

E70/E60 King[®] Electric High Pressure Airless Sprayers

3A8477A

EN

Electric high pressure sprayer packages for application of protective coatings.

For professional use only.

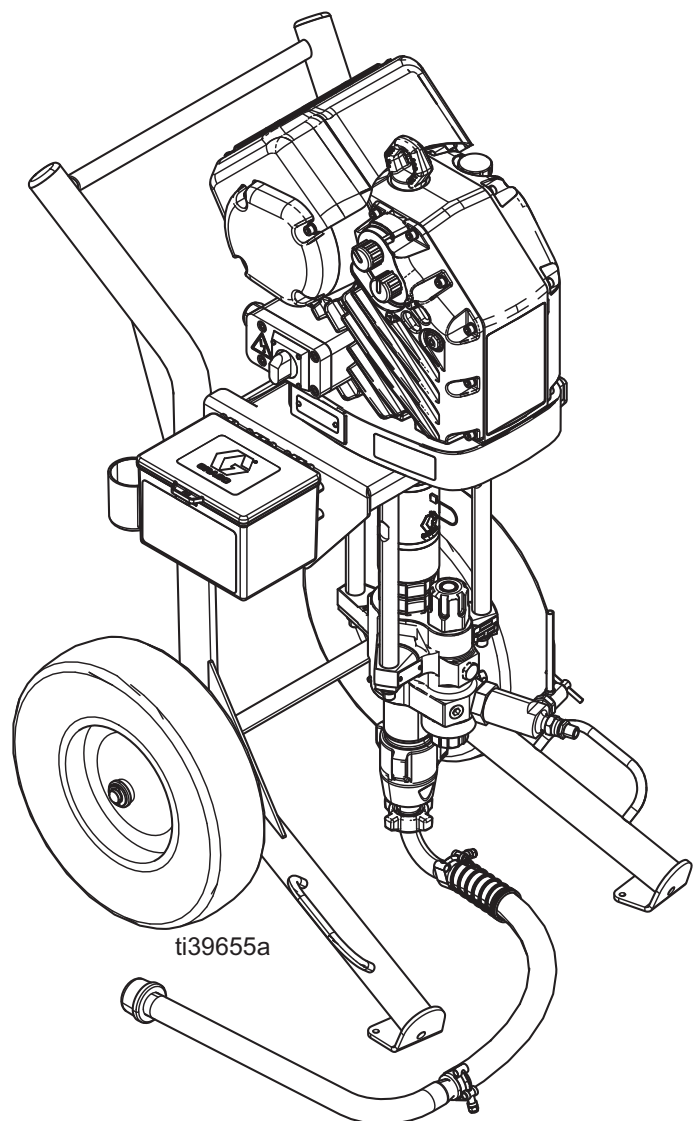
Not approved for use in explosive atmospheres or hazardous (classified) locations.

See page 3 for **Models** information. See **Technical Specifications**, page 32, for Maximum Working Pressure.



Important Safety Instructions

Read all warnings and instructions in this manual and in related manuals before using the equipment. Save all instructions.



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Related Manuals

Manuals are available at www.graco.com.

Manual in English	Description
3A8478	E70/E60 King Driver Manual
311762	Xtreme® Lower Manual
311619	Pump Mounting Kit Manual
312145	XTR™ Gun Manual
3A2799	XHF™ Gun Manual

Models

Model	Description	Package		Pump Lower	
		Complete* (Hose and XTR Gun) Maximum Fluid Temperature: 160 °F (71 °C)	Bare (No Hose or Gun) Maximum Fluid Temperature: 180 °F (82 °C)	Size (Displacement)	Filter
273746	King, E70, Heavy Duty Cart	X		115 cc	Integrated
273747	King, E70, Heavy Duty Cart		X		
273748	King, E70, Light Weight Cart	X			
273749	King, E70, Light Weight Cart		X		
273750	King, E70, Wall Mount	X			
273751	King, E70, Wall Mount		X		
273752	King, E60, Heavy Duty Cart	X		145 cc	Integrated
273753	King, E60, Heavy Duty Cart		X		
273754	King, E60, Light Weight Cart	X			
273755	King, E60, Light Weight Cart		X		
273756	King, E60, Wall Mount	X			
273757	King, E60, Wall Mount		X		

For maximum working pressure, see **Technical Specifications**, page 32

* Lower maximum fluid temperature due to XTR gun.

Heavy Fluids Packages









Model	Description	Package		Pump Lower	
		Complete (Hose and XHF Gun) Whip Hose: 3/8 in. x 6 ft Hose: 1/2 in. x 50 ft Maximum Fluid Temperature: 180 °F (82 °C)	Hopper	Size (Displacement)	Filter
273762	King, E70, Heavy Duty Cart	X	X	115 cc	No
273764	King, E60, Heavy Duty Cart	X	X	145 cc	No

For maximum working pressure, see **Technical Specifications**, page 32

Warnings

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

 WARNING	
   	FIRE AND EXPLOSION HAZARD Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion: <ul style="list-style-type: none"> • Use equipment only in well-ventilated area. • Eliminate all ignition sources, such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking). • Ground all equipment in the work area. See Grounding instructions. • Never spray or flush solvent at high pressure. • Keep work area free of debris, including solvent, rags and gasoline. • Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present. • Use only grounded hoses. • Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive. • Stop operation immediately if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem. • Keep a working fire extinguisher in the work area.
    	SKIN INJECTION HAZARD High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. Get immediate surgical treatment. <ul style="list-style-type: none"> • Do not spray without tip guard and trigger guard installed. • Engage trigger lock when not spraying. • Do not point gun at anyone or at any part of the body. • Do not put your hand over the spray tip. • Do not stop or deflect leaks with your hand, body, glove, or rag. • Follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing equipment. • Tighten all fluid connections before operating the equipment. • Check hoses and couplings daily. Replace worn or damaged parts immediately.

 WARNING	
 	ELECTRIC SHOCK HAZARD This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock. <ul style="list-style-type: none"> • Turn off and disconnect power cord before servicing equipment. • Connect only to grounded electrical outlets. • Use only 3-wire extension cords. • Ensure ground prongs are intact on power and extension cords. • Do not expose to rain. Store indoors. • Wait five minutes after disconnecting power cord before servicing.
 	MOVING PARTS HAZARD Moving parts can pinch, cut or amputate fingers and other body parts. <ul style="list-style-type: none"> • Keep clear of moving parts. • Do not operate equipment with protective guards or covers removed. • Equipment can start without warning. Before checking, moving, or servicing equipment, follow the Pressure Relief Procedure and disconnect all power sources.
	BURN HAZARD Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns: <ul style="list-style-type: none"> • Do not touch hot fluid or equipment.
	TOXIC FLUID OR FUMES HAZARD Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed. <ul style="list-style-type: none"> • Read Safety Data Sheets (SDSs) to know the specific hazards of the fluids you are using. • Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.
	PERSONAL PROTECTIVE EQUIPMENT Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. Protective equipment includes but is not limited to: <ul style="list-style-type: none"> • Protective eyewear, and hearing protection. • Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.



WARNING



EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Specifications** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Specifications** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.

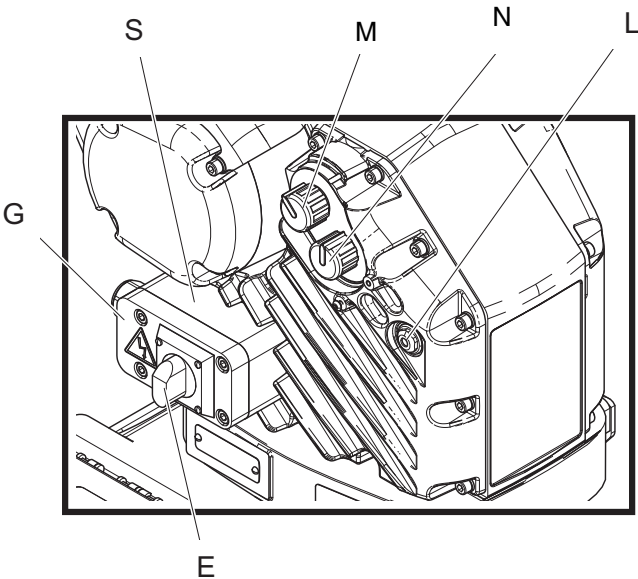


PRESSURIZED ALUMINUM PARTS HAZARD

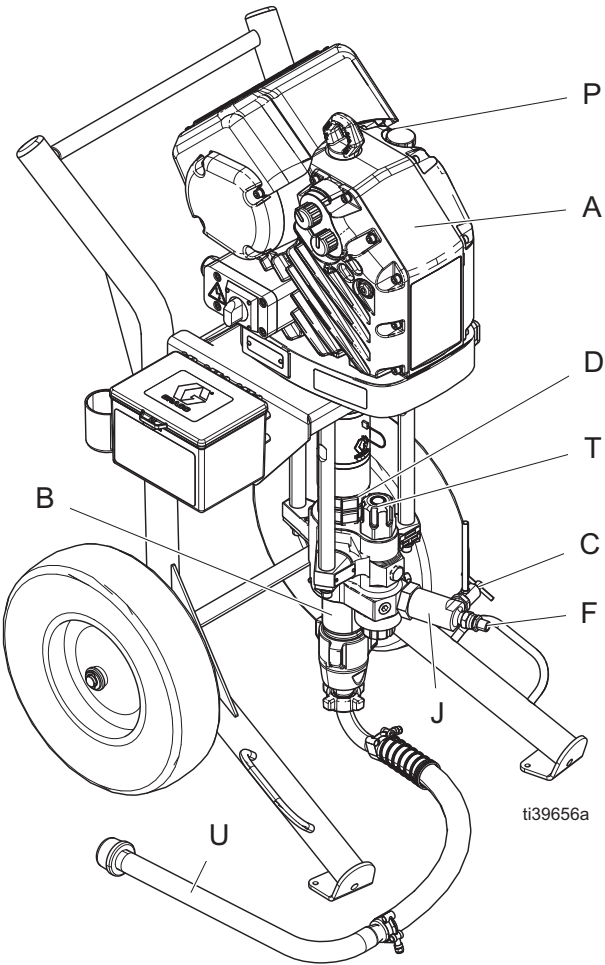
Use of fluids that are incompatible with aluminum in pressurized equipment can cause serious chemical reaction and equipment rupture. Failure to follow this warning can result in death, serious injury, or property damage.

- Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.
- Do not use chlorine bleach.
- Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.

Component Identification






Ref.	Description
A	Electric Driver
B	Pump Lower
C	Fluid Drain/Purge Valve
D	Packing Nut
E	Power Switch (Lock-out tag-out equipped)
F	Fluid Outlet
G	Junction Box Cover
M	Mode Selector Knob
N	Pressure Adjustment Knob



Ref.	Description
J	Outlet Check Valve
L	Status Indicator Light (LED)
P	Oil Fill Cap (vented)
S	Junction Box
T	Filter Cap (models with integrated filter only)
U	Material Suction Hose

NOTE: See your King Driver manual for warning label information.

Installation

				
<p>To reduce the risk of electric shock, and fire and explosion, all electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.</p>				





Power Requirements

See your driver manual for instructions for power source requirements.

Connect Power

See your Driver manual for instructions to connect the power source.

Grounding

				
<p>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.</p>				

Sprayer: System is grounded through the power cord.

Fluid hoses: Use only electrically conductive hoses with a maximum of 210 ft. (64 m) combined hose length to ensure grounding continuity. Check electrical resistance of hoses. If total resistance to ground exceeds 25 mega ohms, replace hose immediately.

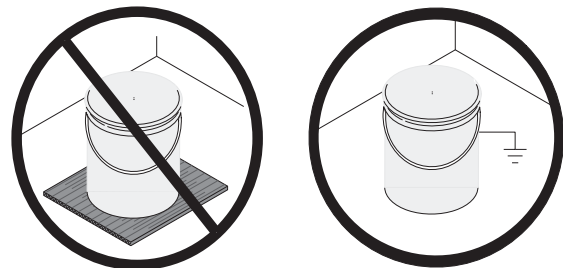
Spray gun: Ground through connection to a properly grounded fluid hose and pump.

Fluid supply container: Ground the fluid supply container. Follow local code.

Object being sprayed: Ground the object being sprayed. Follow local code.

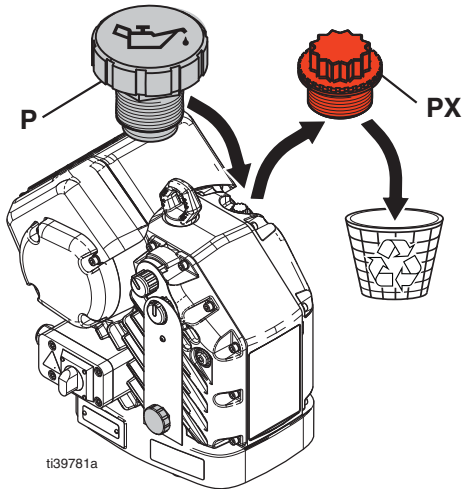
Solvent pails used when flushing: Follow local code. Use only conductive metal pails (5 gallon (19 liter) metal pail, Graco part 101108 - not supplied), placed on a grounded surface. Do not place the pail on a non-conductive surface, such as paper or cardboard, which interrupts grounding continuity.

To maintain grounding continuity when flushing or relieving pressure: Hold the metal part of the spray gun/dispense valve firmly to the side of a grounded metal pail, then trigger the gun/valve.



Install Vented Oil Cap Before Using Equipment

The driver gear box is pre-filled with oil. The temporary unvented cap (PX) prevents oil leaks during shipment. This temporary cap must be replaced with the vented oil cap (P) before use.



Flush Before Using Equipment

The pump fluid section was tested with lightweight oil, which is left in the fluid passages to protect parts. To avoid contaminating your fluid with oil, flush the equipment with a compatible solvent before using the equipment.

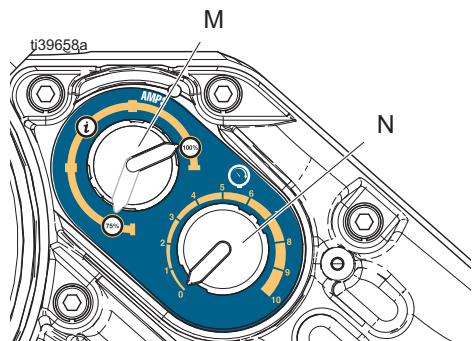
See **Prime/Flush**, page 13.

Setup

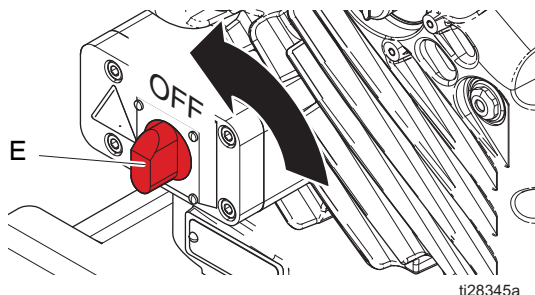


To avoid tipping over, make sure the cart is on a flat and level surface. Failure to do so could result in injury, such as crushing.

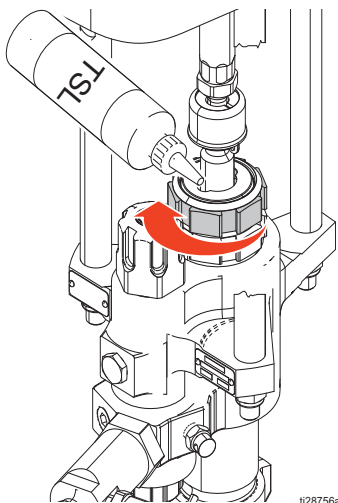
1. Pull pressure adjustment knob (N) out and turn counterclockwise until it stops. Push the knob in to lock.



2. Turn power switch (E) OFF. Connect unit to power source.



3. Check packing nut (D). See your Xtreme lower pump manual for packing nut torque. Fill with Throat Seal Liquid (TSL™).



4. Attach electrically conductive fluid hose to the pump lower outlet via the outlet check valve and tighten.

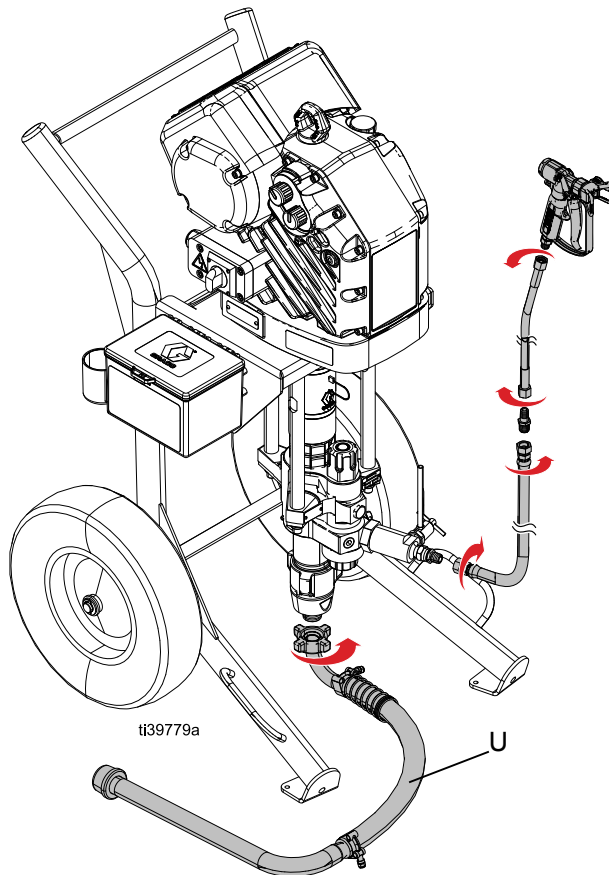
NOTICE

Attaching the hose directly to the lower pump can result in damage to the sprayer during cavitation, or when the sprayer runs out of material. Use an outlet check valve between the lower pump and hose to avoid damage.

NOTICE

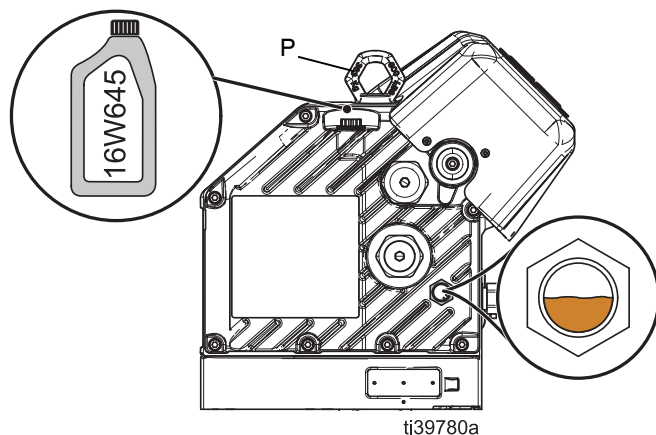
The minimum hose size allowable is 3/8 in. ID x 50 ft (10 mm x 15 m). Smaller hoses can cause high pressure spikes and result in damage to the sprayer.

5. Attach the hose to the gun and tighten.
6. Attach the material suction hose (U) to the pump lower.



NOTE: Maximum suggested length is 6 ft (1.8 m). Minimum suggested inner diameter is 1 in (2.5 cm).

7. Check oil level.

**NOTICE**

Only use oil with Graco part number 16W645. Any other oil may not lubricate properly and can cause damage to the drive train.

8. Pull mode selector knob (M) out and set it to the desired mode:

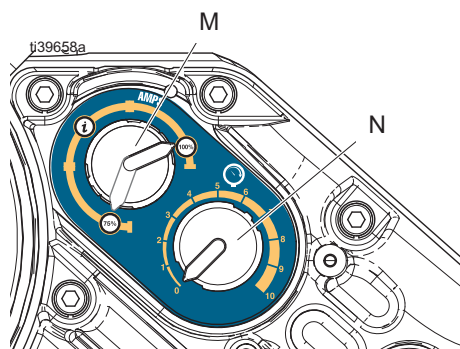
- 100% Power (High Amp) Mode*
- 75% Power (Low Amp) Mode**

Push in the knob to lock.

* See **Technical Specifications**, page 32 for power input information.

** Reduces current draw to:

- 15A for 200-240 V operation, or
- 20A for 100-120 V operation

9. Always flush and prime the sprayer before each use (see **Prime/Flush**, page 13).

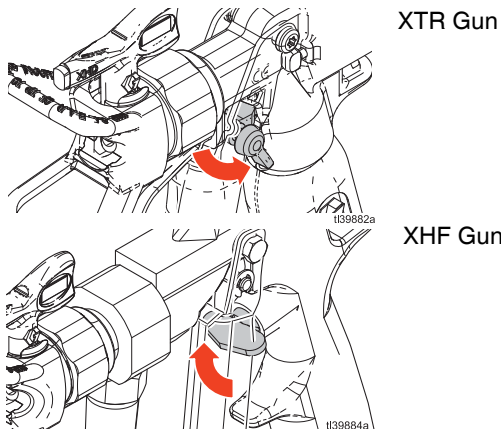
Pressure Relief Procedure



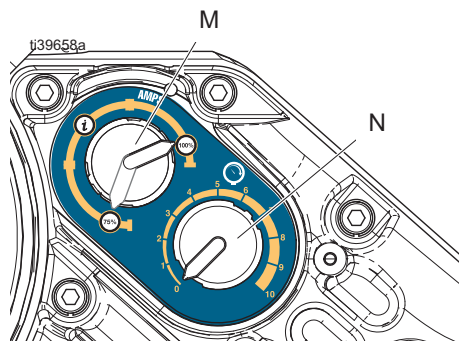
Follow the Pressure Relief Procedure whenever you see this symbol.

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.

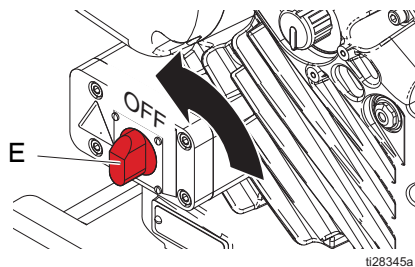
1. Engage the gun trigger lock.



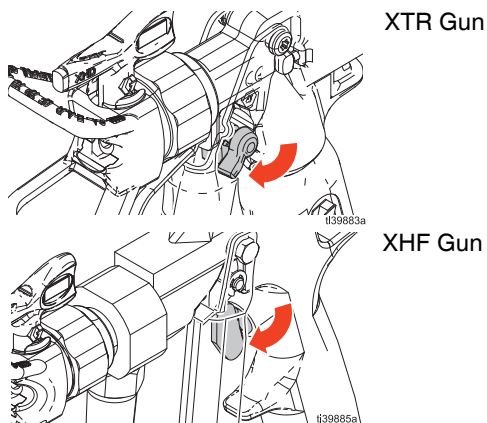
2. Pull pressure adjustment knob (N) out and turn counterclockwise until it stops. Push the knob in to lock.



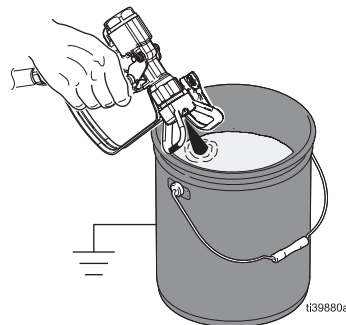
3. Turn power switch (E) OFF.



4. Disengage the gun trigger lock.

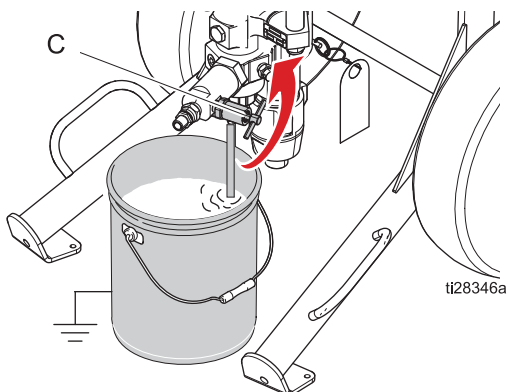


5. Hold gun firmly against a grounded metal pail. Trigger the gun.



6. Engage the gun trigger lock.

7. **Drain fluid:** Place the drain tube in a grounded waste pail. Slowly open fluid drain/purge valve (C), and drain fluid into a waste pail.



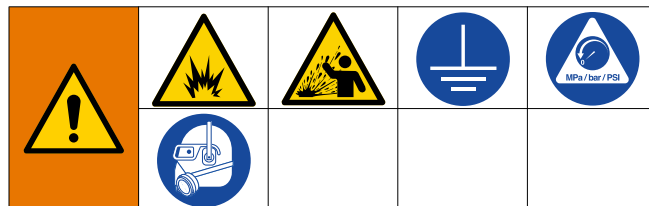
8. If you suspect the spray tip or hose is completely clogged or that pressure has not been fully relieved:
- VERY SLOWLY loosen the tip guard retaining nut or hose end coupling to relieve pressure gradually.
 - Loosen the nut or hose end coupling completely.
 - With tip removed, trigger the gun into the bucket.

Gun Trigger Lock



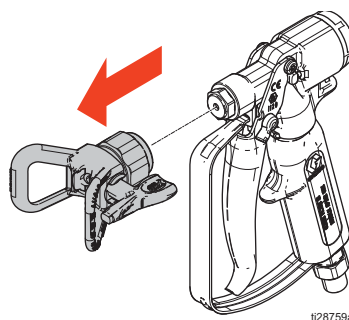
Always engage the gun trigger lock when you stop spraying to prevent the gun from being triggered accidentally by hand or if dropped or bumped.

Prime/Flush

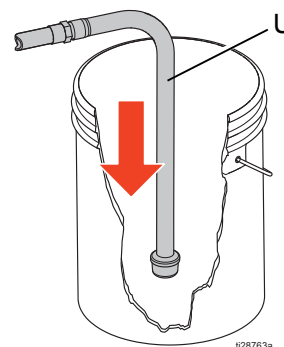


To avoid fire and explosion, always ground equipment and waste container. To avoid static sparking and injury from splashing, always flush at the lowest possible pressure.

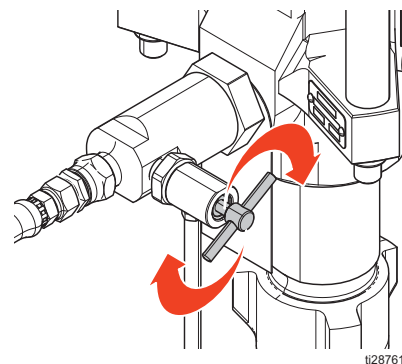
- Follow the **Pressure Relief Procedure** on page 12.
- Remove the tip and tip guard from the gun.



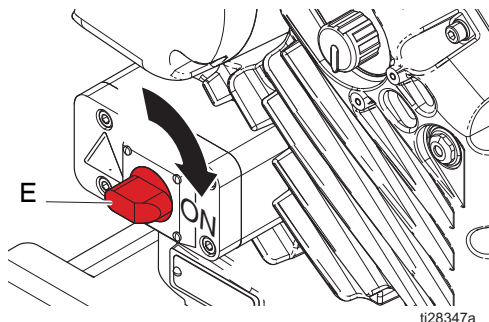
- Place material suction hose (U) into compatible fluid (if priming) or solvent (if flushing).



- Close the drain valve.

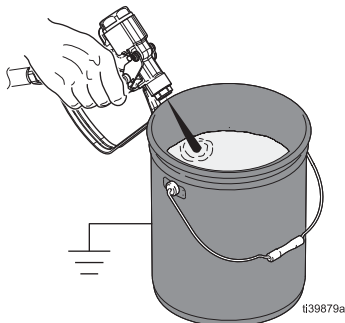


5. Turn power switch (E) ON.

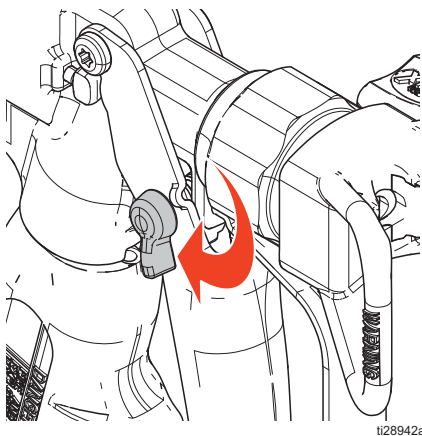


6. Prime or flush the hose or gun:

- a. Disengage the gun trigger lock.
- b. Trigger gun into grounded pail. Pull out pressure adjustment knob (N) and turn clockwise slowly to increase pressure, until a steady stream flows from gun. Push knob in to lock. If flushing, trigger gun until clean solvent flows from the gun.



- c. Engage the gun trigger lock.



7. If priming, equipment is now ready to spray (proceed to Spray, page 15). If flushing, proceed with step 8.

NOTE: The remaining steps are for flushing only.

NOTICE

Do not prime pump through drain/purge valve using two component materials. Mixed two-component materials will harden in valve and result in clogging.

8. Follow the **Pressure Relief Procedure** on page 12.

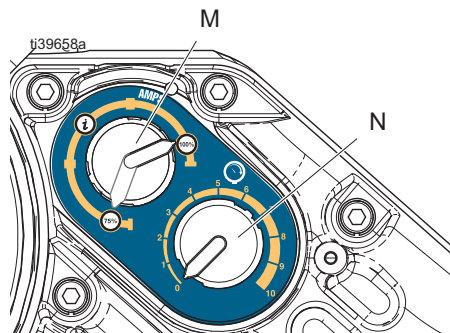
9. Turn power switch (E) ON.

10. To start pump, pull out pressure adjustment knob (N) and turn clockwise slowly to increase pressure, until a steady stream flows from drain valve. Push knob in to lock.

NOTE: To determine the proper amount of solvent and flushing time, remove the inlet valve housing to verify it has been fully cleaned, especially when spraying a new material for the first time.

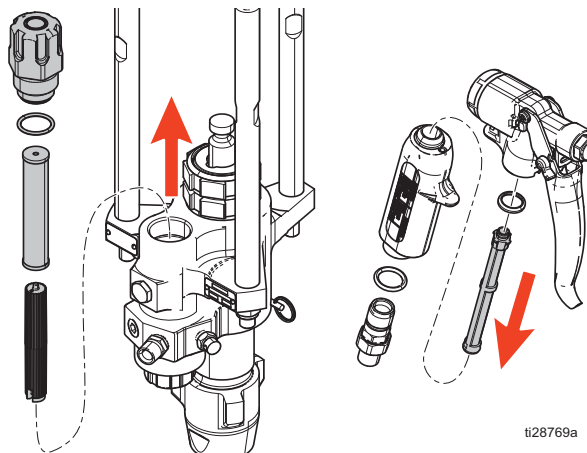
11. Wait for clean solvent to flow from drain tube.

12. Pull pressure adjustment knob (N) out and turn counterclockwise until it stops. Push the knob in to lock.

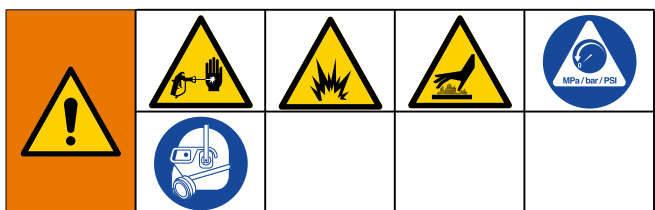


13. Turn power switch (E) OFF.

14. Check the pump and gun filters for debris.



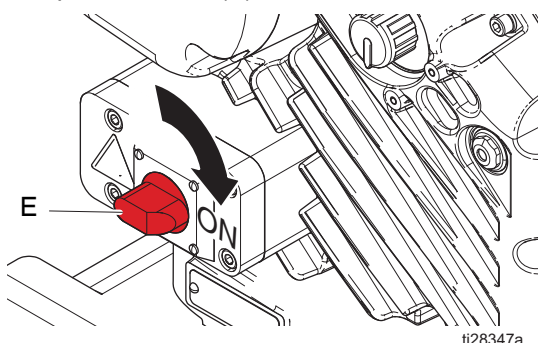
Spray



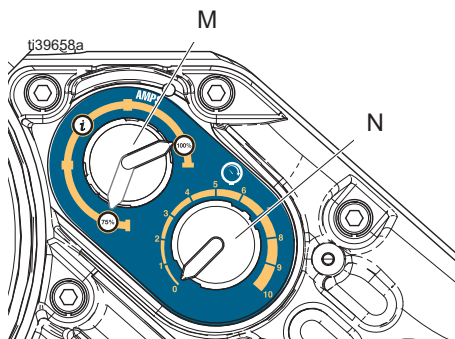
NOTICE

Do not allow pump to run dry. It will quickly accelerate to a high speed causing damage.

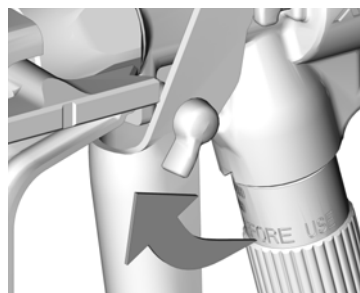
1. Follow the **Prime/Flush** on page 13.
2. Follow the **Pressure Relief Procedure** on page 12.
3. Install tip and tip guard onto gun. Close the drain valve.
4. Turn power switch (E) ON.



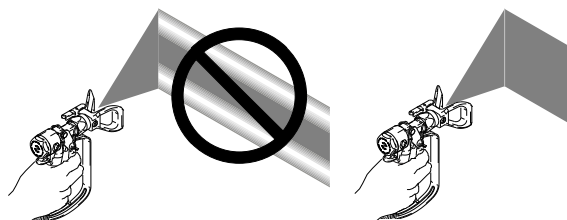
5. Pull out and turn pressure adjustment knob (N) until desired pressure is reached. Turn clockwise to increase pressure, counterclockwise to decrease pressure. Push knob in to lock.



6. Disengage the gun trigger lock.



7. Spray a test pattern. Read fluid manufacturer recommendations and adjust as necessary.



NOTE: When determining the desired spray pressure, always increase the spray pressure until the spray pattern fully develops. This will reduce the pressure surge when the pump is stalled and minimize over-spray.

Pressure Adjustment Knob Setting	Dynamic Pump Outlet Pressure*					
	E70			E60		
	psi	Bar	MPa	psi	Bar	MPa
1	630	43.5	4.35	500	35.0	3.5
2	1250	87	8.70	1000	70.0	7.0
3	1900	130	13.0	1500	105	10.5
4	2500	175	17.5	2000	140	14.0
5	3150	215	21.5	2500	170	17.0
6	3750	260	26.0	3000	205	20.5
7	4410	305	30.5	3500	240	24.0
8	5055	350	35.0	4000	275	27.5
9	5650	390	39.0	4500	310	31.0
10	6300	435	43.5	5000	345	34.5

*The sprayer can stall at pressures higher than the dynamic pressure. All components downstream of the sprayer must be rated for the pressures listed in **Technical Specifications** on page 32.

8. Flush when finished spraying. Follow the **Prime/Flush** on page 13.
9. Follow the **Pressure Relief Procedure** on page 12.

Shutdown



NOTICE

Never leave water or water-based fluid in pump over night. If water-based fluid has been used, flush with water first, then with a rust inhibitor (such as mineral spirits). Relieve pressure, but leave rust inhibitor in pump to protect parts from corrosion.

To shutdown:

1. Follow the **Prime/Flush** on page 13.
2. Follow the **Pressure Relief Procedure** on page 12.

Maintenance



NOTICE

Do not open/remove gear cover. The gear side is not intended to be serviced. Opening the gear cover may alter the factory set bearing pre-load and may reduce the product life.

Preventative Maintenance Schedule

The operating conditions of your particular system determine how often maintenance is required. Establish a preventive maintenance schedule by recording when and what kind of maintenance is needed, and then determine a regular schedule for checking your system.

Change the Oil

NOTE: Change the oil after a break-in period of 200,000–300,000 cycles. After the break-in period, change the oil once a year.

1. Place a minimum 2 quart (1.9 liter) container under the oil drain port. Remove the oil drain plug. Allow all oil to drain from the driver.
2. Reinstall the oil drain plug. Torque to 18–23 ft-lb (25–30 N•m).

NOTICE

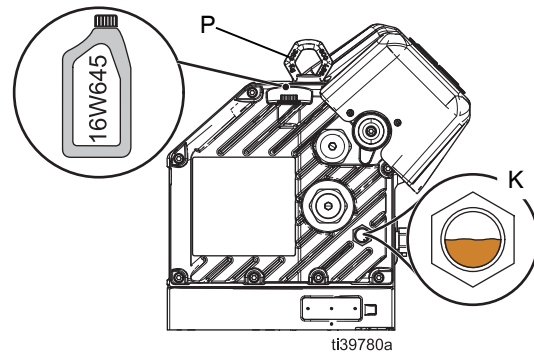
Do not over-torque. The drain plug can become stripped and damaged.

3. Open the oil fill cap (P) and add Graco Part No. 16W645 silicone-free ISO 220 synthetic EP gear oil. Check the oil level in the sight glass (K). Fill until the oil level is near the halfway point of the sight glass. The oil capacity is approximately 1.0–1.2 quarts (0.9–1.1 liters). Do not overfill.

NOTICE

Only use oil with Graco part number 16W645. Any other oil may not lubricate properly and can cause damage to the drive train.

4. Reinstall the oil fill cap (P).



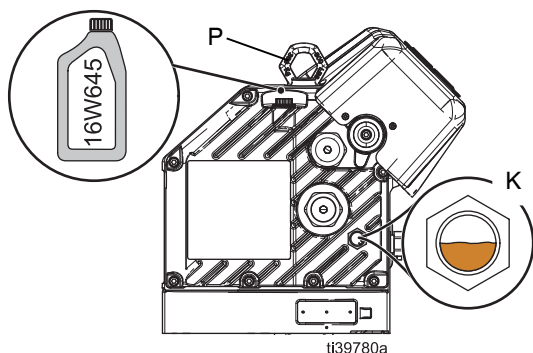
Daily Maintenance

NOTE: For overnight shutdown, stop pump at bottom of its stroke to prevent fluid from drying on exposed displacement rod and damaging throat packings. Follow the **Pressure Relief Procedure** on page 12.

1. Follow the **Prime/Flush** on page 13.
2. Follow the **Pressure Relief Procedure** on page 12.
3. Check packing nut (D). Adjust packings and replace TSL as necessary. See lower pump manual 311762 for packing nut torque.
4. Tighten all fluid connections before each use. Check hoses, tubes, and couplings for loose connections.

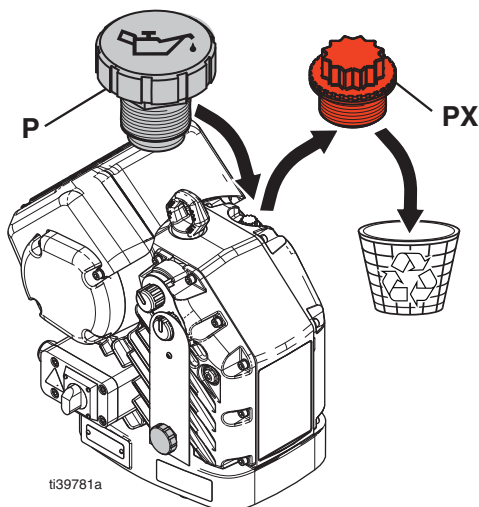
Check Oil level

Check the oil level in the sight glass (K). The oil level should be near the halfway point of the sight glass when the sprayer is not running. If oil is low, open the fill cap (P) and add Graco Part No. 16W645 silicone-free ISO 220 synthetic EP gear oil.



The oil capacity is approximately 1.0–1.2 quarts (0.9–1.1 liters). Do not overfill.

NOTE: The driver gear box is pre-filled with oil. The temporary unvented cap (PX) prevents oil leaks during shipment. This temporary cap must be replaced with the supplied vented oil cap (P) before use.



NOTICE

Only use oil with Graco part number 16W645. Any other oil may reduce the life of the gears.

Corrosion Protection

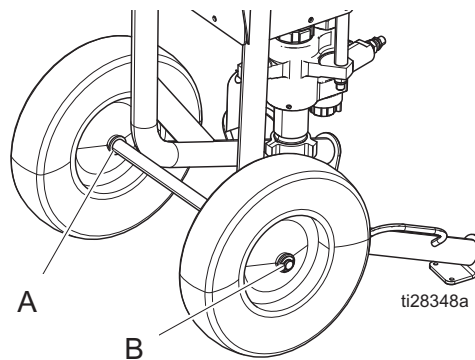
Always flush the pump before fluid dries on the displacement rod. Never leave water or water-based fluid in the pump overnight. First, flush with water or a compatible solvent, then with a rust inhibitor, such as mineral spirits. Follow the **Pressure Relief Procedure** on page 12, but leave rust inhibitor in pump to protect parts from corrosion.

Flushing

- Flush before changing fluids, before fluid can cure in the equipment, at the end of the day, before storing, and before repairing equipment.
- Flush at the lowest pressure possible. Check connectors for leaks and tighten as necessary.
- Flush with a fluid that is compatible with the fluid being dispensed and the equipment wetted parts.

Cart Maintenance

Periodically lubricate the axle between points A and B with lightweight oil (see below).



Keep the cart clean by wiping up spills daily, using a compatible solvent.

Troubleshooting



NOTE: Check all possible remedies before disassembling the pump.

NOTE: The status indicator (L) on the driver will blink if an error is detected.

Problem	Cause	Solution
Pump output low on both strokes	Exhausted fluid supply	Refill and prime the pump.
	* Clogged fluid outlet line, gun, etc. The hose inner diameter is too small	Clear the hose, outlet check valve, or gun; use the hose with the larger inner diameter.
	Worn piston packing	Replace the piston packing. See your pump lower manual.
No output	Improperly installed intake or piston check valves	Check and repair. See pump the lower manual.
	The intake valve is clogged.	Clean the intake valve.
	Exhausted fluid supply	Refill and prime the pump.
Pump will not operate	Exhausted fluid supply	Refill and prime the pump.
	* Clogged fluid hose or gun	Clean the hose or gun.
	Fluid dried on the piston rod	Disassemble and clean the pump (see the lower manual). In the future, stop the pump at the bottom of the stroke. Keep the wet-cup filled with compatible solvent.
	Driver parts are worn or damaged	Repair or replace the driver. Remove the lower from the driver. If the driver will not cycle and does not blink an error code, then troubleshoot the driver or replace.
	Mode not selected	Put the mode selector knob (M) into the correct mode. See Setup , page 10.
	Circuit breaker tripped	Adjust the mode selector knob. See Setup , page 10. Reduce tip size, and/or pressure setting.
No pressure or flow	Fluid is leaking from the rupture disk	Replace the rupture disk; do not replace with a pipe plug.
	The intake valve is clogged	Clean the intake valve.
	Leaking drain valve	Close or replace the drain valve.
Driver does not turn on	Over voltage (over 300 V)	See power supply requirements in your driver manual.
	No power to the control board	Verify that the power supply is connected. Check the junction box connections.
Output low on the down stroke	Open or worn intake valve	Clear or service the intake valve.
Output low on the up stroke	Open or worn piston valve packings	Clear the piston valve. Replace the packings.

* To determine if the fluid hose or gun is obstructed, follow the **Pressure Relief Procedure** on page 12. Disconnect fluid hose and place a container at pump fluid outlet to catch any fluid. Turn pressure adjustment knob just enough to start the pump. If the pump starts, the obstruction is in the fluid hose or gun.

Problem	Cause	Solution
Erratic or accelerated pump speed	Fluid supply is exhausted	Refill the fluid supply and prime the pump.
	Clogged suction	Clean the suction tube.
	Open or worn piston valve packings	Clear the piston valve. Replace the packings.
	Open or worn intake valve	Clear or service the intake valve.
	Clogged gun, hose, outlet, etc.	Clear the gun, hose, outlet, etc.
	Open or worn outlet check valve	Clear or service the outlet check valve.
Cycles or fails to hold pressure at stall	Worn intake or piston valve or seals	Service the pump lower (see your lower manual).
Air bubbles in fluid	Loose suction line	Tighten suction line connections. Use compatible liquid thread sealant or PTFE tape on connections.
	Agitator/mixer is not submerged	Submerge the agitator/mixer.
	Agitator/mixer RPM is too high	Lower the agitator/mixer RPM.
Poor finish or irregular spray pattern	Incorrect fluid pressure at gun	See your gun manual. Read the fluid manufacturer's recommendations.
	Fluid is too thin or too thick	Adjust the fluid viscosity. Read the fluid manufacturer's recommendations.
	Dirty, worn, or damaged spray gun	Service the spray gun (see your spray gun manual).
Driver does not turn over and LED is off	Over voltage (greater than 300 V)	Check the power supply.
	No power to the control board	Contact your Graco distributor or Tech Service for more information.
Driver does not turn over and LED is on	Encoder fault	Cycle power. Recalibrate the encoder following the procedure listed in the Driver Operation/Repair manual. Contact your Graco distributor or Tech Service for more information.
Oil is leaking	Oil was over filled	Drain and refill oil as stated in Check Oil level , page 17.
	Drain plug is not tightened properly	Torque to 18-23 ft-lb (25-30 N•m).
	Seal cartridge o-ring missing or damage	Replace the shaft bearing assembly.

Error Code Troubleshooting

Error codes can take two forms:

- **Alarm:** Alerts you to the cause of the alarm and shuts down the driver.
- **Deviation:** Alerts you to the problem, but the driver may continue to run past the set limits until the system absolute limits are reached.

NOTE: The blink code is displayed using the status indicator (L) on the driver. The blink code given below indicates the sequence. For example, blink code 2 indicates two blinks, a pause, and then repeats.

NOTE: To clear an error code, first try turning the pressure adjustment knob (N) counterclockwise until it stops. If the status indicator (L) does not stop blinking shortly after turning the knob to zero, cycle the power by

turning the power switch (E) to the OFF position for at least 30 seconds before turning back ON.

Standby Mode

When slow blinking is displayed, the driver has entered Standby Mode. The driver will enter standby mode when powered on and pressurized with a knob setting greater than 7, and the pump has not moved any material for 30 minutes.

Standby Mode will be exited when:

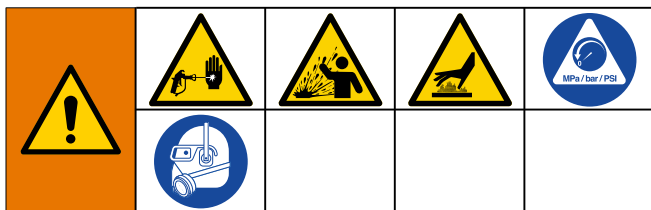
- Material starts to dispense and causes the pump to move, OR
- The pressure adjustment knob (N) is adjusted, OR
- The power switch (E) is cycled OFF and ON

Error Codes Table

Blink Code	Error Type	Troubleshooting Steps
1	Alarm	Pump Diving The pump is diving rapidly. A pressure imbalance between the up and down stroke of the pump is causing the pump to dive with excessive speed. <ul style="list-style-type: none"> • Pump diving may occur when the pump runs out of material while spraying at high pressure. • Verify that material is being properly fed to the pump. • Pressure from the hose could flow back into the pump on the down stroke. • Verify that the check valve is installed and is properly working.
2	Alarm	Voltage Too Low <ul style="list-style-type: none"> • Verify that line voltage is within the range specified in Technical Specifications, page 32. • Cycle power and check status indicator (L) to see if the error is still active.
3	Alarm	Voltage Too High <ul style="list-style-type: none"> • Verify that line voltage is within the range specified in Technical Specifications, page 32. • Cycle power and check status indicator (L) to see if the error is still active.
4	Deviation	High Temperature The temperature of the system is near the maximum operation temperature. The performance has been reduced to prevent the driver from completely shutting down. <ul style="list-style-type: none"> • Reduce pressure. • Move the unit to a cooler location.

Blink Code	Error Type	Troubleshooting Steps
5	Deviation	Low Temperature <ul style="list-style-type: none"> Warm equipment. Circuit board cannot read the temperature sensor. Check if the sensor is plugged into the correct connector. See the Driver manual, Related Manuals, page 2.
6	Alarm	Motor Temperature Fault Motor is running too hot. Allow unit to cool. <ul style="list-style-type: none"> Reduce pressure. Move the unit to a cooler location.
7	Alarm	Board Temperature Fault The control board is running too hot. Allow the unit to cool. <ul style="list-style-type: none"> Reduce pressure. Move the unit to a cooler location.
8	Alarm	Encoder Calibration Error <ul style="list-style-type: none"> Cycle power and check status indicator (L) to see if the error is still active. Follow the calibration procedure listed in the Driver Operation/Repair manual to calibrate the encoder (this code will blink if calibration is in progress). Contact your Graco distributor or Tech Service for more information.
9	Alarm	Encoder Error <ul style="list-style-type: none"> Cycle power and check the status indicator (L) to see if the error is still active. Verify that the internal connections are intact. Contact your Graco distributor or Tech Service for more information.
10	Alarm	Software Versions Do Not Match <ul style="list-style-type: none"> Obtain software update token. See Accessories section for token part number. See the Driver Operation/Repair manual for token installation information.
11	Alarm	Circuit Board Communication Failure <ul style="list-style-type: none"> Cycle power and check status indicator (L) to see if the error is still active. Contact your Graco distributor or Tech Service for more information.
12	Alarm	Internal Circuit Board Hardware Failure <ul style="list-style-type: none"> Cycle power and check status indicator (L) to see if the error is still active. Contact your Graco distributor or Tech Service for more information.
13, 14	Alarm	Internal Software Error <ul style="list-style-type: none"> Cycle power and check status indicator (L) to see if the error is still active. Contact your Graco distributor or Tech Service for more information.
Slow Blink	Deviation	See Standby Mode , page 20.

Repair



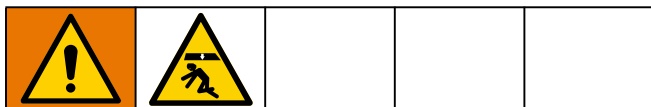
Xtreme Lower Removal

Required Tools

- Set of adjustable wrenches
- Torque wrenches
- Rubber mallet
- Thread lubricant
- Anti-seize lubricant
- Thread sealant

Disconnect the Lower

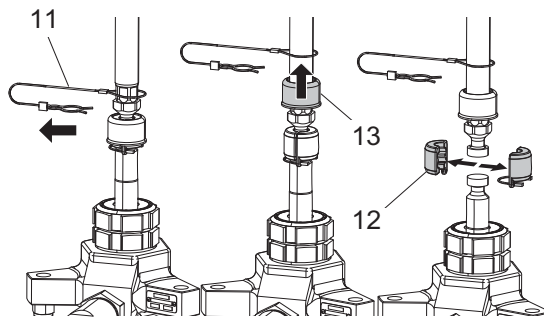
1. Flush the pump (see **Prime/Flush**, page 13). Stop the pump at the bottom of its stroke.
2. Follow the **Pressure Relief Procedure** on page 12.
3. Disconnect the unit from the power source.
4. Disconnect the fluid hose, then disconnect the material suction hose. Hold the fluid inlet fitting with a wrench to keep it from loosening while you disconnect the material suction hose.



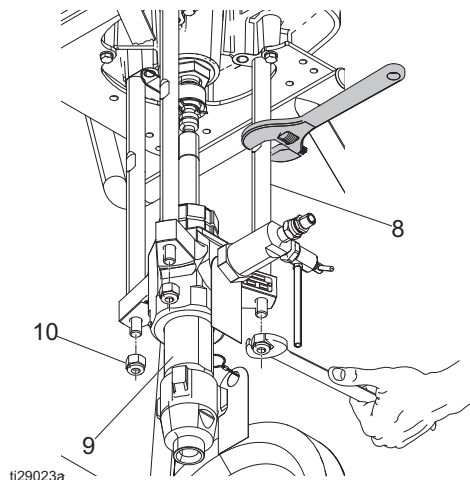
Do not lift the pump by the lift ring when the weight exceeds 360 kg (800 lb). The lift ring could fail and result in injury.

Use caution when disconnecting the lower; it can weigh up to 55 lb (25 kg). Take appropriate precautions.

5. If the driver does not require service, leave it attached to the mounting.
6. Remove clip (11) and slide coupling cover (13) up to remove coupling (12).



7. Use a wrench to hold the tie rod flats to keep rods (8) from turning. Unscrew nuts (10) and remove the lower (9).

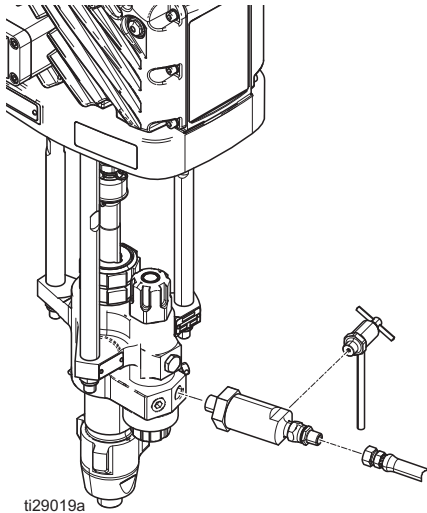


8. See your lower pump manual to service the lower.
9. Reconnect the lower by following the disconnect steps in reverse order.

NOTE: Torque the nuts (10) to 50-60 ft-lb (68-81N•m).

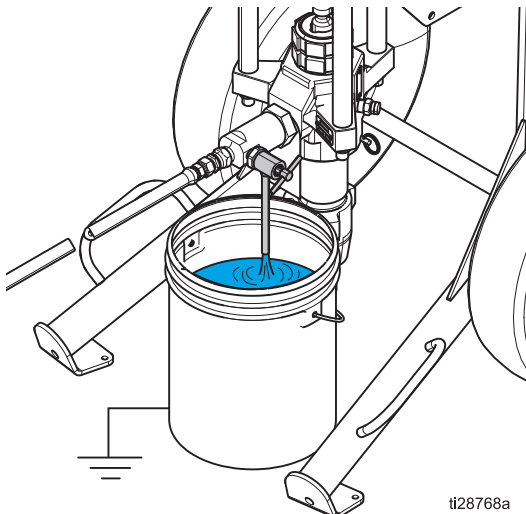
Outlet Check Valves

1. Follow the **Pressure Relief Procedure** on page 12.
2. Disconnect the unit from the power source before removing or servicing the outlet check valve.
3. When replacing the outlet check valve, reinstall with the proper flow direction.

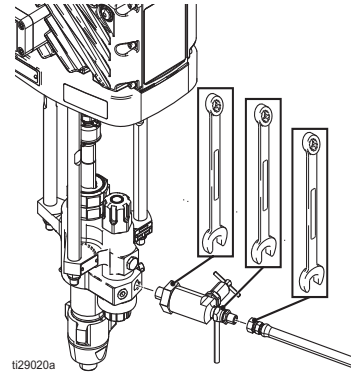


Outlet Check Valve Repair

1. Flush the pump (see **Prime/Flush**, page 13). Stop the pump at the bottom of the stroke.
2. Follow the **Pressure Relief Procedure** on page 12.
3. Disconnect the unit from the power source.
4. Place a waste container below the outlet check valve to catch any material.



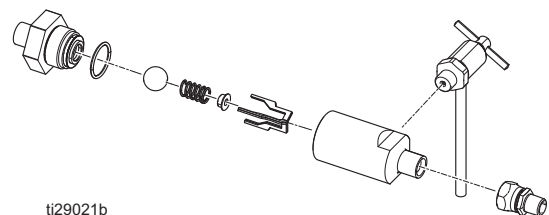
5. Use two wrenches to loosen the hose, then disconnect the hose from the outlet check valve housing.



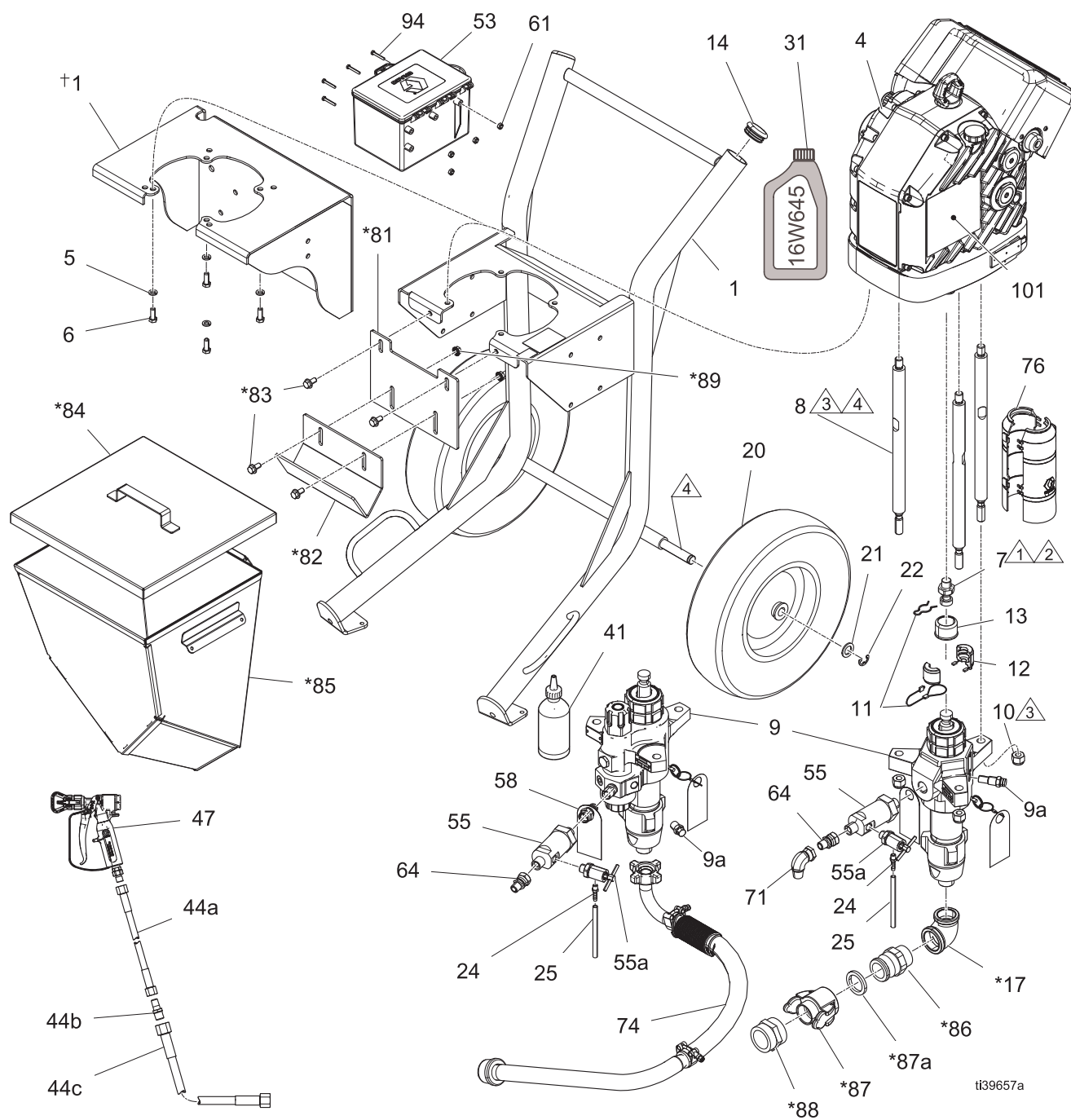
6. Use a wrench to loosen the outlet check valve, then remove the outlet check valve from the pump lower.

NOTE: The pressure drain valve may remain attached to the outlet check valve housing during repair if needed.

7. Remove the outlet check valve nut from the valve housing.
 8. Remove and clean all internal outlet check valve components. Inspect all components for wear or damage and replace components as needed.
 9. Reassemble parts in the reverse order they were removed; ball guides (3), spring retainer, compressor spring, and ball. Use a small blunt tool to push that ball in and verify that the ball and spring move freely.
 10. Replace the o-ring and coat with grease.
 11. Torque the outlet check valve nut onto the housing to 75–80 ft-lb (101–108 N•m).
- NOTE:** If the pressure drain valve was removed for the outlet check valve repair, reinstall at this point.
12. Reattach the outlet check valve to the pump lower and verify the flow indication arrow is pointing away from the pump and that the pressure drain valve outlet is facing the ground.
 13. Attach the dispense hose to the outlet check valve.



Parts



1 Torque to 145-155 ft-lb (196-210 N•m)

2 Apply thread locker.

3 Torque to 56-60 ft-lb (68-81 N•m)

4 Apply grease lubricant.

For information on safety labels, see your driver manual.

Parts List

Ref.	Part	Description	Qty.
1	255143 (includes 5, 6)	BRACKET, wall mount, painted (Models 273750, 273751, 273756, 273757)	1
	17X355 (includes 14, 20, 21, 22)	CART, heavy duty, painted (Models 273746, 273747, 273752, 273753, 273762, 273764)	1
	17X356 (includes 14, 20, 22)	CART, light weight (Models 273748, 273749, 273754, 273755)	1
4	25P291	DRIVER, King, Non-Haz, E70	1
5	100133	WASHER, lock, 3/8	4
6	100101	SCREW, cap, hex hd	4
7	15H392	ROD, adapter Xtreme	1
8	257150	ROD, tie, 14 1/4 long	3
9	L115C6	LOWER, Xtreme, 115, NF (Model 273762)	1
	L115C5	LOWER, Xtreme, 115, BF (Models 273746, 273747, 273748, 273749, 273750, 273751)	1
	L145C6	LOWER, Xtreme, 145, NF (Model 273764)	1
	L145C5	LOWER, Xtreme, 145, BF (Model 273752, 273753, 273754, 273755, 273756, 273757)	1
9a	258962	HOUSING, rupture disk, assembly (All Models)	1
10	101712	NUT, lock	3
11	244820	CLIP, hairpin (with lanyard)	1
12	244819	COUPLING, assembly, 115-290 Xtreme	1
13	197340	COVER, coupler	1
14	113361	CAP, tube, round (Models 273746, 273747, 273752, 273753, 273762, 273764)	2
	16W767	CAP, tube, round (Models 273748, 273749, 273754, 273755)	2
17*	126939	FITTING, elbow (Model 273762, 273764)	1
20	113362	WHEEL, semi-pneumatic, heavy duty (Models 273746, 273747, 273752, 273753, 273762, 273764)	2
	116406	WHEEL, semi-pneumatic, light weight (Models 273748, 273749, 273754, 273755)	2
21	154628	WASHER (Models 273746, 273747, 273752, 273753, 273762, 273764)	2
22	113436	RING, retaining (Models 273746, 273747, 273748, 273749, 273752, 273753, 273754, 273755, 273762, 273764)	2
24	116746	FITTING, barbed, plated	1
25	116750	TUBE, nylon	1
31‡	16W645	KIT, oil (1 quart bottle)	--
41	206994	FLUID, TSL, 8 oz	1
	206995 (not included)	FLUID, TSL, 1 quart (not included with sprayer)	--
	206996 (not included)	FLUID, TSL, 1 gallon (not included with sprayer)	--
	206997 (not included)	FLUID, TSL, 1 quart, qty. 12 bottles (not included with sprayer)	--
44a	H72506	HOSE, cpd, 7250 psi, 0.25 ID, 6 ft (Models 273746, 273748, 273750, 273752, 273754, 273756)	1
	H73806	HOSE, cpd, 7250 psi, 0.375 ID, 6 ft (Model 273762, 273764)	1
44b	164856	FITTING, nipple, reducing (Models 273746, 273748, 273750, 273752, 273754, 273756)	1
	159239	FITTING, nipple, pipe, reducing (Model 273762, 273764)	1
44c	H73850	HOSE, cpd, 7250 psi, 0.375 ID, 50 ft (Models 273746, 273748, 273750, 273752, 273754, 273756)	1
	H75050	HOSE, cpd, 7250 psi, 0.50 ID, 50 ft (Model 273762, 273764)	--
47	XTR720	GUN, XTR7+, 1 in. hnd, 4 FNG, no tip (Models 273746, 273748, 273750, 273752, 273754, 273756)	1
	262854	GUN, spray (Model 273762, 273764)	1
53	25D498	TOOL BOX, black (Models 273746, 273747, 283848, 273749, 273752, 273753, 273754, 273755, 273762, 273764)	1

Parts

Ref.	Part	Description	Qty.
55	25C189	VALVE, subassembly (1/2 in. NPT for Integrated filter Lowers) (Models 273746, 273747, 273748, 273749, 273750, 273751, 273752, 273753, 273754, 273755, 273756, 273757, 273762)	1
	127631	VALVE, subassembly (3/4 in. NPT) (Model 273764)	1
55a	245143	VALVE, pressure, bleed	1
58	17A411	LABEL, instructions	1
61	114231	NUT, lock, hex (Models 273746, 273747, 283848, 273749, 273752, 273753, 273754, 273755, 273762, 273764)	4
64	162505	FITTING, union, swivel	1
71	C19024	FITTING, elbow, swivel, 1/2 in. (Models 273762, 273764)	1
74	25D515	HOSE, suction, 5 gal to 1-1/4 NPT (Models 273746, 273747, 273748, 273749, 273750, 273751, 273752, 273753, 273754, 273755, 273756, 273757)	1
76	19B976	GUARD, rod coupler	2
81*	17D554	BRACKET, hopper, upper (Model 273762, 273764)	1
82*	17C474	BRACKET, hopper (Model 273762, 273764)	1
83*	112395	SCREW, cap flng hd (Model 273762, 273764)	4
84*	16U537	COVER, complete (Model 273762, 273764)	1
85*	17E114	HOPPER, weldment, Xtreme (Model 273762, 273764)	1
86*	17C692	FITTING, cam and groove, 1/2 M, 1-1/2 npt (Model 273762, 273764)	1
87*	128095	FITTING, cam and groove (Model 273762, 273764)	1
87A*	120781	GASKET, quick coupler (PTFE Encapsulated FKM), (Model 273762, 273764)	1
87b	17C435 (not included with 87)	GASKET, quick coupler (Buna-N 6-pack), (Model 273762, 273764), (not shown)	1
88*	128094	FITTING, coupler, bushing, 1-1/4 in. (Model 273762, 273764)	1
89*	112958	NUT, hex, flanged (Model 273762, 273764)	4
94	115248	SCREW, cap, hex (Models 273746, 273747, 283848, 273749, 273752, 273753, 273754, 273755, 273762, 273764)	4
101▲	17J476	LABEL, warning (English/French/Spanish)	1
	17K430	LABEL, warning, bag (Dutch/German/Swedish, Polish/Russian, Italian/Turkish)	1

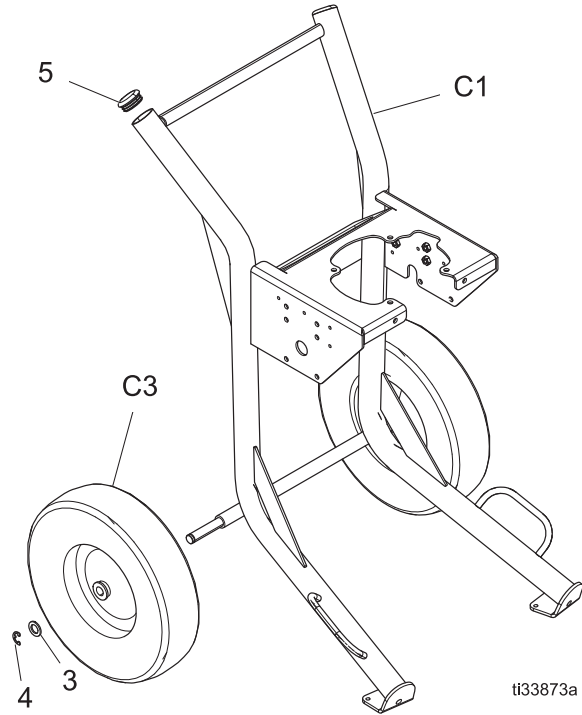
* Included in Hopper Accessory Kit 24X570

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

‡ The driver gear box is pre-filled with oil. Additional oil must be purchased separately.

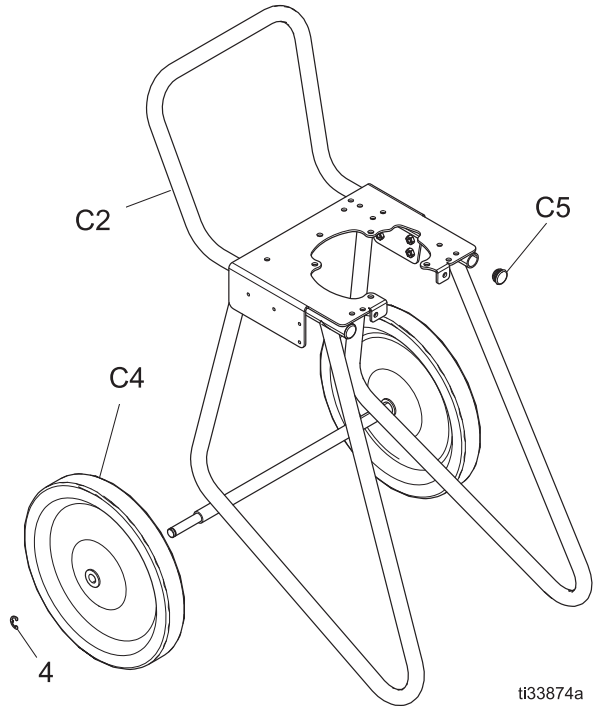
Cart Parts

17X355 - Heavy Duty Cart



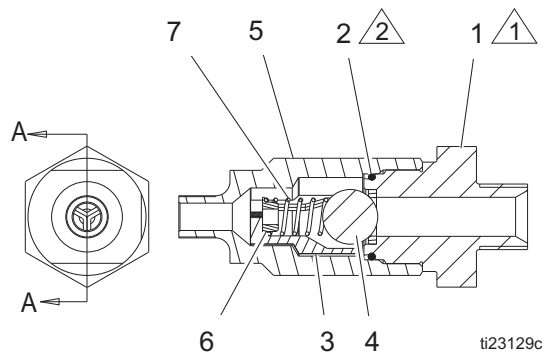
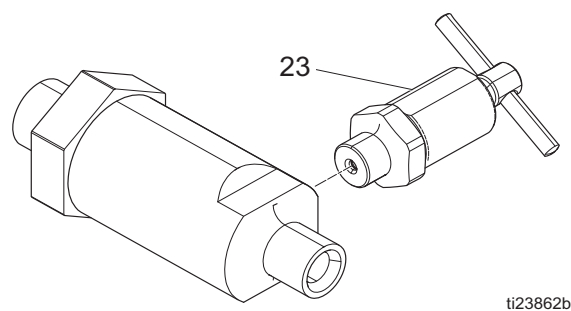
Ref.	Part	Description	Qty.
3	154628	WASHER	2
4	113436	RING, retaining	2
5	113361	CAP, tube, round	2
C1	-----	CART, heavy duty	1
C3	113362	WHEEL, semi-pneumatic	2

17X356 - Light Weight Cart



Ref.	Part	Description	Qty.
4	113436	RING, retaining	2
C2	-----	CART, light weight	1
C4	116406	WHEEL, semi-pneumatic	2
C5	16W767	PLUG, tubing	2

Outlet Check Valves Parts



Outlet check Valves Parts List

127631 (3/4 in. male npt inlet)
25C189 (1/2 in. male npt inlet)

Ref.	Part	Description	Qty.
1	127882	NUT, seat (includes 2* and 4) for 127631 version	1
	25C190	NUT, seat (includes 2* and 4) for 25C189 version	1
2*	102595	PACKING, o-ring	1
3	181492	GUIDE, ball	3
4	102972	BALL, metallic	1
5	17A091	HOUSING, ball, check	1
6	181535	RETAINER, spring	1
7	108361	SPRING, compressor	1
23	245143	VALVE, pressure bleed	1

* If the outlet check valve is disassembled, the o-ring (2) must be replaced. The o-ring is designed to be crushed, and not reused.

Parts Specifications:

Ref.	Instruction
1	Torque to 101-108 N•m (75-80 ft-lb)
2	Apply lubricant

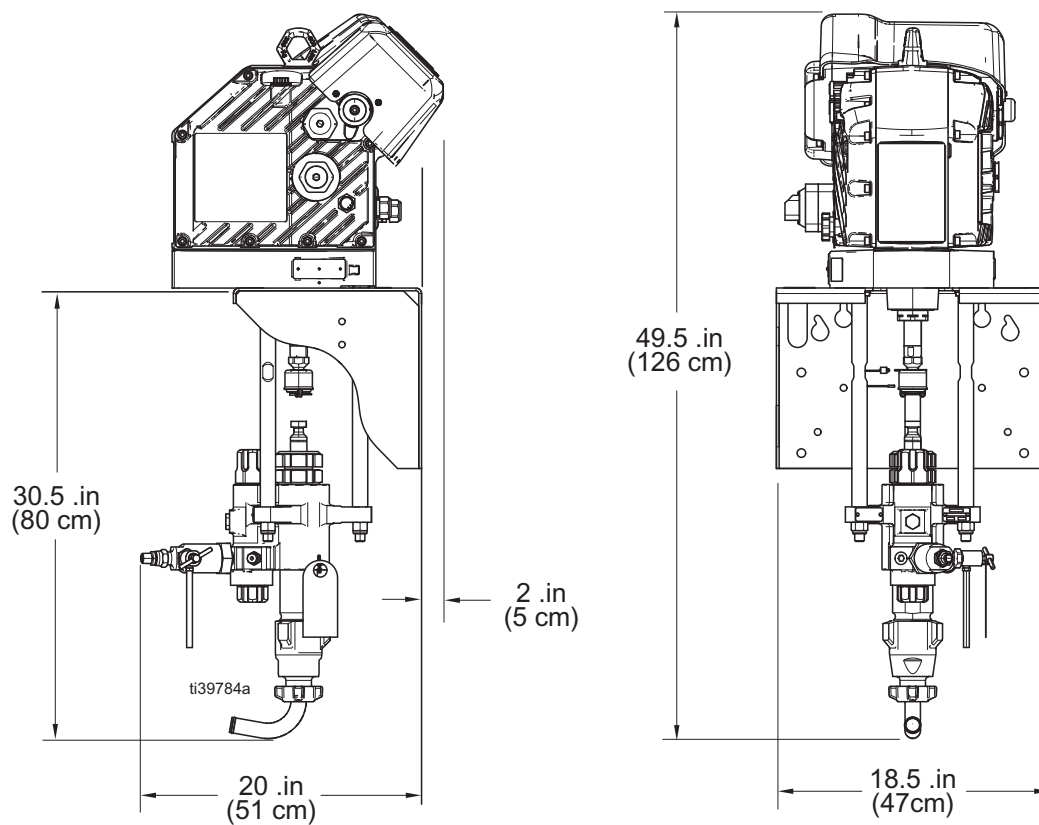
Accessories:

Part	Description
17B291	MIXER, jiffy, PS-1
25F044	KIT, suction set, 1.0 in. npt x 6 ft L
25D515	KIT, suction set, 1.0 in. npt x 3 ft L
20A584	KIT, suction, drum, 1.0 in. npt x 10 ft L
25F047	Software Update Token**
24X570	KIT, hopper

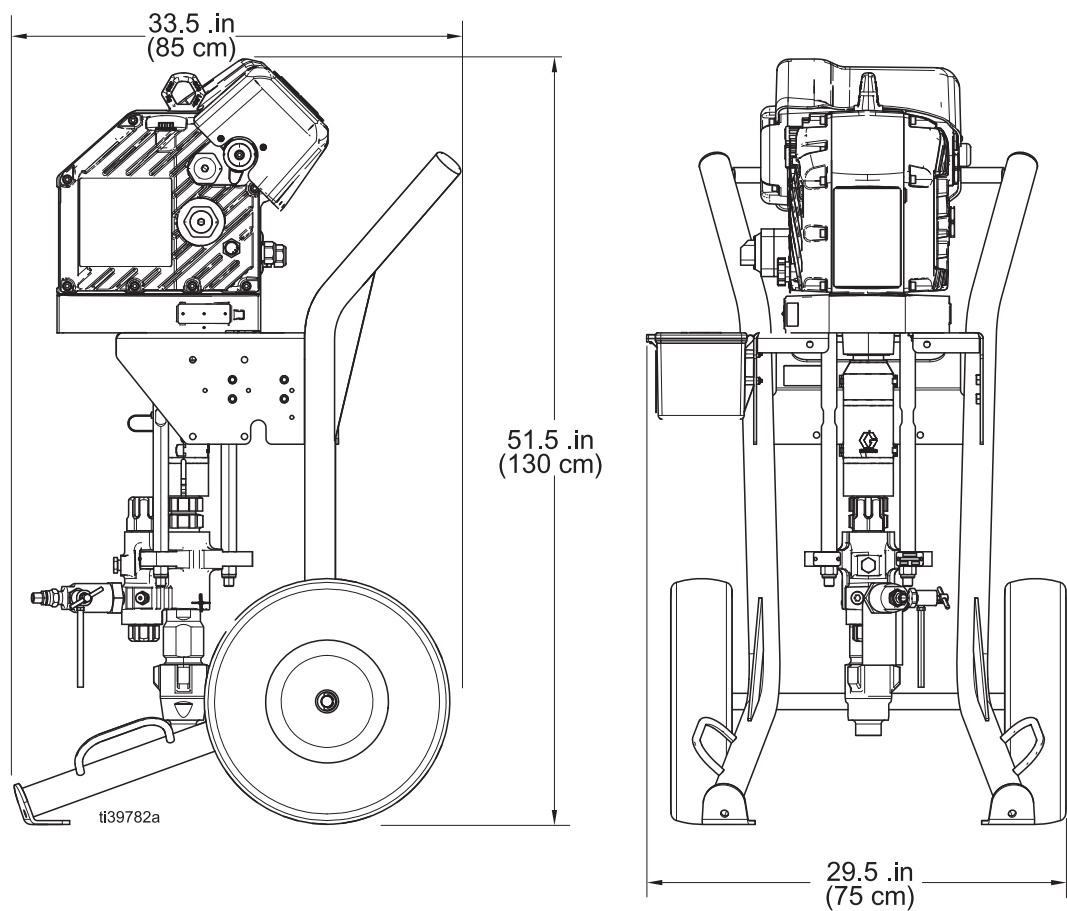
** See your driver manual for software token update procedure.

Dimensions

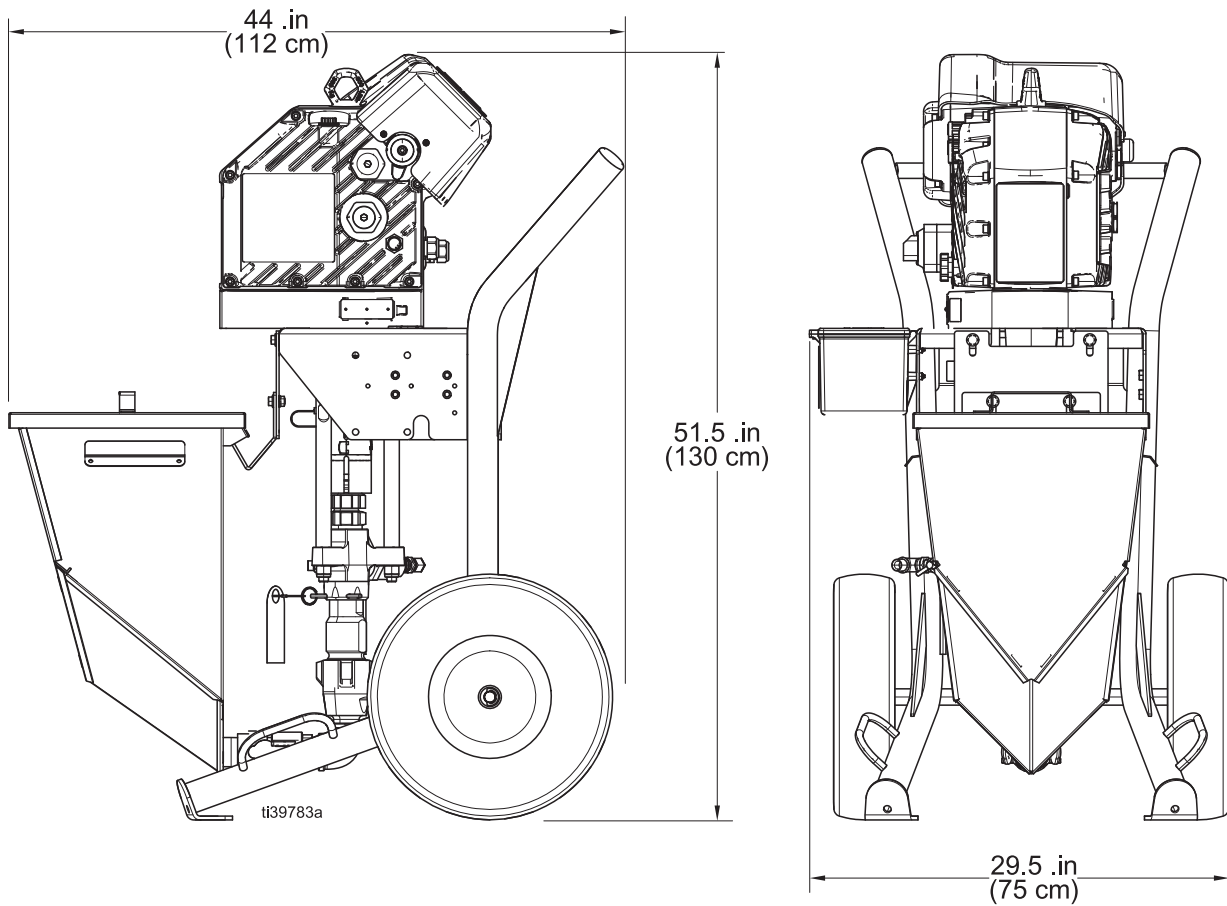
Wall Mount Systems



Cart Systems



Hopper Systems



Technical Specifications

E70 King Electric Sprayer		
	US	Metric
Maximum Fluid Working Pressure	7250 psi	500 bar, 50 MPa
Stroke Length	4.75 in.	120 mm
Maximum Continuous Cycle Rate	40 cycles per minute	
Tip Size	0.023 in.	
Wetted Parts	Carbon Steel, Alloy Steel, 304, 440 and 17-PH Grades of Stainless Steel, Zinc and Nickel Plating, Ductile Iron, Tungsten Carbide, PTFE; Leather, Aluminum	
Maximum Fluid Temperature	See Models information, page 3	
Operating Temperature Range	23 to 120 °F	-5 to 50 °C
Input Power	100-120 VAC, single phase, 50/60 Hz. 30A	
	200-240 VAC, single phase, 50/60 Hz, 20A	
Minimum Recommended Generator Size	6.5 kW (5 kW for 100-120 V)	
Oil Capacity	1.0 to 1.2 quarts	0.9 to 1.1 liters
Oil Specification	Graco part number 16W645 silicone-free ISO 220 synthetic EP gear oil	
Weight		
Cart	330 lb	150 kg
Wall Mount	220 lb	100 kg
Inlet / Outlet Sizes		
Fluid Inlet Sizes	1 1/4 in. npt(m) [also includes 1 in. nps(swivel) to 1 in. npt(m) adapter elbow]	
Fluid Outlet Size	1/2 npt(m) [also includes 1/2 npt(f) to 3/8 npt(m) adapter]	
Hose Requirements		
Minimum Pressure	The minimum hose pressure rating should be equal to or greater than the maximum fluid working pressure of sprayer.	
Minimum Length	50 ft	15 m
Minimum ID	3/8 in.	10 mm
Maximum Resistance per ISO 8028	9100 ohms/ft	30,000 ohms/m
Sound Emissions for Normal Operation (<20 cpm)		
Sound Pressure*	<80 dBA	
*measured 3.28 feet (1 meter) from equipment, ISO-9614-2.		
Notes		
All trademarks or registered trademarks are the property of their respective owners.		

E60 King Electric Sprayer		
	US	Metric
Maximum Fluid Working Pressure	6000 psi	414 bar, 41.4 MPa
Stroke Length	4.75 in.	120 mm
Maximum Continuous Cycle Rate	40 cycles per minute	
Tip Size	0.025 in.	
Wetted Parts	Carbon Steel, Alloy Steel, 304, 440 and 17-PH Grades of Stainless Steel, Zinc and Nickel Plating, Ductile Iron, Tungsten Carbide, PTFE; Leather, Aluminum	
Maximum Fluid Temperature	See Models information, page 3	
Operating Temperature Range	23 to 120 °F	-5 to 50 °C
Input Power	100-120 VAC, single phase, 50/60 Hz. 30A	
	200-240 VAC, single phase, 50/60 Hz, 20A	
Minimum Recommended Generator Size	6.5 kW (5 kW for 100-120 V)	
Oil Capacity	1.0 to 1.2 quarts	0.9 to 1.1 liters
Oil Specification	Graco part number 16W645 silicone-free ISO 220 synthetic EP gear oil	
Weight		
Cart	330 lb	150 kg
Wall Mount	220 lb	100 kg
Inlet / Outlet Sizes		
Fluid Inlet Sizes	1 1/4 in. npt(m) [also includes 1 in. nps(swivel) to 1 in. npt(m) adapter elbow]	
Fluid Outlet Size	1/2 npt(m) [also includes 1/2 npt(f) to 3/8 npt(m) adapter]	
Hose Requirements		
Minimum Pressure	The minimum hose pressure rating should be equal to or greater than the maximum fluid working pressure of sprayer.	
Minimum Length	50 ft	15 m
Minimum ID	3/8 in.	10 mm
Maximum Resistance per ISO 8028	9100 ohms/ft	30,000 ohms/m
Sound Emissions for Normal Operation (<20 cpm)		
Sound Pressure*	<80 dBA	
*measured 3.28 feet (1 meter) from equipment, ISO-9614-2.		
Notes		
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California Proposition 65

CALIFORNIA RESIDENTS

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

Recycling and Disposal

End of Product Life

At the end of a product's useful life, recycle it in a responsible manner.

[illegible]

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.

FOR GRACO CANADA CUSTOMERS

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Graco Information

For the latest information about Graco products, visit www.graco.com.

For patent information, see www.graco.com/patents.

TO PLACE AN ORDER contact your Graco distributor or call to identify the nearest distributor.

Phone: 612-623-6921 or Toll Free: 1-800-328-0211 Fax: 612-378-3505

*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.*

Original instructions. This manual contains English. MM 3A8477

Graco Headquarters: Minneapolis

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www.graco.com
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