

# RentalPro 230 HDR Electric Airless Sprayer

333402A  
EN

*For Portable Airless Spraying of Architectural Coatings and Paints.*

3300 psi (227 bar, 22.7 MPa) Maximum Working Pressure



## Important Safety Instructions

Read all warnings and instructions in this manual, and on the unit, including the power cord. Save these instructions.

## Model 24V658

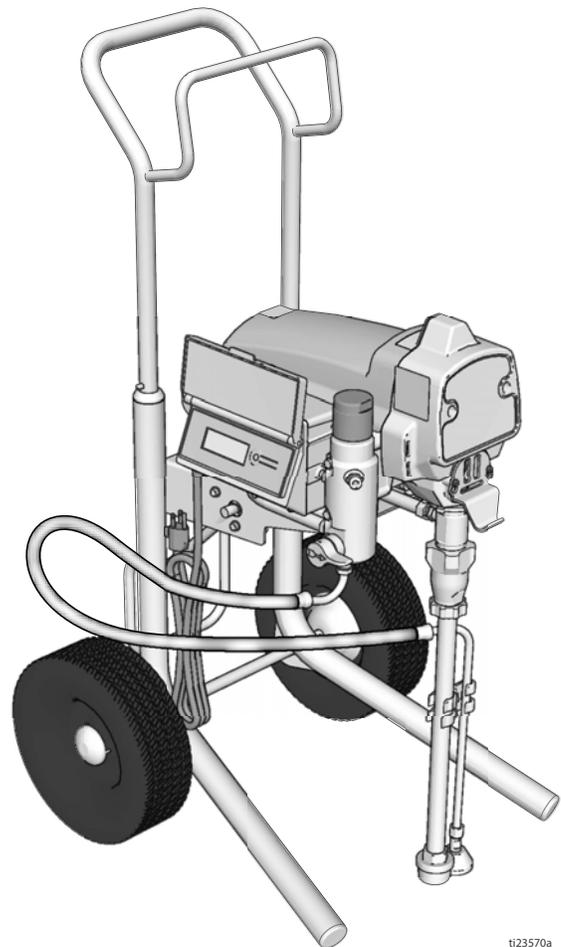
### Related Manuals:



312830



309250



Intertek  
110474

Certified to CAN/CSA C22.2 No. 68  
Conforms to UL 1450

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# Warnings

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

## ⚠ WARNING

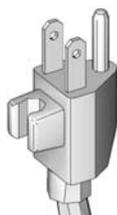


### GROUNDING

This product must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This product is equipped with a cord having a grounding wire with an appropriate grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

- Improper installation of the grounding plug is able to result in a risk of electric shock.
- When repair or replacement of the cord or plug is required, do not connect the grounding wire to either flat blade terminal.
- The wire with insulation having an outer surface that is green with or without yellow stripes is the grounding wire.
- Check with a qualified electrician or serviceman when the grounding instructions are not completely understood, or when in doubt as to whether the product is properly grounded.
- Do not modify the plug provided; if it does not fit the outlet, have the proper outlet installed by a qualified electrician.
- This product is for use on a nominal 120V circuit and has a grounding plug similar to the plugs illustrated in the figure below.

120V US



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

#### Extension Cords:

- Use only a 3-wire extension cord that has a grounding plug and a grounding receptacle that accepts the plug on the product.
- Make sure your extension cord is not damaged. If an extension cord is necessary, use 12 AWG (2.5 mm<sup>2</sup>) minimum to carry the current that the product draws.
- An undersized cord results in a drop in line voltage and loss of power and overheating.

# ! WARNING



## FIRE AND EXPLOSION HAZARD

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

- Do not spray flammable or combustible materials near an open flame or sources of ignition such as cigarettes, motors, and electrical equipment.
- Paint or solvent flowing through the equipment is able to result in static electricity. Static electricity creates a risk of fire or explosion in the presence of paint or solvent fumes. All parts of the spray system, including the pump, hose assembly, spray gun, and objects in and around the spray area shall be properly grounded to protect against static discharge and sparks. Use Graco conductive or grounded high-pressure airless paint sprayer hoses.
- Verify that all containers and collection systems are grounded to prevent static discharge. Do not use pail liners unless they are antistatic or conductive.
- Connect to a grounded outlet and use grounded extensions cords. Do not use a 3-to-2 adapter.
- Do not use a paint or a solvent containing halogenated hydrocarbons.
- Keep spray area well-ventilated. Keep a good supply of fresh air moving through the area. Keep pump assembly in a well ventilated area. Do not spray pump assembly.
- Do not smoke in the spray area.
- Do not operate light switches, engines, or similar spark producing products in the spray area.
- Keep area clean and free of paint or solvent containers, rags, and other flammable materials.
- Know the contents of the paints and solvents being sprayed. Read all Material Safety Data Sheets (MSDS) and container labels provided with the paints and solvents. Follow the paint and solvents manufacturer's safety instructions.
- Fire extinguisher equipment shall be present and working.
- Sprayer generates sparks. When flammable liquid is used in or near the sprayer or for flushing or cleaning, keep sprayer at least 20 feet (6 m) away from explosive vapors.



## SKIN INJECTION HAZARD

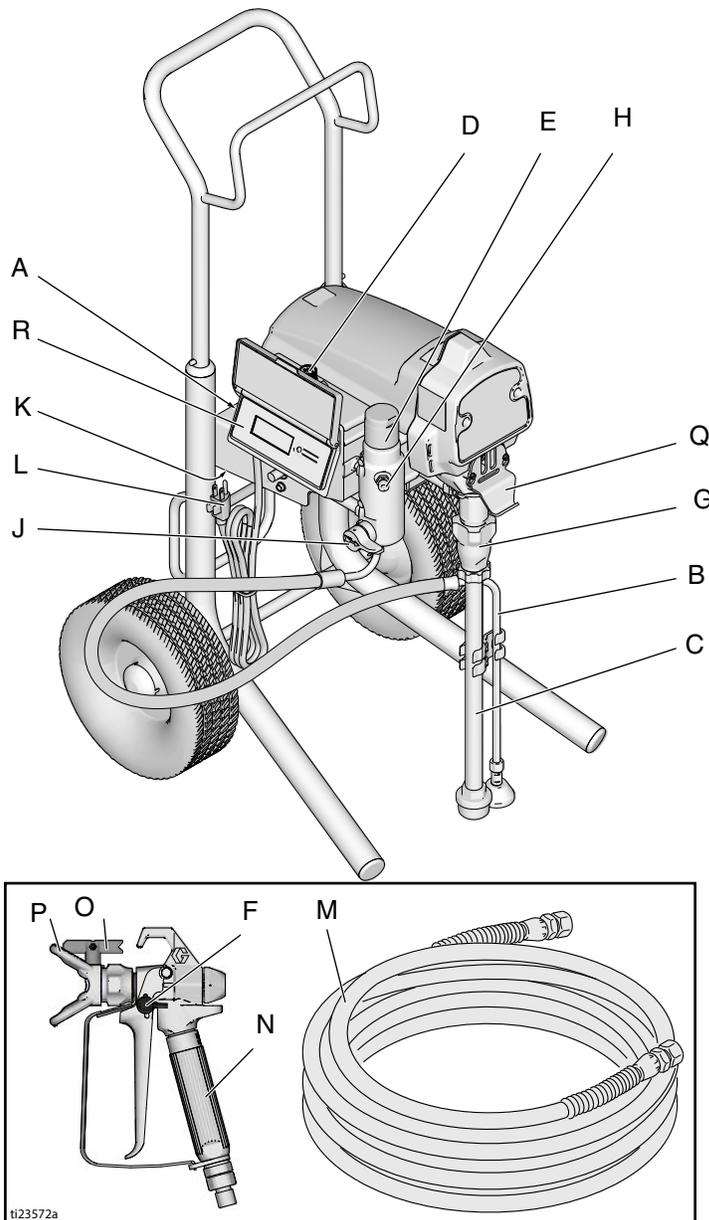
High-pressure spray is able to inject toxins into the body and cause serious bodily injury. In the event that injection occurs, **get immediate surgical treatment.**

- Do not aim the gun at, or spray any person or animal.
- Keep hands and other body parts away from the discharge. For example, do not try to stop leaks with any part of the body.
- Always use the nozzle tip guard. Do not spray without nozzle tip guard in place.
- Use Graco nozzle tips.
- Use caution when cleaning and changing nozzle tips. In the case where the nozzle tip clogs while spraying, follow the **Pressure Relief Procedure** for turning off the unit and relieving the pressure before removing the nozzle tip to clean.
- Unit maintains pressure after shutdown. Before servicing, cleaning, or removing any part, turn power off and follow **Pressure Relief Procedure.**
- Do not leave the unit energized or under pressure while unattended. When the unit is not in use, turn off the unit and follow the **Pressure Relief Procedure.**
- Check hoses and parts for signs of damage. Replace any damaged hoses or parts.
- This system is capable of producing 3300 psi (227 bar, 22.7 MPa). Use Graco replacement parts or accessories that are rated a minimum of 3300 psi (227 bar, 22.7 MPa).
- Always engage the trigger lock when not spraying. Verify the trigger lock is functioning properly.
- Verify that all connections are secure before operating the unit.
- Know how to stop the unit and bleed pressure quickly. Be thoroughly familiar with the controls.

# ! WARNING

   	<p><b>EQUIPMENT MISUSE HAZARD</b></p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> <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 leave the unit energized or under pressure while unattended. When the unit is not in use, turn off the unit and follow the <b>Pressure Relief Procedure</b>.</li> <li>• Do not operate the unit when fatigued or under the influence of drugs or alcohol.</li> <li>• Do not kink or over-bend the hose.</li> <li>• Do not expose the hose to temperatures or to pressures in excess of those specified by Graco.</li> <li>• Do not use the hose as a strength member to pull or lift the equipment.</li> <li>• Do not spray with a hose shorter than 25 feet.</li> <li>• Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.</li> <li>• Make sure all equipment is rated and approved for the environment in which you are using it.</li> </ul>
  	<p><b>ELECTRIC SHOCK HAZARD</b></p> <p>This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.</p> <ul style="list-style-type: none"> <li>• Turn off and disconnect power cord before servicing equipment.</li> <li>• Connect only to grounded electrical outlets.</li> <li>• Use only 3-wire extension cords.</li> <li>• Ensure ground prongs are intact on power and extension cords.</li> <li>• Do not expose to rain. Store indoors.</li> <li>• Wait five minutes after disconnecting power cord before servicing large capacitor units.</li> </ul>
	<p><b>PRESSURIZED ALUMINUM PARTS HAZARD</b></p> <p>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>MOVING PARTS HAZARD</b></p> <p>Moving parts can pinch, cut or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> <li>• Keep clear of moving parts.</li> <li>• Do not operate equipment with protective guards or covers removed.</li> <li>• Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the <b>Pressure Relief Procedure</b> and disconnect all power sources.</li> </ul>
	<p><b>PERSONAL PROTECTIVE EQUIPMENT</b></p> <p>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



A	ON/OFF Switch
B	Drain Tube
C	Suction Tube
D	Pressure Control
E	Filter
F	Trigger Lock
G	Pump
H	Fluid Outlet
J	Prime / Spray Valve

K	Model/Serial Tag (below sprayer frame)
L	Power Cord
M	Fluid Hose
N	Gun
O	Tip
P	Guard
Q	Pail Hook
R	Smart Control 2.0 Display

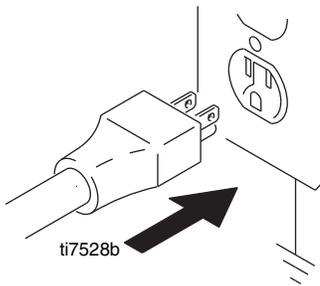
# Grounding

						
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The equipment must be grounded to reduce the risk of static sparking and electric shock. Electric or static sparking can cause fumes to ignite or explode. Improper grounding can cause electric shock. Grounding provides an escape wire for the electric current.

The sprayer cord includes a grounding wire with an appropriate grounding contact. Do not use the sprayer if the electrical cord has a damaged ground contact.

The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.



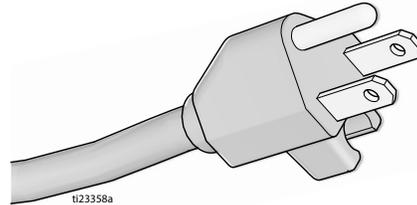
Do not modify plug! If it will not fit in outlet, have grounded outlet installed by a qualified electrician. Do not use an adapter.



## Power Requirements

- 100-120 VAC, grounded
- 50/60 Hz, 15A
- 1 phase

## Extension Cord Requirements



Use an extension cord with an undamaged ground contact.

When operating sprayer outdoors, use an extension cord suitable for outdoor use.

If an extension cord is necessary, use a 3-wire, 12 AWG (2.5 mm<sup>2</sup>) minimum. Longer cords and higher gauge cords reduce sprayer performance.

## Pails

						
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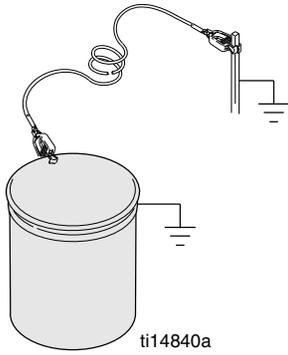
**Solvent and oil/based fluids:** follow local code. Use only conductive metal pails, placed on a grounded surface such as concrete.

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

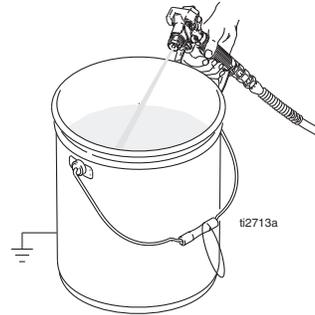


## Grounding

**Grounding a metal pail:** connect a ground wire to the pail by clamping one end to pail and other end to a true earth ground.



**To maintain grounding continuity when flushing or relieving pressure:** hold metal part of spray gun firmly to side of a grounded metal pail. Then trigger gun.



# Operation

## Pressure Relief Procedure

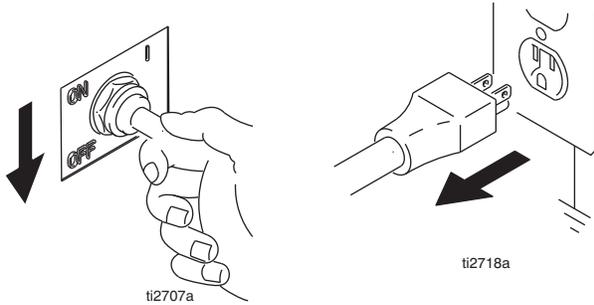


Follow the Pressure Relief Procedure whenever you see this symbol.

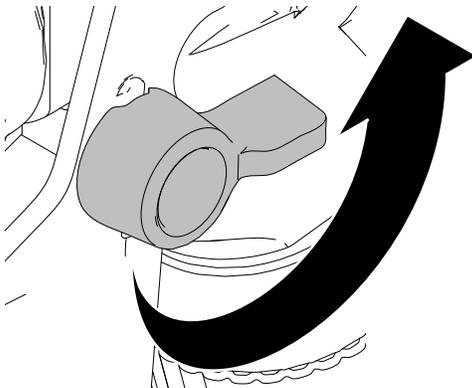


This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

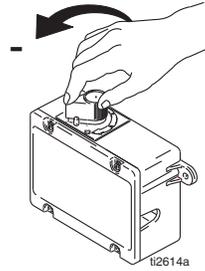
1. Turn power switch **OFF** and unplug sprayer.



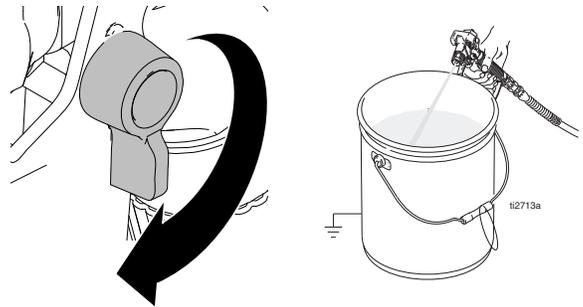
2. Engage trigger lock.



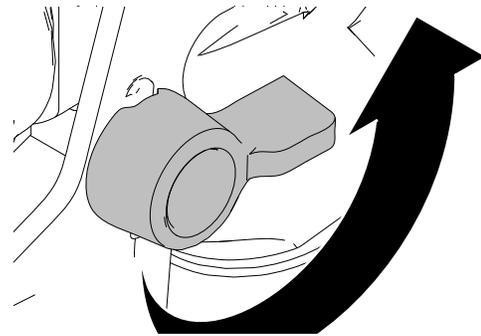
3. Turn pressure control knob left (counterclockwise) to minimum pressure.



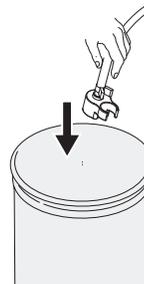
4. Hold gun firmly to side of pail. Disengage trigger lock and trigger the gun to relieve pressure.



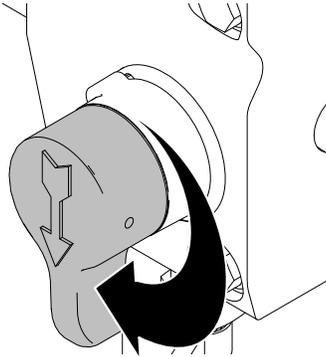
5. Engage trigger lock.



6. Put drain tube in pail.



7. Turn spray/prime valve to PRIME position.



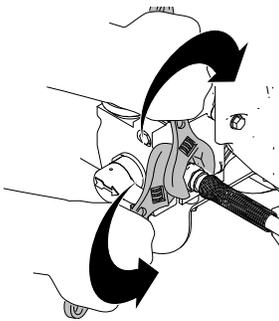
**NOTE:** Leave spray/prime valve in the PRIME position until you are ready to spray again.

If you suspect the spray tip or hose is clogged or that pressure has not been fully relieved after following the steps above, **VERY SLOWLY** loosen tip guard retaining nut or hose end coupling to relieve pressure gradually, then loosen completely. Clear hose or tip obstruction. See **Clearing Tip Clog**, page 15.

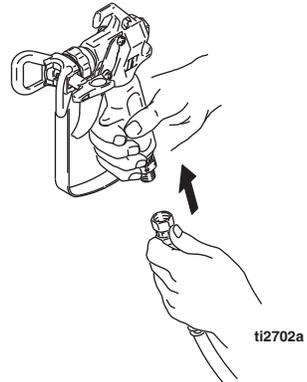
## Setup



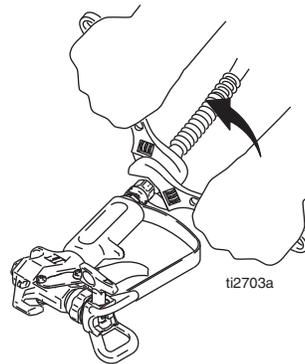
1. Connect Graco airless hose to sprayer. Tighten securely.



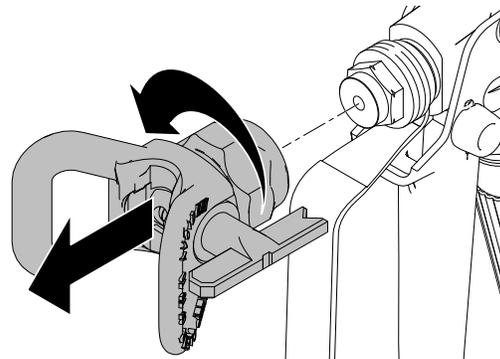
2. Connect other end of hose to gun.



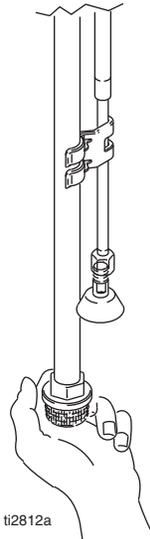
3. Tighten securely.



4. Remove spray tip and guard from gun.

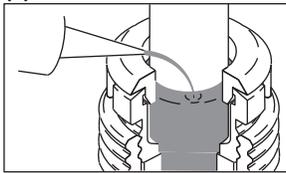


5. Check inlet strainer for clogs and debris.

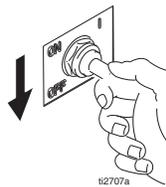


6. Fill throat packing nut with Graco TSL to prevent premature packing wear. Do this each time you spray.

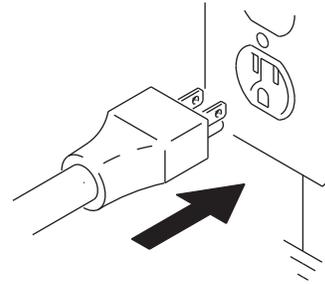
Approximate Fill Level



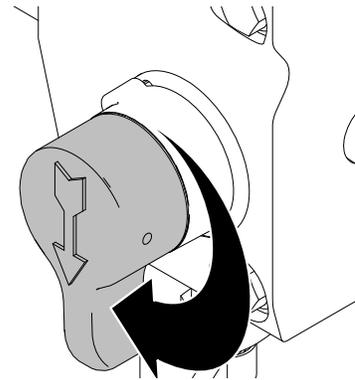
7. Turn power switch OFF.



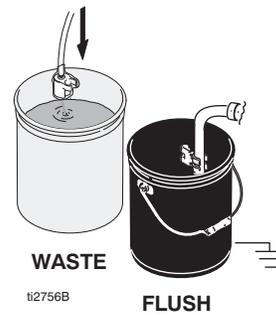
8. Plug sprayer into grounded outlet.



9. Turn spray/prime valve down to PRIME position.



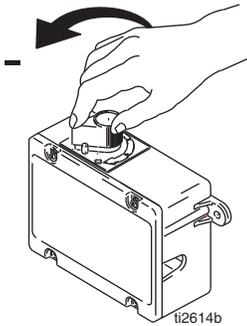
10. Unclip small drain tube from large suction tube and place into waste pail. Place pump in grounded metal pail partially filled with flushing fluid. Attach ground wire to pail and to true earth ground. Perform steps 1 - 7 of **Startup** to flush out storage oil shipped in sprayer. Use water to flush water-base paint and mineral spirits to flush oil-base paint and storage oil.



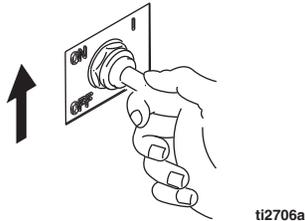
## Startup



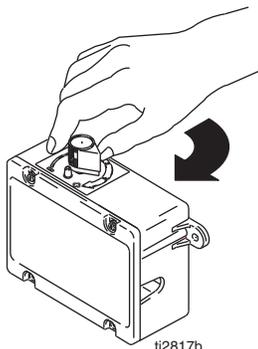
1. Perform **Pressure Relief Procedure**, page 9.
2. Turn pressure control knob left (counterclockwise) to minimum pressure.



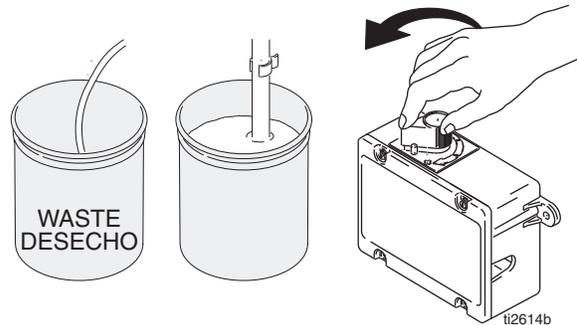
3. Turn power switch ON.



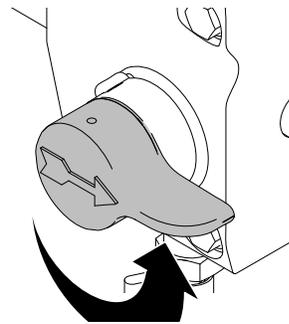
4. With spray/prime valve still in the PRIME position turn pressure control knob to the right (clockwise) until pump starts.



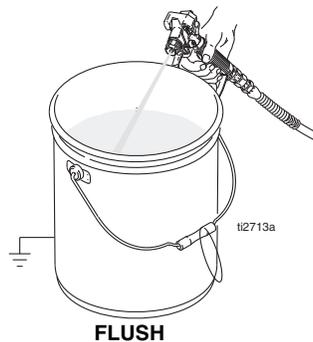
5. Allow fluid to flow out of prime tube into waste pail for 30 to 60 seconds. Turn pressure control knob left (counterclockwise) to minimum pressure.



6. Turn spray/prime valve to **SPRAY** position.

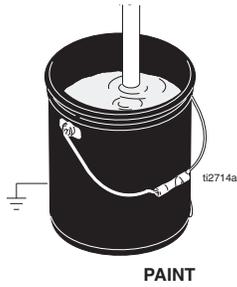


7. Hold gun against grounded metal flushing pail. Trigger gun and increase fluid pressure 1/2 turn. Flush 1 minute.

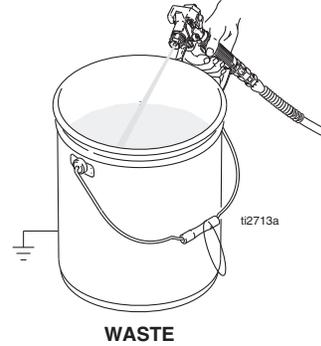


						
<p>High-pressure spray is able to inject toxins into the body and cause serious bodily injury. Do not stop leaks with hand or rag.</p>						

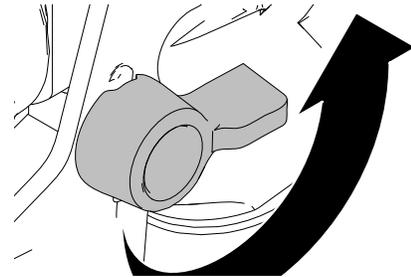
- 8. Inspect for leaks. If leaks occur, perform **Pressure Relief Procedure**, page 9. Tighten fittings. Perform **Startup**, steps 1 - 6. If no leaks, proceed to step 9.
- 9. Submerge suction tube in paint pail.



- 10. Trigger gun into waste pail until paint comes out of gun. Release trigger, pump will build up pressure and motor will stop. Move gun to paint pail and trigger for 20 seconds.



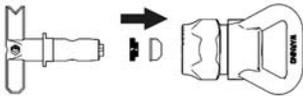
- 11. Engage trigger lock.



## Spray Tip Installation

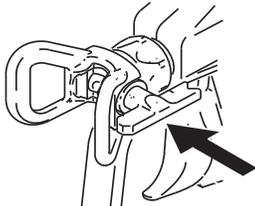


1. Perform **Pressure Relief Procedure**, page 9.
2. Use spray tip to align seat in guard.



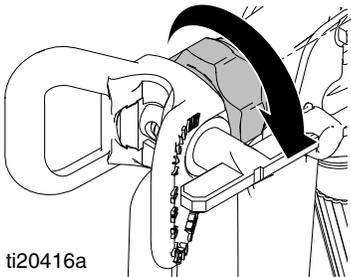
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3. Insert spray tip into guard.



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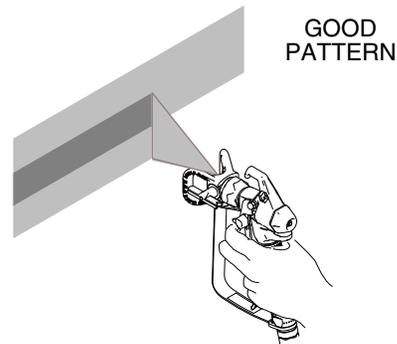
4. Install tip and guard on gun and hand tighten.



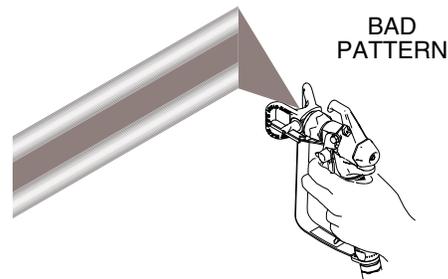
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## Spraying

1. Spray a test pattern. Point gun straight at surface to be sprayed about 12 in (30 cm) away from surface, and begin moving the gun before you trigger it.
2. A good spray pattern is evenly distributed as it hits the surface. Set the pressure so it is just high enough to spray without “tails”. Overlap by 50%. Trigger gun after moving and release before stopping.



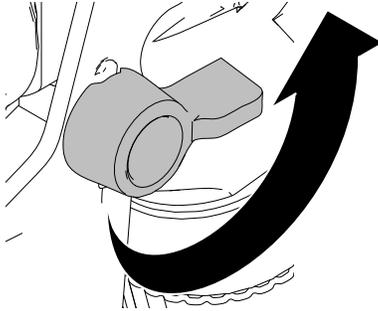
3. If tails persist at the highest pressure, a smaller tip is needed to spray the material or the material may need to be thinned.



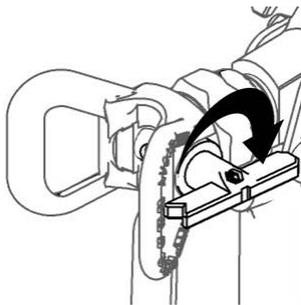
## Clearing Tip Clog

						
<b>SKIN INJECTION HAZARD</b> Never point gun at your hand or into a rag!						

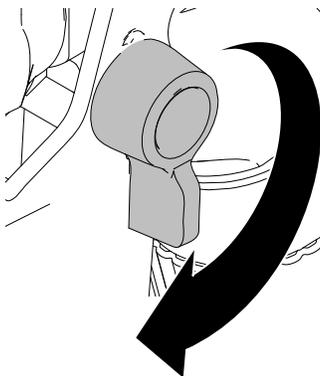
1. Release trigger, engage trigger lock.



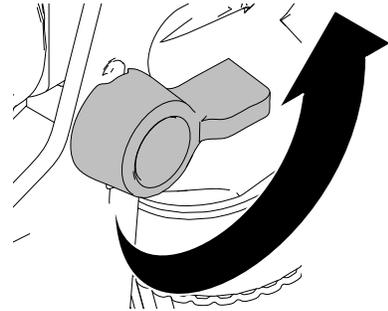
2. Rotate spray tip.



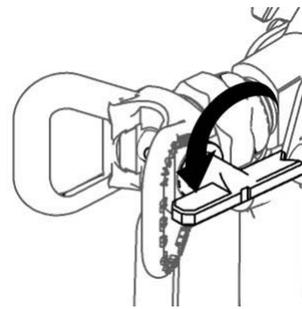
3. Disengage trigger lock. Trigger gun to clear clog.



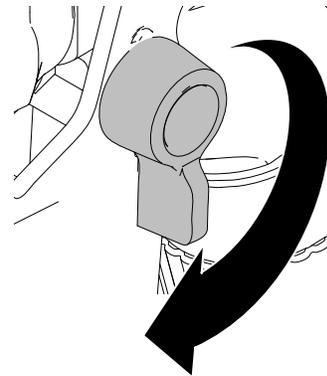
4. Engage trigger lock.



5. Return spray tip to original position.



6. Disengage trigger lock and continue spraying.



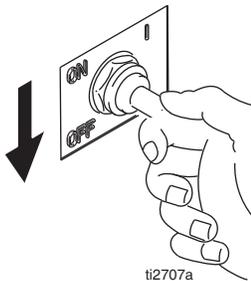
## Cleanup



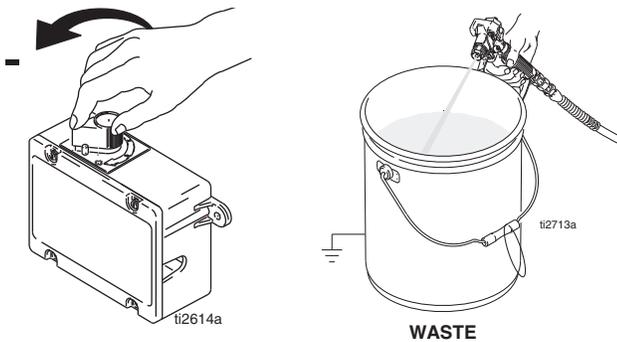
1. Perform **Pressure Relief Procedure**, page 9.

**NOTE:** Use water for water-base material, mineral spirits for oil-base material, or other solvents recommended by manufacturer.

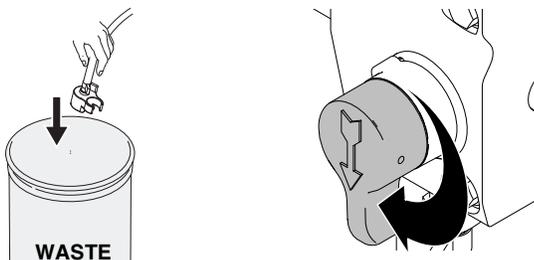
2. Turn power switch OFF.



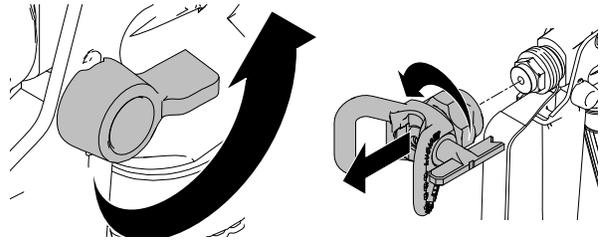
3. Turn pressure control knob left (counterclockwise) to minimum pressure. Trigger gun into a waste pail to relieve pressure from fluid hose.



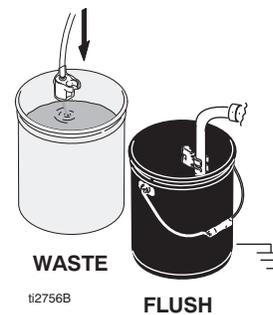
4. Put drain tube in the waste pail. Turn spray/prime valve to PRIME position to relieve fluid pressure from sprayer.



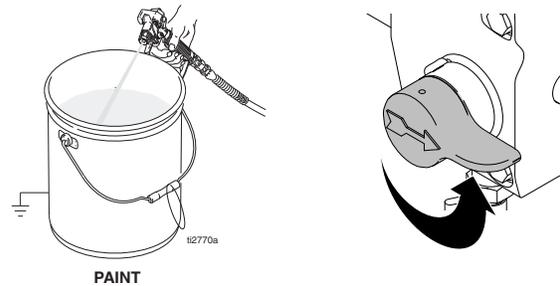
5. Engage trigger lock. Remove tip and guard from gun and place into waste pail for further cleaning.



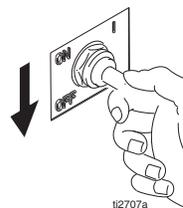
6. Remove suction tube set from paint and place in flushing fluid. Use water for water base paint and mineral spirits for oil base paint.



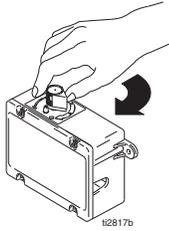
7. Hold gun against paint pail and disengage trigger lock. Trigger gun into paint pail and turn spray/prime valve to SPRAY position.



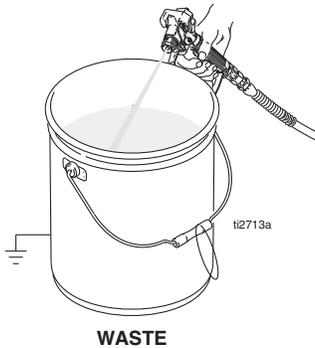
8. Turn power switch ON to push paint out of hose into paint pail.



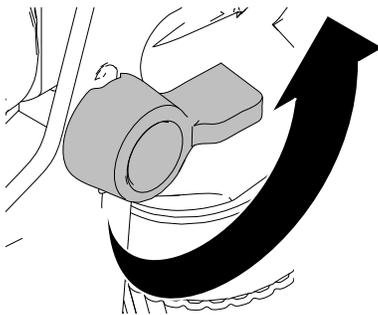
9. Trigger gun and increase pressure until flushing fluid appears.



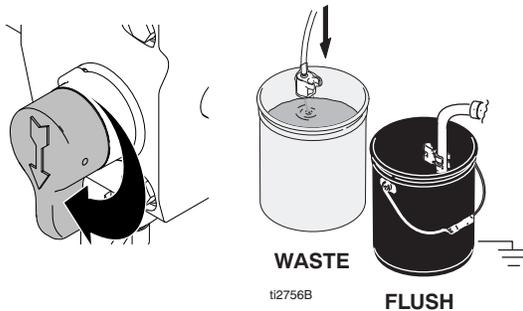
10. Move gun to waste pail, hold gun against paint pail trigger gun to thoroughly flush system. Trigger gun into waste pail for 1-2 minutes until relatively clear flushing fluid comes out of gun.



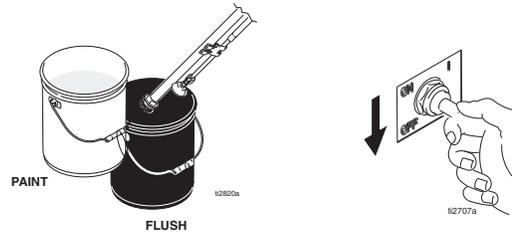
11. Release trigger, engage trigger lock.



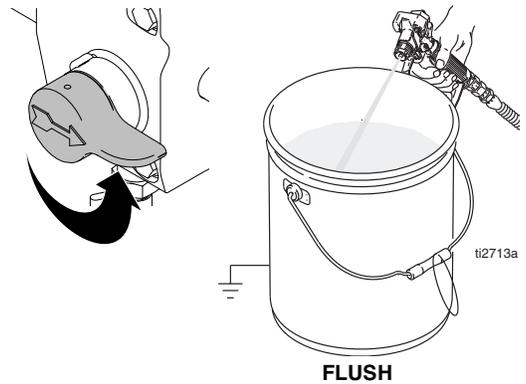
12. Turn spray/prime valve to PRIME position and let flushing fluid flow through sprayer into waste pail for 20 seconds.



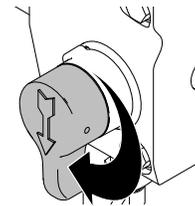
13. Raise suction tube above flushing fluid and run sprayer for 15 to 30 seconds to drain flushing fluid. Turn power switch OFF.



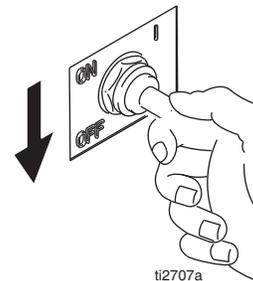
14. Turn spray/prime valve to SPRAY position. Trigger gun into flushing pail to purge fluid from hose.



15. Turn spray/prime valve to PRIME position.

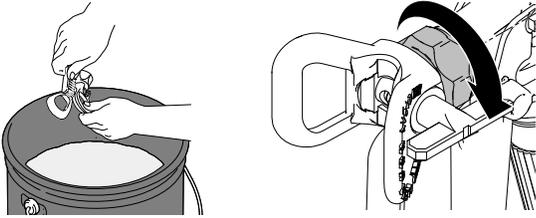


16. Turn power switch OFF.

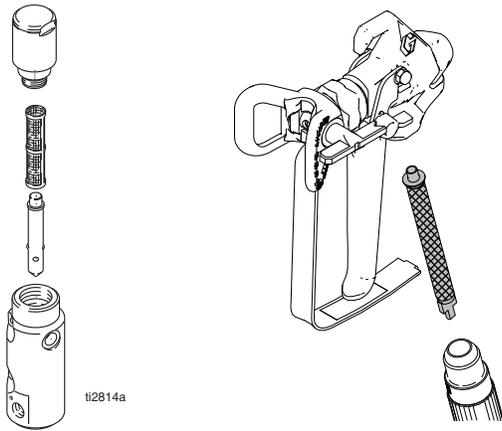


Operation

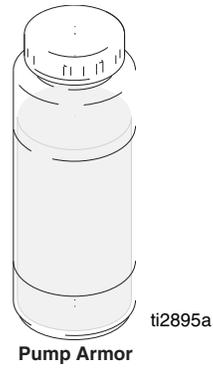
17. Clean tip, guard, and inlet screen with a brush. Reassemble spray tip and guard.



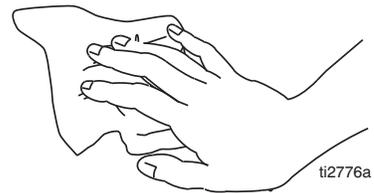
18. Remove filters from gun and sprayer, if installed. Clean and inspect. Install filters.



19. If flushing with water, flush again with mineral spirits, or Pump Armor, to leave a protective coating to prevent freezing or corrosion.



20. Wipe sprayer, hose and gun with a rag soaked in water or mineral spirits.



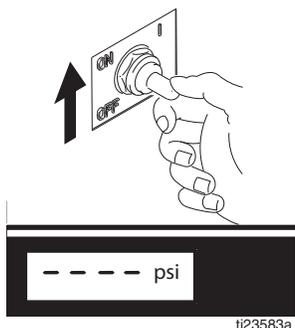
# Digital Display



## Operation Main Menu

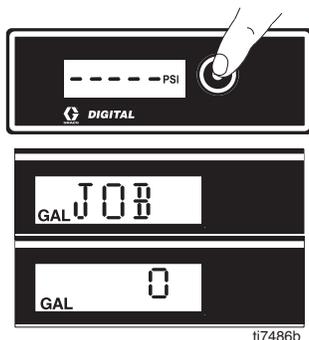
Short press to moves to next display. Press and hold (5 seconds) to change units or reset data.

1. Perform **Pressure Relief Procedure**, page 9.
2. Turn power switch ON. Pressure display appears. Dashes appear when pressure is less than 200 psi (14 bar, 1,4 MPa).



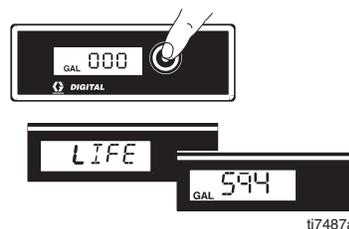
3. Short press DTS button to move to Job Gallons (or Liters x 10).

**NOTE: JOB** displays briefly, then the number of gallons sprayed above 1000 psi (70 bar, 7 MPa).

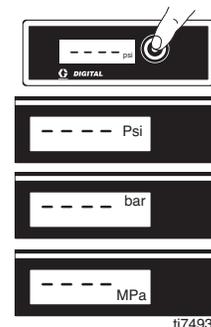


4. Press and hold to reset to zero, or short press DTS button to move to Lifetime Gallons (or Liters x 10).

**NOTE: LIFE** displays briefly, then the number of gallons sprayed above 1000 psi (70 bar, 7 MPa).

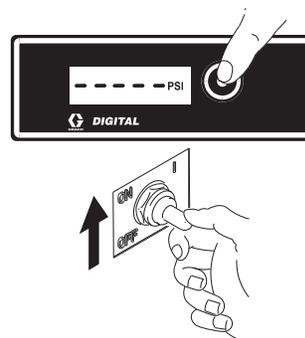


5. To change pressure units (**psi, bar, MPa**), press and hold DTS button for 8 seconds until desired units appear. Selection of bar or MPa changes **gallons to liters x 10**.



## Secondary Menu - Stored Data

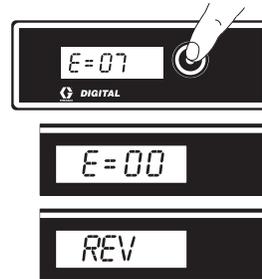
1. Perform **Pressure Relief Procedure**, page 9 if not already done.
2. Press DTS button and turn power switch ON.



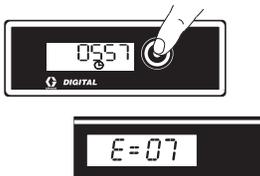
3. **S/N** displays for 1 sec, then the serial number. Short press DTS button. Total motor run hours displays.



5. Press and hold DTS button to clear error code to zero. Short press to move to software **REV**.

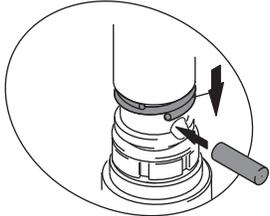


4. Short press DTS button. Last error code is displayed; e.g., **E=07**. See **Motor Control Board Diagnostics**, page 26.



# Troubleshooting



Type of Problem	What to Check <i>(if check is OK, go to next)</i>	What to Do <i>(When check is not OK, refer to this column)</i>
Basic fluid pressure problems	Pressure control knob setting. Motor will not run if at minimum setting (fully counter-clockwise).	Slowly increase pressure to see if motor starts.
	Spray tip or fluid filter may be clogged.	Perform <b>Pressure Relief Procedure</b> , page 9 and clear clog, or clean filter; refer to separate gun or tip instruction manual.
Basic Mechanical Problems	Pump frozen or paint hardened in pump.	Thaw sprayer if water or water-based paint has frozen in sprayer. Place sprayer in warm area to thaw. Do not start sprayer until thawed completely. If paint hardened (dried) in sprayer, replace pump packings. See pump manual 309250.
	Displacement pump connecting rod pin must be completely pushed into connecting rod and retaining spring must be firmly in groove of pump pin.	Push pin into place and secure with spring retainer. 
	Motor. Remove drive housing assembly. Try to rotate fan by hand.	Replace motor if fan won't turn.
	Motor control board. Board shuts down and displays error code.	See <b>Motor Control Board Diagnostics</b> , page 26.

<p><b>Type of Problem</b></p>	<p><b>What to Check</b> <i>(if check is OK, go to next)</i></p>	<p><b>What to Do</b> <i>(When check is not OK, refer to this column)</i></p>
<p>Basic Electrical Problems</p>	<p>Electric supply. Meter must read: 85-130 VAC.</p>	<p>Reset building circuit breaker. Replace building fuse. Try another outlet.</p>
	<p>Extension cord. Check extension cord continuity with volt meter.</p>	<p>Replace extension cord.</p>
	<p>Sprayer power supply cord. Inspect for damage such as insulation or wires.</p>	<p>Replace power supply cord.</p>
	<p>Motor leads are securely fastened and properly mated.</p>	<p>Replace loose terminals; crimp to leads. Be sure terminals are firmly connected.  Clean circuit board terminals. Securely reconnect leads.</p>
<p>Note: for the following electric problems, refer to <b>Wiring Diagram</b>, page 27 to identify Test Points (TP).</p>	<p>Power supply cord. Connect volt meter between TP1 (neutral) and TP2. Plug in sprayer. Meter must read 85-130 VAC.  Unplug sprayer.</p>	<p>Replace power supply cord.</p>
	<p>ON/OFF Switch. Connect volt meter between L1 and L2 terminal on ON/OFF switch. Plug in sprayer and turn ON. Meter must read 85-130 VAC.</p>	<p>Replace ON/OFF switch.</p>
	<p>All terminals for damage or loose fit.</p>	<p>Replace damaged terminals and reconnect securely.</p>

<p><b>Type of Problem</b></p>	<p><b>What to Check</b> <i>(if check is OK, go to next)</i></p>	<p><b>What to Do</b> <i>(When check is not OK, refer to this column)</i></p>
<p>Low Output</p>	<p>For worn spray tip.</p>	<p>Perform <b>Pressure Relief Procedure</b>, page 9. Then replace tip. See your separate gun manual for additional instruction.</p>
	<p>Verify pump does not continue to stroke when gun trigger is released.</p>	<p>Service pump. See pump manual 309250.</p>
	<p>Filter clogged.</p>	<p>Perform <b>Pressure Relief Procedure, page 9</b>. Check and clean filter.</p>
	<p>Prime valve leaking.</p>	<p>Perform <b>Pressure Relief Procedure</b>, page 9. Repair prime valve.</p>
	<p>Suction hose kinks and/or loose connection.</p>	<p>Correct kink and/or tighten any loose connections.</p>
	<p>Electric supply with volt meter. Low voltages reduce sprayer performance. Meter must read 85-130 VAC.</p>	<p>Reset building circuit breaker; replace building fuse. Repair electrical outlet or try another outlet.</p>
	<p>Extension cord size and length; must be at least 12 gauge wire and no longer than 300 ft. Longer cord lengths reduce sprayer performance.</p>	<p>Replace with a correct, grounded, extension cord.</p>
	<p>Leads from motor to pressure control circuit board for damaged or loose wires or connectors. Inspect wiring insulation and terminals for signs of overheating.</p>	<p>Be sure male terminal blades are centered and firmly connected to female terminals. Replace any loose terminal or damaged wiring. Securely reconnect terminals.</p>
<p>Low stall pressure.</p>	<p>Do either or both:</p> <ul style="list-style-type: none"> <li>a. Turn pressure control knob fully clockwise. Make sure pressure control knob is properly installed to allow full clockwise position.</li> <li>b. Try a new transducer.</li> </ul>	
<p>Motor runs and pump strokes</p>	<p>Low paint supply.</p>	<p>Refill and reprime pump.</p>
	<p>Intake strainer clogged.</p>	<p>Remove and clean, then reinstall.</p>
	<p>Suction tube or fittings loose.</p>	<p>Tighten; use thread sealant or sealing tape on threads if necessary.</p>
	<p>See if intake valve ball and piston ball are seating properly.</p>	<p>Remove intake valve and clean. Check balls and seats for nicks, replace if necessary. Strain paint before using to remove particles that could clog pump. See pump manual 309250.</p>

<p><b>Type of Problem</b></p>	<p><b>What to Check</b> <i>(if check is OK, go to next)</i></p>	<p><b>What to Do</b> <i>(When check is not OK, refer to this column)</i></p>
<p>Motor runs and pump strokes</p>	<p>Leaking around throat packing nut which may indicate worn or damaged packings.</p>	<p>Replace packings. Also check piston valve seat for hardened paint or nicks and replace if necessary. Tighten packing nut/wet-cup. See pump manual 309250.</p>
	<p>Pump rod damage.</p>	<p>Replace pump.</p>
<p>Motor runs but pump does not stroke</p>	<p>Displacement pump pin damaged or missing.</p>	<p>Replace pump pin if missing. Be sure retainer spring is fully in groove all around connecting rod.</p>
	<p>Connecting rod assembly damaged.</p>	<p>Replace connecting rod assembly. See pump manual 309250.</p>
	<p>Gears or drive housing.</p>	<p>Inspect drive housing assembly and gears for damage and replace if necessary.</p>
<p>Motor is hot and runs intermittently</p>	<p>Determine if sprayer was operated at high pressure with small tips, which causes low motor RPM and excessive heat buildup.</p>	<p>Decrease pressure setting or increase tip size.</p>
	<p>Be sure ambient temperature where sprayer is located is not more than 90°F (32.22°C) and sprayer is not located in direct sun.</p>	<p>Move sprayer to shaded, cooler area if possible.</p>
<p>Building circuit breaker opens as soon as sprayer switch is turned on</p> <p style="text-align: center;"><b>CAUTION</b></p> <p>Any short in any part of the motor power circuit will cause the control circuit to inhibit sprayer operation. Correctly diagnose and repair all shorts before checking and replacing control board.</p>	<p>All electrical wiring for damaged insulation and all terminals for loose fit or damage. Also, wires between pressure control and motor.</p>	<p>Repair or replace any damaged wiring or terminals. Securely reconnect all wires.</p>
	<p>For missing inspection plate gasket, bent terminal forks or other metal to metal contact points which cause a short.</p>	<p>Correct faulty conditions.</p>
	<p>Motor control board by performing Motor Control Board Diagnostics. See <b>Motor Control Board Diagnostics</b>, page 26. If diagnostics indicate, substitute with a good board.</p> <p><b>CAUTION:</b> Do not perform this check until motor armature is determined to be good. A bad motor armature can burn out a good board.</p>	<p>Replace with a new pressure control board.</p>
<p>Building circuit breaker opens as soon as sprayer is plugged into outlet and sprayer is NOT turned on.</p>	<p>Basic Electric Problems, page 22 of <b>Troubleshooting</b>.</p>	<p>Perform necessary procedures.</p>

<p><b>Type of Problem</b></p>	<p><b>What to Check</b> <i>(if check is OK, go to next)</i></p>	<p><b>What to Do</b> <i>(When check is not OK, refer to this column)</i></p>
<p>Building circuit breaker opens as soon as sprayer is plugged into outlet and sprayer is NOT turned on.</p>	<p>ON/OFF switch. <b>Be sure sprayer is unplugged!</b> Disconnect wires from switch. Check switch with ohmmeter. Reading must be infinity with ON/OFF switch OFF, and zero when switch is ON.</p>	<p>Replace ON/OFF switch.</p>
	<p>For damaged or pinched wires in pressure control.</p>	<p>Replace damaged parts.</p>
<p>Sprayer quits after sprayer operates for 5 to 10 minutes.</p>	<p>Basic Electric Problems, page 22 of <b>Troubleshooting.</b></p>	<p>Perform necessary procedures.</p>
	<p>Electrical supply volt meter. Meter must read 85-130 VAC.</p>	<p>If voltage is too high, do not operate sprayer until corrected.</p>
	<p>Tightness of pump packing nut. Over tightening tightens packings on rod, restricts pump action, and overloads motor.</p>	<p>Loosen packing nut. Check for leaking around throat. Replace pump packings, if necessary. See pump manual 309250.</p>

## Motor Control Board Diagnostics



**NOTICE**

Do not allow sprayer to develop fluid pressure without transducer installed. Leave drain valve open if test transducer is used.

**NOTE:**

- Keep a new transducer on hand to use for test.
- No display does not mean the sprayer is not pressurized. Before repair, perform **Pressure Relief Procedure**, page 9.

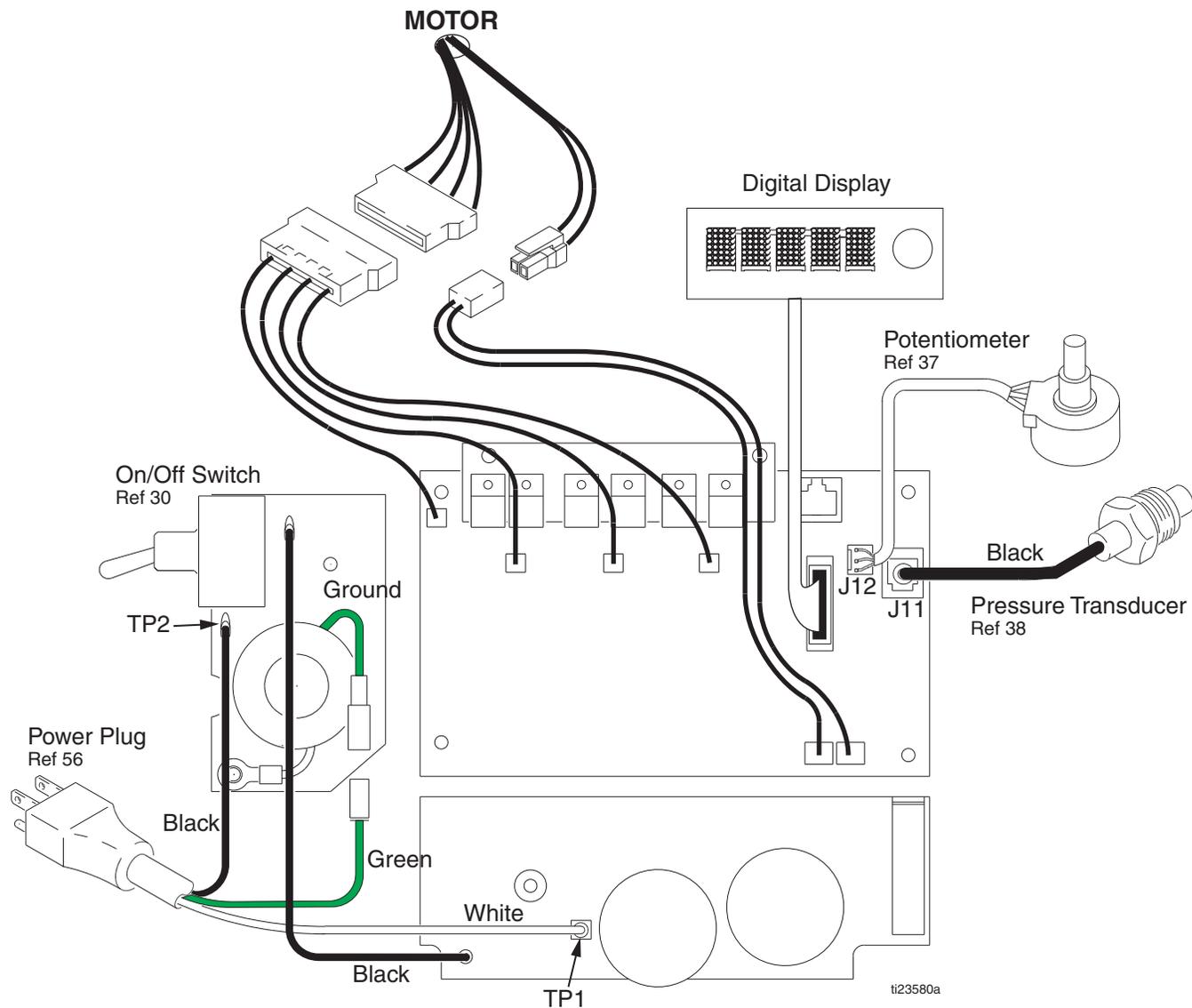
For sprayers with digital display, see Digital Display Messages and table below.

For sprayers without digital display:

1. Remove screws (12) and cover (50).
2. Turn power switch ON.
3. Observe LED operation and reference following table:

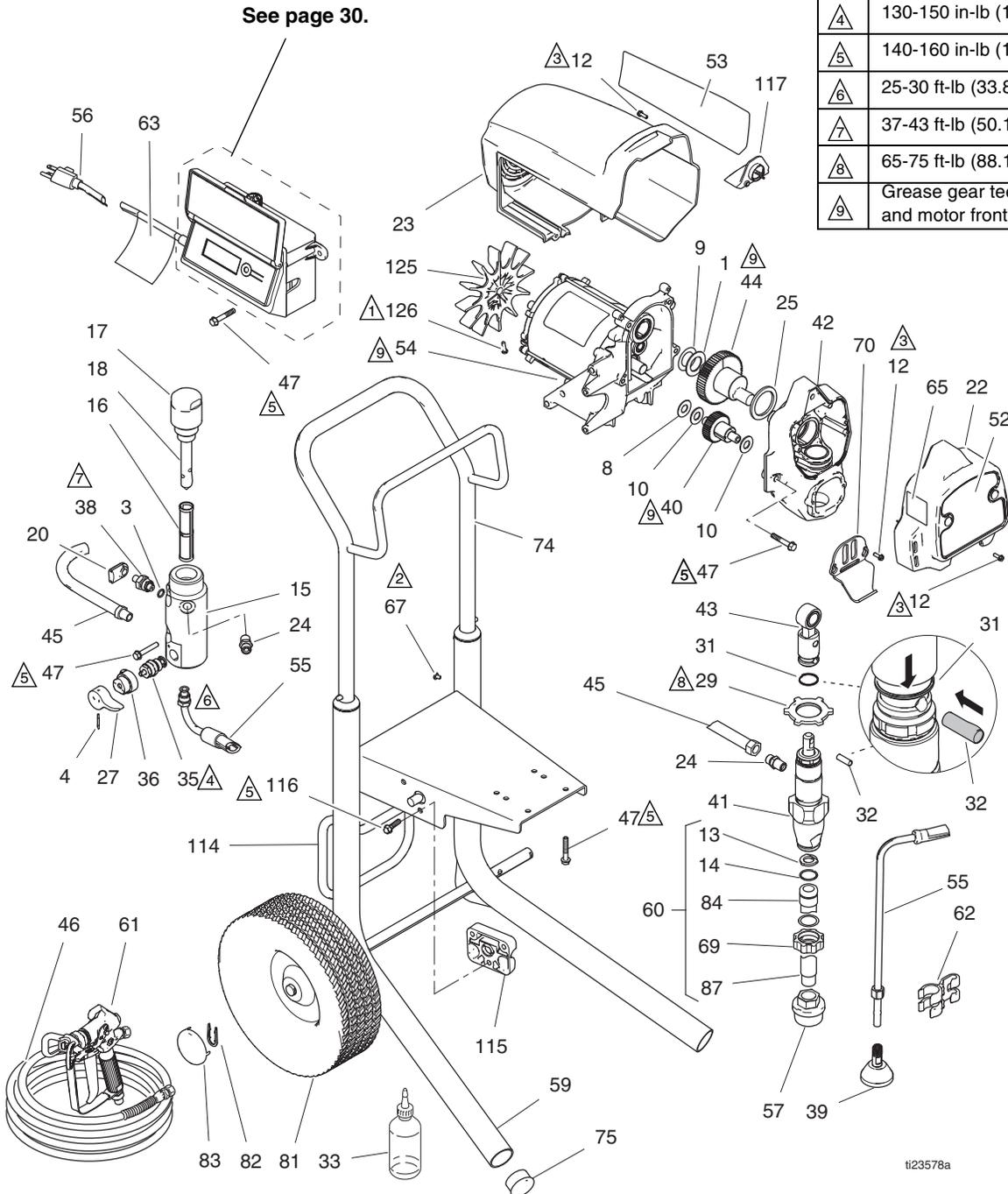
DISPLAY	LED BLINKS	SPRAYER OPERATION	INDICATES	WHAT TO DO
No Display	Never blinks	Sprayer stops. Power is not applied. Sprayer must be pressurized.	Loss of power.	Check power source. Relieve pressure before repair or disassembly.
psi/bar/MPa	Once	Sprayer is pressurized. Power is applied. (Pressure varies with tip size and pressure control setting.)	Normal operation	Do nothing
E=02	Two times repeatedly	Sprayer may continue to run. Power is applied.	Run away pressure. Pressure greater than 4500 psi (310 bar, 31 MPa) or damaged pressure transducer	Replace motor control board or pressure transducer
E=03	Three times repeatedly	Sprayer shuts down and LED continues to blink three times repeatedly	Pressure transducer is faulty or missing	Check transducer connection. Open drain valve. Substitute new transducer for transducer in sprayer. If sprayer runs, replace transducer
E=05	Five times repeatedly	Sprayer does not start or stops and LED continues to blink five times repeatedly. Power is applied.	Motor fault	Check for locked rotor, shorted wiring or disconnected motor. Repair or replace failed parts.
E=06	Six times repeatedly	Sprayer stops and LED blinks six times repeatedly. Power is applied.	Motor is too hot or there is a fault in motor thermal device	Allow sprayer to cool. If sprayer runs correctly when cool, check motor fan function and air flow. Keep sprayer in cool location. If sprayer does not run when cool and continues to blink six times, replace motor.
- - -		Power is applied.	Pressure less than 200 psi (14 bar, 1.4 MPa).	Increase pressure if desired. Drain valve may be open.
E=10	Blinks 10 times repeatedly	Sprayer does not start or stops and LED continues to blink 10 times repeatedly. Power is applied.	High control board temperature.	<ul style="list-style-type: none"> <li>• Make sure motor air intake is not blocked.</li> <li>• Make sure control board is properly connected to the back plate and that conductive thermal paste is used on the power components.</li> </ul>

# Wiring Diagram



# Parts Drawing - Sprayer

Ref.	Torque
1	9-11 in-lb (1.0 - 1.2 N•m)
2	23-27 in-lb (2.6 - 3.0 N•m)
3	30-35 in-lb (3.3 - 3.9 N•m)
4	130-150 in-lb (14.6 - 16.9 N•m)
5	140-160 in-lb (15.8 - 18.0 N•m)
6	25-30 ft-lb (33.8 - 40.6 N•m)
7	37-43 ft-lb (50.1 - 58.3 N•m)
8	65-75 ft-lb (88.1 - 101.6 N•m)
9	Grease gear teeth, motor pinion and motor front end bell



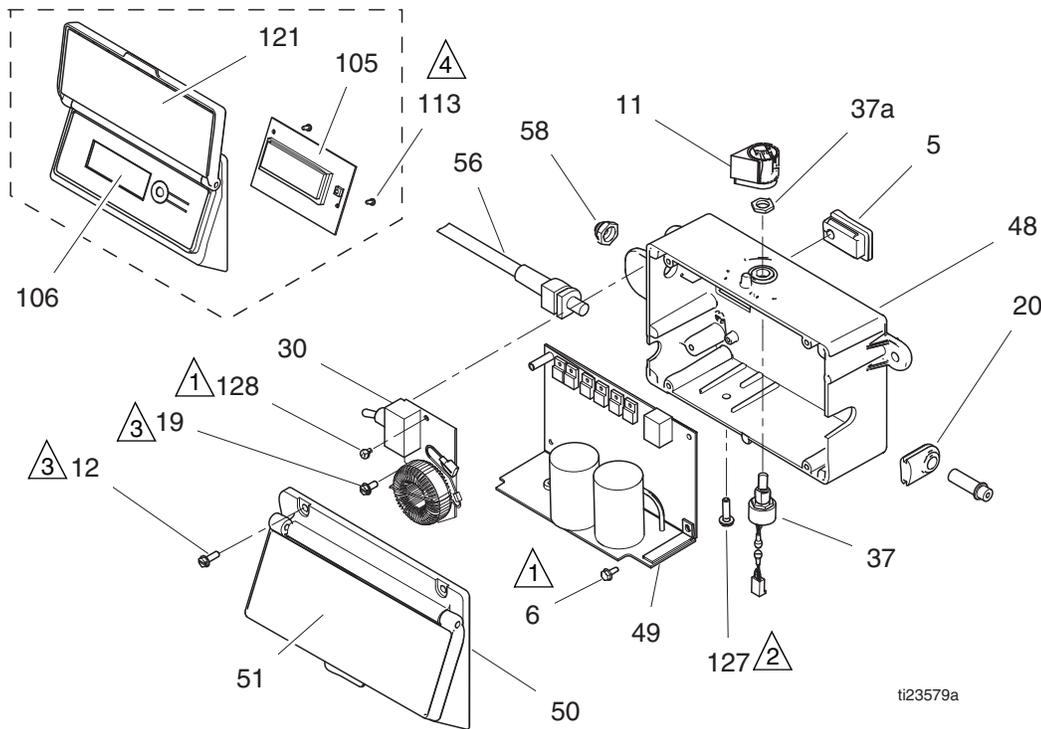
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## Parts List Sprayer

Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
1	107434	BEARING, thrust	1	53	17A577	LABEL, side, Graco	1
2	117828	PACKING, o-ring	1	54	24S022	MOTOR KIT, 110V <i>includes 125, 126</i>	1
3	111457	PACKING, o-ring	1	55	244240	HOSE, drain, <i>includes 39</i>	1
4	111600	PIN, grooved	1	56	253367	CORD, power	1
8	116073	WASHER, thrust	1	57	246385	STRAINER, 7/8-14 unf	1
9	116074	WASHER, thrust	1	59	287779	FRAME, cart, HI	1
10	116079	BEARING, thrust	2	60	246387	KIT, stinger tube <i>includes 13, 14, 57, 69, 84, 87</i>	1
12	117501	SCREW, mach, hex washer hd	8	61	243012	GUN, <i>includes Manuals 312830, 312831, 312832</i>	1
13	115099	WASHER, hose	1	62	276888	CLIP, drain line	1
14	103413	O-RING	2	63▲	15H085	LABEL, danger	1
15	15G455	MANIFOLD, fluid	1	65▲	195793	LABEL, warning	1
16†	246384	FILTER, fluid, 60 mesh	1	67	109032	SCREW, pan hd	4
17	287902	KIT, repair, filter cap, <i>includes 18</i>	1	69	15E813	NUT, jam	1
18		INSERT, filter	1	70	15C146	HOOK, pail	1
20	15B120	GROMMET, transducer	1	74	287489	HANDLE	1
22	287901	COVER, front, Graco, paint <i>includes 12, 65</i>	1	75	108691	PLUG, tubing	2
23	287900	SHIELD, motor, painted <i>includes 12</i>	1	81	106062	WHEEL	2
24	162453	NIPPLE, (1/4 npsm x 1/4 npt)	2	82	15B999	CLIP, retaining	2
25	180131	BEARING, thrust	1	83	104811	CAP, hub	2
27	187625	HANDLE, valve, drain	1	84	15B652	WASHER, suction	1
29	195150	NUT, jam, pump	1	87	15B506	TUBE, suction	1
31	196750	SPRING, retaining	1	114	15D281	HANGER, stand	1
32	196762	PIN, straight	1	115	15C982	CAM, cart	2
33	206994	FLUID, TSL	1	116	114531	SCREW, mch, hex	4
34▲	222385	TAG, warning (not shown)	1	117	15G447	PLUG, tubing	2
35	239914	VALVE, drain	1	125	15D088	FAN, motor	1
36	224807	BASE, valve	1	126	115477	SCREW	1
38	243222	TRANSDUCER, pressure control <i>includes 3</i>	1	▲	333405	GUIDE, Quick-Tips (not shown)	
39	241920	DEFLECTOR, threaded	1	▲		<i>Extra Danger and Warning tags and labels available free.</i>	
40	244242	GEAR, reducer <i>includes 8, 10</i>	1	†		Other filters available: 246382, 100 mesh; 246383, 200 mesh; 246425, 30 mesh	
41	246428	PUMP, displacement	1				
42	287899	HOUSING, drive <i>includes 12, 47</i>	1				
43	287053	ROD, connecting <i>includes 31, 32</i>	1				
44	287054	GEAR, crankshaft <i>includes 1, 9 25</i>	1				
45	287003	HOSE, cpld	1				
46	240794	HOSE, cpld, 1/4 in. x 50 ft	1				
47	117493	SCREW, mach, hex washer hd	12				
52	17A576	LABEL, front, Graco	1				

# Parts Control Box and Board

Ref.	Torque
1	10-14 in-lb (1.1 - 1.5 N•m)
2	20-25 in-lb (2.2 - 2.8 N•m)
3	30-35 in-lb (3.3 - 3.9 N•m)
4	2-3 in-lb (0.23 - 0.34 N•m)



ti23579a

## Parts List

Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
5	15G562	BUSHING, control box	1	105	287904	BOARD, control LCD <i>includes 50, 51, 106, 113, 121</i>	1
6	120405	SCREW, mch, phillips, pan hd	5	106	15G861	LABEL, smart control display	1
11	116167	KNOB, potentionmeter	4	113	115522	SCREW, mch, pan hd	2
12	117501	SCREW, mch hex, wash hd	1	121	15G588	LABEL, digital tracking	1
19	115498	SCREW, mch slot, hex, wash hd	1	127	120165	SCREW, mach, phillips, pan hd	1
30	287911	BOARD, filter, 110V GFI	4	128	120406	SCREW, hex washer, hd	1
37	256219	POTENTIOMETER, adjust, pres- sure	1	129	158674	O-ring	1
48	287905	BOX, control <i>includes 5, 6, 11, 19, 30, 37, 49, 58, 127, 128, 129</i>	1				
49	287909	KIT, control board, 110V	1				
50	287789	COVER, control	1				
51	15K401	LABEL, control	1				
58	195428	BOOT, toggle	1				

# Technical Data

<b>RentalPro 230 HDR Electric Airless Sprayer</b>		
	<b>U.S.</b>	<b>Metric</b>
<b>Sprayer</b>		
Maximum Delivery	0.54 gpm	2.0 lpm
Maximum Tip Size	0.023	0.023
Fluid Outlet npsm	1/4 in.	1/4 in.
Cycles	620 per gallon	165 per liter
Generator Minimum	3500 W	3500 W
Motor	7/10 HP	510 W
120V, A, Hz	12, 50/60	12, 50/60
<b>Dimensions</b>		
Weight:	57 lb	26 kg
Height:	29.5 in. (Handle down) 39.5 in. (Handle up)	74.9 cm (Handle down) 100.3 cm (Handle up)
Length:	21 in.	53.3 cm
Width:	20.5 in.	52.1 cm
Wetted parts	zinc-plated carbon steel, nylon, stainless steel, PTFE, Acetal, chrome plating, leather, UHMWPE, aluminum, tungsten carbide	
Noise Level:		
Sound Power	100 dBa*	100 dBa*
Sound Pressure	90 dBa*	90 dBa*
	*per ISO 3744; measured at 3.1 ft	*per ISO 3744; measured at 1 m

# Graco Standard Warranty

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

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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.

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Original instructions. This manual contains English. MM 333402

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