

ISOLATOR KIT INSTRUCTIONS

The Blick Industries Isolator Kit was created to search for and “isolate” vacuum leaks throughout your vacuum system.

Your vacuum system is made up of three basic components; a vacuum source (usually a pump), distribution manifolds, and accessories such as suction cups, clamps, and reference stops. These components are arranged in a tree structure with the pump being at the base then branching into manifolds, and finally into individual suction cups.

To properly troubleshoot a system that is not performing, you must systematically work your way through your system isolating one component at a time until the problem is found. Troubleshooting your system can be extremely frustrating if not impossible if a systematic approach is not taken. In situations where you have no idea where leaks are coming from, you should first test your pump, followed by your manifolds, and ending with all of the individual accessories.

When connecting your isolator, first be sure that the correct fitting size is installed in the isolator. To change sizes, simply screw the correct sizes into the ends of the isolator. Next, insert the isolator into the line leading to the component being tested. The side of the isolator with the valve should always be connected to the tube coming from the vacuum source. The side without the valve should lead to the component being tested.



With the isolator in place, turn on your vacuum pump and open the valve on the isolator. The gage should jump up to a reading between -22inHg and -25inHg . Once the gage has stabilized, close the valve on the isolator. This will isolate the section being tested from the vacuum source, and if any leaks are present the dial on the gage will fall as air leaks into the system. The severity of any leaks can be judged by the speed at which the dial falls.

WARNING: DO NOT APPLY COMPRESSED AIR TO THE ISOLATOR AS IT WILL PERMANENTLY DAMAGE THE GAGE.

Suction Cup Testing Procedure:

To test if a suction cup has a leak, and to what degree, follow these steps:

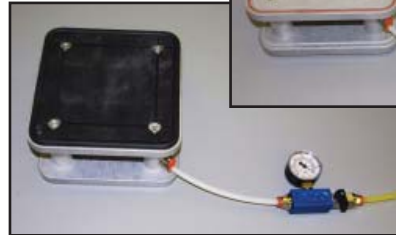
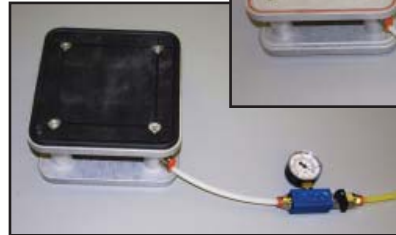
1- Connect a piece of tubing between the suction cup that you are testing and the port on the isolator without the valve.

2- Connect another piece of tubing between the port on the isolator with the valve and a port on your manifold.

3- Place the side of the suction cup that you are testing against your machine's table. (If you are testing the top you will have to flip the suction cup over or place a piece of material on the cup.)

4- Turn on your vacuum pump and open the valves on your manifold and on the isolator. The gauge should read the vacuum level that you are achieving with the vacuum pump working to overcome any leaks that may exist. If this level is under -22in-Hg you either have a large leak in the suction cup, or some other part of your system is not working properly such as your vacuum pump or manifolds.

5- Once the vacuum gauge has stopped moving, close the valve on the isolator and watch the gauge. If the gauge does not move, then there is no leak in the side of the suction cup being tested. If the gauge moves, you can judge the magnitude of the leak by how fast the gauge moves. Slow leaks are not uncommon and as long as it takes more than 5 seconds for the gauge to drop they should not be of great concern.



If leaks are found in suction cups:

1. Judge the severity of the leak by noting how fast the dial on the isolator falls. Very small leaks are common and as long as it takes more than about 5 seconds for the dial to fall, they will probably not cause problems. If the dial falls rapidly, continue with these steps.

2. Check that the seal is not excessively worn. Bottom seals eventually get ground down until they are flush with the bottom of the cup. Top seals become torn up and can become porous after prolonged use. If either of these conditions is found, replace the seal.

3. Check the joint found in all top seals and all orange bottom seals. This joint should appear tight. If a gap is present, remove the seal and reinstall it. Seals are intentionally cut long to ensure that the joints are pushed together. For more information on proper seal installation see our seal replacement instructions on our web site www.blickindustries.com.

4. If the base of a suction cup is leaking, ensure that the surface of your machine's table is not excessively scratched, pitted, or dinged. Over the lifetime of your machine, expect to re-surface its table a number of times. Contact us for more information.

If leaks are found in manifolds:

1. Connect the manifold to pressurized air, spray it down with water, and look for bubbles. If your machine has a "blowback" feature you can use it, if not you will have to run a line from some other source. Do not use pressure higher than 100psi.
2. Once leaks are found either replace faulty valves, or remove and re-seat valves with leaks around their threads. If you have metal valves that use an aluminum crush washer, you must replace the washer whenever the valve is removed. Contact us for replacement washers.



If your pump is not achieving high vacuum levels:

1. Due to the many different manufacturers and types of pumps, the list of possible problems is much too large to list, and we recommend contacting the manufacturer. However, some common problems are discussed below.
2. One common cause of poor performance associated with liquid ring pumps is related to temperature. These pumps must have water circulating through them to operate. This water is heated as it passes through the pump. Some systems are setup to run fresh water through the pump and then send it down the drain, while others have a holding tank to re-circulate the water. If you have a tank system, the water will heat up over time. As this water heats up, the maximum vacuum level that you can achieve will decrease. If this water gets above about 90 degrees F you will see noticeably decreased performance. To fix this you must cool the water passing through the pump.