



DIVE RITE®

XT2 Second Stage Service Manual

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Warning

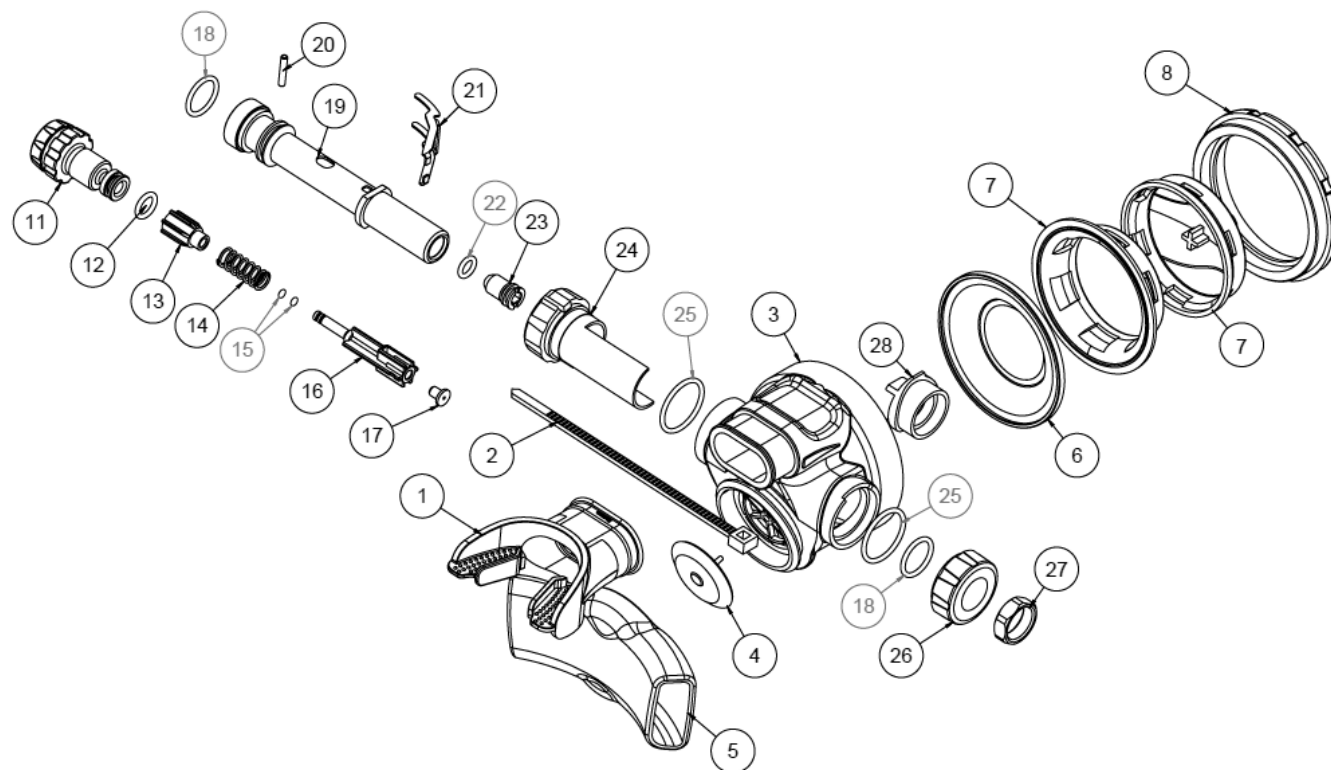
- *This manual is only to be used as a guide for trained regulator technicians. Possession of this guide does not qualify any individual in the service of Dive Rite Breathing Systems. Only qualified Dive Rite dealers can service Dive Rite Products. Improper servicing can lead to serious injury or death.*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

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Required Tools

- 11/16 wrench
- 11/16 tappet wrench
- Flat-blade screwdriver
- 1/4" wood or plastic dowel
- Inline adjustment tool (recommended)



*Highlighted items are included in service kit.

#	Part Number	Description
1	RG1426	XT2 - SS - MOUTHPIECE
2	RP9320	XT2 - SS - NYLON TIE
3	RG5203	XT2 - SS - MAIN HOUSING
4	RG5904	XT2 - SS - EXHAUST VALVE
5	RG5205	XT2 - SS - EXHAUST COVER
6	RG5206	XT2 - SS - DIAPHRAGM
7	RG5230	XT2 - SS - COVER - 2PC GLUED
8	RG5218	XT2 - SS - COVER RING
11	RG5211	XT2 - SS - ADJUST KNOB
12	RG5212	XT2 - SS - ORING
13	RG5916	XT2 - SS - BALANCE CYLINDER
14	RG5917	XT2 - SS - SPRING
15	RG5215	XT2 - SS - ORING
16	RG5919	XT2 - SS - PISTON
17	RG5920	XT2 - SS - LP SEAT
18	RG1404	XT2 - SS - ORING
19	RG5922	XT2 - SS - ADJUST TUBE
20	RG5927	XT2 - SS - ADJUST KNOB PIN
21	RG5928	XT2 - SS - LEVER ARM
22	RG1411	XT2 - SS - ORING
23	RG5924	XT2 - SS - ORIFICE
24	RG5224	XT2 - SS - DEFLECTOR KNOB
25	RG1428SL	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 wrenches 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 – RG5227) in place while another 11/16 wrench is used to loosen and remove the hose



2) Remove the Cover Ring (#8 - RG5218), Cover (#7 - RG5230), and Diaphragm (#6 - RG5206)



3) Use an 11/16 wrench to loosen and remove the Nut (#27 – RG5227)

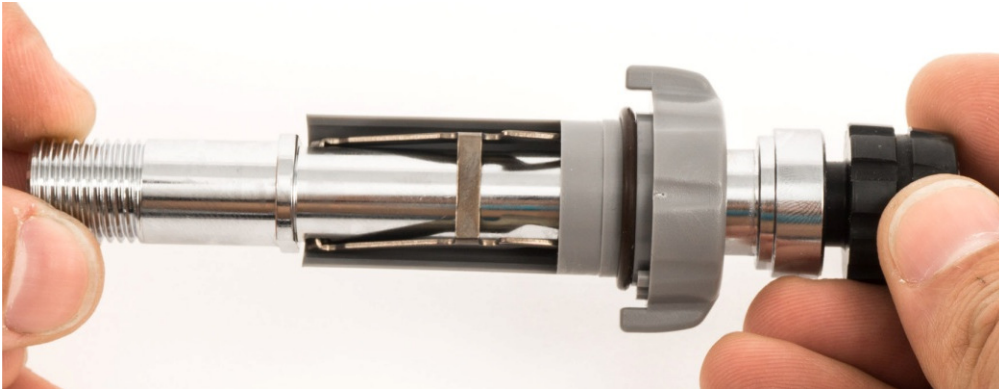


4) Depress the Lever Arm (#21 – RG5928) and pull on the Adjustment Knob (#11 – RG5211) to remove the adjustment tube assembly

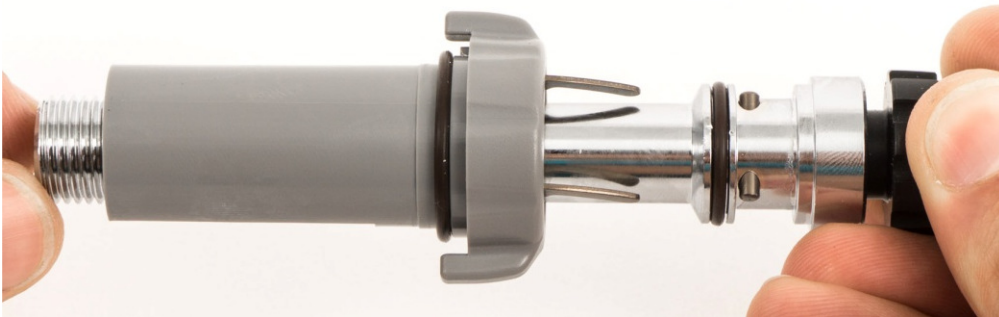


5) Remove the Bushing (#26 – RG5226), Body Insert (#28 - RG5228), and O-rings (#18 – RG1404, #25 – RG1428-SL)

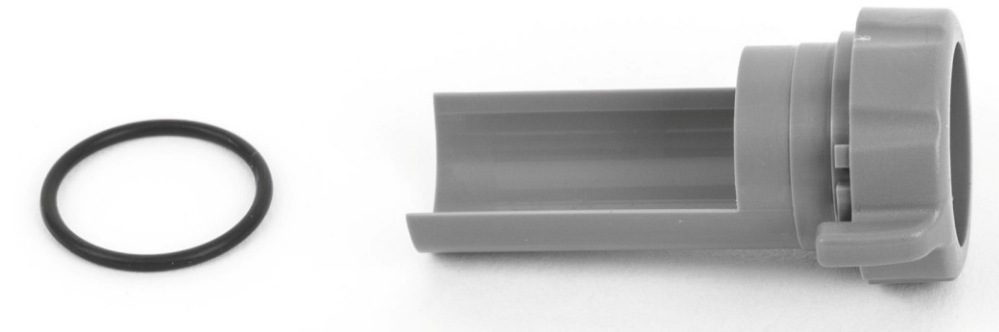
*Note the orientation of the Body Insert before removal



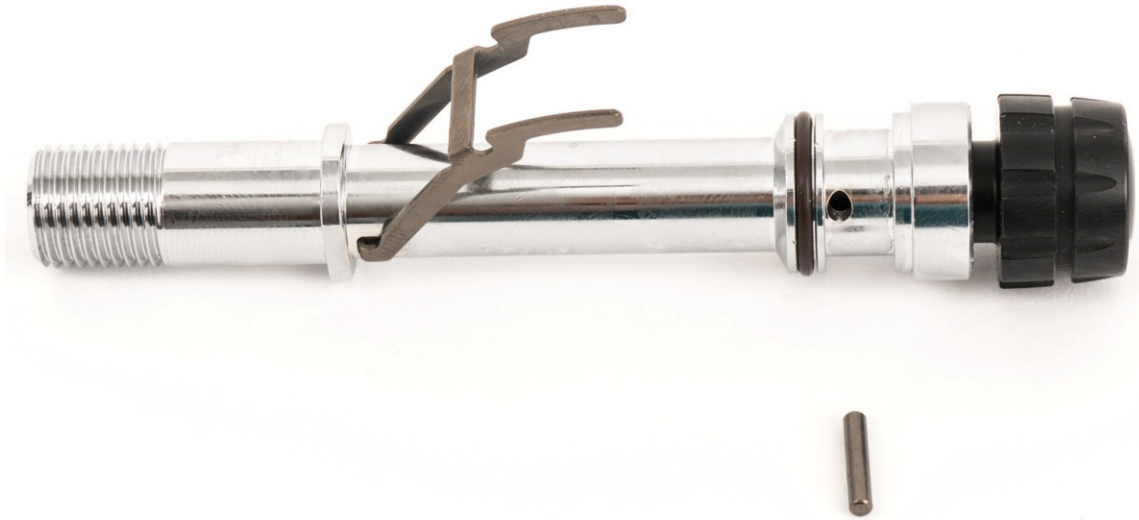
6) Remove the Deflector Knob (#24 – RG5224).



*Hold down the Lever (#21 – RG5928) 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.

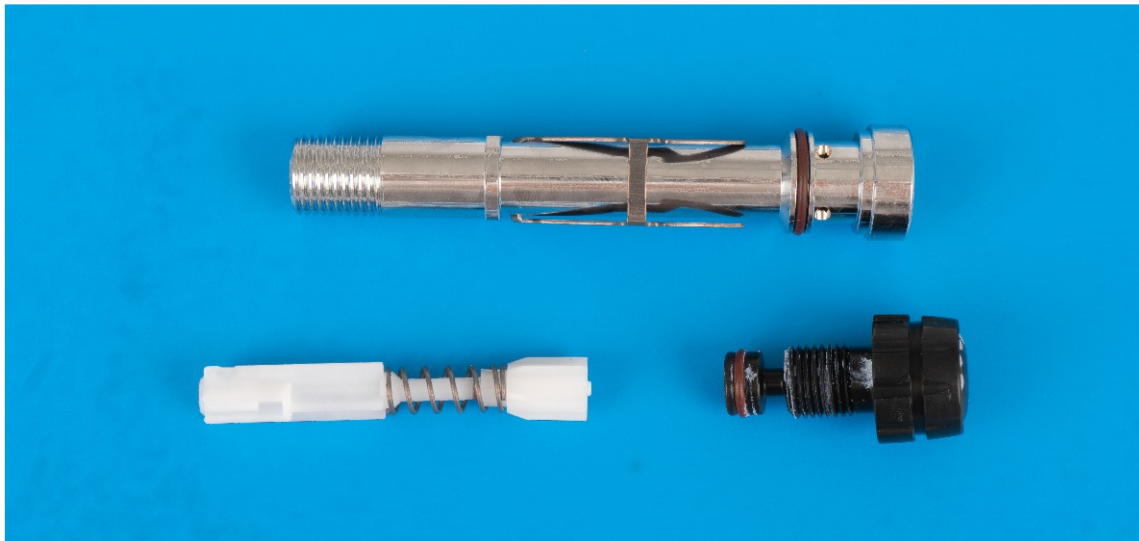


7) Remove the O-ring (#25 – RG1428-SL) from the Deflector Knob (#24 – RG5224)



8) Remove the Adjustment Knob Pin (#20 – RG5927)

*If the Pin is tight rotate the Adjustment Knob (#11 – RG5211) 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.

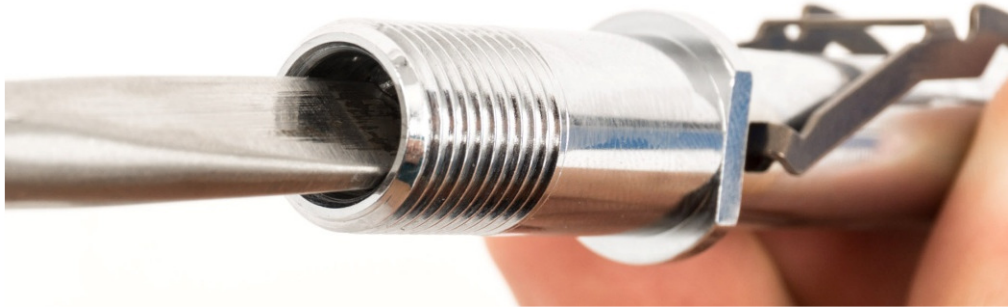


9) Remove the Adjustment Knob (#11 – RG5211), and the LP valve assembly.

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



10) Remove the O-rings (#18 – RG1404,
#12 – RG5212)



11) Use a flat-blade screwdriver to loosen the Orifice (#23 – RG5924) and then push it out with a wooden dowel



12) Remove the O-ring (#22 – RG1411)



13) Use a heat gun to heat the Exhaust Cover (#5 – RG5205). This will soften the material allowing it to be easily removed.



14) Remove and inspect the Exhaust Valve (#4 – RG5904) 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



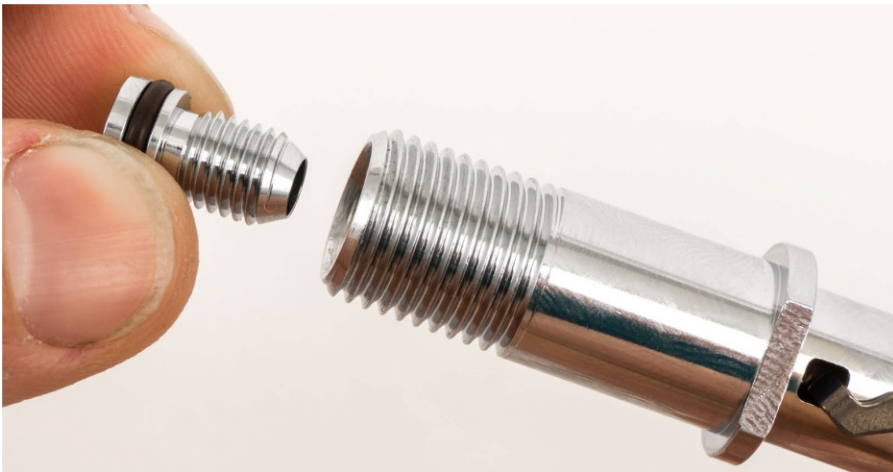
- 1) Install the Exhaust Valve (#4 – RG5904)



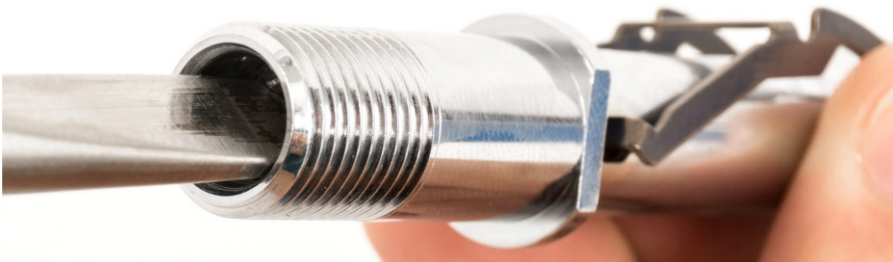
- 2) Use a heat gun to heat the Exhaust Cover (#5 – RG5205). This will soften the material allowing it to be easily installed



3) Install O-ring (#22 – RG1411)
onto the Orifice (#23 – RG5924)



4) Install Orifice (#23 – RG5924) into
the Adjustment tube (#19 – RG5922)
and tighten with a flat-blade screwdriver

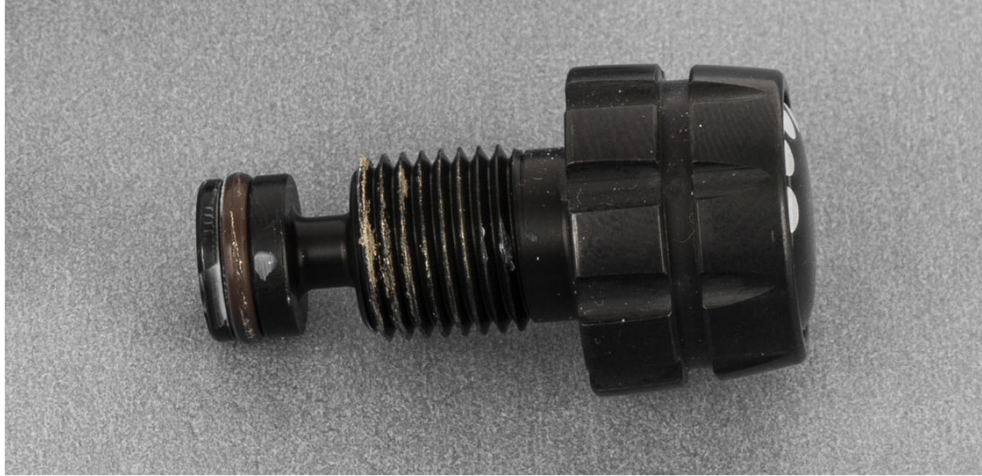


*The Orifice should be screwed in until it
stops then unscrewed approximately
1.5 turns

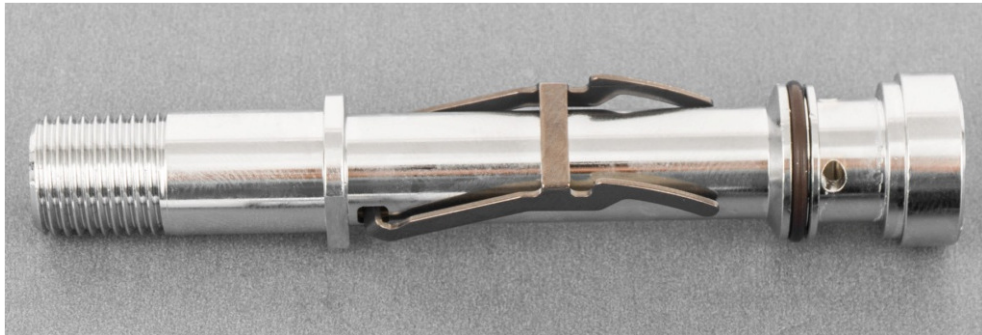


5) The LP Seat (#17 – RG5920) and O-rings (#15 – RG5215) come preinstalled on the new Piston (#16 – RG5919)

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



6) Install the O-ring (#12 – RG5212) onto the Adjustment Knob (#11 – RG5211)

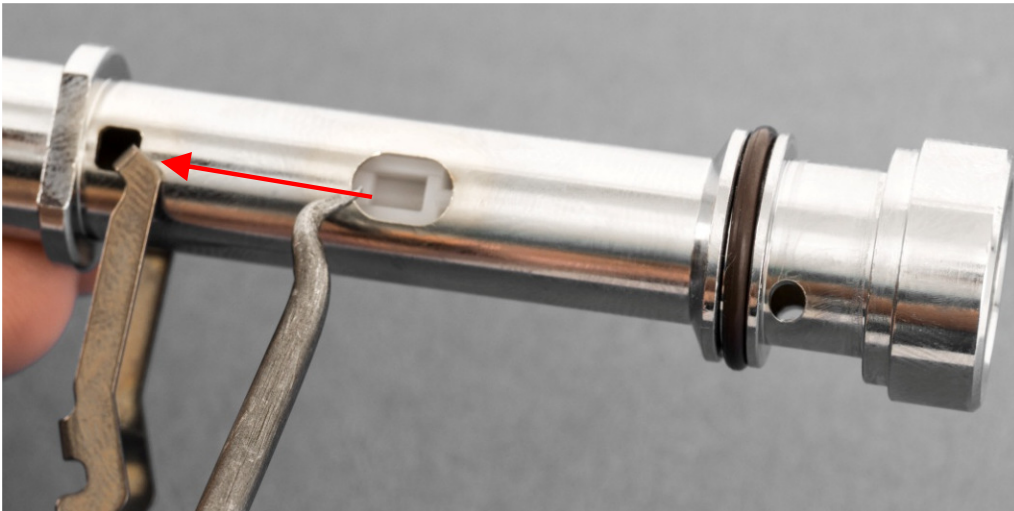


7) Install O-ring (#18 – RG1404) onto Adjustment Tube (#19 – RG5922)



8) Install Piston (#16 – RG5919) into the Adjustment Tube (#19 – RG5922)

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





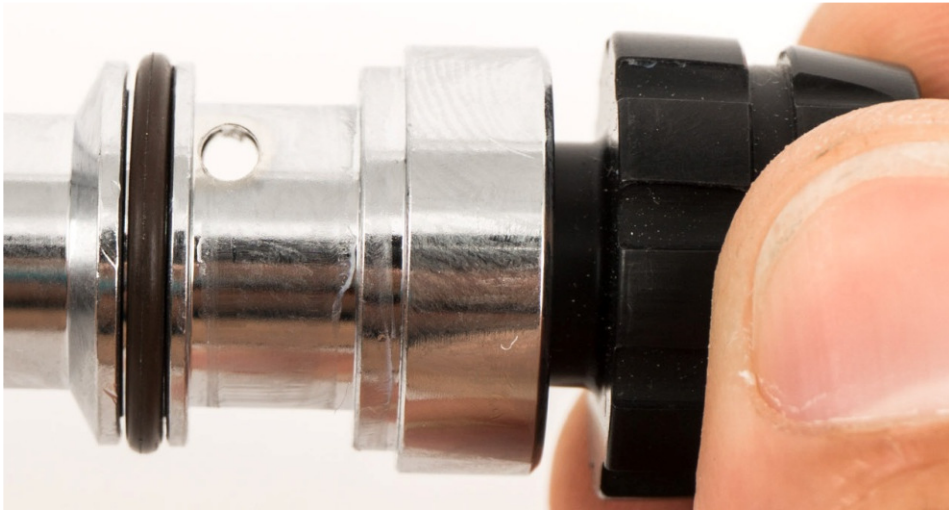
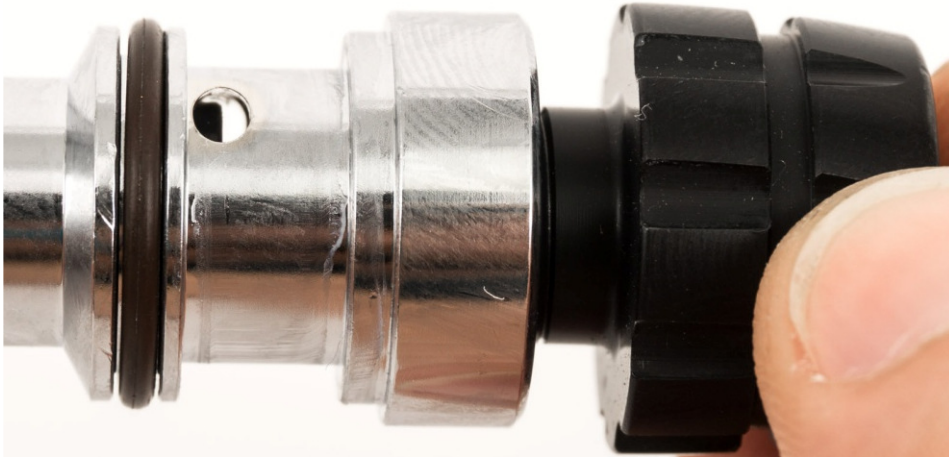
9) Install the Spring (#14 – RG5917) and Balance Cylinder (#13 – RG5916)

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

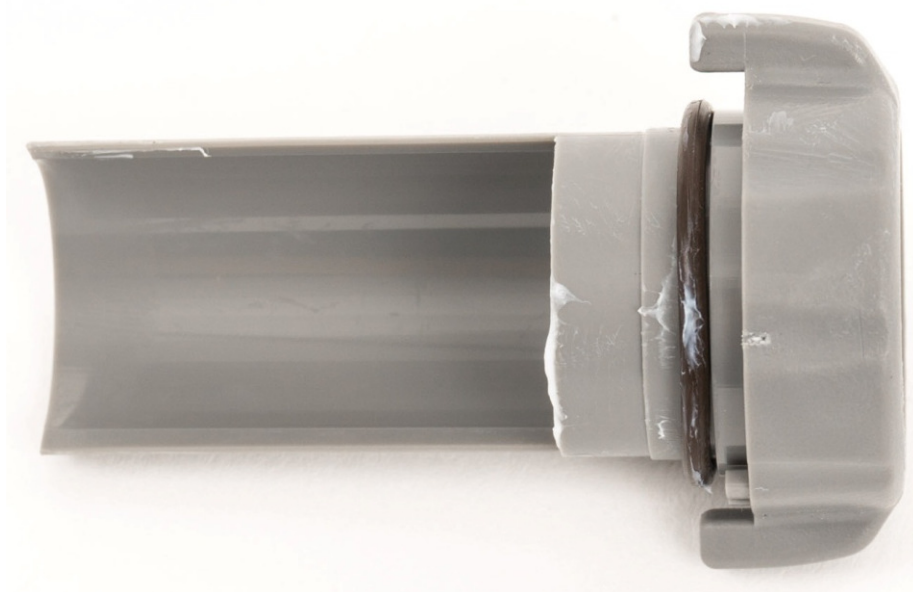


10) Install the Adjustment Knob (#11 – RG5211) onto the Adjustment Tube (#19 - RG5922)

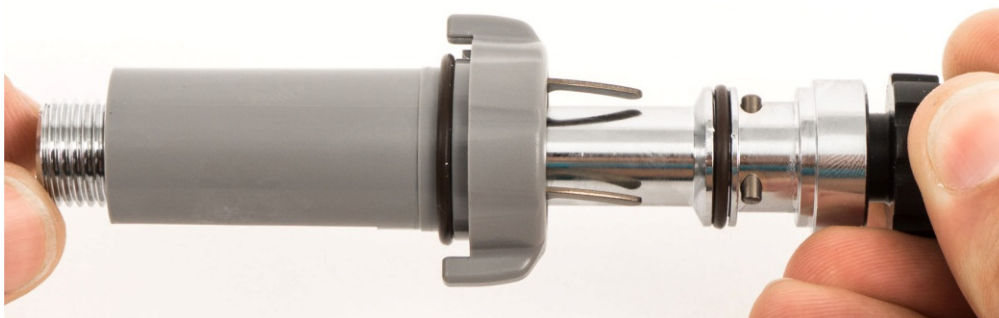
*The Lever should be under spring tension



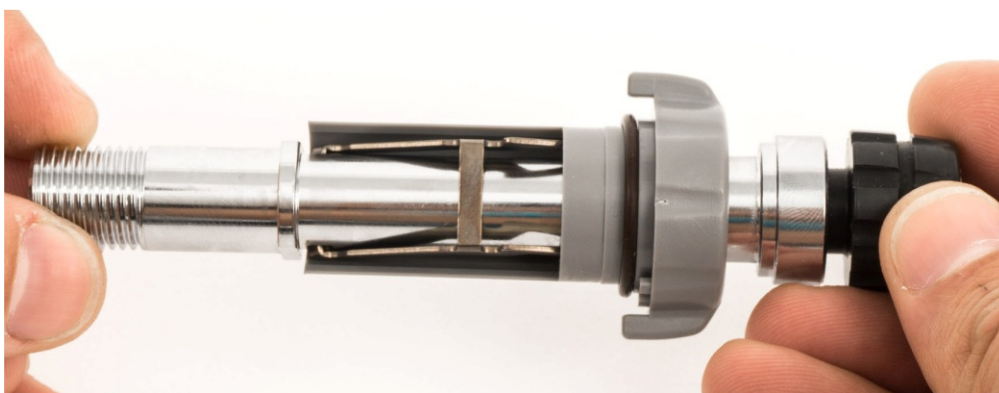
11) Turn the Adjustment Knob (#11 – RG5211) so that the it does not block the pin hole and install the Adjustment Knob Pin (#20 – RG5927)



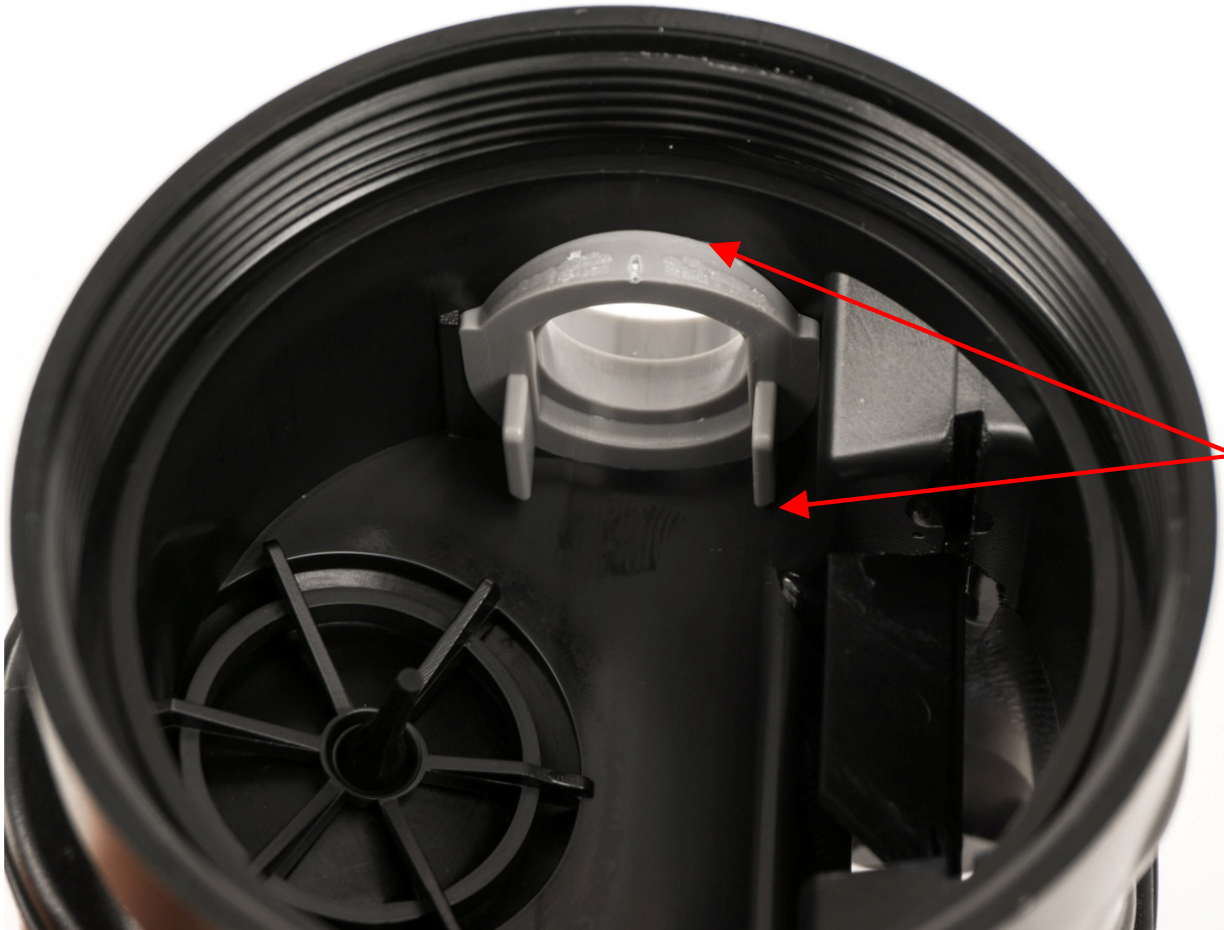
12) Install the O-ring (#25 – RG1428-SL) onto the Deflector Knob (#24 – RG5224)



13) Install the Deflector Knob (#24 – RG5224)



*Slide the knob over the Lever (#21 – RG5928) 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 – RG5927)

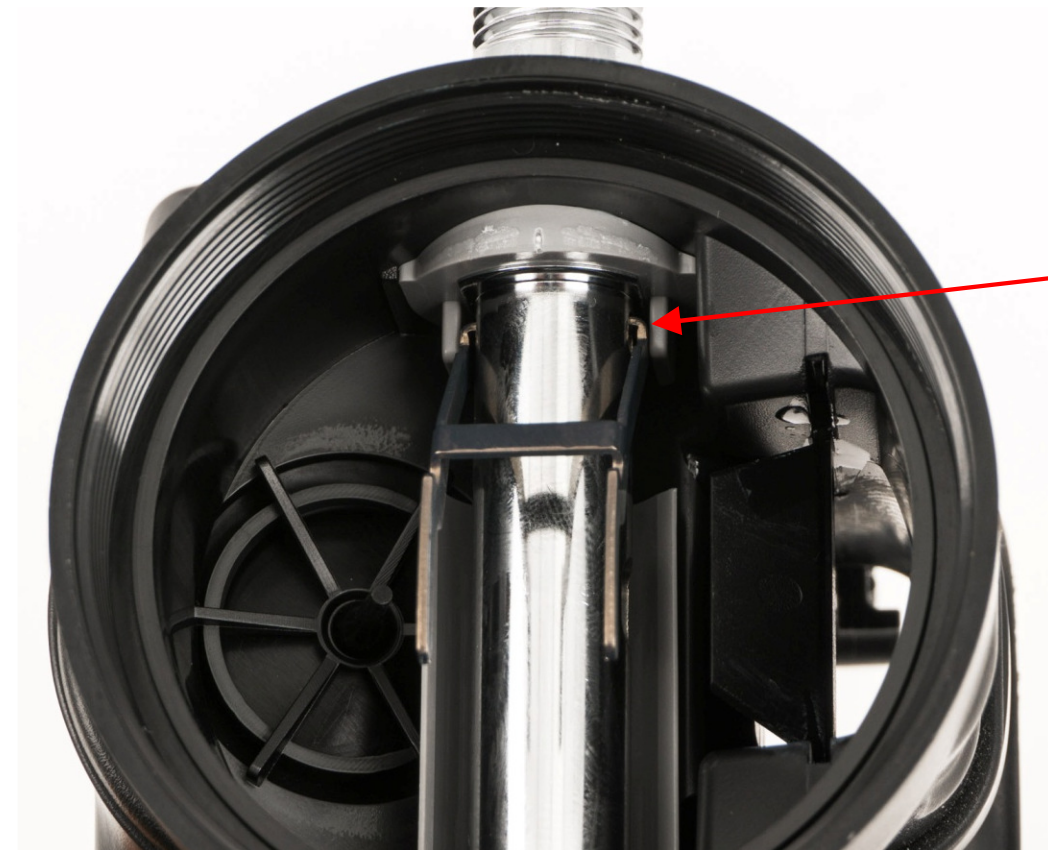


14) Install the Body Insert (#28 – RG5228)

*The insert must be oriented properly and be fully seated



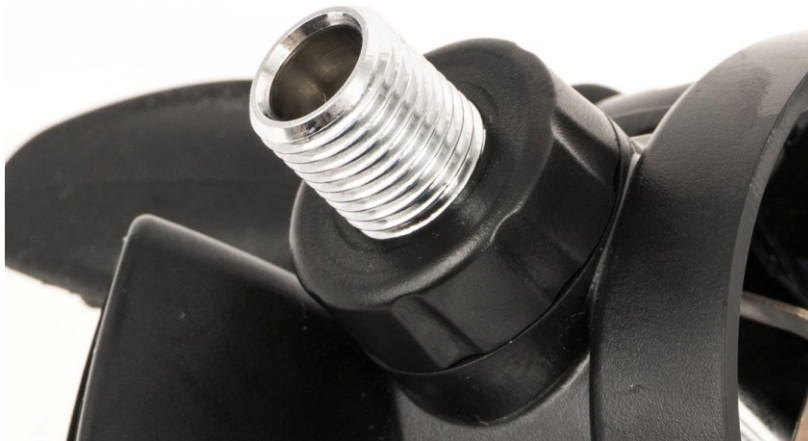
15) Install the adjustment tube assembly



*Ensure that the Lever (#21 – RG5928) is recessed properly into the Body Insert (#28 – RG5228)



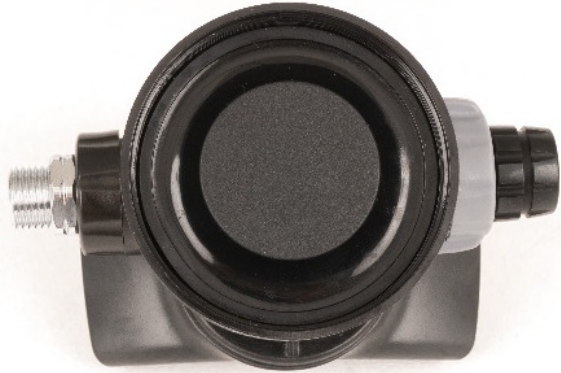
16) Install O-rings (#18 – RG1404, #25 – RG1428-SL)



17) Install Bushing (#26 – RG5226)



18) Install Nut (#27 – RG5227) and tighten to 12-24 in-lb (1.36-2.71 N-m)



19) Install the Diaphragm (#6 – RG5206)



20) Install the Cover (#7 - RG5230) and Cover Ring (#8 - RG5218), and LP hose

*You must use two wrenches 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

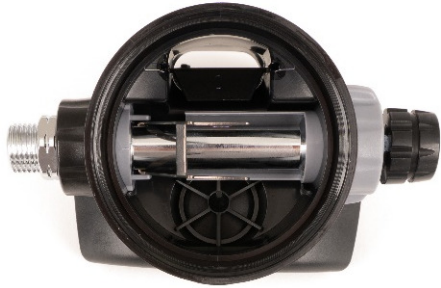
Reversing the Hose Routing of the XT2 Second Stage

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*You must use two wrenches 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 – RG5227) in place while another 11/16 wrench is used to loosen and remove the hose



2) Remove the Cover Ring (#8 - RG5218), Cover (#7 - RG5230), and Diaphragm (#6 - RG5206)



3) Use an 11/16 wrench to loosen and remove the Nut (#27 - RG5227)



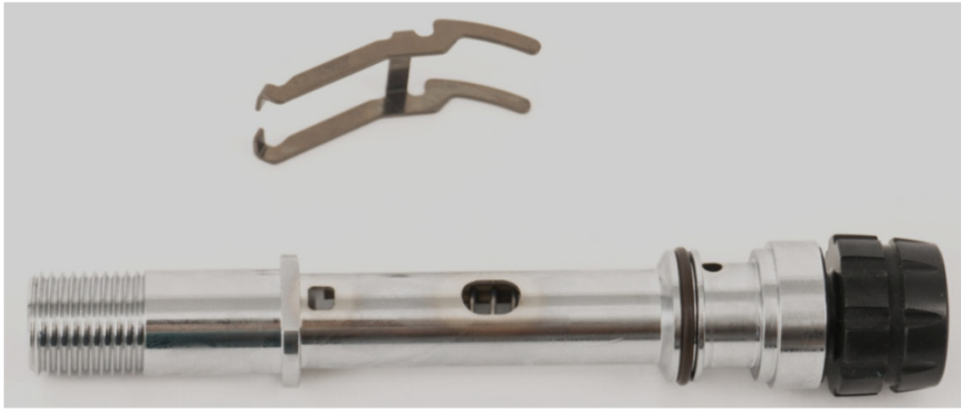


4) Depress the Lever Arm (#21 – RG5928) and pull on the Adjustment Knob (#11 – RG5211) to remove the adjustment tube assembly

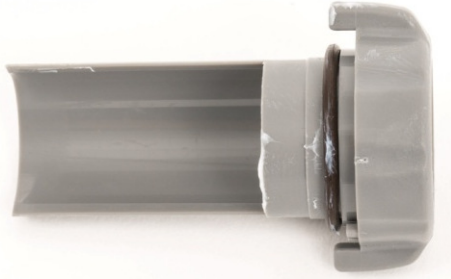


5) Remove the Bushing (#26 – RG5226), Body Insert (#28 – RG5228), and O-rings (#18 – RG1404, #25 – RG1428-SL)

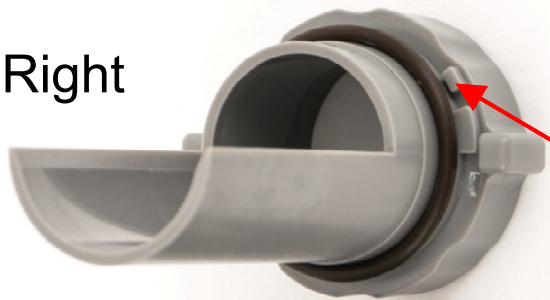
*Note the orientation of the Body Insert before removal



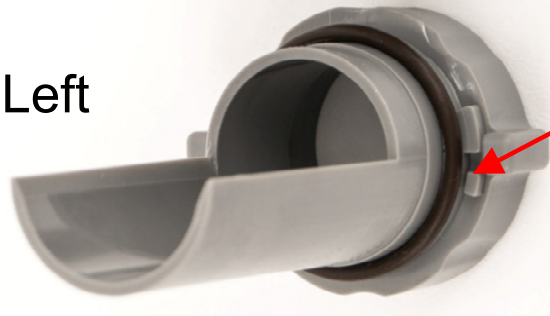
6) Remove the Lever (#21 – RG5928) and Deflector Knob (#24 – RG5224)



Right

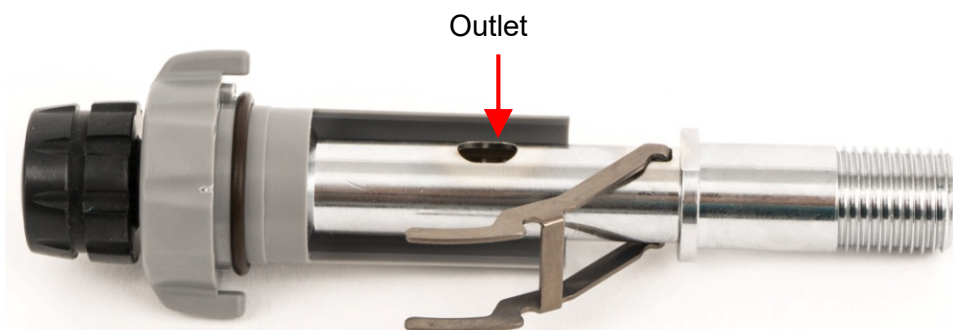


Left



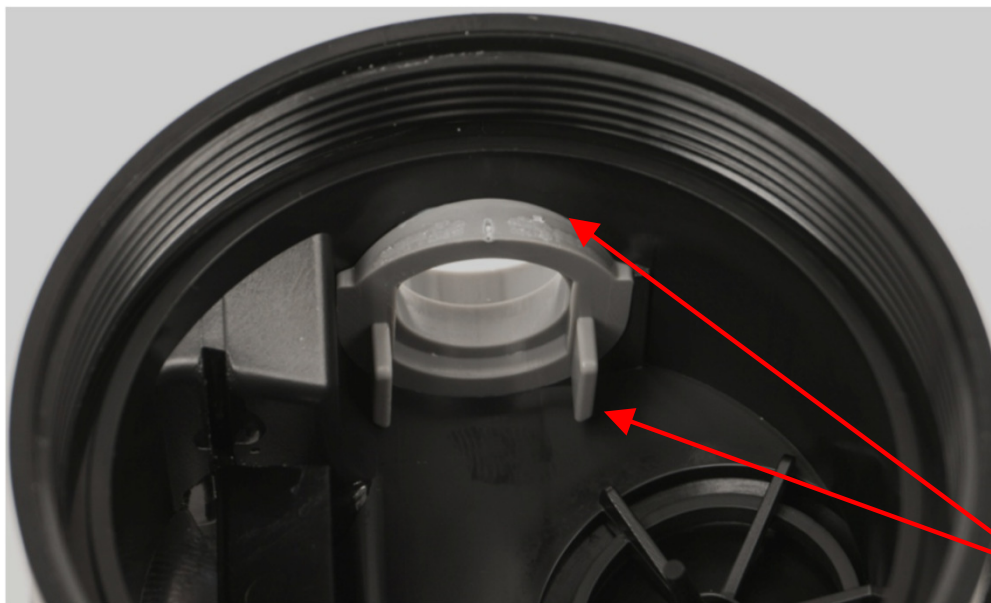
7) Identify the correct Deflector Knob (#24 – RG5224) for the desired hose routing

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



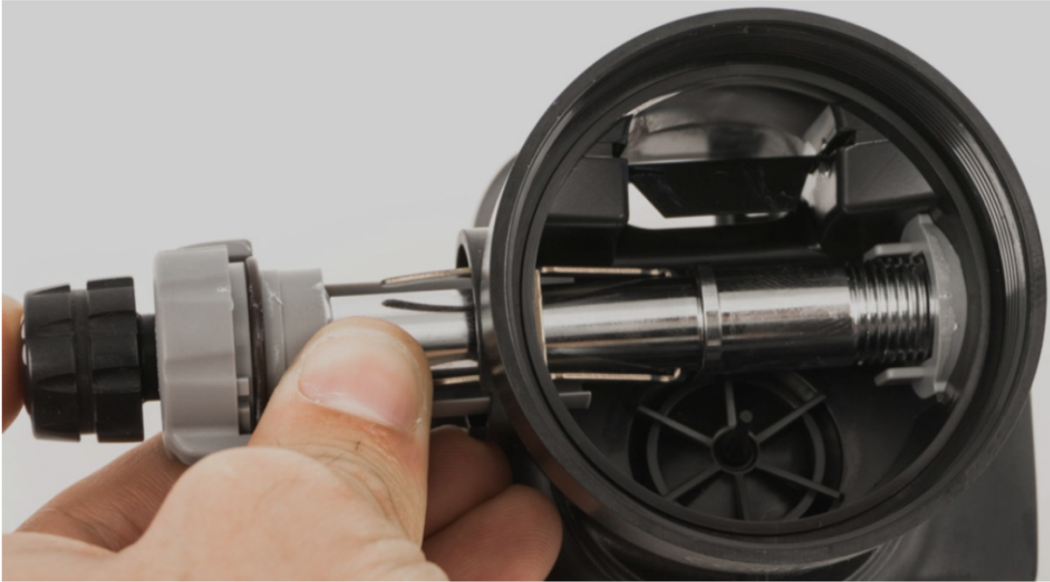
8) Install the Deflector Knob (#24 – RG5224) and Lever (#21 – RG5928) for the desired hose routing

*Outlet must face up towards the mouthpiece opening when the adjustment tube assembly is installed



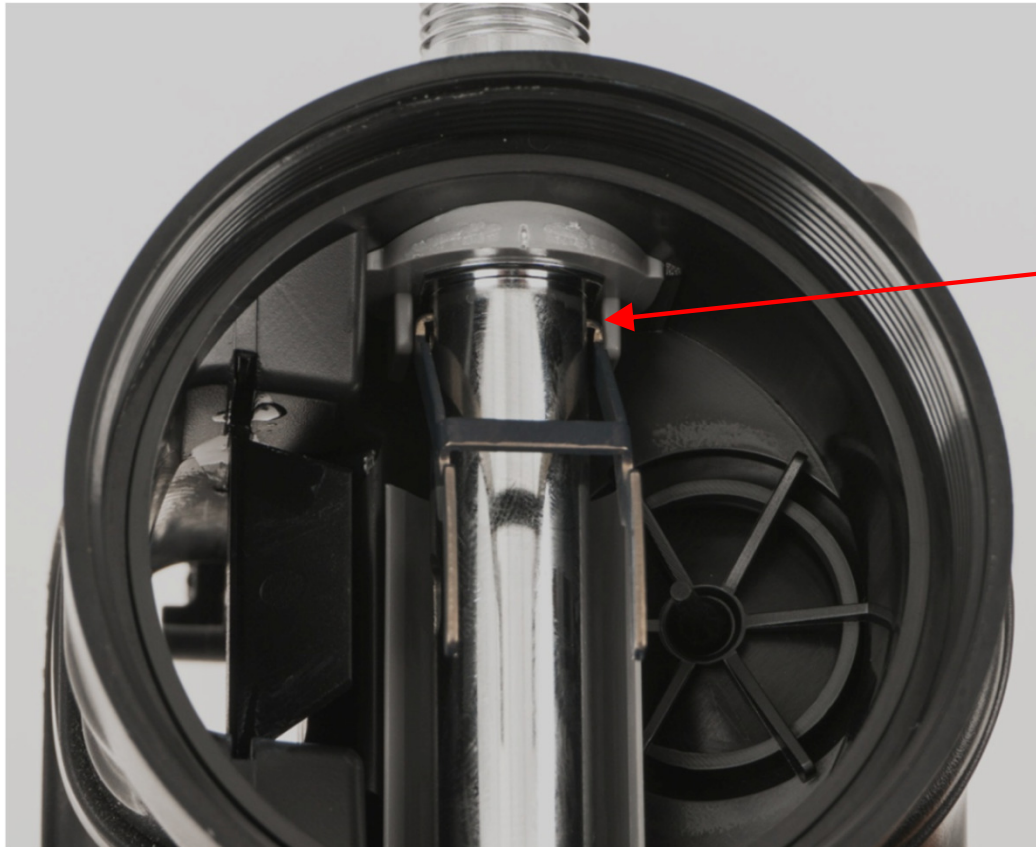
9) Install the Body Insert (#28 – RG5228) on the proper side for the desired hose routing

*The insert must be oriented properly and be fully seated



10) Install the adjustment tube assembly

*Ensure that the Lever (#21 – RG5928) is recessed properly into the Body Insert (#28 – RG5228)





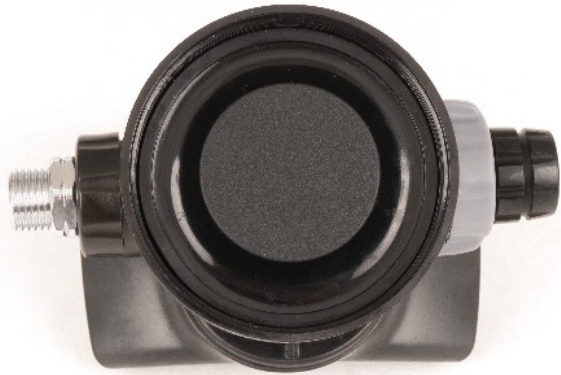
11) Install O-rings (#18 – RG1404, #25 – RG1428-SL)



12) Install Bushing (#26 – RG5226)



13) Install Nut (#27 – RG5227) and tighten to 12-24 in-lbs (1.36-2.71 N-m)



14) Install the Diaphragm (#6 – RG5206)



15) Install the Cover (#7 - RG5230) and Cover Ring (#8 - RG5218), and LP hose

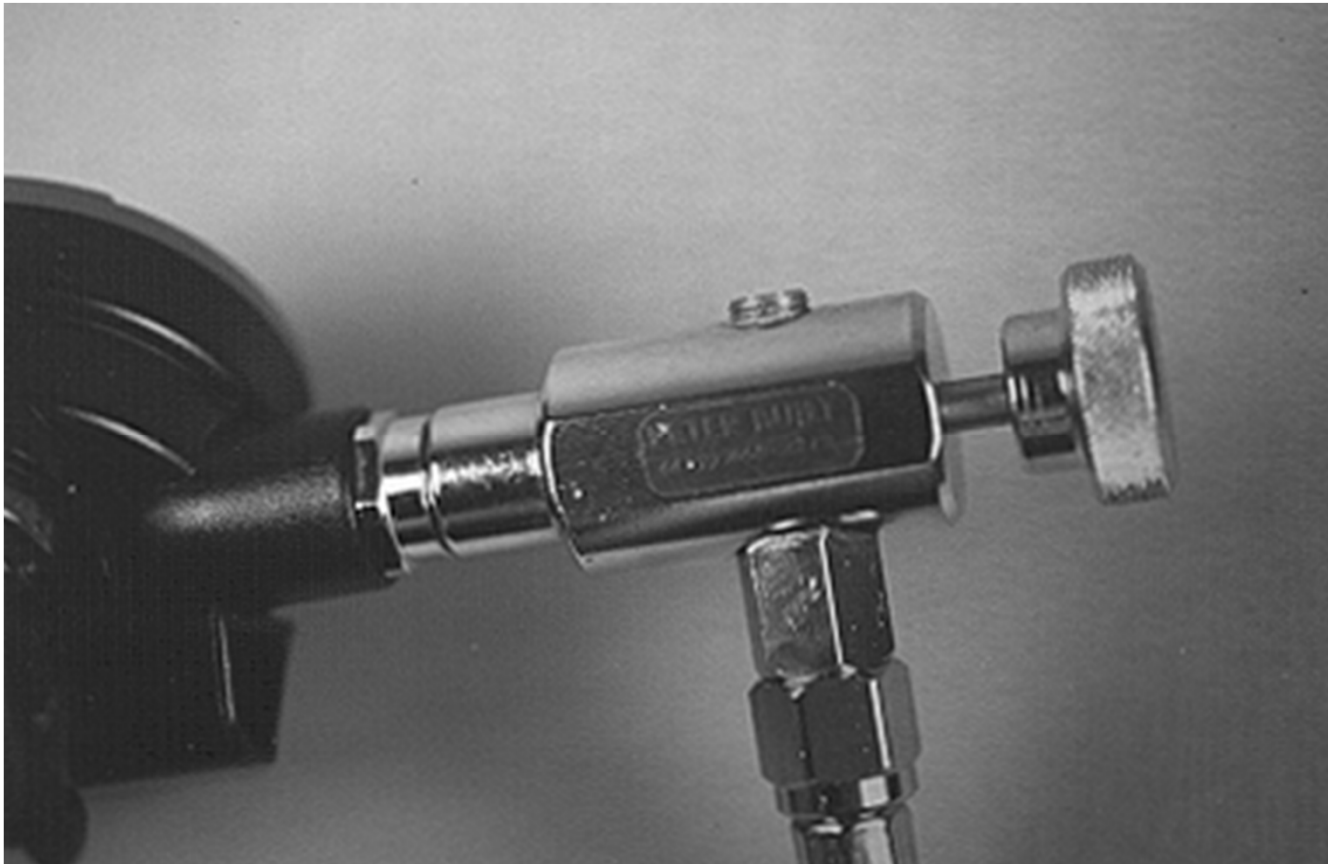
*You must use two wrenches to remove or install a hose onto the XT2 second stage. Damage to internal components may result from improper hose removal or installation



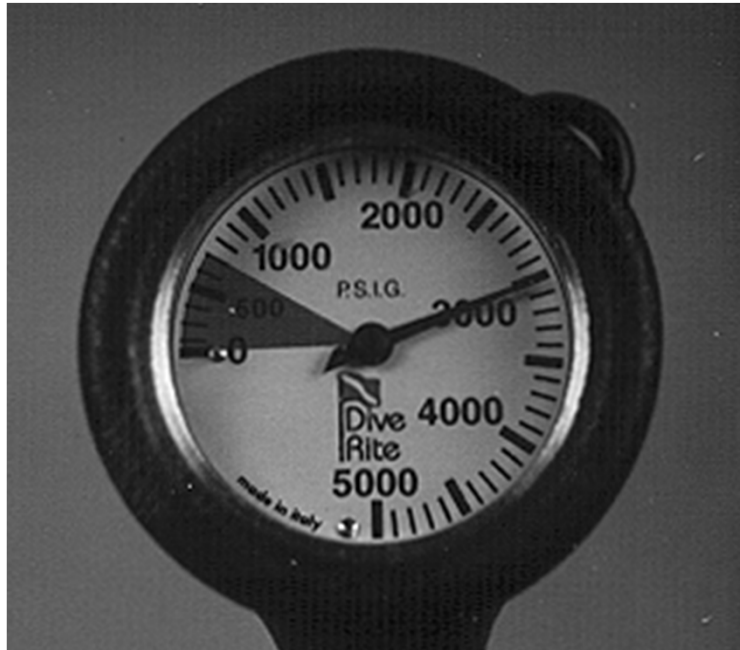
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Tuning and Adjusting Dive Rite Regulators

- 1) Attach a second stage adjusting tool between the second stage and the low pressure hose.
The first stage can also be connected to an 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

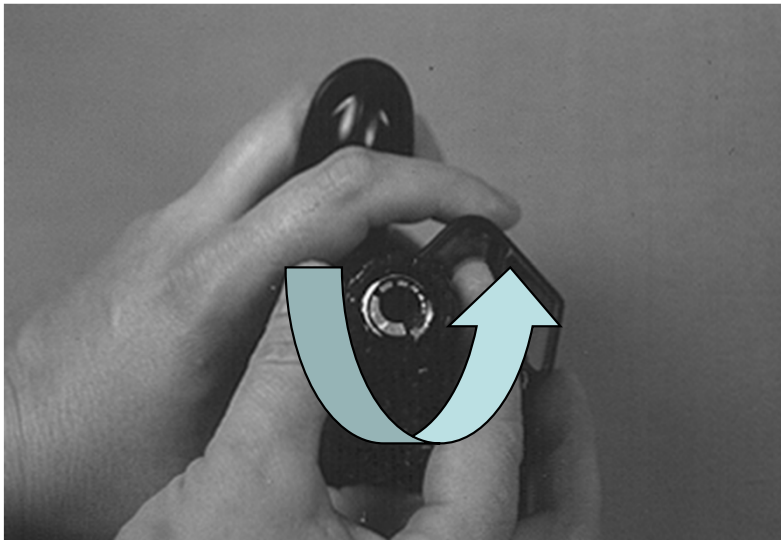


Intermediate Pressure

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 1-1.2 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.