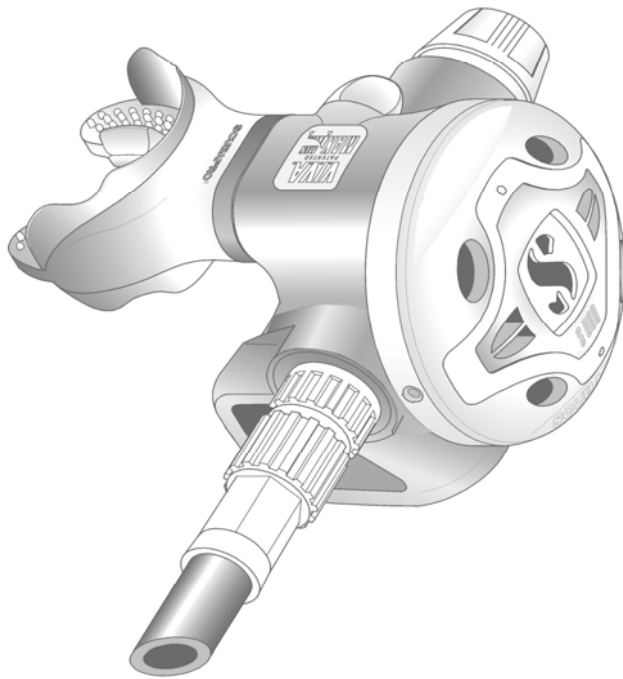


# **S600** *Second Stage Regulator*



## **MAINTENANCE PROCEDURE FOR S 600 AND G250 HP**



## MAINTENANCE PROCEDURE FOR S 600 AND G250 HP

### ***TOOLS NEEDED FOR REPAIR OF S600***



Quantity	Part Number	Description	
1	43.300.227	G500 / S 600 Balance Chamber Adjusting Tool	
1 set	43.300.017	Brass o'ring picks	
1 tube	41.047.000	Christo-Lube	
1	47.010.000	Counter Mat	
1	41.496.101	Lubricant syringe	
1	43.040.000	Universal Tool Latest version	
1	43.002.101	Ball-end Allen Wrench	
1	43.300.225	Viva flow vane remover	
1	41.043.000	Pneumatic Adjusting tool	
1	40.978.000	Blow Gun/Air Nozzle	
1		Soft-bristled toothbrush	

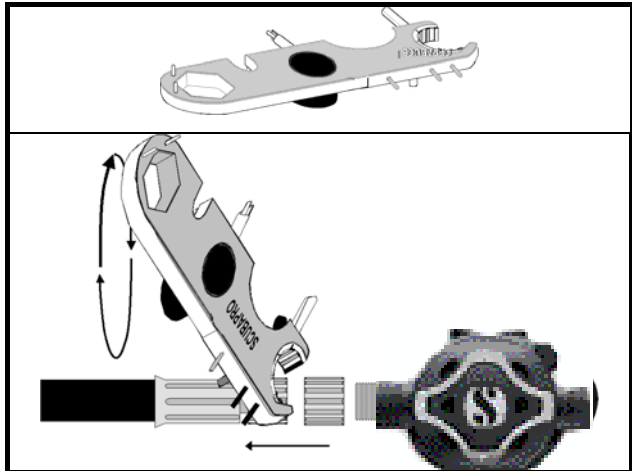
### ***ICON LEGEND***

	Inspect carefully, replace if needed
	Lubricate properly
	Replace annually
	Dynamic o'ring, replace annually and lubricate properly
	Tools needed for this step

## MAINTENANCE PROCEDURE FOR S 600 and G250HP

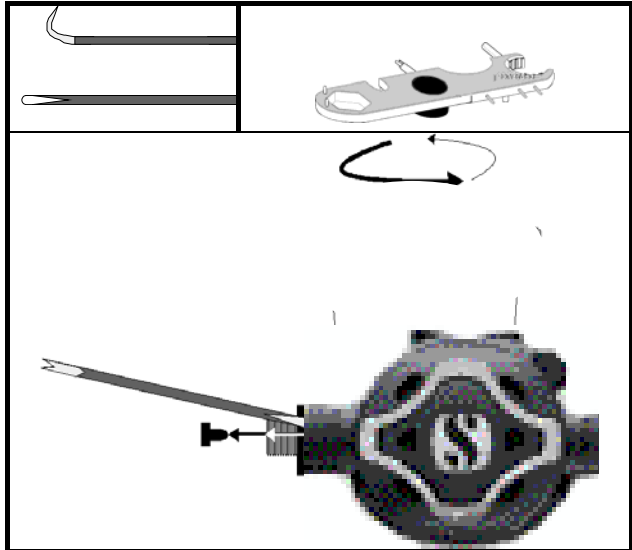


Remove hose and jam nut from the second stage.

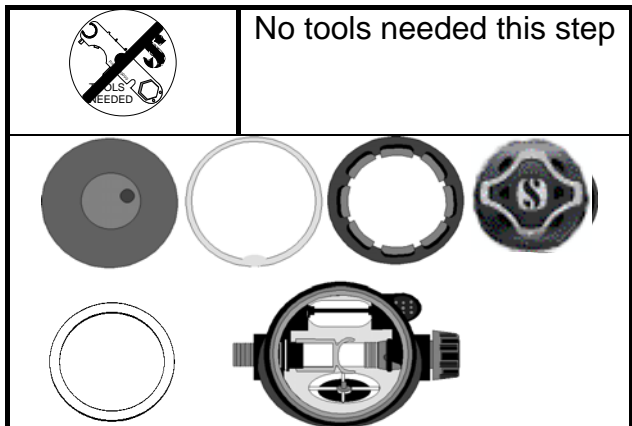


Remove the housing pin using the brass pick or similar tool.

Use the S 600 cover tool to remove the two-piece second stage cover.

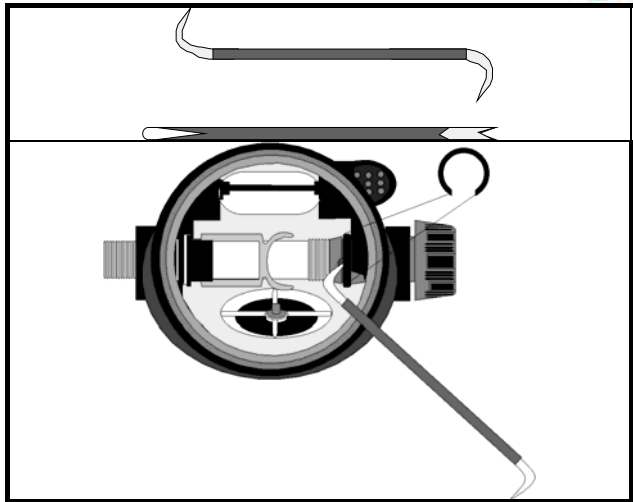


Remove the two-piece cover, 2 friction washers and diaphragm from the second stage housing.



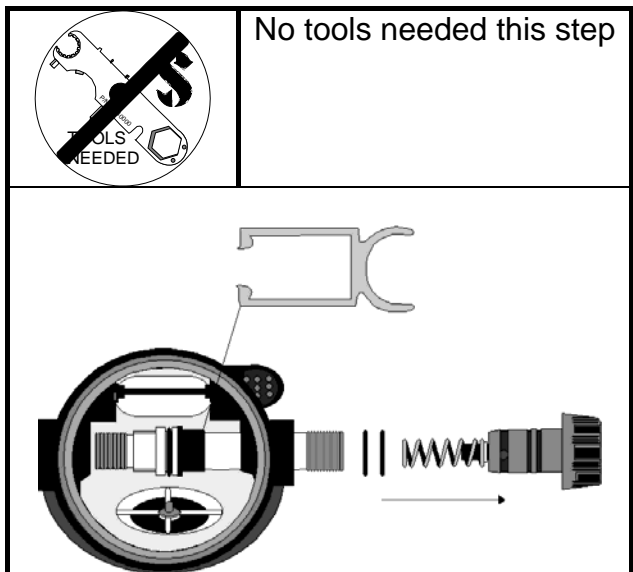


Remove the stop clip from the cracking effort adjustment knob.

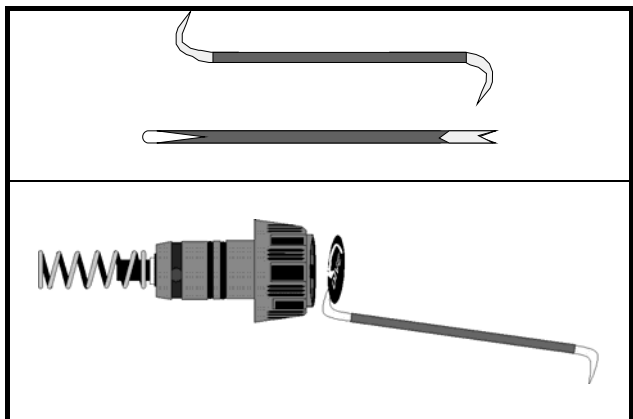


Thread out the cracking effort adjustment knob and remove. Use caution so that the spring and spring pad are not lost.

Remove the composite r barrel and new demand lever.

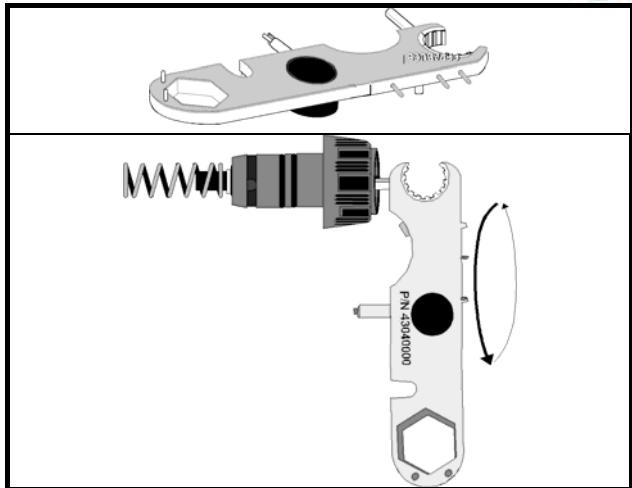


Remove the “Dive” decal from the cracking effort adjustment knob. This will allow access to the balance and anti-set mechanisms.

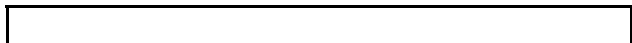
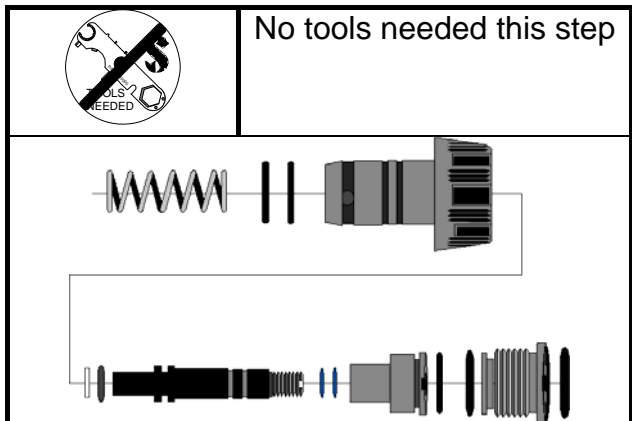




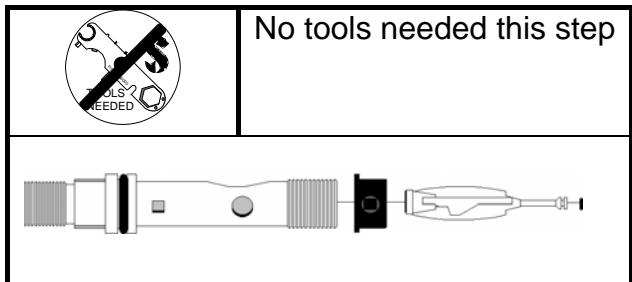
Remove the knob plug using the universal tool.



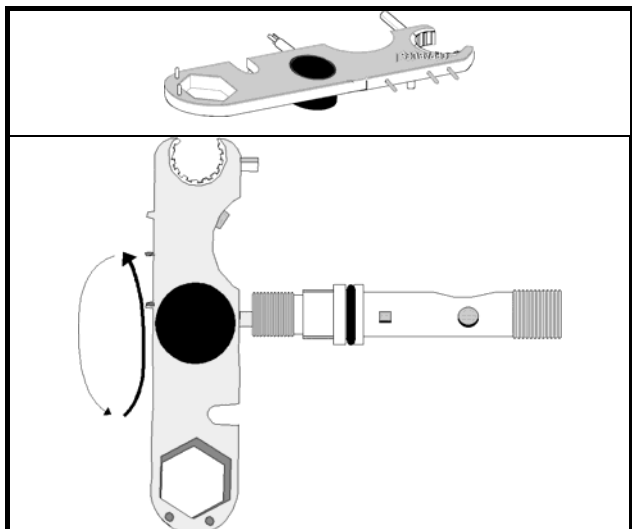
Remove the balance chamber and disassemble. Use caution to avoid losing o-rings, spring, and spring pad.



Carefully remove the poppet. The poppet o-rings and seat will be replaced.



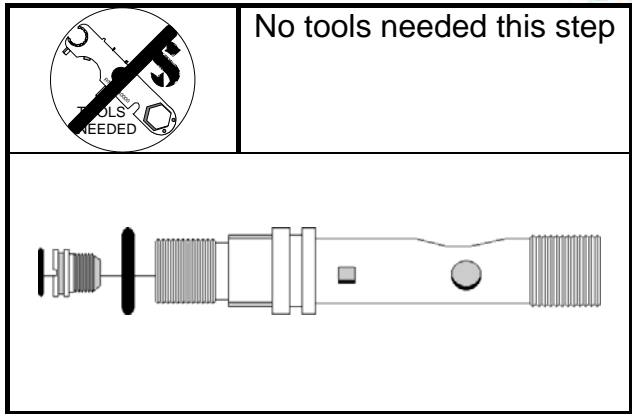
Use the universal tool to remove the adjustable orifice from the composite air barrel.





Remove the adjustable orifice. Take off the adjustable orifice o'ring, as it will be replaced. Remove the composite air barrel o'ring for inspection.

A wooden dowel or "chopstick" may be helpful in removing the orifice.

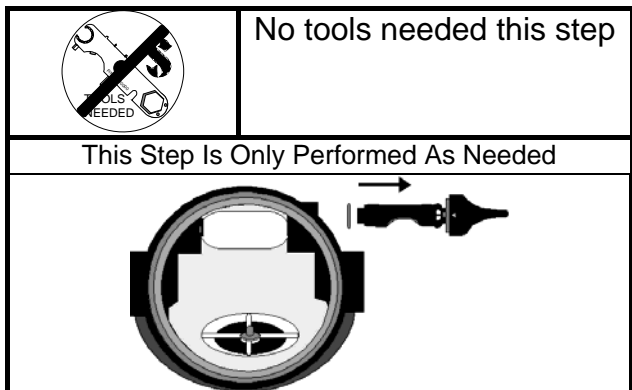


When it is necessary to remove the VIVA flow vane, use the flow vane remover **inserting it through the mouthpiece.** Apply pressure gently to avoid damaging the housing.

This step is seldom needed, unless the VIVA flow vane o'ring is worn or damaged.

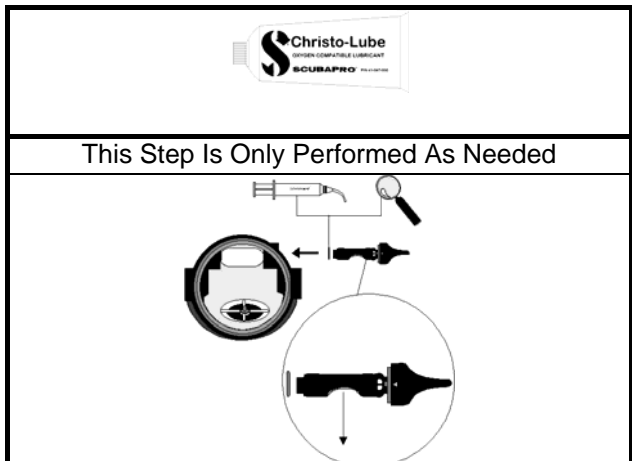


If the VIVA flow vane is removed, the entire VIVA assembly should be replaced, including the o'ring.



Carefully inspect and lubricate the o'ring.

Place the new knob and vane assembly back into the housing with the crescent-shaped notch facing forward toward the mouthpiece. Push the vane inward until it is locked in place.

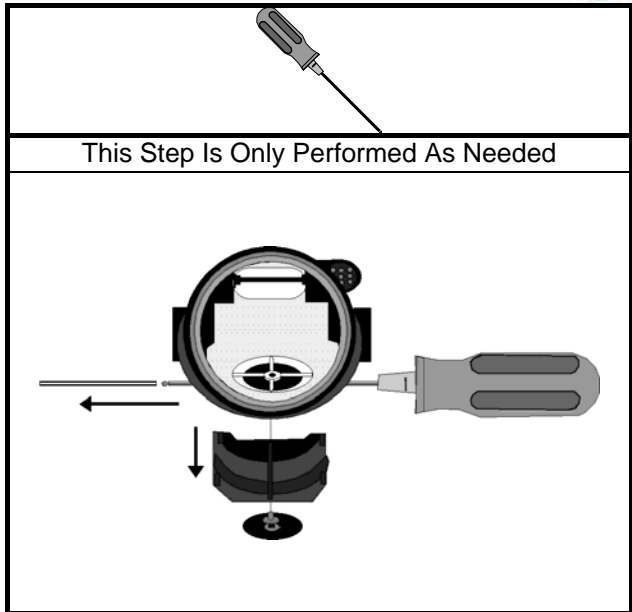




If removal of the exhaust valve is necessary, use the ball-end allen wrench to push out the exhaust tee pin. Remove the center section of the exhaust tee.

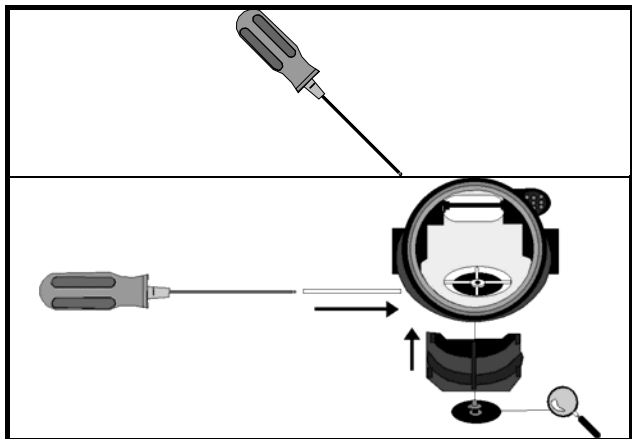
To remove the exhaust valve, grasp with fingers and pull firmly out.

The exhaust valve will seldom need to be replaced. Careful inspection is usually all that is necessary. If the valve is removed during service, it may be damaged during the process, requiring replacement.

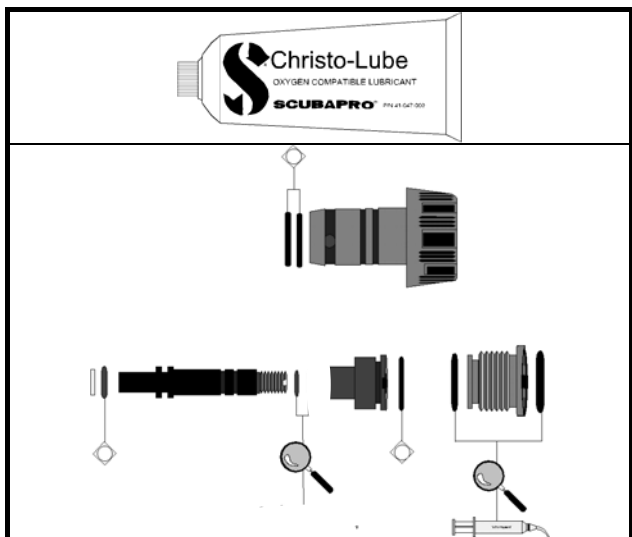


If the exhaust valve is removed, carefully inspect and replace if necessary.

Replace the exhaust tee center section and use the ball-end allen wrench to replace the exhaust tee pin.



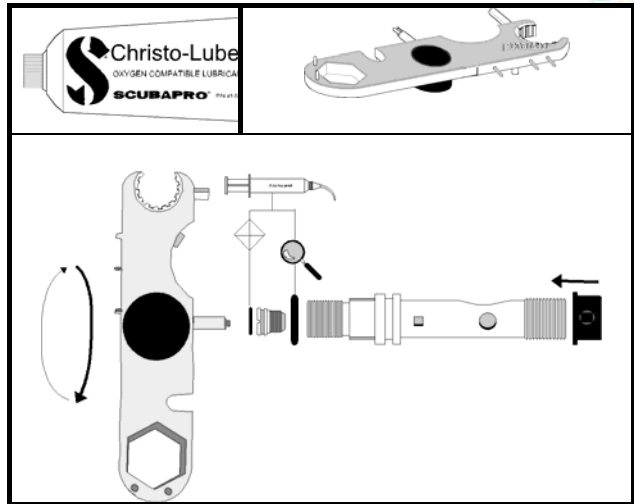
Replace all dynamic o'rings properly and lubricate. Carefully inspect the static o' ring and replace where needed. **Do not lubricate the internal static o ring nor the threads of the floating balancing chamber.**





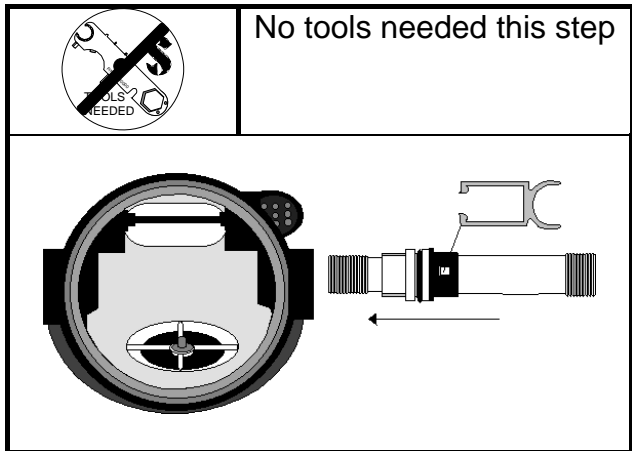
Replace the adjustable orifice o'ring and lubricate properly. Inspect the air barrel o'ring and replace if necessary. Lubricate properly.

Use the universal tool to turn in the adjustable orifice all the way in, then back it out approximately two turns.



Re-install the demand lever through the 2 square holes of the composite barrel.

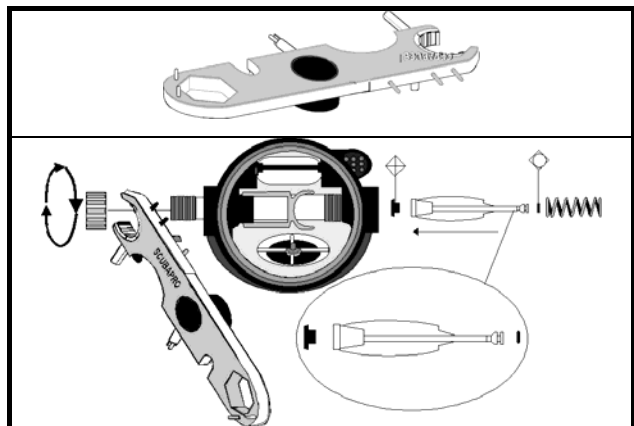
Re-insert the air barrel with the barrel turned so that the demand lever is facing toward the diaphragm.



Re-install the jam nut and tighten.

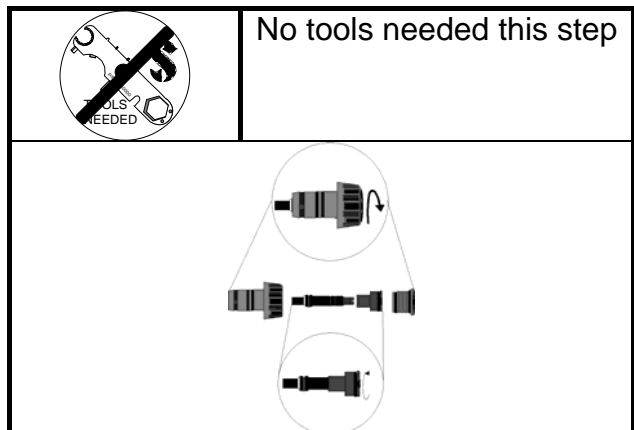
Replace the seat on the poppet, and replace and lubricate the poppet stem o'rings.

Install the poppet so that the "feet" are engaged with the demand lever ( the 2 tabs of the lever should be opposite the diaphragm).



Assemble the two-piece balance chamber and insert it into the cracking effort adjustment knob.

Loosely install the anti-set chamber into the knob. Do not tighten completely, as the plug will need to be removed for final adjustments.



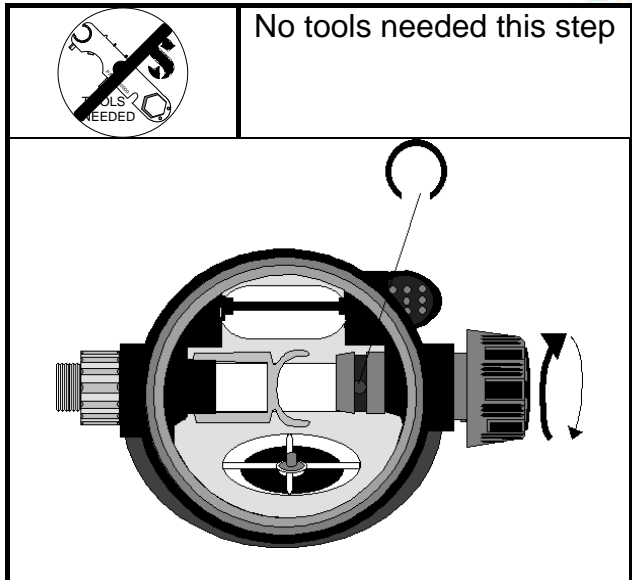




Re-install the cracking effort adjustment knob by inserting and then threading it on to the air barrel.

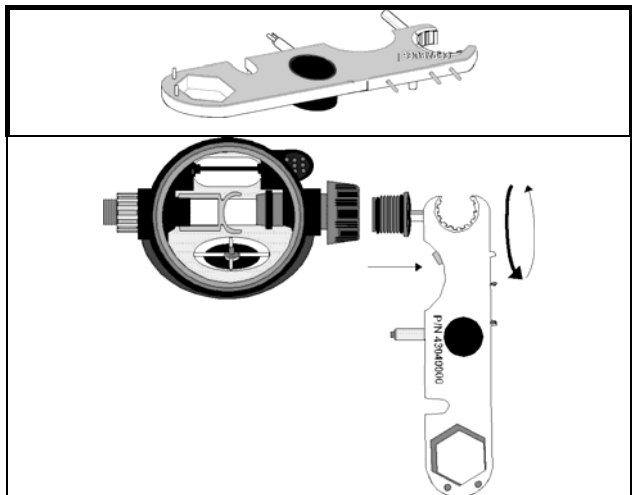
Thread inward until there is enough clearance to install the stop clip.

**Press the stop clip carefully into place. Immediately unscrew the adjustment knob completely.**



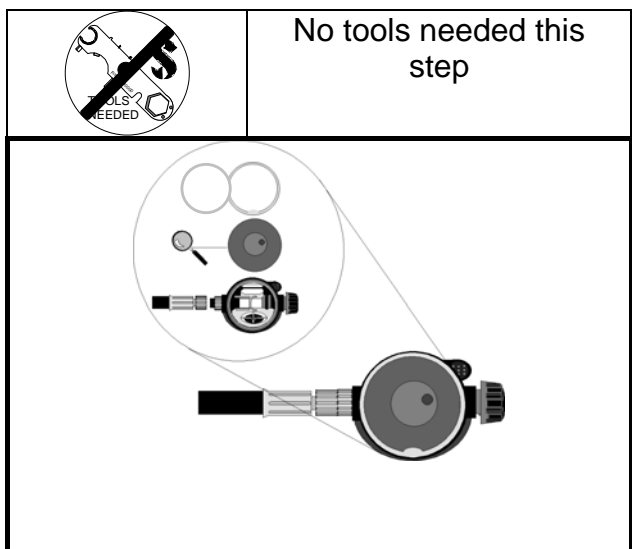
Remove the plug in preparation for final adjustment.

Use the universal tool to remove the plug, if necessary.



Inspect the diaphragm for wear, and replace if necessary.

Install the diaphragm and the two friction washers, being certain that the two pieces lay flat inside the second stage housing.

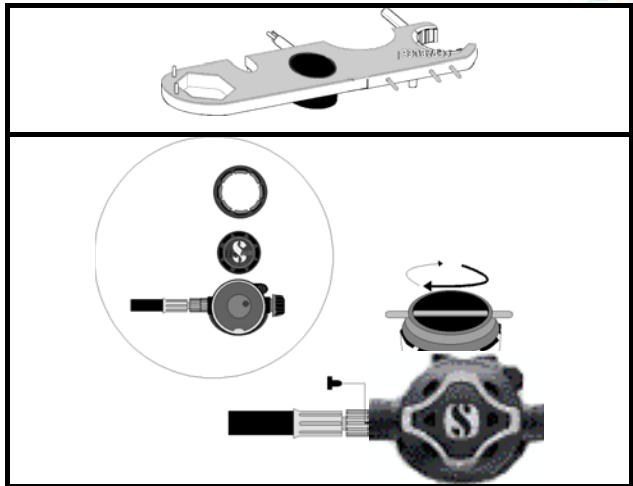




Put the two-piece cover together, arranging the pieces so that the holes in each piece are aligned properly.

Use the tool to tighten the cover, being certain that the SCUBAPRO "S" is properly positioned.

Install a new housing pin into the side of the housing.



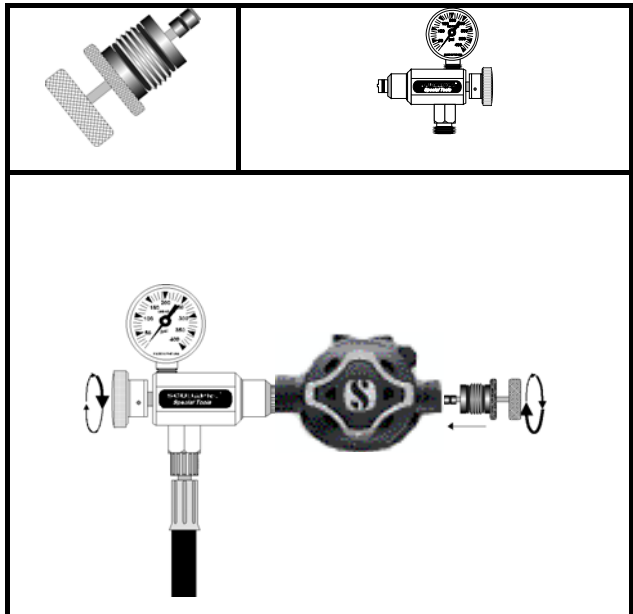
Pressurize the regulator.

Screw the knurled knob of the balance chamber tool close to the maximum limit.

Use the pneumatic adjusting tool to adjust the orifice to reach the free flow, and just stop the free flow.

Unscrew slowly by 1/8 turn steps the knurled knob of the balance chamber adjustment tool until a leak is heard. Screw by 1/2 turn to stop the leak.

Come back on the pneumatic adjustment tool and fine tune the orifice.



Re-install the plug and tighten until it is flush with the outside of the cracking effort adjustment knob.

Make any additional adjustments using the pneumatic adjusting tool and balance chamber adjusting tool.

