Operation, Parts

LineLazer® ES 500 Airless Line Striper

3A9031G

EN

For the application of line striping materials. For professional use only. Not approved for use in explosive atmospheres or hazardous (classified) locations.

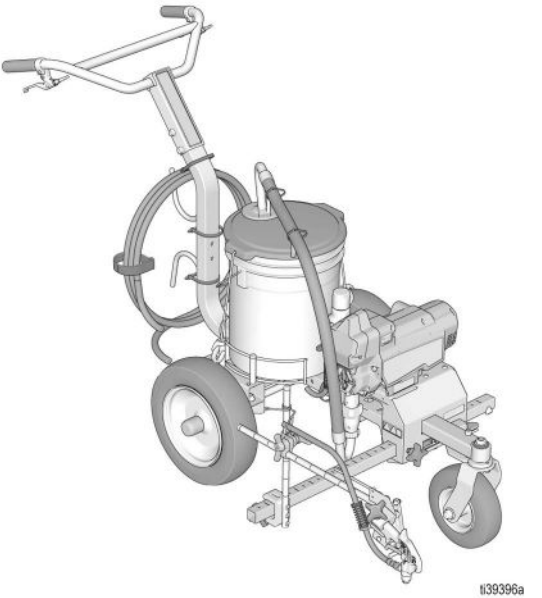
Models: 25U546, 25U547, 25U548, 18H269
3300 psi (228 bar, 22.8 MPa) Maximum Working Pressure

Important Safety Instructions

Read all warnings and instructions in this manual and related manuals before using the equipment. Be familiar with the controls and the proper usage of the equipment. Save these instructions.

Related Manuals

Manual	Description
311254	Gun
334599	Pump



Use only genuine Graco replacement parts.
The use of non-Graco replacement parts may void warranty.

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Models

	Model	Battery Voltage VDC	Charger Voltage VAC
	25U546	60 USA/CA	120 USA/CA
CE EAC UK CA	25U547	54 EMEA/UK	230 EMEA/UK
	25U548	54 ANZ/AP	230 ANZ/AP
	18H269*	54 AP (JA)	110 AP (JA)
		60 AP (KO)	230 AP (KO)

*Battery and charger not sold with unit.

The LineLazer ES 500 is compatible with the following DEWALT® FLEXVOLT® 54V and 60V batteries:

- DCB606 - 60V/2ah (20V/6ah)
- DCB546 - 54V/2ah (18V/6ah)
- DCB609 - 60V/3ah (20V/9ah)
- DCB547 - 54V/3ah (18V/9ah)
- DCB548 - 54V/4ah (18V/12ah)
- DCB612 - 60V/4ah (20V/12ah)

Related DEWALT Manuals

Manual	Description	Region
N463494	DEWALT DCB118 Fast Charger Manual	USA/CA
N463510 N463511	DEWALT DCB118-QW Fast Charger Manual (Part 1 and 2)	EMEA
N501136	DEWALT DCB118-XE Fast Charger Manual	ANZ/AP

Important Grounding Information

The following information is intended to help you understand when to use the grounding wire and clamp provided with your striper. It is required when flushing or cleaning with flammable materials.

Please read the information on the material container label to determine if it is flammable. 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.

Flushing and clean-up materials generally fit into one of the following **3 basic types:**

Grounding Wire and Clamp Required?	Type of Flushing or Cleaning Material
Yes 	***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. Use flammable materials outdoors or in a well-ventilated area with a flow of fresh air. Follow **Grounding Instructions**, page 9, when using this type of material.
No	***OIL-BASED:*** The container label should indicate that the material is COMBUSTIBILE and can be cleaned up with mineral spirits or non-flammable paint thinner.
No	***WATER-BASED:*** The container label should indicate that the material can be cleaned up with soap and water.

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

⚠ WARNING






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:

- Do not spray flammable or 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. All parts of the spray system, including the pump, hose assembly, spray gun, and objects in and around the spray area shall be properly grounded to protect against static discharge and sparks. Use Graco conductive or grounded high-pressure airless paint sprayer hoses.
- Verify that all containers and collection systems are grounded to prevent static discharge. Do not use pail liners unless they are anti-static or conductive.
- Do not use a paint or a solvent containing halogenated hydrocarbons.
- Keep spray area well-ventilated. Keep a good supply of fresh air moving through the area.
- Sprayer generates sparks. Keep pump assembly in a well-ventilated area when spraying, flushing, cleaning, or servicing. Do not spray pump assembly.
- Do not smoke in the spray area or spray where sparks or flame is present.
- 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 (SDSs) and container labels provided with the paints and solvents. Follow the paint and solvent manufacturer's safety instructions.
- Keep a working fire extinguisher in the work area.

Warnings

⚠ WARNING



SKIN INJECTION HAZARD

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

- Do not aim the gun at, or spray any person or animal.
- Keep hands and other body parts away from the discharge. For example, do not try to stop leaks with any part of the body.
- Always use the spray tip guard. Do not spray without spray tip guard in place.
- Use 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** for turning off the unit and relieving the pressure before removing the spray tip to clean.
- Equipment maintains pressure after power is shut off. Do not leave the equipment energized or under pressure while unattended. Follow the **Pressure Relief Procedure** when the equipment is unattended or not in use, and before servicing, cleaning, or removing parts.
- Check hoses and parts for signs of damage. Replace any damaged hoses or parts.
- This system is capable of producing 3300 psi (228 bar, 22.8 MPa). Use Graco parts or accessories that are rated a minimum of 3300 psi (228 bar, 22.8 MPa).
- Always engage the trigger lock when not spraying. Verify the trigger lock is functioning properly.
- Verify that all connections are secure before operating the unit.
- Know how to stop the unit and bleed pressure quickly. Be thoroughly familiar with the controls.



EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Always wear appropriate gloves, eye protection, and a respirator or mask when spraying.
- Do not operate or spray near children. Keep children away from equipment at all times.
- Do not overreach or stand on an unstable support. Keep effective footing and balance at all times.
- Stay alert and watch what you are doing.
- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not kink or over-bend the hose.
- Do not expose the hose to temperatures or to pressures in excess of those specified by Graco.
- Do not use the hose as a strength member to pull or lift the equipment.
- Do not spray with a hose shorter than 25 feet.
- Always replace cracked, broken or missing parts immediately with genuine Graco parts. See **Parts**, page 34.
- 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.
- Do not operate or clean sprayer with the battery shield open.

⚠ WARNING



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.



BATTERY AND CHARGER COMPATIBILITY HAZARD

- Only use DEWALT brand 54V Max or 60V Max batteries and battery chargers with this tool.
- READ ALL INSTRUCTIONS included with this tool regarding the safety and usage of DEWALT batteries and battery chargers.
- Do not wash or spray down battery.
- Do not clean the battery with anything other than a cloth moistened with water.



MOVING PARTS HAZARD

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

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



TOXIC FLUID OR FUMES HAZARD

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

- Read 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.

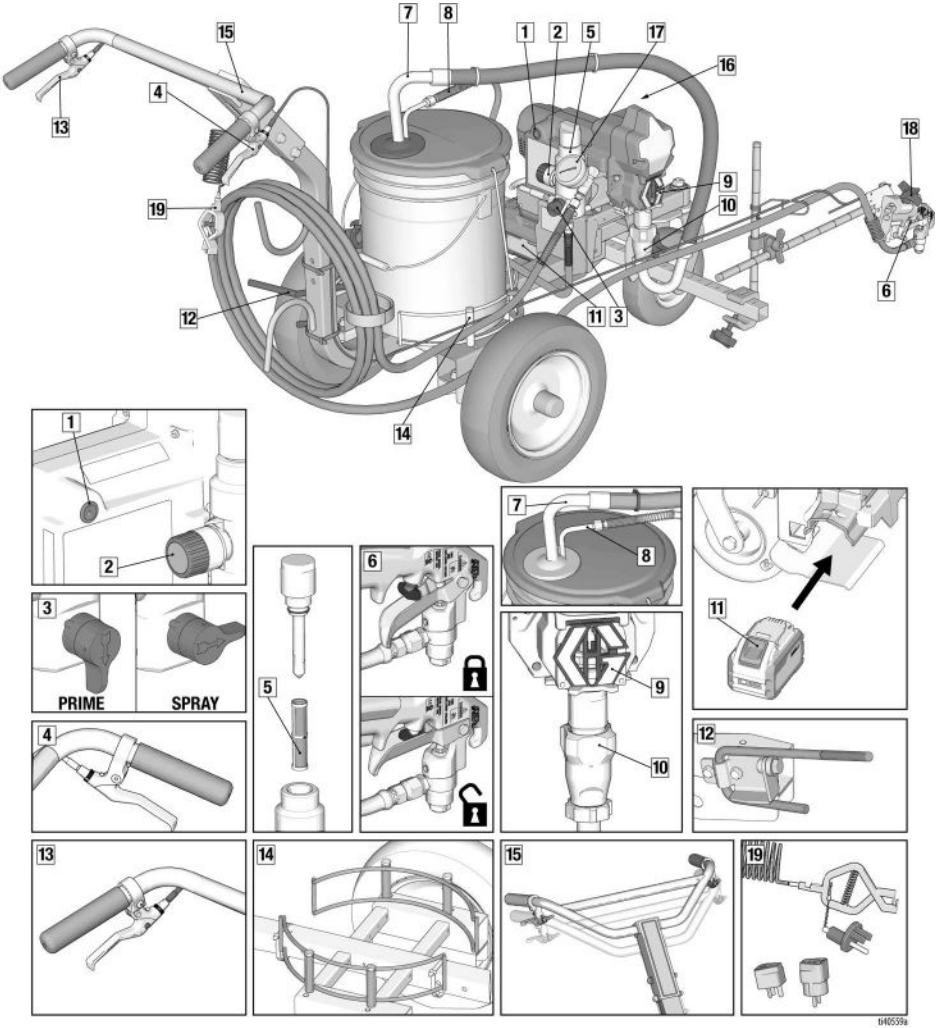


PERSONAL PROTECTIVE EQUIPMENT

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. Protective equipment includes but is not limited to:

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

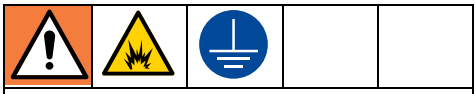
Component Identification



1	ON/OFF Switch
2	Pressure Control
3	Prime/Spray Valve
4	Spray Gun Trigger
5	Filter
6	Spray Gun Trigger Lock
7	Siphon Hose
8	Drain Hose
9	Finger Guard
10	Pump

11	Battery
12	Park Brake
13	Front Wheel Lock/Unlock
14	Adjustable Pail Holder
15	Adjustable Handle
16	Serial Label (on front side)
17	Pressure Gauge
18	Gun Retainer Knob
19	Grounding Wire and Clamp

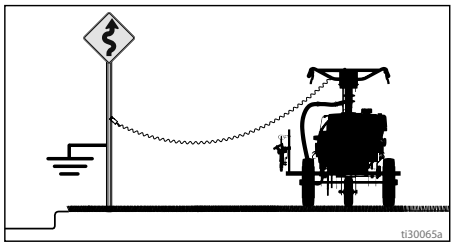
Grounding Instructions
(Flammable Flushing and Cleaning Materials)



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

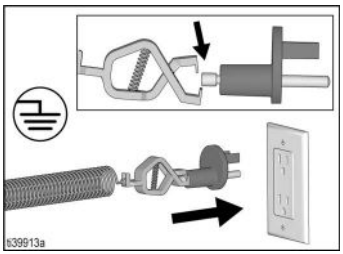
Position the striper so the wheels are on a true grounded surface. Not on pavement.

The striper is equipped with a grounding wire and clamp. The clamp must be connected to a true earth ground when flushing with flammable materials. See **Important Grounding Information**, page 4.



A metal sign post can be used as a true earth ground. Connect the grounding wire and clamp to a metal post. A properly grounded electrical outlet can also be used as a true earth ground. Use the provided adapter.

Plug the adapter in to a grounded outlet. Connect the grounding wire and clamp to the metal stud on the adapter. If the ground wire is not long enough to reach a grounded electrical outlet, use a 3-wire grounded extension cord between the adapter and outlet.



Fluid hoses: Use only electrically conductive hoses with a maximum of 300 ft. (91 m) combined hose length to ensure grounding continuity.

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

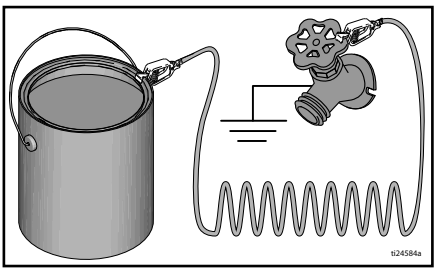
Pails

Flammable and oil-based materials: follow local codes and regulations. Use only conductive metal pails, placed on a grounded surface such as concrete.

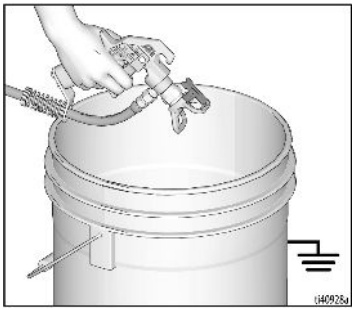
Do not place pail on a non-conductive surface such as paper or cardboard which interrupts grounding continuity.



Always ground a metal pail: connect a ground wire to the pail. Clamp one end to the pail and the other end to a true earth ground such as a water pipe.

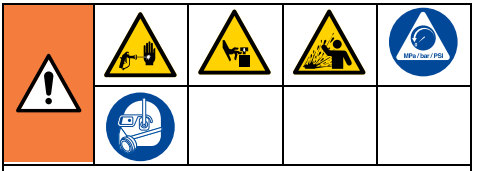


To maintain ground continuity when sprayer is flushed or pressure is relieved: hold metal part of spray gun firmly to the side of a grounded metal pail then trigger the gun.



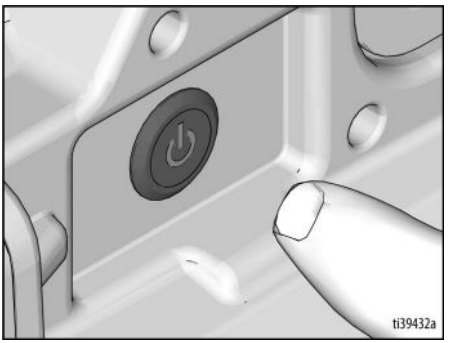
Pressure Relief Procedure

Follow the Pressure Relief Procedure whenever you see this symbol.

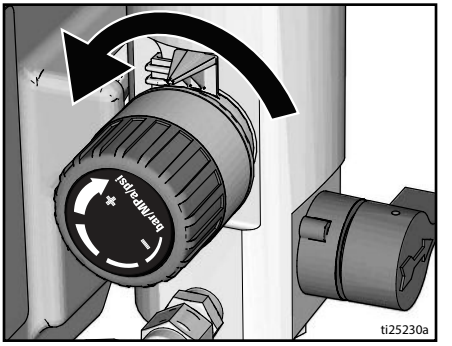


This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashed fluid and moving parts, follow the **Pressure Relief Procedure** whenever striper is stopped and before striper is cleaned or checked, and before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

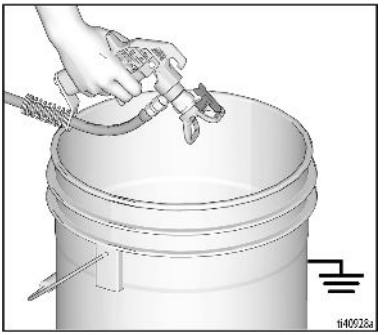
1. Perform the **Grounding Instructions**, page 9, if using flammable materials.
2. Turn the ON/OFF switch to the **OFF** position. Power button is NOT illuminated when OFF.



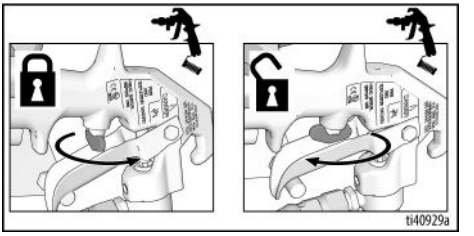
3. Turn pressure control to lowest setting. Disengage the trigger lock.



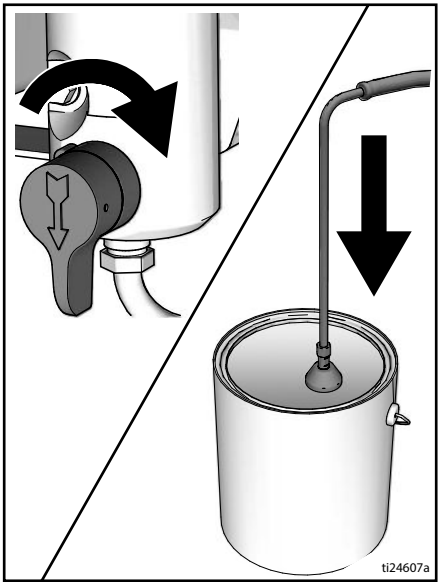
4. Hold a metal part of the gun firmly to a grounded metal pail. Trigger the gun to relieve pressure.



5. Engage the trigger lock.



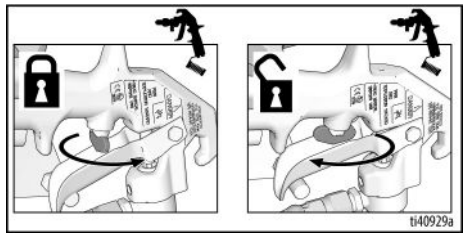
6. Put drain tube in a pail. Turn prime valve down. Leave prime valve in down (drain) position until you are ready to spray again.



7. If you suspect the spray tip or hose is clogged or that pressure has not been fully relieved:
   a. VERY SLOWLY loosen the tip guard retaining nut or the hose end coupling to relieve pressure gradually.
   b. Loosen the nut or coupling completely.
   c. Clear hose or tip obstruction.

Trigger Lock

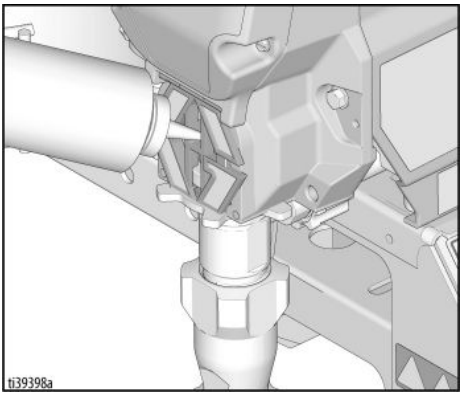
Always engage the trigger lock when sprayer is stopped to prevent the gun from being triggered accidentally by hand or if dropped or bumped.



Setup

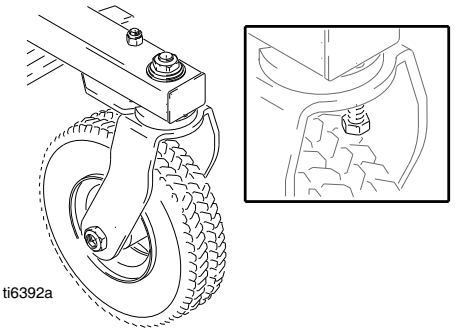
When unpacking sprayer for the first time or after long term storage perform setup procedure.

1. Fill throat packing nut with TSL.



Front Wheel Alignment

1. Loosen cap screw.



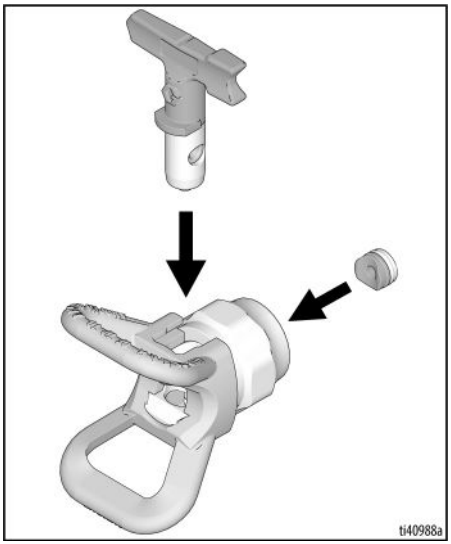
2. Position front wheel left or right, as necessary, to straighten alignment.
3. Tighten cap screw. Gently push striper and let striper roll without holding on to the striper. Note if striper rolls straight or veers right or left. Repeat steps 1 and 2 until striper rolls straight.

Spray Tip Installation

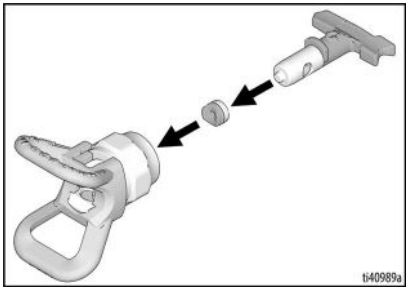


To avoid serious injury from skin injection, do not put your hand in front of the Spray Tip when installing or removing the Spray Tip and Spray Tip Guard.

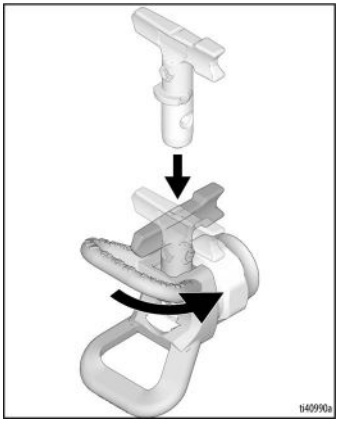
1. Perform **Pressure Relief Procedure**, page 10.
2. Engage trigger lock.
3. Verify spray tip and tip guard parts are assembled in the order shown.



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

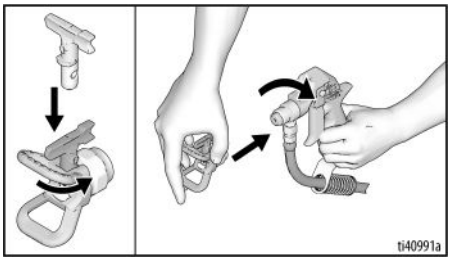


b. Spray tip must be pushed all the way into the tip guard. Turn spray tip to push down.



c. Turn the arrow shaped handle on the spray tip forward to the spray position.

4. Screw spray tip assembly onto the gun and tighten.



5. Return spray to holder.
6. Place trigger guard in front of nut on gun holder. Tighten knob.

Battery Installation and Removal

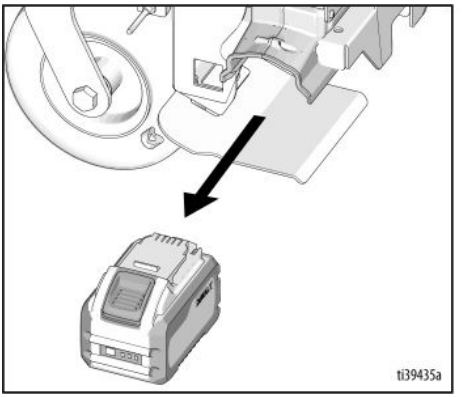
Always start with a fully charged Battery. Do not splash or immerse Battery or charger in water. See Battery and charger information shipped with the sprayer.



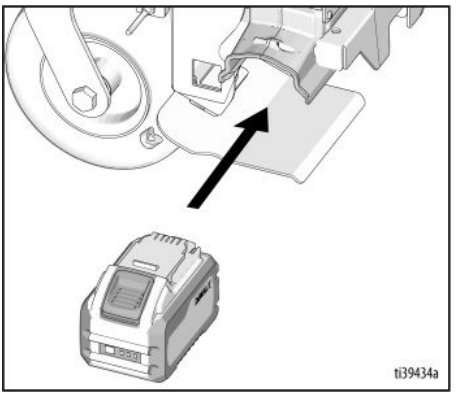
Replace and charge Battery only in a well-ventilated area and away from flammable or combustible materials, including paints and solvents.

Remove and install Battery into the striper as follows:

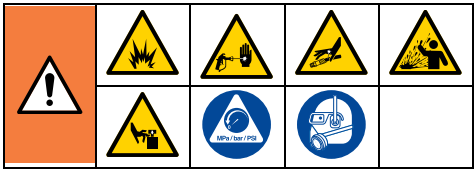
1. Remove the used Battery, if in place.



2. Install battery by aligning the battery pack with the rails inside the sprayer and sliding it in until the battery pack is firmly seated. Ensure that it does not disengage.



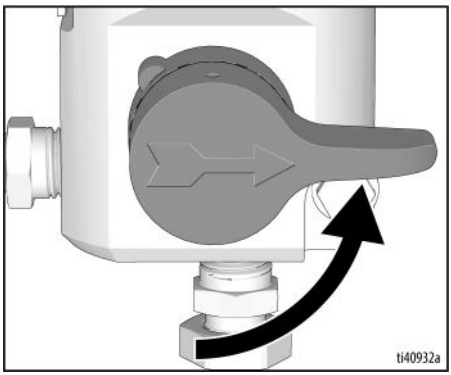
Startup



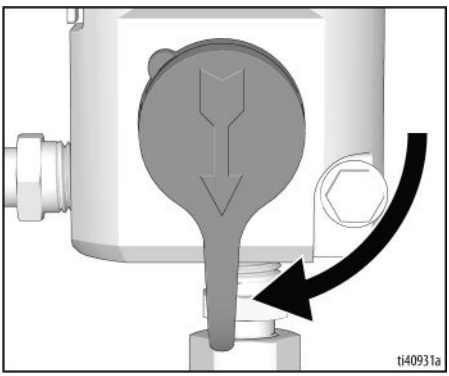
Prime/Spray Valve

The Prime/Spray Valve uses a lever that is flipped between the PRIME and SPRAY position.

SPRAY Position



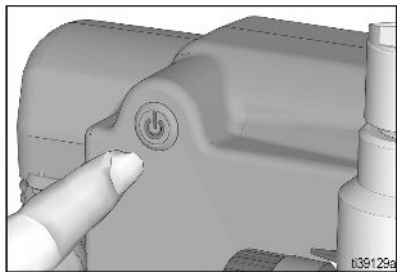
PRIME Position



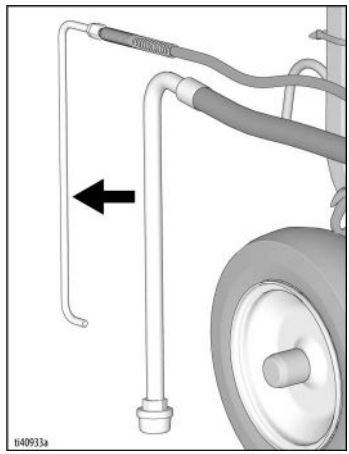
Flush Storage Fluid

This striper arrives from the factory with a small amount of test material in the system. **It is important that you flush this material from the striper before using it for the first time.**

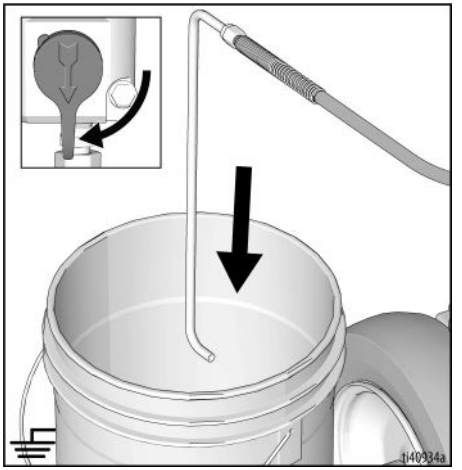
1. When flushing with flammable materials, follow **Grounding Instructions**, page 9.
2. Follow **Cleaning and Flushing Fluid Compatibility**, page 28.
3. Perform **Pressure Relief Procedure**, page 10.
4. Make certain ON/OFF switch is **OFF.** Power button is NOT illuminated when OFF.



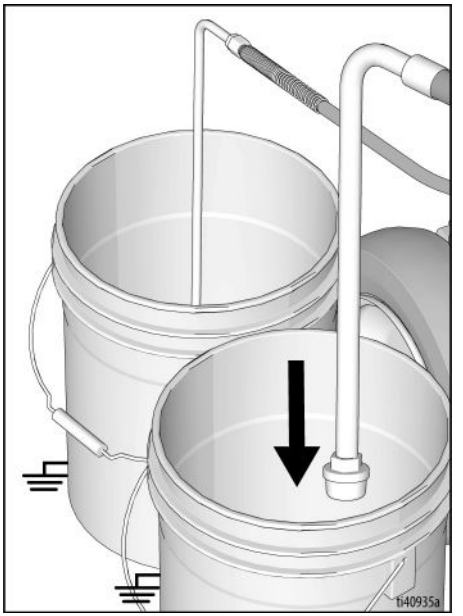
a. Separate drain tube (smaller) from siphon tube (larger).



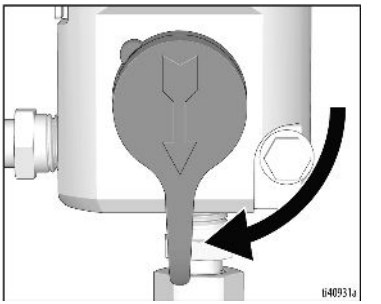
b. Place drain tube in a grounded waste pail.



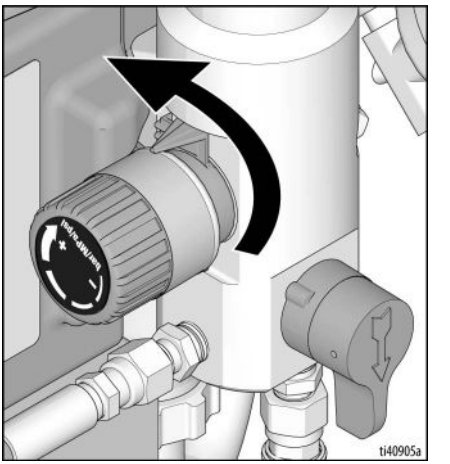
c. Submerge siphon tube in a grounded pail partially filled with water or flushing fluid.



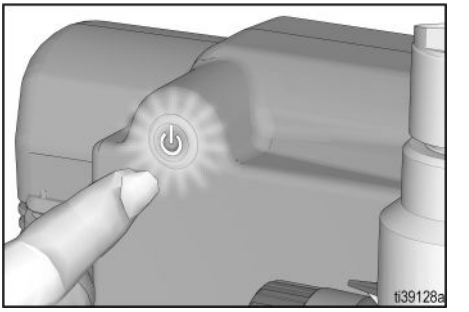
5. Place Prime/Spray valve in PRIME position.



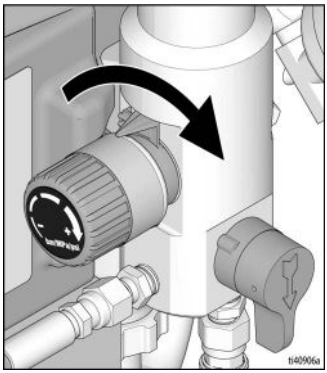
6. Install battery, see **Battery Installation and Removal**, page 14.
7. Align setting indicator with a low setting on Pressure Control Knob.



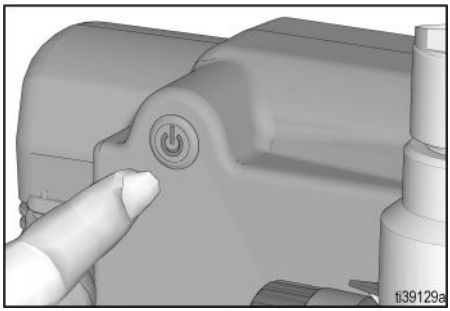
8. Turn ON/OFF switch to **ON** position. Power button is illuminated when ON.



9. Increase pressure 1/2 turn to start motor. Allow paint or other material to circulate through sprayer until material flows out of the drain tube.



10. When sprayer starts pumping, flush fluid and air bubbles will be purged from system. Allow fluid to flow out of drain tube into waste pail for 30 to 60 seconds.
11. Turn ON/OFF switch to **OFF** position. Power button is NOT illuminated when OFF.



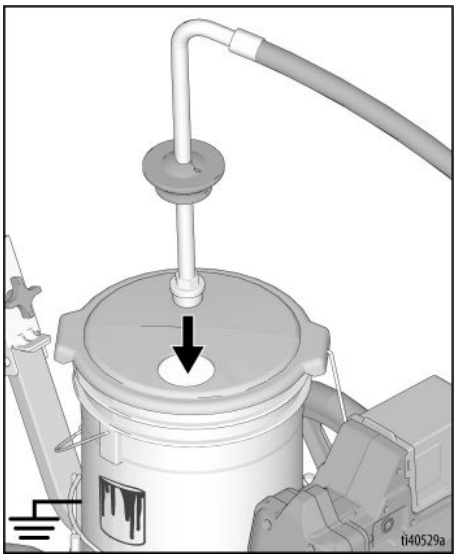


High-pressure spray is able to inject toxins into the body and cause serious bodily injury. Do not stop leaks with hand or rag.

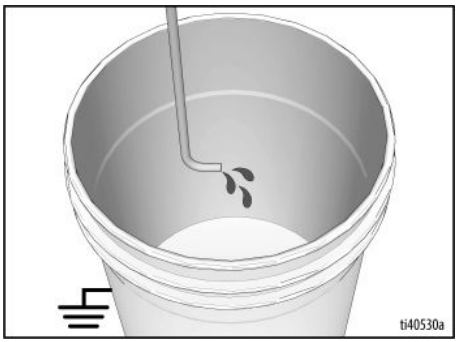
12. Inspect for leaks. If leaks occur, perform **Pressure Relief Procedure**, page 10, then tighten all fittings. If there are no leaks, continue with the next step.

Fill Pump

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



2. Turn ON/OFF switch to **ON** position. Power button is illuminated when ON.
3. Wait to see paint coming out of the drain tube.

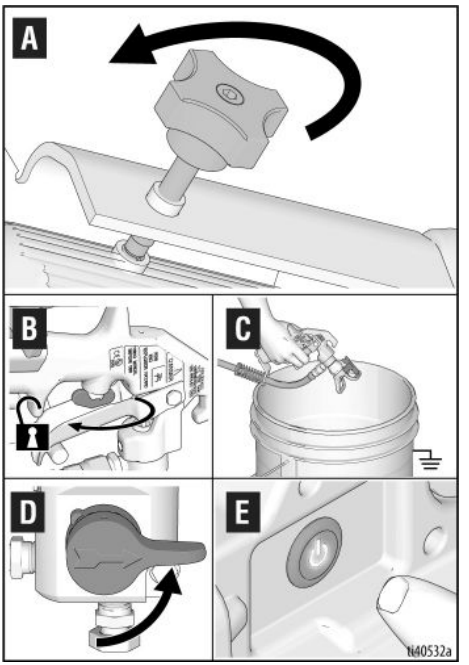


4. Turn ON/OFF switch to **OFF** position. Power button is NOT illuminated when OFF.

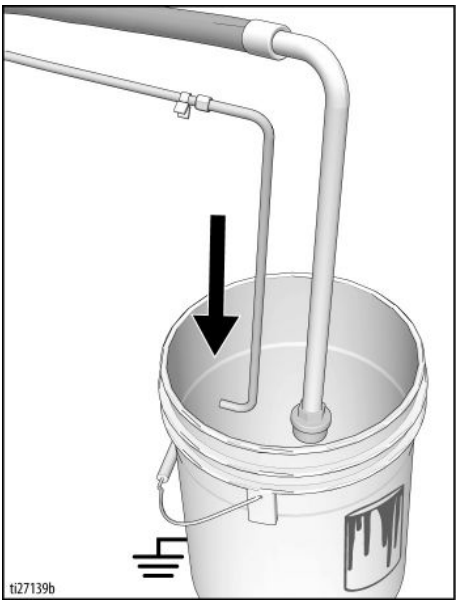
NOTE: Some fluids may prime faster if the ON/OFF switch is momentarily turned off so the pump can slow and stop. Turn ON/OFF switch on and off several times if necessary.

Fill Gun and Hose

1. Hold gun against a grounded waste pail. Point gun into waste pail.
   a. Loosen gun retainer knob and remove spray gun from holder.
   b. Disengage trigger lock.
   c. Pull and hold gun trigger.
   d. Turn Prime/Spray valve to SPRAY position.
   e. Press ON/OFF switch to **ON** position. Button is illuminated when ON.



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

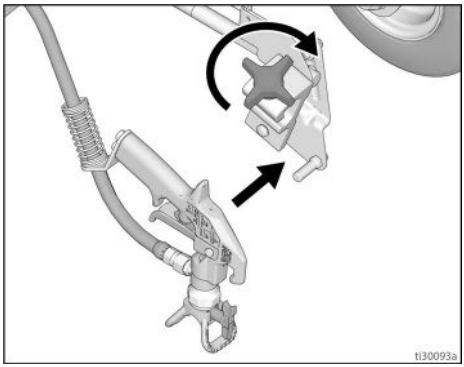


NOTE: When motor stops sprayer is ready to paint. If motor continues to run sprayer is not properly primed, repeat **Fill Pump** and **Fill Gun and Hose**.

How to Spray

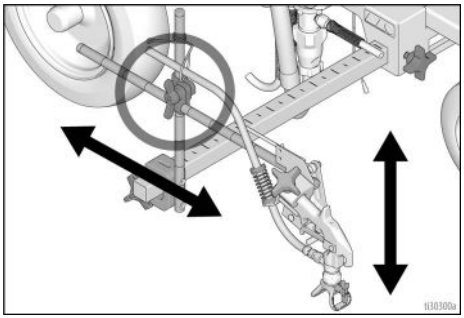
Install Gun

1. Insert gun into gun holder with hose guard pressed against the holder assembly bracket. Tighten gun into clamp.

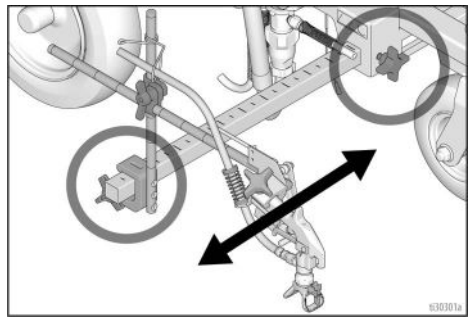


Position Gun

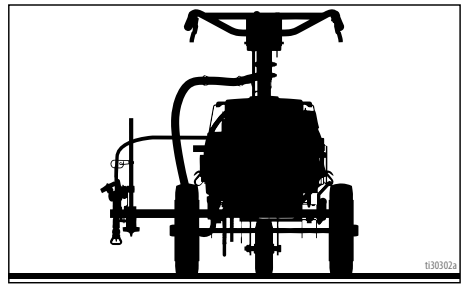
2. Position gun up/down and forward/reverse.



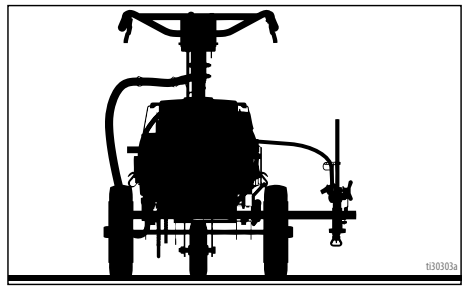
3. Position gun left/right.



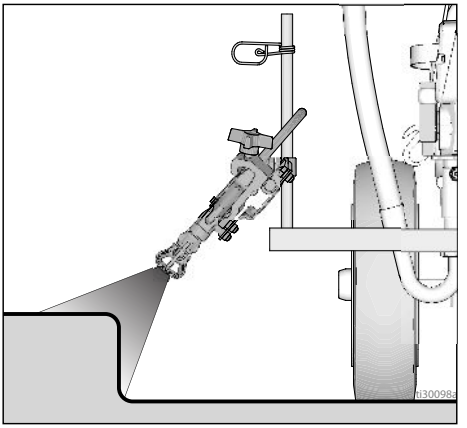
a. **Right-side gun position:** Place gun and related hardware on right-hand side.



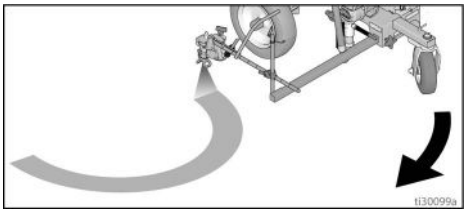
b. **Left-side gun position:** Place gun and related hardware on left-hand side.



4. For **Curb Position,** place gun at 45° angle.



5. For **Gun Arc Spray Position,** place gun at rear of striper. Rear position improves arc quality.

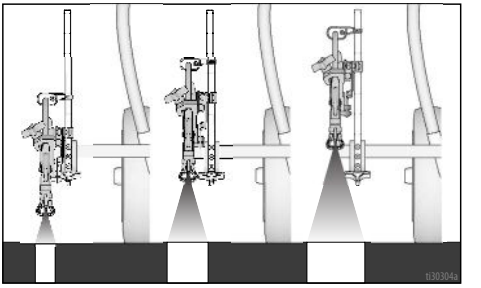


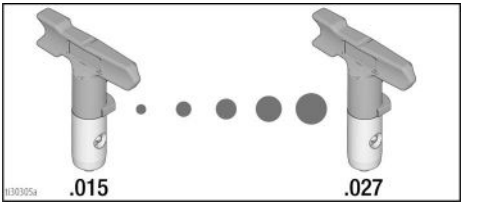
NOTE: Verify that the gun can still be triggered **and** that the trigger lock can still be engaged after installation. Make adjustments if necessary.

NOTE: When first removing from storage or switching paints/colors, consult **Cleaning and Flushing Fluid Compatibility**, page 28.

Paint Stripe Width

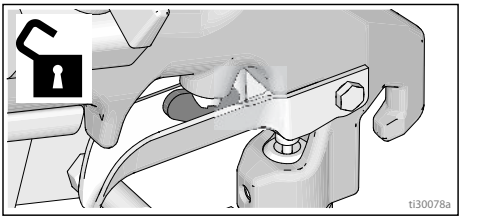
1. Adjust gun up or down to change paint stripe width. If desired width cannot be attained, change tip. Refer to **Component Identification**, page 8 for proper tip for application.



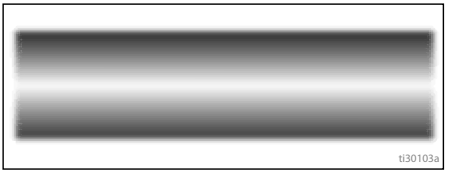


Spray Test Stripe

1. Disengage trigger lock.



2. Trigger gun and spray test pattern. Slowly adjust pressure to eliminate heavy edges. Use smaller tip size if pressure adjustment can not eliminate heavy edges.



Stencil Spraying

1. Loosen gun retainer knob.
2. Remove gun from holder.
3. Trigger spray gun over stencil pattern.
4. Return gun to holder.
5. Tighten gun retainer knob.

NOTE: When using the spray gun by hand, static build up and static shocks can occur. If you cannot position the striper on a grounded surface or connect the grounding wire and clamp to a metal post, try the following to help reduce static build up:

- Stand on a true grounded surface when spraying, such as grass.
- Try wearing a different type of shoes.

Spray Tip Selection

Selecting Tip Size

Spray tips come in a variety of sizes for spraying a range of fluids. Your sprayer includes a tip for use in most paint spraying applications. See **Component Identification**, page 8, for more information.

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 striper.
- 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.

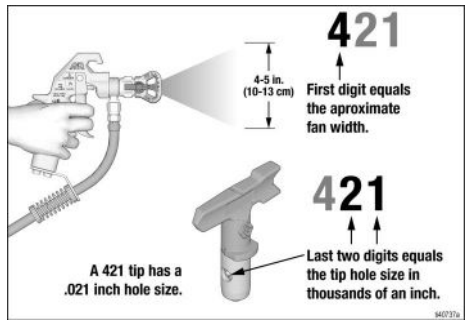
Hints:

- 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.

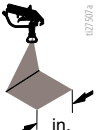
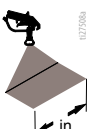
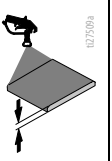
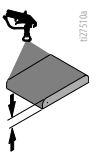
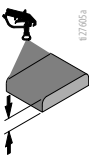
Understanding Tip Number

The last three digits of tip number (i.e.: LL5421) contain information about hole size and fan width on surface when gun is held 6 in. (15.2 cm) from surface being sprayed.

Rac5 tips are measured at 6 in. (15.2 cm) from surface.



Tip Selection

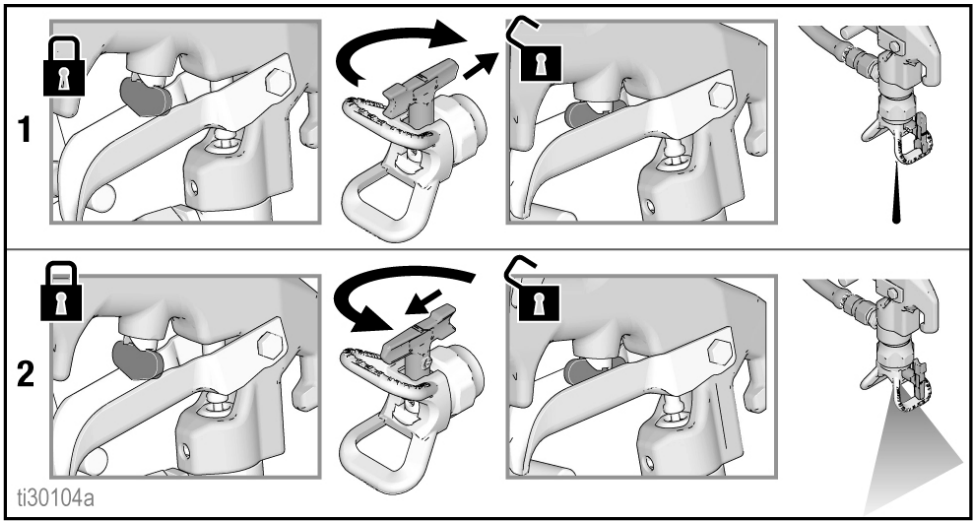
	 in. (cm)	 in. (cm)	 in. (cm)	 in. (cm)			
LL5213*	2 (5)				✓		
LL5215*	2 (5)					✓	
LL5217		4 (10)				✓	
LL5219		4 (10)					✓
LL5315		4 (10)			✓		
LL5317		4 (10)			✓		
LL5319		4 (10)				✓	
LL5321		4 (10)				✓	
LL5323		4 (10)				✓	
LL5325		4 (10)					✓
LL5327		4 (10)					✓
LL5329		4 (10)					✓
LL5331		4 (10)					✓
LL5333		4 (10)					✓
LL5335		4 (10)					✓
LL5355		4 (10)					✓
LL5417			6 (15)		✓		
LL5419			6 (15)		✓		
LL5421			6 (15)		✓		
LL5423			6 (15)			✓	
LL5425			6 (15)			✓	
LL5427			6 (15)			✓	
LL5429			6 (15)			✓	
LL5431			6 (15)				✓
LL5435			6 (15)				✓
LL5621				12 (30)	✓		
LL5623				12 (30)	✓		
LL5625				12 (30)	✓		
LL5627				12 (30)	✓		
LL5629				12 (30)	✓		
LL5631				12 (30)		✓	
LL5635				12 (30)		✓	
LL5639				12 (30)			✓

*Use 100 mesh filter to reduce tip clogs.

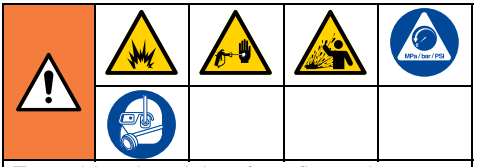
Clear Tip Clog



1. Release trigger. Engage trigger lock. Rotate Spray Tip. Disengage trigger lock. Trigger gun at waste area to clear clog.
2. Engage trigger lock. Return Spray Tip to original position. Disengage trigger lock and continue spraying.



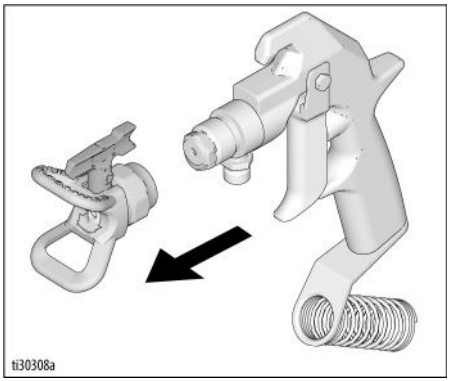
Cleanup



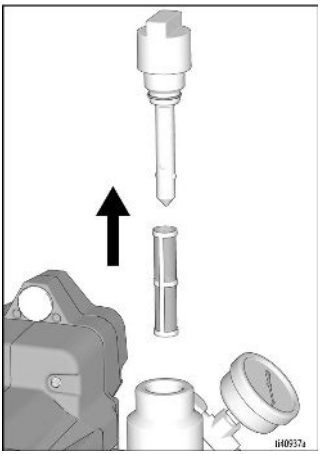
To avoid serious injury from fire and explosion when using flammable materials:

- Do not spray solvents through the spray tip. Always remove tip guard and spray tip before flushing. Clean tip guard and spray tip in a bucket of compatible solvent.
- Clean in a well-ventilated area. Keep a good supply of fresh air moving through the area.
- When flushing with solvents, always ground the striper and waste container.

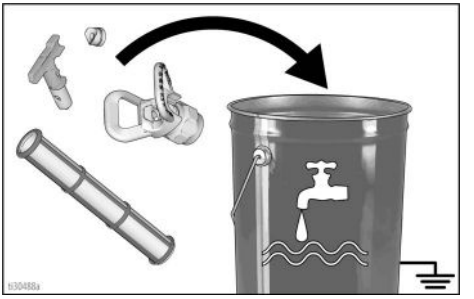
1. When using flammable material, follow **Grounding Instructions**, page 9.
2. Follow **Cleaning and Flushing Fluid Compatibility**, page 28.
3. Remove battery, see **Battery Installation and Removal**, page 14.
4. Perform **Pressure Relief Procedure**, page 10.
5. Remove Rac Guard and Rac Tip. For additional information, see separate gun manual.



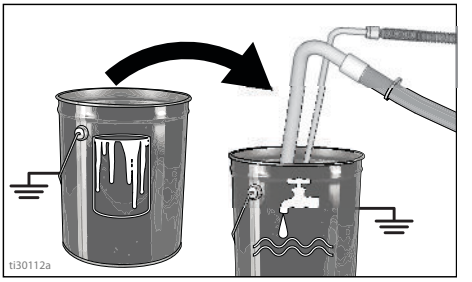
6. Unscrew cap, remove filter. Assemble without filter. Clean filter.



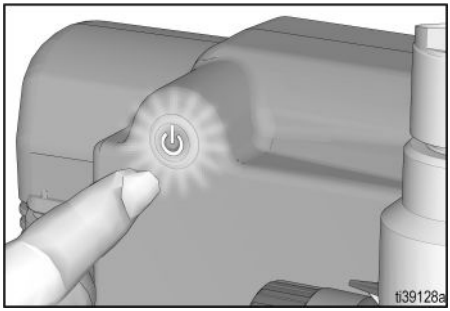
7. Clean gun filter (if installed), Rac Guard and Rac Tip in flushing fluid. See **Cleanup**, page 24.



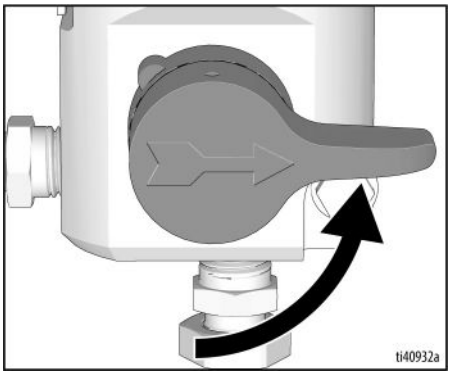
8. Remove siphon tube set from paint and place in flushing fluid. Use water or pump conditioner for water-based paint and mineral spirits for oil-based paint.



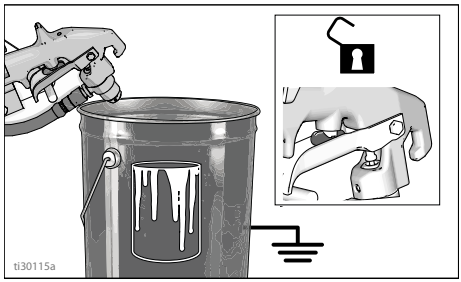
9. Install battery, see **Battery Installation and Removal**, page 14.
10. Switch ON/OFF switch to **ON** position. Button is illuminated when ON.



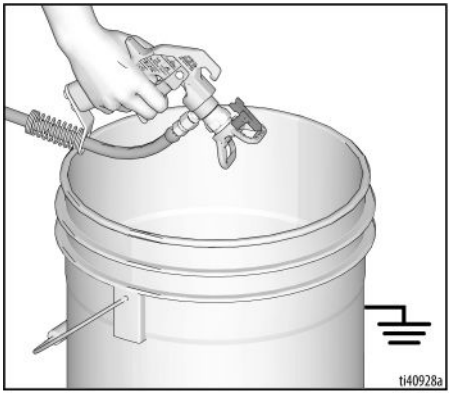
11. Close prime valve.



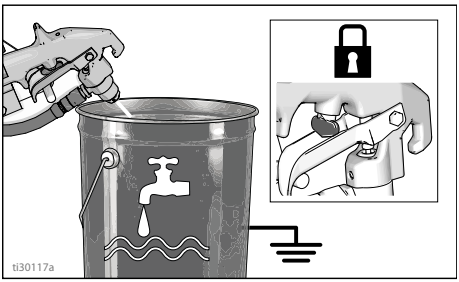
12. Hold gun against a grounded paint pail. Disengage gun trigger lock.



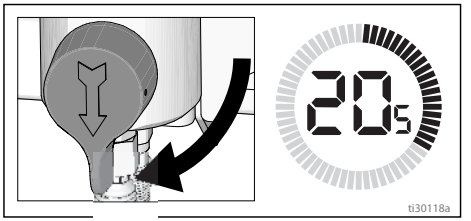
13. Gradually turn pressure control up until motor begins to drive pump. Trigger gun until flushing fluid appears.



14. Move gun to flushing pail, hold gun against a grounded pail, trigger gun to thoroughly flush system. Release trigger and engage trigger lock.



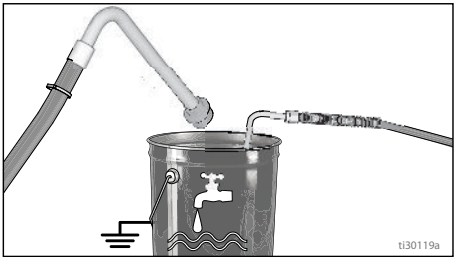
15. Open prime valve and allow flushing fluid to circulate for 20 seconds to clean drain tube.



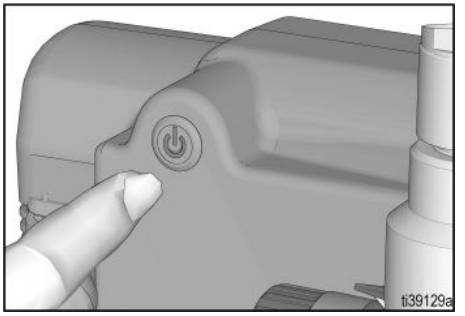
NOTICE

DO NOT *run pump without fluid flow. Damage to packings can occur.*

16. Raise siphon tube above flushing fluid and run striper for 15 to 30 seconds to drain fluid.



17. Switch ON/OFF switch to **OFF.** Power button is NOT illuminated when OFF.

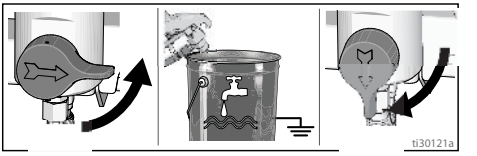


NOTICE

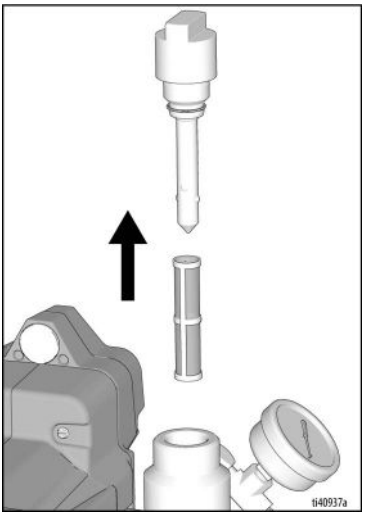
If flushing with water, do not leave water in striper for extended periods. Flush again with Pump Armor and leave protective coating in the striper to prevent freezing or corrosion and to increase striper life.



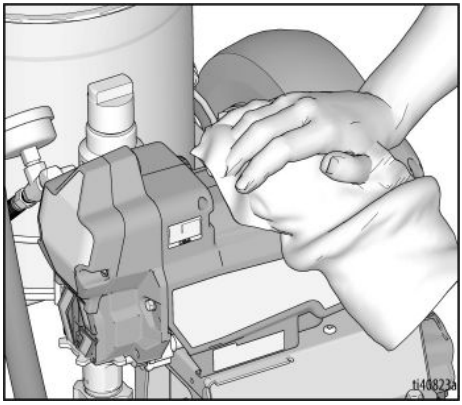
18. Close prime valve. Trigger gun into flushing pail to purge fluid from hose. Open prime valve.



19. Install filter into filter bowl. Make sure plastic center tube is tightened securely.



20. Clean Rac Tip, Rac Guard, and gasket with a soft bristle brush to prevent part failure due to dried materials. Assemble parts and attach loosely onto gun.
21. Wipe striper, hose, and gun with a rag soaked in water or mineral spirits.



Cleaning and Flushing Fluid Compatibility

When flushing with flammable materials, always follow **Grounding Instructions**, page 9.

If you're going to:	Flush with:	Prime with:	Clean with:	Store with:
Spray with new striper or striper that has been stored	Compatible fluid such as water or mineral spirits	Compatible paint, such as water-base or oil-base	Compatible fluid such as water or mineral spirits	Mineral spirits
Spray water-base paint	Warm, soapy water, then clean water	Water-base paint	Warm, soapy water, then clean water	Mineral spirits
Spray oil-base paint	Mineral spirits	Oil-base paint	Mineral spirits	Mineral spirits
Change water-base to oil-base paint	Warm, soapy water, then clean water	Mineral spirits	Mineral spirits	Mineral spirits
Change oil-base to water-base paint	Mineral spirits, soapy water, then clean water	Water-base paint	Warm, soapy water, then clean water	Mineral spirits
Change colors, same base	Compatible fluid such as water or mineral spirits			

Maintenance

Routine maintenance is important to ensure proper operation of your sprayer. Maintenance includes performing routine actions which keep your sprayer in operation and prevents trouble in the future.



Activity	Interval
Inspect/clean sprayer filter, fluid inlet strainer, and gun filter.	Daily or each time you spray
Inspect motor shield vents for blockage.	Daily or each time you spray
Fill TSL by adding through TSL fill point.	Daily or each time you spray
Check sprayer stall. With sprayer gun NOT triggered, sprayer motor should stall and not restart until gun is triggered again. If sprayer starts again with gun NOT triggered, inspect pump for internal/external leaks and check prime valve for leaks.	Every 1000 gallons (3785 liters)
Throat packing adjustment When pump packing begins to leak after extended use, tighten packing nut down until leakage stops or lessens. This allows approximately 100 gallons of additional operation before a repacking is required. Packing nut can be tightened without O-ring removal.	As necessary based on usage

Troubleshooting

Mechanical/Fluid Flow



1. Follow **Pressure Relief Procedure**, page 10, before checking or repairing.
2. Check all possible problems and causes before disassembling the unit.

Problem	What to Check If check is OK, go to next check	What to Do When check is not OK, refer to this column
Pump output is low	Spray tip worn.	Follow **Pressure Relief Procedure**, page 10, then replace tip. See separate gun or tip manual.
	Spray tip clogged.	Relieve pressure. Check and clean spray tip.
	Paint supply.	Refill and reprime pump.
	Intake strainer clogged.	Remove and clean, then reinstall.
	Intake valve ball and piston ball are not seating properly.	Remove intake valve and clean. Check balls and seats for nicks; replace if necessary. See pump manual. Strain paint before using to remove particles that could clog pump.
	Fluid filter or tip filter is clogged or dirty.	Clean filter.
	Prime valve leaking.	Follow **Pressure Relief Procedure**, page 10, then repair prime valve.
	Verify pump does not continue to stroke when gun trigger is released. (Prime valve not leaking.)	Service pump. See pump manual.
	Leaking around throat packing nut which may indicate worn or damaged packings.	Replace packings. See pump manual. Also check piston valve seat for hardened paint or nicks and replace if necessary. Tighten packing nut/wet-cup.
	Battery has insufficient charge.	Charge battery.

Problem	What to Check If check is OK, go to next check	What to Do When check is not OK, refer to this column
Pump output is low	Pump rod damage.	Repair pump. See pump manual.
	Low stall pressure (pressure setting too low).	Turn pressure knob fully clockwise. Make sure pressure control knob is properly installed to allow full clockwise position. If problem persists, replace pressure control.
	Piston packings are worn or damaged.	Replace packings. See pump manual.
	O-ring in pump is worn or damaged.	Replace o-ring. See pump manual.
	Intake valve ball is packed with material.	Clean intake valve. See pump manual.
	Large pressure drop in hose with heavy materials.	Reduce overall length of hose.
Motor runs but pump does not stroke	Connecting rod assembly damaged. See pump manual.	Replace connecting rod assembly. See pump manual.
	Gears or drive housing damaged.	Inspect drive housing assembly and gears for damage and replace if necessary.
Excessive paint leakage into throat packing nut	Throat packing nut is loose.	Remove throat packing nut spacer. Tighten throat packing nut just enough to stop leakage.
	Throat packings are worn or damaged.	Replace packings. See pump manual.
	Displacement rod is worn or damaged.	Replace rod. See pump manual.
Fluid is spitting from gun	Air in pump or hose.	Check and tighten all fluid connections. Cycle pump as slowly as possible during priming.
	Spray tip is partially clogged.	Clear tip. See **Clear Tip Clog**, page 23.
	Fluid supply is low or empty.	Refill fluid supply. Prime pump. See pump manual. Check fluid supply often to prevent running pump dry.

Troubleshooting

Problem	What to Check If check is OK, go to next check	What to Do When check is not OK, refer to this column
Pump is difficult to prime	Air in pump or hose.	Check and tighten all fluid connections. Cycle pump as slowly as possible during priming.
	Intake valve is leaking.	Clean intake valve. Be sure ball seat is not nicked or worn and that ball seats well. Reassemble valve.
	Pump packings are worn.	Replace pump packings. See pump manual.
	Paint is too thick.	Thin the paint according to supplier recommendations.
Sprayer operates for 5 to 10 minutes then stops	Pump packing nut too tight. When pump packing nut is too tight the packings on the pump rod restrict pump action and overloads the motor.	Loosen pump packing nut. Check for leaks around throat. If necessary, replace pump packings. See Pump manual.
	Battery has insufficient charge.	Charge battery.
Sprayer makes no sound when pressure control is ON and ON/OFF switch is ON (illuminated)	ON/OFF switch light blinks two times when pressure control is ON. Indicates incorrect voltage.	Replace battery with a charged battery.
		Battery has reached end of life. Replace the battery.
	ON/OFF switch light blinks three times when pressure control is ON. Indicates battery temperature is too hot or too cold.	Allow battery to cool down or warm up to room temperature.
	ON/OFF switch light blinks four times when pressure control is ON. Indicates locked rotor condition.	Replace pump and/or motor assembly.
	ON/OFF switch light blinks five times when pressure control is ON. Indicates motor temperature is too hot.	Allow motor to cool down to room temperature.
ON/OFF switch does not illuminate when pressed.	Indicates battery is not installed, has insufficient charge, or is damaged.	Install battery correctly, ensure battery is fully charged, or replace battery.
	Control board is damaged.	Replace control board.
	Power switch is damaged.	Replace power switch.
ON/OFF switch is constantly illuminated (does not turn off).	Control board is damaged.	Replace control board.

Electrical

Symptom: Sprayer does not run, stops running, or will not shut off.

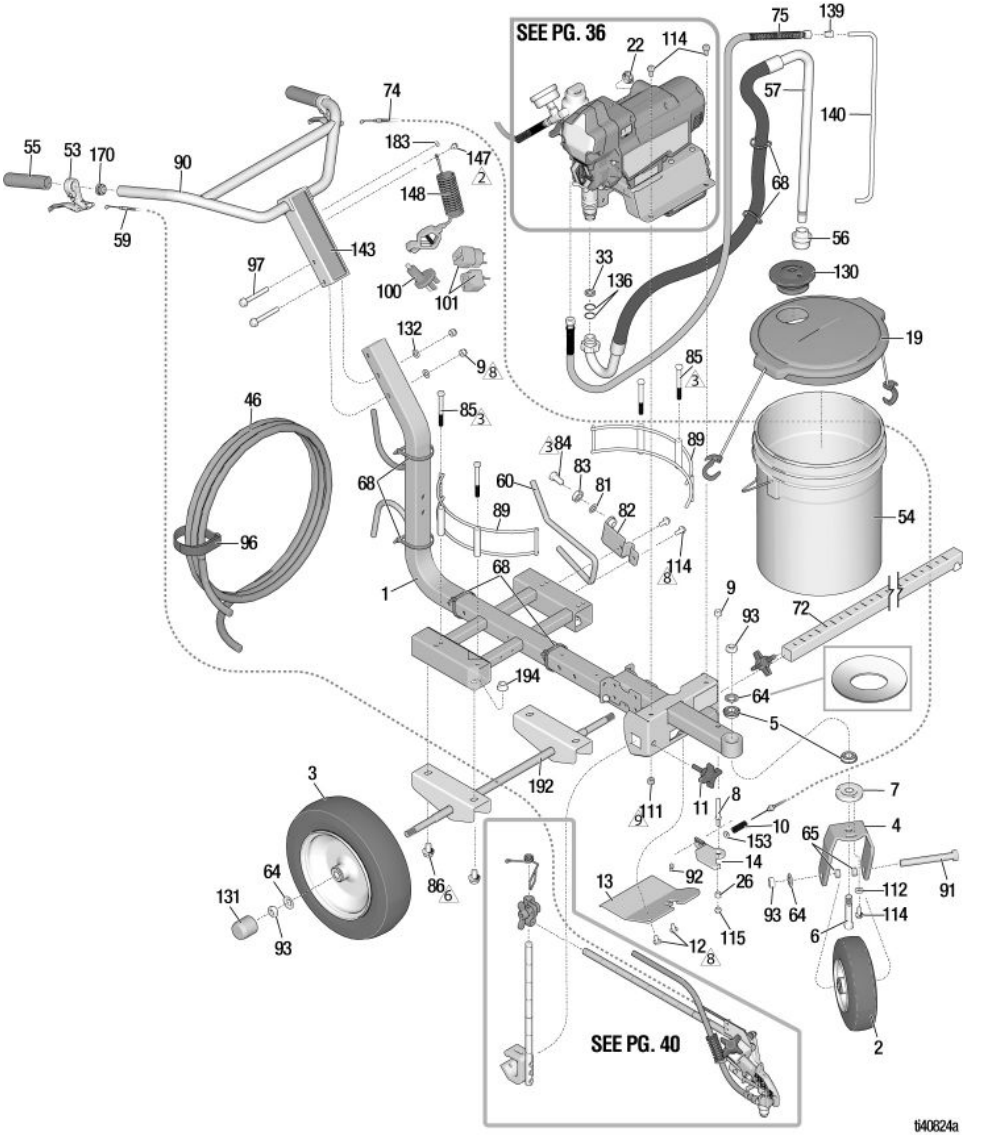


1. Perform **Pressure Relief Procedure**, page 10.
2. Install fully charged battery, see **Battery Installation and Removal**, page 14.
3. Turn the ON/OFF switch **OFF,** wait 30 seconds and then turn power back **ON** again (this ensures sprayer is in normal run mode).
4. Turn pressure control knob clockwise 1/2 turn.

Problem	What to Check	How to check
Sprayer does not run at all.	Check battery charge.	Press charge level indicator on battery. Charge battery or install a new battery, if needed.
	Check pressure control connections.	Make certain connector is clean and firmly connected.
	Check pressure control.	Connect known good pressure control. If the motor runs, replace pressure control.
	Check motor leads.	Make certain terminals are clean and firmly connected.
	Check all wiring harnesses for pinched or severed wires (power switch, motor, pressure control).	Repair wires or bring to Graco certified repair shop.
Sprayer will not shut off after reaching or exceeding maximum pressure.	Check pressure control.	Disconnect pressure control, if sprayer still runs, replace control board. If the sprayer stops, replace pressure control.
Basic electrical problems	Motor leads are securely fastened and properly mated	Replace loose terminals; crimp to leads. Be sure terminal are firmly connected. Clean circuit board terminals. Securely reconnect leads.

Parts

ES 500 Airless Line Striper Parts



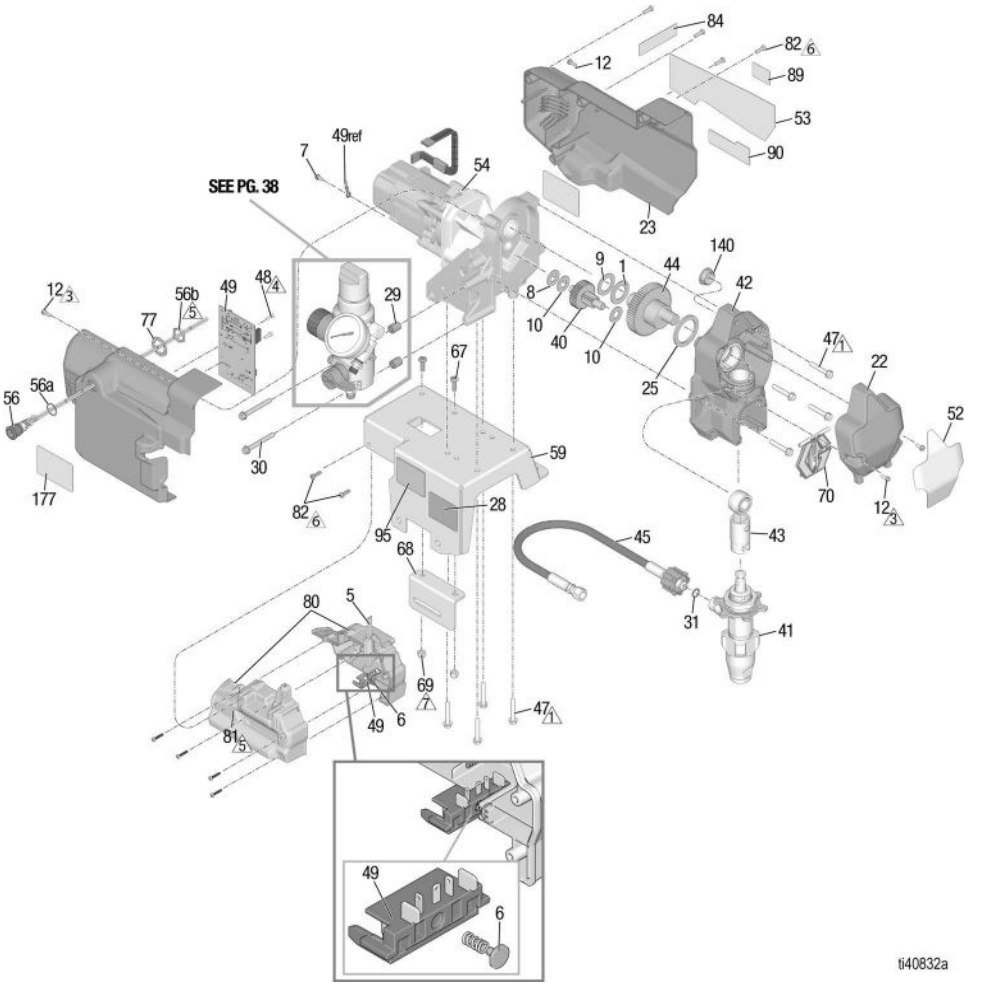
Ref.	Torque	Ref.	Torque	Ref.	Torque
2	80-90 in-lbs (9-10.2 N•m)	6	25-35 in-lbs (2.8-4 N•m)	9	17-23 ft-lbs (23-31 N•m)
3	23-27 in-lbs (2.6-3.1 N•m)	8	190-210 in-lbs (21.5-28.7 N•m)		

ES 500 Airless Line Striper Parts List

Ref.	Part	Description	Qty
1	19D570	FRAME, LL	1
2	119542	WHEEL, small	1
3	119543	WHEEL, large	2
4	15F127	FORK, painted	1
5	119532	BEARING, flanged	2
6	15E780	PIN, fork	1
7	15E773	DISK, adjuster	1
8	15E792	PIN, lever	1
9	101566	NUT, lock	3
10	114682	SPRING, compression	1
11	108471	KNOB, pronged	1
12	111801	SCREW, cap, hex hd.	2
13	19D573	PLATE, skid, battery	1
14	287682	LEVER, caster, *includes 26*	1
16	238049	FLUID, TSL, 4 oz., not shown	1
19	24U241	KIT, pail cover	1
22	17J819	PLUG, hole 1 in.	1
26	111016	BEARING, flange	1
33	115099	WASHER	1
46	249080	HOSE, coupled, 1/4 in. x 50 ft, nickel	1
53	194310	LEVER, actuator	2
54	115077	PAIL, plastic	1
55	116139	GRIP, handle	2
56	246385	STRAINER	1
57	17M875	HOSE, siphon, kit, *includes 33, 136*	1
59	15E992	CABLE, gun	1
60	15E993	ROD, brake	1
64	119563	WASHER, belleville	4
65	15E996	SPACER, wheel	2
68	404989	STRAP, tie	6
72	17J407	BRACKET, support, gun	1
74	241445	KIT, cable, caster*, includes 92*	1
75	249232	HOSE, 14 in. x 3 ft.	1
81	195134	SPACER, ball, guide	1
82	198891	BRACKET, mounting	1
83	198931	BEARING	1
84	113961	SCREW, cap, hex hd	1
85	867517	SCREW, hex head, 3/8-16 x 3.5”	4
86	111802	SCREW	4
89	17N536	HOLDER, bucket	2
90	24Z284	BAR, handle, LL	1
91	113665	SCREW, cap, hex hd	1
92	114802	WIRE, stop	1
93	119554	NUT, lock, nylon, thin pattern	4
96	114271	STRAP, hose wrap	1
97	125626	SCREW, hex hd., flange hd	2
100	25U295	ADAPTER, ground, outlet	1
101		ADAPTER, plug, grounded	1
	16H592	CEE 7/7, Model 25U547	
	16H593	BS-1363/UK, model 25U547	
	16H835	AS3112/ANZ, model 35U548	
111	110838	NUT, lock	2
112	122669	WASHER, flat, extra thick	1
114	110963	SCREW, cap, flange hd	4
115	111040	NUT, lock, insert, nylock, 5/16 in.	1
130	278723	GASKET, pail	1
131	15C871	CAP, leg	2
132	100731	WASHER	2
136	117559	O-RING	2
139	196180	BUSHING	1
140	16X071	TUBE, drain	1
143	19D346	LABEL, ES 500	1
147	112798	SCREW, thread forming, hex hd	1
148	237686	WIRE, ground assembly w/ clamp	1
153	111025	GASKET, polypropylene	1
170	120151	PLUG, tube	2
183 ▲	16W503	LABEL, safety, ground symbol	1
▲		LABEL, warning, medical alert, (not shown)	1
	222385	Models: 25U546, 25U547	
	17A134	Model: 25U548	
192	24Z605	AXLE, weldment	1
194	112731	NUT, hex, flanged	4

▲ *Replacement safety labels, tags, and cards are available at no cost.*

Motor Module Parts



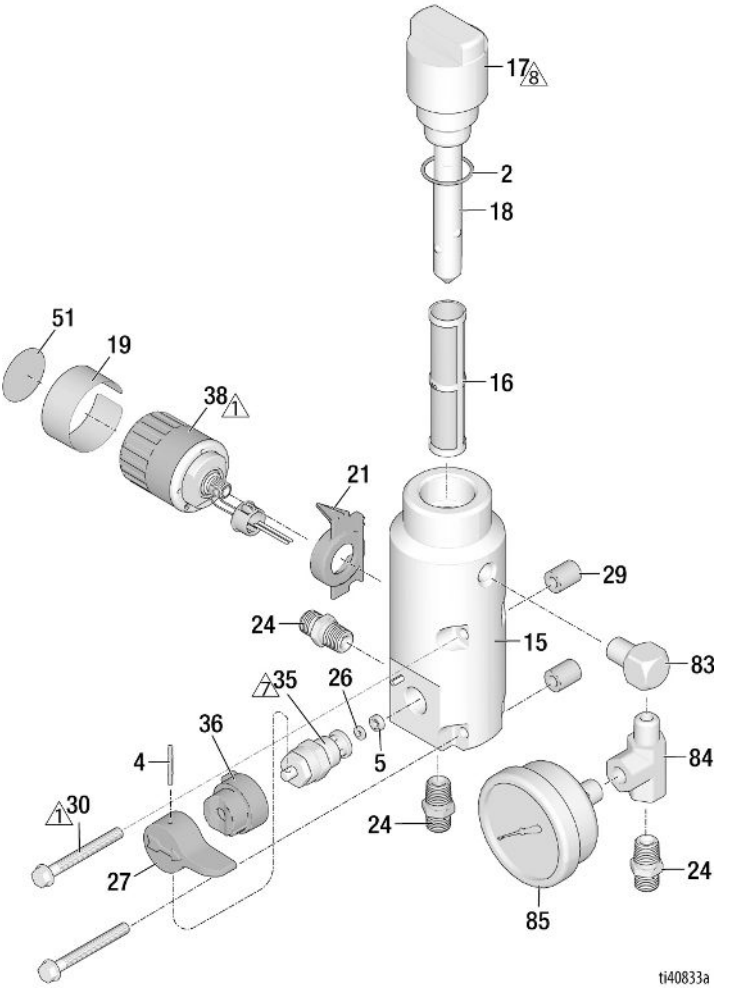
Ref.	Torque	Ref.	Torque	Ref.	Torque
1	140-160 in-lbs. (15.8-18.1 N•m)	5	10-20 in-lbs (1.13-2.26 N•m)		
3	23-27 in-lbs (2.6-3.1 N•m)	6	25-35 in-lbs (2.8-4 N•m)		
4	8-10 in-lbs (0.9-1.13 N•m)	7	40-50 in-lbs (4.5-5.6 N•m)		

Motor Module Parts List

Ref.	Part	Description	Qty.
1	107434	BEARING, thrust	1
5	20A450	GASKET	1
6	20A052	SPRING BUTTON, assembly	1
7	115498	SCREW, mch, slot/hex, wash hd	1
8	116073	WASHER, thrust	1
9	116074	WASHER, thrust	1
10	116079	BEARING, thrust	2
12	117501	SCREW, mach, slot hex wash hd	4
22	17C539	COVER, front	1
23	19D615	KIT, shield, motor, *includes 12, 48, 53, 82, 84, 89, 90 (order item 177 separately)*	1
25	180131	BEARING, thrust	1
28		LABEL, identification	1
29	17D294	SPACER	2
30	17C735	SCREW, mach hex	2
31	16H137	O-RING	1
34 ▲		CARD, medical alert (not shown)	1
	222385	NA/EMEA models	
	17A134	ANZ model, 18H269, 18H270	
40	249194	GEAR, reducer	1
41		PUMP, displacement	1
	17C487	North America	
	17C488	Asia/ANZ/Japan	
	17C489	Europe	
42	24W817	HOUSING, drive, *includes 47*	1
43	24W640	ROD, connecting	1
44	24X020	GEAR, crankshaft, *includes 25*	1
45	20A939	KIT, hose, cpld *includes 31*	1
47	117493	SCREW, mach, hex washer hd	9
48	119236	SCREW, torx	2
49	20A542	KIT, board, control, 390 cordless, *includes 7, 48*	1
52	19D344	LABEL, front	1
53	19D345	LABEL, side	1
54	20A554	KIT, motor, module, *includes 1, 8, 9, 10, 25*	1
56	19D605	SWITCH, power	1
56a		O-RING	1
56b		NUT	1
59	19D571	SHELF, motor	1
67	128795	SCREW, mach, pan hd., torx	2
68	19D553	BRACKET, adapter, ES 500	1
69	102040	NUT, lock	2
70	17C483	COVER, pump rod	1
77	100422	WASHER, lock	2
80	19D606	BATTERY COMPARTMENT, *includes 5, 8, 81, 122*	1
81	17R614	FASTENERS, battery compartment	4
82	115477	SCREW, torx	6
84		LABEL, A+	1
	17P924	Models: 25U546	
	17P925	Models: 25U547, 25U548	
89	16D576	LABEL, USA, w/ global	1
90	20A335	LABEL, brand, DEWALT	1
95	17Y815	LABEL, notice, water	1
99		BATTERY (not shown)	2
	20A162	60V, 6Ah, USA/CA, (models: 25U546)	
	20A163	54V, 6Ah, EMEA/UK, (models: 25U547)	
	20A164	54V, 6Ah, ANZ (model: 25U548)	
	20A756	60V, 9Ah, USA/CA (model: 25U546)	
	20A757	54V, 9Ah, EMEA/UK, (model: 25U547)	
	20A758	54V, 9Ah, ANZ (model: 25U548)	
110		CHARGER, fast, DEWALT (not shown)	1
	20A165	60V, USA/CA (model: 25U546)	
	20A166	54V, EMEA/UK (model: 25U547)	
	20A167	54V, ANZ (model: 25U548)	
		BRACKET, cover	1
177 ▲		LABEL, safety, warning	1
	20A030	North America (model: 25U546)	
	20A480	EMEA (model: 25U547)	
	20A481	ANZ (model: 25U548, 18H269)	

▲ *Replacement safety labels, tags, and cards are available at no cost.*

Filter Manifold Parts

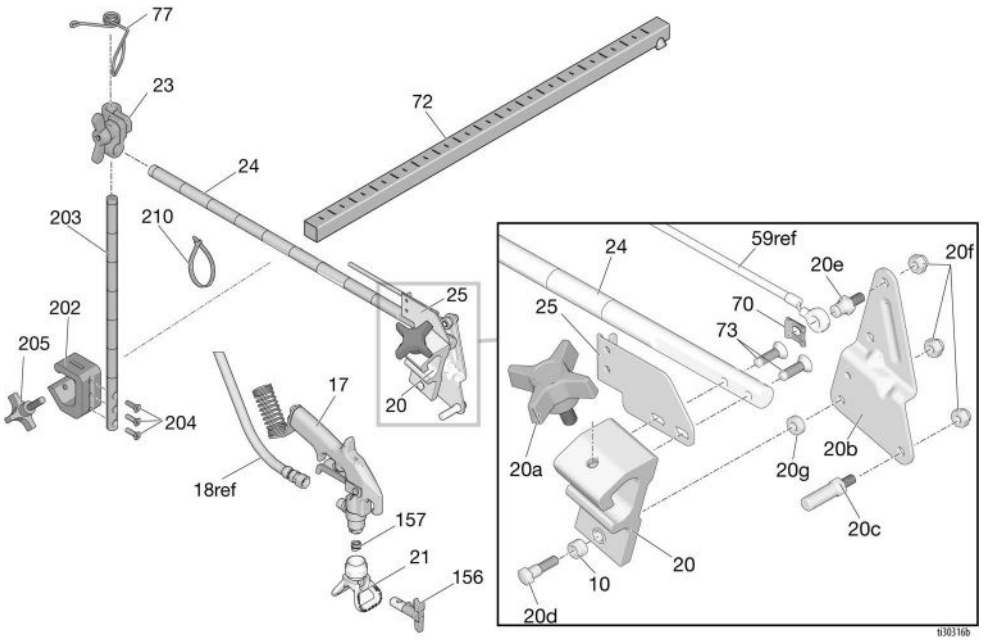


Ref.	Torque	Ref.	Torque	Ref.	Torque	Ref.	Torque
1	140-160 in-lbs. (15.8-18.1 N•m)	7	130-140 in-lbs (14.7-16.9 N•m)	8	48-72 in-lbs (5.4-8.1 N•m)		

Filter Manifold Parts List

Ref.	Part	Description	Qty.
2	117828	PACKING, o-ring	1
4	111600	PIN, grooved	1
5	277364	GASKET, seat, valve	1
15	17C590	MANIFOLD, fluid	1
16		FILTER, fluid (tall manifold)	1
	246425	30 mesh (gray)	
	246384	60 mesh, original (black)	
	246382	100 mesh (blue)	
	246383	200 mesh (red)	
17		CAP, manifold	1
	287902	KIT, cap, tall manifold, *includes 18*	
18	15B071	INSERT, filter, tall	1
19	20A475	LABEL, PC	1
21	17C725	INDICATOR, control pressure	1
24	196181	NIPPLE, (1/4 npsm x 1/4 npt)	3
26	15E022	SEAT, valve	1
27	187625	HANDLE, valve, drain	1
29	17D294	SPACER, manifold	2
30	17C735	SCREW, mach, HWH	2
35	239914	VALVE, drain, *includes 5, 26*	1
36	224807	BASE, valve	1
38	20A556	KIT, control, pressure, cordless, *includes 19, 51*	1
51	20A474	LABEL, control	1
83	19D655	ELBOW, street, 1/4 NPT	1
84	19D580	FITTING, tee, run	1
85	115523	GAUGE, pressure, fluid	1

Gun Arm Parts

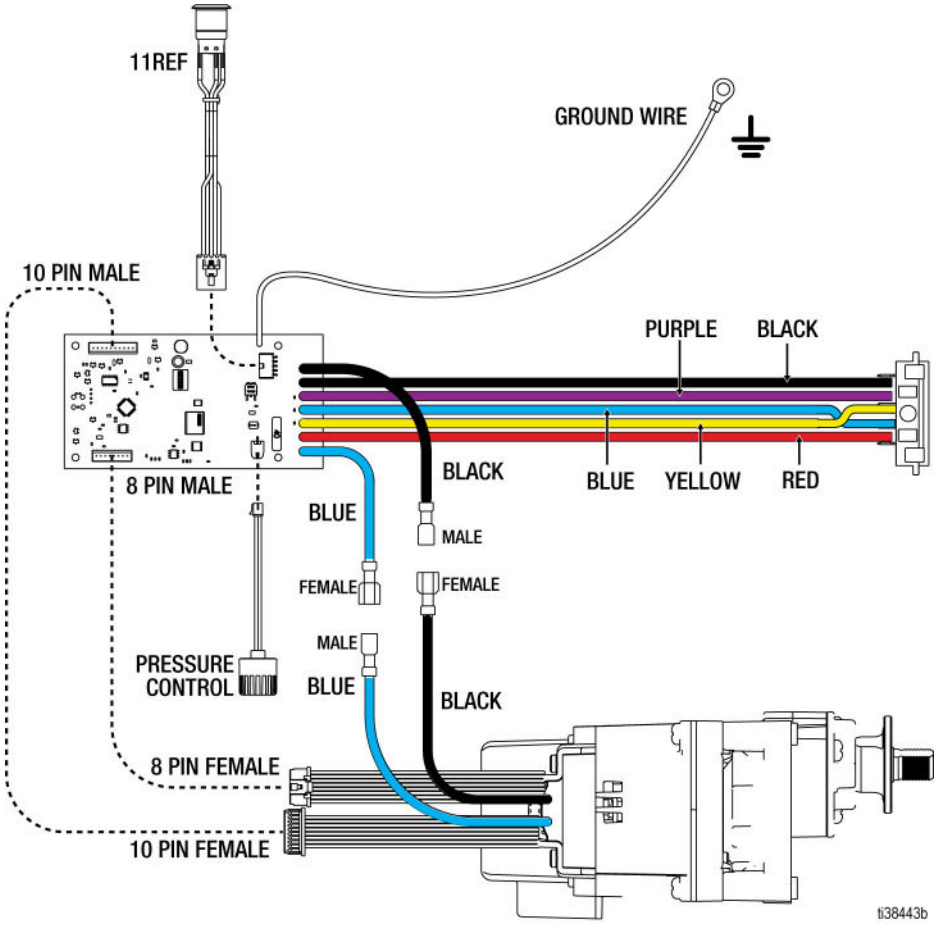


Ref	Part	Description	Qty
10*	119664	BEARING, sleeve	1
17	248157	GUN, flex	1
20*	15F216	HOLDER, gun	1
20a*	15F750	KNOB, holder, gun	1
20b*	15F214	LEVER, actuator	1
20c*	15F209	STUD, pull trigger	1
20d*†	17J575	FASTENER, special	1
20e*	17H673	STUD, cable	1
20f*†	102040	NUT, lock	3
20g*†	17J576	SPACER, special	1
21	243161	GUARD, Rac V	1
23	287566	KIT, clamp	1
24	17J145	ARM, holder, gun	1
25*	15F213	BRACKET, cable	1
70	*126111	RETAINER, Circle Clip, external, 8mm	1
72	17J407	BRACKET, support gun	1
73	119647	SCREW, cap, socket, flathead	2

Ref	Part	Description	Qty
77	188135	GUIDE, cable	1
156	LL5317	TIP, spray, striping, *includes 157*	1
	LL5419	TIP, spray, striping, *includes 157*	1
210*	17H720	STRAP, tie, 5 in.	3
157	243281	GASKET, seal, tip, 5 pack (included w/ 156)	1
202	17J424	BAR, height, adjustment, assy, *includes 203, 204, 205*	1
203*	17J139	BAR, gun, holder	1
204*	113428	SCREW, machine	3
205	108471	KNOB, pronged	1

** Included in Gun Holder Repair Kit 25A528*
† Included in 4-finger Gun Kit 24Y991

Wiring Diagram



Technical Specifications

LineLazer ES 500 Airless Line Striper		
	US	Metric
Sprayer		
Maximum fluid working pressure	3300 psi	228 bar, 22.8 MPa
Maximum delivery	0.47 gpm	1.8 lpm
Maximum tip size	1 gun with 0.021 in. tip	
Inlet paint strainer	12 mesh (893 micron) stainless steel screen, reusable	
Outlet paint strainer	60 mesh (250 micron) stainless steel screen, reusable	
Pump inlet size	1.0 in. diameter	
Fluid outlet	0.25 in. npsm	
Dimensions		
Height		
Handles Down	39.4 in.	100.0 cm
Handles Up	41.3 in.	104.8 cm
Length		
Handles Down	66.3 in.	168.4 cm
Handles Up	68.0 in.	172.7 cm
Width	26.0 in.	66.0 cm
Weight (with battery)	121 lbs.	55 kg
Noise** (dBa) @ 70 psi (0.48 MPa, 4.8 bar)		
Sound pressure	90 dBa*	
Sound power	100 dBa*	
Vibration, per ISO 5349		
Left-hand	<98in/s^2	<2.5m/s^2
Right-hand	<98in/s^2	<2.5m/s^2
Materials of Construction		
Wetted materials on all models	zinc- and nickel-plated carbon steel, nylon, stainless steel, PTFE, acetal, leather, UHMWPE, aluminum, tungsten carbide, polyethylene, fluoroelastomer, urethane	
Notes		

** Startup pressures and displacement per cycle may vary based on suction condition, discharge head, air pressure, and fluid type.*

*** Sound pressure measured 3 feet (1 meter) from equipment.*
Sound power measured per ISO-3744.

All trademarks or registered trademarks are the property of their respective owners.

California Proposition 65

CALIFORNIA RESIDENTS

⚠ **WARNING:** Cancer and reproductive harm – www.P65warnings.ca.gov.

Graco Standard Warranty

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

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

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

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

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