

THE “BOSS” Proportioner

Operators Manual

**Models: SFE 5-12k
SFE 6-12k**






Spray Foam Equipment & Manufacturing
1705 Beulah Church Rd
Calhoun, LA 71225
(318) 644-5140
www.sprayfoam.cm




Serial # _____

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WARNINGS

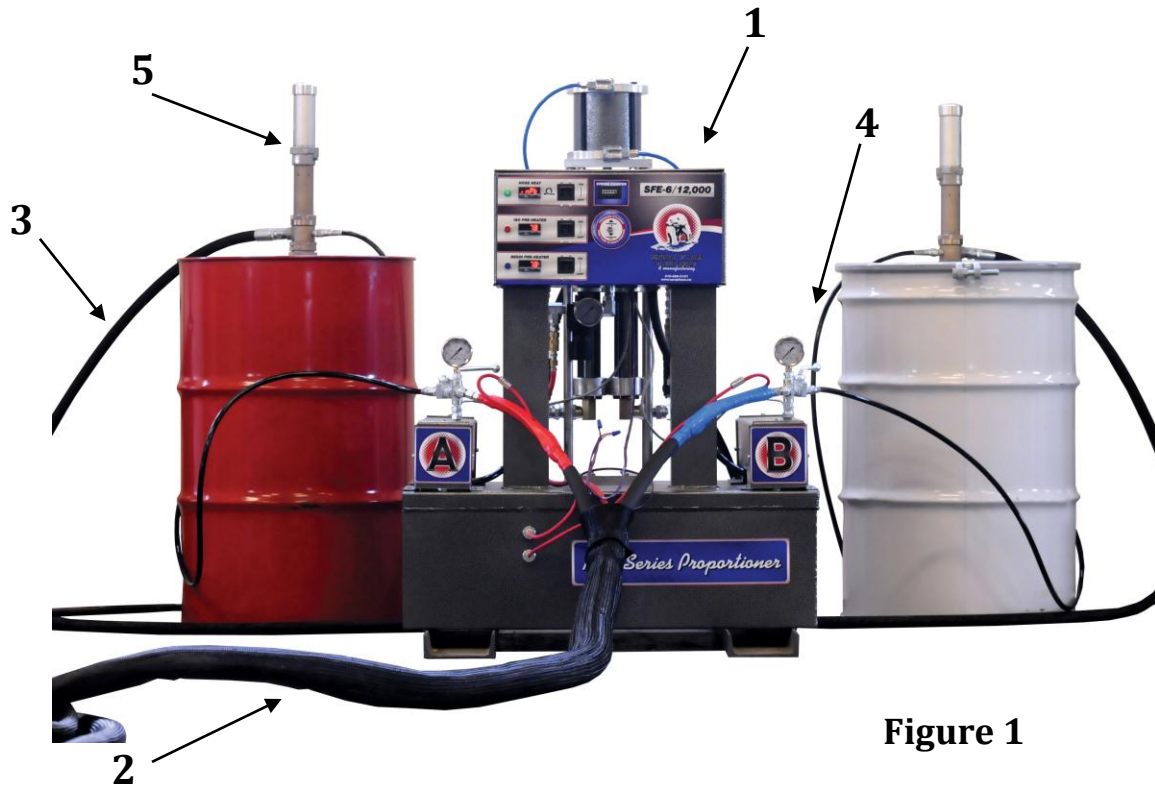
	<p style="text-align: center;">Fire, Electric Shock and Explosion Hazard</p> <p>High Voltage components can cause electric shock. Combustible materials and fumes in confined work areas can ignite and explode. To help prevent explosion, fire and electric shock:</p> <ul style="list-style-type: none"> • Shut off all power before opening or servicing any part of proportioner. • Ensure that all electrical wiring and service is done by qualified personnel and complies with local codes. • Use equipment in well ventilated areas. • Eliminate all ignition sources. • Keep work areas free of solvents, rags, gasoline and other debris.
	<p style="text-align: center;">Skin Injection Hazard</p> <p>High pressure fluid from spray gun, ruptured components, or leaks will pierce skin. This may look minor but is a serious condition. Get immediate emergency treatment!</p> <ul style="list-style-type: none"> • Do not point spray gun at anyone or any part of body. • Do not place hand or fingers over gun tip. • Use lowest possible pressure when troubleshooting or flushing equipment. • Check hoses, connections and fittings daily. Tighten or replace loose or worn or damaged parts immediately. • Relieve all pressure from proportioner and all components when you stop spraying and before cleaning or servicing equipment.
	<p style="text-align: center;">Personal Protective Equipment</p> <p>You must wear proper protective equipment when operating, servicing or when in the operating area of equipment. This will protect you from serious injury including but not limited to: eye injury, inhalation of toxic fumes, and loss of hearing.</p> <p>This equipment includes but is not limited to:</p> <ul style="list-style-type: none"> • Protective eyewear • Respirator, gloves, and clothing recommended by fluid and solvent manufacturer • Hearing protection

	<p style="text-align: center;">Burn Hazard</p> <p>This equipment is used with heated fluid which is hot and will cause some surfaces on equipment to become very hot. To avoid burns:</p> <ul style="list-style-type: none"> • Do not touch fluid or equipment. • Allow fluid and equipment to completely cool before touching or servicing. • Wear gloves and protective clothing.
	<p style="text-align: center;">Toxic Fumes and Fluid Hazard</p> <ul style="list-style-type: none"> • Read Material Safety Data Sheet (MSDS) to know specific hazards of fluid you are using. • Handle and store hazardous fluids according to applicable guidelines.
	<p style="text-align: center;">Misuse of Equipment Hazard</p> <p>Misuse can cause serious injury or death!</p> <ul style="list-style-type: none"> • For professional use only. • Do not exceed the maximum temperature rating or working pressure of equipment. • Check equipment daily replacing worn or damaged parts immediately. • Read manuals, warnings, and labels before operating equipment. • Use only compatible fluids/solvents. • Keep hoses away from traffic areas, sharp edges and hot surfaces. • Comply with all safety warnings and labels. • Service of equipment should be done by qualified personnel only.

TYPICAL INSTALLATION

Key for Figure 1

- 1 Proportioner
- 2 Spray hose
- 3 Supply lines
- 4 Recirculating/pressure relief lines
- 5 Barrel pumps



COMPONENTS OF “THE BOSS” PROPORTIONER

Key for Figure 2

- 1 A side pre-heater
- 2 B side pre-heater
- 3 Recirculating/pressure relief valve
- 4 Air pressure regulator (controls fluid operating psi)
- 5 Fluid operating pressure gauge
- 6 Temperature controller
- 7 Pump switch
- 8 Breakers
- 9 A side outlet
- 10 B side outlet
- 11 Voltage leads for hose heat
- 12 Temperature Sensing Unit (TSU)
- 13 Air connection for spray gun
- 14 Air motor
- 15 Stroke counter
- 16 Fluid pump

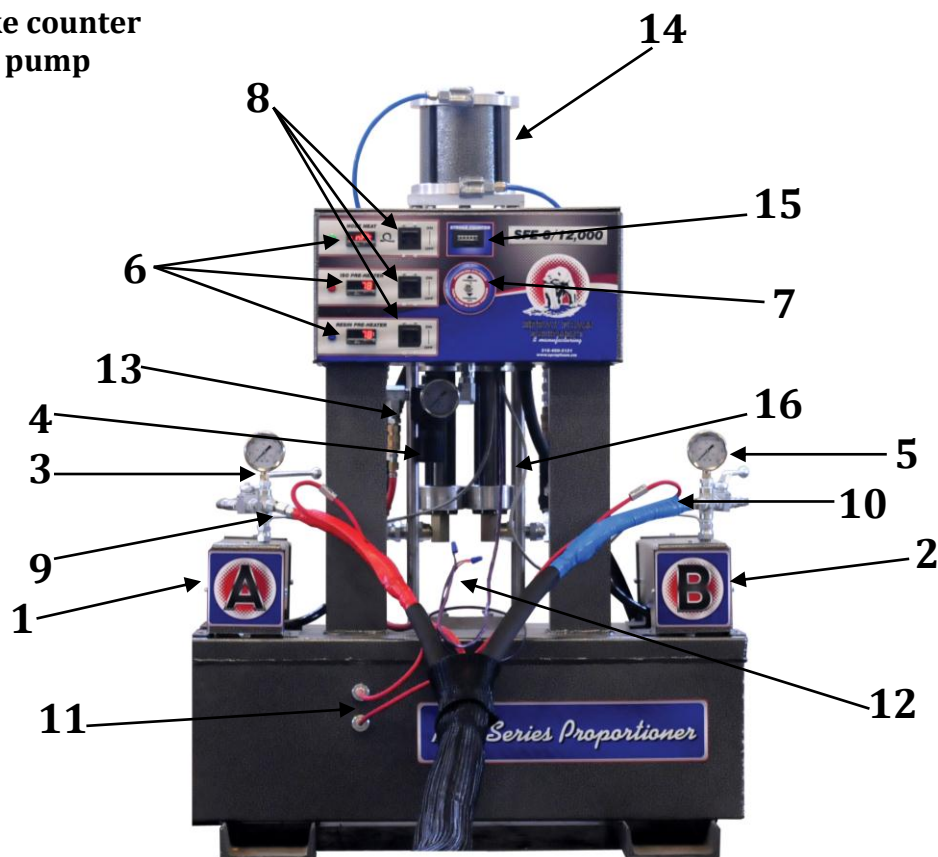


Figure 2

MOISTURE SENSITIVITY OF ISOCYANATES

Isocyanates are catalysts used in two component spray foams and polyurea coatings. This product is commonly referred to as ISO or A side. When ISO is exposed to moisture, it begins to react by forming small crystals that become suspended in the fluid. After prolonged exposure, a film is created on the surface of the fluid and the ISO begins to thicken into a gel. This adversely affects the performance of the ISO as well as puts added stress on the wetted parts of the plural component system.

To prevent exposing ISO to moisture:

- Always use a sealed container with transfer pump securely fastened.
- Keep vent in container closed or use a desiccant dryer if needed.
- Keep the solvent cup of the fluid pump filled with SFE pump lube, part no. SFE-410. This removes any excess fluid on pump shaft to prevent material from hardening when exposed to moisture.
- Always park pumps in down position to eliminate any chance of moisture contact with ISO residue that may be on pump shaft.
- Never use reclaimed ISO as it is not possible to determine if it has been exposed to moisture.
- Never store ISO in an open container.
- Use only spray hoses that are moisture resistant and designed for use with plural component systems.

CIRCULATING FLUID THROUGH THE SYSTEM


If there are ISO and RESIN components within the system, it is **absolutely vital** that the material is recirculated every two weeks if the machine is not in use! **Failure to properly circulate material may cause permanent damage to hose, supply lines, recirculating lines, and machine!**

Follow these steps to properly recirculate material through system:

- 1) Turn on all breakers for hose heat and pre-heaters on machine.**
- 2) Turn compressor on to supply air to transfer pumps. Do NOT turn on switch to pressure up air motor! Use only transfer pumps to circulate material through system.**
- 3) Remove gun from manifold.**
- 4) Circulate fluid through entire system and out of manifold ports back into supply drums. Allow to circulate for five minutes per side.**
- 5) Close all ports on manifold.**
- 6) Replace spray gun on manifold.**
- 7) Open pressure relief valves on preheaters to allow fluid to flow through recirculating line back to supply drums. Allow to circulate two minutes per side.**
- 8) Close pressure relief valves.**
- 9) Turn compressor off to discontinue air supply to transfer pumps.**
- 10) Turn off all breakers for hose heat and pre-heaters on machine.**

SETUP

1) Mount machine in a dry, level area away from moisture.

	Electric Shock Warning!
	Installation of this equipment requires accessing parts which could result in electric shock or serious injury. A qualified electrician should make all electrical connections. Install according to all national, state and local codes.

Electrical requirements for proportioner:

- Input Voltage: 1 phase, 240V AC, 50/60hz
- Amperage Requirements: 67Amp max load

**See Technical Data sheet for more details.

2) Connect a 6 AWG (2 wire + ground) electrical cord to main breaker, which is located in upper housing of machine.

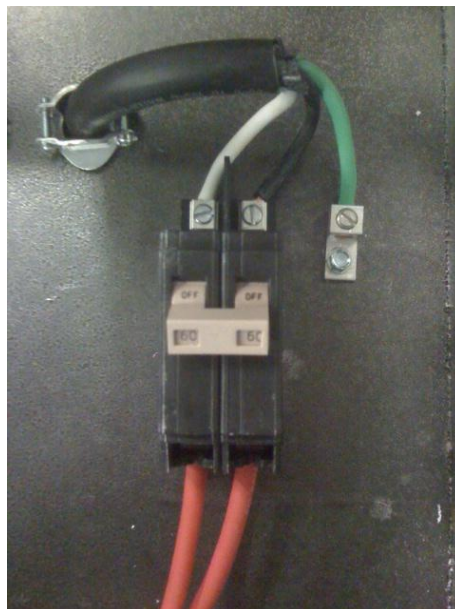



Figure 3

3) Connect transfer pumps.

- a. Install barrel pumps in component A (Isocyanates) and B (Resin) supply drums.
- b. Install air mixer in component B drum. Only mix if resin contains water as the blowing agent.
- c. Connect $\frac{3}{4}$ in. supply hoses between barrel pumps and fluid inlet on proportioner.




Figure 4

	Warning!
	Use high pressure hose rated to withstand the maximum working pressure of this equipment.

4) Connect recirculating/pressure relief lines.

- a. We recommend using a high pressure return line to connect the pressure relief valves to the barrel pumps.
- b. An optional connection would be a relief line from the pressure relief valve to a grounded and sealed waste container.

	Risk of electric shock!
	Make sure all electricity is disconnected. A qualified electrician should make all electrical connections.

5) Connect heated spray hose.



Figure 5

- a. Connect the hose assembly to the fittings coming out of each pre-heater that face forward and inward on each side of the front of the machine (red to A side on left pre-heater and blue to B side on right pre-heater).

- b. Connect the electrical connectors on the two red #6 gauge wires coming out of the front of the proportioner base to the two #6 gauge wires on the hose assembly.
- c. Connect the heat sensor wire from proportioner to heat sensor wire on hose (secure with wire connectors, tape and insulate connections).



Figure 6

- d. Pull back the scuff jacket on the spray hose approximately 6 feet on the gun end. A purple sensor wire will protrude from the insulation on the hose. Cut the end of the purple sensor wire that runs the length of the hose and connect it to the short wire coming out of hose insulation.

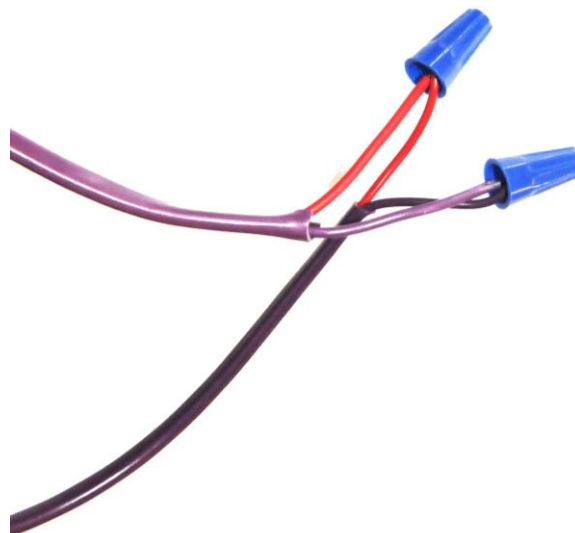


Figure 7

- e. Twist, secure with wire connectors, and insulate as before. Pull the scuff jacket back to the end of hose and tape.

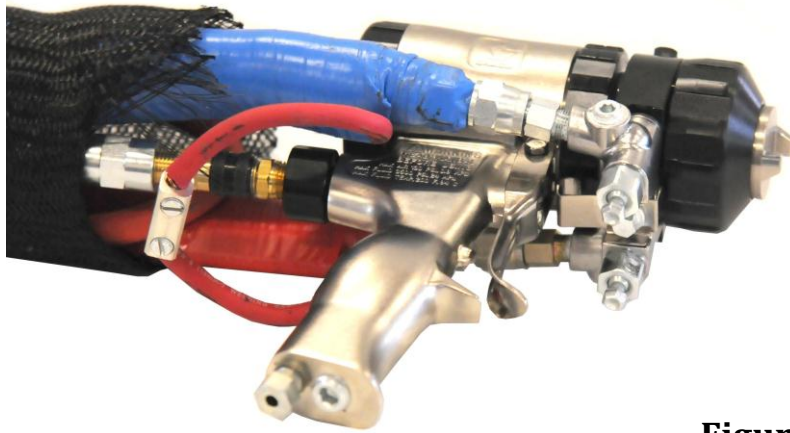


Figure 8

- f. There are two red #6 gauge wires protruding from gun end of spray hose. These two wires should be connected using an electrical connector sized for #6 gauge wire. Tape this connection neatly to hose.

6) Connect gun to spray hose.

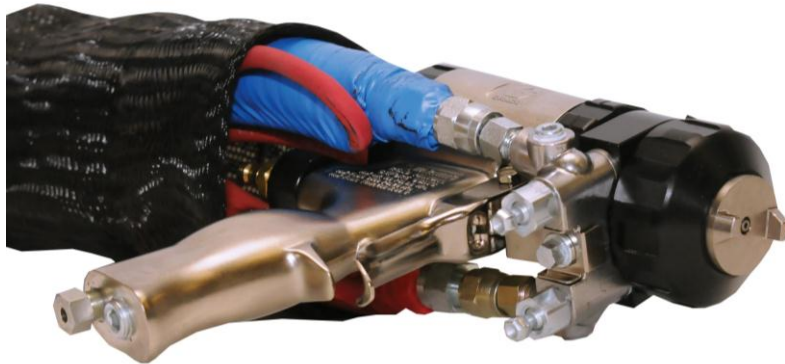



Figure 9

- a. Close gun fluid manifold valves.
- b. Connect red to A side and blue to B side.
- c. Pressure check hose. Check for leaks. If there are not leaks, wrap hose and electrical connections to prevent from damage.

	<p>Risk of Electric Shock!</p>
	<p>Disconnect all power before servicing.</p>

7) Determine appropriate transformer lead.

- a. Remove the access panel from the left side of unit on the bottom which reads SFE. Use the chart below to determine the lead that is appropriate for desired hose length. This lead should be connected to the end of the fuse facing you. If it is not connected, connect it now. (Leave this panel off for now.)

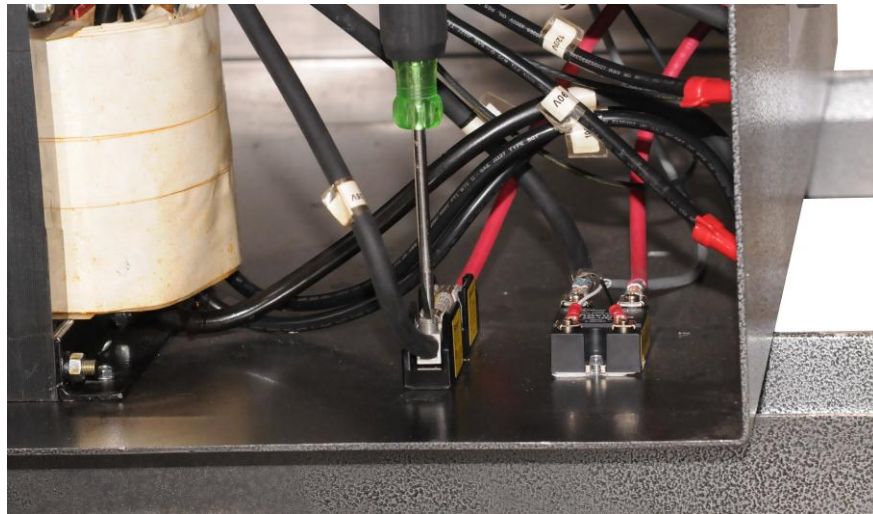


Figure 10

Voltage guidelines for recommended hose temperature:

Hose Length	Lead Voltage
50'	20v
100'	35v
150'	50v
200'	64v
250'	76v
300'	90v

To test amperage to make sure the correct voltage is going to the hose, place a clamp amp meter on one of the red wires coming out of the front of machine. The AC amps should read between 38 and 55. If the amperage is higher than 55, connect the next lowest voltage lead wire from the transformer to the fuse block in bottom of machine. If it is below 38, connect the next highest voltage lead. (See Figure 10 above for voltage connection guidelines.)

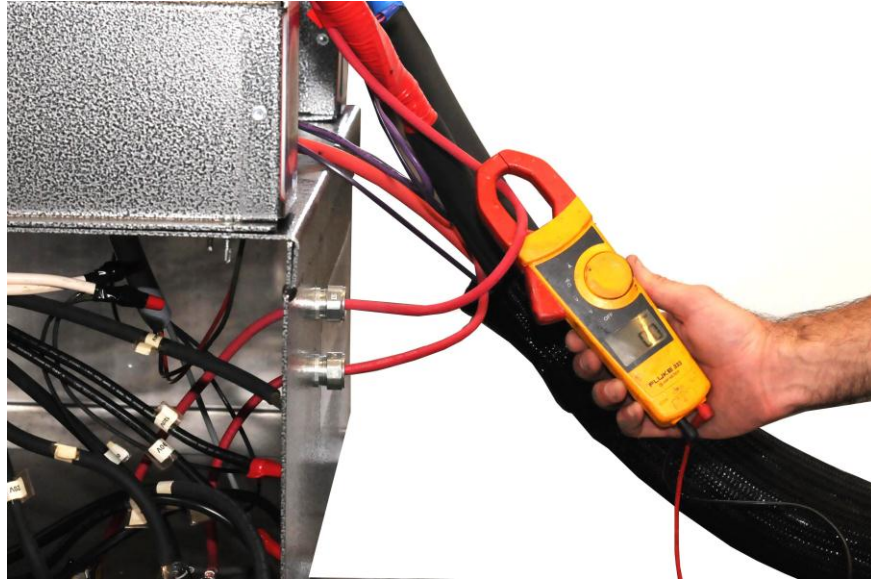



Figure 11

STARTUP

	<p style="text-align: center;">Personal Protective Equipment</p> <p>You must wear proper protective equipment when operating, servicing or when in the operating area of equipment. This will protect you from serious injury including but not limited to: eye injury, inhalation of toxic fumes, and loss of hearing.</p> <p>This equipment includes but is not limited to:</p> <ul style="list-style-type: none">• Protective eyewear• Respirator, gloves, and clothing recommended by fluid and solvent manufacturer• Hearing protection
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1) Make sure all hoses, cables and connections are properly connected.

2) Check pump lube levels in solvent cups and resupply if necessary.

3) Connect air supply to barrel pumps.

- a. Turn on air mixer to B component material. If using a foam that contains water as the blowing agent, it is recommended to stir the B component for 20-30 minutes before spraying.
- b. Turn both input valves on proportioner to the on position (handle in line with the hose).

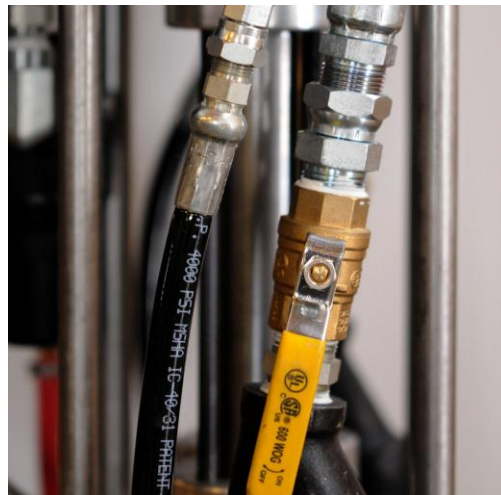


Figure 12

- c. Hold gun fluid manifold over two waste containers. Open fluid valves A and B until clean, air-free fluid comes from valves.
- d. Close valves.

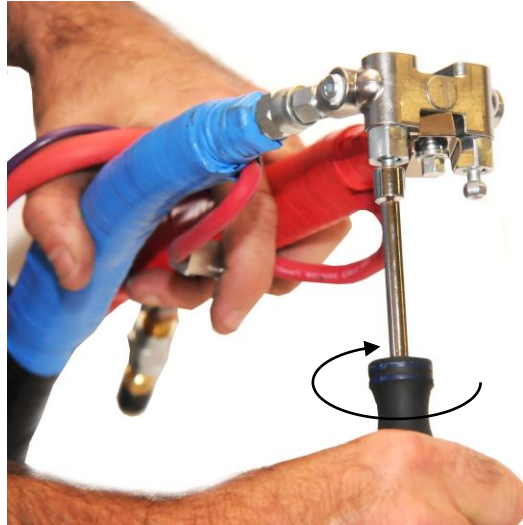



Figure 13

 <p>Elevated Temperatures</p>	<p style="text-align: center;">Burn Hazard</p> <p>This equipment is used with heated fluids which is hot and will cause some surfaces on equipment to become very hot. To avoid burns:</p> <ul style="list-style-type: none"> • Do not touch fluid or equipment. • Allow fluid and equipment to completely cool before touching or servicing. • Wear gloves and protective clothing.
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3) Set Temperatures



Figure 14

- a. Turn all breakers to the on position. The numbers that appear on the controllers are the actual temperatures.
- b. Hold down the left button on the top controller (hose heat controller) and press the up arrow button to the far right. This will increase the target temperature. Set this at 125°. The bottom two (A and B side pre-heater) controllers should be set the same way at approximately 130°. The same indicator lights *and* the LED indicator lights to left of controller indicate pre-heaters are heating. It may take 20 or 30 minutes for all to heat up to working temperature.

4) Set Pressure

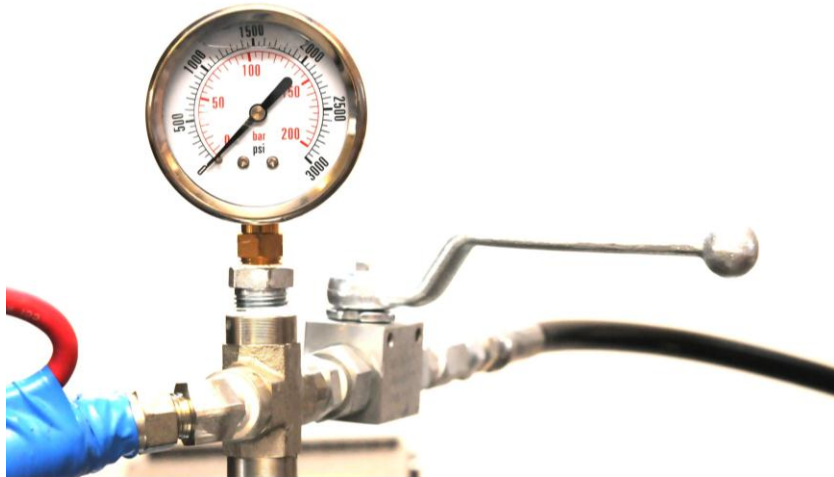


Figure 15

- a. Turn the toggle switch on (up position).
- b. The gauges on the pre-heaters display the working pressure. Adjust air regulator until each pre-heater pressure gauge is registering approximately 800 psi (you can increase pressure on the regulator assembly to increase/decrease this pressure).

- c. The pressure may need to be bled off of either the A or B side so that the pressure on each gauge is the same.

Do not allow the pressures of the A and B side to have a variance of more than 200 psi or you could get a material “crossover” at the gun.

- 6) Adjust fluid pressure if needed on gauges at pre-heaters.**
- 7) Test spray for several seconds. Adjust temperature and pressure for desired results.**
- 8) You are now ready to spray.**

SHUTDOWN

1) Properly clean gun.

It is very important to keep a clean gun. Refer to spray gun literature for proper cleaning of gun after use.

2) Turn off hose heat.

3) Turn off A and B pre-heater breakers.

4) Turn pressure toggle switch to off position.

5) Bleed pressure from the system with the recirculating/pressure relief valves very slowly.

The pump needs to be “parked” in the down position. You may need to switch the toggle off/on one time to cycle the pumps downward.

6) Turn off main power.

MAINTENANCE

- Check pump lube level in solvent cups daily.
- Inspect daily the machine, supply lines, spray hose, and spray gun to ensure everything is in proper working order and that there are no leaks.
- Remove plug on wye inlet and clean as needed.
- Clean check valves on gun regularly.
- Clean mixing chamber ports and check for side seal wear regularly.
- Thoroughly grease gun after use to prevent accidental material crossover.
- Keep ISO from exposure to moisture by ensuring transfer pump remains secure.
- Inspect hose daily and make any necessary repairs to ensure proper performance.
- Drain moisture from air compressor daily as to prevent any damage to system components.
- Recirculate material throughout entire system every two weeks if machine is not in use.
- Flush entire system with compatible solvent to store machine for extended period.

TECHNICAL DATA

Line Voltage Requirement	SFE-5-6k (195-264 Vac, 50/60 Hz) SFE-5-12k (195-264 Vac, 50/60 Hz) SFE-6-6k (195-264 Vac, 50/60 Hz) SFE-6-12k (195-264 Vac, 50/60 Hz)
Amperage Requirement	SFE 6k series (42 Amps max load) SFE 12k series (67 Amps max load)
Heater Wattage	SFE 6k series (6000 watts) SFE 12k series (12000 watts)
Maximum Fluid Working Pressure	SFE-5 series (2000 psi) SFE-6 series (3000 psi)
Maximum Fluid Temperature	195° F
Maximum Output	SFE- 5 series (32 lb./min) SFE- 6 series (32 lb./min)
Output Each Cycle (A and B pumps)	SFE-5 series (0.0500 gal/cycle) SFE-6 series (0.0500 gal/cycle)
Fluid Inlets	¾ npt with ¾ npsm union
Fluid Outlets	Component A (ISO) #8 (1/2") JIC with #5(5/16) JIC adapter Component B (RES) #10 (5/8") JIC with #6(3/8) JIC adapter
Fluid Circulation	¼" with thermoplastic tubing (3000 psi)
Parts Contacting Fluid	Stainless Steel, Zinc Plated, Carbon Steel, Aluminum, Chrome, Brass, PTFE, Viton O- rings
Weight	SFE 6k series (276 lbs) SFE 12k series (301 lbs)
Dimensions	D: 32in x W:36in x H:51in

Spray Foam Equipment Standard Warranty

Spray Foam Equipment warrants all equipment referenced in this document which is manufactured by Spray Foam Equipment and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Spray Foam Equipment, Spray Foam Equipment will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Spray Foam Equipment to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Spray Foam Equipment's written recommendations.

This warranty does not cover, and Spray Foam Equipment 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-Spray Foam Equipment component parts. Nor shall Spray Foam Equipment be liable for malfunction, damage or wear caused by the incompatibility of Spray Foam Equipment with structures, accessories, equipment or materials not supplied by Spray Foam Equipment, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Spray Foam Equipment.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to Spray Foam Equipment for verification of the claimed defect. If the claimed defect is verified, Spray Foam Equipment will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If the 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.

Spray Foam Equipment'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.

SPRAY FOAM EQUIPMENT MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY SPRAY FOAM EQUIPMENT. These items sold, but not manufactured by Spray Foam Equipment (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Spray Foam Equipment will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Spray Foam Equipment be liable for indirect, incidental, special or consequential damages resulting from Spray Foam Equipment supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Spray Foam Equipment, or otherwise.

Spray Foam Equipment Information

TO PLACE AN ORDER, visit our website or call our Spray Foam Equipment Headquarters:

www.sprayfoam.cm
(318) 644-5140

SPRAY FOAM EQUIPMENT 1705 BEULAH CHURCH RD., CALHOUN, LA 71225