

Corded Airless HandHeld Sprayers

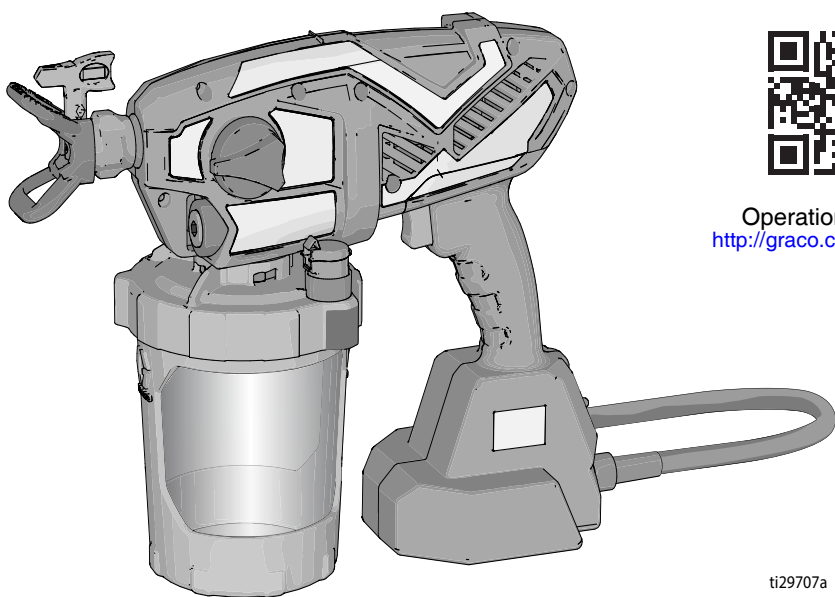
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Important Safety Instructions

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

Use only water-based materials. Do not use materials which state "FLAMMABLE" on the packaging. For more information about your material, request a Safety Data Sheet (SDS) from the distributor or retailer.



*For portable spray applications of water-based
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
	17M360	Ultra	230V	FFLPxxx	0.008 – 0.016 in. (0.20 – 0.41 mm)
	17M362	Ultra	230V		
	17P255	Ultimate	230V		

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

Important User Information

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 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 **2 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.



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.

General Power Tool Safety Information

WARNING

Read all safety warnings and all instructions.

Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

The term “power tool” in the warnings refers to your mains-operated (corded) power tool.

Work Area Safety

- **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.
- **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
- **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

Electrical Safety

- **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.
- **Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.
- **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
- **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.
- **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.
- **If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply.** Use of an RCD reduces the risk of electric shock.

Personal Safety

- **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.
- **Use personal protective equipment. Always wear eye protection.** Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energizing power tools that have the switch on invites accidents.
- **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
- **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
- **Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewelry or long hair can be caught in moving parts.
- **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.

General Power Tool Safety Information

WARNING

Power Tool Use and Care

- **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.
- **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- **Disconnect the plug from the power source before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.
- **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.
- **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.
- **Use the power tool, accessories etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.

Service

- **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.

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

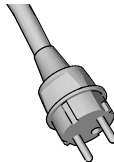


GROUNDING

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 230V circuit and has a grounding plug similar to the plug illustrated below.

230V



230V ANZ



- 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)

Warnings

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.



- Use only water-based materials.

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



- Do not spray or clean with flammable liquids.



- 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 12 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 12 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.

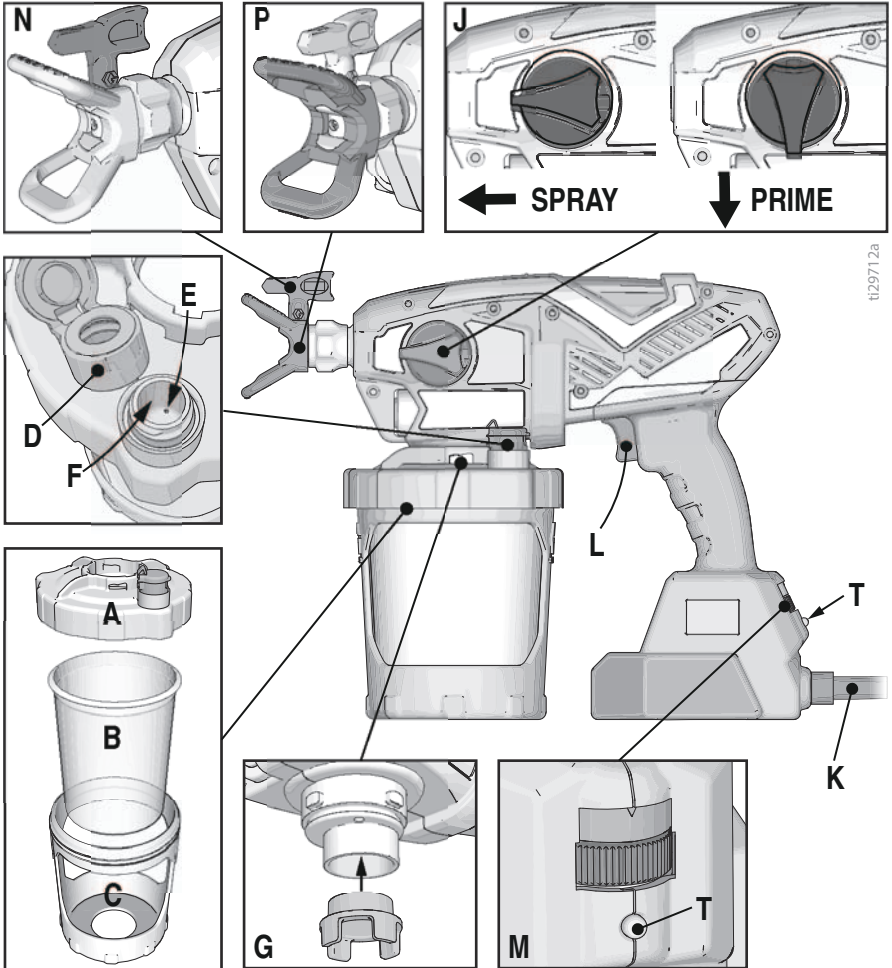


PERSONAL PROTECTIVE EQUIPMENT

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.

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

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

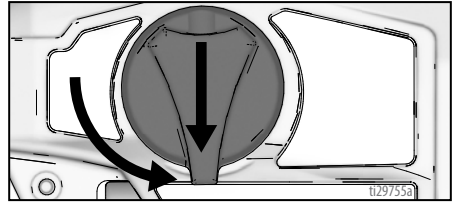


Follow the Pressure Relief Procedure whenever you see this symbol.



This sprayer builds up an internal pressure of 2000 psi (138 bar, 14 MPa) 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

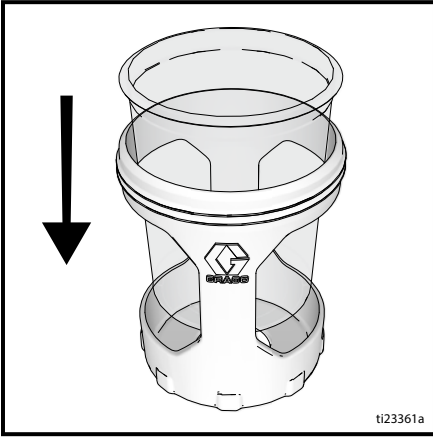
If you are using the sprayer for the very first time, see **Flush a New Sprayer**, page 25.

Strain the Paint

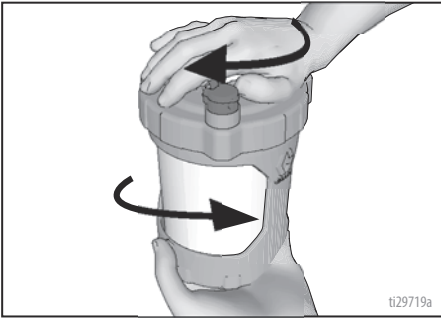
Previously opened paint may contain dried paint or other debris. To avoid priming problems and tip clogs it is advisable to strain the paint before using. Paint strainers are available where paint is sold. Stretch a paint strainer over a clean pail and pour the paint through the strainer to capture any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



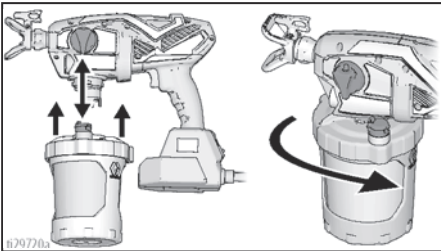
1. Install FlexLiner in the cup support.



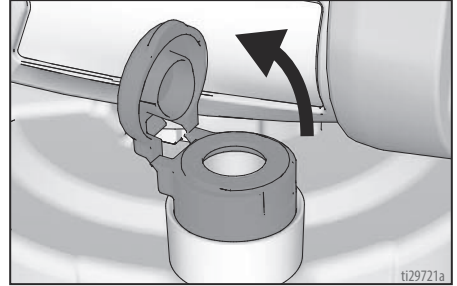
2. Fill FlexLiner with material. Securely tighten cup cover onto cup support. For proper sprayer operation lid must seal tightly with the cup.



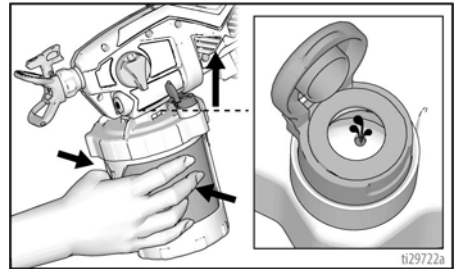
3. Align VacuValve on cup cover with Prime Pump/Spray knob. Push cup assembly onto sprayer and twist to lock.



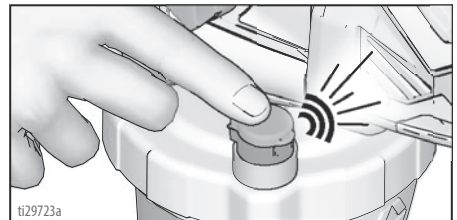
4. The VacuValve is an important part of your new sprayer. It is used to evacuate the air out of the FlexLiner. Your sprayer will not spray if there is air in the FlexLiner.



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.

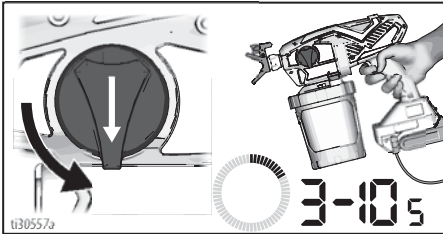


6. Stop squeezing the FlexLiner and snap the VacuValve cap closed. You will hear the cap click when it is closed properly.

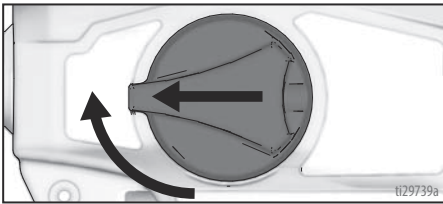


Start Up

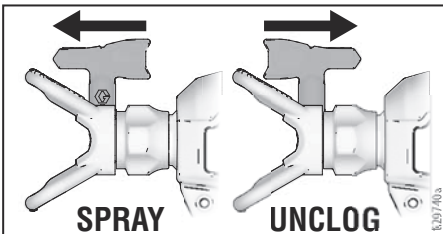
7. Plug sprayer into power source.
8. Turn Prime Pump/Spray knob down to Prime Pump position. Turn spray tip to UNCLOG position. To fill sprayer with fluid, point sprayer into a waste area and hold the trigger in for 3 – 10 seconds.



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.

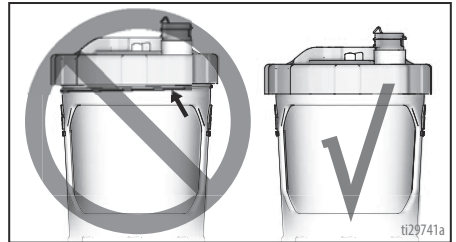


12. You are now ready to spray.

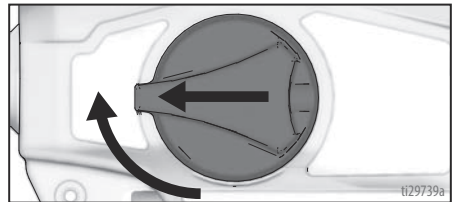
NOTE: For best results; to evacuate all material from the FlexLiner when the material is nearly gone, gently squeeze the bottom of the FlexLiner to push the last of the material up to the cup lid.

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 page 13 to ensure all the air is evacuated from the FlexLiner.
- Make certain the Prime Pump/Spray knob is in the Spray position.

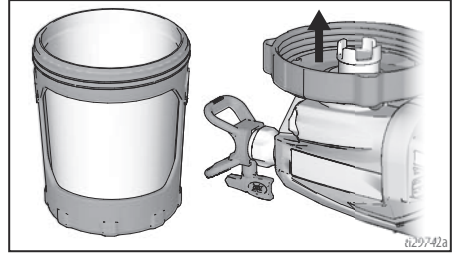


- If sprayer still does not spray, see **Sprayer Diagnostics**, page 32. If material sprays while upside down there is air in the cup. Repeat steps above.
- Replace VacuValve cap. Two new VacuValve caps came with your sprayer.

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 12.

How to Spray

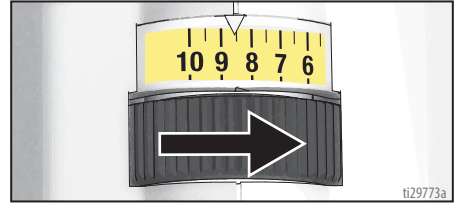


Take a few moments prior to spraying and review these simple tips to ensure your spraying project is a success.

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

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.

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.

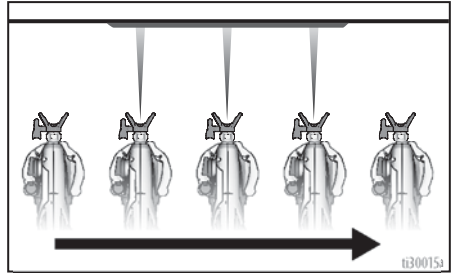
- Hold sprayer 12 in. (30 cm) from surface and aim straight at surface. Tilting the sprayer to direct the spray angle causes an uneven finish.

- 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.

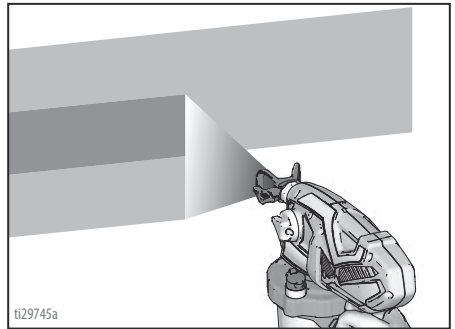
Triggering Sprayer

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

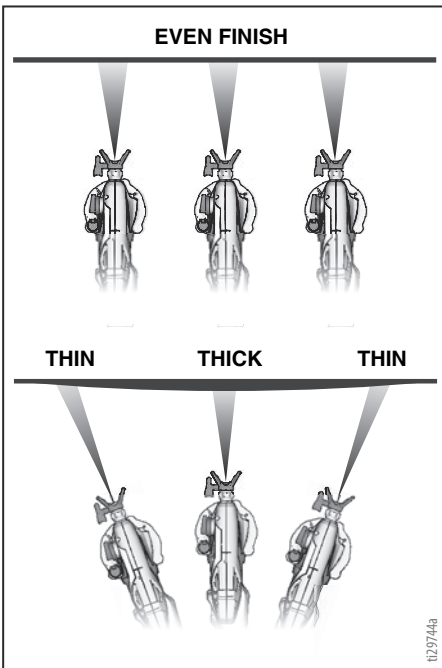
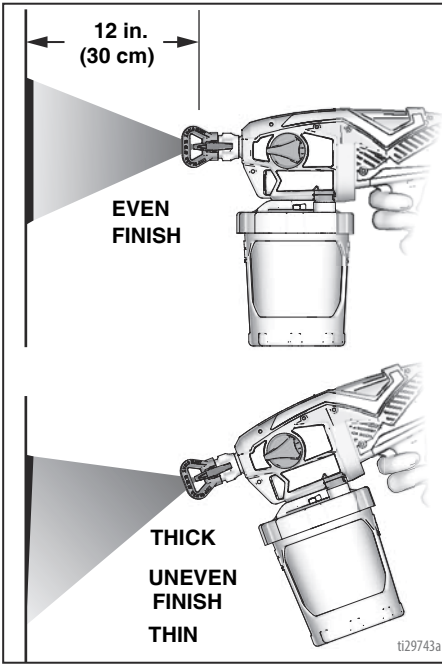


Aiming Sprayer

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

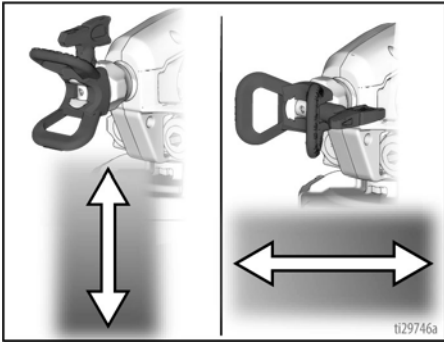


Rotating the spray tip guard changes the pattern to either the vertical or horizontal orientations.



How to Spray

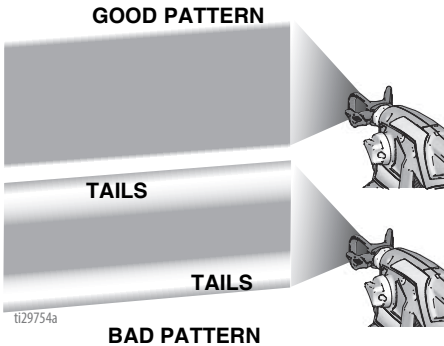
When spraying vertical corners turn spray tip guard to the horizontal orientation and move sprayer up and down.



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:

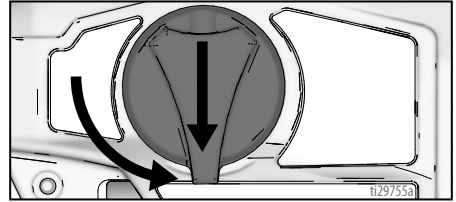
- Spray tip may be worn. See **Tip and Pressure Selection**, page 16.
- A smaller spray tip may be needed.
- Material may need to be thinned. Follow manufacturers recommendations.

Clear Tip Clog

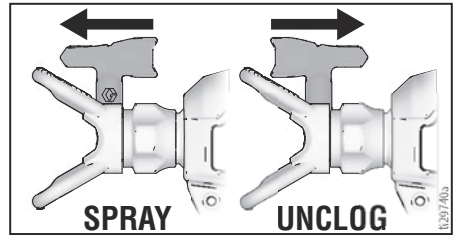


In the event that particles or debris clog the spray tip, this sprayer is designed with a reversible spray tip that quickly and easily clears the particles without disassembling the sprayer. See for **Strain the Paint**, page 12 for additional information.

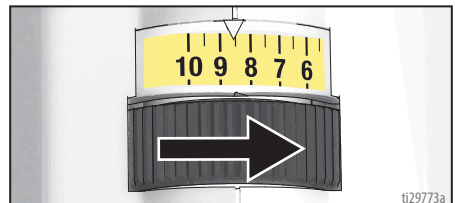
1. To unclog spray tip, turn Prime Pump/Spray knob down to Prime Pump position.



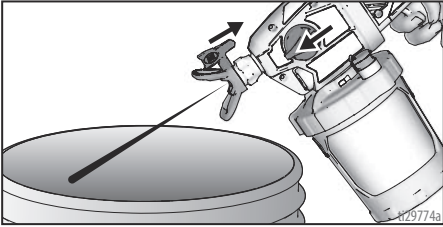
2. Reverse spray tip to UNCLOG position.



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 25.

Cleanup



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

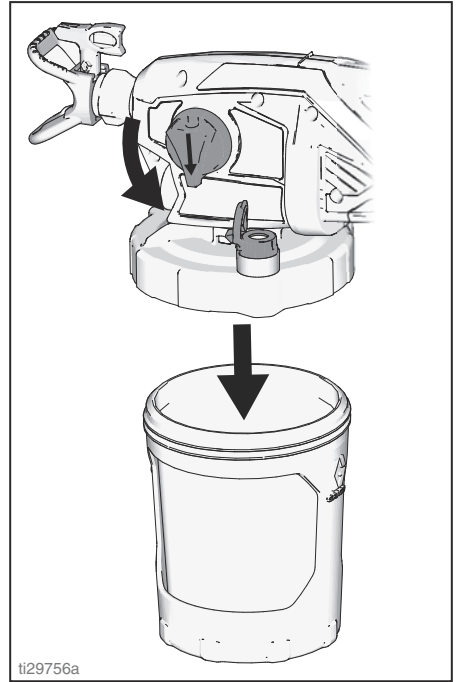
Clean in a well-ventilated area. Keep a good supply of fresh air moving through the area.

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

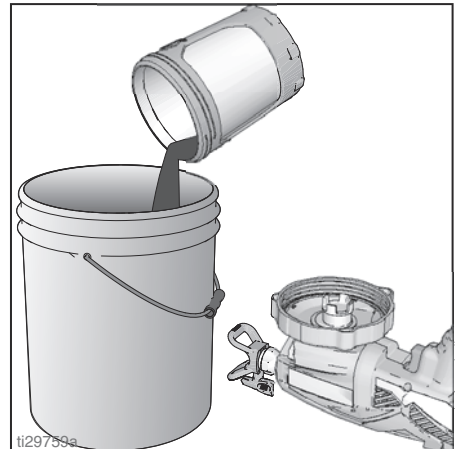
Cleaning your sprayer properly and after every spray job is of the utmost importance! Proper care and maintenance will make your paint sprayer last and work for you trouble free. See **Cleaning Fluid Compatibility**, page 28.

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



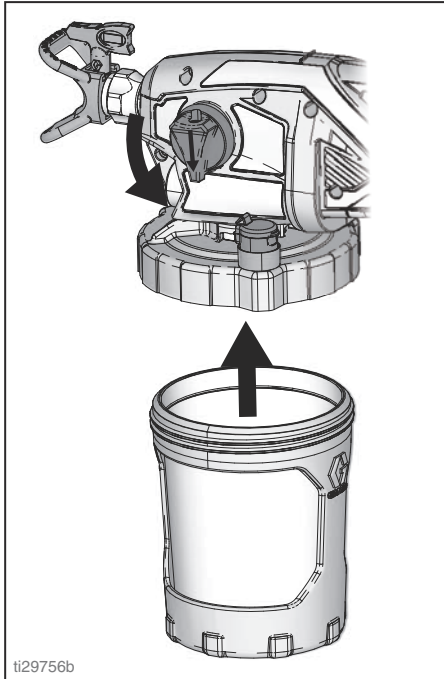
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3. Set the sprayer upside down on a flat surface. This will keep the wet paint in the cup cover. Return excess material to original container. Hold the FlexLiner in place when pouring.

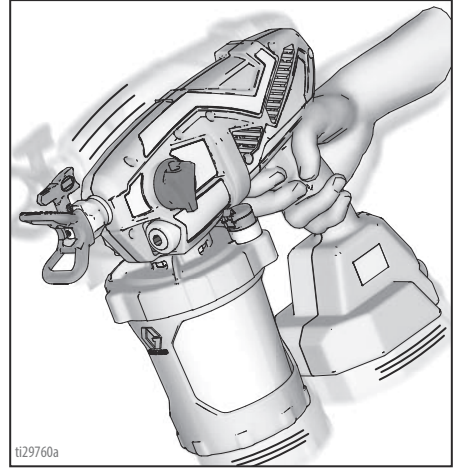


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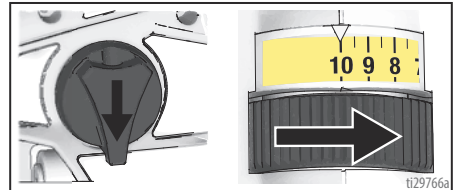
4. You can either dispose of the used FlexLiner and install a new FlexLiner or clean a used FlexLiner.
5. To clean the sprayer, fill FlexLiner approximately half-full with appropriate cleaning fluid (warm water).
6. Securely tighten cup support with FlexLiner to cup cover/sprayer and close VacuValve.



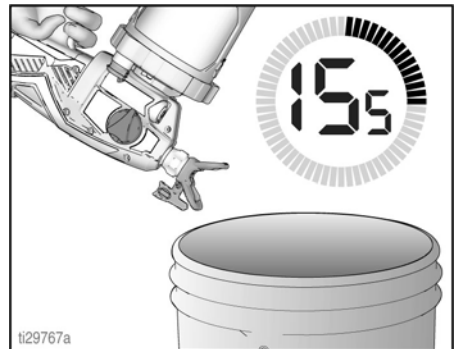
7. To clean the cup cover and pump filter shake the entire sprayer for ten seconds.



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

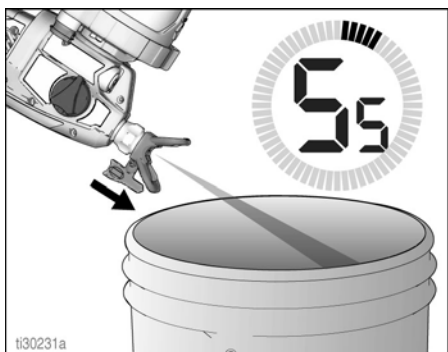


9. Turn the sprayer upside down and point the sprayer into a waste pail. Pull the trigger for 15 seconds.



Cleanup

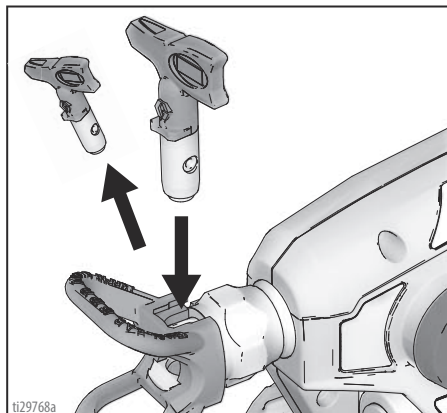
10. Turn Prime Pump/Spray knob forward to SPRAY position.
11. While holding the sprayer upside down point the sprayer into a waste pail.
 - a. With the spray tip in the SPRAY position, pull the trigger for five seconds. Release the trigger.



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



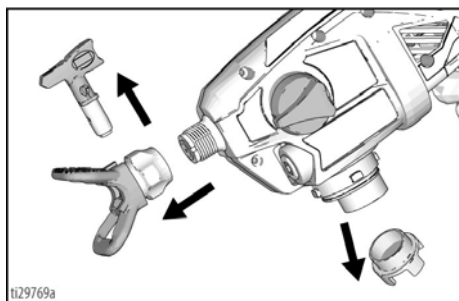
12. If second spray tip was used, remove cleaned spray tip from spray tip guard and install second spray tip. See **Spray Tip Installation**, page 25. Repeat steps 10 and 11 to clean second spray tip.



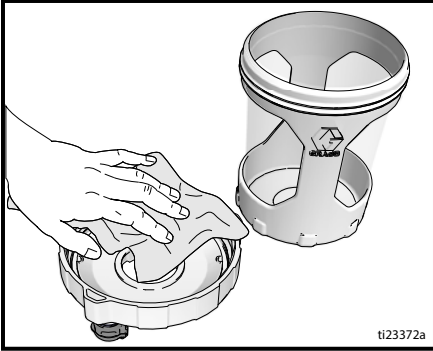
13. Remove cup assembly and discard used fluid. Dispose of used cleaning fluid properly.
14. Replace cleaning fluid and repeat steps 5 – 13 until spray output is clean.

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.

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



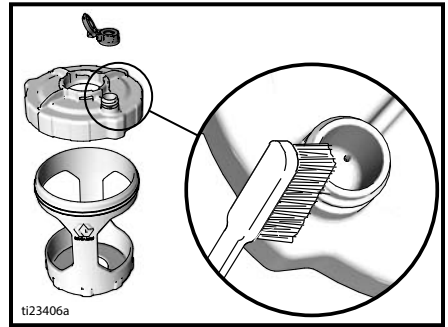
16. Use a soft cloth to clean the cup support and cup cover.



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

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

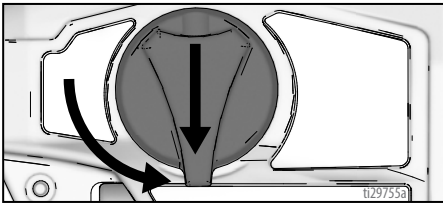


NOTICE

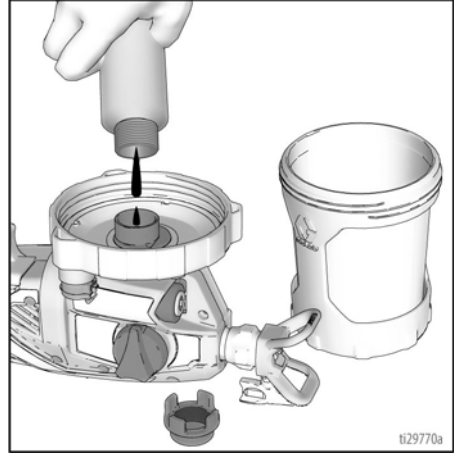
Failure to store sprayer with Pump Armor can result in operational problems the next time you spray. Always circulate Pump Armor through the sprayer after cleaning. **Water or solvents left in the sprayer will corrode and damage the pump.**

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

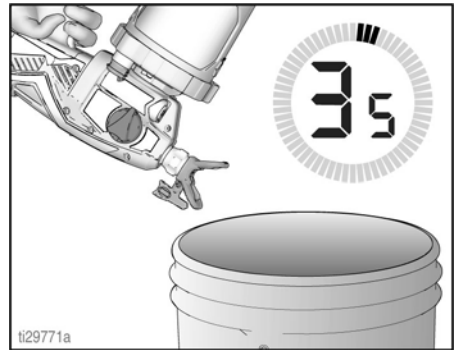
1. Clean the sprayer and cup assembly. See **Cleanup**, page 20.
2. Turn Prime Pump/Spray knob down to the Prime Pump position. Make certain that VacuValve cap is closed.



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 Armour 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**.

Common Procedures

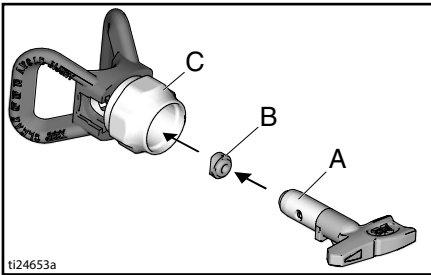
Spray Tip Installation



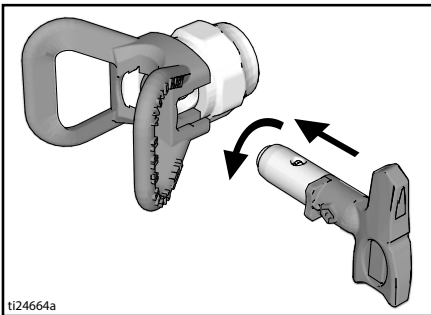
To avoid serious injury from skin injection do not put your hand in front of the spray tip when installing or removing the spray tip and tip guard.

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

1. Perform **Pressure Relief Procedure**, page 12.
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.

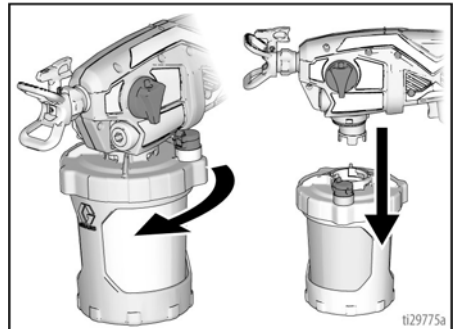
NOTICE

Spray tips must be cleaned or stored in appropriate cleaning fluid (water) 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 20.

Flush a New Sprayer

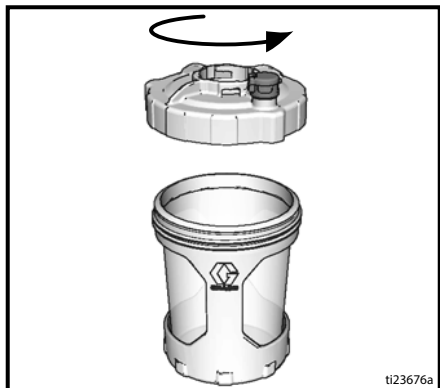
This sprayer arrives from the factory with a small amount of test material in the system. **It is important that you flush this material from the sprayer before using it for the first time.** See **Cleaning Fluid Compatibility**, page 28.

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

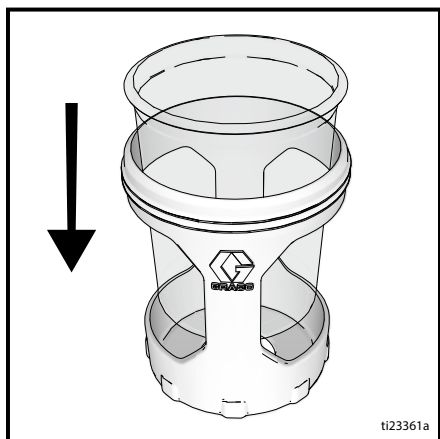


Common Procedures

2. Unscrew cup cover from the cup support.



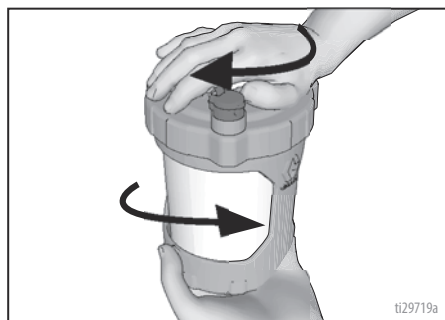
3. Make certain FlexLiner is in the cup support.



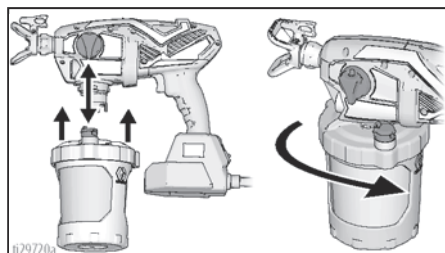
4. Fill FlexLiner with cleaning fluid. See **Cleaning Fluid Compatibility**, page 28.



5. Securely tighten cup cover onto cup support.

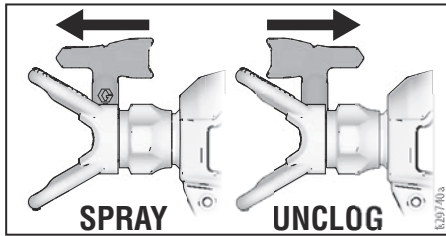
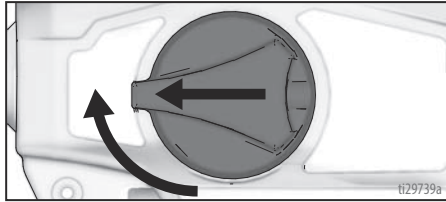


6. Align VacuValve on cup cover with Prime Pump/Spray knob. Push cup assembly onto sprayer and twist to lock.

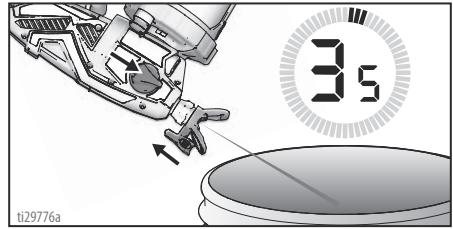


Common Procedures

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 12.

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 16 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 16.

NOTE: For proper sprayer operation use only a tip from the same tip family that came with your sprayer. See **Tip Family**, page 16.

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

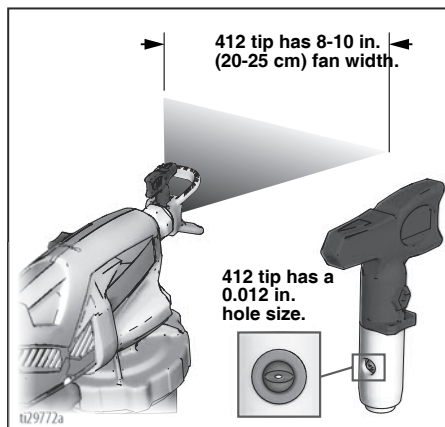
Fan width is the size of the spray pattern, which determines the area covered with each stroke.

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 part number (i.e.: xxx**412**) 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



Water-Based Materials

- When spraying **water-based** materials, flush the system thoroughly with water.
- To spray **water-based** materials, flush the system thoroughly with water first. The water flowing out of tip should be clear and clean **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 paint.

Maintenance

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

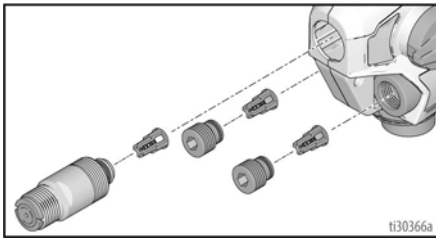
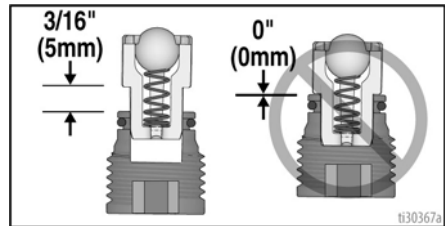


Activity	Interval
Inspect pump filter.	Daily or each time you spray
Inspect enclosure vents for blockage.	Daily or each time you spray
Inspect pump inlet holes located under pump filter for blockage.	Each time the sprayer is cleaned

Cleaning Outlet Valves

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

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

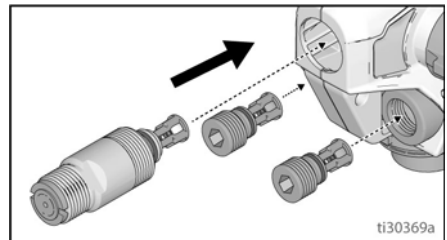


- Clean outlet valve assemblies with warm water.
- Check ball should move freely against the spring in the retainer.
- If outlet valve assembly was removed from the valve plug, assemble as shown. Leave a space between the end of the plug or front valve and shoulder on the outlet valve assembly.

NOTICE

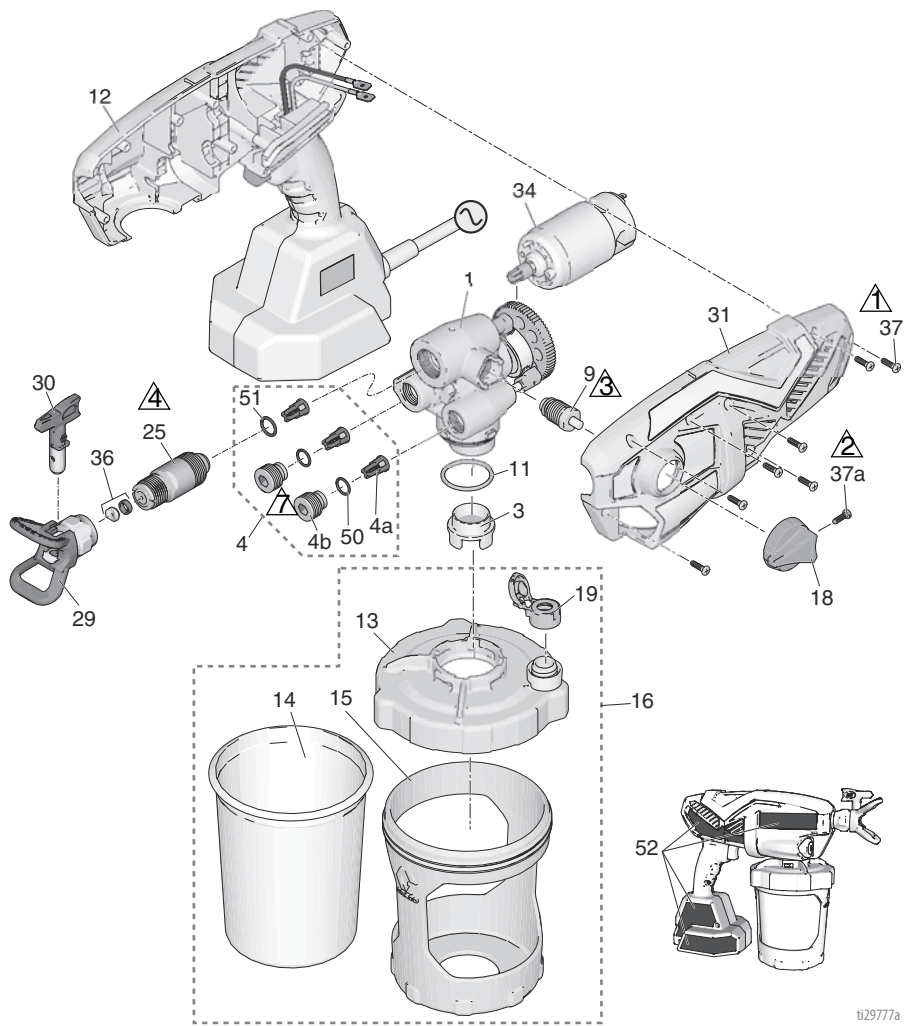
Do not push outlet valves all the way into the valve plugs or front valve. If outlet valves are pushed all the way into the valve plugs or front valve the sprayer will spray with reduced performance.

- Make certain o-rings are on the valve plugs and front valve.
- 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



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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, 1 of 37a</i>
11	All	16Y425	O-ring
12	All	17P178	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	All	17N392	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
25	All	17P174	Kit, front valve <i>includes 51</i>
29	All	246215	Guard, spray tip, FFLP
30	All	FFLP514	Spray tip, FFLP 514
31	All	17P234	Kit, enclosure, cover <i>includes 7 of 37</i>
34	All	17R307	Motor, AC 230V
36	All	17P501	Kit, tip seat and seal (5-pack)
37	All	17R614	Screw, cross-head
37a	All	128726	Screw, cross-head
40	All	17M883	Case, storage (not shown)
50	All	17M394	O-ring
51	All	125119	O-ring
---		17A000	Pump Armor, not shipped with sprayer 240 ml (not shown)
---		253574	Pump Armor, not shipped with sprayer 1 liter (not shown)
52 ▲	All	17P676	Kit, warning labels
53 ▲			Medical alert card (not shown)
		17R476	English, Spanish, Portuguese (Brazil)
		17A134	English, Chinese, Korean
		179960	English, Spanish, French
		17F690	Dutch, German, Italian

▲ 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

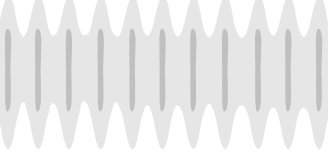



Problem	Cause	Solution
Sprayer makes no sound when trigger is pulled	Diagnostic light does not blink when the spray is first plugged in. Indicates no power to the sprayer.	Verify power to the sprayer. Replace Smartcontrol with enclosure.
	Diagnostic light blinks once when the sprayer is first plugged 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 12.
		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 23.
		Replace VacuValve.
		Clean Sprayer. See Cleanup , page 20.
		Outlet valves are not installed properly. See Cleaning Outlet Valves , page 29.
	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 18.
	Debris in paint.	See Strain the Paint , page 12.
	Pump filter plugged.	See step 15 on page 22
	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 15.
	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.


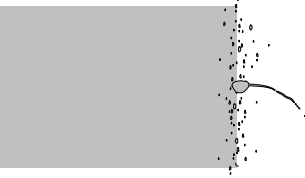
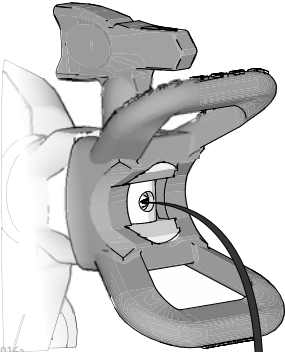
Troubleshooting

Problem	Cause	Solution
Sprayer sprays with poor results	Spray tip is partially clogged.	See Clear Tip Clog , page 18.
	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 16.
	Spray tip is worn or damaged	Replace spray tip. See Spray Tip Installation , page 25.
	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, see Cleaning Outlet Valves , page 29. 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 18.
	Material difficult to atomize.	Increase speed control until desired pattern is achieved.
		Hold sprayer farther away from surface.
	Switch to different spray tip. See Tip and Pressure Selection , page 16.	
Outlet valves are dirty or worn.	Remove two pump plugs and front valve to gain access to the three outlet valves. Clean outlet valves, see Cleaning Outlet Valves , page 29. 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 16.
	Material not compatible with sprayer.	Switch material.
	Spray tip is worn or damaged.	Replace spray tip. See Spray Tip Installation , page 25.
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 25.
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 16.
	Spray tip is worn or damaged.	Replace spray tip. See Spray Tip Installation , page 25.

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 16.</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 18.</p>
	<p>Spray tip not inserted completely into spray tip guard.</p>	<p>See Spray Tip Installation, page 25.</p>
	<p>Spray tip is worn.</p>	<p>Replace spray tip. See Spray Tip Installation, page 25.</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 25.</p>
	<p>Spray tip not inserted completely into spray tip guard.</p>	<p>See Spray Tip Installation, page 25.</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 25.</p>

Technical Specifications

HandHeld Sprayer		
	U.S.	Metric
Max Working Pressure	2000 psi	14 MPa, 138bar
Maximum Amperage	2.8 Amps	2.8 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	85.1 dBa	
Sound Power Level†	90.0 dBa, Uncertainty K = 0.5 dBa	
Vibration level (Measured in accordance with EN 50580:2012)	Vibration total value $a_h = 21.5 \text{ ft/s}^2$ Uncertainty K = 0.3 ft/s^2	Vibration total value $a_h = 6.5 \text{ m/s}^2$ Uncertainty K = 0.1 m/s^2
Power Cord	18 AWG, 3-wire	1.0 mm^2 , 3-wire
Length		
17M360, 17M362	9.8 ft.	3 m
17P255	18 in.	45.7 cm
Electrical Power Requirement	230 Vac, 50 Hz, 16A, 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).

Graco Limited Warranty

Graco Limited Warranty

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Revision B, August 2019