

One Way Valve

Contents

OWV-1	1.1 One Way Valve	OWV-4	1.1.3.1 Oral One Way Valve Check
OWV-1	1.1.1 Disassembly Of The One Way Valve	OWV-4	1.1.3.2 Low Pressure One Way Valve Check
OWV-2	1.1.2 Reassembly of the One Way Valve	OWV-5	1.1.3.3 Hand-Operated Vacuum-Type Pump One Way Valve Check
OWV-4	1.1.3 One Way Valve Check		

1.1 One Way Valve



NOTE

The one way valve assembly should be disassembled, cleaned, and the wiper, spring, and three O-rings replaced at least annually. Any damaged and/or corroded parts, should be replaced. A repair kit is available for replacement parts, KMDSI Part #525-330.

CAUTION

Do not use pliers on the main body of the one way valve. Using pliers may damage the valve body, compromise sealing surfaces, and result in improper operation.

1.1.1 Disassembly Of The One Way Valve

Tools Required:

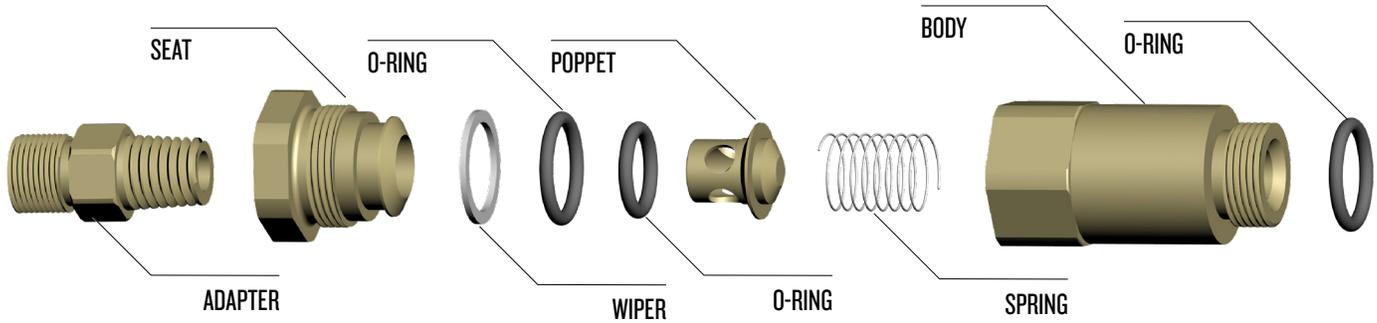
- Two 1" Open End Wrenches
1. With the one way valve secured to the side

block body, use two 1" open-ended wrenches to loosen the seat from the body.



2. Once the seat has been loosened from the body, loosen the valve body from the side block and remove it.
3. Remove the seat from the valve body, then remove the poppet and poppet O-ring.
4. Remove the O-ring and wiper from the seat.

The only functional part remaining in the valve body is a non-moving, pressed-in cage. The function of the cage is to contain the poppet during high gas flows.



Correct assembly order of the one way valve.

⚠ WARNING

Do not attempt to move or remove the cage that sits inside the one way (non-return) valve. Any attempt to remove this part can cause the non-return valve to fail, which can lead to serious personal injury or death.

5. Inspect the body interior for foreign matter of any type. Clean in accordance with the KMDSI cleaning instructions.

6. Inspect the seat and all associated parts for wear. Replace if necessary.

A repair kit is available for replacement parts, (Part #525-330). This one-way valve kit is also included in all the standard helmet and BandMask® soft goods kits. All O-rings should be replaced during normal/annual overhauls.

7. Be careful to thoroughly clean the poppet and poppet O-ring, removing all silicone to prevent foreign materials from adhering to these components.

1.1.2 Reassembly of the One Way Valve



NOTE Threading the main body onto the seat should be done in a vertical manner with the seat resting on the bench and lowering the body down over the assembly assuring spring will remain in correct position in relations to the seat.

1. Install the new wiper onto the seat. Ensure angled cut is aligned correctly.



2. Lubricate and install O-ring onto seat, above the wiper.



3. Install O-ring onto poppet **NO LUBE**

4. Insert poppet with O-ring into seat



5. Place spring on top of the poppet



6. Lubricate the internal threads in the valve body

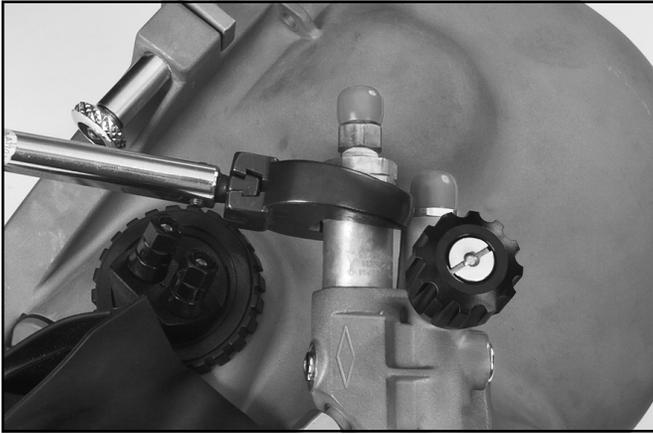
approximately 1/4"/6.3 mm past the leading edge. Thread valve body onto seat.



7. Lubricate and install O-ring onto valve body



8. Install the One Way Valve into the Side Block by hand and torque the Seat to Valve Body then torque the Valve Body to the Side Block. See "Torque Specs" module.



9. Apply Teflon® tape to the adapter. Start 2 threads back from leading edge, 2 ½ to 3 wraps and tighten the adapter to the one way valve.

⚠ WARNING

Do not allow any Teflon® tape to cover the end of the adapter, or to enter the one-way valve. Loose pieces of Teflon® tape can interfere with the performance of the one-way valve or the regulator and may block the diver's air supply. This could lead to death through suffocation.

1.1.3 One Way Valve Check



How To Check The One Way Valve

⚠ WARNING

Never dive if the one way valve is not operating properly. If the hose for breathing gas or air fitting breaks while operating underwater a serious injury could result to the diver's lungs and/or eyes. In extreme cases this could be fatal.

The one way valve must be tested daily prior to the commencement of diving operations.

There are two methods for testing the one way valve.

1. Orally
2. Using regulated low pressure.

⚠ WARNING

The one way valve must be tested daily, prior to commencement of diving operations. Failure of the one way valve could cause serious injury or death.

The free flow valve must be open when performing the test.

1.1.3.1 Oral One Way Valve Check

1. Test the one way valve for proper operation by blowing and sucking (cycling) on the umbilical adapter. No gas should be drawn through the one way valve. If you are able to suck any air through the one way valve, it is not working properly and **should not be used.**



1.1.3.2 Low Pressure One Way Valve Check

1. Close the emergency and defogger control knobs and screw in the adjustment knob on the regulator all the way.
2. Attach a regulated gas supply (normally using the EGS system), adjusted to between 135-150 psig (9.3-10.3 bar), to the emergency valve.
3. Open the emergency supply valve all the way and then slowly open the gas supply.
4. Check for gas exiting from the one way valve. There should be no gas exiting the umbilical adaptor. If any gas exits through the one way valve it is not working properly and **should not be used.**



Checking the one way valve. With the bail-out bottle connected to the emergency valve, no gas should escape through the one-way valve when the EGS valve and cylinder valve are opened.

1.1.3.3 Hand-Operated Vacuum-Type Pump One Way Valve Check

A third method is also acceptable, using a hand-operated vacuum-type pump.

One example of several devices on the market is the DLMV8510 Non-Return Vacuum Tester from Dive Lab, Inc. Operation of vacuum-type testers must strictly follow the manufacturer's instructions.