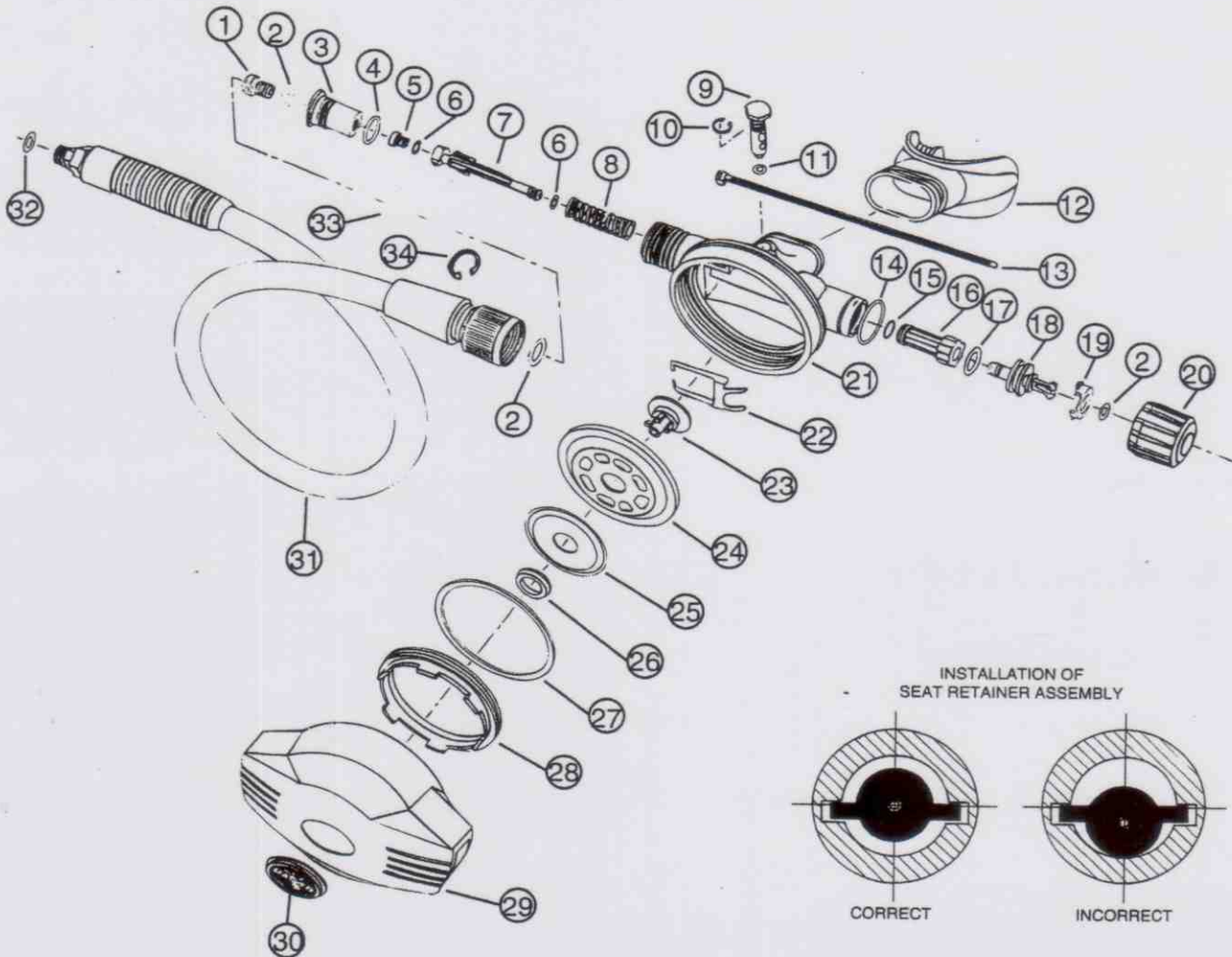


#	QTY	PART #	KEY	DESCRIPTION
1	1	0182-87		VALVE SEAT
2	3	0060-02	Ⓢ	O-RING
3	1	0182-88		ADAPTOR, VALVE SEAT
4	1	0060-22	Ⓢ	O-RING
5	1	0226-01	Ⓢ	L.P. SEAT
6	2	0060-61	Ⓢ	O-RING
7	1	0624-97		SEAT CARRIER
8	1	0040-77		SPRING, PNEUMATIC
9	1	0624-98		FLOW TUBE, ADJUSTABLE
	1	0625-78		FLOW TUBE, NON-ADJ. OCTO
10	1	0250-22	Ⓢ	RETAINING RING
11	1	0060-16	Ⓢ	O-RING
12	1	0300-67		MOUTHPIECE
13	1	0310-11	Ⓢ	CLAMP
14	1	0061-11	Ⓢ	O-RING
15	1	0061-02	Ⓢ	O-RING
16	1	0626-81		BALANCE CHAMBER
17	1	0060-96	Ⓢ	O-RING
18	1	0624-95		SHAFT, ADJUSTING
19	1	0625-61	Ⓢ	CLIP, RETAINER
20	1	0624-99		KNOB
21	1	0614-59		BOTTOM BOX
22	1	0170-91		LEVER S.S.
23	1	0624-91		CORE, DIAPHRAGM
24	1	0050-18		DIAPHRAGM ASSM.

#	QTY	PART #	KEY	DESCRIPTION
25	1	0240-14		EXHAUST VALVE
26	1	0624-92		RETAINER, DIAPHRAGM CORE
27	1	0120-98		FRICTION WASHER
28	1	0624-93		RETAINER, DIAPHRAGM
29	1	0513-65		TOP COVER, EXTREME BLACK
	1	0514-15		TOP COVER, EXTREME NEON
30	1	0232-25		DECAL/INSERT ASSM BLACK
	1	0232-26		DECAL/INSERT ASSM BLUE
31	1	0229-39		HOSE ASSM. 29" IN-LINE ADJ.
	1	0229-40		HOSE ASSM. 39" IN-LINE ADJ.
32	1	0060-51		O-RING
33	1	0121-02		FRICTION WASHER
34	1	0250-24		RETAINING RING, L.P. HOSE



EXTREME/EXTREME PLUS
SECOND STAGE

9/93

Second Stage
Regulators

PAGE

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KEY

Ⓢ Included in annual service kit #9680-22

EXTREME / EXTREME PLUS SECOND STAGE**Custom Tools Supplied by Dacor:**

1. 0980-20 Cone Adjusting Tool
2. 0980-54 In-Line Adjusting Tool
3. 0980-61 O-Ring Removal Tool
4. 0624-93 Diaphragm Retaining Ring
5. 9508-00 Polishing Stick

Standard Tools Needed:

1. Small Needle-Nose Pliers
2. Diagonal Cutters
3. 5/8" Open-End Wrench
4. Narrow-Blade Screwdriver
5. 1/4" Diameter Wood or Plastic Dowel (a 3" minimum length is required)

Disassembly:

Step 1: The disassembly process starts the same way for all models (note that the second stage is the same for both the Extreme and Extreme Plus). Remove the hose from the second stage using the 5/8" open-ended wrench. Remove the two o-rings from the hose. Remove the plastic washer (33) from the hose coupling. (early models did not have this washer, but it may be added).

Step 2: Peel off the flexible cover, and then remove the mouthpiece by cutting off the clamp with the small diagonal cutter, taking care to prevent damage to the mouthpiece. Then use the inverted diaphragm retainer as a tool to remove the diaphragm retainer (28).

Step 3: Next, remove the friction washer (27), diaphragm assembly and lever (22). To remove the lever, spread the engagement legs of the lever with your thumb and forefinger. Be careful not to over bend the lever. Inspect the lever for deformation.

Step 4: Remove the valve seat adaptor (3) by inserting a narrow blade screwdriver into the slot located on the main body and wedging the valve seat adaptor out. The valve seat (1) is now accessible. Remove it by using the cone adjusting tool. Turn the tool counter-clockwise until the threads disengage. The valve seat now can be pushed out of the adaptor with the 1/4" diameter dowel. Be careful to not damage the seat. Remove the o-rings from the adaptor and valve seat.

Step 5: Remove the seat carrier (7) and spring (8) Use a 1/16" Allen wrench to remove the seat (5) from the carrier. Then remove the o-rings (6) from the seat carrier and seat. Note how small the seat is in

comparison with other models.

Step 6: Remove the small retaining ring (10) from the flow tube (9) using the small needle-nose pliers. Push on the ends of the ring with the tips of the pliers. The flow tube can now be pulled out of the body. Remove the flow tube's o-ring (11).

Step 7: The Extreme has an adjustment knob (20) that should be removed using the needle-nose pliers. Squeeze the two plastic retainers together that are located within the knob's center. Remove the knob/body o-ring (14) from the body (not on 1992 models, but can be retrofitted).

Step 8: Remove the o-ring (2) and internal retaining clip (19) with a thin blade screwdriver. Insert the blade into one of the slots located on the body and push on the clip until the center of the clip bows out. Do not try to pry, you will damage the body. Insert the blade in the gap that now exists between the center of the clip and the body. As you wedge the clip out, don't worry if it gets damaged. It will be replaced.

Step 9: Remove the adjusting shaft (18) and the balance chamber (16). On the Extreme, pull on the shaft with your fingers to remove the parts.


Step 10: Separate the shaft and the balance chamber by turning the shaft clockwise. *Note: these are left handed threads.* Remove the shaft o-ring (17) and balance chamber o-ring. (Balance chamber o-ring is not on 1992 models. A new balance chamber and o-ring can be retrofitted). Be careful not to scratch or gouge the o-ring surface. Disassembly of the second stage is now complete.

Cleaning:

Step 1: Cleaning is the same as for the first stage parts. All metal parts should be cleaned using a solution made of 1 gallon of white vinegar (5% acid content) and a quart of any general purpose household cleaner. Soak parts no longer than 15 minutes or 5 minutes, if using an ultrasonic cleaner. All plastic and rubber items should be cleaned with fresh water only. Air dry all parts with an air gun, if possible.

Step 2: Replace all o-rings, the seat and the plastic and metal retaining clips. These parts are provided in the annual service kit. Do not re-use the old parts.

Step 3: Visually inspect the diaphragm-exhaust valve

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assembly. Disassembly of these parts is not required unless they are damaged, in which case they should be replaced.

Step 4: Inspect the top surface of the valve seat's sealing area for nicks or scratches. Take care not to damage this delicate part. If scratches are present, they can be removed by polishing the cone surface with a polishing stick in a circular motion. Cleaning and inspection is now complete.

Assembly:

Step 1: Now you are ready to re-assemble the second stage. Install a new knob/body o-ring (14). Install the new large o-ring (17) onto the adjusting shaft (18). Thread the balance chamber (16) onto the shaft by turning the shaft counter-clockwise, using just light hand pressure, until the assembly is fully threaded. Install o-ring (15) on to balance chamber (if equipped).

Step 2: Insert the shaft and balance chamber assembly into the proper side of the body. A slight twisting action will ease the installation. Apply light pressure and twist until the assembly fully seats itself. The large flat surface of the shaft should be below the level of the retaining clip slots when the unit is properly seated.

Step 3: Install a new plastic retaining clip (19). Engage one of the clip's legs into its slot within the body. Flex and push the other leg into its slot, while holding the pre-installed end in position with your fingers, using light pressure. The ring will bow-out during installation, but should be pushed in flat when properly installed.

Step 4: Install the new small o-ring (2) onto the adjusting shaft. Then re-install the adjusting knob (20) onto the shaft, using light hand pressure to snap it in place. To avoid breakage, be sure the retaining tabs line up with the slot.

Step 5: Install the new o-ring (11) onto the flow tube. Insert the flow tube into the body. Ensure that the flow tube's end has fully engaged into the opening in the air chamber of the body. Lock the flow tube in place by installing the retaining ring (10), using the needle-nose pliers.

Step 6: Install the new seat (5), with its o-ring (6) into the seat carrier (7). Start threading by hand and lightly snug-up with the 1/16 " Allen wrench. Install the new o-ring (6) on the end of the seat carrier assembly.

Step 7: The next step can be tricky, so take particular care. Insert the spring and seat carrier assembly into the body's air chamber, following the diagram. Note the off-center "ears" on the front sides of the seat carrier. The seat carrier will go into the air chamber in any direction, but it must only be installed with the off center "ears" on the carrier matching the off center slots within the body's air chamber. When properly installed the seat face will be centered.

Step 8: Install the new o-rings on the valve seat (1) and valve adaptor (3). Using the cone adjusting tool, thread the valve seat into the adaptor until the cone surface is fully visible with about 1/2 thread exposed. Insert the assembly into the body's air chamber, using hand pressure only. If lubrication is necessary, wet the o-ring with water. Do not use silicone for this application. The two flats should align between the guides on the main body.

Step 9: Reinstall the plastic washer (33) onto the hose coupling and install the new hose o-rings. Install the in-line adjusting hose on the body, and tighten to 45-50 in. lbs. with an 5/8" crows foot on a torque wrench. Slide back the hose protector and remove the retaining ring (34). Early models did not have an in-line adjusting hose. In this case, install the regulator hose onto an in-line adjusting tool and tighten securely.


Step 10: Install the lever (22) into the assembly. Spread the legs apart and push the lever down. Ensure that it has properly engaged the seat carrier by manually testing for spring resistance. If the lever does not engage, turn the cone in clockwise until it does.

Step 11: Turn the knob counter-clockwise until it stops (do not over tighten) and turn the knob back clockwise 2-1/2 turns. Slowly introduce 140 PSI to the second stage. Engage the adjustment portion of the in-line adjusting hose (or tool). Turn counter-clockwise until the lever reaches its maximum height. Now turn the adjustment clockwise until a slight downward movement of the lever occurs. There should be some amount of play in the lever, but as little as possible.

Step 12: Now, install the diaphragm-exhaust valve assembly, the friction washer (27) and the diaphragm retainer (28). Using an inverted retainer, hand-tighten the diaphragm retainer until it's snug.

Adjustment:

To check the inhalation effort of the second stage, a test board with a manometer is preferred. If no test board is


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available, use a tray of water and lower the second stage, diaphragm down, into the water to the appropriate depth.

Step 1: Turn the knob clockwise until an initial opening effort of 1.0-1.1" of water is achieved. Remove supply pressure from second stage.

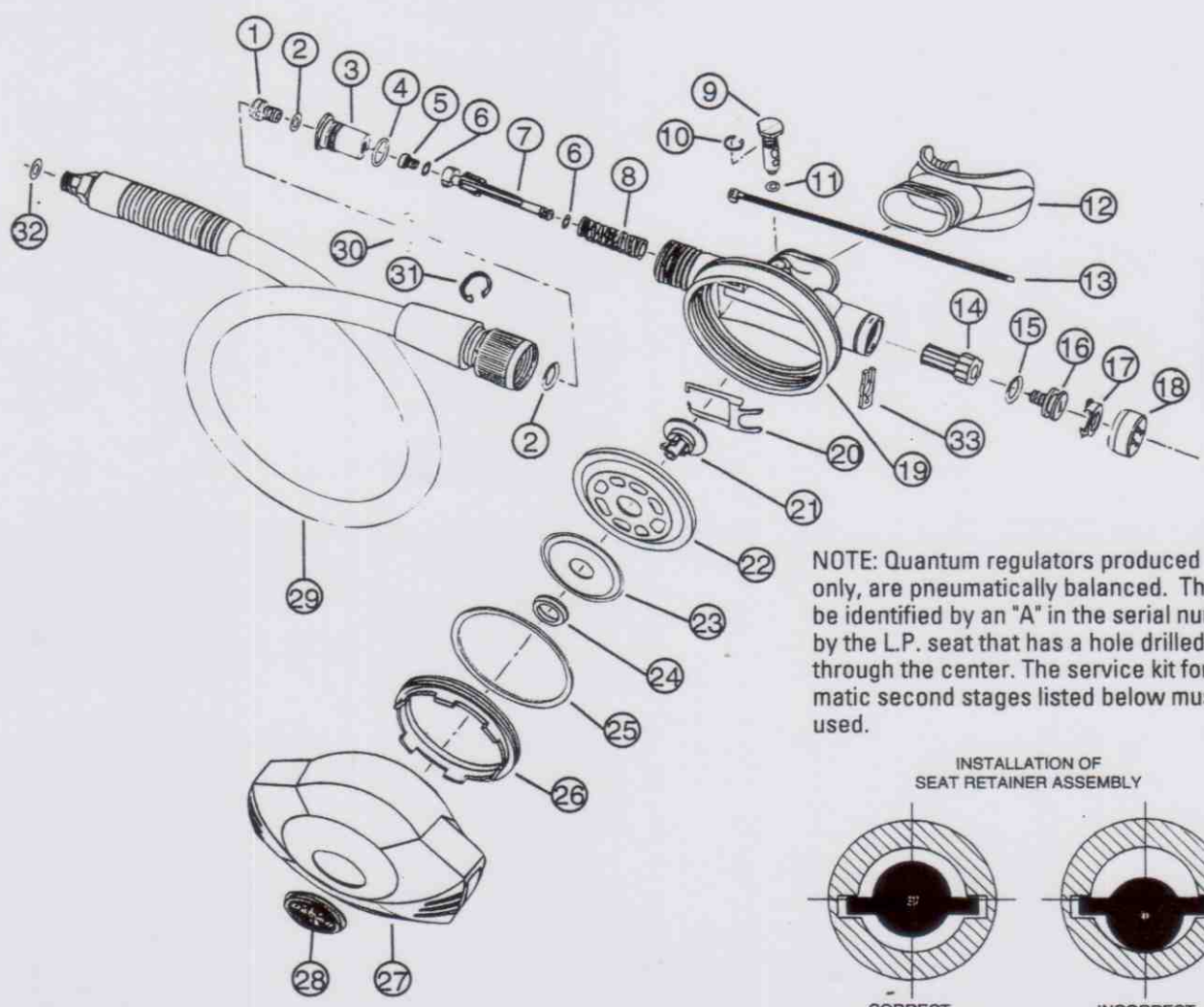
Step 2: Then, re-install the retaining ring (34) on the in-line adjusting hose or detach the in-line adjustment tool and connect the hose directly onto the second stage. Tighten the hose with the 5/8" wrench to a torque specification of 45-50 inch pounds.

Step 3: Finally, replace the flexible cover and the mouthpiece with a new clamp. Service of the second stage is now complete.

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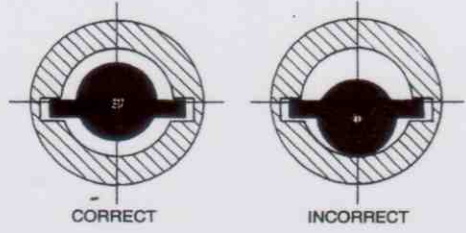
1	1	0182-87		VALVE SEAT
2	2	0060-02	●	O-RING
3	1	0182-88		ADAPTOR- VALVE SEAT
4	1	0060-22	●	O-RING
5	1	0226-01	●	L.P. SEAT
6	2	0060-61	●	O-RING
7	1	0624-97		SEAT CARRIER
8	1	0040-77		SPRING
9	1	0624-98		FLOW TUBE
	1	0625-78		FLOW TUBE NON-ADJUSTABLE
10	1	0250-22	●	RETAINING RING
11	1	0060-95		O-RING
12	1	0300-67		MOUTHPIECE
13	1	0310-11	●	CLAMP
14	1	0624-96		BALANCE CHAMBER
15	1	0060-96	●	O-RING
16	1	0625-05		SHAFT
17	1	0625-61	●●	CLIP, RETAINER
18	1	0625-04		CAP
19	1	0612-80		BOTTOM BOX
20	1	0170-91		LEVER S.S.
21	1	0624-91		CORE, DIAPHRAGM
22	1	0050-18		DIAPHRAGM ASSEMBLY
23	1	0240-14		EXHAUST VALVE
24	1	0624-92		RETAINER, DIAPHRAGM CORE

25	1	0120-98		WASHER
26	1	0624-93		RETAINER, DIAPHRAGM
27	1	0513-94		TOP COVER, QUANT. BLACK
	1	0513-95		TOP COVER, QUANT. YELLOW
28	1	0232-26		DECAL/INSERT ASSM. BLUE
	1	0232-25		DECAL/INSERT ASSM. BLACK
29	1	0229-39		HOSE ASSM. 29" IN-LINE ADJ.
	1	0229-40		HOSE ASSM. 39" IN-LINE ADJ.
30	1	0121-02		FRICTION WASHER
31	1	0250-24		RETAINING RING L.P. HOSE
32	1	0060-51		O-RING
33	1	0628-02	●	RETAINING CLIP



NOTE: Quantum regulators produced in 1992 only, are pneumatically balanced. They can be identified by an "A" in the serial number or by the L.P. seat that has a hole drilled through the center. The service kit for pneumatic second stages listed below must be used.

INSTALLATION OF SEAT RETAINER ASSEMBLY



1992 QUANTUM PNEUMATIC SECOND STAGE
9/93 Second Stage Regulators

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KEY
● Included in annual service kit #9680-22
● 0628-02 Clip retainer (33) replaces 0625-61 retainer, clip (17).

