



Normal system operation and basic maintenance for the Arid Bilge Systems Series 9 dry bilge vacuum system.

Normal operation: The unit turns on once every three hours or after a power reset and starts running cycles, one for each zone from top to bottom. If you have the Premium model with the Stainless Steel hinge on the left side of the face plate, then you will have to remove the button head Allen key machine screws from the top, bottom and right side of the face plate in order to swing the face plate partially open and see the processor and read its indicator lights. The processor is visible on both the Show and Standard Series 9 versions.

When the compressor starts running each time, the X0 (low vacuum) light and Y0 (discharge cycle) should be lit. It's at this point that the unit will discharge any liquids in its collection chamber. After several seconds the Y0 light goes out and the Y5 (vacuum cycle) comes on. At this point, the compressor is being used as a vacuum pump drawing air out of the collection chamber. While the compressor is vacuuming down the collection chamber, the X0 light should extinguish as 8" of vacuum is passed, then a few seconds later, the X2 (high vacuum) light comes on as 18" of vacuum is reached. Three seconds after the X2 light comes on, the Y5 light will go out with the pump shutting off. The X2 light remains lit if only briefly.

***The X2 light is very important, if you are not seeing this light coming on as previously described, then something is wrong with the system.***

Immediately, another Y light will come on, Y1 – Y4 during the first four cycles respectively. The Y1 - Y4 lights correspond with your hour meters for zones 1 to 4. The hour meters have an hour glass icon on the left side of the LCD display. The hour glass icons should all be solid except for the active zone. The active zone will display an hour glass icon that disappears for a second, and

then reappears while that zone is active. Being able to read this part of the display becomes more important when your system starts to activate zone 5 and above, as these zones do not have a red Y light on the processor, just the hour glass icon on the hour meter. On zone 5 for instance, the only way that you will know that this zone is active would be by watching the hour glass icons and seeing which one is disappearing for a second and then reappearing. Once the system checks all of the zones, or finds 3 wet locations, it goes into a bulk pull where it repeats pulling from the same zone(s) over and over again until it reaches an all dry state on any one active zone. At this point the system resets itself, same as a power reset, and starts searching again zone by zone as we describe above on page 1.

Once the system runs all of its zones and finds that they are all dry, it enters the siesta or hibernate mode for 3 hours, after which it will reset itself and start searching zone by zone again.

If an alarm sounds what should you do?

The same alarm buzzer is used to signal several fault conditions. So the first thing would be to see if the Y0 light is lit and the pump is running while the alarm is sounding. If the pump is running with the alarm sounding, there are only two possibilities. First possibility, the discharge is not functioning. This alarm will sound after a power reset and the X4 light, which is the system flooded fault light will also be lit. At this point the collection chamber is completely full of water and not exhausting. The unit should go straight to alarm after power is reset as long as the X4 light remains lit. This could be something as simple as a closed thru hull valve. After verifying that this is open, you can get a bucket and remove the ½" discharge hose. Reset power and see if the Series 9 exhausts water into the bucket, and the X4 light goes out. If this is the case, then check the discharge and locate the blockage.

The second and more likely cause would be a blocked intake. Here, the system will run a full set of cycles, drying all the unaffected zones and then go to alarm. While the alarm is sounding, look at the X4 light to verify that it is not lit and look at your hour glass icons on the left side of the hour meters to see which one is blipping off and back on. The one that is active with the alarm sounding is the affected zone. This means that one of three things has happened to this individual zone.

1. The pickup is clogged
2. The intake valve is not opening
3. The intake tube has been clogged, kinked or crushed.

The easiest way to figure out which problem is causing the alarm is to do a power reset. Next, get ready to unplug the zone that caused the alarm from the box once that zone is active again, i.e. you see its hour glass icon blipping off and back on. If you hear a hiss as you unplug, and the vacuum gauge falls rapidly and the X0 light comes on and the pump starts up again, then the problem is either 1. the pickup or 3. the intake tube. If, however, the vacuum does not fall and there is no hiss sound, then the problem would be with the intake valve.

If the problem is with the tubing or pickup, then do the following... Reconnect the intake tube to the central system. Reset the power and this time when the system locks onto the zone in

question, unplug the bilge pickup from the intake tube on the bilge end of the intake tube. If air rushes into the end of the tube and the system starts running again after about 15 seconds, then take the bilge pickup out on the dock, spray degreaser into the pad, massage the pad and then place a garden hose over the fitting and back wash the bilge pickup. If air does not rush in, then you have a very rare event with a clogged, crushed or pinched intake tube and the tube will likely have to be replaced.

If the intake valve is not opening, then determine if you have pinch or solenoid valves. The pinch valves will have a soft walled tube that protrudes outside of the unit by about 1 ½" inches. The intake tube from the bilge was inserted into this soft walled tube. The pinch valve may have mashed the soft walled tubing by continuously striking it at one point. Simply tug the soft walled tubing into or out of the Arid Bilge System by about ½" in either direction so that it strikes the soft walled tubing at a new point. If this solves your issue in just a few seconds, don't be surprised, and the fix will probably last another 4 or 5 years. If it's been 4 or five years since anyone has touched the system, then you probably should tug on the remaining soft walled tubes in the other intake valves as well.

If the intake valve is not opening and you do not see the soft walled tubing protruding out of the box, then look at the port where the intake tube connects to the box. If you see a brass fitting, then you have the simple solenoid valves. Download the manual for the Series 2 or 4 systems and look for the section where it shows how to take the valves apart with a 17mm deep socket. The pictures and the instructions are easy to follow. These valves can usually be cleaned or replaced inexpensively.

If you have an alarm sounding with the intake valves clicking open and closed from the top to the bottom, then you may have a stuck open solenoid valve, or a leak has developed somewhere else in the system. Here, you would not see the vacuum gauge vacuuming down past 12", the X2 light would not be coming on, and the compressor would be running longer cycles. If you have solenoid valves, it would be best to remove and inspect them at this time. If you have the pinch valves, then chances are the valve would have to be replaced by us at the factory.

If you have additional questions or comments, then please email us at [al@aridbilge.com](mailto:al@aridbilge.com) or phone at (954) 328-9705.

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