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# Apeks O-rings

posted Mar 4, 2012, 12:05 AM by Derek Quek

This article lists the O-Rings used for servicing Apeks regulators for the following models:

\* First stages: US4, DS4, UST, DST, FST(ATX100), FSR(ATX200)  
\* Second stages: T20, TX40/50/100/200, AT20, ATX40/50/100/200

Only o-ring are listed here. Additional parts such as diaphragms and seats are not listed here.

**Material**

There are several common materials used for SCUBA o-rings.

Material	Description
Acrylonitrile-Butadiene Copolymers (NBR, Nitrile or Bunan) 'N'	Most O-rings used in SCUBA are made from Nitrile, a hydrocarbon based synthetic rubber. Nitrile offers excellent resistance to many oils and acids and has good physical properties. However, Nitrile is not a very oxygen resistant material and is not considered oxygen compatible. Nitrile is also often referred to as Buna-N.
Fluorocarbon Elastomers (FKM or Viton Fluorel) 'V'	O-rings made of FKM are more costly but are a preferred choice for oxygen and nitrox compatibility in SCUBA diving applications. FKM is an elastomer with excellent oil and oxygen resistance at high and low temperatures, very good chemical resistance. Even for use with ordinary air, most experts agree that FKM O-rings outperform common Nitrile O-rings. Viton is DuPont Dow's brand name for FKM. FKM has a higher heat tolerance, but emits a highly toxic gas if combusted.
Ethylene Propylene Diene Monomer (EPDM) 'E'	EPDM O-rings are becoming more common in SCUBA because some people feel it's a safer material for use in breathing air systems. EPDM is a elastomer with excellent weatherability, heat resistance, dielectric qualities and odor-free characteristics. EPDM is not recommended for use with petroleum derivatives.

Starting from 2001, Apeks o-rings are based on EPDM with a hardness rating of 80 Shore-A.

**Size**

Most scuba o-rings are based on imperial British Standards (BS) using a three-digit identifier. The first digit denotes the O-ring cross section width: 0xx = 1/16-inch, 1xx = 3/32-inch, 2xx = 1/8-inch. The other 2 digits are used to reference the diameter of the o-ring.

Apeks ID	BS	Cross Section	Inner diam.	SCUBA Application Seal
-	003	1/16	1/16	High-Pressure Hose/SPG swivel
AP6403	004	1/16	5/64	High-Pressure Hose/SPG swivel (less common)
AP1299	006	1/16	1/8	Apeks HP seat (1st stage)
AP1154	010	1/16	1/4	Low-Pressure Hose/2nd Stage Regulator Cylinder Valve Stem Apeks crown (2nd stage)
AP1409	011	1/16	5/16	Standard Low-Pressure Port/Hose (3/8 UNF) Apeks adjusting screw (2nd stage) Apeks conical filter (1st Stage) Apeks FSR HP crown (1st stage) Power Inflator quick disconnect oring
AP1445	012	1/16	3/8	High-Pressure Port/Hose (7/16 UNF) Manifold and Manifold Port Plugs
AP1410	013	1/16	7/16	Large Low-Pressure Port/Hose (1/2 UNF) Apeks balance plug inner (1st stage)
AP1159	014	1/16	1/2	Standard Yoke Regulator/K-valve Apeks ATX adjuster screw (2nd stage)
AP1267	015	1/16	9/16	Apeks valve spindle (2nd stage) Cylinder Valve Bonnet Nut
AP1438	019	1/16	13/16	Apeks Venturi (2nd stage) Apeks turret bolt (1st stage)
AP1420	024	1/16	1-1/8	Apeks Turret (1st stage)
AP1166	111	3/32	7/16	Apeks DIN Regulator/Valve Apeks Yoke spare (2nd stage) Note:Yoke valves often use BS112 or BS014
-	214	1/8	1	Cylinder with Large Neck/Valve (3/4 NPS - All Aluminum, most Steel cylinders)
AP2041	2x1(606)	1mm	2mm	Apeks shuttle valve (2nd stage)
AP5711	2.5x1(607)	1mm	2.5mm	Apeks ATX adjuster screw nib (2nd stage)
AP1300	15x1.5	1.5mm	15mm	Apeks HP balance plug outer (1st stage)
-	006	2.9mm	1.78mm	Power Inflator spindle (Polyurethane)
-	012	1/16	3/8	Power Inflator cylinder inner oring (Buna)
-	112	3/32	1/2	Power Inflator cylinder outer oring (Buna)
-	204	1/8	3/8	Power Inflator oral inflate oring (Buna)

Adjustments, servicing, disassembly and assembly of scuba equipment should be performed only by individuals who have attained appropriate training and certification by the equipment manufacturer.

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