

# Operation, Repair, and Parts



## e-Xtreme® Sprayer

3A3164B  
EN

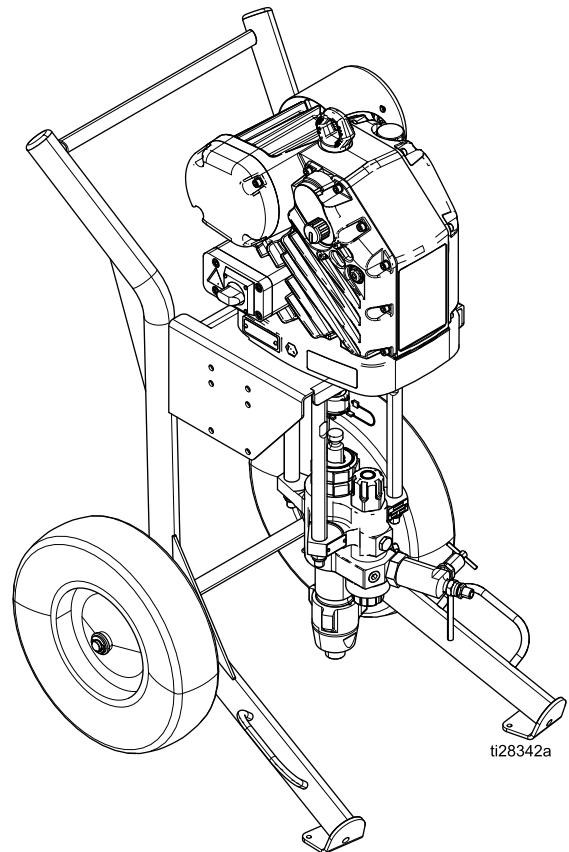
Electric high pressure sprayer packages for application of protective coatings.  
For professional use only.



### Important Safety Instructions

Read all warnings and instructions in this manual and in the e-Xtreme Driver manual. **Save all instructions.**

*See page 3 for model information. See Technical Specifications for maximum working pressure.*



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## Related Manuals

Part	Description
3A3165	e-Xtreme Driver
311619	Pump Mounting Kit Manual
311762	Xtreme Lower Manual
312145	XTR Gun Manual

# Model Information








Model	Description	Package		Filter		Lower Pump
		Complete (Hose and Gun)	Bare (No Hose or Gun)	Integrated Filter	No Filter	
24Y901	e-Xtreme Ex45, Cart	✓		✓		145cc
24Y902	e-Xtreme Ex45, Cart		✓	✓		
24Y903	e-Xtreme Ex45, Cart	✓			✓	
24Y904	e-Xtreme Ex45, Cart		✓		✓	
24Y905	e-Xtreme Ex45, Cart with Hopper	✓		✓		
24Y906	e-Xtreme Ex45, Cart with Hopper		✓	✓		
24Y907	e-Xtreme Ex45, Cart with Hopper	✓			✓	
24Y908	e-Xtreme Ex45, Cart with Hopper		✓		✓	
24Y909	e-Xtreme Ex45, Wall Mount	✓		✓		
24Y910	e-Xtreme Ex45, Wall Mount		✓	✓		
24Y911	e-Xtreme Ex45, Wall Mount	✓			✓	
24Y912	e-Xtreme Ex45, Wall Mount		✓		✓	
24Z901	e-Xtreme Ex35, Cart	✓		✓		180cc
24Z902	e-Xtreme Ex35, Cart		✓	✓		
24Z903	e-Xtreme Ex35, Cart	✓			✓	
24Z904	e-Xtreme Ex35, Cart		✓		✓	
24Z905	e-Xtreme Ex35, Cart with Hopper	✓		✓		
24Z906	e-Xtreme Ex35, Cart with Hopper		✓	✓		
24Z907	e-Xtreme Ex35, Cart with Hopper	✓			✓	
24Z908	e-Xtreme Ex35, Cart with Hopper		✓		✓	
24Z909	e-Xtreme Ex35, Wall Mount	✓		✓		
24Z910	e-Xtreme Ex35, Wall Mount		✓	✓		
24Z911	e-Xtreme Ex35, Wall Mount	✓			✓	
24Z912	e-Xtreme Ex35, Wall Mount		✓		✓	












For maximum working pressure, see [Technical Specifications, page 31](#).






**NOTE:** See the e-Xtreme Driver manual for driver approvals information.

# Warnings

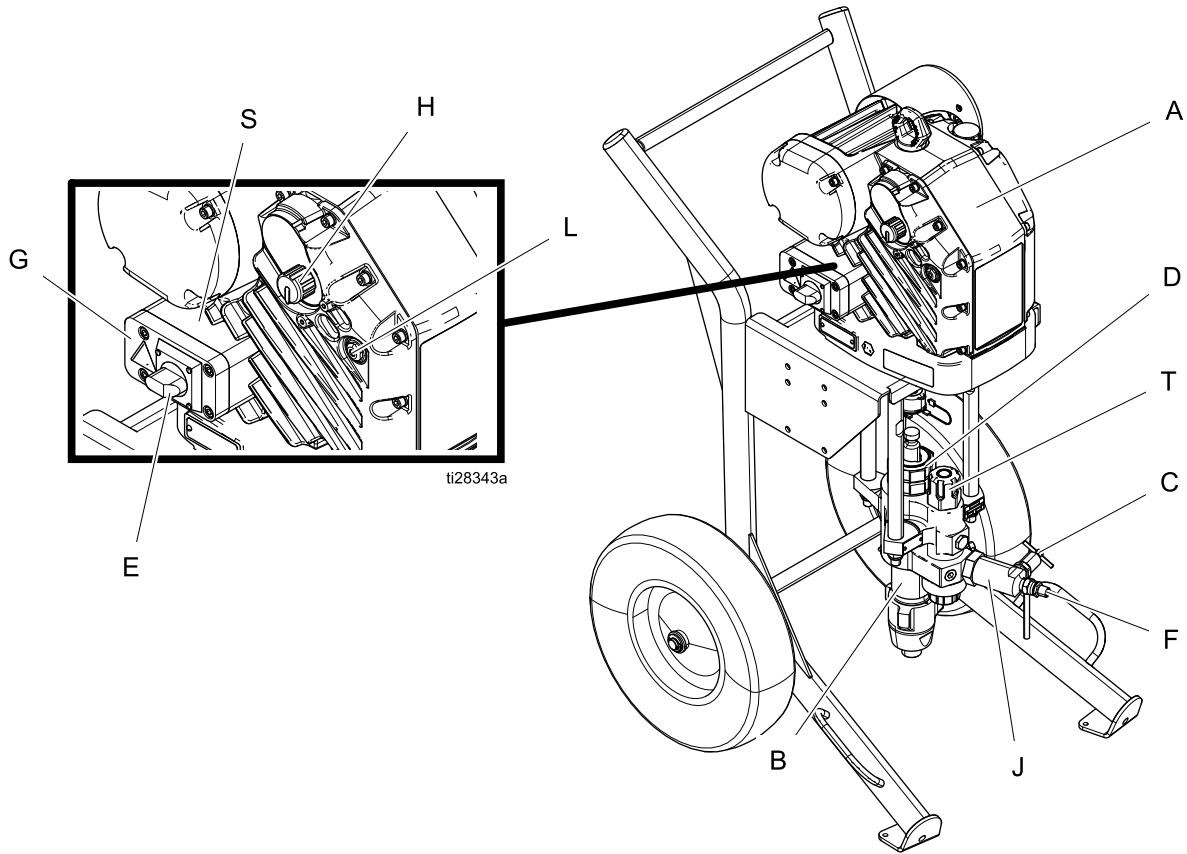
The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer 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.

 <h2 style="margin: 0;">WARNING</h2>	
    	<p><b>FIRE AND EXPLOSION HAZARD</b></p> <p>Flammable fumes, such as solvent and paint fumes, in <b>work area</b> can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> <li>• Use equipment only in well ventilated area.</li> <li>• Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking).</li> <li>• Ground all equipment in the work area. See <b>Grounding</b> instructions.</li> <li>• Never spray or flush solvent at high pressure.</li> <li>• Keep work area free of debris, including solvent, rags and gasoline.</li> <li>• Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.</li> <li>• Use only grounded hoses.</li> <li>• Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are antistatic or conductive.</li> <li>• <b>Stop operation immediately</b> if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem.</li> <li>• Keep a working fire extinguisher in the work area.</li> </ul> <p>Static charge may build up on plastic parts during cleaning and could discharge and ignite flammable vapors. To help prevent fire and explosion.</p> <ul style="list-style-type: none"> <li>• Clean plastic parts only in well ventilated areas.</li> <li>• Do not clean with a dry cloth.</li> <li>• Do not operate electrostatic guns in equipment work area.</li> </ul>
	<p><b>SPECIAL CONDITIONS FOR SAFE USE</b></p> <ul style="list-style-type: none"> <li>• To prevent the risk of electrostatic sparking, the equipment's non-metallic parts should be cleaned only with a damp cloth.</li> <li>• The aluminum housing may spark upon impact or contact with moving parts, which may cause fire or explosion. Take precautions to avoid such impact or contact.</li> <li>• All flameproof joints are critical to the integrity of the driver as approved for hazardous locations and are not repairable if damaged. Damaged parts must be replaced only with genuine Graco parts with no substitutions.</li> </ul>

 <h1 style="margin: 0;">WARNING</h1>	
 	<p><b>ELECTRIC SHOCK HAZARD</b>            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 at main switch before disconnecting any cables and before servicing or installing equipment.</li> <li>• Connect only to grounded power source.</li> <li>• All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.</li> <li>• Do not expose to rain. Store indoors.</li> <li>• Wait five minutes before servicing after power is removed.</li> </ul>
    	<p><b>SKIN INJECTION HAZARD</b>            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. <b>Get immediate surgical treatment.</b></p> <ul style="list-style-type: none"> <li>• Do not spray without tip guard and trigger guard installed.</li> <li>• Engage trigger lock when not spraying.</li> <li>• Do not point gun at anyone or at any part of the body.</li> <li>• Do not put your hand over the spray tip.</li> <li>• Do not stop or deflect leaks with your hand, body, glove, or rag.</li> <li>• Follow the <b>Pressure Relief Procedure</b> when you stop spraying and before cleaning, checking, or servicing equipment.</li> <li>• Tighten all fluid connections before operating the equipment.</li> <li>• Check hoses and couplings daily. Replace worn or damaged parts immediately.</li> </ul>
 	<p><b>MOVING PARTS HAZARD</b>            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>BURN HAZARD</b>            Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:</p> <ul style="list-style-type: none"> <li>• Do not touch hot fluid or equipment.</li> </ul>

 <h1 style="margin: 0;">WARNING</h1>	
	<p><b>TOXIC FLUID OR FUMES</b> Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.</p> <ul style="list-style-type: none"> <li>• Read Safety Data Sheets (SDSs) to know the specific hazards of the fluids you are using.</li> <li>• Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.</li> </ul>
	<p><b>PERSONAL PROTECTIVE EQUIPMENT</b> Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. This 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>
 	<p><b>EQUIPMENT MISUSE HAZARD</b> Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> <li>• Do not operate the unit when fatigued or under the influence of drugs or alcohol.</li> <li>• Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See <b>Technical Data</b> in all equipment manuals.</li> <li>• Use fluids and solvents that are compatible with equipment wetted parts. See <b>Technical Data</b> 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.</li> <li>• Do not leave the work area while equipment is energized or under pressure.</li> <li>• Turn off all equipment and follow the <b>Pressure Relief Procedure</b> when equipment is not in use.</li> <li>• Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.</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> <li>• Use equipment only for its intended purpose. Call your distributor for information.</li> <li>• Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.</li> <li>• Do not kink or over bend hoses or use hoses to pull equipment.</li> <li>• Keep children and animals away from work area.</li> <li>• Comply with all applicable safety regulations.</li> </ul>

# Component Identification



Ref.	Description
A	Electric Driver
B	Pump Lower
C	Fluid Drain/Purge Valve
D	Packing Nut
E	Power Switch
F	Fluid Outlet
G	Junction Box Cover
H	Pressure Adjustment Knob
J	Outlet Check Valve
L	Status Indicator Light (LED)
S	Junction Box
T	Filter Cap (models equipped with integrated filter only)

**NOTE:** See the e-Xtreme Driver manual for warning label information.

# Installation

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

## Power Supply Requirements

See **Driver Manual** for instructions for power supply requirements.

## Connect the Power Supply

See **Driver Manual** for instructions to connect the power supply.

## Grounding

<p>This 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:** Follow local code.

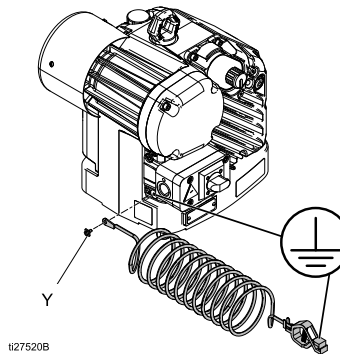
**Object being sprayed:** Follow local code.

**Solvent pails used when flushing:** Follow local code. Use only conductive metal pails, placed on a grounded surface. Do not place the pail on a non-conductive surface, such as paper or cardboard, which interrupts grounding continuity.

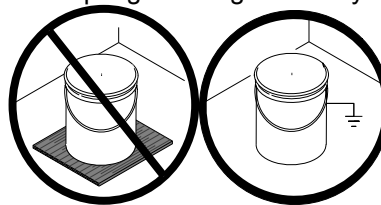
**To maintain grounding continuity when flushing or relieving pressure:** Hold the metal part of the spray gun/dispense valve firmly to the side of a grounded metal pail, then trigger the gun/valve.

### Tools Required:

- Grounding wires and clamps for pails (Graco part 244524 – not supplied)
  - Two 5 gallon (19 liter) metal pails (Graco part 101108 – not supplied)
1. Connect the ground wire (Y) to a ground stud on the back of the motor.



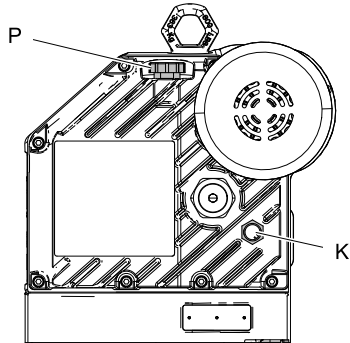
2. Ground the object being sprayed, fluid supply container, and all other equipment in the work area. Follow your local code. Use only electrically conductive air and fluid hoses.
3. Ground all solvent pails. Use only metal pails, which are conductive, placed on a grounded surface. Do not place pail on a non-conductive surface, such as paper or cardboard, which interrupts grounding continuity.





## Fill With Oil Before Using Equipment

Before using the equipment, open the 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).



t127516a

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.**

**NOTE:** Two 1 quart (0.95 liter) bottles of oil are supplied with the equipment.

### **NOTICE**


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

## Flush Before Using Equipment

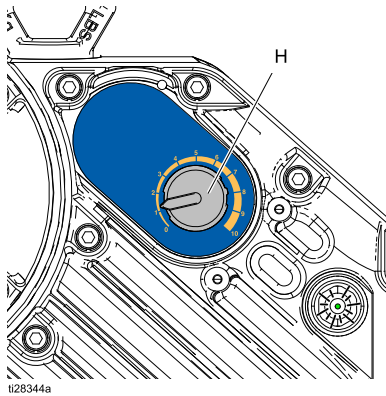
The pump fluid section was tested with lightweight oil, which is left in the fluid passages to protect parts. To avoid contaminating your fluid with oil, flush the equipment with a compatible solvent before using the equipment.

See [Prime/Flush, page 13](#).

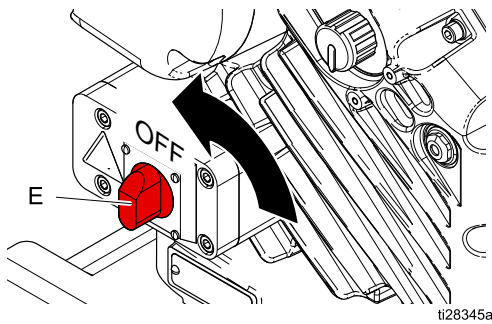
# Setup

				
To avoid tip over, make sure cart is on a flat and level surface. Failure to do so could result in injury.				

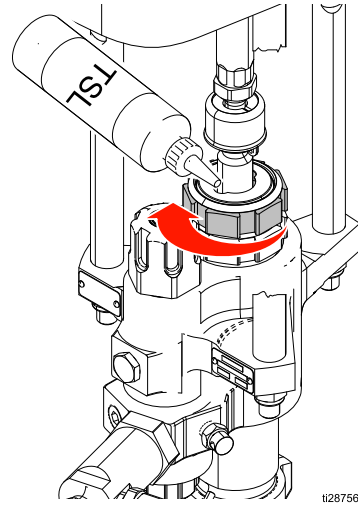
1. Pull pressure adjustment knob (H) out and turn counterclockwise until it stops. Push the knob in to lock.



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



3. Check packing nut (D). See Xtreme lower pump manual 311762 for packing nut torque. Fill with Throat Seal Liquid (TSL™).



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

**NOTICE**

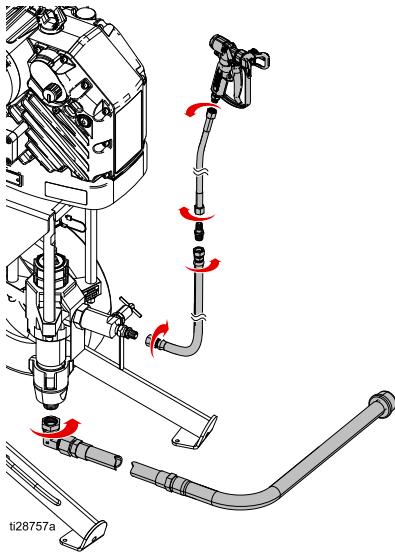
Attaching the hose directly to the lower pump can result in damage to the sprayer during cavitation, or when the sprayer runs out of material. Use an outlet check valve between the lower pump and hose to avoid damage.

**NOTICE**

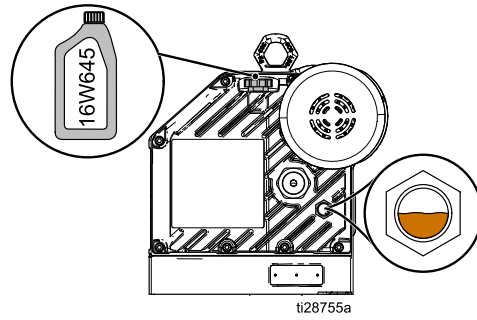
The minimum hose size allowable is 3/8 in. ID x 50 ft (10 mm x 15 m). Smaller hoses can cause high pressure spikes and result in damage to the sprayer.

5. Attach hose to gun and tighten.

6. Attach material supply inlet hose to pump lower.



7. Check oil level.



8. Always flush and prime sprayer before each use (see [Prime/Flush](#), page 13).

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

## Pressure Relief Procedure



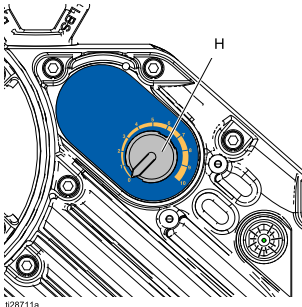
Follow the Pressure Relief Procedure whenever you see this symbol.


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.

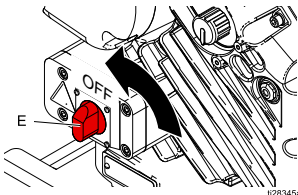
- Engage gun trigger lock.



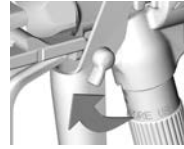
- Pull pressure adjustment knob (H) out and turn counterclockwise until it stops. Push the knob in to lock.



- Turn power switch (E) OFF.



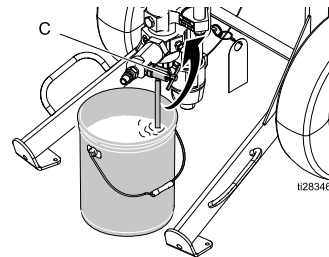
- Disengage gun trigger lock.



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



- Engage gun trigger lock.
- 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.



- 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.

## Trigger Lock

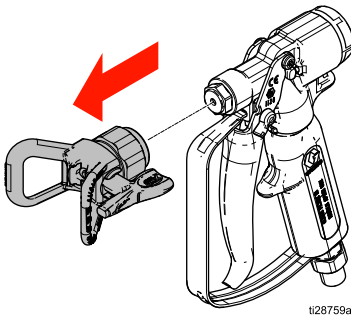


Always engage the trigger lock when you stop spraying to prevent the gun from being triggered accidentally by hand or if dropped or bumped.

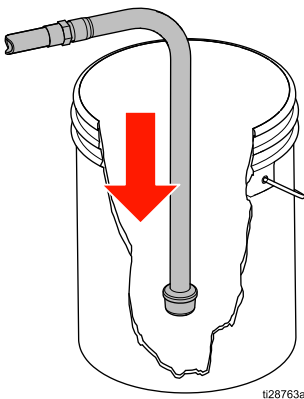
## Prime/Flush


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.

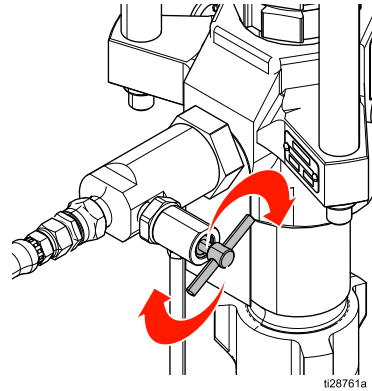
1. Perform [Pressure Relief Procedure](#), page 12.
2. Remove tip and tip guard from gun.



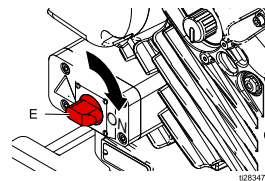
3. Place material supply suction hose into compatible fluid (if priming) or solvent (if flushing).



4. Close drain valve.



5. Turn power switch (E) ON.

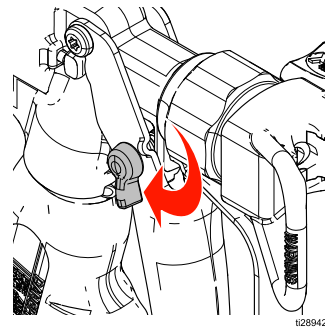


6. Prime or flush hose and gun:

- a. Disengage gun trigger lock.
- b. Trigger gun into grounded pail. Pull out pressure adjustment knob (H) 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 trigger lock.



## Setup

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

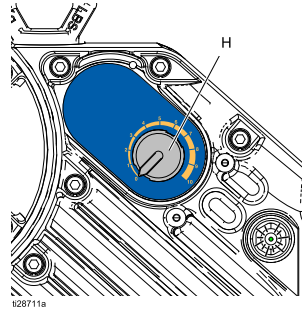
**NOTE:** The remaining steps are for flushing only.

### NOTICE

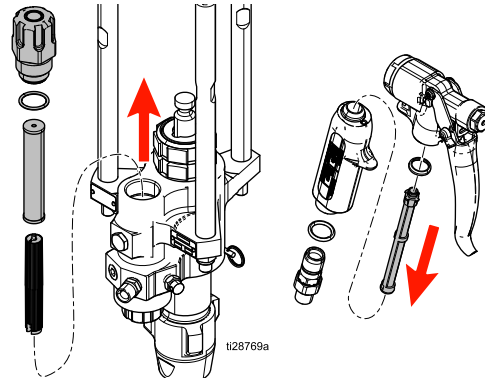
Do not prime pump through drain/purge valve using two component materials. Mixed two-component materials will harden in valve and result in clogging.

- Perform [Pressure Relief Procedure, page 12](#).
  - Turn power switch (E) ON.
  - To start pump, pull out pressure adjustment knob (H) 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.
- Wait for clean solvent to flow from drain tube.

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



- Turn the power switch (E) OFF.
- Check pump and gun filters.



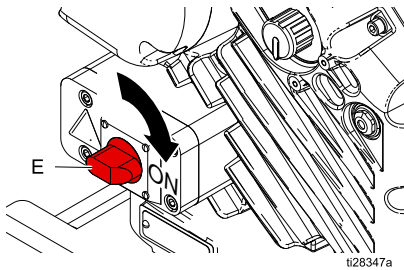
# Spray



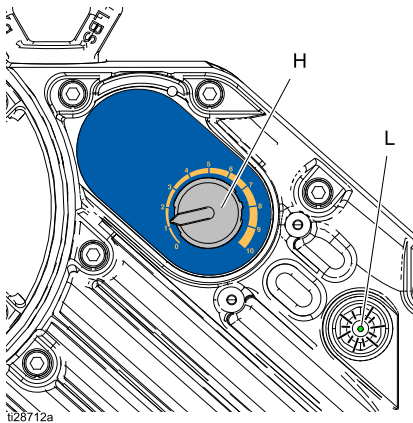
**NOTICE**

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

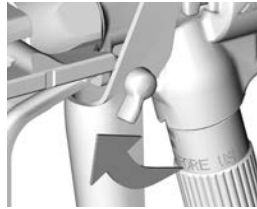
1. Perform [Prime/Flush, page 13](#).
2. Perform [Pressure Relief Procedure, page 12](#).
3. Install tip and tip guard onto gun. Close the drain valve.
4. Turn power switch (E) ON.



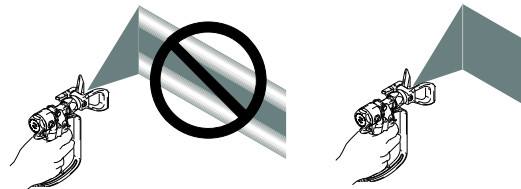
5. Pull out and turn pressure adjustment knob (H) until desired pressure is reached. Turn clockwise to increase pressure, counterclockwise to decrease pressure. Push knob in to lock.



6. Disengage gun trigger lock.



7. Spray a test pattern. Read fluid manufacturer's recommendations. Adjust as necessary.

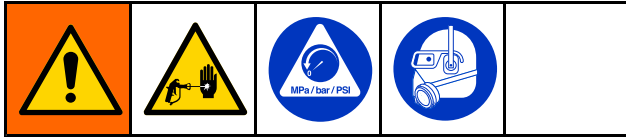


**NOTE:** When determining the desired spray pressure, always increase the spray pressure until the spray pattern fully develops. This will reduce the pressure surge when the pump is stalled and minimize over-spray.

Pressure Adjustment Knob Setting	Dynamic Pump Outlet Pressure					
	Ex35			Ex45		
	PSI	Bar	MPa	PSI	Bar	MPa
1	320	22.0	2.20	400	27.0	2.70
2	640	44.0	4.40	800	54.0	5.40
3	960	66.0	6.60	1200	81.0	8.10
4	1280	88.0	8.80	1600	108	10.8
5	1600	110	11.0	2000	135	13.5
6	1920	132	13.2	2400	162	16.2
7	2240	154	15.4	2800	189	18.9
8	2560	176	17.6	3200	216	21.6
9	2880	198	19.8	3600	243	24.3
10	3200	220	22.0	4000	270	27.0

8. Flush when finished spraying. Perform [Prime/Flush, page 13](#) and [Pressure Relief Procedure, page 12](#).

## Shutdown



### NOTICE

Never leave water or water-based fluid in pump over night. If water-base 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. Perform [Prime/Flush, page 13](#).
2. Perform [Pressure Relief Procedure, 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.

## Preventive 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 25–30 ft-lb (34–40 N•m).

### NOTICE

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

3. Open the 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.**
4. Reinstall the fill cap (see [Fill With Oil Before Using Equipment, page 9](#)).

## Daily Maintenance

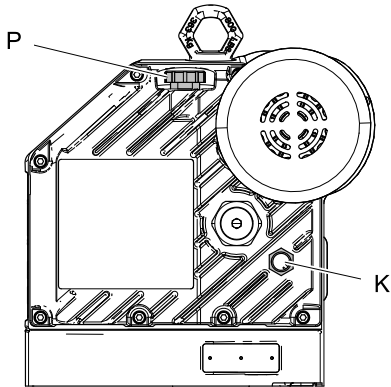
**NOTE:** For overnight shutdown, stop pump at bottom of its stroke to prevent fluid from drying on exposed displacement rod and damaging throat packings. Perform [Pressure Relief Procedure, page 12](#).

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



## 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.



ti27516a

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

**NOTE:** Two 1 quart (0.95 liters) bottles of oil are supplied with equipment.

### **NOTICE**

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

## Corrosion Protection

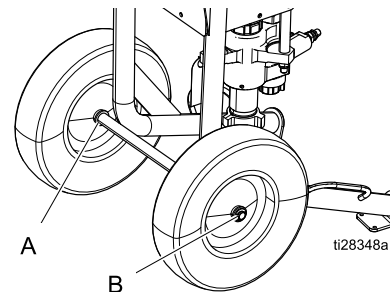
Always flush the pump before fluid dries on the displacement rod. Never leave water or water-based fluid in the pump overnight. First, flush with water or a compatible solvent, then with a rust inhibitor, such as mineral spirits. Perform [Pressure Relief Procedure, page 12](#), but leave rust inhibitor 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

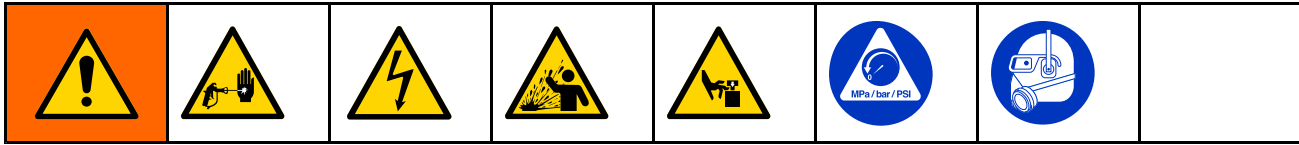
Periodically lubricate the axle between points A and B with lightweight oil (see below).



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

# Troubleshooting



**NOTE:** Check all possible remedies before disassembling 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. See the 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.
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 recommendations in the Driver manual.
	No power to the control board.	Verify that the power supply is connected. check the junction box connections.
Output low on down stroke	Open or worn intake valve	Clear or service the intake valve.
Output low on up stroke	Open or worn piston valve packings	Clear the piston valve. Replace the packings.

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 Lower manual 311762).
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 the 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 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 e-Xtreme Driver manual (3A3165). Contact your Graco distributor or Tech Service for more information.
Oil is leaking	Oil was over-filled	Drain and refill oil as stated in <a href="#">Check Oil Level, page 17</a> .
	Drain plug is not tightened properly	Torque to 25–30 ft-lb (34–40 N•m).
	Seal cartridge o-ring missing or damaged	Replace the shaft bearing assembly.

\* To determine if the fluid hose or gun is obstructed, follow the [Pressure Relief Procedure, 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.

## 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 (H) 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. When the driver is on and pressurized but the pump has not moved any material, the driver will enter Standby Mode.

Standby Mode will be exited when:

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

## Error Codes Table


Blink Code	Error Type	Troubleshooting Steps
1	Alarm	<p><b>Pump diving</b></p> <p>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.</p> <ul style="list-style-type: none"> <li>• Pump diving may occur when the pump runs out of material while spraying at high pressure.</li> <li>• Verify that material is being properly fed to the pump.</li> <li>• Pressure from the hose could flow back into the pump on the down stroke.</li> <li>• Verify that the check valve is installed and is properly working.</li> </ul>
2	Alarm	<p><b>Voltage Too Low</b></p> <ul style="list-style-type: none"> <li>• Verify that line voltage is within the range specified in <a href="#">Technical Specifications, page 31</a>.</li> <li>• Use the recommended cord in <a href="#">Power Supply Requirements, page 8</a>.</li> <li>• Cycle power and check status indicator (L) to see if the error is still active.</li> </ul>
3	Alarm	<p><b>Voltage Too High</b></p> <ul style="list-style-type: none"> <li>• Verify that line voltage is within the range specified in <a href="#">Technical Specifications, page 31</a>.</li> <li>• Cycle power and check status indicator (L) to see if the error is still active.</li> </ul>

Blink Code	Error Type	Troubleshooting Steps
4	Deviation	<p><b>High Temperature</b></p> <p>The temperature of the system is near the maximum operation temperature. The performance has been reduced to prevent the driver from completely shutting down.</p> <ul style="list-style-type: none"> <li>• Reduce pressure.</li> <li>• Move the unit to a cooler location.</li> </ul>
5	Deviation	<p><b>Low Temperature</b></p> <ul style="list-style-type: none"> <li>• Warm equipment.</li> </ul>
6	Alarm	<p><b>Motor Temperature Fault</b></p> <p>Motor is running too hot. Allow unit to cool.</p> <ul style="list-style-type: none"> <li>• Reduce pressure.</li> <li>• Move the unit to a cooler location.</li> </ul>
7	Alarm	<p><b>Board Temperature Fault</b></p> <p>The control board is running too hot. Allow the unit to cool.</p> <ul style="list-style-type: none"> <li>• Reduce pressure.</li> <li>• Move the unit to a cooler location.</li> </ul>
8	Alarm	<p><b>Encoder Calibration Error</b></p> <ul style="list-style-type: none"> <li>• Cycle power and check status indicator (L) to see if the error is still active.</li> <li>• Calibrate the encoder (this code will blink if calibration is in progress).</li> <li>• Contact your Graco distributor or Tech Service for more information.</li> </ul>
9	Alarm	<p><b>Encoder Error</b></p> <ul style="list-style-type: none"> <li>• Cycle power and check the status indicator (L) to see if the error is still active.</li> <li>• Verify that the internal connections are intact.</li> <li>• Contact your Graco distributor or Tech Service for more information.</li> </ul>
10	Alarm	<p><b>Software Versions Do Not Match</b></p> <ul style="list-style-type: none"> <li>• Obtain software update token. See <b>Accessories</b> section for token part number. See the Driver manual for token installation information.</li> </ul>
11	Alarm	<p><b>Circuit Board Communication Failure</b></p> <ul style="list-style-type: none"> <li>• Cycle power and check status indicator (L) to see if the error is still active.</li> <li>• Contact your Graco distributor or Tech Service for more information.</li> </ul>
12	Alarm	<p><b>Internal Circuit Board Hardware Failure</b></p> <ul style="list-style-type: none"> <li>• Cycle power and check status indicator (L) to see if the error is still active.</li> <li>• Contact your Graco distributor or Tech Service for more information.</li> </ul>

*Troubleshooting*

<b>Blink Code</b>	<b>Error Type</b>	<b>Troubleshooting Steps</b>
13, 14	Alarm	<b>Internal Software Error</b> <ul style="list-style-type: none"><li>• Cycle power and check status indicator (L) to see if the error is still active.</li><li>• Contact your Graco distributor or Tech Service for more information.</li></ul>
Slow Blink	Deviation	See <a href="#">Standby Mode, page 20</a> .

# Repair

				
<p>To reduce the risk of injury due to skin injection and splashing, perform the <a href="#">Pressure Relief Procedure, page 12</a> before performing any repair procedure.</p>				



## Xtreme Lower Removal

### Required Tools

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

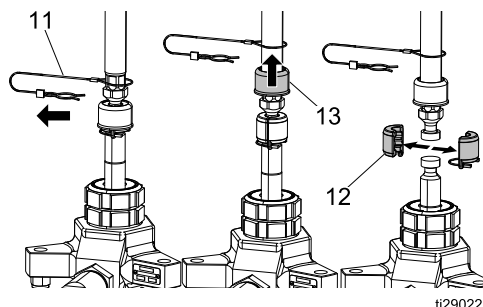
### Disconnect and Reconnect Lower

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

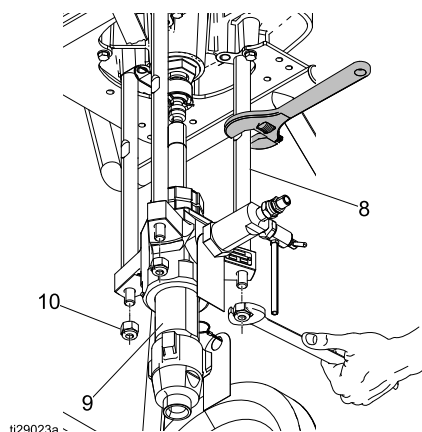
				
<p>Do not lift the pump by the lift ring when the weight exceeds 360 kg (800 lb). The lift ring could fail and result in injury.</p> <p>Use caution when disconnecting the lower; they can weigh up to 25 kg (55 lb). Take appropriate precautions.</p>				

5. If the driver does not require service, leave it attached to its mounting.

6. Remove clip (11) and slide coupling cover (13) up to remove coupling (12).



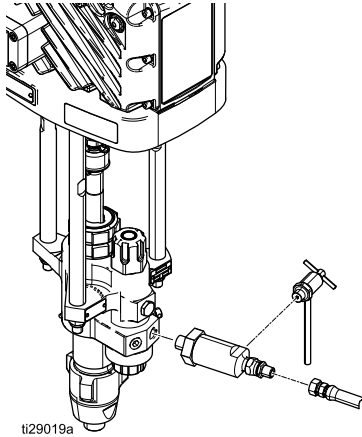
7. Use a wrench to hold the tie rod flats to keep rods (8) from turning. Unscrew nuts (10) and remove the lower (9).



8. Refer to the Xtreme Lower manual (311762) 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 (68–81 N•m).

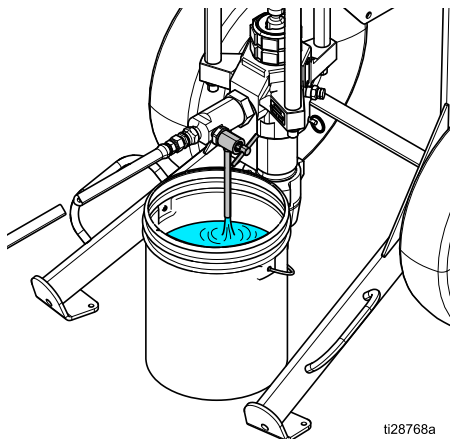
## Outlet Check Valves

1. Perform [Pressure Relief Procedure, page 12](#), and disconnect the unit from the power source before removing or servicing the outlet check valve.
2. When replacing the outlet check valve, reinstall with the proper flow direction.

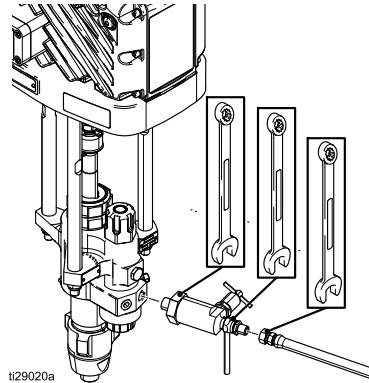


## Outlet Check Valve Repair

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



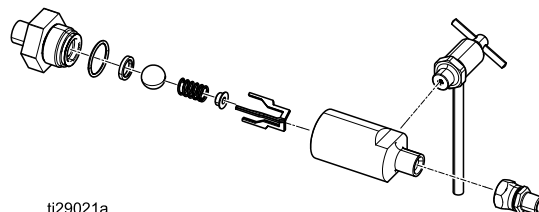
5. Use two wrenches to loosen the hose, then disconnect the hose from the outlet check valve housing.



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.





# Notes

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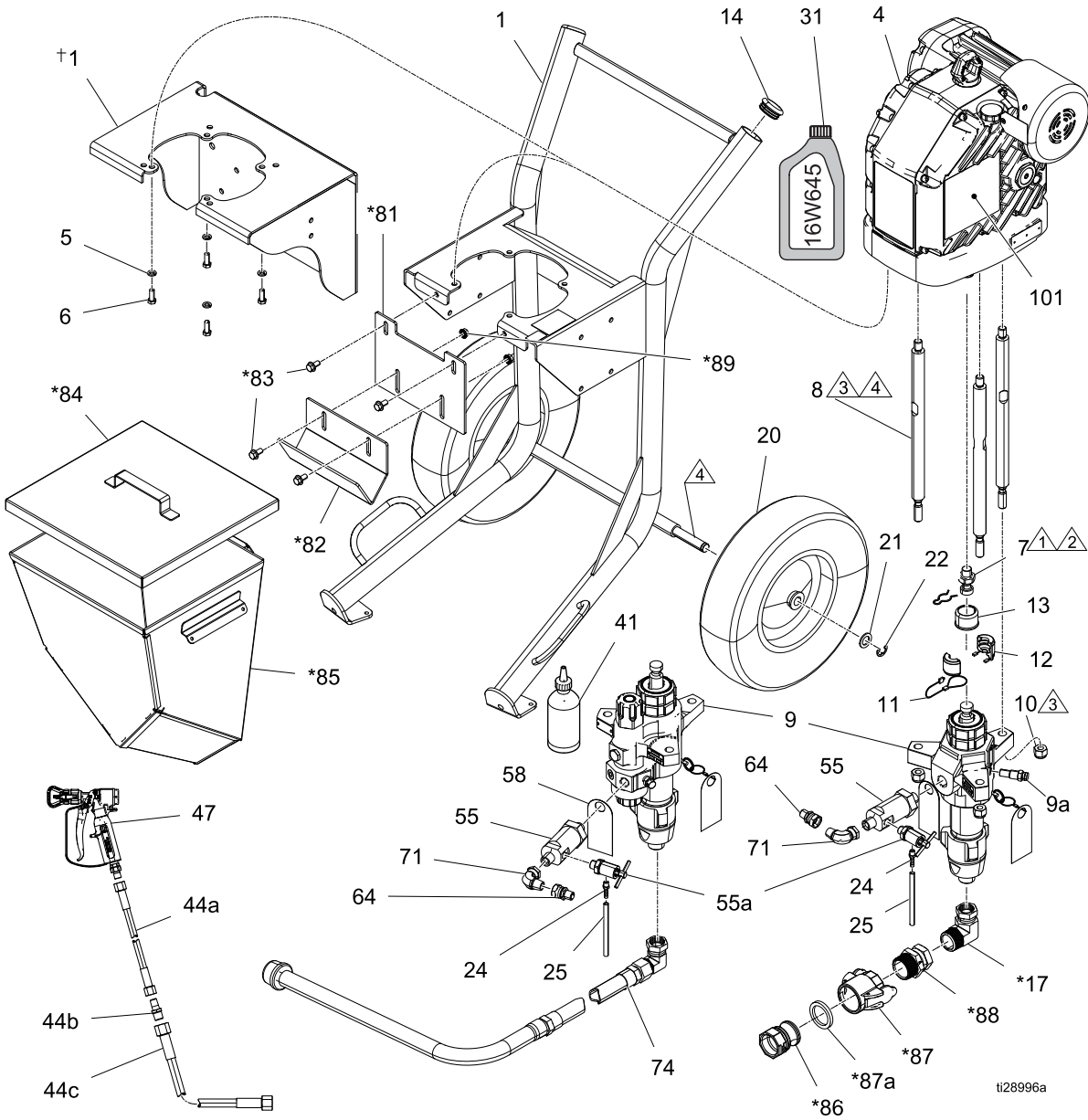
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# Parts

## Parts Drawing



For information on Warning Labels, see Driver manual 3A3165.  
Quick Start Guide 3A3067 (not shown) is available upon request.  
† Wall mount sprayers only.

## Parts List

Ref.	Part	Description	Qty.
1	255143 (includes 5, 6)	BRACKET, wall mount, painted (Models 24Y909, 24Y910, 24Y911, 24Y912, 24Z909, 24Z910, 24Z911, 24Z912)	1
	24Y078 (includes 14, 20, 21, 22)	CART, heavy duty, painted (Models 24Y901, 24Y902, 24Y903, 24Y904, 24Y905, 24Y906, 24Y907, 24Y908, 24Z901, 24Z902, 24Z903, 24Z904, 24Z905, 24Z906, 24Z907, 24Z908)	1
4	24X901 (includes 2x 31 Oil jugs, part 16W645)	DRIVER, e-Xtreme	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	L145CN (includes 9a)	LOWER, Xtreme, 145, nf, xseal, disk (Models 24Y903, 24Y904, 24Y907, 24Y908, 24Y911, 24Y912)	1
	L145CL (includes 9a)	LOWER, Xtreme, 145, w/filt, xseal (Models 24Y901, 24Y902, 24Y905, 24Y906, 24Y909, 24Y910)	1
	L180CN (includes 9a)	LOWER, Xtreme, 180, nf, xseal, disk (Models 24Z903, 24Z904, 24Z907, 24Z908, 24Z911, 24Z912)	1
	L180CL (includes 9a)	LOWER, Xtreme, 180, w/filt, xseal (Models 24Z901, 24Z902, 24Z905, 24Z906, 24Z909, 24Z910)	1
9a	258962	HOUSING, rupture disc, assembly	1
10	101712	NUT, lock	3
11	244820	CLIP, hairpin (w/ lanyard)	1
12	244819	COUPLING, assembly, 145-290 Xtreme	1
13	197340	COVER, coupler	1
14	113361	CAP, tube, round (Models 24Y901, 24Y902, 24Y903, 24Y904, 24Y905, 24Y906, 24Y907, 24Y908, 24Z901, 24Z902, 24Z903, 24Z904, 24Z905, 24Z906, 24Z907, 24Z908)	2
17*	17L151	FITTING, elbow (Models 24Y905, 24Y906, 24Y907, 24Y908, 24Z905, 24Z906, 24Z907, 24Z908)	1
20	113362	WHEEL, semi-pneumatic (Models 24Y901, 24Y902, 24Y903, 24Y904, 24Y905, 24Y906, 24Y907, 24Y908, 24Z901, 24Z902, 24Z903, 24Z904, 24Z905, 24Z906, 24Z907, 24Z908)	2
21	154628	WASHER (Models 24Y901, 24Y902, 24Y903, 24Y904, 24Y905, 24Y906, 24Y907, 24Y908, 24Z901, 24Z902, 24Z903, 24Z904, 24Z905, 24Z906, 24Z907, 24Z908)	2
22	113436	RING, retaining (Models 24Y901, 24Y902, 24Y903, 24Y904, 24Y905, 24Y906, 24Y907, 24Y908, 24Z901, 24Z902, 24Z903, 24Z904, 24Z905, 24Z906, 24Z907, 24Z908)	2
24	116746	FITTING, barbed, plated	1
25	116750	TUBE, nylon	1
31	16W645	KIT, oil (1 quart Bottle)	2
41	206994	FLUID, TSL 8 oz	1
	206995 (not included)	FLUID, TSL 1 quart (not shown)	
	206996 (not included)	FLUID, TSL 1 gallon (not shown)	
	206997 (not included)	FLUID, TSL 12 quarts (not shown)	
44a	H42506	HOSE, cpld, 4500 psi, 0.25 ID, 6 ft (Models 24Y901, 24Y903, 24Y905, 24Y907, 24Y909, 24Y911, 24Z901, 24Z903, 24Z905, 24Z907, 24Z909, 24Z911)	1

Parts

Ref.	Part	Description	Qty.
44b	164856	FITTING, nipple, reducing (Models 24Y901, 24Y903, 24Y905, 24Y907, 24Y909, 24Y911, 24Z901, 24Z903, 24Z905, 24Z907, 24Z909, 24Z911)	1
44c	H43850	HOSE, cpId, 4500 psi, 0.375 ID, 50 ft (Models 24Y901, 24Y903, 24Y905, 24Y907, 24Y909, 24Y911, 24Z901, 24Z903, 24Z905, 24Z907, 24Z909, 24Z911)	1
47	XTR504	GUN, XTR5, 1 in. hnd, 4 fng, xhdrac (Models 24Y901, 24Y903, 24Y905, 24Y907, 24Y909, 24Y911, 24Z901, 24Z903, 24Z905, 24Z907, 24Z909, 24Z911)	1
55	25C189 (1/2 in. NPT for Integrated filter Lowers)	VALVE, subassembly (Models 24Y901, 24Y902, 24Y905, 24Y906, 24Y909, 24Y910, 24Z901, 24Z902, 24Z905, 24Z906, 24Z909, 24Z910)	1
	127631 (3/4 in. NPT for No filter lowers)	VALVE, subassembly (Models 24Y903, 24Y904, 24Y907, 24Y908, 24Y911, 24Y912, 24Z903, 24Z904, 24Z907, 24Z908, 24Z911, 24Z912)	1
55a	245143	VALVE, pressure, bleed	1
58	17A411	LABEL, instructions	1
64	162505	FITTING, union, swivel	1
71*	C19024	FITTING, elbow, swivel (Models 24Y905, 24Y906, 24Y907, 24Y908, 24Z905, 24Z906, 24Z907, 24Z908)	1
74	24Z274	HOSE, suction, 1 in. npt x 3 ft L (Models 24Y901, 24Y902, 24Y903, 24Y904, 24Z901, 24Z902, 24Z903, 24Z904)	1
81*	17D554	BRACKET, hopper, upper (Models 24Y905, 24Y906, 24Y907, 24Y908, 24Z905, 24Z906, 24Z907, 24Z908)	1
82*	17C474	BRACKET, hopper (Models 24Y905, 24Y906, 24Y907, 24Y908, 24Z905, 24Z906, 24Z907, 24Z908)	1
83*	112395	SCREW, cap, flng hd (Models 24Y905, 24Y906, 24Y907, 24Y908, 24Z905, 24Z906, 24Z907, 24Z908)	4
84*	16U537	COVER, complete (Models 24Y905, 24Y906, 24Y907, 24Y908, 24Z905, 24Z906, 24Z907, 24Z908)	1
85*	17E114	HOPPER, weldment, Xtreme (Models 24Y905, 24Y906, 24Y907, 24Y908, 24Z905, 24Z906, 24Z907, 24Z908)	1
86*	120307	FITTING, hose adapter, male (Models 24Y905, 24Y906, 24Y907, 24Y908, 24Z905, 24Z906, 24Z907, 24Z908)	1
87*	120308	FITTING, hose adapter, female (Models 24Y905, 24Y906, 24Y907, 24Y908, 24Z905, 24Z906, 24Z907, 24Z908)	1
87a*	120781 (PTFE Encapsulated Viton)	GASKET, quick coupler (Models 24Y905, 24Y906, 24Y907, 24Y908, 24Z905, 24Z906, 24Z907, 24Z908)	1
87b*	17C453 (Buna-N 6-pack) (not included with 87)	GASKET, quick coupler (6-PACK) (Models 24Y905, 24Y906, 24Y907, 24Y908, 24Z905, 24Z906, 24Z907, 24Z908) (not shown)	1
88*	17L152	FITTING, swivel (Models 24Y905, 24Y906, 24Y907, 24Y908, 24Z905, 24Z906, 24Z907, 24Z908)	1
89*	112958	NUT, hex, flanged (Models 24Y905, 24Y906, 24Y907, 24Y908, 24Z905, 24Z906, 24Z907, 24Z908)	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 25C188			
▲ Additional Warning labels are available at no cost.			

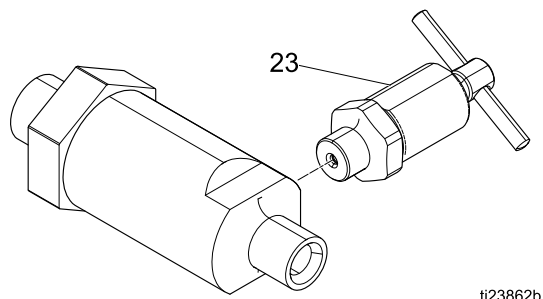
1 Torque to 145–155 ft-lb (196–210 N•m).

3 Torque to 56–60 ft-lb 68–81 N•m).

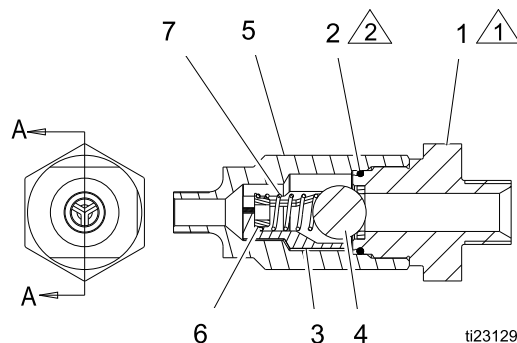
2 Apply thread locker.

4 Apply lithium grease lubricant.

## Outlet Check Valves Parts



ti23862b



ti23129c

### 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 187631 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:

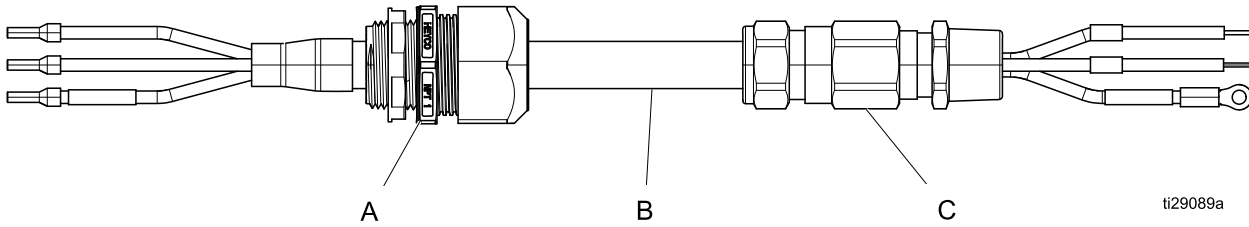
Ref.	Instruction
1	Torque to 101–108 N•m (75–80 ft-lb)
2	Apply lubricant

### Accessories:

Part	Description
17B291	MIXER, jiffy, PS-1
24Z266	KIT, suction set, 1 in. npt x 6 ft L
24Z274	KIT, suction set, 1 in. npt x 3 ft L
24Z270	KIT, suction, drum, 1 in. npt x 10 ft L
17M677	Software Update Token**
25C188	KIT, hopper (see Parts List for contents)

\*\* See the Driver manual for “**Software Token Update**” procedure.

**ATEX/Hazardous Location-Rated Power Cord Kits (1-gland cable shown)**



ti29089a

ATEX/Hazardous Location-Rated Power Cords:		A – Cord Grip	B – Cable	C – Cable Gland
24Z267*	KIT, power cable, 1 gland, 8M	1	1	1
24Z268*	KIT, power cable, 1 gland, 15M	1	1	1
24Z269*	KIT, power cable, 1 gland, 30M	1	1	1
24Z271	KIT, power cable, 2 gland, 8M	—	1	2
24Z272	KIT, power cable, 2 gland, 15M	—	1	2
24Z273	KIT, power cable, 2 gland, 30M	—	1	2

\* Only one end has ATEX/Hazardous location cable gland. Power Supply must be outside of ATEX/Hazardous location for ratings to apply.

**A: Cord Grip (ordinary location)**

Power Supply must be outside of ATEX/Hazardous location for ratings to apply.

**B: Cable**

**MOR® Polyrad® XT-125 Armored and Sheathed Cable (125° C Temperature Rating)**

Manufacturer: General Cable

Manufacturer P/N: 279220

**UL 1309 Type X110 (UL Listed File No. E85994)**

**IEEE 1580 Type P**

**CSA C22.2 No. 245 Type X110**

**IEC 60092 – 350**

**API-RP14F\*\*\***

\*\*\*Per manufacturer General Cable, suitable for use in Class I, Division 1, and Zone 1 Hazardous Locations when installed in accordance with API-RP14F. Cable gland ratings may have an effect on overall ratings and must also be considered.

For other ratings, listings and installation instructions see manufacturer’s website: <http://www.generalcable.com/>

**C: Cable Gland – for driver, with ratings**

**CROCLOCK® Cable Gland**

Manufacturer: Peppers Cable Glands

Manufacturer P/N: CR-3B/NP/20/075NPT

**Certificate No.**

**ABS: 09-LD463991-PDA (American Bureau of Shipping)**

**CSA: 1356011**

• **Ex d llc / Ex e II Class I Zone 1**

• **Class I Division 2, Groups A, B, C and D**

**ATEX: BAS 01ATEXT2271X**

**IECEX: SIR 07.0099X**

For additional certificates/listings and installation instructions, see manufacturer’s website:

<http://peppersamerica.com/>

# Technical Specifications

<b>Ex35 e-Xtreme Sprayers</b>		
	<b>U.S.</b>	<b>Metric</b>
Maximum fluid working pressure	3500 psi	240 bar, 24.0 MPa
Stroke length	4.75 in.	120 mm
Maximum continuous cycle rate	44 cycles per minute	
Tip Size	.023 in.	
Weight	295 lb	135 kg
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	
Operating temperature range	23° to 120° F	-5° to 50° C
Input voltage	200–240 VAC, single phase, 50/60 Hz	
Input power	2.5 kVA	
Minimum Recommended generator size	5 kW	
Oil capacity	1.0–1.2 quarts	0.9–1.1 liters
Oil specification	Graco part number 16W645 silicone-free ISO 220 synthetic EP gear oil	
<b>Inlet / Outlet Sizes</b>		
Fluid inlet size	1 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]	
<b>Hose Requirements</b>		
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.	10mm
Maximum resistance per ISO 8028	9,100 ohms/ft	30,000 ohms/m
<b>Sound Emissions (per ISO 9614) for Normal Operation (Spraying @ 20 cpm)</b>		
Sound Pressure LpA Average	70.2 dBA	
Sound Power LwA Total Power	76.7 dBA	
<b>Sound Emissions (per ISO 9614) for Maximum Speed (Flushing @ 44 cpm)</b>		
Sound Pressure LpA Average	77.4 dBA	
Sound Power LwA Total Power	85.1 dBA	

Technical Specifications

<b>Ex45 e-Xtreme Sprayers</b>		
	<b>U.S.</b>	<b>Metric</b>
Maximum fluid working pressure	4500 psi	310 bar, 31.0 MPa
Stroke length	4.75 in.	120 mm
Maximum continuous cycle rate	44 cycles per minute	
Tip Size	.021 in.	
Weight	295 lb	135 kg
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	
Operating temperature range	23° to 120° F	-5° to 50° C
Input voltage	200–240 VAC, single phase, 50/60 Hz	
Input power	2.5 kVA	
Minimum Recommended generator size	5 kW	
Oil capacity	1.0–1.2 quarts	0.9–1.1 liters
Oil specification	Graco part number 16W645 silicone-free ISO 220 synthetic EP gear oil	
<b>Inlet / Outlet Sizes</b>		
Fluid inlet size	1 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]	
<b>Hose Requirements</b>		
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.	10mm
Maximum resistance per ISO 8028	9,100 ohms/ft	30,000 ohms/m
<b>Sound Emissions (per ISO 9614) for Normal Operation (Spraying @ 20 cpm)</b>		
Sound Pressure LpA Average	70.2 dBA	
Sound Power LwA Total Power	76.7 dBA	
<b>Sound Emissions (per ISO 9614) for Maximum Speed (Flushing @ 44 cpm)</b>		
Sound Pressure LpA Average	77.4 dBA	
Sound Power LwA Total Power	85.1 dBA	



# Notes

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# 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

The Parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés, à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

## Graco Information

For the latest information about Graco products, visit [www.graco.com](http://www.graco.com).  
For patent information, see [www.graco.com/patents](http://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 3A3164

**Graco Headquarters:** Minneapolis

**International Offices:** Belgium, China, Japan, Korea

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