



Golem BOV Service/Maintenance Manual

Participation in rebreather diving can result in serious injury or death!

Golem BOV is a Dive Surface Valve / Open Circuit regulator for rebreathers. The BOV can be switched from closed circuit to open circuit mode by rotating the handle on the front.

The BOV should be inspected and lubricated every six months, more often when diving in harsh conditions. Also, whenever the switching action between CC and OC becomes difficult, disassemble the BOV, inspect all o-rings and relubricate. O-rings should be replaced annually. The Apeks 2nd stage should be serviced by an Apeks technician according to manufacturer's specifications. The Interspiro diaphragm can be replaced with the same from the manufacturer. The BOV can also be sent to Golem Gear, Inc. for service. Please contact us at the address below to arrange the details.



You will need:

- 2.5mm hex key
- Needle-nose pliers
- Brass or plastic hook



Remove one-way valves

Use a brass hook to gently pull the one-way valve holder by pulling on each spoke sequentially. Take care not to puncture the rubber valve.



On the exhalation side, lift the flapper valve to reach the holder spokes.



On the Clamped BOV pull gently on the circumference of the one-way valve holder



Remove retaining washers

Insert needle-nose pliers into the two holes of the retaining washer; pull together while pulling the washer out of the groove.



Alternatively, you can use the hook to pull on one of the holes of the retaining washer and twist it out of the groove. Remove retaining washer on the other side as well.



Remove the ball valve

Unscrew four hex screws (M3-16) from the ball valve cover.



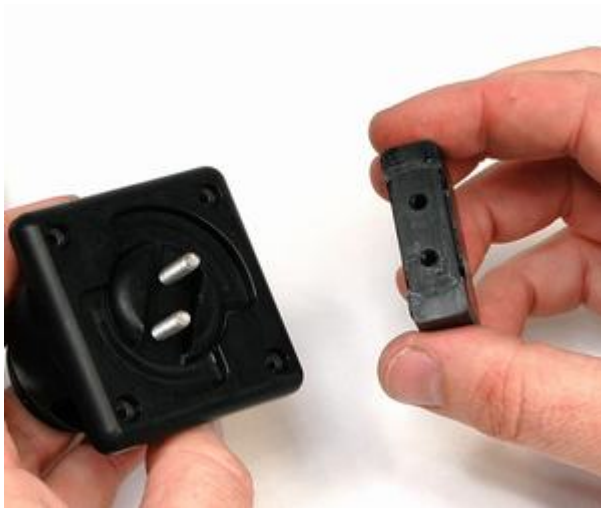
Pull the ball cover (and the ball valve) out of the BOV body. Make sure that BOTH retaining washers from the inhalation and exhalation ports are removed, otherwise you will not be able to remove the ball valve, and might damage the BOV.





Remove the ball valve handle

Unscrew the two hex screws (M4-20) on the valve handle.



Separate the ball valve from the valve cover.



Inspect o-ring on the valve cover.

Inspect the o-rings on the ball valve.



Remove 2nd stage

- Unscrew the diaphragm cover.
- Locate four hex screws (M3-14) inside the 2nd stage case.



Unscrew all four screws.



Remove the 2nd stage case

Make sure the o-ring between the BOV and 2nd stage is not lost.



Remove ball valve seats

There are convex valve seats on the inside of the inhalation and exhalation ports. Push them out with your thumb, and inspect the o-rings.



Take extreme care to insert the ball valve seat properly when returning it. A pinched o-ring will render the BOV inoperative!!



Inspect/replace all o-rings

- 1x – ball valve handle
- 1x - ball valve to mouthpiece
- 1x – ball valve cover
- 4x – ball valve seat (two each)
- 1x – BOV box to 2nd stage body
- 2x – one-way valves (one each)

Lightly lubricate all o-rings with O₂ compatible grease.

Assemble the BOV in reverse order

- Insert valve seat on each side of hose ports. Do not pinch o-rings!
- Attach ball valve to valve cover and to valve handle with two hex screws (M4-20).
- Insert ball valve into the BOV body. Make sure that the o-rings in the valve seats are in proper place.
- Insert the retaining washers.
- Screw in the four hex screws (M3-16) into the ball valve cover.
- Attach the 2nd stage body to the BOV using four hex screws (M3-14). Make sure that there is an o-ring around the 2nd stage port on the BOV. Take care to properly seat the OC pod to the body of the BOV. Lubricate the captured o-ring with O₂ compatible grease, and make sure that it is seated correctly between the OC pod and the BOV body.



- Insert the one-way valves. Make sure that the o-rings on the circumference of the one-way valve body are lightly lubricated and seated properly.

!!! Always verify that the one-way valves are in the correct position to circulate gas according to your rebreather specifications!!! Failure to do so can result in serious injury or death!!!



The gas will travel into the flapper valve in which the spokes are visible, and out of the valve with rubber flapper on top.

Make sure that each valve has the correct orientation.



Inspect the 2nd stage diaphragm

Check the diaphragm body for punctures. Also verify the operation of the one-way exhaust valve in the center.



Make sure that the diaphragm is seated properly, and that there is an o-ring on the circumference. The center of the diaphragm must be seated in the center of the purge button on the 2nd stage cover



Screw in the 2nd stage cover.



That completes assembly of the BOV.



This BOV is composed of many parts, all of which will eventually fail. Always carry adequate bailout, and have the proper training and skills to use it. Ultimately, you, the diver, have the responsibility for your safety while diving.

!!! Do not get in the water if your unit with this BOV attached does not pass standard loop integrity tests. Always verify that the one-way valves are in the correct position to circulate gas according to your rebreather specifications!!!

