

Octopus O-Rings

If you've had your gear for years, the o-rings in the air hoses tend to wear out and should be changed.

Failure to do this periodically will eventually result in an o-ring failing during a dive. If this occurs on the boat, it is disappointing, but if happens underwater it can range from annoying to life threatening.

If you don't feel comfortable doing this yourself, make sure that you bring your regulator into your local dive shop every year or so to be serviced. Be prepared for them to charge you quite a bit of money for the service. If you enjoy tinkering and want to save some money you can follow the instructions below.

Contents

What You Need	2
High Pressure Gauge Swivel O-Rings	3
Second Stage Regulator O-Ring	5
Hoses on Primary Stage Octopus	7

What You Need

First of all you need to get an assortment of NBR 90 Duro (the material type required for scuba to resist salt water) o-rings. Do not use just any old rubber o-rings make sure they are NBR 90 Duro. You can buy these in many places. I got mine on Amazon here for \$12.59:

[Amazon.com: BUSY-CORNER 166 Pieces Scuba O-Ring Kit Scuba Diving Rubber Orings, for Dive Hoses Ring Diving Dive Gear Equipment Scuba Tanks NBR90 : Sports & Outdoors](https://www.amazon.com/BUSY-CORNER-166-Pieces-Scuba-O-Ring-Kit-Scuba-Diving-Rubber-Orings-for-Dive-Hoses-Ring-Diving-Dive-Gear-Equipment-Scuba-Tanks-NBR90-Sports-Outdoors/dp/B075383838)



This has all the standard scuba sizes and the chart shows **both** the “AS” standard numbers **and** the actual diameter. Many kits only show the “AS” number and then you need a cross reference to determine the size.

You will also need some silicone grease which you should be able to get at any major hardware store. You don’t need much so a small 1-2 ounce container is more than enough.

You will also need basic hand tools as shown in the examples below.

I would also recommend that you buy a scuba utility tool that has all the wrench sizes that you need and keep it in your dive kit (along with some extra o-rings) so you can do field repairs.



High Pressure Gauge Swivel O-Rings

These are by far the most tedious to replace. Here are the steps to do replace them.

1. Force the gauge out of the rubber boot
2. Pull some of the hose through the boot so the gauge is easier to work on.
3. Using 5/8" and 9/16" wrenches disconnect the gauge from the swivel as shown below.



4. Pull the swivel pin out of the assembly (seen in pliers above.)
5. Remove the existing two o-rings using a dental pick (or whatever) being careful not to scratch the metal surface below the o-rings. I found it useful to gently clamp the middle of the pin with some vise-grips and paper towel to protect the pin.



6. Lightly coat an AS-003 (1/16") o-ring with silicone grease. Do not forget this step as it makes it much easier to slide the o-ring over the pin!
7. Now here is the hard part – using a small flat screw driver (your finger won't work as the o-ring just presses into the skin):

- a. Start the o-ring at one side at an angle to the edge of the pin (see photo below)



- b. Apply pressure to the screw driver pressing the o-ring into the pin
 - c. While keeping the pressure, slowly move the screw driver towards the other side of the pin – sort of like you are spreading butter on a piece of tiny toast.
 - d. If you are lucky, the o-ring will snap around the tip of the pin and you can gently roll it down until it pops into the o-ring groove. If you are less fortunate, the o-ring will break in half or otherwise become damaged, and you will have to start over with another o-ring.
8. Repeat step 7 for the second o-ring.
 9. Clean any dirt and grime out of the hose receptacle area where the swivel pin will be housed.
 10. Re-assemble the unit by following steps 1-4 in reverse order.

Second Stage Regulator O-Ring

Disconnect the hose from the second stage using a 9/16" wrench. You will then be able to see the o-ring recessed inside of the hose assembly as shown below.



The fact that it is recessed makes it more difficult to get out, but getting it back in is easy. After trying various things (that didn't work) I found that a small vise and some 1mm jewelers screw drivers worked really well. The easiest way is to break the old o-ring with one of the screw drivers and then position both of the screw drivers in the break and push the broken o-ring out of the slot.



To insert the new o-ring, apply a thin film of silicone grease to an AS-012 (3/8") o-ring and slide it over the metal tip of the hose and gently roll it down into the o-ring groove.



Complete by re-attaching the hose to the second stage regulator.

Hoses on Primary Stage Octopus

The procedure is the same for both high and low pressure hoses; they differ only in wrench and o-ring size as follows:

- High pressure hose – 5/8" wrench, AS-012 3/8" o-ring
- Low pressure hose – 9/16" wrench, AS-011 5/16" o-ring



The procedure is as follows:

1. Using the wrench loosen the hose, and manually unscrew it
2. Gently remove the old o-ring without scratching the o-ring groove
3. Lightly coat the new o-ring with silicone grease
4. Roll the new o-ring over the metal hose tip and into the o-ring groove
5. Re-thread the hose into the primary stage and tighten with the wrench