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SFE Boss 6/6K Proportioner Electrical Safety Upgrade Operation Addendum

The Boss proportioners are built with a very simple electrical system. The factory system does not incorporate a safety circuit to completely shut down the machine in the event of an over pressure situation.

The information referred to in this document pertains to a Boss 6/6K proportioner that is being used in high pressure coatings application and may differ from a like machine that is being used in lower pressure spray foam applications.

The Boss Electrical Safety Upgrade includes the addition of an emergency stop button (E-Stop), an air dump valve and other components. In the event of an over pressure that exceeds the set pressure of the pressure switches (3200-3600 psi); the new safety circuit will shut down all three heat zones and dump the air from drive portion of the machine.

The air supply to the gun and the material supply pumps has been re-routed to feed air before the air dump valve so the gun air and supply pumps feed air will not be affected by the safety circuit.

General start up, shut down and operation of the machine will be affected by the safety upgrade.

Start up:

Turn on the main source power and air supply feeding the system.

Make sure the E-Stop is in the on position.

Pull out or twist to re-set the switch to the on position depending on the switch style.

Do not turn on the run toggle switch and allow the machine to pressure up before the hose heat cycle has completed.

Turn on the hose heat breaker on the front panel.

The hose heat breaker is the main power feed to the machine; it will energize the control circuitry and the primary heat zones for machine operation. The primary A & B heat zones will not function without the hose heat breaker turned on.

Hose heat and mix cycle.

Turn on the hose heat breaker and set the controller to the desired temperature (160-170°). Turn on the air mixer in the B-side product (drum or tote).

The hose preheat cycle takes 30-60 minutes to heat to the set temp. The mixing cycle is approx 30 minutes; mix on high for 30 minutes then turn the mixer to its lowest setting to maintain the mixture for the duration of your machine/spray operation time.

Primary A & B heat zones.

Turn on the primary heat zones 5-10 minutes prior to spraying.

Turn off the primary heat zones if the system will be left at idle for more than 10 minutes.

The primary heat zones preheat very fast and can cause excessive pressure to build in the system if they are left on while the system is not in use.

Run/spray.

Turn the toggle switch from the park/retract position to run. The machine will pressure up and should be ready to spray at this point.

Shut down.

Switch the toggle switch to park/retract. Bleed pressure from the system through the recirculation valves, gun ball valves or by spraying the gun. The pumps need to be parked in the down position; if they park at the top of the cycle, toggle the switch on/off once to cycle the pumps downward to park them at the bottom of the cycle in the correct position.

Turn off the primary and hose heat breakers.

Turn off source power and air to the spray system.

Grease and/or maintain your gun as needed.

Apply fresh pump lube to the top of the A-side pump.

The over-pressure system troubleshooting.

When the pressure limit switch is tripped due to high pressure the air dump valve will release the stored air pressure from the machine and a loud air release noise will be heard. The pressure switches are set in the 3200-3600 range depending on the machine.

Monitor your main high pressure gauges; a quick look should tell you which side over pressured and needs to be addressed.

All three heat zones will be de-energized while the over pressure circuit is tripped. However, the controllers will continue to read and display the temp of the different heat zones so you can monitor the actual temp in those zones.

To re-set the over-pressured system simply bleed the high pressure off and the system will re-set and start up again automatically. If the system is left alone after tripping the over pressure it will eventually cool down, drop pressure and re-set itself.

The over temp snap disc is the temperature safety and is also tied into the safety circuit. If the safety circuit is tripped and the main pressures are below 3000 psi then it is possible that the snap disc has tripped. The snap disc is set at 220° F; although it is uncommon, if tripped the snap disc will need to be re-set manually. To re-set, turn the main power off; remove the front cover of the primary heaters on the left side of the machine below the main gauges. The snap disc is on the front of the heater block, there is a small, square, dark red button on the snap disc, push to re-set.

Live system pressure bleeding.

When bleeding the A or B sides independently on a live system, keep in mind that as you bleed pressure from one side it adversely affects the opposing side and may trip the over pressure circuit. In this case, simply bleed the other side down below 3000 psi to re-set the circuit.

Please refer to the machine and gun manuals along with other Boss tech docs on the dealers section of the web site.

www.turboliner.com

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