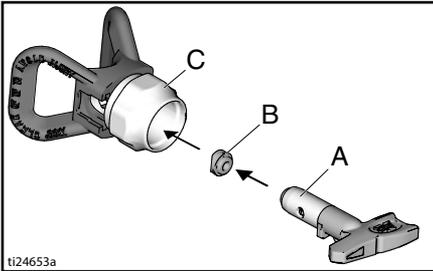
Spray Tip Installation



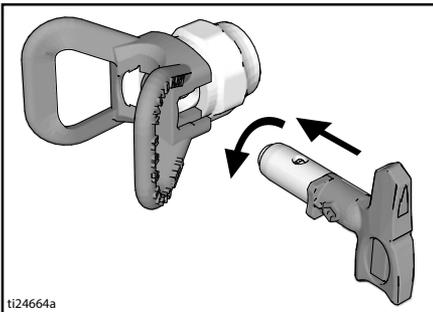
To avoid serious injury from skin injection do not put your hand in front of the spray tip when installing or removing the spray tip and tip guard.

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

1. Perform **Pressure Relief Procedure**, page 10.
2. Use spray tip (A) to insert seal (B) into tip guard (C).



3. Insert Spray Tip. Spray tip must be pushed all the way into the tip guard.



4. Screw spray tip and tip guard assembly onto the gun and hand tighten.
 - Spray tips wear with use and abrasive paint and need periodic replacement.
 - If the spray pattern is poor, you may have a worn spray tip. Replace spray tip. See **Spray Pattern Diagnostics**, page 35.

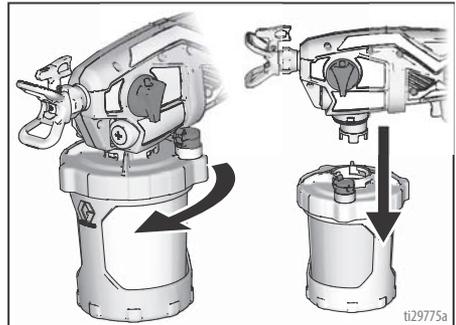
NOTICE

Spray tips must be cleaned or stored in appropriate cleaning fluid (water or mineral spirits) immediately after use to ensure material is not allowed to dry in spray tip. Failure to do so will result in damage to the spray tip. See **Cleanup**, page 18.

Flush a New Sprayer

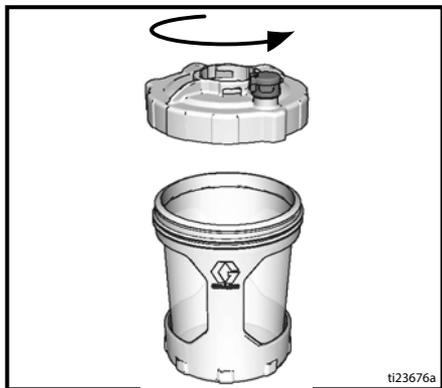
This sprayer arrives from the factory with a small amount of test material in the system. **It is important that you flush this material from the sprayer before using it for the first time.** See **Cleaning Fluid Compatibility**, page 27 and **Static Grounding Instructions (Oil-Based materials)**, page 27 for additional information when using oil-based materials.

1. Remove cup assembly from the sprayer by turning and pulling down.

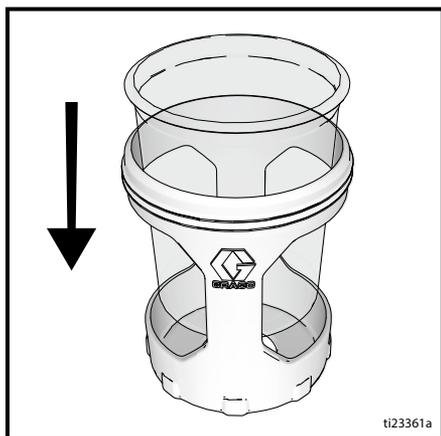


Common Procedures

2. Unscrew cup cover from the cup support.



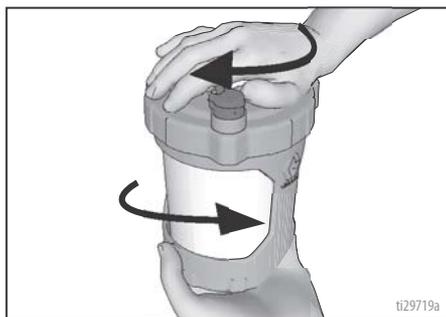
3. Make certain FlexLiner is in the cup support.



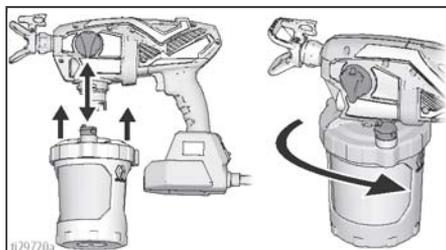
4. Fill FlexLiner with cleaning fluid. See **Cleaning Fluid Compatibility**, page 27.



5. Securely tighten cup cover onto cup support.

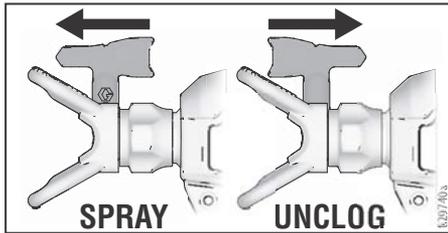
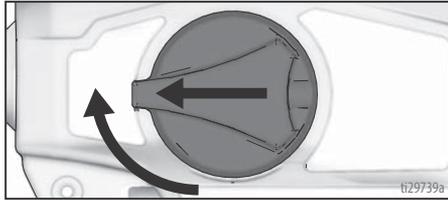


6. Align VacuValve on cup cover with Prime Pump/Spray knob. Push cup assembly onto sprayer and twist to lock.

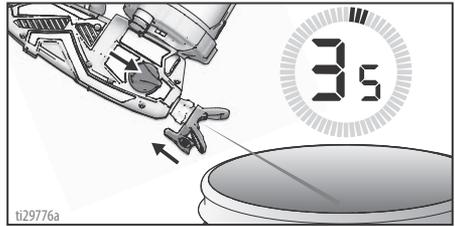


Common Procedures

7. Plug sprayer into power source.
8. Make certain the Prime Pump/Spray knob is in the Prime Pump position (pointed down). Set speed control to 10.
9. Turn the sprayer upside down and point the sprayer into a waste pail. Pull the trigger for three seconds.
10. Turn Prime Pump/Spray knob forward to SPRAY position. Rotate spray tip 180 degrees to UNCLOG position.



11. While holding the sprayer upside down point the sprayer into a waste pail. Pull the trigger for three seconds.



IMPORTANT! For best results, do not spray more than one cup of water through the tip while cleaning. If more flushing is needed, remove the tip from the sprayer to avoid excessive wear.

12. Sprayer is now flushed and ready for use. See **Start Up**, page 10.

IMPORTANT! The motor has a built-in feature to protect itself from overuse. If the motor stops, the thermal switch has tripped. **Do not return sprayer to store.** The motor will operate normally after cooling for 20-30 minutes.

Reference

Spray Tip Selection

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 14 to determine the range of recommended tip hole sizes for each fluid type. If you need a tip other than the one supplied, see **How to Spray**, page 14.

NOTE: For proper sprayer operation use only a tip from the same tip family that came with your sprayer.

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

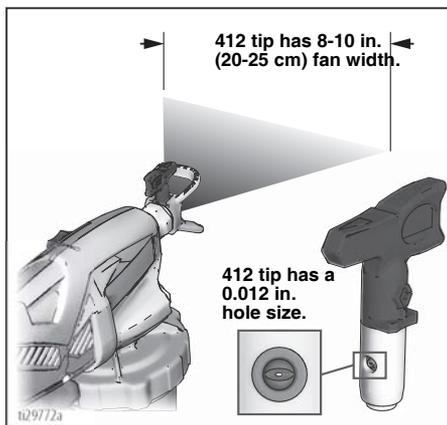
Fan width is the size of the spray pattern, which determines the area covered with each stroke.

Hints:

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

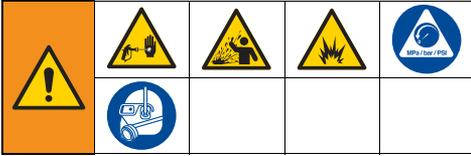
Understanding Tip Number

The last three digits of tip part number (i.e.: xxx412) contains information about hole size and fan width on surface when gun is held 12 in. (30.5 cm) from surface being sprayed.



First digit when doubled = approximate fan width.
Last two digits = tip hole size in thousands of an inch.
For an 8 to 10 in. (203 to 254 mm) fan width and 0.010 (0.25 mm) hole size, order Part No. ...410.

Cleaning Fluid Compatibility



Oil- or Water-Based Materials

- When spraying **water-based** materials, flush the system thoroughly with water.
- When spraying **oil-based** materials, flush the system thoroughly with mineral spirits or compatible, oil-based flushing solvent.
- To spray **water-based** materials **after spraying oil-based** materials, flush the system thoroughly with water first. The water flowing out of drain tube should be clear and solvent-free **before** you begin spraying the water-based material.
- To spray **oil-based** materials **after spraying water-based** materials, flush the system thoroughly with mineral spirits or a compatible oil-based flushing solvent first. The solvent flowing out of the drain tube should not contain any water. When flushing with solvents always follow **Static Grounding Instructions (Oil-Based materials)**, page 27.
- To avoid fluid splashing back on your skin or into your eyes, always aim gun at inside wall of pail.

Static Grounding Instructions (Oil-Based materials)



The equipment must be grounded to reduce the risk of static sparking and electric shock. An electric or static spark can cause fumes to ignite or explode. An improper ground can cause electric shock. A good ground provides an escape wire for the electric current.

Always use a metal pail for oil-based materials requiring flushing with compatible oil-based flushing solvents when sprayer is flushed or pressure is relieved.

Follow local code. Use only conductive metal pails, placed on a grounded surface such as concrete.

Do not place pail on a non-conductive surface such as paper or cardboard which interrupts grounding continuity.



Maintenance

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

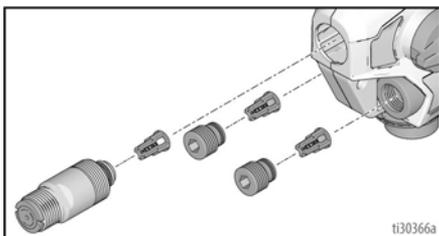
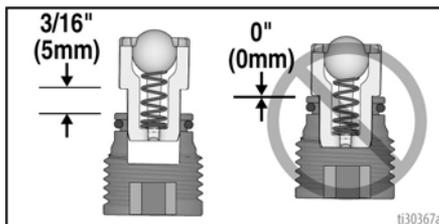


Activity	Interval
Inspect pump filter.	Daily or each time you spray
Inspect enclosure vents for blockage.	Daily or each time you spray
Inspect pump inlet holes located under pump filter for blockage.	Each time the sprayer is cleaned

Cleaning Outlet Valves

Dirt and debris in the outlet valve assemblies may affect sprayer performance and require cleaning.

1. To clean the three outlet valves, remove two pump plugs and front valve. Remove pump plugs with 8mm or 5/16" Allen wrench.

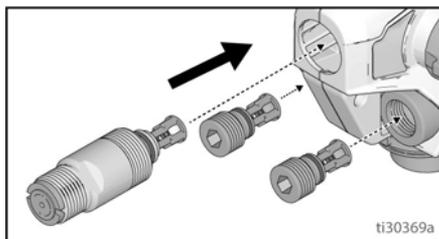


2. Clean outlet valve assemblies with warm water or mineral spirits.
3. Check ball should move freely against the spring in the retainer.
4. If outlet valve assembly was removed from the valve plug, assemble as shown. Leave a space between the end of the plug or front valve and shoulder on the outlet valve assembly.

NOTICE

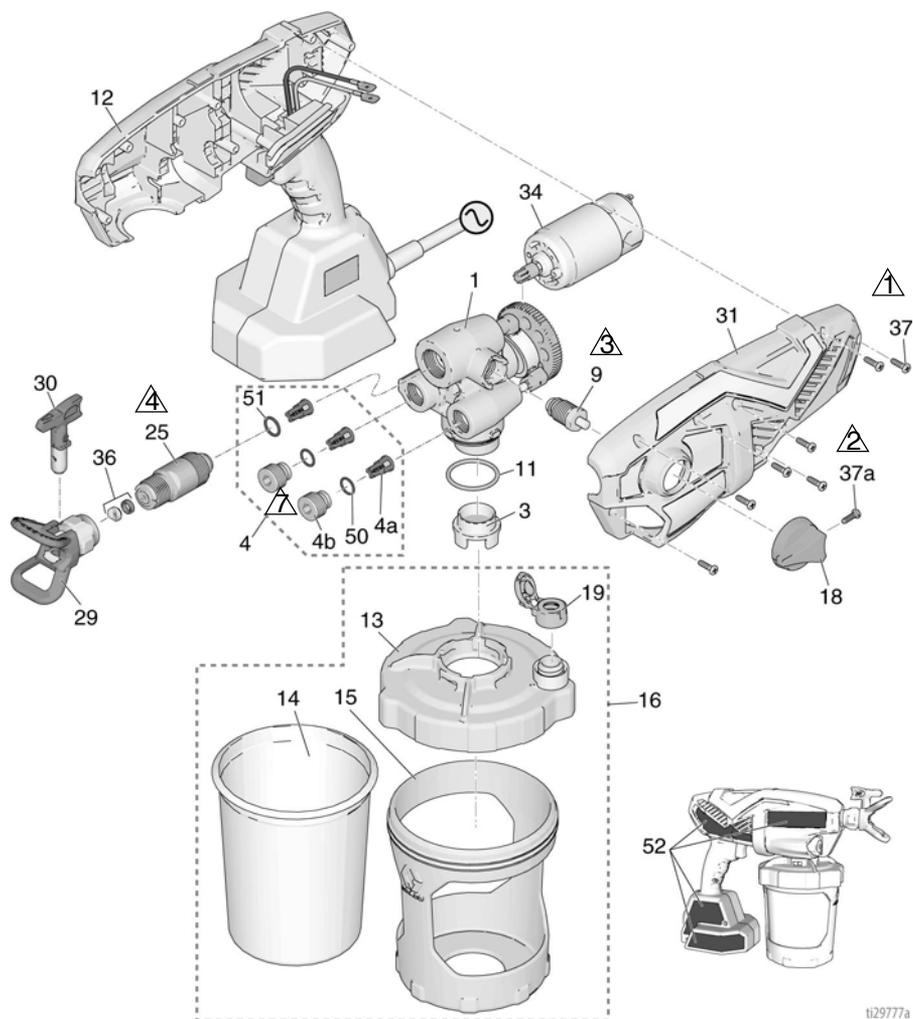
Do not push outlet valves all the way into the valve plugs or front valve. If outlet valves are pushed all the way into the valve plugs or front valve the sprayer will spray with reduced performance.

- a. Make certain o-rings are on the valve plugs and front valve.
- b. Install two pump plugs and front valve. Install pump plugs with 8mm or 5/16" Allen wrench. Torque outlet valve and pump plugs, see page 30 for torques.



Replacement Parts

Replacement Parts



ti29777a

Ref.	Torque	Ref.	Torque
△1	10 in-lb (1.1 N•m)	△4	55-65 in-lb (6.2 - 7.3 N•m)
△2	8-10 in-lb (0.9 - 1.1 N•m)	△7	5-7 in-lb (0.6 - 0.8 N•m)
△3	10-15 in-lb (1.1 - 1.7 N•m)		

Parts List

Ref.	Sprayer Name	Part #	Description
1	All	17P185	Kit, pump assembly <i>includes 4, 9, 11, 25</i>
3	All	17P554	Filter, pump, 60 mesh, 3 pack
	All	17P555	Filter, pump, 100 mesh, 3 pack
4	All	17P183	Kit, outlet valve repair <i>includes 3 of 4a, 2 of 4b, 2 of 50, 1 of 51</i>
4a	All		Outlet valve assembly
4b	All		Outlet valve plug
9	All	17P098	Prime Pump/Spray valve <i>includes 18, 37</i>
11	All	16Y425	O-ring
12	All	17P176	Kit, Smartcontrol with enclosure <i>includes 31, 34, 7 of 37, 52</i>
13	All	17N515	Lid, cup <i>includes 1 of 19</i>
14	All	17A226	FlexLiner, 32 oz. (3-pack)
	All	17P212	FlexLiner, 32 oz. (25-pack)
	All	17F005	FlexLiner, 42 oz. (3-pack)
	All	17P549	FlexLiner, 42 oz. (25-pack)
15	Ultra, Ultimate	17N392	Support, cup, 32 oz.
	TC Pro	16W846	Support, cup, 32 oz.
16		17P550	Kit, cup support, lid and plug 32 oz. <i>includes 13, 1 of 14, 15, 17, 1 of 19</i>
		17P552	Kit, cup support, lid and plug 42 oz. <i>includes 13, 1 of 14, 15, 17, 1 of 19</i>
17	All	17M879	Plug, cup lid, not shipped with sprayer (not shown)
18	All	17M882	Prime Pump/Spray knob
19	All	17P712	VacuValve cap (3-pack)
20	Ultra	17P659	Kit, label, brand, Ultra
	Ultimate	17P661	Kit, label, brand, Ultimate
	TC Pro	17P662	Kit, label, brand, TC Pro
25	All	17P174	Kit, front valve <i>includes 51</i>
29	Ultra, Ultimate	246215	Guard, spray tip, FFLP
	TC Pro	17P574	Guard, spray tip, TCP
30	Ultra, Ultimate	FFLP514	Spray tip, FFLP 514
	TC Pro	TCP514	Spray tip, TC P514
31	All	17P234	Kit, enclosure, cover <i>includes 7 of 37</i>
34	All	17P099	Motor, AC 120V
36	All	17P501	Kit, tip seat and seal (5-pack)
37	All	17R614	Screw, cross-head
37a	All	128726	Screw, cross-head
40	Ultra, Ultimate	17M883	Case, storage (not shown)
	TC Pro	17N194	Case, storage (not shown)
50	All	17M394	O-ring
51	All	125119	O-ring
---		24D386	Pump Armor, included with sprayer 4 oz (not shown)
---		244168	Pump Armor, not shipped with sprayer 8 oz (not shown)
52 ▲	All	17P676	Kit, warning labels (not shown)
53 ▲	All	179960	Medical Alert Card, English, Spanish, French (not shown)

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

Troubleshooting

Troubleshooting



Check everything in this Troubleshooting Table before you bring the sprayer to an authorized service center.



Sprayer Diagnostics

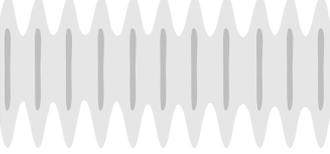
Problem	Cause	Solution
Sprayer makes no sound when trigger is pulled	Diagnostic light does not blink when the spray is first plugged in. Indicates no power to the sprayer.	Verify power to the sprayer. Replace Smartcontrol with enclosure.
	Diagnostic light blinks once when the sprayer is first plugged in. Indicates power to the sprayer.	Motor has overheated, wait 20–30 minutes for the motor to cool. Motor brushes are worn, replace motor.
	Diagnostic light blinks four times when the trigger is pulled. Indicates a locked rotor condition.	Replace pump and/or motor assembly.

Problem	Cause	Solution
Sprayer makes sound but no material is sprayed when trigger is pulled	Sprayer is not primed.	Prime the pump. See Starting a New Job , page 10.
		Make certain there is only one FlexLiner in the cup support.
		Make certain the cup cover is properly threaded to the cup support. If threads are visible below the cup cover when tight, fully remove and reinstall to the cup support so no threads are visible when tight.
		Make certain the cup cover is tightened to cup support. For proper sprayer operation lid must seal tightly with the cup.
		Make certain the cup assembly is properly locked on the sprayer.
		Make certain all the air is out of the FlexLiner and the VacuValve is properly closed.
		Clean VacuValve reservoir and air hole. See Cleaning VacuValve , page 21.
		Replace VacuValve.
		Clean Sprayer. See Cleanup , page 18.
		Outlet valves are not installed properly. See Cleaning Outlet Valves , page 28.
	Prime Pump/Spray knob is in PRIME PUMP position.	Turn Prime Pump/Spray knob forward to SPRAY position.
	Spray tip is not in SPRAY position.	Turn spray tip to SPRAY position.
	Spray tip is clogged.	See Clear Tip Clog , page 16.
	Debris in paint.	See Strain the Paint , page 10.
	Pump filter plugged.	See step 16 on page 20
	Speed control is set too low.	Increase speed until unit sprays.
	No or low material in material cup.	Refill FlexLiner with material and prime the pump. See Refilling FlexLiner , page 13.
	Pump has reached the end of its life.	Replace pump assembly.
	Diagnostic light blinks four times when the trigger is pulled. Indicates a locked rotor condition.	Replace pump and/or motor assembly.

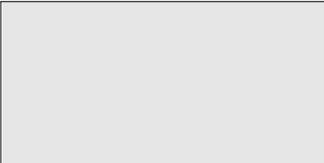
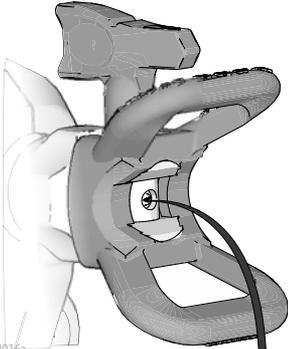
Troubleshooting

Problem	Cause	Solution
Sprayer sprays with poor results	Spray tip is partially clogged.	See Clear Tip Clog , page 16.
	Spray tip is not in correct position	Rotate spray tip to SPRAY position.
	Incorrect spray tip for application of material.	Install different size spray tip. See Tip and Pressure Selection , page 14.
	Spray tip is worn or damaged	Replace spray tip. See Spray Tip Installation , page 23.
	Material being sprayed is aerated because it was shaken.	Do NOT shake material. Stir the material or check the manufacturer's recommendation for the material being sprayed.
	Material being sprayed is too cold to spray.	Warm material.
	Outlet valves are dirty or worn.	Remove two pump plugs and front valve to gain access to the three outlet valves. Clean outlet valves. Outlet valves are not installed properly. See Cleaning Outlet Valves , page 28. Replace if necessary.
	Pump has reached the end of its life.	Replace pump assembly.
Sprayer runs intermittently or very slow	Fluid has gotten into the sprayer.	Allow the sprayer to dry out.
		Replace motor and/or Smartcontrol with enclosure.
Pump will spray paint but will not spray water	Pump has reached the end of its life.	Replace pump assembly.
Paint leaks out of the cup threads.	Cup not properly seated.	Make certain that there is only one FlexLiner in cup support.
		Make certain the cup cover is properly threaded to the cup support. If threads are visible below the cup support when tight, fully remove the cup cover and reinstall to the cup support so no threads are visible when tight.
		Make certain the cup cover is tightened to cup support. For proper sprayer operation lid must seal tightly with the cup.
		Avoid flexing or pushing on the cup support when you evacuate the air out of the FlexLiner.
		Avoid pulling down on the FlexLiner when you evacuate the air out of the FlexLiner.
		Make certain there is no damage to the FlexLiner lip or the cup cover gasket.
		Make certain that the FlexLiner lip and cup cover gasket is free of debris and dried paint.
		Replace FlexLiner.

Spray Pattern Diagnostics

Problem	Cause	Solution
Spray pattern is uneven: 	Operator is moving too fast while spraying.	Slow speed of movement.
	Spray tip is clogged.	Unclog spray tip or clean spray tip see Clear Tip Clog , page 16.
	Material difficult to atomize.	Increase speed control until desired pattern is achieved.
		Hold sprayer farther away from surface.
	Outlet valves are dirty or worn.	Switch to different spray tip. See Tip and Pressure Selection , page 14.
		Remove two pump plugs and front valve to gain access to the three outlet valves. Clean outlet valves. Outlet valves are not installed properly. See Cleaning Outlet Valves , page 28. Replace if necessary.
Pump has reached the end of its life.	Replace pump assembly.	
Spray pattern has tails: 	Speed control is set too low.	Increase speed until desired pattern is achieved.
	Material may need to be thinned.	Thin material follow paint manufacturer's recommendations.
	Incorrect spray tip for application of material.	Install different size spray tip. See Tip and Pressure Selection , page 14.
	Material not compatible with sprayer.	Switch material.
	Spray tip is worn or damaged.	Replace spray tip. See Spray Tip Installation , page 23.
Spray pattern has dripping/sagging: 	Operator is moving too slowly while spraying.	Move sprayer faster while spraying.
	Sprayer is too close to target surface.	Move sprayer away from surface 12 in. (30 cm)
	Holding trigger while changing spray direction.	Release trigger when changing directions.
	Speed control is set too high.	Decrease speed until desired pattern is achieved.
	Spray tip is worn or damaged.	Replace spray tip. See Spray Tip Installation , page 23.
Spray pattern is too narrow: 	Sprayer is too close to target surface.	Move sprayer away from surface 12 in. (30 cm)
	Incorrect spray tip for application of material.	Install different size spray tip. See Tip and Pressure Selection , page 14.
	Spray tip is worn or damaged.	Replace spray tip. See Spray Tip Installation , page 23.

Troubleshooting

Problem	Cause	Solution
<p>Spray pattern is too wide:</p> 	<p>Sprayer is too far away from target surface.</p>	<p>Move sprayer closer to surface.</p>
	<p>Incorrect spray tip for application of material.</p>	<p>Install different size spray tip. See Tip and Pressure Selection, page 14.</p>
<p>Spray pattern “spits” at the beginning or end of pattern:</p> 	<p>Excess material has accumulated on spray tip guard assembly or spray tip is partially clogged.</p>	<p>Clean spray tip guard. See Clear Tip Clog, page 16.</p>
	<p>Spray tip not inserted completely into spray tip guard.</p>	<p>See Spray Tip Installation, page 23.</p>
	<p>Spray tip is worn.</p>	<p>Replace spray tip. See Spray Tip Installation, page 23.</p>
	<p>Sprayer is dirty</p>	<p>Flush sprayer.</p>
	<p>Front valve has reached the end of its life.</p>	<p>Replace front valve assembly.</p>
<p>Spray tip continues to drip or ooze material after trigger is released:</p> 	<p>Spray tip is worn.</p>	<p>Replace spray tip. See Spray Tip Installation, page 23.</p>
	<p>Spray tip not inserted completely into spray tip guard.</p>	<p>See Spray Tip Installation, page 23.</p>
<p>Material leaks around spray tip guard or spray tip handle</p>	<p>Spray tip seal and seat are damaged or not properly installed.</p>	<p>See Spray Tip Installation, page 23.</p>

Technical Specifications

HandHeld Sprayer		
	U.S.	Metric
Max Working Pressure	2000 psi	14 MPa, 138bar
Maximum Amperage	3.6 Amps	3.6 Amps
Weight	4.6 lb	2.1 kg
Dimensions:		
Length	14.0 in.	36.1 cm
Width	5 in.	12.7 cm
Height	10.5 in.	26.7 cm
Storage Temperature Range ♦♦	32° to 113° F	0° to 45° C
Operating Temperature Range ✓	40° to 90° F	4° to 32° C
Storage Humidity Range	0% to 95% relative humidity, non-condensing	
Sound Pressure Level	85.1 dBa	
Sound Power Level †	90.0 dBa, Uncertainty K = 0.5 dBa	
Vibration level (measured in accordance with EN50580:2012)	Vibration total value $a_h = 21.5 \text{ ft/s}^2$ Uncertainty = 0.3 ft/s^2	Vibration total value $a_h = 6.5 \text{ m/s}^2$ Uncertainty = 0.1 m/s^2
Power Cord	18 AWG, 3-wire	1.0 mm ² , 3-wire
Length	18 in.	45.7 cm
Electrical Power Requirement	120 Vac, 60 Hz, 15A, 1 Ø	
Maximum tip orifice	0.016 in.	0.41 mm

♦ Pump damage will occur if fluid 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.

† All readings were taken within the priming mode at the assumed operator position. Sound power levels were tested to ISO 3741 at 3.3 feet (1m).

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