

FinishPro II 395/595 Airless/Air-Assisted Sprayer

333126A
EN

**For the application of architectural paints and coatings.
For professional use only.
Not approved for use in explosive atmospheres or hazardous locations.**






Maximum Fluid Working Pressure: 3300 psi (227 bar, 22.7 MPa)
Maximum Air Working Pressure: 35 psi (2.4 bar, 0.24 MPa)



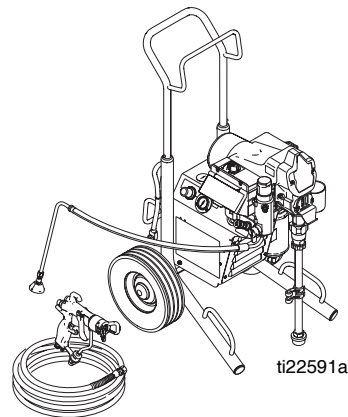
Important Safety Instructions

Read all warnings and instructions in this manual, and in the gun manual. Save these instructions.

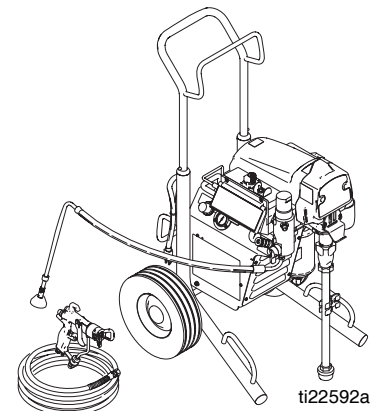
Models:

Region	FinishPro II 395	FinishPro II 595	
US	24U065	24U073	
Europe CEE 7/7	24U067	24U075	
Europe Multi Cord	24U069	24U077	
UK	24U070	-----	
Asia/Australia	24U071	24U071	

FinishPro II 395



FinishPro II 595



Related Manuals:

	333120		333182
	309250		333154

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Warning

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

! WARNING

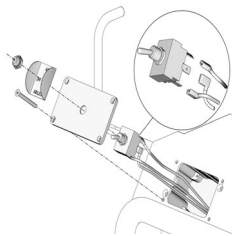


GROUNDING

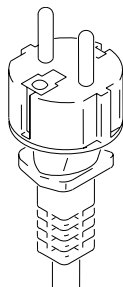
This product must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This product is equipped with a cord having a grounding wire with an appropriate grounding plug. The plug must be plugged into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

- Improper installation of the grounding plug is able to result in a risk of electric shock.
- When repair or replacement of the cord or plug is required, do not connect the grounding wire to either flat blade terminal.
- The wire with insulation having an outer surface that is green with or without yellow stripes is the grounding wire.
- Check with a qualified electrician or serviceman when the grounding instructions are not completely understood, or when in doubt as to whether the product is properly grounded.
- Do not modify the plug provided; if it does not fit the outlet, have the proper outlet installed by a qualified electrician.
- This product is for use on a nominal 120V or 230V circuit and has a grounding plug similar to the plugs illustrated in the figure below.

120V US



230V



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

Extension Cords:

- Use only a 3-wire extension cord that has a grounding plug and a grounding receptacle that accepts the plug on the product.
- Make sure your extension cord is not damaged. If an extension cord is necessary, use 12 AWG (2.5 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.

WARNING



FIRE AND EXPLOSION HAZARD

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

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









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.



! WARNING

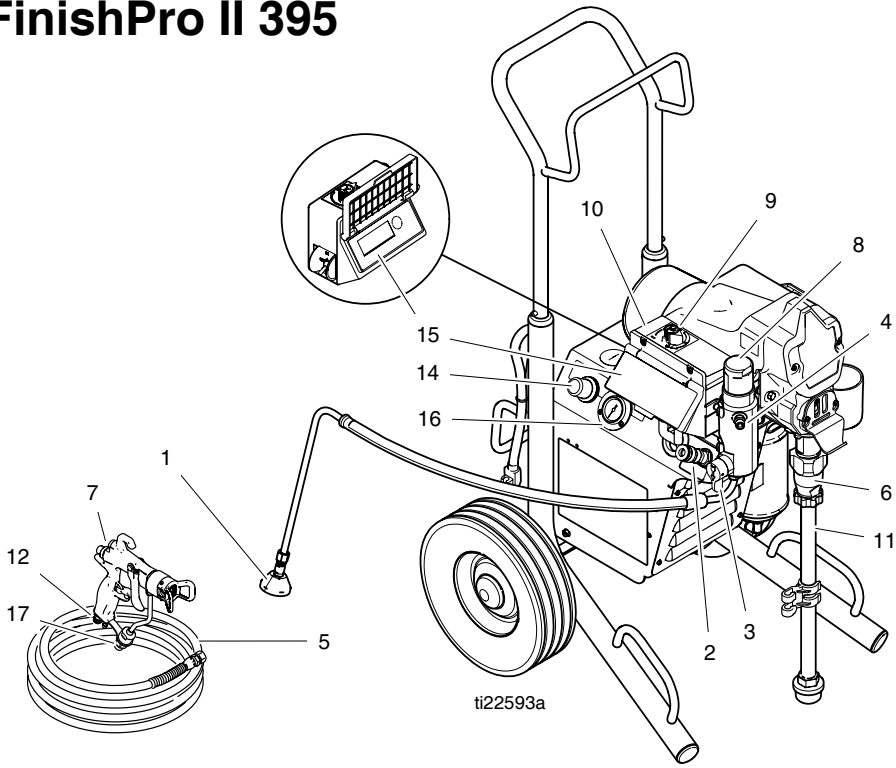
  	<p>SKIN INJECTION HAZARD</p> <p>High-pressure spray is able to inject toxins into the body and cause serious bodily injury. In the event that injection occurs, get immediate surgical treatment.</p> <ul style="list-style-type: none"> • Do not aim the gun at, or spray any person or animal. • Keep hands and other body parts away from the discharge. For example, do not try to stop leaks with any part of the body. • Always use the nozzle tip guard. Do not spray without nozzle tip guard in place. • Use Graco nozzle tips. • Use caution when cleaning and changing nozzle tips. In the case where the nozzle tip clogs while spraying, follow the Pressure Relief Procedure for turning off the unit and relieving the pressure before removing the nozzle tip to clean. • Do not leave the unit energized or under pressure while unattended. When the unit is not in use, turn off the unit and follow the Pressure Relief Procedure for turning off the unit. • Check hoses and parts for signs of damage. Replace any damaged hoses or parts. • This system is capable of producing 3300 psi (227 bar, 22.7 MPa) psi. Use Graco replacement parts or accessories that are rated a minimum of 3300 psi (227 bar, 22.7 MPa) psi. • Always engage the trigger lock when not spraying. Verify the trigger lock is functioning properly. • Verify that all connections are secure before operating the unit. • Know how to stop the unit and bleed pressure quickly. Be thoroughly familiar with the controls.
 	<p>EQUIPMENT MISUSE HAZARD</p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> • Always wear appropriate gloves, eye protection, and a respirator or mask when painting. • Do not operate or spray near children. Keep children away from equipment at all times. • Do not overreach or stand on an unstable support. Keep effective footing and balance at all times. • Stay alert and watch what you are doing. • Do not leave the unit energized or under pressure while unattended. When the unit is not in use, turn off the unit and follow the Pressure Relief Procedure for turning off the unit. • Do not operate the unit when fatigued or under the influence of drugs or alcohol. • Do not kink or over-bend the hose. • Do not expose the hose to temperatures or to pressures in excess of those specified by Graco. • Do not use the hose as a strength member to pull or lift the equipment. • Do not spray with a hose shorter than 25 feet. • 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.
	<p>PRESSURIZED ALUMINUM PARTS HAZARD</p> <p>Use of fluids that are incompatible with aluminum in pressurized equipment can cause serious chemical reaction and equipment rupture. Failure to follow this warning can result in death, serious injury, or property damage.</p> <ul style="list-style-type: none"> • Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents. • Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.

! WARNING

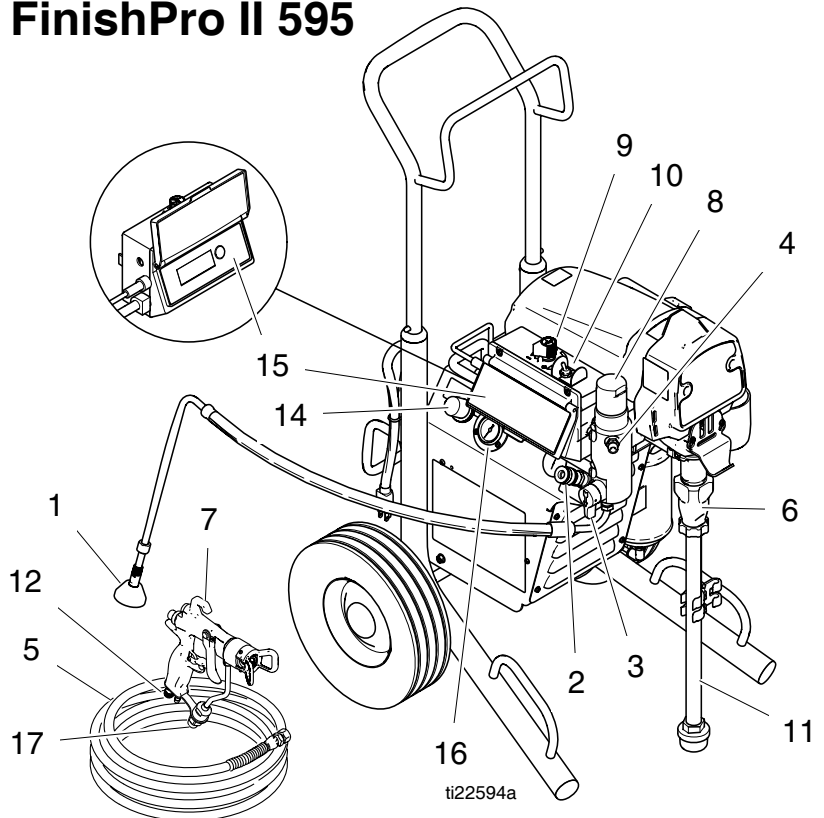
	<p>BURN HAZARD Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:</p> <ul style="list-style-type: none"> • Do not touch hot fluid or equipment.
 	<p>MOVING PARTS HAZARD Moving parts can pinch, cut or amputate fingers and other body parts.</p> <ul 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>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.
	<p>CALIFORNIA PROPOSITION 65 This product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm. Wash hands after handling.</p>

Component Identification

FinishPro II 395







FinishPro II 595



Component Identification

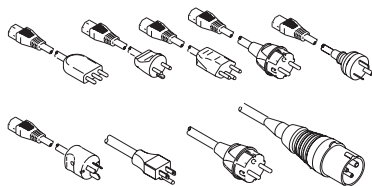
Item	Description
1	Drain Tube/Hose
2	Air Hose Connection
3	Prime/Spray Valve
4	Fluid Outlet
5	Air/Fluid Supply Hose
6	Displacement Pump
7	Gun (see manual)
8	Filter Manifold
9	Fluid Pressure Control
10	Power/Function Selector
11	Suction Tube
12	Gun Air Regulator
14	Sprayer Air Pressure Regulator
15	Digital Display
16	Air Pressure Gauge
17	Gun Filter

Grounding

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

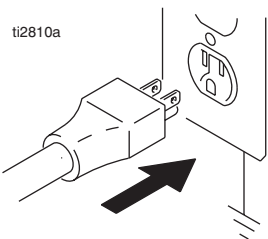
The sprayer cord includes a grounding wire with an appropriate grounding contact. Do not use the sprayer if the electrical cord has a damaged ground contact.



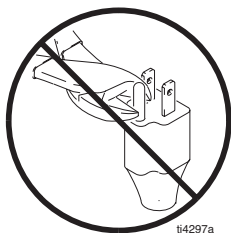
Power Requirements

110-120V units require 110-120 VAC, 50/60 Hz, 15A, 1 phase. 230V units require 230 VAC, 50/60 HZ, 10A, 1 phase.

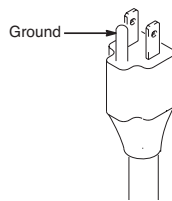
The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.



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



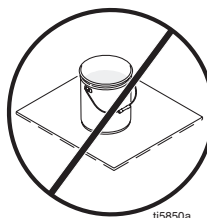
Extension Cords



Use an extension cord with an undamaged ground contact. If an extension cord is necessary, use a 3-wire, 12 AWG (2.5 mm²) minimum. Longer cords reduce sprayer performance.

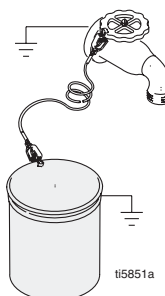
Pails

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

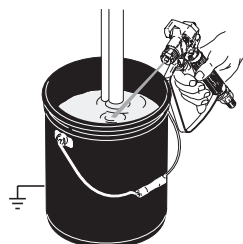


Do not place pail on a nonconductive surface such as paper or cardboard which interrupts grounding continuity.

Grounding a metal pail: connect a ground wire to the pail by clamping one end to pail and other end to a true earth ground such as a water pipe.



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



Pressure Relief Procedure

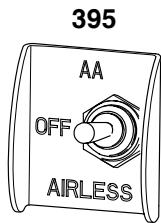


Follow the Pressure Relief Procedure whenever you see this symbol.

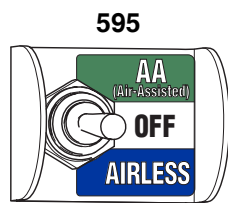


This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

1. Set function selection switch to OFF and unplug sprayer.

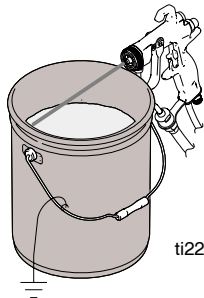


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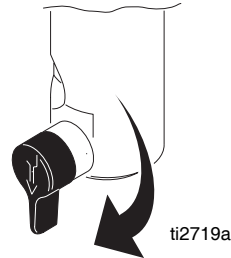
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2. Turn pressure control knob to lowest setting.
3. Hold gun to side of grounded, metal pail. Trigger the gun to relieve pressure.



ti22566a

4. Turn prime valve down.





ti2719a




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

5. Engage trigger lock.

General Repair Information

						
<p>Flammable materials spilled on hot, bare, motor could cause fire or explosion. To reduce risk of burns, fire or explosion, do not operate sprayer with cover removed.</p>						

- Keep all screws, nuts, washers, gaskets, and electrical fittings removed during repair procedures. These parts usually are not provided with replacement kits.
- Test repairs after problems are corrected. If sprayer does not operate properly, review repair procedure to verify you did it correctly. See **Troubleshooting**, page 13.
- Overspray may build up in the air passages. Remove any overspray and residue from air passages and openings in the enclosures whenever you service sprayer.
- Do not operate sprayer without motor shroud in place. Replace if damaged. Motor shroud directs cooling air around motor to prevent overheating.

						
<p>To reduce risk of serious injury, including electric shock:</p> <ul style="list-style-type: none"> • Do not touch moving or electric parts with fingers or tools while testing repair. • Unplug sprayer when power is not required for testing. • Install all covers, gaskets, screws and washers before you operate sprayer. 						

NOTICE						
<ul style="list-style-type: none"> • Do not run sprayer dry for more than 30 seconds. Doing so could damage pump packings. • Protect the internal drive parts of this sprayer from water. Openings in the cover allow for air cooling of the mechanical parts and electronics inside. If water gets in these openings, the sprayer could malfunction or be permanently damaged. • Prevent pump corrosion and damage from freezing. Never leave water or water-base paint in sprayer in cold weather. Freezing fluids can seriously damage sprayer. Store sprayer with Pump Armor to protect sprayer during storage. • Do not allow material to dry on gun air cap. Poor spray finish could result. 						

Troubleshooting



Problem	What To Check <i>(If check is OK, go to next check)</i>	What To Do <i>(When check is not OK, refer to this column)</i>
Sprayer Won't Operate		
Basic Fluid Pressure	1. Pressure control knob setting. Motor will not run if set at minimum (fully counter-clockwise).	Slowly increase pressure setting to see if motor starts.
	2. Spray tip or fluid filter may be clogged.	Relieve pressure , page 11. Then clear clog or clean gun filter. Refer to gun instruction manual.
Basic Mechanical	1. Pump frozen or hardened paint.	Thaw sprayer if water or water-based paint has frozen in sprayer. Place sprayer in warm area to thaw. Do not start sprayer until thawed completely. If paint hardened (dried) in sprayer, replace pump packings. See page 18, Displacement Pump Replacement .
	2. Displacement pump connecting rod pin. Pin must be completely pushed into connecting rod and retaining spring must be firmly in groove or pump pin.	Push pin into place and secure with spring retainer. See page 18, Displacement Pump Replacement .
	3. Motor. Remove drive housing assembly. See page 20, Drive Housing Replacement . Try to rotate fan by hand.	Replace motor if fan won't turn. See page 35, Motor Replacement .
Basic Air Pressure	1. Power/function selector.	Ensure selection is AA.
	2. Spray air pressure regulator may be closed.	Pull air regulator to unlock and turn clockwise to open.
	3. Air valve at gun may be closed.	Turn air regulator counter-clockwise to open.

Problem	What To Check <i>(If check is OK, go to next check)</i>	What To Do <i>(When check is not OK, refer to this column)</i>
Basic Electrical <i>See wiring diagram, page 36</i>	1. Electric supply. Meter must read 105-130 Vac for 110-120 Vac models and 210-255 Vac for 230 Vac models.	Reset building circuit breaker, replace building fuses. Try another outlet.
	2. Extension cord. Check extension cord continuity with volt meter.	Replace extension cord. Use shorter extension cord.
	3. Sprayer power supply cord. Inspect for damage such as broken insulation or wires.	Replace power supply cord. See page 25, Power Cord Replacement.
	4. Motor leads are securely fastened and properly connected to control board.	Replace loose terminals; crimp to leads. Be sure terminals are firmly connected. Clean circuit board terminals. Securely reconnect leads.
	5. Motor thermal switch. Yellow motor leads must have continuity through thermal switch.	Replace motor. See page 35, Motor Replacement.
	6. Brush cap missing or loose brush lead connections (FinishPro II 395 only).	Install brush cap or replace brushes if leads are damaged. See page 23, Motor Brush Replacement.
	7. Brush length which must be 1/4 in. (6mm) minimum (FinishPro II 395 only). NOTE: Brushes do not wear at the same rate on both sides of motor. Check both brushes.	Replace brushes. See page 23, Motor Brush Replacement.
	8. Motor armature commutator for burn spots, gouges and extreme roughness.	Remove motor and have motor shop resurface commutator if possible. See page 35, Motor Replacement.
	9. Motor armature for shorts using armature tester (growler) or perform spin test, page 21.	Replace motor. See page 35, Motor Replacement.
	10. Pressure control not plugged in to control board.	Insert pressure control connector into control board.

Problem	What To Check <i>(If check is OK, go to next check)</i>	What To Do <i>(When check is not OK, refer to this column)</i>
Low Fluid Output	1. Worn spray tip.	Relieve pressure , page 11. Replace tip. Refer to gun instruction manual, 311937.
	2. Verify pump does not continue to stroke when gun trigger is released.	Service pump. See page 18, Displacement Pump Replacement .
	3. Prime valve leaking.	Relieve pressure , page 11. Then repair prime valve. See page 31, Pressure Control Replacement .
	4. Suction hose connections.	Tighten any loose connections. Check o-rings on suction hose swivel.
	5. Electric supply with volt meter. Meter must read 105-130 Vac for 110-120 Vac models and 210-255 for 240 Vac models. Low voltages reduce sprayer performance.	Reset building circuit breaker; replace building fuse. Repair electrical outlet or try another outlet.
	6. Extension cord size and length.	Replace with a correct, grounded extension cord. See page 10, Grounding and Electric Requirements .
	7. Leads from motor to circuit board for damaged or loose wire connectors. Inspect wiring insulation and terminals for signs of overheating.	Be sure male terminal pins are centered and firmly connected to female terminals. Replace any loose terminals or damaged wiring. Securely reconnect terminals.
	8. Worn motor brushes which must be 1/4 in. (6 mm) minimum.	Replace brushes. See page 23. Motor Brush Replacement .
	9. Motor brushes binding in brush holders.	Clean brush holders. Remove carbon dust by using compressed air to blow out brush dust.
	10. Low stall pressure. Turn pressure control knob fully clockwise.	Replace pressure control assembly. See page 31, Pressure Control Assembly Replacement .
	11. Motor armature for shorts by using an armature tester (growler) or perform spin test, page 21.	Replace motor. See page 35, Motor Replacement .

Problem	What To Check <i>(If check is OK, go to next check)</i>	What To Do <i>(When check is not OK, refer to this column)</i>
Motor runs and pump strokes	1. Prime Valve Open.	Close prime valve.
	2. Paint supply.	Refill and reprime pump.
	3. Intake strainer clogged.	Remove and clean, then reinstall.
	4. Suction hose leaking air.	Tighten nut. Check o-rings on swivel.
	5. Intake valve ball and piston ball are seating properly.	See Pump Manual 309250. Strain paint before using to remove particles that could clog pump.
	6. Leaking around throat packing nut which may indicate worn or damaged packings.	See Pump Manual 309250.
	7. Pump rod damaged.	See Pump Manual 309250.
Motor runs but pump does not stroke	1. Displacement pump pin damaged or missing.	Replace pump pin if missing. Be sure retaining spring is fully in groove all around connecting rod. See page 18, Displacement Pump Replacement .
	2. Connecting rod assembly for damage.	Replace connecting rod assembly. See page 18, Displacement Pump Replacement .
	3. Gears or drive housing.	Inspect drive housing assembly and gears for damage and replace if necessary. See page 20, Drive Housing Replacement .
Motor is hot and runs intermittently	1. Be sure ambient temperature where sprayer is located is not more than 115° F (46° C) and sprayer is not located in direct sun.	Move sprayer to shaded, cooler area if possible.
	2. Motor has burned windings indicated by removing positive (red) brush and seeing burned adjacent commutator bars.	Replace motor. See page 35, Motor Replacement .
	3. Tightness of pump packing nut. Overtightening tightens packings on rod, restricts pump action and damages packings.	Loosen packing nut. Check for leaking around throat. Replace pump packings if necessary. See pump manual 309250.
Low air output at gun	1. Air valve at gun may be closed.	Turn air valve counter-clockwise to open.
	2. Sprayer air regulator may be closed.	Pull to unlock and turn air regulator clockwise to open.
	3. Air connections may be loose.	Check all connections for leaking air.
	4. Damaged (leaking) air supply hose.	Replace air supply hose.
	5. Air intake filter clogged.	Clean or replace air intake filter kit.
	6. Mechanical air unloader stuck open.	Replace mechanical air unloader.
	7. Electrical air unloader stuck open.	Replace electrical air unloader.

Problem	What To Check <i>(If check is OK, go to next check)</i>	What To Do <i>(When check is not OK, refer to this column)</i>
Air compressor does not run	1. Power/function selector switch.	Set function selector switch to AA; replace switch.
	2. Voltage to compressor below 105 Vac for 110 - 120 Vac models or below 210 Vac for 240 Vac models.	Try another outlet. Reduce extension cord length or increase extension cord gauge.
	3. Loose power connections.	Verify all connections are firm.
	4. Excessive head pressure (compressor hums).	Moisture frozen in air supply line.
	5. Excessive head pressure (compressor hums).	Wait for air pressure to bleed to zero.
	6. Excessive head pressure (compressor hums).	Electrical air unloader stuck closed. Replace electrical air unloader.
	7. Excessive head pressure (compressor hums).	Open air regulator. Install air line. Do Startup , Operation Manual 311905
	8. Compressor thermal switch is open. Ensure ambient temperature is below 115 °F (46 °C).	Move sprayer to shaded, cooler area.
	9. Low compressor performance.	Worn compressor; repair compressor with Compressor Service Kit 288723.
Poor air spray pattern	1. Air cap air ports clogged.	Soak in solvent to clean.
	2. Air cap worn.	Replace air cap.
	3. Worn spray tip.	Relieve pressure , page 11. Replace tip. Refer to gun instruction manual.
Water in pattern	1. Water in air line.	Add Water Separator Kit 289535 to air line and inline water filter kit 24U981 (5 Pack), 24U982 (25 Pack).
Compressor does not shut off when gun is not triggered.	1. Leak in air line.	Check all air connections. Make sure there are no leaks.
	2. Pressure switch wore out.	Replace pressure switch.
	3. Pressure relief valve worn out.	Replace pressure relief valve.

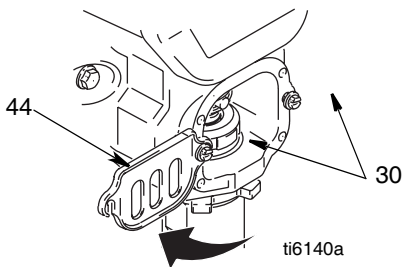
Displacement Pump Replacement

See manual 309250 for pump repair instructions.

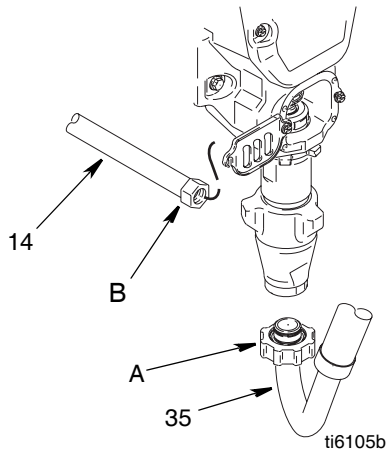
Removal



1. **Relieve pressure**, page 11. Unplug sprayer from outlet.
2. Loosen two screws (30) and rotate cover (44).

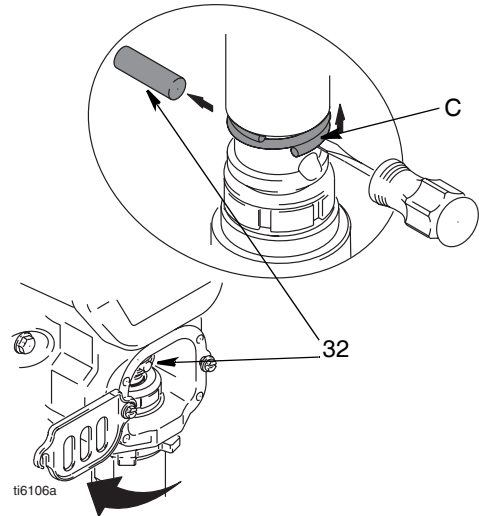


3. Loosen nut (A) and remove suction hose (35). Loosen nut (B) and remove the high pressure hose (14).

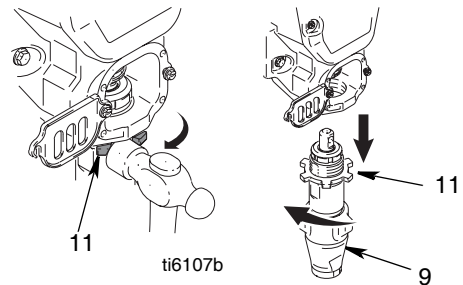


4. Cycle pump until pin (32) is in position to be removed.
5. Disconnect power cord from outlet.



6. Using a flat screwdriver, push retaining spring (C) up. Push out pump pin (32).



7. Using a hammer, loosen pump jam nut (11). Unscrew and remove pump (9).



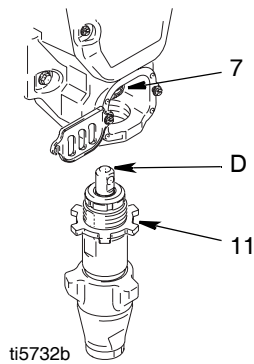
Installation

						
<p>If pump pin works loose, parts could break off due to force of pumping action. Parts could project through air and result in serious injury or property damage. Pin must be completely pushed into connecting rod and retaining spring must be firmly positioned in groove over pump pin.</p>						

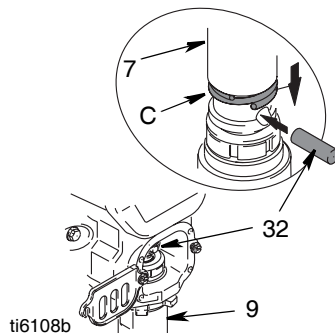
NOTICE

If the pump jam nut loosens during operation, the threads of the drive housing will be damaged.

1. Extend pump piston rod full. Apply grease to top of pump rod at (D) or inside connecting rod (7). Install jam nut (11) on pump threads.

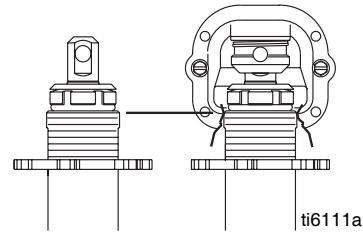


2. Install pump rod (D) into connecting rod (7).
3. Install pump pin (32). Verify retainer spring (C) is in groove over pump pin.

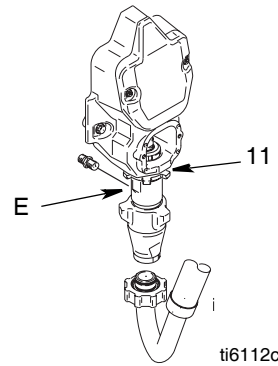


4. Push pump (9) up until pump threads engage.

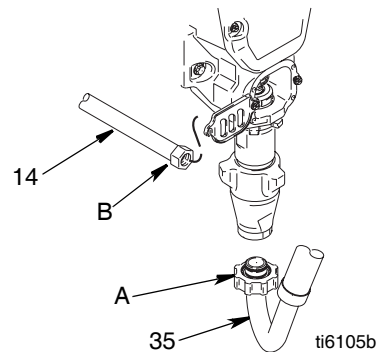
5. Screw in pump until threads are flush with top of drive housing opening.



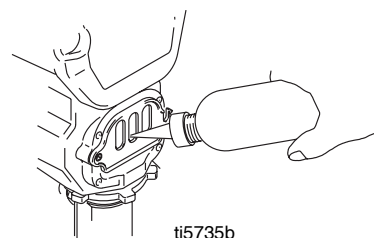
6. Align pump outlet (E) to back.



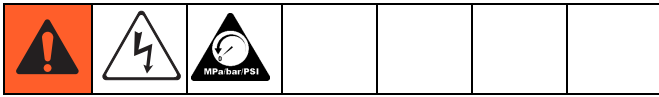
7. Screw jam nut (11) up onto pump until nut stops. Tighten jam nut by hand, then tap 1/8 to 1/4 turn with a 20 oz (maximum) hammer to approximately 75 ft-lb (102 N•m).
8. Install suction tube (35) and high pressure hose (14). Tighten nuts (A) and (B).



9. Fill packing nut with Graco TSL until fluid flows onto top of seal. Rotate cover (44). Tighten screws (30).

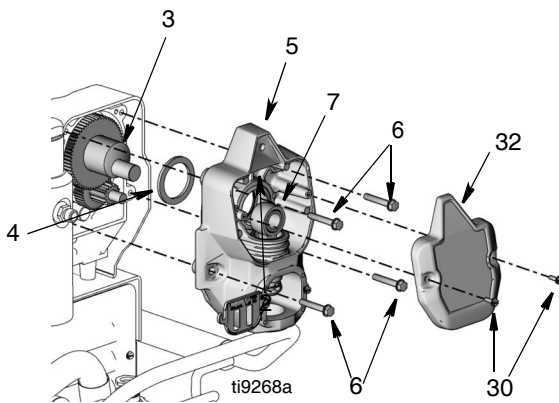


Drive Housing Replacement



Removal

1. Disconnect power cord from outlet.
2. **Relieve pressure**, page 11.
3. Remove pump (9). **Displacement Pump Replacement**, page 18.



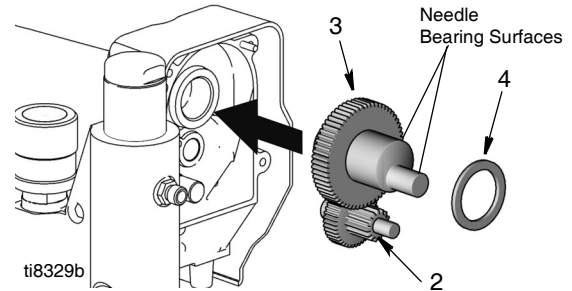
4. Remove two screws (30) and cover (32).
5. Remove four screws (6).
6. Pull drive housing (5) out of motor front endbell.
7. Remove gear cluster (2) and (3) and thrust bearing (4) from drive housing.

NOTICE

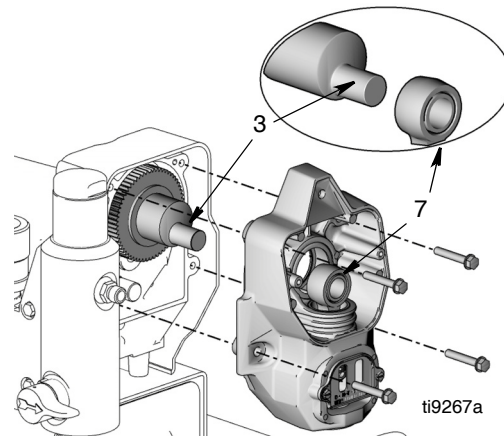
Do not drop gear cluster (3) and (2) when removing drive housing (5). Gear cluster may stay engaged in motor front endbell or drive housing.

Installation

1. Apply a liberal coat of grease to gears and needle bearing surfaces. Install thrust bearing (4) and gears (2) and (3) in front endbell housing.



2. Push drive housing into front endbell housing. Insert gear crank (3) through hole in connecting rod (7).



3. Install four screws (6).
4. Install cover (32) with two screws (30).
5. Install pump (9). **Displacement Pump Replacement**, page 18.

Spin Test (395 only)

See Wiring Diagram, page 36.



To check armature, motor winding and brush electrical continuity:

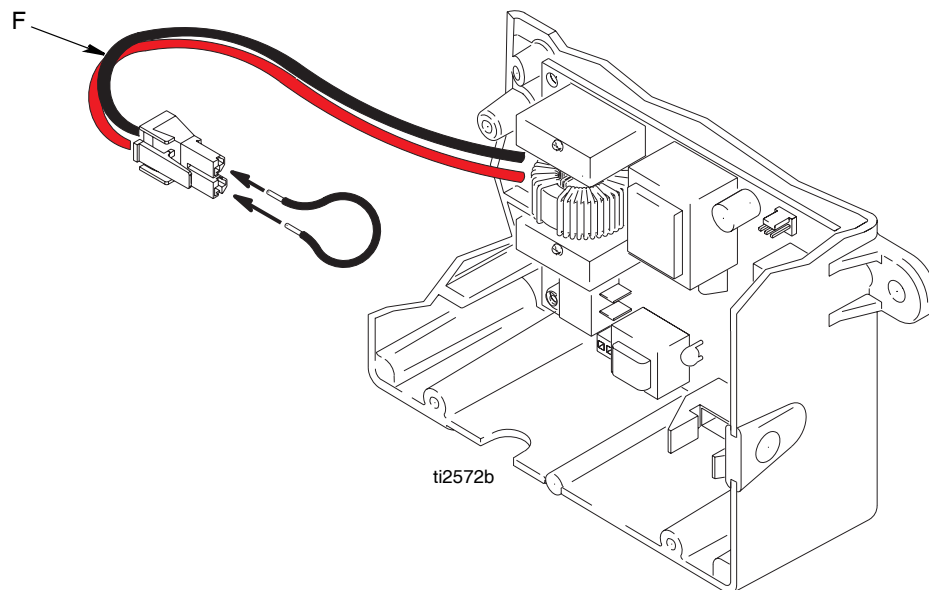
1. **Relieve pressure**, page 11. Disconnect power cord from outlet.
2. Remove two screws (30) and shroud (29).
3. Remove drive housing (5), page 20.
4. Disconnect motor connector (F).

Armature Short Circuit Test

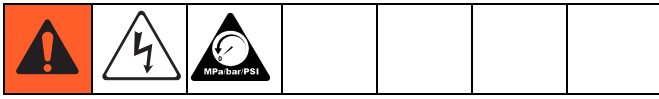
Quickly turn motor fan by hand. If motor coasts two or three revolutions before complete stop, there are no electrical shorts. If motor does not spin freely, armature is shorted. Replace motor, page 35.

Armature, Brushes, and Motor Wiring Open Circuit Test (Continuity)

1. Connect red and black motor leads with test lead. Turn motor fan by hand at about two revolutions per second.
2. If uneven or no resistance, check for missing brush caps, broken brush springs, brush leads, and worn brushes. Repair as needed, page 23.
3. If still uneven or no resistance, replace motor, page 35.
4. Reattach motor connector (F).
5. Replace drive housing, page 20.
6. Replace shroud (29) and two screws (30).



Fan Replacement



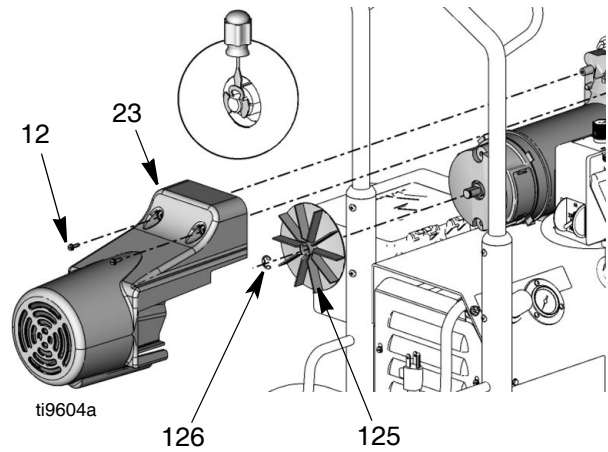
Removal

1. **Relieve pressure**, page 11. Disconnect power cord from outlet.
2. Remove four screws (12) and shroud (23).
3. Remove retaining component (126) on fan (125).
4. Pull off fan.

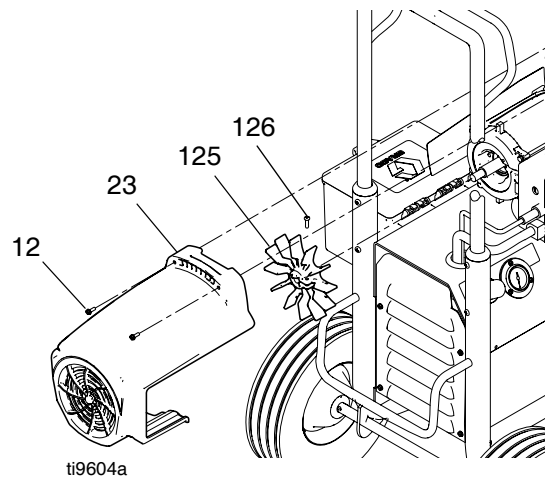
Installation

1. Slide new fan (125) on back of motor. Be sure blades of fan face motor as shown.
2. Install retaining component (126).
3. Replace shroud (23) and four screws (12).

Finish Pro 395



Finish Pro 595



Motor Brush Replacement

(FinishPro II 395 only)

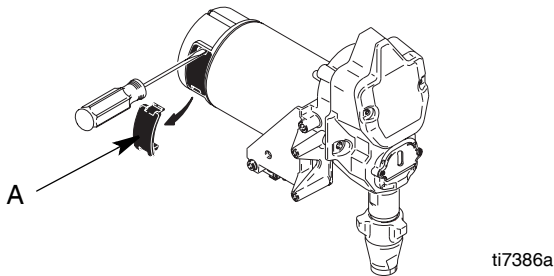
Removal

Replace brushes worn to less than 1/2 in. Brushes wear differently on each side of motor, check both sides. Brush Repair Kit 287735 is available.

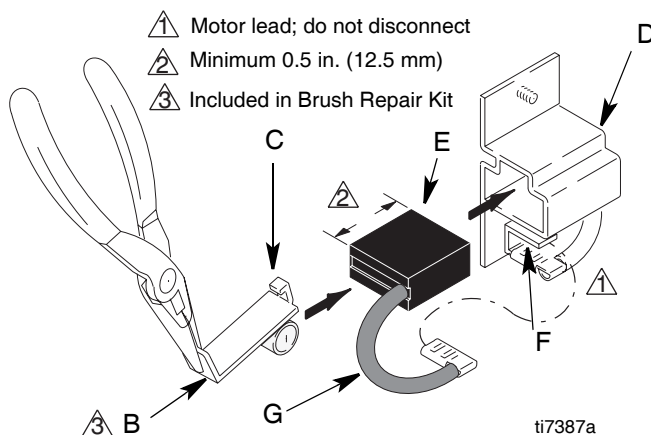
1. Read General Repair Information, page 12.



2. Disconnect power.
3. **Relieve pressure**, page 11.
4. Remove motor shroud and two inspection covers (A).



5. Push clip spring (B) to release hook (C) from brush holder (D). Pull out spring clip (B).
6. Pull brush lead (E) off terminal (F). Remove brush (G).



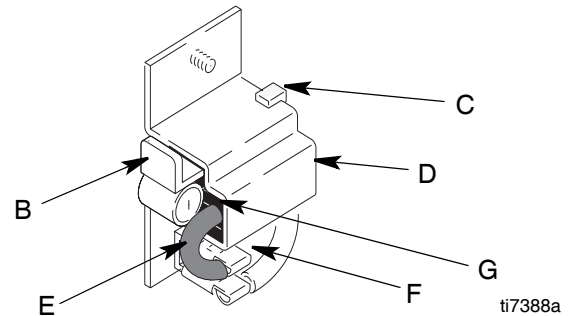
7. Inspect commutator for excessive pitting, burning, or gouging. A black color on commutator is normal.

Have commutator resurfaced by a motor repair shop if brushes wear too fast.

Installation

NOTICE

When installing brushes, follow all steps carefully to avoid damaging parts.



1. Install new brush (G) with lead into brush holder (D).
2. Slide brush lead (E) onto terminal (F).
3. Install spring clip (B). Push down to set hook (C) into brush holder (D).
4. Repeat for other side.
5. Test brushes.
 - a. Remove pump. **Displacement Pump Replacement**, page 18.
 - b. With sprayer OFF, turn pressure control knob fully counter-clockwise to minimum pressure. Plug in sprayer.
 - c. Turn sprayer ON. Slowly increase pressure until motor is at full speed.

NOTICE

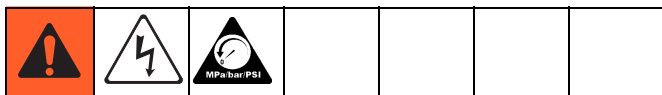
Do not run sprayer dry for more than 30 seconds while checking brushes to avoid damaging displacement pump packings.

6. Install brush inspection covers (A) and gaskets.
7. Break in brushes.
 - a. Operate sprayer 1 hour with no load.
 - b. Install pump. **Displacement Pump Replacement**, page 18.

Control Board Replacement

FinishPro II 395 and 595

See *Wiring Diagram*, page 37.



Removal

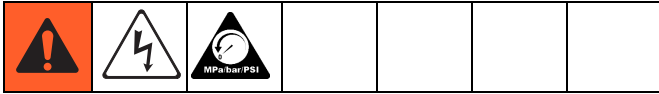
1. **Relieve pressure**, page 11. Disconnect power cord from outlet.
2. Remove four screws (12) and cover (50).
3. Disconnect all leads to motor control board (49).
4. Remove screws (6) and motor control board.

Installation

1. Clean pad on rear of motor control board (49). Apply small amount of thermal compound to pad.
2. Install motor control board with screws (6).
3. Connect all leads to motor control board.
4. Bundle and tie all loose wires so none are in contact with inductor coil.
5. Install cover (50) with four screws (6).

On/Off Switch Replacement

See *Wiring Diagram*, page 37.



Removal

1. Disconnect power.
2. **Relieve pressure**, page 11.
3. Remove four screws (12) and pressure control cover (50).

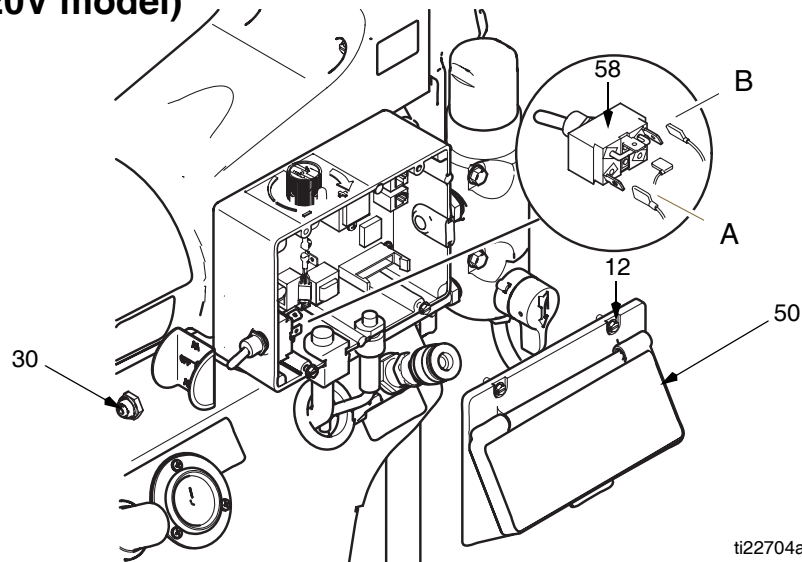
NOTE: Tag wires before removing to ensure wires are identifiable when assembling.

4. Disconnect three wires (A) from ON/OFF switch (58).
5. Remove toggle boot/nut (30) (120V models only).
6. Remove two yellow wires (B) from ON/OFF switch. Remove ON/OFF switch.

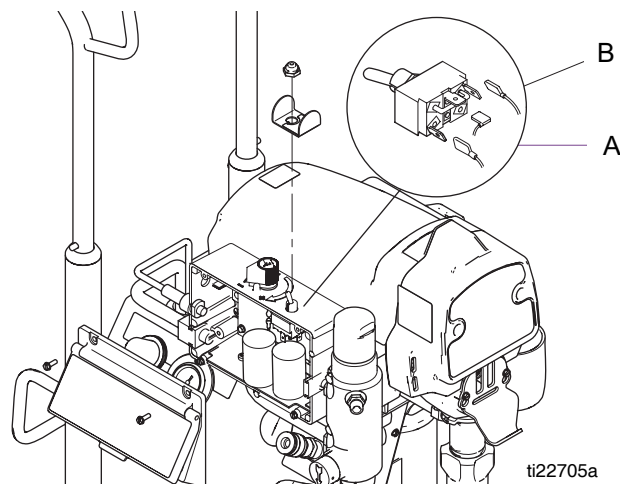
Installation

1. Connect two yellow wires (B) to ON/OFF switch (58)
2. Install new ON/OFF switch (58). Install toggle boot/nut (30).
3. Connect three wires (A) to ON/OFF switch.
4. Install pressure control cover (50) with four screws (12).

FinishPro II 395 (120V model)



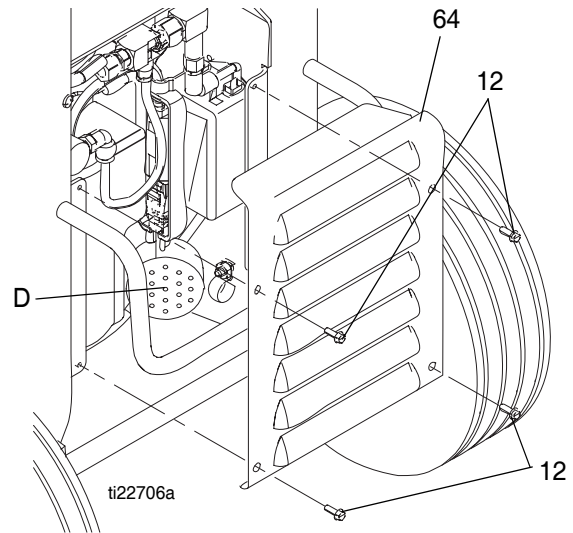
FinishPro II 595



Removing and Installing Air Filter



1. Remove four screws (12) from back louvered cover (64).
2. Unscrew filter (D) from back of sprayer. Install new filter from Compressor Filter Kit 288724.
3. Install back cover (64) with four screws (12).



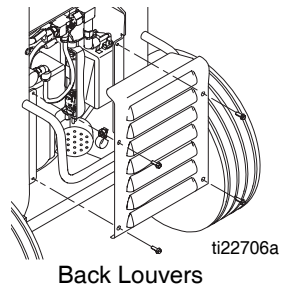
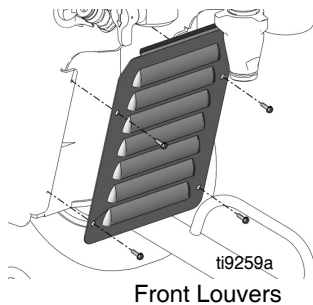
Compressor Replacement and Repair



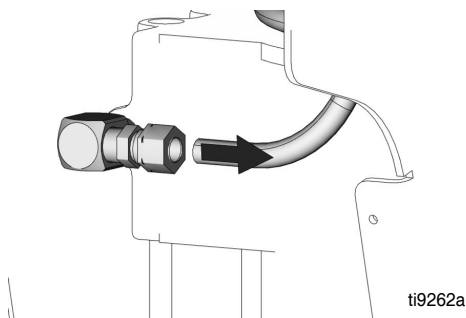
To repair compressor, use Compressor Service Kit 288723. Refer to Thomas Compressor manual provided. To replace compressor piston assembly, use Kit 288723.

Removing Compressor from Sprayer

1. **Relieve pressure**, page 11. Disconnect power cord from outlet.
2. Remove front and back louvers from sprayer.



3. Remove toolbox from the sprayer.
4. Unscrew the compression fittings from the front and rear of the sprayer.

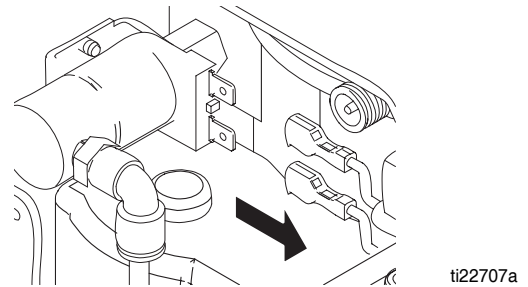


5. Remove tubing.

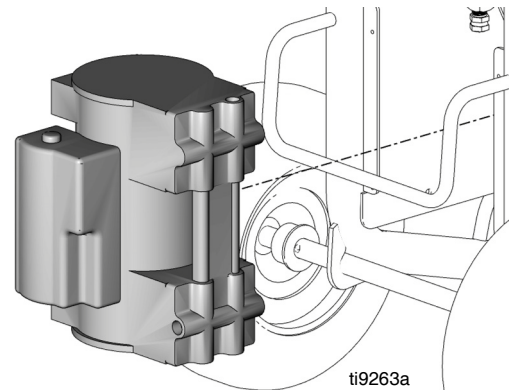
NOTICE

To prevent damage to the tubing, the compression fittings must be removed first.

6. Disconnect electrical connection from solenoid valve at the rear of the sprayer.



7. Remove air filter from the back of the compressor.
8. Remove the four screws from the sprayer that are located underneath the removed toolbox.



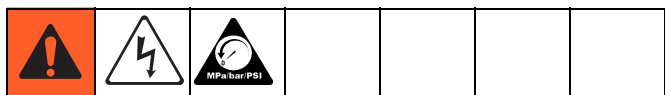
NOTE: Remove bottom screws first. When you have one screw left to remove, hold onto the compressor so it doesn't fall out the bottom.

9. Remove compressor from sprayer.
10. Disconnect electrical connection.

Motor Control Board Diagnostics

NOTICE




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



- Keep new transducer on hand for use for test.
 - Refer to Digital Display Messages, page 29.
1. **Relieve pressure**, page 11 and unplug sprayer.
 2. Remove screws and cover.
 3. Turn ON/OFF switch, ON.
 4. Observe LED operation and reference following table:

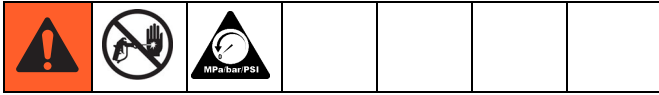
LED Blinks	Sprayer Operation	Indicates	What To Do
Once	Sprayer runs	Normal operation	Do nothing
Two times repeatedly	Sprayer shuts down and LED continues to blink two times repeatedly	Run away pressure. Pressure greater than 4500 psi (310 bar) or damaged pressure transducer	Replace motor control board or pressure transducer
Three times repeatedly	Sprayer shuts down and LED continues to blink three times repeatedly	Pressure transducer is faulty or missing	Check transducer connection. Open drain valve. Substitute new transducer for transducer in sprayer. If sprayer runs, replace transducer
Four times repeatedly	Sprayer shuts down and LED continues to blink four times repeatedly	Line voltage is too high	Check for voltage supply problems
Five times repeatedly	Sprayer does not start or shuts down and LED continues to blink five times repeatedly	Motor fault	Check for locked rotor, shorted wiring or disconnected motor. Repair or replace failed parts.

Digital Display Messages: FinishPro II 395

						
<p>INJECTION HAZARD No display does not mean the sprayer is not pressurized. Relieve pressure before repair.</p>						

<i>Display</i>	<i>Sprayer Operation</i>	<i>Indicates</i>	<i>What To Do</i>
No Display	Sprayer stops. Power is not applied. Sprayer may be pressurized.	Loss of power.	Check power source. Relieve pressure before repair or disassembly.
3000 psi 210 bar 21 MPa	Sprayer is pressurized. Power is applied. (Pressure varies with tip size and pressure control setting.)	Normal operation.	Spray.
E=02	Sprayer may continue to run. Power is applied.	Pressure greater than 4500p psi (310 bar, 31 mpa) or a pressure transducer is faulty.	Replace pressure control board or pressure transducer.
E=03	Sprayer stops. Power is applied.	Pressure transducer faulty, bad connection or broken wire.	Check transducer connection. Open drain valve. Substitute new transducer for transducer in sprayer. If sprayer runs, replace transducer.
E=04	Sprayer stops. Power is applied.	Line voltage too high.	Check for voltage supply problem.
E=05	Sprayer does not start or stops. Power is applied.	Motor fault.	Check for locked rotor, shorted wiring or disconnected motor. Repair or replace failed parts.
----	Power is applied.	Pressure is less than 200 psi (14 bar, 1.4 MPa)	Increase pressure if desired. Drain valve may be open.
EMPTY	Sprayer stops. Power is applied.	Empty paint pail. Loss of pressure.	Refill paint pail. Check for leaks or clogged pump inlet. Repeat Startup procedure.

Digital Display Messages: FinishPro II 595



- Keep a new transducer on hand to use for test.
- No display does not mean the sprayer is not pressurized. Before repair, **Relieve Pressure**, page 11.

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

1. For sprayers with digital display, see Digital display Messages.
2. Remove screws (12) and cover (50).
3. Turn ON/OFF switch ON.
4. Observe LED operation and reference following table:

<i>Display</i>	<i>Sprayer Operation</i>	<i>Indicates</i>	<i>What To Do</i>
No Display	Sprayer stops. Power is not applied. Sprayer may be pressurized.	Loss of power.	Check power source. Relieve pressure before repair or disassembly.
psi/bar/MPa	Sprayer is pressurized. Power is applied. (Pressure varies with tip size and pressure control setting.)	Normal operation.	Do nothing
E=02	Sprayer may continue to run. Power is applied.	Runaway pressure. Pressure greater than 4500 psi (310 bar, 31 MPa) or damaged pressure transducer	Replace motor control board or pressure transducer.
E=03	Sprayer shuts down and LED continues to blink three times repeatedly. Power is applied.	Pressure transducer is faulty or missing.	Check transducer connection. Open drain valve. Substitute new transducer for transducer in sprayer. If sprayer runs, replace transducer.
E=04	Sprayer shuts down and LED continues to blink four times repeatedly. Power is applied.	Line voltage is too high.	Check for voltage supply problems.
E=05	Sprayer does not start or stops and LED continues to blink five times repeatedly. Power is applied.	Motor fault.	Check for locked rotor, shorted wiring or disconnected motor. Repair or replace failed parts.
E=06	Sprayer stops and LED blinks six times repeatedly. Power is applied.	Motor is too hot or there is a fault in motor thermal device.	Allow sprayer to cool. If sprayer runs correctly when cool, check motor fan function and air flow. Keep sprayer in cool location. If sprayer does not run when cool and continues to blink six times, replace motor.
- - - -	Power is applied.	Pressure is less than 200 psi (14 bar, 1.4 MPa)	Increase pressure if desired. Drain valve may be open.
EMPTY	Sprayer stops. Power is applied.	Empty paint pail. Loss of pressure.	Refill paint pail. Check for leaks or clogged pump inlet. Repeat Startup procedure.
E=10	Sprayer does not start or stops and LED continues to blink 10 times repeatedly. Power is applied.	High control board temperature.	<ul style="list-style-type: none"> • Make sure motor air intake is not blocked. • Make sure control board is properly connected to the back plate and that conductive thermal paste is used on the power components.

Pressure Control Transducer



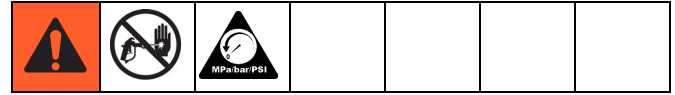
Removal

1. **Relieve pressure**, page 11. Disconnect sprayer.
2. Remove screws and cover.
3. Disconnect lead (E) from motor control board.
4. Remove two screws and filter housing.
5. Thread transducer lead plastic connector down through transducer grommet.
6. Remove pressure control transducer and packing o-ring from filter housing.

Installation

1. Install packing o-ring and pressure control transducer in filter housing. Torque to 30-35 ft-lb.
2. Thread transducer lead plastic connector up through transducer grommet.
3. Install filter housing with two screws.
4. Connect lead to motor control board.
5. Install cover with screws.

Pressure Adjust Potentiometer



Removal

1. **Relieve pressure**, page 11. Disconnect sprayer.
2. Remove screws and cover.
3. Disconnect leads from motor control board.
4. Remove potentiometer knob, nut, and pressure adjust potentiometer.

Installation

1. Install pressure adjust potentiometer, nut and potentiometer knob.
 - a. Turn potentiometer fully clockwise.
 - b. Install knob at full clockwise position.
2. Connect all leads to motor board.
3. Install cover with screws.

Stored Data

The SmartControl contains stored data to assist with troubleshooting and maintenance. to view this stored data on the digital display, proceed as follows:



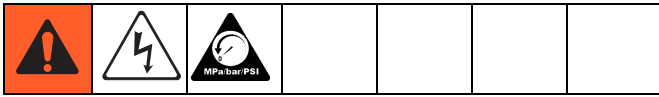
1. **Relieve pressure**, page 11.
2. Plug in sprayer.
3. Hold down digital display button and turn sprayer ON.
4. Release display button about 1 second after turning on sprayer.

NOTE: Sprayer model number displays for a few seconds and then data point 1 displays.

5. Push display button and next data point displays.
6. Turn sprayer OFF and then ON to leave in stored data mode.

Data Point	Definition
1	Number of hours power switch has been ON with power applied
2	Number of hours motor has been running
3	Last error code. Press and hold display button to clear error code to E=00
4	Software revision

Drain Valve Replacement



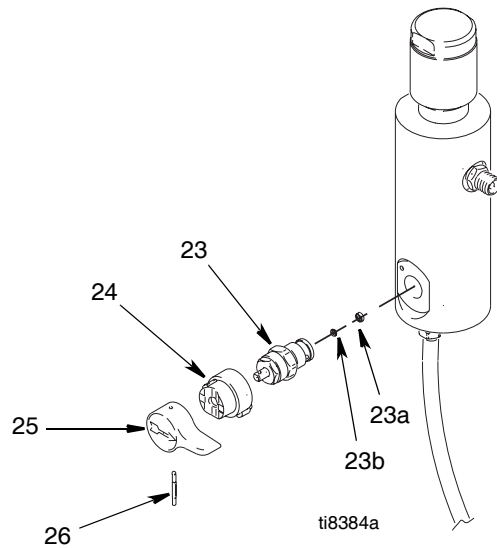
Removal

1. **Relieve pressure**, page 11. Disconnect power cord from outlet.
2. Using a punch and hammer, tap pin (26) out of drain handle (25).
3. Pull drain handle (25) and base (24) off drain valve (23).
4. Using a wrench, loosen drain valve (23) and remove it from manifold (15).

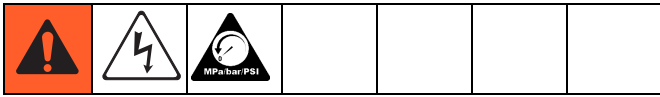
Installation

NOTE: Before installing new drain valve, be sure old gasket (23a) and seat (23b) are not still inside manifold.

1. Thread drain valve (23) into manifold (15) opening.
2. Hand tighten securely. Using a wrench, torque to 120 to 130 in-lb.
3. Push base (24) over drain valve (23) and then drain handle (25) over base (24).
4. Replace pin (26) in drain handle (25). If necessary, use a hammer to tap it in place completely.

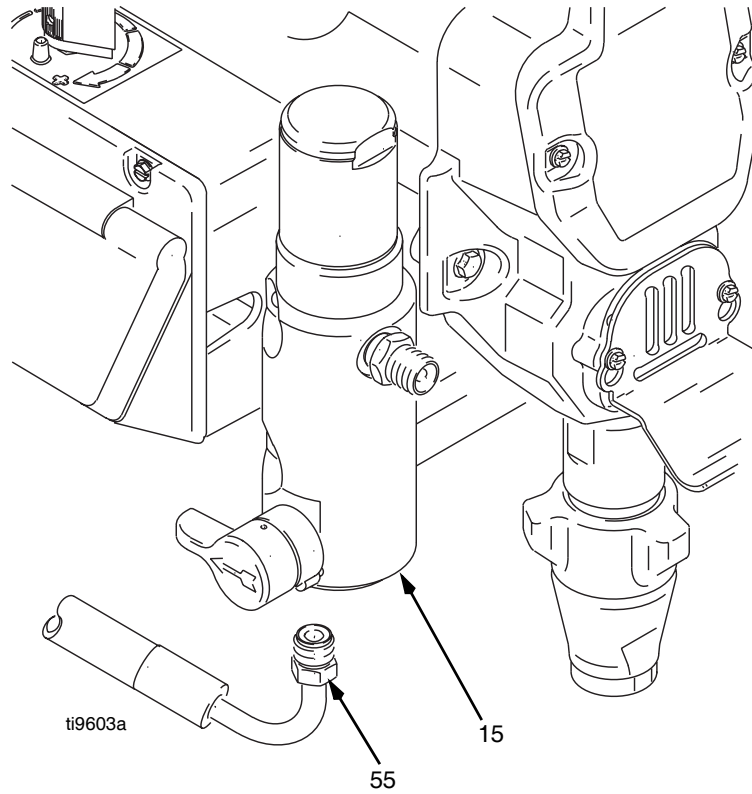


Drain Line Removal/Replacement



Removal: Unscrew drain line (55) from filter manifold (15).

Installation: Screw drain line (55) into filter manifold (15).



Motor Replacement

FinishPro II 395

See *Wiring Diagram*, page 36.



NOTICE

Do not drop gear cluster (44) and (40) when removing from drive housing (42). Gear cluster may stay engaged in motor front end bell or drive housing.

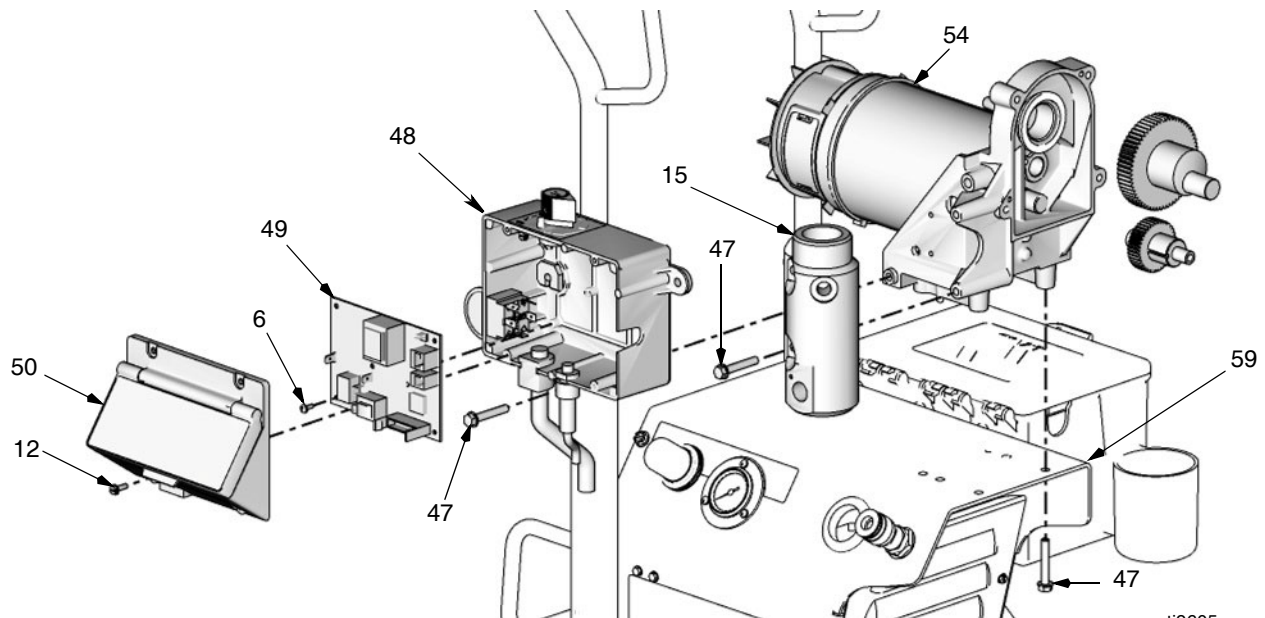
Removal

1. Disconnect power.
2. **Relieve pressure**, page 11.
3. Remove pump (41); **Displacement Pump Replacement**, page 18
4. Remove drive housing (42); **Drive Housing Replacement**, page 20.
5. Remove screws (12) from cover (50).

6. Disconnect all leads from board (49). Remove screws (6) and board.
7. Remove screws (47) and control box (48).
8. Remove screws (47) and manifold (15).
9. Remove screws (47) and motor (54) from frame (59).

Installation

1. Install new motor (54) on frame (59) with screws (47).
2. Install manifold (15) with screws (47).
3. Install control housing (48) with screws (47).
4. Install board (49) with screws (6). Connect all leads to board. See wiring diagram for your sprayer model on page 36.
5. Install drive housing (42); **Drive Housing Replacement**, page 20.
6. Install pump (41); **Displacement Pump Replacement**, page 18.

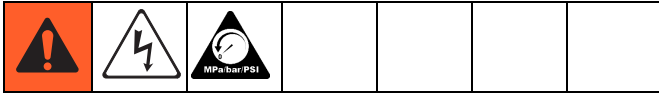


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Motor Replacement

FinishPro II 595

See *Wiring Diagram*, page 36.



NOTICE

Do not drop gear cluster (44) and (40) when removing from drive housing (42). Gear cluster may stay engaged in motor front end bell or drive housing.

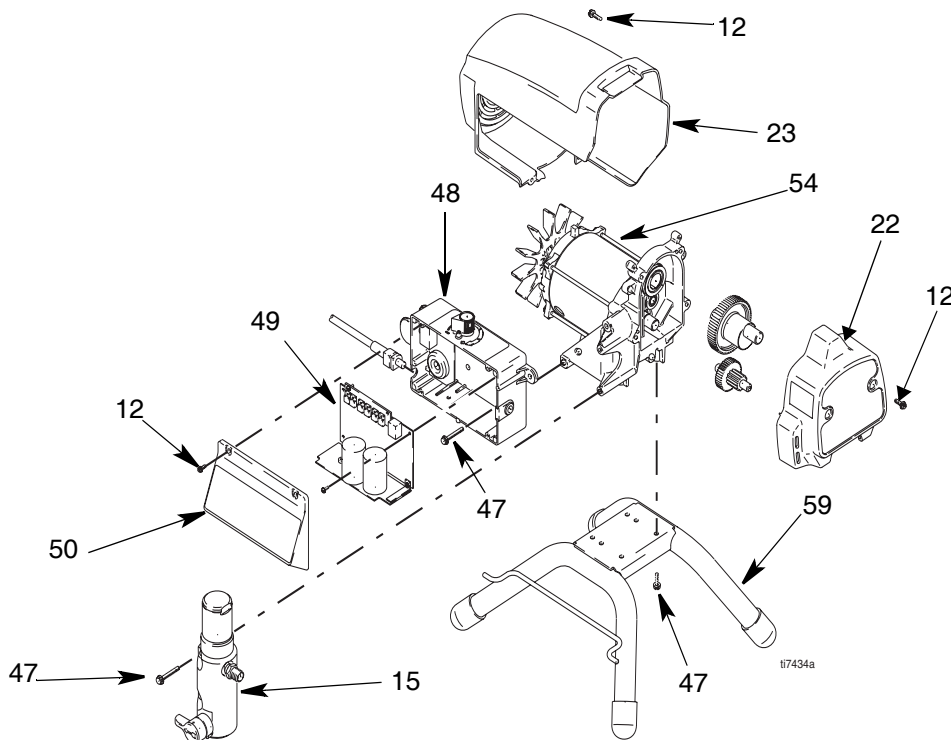
Removal

1. Disconnect power.
2. **Relieve pressure**, page 11.
3. Remove four screws (12) and shroud (23).
4. Remove two screws (12) and front cover (22).
5. Remove pump (41); **Displacement Pump Replacement**, page 18
6. Remove drive housing (42); **Drive Housing Replacement**, page 20.

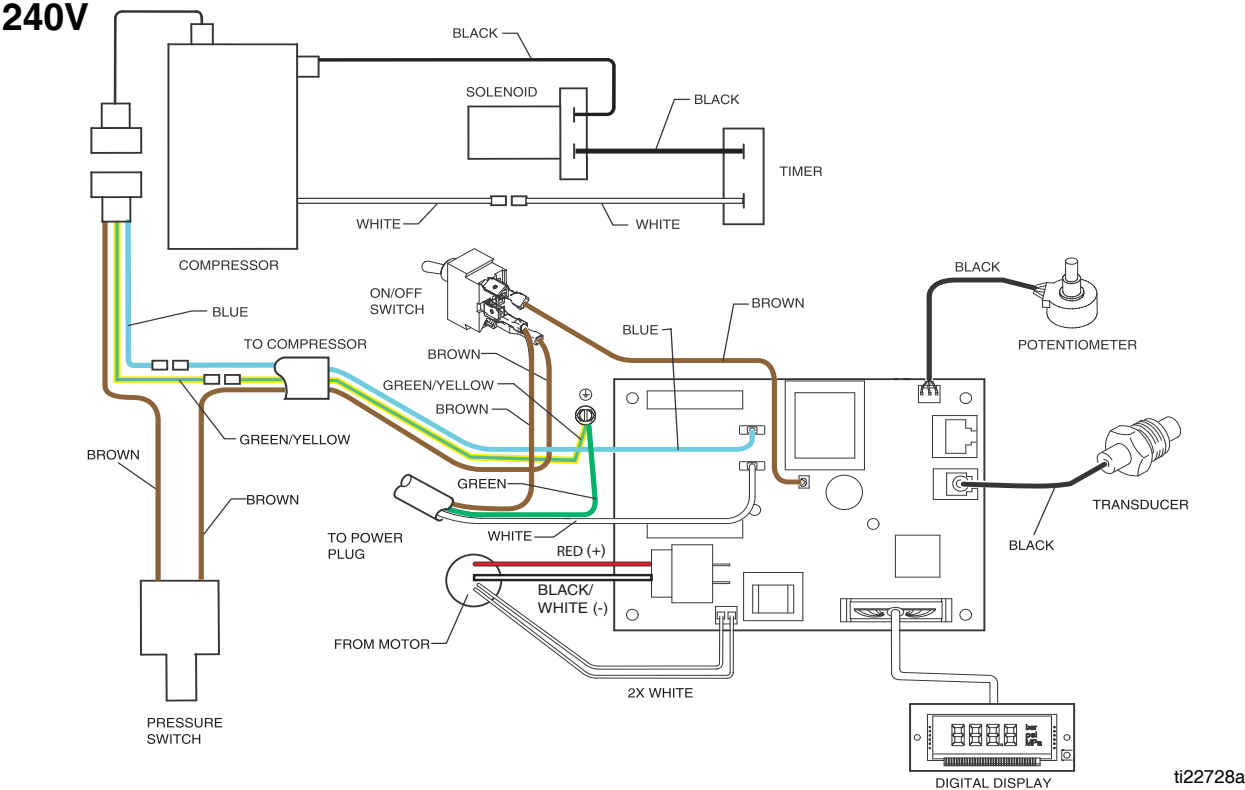
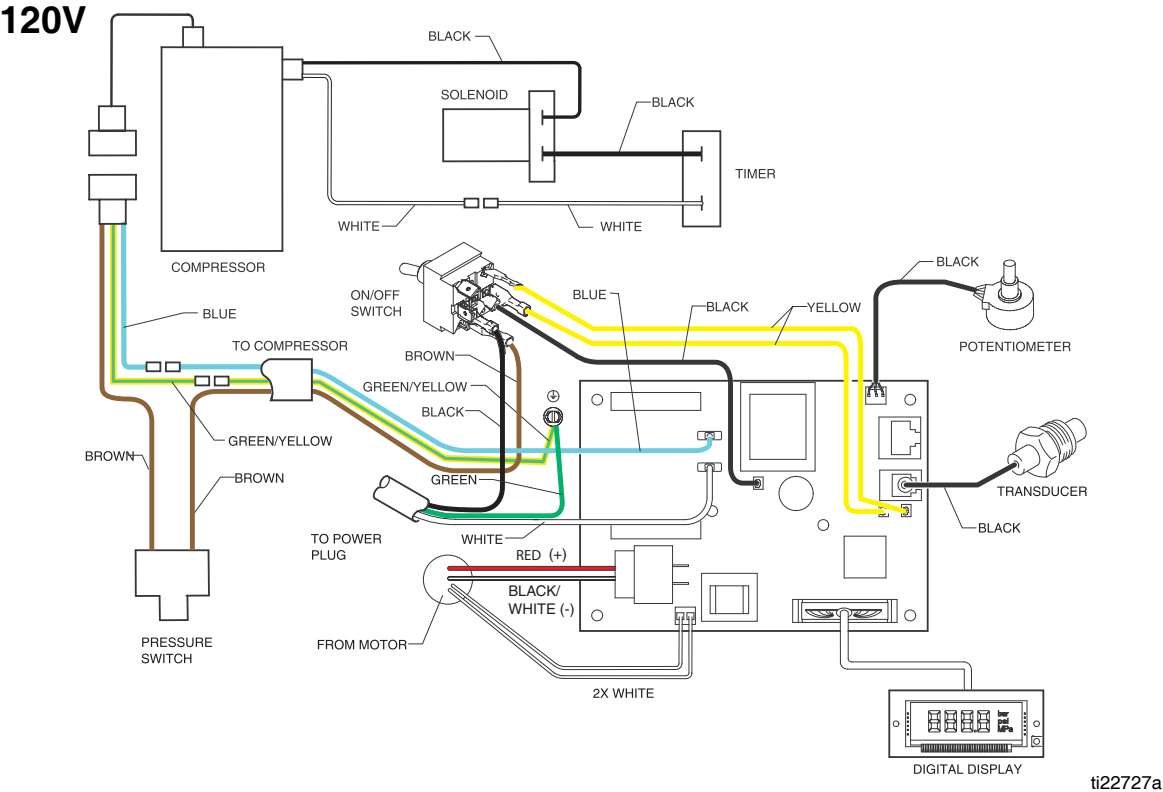
7. Disconnect motor leads.
8. Remove screws (47) and manifold (15).
9. Remove screws (47) and control box (48).
10. Remove screws (47) and motor (54) from frame (59).

Installation

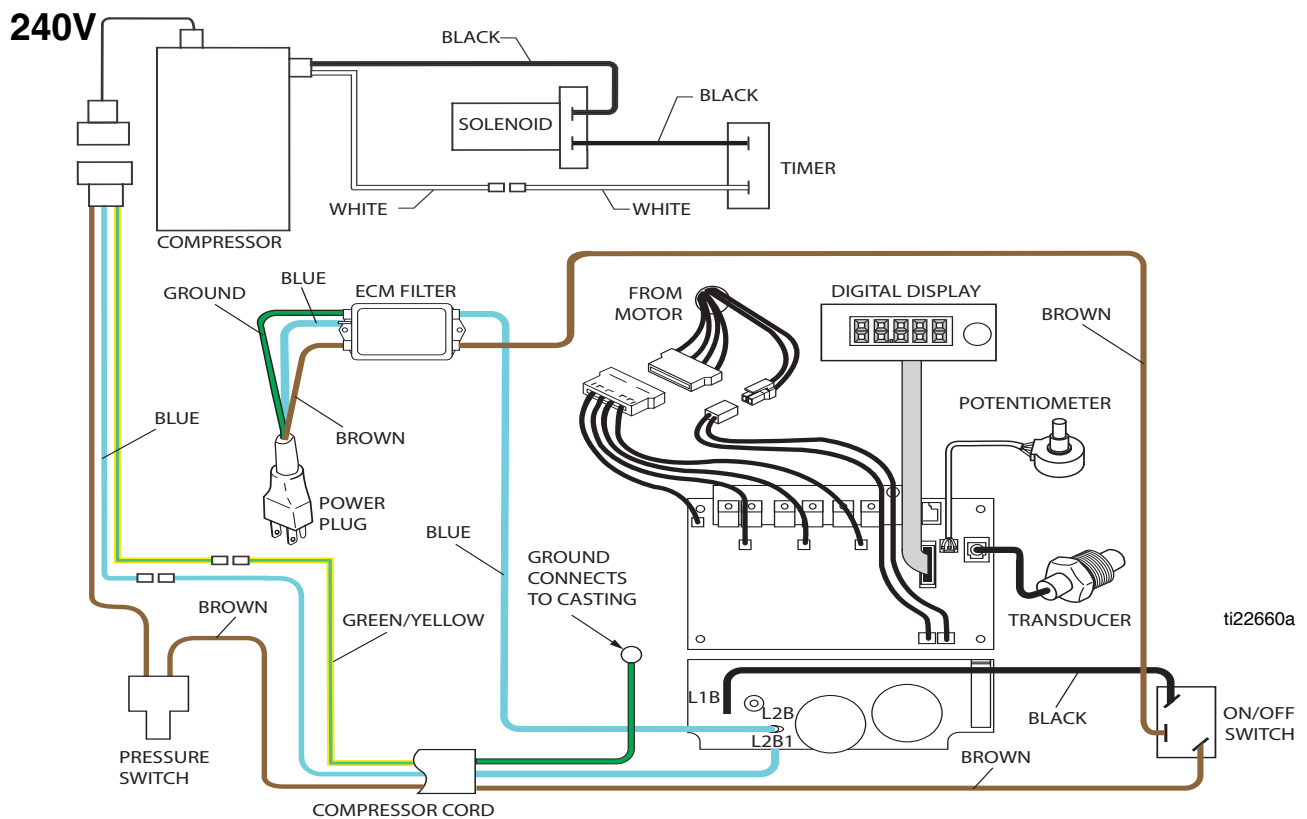
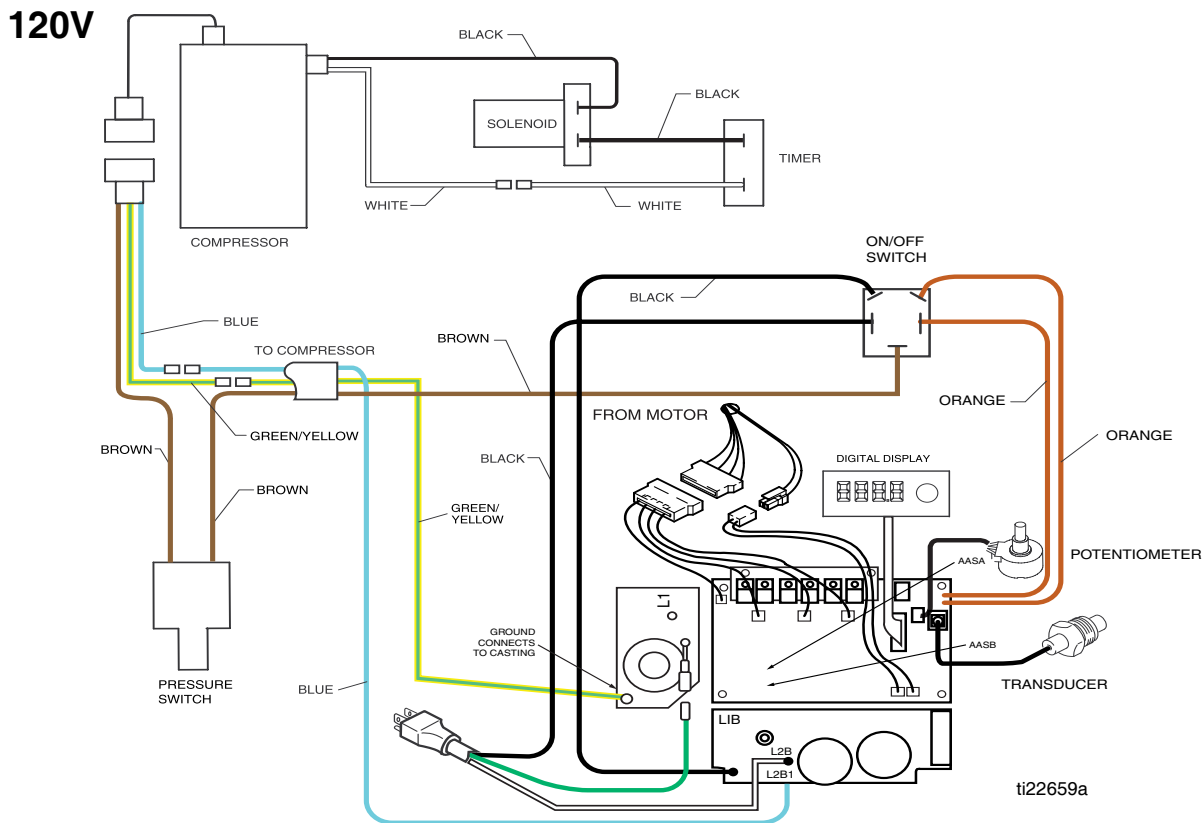
1. Install new motor (54) on frame (59) with screws (47).
2. Install control housing (48) with screws (47).
3. Install manifold (15) with screws (47).
4. Connect motor leads. See **Wiring Diagram** on page 36.
5. Install drive housing (42); **Drive Housing Replacement**, page 20.
6. Install pump (41); **Displacement Pump Replacement**, page 18.
7. Replace front cover (22) and screws (12). Tighten screws securely.
8. Replace shroud (23) and screws (12). Tighten screws securely.



Wiring Diagrams (395 Models)



Wiring Diagrams (595 Models)



Technical Data

Finish Pro II 395 Sprayers		
	U.S.	Metric
Sprayer		
Power requirements	★100/120V AC, 50/60 hz, 15A, 1 phase	◆ 230V AC, 50/60 hz, 10A, 1 phase
Max tip size		
US★ / UK★	0.021	0.021
Europe◆ / Asia/Australia◆	0.023	0.023
Max material output gpm (lpm)		
US ★ / UK★	.47 gpm	1.8 lpm
Europe◆ / Asia/Australia◆	.54 gpm	2.0 lpm
Maximum material pressure - Airless		
US ★	3300 psi	227 bar
UK★	2800 psi	193 bar
Europe◆ / Asia/Australia◆	3300 psi	227 bar
Maximum material pressure - AA		
US ★ / UK★	2800 psi	193 bar
Europe◆ / Asia/Australia◆	3300 psi	227 bar
Atomizing air output		
US★ / UK★	3.2 cfm	3.2 cfm
Europe / Asia/Australia	2.9 cfm	2.9 cfm
Air pressure	35 psi	2.4 bar
Frame	Hi-boy	Hi-boy
Dimensions		
Length	32.5 in.	82.5 cm
Width	21 in.	53.3 cm
Height	40.5 in.	102.8 cm
Weight (bare)	110 lb	49.9 kg
Pump motor	TEFC 7/8 HP DC	TEFC 7/8 HP DC
Compressor motor	1.0 HP AC Induction	1.0 HP AC Induction
Material hose	1/4 in. x 50-ft (blue)	1/4 in. x 15.2 m (blue)
Air hose	3/8 in. x 50-ft (clear)	3/8 in. x 15.2 (clear)
Gun	G40 w RAC X tip	G40 w RAC X tip
Wetted parts	zinc-plated carbon steel, nylon, stainless steel, PTFE, Acetal, chrome plating, leather, UHMWPE, aluminum, tungsten carbide	

Finish Pro II 595 Sprayers		
	U.S.	Metric
Sprayer		
Power requirements	★100/120V AC, 50/60 hz, 15A, 1 phase	◆ 230V AC, 50/60 hz, 10A, 1 phase
Max tip size		
Europe◆ / Asia/Australia◆	0.027	0.027
Max material output gpm (lpm)		
US ★ / UK★	.68 gpm	2.5 lpm
Europe◆ / Asia/Australia◆	.68 gpm	2.5 lpm
Maximum material pressure - Airless		
US ★	3300 psi	227 bar
UK★	2800 psi	193 bar
Europe◆ / Asia/Australia◆	3300 psi	227 bar
Maximum material pressure - AA		
US ★ / UK★	2800 psi	193 bar
Europe◆ / Asia/Australia◆	3300 psi	227 bar
Atomizing air output		
US★ / UK★	3.2 cfm	3.2 cfm
Europe / Asia/Australia	2.9 cfm	2.9 cfm
Air pressure	35 psi	2.4 bar
Frame	Hi-boy	Hi-boy
Dimensions		
Length	32.5 in.	82.5 cm
Width	21 in.	53.3 cm
Height	40.5 in.	102.8 cm
Weight (bare)	112 lb	50.8 kg
Pump motor	TEFC 7/8 HP DC	9110 HP Brushless
Compressor motor	1.0 HP AC Induction	1.0 HP AC Induction
Material hose	1/4 in. x 50-ft (blue)	1/4 in. x 15.2 m (blue)
Air hose	3/8 in. x 50-ft (clear)	3/8 in. x 15.2 (clear)
Gun	G40 w RAC X tip	G40 w RAC X tip
Wetted parts	zinc-plated carbon steel, nylon, stainless steel, PTFE, Acetal, chrome plating, leather, UHMWPE, aluminum, tungsten carbide	

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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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