

REACTOR

PLURAL COMPONENT PROPORTIONER

E-10
4:1

313221B

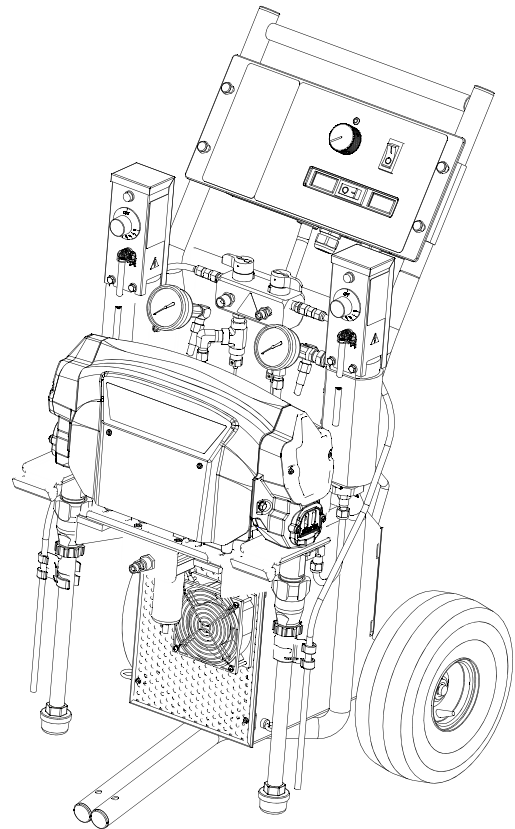
***For spraying or dispensing 4:1 mix ratio materials, including epoxies, polyurethane foam, and polyurea coatings.
Not for use in explosive atmospheres.***



Important Safety Instructions

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

See page 4 for a list of models and maximum working pressures.



CE

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Related Manuals

The following manuals are for Reactor E-10 - 4:1 components and accessories. Some are supplied with your package, depending on its configuration. Manuals are available at www.graco.com.

Fluid Heater	
Part No.	Description
311210	Instruction-Parts Manual (English)
Fusion Air Purge Plural Component Gun	
Part No.	Description
309550	Instruction-Parts Manual (English)
Displacement Pump - White Material	
Part No.	Description
311076	Instruction-Parts Manual (English)
Static Mixer Kit	
Part No.	Description
313122	Instruction-Parts Manual (English)

Models







The model no., series letter, and serial no. are located on the back of the Reactor E-10. For faster assistance, please have that information ready before calling Customer Service.





Reactor E10 4:1	Volts	* Electrical Connection	Maximum Working Pressure, psi (MPa, bar)
256765	120 V	15 A cord (motor) 15 A cord (heaters) 15 A cord (compressor)	2000 (14, 140)

* See page 14 for detailed electrical requirements.

Warnings

The following general warnings are for the setup, use, grounding, maintenance, and repair of this equipment. Additional, more specific warnings may be found throughout the body of this manual where applicable. *Symbols appearing in the body of the manual refer to these general warnings. When these symbols appear throughout the manual, refer back to these pages for a description of the specific hazard.*

 WARNING	
	<p>ELECTRIC SHOCK HAZARD</p> <p>Improper grounding, setup, or usage of the system can cause electric shock.</p> <ul style="list-style-type: none"> • Turn off and disconnect power cord before servicing equipment. • Use only grounded electrical outlets. • Use only 3-wire extension cords. • Ensure ground prongs are intact on sprayer and extension cords. • Do not expose to rain. Store indoors.
	<p>TOXIC FLUID OR FUMES HAZARD</p> <p>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 MSDS's 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</p> <p>You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. This equipment includes but is not limited to:</p> <ul style="list-style-type: none"> • Protective eyewear • Clothing and respirator as recommended by the fluid and solvent manufacturer • Gloves • Hearing protection
 	<p>SKIN INJECTION HAZARD</p> <p>High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. Get immediate surgical treatment.</p> <ul style="list-style-type: none"> • Do not point gun at anyone or at any part of the body. • Do not put your hand over the spray tip. • Do not stop or deflect leaks with your hand, body, glove, or rag. • Do not spray without tip guard and trigger guard installed. • Engage trigger lock when not spraying. • Follow Pressure Relief Procedure in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.

 WARNING	
	<p>FIRE AND EXPLOSION HAZARD</p> <p>Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> • Use equipment only in well ventilated area. • Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc). • Keep work area free of debris, including solvent, rags and gasoline. • Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present. • Ground all equipment in work area. See Grounding instructions. • Use only grounded hoses. • Hold gun firmly to side of grounded pail when triggering into pail. • If there is static sparking or you feel a shock, stop operation immediately. Do not use equipment until you identify and correct the problem. • Keep a fire extinguisher in the work area.
	<p>PRESSURIZED ALUMINUM PARTS HAZARD</p> <p>Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminum equipment. Such use can cause serious chemical reaction and equipment rupture, and result in death, serious injury, and property damage.</p>
	<p>EQUIPMENT MISUSE HAZARD</p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> • This equipment is for professional use only. • Do not leave the work area while equipment is energized or under pressure. Turn off all equipment and follow the Pressure Relief Procedure in this manual when equipment is not in use. • Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See Technical Data in all equipment manuals. • Use fluids and solvents that are compatible with equipment wetted parts. See Technical Data in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS from distributor or retailer. • Check equipment daily. Repair or replace worn or damaged parts immediately with genuine Graco replacement parts only. • Do not alter or modify equipment. • Use equipment only for its intended purpose. Call your Graco 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. • Do not operate the unit when fatigued or under the influence of drugs or alcohol. • Comply with all applicable safety regulations.

 **WARNING****MOVING PARTS HAZARD**

Moving parts can pinch or amputate fingers and other body parts.

- 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** in this manual. Disconnect power or air supply.

**BURN HAZARD**

Equipment surfaces and fluid that's heated can become very hot during operation. To avoid severe burns, do not touch hot fluid or equipment. Wait until equipment/fluid has cooled completely.

Overview

The Reactor E-10 is a portable, electric-powered, 4:1 mix ratio proportioner, for use with a wide variety of coatings, foams, sealants, and adhesives. Materials must be self-leveling and pourable, and may be applied with impingement mix spray guns, disposable mixer guns, or flush-type mix manifolds.

Reactor E-10 is siphon-fed from 5 gallon pails that can be mounted on the unit.

Severe duty, positive displacement reciprocating piston pumps meter fluid flow to the gun for mixing and applying. When set to recirculation mode, Reactor E-10 will circulate fluids back to the 5 gallon pails.

The Reactor E-10 includes separate thermostatically controlled heaters for each fluid. Digital displays show the temperatures of the two fluids.

An electronic processor controls the motor, monitors fluid pressures, and alerts the operator if errors occur. See **STATUS Indicator**, page 10, for further information.

An air compressor provides and regulates air pressure for the spray gun.

Reactor E-10 has two recirculation speeds, slow and fast, and an adjustable pressure output.

Slow Recirculation

- Slow circulation results in a higher temperature transfer in the heater, so hoses and gun heat up quicker.
- Good for touchup or low flow spraying, up to moderate temperature.
- Not used to circulate full tanks up to temperature.

Fast Recirculation

- Use to support higher flow rates or higher temperatures by preheating the tanks.
- Agitates fluid within tanks, to avoid heating only the fluid at the top of the tank.
- Use for flushing.

Pressure Adjust

Automatically maintains selected pressure output for dispensing or spraying.

Keep Components A and B Separate

CAUTION

To prevent cross-contamination of the equipment's wetted parts, **never** interchange component A (white fluid) and component B (red fluid) parts.

Component Identification

Key for FIG. 1

- | | |
|---|--------------------------------------|
| A Pump A | K Control Panel; see FIG. 2, page 10 |
| B Pump B | L Electric Motor and Drive Housings |
| C Heater A | M Suction Tubes |
| D Heater B | N Recirculation Tubes |
| E Compressor | P Air Line outlet |
| F Crossbar | R Outlet Hose Connections |
| G Pail Mounting Bracket | S Recirculation Tube Connections |
| H Fluid Pressure Gauges | T Fluid Temperature Sensors |
| J Recirc/Spray and Overpressure Relief Valves | U Air Filter/Moisture Separator |

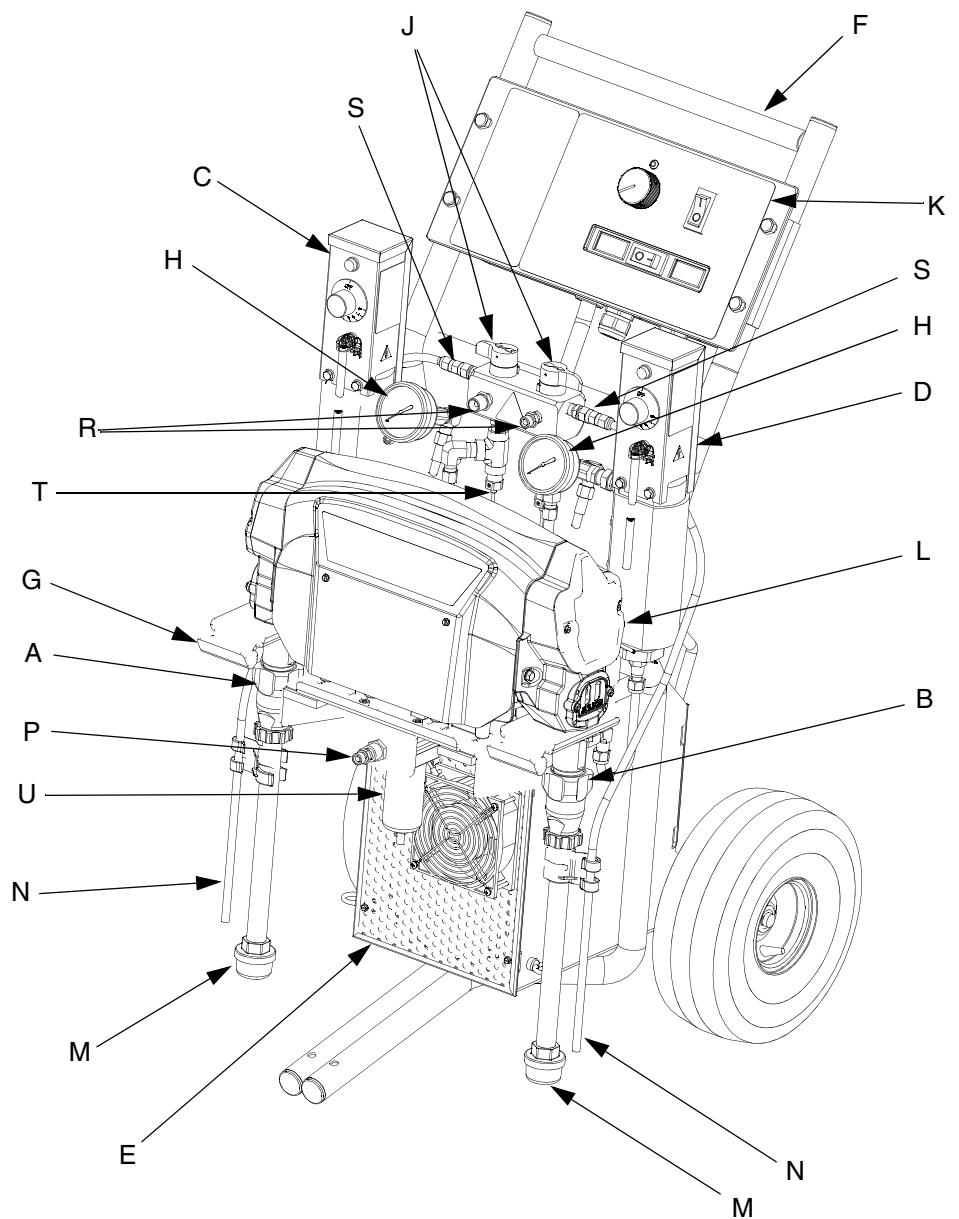
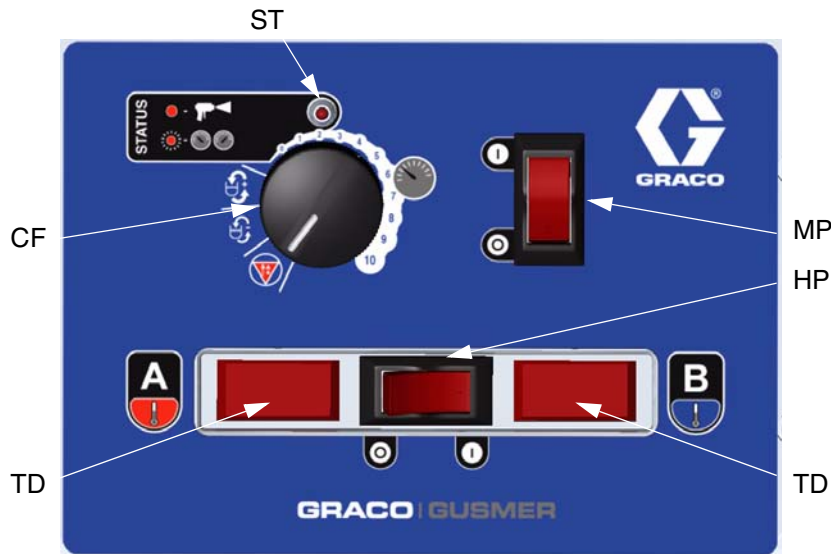


FIG. 1: Component Identification

Controls and Indicators



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FIG. 2. Controls and Indicators (heated unit shown)

Motor/Pump Control Function Knob

Use knob (CF) to select desired function.

Icon	Setting	Function
	Stop/Park	Stops motor and automatically parks pumps.
	Slow Recirc	Slow recirculation speed.
	Fast Recirc	Fast recirculation speed.
	Pressure Adjust	Adjusts fluid pressure to gun in spray mode.

STATUS Indicator

- Indicator (ST) steady on: Motor Power switch is turned on and control board is working.

- Indicator (ST) blinking: If error occurs, STATUS indicator will blink 1 to 7 times to indicate status code, pause, then repeat. See TABLE 1 for a brief description of status codes. For more detailed information and corrective action, see page 26.

Table 1: Status Codes
(see also the label on back of the control enclosure)

Code No.	Code Name
1	Pressure imbalance between A and B sides
2	Unable to maintain pressure setpoint
3	Pressure transducer A failure
4	Pressure transducer B failure
5	Excessive current draw
6	High motor temperature
7	No cycle counter switch input



The default is to shut down if a status code indication occurs. Codes 1 and 2 may be set to disable automatic shut-down if desired; see page 27. The other codes are not settable.

Motor Power Switch/Circuit Breaker

Switch (MP) turns power on to control board and function knob. The switch includes a 20 A circuit breaker.

Heater Power Switch/Circuit Breaker

See FIG. 2. Switch (HP) turns power on to heater thermostats. The switch includes a 20 A circuit breaker.

Heater Temperature Controls

See FIG. 3. Control knobs (HC) set temperature of component A and B heaters. Indicator lights (HL) turn on when thermostats are heating, and off when heater reaches setpoint.

Fluid Temperature Sensors and Displays

See FIG. 2. Fluid temperature sensors (T) monitor actual temperature of component A and B fluid going to spray gun. Temperatures are then displayed (TD).

Unit is shipped set to °F. To change to °C, see page 39.

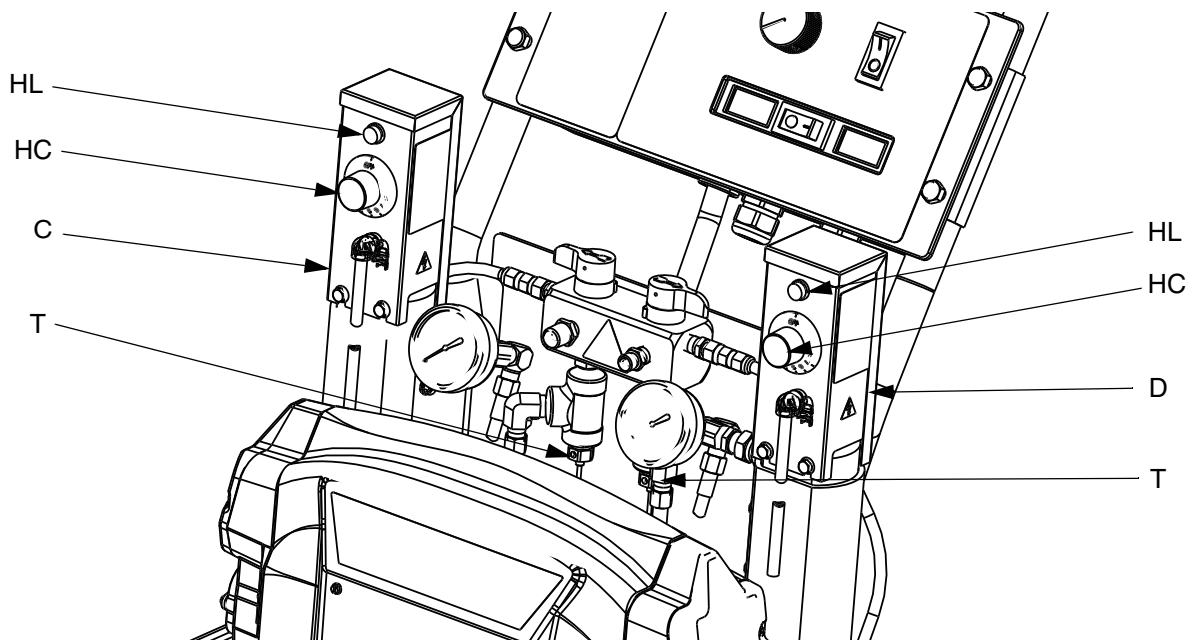


FIG. 3. Heater Temperature Controls

Air Compressor Power Switch/Circuit Breaker

Switch (CP) turns power on to compressor and regulator. The switch includes a 20 A circuit breaker.

Air Compressor Controls

Pressure Gauge (PG) indicates set air pressure by regulator.

Regulator (AR) sets desired air pressure.

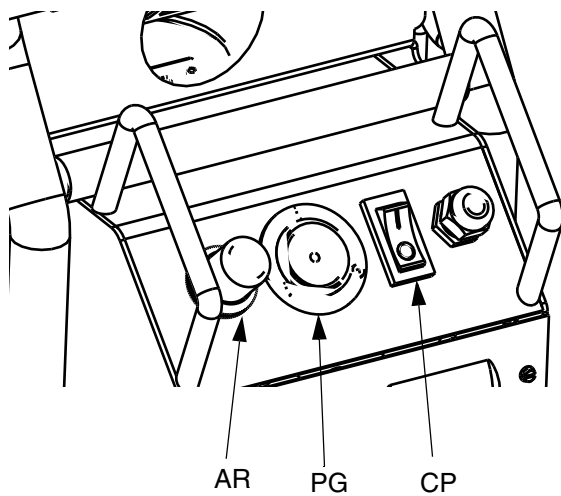




FIG. 4

Setup

1. Locate Reactor E-10




- a. Locate Reactor E-10 on a level surface.
- b. Do not expose Reactor E-10 to rain.

2. Electrical requirements

					
Improper wiring may cause electric shock or other serious injury if work is not performed properly. Have a qualified electrician perform any electrical work. Be sure your installation complies with all National, State and Local safety and fire codes.					

Connect Reactor E-10 to the correct power source for your model. See TABLE 2. Models with two power cords must be connected to two separate, dedicated circuits. See FIG. 5.

3. Ground system

					
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The equipment must be grounded. Grounding reduces the risk of static and electric shock by providing an escape wire for the electrical current due to static build up or in the event of a short circuit.

- a. *Reactor E-10*: grounded through power cord.

- b. *Generator (if used)*: follow your local code. Start and stop generator with power cord(s) disconnected.
- c. *Spray gun*: grounded through the supplied fluid hoses, connected to a properly grounded Reactor E-10. Do not operate without at least one grounded fluid hose.
- d. *Object being sprayed*: follow your local code.
- e. *Solvent pails used when flushing*: follow your local code. Use only metal pails, which are conductive, placed on a grounded surface. Do not place pail on a nonconductive surface, such as paper, plastic, or cardboard, which interrupts grounding continuity.
- f. *To maintain grounding continuity when flushing or relieving pressure*, hold a metal part of spray gun firmly to the side of a grounded *metal* pail, then trigger gun.

Table 2: Electrical Requirements




Model	Required Power Source	Power Cord Connector
120 V, 1 phase, 50/60 Hz, three 15 ft (4.5 m) power cords, Heated	Three separate, dedicated circuits rated at minimum of 15 A each	 Three NEMA 5-15T

Table 3: Extension Cord Requirements



Model	Required Wire Size	
	Up to 50 ft (15 m)	Up to 100 ft (30 m)
Two cord heated models	AWG 14	AWG 12



Cords must be 3-conductor grounded, rated for your environment.

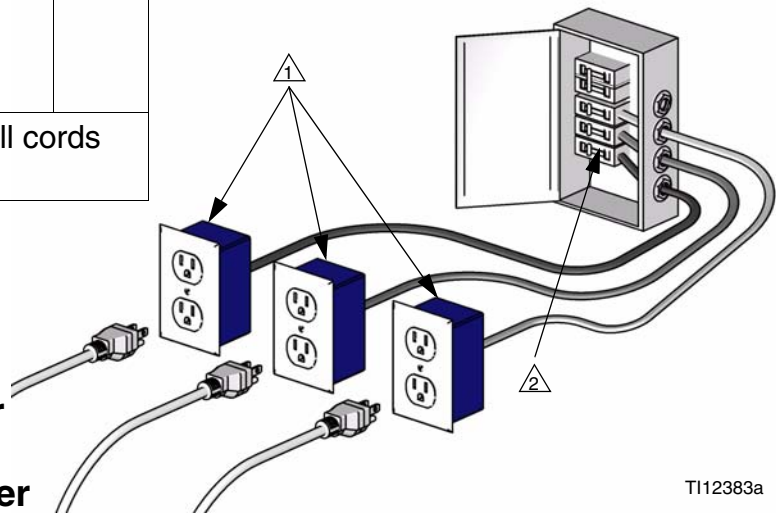
To avoid electric shock, always unplug all cords before servicing Reactor E-10.

-  Ensure no other high amp loads are connected while running Reactor E-10.
-  To verify separate circuits, plug in Reactor E-10 or a worklight and cycle breakers on and off.

Heater Power

Motor Power

Compressor Power



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FIG. 5. Use Three Separate Circuits

4. Connect fluid hoses

Connect fluid supply hoses to outlet hose connections (R, FIG. 6). Fittings are sized to prevent connection errors. Connect other end of hoses to A and B inputs of gun.

5. Connect gun air hose

Connect gun air hose to the gun air input and to the air filter outlet (Z). If you are using more than one hose bundle, join the air hoses with the nipple (305) provided with the hose bundle.

On heated units with Fusion guns, connect the supplied ball valve and quick-disconnect coupler to the gun air hose, then connect the coupler to the gun air fitting.

6. Turn on air compressor

Turn on air compressor power. Set regulator to desired output pressure as indicated on the gauge.



Air Filter/Moisture Separator (Z) is equipped with an automatic moisture drain.

7. Flush before first use

The Reactor E-10 is tested with a plasticizer oil at the factory. Flush out the oil with a compatible solvent before spraying. See page 24.

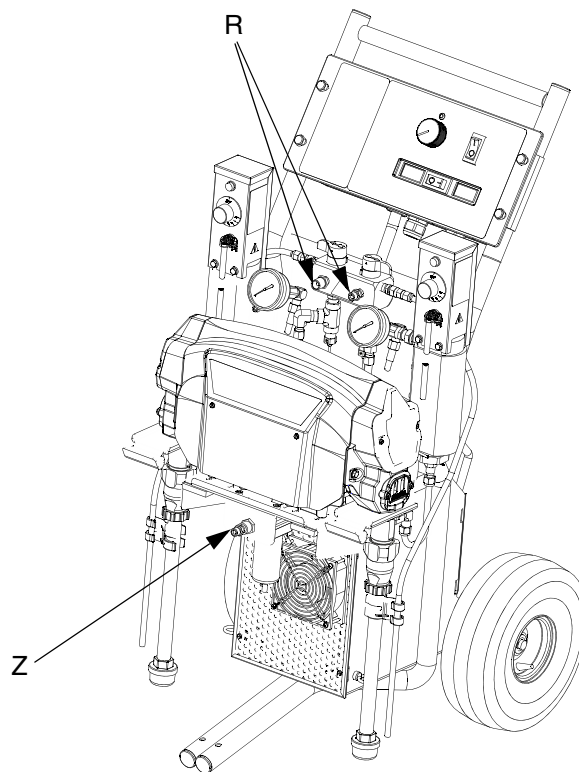





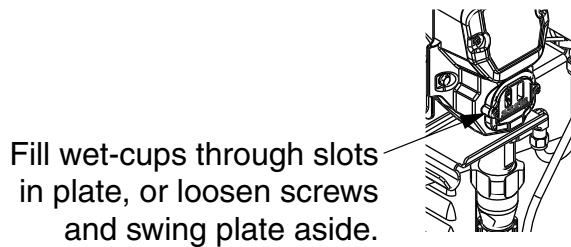
FIG. 6. Hose Connections

8. Fill wet-cups

Keep the felt washers in the pump wet-cups saturated with Owens Corning plasticizer; see Owens Corning Distributor. The lubricant creates a barrier between the red fluid and the atmosphere.

					
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Pump rod and connecting rod move during operation. Moving parts can cause serious injury such as pinching or amputation. Keep hands and fingers away from wet-cup during operation. Shut off Motor Power  before filling wet-cup.



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9. Install suction tube



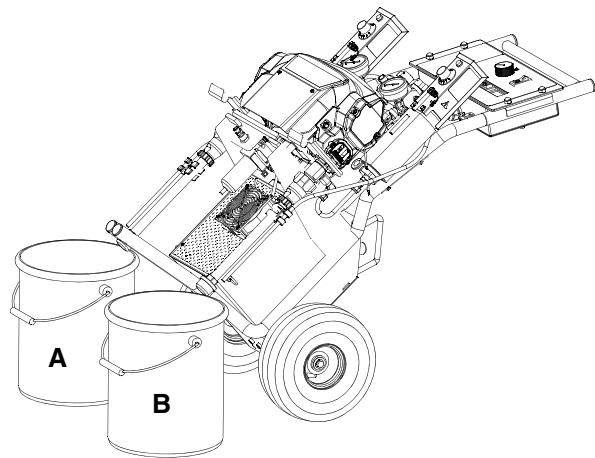
CAUTION

To prevent cross-contamination of fluids and equipment parts, **never** interchange component A and component B parts or containers.

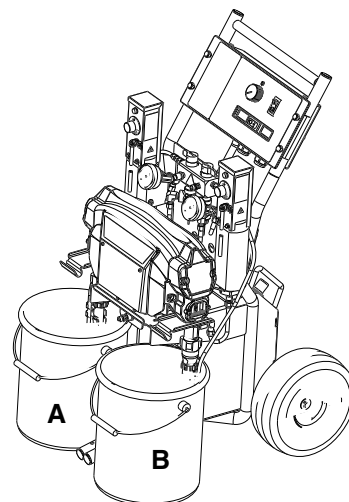
Label one pail "A" and the other "B", using the labels provided. Always doublecheck which material you have before placing suction tubes in pails.

 Using a drill and mixing blade, mix filled or separated materials in the pail. Material left in the tanks overnight may need to be remixed.

- a. Open red and white fluid pails and position in front of suction tubes.
- b. Stand behind unit and hold cross-bar. Lean unit backwards until the suction tubes are above the supply pails.

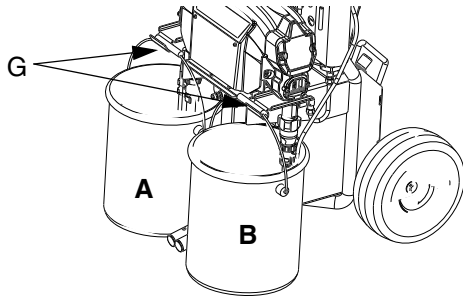


- c. Place suction tubes in pails.

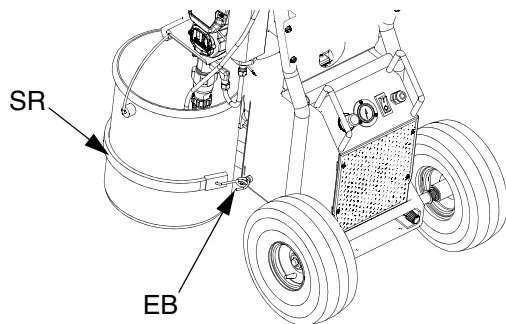


10. Mount pails

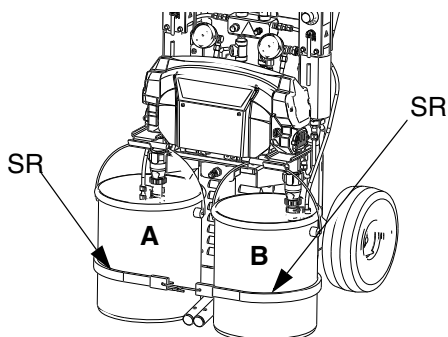
- a.** Insert pail handles on mounting bracket (G).



- b.** Install one end of strap (SR) through eye bolt (EB) on A side of unit. Use second strap for B side.



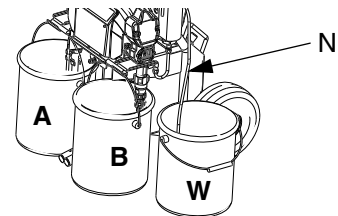
- c.** Latch straps (SR) together in front of pails.



11. Purge air and flush fluid from lines



- a.** Remove both recirculation tubes (N) from the pails and secure each one in a dedicated waste container (W).



- b.** Set function knob to Stop/Park

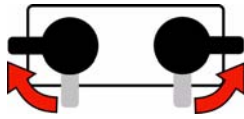




- c.** Plug in power cord(s). See TABLE 2, page 14.

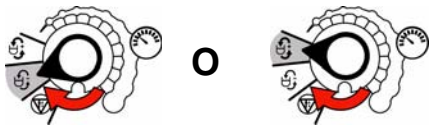
- d.** Turn on Motor Power.




- e.** Set Recirc/Spray valves to Recirc.



- f.** Set function knob to Slow Recirc  or Fast Recirc .




- g.** When clean fluids exit both recirculation tubes (P), set function knob to Stop/Park .





- h.** Replace recirculation tubes in pails.



- i.** On nonheated units, purge the hoses through the gun without a static mixer installed.

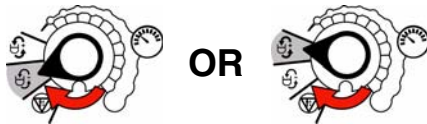
 For heated units, continue with **Startup of Heated Units**, page 19.

Nonheated units are ready to spray/dispense. Go to **Spraying/Dispensing**, page 20.

Startup of Heated Units

					
<p>Equipment surfaces can become very hot. To avoid severe burns:</p> <ul style="list-style-type: none"> • Do not operate Reactor E-10 without all covers and shrouds in place. • Do not touch hot fluid or equipment. • Allow equipment to cool completely before touching it. • Wear gloves if fluid temperature exceeds 110°F (43°C). 					

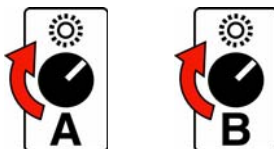
1. Perform **Setup**, pages 13-18.
2. Set function knob to Slow Recirc  or Fast Recirc .



3. Turn on Heater Power.

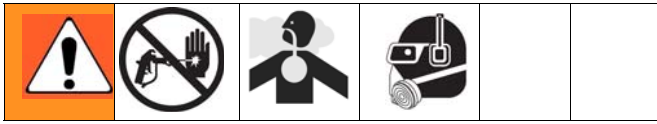


4. Temporarily set heater control knobs to maximum setting.



5. Circulate through heaters until temperature readouts display desired temperature.
6. Adjust heater control knobs as necessary for a stable spray temperature.


Spraying/Dispensing



Air is supplied to spray gun with gun piston safety lock and gun fluid manifold valves A and B closed (if present).




Fusion

1. Set function knob to Stop/Park .



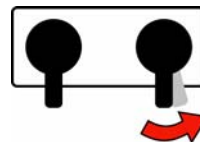
2. Set Recirc/Spray valves to Spray.



3. Turn function knob to Pressure Adjust . Keep turning to the right until fluid pressure gauges show desired pressure.



4. Check fluid pressure gauges to ensure proper pressure balance. If imbalanced, reduce pressure of higher component by **slightly** turning Recirc/Spray valve for that component toward Recirc, until gauges show balanced pressures. The pressure imbalance alarm (Status Code 1) is inactive for 10 sec after entering spray pressure mode, to allow time to balance pressures.



In this example, B side pressure is higher, so use the B side valve to balance pressures.

Watch gauges for 10 sec to be sure pressure holds on both sides and pumps are not moving.

5. Open gun fluid manifold valves A and B (impingement mix guns only).



On impingement guns, **never** open fluid manifold valves or trigger gun if pressures are imbalanced.

6. Disengage piston safety lock.

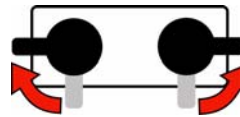


Fusion

7. Test spray onto cardboard or plastic sheet. Verify that material fully cures in the required length of time, and is the correct color. Adjust pressure and temperature to get desired results. Equipment is ready to spray.




3. Set Recirc/Spray valves to Recirc until temperature readouts come back up.



4. *If you stop spraying for more than 2 minutes when using an impingement mix gun, close gun fluid valves A and B. Doing this will keep the internal parts of the gun cleaner and prevent crossover.*



Pause (Heated Units)

 To bring the hose and gun back to spray temperature after a brief break, use the following procedure.

1. Engage piston safety lock.

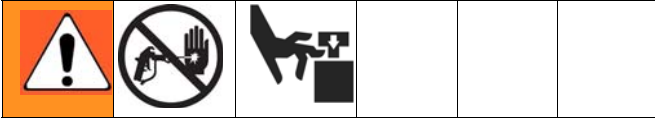


Fusion

2. Set function knob to Slow Recirc .



Pressure Relief Procedure



1. Engage piston safety lock.

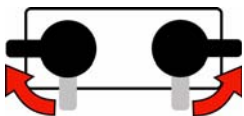


Fusion


2. Set function knob to Stop/Park .



3. Turn Recirc/Spray valves to Recirc. Fluid will be dumped to pails. Pumps will move to the bottom of their stroke. Ensure gauges drop to 0.



Shutdown

 For longer breaks (more than 10 minutes), use the following procedure. If you will be shut down for more than 3 days, first see **Flushing**, page 24.

1. Follow all steps of **Pressure Relief Procedure**, at left.

2. *If using an impingement mix gun, close gun fluid valves A and B. Doing this will keep the internal parts of the gun cleaner and prevent crossover.*



3. Shut off Heater Power (heated units only).



4. Shut off Motor Power.



5. Shut off Compressor Power.

6. Remove pails from mounting bracket.

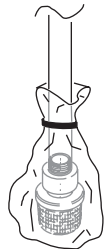
7. Refer to your separate gun manual and perform the **Shutdown** procedure.

Maintenance

- Check pump wet-cups fluid level daily, page 16.
- Do not overtighten packing nut/wet-cup. Throat u-cup is not adjustable.
- Generally, flush if you will shutdown for more than three days. Flush more often if material is moisture sensitive and humidity is high in the storage area, or if material may separate or settle out over time.
- *If using an impingement mix gun, close gun fluid valves A and B when not spraying. Doing this will keep the internal parts of the gun cleaner and prevent crossover. Clean gun mix chamber ports and check valve screens regularly. See gun manual.*







- *If using an Fusion Air Purge impingement mix gun, always grease the gun after use until purge air carries grease mist out the front of the gun. Use Part No. 117773 Grease. See gun manual 309550.*
- To prevent fluid from running out of sprayer during storage or transportation, fasten a plastic bag over suction tube when not using sprayer.



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Flushing

					
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Flush equipment only in a well-ventilated area. Do not spray flammable fluids. Do not turn on heaters while flushing with flammable solvents.

- Generally, flush if you will be shut down for more than 3 days. Flush more often if material is moisture sensitive and humidity is high in the storage area, or if material may separate or settle out over time.
- Flush out old fluid with new fluid, or flush out old fluid with a compatible solvent before introducing new fluid.
- Use the lowest possible pressure when flushing.
- Always leave some type of fluid in system. Do not use water.
- For long term storage, flush out the solvent with a storage fluid such as Bayer Mesamoll plasticizer or, at minimum, clean motor oil.

1. Engage piston safety lock. Close fluid valves A and B. Leave air on.



Fusion

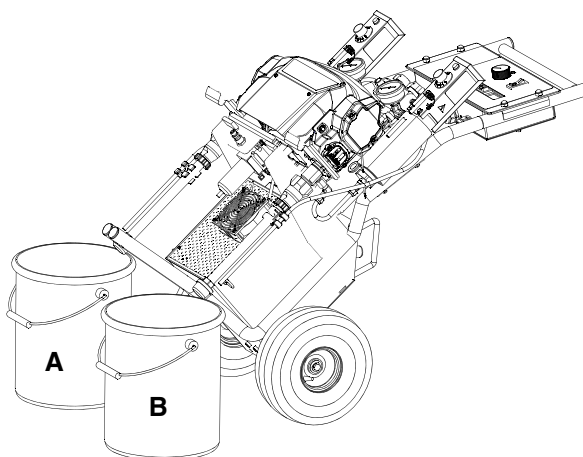
2. Set function knob to Stop/Park .



3. Shut off Heater Power (heated units only). Allow system to cool.

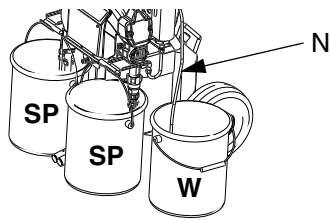


4. Unlatch straps and remove A and B pails from mounting bracket. Stand behind unit and hold crossbar. Lean unit backwards to remove suction tubes from A and B fluid pails.



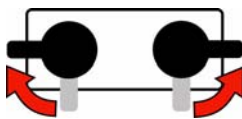
5. Fill two pails with 1-2 gal. (3.8-7.6 l) of solvent recommended by your material manufacturer. Insert suction tubes in solvent pails (SP).


- 6.** Disconnect recirculation tube (N) and insert in waste container (W).




To flush gun, refer to gun instruction manual.

- 7.** Turn Recirc/Spray valves to Recirc.




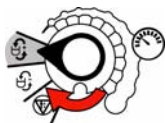
- 8.** Set function knob to Fast Recirc . Pump solvent through system to waste containers.



- 9.** When nearly clear solvent comes from recirculation tubes, set function knob to Stop/Park . Place recirculation tubes in solvent pails.



- 10.** Set function knob to Fast Recirc . Circulate solvent through system for 10-20 minutes to ensure thorough cleaning.

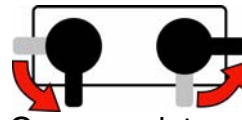




Purge Gun Hoses



Disconnect hoses from gun and secure back into the tanks for thorough cleaning with solvent.

- Turn Recirc/Spray valve A to Spray.



- Open gun into waste container A.
- Set function knob to Slow Recirc  until hose is flushed.
- Set function knob to Stop/Park .
- Repeat for B side.

- 11.** Set function knob to Stop/Park .



- 12.** Solvent flushing is a two step process. Go back to step 4, drain solvent, and flush again with fresh solvent.

- 13.** Leave unit filled with solvent, plasticizer, or reprime with new material.



Never leave the unit dry unless it has been disassembled and cleaned. If fluid residue dries in the pumps, the ball checks may stick the next time you use the unit.

Troubleshooting


Status Codes


Determine the status code by counting the number of times the status indicator (ST) blinks.



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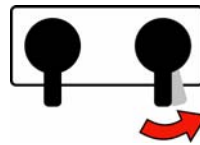
Status Code 1: Pressure Imbalance

 The unit does not check for pressure imbalance at setpoints less than 250 psi (1.75 MPa, 17.5 bar).

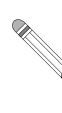
 The unit does not check for pressure imbalance for 10 sec after entering pressure mode.

Unit senses pressure imbalance between components A and B, and warns or shuts down, depending on settings of DIP switches 1 and 2. To turn off automatic shutdown and/or tighten pressure tolerances for status code 1, see **Status Code 1 and 2 Settings** on page 27.

1. Check fluid supply of lower pressure component and refill if necessary.
2. Reduce pressure of higher component by **slightly** turning Recirc/Spray valve for that component toward Recirc, until gauges show balanced pressures.




In this example, B side pressure is higher, so use the B side valve to balance pressures.

 Turn Recirc/Spray valve only enough to balance pressure. If turned completely, all pressure will bleed off.

3. Check fluid inlet strainers (51a, page 23) and fluid filters at gun.
4. Clean or change restrictor at mixer manifold if using disposable mixer gun kit.

Status Code 2: Pressure Deviation from Setpoint

 The unit does not check for pressure deviation at setpoint less than 400 psi (2.8 MPa, 28 bar).

Unit senses pressure deviation from setpoint, and warns or shuts down, depending on settings of DIP switches 3 and 4. If equipment cannot maintain enough pressure for a good mix with an impingement mix gun, try using a smaller mix chamber or nozzle.

To turn off automatic shutdown and/or tighten pressure tolerances for status code 2, see **Status Code 1 and 2 Settings** on page 27.

Status Code 1 and 2 Settings

1. Locate switch SW2 on the control board, page 43.
2. Set the four DIP switches to the desired positions. See FIG. 7 and TABLE 4 on page 27.



FIG. 7. DIP Switch (SW2) Settings

Table 4: Status Code 1 and 2 Settings

DIP Switch and Function	Left	Right (default setting)
DIP Switch 1 If selected, causes shutdown or displays a warning if there is a pressure imbalance exceeds selection made in DIP Switch 2	WARNING	SHUTDOWN
DIP Switch 2 If selected, causes <i>shutdown</i> if A and B pressure imbalance is greater than If selected, causes <i>warning</i> if A and B pressure imbalance is greater than	500 psi (3.5 MPa, 35 bar) (60% if < 800 psi [5.6 MPa, 56 bar] running)	800 psi (5.6 MPa, 56 bar) (70% if < 800 psi [5.6 MPa, 56 bar] running)
	300 psi (2.1 MPa, 21 bar) (50% if < 800 psi [5.6 MPa, 56 bar] running)	500 psi (3.5 MPa, 35 bar) (60% if < 800 psi [5.6 MPa, 56 bar] running)
DIP Switch 3 If selected, causes shutdown or displays a warning due to deviation of pressure from setpoint exceeds selection made in DIP Switch 4	WARNING	SHUTDOWN
DIP Switch 4 Causes warning if deviation of pressure from setpoint is greater than	300 psi (2.1 MPa, 21 bar) (25% if < 800 psi [5.6 MPa, 56 bar])	500 psi (3.5 MPa, 35 bar) (40% if < 800 psi [5.6 MPa, 56 bar])

Status Code 3: Transducer A Failure

1. Check transducer A electrical connection (J3) at board, page 43.
2. Reverse A and B transducer electrical connections at board, page 43. If error moves to transducer B (Status Code 4), replace transducer A, page 44.

Status Code 4: Transducer B Failure

1. Check transducer B electrical connection (J8) at board, page 43.
2. Reverse A and B transducer electrical connections at board, page 43. If error moves to transducer A (Status Code 3), replace transducer B, page 44.

Status Code 5: Excessive Current Draw

Shut off unit and contact distributor before resuming operation.

1. Locked rotor; motor unable to turn. Replace motor, page 47.
2. Short on control board. Replace board, page 42.
3. Worn or hung up motor brush causing arcing of brush at commutator. Replace brushes, page 49.

Status Code 6: High Motor Temperature

Motor is running too hot.




1. Motor temperature too high. Reduce pressure duty cycle, gun tip size, or move Reactor E-10 to a cooler location. Allow 1 hour for cooling.
2. Check fan operation. Clean fan and motor housing.



Status Code 7: No Cycle Counter Switch Input



Have not received input from cycle counter switch for 10 seconds after selecting Recirc mode.



1. Check cycle counter switch connection to board (J10, pins 5, 6), page 43.
2. Check that magnet (224) and cycle counter switch (223) are in place under B side motor end cover (227). Replace if necessary.

Troubleshooting Chart

PROBLEM	CAUSE	SOLUTION
Reactor E-10 does not operate.	No power.	Plug in power cord.
		Cycle Motor Power off  , then on  to reset breaker.
Motor does not operate.	Power turned on with function knob set to a run position.	Set function knob to Stop/Park  , then select desired function.
	Loose connection on control board.	Check connection at J11 (120 V). See page 42.
	Worn brushes.	Check both sides. Replace brushes worn to less than 1/2 in. (13 mm), see page 49.
	Broken or misaligned brush springs.	Realign or replace, page 49.
	Brushes or springs binding in brush holder.	Clean brush holder and align brush leads for free movement.
	Shorted armature.	Replace motor, page 47.
	Check motor commutator for burn spots, black pitting, or other damage.	Remove motor. Have motor shop resurface commutator, or replace motor, page 47.
	Failed control board.	Replace board. See page 42.
Fan not working.	Loose fan cable.	Check that cable is connected at fan and at J9 on control board. See pages 49 and 42.
	Defective fan.	Test and replace if necessary, page 49.
Pump output low.	Plugged fluid inlet strainer.	Clear, see page 23.
	Plugged disposable mixer.	Clean or replace.
	Leaking or plugged piston valve or intake valve in displacement pump.	Check valves. See pump manual.
One side doesn't come up to pressure in spray mode.	Dirty or damaged Recirc/Spray valve.	Clean or repair, page 36.
	Plugged fluid inlet strainer.	Clear, see page 23.
	Pump intake valve plugged or stuck open.	Clean pump intake valve. See page 37.

PROBLEM	CAUSE	SOLUTION
Pressure is higher on one side when setting pressure with function knob.	Pump intake valve partially plugged.	Clean pump intake valve. See page 37.
	Air in hose. Fluid is compressible.	Purge air from hose.
	Unequal size hoses or unequal hose construction.	Use matching hoses, or balance pressures before spraying.
Pressures are not balanced when running, but pressure is generated and holds on both strokes.	Unequal viscosities.	Change temperature setting to balance viscosities.
		Change restrictor at mix point to balance back pressure.
	Restriction on one side.	Clean mix module or restrictor at mix manifold. Clean gun check valve screens.
Fluid leak in pump packing nut area.	Worn throat seals.	Replace. See pump manual.
Pressure doesn't hold when stalled against gun in spray mode.	Leaking Recirc/Spray valve.	Repair, page 36.
	Leaking piston valve or intake valve in displacement pump.	Repair. See pump manual.
	Leaking gun shutoff.	Repair. See gun manual.
Pressure is higher on B side during startup of recirculation, especially in High Recirc mode.	This is normal. Component B is typically higher viscosity than component A until the material is heated during recirculation.	No action required.
One gauge shows half as many pulses as the other when pumps are cycling.	Loss of pressure on downstroke.	Intake valve is leaking or not closing. Clean or replace valve; see page 37.
	Loss of pressure on upstroke.	Piston valve is leaking or not closing. Clean or replace valve or packings; see page 37.
Status indicator (red LED) not lit.	Motor Power switch off.	Cycle Motor Power off  , then on  to reset breaker.
	Loose indicator cable.	Check that cable is connected at J10 pins 1 (red) and 2 (black) on control board. See page 42.
	Failed control board.	Replace board. See page 42.
A side rich; lack of B side.	A side gauge is low.	B side restriction downstream of gauge. Check gun check valve screen, mix module, or mix manifold restrictor.
	B side gauge is low.	B side material supply problem. Check B side inlet strainer and pump intake valve.



PROBLEM	CAUSE	SOLUTION
B side rich; lack of A side.	A side gauge is low.	A side material supply problem. Check A side inlet strainer and pump intake valve.
	B side gauge is low.	A side restriction downstream of gauge. Check gun check valve screen, mix module, or mix manifold restrictor.
No temperature display.	Loose display cables on control board.	Check cable connections to each display, page 42.
	Failed control board (displays get power from control board).	Remove access panel. Check if board LED is lighted. If not, replace board, page 42.
	Inadequate power to control board.	Check that power supply meets requirements.
	Loose power cable.	Check cable connections, page 42.
	Motor Power switch circuit breaker tripped.	Display is powered from Motor Power circuit breaker. Cycle Motor Power off  , then on  to reset breaker.
Wrong temperature displayed.	°F/°C switch in wrong position.	Set switch, see page 39.
Temperature displays do not match at ambient temperature.	Displays need calibration.	Turn calibration screw on back of displays to correct reading, see page 39.

PROBLEM	CAUSE	SOLUTION
No heat, and heater indicator light is off.	Heater Power shut off, or circuit breaker tripped.	Cycle Heater Power off  , then on  to reset circuit breaker.
	Bad thermostat.	With power on, check for continuity at clicks of heater control knob. To replace thermostat, see 311210.
	Bad overtemperature sensor (this is a high temperature limit fuse and must be replaced if blown).	With power on, check for continuity at overtemperature sensor. To replace sensor, see 311210.
	Loose heater cable connections.	Check connections at Heater Power switch. See FIG. 12, page 43.
No heat, but heater indicator light is on.	Bad heater cartridge.	Check for continuity at heater cartridge connections: 16-18.6 ohms for 120 V.
Heater on one side shuts off early or continuously during recirculation.	Y-strainer is plugged on that side.	Clean or replace strainer, page 23.
	Fluid inlet valve (52) closed.	Open valve.
B side pump is not priming	Running pump too fast.	Put finger over recirculation tube while running, to build pressure, and release. Repeat as necessary.
	Piston ball check is stuck in open position.	
Low air output at gun	Air valve at gun may be closed.	Turn air valve counter-clockwise to open.
	Sprayer air regulator may be closed.	Pull to unlock and turn air regulator clockwise to open.
	Air connections may be loose.	Check all connections for leaking air.
	Damaged (leaking) air supply hose.	Replace air supply hose.
	Air intake filter clogged.	Clean or replace air intake filter kit.
	Mechanical air unloader stuck open.	Replace mechanical air unloader.
	Electrical air unloader stuck open.	Replace electrical air unloader.
	Loose relief valve.	Turn relief valve until it locks in place at 100 psi.


PROBLEM	CAUSE	SOLUTION
Air compressor does not run	Power is not on.	Turn compressor power on.
	Voltage to compressor below 105 Vac for 120 Vac.	Try another outlet. Reduce extension cord length or increase extension cord gauge.
	Loose power connections.	Verify all connections are firm.
	Excessive head pressure (compressor hums)	Moisture frozen in air supply line.
		Wait for air pressure to bleed to zero.
		Electrical air unloader stuck closed. Replace electrical air unloader.
	Open air regulator; install air line. Complete Setup on page 13.	
Compressor thermal switch is open. Ensure ambient temperature is below 115°F (46°C).	Move sprayer to shaded, cooler area.	
Low compressor performance	Worn compressor; replace compressor with Compressor Service Kit 256779.	

Repair

Before Beginning Repair

					
<p>Repairing this equipment requires access to parts which may cause electric shock or other serious injury if work is not performed properly. Have a qualified electrician connect power and ground to main power switch terminals, see page 13. Be sure to shut off all power to the equipment before repairing.</p>					

1. Flush if possible, see page 24. If not possible, clean all parts with solvent immediately after removal.

2. Set function knob to Stop/Park .



3. Shut off Motor Power. Disconnect power supply.

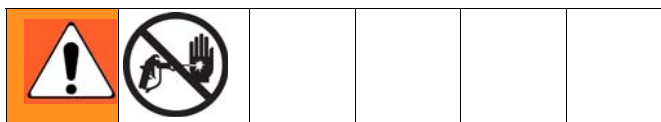


4. Shut off Heater Power. Allow equipment to cool before repairing.



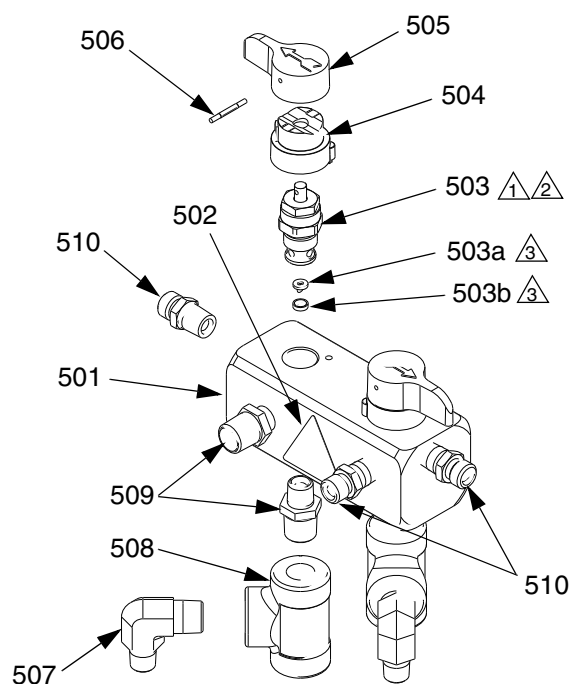
5. Relieve pressure, page 22.

Recirc/Spray Valves



1. See **Before Beginning Repair**, page 35. Relieve pressure, page 22.
2. See FIG. 8. Disassemble Recirc/Spray valves. Clean and inspect all parts for damage. Ensure that the seat (503a) and gasket (503b) are positioned inside each valve cartridge (503).
3. Apply PTFE pipe sealant to all tapered pipe threads before reassembling.
4. Reassemble in reverse order, following all notes in FIG. 8.

Heated Models



① Torque to 250 in-lb (28 N•m).

② Use blue threadlocker on valve cartridge threads into manifold.

③ Part of item 503.

FIG. 8. Recirc/Spray Valves

Displacement Pump



A side displacement pump repair and parts information is included in manual 311076, which is supplied with your unit.



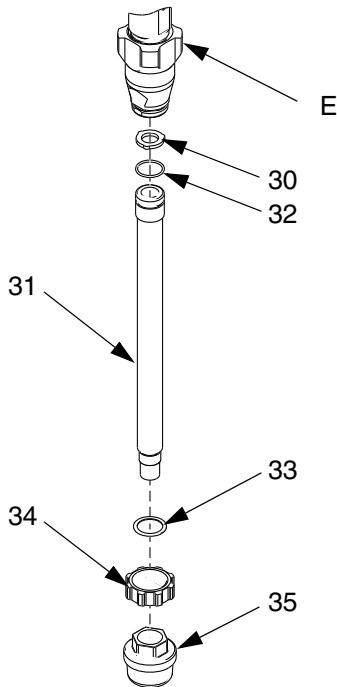
Use dropcloth or rags to protect Reactor E-10 and surrounding area from spills.



1. See **Before Beginning Repair**, page 35.
Relieve pressure, page 22.

To Remove Suction Tube

1. Loosen nut (34) and remove suction tube (31).



To Remove Intake Valve Only




If pump is not generating any pressure, the intake ball check may be stuck closed with dried material.

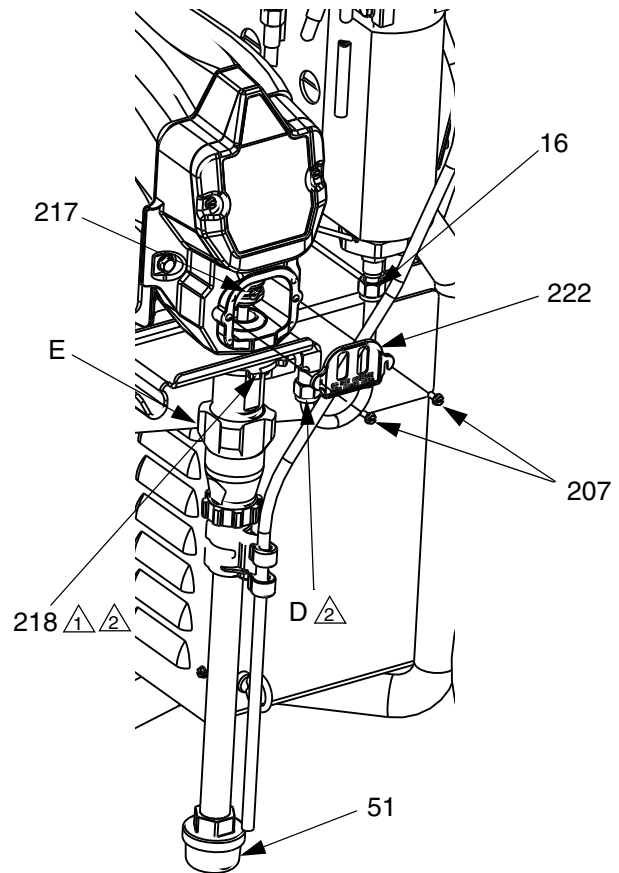
If the pump is not generating pressure on the downstroke, intake ball check may be stuck open.


Either of these conditions can be serviced with the pump in place.

2. Disconnect suction tube.
3. Remove intake valve by hitting ears (E) firmly right-to-left with a non-sparking hammer. Unscrew from pump. See manual 311076 for repair and parts.

To Remove Entire Pump Assembly

4. Disconnect suction tube. See page 37. Also disconnect steel outlet tube (16) from heater inlet.
5. Remove pump rod cover (222). Push clip up in back and push pin (217) out. Loosen locknut (218) by hitting firmly right-to-left with a non-sparking hammer. Unscrew pump. See manual 311076 for pump repair and parts.
6. Install pump in reverse order of disassembly, following all notes in FIG. 9. Clean strainer (51). Reconnect suction tube and outlet (D) lines.
7. Tighten fluid outlet fitting (D), then tighten locknut (218) by hitting firmly with a non-sparking hammer.
8. Set function knob to Slow Recirc . Purge air and prime. See page 17.



 Flat side faces up. Tighten by hitting firmly with non-sparking hammer.


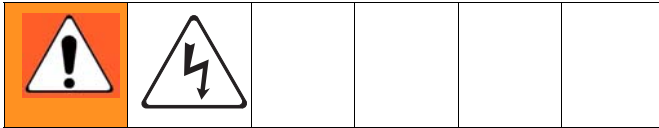
 Lubricate threads with ISO oil or grease.

FIG. 9. Displacement Pump

Control Module

Change Display Temperature Units (°F/°C)

Unit is shipped with temperature displays set to °F.

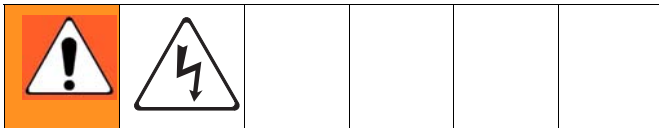


1. Shut off Motor Power. Disconnect power supply.




2. Remove access cover (39) from back of control module.
3. See FIG. 11. Locate slide switch (FC) at right edge of each temperature display board. Unit is shipped set to °F (down). To change to °C, move both switches to up position.

Calibrate Temperature Displays



1. Remove access cover (39) from back of control module.
2. See FIG. 11. Locate calibration screw (CS) at upper right corner of each temperature display board. Turn screw slightly to correct temperature display.

 Temperature displays do not read lower than 50°F (10°C).

Replace Temperature Display and Sensor (Heated Units Only)



1. See **Before Beginning Repair**, page 35. Relieve pressure, page 22.
2. Remove temperature sensor (424):
 - a. Loosen setscrew (22) on thermowell housing (21). See FIG. 10 on page 40.
 - b. Pull sensor (424) out of thermowell housing.
 - c. Work sensor and wire out of cable channel between tanks. It may be easier to remove one tank. See page 36.
3. Remove access cover (39) from back of control module.
4. Disconnect temperature display power cable from J14 or J15 at bottom left of control board (406).
5. Remove four screws from rear panel studs and remove temperature display (403) from front plate (401).
6. Remove screw and nut (409) holding display to plate (403).
7. Pull sensor cable through split in bushing (411).

8. Reassemble in reverse order. Mount temperature display so Heater Power switch off (0) position is at left when facing control panel.

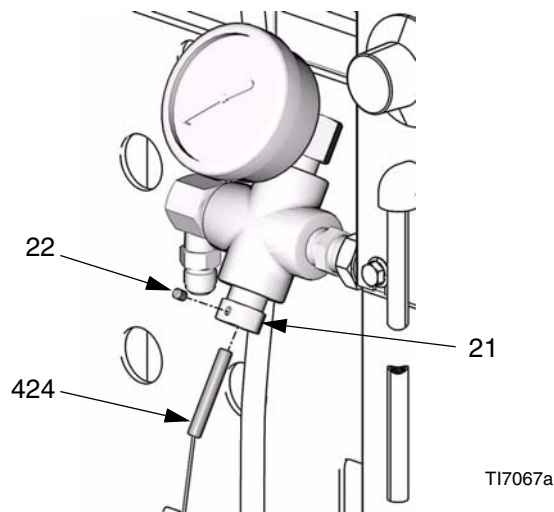


FIG. 10. Temperature Sensor

horizontal. Position knob (416) so pointer (P) faces up. Install knob on shaft so slot (S) engages alignment pin in knob. Push knob onto shaft against detent spring before tightening setscrews (416a).

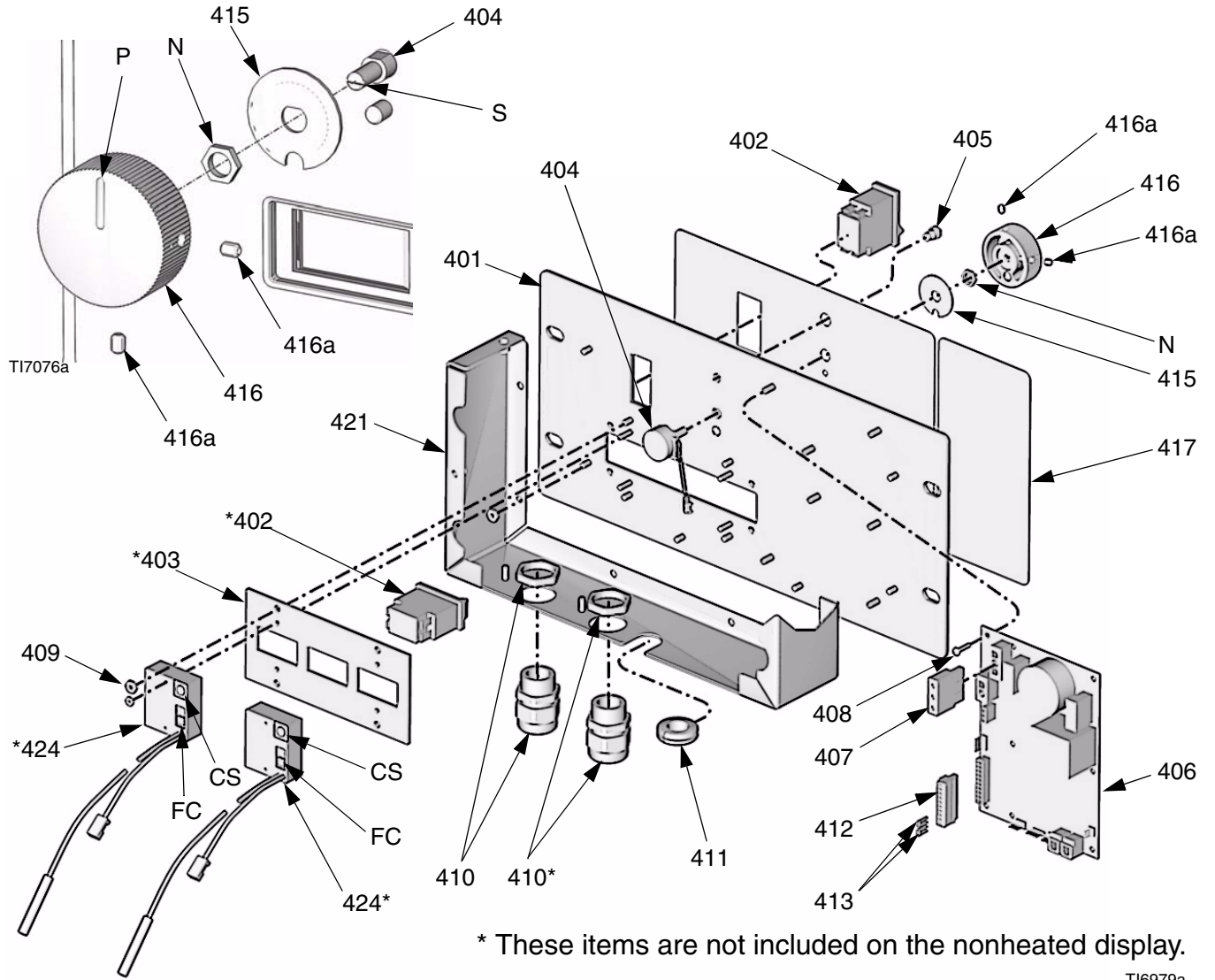
7. Reconnect potentiometer wires to J2 as shown in FIG. 12.

Replace Function Knob/Potentiometer



1. See **Before Beginning Repair**, page 35. Relieve pressure, page 22.
2. Remove access cover (39) from back of control module.
3. Disconnect potentiometer wires from J2 on control board (406). See FIG. 12.
4. See FIG. 11. Remove two setscrews (416a) and pull function knob (416) off potentiometer (404) shaft.
5. Remove nut (N, part of 404) and detent plate (415).
6. Install new potentiometer (404) in reverse order. Position potentiometer so slot (S) is

Detail of Function Knob/Potentiometer



T16979a

FIG. 11. Control Module (Heated Model Shown)

Control Board

Power Bootup Check



There is one red LED (D11) on the board. Power must be on to check. See FIG. 12 for location. Function is:

- Startup: 1 blink for 60 Hz, 2 blinks for 50 Hz.
- Motor running: LED on.
- Motor not running: LED off.
- Status code (motor not running): LED blinks status code.



Control Board Replacement



Check motor before replacing board. See **Electric Motor**, page 47.

1. See **Before Beginning Repair**, page 35. Relieve pressure, page 22.
2. Remove access cover (39) at back of control module to expose control board (406).
3. Disconnect all cables and connectors from board. Remove two jumper wires (413) from J10 pins 7-8 and 9-10.
4. Remove screws (408) and remove board from control module.
5. Install new board in reverse order.



Apply thermal compound between the square steel piece on the back of the board and the main aluminum plate. Order Part No. 110009 Thermal Compound.

Table 5: Control Board Connectors
(see FIG. 12)

Board Jack	Pin	Description
J1	n/a	Main power from breaker
J2	n/a	Function knob
J3	n/a	Transducer A
J4	n/a	Motor power (230 V units)
J7	1, 2	Motor thermal overload signal
J8	n/a	Transducer B
J9	n/a	Fan
J10	1, 2	Status indicator
	3, 4	Not used
	5, 6	Cycle switch signal
	7-8	Jumpered
	9-10	Jumpered
J11	n/a	Motor power (120 V)
J14	n/a	B temperature display
J15	n/a	A temperature display

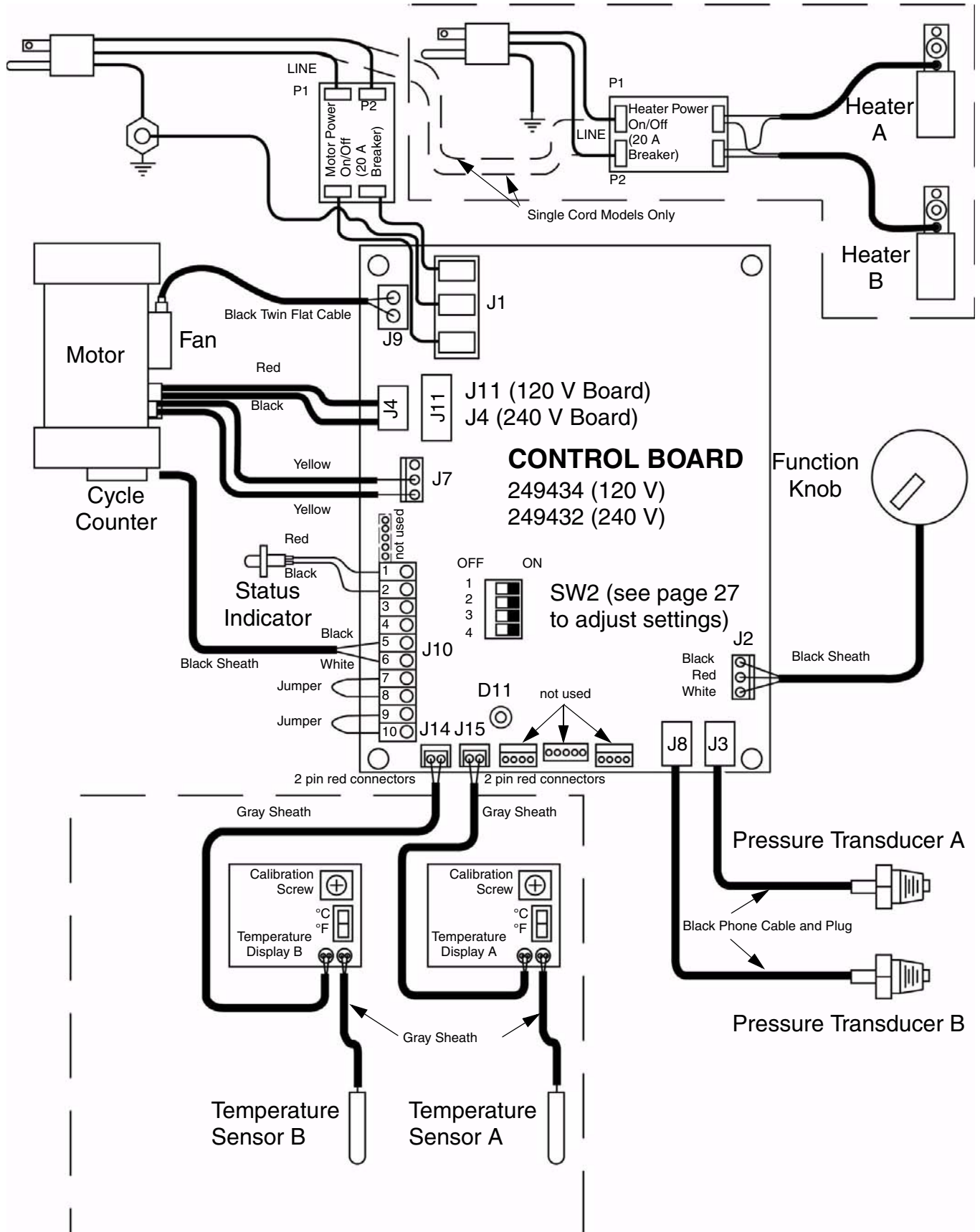


FIG. 12. Control Module Wiring Connections

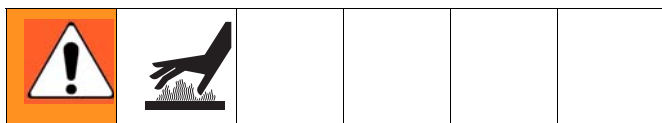
Fluid Heaters



Fluid heater repair and parts information is included in manual 311210, which is supplied with heated units.



To replace a pressure transducer, see at right.



1. See **Before Beginning Repair**, page 35. Relieve pressure, page 22.

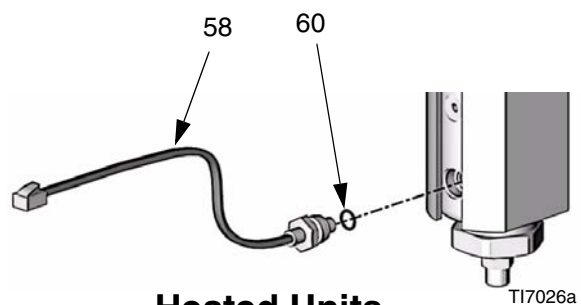


2. Control section of heater can be repaired in place. Remove heater to clean fluid section. See manual 311210 for heater repair and parts.

Pressure Transducers



1. See **Before Beginning Repair**, page 35. Relieve pressure, page 22.
2. Remove access cover (39) at back of control module to expose control board (406).
3. Disconnect transducer cables from J3 and J8 at board; see FIG. 12, page 43. Reverse A and B connections and check if status code follows the bad transducer, page 27.
4. Reconnect good transducer to proper connector. Disconnect failed transducer from board, and unscrew from base of fluid heater (heated units) or transducer manifold (nonheated units).
5. Install o-ring (60) on new transducer (58), FIG. 13.
6. Install transducer in heater or manifold. Mark board end of cable with tape (red=transducer A, blue=transducer B).
7. Route cable through channel to control module.
8. Connect transducer cable at board; see FIG. 12, page 43.

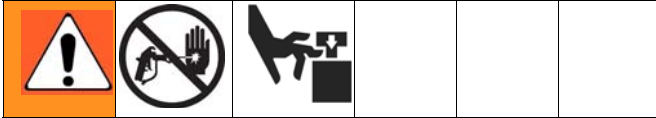


Heated Units


FIG. 13. Transducers

Drive Housing

Removal



1. See **Before Beginning Repair**, page 35. Relieve pressure, page 22.
2. Remove screws (207) and end covers (221, 227), FIG. 14.

 Examine connecting rod (216). If rod needs replacing, first remove the pump (219), page 37.

CAUTION

Do not drop gear reducer (214) and crankshaft (210) when removing drive housing (215). These parts may stay engaged in motor end bell (MB) or may pull away with drive housing.

3. Disconnect pump inlet and outlet lines. Remove screws (220) and pull drive housing (215) off motor (201). Connecting rod (216) will disengage from crankshaft (210).
4. Examine crankshaft (210), gear reducer (214), thrust washers (208, 212), and bearings (209, 211, 213).

Installation

1. Apply grease liberally to washers (208, 212), bearings (209, 211, 213), gear reducer (214), crankshaft (210), and inside drive housing (215). Grease is supplied with replacement parts kits.



B side crankshaft (210) includes the cycle counter magnet (224). When reassembling, be sure to install crankshaft with magnet on B side.

If replacing crankshaft, remove magnet (224). Reinstall magnet in center of offset shaft on new crankshaft. Position shaft in Park position.

2. Install bronze bearings (211, 213) in drive housing (215), as shown.
3. Install bronze bearings (209, 211) and steel washer (208) on crankshaft (210). Install bronze bearing (213) and steel washer (212) on gear reducer (214).
4. Install gear reducer (214) and crankshaft (210) into motor end bell (MB).



Crankshaft (210) must be in line with crankshaft at other end of motor. Pumps will move up and down together.



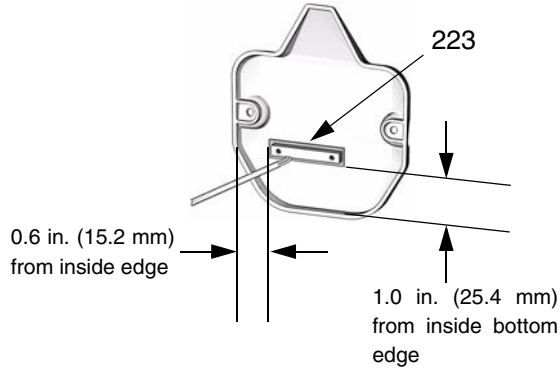
If connecting rod (216) or pump (219) were removed, reassemble rod in housing and install pump, page 37.

5. Push drive housing (215) onto motor (201). Install screws (220).
6. Install drive housing covers (221 on A side, 227 on B side) and screws (207). Pumps must be in phase (both at same position in stroke).

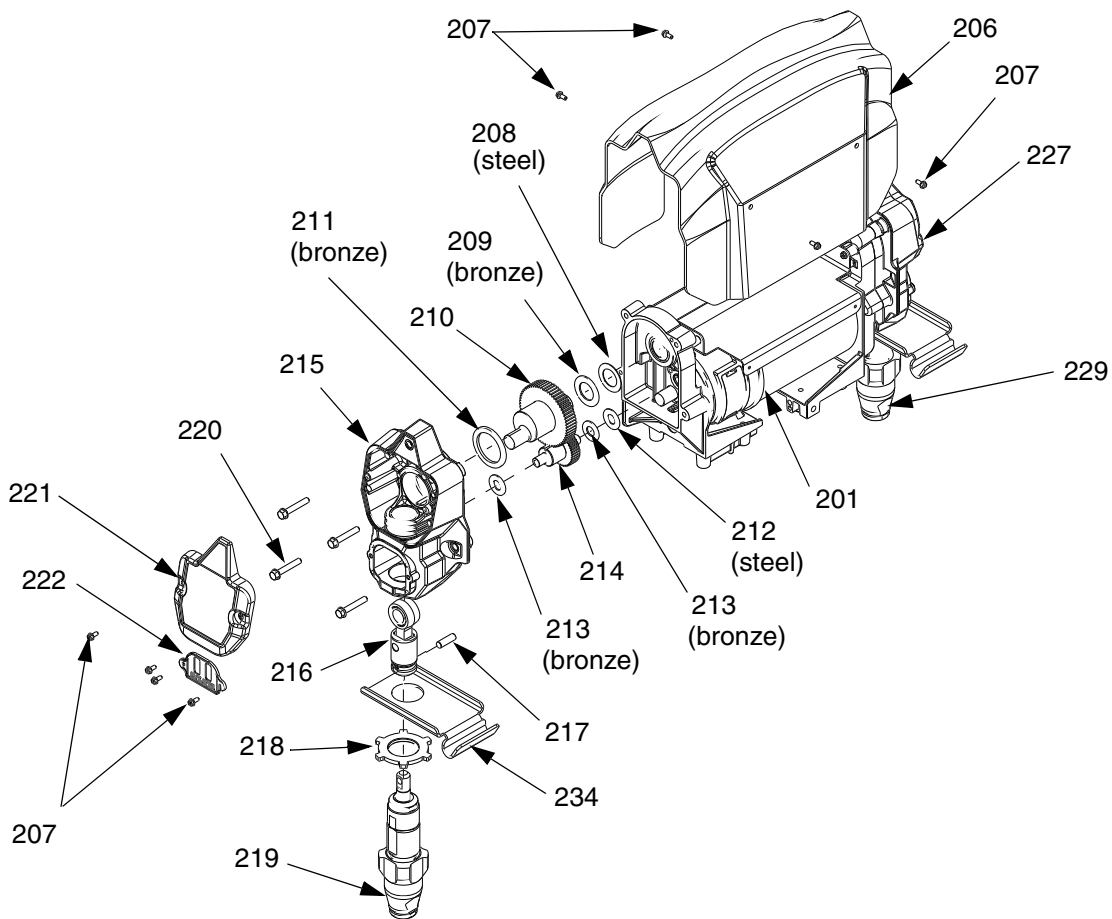
Cycle Counter Switch Replacement



B side drive housing cover (227) includes the cycle counter switch (223), mounted in the cover. When reassembling, be sure to install cover with switch on B side.



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Crankshaft must be in line with crankshaft at other end of motor, so pumps move up and down in unison.


FIG. 14. Drive Housing

Electric Motor

Test Motor

If motor is not locked up by pumps, it can be tested using a 9 V battery. Open recirculating valves, disconnect J4 or J11 from control board, see FIG. 12, page 43. Touch jumpers from battery to motor connections. Motor should turn slowly and smoothly.

Removal

 If replacing a component with electrical cabling, remove one supply tank, page 36.



1. See **Before Beginning Repair**, page 35. Relieve pressure, page 22.
2. Remove four screws (207) and shroud (206). See FIG. 14.
3. Remove drive housing/pump assemblies, page 45.
4. Disconnect motor cables as follows:
 - a. Find control board at back of control module, see FIG. 12, page 43.
 - b. Unplug motor power connector from J11 (120 V units).
 - c. Unplug motor temp switch harness from connector J7.
 - d. Unplug cable (37) from fan (202). See FIG. 18.
- e. Thread motor power switch harness out bottom of control module and cable channel, to free motor.

CAUTION

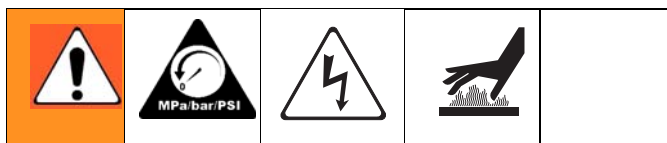
Motor is heavy. Two people may be required to lift.

5. Remove screws holding motor to bracket. Lift motor off unit.

Installation

1. If replacing motor, install fan assembly and fan mount threaded bushing on new motor.
2. Place motor and fan on unit. Thread motor switch harness into control module.
3. Fasten motor with screws underneath. Do not tighten yet.
4. Plug 3-pin connector J7 to board.
5. Plug Motor Power switch harness to connector J11 (120 V units).
6. Install drive housing/pump assemblies, page 45. Reconnect inlet assemblies to pumps.
7. Tighten motor mounting screws.
8. Return to service.

Compressor



- To repair compressor, use Compressor Service Kit 256779. Refer to Thomas Compressor manual provided.
- Replace compressor piston assembly, use Kit 256779.

Removing Compressor from Sprayer

1. Relieve pressure, page 22. Disconnect power cord from outlet.
2. Remove filter bracket.

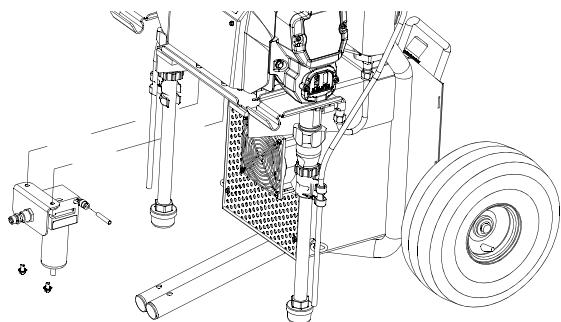


FIG. 15

3. Disconnect fan electrical connection.
4. Remove front and back louvers from unit.

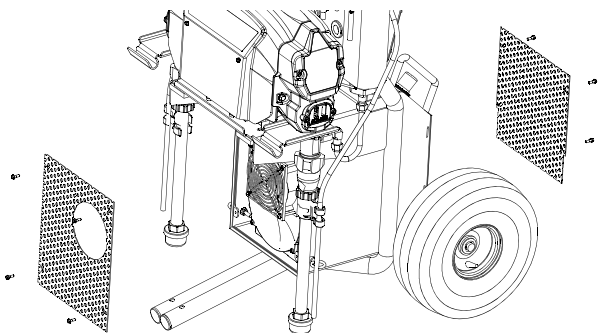


FIG. 16

5. Disconnect air fitting from compressor. Remove compressor from unit. Follow instructions provided with your repair kit.
6. Disconnect electrical connection from solenoid valve.

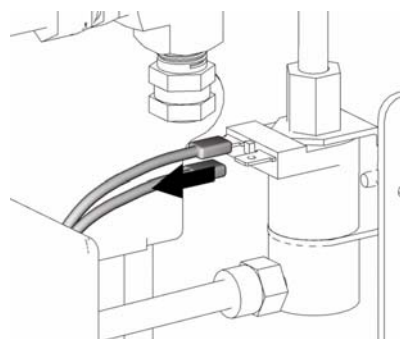


FIG. 17

Motor Brushes



Replace brushes worn to less than 1/2 in. (13 mm). Brushes wear differently on each side of motor; check both sides. Brush Repair Kit 248186 is available; kit includes instruction sheet 406582.

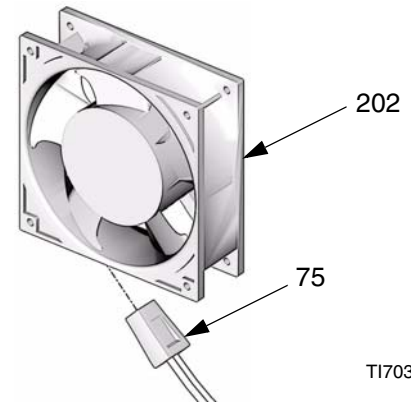
Motor commutator should be smooth. If not, resurface commutator or replace motor.



1. See **Before Beginning Repair**, page 35. Relieve pressure, page 22.
2. See instruction sheet 406582, included with Brush Repair Kit 248186. Remove old brushes and install new ones supplied in kit.

Fan

1. Disconnect fan cable (75) from fan (202). With Motor Power on, test cable connector for line voltage (120 V).
2. *If voltage is correct*, fan is defective. Remove screws holding fan to shield (206). Install new fan in reverse order.
3. *If voltage is not correct*, check fan cable connection at J9 on control board; see FIG. 12, page 43.

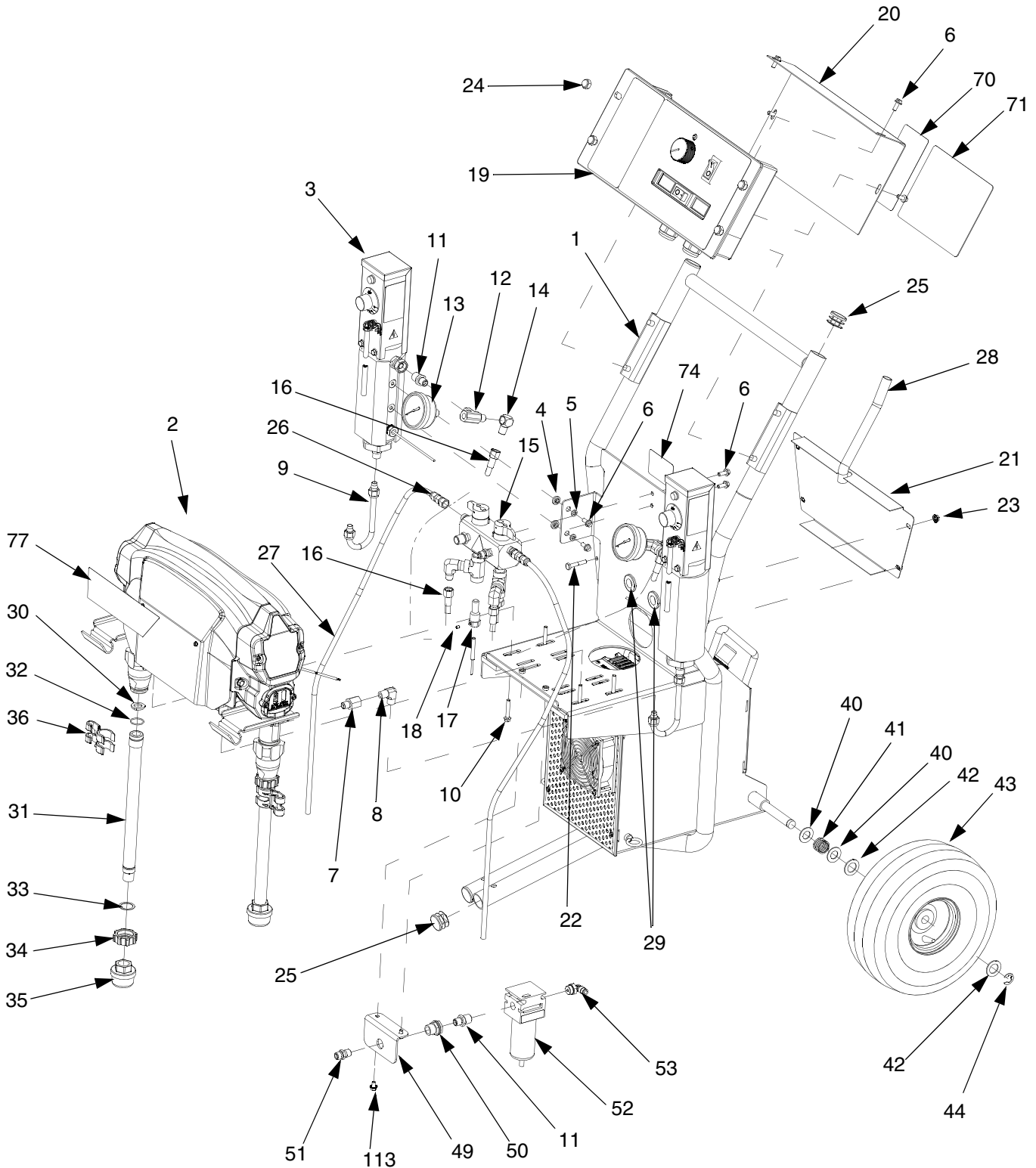


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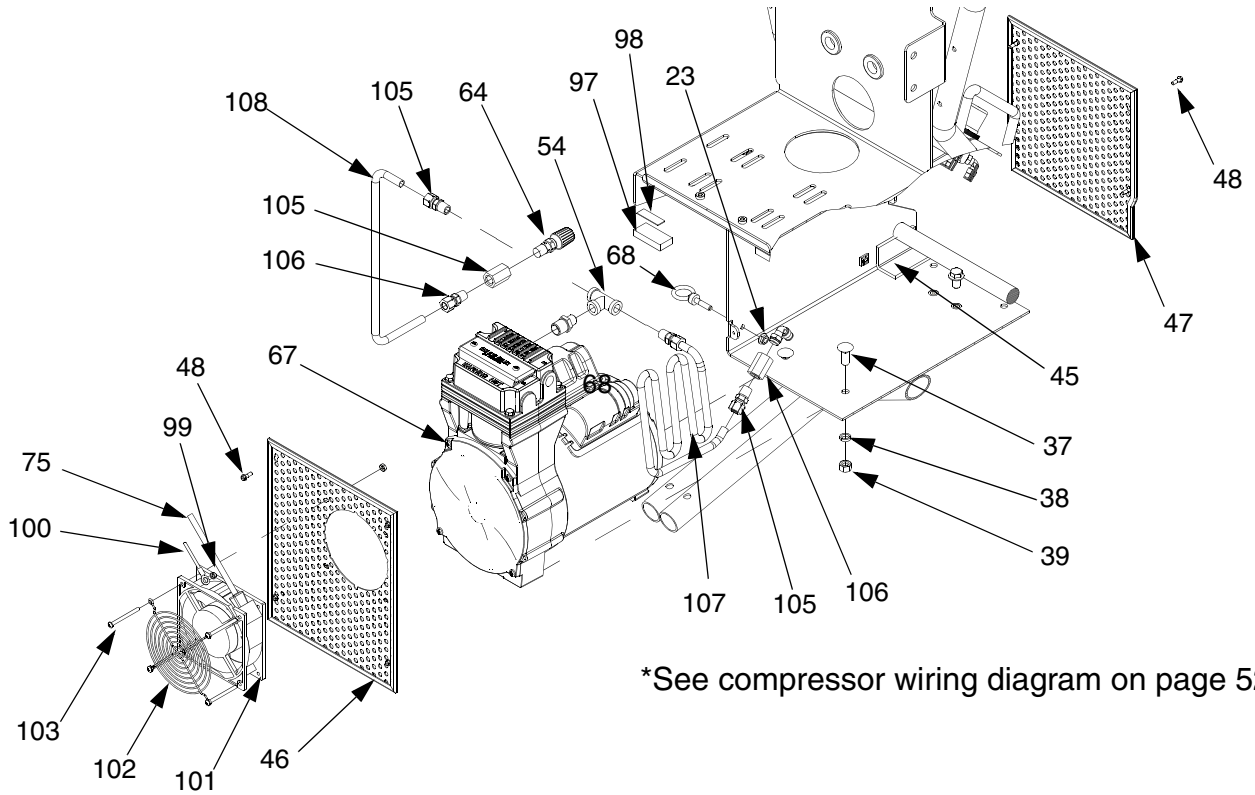
FIG. 18. Fan

Parts

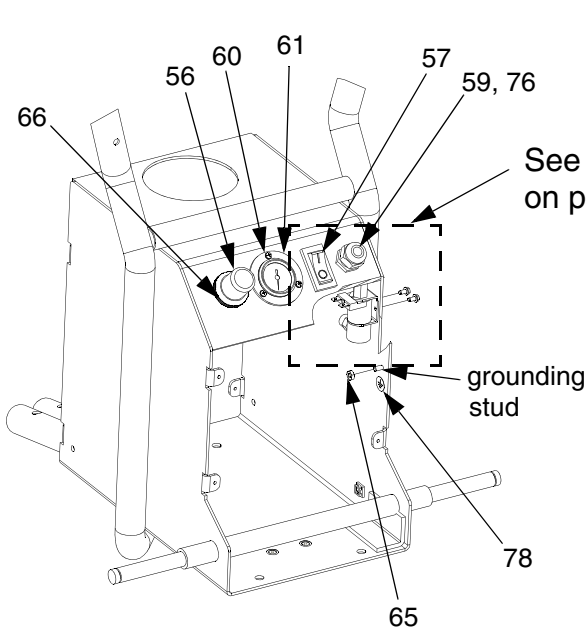
Part No. 256765, 120 V, 15 A, Heated Proportioner



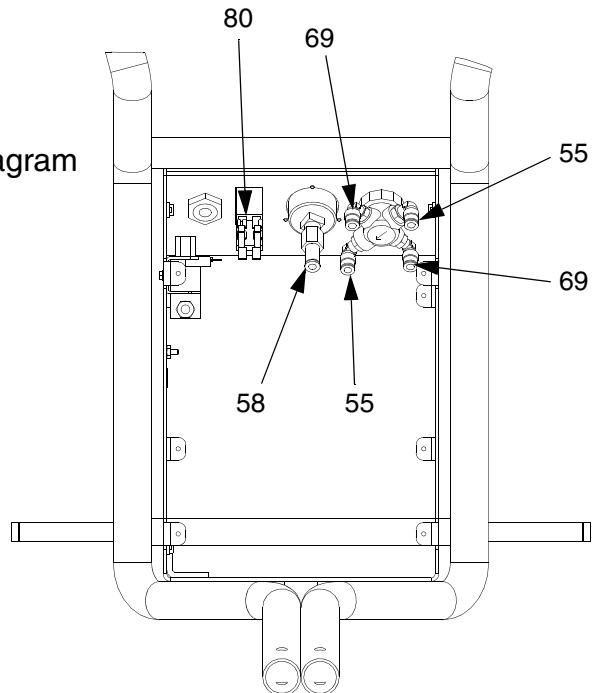
Part No. 121851, Compressor



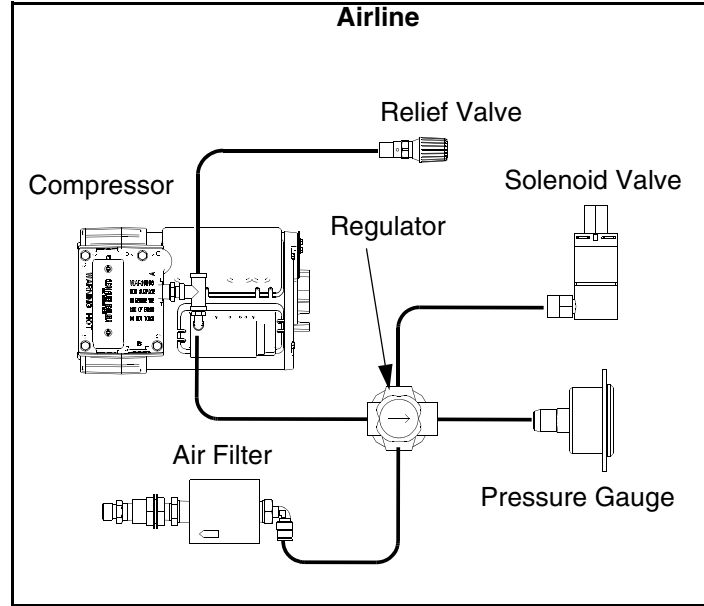
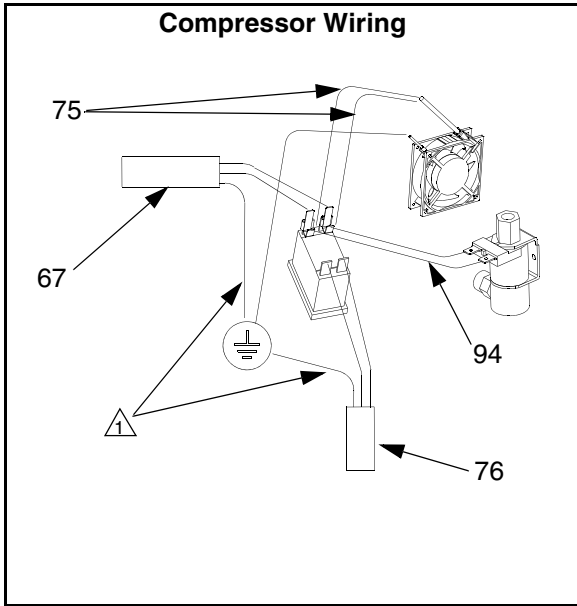
*See compressor wiring diagram on page 52.




See Airline diagram on page 52.



Compressor Wiring and Airline Diagrams



 Attach ground wires to grounding stud on (1).

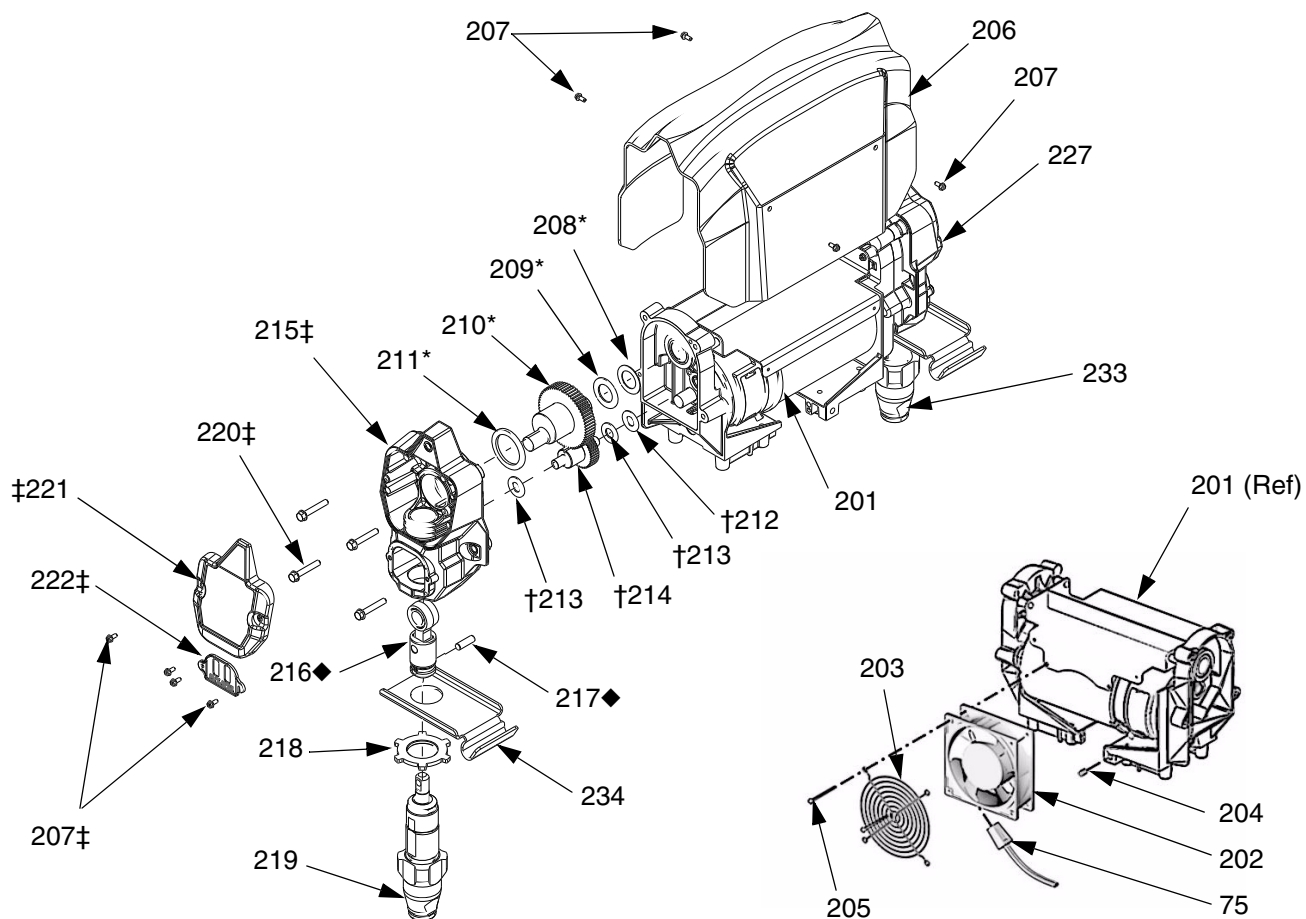
Heated Proportioner

Ref. Part	Description	Qty	Ref. Part	Description	Qty
1	CART	1	17	15F692 HOUSING, thermowell	2
2	PROPORTIONER, E10, 4:1, 120V	1	18	101118 SCREW, set; 10-24 x 1/4 in. (6 mm)	2
3	287672 HEATER, fluid, 120V, E10; see 311210	2	19	249556 DISPLAY, E-10, heated, 120V, matrix	1
4	167002 INSULATOR, heat	4	20	15G385 COVER, access, display, E10	1
5	100016 WASHER, lock	4	21	COVER, wire	1
6	108296 SCREW, machine, hex washer hd; 1/4-20 x 5/8 in. (16 mm)	12	22	114238 SCREW, cap, hex hd	4
7	116393 FITTING, straight 1/4 npt	2	23	115942 NUT, hex, flange hd	6
8	119891 FITTING, elbow, 1/4 npt x 3/8 in. tube	2	24	117623 NUT, cap (3/8-16)	4
9	15G114 TUBE, fluid, w/ferrule, E-10	2	25	112853 PLUG, tubing	4
10	117493 SCREW, machine, hex washer hd; 1/4-20 x 1-1/2 in. (38 mm)	4	26	205447 COUPLING, hose	2
11	157350 ADAPTER	4	27	054826 TUBE, plastic	8
12	116504 FITTING, tee, run	2	28	114601 CONDUIT, flexible, non-metallic	1
13	113641 GAUGE, pressure, fluid, sst	2	29	101765 GROMMET	2
14	100840 ELBOW, street, 1/4 npt	2	30	115099 WASHER, garden hose	2
15	MANIFOLD, recirculation, w/ valves	1	31	TUBE	2
16	249629 HOSE, cpld, 1/4 in. x 48 in., moistguard	2	32	103413 O-RING	2
			33	15B652 WASHER, suction	2
			34	15E813 NUT, jam	2
			35	STRAINER	2
			36	276888 CLIP, drain line	2
			37	113956 BOLT, carriage	2
			38	106115 WASHER, lock (hi-collar)	3
			39	112913 NUT, hex	2
			40	154636 WASHER, flat	4

Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
41	116411	SPRING, compression	2	97	121966	MAGNET, 1.875 in. x 0.875 in. x 0.375 in.	1
42	116477	WASHER, flat, nylon	4	98	115711	TAPE, foam, 1/2 in. wide	1
43	116478	WHEEL, pneumatic	2	99	115492	SCREW, slot hex wash hd	1
44	101242	RING, retaining, ext.	2	100	15B090	WIRE, grounding, door	1
45		BOLT, hex, 3/8-16, 0.75 in.	1	101	119994	FAN, cooling, 120 VAC, E10	1
46		PANEL, end	1	102	115836	GUARD, finger	1
47		PANEL, end	1	103	120094	SCREW, pan hd, phillips, zinc	4
48	117501	SCREW, mach, slot hex wash hd	8	104	102931	NUT, hex	4
49		BRACKET, filter, air	1	105	120732	FITTING, compression, male connect	4
50	104641	FITTING, bulkhead	1	106	113093	CONNECTOR, pipe	2
51	162453	FITTING, (1/4 npsm x 1/4 npt)	1	107	15K148	TUBE, heat exchanger, 390	1
52	117629	FILTER, air, 3/8 (auto drain)	1	108	15V878	TUBE, relief valve, E10, 4:1	1
53	114153	FITTING, elbow, male, swivel	1	113	119865	SCREW, hex serrated hd	2
54	104984	FITTING, tee, pipe	1				
55	114109	FITTING, elbow, male, swivel	3				
56	115242	REGULATOR, air, 1/4 npt	1				
57	119927	SWITCH, rocker, w/breaker, 240V, 20A	1				
58	504235	FITTING, connector, female, tube	1				
59	114421	BUSHING, strain relief	1				
60	115494	SCREW, mach, phillips pan hd	3				
61		GAUGE, pressure, 160psi	1				
62	15K212	SOLENOID, 2 way normally open, 120V	1				
63	109575	SCREW, thread forming, hex hd	2				
64	121853	VALVE, relief, 100 psi	1				
65	113505	NUT, keps, hex hd	1				
66	15K040	NUT, regulator, metal	1				
67		COMPRESSOR, 120V	1				
68	109511	BOLT, eye	2				
69	112698	ELBOW, male, swivel	2				
70▲	15G719	LABEL, status codes, E-10	1				
71▲	15G280	LABEL, warning, E-10	1				
74▲	190774	BLANK, label, kit	1				
75	15G458	CABLE, fan, 46 in. w/plug/board connection	2				
76	15G218	CORD SET, power, 125V	3				
77		LABEL, proportioner, E10, 4:1	1				
78	172953	LABEL, designation	1				
79		HOSE, nylon, wpr 250 psi; 3.33 ft., 1/4 in. OD	1				
80	120023	TERMINAL, dual adapter, unisolated	2				
89	109510	STRAP, rubber	4				
90	117832	ADAPTER, 9/16-18 JIC x 3/8 npt	1				
91	119998	ADAPTER, 1/2-20 JIC x 1/4 npt	1				
92	156971	FITTING, nipple, short	1				
94	121966	WIRE, jumper, solenoid	2				
95▲	15G476	LABEL, A-B identification	1				
96		STRAP, tie, wire	6				

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

Part No. 256539, 120 V Bare Proportioner



Ref.	Part	Description	Qty
201	287650	MOTOR, electric; 120 V	1
202	119994	FAN, cooling; 120 V	1
203	115836	GUARD, finger	1
204		RIVET, blind; 5/32 x 3/8 grip	1
205		SCREW, machine, slotted hd;	3
		8-32 x 2 in. (51 mm)	
206	249518	SHIELD, proportioner	1
207†	115492	SCREW, machine, hex washer	12
		hd; 8-32 x 3/8 in. (10 mm)	
208*	116074	WASHER, thrust; steel	2
209*	107434	BEARING, thrust; bronze	2
210*	248231	CRANKSHAFT KIT	2
211*	180131	BEARING, thrust; bronze	2
212†	116073	WASHER, thrust; steel	2
213†	116079	BEARING, thrust; bronze	4
214†	287057	GEAR REDUCER KIT	2
215‡	287055	DRIVE HOUSING KIT	2
216◆	287053	CONNECTING ROD KIT	2
217◆	196762	PIN, straight	2
218	195150	NUT, jam, pump	2
219		PUMP, displacement; A side;	1
		see 311076	

Ref.	Part	Description	Qty
220‡	117493	SCREW, machine, hex washer	8
		hd; 1/4-20 x 1-1/2 in. (38 mm)	
221‡	15B254	COVER, drive housing, A side	1
222‡	15B589	COVER, pump rod	2
223	117770	SWITCH, reed, w/cable	1
224	119875	MAGNET	1
227	249854	COVER, drive housing, B side;	1
		includes item 223 and 228	
228	115711	TAPE, mounting, reed switch;	1
		not shown	
233		PUMP, displacement pump; B	1
		side	
234		BRACKET, bucket	2

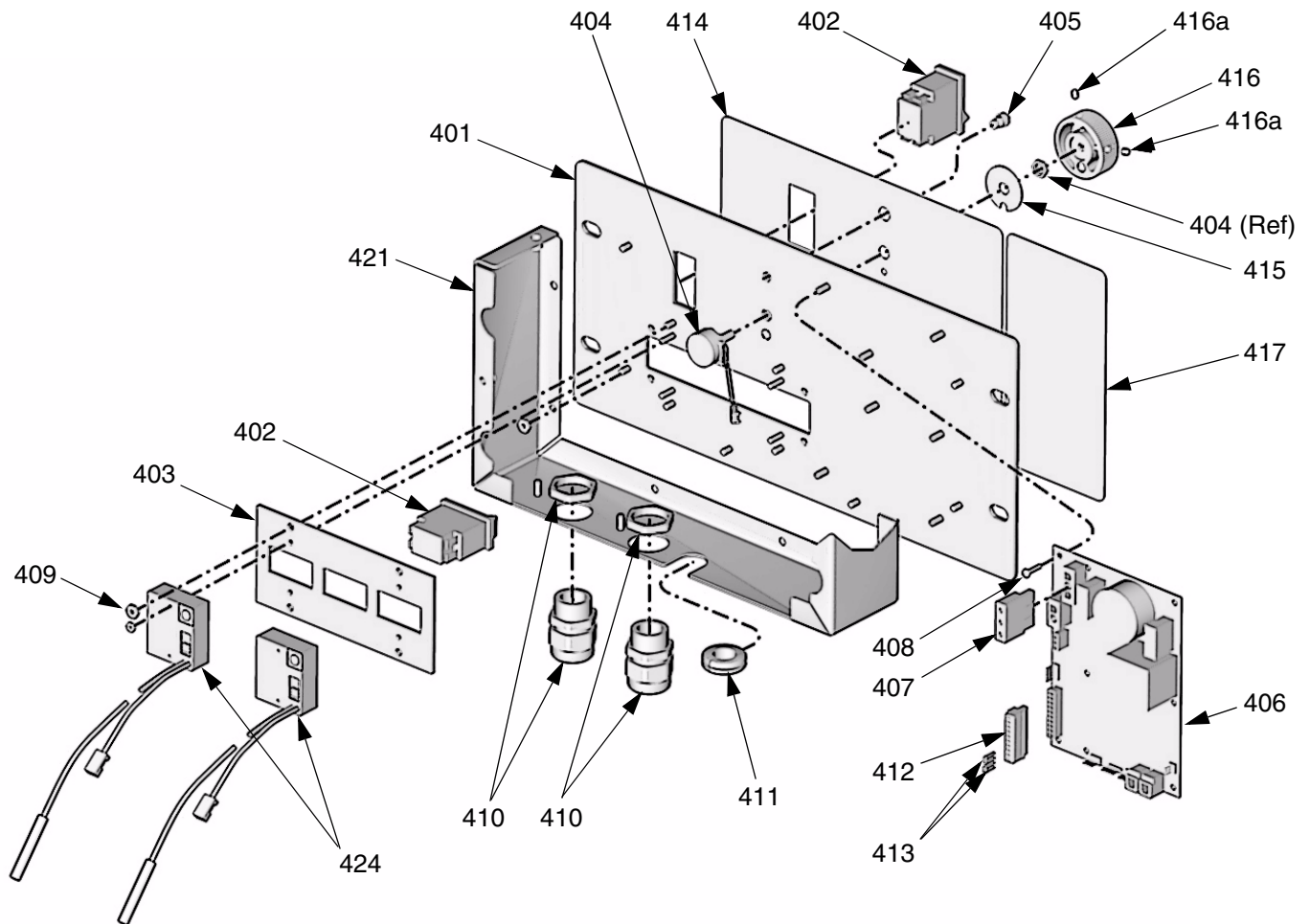
* Included in 248231 Crankshaft Kit.

† Included in 287057 Gear Reducer Kit.

‡ Included in 287055 Drive Housing Kit.

◆ Included in 287053 Connecting Rod Kit.

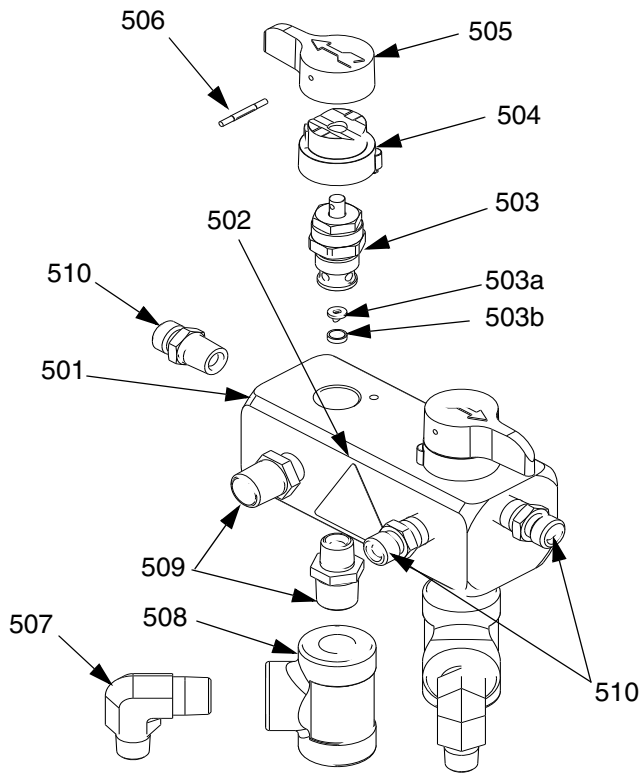
Part No. 249556, 120 V Heated Display



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Ref.	Part	Description	Qty	Ref.	Part	Description	Qty
401	15F984	PLATE	1	414	15G279	LABEL, display	1
402	119927	SWITCH, motor or heater power, with circuit breaker	2	415	15G053	PLATE, detent	1
403	249567	MODULE, display, temperature; includes (1) item 402 and (2) item 424	1	416	249453	KNOB, function; includes item 416a	1
404	249494	POTENTIOMETER	1	416a	101118	SCREW, set; no. 10 x 1/4 in. (6 mm)	2
405	119930	INDICATOR, status, LED	1	417	15G454	LABEL, startup, heated	1
406	249434	BOARD, control; 120 V units only	1	421	15G384	ENCLOSURE	1
407	15G230	CABLE, harness	1	424	119869	DISPLAY, temperature, with sensor	2
408	107156	SCREW, machine, pan hd	7	425		DUAL TERMINAL; not shown	2
409	113505	NUT, keps, hex hd	10				
410	119898	BULKHEAD FITTING, cable	2				
411	101765	GROMMET	1				
412	116773	CONNECTOR, plug	1				
413		WIRE, jumper	2				

Part No. 256627 Recirculation Manifold



Ref.	Part	Description	Qty
501	15F870	MANIFOLD, recirculation	1
502	189285	LABEL, caution	4
503	239913	VALVE, recirc/spray; includes items 503a, 503b	2
503a	15E022	. SEAT	1
503b	111699	. GASKET	1
504	224807	BASE, valve	2
505	187625	HANDLE, valve, drain	2
506	111600	PIN, grooved	2
508	100483	TEE; 3/8-18 npt	2
509	166863	ADAPTER; 3/8 npt x 1/4 npt	1
510	162453	NIPPLE; 1/4 npsm x 1/4 npt	3

Suggested Spare Replacement Parts

Keep the following spare parts on hand to reduce downtime.

All Units

Part	Description
119927	SWITCH, motor or heater power, with circuit breaker
113641	GAUGE, pressure, fluid; sst
239914	VALVE, recirc/spray; includes seat and gasket
249494	POTENTIOMETER, control knob
249434	BOARD, control; 120 V units only
246123	TRANSDUCER, pressure
	PUMP, displacement; white
	PUMP, displacement; red
256779	KIT, repair compressor

Heated Units Only

Part	Description
119869	DISPLAY, temperature, with sensor
119857	FUSE, heater over-temperature
119797	THERMOSTAT, heater
15F770	HEATER ELEMENT; 120 V units only

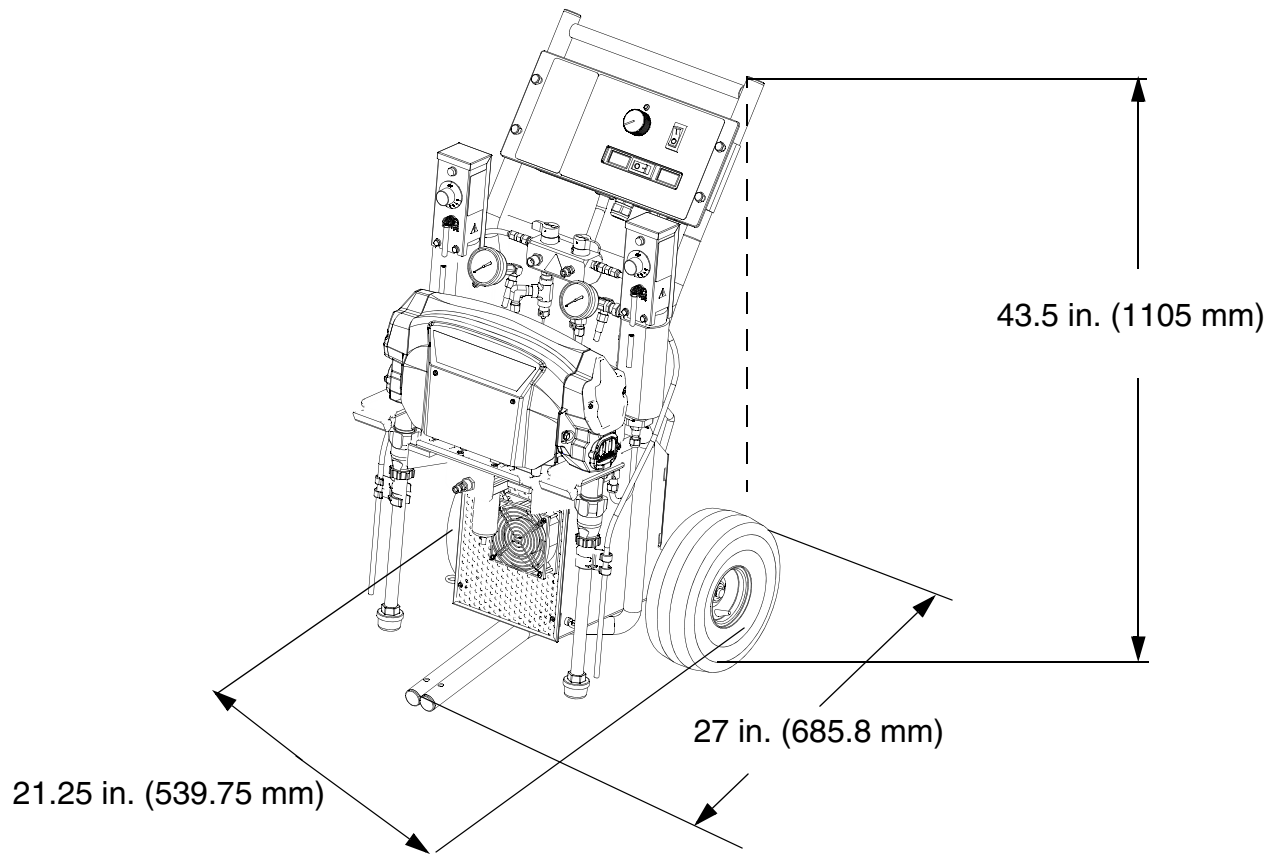
Accessories

Part	Description
256563	KIT, static mixer; includes Fusion air purge spray gun; see 313122
256525	HOSE, bundle, 50 ft, 3 hose; see page 55
256407	HOSE, bundle, 6 ft, 3 hose; see page 55



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Dimensions



Technical Data

Maximum fluid working pressure	2000 psi (14 MPa, 140 bar)
Electrical requirements	<i>Model 256765:</i> 120 Vac, 1 phase, 50/60 Hz, 3500 W; requires three separate, dedicated 15 A circuits
Generator Size (for Reactor E-10 4:1 only)	<i>Heated:</i> 5000 W minimum
Maximum Fluid Temperature	160°F (71°C)
Maximum Ambient Temperature	110°F (43°C)
Maximum Output	12 lb/min (5.4 kg/min) at 340 cycles/min
Output per Cycle (A side, white fluid)	0.00352 gal. (0.0133 liter)
Output per Cycle (B side, red fluid)	0.00088 gal. (0.0033 liter)
Overpressure Relief	Recirc/Spray valves automatically relieve excessive fluid pressure back to supply tanks
Heater Power	<i>120V models:</i> 850 W each; 1700 W total
Sound Pressure	85.9 dB(A) in fast circulation mode (compressor on) 87.8 dB(A) at 2000 psi (compressor on) (14 MPa, 140 bar), 0.7 gpm (2.6 lpm)
Sound Power, per ISO 9614-2	92.5 dB(A) in fast circulation mode (compressor on) 94.6 dB(A) at 2000 psi (compressor on) (14 MPa, 140 bar), 0.7 gpm (2.6 lpm)
Fluid Outlets	<i>Component A (white fluid):</i> 3/8 npt <i>Component B (red fluid):</i> 1/4 npt
Air Outlet	1/4 npsm(m)
Gun Compressed Air Requirements	Fusion Gun (purge air and operating air): 4 scfm (0.112 m ³ /min)
Weight (empty)	approximately 180 lb (82 kg), depending on model
Wetted Parts	Aluminum, stainless steel, carbon steel, brass, carbide, chrome, chemically resistant o-rings, PTFE, ultra-high molecular weight polyethylene

All other brand names or marks are used for identification purposes and are trademarks of their respective owners.



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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.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

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

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