XT2 Second Stage Service Manual

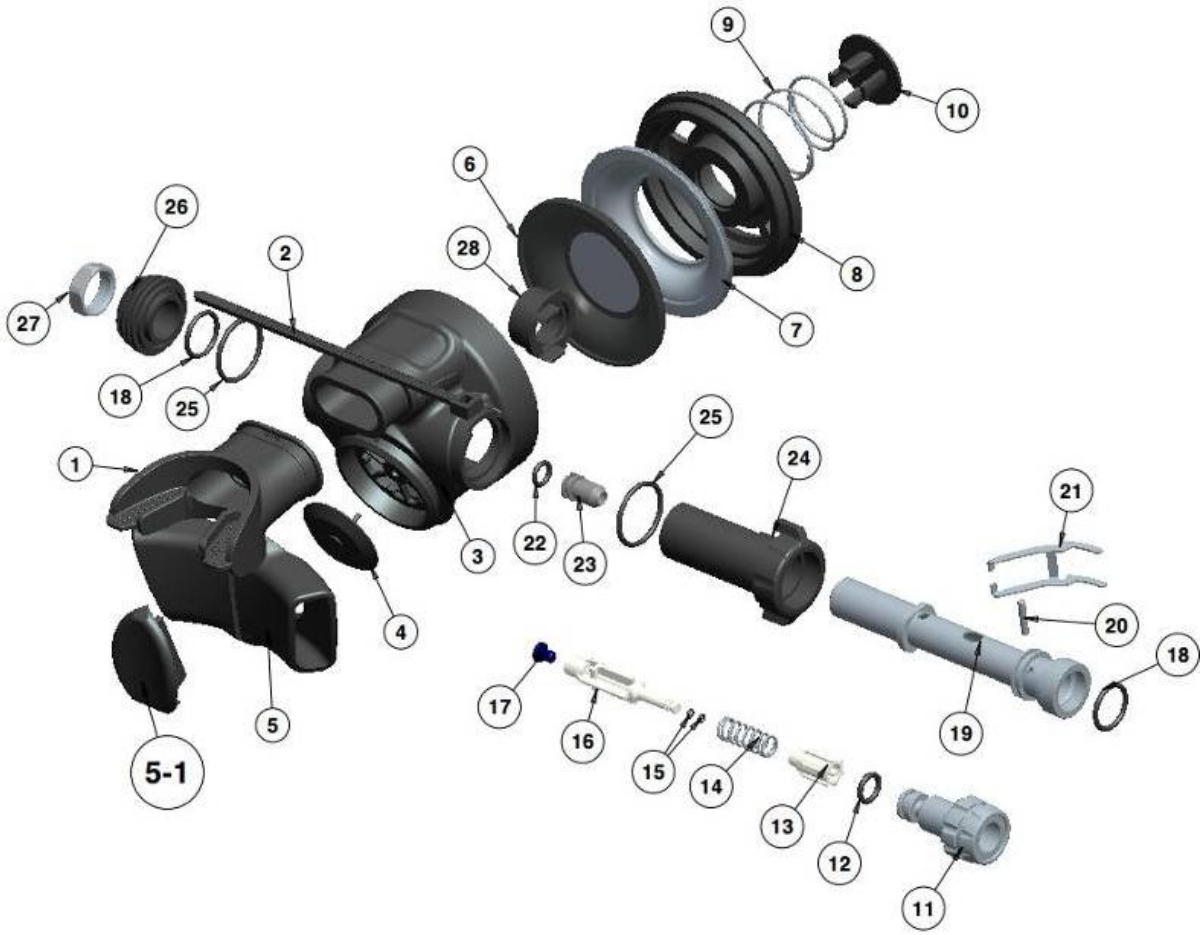
Warning

- *This manual is only to be used as a guide for trained regulator technicians. Possession of this guide does not qualify any individual in the service of Dive Rite Breathing Systems. Only qualified Dive Rite dealers can service Dive Rite Products. Improper servicing can lead to serious injury or death.*
- ***Only Original Parts ordered from Dive Rite are to be used***

Table of Contents

Required Tools

- 11/16 wrench
- 11/16 tappet wrench
- Flat-blade screwdriver
- ¼” wood or plastic dowel



#	Part Number	Description
1	RG1426	XT2 - SS - MOUTHPIECE
2	RP9320	XT2 - SS - NYLON TIE
3	RG5203	XT2 - SS - MAIN HOUSING
4	RG5204	XT2 - SS - EXHAUST VALVE
5	RG5205	XT2 - SS - EXHAUST COVER
6	RG5206	XT2 - SS - DIAPHRAGM
7	RG5207-M	XT2 - SS - DIAPHRAGM WASHER
8	RG5208	XT2 - SS - COVER - BLACK
9	RG5209	XT2 - SS - BUTTON SPRING
10	RG5210	XT2 - SS - PURGE BUTTON
11	RG5211	XT2 - SS - ADJUST KNOB
12	RG5212	XT2 - SS - ORING
13	RG5213	XT2 - SS - BALANCE CYLINDER
14	RG5214	XT2 - SS - SPRING
15	RG5215	XT2 - SS - ORING
16	RG5216	XT2 - SS - PISTON
17	RG5217	XT2 - SS - LP SEAT
18	RG1404	XT2 - SS - ORING
19	RG5219	XT2 - SS - ADJUST TUBE
20	RG5220	XT2 - SS - ADJUST KNOB PIN
21	RG5221	XT2 - SS - LEVER ARM
22	RG1411	XT2 - SS - ORING
23	RG5223	XT2 - SS - ORIFICE
24	RG5224	XT2 - SS - DEFLECTOR KNOB
25	RG1428-SL	XT2 - SS - ORING
26	RG5226	XT2 - SS - BUSHING
27	RG5227	XT2 - SS - NUT
28	RG5228	XT2 - SS - BODY INSERT

Disassembling the XT2 Second Stage

*You must use two wenches to remove or install a hose onto the XT2 second stage. Damage to internal components may result from improper hose removal or installation.

1) An 11/16 tappet wrench is used to hold the Nut (27) in place while another 11/16 wrench is used to loosen and remove the hose

2) Remove the Cover (8), Diaphragm Washer (7), and Diaphragm (6)

3) Use an 11/16 wrench to loosen and remove the Nut (27)

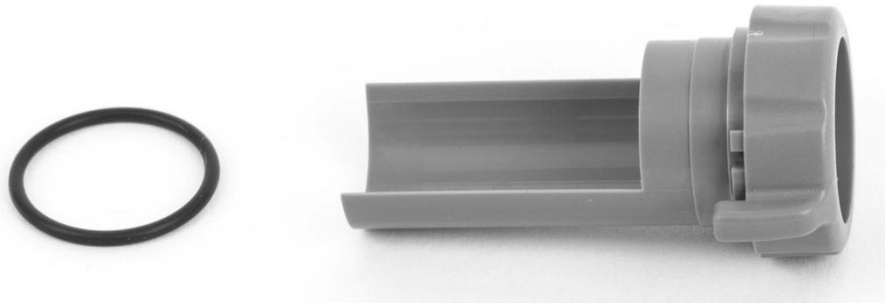
4) Depress the Lever Arm (21) and pull on the Adjustment Knob (11) to remove the adjustment tube assembly

5) Remove the Bushing (26), Body Insert (28), and O-rings (18, 25)

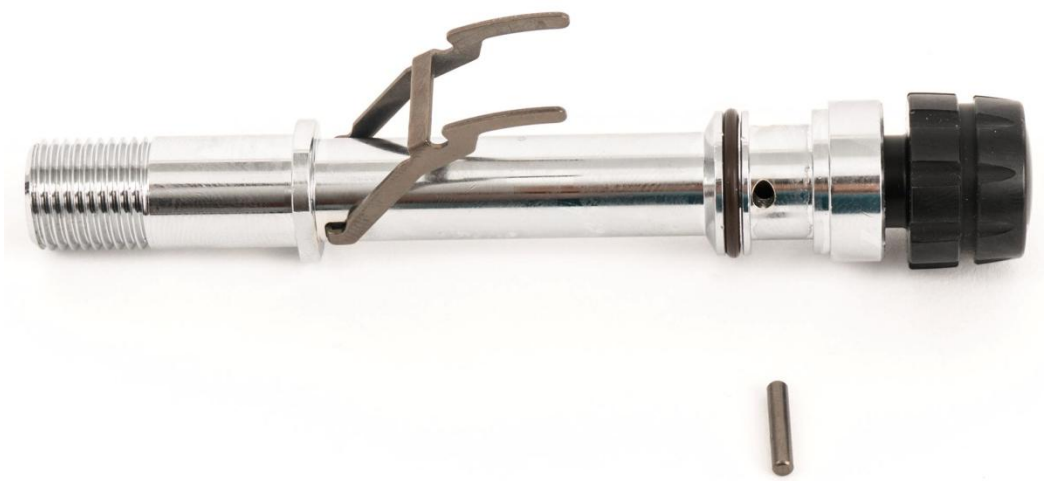
*Note the orientation of the Body Insert before removal

6) Remove the Deflector Knob (24).

*Hold down the Lever (21) and slide the Deflector Knob over the Lever until it stops. Rotate the Deflector Knob 180 degrees and slide it off the rest of the way.

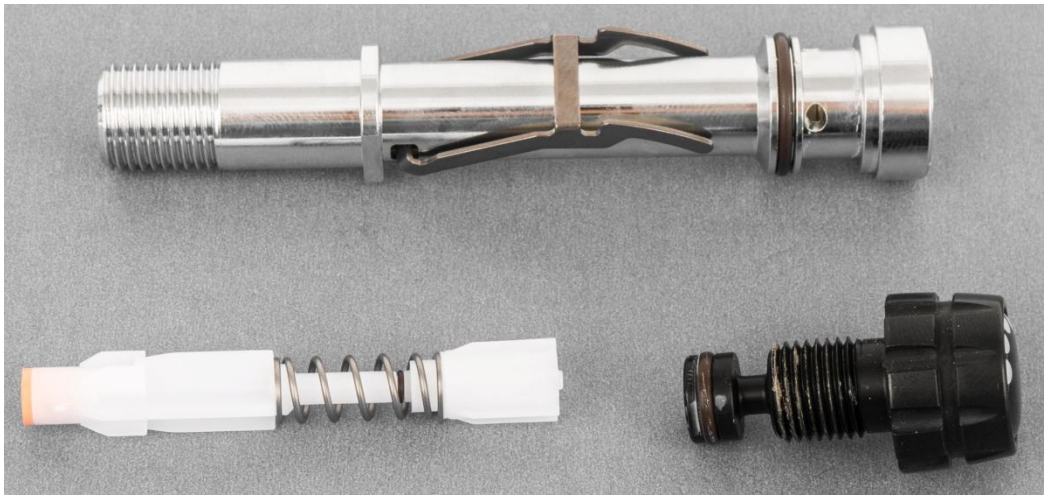


7) Remove the O-ring (25) from the Deflector Knob (24)



8) Remove the Adjustment Knob Pin (20)

*If the Pin is tight rotate the Adjustment Knob (11) so that it is in the middle of its adjustment range. The pin cannot be removed if the adjustment knob is turned all the way in either direction.



9) Remove the Adjustment Knob (11), and the LP valve assembly.

*It may be necessary to push the valve assembly out by inserting a hex key through the inlet

10) Remove the O-rings (18, 12)

11) Remove the LP Seat (17) and the two O-rings (15)

12) Use a flat-blade screwdriver to loosen the Orifice (23) and then push it out with a wooden dowel

13) Remove the O-ring (22)

14) Use a heat gun to heat the Exhaust Cover (5). This will soften the material allowing it to be easily removed

15) Remove and inspect the Exhaust Valve (4) for damage.

*This part will be reused as long as it is not damaged.

This completes disassembly of the XT2 Second Stage

Warning!!! Only original Dive Rite parts are to be used

- Parts should be cleaned in a solution compatible with Oxygen use.
- All points of lubrication (O-rings, Etc.) require the use of an Oxygen compatible lubricant. I.E. Tribolube 71

Assembling the XT2 Second Stage

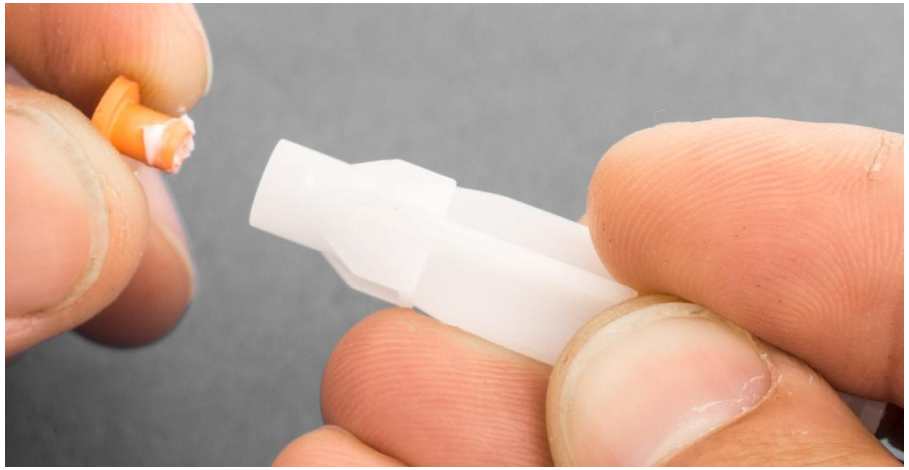
1) Install the Exhaust Valve (4)

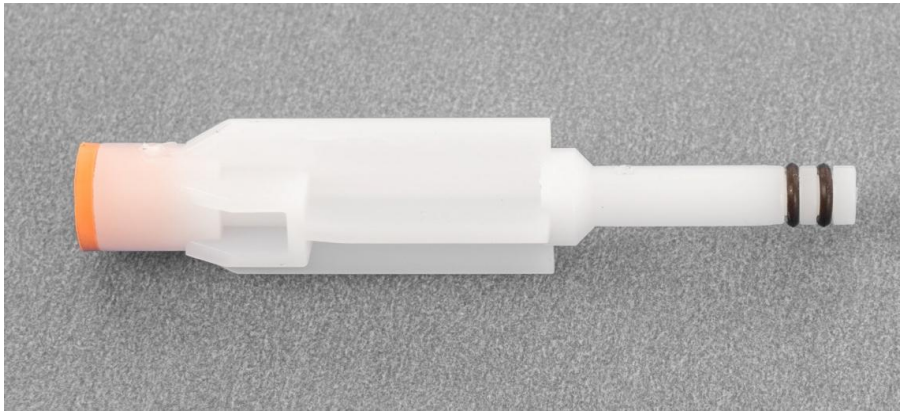
2) Use a heat gun to heat the Exhaust Cover (5). This will soften the material allowing it to be easily installed

3) Install O-ring (22) onto the Orifice (23)

4) Install Orifice (23) into the Adjustment tube and tighten with a flat-blade screwdriver

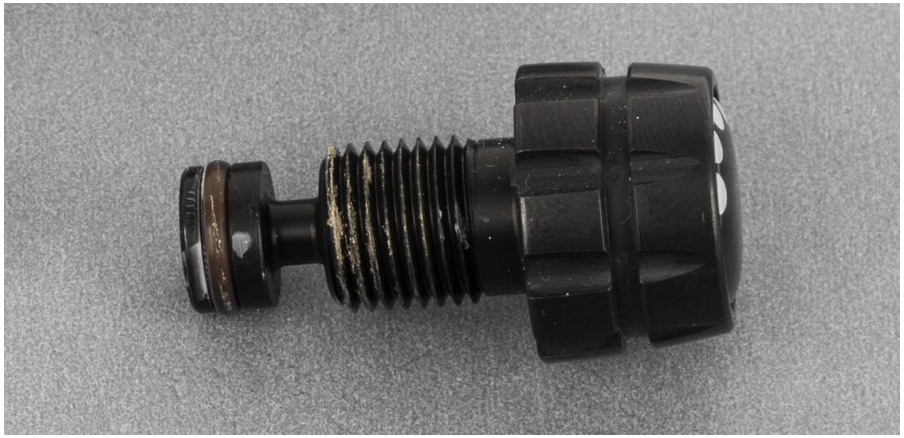
*The Orifice should be screwed in until it stops then unscrewed 1.5 turns





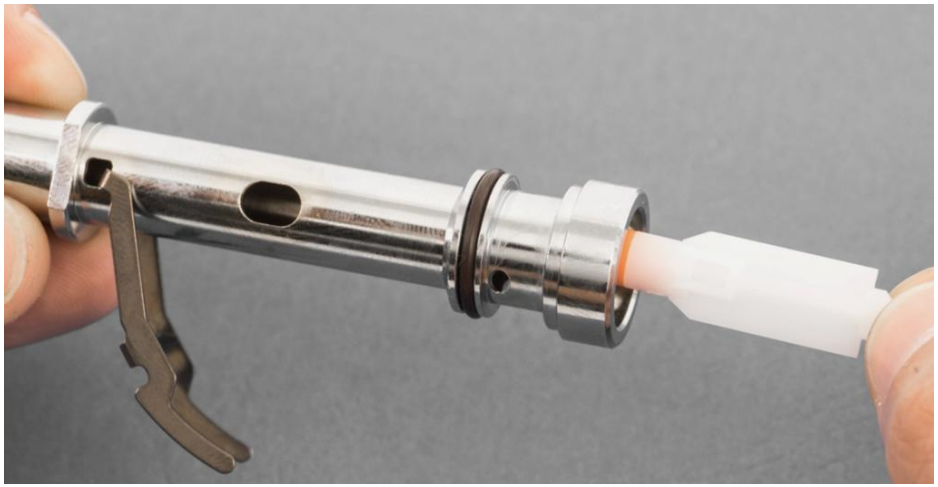
5) Install the LP Seat (17) and O-rings (15) onto the Piston (16)

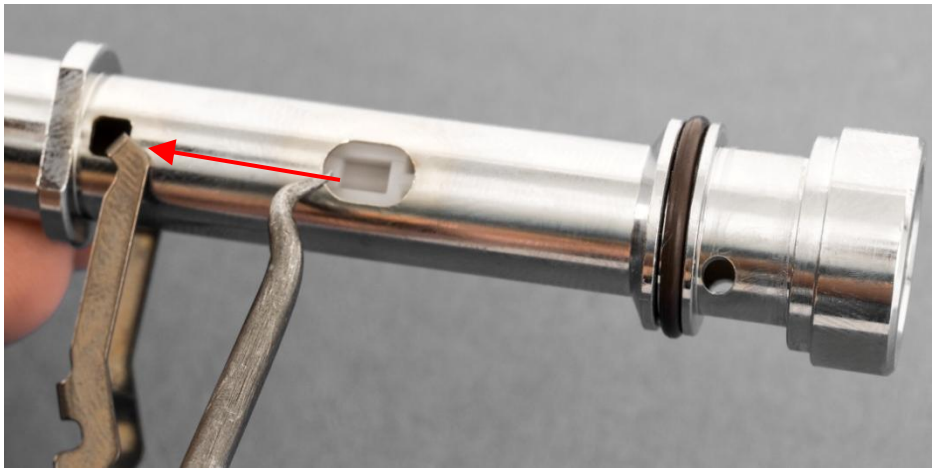
*Apply a small amount of grease to the LP Seat stem to allow it to install fully.



6) Install the O-ring (12) onto the Adjustment Knob (11)

7) Install O-ring (18) onto Adjustment Tube (19)





8) Install Piston (16) into the Adjustment Tube (19)

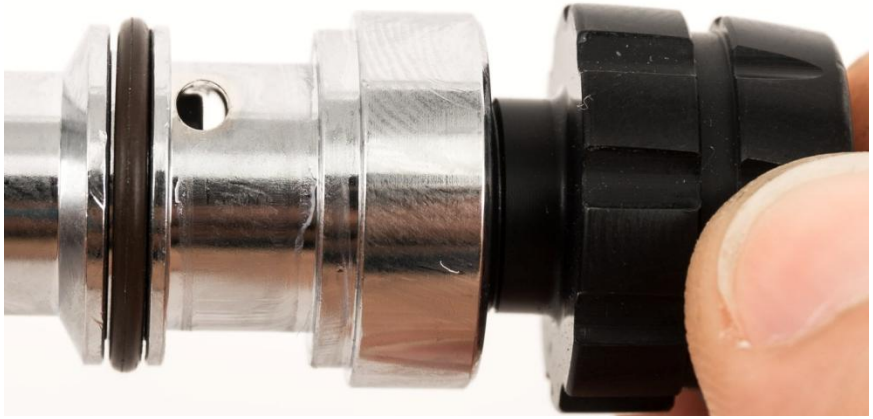
*The lever catch on the Piston must be properly aligned with the Lever

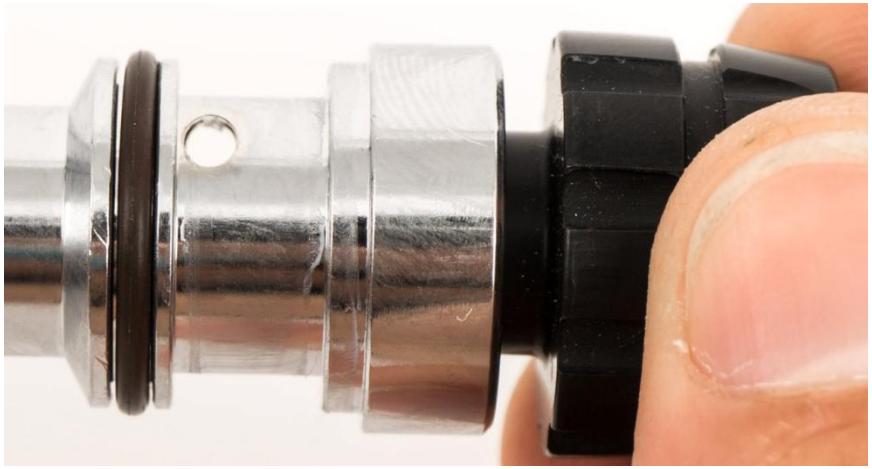
9) Install the Spring (14) and Balance Cylinder (13)

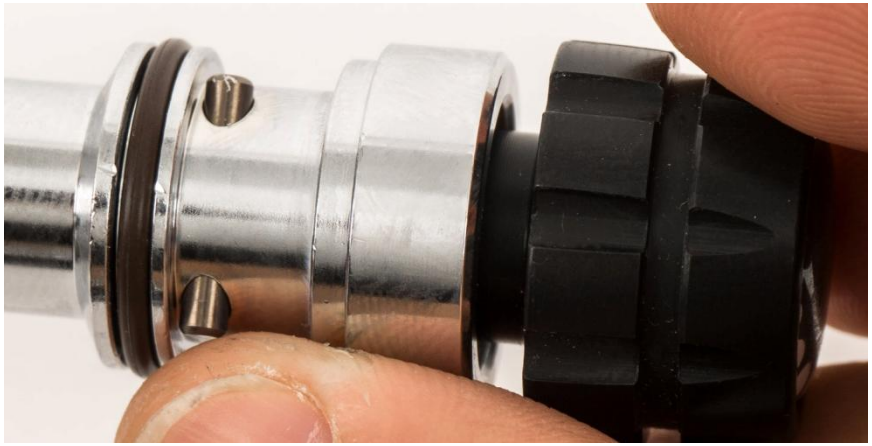
*Apply pressure to the back of the Balance Cylinder to ensure that the Piston is seated properly on the Lever

10) Install the Adjustment Knob (11) onto the Adjustment Tube (19)

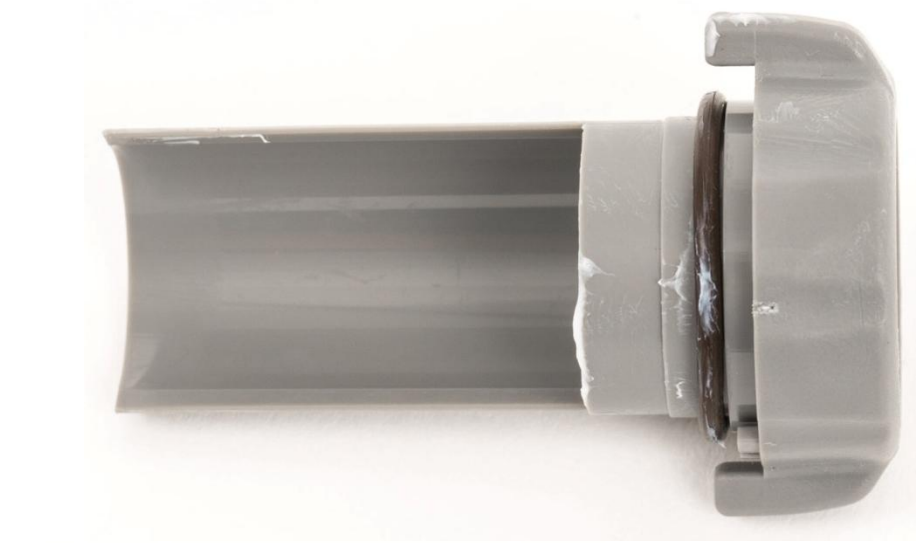
*The Lever should be under spring tension







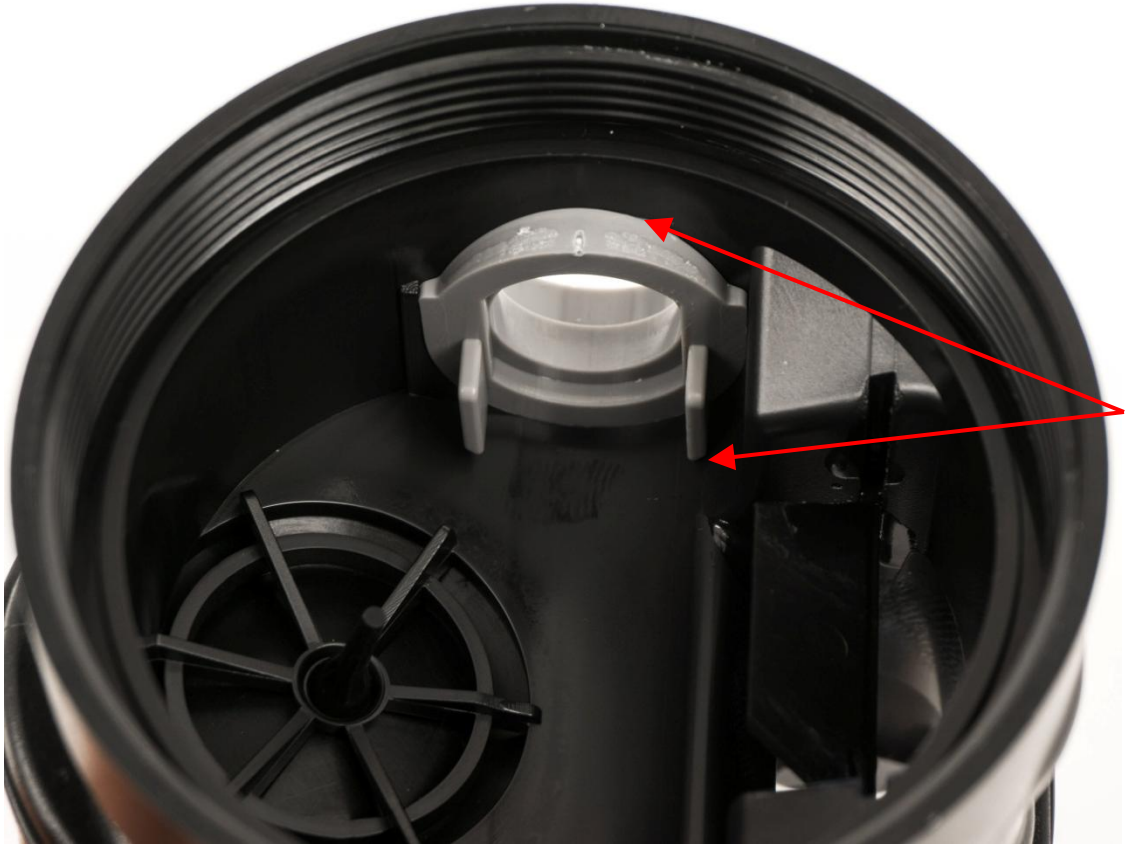
11) Turn the Adjustment Knob (11) so that the it does not block the pin hole and install the Adjustment Knob Pin (20)



12) Install the O-ring (25) onto the Deflector Knob (24)

13) Install the Deflector Knob (24)

*Slide the knob over the Lever (21) until it stops. Rotate the knob 180 degrees and slide it on the rest of the way so that it covers the Adjustment Knob Pin (20)



14) Install the Body Insert (28)

*The insert must be oriented properly and be fully seated

15) Install the adjustment tube assembly

*Ensure that the Lever (21) is recessed properly into the Body Insert (28)

16) Install O-rings (18, 25)

17) Install Bushing (26)

18) Install Nut (27) and tighten to 1-2 ft-lb

19) Apply silicone grease to the friction surface of the Diaphragm Washer (7)

20) Install the Diaphragm (6) and Diaphragm Washer (7)

21) Install the Cover and LP hose

*You must use two wenches to remove or install a hose onto the XT2 second stage. Damage to internal components may result from improper hose removal or installation

This completes Assembly of the XT2 Second Stage

Reversing the Hose Routing of the XT2 Second Stage

- *This manual is only to be used as a guide for trained regulator technicians. Possession of this guide does not qualify any individual in the service of Dive Rite Breathing Systems. Only qualified Dive Rite dealers can service Dive Rite Products. Improper servicing can lead to serious injury or death.*
- ***Only Original Parts ordered from Dive Rite are to be used***

*You must use two wenches to remove or install a hose onto the XT2 second stage. Damage to internal components may result from improper hose removal or installation.

1) An 11/16 tappet wrench is used to hold the Nut (27) in place while another 11/16 wrench is used to loosen and remove the hose

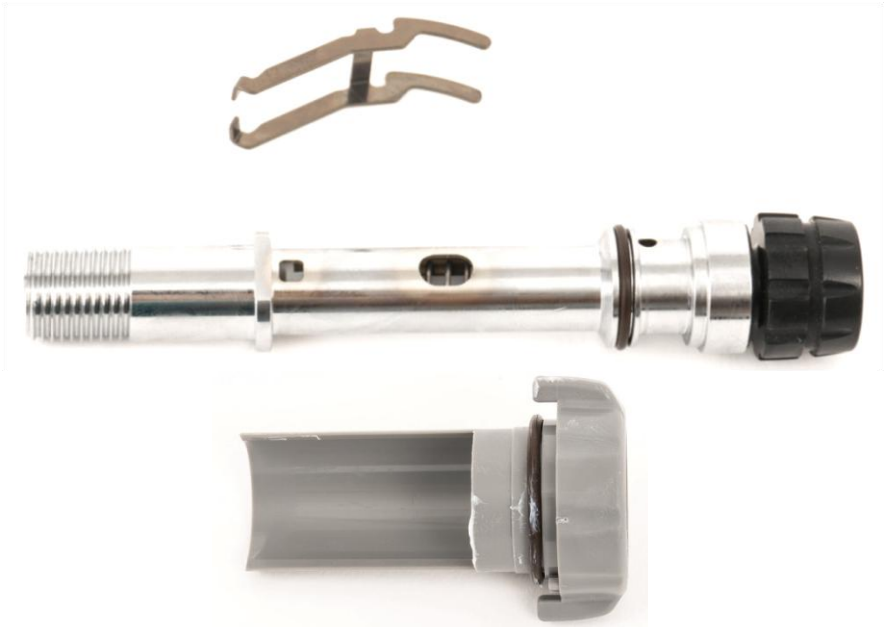
2) Remove the Cover (8), Diaphragm Washer (7), and Diaphragm (6)

3) Use an 11/16 wrench to loosen and remove the Nut (27)

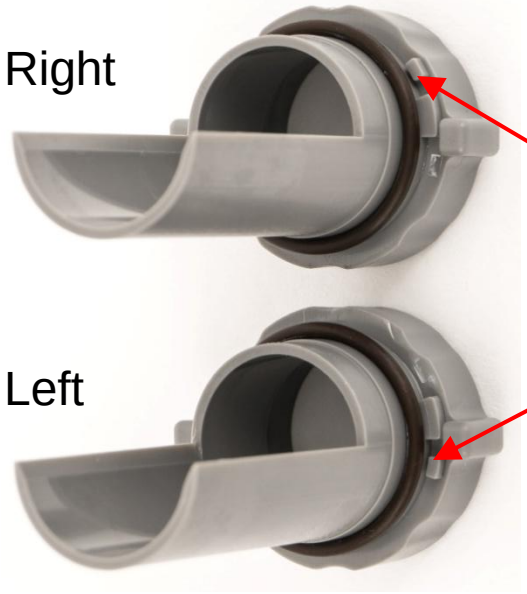
4) Depress the Lever Arm (21) and pull on the Adjustment Knob (11) to remove the remove the adjustment tube assembly

5) Remove the Bushing (26), Body Insert (28), and O-rings (18, 25)

*Note the orientation of the Body Insert before removal



6) Remove the Lever (21) and Deflector Knob (24)



7) Identify the correct Deflector Knob (24) for the desired hose routing

*The deflectors can be identified by the location of the small additional tab

8) Install the Deflector Knob (24) and Lever (21) for the desired hose routing

9) Install the Body Insert (28) on the proper side for the desired hose routing

10) Install the adjustment tube assembly

*Ensure that the Lever (21) is recessed properly into the Body Insert (28)

11) Install O-rings (18, 25)

12) Install Bushing (26)

13) Install Nut (27) and tighten to 1-2 ft-lb

14) Install the Diaphragm (6) and Diaphragm Washer (7)

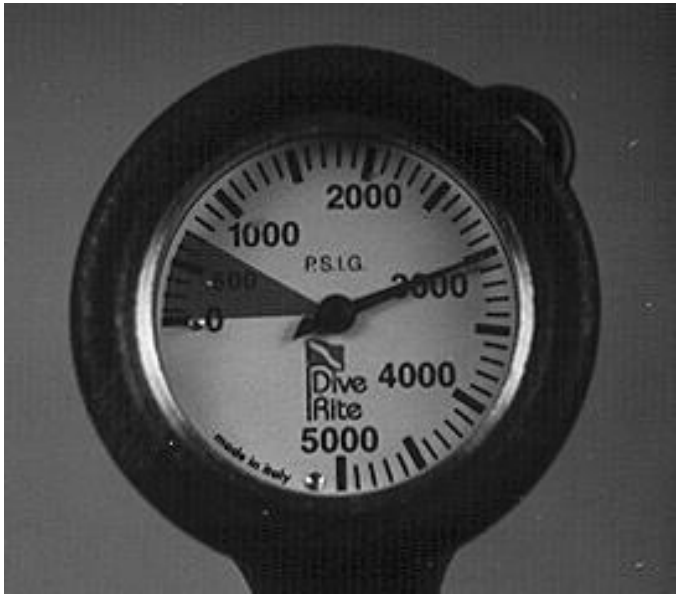
15) Install the Cover and LP hose

*You must use two wenches to remove or install a hose onto the XT2 second stage. Damage to internal components may result from improper hose removal or installation

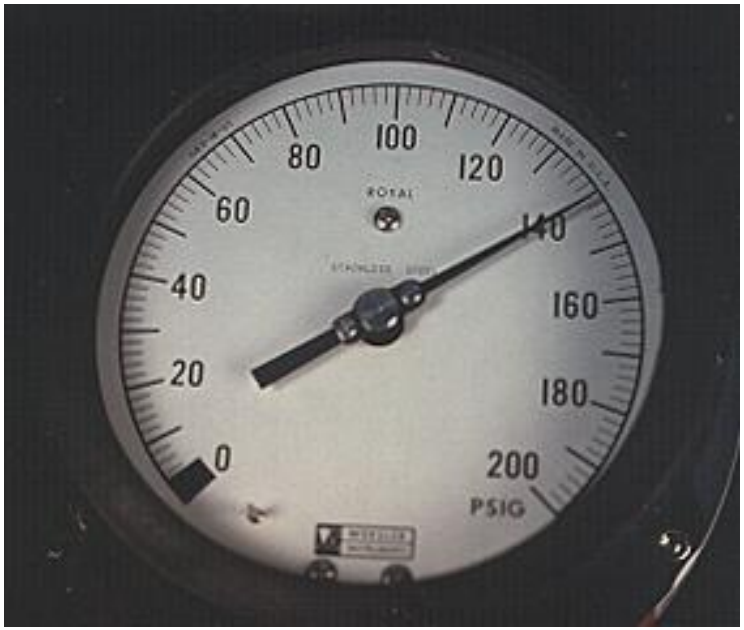
Tuning and Adjusting Dive Rite Regulators

1) Attach a second stage adjusting tool between the second stage and the low pressure hose.
The first stage can also be connected to a overpressure valve
2) Close all other open ports with the appropriate plugs.

3) Connect to a high pressure (3000 psi) gas source.
4) Open the supply pressure slowly.
5) Adjust the intermediate pressure by moving the adjusting screw to increase or decrease tension on the intermediate pressure spring. (Purge the second stage after each adjustment.)
6) The Intermediate pressure should be adjusted to 140 psi +/- 5psi.



Supply Pressure



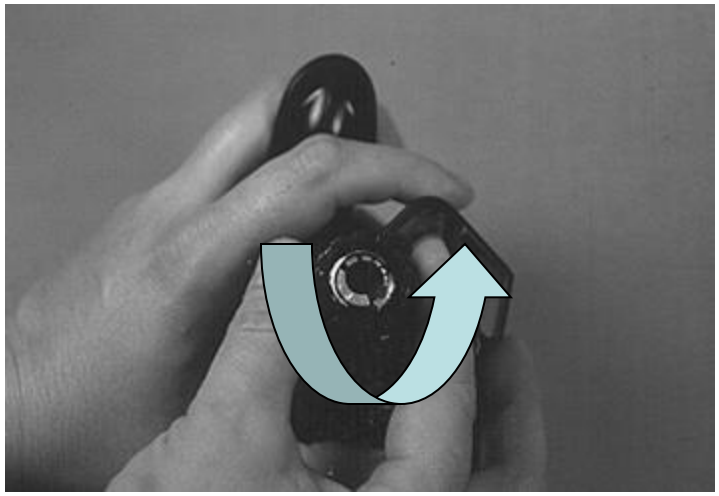
Intermediate Pressure

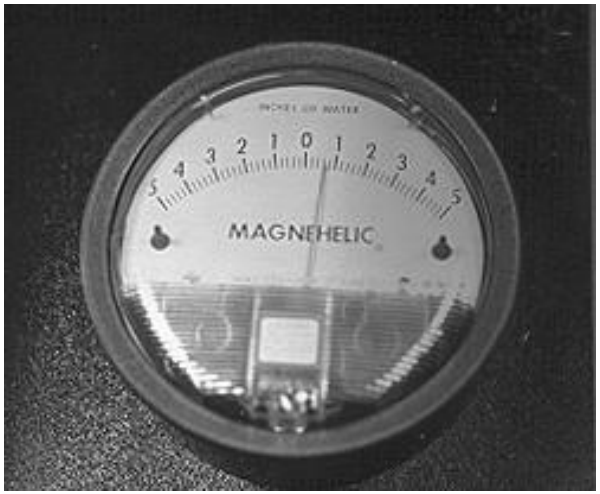
Note: it may be necessary to purge the regulator several times to allow the HP seat to “break in” and hold pressure.

Tuning the Second Stages

1) Turn the adjustment knob counterclockwise until it stops; this will set the second stage for the least resistance.
2) Using the second stage adjusting tool set the resistance to .8-1.0 inches of water.
3) Purge the regulator and observe the intermediate pressure.

An intermediate pressure drop of 2-8 psi is considered acceptable





Note: By setting the adjustment knob to the easiest setting, the diver can increase breathing resistance to his/her preference. The regulator should NOT be set to FREEFLOW.