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Plast-O-Matic Valve Upgrade Procedure

- Be sure to turn off all valves supplying chemicals to the VUE 5 (Acid, Oxidizer, Etch In).
 - Wear protective gloves and eye wear when disconnecting any pipes containing chemicals.
 - Unplug the VUE 5 before servicing electrical components.
 - Do not over tighten unions! Just snug is enough.
1. Disconnect electrical connector from Acid Valve. Carefully unscrew both unions and remove the valve. Some acid will spill out so be very careful when handling.
 2. Unscrew Acid Flow Detector from pipe and set off to the side. Some acid will be present so be very careful when handling.
 3. Remove Silicone sealer from three holes on top of valve support bracket. Remove three Phillips head screws and remove top of bracket.
 4. Unscrew union on Flow Detector Pipe from fitting on inside of Chemical Box case and remove the pipe. Some acid will spill out so be very careful when handling.
 5. Install new Flow Detector Pipe marked “Acid” using Silicone grease (NOT sealer) on the o-rings and union threads.
 6. Install new o-rings on Acid Flow Detector, apply Silicone grease to o-rings and reinstall Flow Detector into pipe. Be certain to follow the directional arrows on top of the Flow Detector. They should point towards the Acid Valve. When tightening the screw fitting, the index for proper direction will drop into the notch in the Flow Detector Pipe and allow the Flow Detector to be fully tightened down. Do not over tighten! Tighten just until the screw top stops.
 7. Install new valve using new outlet elbow to glass tube. Be sure to use Silicone grease on all o-rings and threads. Be sure to note the direction of flow arrow on valve. The correct direction points from Flow Detector to glass tube.
 8. Cut off the old electrical connector for the Acid Valve. Strip back approximately 1” of the outer insulation cover to expose the three internal wires. Strip each wire approximately 1/8”. Using the correct crimping tool, crimp a new socket onto each wire and solder the connection. Slide a piece of shrink wrap and then a back shell onto the wire. Carefully insert the sockets into the appropriate numbered holes in the AMP connector. The color code is as follows:
 - 1 = Red
 - 2 = Not used (Insert blocking pin)
 - 3 = Black
 - 4 = White

Screw the back shell onto the connector. Attach strain relief onto back shell with 2 screws. Slide shrink wrap over the back shell. Fill back side of shrink wrap with hot melt glue. Use a heat gun to contract the shrink wrap over the back shell and hot melt glue.

9. Attach new valve electrical pigtail to connector. Be sure to use a new gasket and coat electrical connector with Silicone grease. Attach valve connector to valve also using a new gasket and Silicone grease. Apply a small dab of Silicone sealer to cover screw head of valve connector to prevent corrosion.
10. Repeat steps 1,2,4-9 for Oxidizer Valve.
11. Reinstall valve mount top bracket applying a small dab of Silicone sealer to each screw hole on bottom part of bracket. After tightening the three screws from the top, fill each hole with Silicone sealer to prevent corrosion.
12. Disconnect spent plumbing from fitting on outside of Chemical Box case. Some etchant will spill out so be very careful when handling. Disconnect electrical connector from Spent Valve. Carefully unscrew both unions and remove the valve.
13. Using a tubing cutter, cut off old Spent Out pipe fitting exiting through side of Chemical Box case. Assemble new Spent Out pipe and fittings using PVC cement taking care not to drip on other parts. Be sure to have the valve union on the inside and the _" pipe union on the outside of the Chemical Box case. Allow sufficient drying time for PVC cement before operating VUE 5.
14. Remove 90° elbow for spent coming up from Etch In pipe. Replace with new spent elbow. Be sure to use Silicone grease on all o-rings and threads.
15. Install the Spent Valve noting the flow direction arrow on the valve. It should be pointing from the 90° elbow towards the Spent Out fitting on the outside of the Chemical Box case. Be sure to use Silicone grease on all o-rings and threads.
16. Cut off the old electrical connector for the Spent Valve. Strip back approximately 1" of the outer insulation cover to expose the three internal wires. Strip each wire approximately 1/8". Using the correct crimping tool, crimp a new socket onto each wire and solder the connection. Slide a piece of shrink wrap and then a back shell onto the wire. Carefully insert the sockets into the appropriate numbered holes in the AMP connector. The color code is as follows:
 - 1 = Red
 - 2 = Not used (Insert blocking pin)
 - 3 = Black
 - 4 = White

Screw the back shell onto the connector. Attach strain relief onto back shell with 2 screws. Slide shrink wrap over the back shell. Fill back side of shrink wrap with hot melt glue. Use a heat gun to contract the shrink wrap over the back shell and hot melt glue.

17. Attach new valve electrical pigtail to connector. Be sure to use a new gasket and coat electrical connector with Silicone grease. Attach valve connector to valve also using a new gasket and Silicone grease. Apply a small dab of Silicone sealer to cover screw head of valve connector to prevent corrosion.
18. Check to be sure that all plumbing fittings are tight and all electrical connections are attached. Reinstall covers on Chemical Box. Open supply ball valves to VUE 5. Plug in power supply cord for VUE 5. Start etcher, check for leaks. Test operation of each valve in manual before returning switches to automatic position.