

June 1, 1971
Part No. 7803-00

AQUA-LUNG® Repair Manual



U.S. DIVERS CO.

3323 W. WARNER AVE.
SANTA ANA, CALIF. 92702 714/540-8010

PARTS LIST

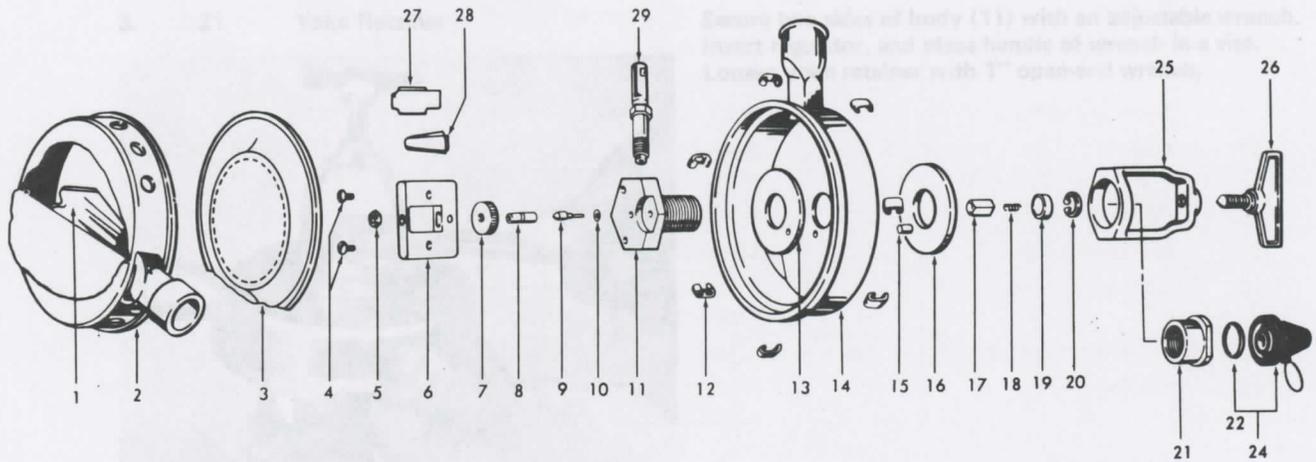
"MISTRAL" REGULATOR No. 1008-00

SINGLE STAGE - TWO HOSE

"MISTRAL" REGULATOR No. 1008-00



Procedure
 (For exploded view)
 Remove by starting regulator on bottom hose (26) up. Try not to slip off with diagonal pliers.
 Lift off.
 Remove.
 Pull exhaling valve (1) out of bottom box (2).
 Remove secondary lever from lever plate (6).
 Remove primary lever from lever plate (6).



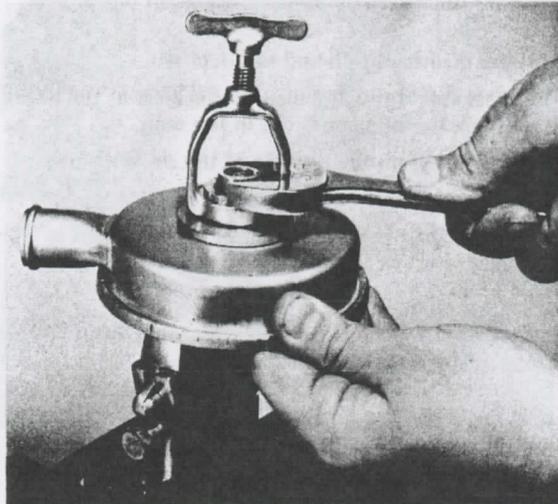
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SEE 1010-00 AQUA MASTER REGULATOR FOR 1128-00 HOSE ASSEMBLY

Key Order Part	Description	Key Order Part	Description
1 - 1010-18	Exhaling Valve	15 - 1002-08	Dowel Pin
2 - 1002-16	Bottom Box	16 - 1002-06	Washer
3 - 9103-12	Diaphragm (L.P.)	17 - 1002-18	Seat Assembly
4 - 8360-05	Screw (2)	18 - 1002-10	Spring
5 - 1002-04	Nut	19 - 1000-38	Filter
6 - 1002-12	Lever Plate	20 - 8630-51	Retainer Ring
7 - 1002-23	Adjustment Nut	21 - 1005-02	Yoke Retainer
8 - 8350-04	Screw	22 - 8201-12	O'Ring
9 - 1002-11	Pin	24 - 1010-12	Cap Assembly
10 - 8200-06	O'Ring	25 - 1002-01	Yoke
11 - 1002-20	Body	26 - 1053-12	Yoke Screw
12 - 1000-15	Clip (7)	27 - 1002-17	Secondary Lever
13 - 1002-07	Gasket	28 - 1002-13	Primary Lever
14 - 1002-14	Top Box	29 - 1008-01	Orifice

A. DISASSEMBLY

Step No.	Key No.	Description	Procedure (Ref exploded view)
1.	12	Box Clips (7 reqd)	Remove by placing regulator on bench, yoke (25) up. Pry box clips off with diagonal pliers.
	2	Bottom Box	Lift off.
	3	Diaphragm (L.P.)	Remove.
	1	Exhaling Valve	Pull exhaling valve (1) out of bottom box (2).
2.	27	Secondary Lever	Remove secondary lever from lever plate (6).
	28	Primary Lever	Remove primary lever from lever plate (6).
3.	21	Yoke Retainer	Secure two sides of body (11) with an adjustable wrench. Invert regulator, and place handle of wrench in a vise. Loosen yoke retainer with 1" open-end wrench.



4.	25	Yoke	Remove from body (11).
	26	Yoke Screw	Remove.
	16	Washer	Remove.
	11	Body	Push body (11) through the hole in the top box (14).
	15	Dowel Pin	Remove and note location in body (11).
	13	Gasket	Separate gasket (13) from body (11).
	9	Pin	Pull pin (9) out of body (11).
	4	Screw (2 reqd)	Unscrew from face of body (11).
	5	Nut	Unscrew from adjustment screw (8).
	6	Lever Plate	Remove from body (11).
5.	7	Adjustment Nut	Unscrew.
	8	Adjustment Screw	Remove with 3/32" allen wrench.
	29	Orifice	Remove from side of body (11) with 5/16" box wrench.
	20	Retainer Ring	With inlet of body (11) facing up, remove retainer ring (20) with circlip pliers (Ref 1111-00, TOOLS).
	19	Sintered Filter	Invert body (11), and remove.
	18	Spring	Remove.
	17	Seat Assembly	Remove.
	NOTE: If seat assembly (18) is in body (11), it can be driven out by inserting a 1/16" punch in pin end of the body. Tap gently.		
	10	O'Ring	Remove from body (11) pin hole.

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B. INSPECTION AND CLEANING

Step No.	Key No.	Description	Procedure (Ref exploded view)
INSPECTION			
1.	28	Primary Lever	Check for wear at the junctions.
	27	Secondary Lever	Check for wear at the junctions.
	6	Lever Plate	Check for wear.
2.	10	O'Ring	Check for wear in center hole.
	9	Pin	Look for verdigris on side.
	13	Gasket	Look for cracks and distortion.
3.	3	Diaphragm (L.P.)	Check for cracks in rubber, and separation from reinforced backing.
4.	1	Exhaling Valve	Look for rubber disintegration and salt deposit.
5.	11	Body	Look at the brass seat through a magnifying glass at the base of the inlet. Check for cuts and nicks in the seat.
6.	19	Sintered Filter	Look for discoloration on the outside of the sintered area.
	20	Retainer Ring	Check for distortion due to removal.
	18	Spring	Because it is difficult to check tension on this spring, it is suggested that this part be automatically replaced.
NOTE: We suggest that all parts in step 6 be replaced.			
7.	29	Orifice	Note any heavy verdigris that would distort, clog, or in any way affect the size of the openings.

CLEANING

- All metal parts, except sintered filter (19) and seat assembly (17) are given an acid bath of 15-20% nitric acid solution. This solution is used only for removing deeply encrusted verdigris.
CAUTION: Be sure that acid does not eat into metal.
- Thoroughly wash metal parts in fresh water after acid bath.
- Extremely heavy sedimentation can be removed with a soft wire wheel, or wire brush.
- All rubber parts should be thoroughly washed in warm, soapy water, and rinsed in fresh water.
- 17 Seat Assembly
 - Heavy wear and verdigris: automatically replace.
 - Light wear, no verdigris: in some cases this part can be reused. It might be necessary to reface with a fine crocus cloth.
- 11 Body

If cuts or nicks are located on the brass seat, most of them can be polished off as follows:

Place small amount of fine grinding compound on a 1/4" wooden dowel. Place dowel down into inlet of body, and invert so that body is resting on top of stick. Spin body to polish.

NOTE: The brass seat can be ground to a certain point after which the seat assembly (17) will not seat itself on the body (11). When this occurs, the body (11) must be replaced. Be sure to remove all grindings before reassembly. (Use air blasts and a fine cloth inserted on a pencil eraser end.)
- Suggest automatic replacement of the following parts if there is heavy verdigris and sedimentation in the regulator.
 - 10 O'Ring
 - 13 Gasket
 - 19 Sintered Filter
 - 20 Retainer Ring
 - 17 Seat Assembly

C. ASSEMBLY

Step No.	Key No.	Description	Procedure (Ref exploded view)
1.	11	Body	Place on table, inlet up.
	17	Seat Assembly	Insert in inlet of body (11), teflon edge facing down.
	18	Spring	Place inside seat assembly (17).
	19	Sintered Filter	Place over spring (18).
	20	Retaining Ring	Secure retainer ring (20) in body (11), using circlip pliers (Ref TOOLS).



CAUTION: Make sure that the sharp edges of the retainer ring (20) are facing up. This will insure perfect engagement in lip of body (11).

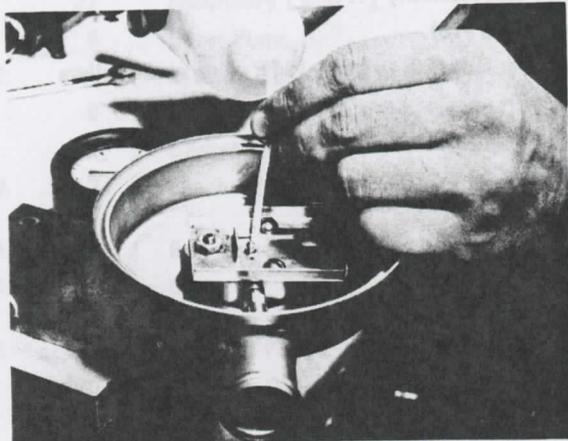
2.	29	Orifice	Screw snugly into body (11).
	10	O'Ring	Insert into body (11) pin hole by collapsing O'ring and pushing in place with a small dowel.
3.	15	Dowel Pin	Insert in body (11) in hole on side of body.
4.	13	Gasket	Place on body (11).
5.	11	Body	Assemble in top box (14), aligning dowel pin (15) with small hole in top box.
	16	Washer	Invert regulator with inlet opening up. Place washer (16) over body (11) and inside of top box (14), aligning dowel pin (15) with hole in washer (16).
6.	25	Yoke	Place over body (11).
	21	Yoke Retainer	Screw onto body (11). Tighten with a 1" open wrench or in vise.
	26	Yoke Screw	Screw into yoke (25).
7.	8	Adjustment Screw	Screw into body (11).
	7	Adjustment Nut	Screw onto adjustment screw (8).
	6	Lever Plate	Place in proper position over body (11), threading adjustment screw (8) through one end.
	4	Screw (2 reqd)	Screw into body (11) through lever plate (6). Do not tighten.
	9	Pin	Insert into body (11) through O'Ring (10).

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Step No.	Key No.	Description	Procedure (Ref exploded view)
8.	28	Primary Lever	Insert into lever plate (6).
	27	Secondary Lever	Insert into lever plate (6).

9. Soap water test.

Attach regulator to "Aqua-Lung" tank. Turn on valve. Put soap water over pin (9) (Ref photo). Check for bubbles at 2000 psi to 3000 psi. There should be none.



10. Adjustment of levers

NOTE: Adjustment must be made under pressure. With one hand press down on sides of lever plate (6) next to the screws. With other hand raise or lower adjustment nut (7) until top of the secondary lever (27) is level with the top edge of the top box (14). If you were to lay a steel ruler across the edge of the top box, the secondary lever would touch the ruler (Ref photo).



5 Nut

If above adjustment is correct, tighten down nut (5).

11. Shut off valve

- 3 Diaphragm (L.P.)
- 2 Bottom Box

Depress secondary lever (27) to bleed off air. Place diaphragm (3) securely on top box (14). Place on diaphragm (3).

NOTE: The inlet tubes must be approximately 120° apart, or have the upper left hand corner of the "Aqua-Lung" tag align with the center of the intake tube.

12. 12 Box Clips (7 reqd)

Snap on box clips (12) — one on either side of the intake and exhaust tubes (4 reqd); one directly below the "Aqua-Lung" tag; and the remaining 2 box clips on either side, equi-distant between the box clips next to the intake tube and the box clip at the bottom of the "Aqua-Lung" tag. If the box clips do not snap on easily, spread them slightly.

NOTE: It is important that the box clips (12) be put on tightly, so that there is no water leak at the diaphragm (3). This will also prevent the diaphragm (3) from being sucked into the top box (14).

Step No.	Key No.	Description	Procedure (Ref exploded view)
13.	1	Exhaling Valve	Insert into bottom box (2) so that exhaling valve (1) lies parallel to diaphragm (3). Fold exhaling valve lips back over exhaust tube of bottom box (2).
14.		Install hoses (Ref 1010 Aqua-Master).	

TROUBLE SHOOTING CHART

COMPLAINT	ORIGIN	KEY NO.	CAUSE	REMEDY
Air leak	a. Levers	27, 28	Levers are set too high.	Readjust.
	b. Body	20	Scratched body seat.	Regrind seat or replace.
	c. Seat Assy	17	Damaged seat.	Reface seat or replace.
	d. Spring	18	Loss of tension.	Replace.
Water leak	a. Yoke Retainer	21	Loose.	Tighten.
	b. Box Clips	12	Loose.	Tighten.
	c. Hose	1128-00	Clamp not put on properly. Pin hole in hose.	Tighten all clamps. Check for pin holes. Replace.
	d. Diaphragm	3	Pinched by boxes.	Reset in top box (14).
	e. Exhaust Valve	1	Pinched by hose clamp.	Refit in bottom box (2).
Hard to inhale	a. Hose	1128-00	Faulty assembly.	Reassemble.
	b. Levers	27, 28	Levers are set too low.	Raise levers slightly (under pressure).
Hard to exhale	a. Exhaling Valve	1	Improper assembly or valve stuck.	Realign.
	b. Hose	1128-00	Hoses not assembled properly.	Reassemble.

PARTS PRICE LIST

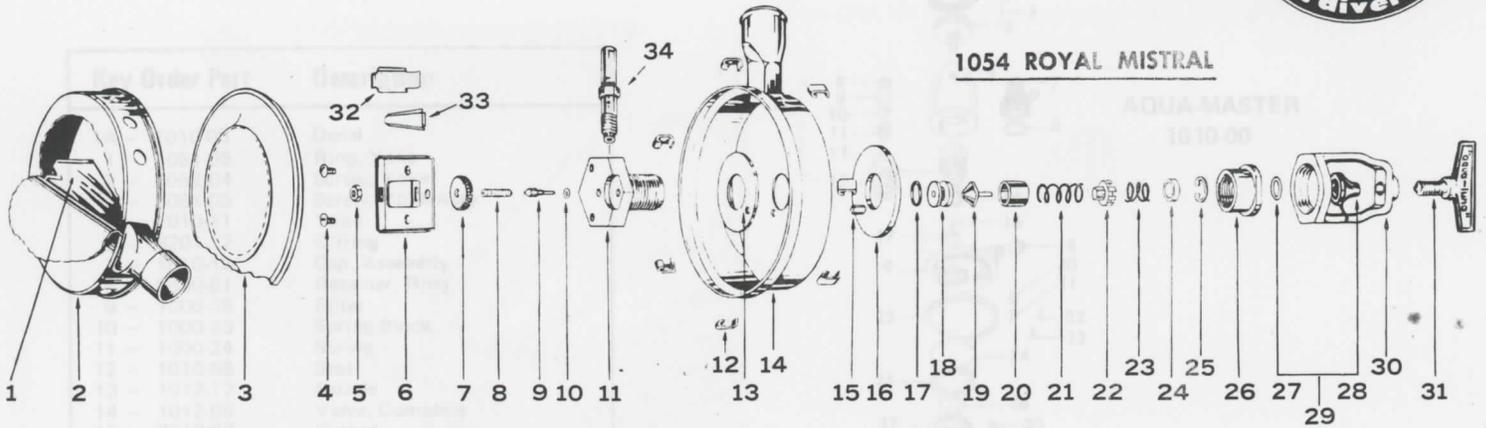
1	1010-01	Exhaling Valve	1.25
2	1010-02	Bottom Box	1.50
3	1010-03	Diaphragm	1.00
4	1010-04	Top Box	1.50
5	1010-05	Yoke Retainer	1.00
6	1010-06	Box Clips	1.00
7	1010-07	Hose	1.00
8	1010-08	Clamp	1.00
9	1010-09	Diaphragm	1.00
10	1010-10	Exhaust Valve	1.00
11	1010-11	Levers	1.00
12	1010-12	Body	1.00
13	1010-13	Seat Assy	1.00
14	1010-14	Spring	1.00
15	1010-15	Yoke Retainer	1.00
16	1010-16	Box Clips	1.00
17	1010-17	Hose	1.00
18	1010-18	Clamp	1.00
19	1010-19	Diaphragm	1.00
20	1010-20	Exhaust Valve	1.00
21	1010-21	Levers	1.00
22	1010-22	Body	1.00
23	1010-23	Seat Assy	1.00
24	1010-24	Spring	1.00
25	1010-25	Yoke Retainer	1.00
26	1010-26	Box Clips	1.00
27	1010-27	Hose	1.00
28	1010-28	Clamp	1.00
29	1010-29	Diaphragm	1.00
30	1010-30	Exhaust Valve	1.00
31	1010-31	Levers	1.00
32	1010-32	Body	1.00
33	1010-33	Seat Assy	1.00
34	1010-34	Spring	1.00
35	1010-35	Yoke Retainer	1.00
36	1010-36	Box Clips	1.00
37	1010-37	Hose	1.00
38	1010-38	Clamp	1.00
39	1010-39	Diaphragm	1.00
40	1010-40	Exhaust Valve	1.00
41	1010-41	Levers	1.00
42	1010-42	Body	1.00
43	1010-43	Seat Assy	1.00
44	1010-44	Spring	1.00
45	1010-45	Yoke Retainer	1.00
46	1010-46	Box Clips	1.00
47	1010-47	Hose	1.00
48	1010-48	Clamp	1.00
49	1010-49	Diaphragm	1.00
50	1010-50	Exhaust Valve	1.00
51	1010-51	Levers	1.00
52	1010-52	Body	1.00
53	1010-53	Seat Assy	1.00
54	1010-54	Spring	1.00
55	1010-55	Yoke Retainer	1.00
56	1010-56	Box Clips	1.00
57	1010-57	Hose	1.00
58	1010-58	Clamp	1.00
59	1010-59	Diaphragm	1.00
60	1010-60	Exhaust Valve	1.00
61	1010-61	Levers	1.00
62	1010-62	Body	1.00
63	1010-63	Seat Assy	1.00
64	1010-64	Spring	1.00
65	1010-65	Yoke Retainer	1.00
66	1010-66	Box Clips	1.00
67	1010-67	Hose	1.00
68	1010-68	Clamp	1.00
69	1010-69	Diaphragm	1.00
70	1010-70	Exhaust Valve	1.00
71	1010-71	Levers	1.00
72	1010-72	Body	1.00
73	1010-73	Seat Assy	1.00
74	1010-74	Spring	1.00
75	1010-75	Yoke Retainer	1.00
76	1010-76	Box Clips	1.00
77	1010-77	Hose	1.00
78	1010-78	Clamp	1.00
79	1010-79	Diaphragm	1.00
80	1010-80	Exhaust Valve	1.00
81	1010-81	Levers	1.00
82	1010-82	Body	1.00
83	1010-83	Seat Assy	1.00
84	1010-84	Spring	1.00
85	1010-85	Yoke Retainer	1.00
86	1010-86	Box Clips	1.00
87	1010-87	Hose	1.00
88	1010-88	Clamp	1.00
89	1010-89	Diaphragm	1.00
90	1010-90	Exhaust Valve	1.00
91	1010-91	Levers	1.00
92	1010-92	Body	1.00
93	1010-93	Seat Assy	1.00
94	1010-94	Spring	1.00
95	1010-95	Yoke Retainer	1.00
96	1010-96	Box Clips	1.00
97	1010-97	Hose	1.00
98	1010-98	Clamp	1.00
99	1010-99	Diaphragm	1.00
100	1010-100	Exhaust Valve	1.00

PARTS LIST

"AQUA-MASTER" No. 1010-00

TWO STAGE REGULATOR WITH KLEER E-Z MOUTHPIECE AND HOOKAH ATTACHMENT

PARTS PRICE LIST



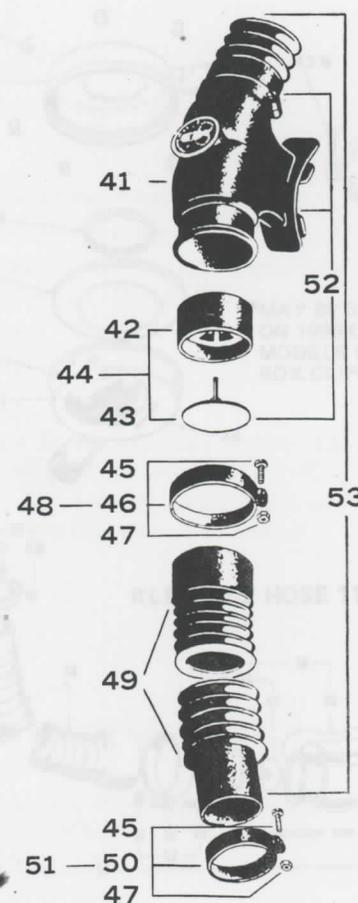
1054 ROYAL MISTRAL

PARTS PRICE LIST ROYAL MISTRAL 1054

Key Order Part #	Description	Retail
1	1010-18 Exhaling Valve	1.75
2	1054-02 Box Bottom	11.00
3	1001-06 Diaphragm	2.80
4	8360-05 Screw	.25
5	8520-06 Nut	.25
6	1002-12 Lever Plate	.90
7	1002-03 Adjustment Nut	.78
8	8350-04 Screw	.40
9	1054-06 Pin	1.15
10	8200-06 O' Ring	.30
11	1054-04 Body	12.00
12	1000-15 Clips	.25
13	1002-07 Gasket	.50
14	1054-01 Box Top	12.80
15	1002-08 Pin	.50
16	1054-17 Washer	1.75
17	8200-12 O' Ring	.30
18	1054-07 Disc & Retainer	1.42
19	1054-12 Poppet	1.42
20	1054-14 Sleeve	2.00
21	1046-04 Spring	.25
22	1054-16 Spring Block Assemble	3.18
23	1046-13 Spring	.25
24	1000-38 Filter	.60
25	8630-51 Retainer Ring	.25
26	1054-18 Yoke, Retainer	1.40
27	8201-12 O' Ring	.25
28	1010-13 Cap & Cord	.50
29	1010-12 Cap Assemble	.75
30	1023-45 Yoke	5.04
31	1041-20 Yoke, screw	3.30
32	1002-17 Secondary Lever	.75
33	1002-13 Primary Lever	.75
34	1008-01 Orifice	1.42

PARTS PRICE LIST KLEER EZ HOSE 1128

41	1128-02 Mouthpiece	3.50
42	1108-03 Support	.50
43	1108-02 Valve	.25
44	1108-12 Valve Assembly	.70
45	8350-02 Screw	.25
46	1128-11 Clamp	.30
47	8520-03 Nut	.25
48	1128-13 Clamp Assembly	.80
49	1128-08 Hose	3.95
50	1128-10 Clamp	.30
51	1128-12 Clamp Assembly	.80
52	1128-07 Mouthpiece & Valve	5.25
53	1128-00 Hose & Mouthpiece complete	12.95



1128 KLEER E-Z

HOSE ASSY