TROUBLE SHOOTING - REGULATOR

SYMPTOM	POSSIBLE CAUSE	TREATMENT
*** Free flow or leakage present.**	1. Excessive lever(47) height. 2. Excessive intermediate pressure from first stage. 3. Lever arm(47) bent. 4. Debris trapped under front cover(44). 5. Damaged or worn poppet seat(21). 6. Damaged orifice(20). 7. Locking nut(38) overtightened onto poppet(22) shaft. 8. Washer(46) bent or distorted. 9. Spring(23) weakened or worn. 10. Orifice(20) incorrectly adjusted.	1. Adjust orifice and locking nut to arrive at correct springload tension and lever height. (Refer to tuning section.) 2. Refer to first stage troubleshooting chart. 3. Replace with new. 4. Disassemble and clean or replace with new as needed. 5. Replace with new. 6. Replace with new. 7. Loosen to correct springload tension and lever height. (Refer to tuning section.) 8. Replace washer, spacer, and locking nut with new. 9. Replace with new. 10. Turn in clockwise to adjust. (Refer to tuning section.)
*** Excessive inhalation resistance.**	1. Locking nut(38) overtightened onto poppet(22) shaft, causing excessive spring tension. 2. Locking nut(38) insufficiently tightened onto poppet(22) shaft, causing lever slack. 3. Lever arm(47) bent. 4. Orifice(20) incorrectly adjusted. 5. Insufficient intermediate pressure from first stage.	1. Loosen to correct springload and lever height. (Refer to tuning section.) 2. Tighten to correct springload and lever height. (Refer to tuning section.) 3. Replace with new. 4. Adjust to correct contact. (Refer to tuning section.) 5. Refer to first stage troubleshooting chart.
*** Rattle heard inside second stage.**	1. Lever(47) slack present. 2. Debris trapped inside housing(24).	1. Tighten locking nut onto poppet shaft. (Refer to tuning section.) 2. Disassemble and clean or replace with new as needed.
*** Little or no airflow when purge button is depressed.**	1. Lever slack present. 2. Lever arm(47) bent. 3. Orifice(20) incorrectly adjusted.	1. Tighten locking nut onto poppet shaft. (Refer to tuning section.) 2. Replace with new. 3. Adjust orifice to correct contact. (Refer to tuning section.)
*** Water entering second stage.**	1. Tear in mouthpiece(49). 2. Exhaust valve diaphragm(41) distorted or damaged. 3. Demand diaphragm(43) distorted or damaged. 4. Front cover retainer ring(45) not sufficiently tight on housing. 5. Cracked or damaged housing(24).	1. Replace with new. 2. Replace with new. 3. Replace with new. 4. Tighten until secure. 5. Replace with new.

TROUBLE SHOOTING - INFLATOR

SYMPTOM	POSSIBLE CAUSE	TREATMENT
* **Air leakage detected from beneath the oral valve disk(37).**	1. Oral button locking nut(38) is loose. 2. Oral valve disk(37) is damaged or worn. 3. Oral valve seat(36) is damaged or worn. 4. Debris trapped between oral valve seat(36) and oral valve disk(37). 5. Oral valve seat(36) is loose. 6. Oral valve seat gasket(35) is damaged or worn.	1. Tighten locking nut(38) onto the oral button shaft(51). 2. Replace with new. 3. Replace with new. 4. Disassemble and clean or replace with new as needed. 5. Tighten sufficiently into the housing. 6. Replace with new.
* **Air leakage detected from beneath the oral button(51).**	1. Oral button shaft o-ring(54) is damaged or worn. 2. Oral button(51) shaft is damaged or worn. 3. Internal damage to o-ring seating surface inside the housing(24). 4. Oral button spring(52) is weakened.	1. Replace with new. 2. Replace with new. 3. Replace with new. 4. Replace with new.
* **Air leakage detected from beneath the exhaust valve guard cap(42).**	1. Exhaust valve(41) is distorted or damaged. 2. Exhaust valve(41) stem in not sufficiently trimmed. 3. Exhaust valve frame(40) is loose. 4. Exhaust valve gasket(39) is damaged or worn.	1. Replace with new. 2. Trim exhaust valve stem. 3. Tighten sufficiently into the housing. 4. Replace with new.
* **Air leakage detected from the valve housing(32).**	1. Valve housing outer o-ring(34) damaged or worn.	1. Replace with new.
* **Air leakage detected from beneath the button slide(25).**	1. Buttton boot(27) damaged or worn.	1. Replace with new.
* **Air leakage detected from beneath the upper housing assembly(7).**	1. Upper gasket seal(57) damaged or worn.	1. Replace with new.
* **Air leakage detected from beneath the upper housing guard cap(1).**	1. Exhaust valve(3) is distorted or damaged. 2. Exhaust valve(3) stem is not sufficiently trimmed. 3. Exhaust valve frame(4) is loose. 4. Exhaust valve spring(5) is weakened. 5. Gasket/Poppet assembly(6) is damaged or worn. 6. Internal damage to seating surface inside the upper housing assembly(7).	1. Replace with new. 2. Trim exhaust valve stem. 3. Tighten sufficiently into the housing. 4. Replace with new. 5. Replace with new. 6. Replace with new.
* **Inflator is auto inflating.**	1. Schraeder valve(31) is worn or damaged. 2. Valve housing inner o-ring(33) is worn or damaged.	1. Replace with new. 2. Replace with new.

REMOVING THE AIRWAY FROM THE BC

1. Using a Retaining Nut Tool, turn the nut portion of the upper housing assembly(7) counter clockwise to loosen and remove the airway assembly from the BC upper valve retainer. (Fig. 1)

2. Remove and discard the upper gasket seal(57). DO NOT reuse.

3. Clean and inspect the upper housing retainer on the BC for any signs of cracking or distortion, especially around the threads.

Fig. 1

UPPER INFLATOR DISASSEMBLY & SERVICE

1. Clean and inspect the upper housing nut(7) for any signs of cracking or distortion, especially around the threads.

2. Remove the upper housing guard cap(1) by turning counter clockwise by hand. Remove the color ring(2).

3. Remove the exhaust valve frame(4) with exhaust valve(3) by turning counter clockwise. (Fig 2) Remove and discard the exhaust valve. DO NOT reuse.

4. Remove the exhaust valve spring(5) and poppet assembly(6). Discard the poppet assembly and DO NOT reuse.

5. Examine the spring(5), checking for any signs of distortion or corrosion. Replace with new if found.

6. Clean and examine the overall condition of all parts to be reused, checking for any signs of stress cracks, decay or corrosion. Replace with new if found.

7. Clean and examine the condition of the exhaust valve gasket seating surface inside the upper housing(7) for any nicks, scoring, or other signs of damage. Replace with new if found.

8. Secure the upper housing with one hand and alternately pull the pull-dump ball(12) and lower inflator assembly straight down several times. The exhaust valve arm(9) will pivot outward indicating that the rapid exhaust cables are securely intact and of the correct length.

9. Inspect the entire length of the corrugated airway hoses(11/15) for any signs of decay or damage that may result in future leakage. Replace with new if found.

Fig. 2

△ **NOTE: Step 10 is only necessary if the components referenced in previous steps 7-9 require replacement.**

10. To remove the corrugated hoses(11/15) and rapid exhaust cables(9/14):

a. Being careful to avoid damaging the corrugated airway hose(11), snip the tie wrap(10) that holds the hose onto the upper housing(7) and gently pull it off and away from the housing.

b. Using a 1/16" drift pin punch, lightly tap the rapid exhaust arm pin(8) out of the housing. Remove the rapid exhaust arm with cable(9) from the upper housing(7).

c. Being careful to avoid damaging the corrugated airway hose(11\15), snip the tie wraps(10) that hold the hoses onto the pull ball(12) and gently pull it off and away from the ball.

d. Using a 1/16" drift pin punch, lightly tap the cable pin(13) partially out of the pull ball(12) far enough to remove the cables(9/14).

e. Being careful to avoid damaging the corrugated airway hose(15), snip the tie wrap(10) that holds the hose onto the lower inflator housing(24) and gently pull it off and away from the housing.

f. Using a 1/16" drift pin punch, lightly tap the cable pin(13) partially out of the housing(24) far enough to remove the cable.

UPPER INFLATOR REASSEMBLY

△ **NOTE: Lay each of the rapid exhaust cables(9/14) along side each of the corrugated airway hoses(11/15) to ensure the correct length of each.**

1. To replace the rapid exhaust cables(9/14) and corrugated airway hoses(11/15) on to the upper housing(7) and pull ball(12):

   a. Inspect both ends of the rapid exhaust arm with cable(9) to ensure the crimps are securely intact.

   b. While holding the upper housing(7) with the airway hose inlet opening at the top, insert the rapid exhaust arm pin(8) partially into one of the pin holes in the side of the inlet.

   c. Holding the rapid exhaust arm with cable(9) by the crimp, lower the arm into the inlet opening. Insert the pin(8) through the arm and into the pin hole in the opposite side of the inlet. (Fig. 2)

   d. Exercising care not to allow the pin to fall out, slide the corrugated airway hose(11) over the cable and onto the inlet opening of the upper housing(7) so that the hose mold lines are facing the 3 and 9 o'clock positions. (Fig. 3). Ensure that the ridge of the housing is seated securely inside the recessed groove of the hose(11).

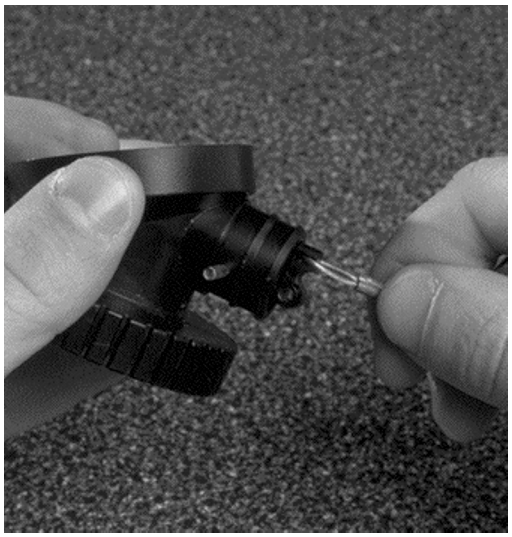


Fig. 2

Fig. 3

e. Fasten a plastic tie-wrap(10) around the groove of airway tube. Tighten the tie-wrap with the lock tab positioned at the side of upper housing assembly. Snip off the excess.

f. Hold the pull ball(12) so that the cable pin hole portion of the ball is down (Fig. 4). Insert the rapid exhaust cable pin(13) partially into the pin hole in the side of the pull ball(12). Lay the upper inflator assembly flat with the retaining nut facing down and pull the crimped loop of the rapid exhaust cable taut to ensure it is not twisted. Place the crimped loop over the pin(13) inside the pull ball(12).

Fig. 4

g. Press the corrugated hose(15) onto the barrel of the pull ball(12) so that the hose mold lines are facing the 3 and 9 o'clock positions. Fasten a plastic tie-wrap(10) around the groove of the airway tube. Tighten the tie-wrap with the lock tab positioned at the side of the pull ball assembly. Snip off the excess.

h. Place one of the crimped loops of the lower exhaust cable(14) over the pin(13) inside the pull ball(12) and push the pin gently through until it is seated flush inside the opposite wall of the pull ball.

i. Exercising care not to allow the pin to fall out, slide the lower corrugated airway hose(15) over the cable and onto the lower inlet opening of the pull ball(12) so that the hose mold lines are facing the 3 and 9 o'clock positions. Ensure that the ridge of the pull ball is seated securely inside the recessed groove of the hose(15).

j. Fasten a plastic tie-wrap(10) around the groove of airway tube. Tighten the tie-wrap with the lock tab positioned at the side of upper housing assembly. Snip off the excess.

k. Lay the lower inflator assembly flat on its side with the front cover(44) facing up and insert the cable pin(13) through the pin hole, half way into the barrel of the corrugated hose opening.

△ **NOTE: Do not perform the following step if the lower inflator unit is also being serviced.**

l. Lay the upper inflator assembly flat with the retaining nut facing down and pull the crimped loop of the lower exhaust cable(14) taut to ensure it is not twisted. Place the crimped loop over the pin inside the lower housing and push the pin gently through until it is seated flush inside the opposite wall of the housing.

△ **NOTE: Position the lower housing so the quick disconnect valve stem is on the same side of the corrugated hose as the inflator hose keeper on the upper housing.**

j. Press the corrugated hose(15) onto the barrel of the lower

housing so that the mold lines are facing the 3 and 9 o'clock positions. Fasten a plastic tie-wrap(10) around the groove of airway tube. Tighten the tie-wrap with the lock tab positioned at the side of lower housing assembly. Snip off the excess.

2. Install a new exhaust valve(3) by gently pulling the stem through the center of the exhaust valve frame(4) until the flange of the stem is completely seated on the opposite side.

⚠ **WARNING: Trim the excess length of the stem before assembling the frame onto the upper housing. Failure to do so could result in severe leakage. (Fig. 5)**

3. Install the exhaust valve poppet assembly(6) into the upper housing(7) with the gasket resting on the seating rim in the housing.

4. Set the exhaust valve spring(5) on top of the poppet assembly(6), outside the alignment tabs. (Fig. 6)

5. Press the exhaust valve frame(4) with exhaust valve(3) down over the spring(5) and thread clockwise into the upper housing(7) until secure. DO NOT overtighten.

△ **NOTE: Lift the exhaust valve(3) up and visually inspect to ensure that the spring(5) is installed correctly and did not slip off the mounting tabs during installation.**

6. Install the color ring(2) over the threads of the valve frame(4).

7. Install the upper housing cap(1) onto the valve frame(4), threading clockwise until secure. DO NOT overtighten.

Fig. 5

Fig. 6

LOWER (POWER) INFLATOR DISASSEMBLY & SERVICE

△ **NOTE: Oceanic recommends that all gaskets, nonmetal filters and o-rings, both static and dynamic, that are removed during disassembly of the Lower Inflator should be discarded and replaced with new.**

1. Being careful to avoid damaging the corrugated airway hose(15), snip the tie wrap(10) which holds the hose onto the lower inflator housing(24) and gently pull it off and away from the housing if it has not been previously removed.

2. Using a 1/16" drift pin punch, lightly tap the cable pin(13) partially out of the housing(24) far enough to remove the cable.

3. Being careful to avoid damaging the mouthpiece(49), snip the tie wrap(50) that holds the mouthpiece onto the lower inflator housing(24) and gently pull it off and away from the housing. Inspect the mouthpiece to ensure that it is supple and free of any tears or corrosion.

4. To remove the colored button slide(25) use a small screwdriver to gently pry the sides of the slide, one side at a time, away from the housing. (Fig. 7).

⚠ **NOTE: Use only enough pressure lifting the sides of the button slide to release the four slide retaining tabs from the housing.**

5. Remove the slide spring(26) and inspect for any signs of corrosion. Discard if found and DO NOT reuse.

6. Remove the front cover retaining ring(45) by turning in a counter clockwise direction to expose the front cover(44), using a universal front cover tool if necessary, and remove the front cover(44).

7. Grasp the diaphragm(43) by the raised edges of the center, and gently lift out with a slight upward twist to remove. Inspect the diaphragm to ensure it is supple and free of any tears, corrosion, or other distortion. Discard if found.

8. Depress and hold the lever arm(47) to remove the inlet coupling(17) in a counter clockwise direction, using an 11/16" open end wrench. (Fig. 8). Remove the adjustable orifice(20) from the inlet coupling(17) by turning counter clockwise by hand. Remove and discard orifice o-rings(19) and Do Not attempt to reuse.

⚠ **CAUTION: The orifice cone(20) will now be exposed, and must be handled with care to prevent damage to its' delicate seating surface.**

⚠ **NOTE: The orifice cone(20) may remain in the housing(24) once the inlet coupling(17) is removed. In this case, pull the orifice cone straight up with slow, steady force. DO NOT rock back and forth to remove.**

9. Press the valve housing(32) out of the lower inflator housing(24) by pushing firmly inward on the rubber covered button boot(27). (Fig. 9).

10. Carefully peel the button boot(27) off the valve housing(32) and remove the push pin(28).

11. Remove the filter tube retainer o-ring(30) and the filter tube(29) from the barrel of the valve housing(32). Examine for any signs of distortion or corrosion. Discard if found.

12. Carefully remove the valve housing inner o-ring(33) and outer o-ring(34) by squeezing and grasping them with the fingers. Discard and DO NOT reuse.

⚠ **NOTE: DO NOT use a dental pick or other metal instrument to remove the o-rings. Doing so could damage the seating surfaces of the inflator valve.**

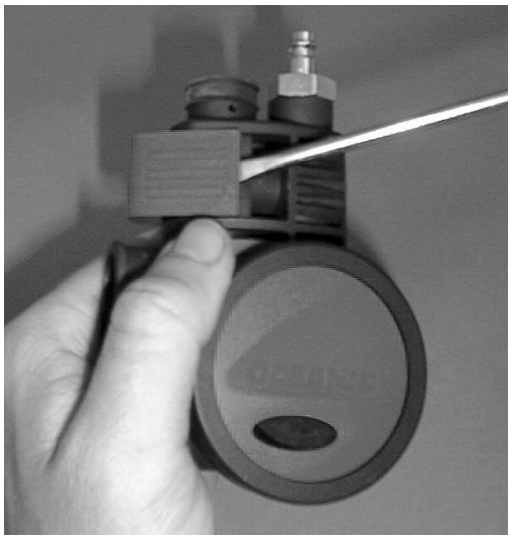


Fig. 7

Fig. 8

Fig. 9

13. Insert a Schraeder valve tool into the end of the valve housing(32) and remove the Schraeder valve(31) by turning the tool counter clockwise with slight inward pressure. Discard and DO NOT reuse.

14. Using a 1/4" open end wrench to hold the locking nut(38) secure, turn the poppet(22) out of the nut in a counter clockwise direction, using an Air XS poppet installation tool. (Fig. 10).

NOTE: To avoid a sudden ejection as they are disengaged, continuously apply a slight amount of inward pressure while turning the poppet out of the locking nut.

15. Carefully remove the poppet(22), spring(23), washer(46), lever arm(47), spacer(48), and locking nut(38) from the housing(24). Discard the washer and locking nut, and DO NOT attempt to reuse.

16. Examine the spacer(48) for deterioration. Discard if found. Examine the lever arm(47) and compare with new to ensure that it is not bent or distorted in any way. Discard if distortion is found.

17. Examine the poppet spring(23) with a magnifier and compare with new to ensure correct tension and length. Discard if found to be weakened or corroded.

18. Remove the poppet seat(21) from the poppet(22) with the use of a brass o-ring tool. Discard and DO NOT attempt to reuse.

19. Using the Air XS multi-tool (side A), remove the exhaust valve cover(42) by turning the tool counter clockwise with slight inward pressure.

20. Using the Air XS multi-tool (side B), remove the exhaust valve frame(40) with exhaust valve(41) by turning the tool counter clockwise with slight inward pressure. (Fig. 11). Discard the exhaust valve and DO NOT attempt to reuse.

21. Remove the exhaust valve gasket(39) that may be found seated either on the underside of the exhaust valve frame(40) or inside the housing(24). Discard and DO NOT attempt to reuse.

CAUTION: DO NOT use a dental pick or other metal instrument to remove the exhaust valve gasket(39). Doing so could damage the seating surfaces of the exhaust valve retainer or housing.

22. Depress and hold the oral button(51) secure in the housing(24). Remove the oral button locking nut(38) by turning in a counter clockwise direction using a 1/4" nut driver. Discard the locking nut and DO NOT attempt to reuse.

23. While applying slight outward pressure, turn the oral button(51) counter clockwise to remove. Remove the oral button spring(52), washer(53), and oral valve disk(37) from inside the housing. Discard the oral valve disk(37) and DO NOT attempt to reuse.

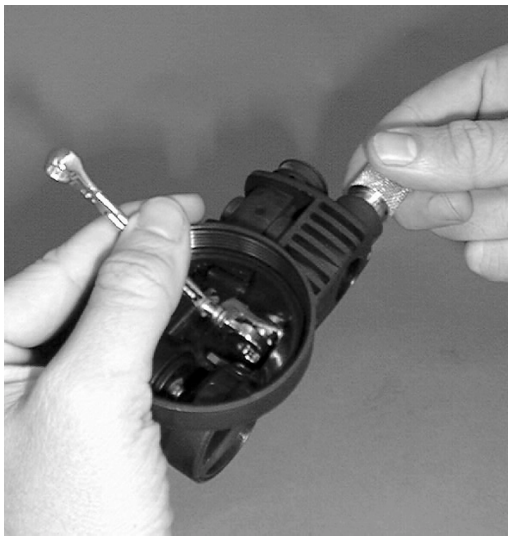


Fig. 10

Fig. 11

24. Using the Air XS multi-tool (side C), remove the oral valve seat(36) by turning the tool counter clockwise with slight inward pressure. Remove the valve seat gasket(35) that may be found seated either on the underside of the oral valve seat(36) or inside the housing(24). Discard the valve seat gasket(35) and DO NOT attempt to reuse.

⚠ **CAUTION: DO NOT use a dental pick or other metal instrument to remove the valve seat gasket(35). Doing so could damage the seating surfaces of the oral valve seat(36).**

25. Clean and examine the overall condition of all parts to be reused, checking for any signs of stress cracks, decay or corrosion.

Lower (Power) Inflator Reassembly

⚠ **NOTE: Prior to reassembly, it is necessary to inspect all parts, both new and those being reused to ensure that every part and component has been thoroughly cleaned.**

⚠ **WARNING: Use only genuine Oceanic parts, subassemblies, and components whenever assembling Oceanic products. DO NOT attempt to substitute an Oceanic part with another manufacturer's, regardless of any similarity in shape, size or appearance. Doing so may render the product unsafe, and could result in serious injury or death of the user.**

1. Lightly lubricate and install a new valve seat gasket(35) onto the stepped side of the oral valve seat(36).

2. Place the oral valve seat(36) onto the Air XS multi-tool (side C). Lower the housing(24) onto the Air XS multi-tool with oral valve seat seat facing up. Turn the tool clockwise into the housing(24) until secure. (Fig. 12). DO NOT overtighten.

3. Apply a light film of lubricant to each end of the oral button spring(52) and place over the threaded end of the oral button(51). Place the oral button spring washer(53) over the threads of the oral button shaft and onto the spring(52). Lightly lubricate and install the oral button shaft o-ring(54) over the shaft and onto the washer(53).

4. Ensuring that the notches of the oral button(51) are aligned with the housing(24), press the oral button completely into the housing so that the threaded end of the button is clearly visible.

5. While continuing to depress the oral button(51), install a new oral valve disk(37) onto the end of the oral button shaft with the metal insert facing up.

6. Turn a new locking nut(38)clockwise onto the oral button threads with your fingertips until threading is started.

Fig. 12

7. While continuing to depress the oral button(51), turn the locking nut(38) clockwise with a 1/4" nut driver until secure.

⚠ **CAUTION: While depressing the oral button(51) slightly so that the oral valve disk(37) is held away from the oral valve seat(36), attempt to turn the oral valve disk with your index finger. If you are able to turn the oral valve disk, it is important that the locking nut(38) be tightened further. Failure to do so could result in severe leakage.**

8. Install a new exhaust valve(41) by gently pulling the stem through the center of the exhaust valve frame(40) until the flange of the stem is completely seated on the opposite side.

⚠ **WARNING: Trim the excess length of the stem before assembling the frame into the housing. Failure to do so could result in severe leakage.**

9. Lightly lubricate and install a new exhaust valve gasket(39) onto the stepped side of the exhaust valve frame(40).

10. Place the exhaust valve frame(40) with exhaust valve and gasket onto the Air XS multi-tool (side B). Lower the housing(24) onto the Air XS multi-tool with exhaust valve frame facing up. Turn the tool clockwise into the housing(24) until secure. DO NOT overtighten.

11. Install the exhaust valve cover(42) into the housing(24), threading clockwise by hand until secure. DO NOT overtighten.

12. Install a new poppet seat(21) into the poppet(22), with the side that is perfectly smooth facing out. Ensure that it is completely seated, flush with the inner rim of the poppet. DO NOT use adhesive.

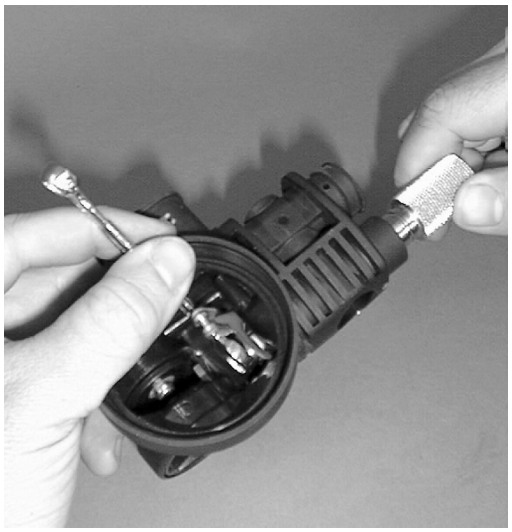
13. Apply a light film of lubricant to each end of the spring(23) and place onto the poppet(22). Fit the poppet into the pronged end of the Air XS poppet installation tool and insert the poppet shaft completely through the inlet tube of the housing, compressing the spring until the threaded portion of the shaft is completely visible inside the housing. Hold in position by grasping the tool with the fingers and the outer rim of the housing with the thumb.

14. Place the washer(46) over the threads of the poppet(22) and onto the shaft. Place the spacer(48) onto the poppet shaft. Turn the locking nut(38) clockwise onto the poppet threads with your fingertips until threading is started.

15. Invert the housing(24) so that the poppet installation tool is facing up. While continuing to compress the spring, place the forks of the lever arm(47) over the poppet shaft, between the washer(46) and spacer(48). (Fig. 13).

16. Using a 1/4" open end wrench to hold the locking nut(38) secure, turn the poppet(22) clockwise with the Air XS poppet installation tool until the **first** index mark (minimum adjustment) of the poppet tool is aligned flush with the inlet opening of the housing(24). (Fig.14).

Fig. 13



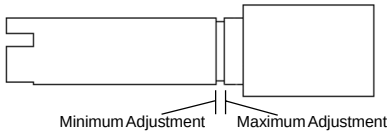


Fig. 14

Doc. 12-2228-r01 (01/00)

17. Remove the tool and depress the lever arm(47) repeatedly to ensure smooth movement.

⚠ WARNING: It is very important that the poppet is adjusted using the Oceanic poppet installation tool exactly as described in step 16. The lever arm may otherwise become caught on the end of the poppet shaft, resulting in an uncontrolled free flow or leakage.

18. Lightly lubricate the threads and o-ring of the Schraeder intake valve(31) and insert it, operating pin end first into the valve housing(32) while holding the threaded end. Using a Schraeder valve tool, tighten in a clockwise direction to a torque of 5 to 6 in-lbs.

19. Lubricate and install the valve housing inner o-ring(33) and outer o-ring(34) by sliding them over the smaller end of the valve housing(32).

20. Install the filter tube(29) onto the barrel of the housing(32) and the filter tube o-ring(30) onto the filter tube.

21. Holding the valve housing(32) vertically with the open end up, insert the push pin(28) into the top opening and install the button boot(27) over the pin onto the grooved end of the housing(32). Push the rubber button boot several times to ensure that the Schraeder valve(31) operates freely.

22. With the elliptical opening facing the quick disconnect inlet, insert the assembled valve housing, button(27) first, into the large opening on the side of the lower inflator housing(24) and press firmly into place. (Fig. 15).

Fig. 15

△ NOTE: Visually verify correct positioning of the valve housing by looking into the quick disconnect inlet. The elliptical opening should be centered in the housing(24) so that the poppet seat(21) is clearly visible.

23. Lubricate and install the o-ring(18) onto the threaded end of the inlet coupling(17).

24. Lubricate and install three new o-rings(19) onto the orifice(20).

25. Lightly lubricate and insert the threaded end of the orifice(20) into the larger opening end of the inlet coupling - valve stem(17). Turn the orifice in a clockwise direction by hand until resistance is felt.

⚠ CAUTION: Be careful to protect the delicate knife edge of the orifice as this is done.

26. Holding the housing(24) vertically with the quick disconnect (smaller) and corrugated hose (larger) openings on top, carefully insert the orifice/coupling assembly into the smaller opening, threading it clockwise. (Fig. 16). Using a 11/16" crow's foot adaptor and torque wrench, tighten in a clockwise direction to a torque of 100 to 120 in-lbs.

Fig. 16

27. Insert a 5/32" hex key into the inlet coupling(17) opening. Gently turn the orifice(20) clockwise into the coupling(17) until the knife edge is barely contacting the poppet seat(21).

△ **NOTE: DO NOT continue to turn the orifice any further beyond this point, which will possibly damage the poppet seat, requiring its' replacement.**

△ **NOTE: This is an important preliminary setting for the orifice. For best sensitivity of touch, place the tip of your index finger on the locking nut(38).**

28. Place the diaphragm(43) inside the housing(24) with the raised center facing up, and ensure that it seats flush at the base of the inner threads. Place the front cover(44) directly over the diaphragm, and ensure that it seats flush and that the Oceanic logo is properly aligned.

29. While holding the front cover(44) secure with your thumb, thread the front cover retaining ring(45) onto the housing(24), taking care to ensure that it is correctly seated on the threads. Hand tighten until secure. DO NOT overtighten. (Fig. 17).

Fig. 17

30. Secure the mouthpiece(49) onto the housing(24) with an all plastic, noncorrosive tie wrap(50), positioning the locking tab of the tie wrap towards the bottom of the housing. Snip off excess.

△ **NOTE: Oceanic's patented Orthodontic Mouthpieces are designed to accommodate the natural overbite of the human jaw.**

31. Holding the lower inflator housing(24) with the mouthpiece facing up, place the slide spring(26) over the rubber button boot(27) so that it rests on the housing(24). Using moderate force, lower the button slide(25) down over the spring(26) and recessed sides of the housing(24) until the four slide tabs snap into place. (Fig. 18)

Fig. 18

32. Lay the lower inflator assembly flat on its side with the front cover(44) facing up and insert the cable pin(13) through the pin hole, half way into the barrel of the corrugated hose opening.

33. Lay the upper inflator assembly flat with the retaining nut facing down and pull the crimped loop of the rapid exhaust cable taut to ensure it is not twisted. Place the crimped loop over the pin inside the lower housing and push the pin gently through until it is seated flush inside the opposite wall of the housing.

△ **NOTE: Position the lower housing so the quick disconnect valve stem is on the same side of the corrugated hose as the inflator hose keeper on the upper housing.**

34. Press the corrugated hose(15) onto the barrel of the lower housing so that the mold lines are facing the 3 and 9 o'clock positions. Fasten a plastic tie-wrap(10) around the groove of airway tube. Tighten the tie-wrap with the lock tab positioned at the side of lower housing assembly. Snip off the excess.

INSTALLING THE AIRWAY ONTO THE BC

⚠ **WARNING: Certain Ovation and Ocean Sport BCs do not have a lower overpressure relief valve, and rely on the function of one that is included in the Oceanic integrated airway assembly that was originally sold with the BC. DO NOT attempt to attach a non-Oceanic airway to the BC. Doing so may result in permanent, unrepairable damage to the bladder, and render the BC unsafe.**

1. Place the upper gasket seal(57) inside the upper retainer of the BC. Hold the airway in the desired position and thread the retaining nut of the upper housing assembly(7) clockwise onto the upper retainer. Using a Retaining Nut Tool, tighten the retaining nut until completely secure. (Fig. 19)

Fig. 19

⚠ **CAUTION: DO NOT overtighten.**

FINAL TUNING & TESTING

TUNING

1. Prior to tuning the Air XS, check the following items:

   a. The poppet assembly has been initially adjusted using the Air XS poppet installation tool as described in step 16 of Lower Inflator Reassembly.

⚠ **CAUTION: It is important to ensure that this initial adjustment was made as described before proceeding further. The lever arm(47) may otherwise become caught on the end of the poppet shaft, resulting in an uncontrolled free flow.**

   b. The front cover(44) should be tightened securely and properly aligned on the housing.

   c. The mouthpiece should be cleaned and disinfected with warm, soapy water.

   d. The Air XS is attached to a recently calibrated first stage via an Air XS low pressure quick disconnect hose.

2. Pressurize the regulator with a pure breathing gas source of 3,000PSI (206 BAR), and listen to determine that a slight airflow is initially present. If necessary, disconnect the quick disconnect hose and insert a 5/32" hex key into the inlet coupling. Turn the orifice slightly out counter clockwise to initiate this airflow.

⚠ **CAUTION: To avoid cutting the LP seat with the knife edge of the orifice, depress the purge button while turning the orifice in or out.**

3. Use the 5/32" hex key to turn the orifice clockwise with very small fractions of a turn, just until airflow is no longer present, and pause to listen carefully for airflow or leakage after each adjustment. While continuing to depress the lever arm, use the 5/32" hex key to turn the orifice clockwise an additional 1/12 of a turn.

⚠ **CAUTION: Turning the orifice further than described will result in excessive lever arm slack and excessive springload tension, impairing proper performance.**

4. Hold the Air XS with the front cover facing directly up, and gently shake up and down. Listen for excessive rattle that may be present, indicating lever slack. Some lever slack is considered normal due to the close proximity of the soft urethane front cover to the inhalation diaphragm. Eliminating this completely would result in an oversensitive second stage, considered undesirable for an alternate air device. If excessive lever arm slack is present, perform the following procedure:

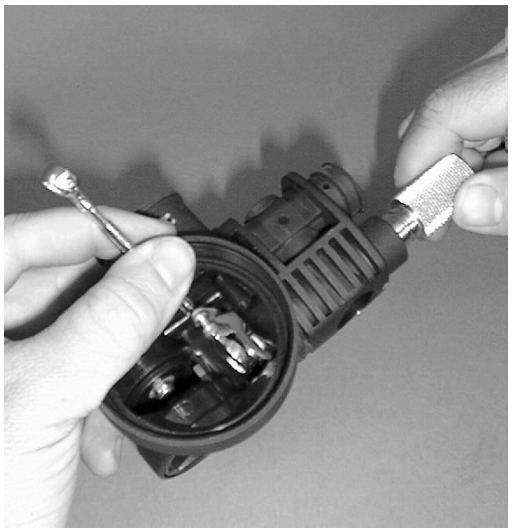
   a. Purge the regulator of air.
   b. Remove the front cover retainer, front cover and diaphragm to gain access to the valve assembly.
   c. Depress the lever arm and hold to remove the inlet coupling from the housing, using an 11/16" open end wrench.

⚠ **CAUTION: The orifice cone will now be exposed, protruding through the inlet coupling, and must be handled with care to prevent damage to its' delicate seating surface.**

   d. Remove the button slide and spring. Press the valve housing out of the lower housing by pushing firmly inward on the rubber covered button.
   e. Using a 1/4" open end or box wrench to hold the locking nut secure, turn the Air XS poppet installation tool clockwise 1/8 turn to tighten the locking nut further onto the poppet shaft.

⚠ **WARNING: DO NOT attempt to tighten the locking nut beyond where the second index mark (maximum adjustment) of the Air XS poppet installation tool is flush with the inlet opening of the housing. Doing so may render the product unsafe, and could result in serious injury or death of the user. (Fig. 20).**

⚠ **NOTE: Avoid tightening the locking nut any further than is necessary to eliminate lever slack. It may be necessary to repeat step E several times to arrive at the correct setting.**



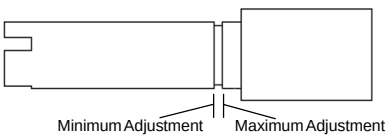


Fig. 20

f. Use the procedure described in steps 26 - 29 of Lower Inflator Reassembly to replace the inlet coupling after each adjust ment, and again determine whether excessive lever arm slack is present.

⚠ **CAUTION: Be careful to avoid over adjusting! If airflow returns, replace the locking nut and seat with new, and start over after rereading the above procedures.**

5. Replace the valve housing assembly, button slide and spring, diaphragm, front cover, and front cover retainer if removed, and pressurize the regulator again with a pure breathing gas source of 3,000PSI (206 BAR). Inhale lightly through the mouthpiece to perform a subjective breathing test of airflow and cracking effort. Air should flow easily and smoothly, without any hesitation or lag.

△ **NOTE: If hesitation or lag is detected, refer to the Trouble Shooting section to determine possible cause and treatment.**

△ **NOTE: If not previously installed, attach the airway onto the BC as described in Installing the Airway onto the BC before proceeding further.**

6. Attach the Air XS to a pure air source, via a quick disconnect LP hose, and perform the General Air Leak Inspection as described in Buoyancy Compensator General Procedures (Section 5.1) to ensure that leakage is not present and the inflation, deflation, over pressure relief valve, and pull dump are functioning perfectly. If leakage is found, refer to the Trouble Shooting section to determine possible cause and treatment.

7. With the BC fully inflated, remove the Air XS front cover retainer, front cover and diaphragm to perform one final leak detection test. This is important to ensure that no leakage is found between the oral valve disk(37) and oral valve seat(36). If leakage is found, refer to the Trouble Shooting section to determine possible cause and treatment.

SPECIFICATIONS

Torques

P/N 810266 Schraeder Valve	5 to 6 in-lbs 56.5 to 67.8 Newton - cm
P/N 83365 Inlet Coupling	100 to 120 in-lbs 11.5 - 13.5 Newton - m

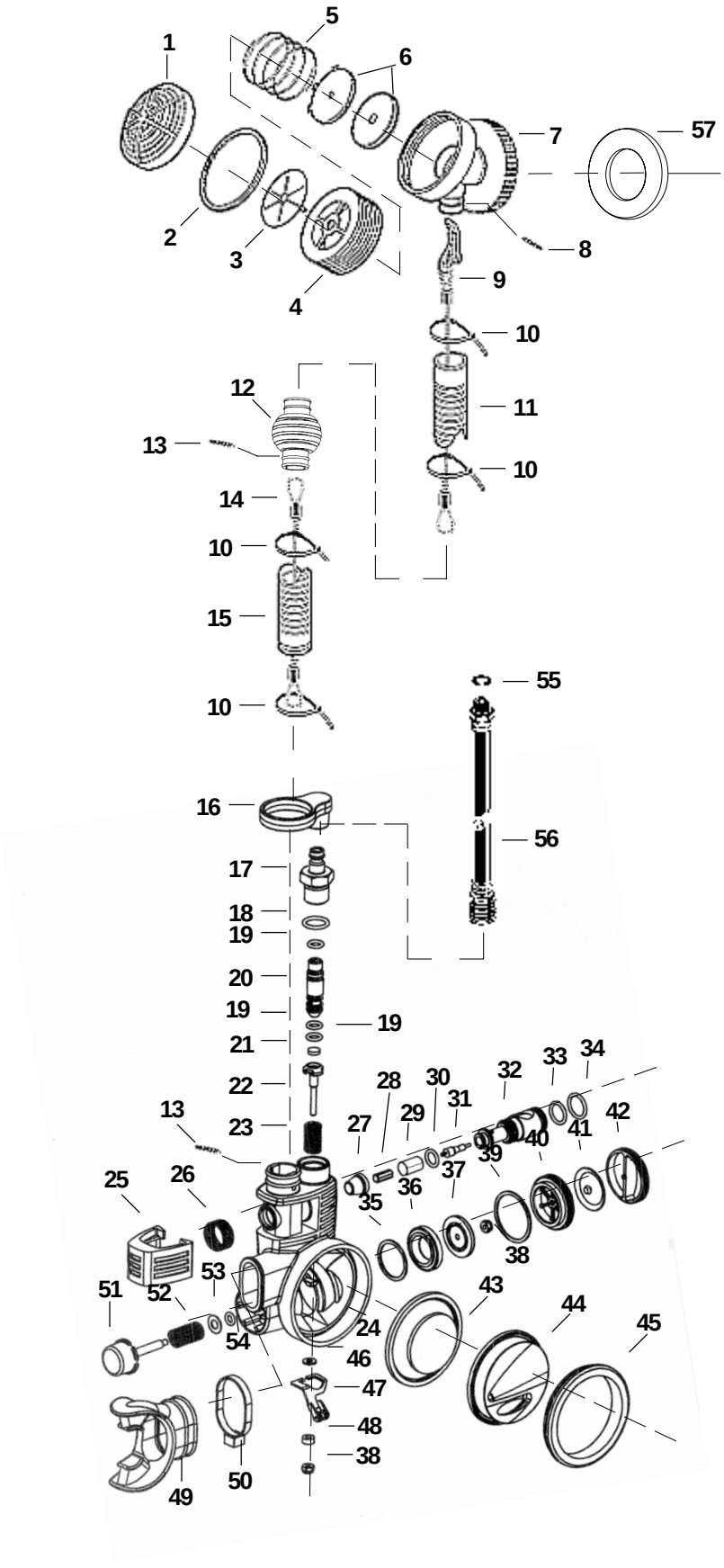
Opening Effort (IP = 144 psi / 10 BAR)

1.6 to 2.2 inches of H_2O
3.8 to 5.6 cm of H_2O

SPECIALTY TOOLS

P/N 40.3367	Air XS Poppet Installation Tool
P/N 40.3362	Air XS Multi-Tool
P/N 40.9650	Universal Front Cover Tool
P/N 08.9500	Retaining Nut Tool
P/N 40.9519	Schraeder Valve Tool
P/N 40.9313	5/32" Allen Key
P/N 40.2300	VFC-23 Cleaner - Pint
P/N 40.2308	VFC-23 Cleaner - Gallon
P/N 40.2302	Christo-Lube MCG111 - 2 oz.
P/N 40.9520	O-ring Tool Kit
P/N 40.9412	1/16" Drift Pin Punch
P/N 40.9512	1/4" Open End/Box Wrench

AIR XS ALTERNATE INFLATOR



Dia. No.	Part #	Description
n/s	08.9700	Annual Service Kit (Includes all **Bold** items)
1c	819011	Cap - Upper Housing
2c	819013.01	Ring - Color (BL)
3a	**4576**	**Valve - Exhaust**
4c	819039	Frame - Exhaust Valve
5c	819041	Spring - Exhaust Valve
6a	**819040.1**	**Gasket/Poppet Assembly**
7c	819042.1	Upper Housing Assembly
8c	819014	Pin - Rapid Exhaust Cable
9c	819691.6	Cable - Rapid Exhaust (6")
	819691.8	Cable - Rapid Exhaust (8")
	819691.10	Cable - Rapid Exhaust (10")
10c	84408 (4)	Tie Wrap - Corrugated Hose
11c	84946.10	Corrugated Hose - Upper (10")
12c	83284	Ball - Pull
13c	84948 (2)	Pin - Pull Ball/Air XS
14c	83286.6	Cable - Lower (6")
	83286.8	Cable - Lower (8")
	83286.10	Cable - Lower (10")
15c	84946.6	Corrugated Hose - Lower (6")
	84946.8	Corrugated Hose - Lower (8")
	84946.10	Corrugated Hose - Lower (10")
16c	83292	Cap - Quick Disconnect
17c	83365	Coupling - Inlet
18b	3.906	O-ring - Inlet Coupling
19a	**2.010 (3)**	**O-ring - Orifice Shaft**
20c	83364	Shaft - Orifice
21a	**4340**	**Seat - Poppet**
22c	4333	Poppet
23c	5074b	Spring - Poppet
24c	83260	Housing
25c	83271.01	Slide - Button (BL)
26c	819030	Spring - Button Slide
27b	819017	Boot - Button
28c	819023	Pin - Push
29b	810236	Tube - Filter
30b	2.011	O-ring - Filter Retainer
31a	**810266**	**Intake Valve - Schraeder**
32c	83267	Housing - Valve
33b	2.013	O-ring - Valve Housing (Inner)
34b	2.014	O-ring - Valve Housing (Outer)
35a	**83361**	**Gasket - Oral Valve Seat**
36c	83291	Seat - Oral Valve
37a	**83262**	**Disk - Oral Valve**
38a	**4336 (2)**	**Nut - Locking**
39a	**83275**	**Gasket - Exhaust Valve**
40c	83264	Frame - Exhaust Valve
41a	**83263**	**Exhaust Valve**
42c	83265	Cover - Exhaust Valve
43b	6380	Diaphragm - Demand
44c	86554.01	Front Cover - Blue
45c	86553	Ring - Front Cover Retaining
46a	**5117**	**Washer**
47c	83270	Arm - Lever
48b	4335	Spacer
49c	4485.07	Mouthpiece
50a	**1978.07**	**Tie Wrap (Mouthpiece)**
51c	83261.01	Button - Oral (BL)
52c	83266	Spring - Oral Button
53c	86403	Washer - Spring
54a	**2.008**	**O-ring - Oral Button Shaft**
55b	3.903	O-ring - QD Hose
56c	816172.26	Air XS QD Hose Assembly (26")
	816172.30	Air XS QD Hose Assembly (30")
	816172.34	Air XS QD Hose Assembly (34")
57a	**819045**	**Seal - Upper Gasket**