

ToughTek® SL340e Portable Self-Leveling Underlayment Pump

3A7829D

EN

***Electric sprayer for water-based cementitious underlayment material.
For professional use only.***

Not approved for use in explosive atmospheres or hazardous locations.

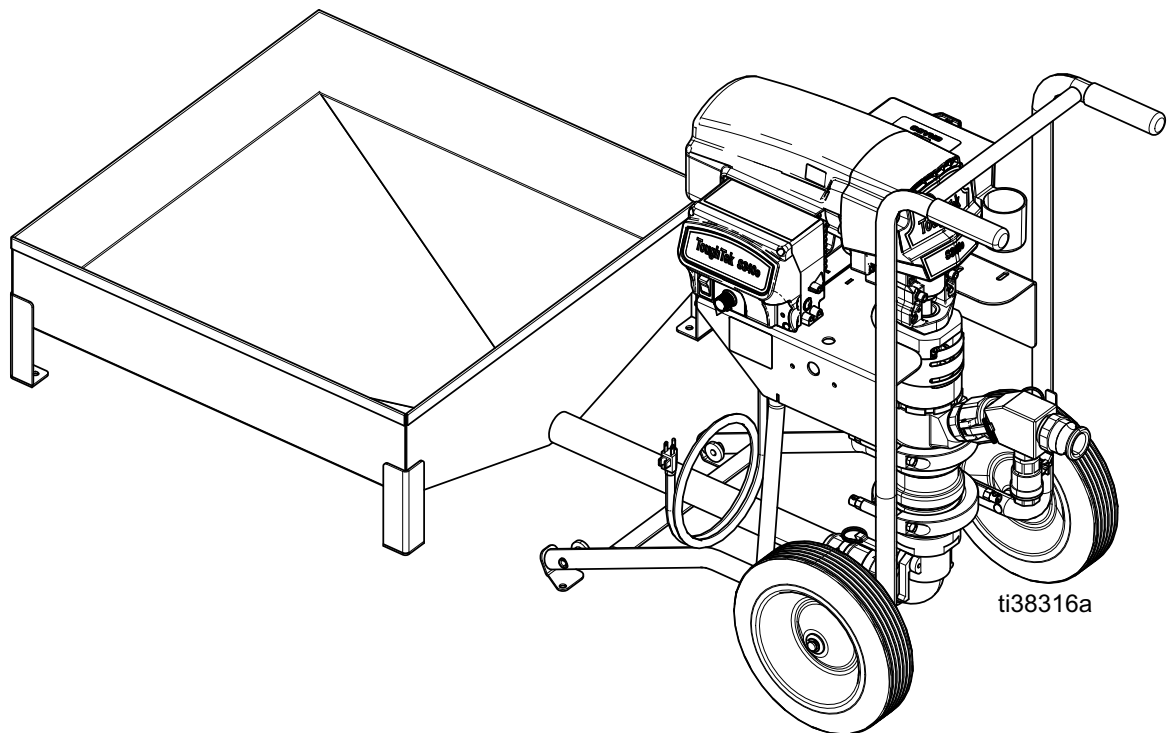
600 psi (4.13 MPa, 41.3 bar)
Maximum Fluid Working Pressure

See page 2 for model information and approvals.



Important Safety Instructions

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



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Models

Bare Model	Electric Requirements	Country
25B509	120 V, 15 A, 50/60 Hz, 1 Phase	North America

Related Manuals

Manuals are available at www.graco.com

Manual in English	Description
3A3112	ToughTek 340e Remote Switch Control Box Kit 17G554
3A5637	ToughTek Camlock Mortar Hose
3A4554	ToughTek Mortar Coupling Hose

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	
 	ELECTRIC SHOCK HAZARD This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock. • Turn off and disconnect power cord before servicing equipment. • Connect only to grounded electrical outlets. • Use only 3-wire extension cords. • Ensure ground prongs are intact on power and extension cords. • Do not expose to rain. Store indoors. • Wait five minutes after disconnecting power cord before servicing.
   	FIRE AND EXPLOSION HAZARD Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion: • Use equipment only in well-ventilated area. • Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking). • Ground all equipment in the work area. See Grounding instructions. • Never spray or flush solvent at high pressure. • Keep work area free of debris, including solvent, rags and gasoline. • Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present. • Use only grounded hoses. • Hold applicator firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive. • Stop operation immediately if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem. • Keep a working fire extinguisher in the work area.
 	MOVING PARTS HAZARD Moving parts can pinch, cut or amputate fingers and other body parts. • Keep clear of moving parts. • Do not operate equipment with protective guards or covers removed. • Equipment can start without warning. Before checking, moving, or servicing equipment, follow the Pressure Relief Procedure and disconnect all power sources.
	SUCTION HAZARD Misuse can cause death or serious injury. • Never place hands near the pump fluid inlet when pump is operating or pressurized.



WARNING



SKIN INJECTION HAZARD

High-pressure fluid from applicator, 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.**



- Do not point applicator 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.



EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.



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



WARNING



PRESSURIZED ALUMINUM PARTS HAZARD

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

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



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.

- Read Safety Data Sheets (SDSs) to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.



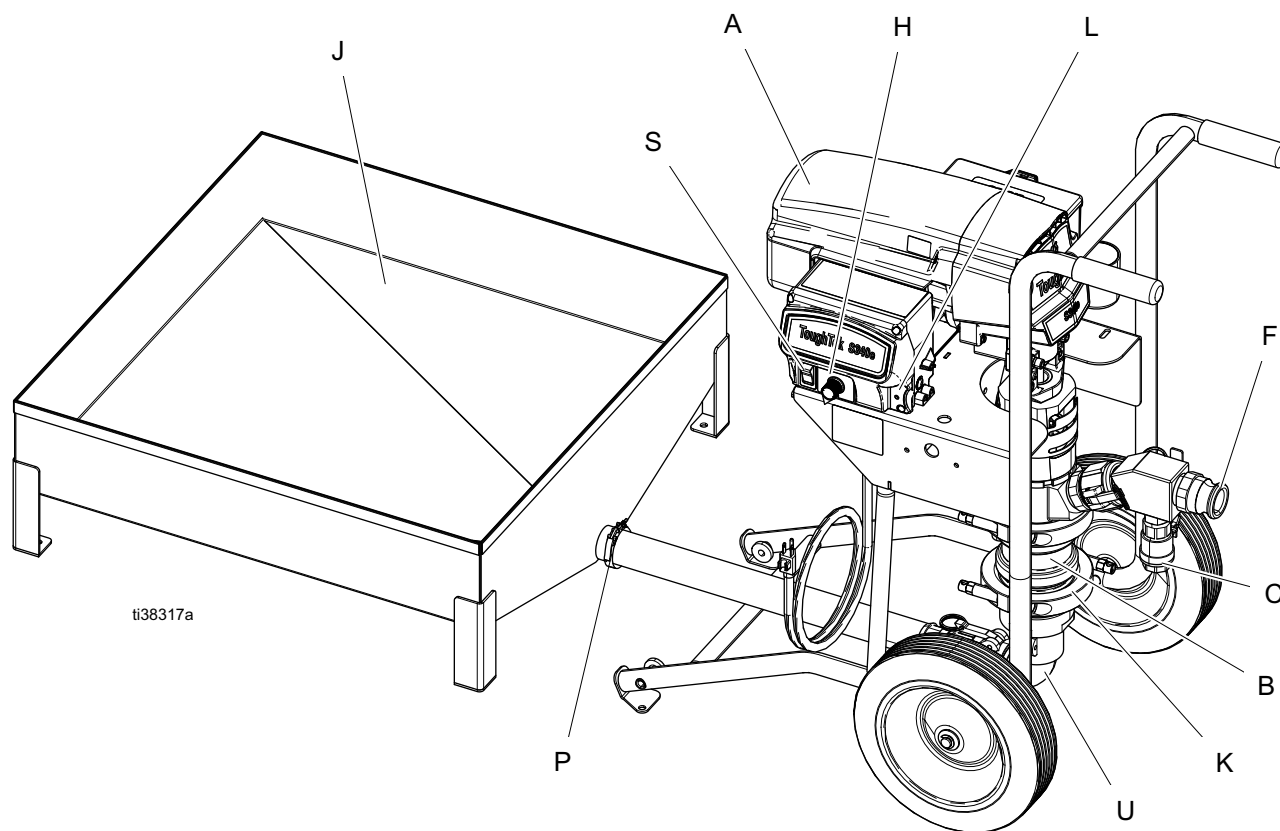
PERSONAL PROTECTIVE EQUIPMENT

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. Protective equipment includes but is not limited to:

- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

Component Identification

Overview



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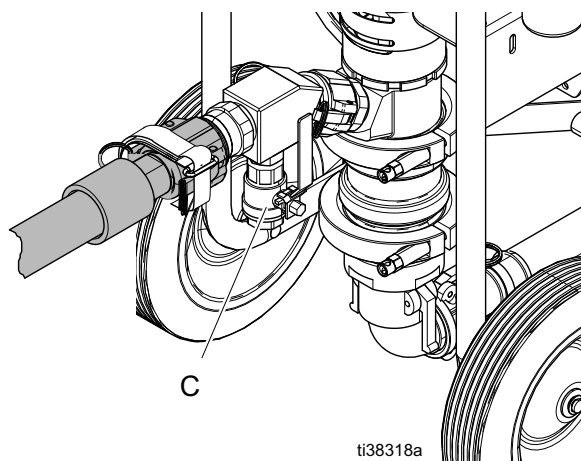
Ref.	Description
A	Electric Motor
B	Pump Lower
C	Fluid Drain/Purge Valve
F	Fluid Outlet
H	Flow Adjustment Knob
J	Hopper

Ref.	Description
K	Over-Center Latch
L	Control Board Status Light
P	Hopper Clamp
S	Motor Power Switch
U	Inlet Latch

Fluid Drain/Purge Valve

				
To avoid injury from splashing fluid, never open a cam-lock hose or applicator fitting while there is pressure in the fluid line. Follow the Pressure Relief Procedure on page 14.				

Open the drain/purge valve (C) to relieve pressure if pump or hose pack-out occurs, or to relieve pressure inside the hose. Close valve when spraying.

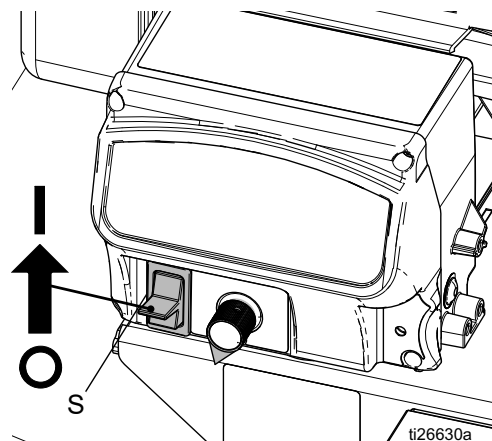


NOTICE

To prevent material hardening in fluid drain/purge valve, flush the valve after every time it is used. Failure to flush prior to material curing in the system will result in damage to the system and may require replacement of all system parts in contact with the material. Follow the **Flush** procedure on page 10.

Motor Power Switch

The motor power switch (S) must be in the ON position for the sprayer to pump material.



Motor Power Switch Settings:

OFF	Power is disconnected. The motor will not run.
ON	The motor will run continuously at a speed determined by the flow adjustment knob.

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.

Ground the sprayer by plugging it into an outlet that is properly installed and grounded in accordance with all local codes and regulations. Do not modify the power cord provided; if it does not fit the outlet, have the proper outlet installed by a qualified electrician.

Extension Cords

- Use only a 3-wire extension cord that has a grounding plug and a grounding receptacle that accepts the plug on the product.
- Make sure your extension cord is not damaged. If an extension cord is necessary, use 12 AWG (2.5 mm²) minimum to carry the current that the product draws.
- An undersized cord results in a drop in line voltage and loss of power and overheating.

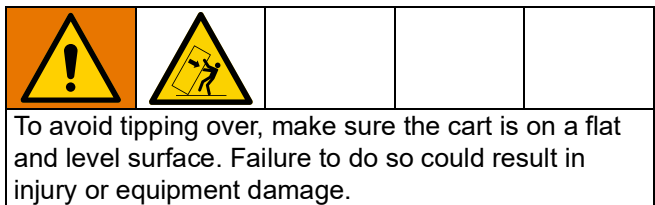
NOTE: Certain GFCI outlets have been known to trip while using this product. GFCI outlets have a range of sensitivities. Motor controllers can cause false trips of GFCI outlets. If you experience issues while using this product, switch to a different GFCI model.

Power Requirements

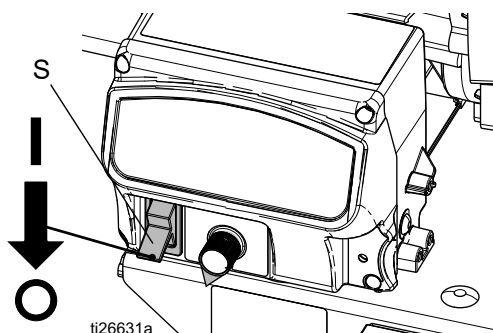
Model	Required Power Source	Power Cord Connectors
100–120 VAC, 50/60 Hz	Dedicated 15A or 20A circuit	 One NEMA 5–15P Plug

Operation

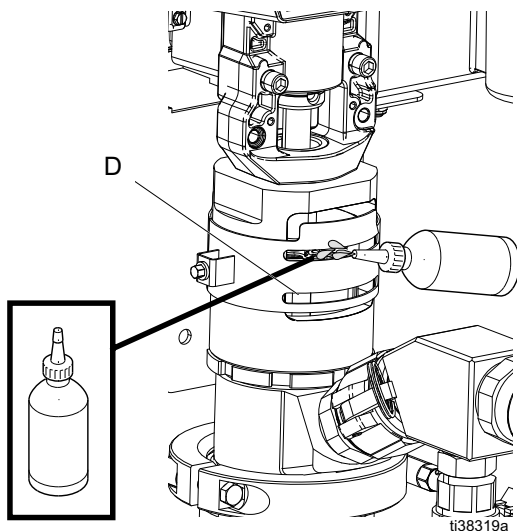
Setup



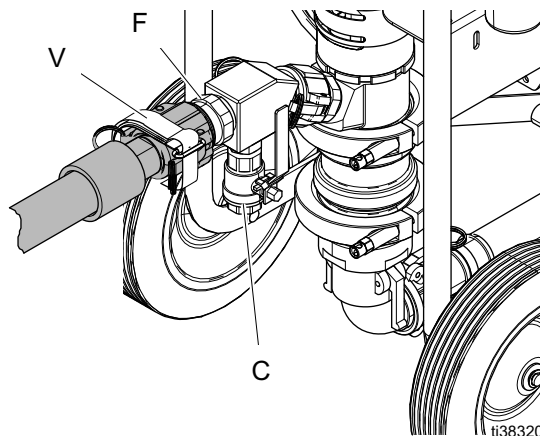
1. Turn the motor power switch (S) to OFF.



2. Ground sprayer (see **Grounding**, page 8). Plug the power cord into a dedicated 15 amp or 20 amp, 120 V circuit.
3. Check Throat Seal Liquid (TSL) level in packing nut (D). Fill 1/2 full with TSL.



4. Attach hose to applicator fluid inlet and pump fluid outlet (F), then secure Velcro straps (V) around the cam lock fitting.



5. Flush the system with water before using (follow the **Flush** procedure on page 10).

Flush



NOTICE

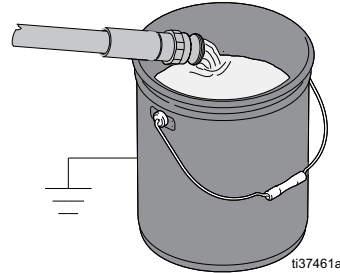
Failure to flush prior to material curing in the system will result in damage to system and may require replacement of all system parts in contact with the material.

NOTICE

If the fluid/drain purge valve has been used to relieve pressure, the valve must be flushed to prevent material hardening in fluid/drain purge valve. If that is not sufficient, remove, disassemble, and clean the valve then reinstall.

- Flush if the materials in the system are about to reach their cure time.
- Flush any time the flow rate starts to decrease as this is a sign that material is starting to thicken and cure.
- Always flush the system at least twice, draining all water between flushes then replacing with clean water.
- Flush using water only.

1. Follow the **Pressure Relief Procedure** on page 14.
2. Place the hose outlet in a waste container. The waste container must be large enough to hold all dispensed material.



3. Turn motor power switch (S) on.
4. Turn adjustment knob (H) clockwise slowly to increase pressure, until a steady stream flows from applicator.
5. When the material level in the hopper is within a few inches of the material inlet at the bottom:
 - a. Scrape the material down the sides of the hopper.
 - b. Fill the hopper with water as the material runs out and continue dispensing.
6. Keep the hopper filled with water while dispensing.

NOTE: Be prepared to decrease the flow adjustment knob (H) when the material exiting the hose changes to water.
7. When water begins to exit the hose outlet, turn the motor power switch (S) to OFF to stop dispensing.
8. Place the hose outlet in the system hopper with the outlet pointing down to enable fluid circulation.

9. Circulate clean water:
 - a. Fill the system hopper with clean water.
 - b. Use a scrub brush to scrub the walls of the hopper.
 - c. Turn the motor power switch (S) to ON to begin circulating water.
 - d. While pumping, open the fluid drain/purge valve. Allow the water to flush out any material to prevent material hardening in the valve. Once the water appears clean, close the fluid drain/purge valve.
 - e. Turn the motor power switch (S) to OFF.
 - f. Place hose outlet in a waste container.
 - g. Turn the motor power switch (S) to ON to dispense into a waste container.
 - h. Dispense into a waste container until hopper is almost empty then turn the motor power switch (S) to OFF.
 - i. Repeat this entire "Circulate clean water" step one more time to ensure system is thoroughly flushed.
10. Remove the remaining material with a hose clean-out ball. See **Driver and Motor** on page 28 for a list of available clean-out balls and appropriate hose sizes to use with them.
 - a. Place the hose outlet in the waste container.
 - b. Remove the hose inlet from the pump outlet and place a hose clean-out ball within the hose inlet. The ball must be wetted down before inserting.
 - c. Reattach the hose to the pump outlet and turn the motor power switch (S) to ON to resume flushing the hose.
 - d. The hose clean-out ball will be pushed out of the hose after several minutes. Once the ball is pushed through the hose, turn the motor power switch (S) to OFF and repeat the entire process listed in step 10 one time to ensure the system is thoroughly flushed.

NOTICE

Material left on the throat seal can dry out and damage the seal. Always stop the pump at the bottom of the stroke to avoid damage to the throat seal.

11. After performing the previous step at least twice, drain remaining water from system:
 - a. Place a drain pan beneath pump lower inlet connection.
 - b. Detach pump from hopper.
 - c. Use a screwdriver to lift the pump lower inlet ball. This will drain the remaining material from the pump lower. When the pump stops draining, release the pump lower inlet ball.
 - d. Reattach pump to hopper.
 - e. Starting at the pump, raise the hose bundle above your head and slowly move towards the applicator. As you move towards the hose outlet, the remaining fluid in the hose will drain from the hose into the bucket.
12. Dispose of all waste material in accordance with local codes and regulations. See manufacturer's SDS for additional information.

Mix the Material

Always follow the material manufacturer's instructions for the material being sprayed. Material must be thoroughly mixed to a smooth consistency before loading it in the hopper.

Managing Material After Mixing:

- Pay close attention to the work life of the material being used.
- Only mix the material kits as needed. Do not let mixed material sit longer than necessary.
- Scrape material down the sides of the hopper as the hopper material level lowers. Do not let older material cure on the walls.
- To ensure that all material in the hopper is used while fresh, occasionally wait until the hopper is almost empty before refilling.

Prime with Material



NOTICE

To prevent material curing in system, never load material into a dry system. Loading material into a dry system will cause the material to stick to internal components and cure, causing damage and requiring replacement of those parts.

Always push out any remaining water into a waste container before circulating material. Always circulate clean material back into the hopper for a few minutes before beginning to pour.

1. Follow the **Mix the Material** instructions.
2. Turn the flow adjustment knob (H) counterclockwise until it stops.
3. Fill the clean hopper with material to be sprayed.
4. Place the hose outlet in a 5 gallon waste container.

NOTICE

To prevent damage to pump seals caused by cavitation, run the pump slowly until the system is primed.

5. Turn the motor power switch (S) to ON.
6. Turn the flow adjustment knob (H) clockwise slowly to increase pressure until water is purged out and a steady stream of material flows from the hose.
7. To stop dispensing, turn the flow adjustment knob (H) counterclockwise until it stops.
8. Place the hose outlet into the hopper.
9. Recirculate a few gallons of material to be sure the material is flowing properly.
10. Turn the flow adjustment knob (H) counterclockwise to stop the pump.

The system is now primed and ready to spray.

Pouring

Prevent Pack-out

To avoid “packing out” the pump or hose:

- Use the lowest pressure and largest nozzle size that provides an acceptable flow rate. This will also result in seals and wear parts lasting much longer.
- Do not use any more fluid hose than is necessary.
- Use an applicator with a rubber tip retainer that will blow off if it plugs.

Before Starting or Stopping Material Flow

NOTE: If the ball valve kit (17J703) has been installed, do NOT use the valve to stall the pump. The pump must be stopped first before the ball valve can be closed.

Pumping



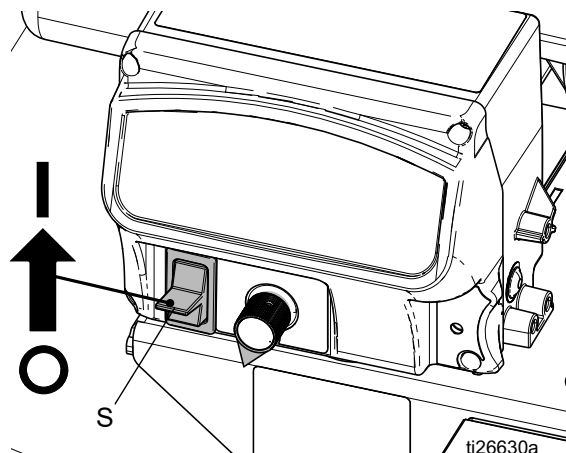
1. Follow the **Mix the Material** instructions on page 12.
2. Follow the **Prime with Material** procedure on page 12.

NOTICE

Do not allow pump to run without material in the hopper. It can cause damage to the pump seals.

Failure to flush prior to material curing in the system will result in damage to system and may require replacement of all system parts in contact with the material.

3. Turn the motor power switch (S) to ON.



4. Turn flow adjustment knob (H) until desired flow is reached. Turn clockwise to increase flow, counterclockwise to decrease flow.
5. If the material is approaching its cure time or the system will be idle for enough time for material to begin curing in the system, flush the system. Follow the **Flush** procedure on page 10.

NOTICE

Failure to flush prior to material beginning to cure in the system will result in damage to system and may require replacement of all parts in contact with the material.

Pressure Relief Procedure

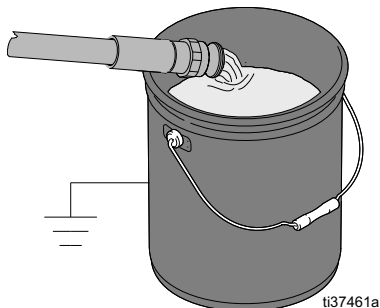


Follow the Pressure Relief Procedure whenever you see this symbol.



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

1. Turn the flow adjustment knob (H) counterclockwise until it stops.
2. Turn the motor power switch (S) off.
3. Hold the hose firmly against a pail.



To avoid injury from splashing fluid, never open a cam-lock hose or applicator fitting while there is pressure in the fluid line.

4. If the ball valve kit (17J703) has been installed, open the ball valve.
5. If you suspect the hose is completely clogged, or that pressure has not been fully relieved after following the previous steps, slowly open the fluid drain/purge valve (C) at the pump outlet and drain material into a waste pail.

Clearing a Clogged Hose

1. Follow the **Pressure Relief Procedure**.
2. If you suspect there is a clog in the hose, disconnect the hose at the connection farthest from the pump. Continue to disconnect the hose back toward the pump (upstream) until the hose with the clog is reached.
3. To clear a clogged hose:
 - a. Disconnect the clogged hose from the pump if not done already.
 - b. Use a rope or a strap to secure the clogged hose to a permanent, stationary column.
 - c. Use a water hose to clear the clogged or dried material from the material hose. Do not use a hammer on the hose, or insert any potential projectiles (such as sticks, rebar, etc) into the hose end.

NOTICE

To prevent damage from material hardening in the fluid drain/purge valve, flush the valve after every use.

Shutdown

To avoid injury from splashing fluid, never open a cam-lock hose or applicator fitting while there is pressure in the fluid line.				

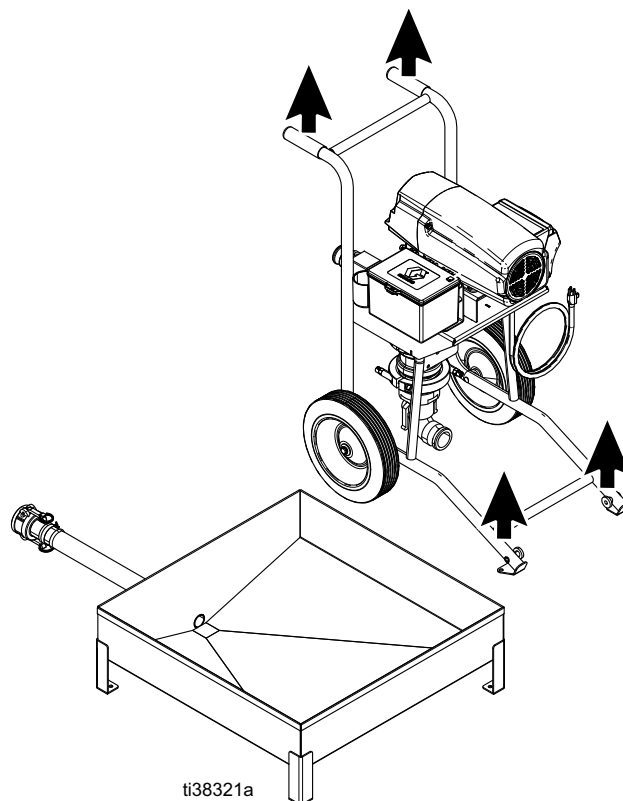
NOTICE

To prevent rust, never leave water or water-based fluid in the pump overnight.

1. To shutdown, follow the **Flush** procedure on page 10.
2. Turn the motor power switch (S) to OFF.

Lifting Instructions

When lifting the unit, only lift at the points indicated by the arrows shown in the illustration. Never lift with the hopper attached.



Maintenance



1. Follow the **Flush** procedure on page 10.
2. Clean the hopper with a scrub pad. Clean the outside of the sprayer with a cloth and water.
3. Check hoses, tubes, and couplings for wear or damage. Tighten all fluid connections before each use.
4. Check and replace cam-lock gaskets as needed.

Water Exposure

NOTICE

Exposing the motor and/or control to water can cause damage and possible motor failure. Do not store the pump outside. Do not spray water directly into the motor fan.

Preventative Maintenance

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.

DAILY: Check hose for wear and damage, and inspect fluid lines for leaks.

DAILY: Check fluid drain/purge valve for proper operation.

DAILY: Check level of Throat Seal Liquid (TSL) in displacement pump packing nut/wet cup. Fill nut 1/2 full with TSL. Maintain TSL level to help prevent material buildup on piston rod and premature wear of packings and pump corrosion.

Corrosion Protection

NOTICE

To prevent rust, never leave water or water-based fluid in the pump overnight.

NOTICE

Material left on the throat seal can dry out and damage the seal. Always stop the pump at the bottom of the stroke to avoid damage to the throat seal.

Always flush the pump before the fluid dries on the displacement rod. First, flush with water, then with oil. Relieve the pressure, but leave the oil in the pump to protect the parts from corrosion.

Troubleshooting



1. Follow the **Pressure Relief Procedure** on page 14.

2. Check all possible problems, causes, and solutions listed below before disassembling the pump.

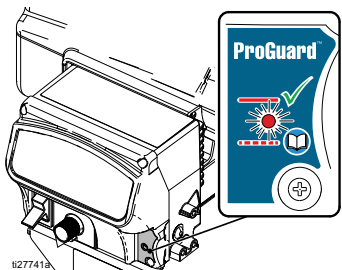
NOTE: For troubleshooting and repair questions, contact your distributor.

Mechanical/Fluid Flow

Problem	Cause	Solution
The displacement pump operates, but output is low on the up stroke.	The piston ball check is not seating properly.	Service the piston ball check.
	Piston packings are worn or damaged.	Replace the packings.
The displacement pump operates, but output is low on the down stroke and/or on both strokes.	Piston packings are worn or damaged.	Tighten the packing nut or replace the packings.
	The outlet check valve is not seating properly.	Clean the check valve.
	The intake valve ball check is not seating properly.	Service the intake valve ball check.
	The rubber elbow has an air leak.	Tighten the elbow clamps.
Material leaks and runs over the side of the wet cup.	The wet cup is loose.	Tighten the wet cup enough to stop leakage.
	Throat packings are worn or damaged.	Replace the packings.
Fluid delivery is low.	The applicator tip is dirty or clogged.	Clean or replace the applicator tip.
	Clamps on the hopper hose are loose.	Tighten the clamps on the hopper hose.
	Large pressure drop in the fluid hose.	Reduce the hose length or increase the fluid hose diameter.
The electric motor does not operate.	The power switch is not ON.	Turn the power switch ON.
	The circuit breaker has been tripped.	Check the circuit breaker at the power source. Reset the motor switch.
The sprayer does not operate.	The fluid hose is obstructed.	Clean the fluid hose.
	Dried fluid on the displacement rod or inlet ball.	Clean the displacement rod. Always stop the pump at the bottom of the stroke. Keep the wet cup filled with TSL. Be sure the inlet ball moves freely.

Problem	Cause	Solution
Speed is erratic and/or accelerated.	The material supply has been exhausted, or clogged the suction.	Refill the hopper and prime the pump.
	The piston valve or packings are worn or open.	Clear the piston valve and replace the packings.
	The intake valve is worn or open.	Clear or service the intake valve.
The pump cycles or fails to hold pressure at stall.	Check balls, seats, or piston packings are worn.	Service the lower pump.
Poor finish or irregular spray pattern.	The atomizing air pressure is inadequate.	Adjust the air needle valve on the applicator (see your applicator manual).
	The spray applicator is dirty, worn, or damaged.	Service the spray applicator (see your applicator manual).
The motor is powered but nothing comes out of the hose.	The pump is packed out with dry or cured material.	Disassemble and clean the pump.
		Reverse the hose and try to push out the bad material.
		Some materials may only require 1 in. inner diameter fluid line all the way to the outlet.
	The outlet check valve has been installed backwards.	Re-install the outlet check valve in the proper orientation.
Material is too thick to push through the hose without packing out.	The hose is too restrictive.	Thin and mix material thoroughly to lower the viscosity.
		Use a pump system priming fluid (slime). Wet out the system.
		Use a larger diameter hose.

Electrical

Problem	Cause	Solution
The control board status light blinks four times repeatedly. 	The control board is detecting multiple voltage surges.	Check voltage supply to the sprayer: 1. Turn the motor power switch (S) to OFF and unplug the sprayer. 2. Locate a good voltage supply to prevent damage to electronics.
The control board status light blinks five times repeatedly.	Check for line obstruction or pack out. The motor is powered but not able to turn.	Remove obstruction and cycle power off and on. If the problem continues, contact your local distributor
	The outlet check valve is installed backwards.	Install the outlet check valve in the proper orientation
The control board status light blinks six times repeatedly.	The motor is overheating.	Allow the sprayer to cool. If the sprayer runs when cool, correct the cause of overheating. Keep the sprayer in a cooler location with good ventilation. Make sure the motor air intake is not blocked. If the sprayer still does not run, contact your local distributor.
The control board status light blinks eight times repeatedly.	Incoming voltage is too low for sprayer operation.	Check voltage supply to the sprayer: 1. Turn the motor power switch (S) to OFF and unplug the sprayer. 2. Remove other equipment that uses the same circuit. 3. Locate a good voltage supply to avoid damage to electronics.
The control board status light blinks ten times repeatedly.	The control board is overheating.	1. Make sure the motor air intake is not blocked. 2. Make sure the fan has not failed. 3. Make sure the control board is properly connected to the back plate and that conductive thermal paste is used on power components. 4. Replace the control board. 5. Replace the motor.
The control board status light blinks 12 times repeatedly.	Excessive current protection is enabled.	Cycle the power on and off.

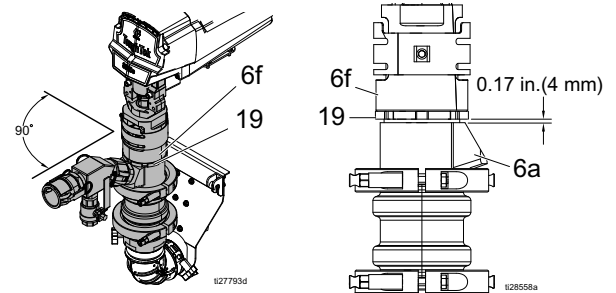
Problem	Cause	Solution
The control board status light blinks 15 times repeatedly.	Connections above the motor may be loose or damaged.	1. Set the motor power switch (S) to OFF and unplug the sprayer. 2. Remove the motor shroud. 3. Disconnect the motor control and inspect for damage at the connectors. 4. Reconnect the motor control. 5. Turn the motor power switch (S) to ON. If the blinking code continues, replace the motor.
The control board status light blinks 16 times repeatedly.	Check the connections. Check for water in the sensor. The control is not receiving the motor position sensor signal.	1. Set the motor power switch (S) to OFF and unplug the sprayer. 2. Remove the motor shroud. 3. Disconnect the motor control and inspect for damage at the connectors. 4. Inspect the sensor for water. If the sensor is wet, let it dry for 24 hours. 5. Re-install the sensor, motor control connections, and shroud. 6. Turn power ON. If the problem continues, replace the motor.
The control board status light blinks 17 times repeatedly.	The sprayer is plugged into the wrong voltage.	1. Set the motor power switch (S) to OFF and unplug the sprayer. 2. Locate a good voltage supply to avoid damage to electronics.
The incoming power supply circuit is repeatedly tripped.	The circuit uses a ground fault circuit interrupter (GFCI).	Certain 120 V GFCI outlets have been known to trip while using this product. GFCI outlets have a range of sensitivities. Motor controllers can cause false trips of GFCI outlets. If a GFCI circuit has tripped, connect to an outlet with a different GFCI model.

Repair



Perform the procedure below to replace the entire pump lower with a new or different pump lower.

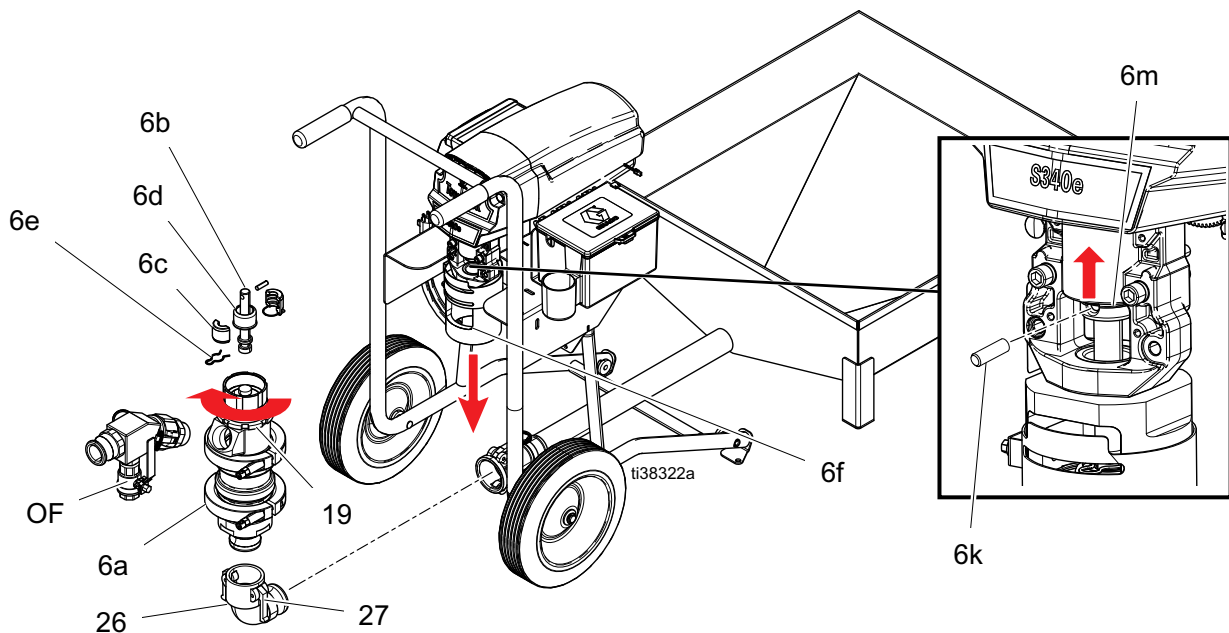
1. Follow the **Pressure Relief Procedure** on page 14.
2. Disconnect the hopper, material hose, and power.
3. Remove outlet fittings (OF) from the pump lower (6a) outlet.
4. Lift retaining spring (6m) and remove pin (6k).
5. Loosen jam nut (19) and unthread the pump lower (6a).
6. Disconnect the piston extension rod (6b) by removing clip (6e) and disassembling the coupler cover (6d) and assembly coupling (6c). The pump lower (6a) should now be separated from all other parts. Replace the pump lower and reinstall on the unit. If pump components need replacing, see **Replace Pump Components** on page 22.



NOTE: When reinstalling the pump lower, the jam nut (19) should be threaded on the pump lower until it bottoms out. The pump lower should be threaded completely into the motor adapter (6f) and backed off to the correct orientation position shown above. Once in position, unthread the pump two additional turns and secure the jam nut.

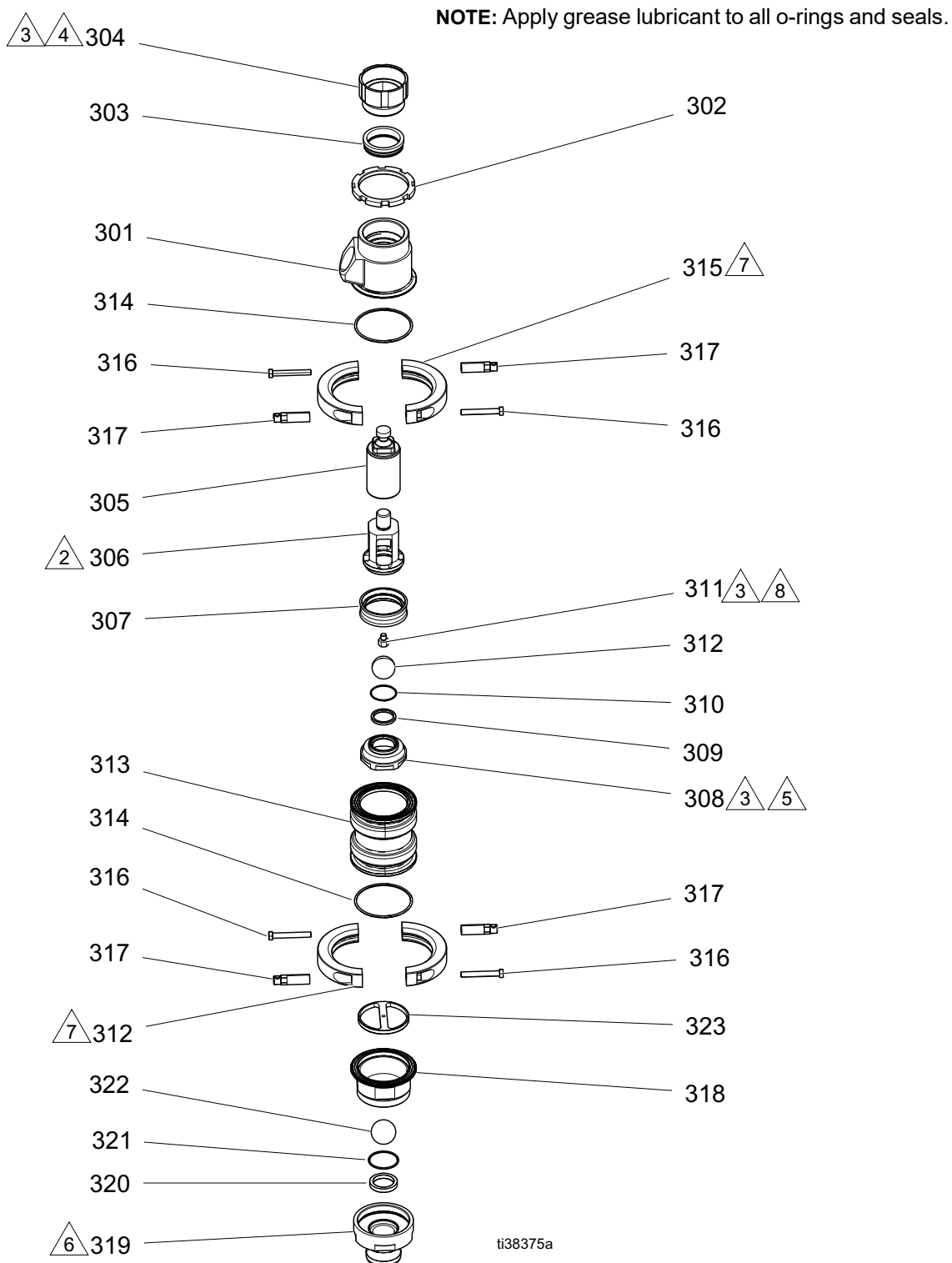
NOTICE

Failure to assemble the pump lower to the correct depth and orientation can cause damage to the pump. To avoid damage to the pump, follow the Note above.



Replace Pump Components

Remove the pump lower (6a - 257295) before replacing any pump components. For a list of available pump lower kits, see the list on the following page.



Pump Components Parts List

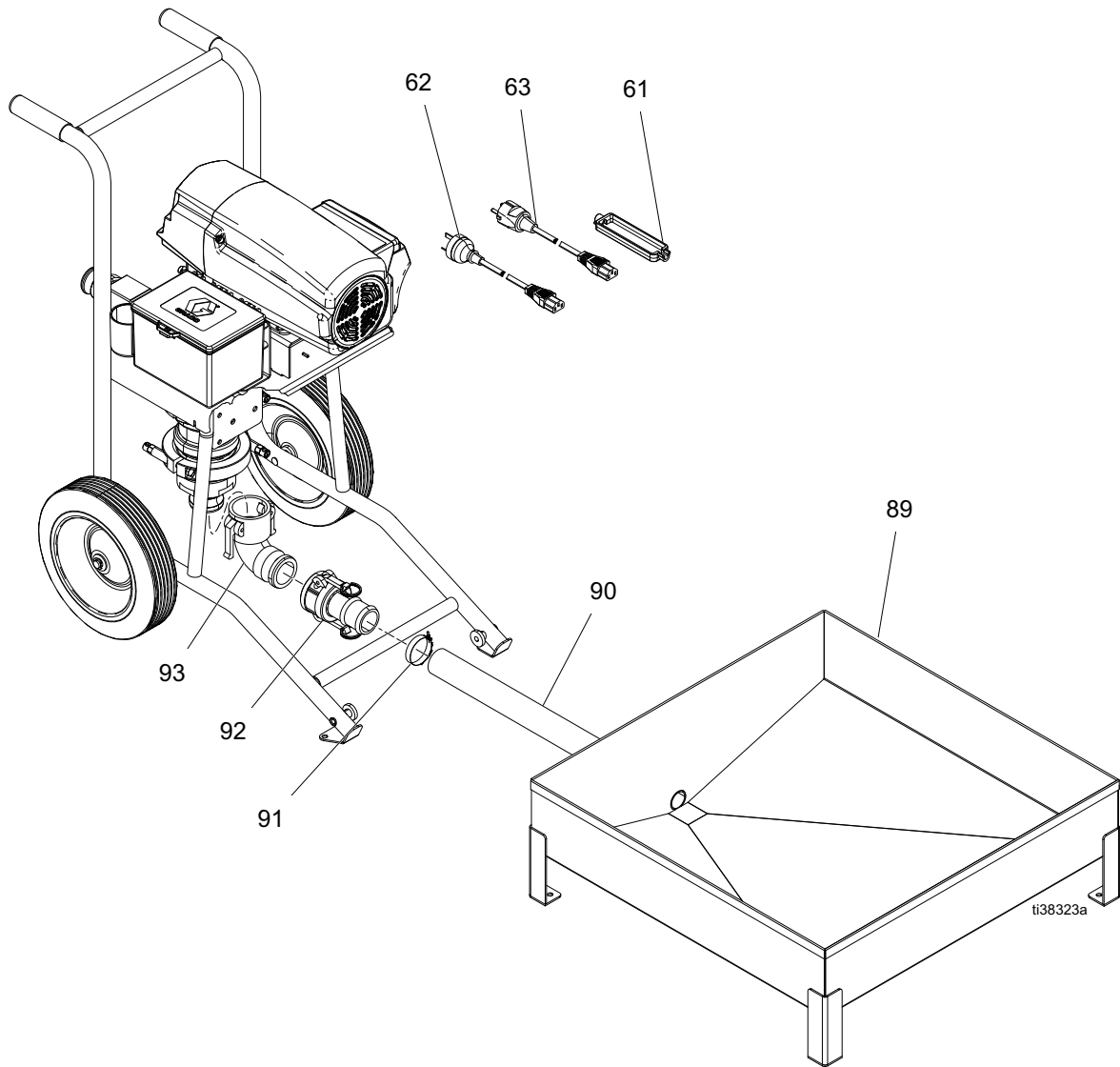
Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
301	17G220	HOUSING, outlet	1	318	16U796	HOUSING, inlet, ball guide	1
302	17G859	NUT, jam, black	1	319	16V143	HOUSING, inlet	1
303	17G865	KIT, bearing, seal throat, 3-pack	1	320	†	SEA, carbide, valve, inlet	1
304	17G321	NUT, packing, 340e	1	321	†	O-RING, 50 mm x 2.5 mm	1
305	17G331	ROD, short, displacement	1	322	15H833†	BALL, neo/sst core, 1.75 in.	1
306	17G795	GUIDE, ball, piston	1	323	16U797	GUIDE, ball, inlet	1
307	16W491	PACKING, cup, 3-pack	1	† See List of Kits table for more information.			
308	17G794	VALVE, piston	1				
309	†	SEAT, carbide, valve, piston	1	△ ₂ Apply serviceable thread locker to threads.			
310	†	PACKING, o-ring	1	△ ₃ Apply anti-seize to threads.			
311	17G817	STOP, ball, piston	1	△ ₄ Torque to 30 +/- 5 ft-lb (40 +/- 6.7 N•m).			
312	17G798†	BALL, neoprene, cs core, 1.625	1	△ ₅ Torque to 100 +/- 5 ft-lb (135 +/- 13.5 N•m).			
313	17G330	CYLINDER, short	1	△ ₆ Torque to 200 +/- 5 ft-lb (271 +/- 13.5 N•m).			
314	†	PACKING, o-ring	2	△ ₇ Orient clamps approximately as shown.			
315	†	CLAMP, 4 in. 1000 psi	2	△ ₈ Torque to 10 +/- 2 ft-lb (13 +/- 2.7 N•m).			
316	†	SCREW, cap, hex hd	4				
317	†	NUT, extension, 3/8-16	4				

List of Kits

Kit	Description	Kit Contents
25A233	Pump rebuild kit	303 (10), 307 (1), 310 (1), 312 (1), 314 (2), 321 (1), 322 (1)
17G456	Pump lower clamp kit	315 (1), 316 (2), 317 (2)
17G862	Piston seat and o-ring	309 (1), 310 (1)
17G863	Inlet seat and o-ring	320 (1), 321 (1)
25A467	Check ball repair kit	312 (1), 322 (1)
16W490	Cylinder o-ring kit	314 (10)
25V556	SST check ball 1-9/16"	Alternate to 312 (1)
25V557	SST check ball 1-5/8"	Alternate to 322 (1)

Parts

SL340e

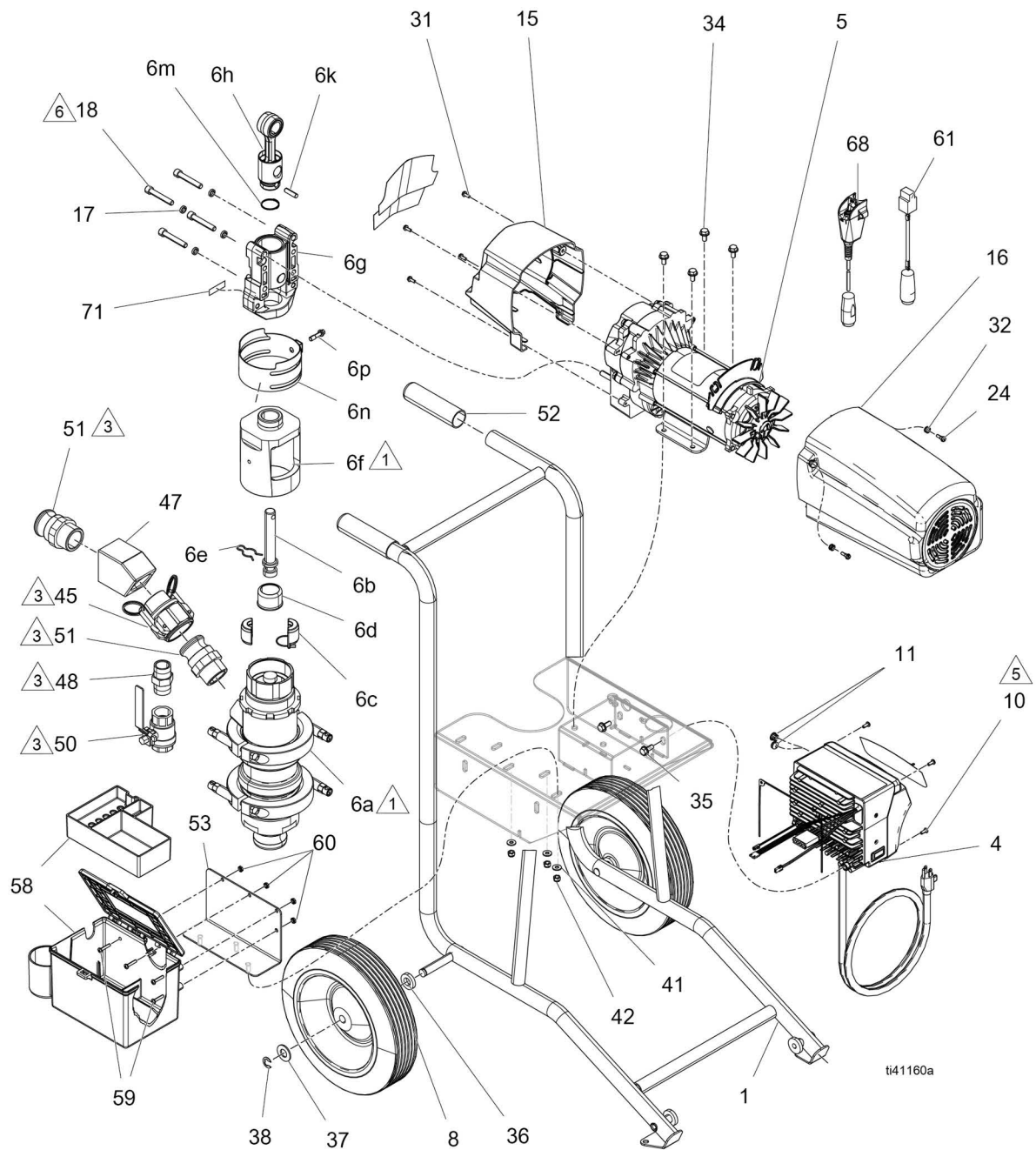


SL340e Parts List

Ref.	Part	Description	Qty.
61	195551	RETAINER, plug, adapter	1
62	242005	CORD SET, adapter, Australia	1
63	242001	CORD SET, adapter, Europe	1
89	18B709	HOPPER, assy, SL340	1

Ref.	Part	Description	Qty.
90	18B767	HOSE, EPDM, 2.0 in.	1
91	18B766	CLAMP, over center, 2.0 in.	1
92	513550	COUPLER, hose shank	1
93	16V510	FITTING, cam and groove, elbow, 2.0 in.	1

SL340e (continued)



- △1 Apply lubricant grease to threads.
- △3 Apply pipe sealant to threads.
- △5 Torque to 40 - 45 in-lb (4.5 - 5.0 N•m).
- △6 Torque to 25 +/- 5 ft-lb (33.8 +/- 6.7 N•m).

SL340e Parts List (continued)

Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
1	-----	CART, 340e, painted	1	18	114666	SCREW, cap, socket head	4
4	†	MODULE, 340e, motor control, 120V	1	19	-----	PLUG, tube	2
	†	MODULE, 340e, motor control, 120V, UK	1	24	119250	SCREW, shoulder	2
	†	MODULE, 340e, motor control, 230V	1	31	118444	SCREW, mach, slot, hex wash hd	4
5	17J711	MOTOR, 340e, pump	1	32	276980	GROMMET, cover	2
6a	25T296	KIT, pump, lower SL340	1	34	-----	SCREW, cap, hex hd	6
6b	17G283	ROD, extension, piston, 340e	1	35	117791	SCREW, cap, tri, lobe	2
6c	244819	COUPLING, assembly, 145–290 Xtreme	1	36	191824	WASHER, space	2
6d	197340	COVER, coupler	1	37	111841	WASHER, plain, 5/8	2
6e	116407	CLIP, hairpin	1	38	101242	RING, retaining, ext.	2
6f	17G279	ADAPTER, pump to motor, 340e	1	41	100527	WASHER, plain	7
6g	-----	HOUSING, bearing	1	42	111040	NUT, lock, insert, nylock, 5/16 in.	7
6h	287395	ROD, connecting	1	45	128758	FITTING, 1.5 cmlk f x 1.50 npt m	1
6k	183210	PIN, str, hdl	1	47	17G408	MANIFOLD, outlet, pump	1
6m	119778	SPRING, retaining	1	48	17G388	FITTING, hose, 1–11 1/2 npt	1
6n	†	GUARD, finger, weldment, 340e	1	50	127232	VALVE, ball, 1000 psi, 1 in.	1
6p	†	BOLT, special, 5/16–24	1	51	128473	FITTING, 1.5 in. camlock x 1.5 in. nptm	2
8	17J706	WHEEL, semi pneumatic, offset	2	52	-----	GRIP, vinyl, gray, 1.25 in.	2
10	16V095	SCREW, mach, pnh, torx, self tapping	4	53	-----	BRACKET, F340e, mounting	1
11*	17H175	PLUG, round	1	58	†	TOOL BOX	1
11**	-----	GROMMET, 3/16 in. ID x 9/16 in. OD	1	59	†	SCREW, mach, pnh	4
12	-----	WIRE, jumper, remote	1	60	†	NUT, keps, hex hd	4
15	†	COVER, front, plastic, painted	1	61	17Y417	ADAPTER, cord, remote switch (adapt twist lock remote switch to new control box)	1
16	†	SHIELD, motor, painted	1				
17	106115	WASHER, lock (hi collar)	4				

* Only included in models 25A300, 25C610, 25A304.

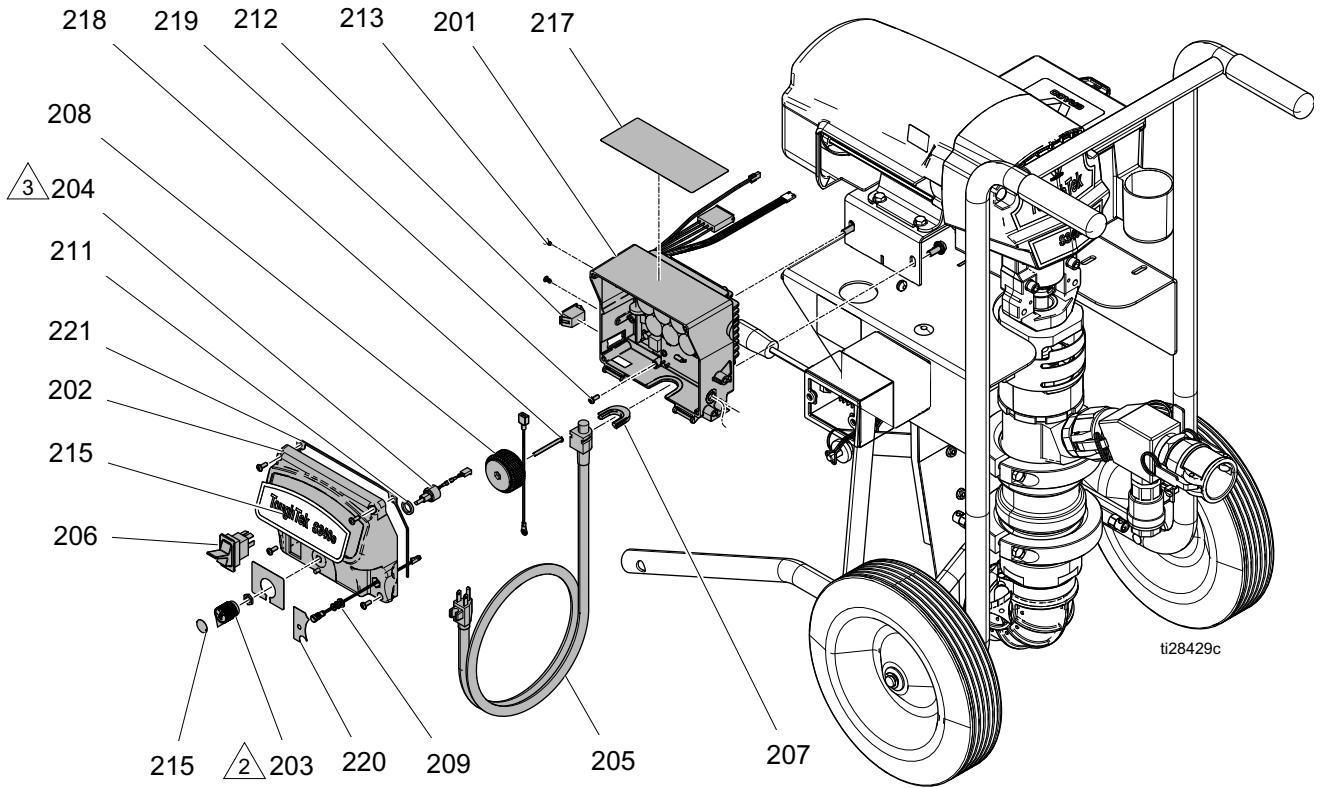
** Only included in 25A302, 25A306, 25C612.

† See List of Kits table.

SL340e List of Kits

Kit	Description	Kit Contents
17J702	120V motor control module kit	4 (1), 10 (4), S340e Label (1), F340e Label (1), SL340 Label (1)
17J714	340e finger guard kit	6n (1), 6p (1)
17J704	Front cover kit	15 (1), 31 (4), S340e Label (1), F340e Label (1)
287282	Motor shield kit	16 (1), 24 (2), 32 (2)
17G554	Remote switch control box kit	64 (1), 65 (1), 66 (1), 67 (1), 68 (1)
17J705	Tool box kit	58 (1), 59 (1), 60 (1)
17N875	35 mm 1.5 npfm adapter kit	86 (1), 87 (1), 88 (1)

Control Box



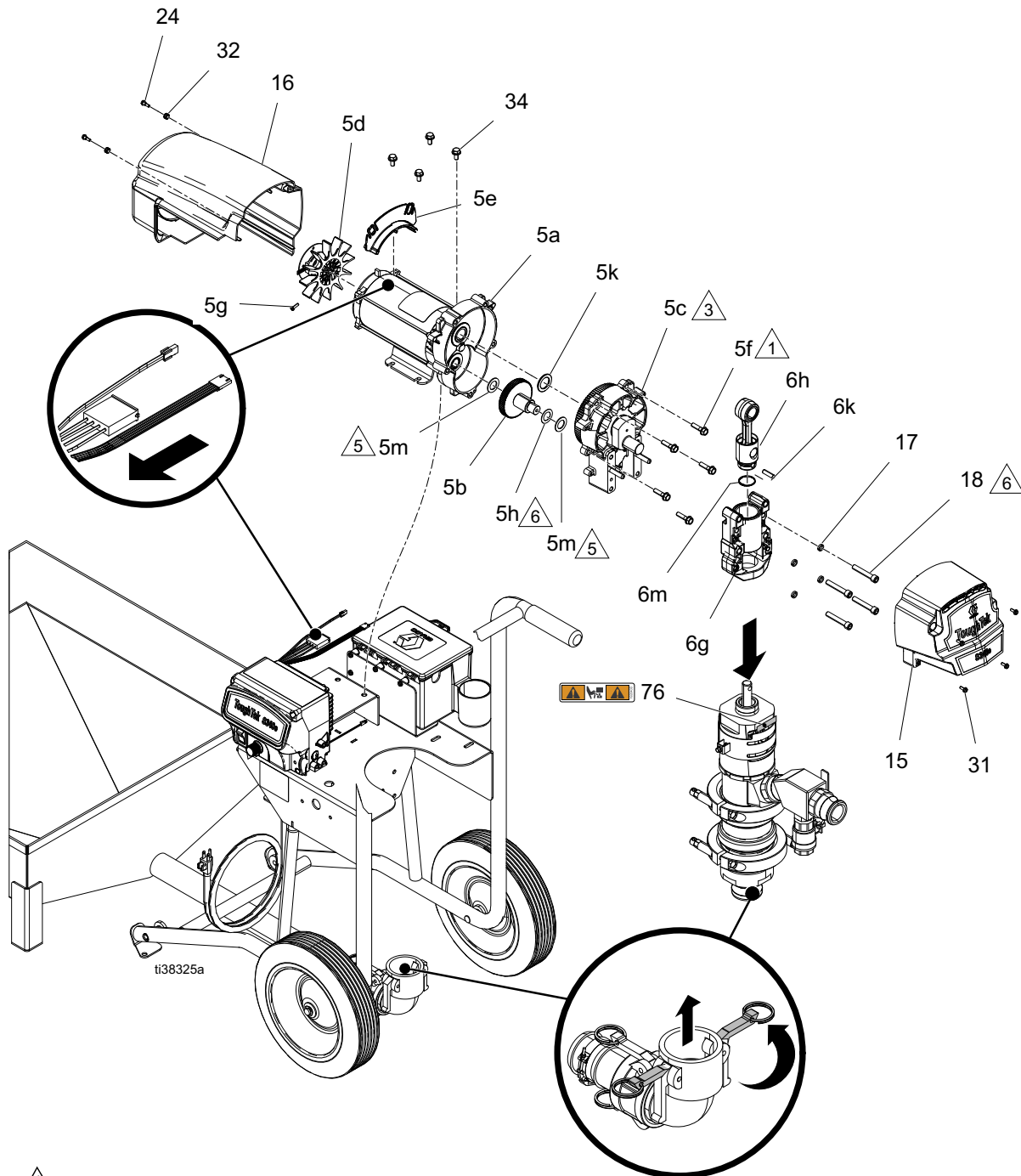
△₂ Torque to 10 - 15 in-lb (1.1 - 1.7 N•m).

△₃ Torque to 30 - 35 in-lb (3.3 - 3.9 N•m).

Driver and Motor Parts List

Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
201	-----	CONTROL, board, 50 amp	1	216	16Y786	LABEL, control, elec, std	1
202	-----	COVER, control, ultra, std	1	217▲	16T784	LABEL, warning, EN/FR/ES	1
203	116167	KNOB, potentiometer	1	218	16U215	SCREW, phillips, pan hd, plastite	1
204	256219	POTENTIOMETER, assembly	1	219	114391	SCREW, grounding	1
205	15H064	CORD, power	1	220	-----	LABEL, control, F340e, Proguard	1
206	15D527	SWITCH, rocker, 240V	1	221	-----	GASKET, housing, motor, control, F340e	1
207	16T547	ADAPTER, cord	1	▲ Replacement safety labels, tags, and cards are available at no cost.			
208	-----	COIL, filter	1				
209	16Z019	HARNESS, wiring, with light	1				
211	15C973	GASKET	1	NOTE: All Control Box Parts listed above are included in both the 120V Motor Control Module Kit (17J702) and 230V Motor Control Module Kit (17J755).			
212	16T483	PLUG, hole, switch	1				
213	-----	PLUG, nylon	2				
215	-----	LABEL	1				

Driver and Motor



- ① Torque to 190 - 210 in-lb (21.4 - 23.7 N•m).
- ③ Apply lubricant to all gear teeth proportionally.
- ⑤ Copper colored washer.
- ⑥ Steel colored washer.

Driver and Motor Parts List

Ref.	Part	Description	Qty.	Ref.	Part	Description	Qty.
5a	-----	MOTOR, electric	1	6m	119778	SPRING, retaining	1
5b	-----	GEAR, combination	1	15†	-----	COVER, front, plastic, painted	1
5c	-----	HOUSING, drive	1	16†	-----	SHIELD, motor, painted	1
5d	15D088	FAN, motor	1	17	106115	WASHER, lock (hi collar)	4
5e	278075	BRACKET, wire	1	18	114666	SCREW, cap, socket head	4
5f	15C753	SCREW, mach, hex wash hd	5	24	119250	SCREW, shoulder	2
5g	115477	SCREW, mach, torx pan hd	1	31	118444	SCREW, mach, slot, hex wash hd	4
5h	114699	WASHER, thrust	1	32	276980	GROMMET, cover	2
5k	116192	WASHER, thrust	1	34	-----	SCREW, cap, hex hd	6
5m	114672	WASHER, thrust	2	76▲	192840	LABEL, warning	1
6g	-----	HOUSING, bearing	1	† See List of Kits table.			
6h	287395	ROD, connecting	1	▲ Replacement safety labels, tags, and cards are available at no cost.			
6k	183210	PIN, str, hdls	1				

Driver and Motor List of Kits

Kit	Description	Kit Contents
17J711	F340e Pump motor	5 (1), includes 5a-5h, 5k, 5m
17J704	Front cover kit	15 (1), 31 (4), S340e label (1), F340e label (1)
287282	Motor shield kit	16 (1), 24 (2), 32 (2)

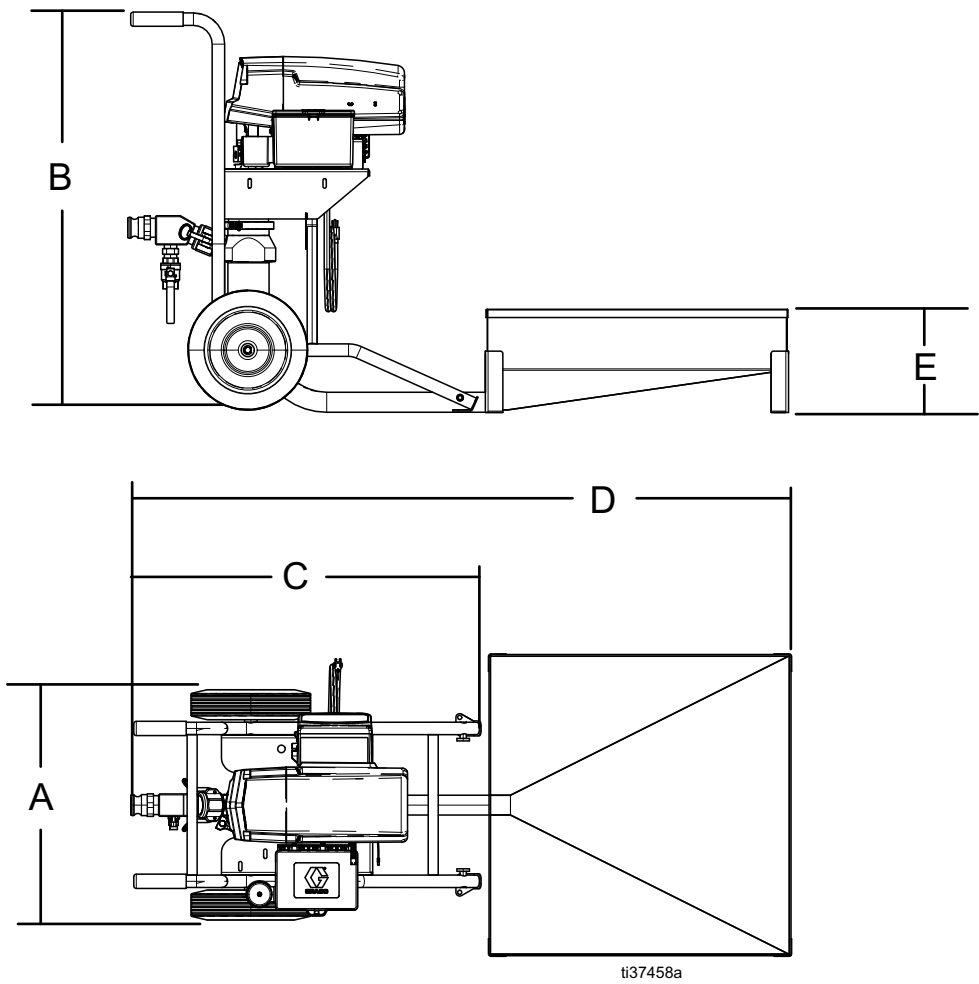
Replacement Parts and Accessories

Accessories	
17G554	Kit, remote switch, control box, 340e
17W829	Kit, remote switch, extension cord (100 ft)
114271	Strap, retaining
240296	Kit, retaining straps, 4-pack
17W604	Kit, remote switch, cable (switch and 100 ft cable)
17J703	Kit, applicator, ball valve (applicator)
248515	Kit, clean out, sponge ball, 1.18 in. diameter (30 mm) 5-pack (for use on 1 in. hoses)
25A227	Kit, clean out, sponge ball, 1.57 in. diameter (40 mm) 5-pack (for use on 1.38 in. hoses)
17G930	Kit, clean out, sponge ball, 2.36 in. diameter (60 mm) 5-pack (for use on 2.0 in. hoses)

Repair Parts

Lower Assembly	
25A233	KIT, rebuild, pump, 340e
17G456	CLAMP, double bolted, 4.0 in.
17G865	KIT, bearing, seal, throat, 3-pack
25T296	KIT, pump, lower, SL340
Piston	
16W491	KIT, repair, 3-pack, seal, piston (piston packing cup)
Hopper	
18B877	KIT, hopper, slu

Dimensions



Ref.	Dimension
A	23.05 in. (57 cm)
B	39.4 in. (100 cm)
C	35.0 in. (89 cm)
D	66.0 in. (168 cm)
E	10.25 in. (26 cm)

Recycling and Disposal

End of Product Life

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

California Proposition 65

CALIFORNIA RESIDENTS

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

Technical Specifications

ToughTek SL340e		
	US	Metric
Maximum Fluid Working Pressure	600 psi	4.1 MPa, 41 Bar
Stroke Length	2.25 in.	57 mm
Maximum pump speed (Do not exceed maximum recommended speed of fluid pump to prevent premature pump wear)	150 cycles per minute	
Weight (dry with hopper)	205 lb	93 kg
Wetted Parts	Stainless steel, plated steel, carbide, urethane, PTFE, UHMWPE, LLDPE, aluminum, solvent-resistant o-rings	
Inlet/Outlet Sizes		
Fluid Inlet Size	1.5 in.	
Fluid Outlet Size	1.5 in. npt(f) with 1.5 in. male camlock	
Hose Requirements		
Minimum Pressure	600 psi	4.1 MPa, 41 Bar
Minimum Hose Diameter	1.0 in.	2.5 cm
Minimum Hose Length	25 ft	7.6 m
Power Requirements		
100–120 VAC Models	1 phase, 50/60 Hz	
Noise Level		
Sound Power	90.4 dBa*	
Sound Pressure	80.5 dBa*	
*per ISO 3744; measured at 3.1 ft		
Operating Ambient Temperature Range		
Temperature	32° F to 120° F	4° C to 49° C

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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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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.

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Original instructions. This manual contains English. MM 3A5202

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