

Solenoid Valve Replacement for 1030/1031 Compressor

***WARNING:** Unplug compressor before beginning. Before replacing valve, draw all of the air out of the compressor by pressing both the + and – buttons on the exercise equipment. When this is done, shut off valve to exercise equipment by turning the red handle clockwise. When the valve has been turned off, it should be parallel to the compressor like this:



The Mac® valve cannot be cleaned. Therefore, once faulty, it must be replaced. The Allenair® valve functions well in this application, and it can be cleaned. There are three steps for valve removal:

- 1 Dismount valves
- 2 Remove hoses
- 3 Remove electrical wires from circuit board

Step One: Dismount valve

First, remove the screws on either side of the valve. There are two. Use the needle nose pliers to grab and hold the nut underneath the valve while using a Phillips screwdriver to remove the screws from the top.



remove both screws

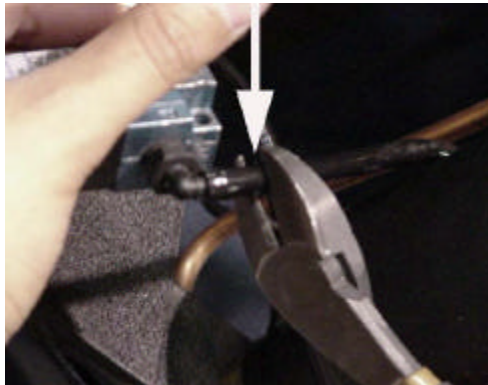
Step Two: Remove hoses

After the screws have been removed, take the ½ inch open-ended wrench, and loosen the nut that connects the hose to the valve by turning it counter-clockwise, and remove the hose.



Unscrew nut counter-clockwise

Next, cut the hose to the plastic elbow 3/8 inch from the end of the plastic elbow using the wire cutter.

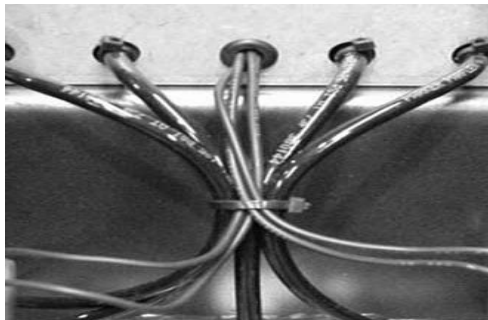


cut tubing

Repeat steps one and two to dismount the second valve before proceeding to step three.

Step Three: Remove electrical wires

First, clip the zip tie that is holding the four wires to the valves outside of the compressor.



cut ties

Next, remove the lid to the computer control system box by unscrewing the screw on either side.



remove two screws on lid

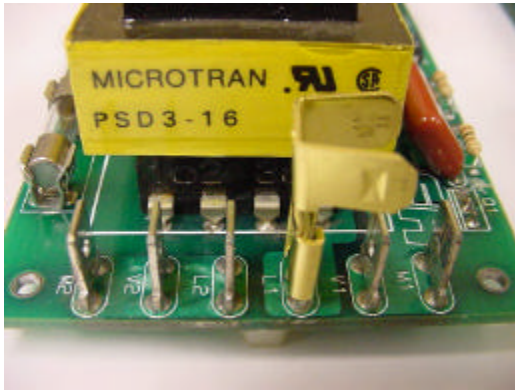
Then remove the rubber grommet by using the needle nose pliers to carefully pop it out of the hole.



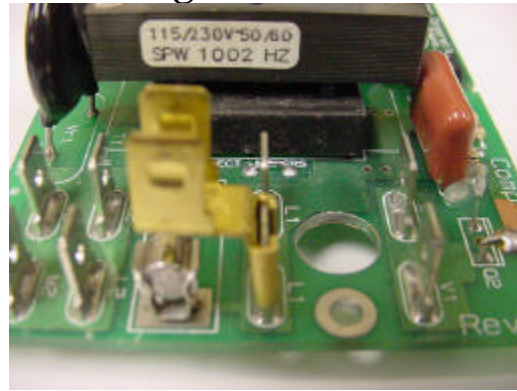
pop out grommet

Inside the computer control system box, cut all other zip ties holding the four wires. Trace each of the wires from the valve to the circuit board. There are two per valve, four wires total. The connectors are marked **V1** and **V2** on the circuit board. Remove each connector from the circuit board by **pushing down** on the board as you use the needle nose pliers to **pull up** on the connector. This allows you to safely remove the connectors without flexing or breaking the circuit board.

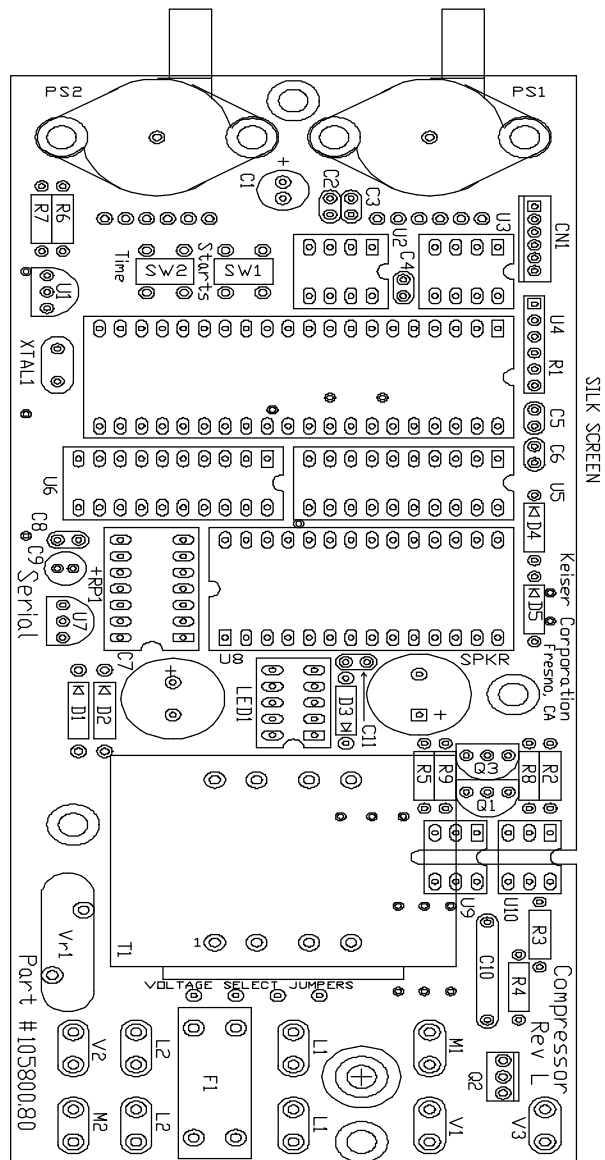
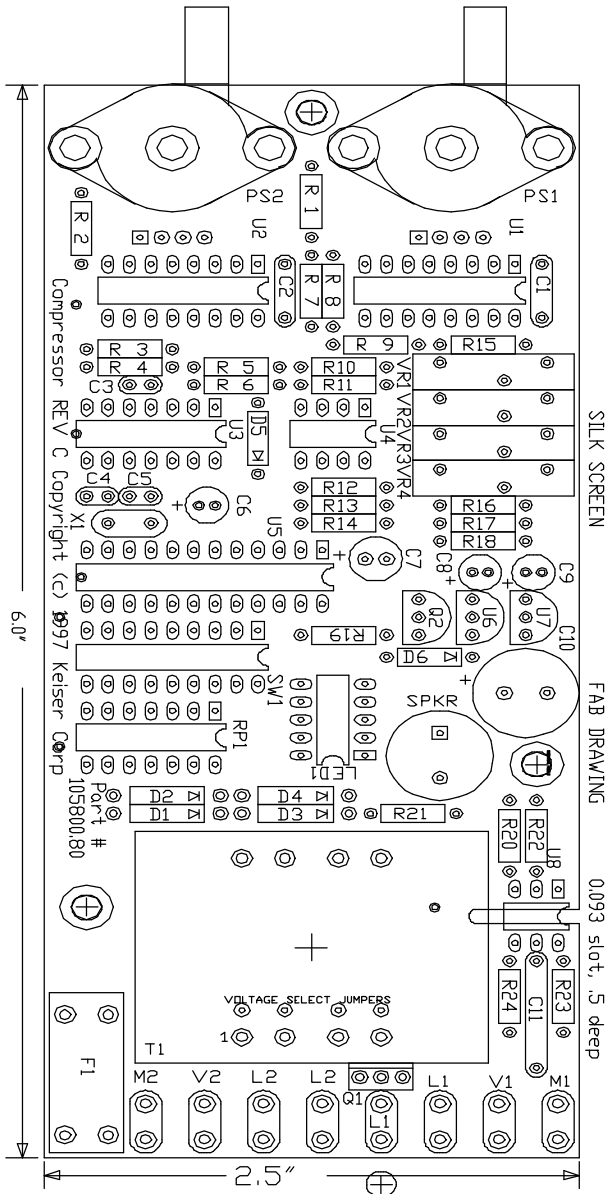
1030 Circuit Board Diagrams

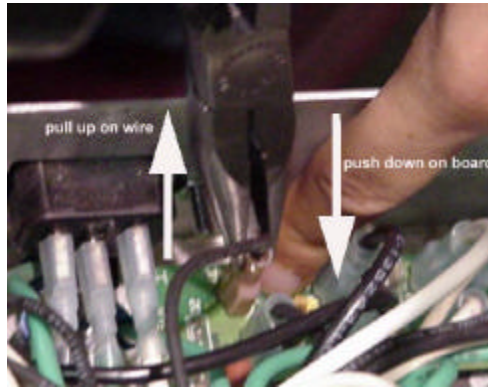


Rev A, B, C



Rev D - Current





push on board, pull on wire

Pull each of the four wires back out the hole one by one. Save the rubber grommet.



There are four steps to Allenair® valve installation:

- 1 Adjust and mount new valve
- 2 Install single to double splitter and electrical wires
- 3 Secure and tie wires and replace lid
- 4 Test compressor
- 5

Note: *Keep two things in mind when you are ready to install the new valves. First, the new valve requires a different mount. Second, the electrical wiring requires the installation of a single to double adapter on the circuit board.*

Step One: Adjust and mount new valve

First, make sure that the valve is open. Try to turn the pet-cock on the valve counter-clockwise. If you cannot turn it further counter-clockwise, it is open.



open valve counter-clockwise

The new valve allows you to rotate its housing for easy mounting. Use the ½ inch open-ended wrench to loosen the nut on the top of the new valve. Loosen it just enough that you can rotate the red metal housing of the valve.



turn nut counter-clockwise

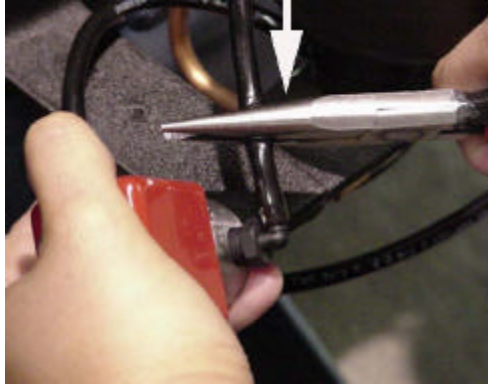
By adjusting the housing, you can mount the valve so that each hose easily reaches it, while the electrical wires are leaving the valve in the direction of the hole in the computer control system box. When you have adjusted the housing, tighten the nut on top of the valve, so that the housing does not move.



position housing on valve

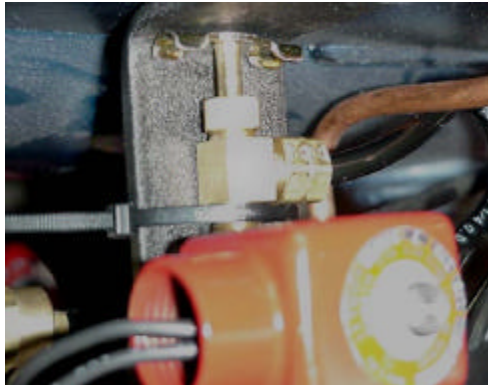
Next, remove the compression nut that connects the hose to the valve. Replace it with the original compression nut, attach the hose, and tighten the compression nut finger tight. Take the ½ inch wrench and rotate the nut ½ to ¾ turn.

Attach the second hose to the plastic elbow by using the needle nose pliers to push the hose **all the way** onto the plastic elbow. If you do not properly attach the hose, the pressure from the compressed air will force the hose off the elbow.



push all the way down on elbow

Take two zip ties and mount the valve by using one tie on each side of the valve to hold the valve in place. In order for the ties to stay tight, the smooth side of the tie must face outward.



secure valve with zip ties

Tighten the tie as much as possible, and check to make sure that the valve is securely in place by testing to see if you can move the valve. Once all the slack is removed from the zip ties, remove the excess by cutting it with the wire cutters.



Left side valve



Right side valve

Repeat the process under Step One to mount the second valve.

Step Two: Install single to double adapter and electrical wires

Take all four electrical wires and insert them, one by one, through the rubber grommet, and then through the hole. Pull all of the slack into the computer system control box. Replace the grommet in the hole.



Next, install the single to double adapter. Approach the compressor from the front. The electrical plug and air valve are on the front.



Left side valve



Right side valve

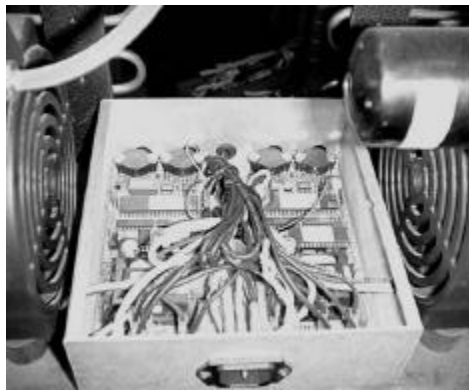
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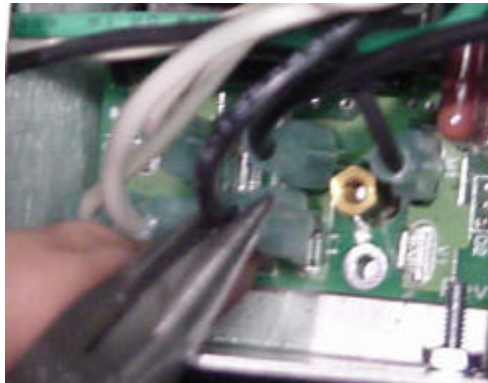


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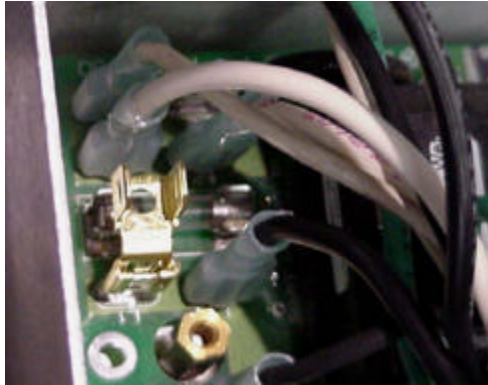
Front of compressor

Grasp the connector located on the left hand side of the circuit board in slot L1 with the pliers. Remove the connector located in L1 by **pushing down on the board** while **pulling up** on the connector.



push down on board, pull up on connector

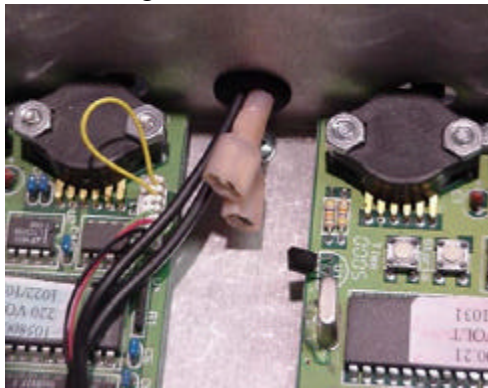
Take the single to double adapter and turn it so that the two top prongs are pointing to the left hand side of the box. The bent portion with these two prongs should be over the fuse. Replace the connector with the single to double adapter in L1.



single to double adapter

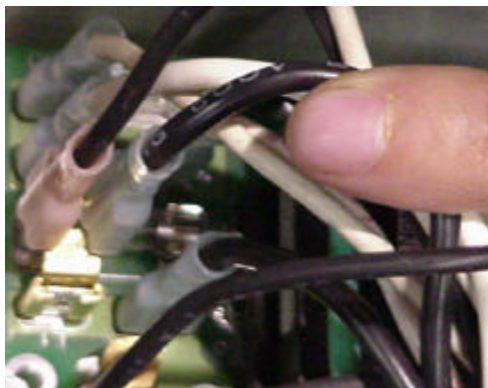
Reconnect the connector that was removed from L1 onto either of the prongs atop the single to double adapter.

Next, pull the two wires that lead to the valve on your right back to the hole in the box. This prevents crossing the left and right side wires.



pull right side wires to grommet

Take the two wires from the valve on your left, and attach one to the second prong on top of the adapter, and the other to V1 on the circuit board.



attach wires to board

On the right hand side of the circuit board, attach one of the wires leading to the second valve directly to the circuit board in L1, and attach the other wire to V1.

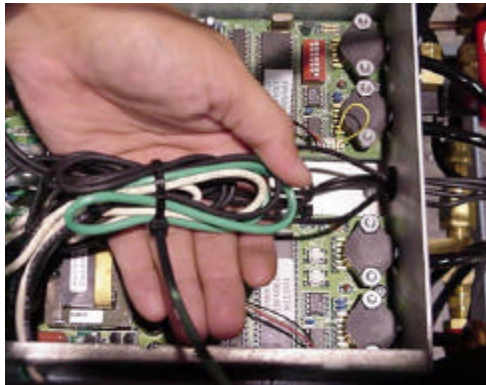
Step Three: Secure and tie wires and replace lid

Make sure that all of the slack is inside the computer control system box. Use a zip tie to bind the wires and hoses on the outside of the box. Use the wire cutters to cut off the excess.



zip tie all wires and hoses

Next, gather the four wires inside the box, and arrange them so that the small grey LED on either side of the box is not blocked from view. Tie these wires using two or more zip ties. Cut the excess from the ties.

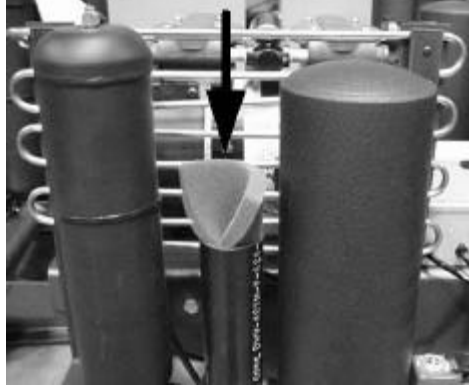


secure wires to center of CGS box

Replace the lid on the computer control system box, and return the screw on either side of the box.

Step Four: Test compressor

Plug the compressor back in, the displays should light up, and if the compressor is below 95 PSI both compressors should start. The compressor should pump up to approximately 117 PSI and shut off. When each motor shuts off, you should be able to feel air blow through the tube that holds the foam, which is located on the same side as the motor that has just shut off.



feel for air flow

After the flow of air has stopped, wait thirty seconds. Slowly lower the air in the compressor to approximately 95 PSI and the compressor should start. Open the valve by turning the handle counter-clockwise to allow the air to reach the equipment.



Open valve by turning counter-clockwise until the handle is directly above the valve.

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