

Electric High Pressure Airless Sprayer

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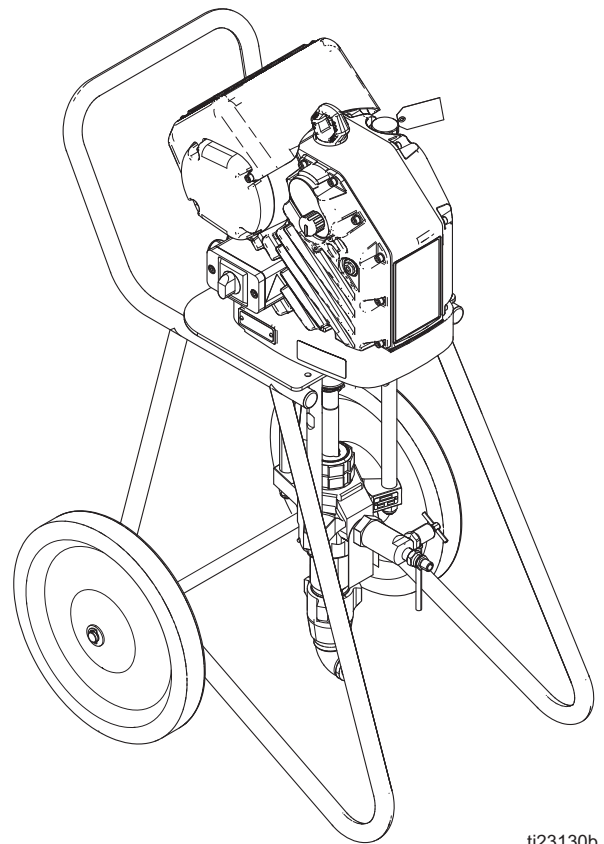
Electric high pressure sprayer packages for application of protective coatings.
For professional use only.
Not approved for use in explosive atmospheres or hazardous locations.



Important Safety Instructions

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

For **Model Information** and maximum working pressure, see page 2.



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Model Information

Model	Description	Maximum Working Pressure	Maximum Fluid Temperature
24X450	Includes hose and gun	4500 psi (31 MPa, 310 bar)	160° F (71° C)*
24X451	No hose or gun	4500 psi (31 MPa, 310 bar)	180° F (82° C)
24Y452	Hopper Ready, includes hose and gun	4500 psi (31 MPa, 310 bar)	160° F (71° C)*
24W315	Includes hose and gun	2600 psi (18 MPa, 180 bar)	160° F (71° C)*
24W316	No hose or gun	2600 psi (18 MPa, 180 bar)	180° F (82° C)
24Y317	Hopper Ready, includes hose and gun	2600 psi (18 MPa, 180 bar)	160° F (71° C)*
25A829	High Temp Sprayer, no hose/gun	2600 psi (18 MPa, 180 bar)	390° F (200° C)

*Lower fluid temperature due to XTR5 gun.





Related Manuals

Manuals are available at www.graco.com. Component manuals in English:










311762	Xtreme Lower Manual
312145	XTR Gun Manual
333233	Electric Driver Manual
333267	Hopper Accessory Kit
3A4094	XHT High Temperature Gun

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	
	<p>ELECTRIC SHOCK HAZARD</p> <p>This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.</p> <ul style="list-style-type: none"> • Turn off and disconnect power at main switch before disconnecting any cables and before servicing or installing equipment. • Connect only to grounded power source. • All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations. • Do not expose to rain. Store indoors.
	<p>BURN HAZARD</p> <p>Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:</p> <ul style="list-style-type: none"> • Do not touch hot fluid or equipment.
	<p>FIRE AND EXPLOSION HAZARD</p> <p>Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> • 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 arc). • 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. • Ground all equipment in the work area. See Grounding instructions. • Use only grounded hoses. • Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are antistatic 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.

WARNING

  	<p>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.</p> <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.
 	<p>MOVING PARTS HAZARD Moving parts can pinch, cut or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> • Keep clear of moving parts. • Do not operate equipment with protective guards or covers removed. • Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the Pressure Relief Procedure and disconnect all power sources.
 	<p>EQUIPMENT MISUSE HAZARD Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> • 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 Data in all equipment manuals. • Use fluids and solvents that are compatible with equipment wetted parts. See Technical Data in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS 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.
	<p>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.</p> <ul style="list-style-type: none"> • Read MSDSs 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.
	<p>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. This protective equipment includes but is not limited to:</p> <ul style="list-style-type: none"> • Protective eyewear, and hearing protection. • Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

Component Identification - Cart Mount

- | | | | |
|---|-------------------------|---|--------------------------|
| A | Electric Driver | G | Junction Box Cover |
| B | Lower | H | Pressure Adjustment Knob |
| C | Fluid Drain/Purge Valve | I | Outlet Check Valve |
| D | Packing Nut | L | Red Indicator Light |
| E | Power Switch | P | Oil Fill Cap (Vented) |
| F | Fluid Outlet | S | Junction Box |

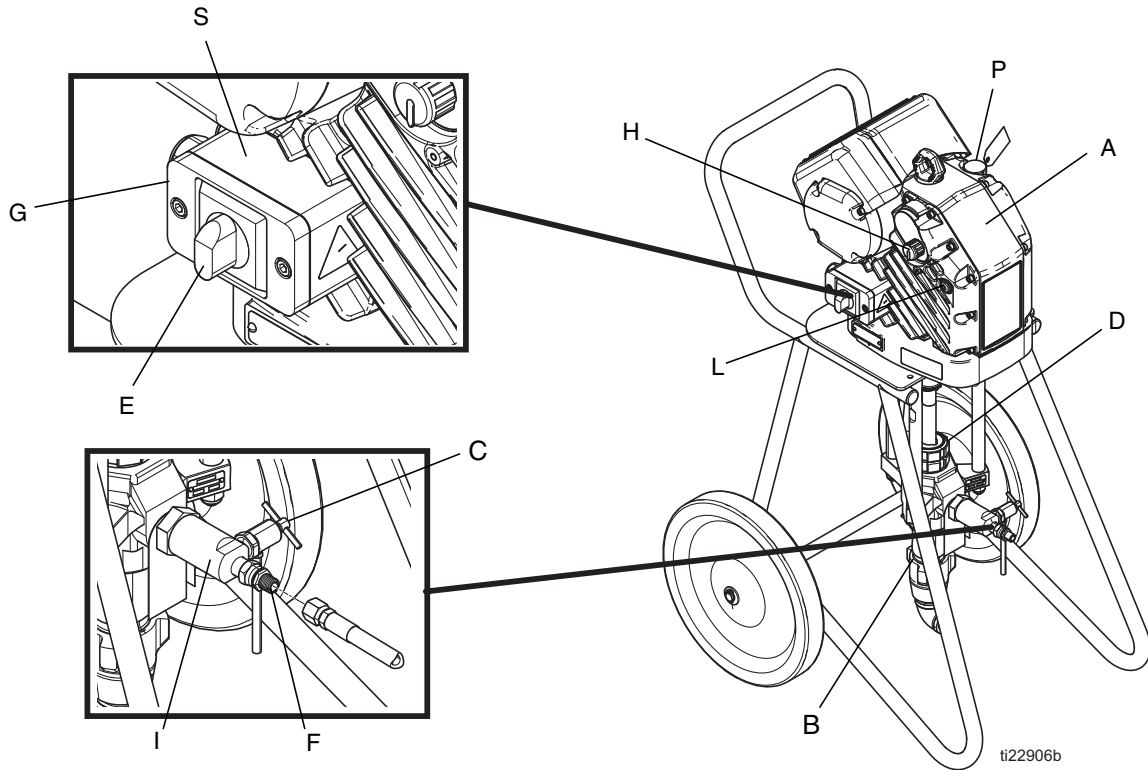


FIG. 1: Airless Sprayer

Installation

<p>Improper wiring may cause electric shock or other serious injury. All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.</p>						

Power Supply

See **Table 1** for power supply requirements. The system requires a dedicated circuit protected with a circuit breaker.

Table 1: Power Supply Specifications

Voltage	Phase	Hz	Current
200-240 VAC	1	50/60	20 A

Select the minimum cord wire gauge based on length according to the table below:

Length	Gauge	mm ²
50 ft (15.24 m)	12 AWG	3.31
100 ft (30.48 m)	10 AWG	5.26
200 ft (60.96 m)	6 AWG	13.29
300 ft (91.44 m)	4 AWG	21.14

Connect Power

- Cut power cord wires to the following lengths:
 - Ground wire - 6.5 inches (16.5 cm)
 - Power wires - 3.0 inches (7.6 cm)
 - Add ferrules as necessary. See **FIG. 2**.

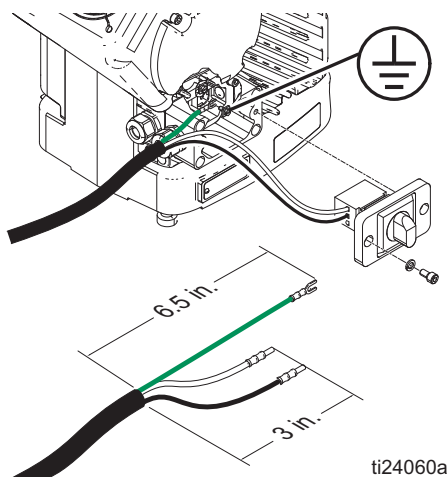


FIG. 2: Power Cord

- Bring cord to unit and remove two screws to separate junction box cover (G) and power switch (E) from remainder of sprayer. See **FIG. 3**.

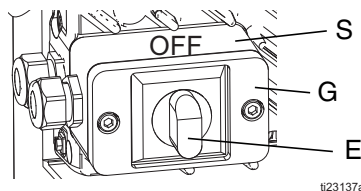


FIG. 3: Power Switch

- With power switch (E) and junction box cover (G) detached from machine, wires inside junction will appear as below.

NOTE: Two wires will be installed in both terminals. See **FIG. 4**:

- For Series A and B: terminals 1L1 and 3L2
- For Series C: terminals 1L1 and 5L3

NOTE: Press gasket against back sealing face of junction box cover to ease installation of power cord.

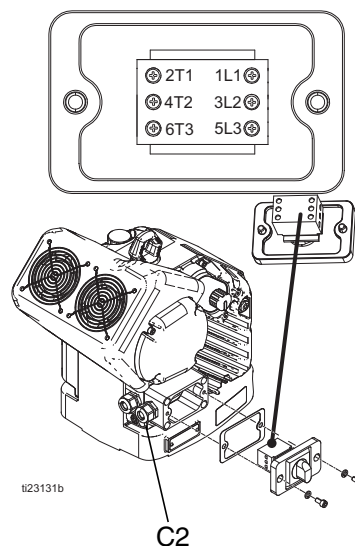


FIG. 4: Terminal Connections

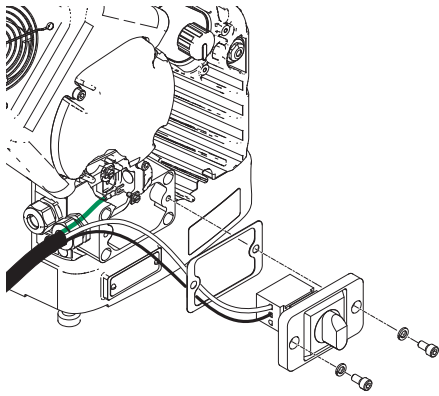
- Insert power cord (from step 1) through cord grip (C2) and into junction box (S).

NOTE: Power wires should be installed into terminals. See **FIG. 4**:

- Series A and B: terminals 2T1 and 4T2
- Series C: terminals 2T1 and 6T3

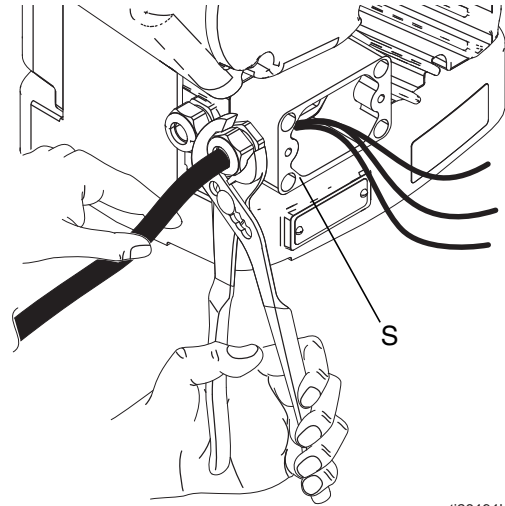
- 5. Attach ground wire to ground terminal inside junction box (S).

NOTE: The power cord attaches to a separate ground screw than the ground screw that is already attached.



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- 7. Replace junction box screws and washers removed in step 2 and tighten cord grip to securely hold power cord in junction box (S). See FIG. 6.



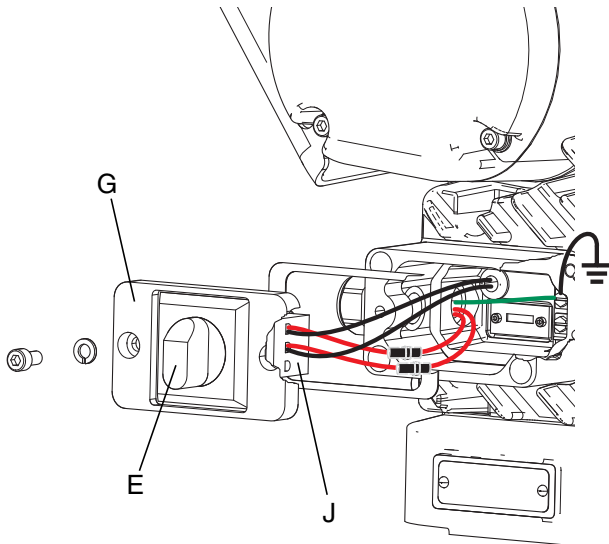
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- 6. Place fan wires and other power wires into open area on either side of disconnect block (J) as space permits. Reinstall junction box cover. See FIG. 5.

NOTICE

If wires get pinched when the screws are tightened, damage will occur. Make sure all wires are routed correctly before installation.

FIG. 6: Junction Box Screws and Strain Relief



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FIG. 5: Grounding Wire

Grounding



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.

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 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 shipped from the factory prefilled with oil. The temporary unvented cap (PX) prevents oil leaks during shipment. This temporary cap must be replaced with the vented oil cap (P), supplied with equipment, before use.

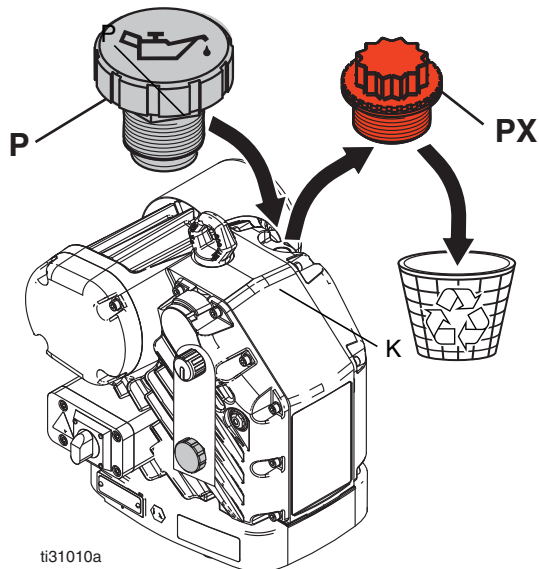


FIG. 7: Unvented and Vented Oil Caps

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.

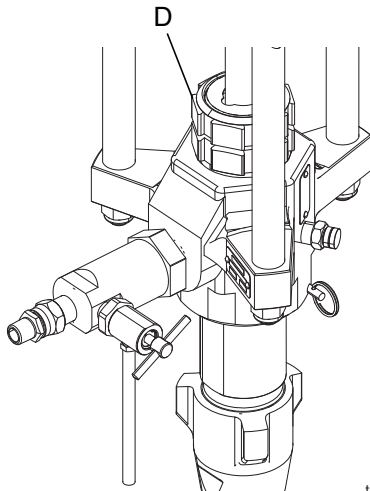
See **Prime/Flush** procedure, page 11.

Setup



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

1. Check packing nut (D). Fill with Throat Seal Liquid (TSL). Torque to 25 ft-lb (34 N•m).



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

NOTICE

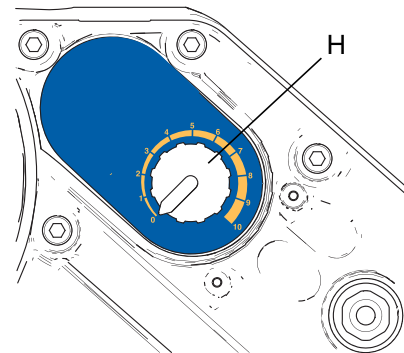
Attaching the hose directly to the lower pump can result in damage to the sprayer during cavitation, or when the sprayer runs out of material. Use an outlet check valve between the lower pump and hose to avoid damage.

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.

3. Attach hose to gun and tighten.
4. Attach material supply inlet hose to pump lower.

NOTE: Maximum suggested length is 6 ft (1.8 m), minimum suggested inner diameter is 1 in. (2.5 cm).
5. Pull pressure adjustment knob (H) out and turn counterclockwise until it stops. Push the knob in to lock.



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6. Turn power switch (E) OFF. Connect unit to power source. See FIG. 3, page 6.
7. Always flush and prime sprayer before each use (see page 11).

Pressure Relief Procedure

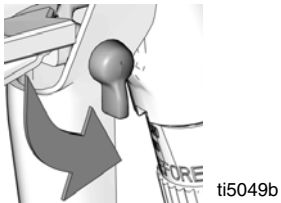


Follow the Pressure Relief Procedure whenever you see this symbol.

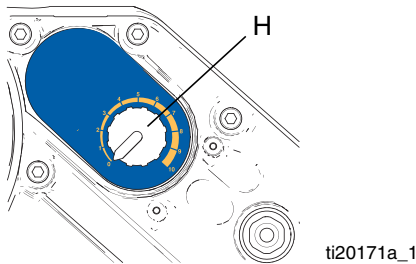


This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

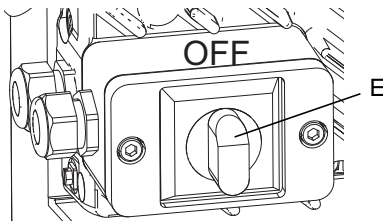
1. Engage gun trigger lock.



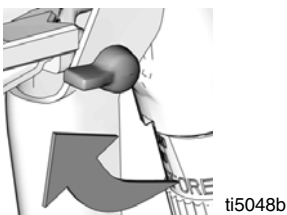
2. Pull pressure adjustment knob (H) out and turn counterclockwise until it stops. Push the knob in to lock.



3. Turn power switch (E) off.



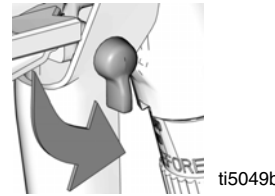
4. Disengage gun trigger lock.



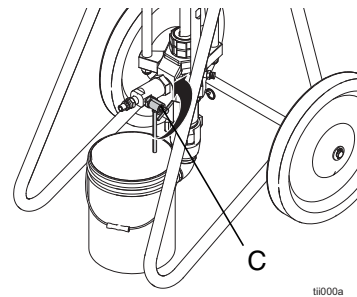
5. Hold gun firmly against a grounded metal pail. Trigger the gun.



6. Engage gun trigger lock.

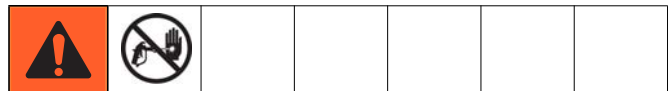


7. **Drain fluid:** Slowly open fluid drain/purge valve (C), and drain fluid into a waste pail.

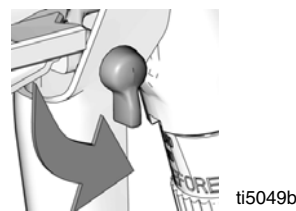


8. If you suspect the spray tip or hose is completely clogged, or that pressure has not been fully relieved after following the previous steps, **VERY SLOWLY** loosen the tip guard retaining nut or hose end coupling and relieve pressure gradually; then loosen completely. With tip removed, trigger gun into bucket.

Trigger Lock



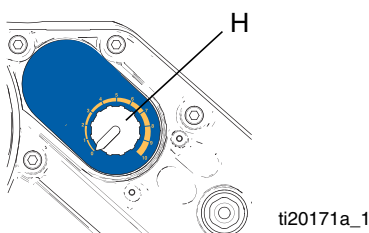
Always engage the trigger lock when you stop spraying to prevent the gun from being triggered accidentally by hand or if dropped or bumped.



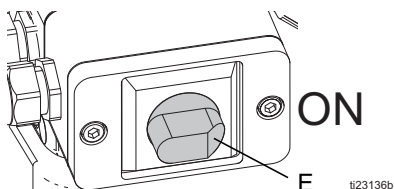
Prime/Flush

					
To avoid injury from splashing, always flush at lowest possible pressure.					

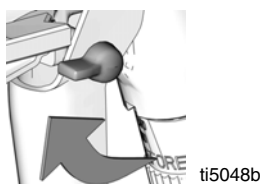
1. Perform **Pressure Relief Procedure**, page 10.
2. Remove tip and tip guard from gun.
3. Place material supply suction hose into compatible fluid (if priming) or solvent (if flushing).
4. Pull pressure adjustment knob (H) out and turn counterclockwise until it stops. Push the knob in to lock.



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 for 10-15 seconds.



- c. Engage trigger lock.

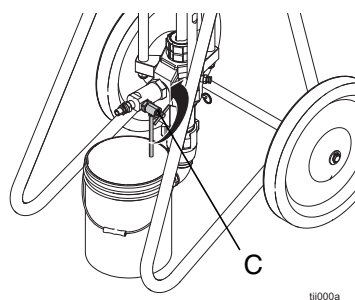
7. If priming, equipment is now ready to spray (proceed to **Spray**, page 12). If flushing, proceed with step 8.

NOTE: The remaining steps are for flushing only.

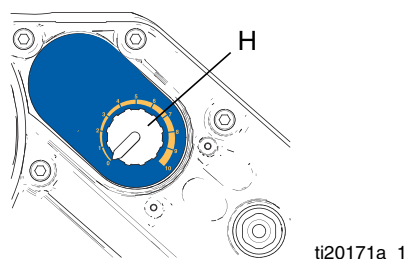
NOTICE

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

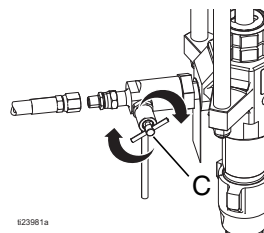
8. Place drain tube in a grounded waste pail.
9. Slightly rotate drain/purge valve handle (C) counterclockwise to open.



10. To start pump, pull out pressure adjustment knob (H) and turn clockwise until pump begins to move. Push knob in to lock.



11. When clean solvent flows from drain tube, rotate drain/purge valve handle (C) clockwise to close. Pump will stall.



12. Perform **Pressure Relief Procedure**, page 10. Leave solvent in and store sprayer.

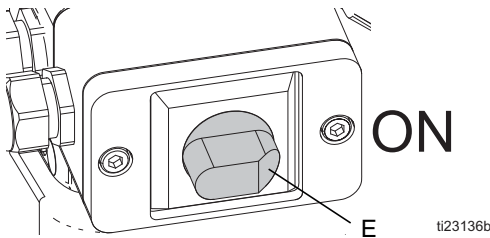
Spray



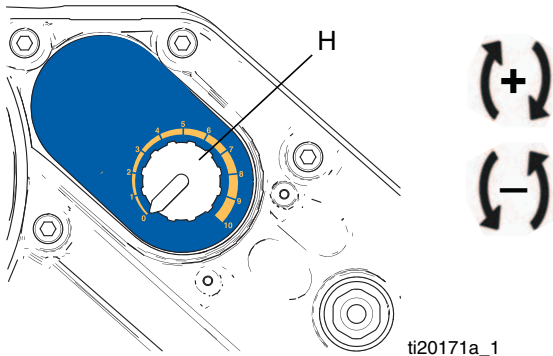
NOTICE

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

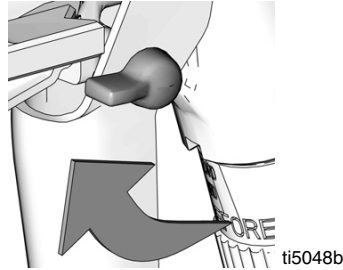
1. Perform **Prime** procedure, page 11.
2. Perform **Pressure Relief Procedure**, page 10.
3. Install tip and tip guard onto gun.
4. Turn power switch (E) ON.



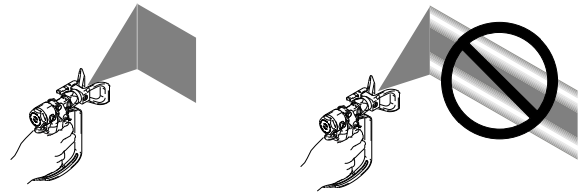
5. Pull out and turn pressure adjustment knob (H) until desired pressure is reached. Turn clockwise to increase pressure, counterclockwise to decrease pressure. Push knob in to lock.



6. Disengage gun trigger lock.



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



8. Flush when finished spraying. See **Prime/Flush**, page 11.
9. Perform **Pressure Relief Procedure**, page 10.

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, perform **Prime/Flush** procedure, page 11.

Perform **Pressure Relief Procedure**, page 10.

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 preventative 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

NOTICE

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

NOTE: Change the oil after a break-in period of 200,000 to 300,000 cycles. After the break-in period, change the oil once per 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).
3. Open the fill cap (P) and add Graco Part 16W645 ISO 220 silicone-free synthetic EP gear oil. Check the oil level in the sight glass (K). (See FIG. 8.) 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 FIG. 8.

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 10.

1. Perform **Flush** procedure, page 11.
2. Relieve pressure. See **Pressure Relief Procedure**, page 10.
3. Check packing nut (D) See FIG. 1, page 5. Adjust packings and replace TSL as necessary. Torque to 25 ft-lb (34 N•m).
4. Check hoses, tubes, and couplings. Tighten all fluid connections before each use.

Check Oil Level

See FIG. 8. Check the oil level in 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 fill cap (P) and add Graco Part No. 16W645 ISO 220 silicone-free synthetic EP gear oil.

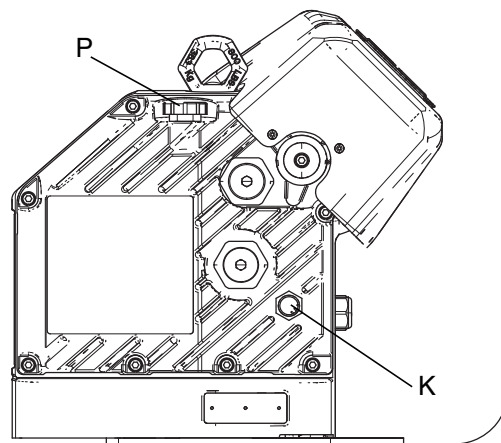


FIG. 8: Sight Glass and Oil Fill Cap

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 drive train.

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 10), but leave rust inhibitor in pump to protect parts from corrosion.

Flushing

- Flush before changing fluids, before fluid can dry 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 the following figure.

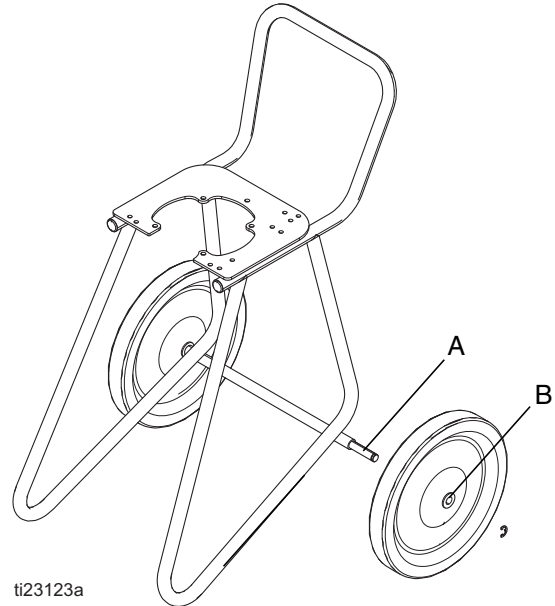


FIG. 9: Cart

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

Troubleshooting



NOTE: Check all possible remedies before disassembling pump.

NOTE: The LED on the driver will blink if an error is detected.

Problem	Cause	Solution
Pump output low on both strokes	Inadequate power supply.	See Power Supply , page 6.
	Exhausted fluid supply.	Refill and prime pump.
	Clogged fluid outlet line, gun*, etc.; hose inner diameter too small.	Clear hose, outlet check valve, or gun; use hose with larger inner diameter.
	Worn piston packing.	Replace. See lower manual.
No output	Improperly installed intake or piston check valves.	Check and repair. See lower manual.
	Exhausted fluid supply.	Refill and prime pump.
Pump will not operate	Inadequate power supply.	See Power Supply , page 6.
	Exhausted fluid supply.	Refill and prime pump.
	Clogged fluid hose or gun*.	Clean hose or gun.
	Fluid dried on piston rod.	Disassemble and clean pump. See lower manual. In future, stop pump at bottom of stroke. Keep wet-cup filled with compatible solvent.
	Driver parts are worn or damaged.	Repair or replace driver.
No pressure	Fluid leaking from rupture disk.	Replace rupture disk with new one; do not replace with pipe plug.
	Leaking drain valve.	Close or replace.
Driver does not turn on (fans may still run)	Over voltage (over 300 V)	See Power Supply , page 6.
	No power to control board.	Verify power supply is connected. Check junction box connections.
Output low on down stroke	Open or worn intake valve.	Clear or service intake valve.
Output low on upstroke	Open or worn piston valve packings.	Clear piston valve; replace packings.
Erratic or accelerated pump speed	Fluid supply exhausted.	Refill supply and prime pump.
	Clogged suction.	Clean suction tube.
	Open or worn piston valve packings.	Clear piston valve; replace packings.
	Open or worn intake valve.	Clear or service intake valve.
	Clogged gun, hose, outlet, etc.	Clear gun, hose, outlet, etc.
	Open or worn outlet check valve	Clear or service outlet check valve.
Cycles or fails to hold pressure at stall	Worn intake or piston valves or seals.	Service lower. See Xtreme Lower Removal , page 19, and lower manual (311762).

Problem	Cause	Solution
Air bubbles in fluid	Loosen suction line.	Tighten suction line connections. Use compatible liquid thread sealant or PTFE tape on connections.
	Agitator/mixer is not submerged.	Submerge agitator/mixer.
	Agitator/mixer RPM is too high.	Lower RPM.
Poor finish or irregular spray pattern	Incorrect fluid pressure at gun.	See spray gun manual. Read fluid manufacturer's recommendations.
	Fluid is too thin or too thick.	Adjust fluid viscosity. Read fluid manufacturer's recommendations.
	Dirty, worn, or damaged spray gun.	Service spray gun. See spray gun manual.
Driver does not turn over and LED is off	Over voltage (greater than 300 V)	Check power supply
	No power to 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 Electric Driver Manual (333233). Contact your Graco distributor or Tech Service for more information.
Oil is leaking	Oil was over-filled	Drain and refill as stated in Check Oil Level , page 13.
	Drain plug not tightened properly	Torque to 18-23 ft-lb (25-30 N•m).
	Seal cartridge o-ring missing or damaged.	Replace shaft bearing assembly.

* To determine if fluid hose or gun is obstructed, follow **Pressure Relief Procedure**, page 10. Disconnect fluid hose and place a container at pump fluid outlet to catch any fluid. Turn pressure adjustment knob just enough to start pump. If pump starts, the obstruction is in fluid hose or gun.

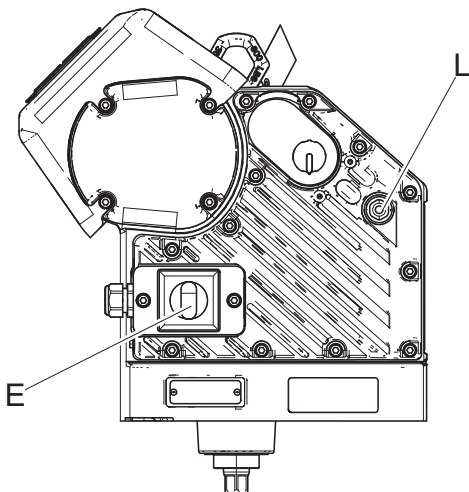
Error Codes

Error codes can take two forms:

Alarm: alerts you to the alarm cause and shuts down the pump.

Deviation: alerts you to the problem, but pump may continue to run past the set limits until the system's absolute limits are reached.

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

Power Saving Mode

When fast blinking is displayed, the sprayer has entered Power Saving Mode. When the sprayer is on and pressurized but the pump has not moved any material in 30 minutes, the sprayer will enter Power Saving Mode and will only control up to 75% of the maximum pressure.

Power Saving Mode will be exited when:

- Material starts to dispense and causes the pump to move, OR
- The pressure knob is adjusted, OR
- Power is cycled OFF and ON

Blink Code	Error Type	Troubleshooting Steps
1	Alarm	<p>Voltage Too Low</p> <ul style="list-style-type: none"> • Verify that line voltage is within the range specified in Technical Data, page 25. • Use the recommended cord (see page 6). • Cycle power and check status indicator to see if error is still active.
2	Alarm	<p>Voltage Too High</p> <ul style="list-style-type: none"> • Verify that line voltage is within the range specified in Technical Data, page 27. • Cycle power and check status indicator to see if error is still active. • Verify that outlet check valve is installed on pump and functions properly. <p>NOTE: A faulty outlet check valve can result in excessive pump speed and cause high voltage internally to the electric driver.</p>
3	Deviation	<p>Low Temperature</p> <ul style="list-style-type: none"> • Warm equipment. • Contact your Graco distributor or Tech Service for more information.

Blink Code	Error Type	Troubleshooting Steps
4	Deviation	<p>High Temperature</p> <p>The temperature of the system is near the maximum operation temperature. The performance has been reduced to prevent the sprayer from completely shutting down.</p> <ul style="list-style-type: none"> • Check fan operation. Clean fan and driver housing. Verify fuses are intact in junction box. • Reduce pressure, duty cycle, or gun tip size. • Move unit to a cooler location.
5	Alarm	<p>Motor Temperature Fault</p> <p>Motor is running too hot. Allow unit to cool.</p> <ul style="list-style-type: none"> • Check fan operation. Clean fan and driver housing. Verify fuses are intact in junction box. • Reduce pressure, duty cycle, or gun tip size. • Move unit to a cooler location.
6	Alarm	<p>Board Temperature Fault</p> <p>The control board is running too hot. Allow unit to cool.</p> <ul style="list-style-type: none"> • Check fan operation. Clean fan and driver housing. Verify fuses are intact in junction box. • Reduce pressure, duty cycle, or gun tip size. • Move unit to a cooler location.
7	Alarm	<p>Encoder Calibration Error</p> <ul style="list-style-type: none"> • Cycle power and check status indicator to see if error is still active. • Calibrate the encoder (see driver manual). • Contact your Graco distributor or Tech Service for more information.
8	Alarm	<p>Encoder Error</p> <ul style="list-style-type: none"> • Cycle power and check the status indicator to see if the error is still active. • Verify that the encoder cable is connected securely. • The encoder may need to be replaced. • Contact your Graco distributor or Tech Service for more information.
9	Alarm	<p>Software Versions Do Not Match</p> <ul style="list-style-type: none"> • Obtain software update token and follow Software Update procedure (contact your Graco distributor or Tech Service for more information).
10	Alarm	<p>Circuit Board Communication Failure</p> <ul style="list-style-type: none"> • Cycle power and check status indicator to see if error is still active. • Contact your Graco distributor or Tech Service for more information.
11	Alarm	<p>Internal Circuit Board Hardware Failure</p> <ul style="list-style-type: none"> • Cycle power and check status indicator to see if error is still active. • Contact your Graco distributor or Tech Service for more information.
12, 13	Alarm	<p>Internal Software Error</p> <ul style="list-style-type: none"> • Cycle power and check status indicator to see if error is still active. • Contact your Graco distributor or Tech Service for more information.
Fast Flash	Deviation	See Power Saving Mode , page 17.

Repair



To prevent skin injection and splashing, never open a camlock hose or applicator fitting while there is pressure in the fluid line. Perform **Pressure Relief Procedure**, page 10, before performing any repair procedure.

The material and equipment may be hot. To avoid burns, do not touch hot fluid or equipment. Wait until equipment has cooled completely before performing any repair procedure.

Xtreme Lower Removal

Required Tools

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

Disconnect and Reconnect Lower



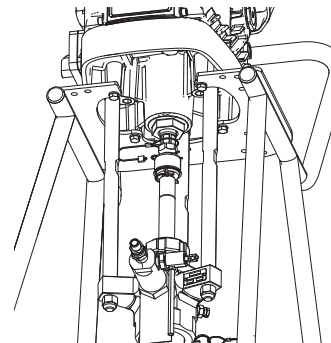
1. Flush pump; see **Prime/Flush**, page 11. Stop pump at bottom of its stroke.
2. Perform **Pressure Relief Procedure**, page 10.
3. Disconnect unit from power source.
4. Disconnect fluid hose. Disconnect suction hose. Hold fluid inlet fitting with a wrench to keep it from loosening while you disconnect suction hose.



Do not lift the pump by the lift ring when the weight exceeds 250 kg (550 lb). The lift ring could fail and result in personal injury or damage to the equipment.

Use caution when disconnecting lower; they can weigh up to 25 kg (55 lbs). Take appropriate precautions.

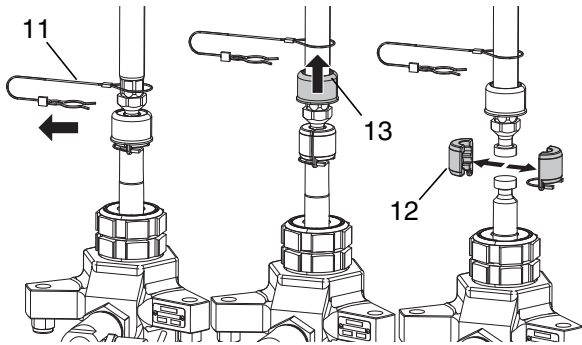
5. If driver does not require service, leave it attached to its mounting.



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Repair

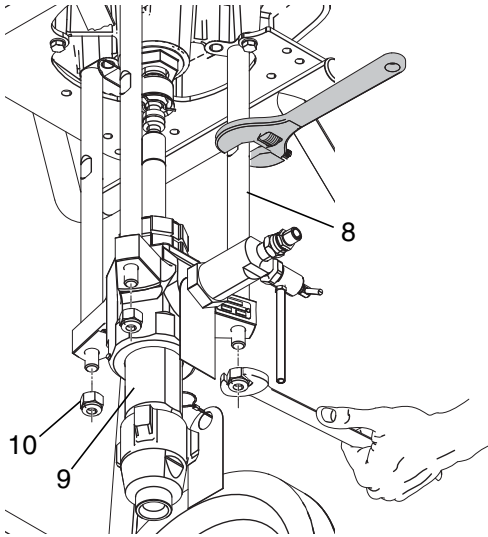
6. Remove clip (11) and slide coupling cover (13) up to remove coupling (12).



8. Refer to Xtreme Lower manual (311762) to service lower.
9. Reconnect lower by following disconnect steps in reverse order.

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

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

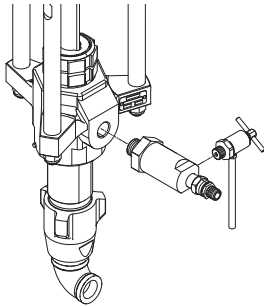


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Outlet Check Valves

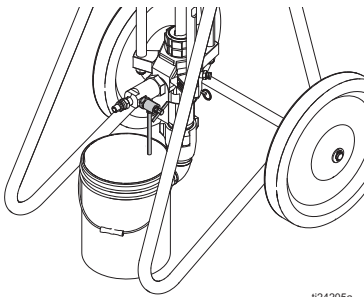


1. Perform **Pressure Relief Procedure**, page 10, and disconnect unit from power source before removing or servicing outlet check valve.
2. When replacing outlet check valve, reinstall with proper flow direction.



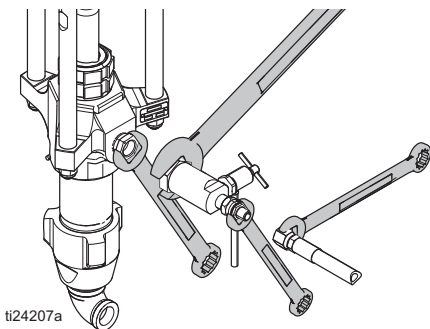
Outlet Check Valve Repair

1. Flush pump (see **Prime/Flush**, page 11). Stop the pump at the bottom of the stroke.
2. Perform **Pressure Relief Procedure**, page 10.
3. Disconnect unit from power source.
4. Place a waste container below the outlet check valve to catch any material.



ti24205a

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



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

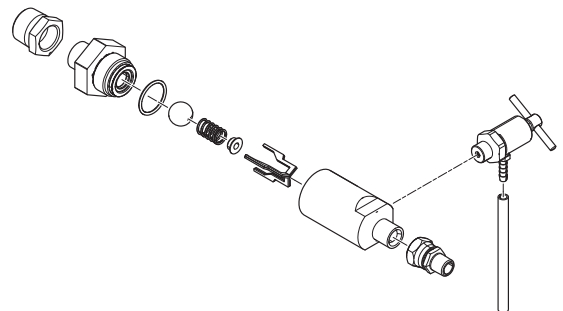
NOTE: The pressure drain valve may remain attached to the outlet check valve housing during repair if needed.

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, compression spring, and ball. Use a small blunt tool to push the ball in and verify that the ball and spring move freely.
10. Replace the o-ring and coat with grease.

NOTICE

The o-ring is designed to be crushed and should not be reused. The o-ring must be replaced every time the outlet check valve housing is opened. If the o-ring is reused, damage to equipment could occur.

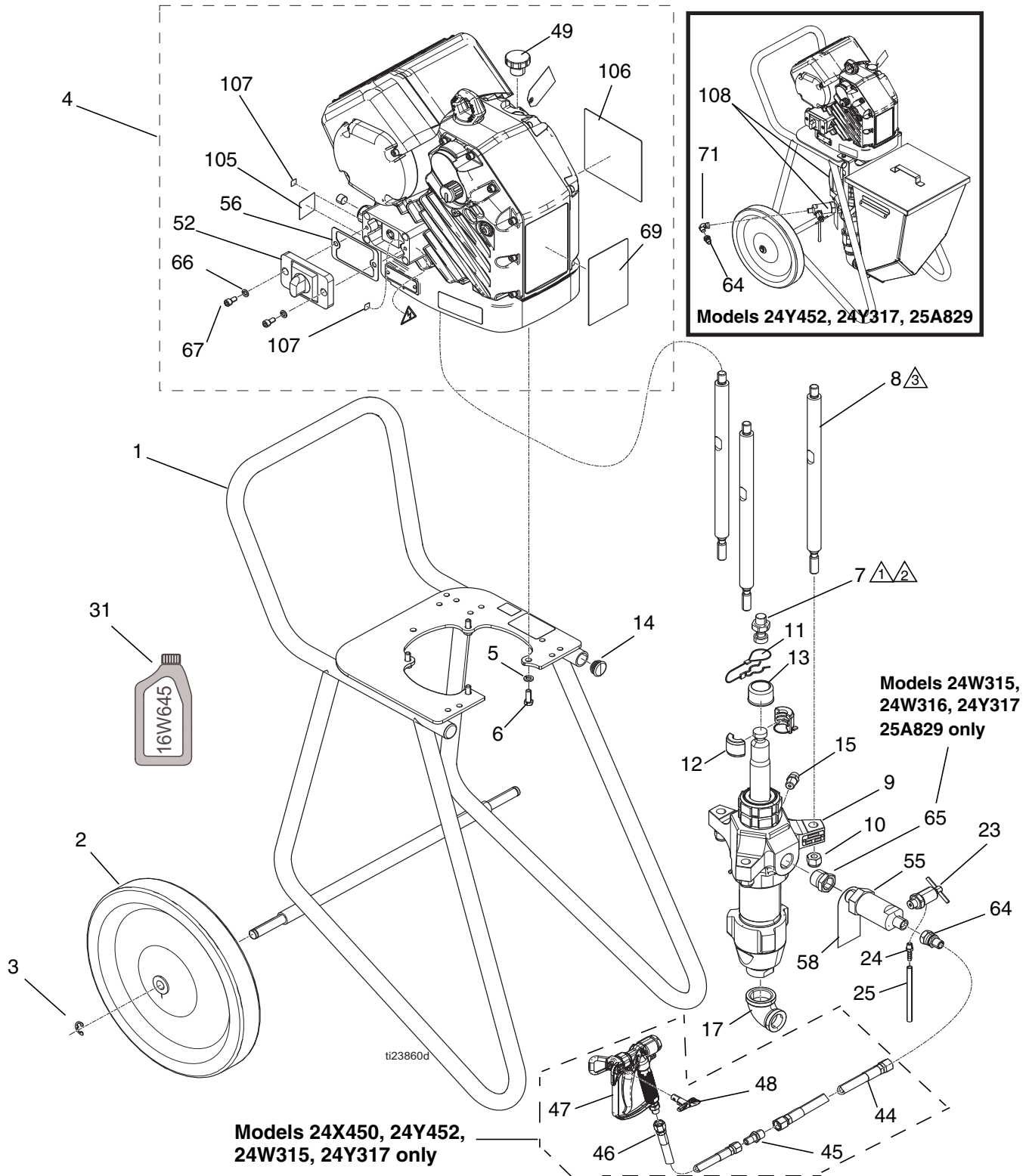
11. Torque the outlet check valve nut onto the housing to 75-80 ft-lb (101-108 N•m).
- NOTE:** If the pressure drain valve was removed for the outlet check valve repair, reinstall at this point.
12. Reattach the outlet check valve to the pump lower and verify the flow indication arrow is pointing away from the pump and that the pressure drain valve outlet is facing the ground.



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13. Attach the dispense hose to the outlet check valve.

Parts Sprayer



Parts List - Sprayer

Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
1	262914	CART, painted, mortar, light wt	1	55‡		VALVE, outlet check	1
2	116406	WHEEL, semi pneu, light weight	2	56	17B509	GASKET, cover, junction box	1
3	113436	RING, retaining	2	57		TAG, oil	1
4*	24V016	DRIVER, non-hazardous location	1	58	17A411	LABEL, instructions	1
5	100133	WASHER, lock, 3/8	4	64	162505	FITTING, union, swivel	1
6	100101	SCREW, cap, hex hd	4	65	15Y463	FITTING, bushing	1
7	15H392	ROD, adapter Xtreme	1			(Models: 24W316, 24W315, 24Y317, 25A829)	
8	257150	ROD, tie, 14 1/4 long	3	66	104572	WASHER, lock and spring	2
9		LOWER, Xtreme, nf, Xseal, disk	1	67	115264	SCREW, cap, socket head	2
	L145C8	Models: 24X450, 24X451, 24Y452		69		LABEL, branding, Xtreme Z45	1
	L250C8	Models: 24W315, 24W316, 24Y317				LABEL, branding, Xtreme Z25	1
	25A710	Model: 25A829		71	C19024	FITTING, elbow, swivel	2
10	101712	NUT, lock	3			(Models: 24Y452, 24Y317, 25A829)	
11	244820	CLIP, hairpin (w/ lanyard)	1	105▲	195795	LABEL, warning	1
12	244819	COUPLING, assembly, 145-290 Xtreme	1	106▲	16W360	LABEL, safety, warning	1
13	197340	COVER, coupler	1	107▲	16T764	LABEL, warning	1
14	16W767	PLUG, tubing	2	108▲	189285	LABEL, warning (Model 25A829 only)	2
15†		HOUSING, rupture, disc	1				
	127628	Models: 24X450, 24X451, 24Y452					
	258962	Models: 24W315, 24W316, 24Y317, 25A829					
17	116401	ADAPTER, elbow	1				
23‡	245143	VALVE, pressure bleed	1				
24	116746	FITTING, barbed, plated	1				
25	116750	TUBE, nylon	1				
31◆	16W645	OIL, silicone-free synthetic ISO 220 EP gear oil, 1 quart (0.95 liter)	1				
44	H43850	HOSE, Xtreme, 4500 PSI, .375ID, 50 ft (Models: 24X451, 24W316, 24Y317, 24Y452)	1				
45	164856	FITTING, nipple, reducing (Models: 24X451, 24W316)	1				
46	H42506	HOSE, cpld, 4500 psi, .25 ID, 6 ft (Models: 24X451, 24W316, 24Y317, 24Y452)	1				
47	XTR510	GUN, XTR5, 1 in. HND, 4fng, XHD529, nf (Models: 24X451, 24W316, 24Y317, 24Y452)	1				
48	XHD651	TIP, spray, high output (Models: 24W315, 24Y317)	1				
49	15H525	CAP, fill	1				
52	17B507	COVER, junction box	1				

* 24V016 KIT includes adapter (7) and labels (69)

† Included in lower (9). See Xtreme lower manual for details.

‡ 127631 KIT, outlet check valve (includes 23, 55)

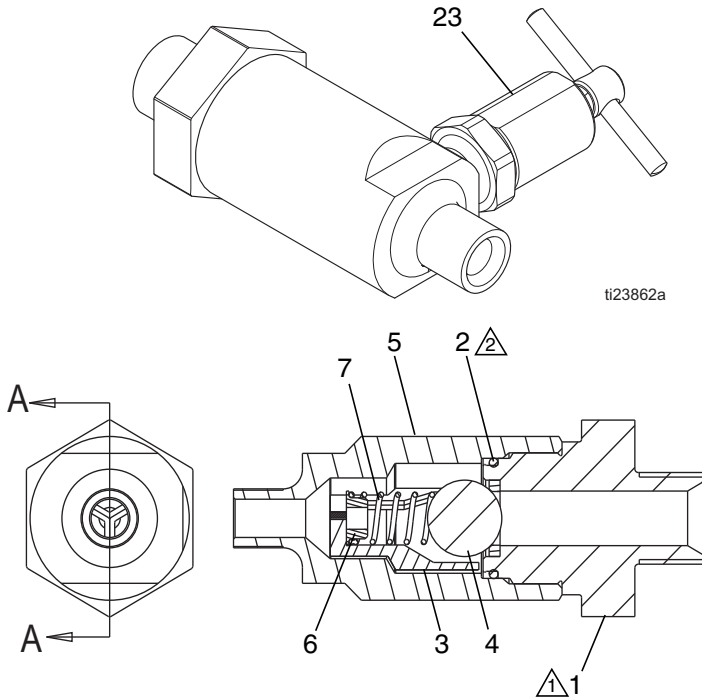
◆ The driver gear-box is shipped from the factory pre-filled with oil. Additional oil must be purchased separately.

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

Part Specifications:

Ref.	Instruction
①	Torque to 196-210 N•m (145-155 ft-lb)
②	Apply thread sealant
③	Torque to 68-81 N•m (50-60 ft-lb)

Outlet Check Valve



Parts List - Outlet Check Valve

Ref.	Part	Description	Qty.
1	127882	NUT, seat (includes 4)	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, compression	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.

Part Specifications:

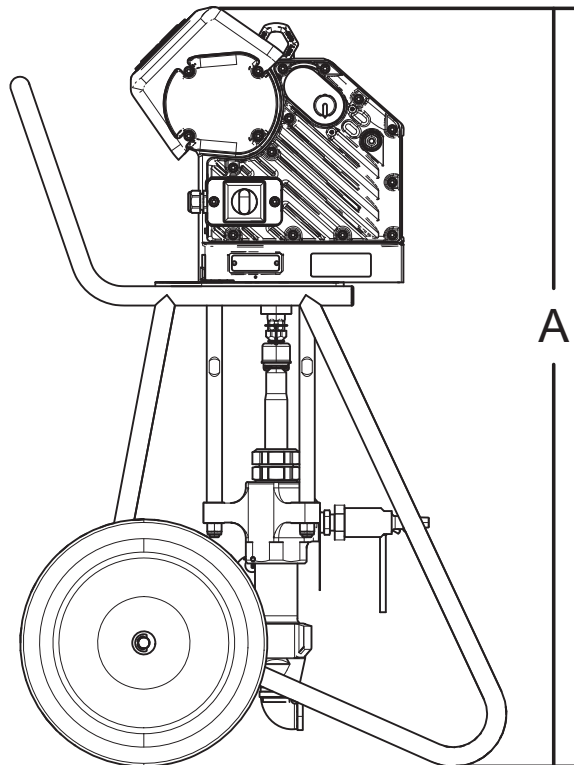
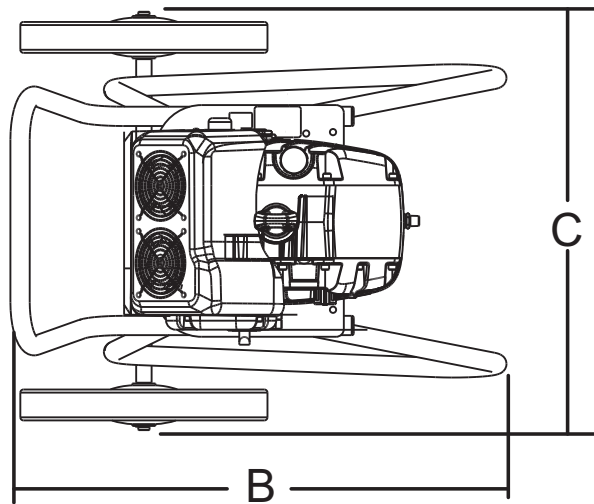
Ref.	Instruction
①	Torque to 101-108 N•m (75-80 ft-lb)
②	Apply lubricant

Accessories:

Part	Description
17B291	MIXER, jiffy, PS-1
24V083	HOPPER KIT
24V499	HOPPER BRACKET
245176	XTREME SIPHON TUBE KIT
17N254	SOFTWARE UPDATE TOKEN†

† See the driver manual for Software Update Procedure

Dimensions



ti30924a

Driver Dimensions

A height	50.0 in (1.27 m)
B depth	33.5 in (0.85 m)
C width	28.0 in (0.71 m)

Technical Data

Electric High Pressure Airless Sprayer		
Models: 24X450, 24X451, 24Y452, 24W315, 24W316, 24Y317, 25A829		
	US	Metric
Maximum fluid working pressure (Models: 24X450, 24X451, 24Y452)	4500 psi	31 MPa, 310 bar
Maximum fluid working pressure (Models 24W315, 24W316, 24Y317, 25A829)	2600 psi	17.9 MPa, 179 bar
Stroke length	4.75 in.	120 mm
Maximum continuous cycle rate (To prevent premature pump wear, do NOT exceed maximum recommended speed of fluid pump)	33 cycles per minute	
Weight	230 lbs	104 kg
Wetted Parts		
Models 24X450, 24X451, 24Y452, 24W315, 24W316, 24Y317	Carbon Steel, Alloy Steel, 304, 440 and 17-PH Grades of Stainless Steel, Zinc and Nickel Plating, Ductile Iron, Tungsten Carbide, PTFE; Leather, Aluminum	
Model 25A829	Carbon Steel, Alloy Steel, 304, 440 and 17-PH Grades of Stainless Steel, Zinc and Nickel Plating, Ductile Iron, Tungsten Carbide, PTFE; Aluminum	
Ambient operating temperature range	23° to 120° F	-5° to 50° C
Maximum fluid temperature	See Model Information , page 2	
Input voltage	200-240 VAC, single phase, 50/60 Hz	
Input current	20A maximum	
Sound pressure	74 dB at maximum cycle rate	
Oil capacity ♦	1.0-1.2 quarts	0.9-1.1 liters
Oil specification	Graco part number 16W645 ISO 220 silicone-free synthetic EP gear oil	
Inlet/Outlet Sizes		
Fluid inlet size	1-1/4 npt(m)	
Fluid outlet size	3/8 npt(m)	
Hose Requirements		
Minimum pressure	4500 psi	31 MPa, 310 bar
Minimum length	50 ft	15 m
Minimum ID	3/8 in.	10 mm
Maximum resistance per ISO 8028	9100 /ft	30,000 /M

♦ The driver gear-box is shipped from the factory prefilled with oil. Additional oil must be purchased separately.

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.

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

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

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Original instructions. *This manual contains English. MM 333208*

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Revision E, March 2017