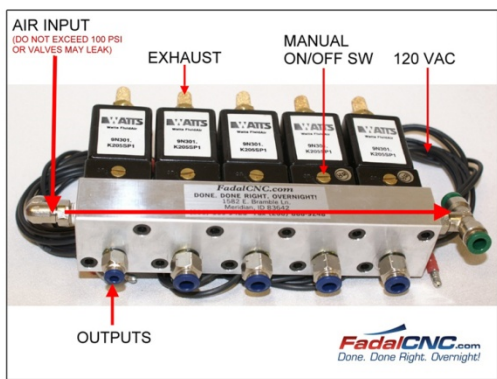


Understanding Solenoid Valve Manifolds

In troubleshooting about anything new, you need to first understand what "normal" is before you can begin to troubleshoot a problem. To know what "Normal" is, you need to understand how it works. With this knowledge, it becomes quick & easy to determine the cause of the failure.

Here's how the Fadal manifold block works. As you can see by the photo below, you have two inputs on either side of the block. You can use them as you see fit. Some machines need a "T" off one side for other devices which need shop air, so the "T" is provided. If you don't need one of the ports, just push a small piece of plastic air hose into the Press-Lok fitting, bend it in half and wire tie it in place. This will seal it off. Otherwise you feed air in one side of the manifold block and out the other side to machine devices.



After the air is connected, you should hear no air leaking from any solenoids. On the front of the solenoid, you can turn the Manual Valve Activation Screw to force the air pass to out through the output port. Make sure to turn it back off when done. Now, hook up all the control wires to the appropriate control circuit for the valve so it operates the correct device on the machine. Again, unless one of the solenoids has 120VAC to the input wires, they should not be leaking air.

When the valve is actuated with voltage to the input wires from the control, this slides a plunger from one position to another internally so that the input air is routed through the valve out the output port. When the input voltage is turned off, the piston slides back to home position and now the ports between the input and exhaust is open. If you have a new assembly, blow into the input with the whole valve assembly in your hand and you will hear it bleed through the exhaust muffler on top.

That is about it for the solenoid operation. If you have a suspect bad unit, remove power first and check again manually to be sure you don't have some stray voltage bleeding on to the solenoid control wires and actuating it slightly or completely when it should not. With the control wires disconnected, manually actuate it with the screw on front. If it works normally, but not when driven electrically, you have a bad valve.

If for some odd reason it leaks air with no wires connected and the manual actuation screw horizontal, then swap it with the valve next to it and see if the problem stays in the same slot or moves with the solenoid. If it stays with the slot, you have a bad manifold. If it moves, you have a bad solenoid.

Now you are a Fadal solenoid valve expert!