

MANUFACTURER'S GUIDELINES

FOR THE CONDUCT OF PADI COURSES

PADI REBREATHER DIVER – KNOWLEDGE REVIEW ONE

The PADI Rebreather Diver Course and the PADI Advanced Rebreather Diver Course teaches divers how to use the dive equipment of the future in a safe and controlled manner. This article will teach the instructor teaching on the Poseidon MKVI how this generic course can be applied on this specific unit.

The reason why the PADI courses are generic is that rebreathers differ from each other in the way you operate them. Therefore the instructor will be responsible to update him/herself on the latest information from the rebreather developer. This series of articles will cover some sections of the PADI courses that the manufacturer wants you to take extra considerations when it comes to the Poseidon MKVI. This article was finished the 19th June 2012, it is your responsibility as an instructor to find new updates from Poseidon Diving Systems that may differ from the explanations given in this document.

This article will cover the Knowledge Reviews of the PADI Rebreather Diver Course. These are the recommended procedures from Poseidon Diving System and are supposed to compliment the answer keys provided by PADI in the instructor manual.

Knowledge Review 1 - Question 8

The oxygen sensors are calibrated during t53 in the automatic pre-dive test. This is the most advanced test during the automatic pre-dive test.

Knowledge Review 1 – Question 9

The recommended minimum time for the pre-breath is five minutes, according to Poseidon Diving Systems.

Knowledge Review 1 – Question 10

The most common failure starting up your Poseidon MKVI is due to lack of knowledge of what happens during the automatic pre-dive test. Poseidon Diving Systems recommends the instructor to thoroughly go through the method of solving errors during the automatic pre-dive test. By remembering both the **test number** and the **error code** shown on the display and then consulting



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the Poseidon MKVI Manual for the right troubleshooting action. Poseidon Diving Systems sees this as very important information to pass on to your students. **As your student won't experience all error codes during the course they need to be taught how to solve errors themselves.** It is also recommended that the student get taught what types of functions are tested during tests 40-54. As there are some corrective measurements that the diver can do themselves if any of these tests fails. Poseidon Diving Systems further states that; the automatic pre-dive test is a go or no go system. So if the automatic pre-dive test keeps on failing do not under any circumstances try to surpass it and dive with the unit.

Knowledge Review 1 – Question 11

Poseidon Diving Systems uses another terminology of going on and of the loop then PADI uses. When PADI says that you should go on the loop, Poseidon refers to this that you are in Closed Circuit (CC) mode. When PADI says that you should go off the loop or close the loop, Poseidon refers to this that you are in Open Circuit (OC) mode.

Poseidon Diving Systems recommend that you teach your student to look at the display every time he/she has changed the diluent valve switch. The reason for this is that the student has to confirm that the switch is placed in either CC- or OC-mode. If the diluent valve switch is placed in NC-mode, the student need to correct the switch until the display shows OC or CC. Remember that you don't have to use a lot of force when moving the switch back and forth, as this can damage the mechanisms inside the mouthpiece.

Knowledge Review 1 – Question 12

During step number 3 make sure that the student looks at the display after going on the loop, to confirm that they have put the mouthpiece in CC mode.

At step number 6 Poseidon recommends that you perform the bubble check at 7 metres or at 5 meters. The reason for this is to minimise failure of the hyperoxic linearity test. The hyperoxic linearity test is initiated at 6 meters to make sure that the oxygen sensors are able to read a partial pressure of 1.6. If you perform the bubble check at 6 meters the hyperoxic linearity test may fail as your students raise their bodies above the 6-meter mark when performing the bubble check. Please read more about the hyperoxic linearity test in the Poseidon MKVI manual.

During step 8 make the students confirm that the diluent valve switch is in either CC or OC-mode. When performing the bailout exercise.



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Knowledge Review 1 – Question 13

If you are bailing out because you have a C1-warning, a blank display, running low on oxygen and low on diluent. Then the procedure stated by PADI in the answer key should be followed. Poseidon Diving Systems recommends divers to look three times at the display when returning on the loop, in the following sequence;

1. Before switching from the alternative air source to mouthpiece, confirming that you have an adequate amount of diluent air and that there aren't any other general warnings.
2. When you have the mouthpiece in your mouth about to return to the loop, look at the display confirming a breathable loop.
3. When you have returned to the loop to confirm you are in CC mode and not in NC mode.

Knowledge Review 1 - Question 17

When receiving a red HUD alarm on the Poseidon MKVI it doesn't automatically mean you have to bail out. The HUD flashes every two minutes to remind the diver to look at the display and confirm the partial pressure on the oxygen. So these flashing reminders don't mean you have to bailout.

The Poseidon MKVI also has a unique monitoring system that warns you if you don't have an adequate amount of diluent air to bailout and make it to the surface. When the machine gives you this warning it doesn't differ from any other warnings on the machine in the sense that it gives you the flashing red light, the mouthpiece vibrates and the battery gives out a warning sound. The best option in this situation is to stay on the loop and ascend to a shallower depth until the warning disappears. The warning symbols that are shown during this warning are; "general alert" and "ascend indicator". They simultaneously flash together with the diluent gas pressure indicator.

Poseidon Diving Systems recommends the diver to do the following sequence actions when you get a red HUD alarm.

1. Look at the display
2. Confirm if there is anything wrong with the machine
3. If not, confirm partial pressure and continue with the dive
4. If there is something wrong take the appropriate action.

If for some reason you do not understand the warning on your display you should always bailout and keep your dive buddy close. **It is important that you understand all warnings that are stated in the Poseidon MKVI manual prior to diving the unit.**

Knowledge Review 1 - Question 23

Poseidon recommends you to use Gigasept disinfection or Virkon disinfection in the USA.



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