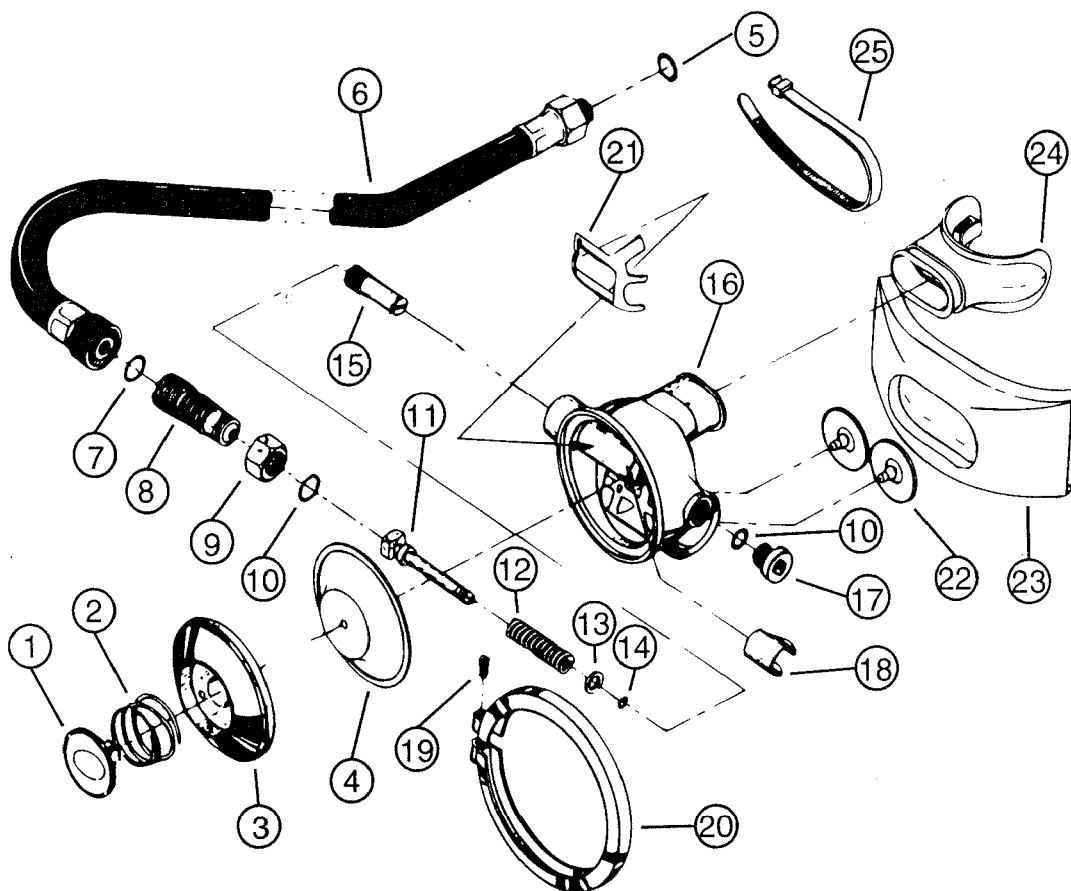


#	QTY	PART #	KEY	DESCRIPTION
1	1	0220-59		PURGE BUTTON ASSEMBLY
2	1	0040-38		PURGE BUTTON SPRING
3	1	0170-77		TOP COVER (SUB 0622-13)
4	1	0050-09		DIAPHRAGM ASSEMBLY
5	1	0060-51	❶	O-RING
6	1	0228-30		29" L.P. HOSE ASSEMBLY
7	1	0060-02	❶	O-RING
8	1	0180-85		VALVE SEAT (SUB 0182-43)
9	1	0150-29		JAM NUT
10	1	0060-01	❶	O-RING
11	1	0107-98	❶	L.P. SEAT ASSEMBLY
12	1	0040-72		SPRING
13	1	0120-95		WASHER
14	1	0060-61	❶	O-RING
15	1	0350-31		BALANCE CHAMBER
16	1	0108-16		BOTTOM BOX
17	1	0410-05		PLUG
18	1	0250-07		SPRING CLIP
19	1	0130-13		RING SCREW
20	1	0100-85		CLAMP RING
21	1	0170-55		LEVER (SUB 0170-91)
22	2	0240-04		EXHAUST VALVE
23	1	0512-25		EXHAUST MANIFOLD
24	1	1117-00		MOUTHPIECE
25	1	0310-09	❶	CLAMP



PACER XLS (METAL)
SECOND STAGE

9/93

Second Stage
Regulators

PAGE

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KEY

❶ Included in annual service kit #9680-03

PACER XLS (METAL) SECOND STAGE**Tools Needed:**

1. 0980-38 Tool Kit
2. 0980-61 O-ring Tool Kit
3. 11/16" Open End Wrench
4. 5/8" Open End Wrench
5. 3/16" Allen Wrench

Disassembly:

Step 1: Remove hose (6) from second stage regulator assembly using an 11/16" and 5/8" wrench. "O" ring (7) is accessible.

Step 2: Remove exhaust manifold (23) by pulling sharply on one end. No tools are required for removal. Exhaust valves (22) are now accessible and are removed by gently pulling free from the bottom box assembly.

Step 3: Remove mouthpiece (24) by removing mouthpiece clamp (25) and gently pulling free from mouthpiece sleeve. Have replacement clamps available. This piece has a one time use only and will be destroyed upon removal.

Step 4: Remove ring screw (19) and ring (20).

Step 5: Remove top cover (3). Low pressure diaphragm (4) is now accessible.

Step 6: Remove purge button (1) and purge button spring (2).

Step 7: Remove low pressure diaphragm (4).

Step 8: Loosen lock nut (9) with 11/16" wrench. Remove valve seat (8) by turning counter clockwise. Use 3/16" allen wrench. "O" ring (10) is now accessible. CAUTION: Do not damage seat during this operation.

Step 9: Remove lock nut (9) from valve seat (8).

Step 10: Remove Venturamatic lever (21), valve seat carrier (11), spring (12) and washer (13) as follows: Use multi-tool to depress valve seat carrier. The lever will now be loose. Remove lever by freeing one side at a time from the valve seat carrier housing. Release multi-tool slowly because of the spring tension released by removal of the lever. "O" ring (14) may now be removed.

Step 11: Remove plug (17) and remove "O" ring (10) from plug.

Step 12: Balance chamber (15) may now be removed by fitting a screwdriver through the open port on the side of the bottom box (16). Turn the balance chamber (15) clockwise until it falls through the valve seat carrier housing in the bottom box (16).

Step 13: Remove Venturamatic booster clip (18) by sliding it off the end of the valve seat carrier housing.

Assembly:

Step 1: Install exhaust valves (22) by pulling stem portion of the valve through center hole of exhaust port openings from the outside into the inside of the bottom box assembly (16). NOTE: Valves can be replaced without disassembly of second stage by pushing stem portion of valve through the center hole from the outside. Be sure stem is firmly seated in place.

Step 2: Install spring (12) onto seat assembly (11). Install washer (13) and "O" ring (14) onto seat assembly.


Step 3: Install lock nut (9) on valve seat (8) carefully so as to avoid damage to the cone area. Unthreaded portion of nut should face the larger shoulder of valve seat.

Step 4: Install balance chamber (15) and valve seat carrier (15) as follows: Drop balance chamber (15) into seat carrier housing. Turn exposed end of balance chamber (15) counter clockwise until first thread is exposed. Then turn back 1.5 to 2 turns. Install seat carrier (11).

Step 5: Install Venturamatic lever (21) as follows: Hold the bottom box assembly (16) in the palm of the left hand grasping the crossbar of the multi-tool together as far as it will go. With the right hand insert the ends of the lever one at a time into the square broached holes on the side of the carrier chamber. Release the tool. Lever will now be in an up right position.

Step 6: Install valve seat (8) again using care to avoid damage to the cone area. Turn valve seat clockwise until the top of the lever is even with the edge of the bottom box. This is not the final lever height adjustment.

Step 7: Install Venturamatic booster clip (18) placing open end of clip on valve seat carrier body and pushing down until it snaps into place. Slide clip toward valve seat side of carrier body until clip touches the

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Venturamatic lever (21). Depress lever completely. This will position the clip correctly.

Step 8: Install low pressure diaphragm (4).

Step 9: Install purge button (1) and purge button spring (2) in top cover (3).

Step 10: Install top cover (3).

Step 11: Install ring (20) and ring screw (19).

Step 12: Install exhaust manifold (23) by engaging one end in lip of exhaust tube then stretching manifold over balance of exhaust tube lip. Lubricating with soap water will facilitate proper positioning. Do not use grease as a lubricant because the residual properties could cause loss of the manifold.

Step 13: Install mouthpiece (24) on mouthpiece tube. A new mouthpiece clamp (25) must be used and can be tightened with pliers. Any excess material must be cut off.

Step 14: Install hose (6) and "O" ring (7).

Step 15: To adjust second stage lever height and attain proper air flow on demand plus proper purge button action, proceed as follows:

A. Place regulator on air source such as a diving cylinder.

B. Open cylinder valve.

C. Be sure the intermediate pressure is correct for the regulator being used.

D. Hose nut and lock nut must be loosened approximately one turn.

E. Grasp hose in left hand as near to the second stage of the regulator as is comfortable. Grasp second stage in right hand.

F. Rotate second stage toward you (counter clockwise) until heavy free flow is attained.


G. Rotate second stage away from you (clockwise) until free flow stops. The closer to the cut-off point you stop this rotation the better the performance of the regulator.

H. Tighten lock nut (9).

I. Tighten hose nut.

Test by (a) breathing through unit. Air must flow easily and freely, but should have no free flow. Test by (b) depressing purge bottom. A heavy flow of air should be attained. If unit fails a and/or b, turn off air at cylinder valve then loosen the hose and lock nut. Readjust unit. Following procedures in step 15 above.

Step 16: To fine tune the Pacer XLS, proceed as follows: Using screwdriver through plug opening now provided, turn balance chamber (15) clockwise to increase valve seat carrier spring load (this increases the opening and breathing effort) and counter clockwise to decrease valve seat carrier spring load (this decreases opening and breathing effort). Replace plug (17) with "O" ring (10) installed.

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