

# Protective Coating Hand-Held Paint Sprayer

3A2308C  
EN




- For portable spray applications of protective coatings -
- For professional use only -
- Not approved for use in explosive atmospheres or hazardous locations -
- DO NOT SPRAY ZINC COATINGS OR MATERIALS WITH AGGREGATE.  
ACCELERATED PUMP WEAR WILL OCCUR -

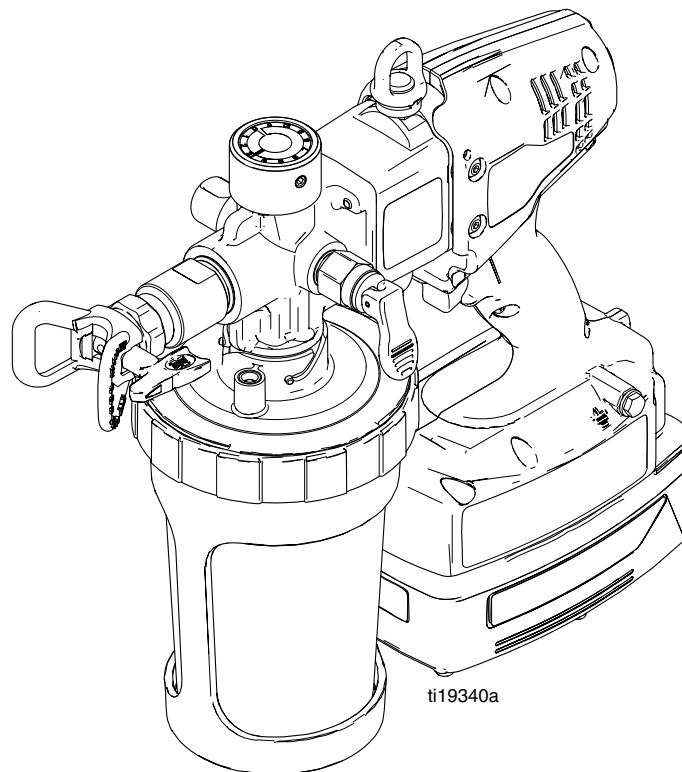
4000 psi (27.6 MPa, 276 bar) Maximum Working Pressure



### IMPORTANT SAFETY INSTRUCTIONS

Read all warnings and instructions in this manual. Save these instructions.

Model			
16H960	✓		
16N654	✓		
16N927			
16N655		✓	
16N656			✓



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## Important User Information

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

### DO NOT RETURN THIS SPRAYER TO THE STORE!

If you experience problems, contact Graco Product Support at 1-888-541-9788 or visit [www.graco.com](http://www.graco.com).

Before using this equipment, be sure to read and follow the information on your container label and ask for a Material Safety Data Sheet (MSDS) from your supplier. The container label and MSDS will explain the contents of the material and the specific precautions related to it.

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



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





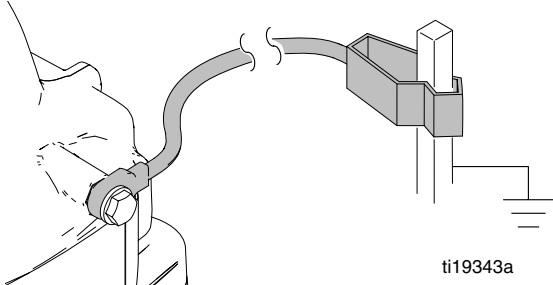

**OIL-BASED:** The container label should indicate that the material is COMBUSTIBLE and can be cleaned up with mineral spirits or paint thinner. The MSDS must indicate that the flash point of the material is above 100° F. Your sprayer is compatible with this type of material. Use oil-based material outdoors or in a well-ventilated indoor area with a flow of fresh air. See the safety warnings in this manual.







**FLAMMABLE:** This type of material contains flammable solvents such as xylene, toluene, naphtha, MEK, lacquer thinner, acetone, denatured alcohol, and turpentine. The container label should indicate that this material is FLAMMABLE. Your sprayer is compatible with this type of material. Use flammable materials outdoors or in a well-ventilated indoor area with a flow of fresh air. See the safety warnings in this manual.

# 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.

 <b>WARNING</b>	
	<p><b>FIRE AND EXPLOSION HAZARD (GROUNDING)</b></p> <p>Some oil-based and flammable materials generate static electricity when sprayed. Static electricity creates an explosion and fire risk. Your sprayer has a ground wire that will conduct the static electricity to earth ground. The sprayer and all objects in spray area must be properly grounded to protect against static discharge, sparks or shocks.</p> <ul style="list-style-type: none"> <li>• Connect the ground wire when spraying flammable or static producing oil-based materials.</li> <li>• If there is static sparking or if you feel a shock, stop spraying immediately and connect the sprayer to earth ground with the ground wire provided.</li> </ul> <p><b>GROUNDING INSTRUCTIONS</b></p> <p>Clamp sprayer ground wire to earth ground.</p>  <p style="text-align: center; font-size: small;">ti19343a</p>
	<p><b>FIRE AND EXPLOSION HAZARD</b></p> <p>Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> <li>• Do not spray flammable or combustible liquids in a confined area.</li> <li>• Keep spray area well-ventilated. Keep a good supply of fresh air moving through the area.</li> <li>• Paint or solvent flowing through the sprayer is able to result in static electricity. Static electricity creates a risk of fire or explosion in the presence of paint or solvent fumes. The sprayer and all objects in spray area shall be properly grounded to protect against static discharge, sparks, or shocks.</li> <li>• Always connect the ground wire provided when spraying flammable materials or static producing oil-based materials. See <b>Grounding Instructions</b> above.</li> <li>• If there is static sparking or you feel a shock, stop operation immediately and connect sprayer to earth ground with the ground wire provided.</li> <li>• Do not spray flammable or combustible materials near open flame or sources of ignition such as cigarettes, external motors, and electrical equipment.</li> <li>• Do not operate light switches, engines, or similar spark producing products in the spray area.</li> <li>• Do not smoke in the spray area.</li> <li>• Keep spray area clean and free of paint or solvent containers, rags, and other flammable materials.</li> <li>• Know the contents of the paints and solvents being sprayed. Read all Material Safety Data Sheets (MSDS) and container labels provided with the paints and solvents. Follow the paint and solvents manufacturer's safety instructions.</li> <li>• Fire extinguisher equipment shall be present and working.</li> </ul>

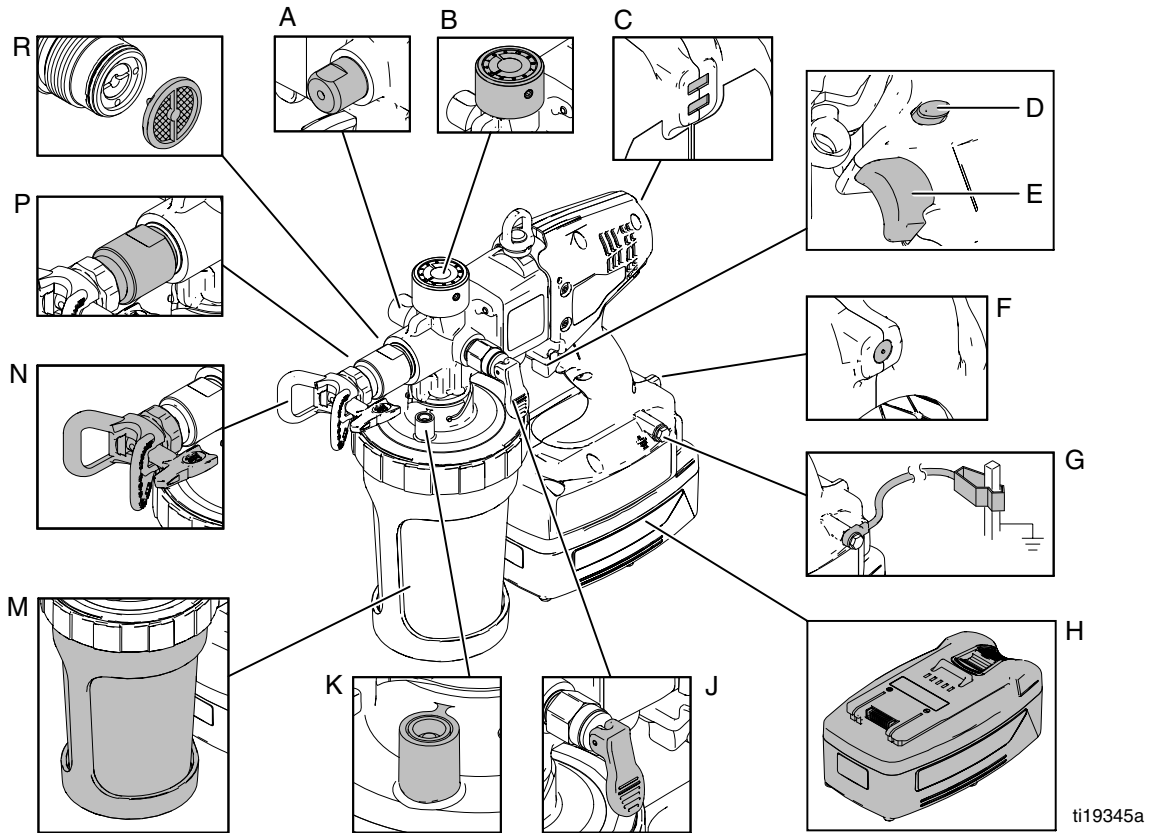
# ! WARNING

 	<p><b>SKIN INJECTION HAZARD</b></p> <p>High-pressure spray is able to inject toxins into the body and cause serious bodily injury. In the event that injection occurs, <b>get immediate surgical treatment.</b></p> <ul style="list-style-type: none"> <li>• Do not aim the sprayer at, or spray any person or animal.</li> <li>• Keep hands and other body parts away from the discharge. For example, do not try to stop leaks with any part of the body.</li> <li>• Always engage the trigger lock when not spraying. Verify the trigger lock is functioning properly.</li> <li>• Always use the spray tip guard. Do not spray without spray tip guard in place.</li> <li>• Use caution when cleaning and changing spray tips. In the case where the spray tip clogs while spraying, follow the <b>Pressure Relief Procedure</b> for relieving the pressure before reversing or removing the spray tip to clean.</li> <li>• Do not leave the unit energized or under pressure while unattended. When the unit is not in use, follow the <b>Pressure Relief Procedure</b> and engage the trigger lock.</li> <li>• Check parts for signs of damage. Replace any damaged parts with genuine Graco parts.</li> <li>• This system is capable of producing 4000 psi. Use replacement parts or accessories that are rated a minimum of 4000 psi.</li> <li>• Do not carry the sprayer with a finger on the trigger.</li> <li>• Verify that all connections are secure before operating the unit.</li> <li>• Know how to stop the unit and bleed pressure quickly. Be thoroughly familiar with the controls.</li> </ul>
	<p><b>EQUIPMENT MISUSE HAZARD</b></p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> <li>• Disconnect the battery before servicing.</li> <li>• Always wear appropriate gloves, eye protection, and a respirator or mask when painting.</li> <li>• Do not operate or spray near children. Keep children away from equipment at all times.</li> <li>• Do not overreach or stand on an unstable support. Keep effective footing and balance at all times.</li> <li>• Stay alert and watch what you are doing.</li> <li>• Do not operate the unit when fatigued or under the influence of drugs or alcohol.</li> <li>• Use only in dry locations. Do not expose to water or rain.</li> <li>• Use in well-lit areas.</li> <li>• Always replace cracked, broken or missing parts immediately with genuine Graco parts. See Parts List, page 23.</li> </ul>
	<p><b>BATTERY HAZARD</b></p> <p>The battery may leak, explode, cause burns, or cause an explosion if mishandled. Contents of an open battery can cause severe irritation and/or chemical burns. If on skin, wash with soap and water. If in eyes, flush with water for at least 15 minutes and seek immediate medical attention.</p> <ul style="list-style-type: none"> <li>• Replace battery only in a well-ventilated area and away from flammable or combustible materials; including paints and solvents.</li> <li>• When battery is not in use, keep it away from metal objects like keys, nails, screws or other metal objects that can short circuit the battery terminals.</li> <li>• Do not throw into fire.</li> <li>• Charge only with Graco-approved charger as listed in this manual.</li> <li>• Do not store at temperatures below 32° or above 113° F (0° to 45° C).</li> <li>• Do not use at temperatures below 40° or above 90° F (4° to 32° C).</li> <li>• Do not expose battery to water or rain.</li> <li>• Do not disassemble, crush, or penetrate the battery.</li> <li>• Do not charge a battery that is cracked or damaged.</li> <li>• Follow local ordinances and/or regulations for disposal.</li> </ul>

# ! WARNING

	<p><b>CHARGER ELECTRIC SHOCK, FIRE AND EXPLOSION HAZARD</b> Improper setup or usage can cause electric shock, fire, and explosion.</p> <ul style="list-style-type: none"> <li>• Charge only in a well-ventilated area and away from flammable or combustible materials, including paints and solvents.</li> <li>• Do not charge on a combustible or flammable surface.</li> <li>• Do not leave battery unattended while charging.</li> <li>• Immediately unplug charger and remove battery when charging is complete.</li> <li>• Charge only Graco batteries listed in this manual; other batteries may burst.</li> <li>• Use only in dry locations. Do not expose to water or rain.</li> <li>• Do not use a charger that is cracked or damaged.</li> <li>• If the supply cord is damaged, replace the charger or cord, depending on model.</li> <li>• Never force the battery into the charger.</li> <li>• When operating a charger outdoors, always provide a dry location and use an extension cord suitable for outdoor use.</li> <li>• Disconnect the charger from the outlet before cleaning.</li> <li>• Ensure that the outside surface of the battery is clean and dry before plugging into the charger.</li> <li>• Do not attempt to charge non-rechargeable batteries.</li> <li>• Do not disassemble the charger. Take charger to authorized service center when service or repair is required.</li> </ul>
	<p><b>PRESSURIZED ALUMINUM PARTS HAZARD</b> 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.</p> <ul style="list-style-type: none"> <li>• Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.</li> <li>• Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.</li> </ul>
	<p><b>TOXIC FLUID OR FUMES HAZARD</b> Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.</p> <ul style="list-style-type: none"> <li>• Read MSDS's to know the specific hazards of the fluids you are using.</li> <li>• Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.</li> </ul>
	<p><b>PERSONAL PROTECTIVE EQUIPMENT</b> 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:</p> <ul style="list-style-type: none"> <li>• Protective eyewear, and hearing protection.</li> <li>• Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.</li> </ul>

# Component Identification





ti19345a

Ref.	Description
A	Accumulator
B	Pressure Control Knob
C	Sprayer Status Indicator
D	Trigger Lock
E	Trigger
F	Static Wick
G	Ground Wire Assembly with Clamp

Ref.	Description
H	Battery
J	Pressure Relief Valve / Prime Valve
K	Check Valve
M	Material Cup
N	Spray Tip Assembly
P	Front Shut-Off Valve
R	Material Filter

# Operation

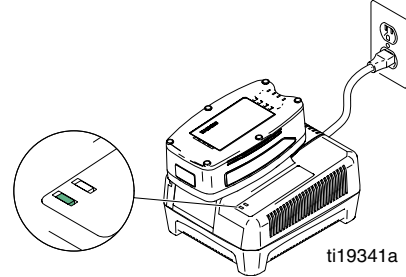
## Charging the Battery

		
<p>Replace and charge battery only in a well-ventilated area and away from flammable or combustible materials, including paints and solvents.</p>		

Batteries are initially 50% charged to provide optimum battery life and require charging before first use. It takes approximately 50 minutes to charge a dead battery to 80%, at which point it can be used. It will take approximately 75 minutes to fully charge a dead battery.

1. Place charger in a dry, well-ventilated area and away from flammable or combustible materials, including paints and solvents.





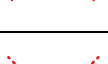
2. Plug charger into an electrical outlet and slide battery into charger as shown (light will turn on in 5 seconds).



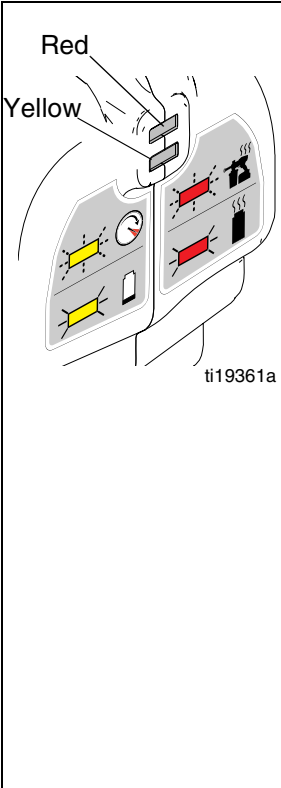




3. When battery becomes fully charged, immediately unplug the charger from the power supply and remove the battery from the charger.

**NOTE:** The amount sprayed with each battery varies depending on material, spray tip size, battery charge, and battery temperature. One battery fully charged will spray up to one gallon. Amount sprayed will be less depending on spray tip size, material sprayed, life of battery, temperature, and other environmental factors.

## Charger Status Indicator Lights

Label	Appearance	Description
	Solid green light	Indicates a full charge. Battery can be used.
	Flashing green light	Battery is charging, indicates 80% charge. Battery can be used.
	Flashing red light	Battery is charging, indicates less than 80% charge. Do NOT use battery.
	Solid red light	Battery is too hot or too cold to charge. Remove battery and allow to cool or warm up before charging. Battery temperature must be between 50° F - 113° F (10° C - 45° C) to charge.
	Both lights	Battery has internal fault or has experienced damage. Do not use.

## Sprayer Status Indicator

	No light	Normal operation.	No action required.
	 Solid Red	Battery is too hot. Unit will shut down until battery has cooled.	Change battery. Allow battery to cool.
		Liquid has contacted control board.	Allow unit to dry.
	 Flashing Red	Motor is too hot and will shut down if heavy use continues. Unit will shut down until motor has cooled.	Increase tip size.
			Turn down pressure.
			Let unit cool down.
	 Solid Yellow	Battery is low or battery is too cold.	Charge battery.
			Warm up battery.
 Flashing Yellow	High pressure signal. Gun will shut down after 1.5 seconds.	Turn pressure control counter-clockwise to reduce pressure.	
		Increase tip size.	
Solid red and solid yellow	Locked motor.	Bring sprayer in to service center for diagnostics.	

**\*NOTE:** The sprayer status indicator light is visible for 10 seconds after the trigger is released.



## Common Procedures

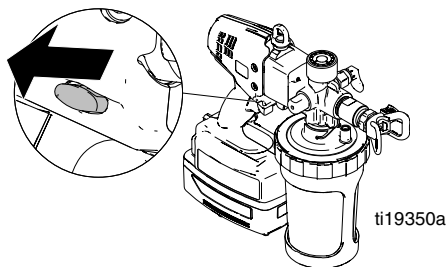
### Trigger Lock



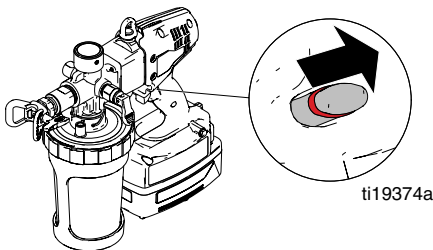
Follow the Pressure Relief Procedure whenever you see this symbol.



Always engage the trigger lock when you stop spraying to prevent the sprayer from being triggered accidentally by hand, or if dropped or bumped.

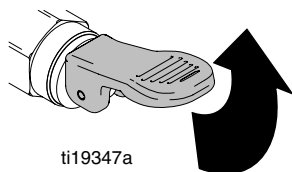


**Trigger Locked**

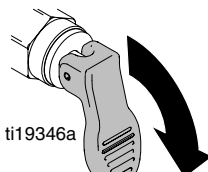


**Trigger Unlocked  
(red ring is visible)**

### Prime/Pressure Relief Valve Position



**UP position  
(For priming and releasing  
pump pressure)**



**DOWN position  
(Ready to spray)**

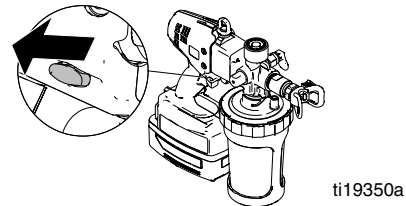
### Pressure Relief Procedure



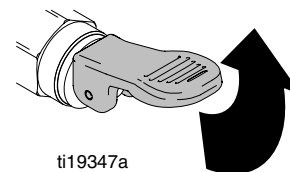
Do not operate or spray near children. Do not aim the sprayer at, or spray any person or animal. Keep hands and other body parts away from the discharge. For example, do not try to stop the paint flow with any part of the body.

This sprayer builds up an internal pressure of 4000 psi during use. This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

1. Engage trigger lock.



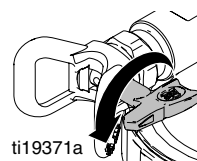
2. Put prime/pressure relief valve UP to release pressure.



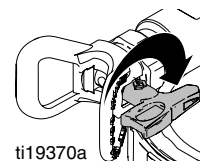
### Spray Tip Position



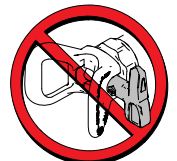
Always perform **Pressure Relief Procedure** before adjusting spray tip position.



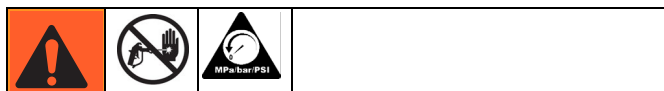
**Tip Forward  
(SPRAY position)**



**Tip Reversed  
(UNCLOG position)**



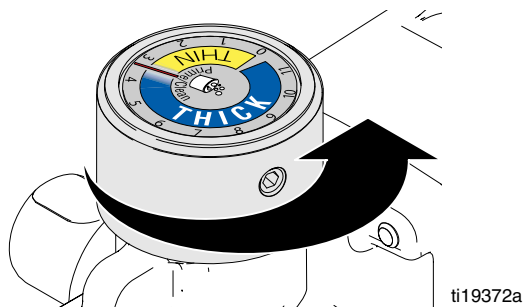
# Adjusting Pressure



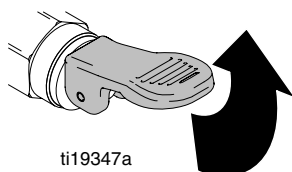
**NOTE:** Spraying water, solvents, and thin materials (low viscosity materials) at high pressure (setting “2” or higher with yellow light flashing) can result in temporary pump leaking. To avoid, read and follow instructions (Quick Guide or Manual) on how to properly adjust pressure.

**NOTE:** To reduce overspray and extend battery life, always spray at lowest pressure that results in an acceptable spray pattern.

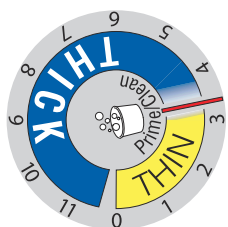
4. You **MUST** start with dial at “1” and gradually increase by increments of “1” or less until desired spray pattern is achieved. Put pressure relief handle in UP position to turn pressure control knob, then return handle to DOWN position to spray.



1. Put the pressure relief valve UP to relieve pressure.

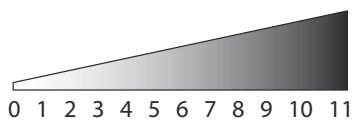


2. Turn pressure control knob: **Clockwise to INCREASE pressure, or Counter-clockwise to DECREASE pressure.**

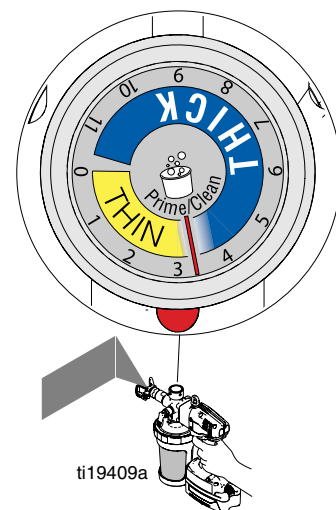
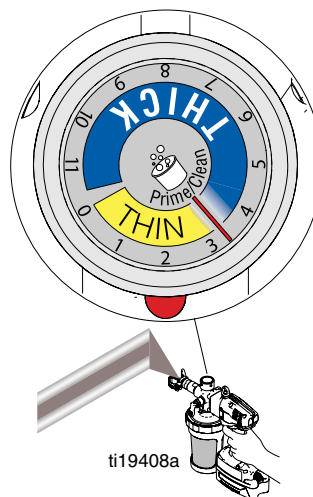
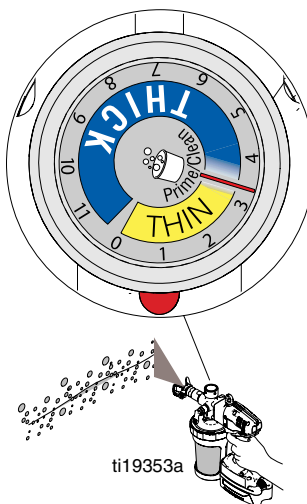


THIN MATERIAL

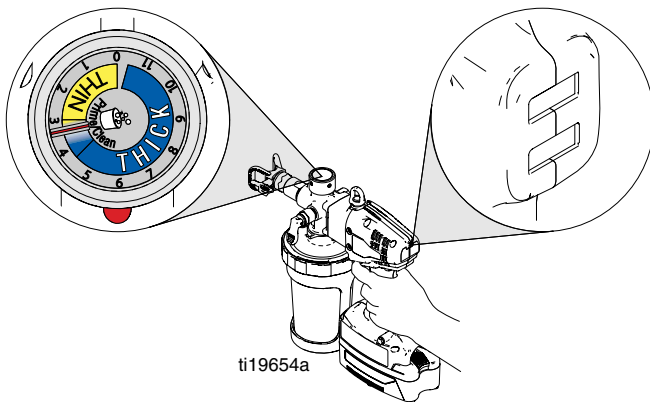
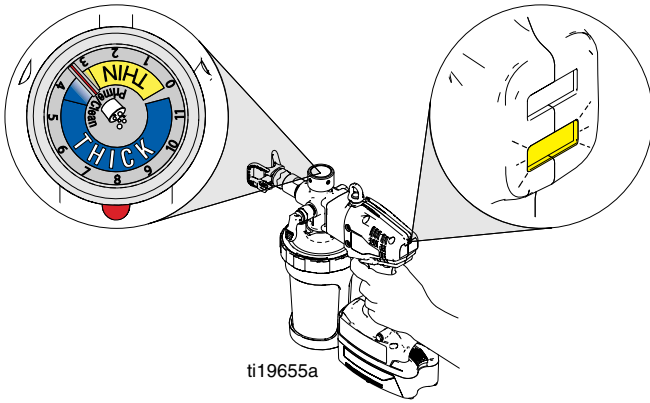
THICK MATERIAL



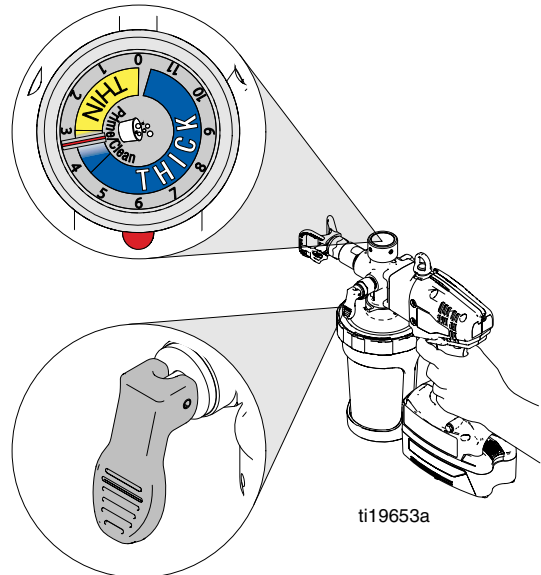
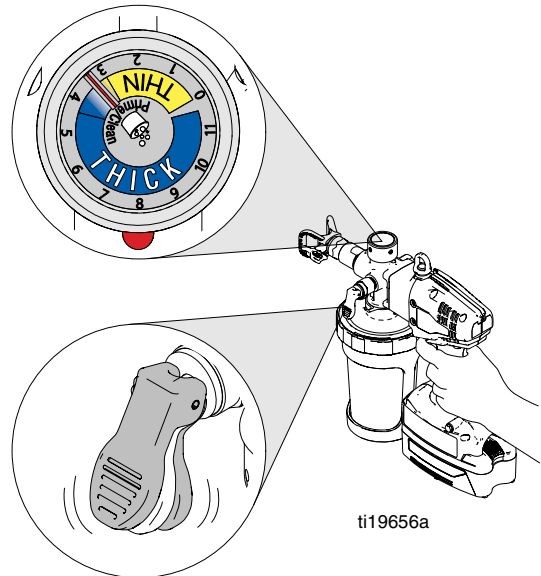
3. Dial in pressure by spraying material on a scrap material.



5. If yellow light is flashing while triggering, pressure is set too high. You **MUST** turn down pressure until yellow light no longer flashes, increase tip size, or do not thin material as much.



6. If pressure relief valve is vibrating, pressure is set too high. You **MUST** turn down pressure, increase tip size, or do not thin material as much.






**NOTE:** Thin materials will generally require a low setting and thick materials will generally require a high setting.

### IMPORTANT!

After storage, the piston seals need to be energized prior to next use to prevent leakage. To energize, follow steps below:

1. Prime system with flushing fluid.
2. Spray at low pressure setting "1" for 10 seconds.
3. Drain fluid. You are now ready to spray.

## Setup

						
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Flammable fumes (such as solvent and paint fumes) in work area can ignite or explode.  
See **Grounding Instructions**, page 3.  
Do not spray flammable or combustible liquids in a confined area.  
**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.

## Starting a New Job

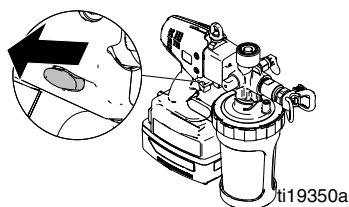
**NOTICE**

Always flush any cleaning material from the previous use before starting a new job. If the new spraying material is not compatible with leftover material in the pump, adverse reactions could ruin new material.

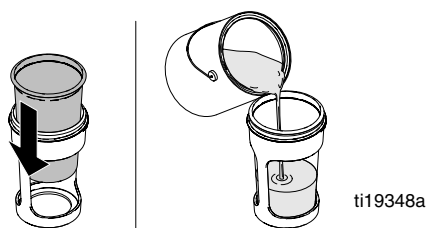
**NOTICE**

Do **NOT** spray zinc coatings or materials with aggregate. Accelerated pump wear will occur.

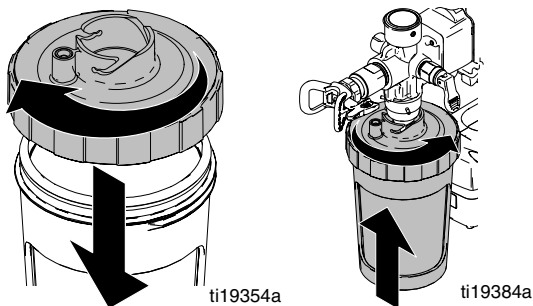
1. Engage trigger lock.



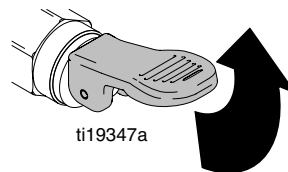
2. Install liner into cup and fill liner 1/2 full with appropriate cleaning fluid for material about to be sprayed.



3. Thread lid onto cup and connect cup to sprayer.

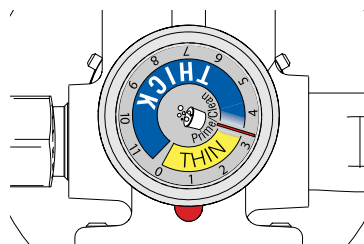


4. Put prime/pressure relief valve in UP position.

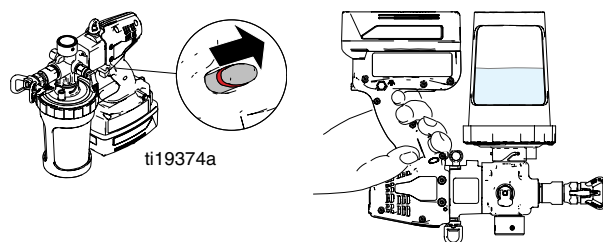


**NOTE:** After storage, the piston seals need to be energized prior to next use to prevent leakage. To energize, follow steps below:

- a. Prime system with flushing fluid.
  - b. Spray at low pressure setting "1" for 10 seconds.
  - c. Drain fluid. You are now ready to spray.
5. You **MUST** set pressure control to setting "1".

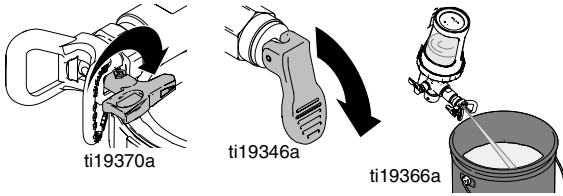


6. Disengage trigger lock, turn sprayer upside-down and trigger for approximately 5 seconds to recirculate material.

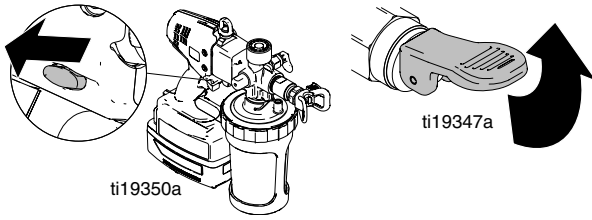


Operation

- Reverse tip to UNCLOG position. Put prime/pressure relief valve DOWN to spray position and trigger sprayer through tip into waste area for 1- 2 seconds.

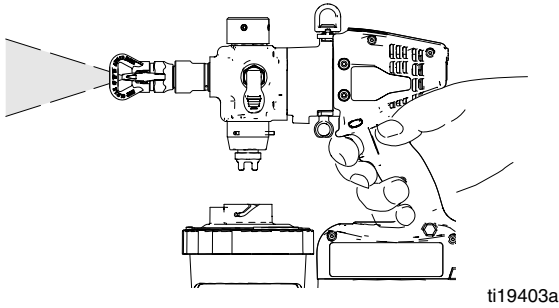


- Engage trigger lock and put prime/pressure relief valve UP to release pressure.

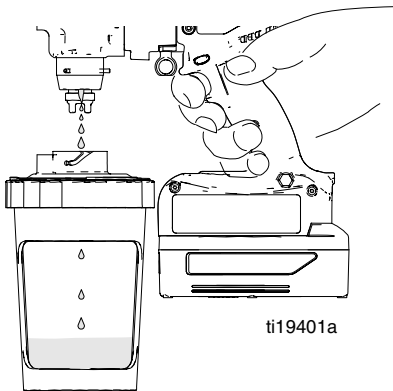


- Remove material cup.

- Disengage trigger lock, put prime/pressure relief valve DOWN to spray position, hold sprayer slightly above material cup and pull trigger to discharge fluid from pump.



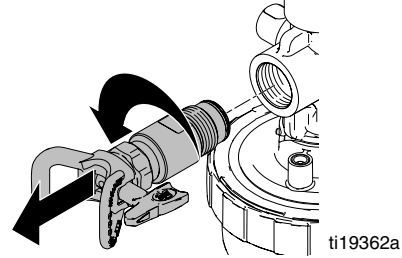
- Put prime/pressure relief valve UP and pull trigger to finish flushing material.



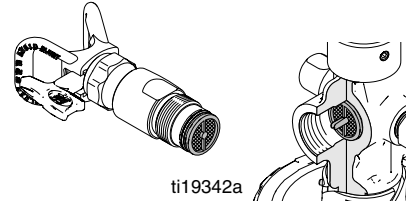
- Properly discard any material in cup.

## Install/Service Filter (if needed)

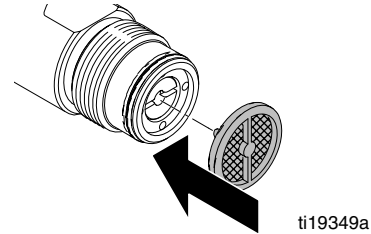
- Perform **Pressure Relief Procedure**, page 9.
- Unthread front valve housing from sprayer.



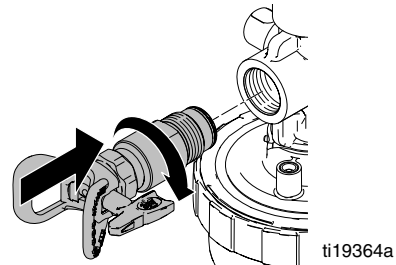
- Filter should come out of pump housing with valve. If filter remains in housing, remove it by hand or with pliers if necessary.



- Install properly-sized filter (if needed).

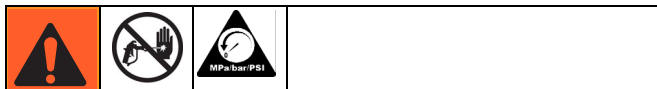


- Reassemble valve housing to pump.



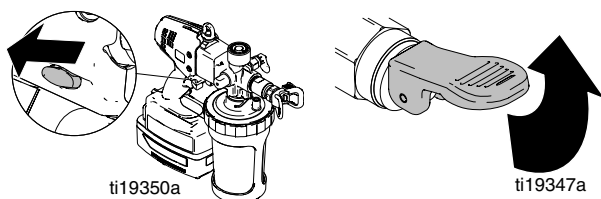
## Install Tip/Guard Assembly (if not installed)

**NOTE:** Only use Graco Tip/Guard assemblies.



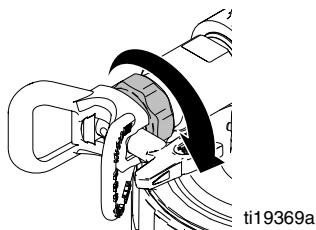
This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

1. Engage trigger lock and put prime/pressure relief valve UP to relieve pressure.



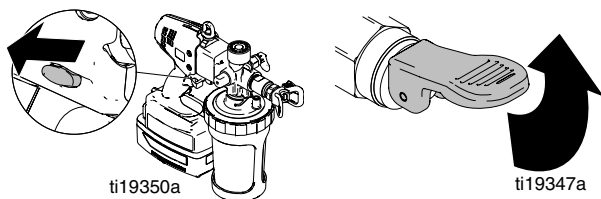
Do NOT place hands in front of tip.

2. Screw Tip/Guard Assembly onto sprayer. Tighten retaining nut until completely engaged with sprayer. Do not overtighten nut.

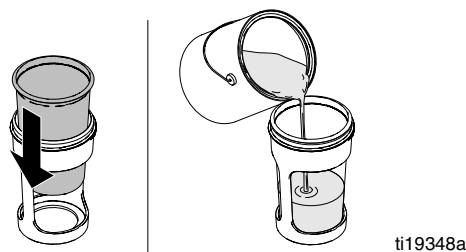


## Filling and Installing Cup

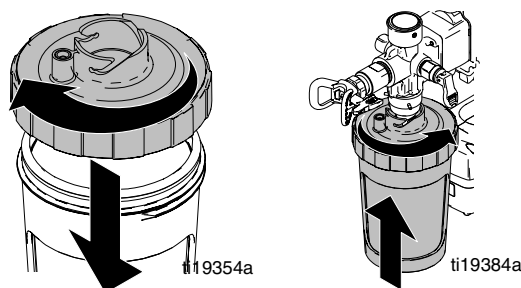
1. Engage trigger lock and put prime/pressure relief valve UP to relieve pressure.



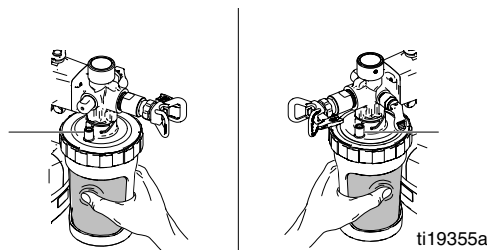
2. Install liner into material cup and fill with material.



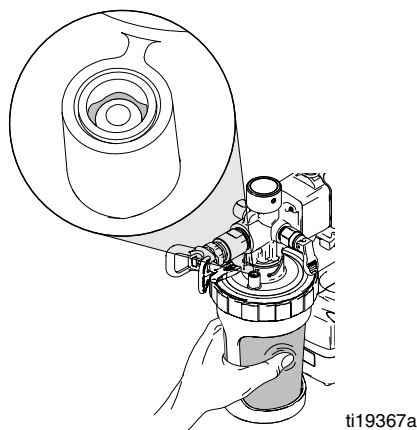
3. Thread lid onto material cup and connect cup to sprayer. **NOTE:** Do not squeeze sides of cup while threading lid onto cup.



**NOTE:** Check valve can be oriented in three locations when attached to cup. If squeezing liner with left hand, position check valve on left side. If squeezing liner with right hand, position check valve on right side.



4. Squeeze liner to purge air through check valve until material is present at check valve.

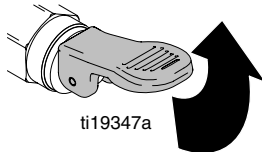


**NOTE:** To purge the maximum amount of air out of the liner, slightly tilt the sprayer so the check valve is the highest point.

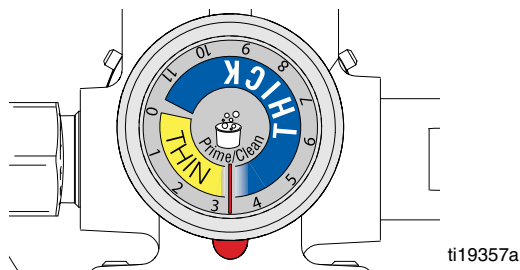
## Priming Pump



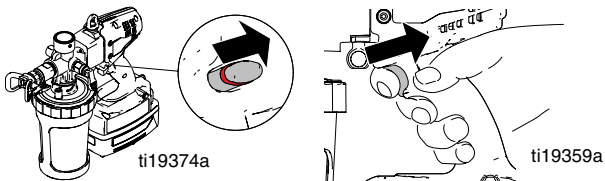
1. Put prime/pressure relief valve UP to priming position.



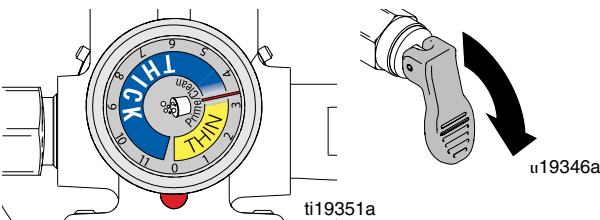
2. Turn pressure control knob to prime/clean position in line with red indicator dot.



3. Disengage trigger lock and trigger sprayer for three seconds, then release trigger.



4. Turn pressure control knob counter-clockwise to lowest position. Put prime/relief valve to DOWN position to spray.

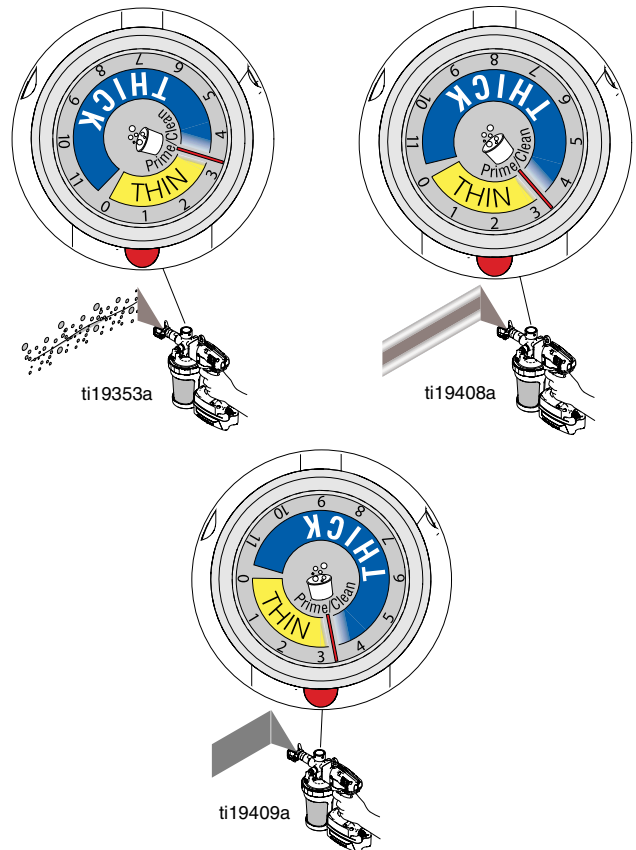


**NOTE:** A small amount of air may be introduced into the cup from the pump while priming. Slightly tip unit and squeeze liner to purge final amount of air if desired.

## Setting Pressure

**NOTE:** Spraying water, solvents, and thin materials (low viscosity materials) at high pressure (setting “2” or higher with yellow light flashing) can result in temporary pump leaking. To avoid, read and follow instructions (Quick Guide or Manual) on how to properly adjust pressure.

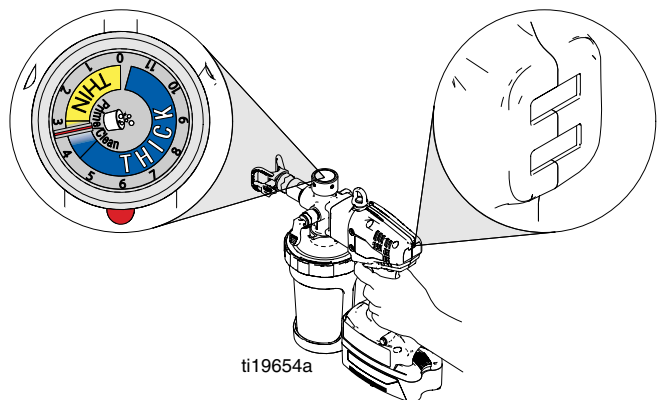
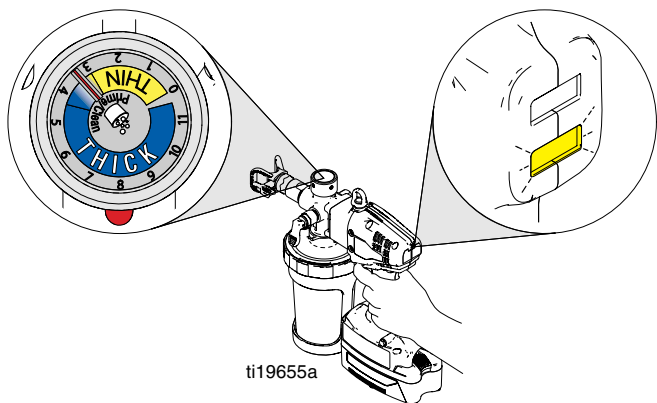
1. To reduce overspray and extend battery life, always spray at lowest pressure that produces an acceptable spray pattern.
2. Dial in pressure by spraying material on a scrap material.
3. You **MUST** start with dial at “1” and gradually increase by increments of “1” or less until desired spray pattern is achieved. Put pressure relief handle in UP position to turn pressure control knob, then return handle to DOWN position to spray.



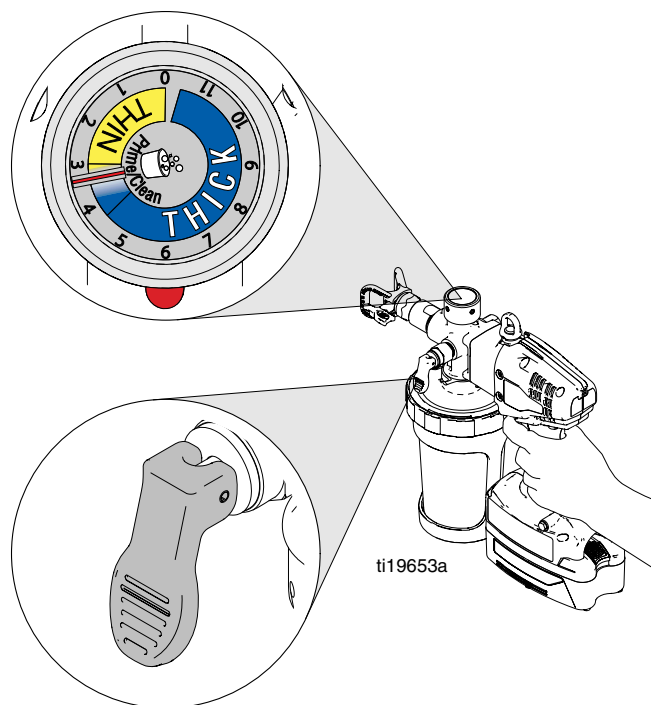
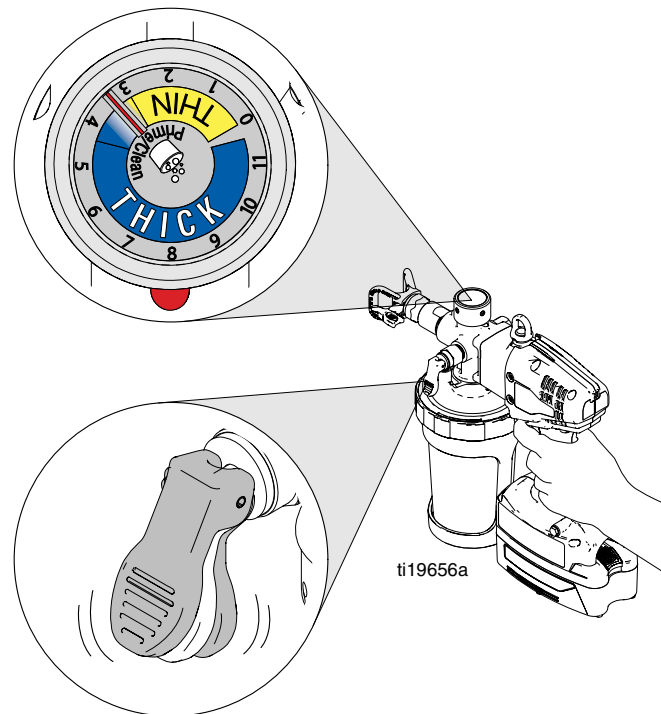
**NOTE:** After storage, the piston seals need to be energized prior to next use to prevent leakage. To energize, follow steps below:

- a. Prime system with flushing fluid.
- b. Spray at low pressure setting “1” for 10 seconds.
- c. Drain fluid. You are now ready to spray.

4. If yellow light is flashing while triggering, pressure is set too high. You **MUST** turn down pressure until yellow light no longer flashes, increase tip size, or do not thin material as much.



5. If pressure relief valve is “popping”, pressure is set too high. You **MUST** turn down pressure, increase tip size, or do not thin material as much.



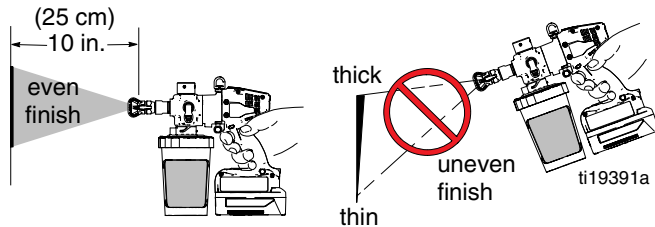
**NOTE:** If not enough pressure can be achieved for an acceptable pattern, reduce tip orifice size and repeat steps. If acceptable pattern is still not achieved, material might need to be thinned or heated (see material manufacturing data sheet for thinning and heating instructions).



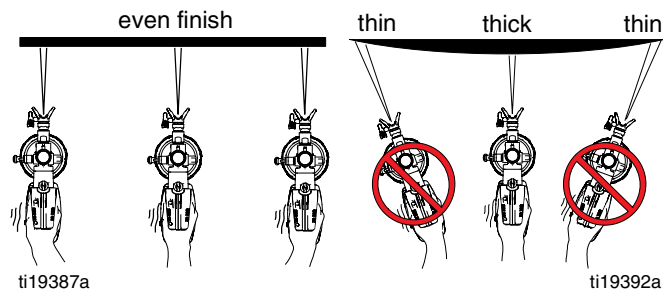
## Getting Started with Basic Techniques

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

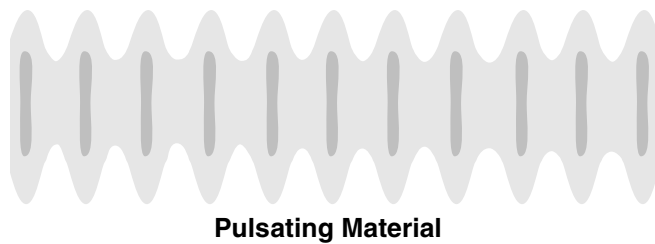
Hold sprayer 10 in. (25 cm) from surface and aim straight at surface. Tilting sprayer to direct spray angle causes an uneven finish.



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

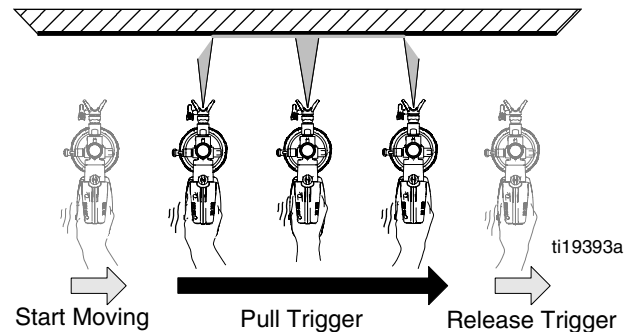


**NOTE:** How fast you move the sprayer will affect spray application. If material is pulsating (see below), you are moving too fast. If material runs, you are moving too slow. See **Troubleshooting**, page 24.



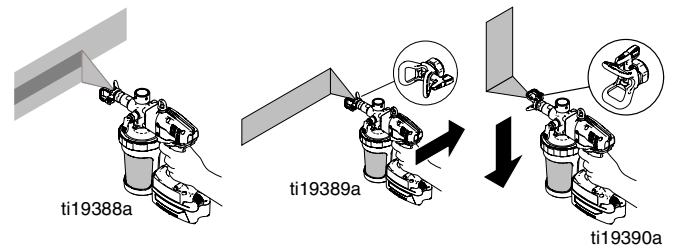
## Triggering Sprayer

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






## Aiming Sprayer

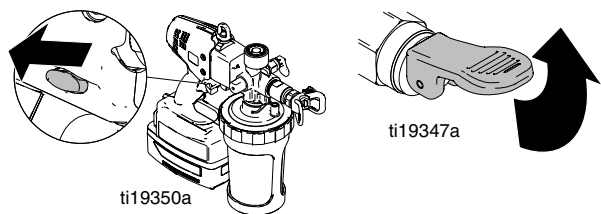
Aim tip of sprayer at bottom edge of previous stroke, overlapping each stroke by half.



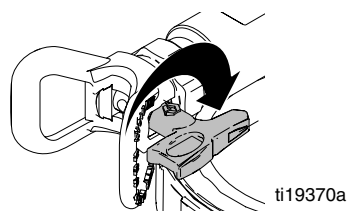
# Unclogging Spray Tip/Guard Assembly

			
<p>Always perform the <b>Pressure Relief Procedure</b> (page 9) before unclogging spray tip.</p>			

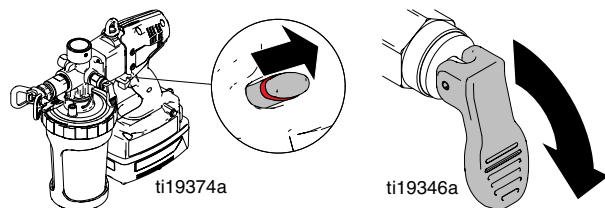
1. To unclog tip obstruction, engage trigger lock and put prime/pressure relief valve UP to relieve pressure.



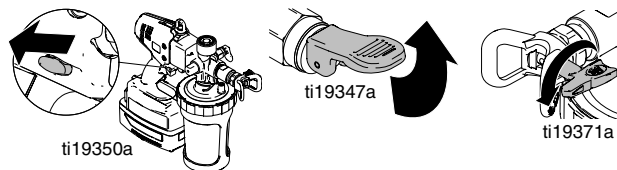
2. Reverse spray tip to UNCLOG position.



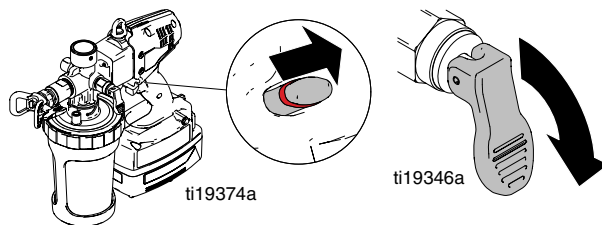
3. Aim sprayer at waste area, disengage trigger lock, and put prime/pressure relief valve DOWN to spray position. Pull trigger to clear clog.



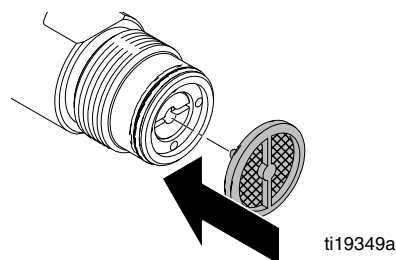
4. Engage trigger lock. Put prime/pressure relief valve UP to relieve pressure and rotate spray tip back to SPRAY position.



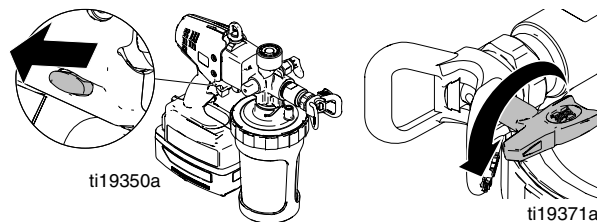
5. Disengage trigger lock, put prime/pressure relief valve DOWN to spray position, and resume spraying.



6. If tip is still clogged, it may be necessary to repeat steps 1 - 5 and rotate the tip from SPRAY to UNCLOG several times. Repeat step 1 to release pressure, remove and clean filter, or replace with new tip assembly.



7. When obstruction is cleared, engage trigger lock and rotate arrow-shaped handle back to SPRAY position.



## Shutdown and Cleaning

### NOTICE

Failure to properly clean sprayer after each use will result in hardened materials, damage to the sprayer, and the warranty will no longer be valid. Do not store solvents other than mineral spirits in sprayer.

### Flushing Sprayer



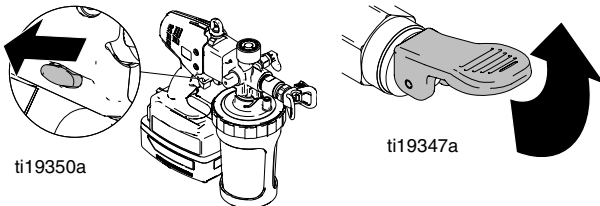
Do not spray solvents through the spray tip. Clean the tip in a bucket of compatible solvent.

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

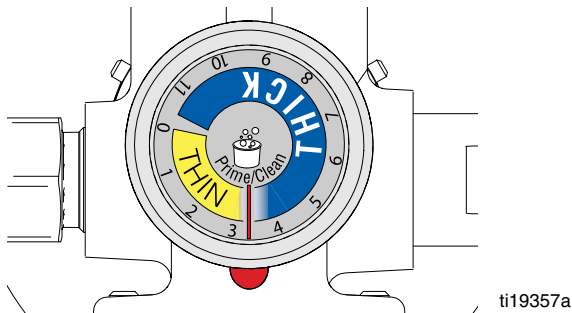
### NOTICE

**Protect the internal parts of this sprayer from water.** Do not submerge the sprayer in cleaning fluid. Openings in shroud allow cooling of mechanical parts and electronics inside. If water or cleaning fluid gets into these openings, the sprayer could malfunction or become permanently damaged.

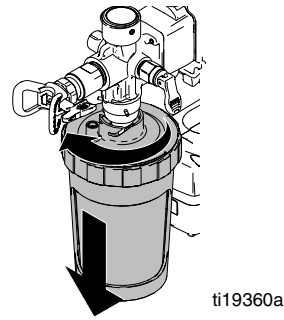
1. Engage trigger lock and put prime/pressure relief valve UP to release pressure.



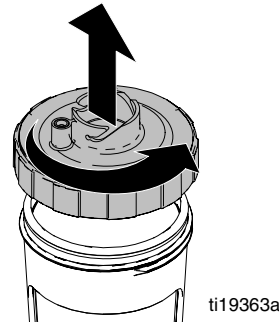
2. Turn pressure control knob to prime/clean position.



3. Remove cup from sprayer.



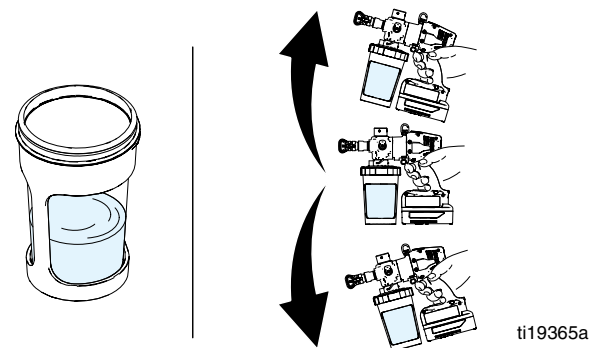
4. Remove lid from cup.



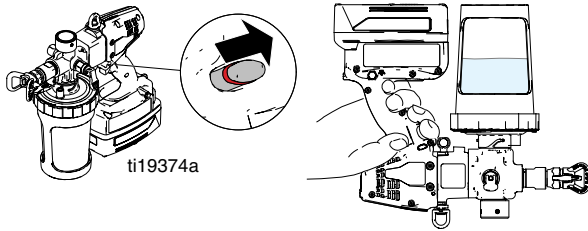
5. Remove material liner and lid from cup and properly dispose. Properly dispose any excess material left in the liner.



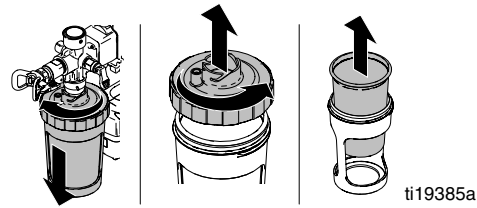
6. Insert a new liner into cup and fill 1/2 full with appropriate flushing fluid. Screw on lid and attach cup to sprayer. Shake sprayer to move flushing fluid around and clean all wetted areas inside cup.



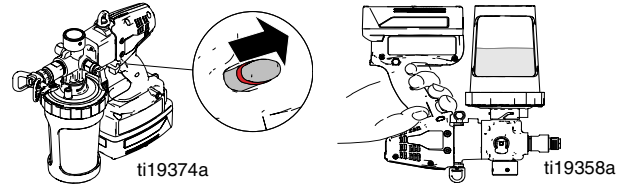
7. Disengage trigger lock, turn sprayer upside-down and trigger for approximately 15 seconds to recirculate material.



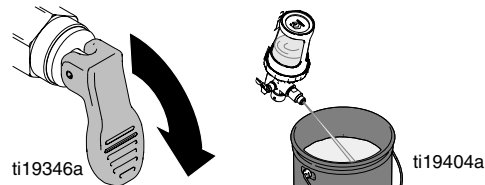
11. Remove cup and properly dispose contaminated fluid.




12. Refill liner 1/2 full. Disengage trigger lock, turn sprayer upside-down and trigger sprayer for approximately 15 seconds to recirculate material.

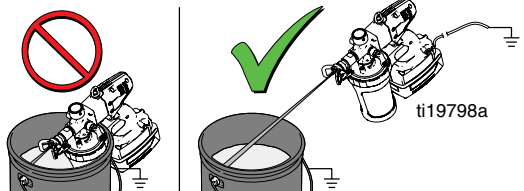


13. Put prime/pressure relief valve DOWN to spray position. Spray the remaining amount of cleaning fluid through the front of the sprayer.



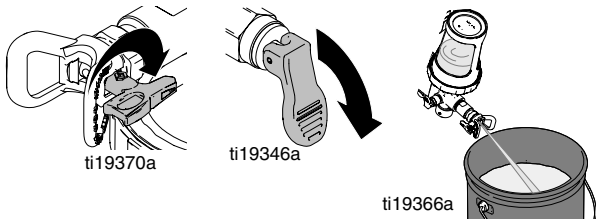


To avoid serious injury or damage to equipment, do not expose the sprayer electronics to flushing solvents. Keep sprayer **at least 10 in.** above the rim of the container when flushing.



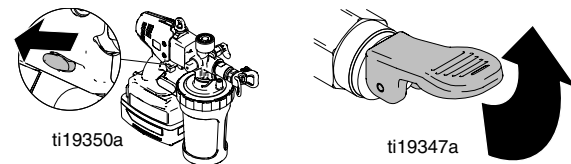
Keep spray area well-ventilated. Keep a good supply of fresh air moving through the area. When flushing with solvents, always ground the sprayer and waste container.

8. Reverse tip to UNCLOG position. Put prime/pressure relief valve DOWN to spray position and trigger sprayer through tip into waste area for 1- 2 seconds.

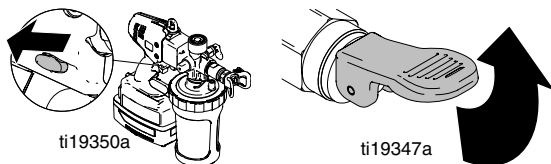


14. If sprayer is not completely clean, repeat steps 11 and 12.

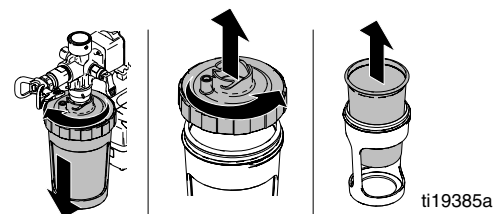
15. Engage trigger lock and put prime/pressure relief valve UP to release pressure.



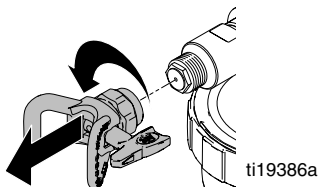
9. Engage trigger lock. Put prime/pressure relief valve in UP position.



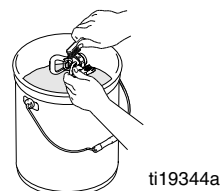
16. Remove material liner and lid and properly dispose. Properly dispose used fluid.



10. Unthread tip/guard from sprayer and soak in appropriate flushing fluid.



17. Clean Spray Tip/Guard assembly with clean flushing fluid. Use a soft brush to loosen and remove dried material if needed.



## Cleaning Sprayer Exterior

Wipe paint off outside of sprayer using a soft cloth moistened with water or flushing fluid. Do NOT submerge the sprayer or pump.



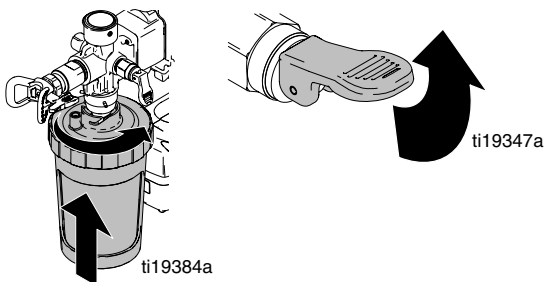
ti19400a

<p>This sprayer is equipped with a static wick that reduces the build up of static charge to reduce the risk of fire and explosion. <b>KEEP THIS SURFACE CLEAN OF OVERSPRAY.</b></p>		
		<p>ti19405a</p>

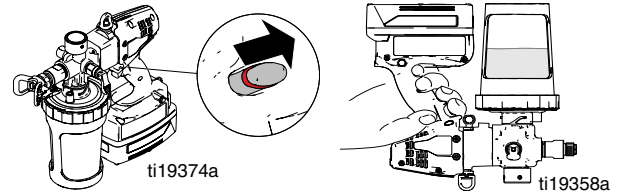
## Storage

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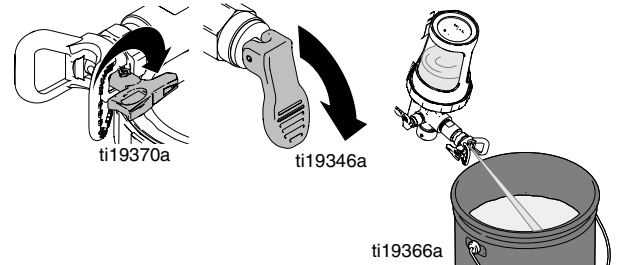
1. Fill material cup 1/3 full with mineral spirits solvent or dilute a 4 oz. bottle of Pump Armor concentrate with an additional 4 oz. of water in material cup and liner.
2. Connect cup to sprayer, put prime/pressure relief valve to UP position.



3. Disengage trigger lock, turn sprayer upside-down and trigger for approximately 10 seconds to recirculate material.

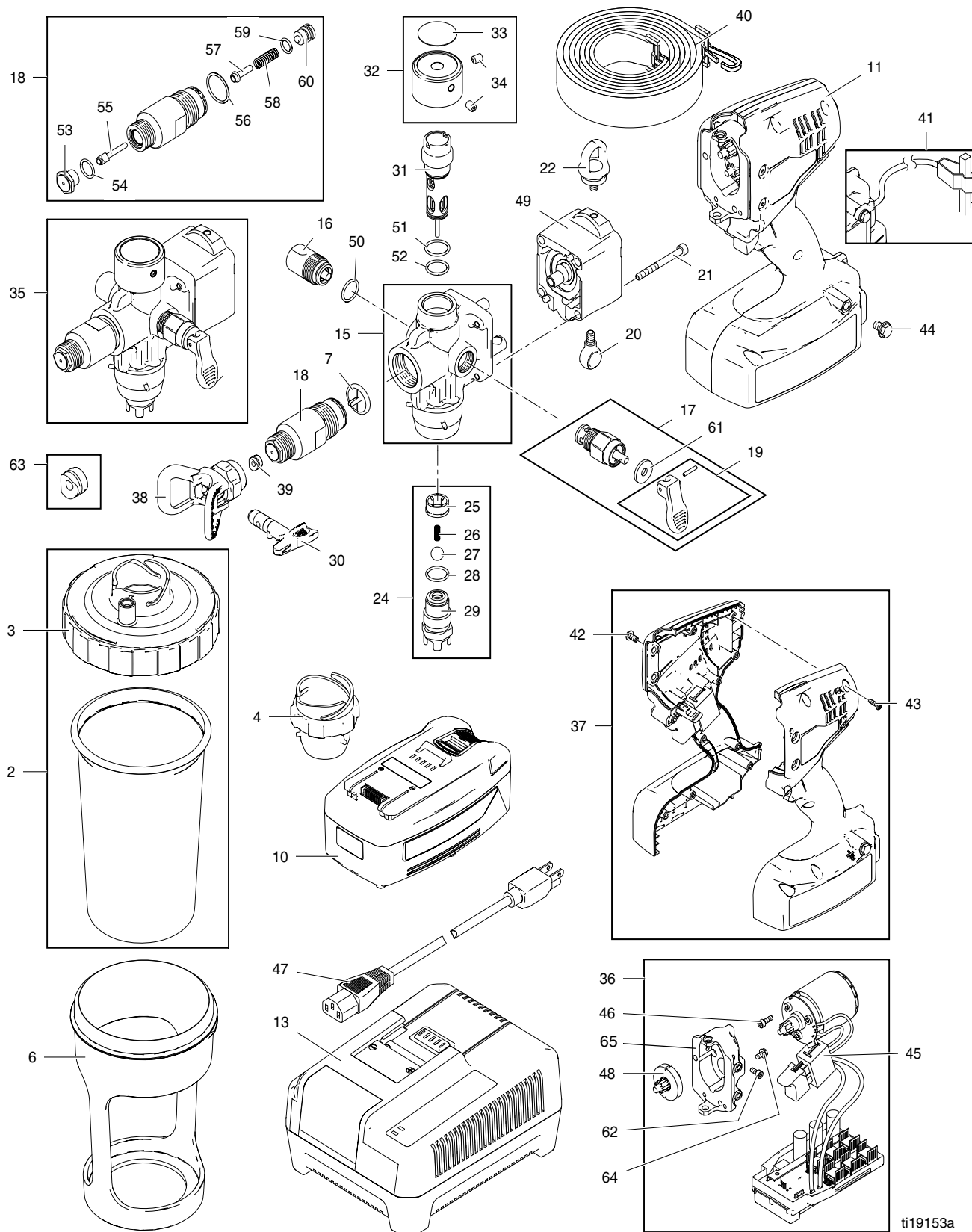


4. Reverse tip to UNCLOG position. Put prime/pressure relief valve DOWN to spray position and trigger sprayer through tip into waste area for 1- 2 seconds.



5. Properly dispose of used storage fluid from material cup.
6. Recharge battery to full charge before storage. See **Charging the Battery**, page 7.
7. Store sprayer indoors in a cool, dry place. Never store sprayer with material in the cup.

# Parts



ti19153a

## Parts List

Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
2	16P165	KIT, lid, liner, 25 pack	1	42	124165	SCREW, BHCS, M5, 0.8 x 10, ss	4
3	16P166	KIT, lid, 25 pack	1	43	119236	SCREW, mach, torx pan hd	10
4	16P167	KIT, plug, cup (6 pack)	1	44	112161	SCREW, mach, hex, washer, hd	1
6	16P169	KIT, cup	1	45	278345	SWITCH, assembly	1
7	16P170	KIT, filter, 30 mesh, 10 pack	1	46	115263	SCREW, cap, socket, head	3
	16P171	KIT, filter, 60 mesh, 10 pack	1	47		POWER CORD	1
	16P172	KIT, filter, 100 mesh, 10 pack	1		16N441	U.S.	
10	16P173	KIT, battery, 28V, lithium-ion	1		16N442	Europe	
11		KIT, module, drive			16P074	Australia	
	16P174	Models 16H960, 16N927	1		16P076	Italy	
	16P175	Models 16N654, 16N655, 16N656	1		16P077	Denmark	
13		KIT, charger, battery			16P078	Swiss	
	*16P177	120V Models 16H960, 16N654	1		16P411	UK	
	**16P178	240V Models 16N927, 16N655, 16N656	1	48	16N510	GEAR, reducer	1
15	16P179	KIT, pump, rebuild	1	49	24P203	HOUSING, drive	1
16	16P180	KIT, accumulator, replacement	1	50	109450	PACKING, o-ring	1
17	16P181	KIT, prime valve, replacement	1	51	111116	PACKING, o-ring, seat	1
18	16P182	KIT, front shutoff valve, replacement	1	52	102982	PACKING, o-ring	1
19	262601	KIT, replacement, handle, prime valve	1	53	16M574	SEAT, assembly	1
20	16M558	SCREW, thumb	1	54	104319	PACKING, o-ring	1
21	16P284	SCREW, cap, socket head	1	55	16M569	NEEDLE, assembly, HD	1
22	16P669	SWIVEL	1	56	111603	PACKING, o-ring, PTFE	1
24	16P451	KIT, repair, intake valve	1	57	16M571	CAP, needle	1
25	16N586	GUIDE, ball, inlet	1	58	16C354	SPRING, compression	1
26	15R867	SPRING, compression	1	59	16P303	PACKING, o-ring	1
27	16N589	BALL, stainless steel	1	60	16M572	RETAINER, spring	1
28	109450	PACKING, o-ring	1	61	16N602	DISK, toggle knob	1
29	16N848	HOUSING, intake	1	62	121817	SCREW, cap, socket HD, m4	1
30	LTX517	TIP, spray 517, RAC X	1	63	248936	KIT, accessory, RAC X	1
31	16P452	KIT, repair, outlet valve	1	64	109575	SCREW, flange, hex HD	2
32	16P935	KIT, repair, pressure knob	1	65	16N180	HOUSING, gear, machining	1
33	16P894	LABEL, control	1				
34	16P285	SCREW, set, cup, socket, HD	2	***		Warning Label Kit (Not Shown)	
35	16P164	KIT, pump, replacement, HD	1		16T263	ENG/FRA/SPA Models 16H960, 16N654	
36	16P183	KIT, motor, replacement	1		16T264	SPA/POR/ITA Model 16N927	
37		KIT, repair, clamshell			16T265	EU Model 16N655	
	16P962	Models 16H960, 16N927	1		16T266	ASIA/ANZ Model 16N656	
	16P961	Models 16N654, 16N655, 16N656	1				
38	246215	GUARD, RAC X	1			* Includes 16N441	
39	246453	OneSeal™, RAC X (5 pack)	1			** Includes 16N441, 16N442, 16P074	
40	16P966	STRAP, shoulder	1			*** Replacement Danger and Warning labels are available at no cost.	
41	237686	WIRE, ground assembly with clamp	1				

# Troubleshooting



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



Problem	Cause	Solution
Sprayer makes no sound when trigger is pulled	Trigger is locked.	Disengage trigger lock. See page 9.
	Status Indicator Light is solid YELLOW when triggering, indicating that the battery charge is low, or the battery is too cold.	Replace with charged battery and place old battery in charger, or allow battery to warm up.
	Status Indicator Light is solid RED when triggering, indicating that the battery is too hot to operate.	Allow battery to cool.
	Battery is not installed or is damaged.	Install battery or replace.
	Prime/Pressure Relief valve is in UP position.	Put valve DOWN to spray position.
	Tip is not in SPRAY position.	Turn tip to SPRAY position.
	Pump is clogged, frozen, or has debris inside.	See Repair manual.
Sprayer makes sound but no material is sprayed when trigger is pulled	Sprayer is not primed or air is in material cup.	Prime the pump. See <b>Starting a new Job (or Refilling the Cup)</b> , page 12.
	Tip is clogged.	See <b>Unclogging Tip/Guard Assembly</b> , page 18.
	Tip filter is clogged.	Remove and clean tip filter. See <b>Install/Service Filter</b> , page 13.
	No or low material in liner.	Refill liner with material and prime the pump.
	Inlet ball is stuck from material residue left in sprayer.	Use a pencil or thin rod to lightly push on inlet valve to make sure it moves up and down freely.
	Outlet ball is stuck from material residue left in sprayer.	Use a thin rod to lightly push outlet valve ball to make sure it moves freely.
		Outlet valve is visible when filter is removed. See <b>Install/Service Filter</b> , page 13.
Pressure setting too low.	Turn pressure control knob clockwise to increase pressure.	



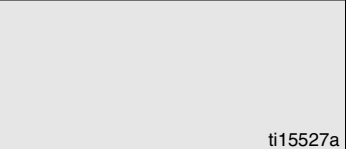

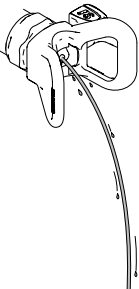


Problem	Cause	Solution
Sprayer sprays with poor results	Tip is partially clogged	See <b>Unclogging Tip/Guard Assembly</b> , page 18.
	Tip filter is partially clogged or damaged.	Clean or replace filter. See page 13.
	Material being sprayed is aerated because it was shaken.	Do <b>NOT</b> shake material. Stir the material or check the manufacturer's recommendation for the material being sprayed.
	Material being sprayed is too cold to spray.	Warm material.
	Pressure adjustment is not set correctly.	Readjust pressure setting. See <b>Setting Pressure</b> , page 15.
	Material being sprayed is too thick.	Thin material with proper reducer recommended by material manufacturer.
	Incorrect tip for application of material.	Change tip size.
	Tip is worn or damaged.	Replace tip.
	Tip is not in correct position.	Rotate tip to SPRAY position.
	Inlet or outlet valves are worn.	See Repair manual.
	Prime/Pressure Relief valve is worn out.	Replace Prime/Pressure Relief valve.
	Accumulator is frozen and not functioning properly.	Check to see if accumulator moves when spraying. If frozen, replace accumulator.
Battery is discharged but charger still displays green light when battery is inserted.	Damaged battery.	Replace battery.
Battery does not last long.	Battery life varies with material, tip size, pressure, and speed setting.	See <b>Charging the Battery</b> , page 7.
Prime/relief valve is moving and making a popping noise while spraying.	Tip is clogged.	Unclog tip.
	Pressure is too high	Turn pressure control knob counter-clockwise.
		Increase tip size.
	Front valve housing is clogged.	Remove front valve housing and clean.
	Tip is not in correct position.	Rotate Tip to SPRAY position.
Accumulator is frozen and not functioning properly.	Check to see if accumulator moves when spraying. If frozen, replace accumulator.	
Pump keeps losing prime.	Air is getting into the bag system	Ensure lid is tight.
		Ensure liner is not pinched and creating an air leak path.
		Change lid and liner. Retry.
	Material is too thick.	Properly mix material to shear thin the material.
		Warm up material to reduce viscosity.
		Thin material with proper reducing agent.
	Prime/Pressure Relief valve is not properly sealed.	Make sure Prime/Pressure Relief valve is fully assembled with thread sealant applied to threads.

Problem	Cause	Solution
Paint leaks from bottom of pump module.	Piston seal failure.	Replace pump module. See Repair manual.
		Replace piston seals. See Repair manual.
Water or thin cleaning fluids drip from bottom of pump module.	Thin fluids commonly drip while spraying at high pressure.	After storage, the piston seals need to be energized prior to next use to prevent leakage. To energize, follow steps below: <ul style="list-style-type: none"> <li>a. Prime system with flushing fluid.</li> <li>b. Spray at low pressure setting "1" for 10 seconds.</li> <li>c. Drain fluid. You are now ready to spray.</li> </ul>
Cannot squeeze bag to extinguish air out of liner with a new lid.	O-ring has set in check valve.	Lightly poke bottom of check valve on underside of lid to release valve.
	O-ring in check valve is enlarged from solvents.	Replace lid.
	Check valve is frozen from cured material.	Replace lid.
Sprayer shuts down after 1.5 seconds of spraying and yellow light flashes.	Pressure is too high.	Turn pressure control knob counter-clockwise.
		Increase tip size.
Liquid is squirting out of accumulator.	Accumulator is worn out.	Replace accumulator.

## Spray Pattern Diagnostics

Problem	Cause	Solution
Spray pattern is pulsating: 	Operator is moving too fast while spraying.	Slow speed of movement.
	Tip or tip filter is clogged.	Unclog tip or clean tip filter, page 18.
Spray pattern has tails: 	Pressure control is too low.	Turn up pressure control.
	Incorrect tip for application of material.	Change tip.
	Inlet or outlet valves are worn.	See Repair manual.

Problem	Cause	Solution
<p>Spray pattern has dripping:</p> 	Sprayer is moving too slow for material.	Move sprayer faster while spraying.
	Sprayer is too close to target surface.	Move sprayer away from surface 10 in. (25 cm)
	Holding trigger while changing spray direction.	Release trigger when changing directions.
	Incorrect tip for application of material.	Replace tip.
	Pressure control is too high.	Turn down pressure control.
	Tip is worn or damaged.	Replace tip.
<p>Spray pattern is too narrow:</p>  <p>ti15523a</p>	Sprayer is too close to target surface.	Move sprayer away from surface 10 in. (25 cm)
	Incorrect tip for application of material.	Replace tip.
	Tip is worn or damaged.	Replace tip.
<p>Spray pattern is too wide:</p>  <p>ti15527a</p>	Sprayer is too far away from target surface.	Move sprayer closer to surface.
	Incorrect tip for application of material.	Replace tip.
<p>Spray pattern “spits” at the end or beginning:</p>  <p>ti15525a</p>	Excess material has accumulated on Spray Tip/Guard Assembly.	See <b>Shutdown and Cleaning</b> , page 19.
	Tip filter is partially clogged or damaged.	Clean or replace filter. See page 13.
	Front valve is slow to react.	Clean front valve.
<p>Tip continues to drip or ooze material after trigger is released:</p>  <p>ti15528a</p>	Front valve is damaged or worn out.	Replace front valve.
	Filter is partially clogged or damaged.	Clean or replace filter. See page 13.
	Tip/Guard Assembly not threaded completely onto sprayer.	See <b>Install Tip/Guard Assembly</b> , page 14.
	Seat is worn.	Replace front valve seat housing.

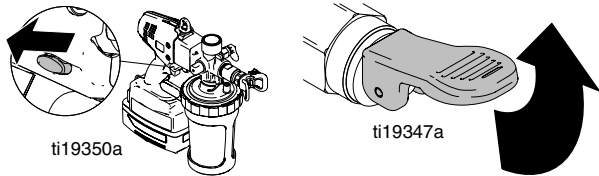
# Repair

## Inlet Valve

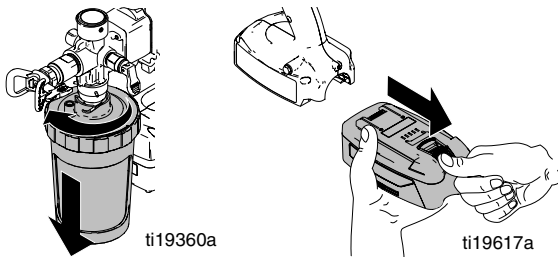


### Removal

1. Engage trigger lock and put prime/pressure relief valve in UP position to relieve pressure.

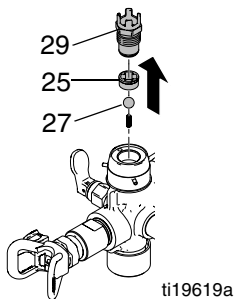


2. Remove material cup and battery.

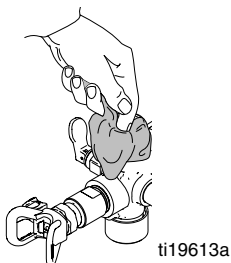


3. Hold sprayer upside-down and use wrench or socket to loosen fitting. Remove inlet fitting (29), inlet ball (27), spring, and ball guide (25).

**NOTE:** Use needle-nose pliers to remove spring and ball guide if needed.

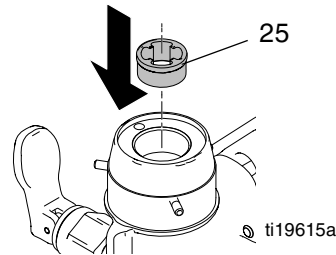


4. Clean as much excess material from inlet cavity as possible.

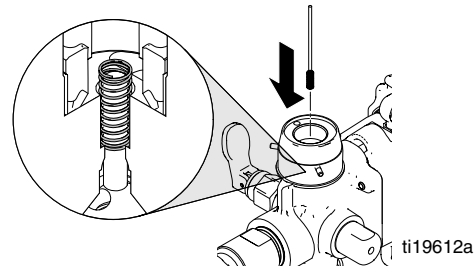


### Installation

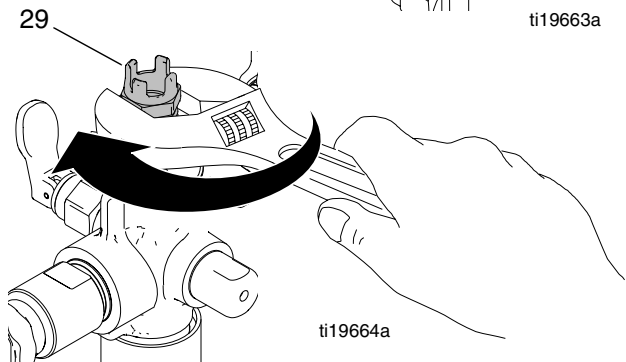
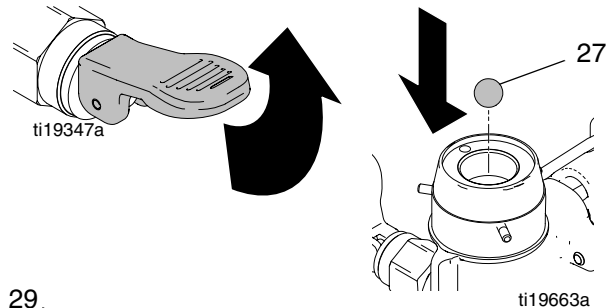
1. Insert ball guide (25) with smaller diameter inserted first.



2. Use a thin wire to assemble spring into inlet cavity.



3. Make sure prime/pressure relief valve is in UP position. Insert ball (27) and assemble inlet fitting (29) using wrench or socket. Tighten to 140 in-lb (15.8 N•m).

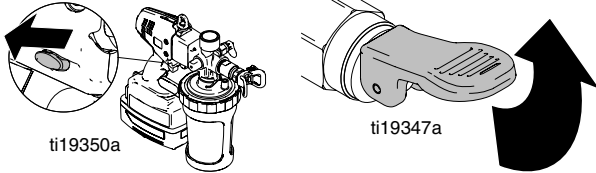


# Outlet Valve

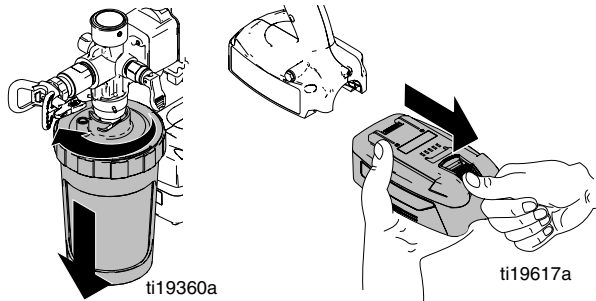


## Removal

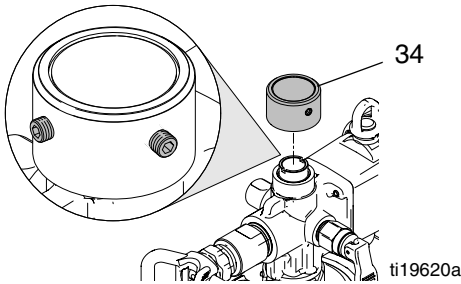
1. Engage trigger lock and put prime/pressure relief valve in UP position to relieve pressure.



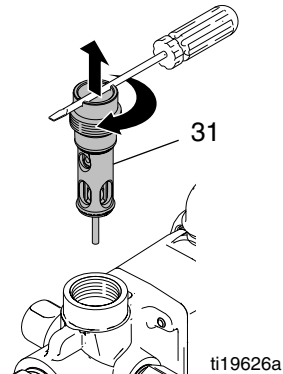
2. Remove material cup and battery.



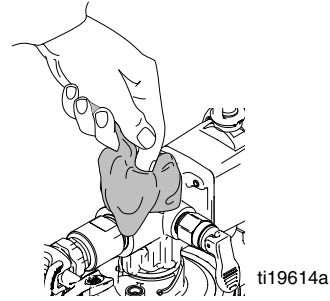
3. Loosen set screws (34) from pressure control knob and remove knob.



4. Use thin screwdriver or allen wrench to turn outlet valve (31) clockwise and remove.



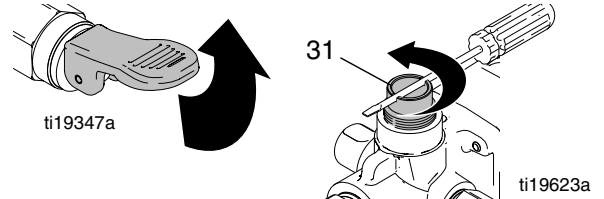
5. Clean as much excess material from outlet valve cavity as possible.



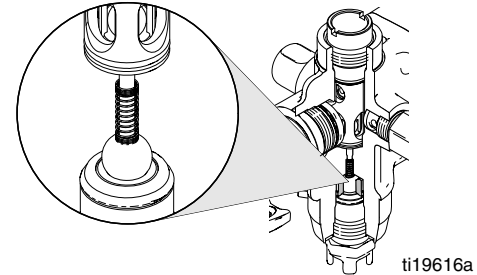
## Installation

**NOTE:** Inlet valve must be fully installed before outlet valve can be installed.

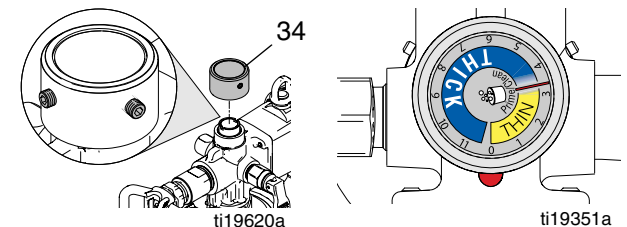
1. Make sure prime/pressure relief valve is in UP position. Use a thin screwdriver or allen wrench and turn outlet valve (31) counter-clockwise to install.



2. Thread outlet valve in until it touches inlet ball. **DO NOT TIGHTEN.** Outlet valve should only be threaded until inlet ball does not move when touched.



3. Install pressure control knob. Turn knob fully counter-clockwise until it stops ("0" setting will line up with red dot). Torque set screws (34) to 40 in-lb (4.5 N•m).

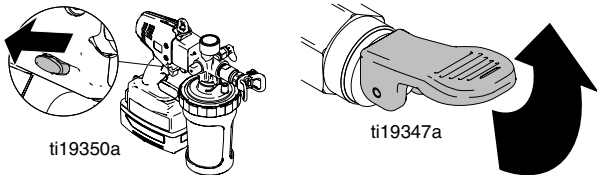


# Pressure Control Knob

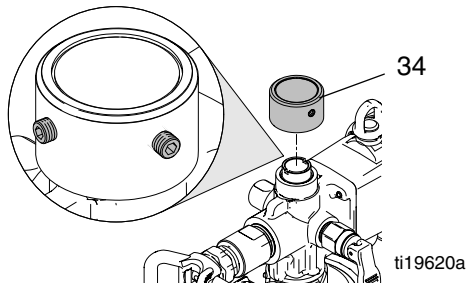


## Removal

1. Engage trigger lock and put prime/pressure relief valve in UP position to relieve pressure.



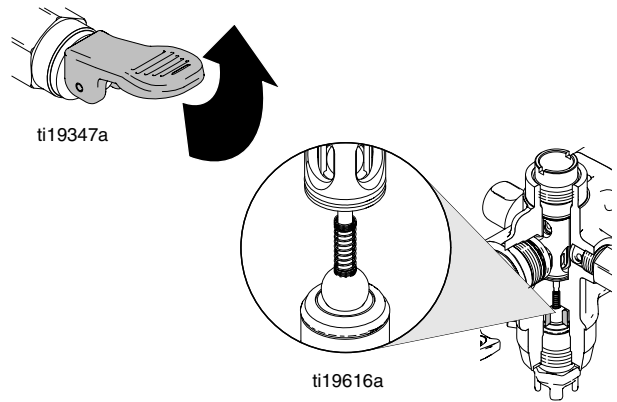
2. Loosen two set screws (34) from pressure control knob and remove knob.



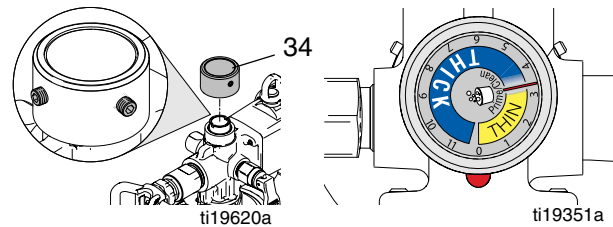
## Installation

**NOTE:** Inlet valve must be fully installed before outlet valve can be installed.

1. Make sure prime/pressure relief valve is in UP position. Use a thin screwdriver or allen wrench to turn outlet valve counter-clockwise until it touches inlet ball. **DO NOT TIGHTEN.** Outlet valve should only be threaded until inlet ball does not move when touched.



2. Install pressure control knob. Turn knob fully counter-clockwise ("0" setting will line up with red dot). Torque set screws (34) to 40 in-lb (4.5 N•m).

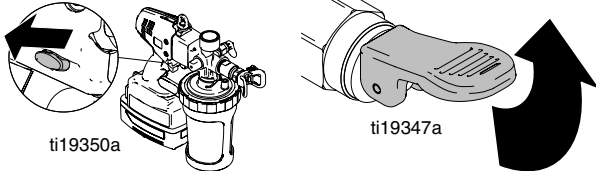


## Pump Module/Drive Module

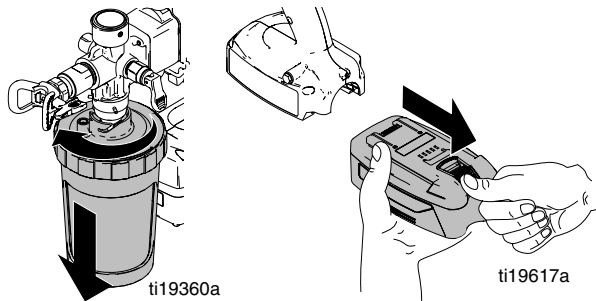


### Removal

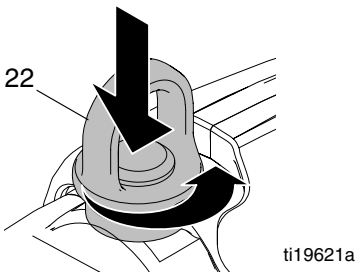
1. Engage trigger lock and put prime/pressure relief valve in UP position to relieve pressure.



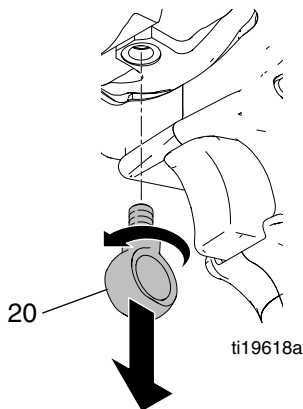
2. Remove material cup and battery.



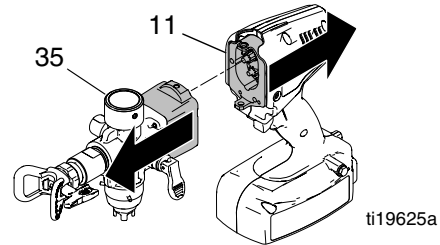
3. Unscrew swivel bolt (22) by pressing down and turning it counter-clockwise. Use tool if needed.



4. Unscrew bolt (20). Use tool if needed.

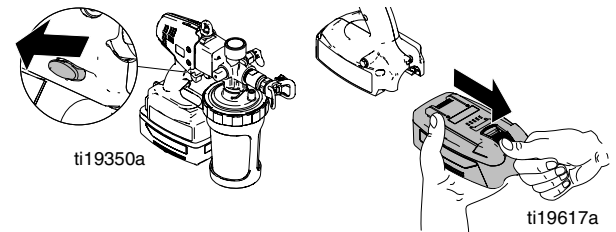


5. Remove pump module (35) from drive module (11).

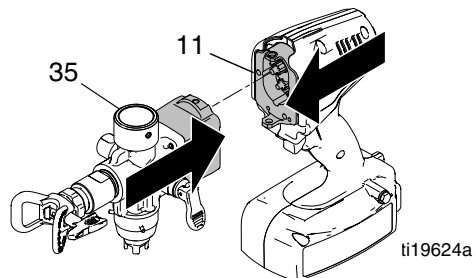


### Installation

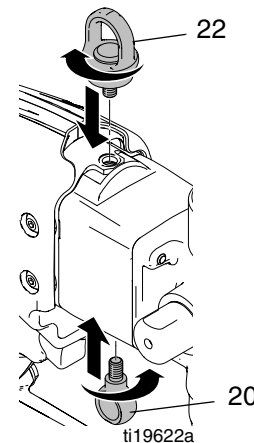
1. Engage trigger lock and remove battery from unit.



2. Assemble pump module (35) to drive module (11). Gears must properly engage for assembly. Slightly rotate pump assembly as needed for proper engagement.



3. Assemble swivel bolt (22) and bolt (20). Partially thread both bolts before tightening either bolt. Use tool to tighten and make sure bolts are secure. **NOTE:** Make sure there is no gap between the two housings when assembling bolts.

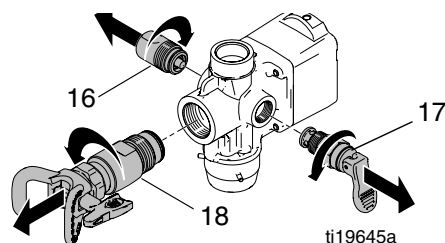


## Pump Rebuild Kit

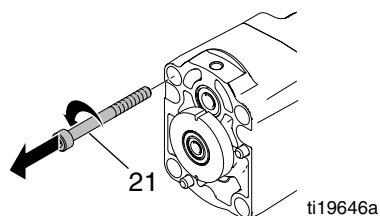


### Removal

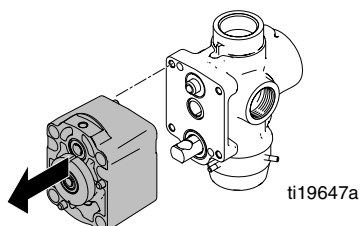
1. Remove pump module from drive module. See **Pump Module/Drive Module**, page 31.
2. Remove outlet valve from pump module and set aside. See **Outlet Valve**, page 29.
3. Remove inlet valve from pump module and set aside. See **Inlet Valve**, page 7.
4. Remove accumulator (16), front valve (18), and prime valve (17) from pump module and set aside.



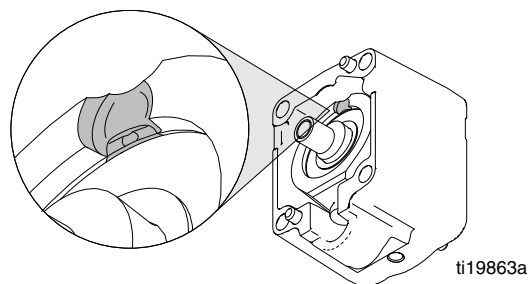
5. Remove four bolts (21) from pump module.



6. Separate pump portions as shown below.

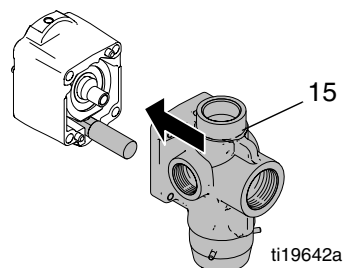


7. Inspect wobble drive assembly. If bearing race is visible as shown below, replace wobble drive assembly.

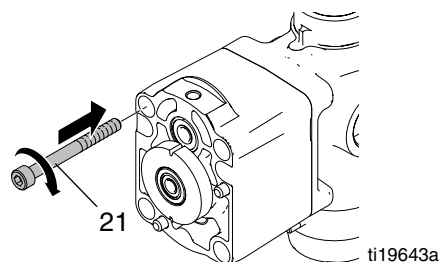


### Installation

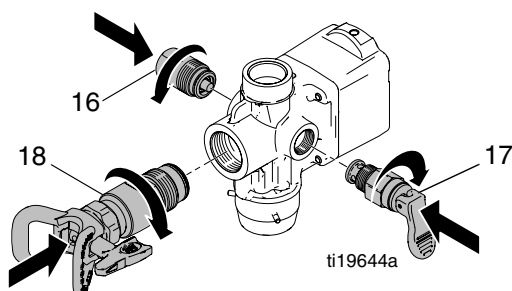
1. Hold rebuild kit (15) and insert wobble drive into piston pocket and connect together.



2. Install four bolts (21). Torque to 60 in-lb (6.7 N•m).



3. Install accumulator (16). Torque to 140 in-lb (15.8 N•m). Apply thread sealant to prime valve (17) and install. Torque to 140 in-lb (15.8 N•m). Install front valve (18) fully tighten.



4. Install inlet valve to pump module. See **Inlet Valve**, page 7.
5. Install outlet valve to pump module. See **Outlet Valve**, page 29.
6. Install pump module to drive module. See **Pump Module/Drive Module**, page 31.

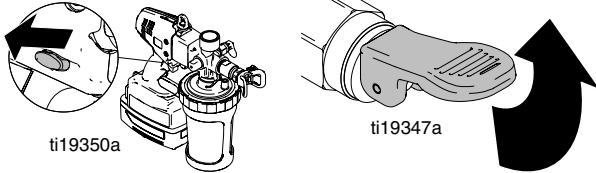


# Clamshell

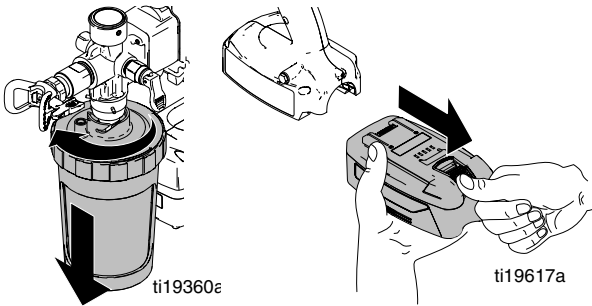


## Removal

1. Engage trigger lock and put prime/pressure relief valve in UP position to relieve pressure.

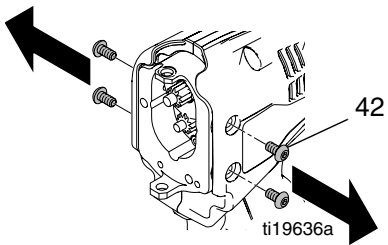


2. Remove material cup and battery.

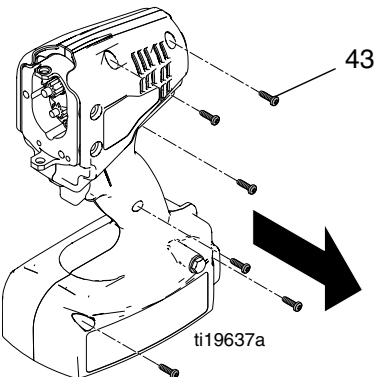


3. Remove pump module from drive module. See **Pump Module/Drive Module**, page 31.

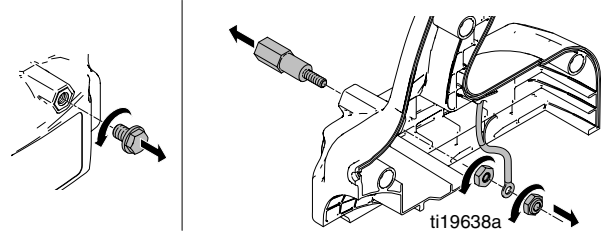
4. Remove screws (42) from motor housing.



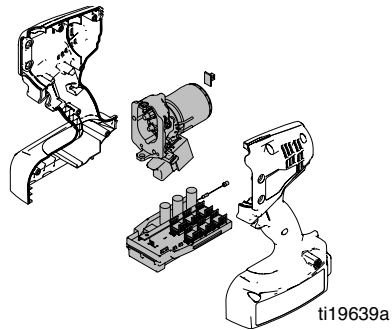
5. Remove screws (43) from clamshell.



6. Remove nut from ground stud. Remove ring terminal and unscrew second nut from ground stud. Remove ground stud from clamshell.

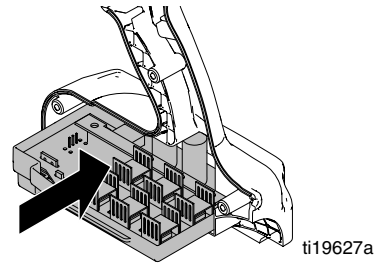


7. Carefully remove motor, motor housing, switch, control board, indicator lights, trigger lock, and static wick from clamshell.

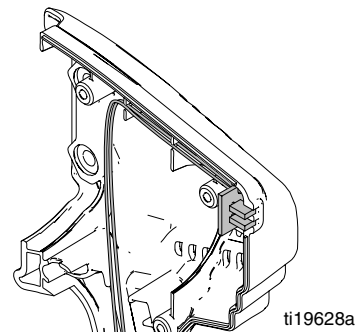


## Installation

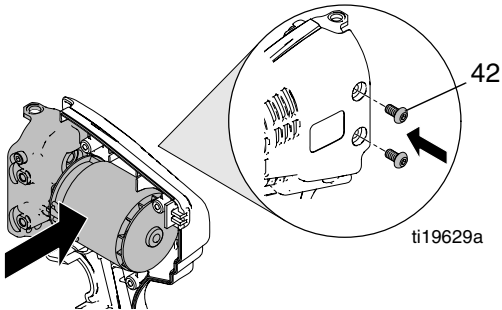
1. Insert control board into right half of clamshell.



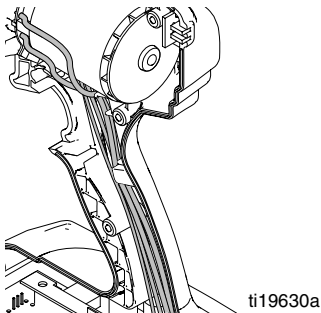
2. Install two LED lights into designated slot in right half of clamshell. Push wire bundle into slots in clamshell.



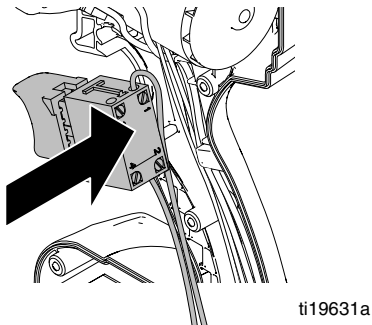
- Set motor housing into right half of clamshell and loosely install two bolts (42) to motor housing as shown below.



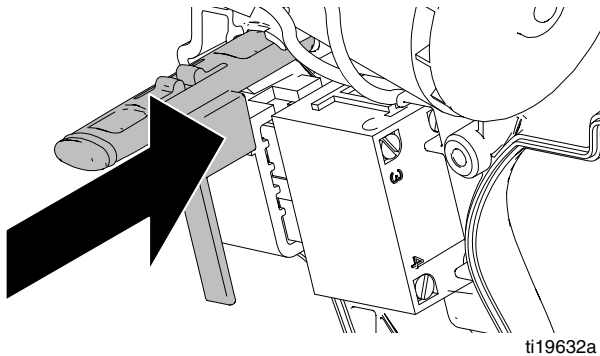
- Route wires from motor down the handle.



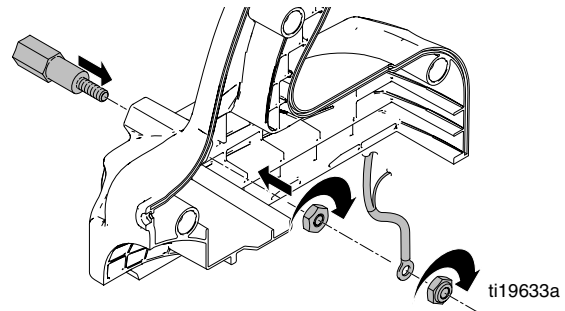
- Install trigger over top of wires. Route trigger wires behind trigger.



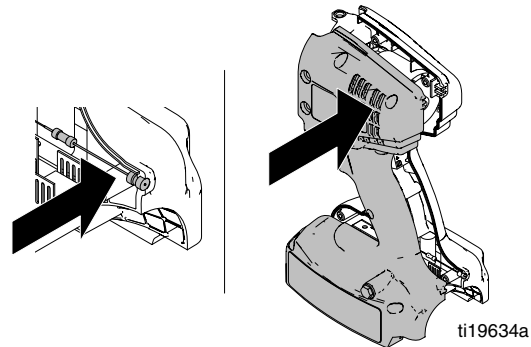
- Insert trigger lock over trigger with o-ring facing out.



- Press ground stud into left half of clamshell. Tighten nut onto stud. Install ground terminal to stud and tighten second nut onto stud. Install wire up along handle.



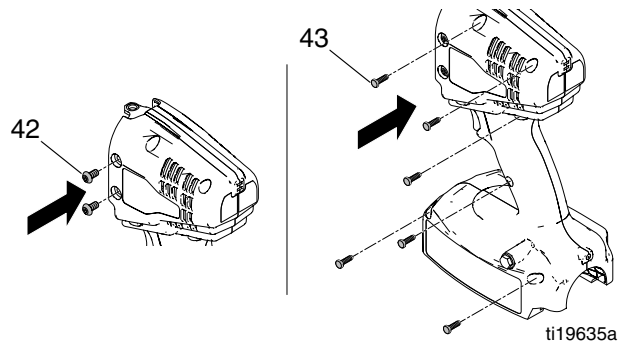
- Insert static wick into right half of clamshell and install left clamshell to right clamshell.



**NOTICE**

Wires can become damaged when pinched between clamshell halves. Make sure no wires are pinched during reassembly.

- Install bolts (42) to motor housing and install screws (43) to connect clamshell halves. Make sure LED lights and static wick are securely in place. Tighten bolts (42) to 50 in-lb (5.6 N•m) and screws (43) to 9 in-lb (1 N•m).



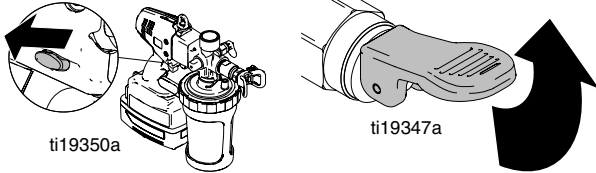
- Install pump module to drive module. See **Pump Module/Drive Module**, page 31.

# Motor/Control Board Replacement Kit

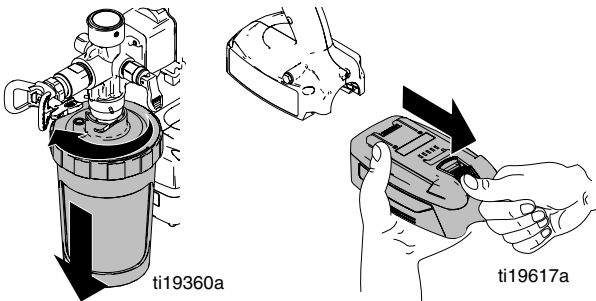


## Removal

1. Engage trigger lock and put prime/pressure relief valve in UP position to relieve pressure.

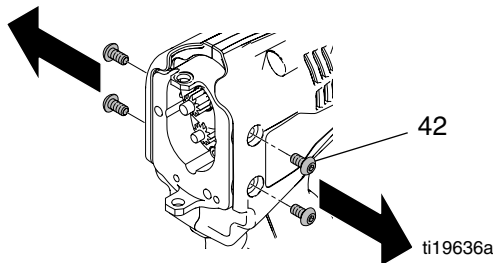


2. Remove material cup and battery.

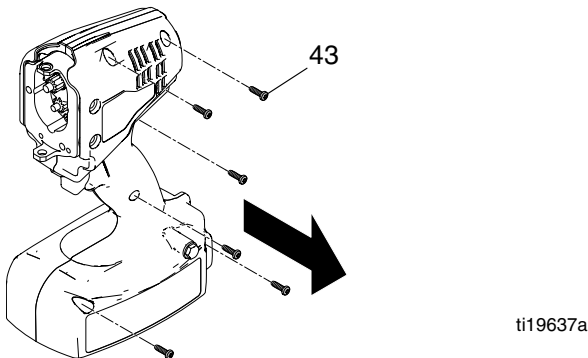


3. Remove pump module from drive module. See **Pump Module/Drive Module**, page 31.

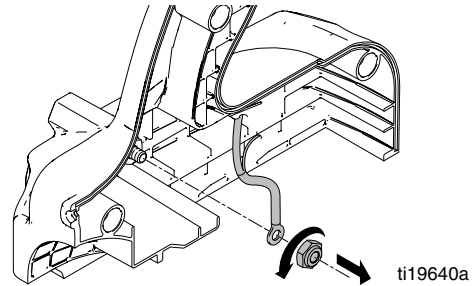
4. Remove four bolts (42) from motor housing.



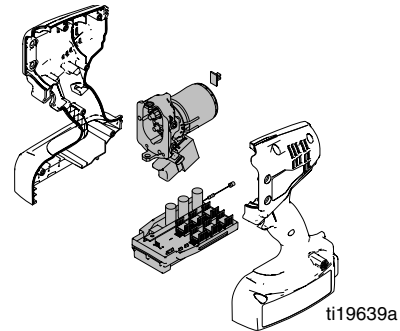
5. Remove screws (43) from clamshell.



6. Unscrew nut from ground stud and remove ring terminal. Leave other nut secured to ground stud.

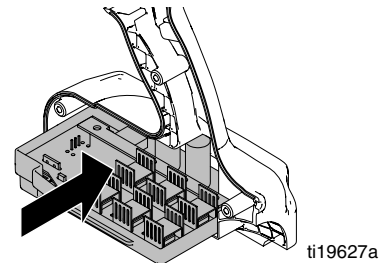


7. Remove motor, motor housing, switch, control board, indicator lights, trigger lock, and static wick from clamshell.

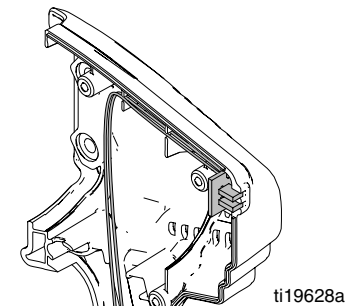


## Installation

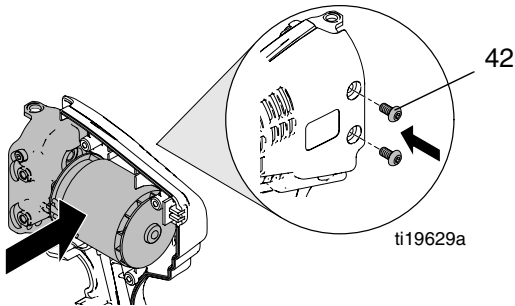
1. Insert control board into right half of clamshell.



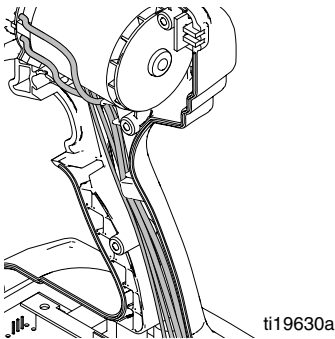
2. Install two LED lights into designated slot in right half of clamshell. Push wire bundle into slots in clamshell.



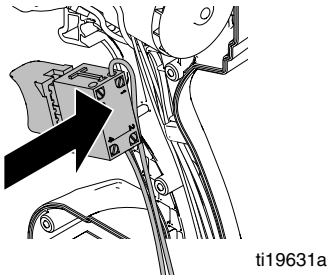
3. Set motor housing into right half of clamshell and loosely install two bolts (42) to motor housing as shown below.



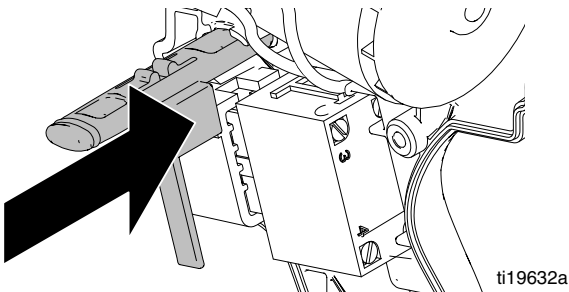
4. Route wires from motor down the handle.



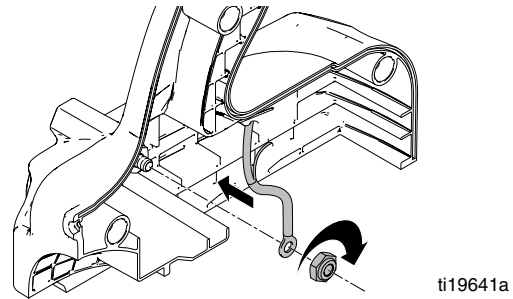
5. Assemble trigger over top of wires. Route trigger wires behind trigger.



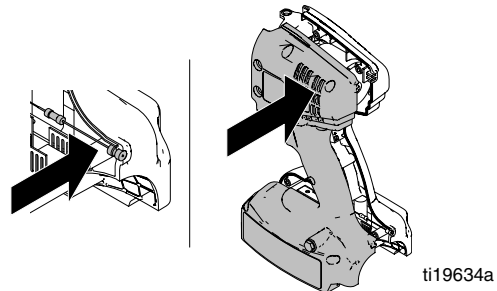
6. Insert trigger lock over trigger with o-ring facing out.



7. Install ground terminal to stud and tighten second nut onto stud. Install wire up along handle.



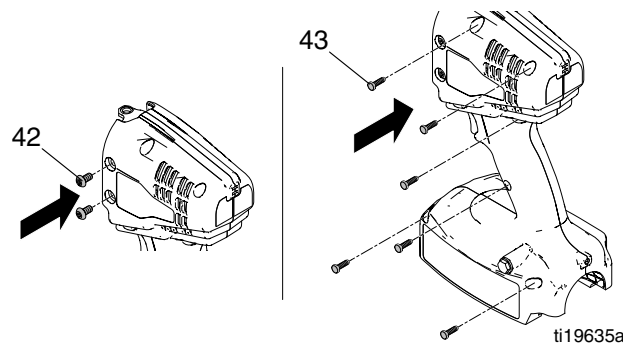
8. Insert static wick into right half of clamshell and install left clamshell to right clamshell.



**NOTICE**

Wires can become damaged when pinched between clamshell halves. Make sure no wires are pinched during reassembly.

9. Install two bolts (42) to motor housing and install screws (43) to connect clamshell halves. Make sure LED lights and static wick are securely in place. Tighten bolts (42) to 50 in-lb (5.6 N•m) and screws (43) to 9 in-lb (1 N•m).



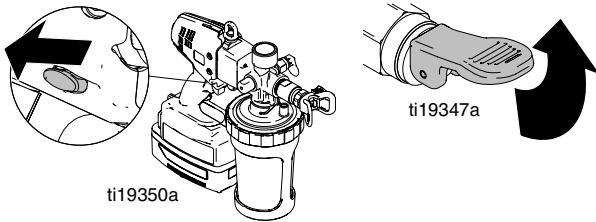
10. Install pump module into drive module. See **Pump Module/Drive Module**, page 31.

## Switch Assembly

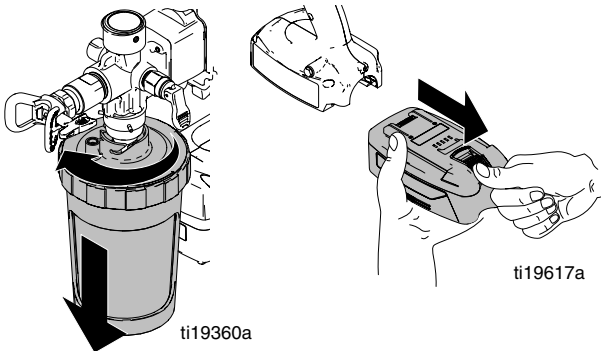


### Removal

1. Engage trigger lock and put prime/pressure relief valve in UP position to relieve pressure.

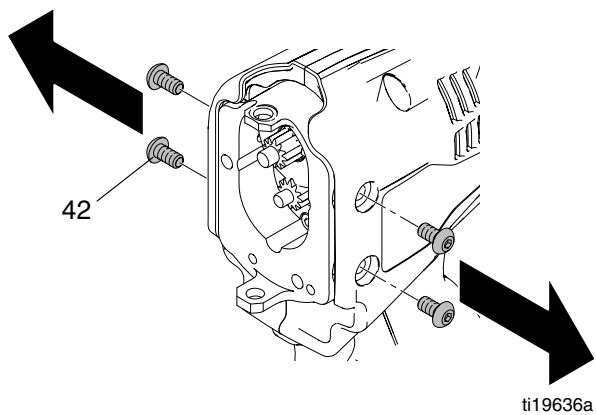


2. Remove material cup and battery.

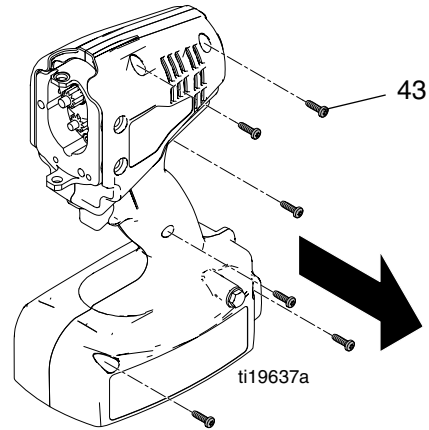


3. Remove pump module from drive module. See **Pump Module/Drive Module**, page 31.

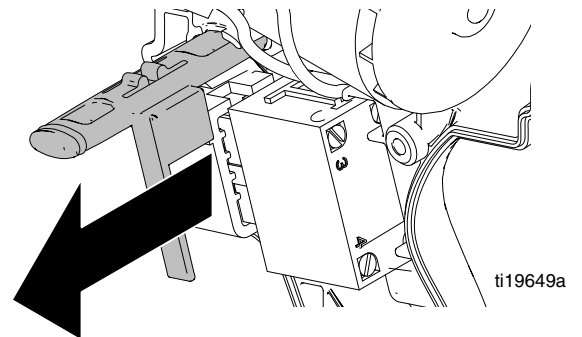
4. Remove four bolts (42) from motor housing.



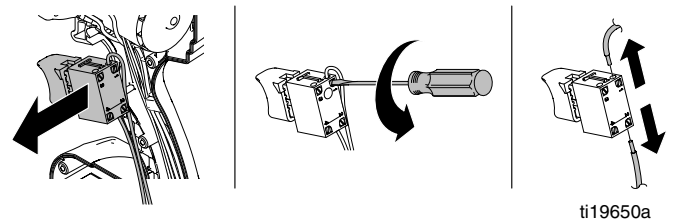
5. Remove eight screws (43) from clamshell.



6. Remove trigger lock from assembly.

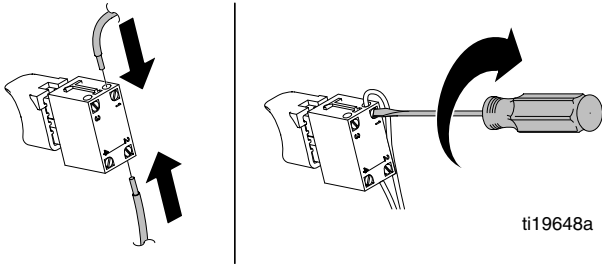


7. Remove trigger switch from clamshell and loosen screws connecting wires to switch.

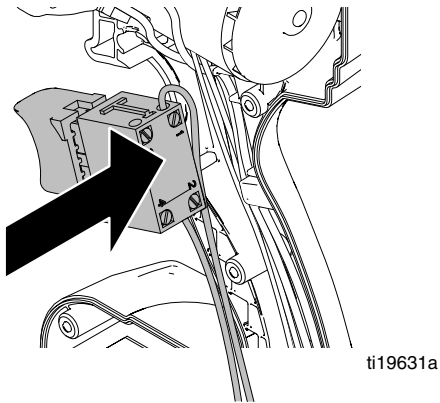


## Installation

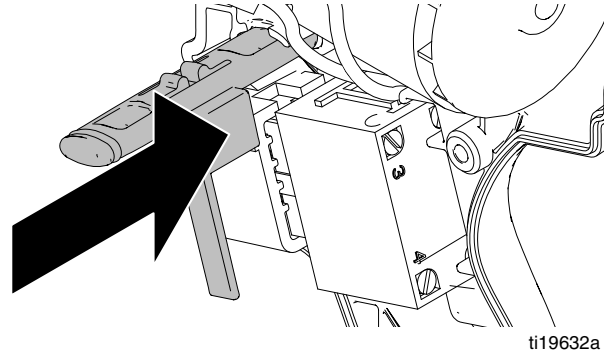
1. Insert wires and tighten screws to connect wires into slots 1 and 2 of trigger switch.



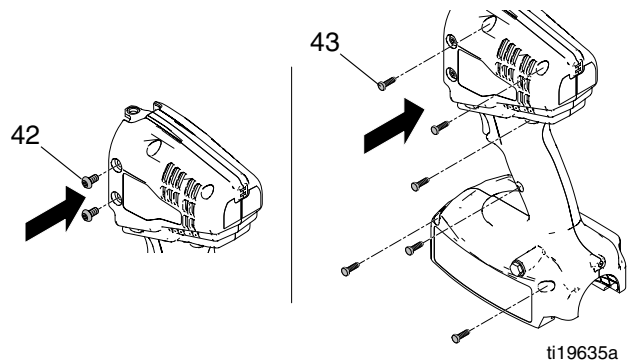
2. Install trigger over top of wires. Route trigger wires behind trigger.



3. Install trigger lock over trigger with o-ring facing out.



4. Install bolts (42) into motor housing and install screws (43) to connect the clamshell halves. Make sure LED lights and static wick are properly in place. Tighten all four bolts (42) to 50 in-lb (5.6 N•m) and screws (43) to 9 in-lb (1 N•m).



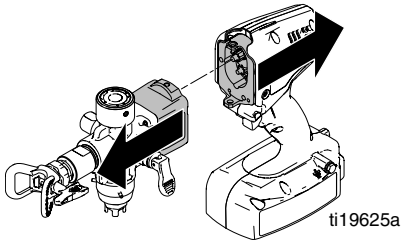
5. Install pump module into drive module. See **Pump Module/Drive Module**, page 31.

# Gear Replacement

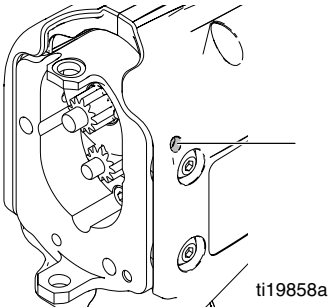


## Removal

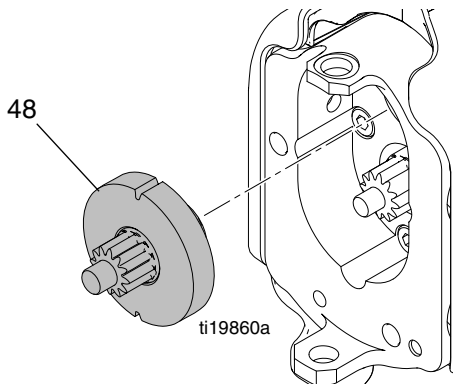
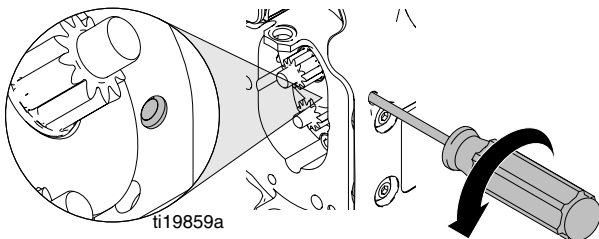
1. Remove pump module from drive module. See **Pump Module/Drive Module**, page 31.



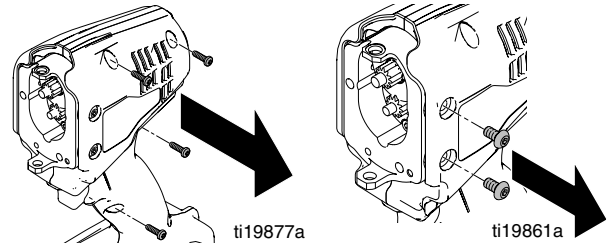
2. If unit has accessible retaining bolt shown below, proceed to step 3. If unit does not have accessible retaining bolt, proceed to step 4.



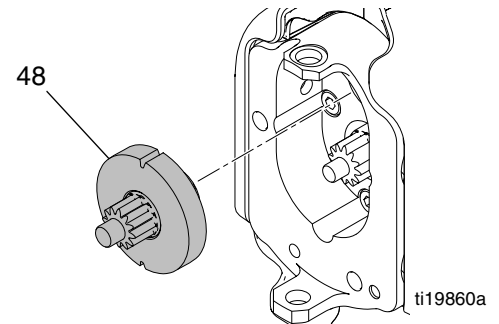
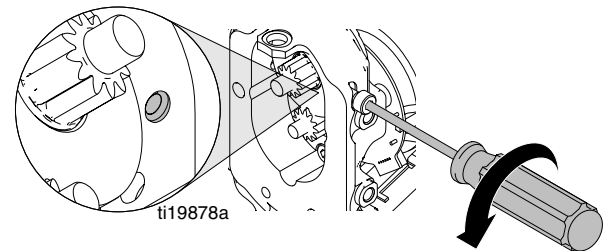
3. Unscrew retaining bolt until gear (48) is no longer retained. Remove gear from drive. Proceed to Installation.



4. Remove four screws holding clamshells together and two bolts connecting drive to clamshell.

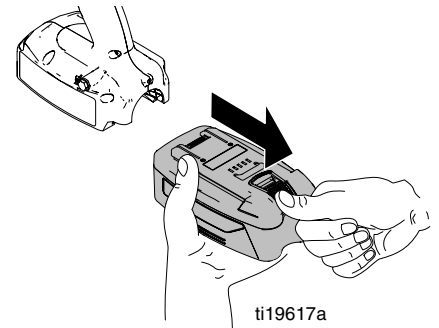
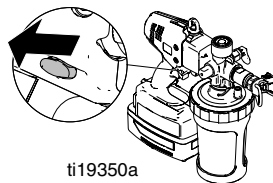


5. Pull the clamshell up and unscrew retaining bolt until gear (48) is no longer retained. Remove gear from drive. Proceed to Installation.

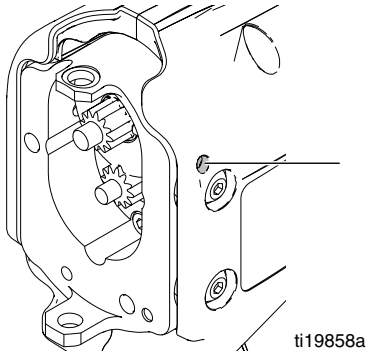


## Installation

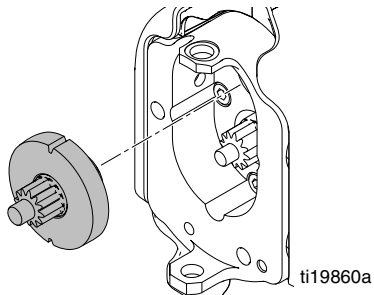
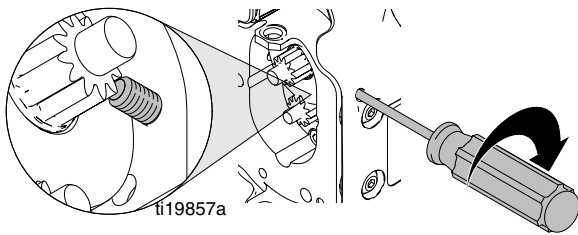
1. Engage trigger lock and remove battery from unit.



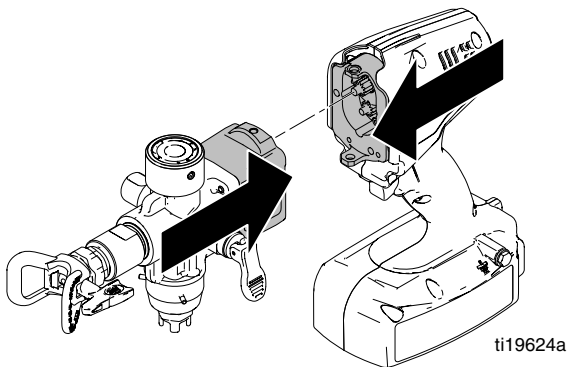
2. If unit has accessible retaining bolt shown below, proceed to step 3. If unit does not have accessible retaining bolt, proceed to step 5.



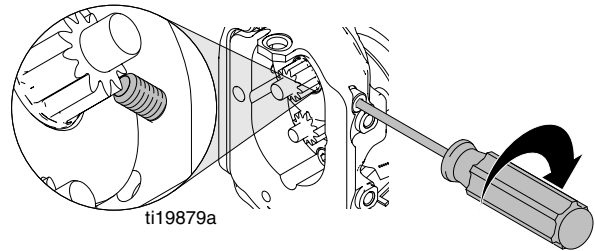
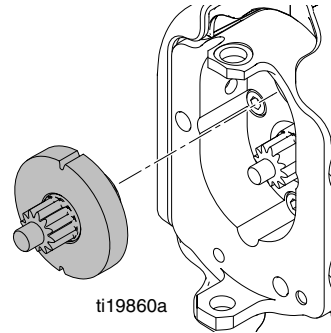
3. Install new gear into drive housing. Screw retaining bolt into drive housing to retain gear. Torque to 30 in-lb (3.4 N•m).



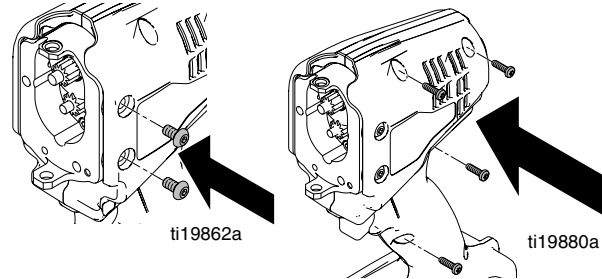
4. Install pump module to drive module. See **Pump Module/Drive Module**, page 31.



5. Install new gear into drive housing. Pull the clamshell up and screw in retaining bolt to retain gear. Torque to 30 in-lb (3.4 N•m).



6. Install two bolts connecting drive to clamshell. Torque to 50 in-lb (5.6 N•m). Install four screws connecting clamshell halves. Torque to 9 in-lb (1.0 N•m).



7. Install pump module to drive module. See **Pump Module/Drive Module**, page 31.



# Technical Data

Models 16H960, 16N654, 16N927, 16N655, 16N656		
	U.S.	Metric
<b>Sprayer:</b>		
Adjustable Pressure Range	1000 to 4000 psi	69 to 276 bar, 6.9 to 27.6 MPa
Maximum Working Pressure	4000 psi	276 bar, 26.7 MPa
Weight	8.6 lb	3.9 kg
<b>Dimensions:</b>		
Length	14.5 in.	36.8 cm
Width	5.6 in.	14.2 cm
Height	12.8 in.	32.5 cm
Storage Temperature Range ♦❖	32° to 113° F	0° to 45° C
Operating Temperature Range ✓	40° to 90° F	4° to 32° C
Battery Charging Temperature Range	50° to 113° F	10° to 45° C
Storage Humidity Range	0% to 95% relative humidity, non-condensing	
Sound Pressure Level	LpA = 79.0 dB, Sound Power = LWA = 90.0	
Vibration Level Acceleration	Less than 8.2 feet/s <sup>2</sup> 2.5 m/s <sup>2</sup> ††	
Wetted Parts	Brass, aluminum, 301 sstl, 440c sstl, carbide, FKM, TFE, PTFE, LDPE, UHMWPE, Polypropylene, Nylon 6/6	
<b>Charger:</b>		
Charging Time	50 minutes to 80%, 75 minutes to 100%	
Power Source	120 VAC / 240 VAC	
<b>Battery:</b>		
Voltage	28 VDC, Lithium Ion	
Capacity	2.4 Ah, 67 Wh	

- ♦ Pump damage will occur if fluid freezes in pump.
- ❖ Damage to plastic parts may result if impact occurs in low temperature conditions.
- ✓ Changes in coating viscosity at very low or very high temperatures can affect sprayer performance.
- † per ISO 3744 measured at 3.1 feet (1m)
- †† per ISO 5349, no load condition

## FCC Declaration for Battery Charger

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**WARNING:** Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. The equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does not cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measure:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help





# 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.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

## Graco Information

For the latest information about Graco products, visit [www.graco.com](http://www.graco.com).

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

*All written and visual data contained in this document reflects the latest product information available at the time of publication. Graco reserves the right to make changes at any time without notice.*

*For patent information, see [www.graco.com/patents](http://www.graco.com/patents).*

Original instructions. This manual contains English. MM 3A2308

**Graco Headquarters:** Minneapolis  
**International Offices:** Belgium, China, Japan, Korea

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