

SNARK III DELUXE SILVER REGULATOR

The Snark III Silver is a two stage working regulator. The third stage is a safety, or pressure relief valve to relieve inter-stage pressure build-up. The unique position of the hinged levers creates a very low suction effort to activate the diaphragm. Demand breathing is therefore effortless with the Snark III Deluxe Silver Regulator.

Air enters the first stage of the Snark III through a series of filters (SG114 and 28) and enters the intermediate chamber through the open seat (SG2997) compressed against spring (23) by pin (2988) in the high pressure system, establishing inter-stage pressure. As high pressure enters the first stage, the high pressure diaphragm (12) is forced outward against the high pressure bonnet spring (18), which is pre-adjusted by adjusting screw (21) to hold seat (SG2997) open until inter-stage pressure reaches about 125 PSI, at which time, pin (2988) withdraws and allows seat (SG2997) to close the stage.

The intermediate chamber consists of the inner surface of the diaphragm (12), soft seat of valve (SG2997) and a bore running toward the safety stage, or third stage (2597). Excess pressure in this chamber will force the relief spring (99) to open, venting off pressure in excess of 150 PSI.

Upon demand, the diver causes a partial vacuum inside case assembly (SG2668). The pressure differential between the case pressure and the ambient pressure forces demand diaphragm (85A) into the case (SG2668). As the diaphragm moves inward, the primary lever (2993) exerts a force on secondary lever (88) through considerable mechanical advantage. Secondary lever (88) in turn, multiplies the force again and forces seat (SG2985) against spring (2987). Air flows to the diver due to diminished inter-stage pressure.

When demand ceases the demand diaphragm (85A) returns to normal position and the demand stage is allowed to close by spring (2987). During exhalation, pressure increases slightly above ambient in the exhaust hose (200) and spent air lifts the exhaust valve (86A) which is attached to cover (SG2999).

Check valves (106) are also in the mouthpiece to minimize water entering the diver's mouth. A neck strap is provided for additional safety. Also, a mouthpiece cover prevents sand or dirt from entering the mouthpiece when the regulator is not in use. A protection cap (52) with a rubber insert will also keep dirt and water from entering the high pressure stage.

PART NUMBERS and DESCRIPTION

	Each
4 High pressure washer	\$.38
12 High pressure diaphragm	.38
13 Rubber gasket	.38
14 Fibre gasket	.38
15 Seat disc adjusting spring	.42
18 Adjusting spring	.38
20 Spring container	1.92
21 Adjusting screw	.52
23 High pressure spring	.38
24 Spring support	.57
28 Perforated filter disc	.38
29 Circlip	.38
47 Sleeve	.38
49/1 Protector	.75
52 Protection cap	.38
52A Rubber insert	.38
53 Cork floater	.38
71 Secondary lever pin	.38
71A Lever pin	.38
73 Set screw	.38
74 Locknut	.38
75 Pin	.38
81 O'ring	.45
83 Screw	.38
84A Diaphragm fibre plate	.57
85A Low pressure diaphragm	1.42
86A Exhale valve	.38
88 Secondary lever	.45
92 Low pressure washer	.38
94 Brass washer escape valve	.38
95 Rubber washer escape valve	.38
96 Washer escape valve	.38
98 Escape valve retainer	.38
99 Escape valve spring	.38
100 Adjusting screw	.38

	Each
106 Diaphragm plate	\$.38
111 Bands screw	.38
112 Narrow hose band	.38
118 Large hose band	.38
120 Large hose sleeve	.42
121 Narrow hose sleeve	.42
122 Valve support	.38
123 Diaphragm plate supporter	.38
150 Pin disc	.38
199 Mouthpiece	1.92
200 Ringed hose	3.19
1016 Nut	.38
2294 Fixation strap	.60
2597 Escape valve body	.60
2598 Escape valve plug	.38
2630 Bands screw	.38
2631 Screw retainer	.38
2632 Nut	.38
2633 Yoke	1.02
2981 Body case plate	3.88
2986 Low pressure valve guide	.42
2987 Low pressure valve spring	.38
2988 Pin	1.27
2993 Primary lever	.45
2994 Low pressure chamber plug	.52
2995 High pressure case	1.26
3081 Label	1.00
5238 Button	.38
5239 Screw	.90
5240 Yoke	1.17
SG 114 Filter	.38
SG1035 Buckle 14 mm.	.38
SG2668 Case assembly	4.80
SG2985 Low pressure valve	.82
SG2997 High pressure valve	1.42
SG2999 Case	

A thorough inspection is always a good policy after several years of use. Return your regulator to your local dealer or directly to Seamless Rubber Company for proper inspection and repair.

Analysis and Correction of Complaints

1. Mouthpiece or hoses leak water
 - A. Check #200 hoses for cuts or holes.
 - B. Check #118 and #112 clamps for tightness.
 - C. Check valves #106 and #86A for correct closure.
 - D. Loose grip on mouthpiece - tighten your bite.
 - E. Loose or damaged diaphragm - remove cover SG2999, check #85A diaphragm.
 - F. Loose case cover #2981, check tightness of screws #83.
2. Mouthpiece leaks air
 - A. Check diaphragm #85A for stiffness or loss of suppleness.
 - B. Check lever #2993 and #88 - could be reset too high, use calibrating tool #7001 to correct lever position.
 - C. Check inter-stage pressure with manometer gauge \$7010 at rotary venture nozzle #2994 at 125PSI.
 - D. Check face on seat #SG2997.
3. Air leaks from regulator case plate #2981
 - A. Loose high pressure nozzle case #2995 - tighten case. If leak persists, replace gasket #04
 - B. Before assembly, set pressure with gauge #7010 at 125 PSI, using adjusting screw #21 as needed.
 - C. Plug #2994 may be loose, so tighten. If leak continues, replace gasket #92.

- D. First stage leak causes pressure relief valve #100 to blow off. Check SG2997 for damage. Place gauge #7010 at nozzle #2994. Adjust inter-stage pressure to 150 PSI with screw #21, then adjust screw #100 to blow off at 150 PSI. When relief pressure is set, reduce inter-stage pressure to normal 125 PSI with #21.
4. Regulator breathes hard
- A. Cylinder pressure may be too low
 - B. High pressure end of regulator may be clogged by rust or salt crystals plugging filters.
 - C. Check holes in nozzle #2995. Remove circlip #29, replace screen #28 and filter #SG114 and replace new circlip.
 - D. Diaphragm #85A may be too stiff, loss of suppleness, replace diaphragm.
 - E. Levers #2993 and #88 are set too low. Normal calibration is when top curled end of #2993 is flush with the groove of tool #7001 whose outer edges are resting on the case assembly wall.
 - F. Check seat #SG2985 for proper lift off or wear.
 - G. Check intermediate stage pressure at 125 PSI.
5. Regulator does not breathe.
- A. Check air in tank
 - B. Check exhalation
 - C. Non-return valves #106 in mouthpiece #199 may be reversed.
 - D. Remove regulator cover #SG2999 and check diaphragm #85A and depress lever #2993. Remove #2994, #2987 #2985, #2986, #73 and #74. If no air flows past these points, which regulator is attached to a cylinder with 500 PSI check high pressure body #2995. The seat may be frozen due to water in the air cylinder or regulator submerged in water without the protection cap #52.

Summary

The #7010 gauge is used on plate (2081) and is set at 125 PSI by adjusting screw (21). Air inside the gauge must be released each time adjusting screw (21) is moved. If required, set the safety stage adjusting screw (100) to 150 PSI before adjusting the inter-stage pressure at 125 PSI.

Try not to be penny-wise and pound-foolish in the repair of regulators. Soak and buff all metal parts with 20% nitric acid solution. Brush all rubber parts with a solution of silicone. Carry a good supply of parts and replace them freely. Your customers will be happy to pay a few extra dollars if you are extremely careful and accurate in your repair work.