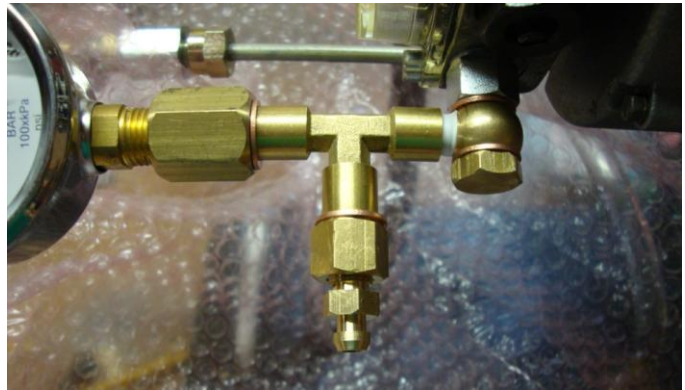


## #9 FIREDRAGON Field Notes ©

**#111 Cad-cell Deviator Switch** The following is from our Firedragon Academy textbook *'The RIELLO Handbook'*. It outlines the proper use of a switched cad-cell or our #111 Cad-cell Deviator Switch to aid in the priming of a RIELLO fuel unit that is severely air bound.

### Air Purging of Pump Single-pipe Systems

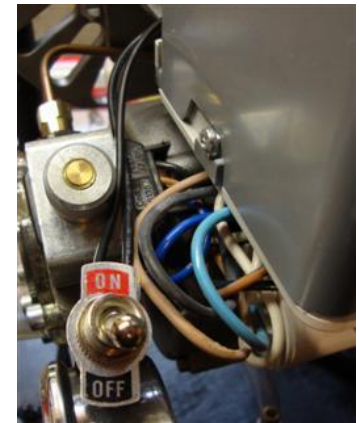
1. Insure that there is an adequate supply of oil available, and that lines are of proper size and without air leaks.
2. Open the bleeder  $\frac{1}{2}$  to  $\frac{3}{4}$  turn or install a gauge with adapter to provide for flow control through the bleeder port, **Figure 1-16**. Figure 1-16 shows the use of our #223 adapter. If this arrangement is not available simply use the supplied bleeder and open it only  $\frac{1}{2}$  to  $\frac{3}{4}$  turn and place a bleeder hose from the bleeder into a purging can with enough oil to submerge the end of the hose in liquid to create a closed system.
3. To start the motor and energize the oil valve only the following method may be used; replace the cad-cell with our #111 Deviator Switch, **Figure 1-17**.



**Figure 1-16**

Removal of the access cover (5) as shown in Figure 1-1 and showing the cad-cell false flame light using a flashlight is **NOT** recommended by this author.

- Put the control and #111 Deviator in place.
- Place the Deviator switch in the 'OFF' position. This will put the burner into 'Pre-Purge' mode.
- After the pre-purge period the oil valve will energize. At this time, place the Deviator switch in the 'ON' position.
- The oil will now leave the pump and enter the receiving container.



**Figure 1-17**

**Note:** There will be flow from the nozzle, but all air should be purged from the pump. The use of an oil line from the nozzle port to the purging can greatly speed this process.

**Note:** On some gravity systems with little to no restriction in the system the use of a jumper between terminals 5 and 6 of the sub-base without the control installed may also bleed the pump. The use of a CATIII 600Vac jumper like that shown in **Figure 1-18** (and available from us) is recommended to protect the technician from line voltage.



**Figure 1-18**

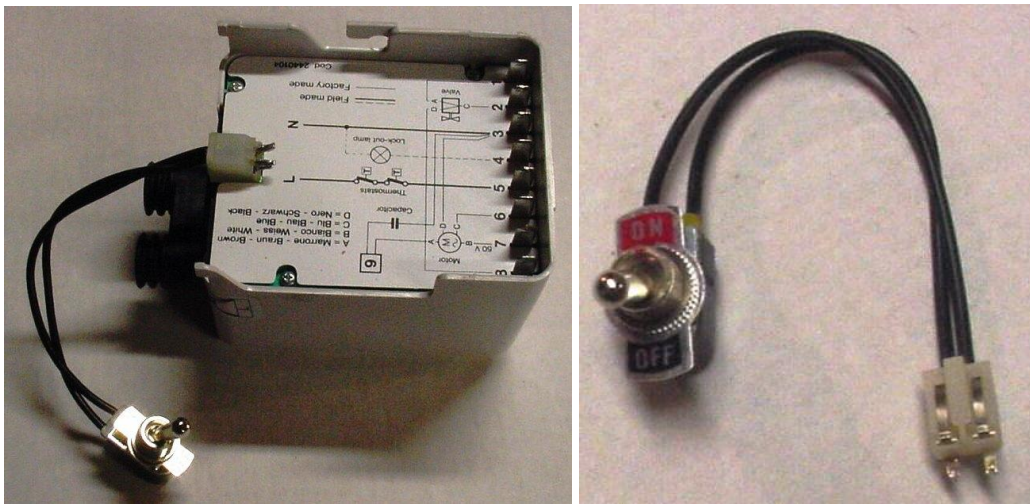
## Two-pipe Systems

Normally when the pump is set up for two-pipe operation it will self-purge with the motor jumped out. Reference the section on Electrical Troubleshooting–Motor. The burner will also provide an audible as well as visual notice that the pump is bled by opening the damper through the piston. However if a large amount of air is present in the system the pump should be bled using a Cad-cell Deviator.

The #111 Cad-cell Deviator Switch is available on our website and is also shown in use below.

The following is also from our Firedragon Academy textbook *'The RIELLO Handbook'*. It outlines the proper use of our #111 Cad-cell Deviator Switch to perform a basic checkout of the RIELLO Control/Ignitor box.

1. Shut off power to burner and remove control.
2. Attach #111 Deviator switch with switch in **ON** position.
3. Start burner and allow to run for at least 30 seconds, nothing should happen but motor should operate.
4. Put #111 Deviator in **OFF** position, after pre-purge, burner should fire.
5. With Deviator in **OFF** position, control should go to lockout in 5 seconds.
6. With Deviator in **ON** position, burner should continue to run.



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