

SEAL CHECK

Quick Troubleshooting Guide

NOTE: More detail on troubleshooting is found in the Setup, Use and Care Guide.

TEST PASS CONDITION

- A **passing condition** is identified by a reading that remains stable and does not drop consistently with time. The reading may fluctuate slightly up and down (for example between 9.37 and 9.47 InHg). This is normal.

TEST FAIL CONDITIONS

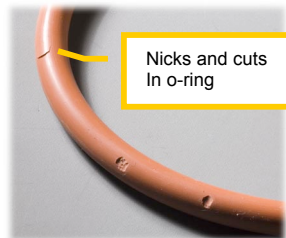
- **No vacuum can be drawn on the housing.** The vacuum gauge continues to read zero despite an operating vacuum pump. This indicates a complete compromise of a seal, or a missing seal. In most cases the cause will be evident, so look for the obvious.

- **First check that the 3 way valve** is in the proper position and pointed toward the vacuum pump for proper testing.
- **Examine the main seal** for an even line around the mating front and rear shells. Look closely at the latches that they are tight and secure. (Refer to the photo in the next section.)
- **If this is the first use of the housing from storage or travel** check for damage.
- **Check for setup errors** like a missing o-ring or misaligned port.
- **Check the glands** (the bolt-shaped component at the base of each control). Try to loosen with your fingers. They should be tight. If one has loosened, gently tighten with a 5/8 wrench.
- **If the housing has been in use and now leaks** focus on any changes or service performed on the housing.
- **Lastly, examine Seal Check** for detached or broken hoses. Re-test the housing for leaks to eliminate possibilities.



- **Rapid loss of vacuum.** In this condition a vacuum can be drawn on the housing, but drops rapidly reaching zero within a few minutes. This indicates one or more o-rings are compromised by damage, foreign matter or poor mating of components. Finding this type of leak will require a little more investigation, but it should also be evident once identified.

- **Examine the main seal** for an even line around the mating front and rear shells. Look for obvious gaps. An easy check is to run a slip of paper around the seal. It should not pass the o-ring.
- **Check the main seal and port o-rings.** Inspect them carefully for nicks or cuts. Ensure the o-ring is free of foreign matter (dirt, hair, etc) that can compromise the seal. Clean and lubricate the o-ring as needed, and re-install. (NOTE: do not lubricate orange o-rings)
- **If the housing has been in use and now leaks** check for changes or service performed on the housing.
- **If this is the first use of the housing from storage or travel** check for damage.
- **Check the glands** (the bolt-shaped component at the base of each control). Try to loosen with your fingers. They should be tight. If one has loosened, gently tighten with a 5/8 wrench.
- **Examine all windows.** A proper seal is indicated by a solid black line (which is the o-ring) around the perimeter. Also look for cracks. A flashlight may be necessary to illuminate more subtle cracks or damage.
- **Lastly, examine Seal Check** for cracked or broken hoses.



Re-test the housing for leaks to eliminate possibilities. This logical approach will rapidly narrow and help ID the cause. If necessary you can also take the housing in the water WITHOUT a camera and look inside the port or windows to see where water is entering.

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- **Slow loss of vacuum.** In this condition a vacuum can be drawn on the housing, but drops slowly and consistently over time – maybe hours. It vacuum reading may or may not reach zero depending on the specific type of leak.

This type of leak indicates the o-rings are attempting to seal but one or more are compromised by a more subtle form of damage, foreign matter or poor mating of components. Finding this type of leak is more difficult and time consuming. Leaks of this nature are best identified by close examination and frequent re-test to eliminate possibilities.

- ▶ **NOTE:** A false leak indication may occur if your housing is experiencing a significant temperature change. For example, if you move the housing from a cool air conditioned room to a warm tropical exterior, the gauge may indicate a slow loss of vacuum. This may be a false leak indication. It will be necessary to wait until the housing reaches ambient temperature before an accurate reading of the gauge can be made.

- **Examine the main seal** as described in the previous section.
- **Check the main seal and port o-rings** as described in the previous section.
- **If the housing has been in use and now leaks** check for changes or service performed on the housing.
- **If this is the first use of the housing from storage or travel** check for damage as described in the previous section.
- **Examine all windows** as described in the previous section.
- **Check the glands** as described in the previous section.
- **Look closely at the surface where the main o-ring mates.** Examine this surface for nicks, dings and scratches that could compromise the seal. Do the same for the port mating surface. This surface is the inner diameter of the port bore opening, immediately forward of the bayonet tabs.
- **Examine all controls.** The stainless steel shafts should be free of nicks and scratches. A scratch of sufficient depth to compromise a seal can be felt with your fingernail.
- **Lastly, examine Seal Check** for cracked or broken hoses.



At any point you can re-test the housing for leaks to eliminate possibilities. This logical approach will rapidly narrow and help ID the cause. If necessary you can also take the housing in the water WITHOUT a camera and look inside the port or windows to see where water is entering.

What to do if you find the leak

Fortunately, nearly all leaks identified by Seal Check are readily remedied on the spot. O-rings, generally the cause of water intrusion, are easily replaced. Ports can be seated and housing sealed more carefully. Glands can be tightened. It is very likely you will be 'up and running' quickly after having identified the leak.

If circumstance requires parts or other support from Gates to fix a problem, please contact us immediately at the details below. We stand ready to assist, and help you get the underwater images you want.

Should you be in a remote location and must perform repairs to your Gates housing on the spot, our technical support team may be able to guide you through some unconventional but effective field repairs.

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