

## TOPIC: Restarting UF System After Unexpected Shut Down

### Start-Up

#### Situation:

UF Machine is offline and UF Elements are resting in permeate, or buffered (to same pH as the ED paint bath) RO/DI water. When turning on the magnetic flow meter the reading should read zero (and no paint flow though the meter). If it does not, please see re-zeroing instructions that came with your magnetic paint flow meter.

#### Goal:

Restart the production of permeate after a period of rest or if the UF Feed pump was shut down for maintenance.

Persons required: 1

Tools/Materials Required: small bucket to capture paint escaping from V28-\* valves & V18 valve

#### Important ED Machine Valve Positions

V9 valve is Closed.

V10 valve is Closed

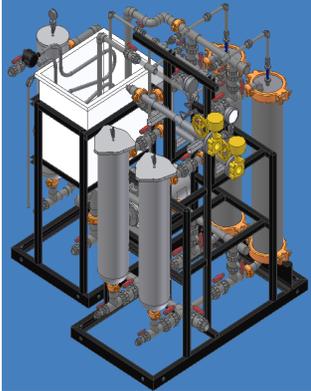
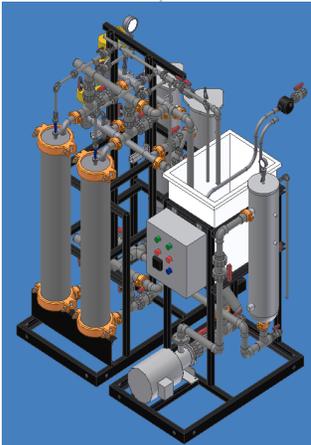
UF Feed pump is On, VP2 valve is Open, VP3 is Open, and VP1 valve is Open.

VT1 valve is Open, and VT2 valve is Open.

#### Primary Checks

Do Bag filters need to be changed?

Make sure the UF Elements are flushed (twice if new and shipped in preservative) and resting in permeate or buffered RO/DI water.



**Follow these next steps to get UF system running again:**

Step 1. Open all V1-\* valves, Open V11 valve, Open V32 valve, Open VP6 valve, Close VP3 valve, and Close all V2-\* valves

Step 2. Close all V6-\* valves and Close all V4-\* valves

Step 3. Open all V3-\* valves and Open all V5-\* valves. Open all V25-\* valves and Open all V26-\* valves.

Step 4. Crack Open one notch, or less, BPV valve, Crack Open V18 Valve. Place a bucket under V18 valve.

Step 5. Open V9 valve Step 6. Close VP1 valve and immediately go to Step 7.

Step 7. Slowly begin to Open the valve V10 taking a Full 60 seconds. If the Magnetic paint flow meter reads more than the required ED paint flow rate (i.e. # UF Modules x 70 - 84 gpm), then begin to Close V9 valve as V10 is opened to its fullest. Note VP3 may have to slightly Closed in order to increase the paint flow through V10.

Step 8. Close V18 when all the air has been purged and ED paint begins to enter into the bucket.

Step 9. Observe the permeate flow through the F-\* flow meters, make sure they are clear and normal looking. It is common to see some ED paint in the permeate for up to 10 - 20 minutes or so with new UF Elements.

Step 10. Slowly throttle Closed V9 valve until P2 reads 10 – 15 \* psi (if this flow is meant to exit through eductors, then this may have to be adjusted as required per the design of the eductor venturi specifications). Now slowly Close VP3 valve until the ED paint flow as shown on the magnetic paint flow meter is as required. Check P2 to insure you still have 10 – 15 psi, if not, slightly close V9 valve a little more and then Close VP3 valve a little more to get the proper flow of paint. Repeat as required until P2 reads between 10 – 15 \* psi and the magnetic paint flow meter reads the required flow.

Step 11. UF Machine is now in 'Normal working mode' and you are finished.

Step 12. Complete recording information into the UF Logbook.

### Normal Operating Parameters

ED paint flow is (# UF Modules x 70 – 84 gpm).  
P2 pressure gage reading is 10 to 15 psi minimum  
Typical pressure drop across P1 to P2 is 20-25 PSI minimum.  
Standard permeate rate per UF Module is 2.5 gpm +/- 10%

