

#60-1267-018 Dual Air Valve Package for SyriXus® 65x Installation Instructions

Overview

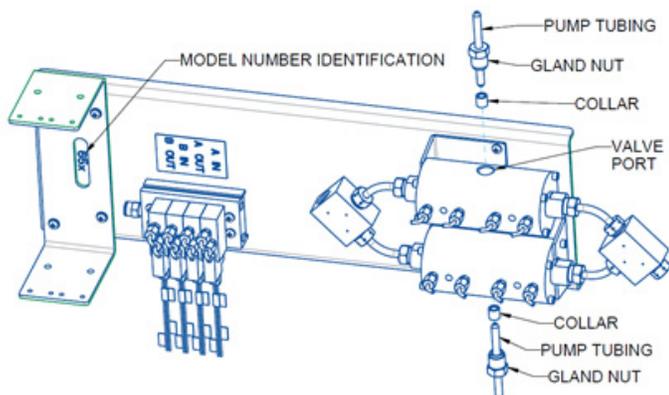
The SyriXus 65x dual air valve option is designed to automatically allow the SyriXus 65x pumps to operate continuously under software control. As one pump is delivering working fluid, the other refills and balances pressure, then waits its turn to take over delivery. As one delivering pump reaches near empty, the software switches delivery to the other (full) pump. Once the switch is completed, the first pump then refills and balances pressure, then waits its turn to take over delivery again.

This operation allows the pumps to deliver working fluid continuously with nearly no deviation in the delivered pressure (or flow) while the pumps refill. This action will continue while working fluid is available to the refill the pumps or the until the user stops or changes the flow.

The dual air valve option mounts between two SyriXus 65x pumps and fastens the two pumps together. The two pumps must both be 65x models to allow proper operation. This valve package will not work with any other SyriXus model.

Parts of the Valve Assembly

Most of the valve assembly will be assembled at the factory, but the pump tubing will be separate. Tubing components to connect to the pumps are included with the valve package. Additionally, the reagent supply tubing and air supply tubing are shipped unattached to prevent damage to the plastic tubing during shipping. Screws and washers are supplied with the assembly in a separate package.



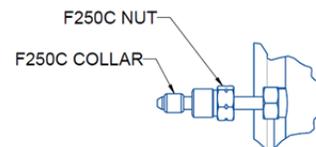
Remove the valve assembly from the packaging and identify the ports to which tubing will attach to the pump. The gland nut and collar for the pump ports should be packaged separately with other loose parts. There will be one tubing on each valve, and the tubing will be oriented toward the outside of the valve assembly. Notice there is lettering on the opposite end of the assembly relative to the valve identifying the model number.

Orient the valve assembly with the valves facing up, and the model identifier lettering closer to you. The end of the valve assembly with the Model Identifier Lettering represents the “bottom” of the valve assembly.



If the F250C collar is not properly positioned, it may not be possible to create an acceptable seal between the pump and pump tubing.

ATTENTION: Do not use PTFE tape with these fittings. Although they may look like NPT fittings, they are not.

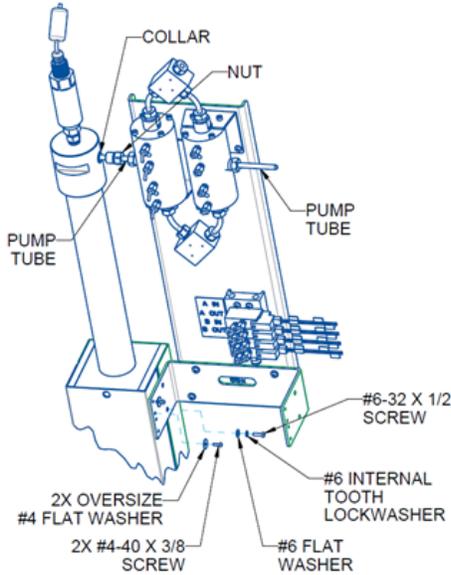


Place the F250C nut onto the pump tubing, oriented as shown in the figure above. Apply a small amount of metal-based thread lubricant on the gland nut threads. Avoid applying lubricant to the threads of the collar or the tubing. Push the nut well onto the tubing to reveal the coned and threaded end of the pump tubing. Now thread the collar onto the pump tubing. This positioning applies to all F250C nuts and collars used in this assembly.

NOTE: Left Hand Threads!

Position the collar so that it is further onto the tube than any portion of the coned end, but no more than two threads beyond the coned end as shown in the figure. Apply a process tolerable lubricant such as silicone grease to the coned end of the tubing to assist in the sealing process.

Insert two #6-32 x 1/2 screws into #6 internal tooth lock washers, then insert the #6-32 x 1/2 screws with lock washer into a #6 flat washer. Next, insert four #4-40 x 3/8 screws each into an oversize #4 flat washer. Place these screws and washers within convenient reach near the pump.



Position the valve assembly on the side of one of the pumps with the pump tube aligned with the port in the cap. While holding the valve assembly in place, thread the F250C nut and collar into the pump cylinder cap. Tighten the F250C nut into the pump cap finger tight.

Continuing to hold the valve assembly in place, insert the #6 screw with washers into the valve mounting bracket in the bottom hole closest to the valve as shown in the figure. Tighten this screw only finger tight. Install the two #4-40 screws in the top two holes in the mounting bracket near the front of the pump as shown. Tighten these screws finger tight.

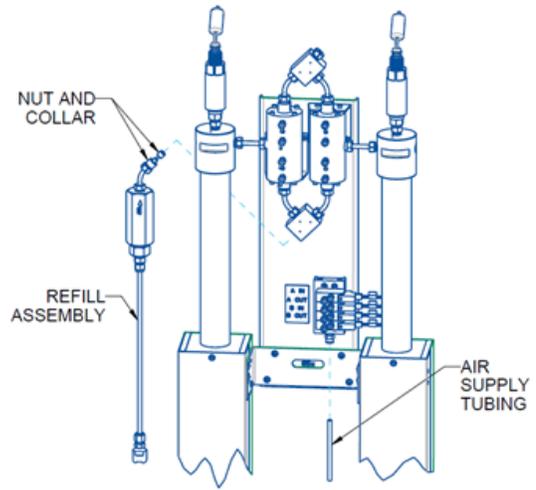
Move the second pump into position so that the free pump tubing aligns with the port in the second pump's cap. Thread the F250C nut and collar into the second pump cylinder cap. Tighten the F250C nut into the pump cap finger tight.

Install the remaining #6-32 screw with washers and #4-40 screws with washers into the mounting bracket and into the second pump.

Adjust the position of the valve assembly and then tighten the six screws just installed.

Tighten the F250C nuts to 10 ft-lbs [13.5 N·m]. Avoid over-tightening.

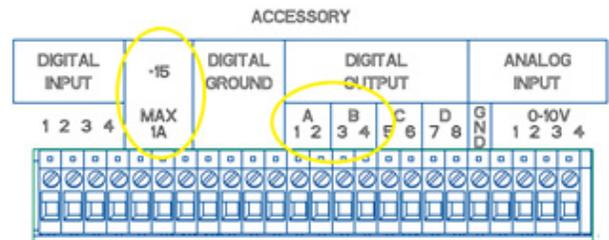
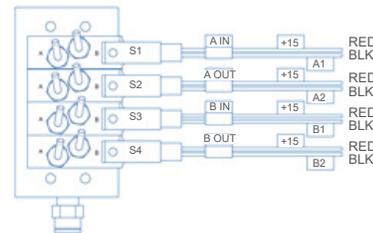
Locate the refill assembly. The F250C nut and collar to attach the refill assembly to the valve should be in the package of loose parts. Thread the nut and collar onto the tubing of the refill assembly. Insert this assembly into the lower fluid tee as shown in the figure and tighten to 10 ft-lbs [13.5 N·m]. While tightening, use a wrench on the flats of the tee to prevent damaging the assembly while tightening the gland nut.



Air supply tubing is provided with the valve assembly. Connect the air supply tubing to the actuator by pushing the retaining ring on the actuator port inward and then pushing the tubing into the actuator. Release the retaining ring. When properly installed, the tubing should not be able to be easily pulled out. Reversing this procedure allows the air supply tubing to be detached should the pumps need to be moved.

NOTE: The refill tubing can be shortened by removing the fitting and ferrule at the filter end and cutting the tubing shorter.

The valve can then be electrically connected to the controller using the procedure described as follows:



The actuator has eight wires, four red and four black. The red wires have labels showing '+15', and the black wires have labels 'A1', 'A2', 'B1' and 'B2'.

On the back of the pump controller is a terminal strip connector labeled 'ACCESSORY'. Locate the connections identified as circled in the figure above.

Connect the red wires to the connectors labeled '+15'. More than one red wire can be connected to a single +15 terminal connector.

The black wires are connected to the DIGITAL OUTPUT connectors, matching the label on the wire with the connector having the same name. Only the 'A' and 'B' connectors are used with a single pair of pumps and dual air valves.

ATTENTION: Although the '+15' connectors will have more than one red wire in some ports, 'DIGITAL OUTPUT' connectors must have only one black wire per port.

Before connecting the controller to the pump, inspect the connections are inserted correctly and secured.

Refer to the User Manual for information about connecting two pairs of pumps with air valves to a single controller.

Teledyne ISCO

4700 Superior Street, Lincoln, NE 68504 USA

Toll-free: (800) 228-4373 • Phone: (402) 464-0231 • Fax: (402) 465-3091

teledyneisco.com

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