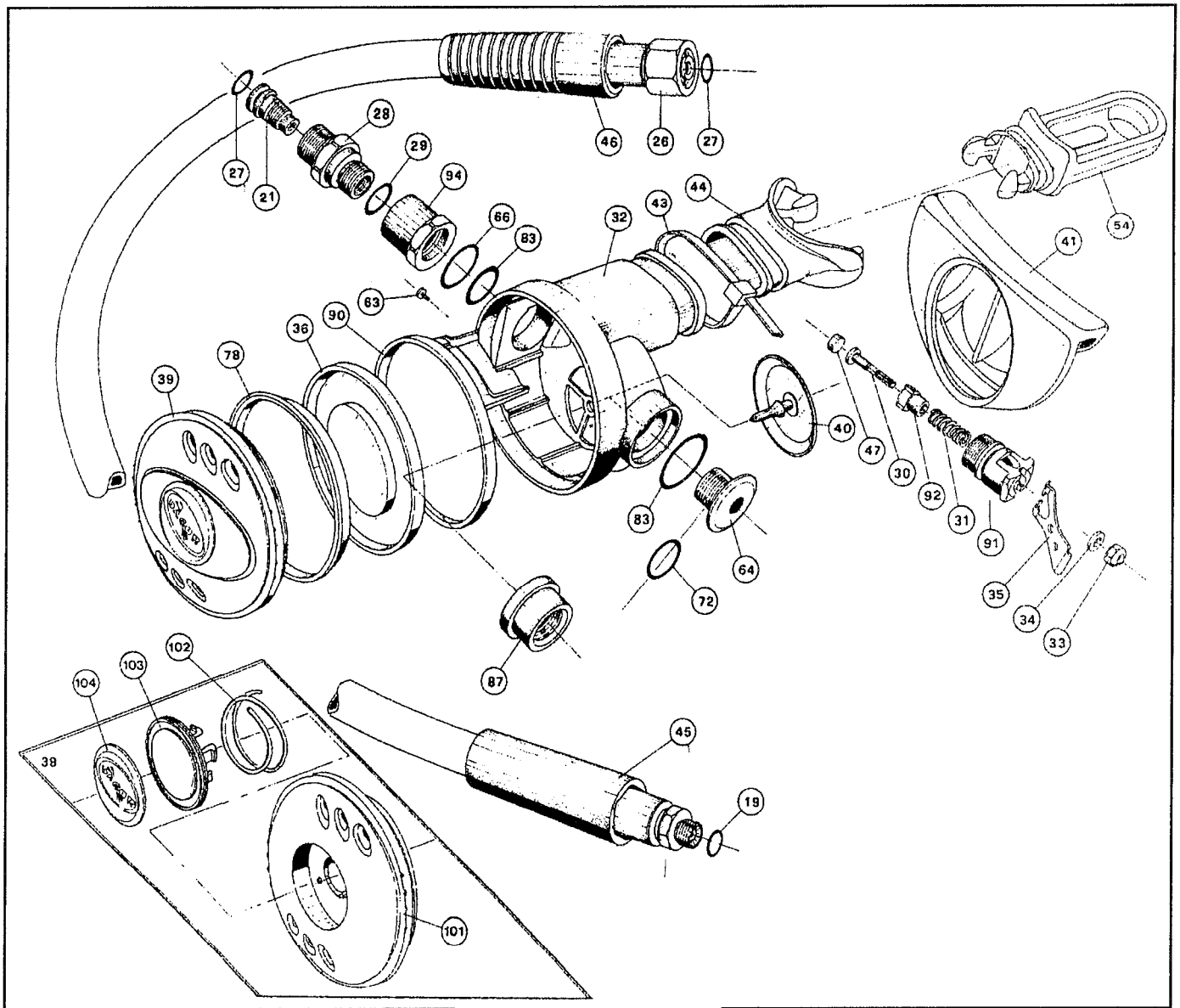
DACOR REPAIR MANUAL
VOLUME THREE
11/99
SECTION 2

SECOND STAGE REGULATOR

SECOND STAGE
FURY



Ref.	Code	Description
19	46110106	OR 106
19	46110402	OR 106 Viton
21	46186023	2nd stage seat connector
26	46187062	Hose hi flow Fury
26	46187070	Hose hi flow Fury, yellow
27	46110205	OR 2025
27	46110411	OR 2025 Viton
28	46184282	Hose connector
29	46110191	OR 3-906
29	46110408	OR 3-906
30	46184219	Poppet metal body, 2nd stage
31	46185057	Poppet spring, 2nd stage
32	46187059	Case Fury tamp., 2nd stage
33	46185051	Lock nut, lever
34	46185049	Washer, 2nd stage
35	46185104	Demand lever, CWD
36	46184225	Diaphragm
40	46184006	Exhaust valve, 2nd stage
41	46186266	Exhaust tee, 2nd stage 98
43	47157984	Clamp 200x4.8 black
44	46185086	Mouthpiece, black (GS)
45	46187061	Hose protector, 2nd stage Fury
46	46187014	Hose protector, 1st stage Dacor
47	46184062	Rubber poppet seat
54	46186090	Mouthpiece plug octopus
63	46184289	Safety catch, cover

Ref.	Code	Description
64	46186267	Adjusting plug
66	46110220	OR 2062
66	46110417	OR 2062 Viton
72	46110215	OR 2043
72	46110415	OR 2043 Viton
78	46184224	Diaphragm ring
83	46110225	OR 2068
83	46110420	OR 2068 Viton
87	46184233	Plug seat
90	46184222	Spacer ring
91	46184218	Poppet housing
92	46184220	Poppet body 2nd stage
94	46184216	Inlet fitting
101	46187063	Cover Fury, black
101	46187064	Cover Fury, yellow
102	46184287	Spring, button
103	46184694	Button
104	46187042	Label, 1st stage knob
		ASSEMBLIES
	46187239	2nd stage Fury assy
	46187229	Maintenance kit 2nd stage Fury
		(19-27-29-33-40-43-47-66-73-83)
		Maintenance kit 2nd stage Fury Nitrox
		(19-27-29-33-40-43-47-66-73-83)

SECOND STAGE FURY

DISASSEMBLY

1. Unscrew the First stage hose using wrench (B-18).
2. Remove mouthpiece clamp (43) by cutting it with the appropriate tool.

NOTE
REMOVE THE MOUTHPIECE CLAMP ONLY IF THE CORRESPONDING SPARE PART IS AVAILABLE.

3. Remove the mouthpiece (44).
4. Remove the exhaust tee (41).
5. Using two wrenches (B-17) remove the hose connector assembly from Second stage.
6. Remove O-Ring (27) from hose connector.
7. Holding the inlet fitting in place with wrench (B-9) and remove hose connector (28) with wrench (B-17). (Fig.1)

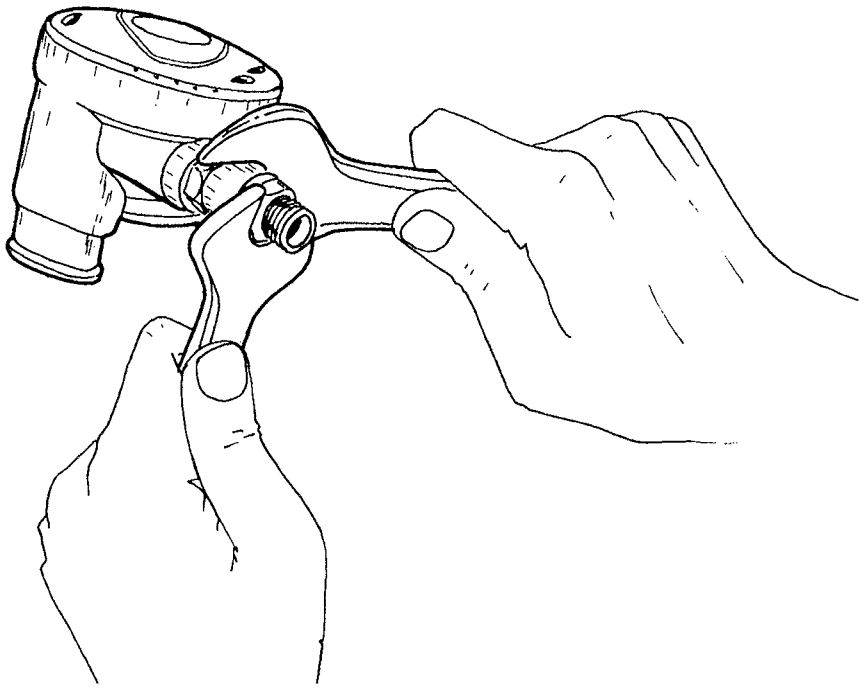


FIG. 1

8. Remove O-Ring (29) from hose connector (28).
9. Unscrew Second stage seat connector (21) from hose connector (28) using the Allen wrench (B-4).
10. Remove O-Ring (27) from Second stage seat connector (21).
11. Remove safety catch (63).
12. Remove purge cover (39).

NOTE
DISASSEMBLY OF THE PURGE COVER ASSEMBLY (PURGE BUTTON, SPRING AND COVER) IS NOT NECESSARY UNLESS THE COVER IS SEVERLY ENCRUSTED, DIRTY OR WHENEVER THE PURGE BUTTON DOES NOT RETURN TO ITS NORMAL POSITION.

13. Remove diaphragm ring (78), diaphragm (36) and spacer ring (90) from 2nd stage case.
14. Unscrew case plug (64) using an Allen wrench (B-8).
15. Remove O-Ring (72) from the case plug (64).
16. Remove the plug seat (87) by gently pressing it into the case and remove O-Ring (83) from its seat in the case.
17. Place the 2nd stage case on the special tool (B-6) gently pressing. Then, using nut driver (B-12), unscrew lock nut (33) and remove demand lever (35) and washer (34). (Fig. 2)

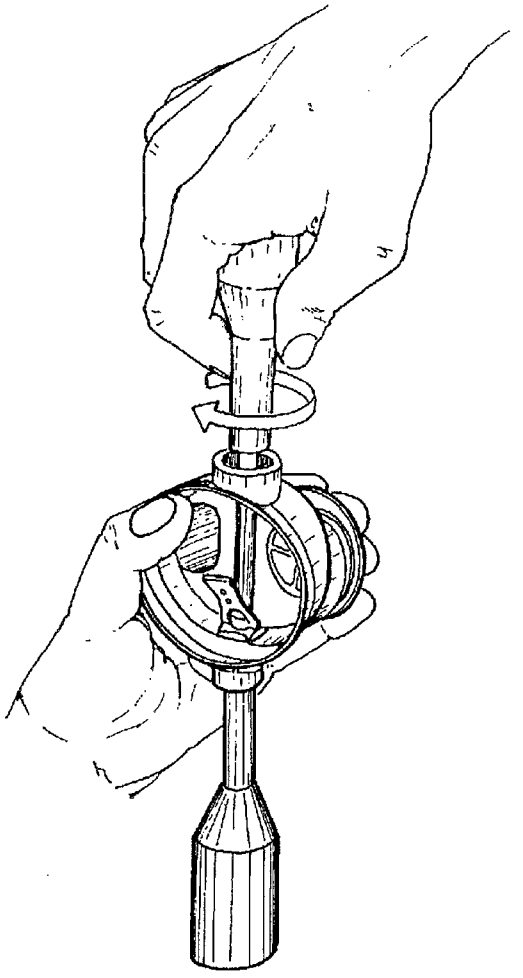


FIG. 2

18. Lift the 2nd stage case from the special tool (B-6) and remove the 2nd stage poppet and the spring (31).
19. Remove the poppet seat (47) gently pressing the poppet body (92) towards the threaded end.
20. Remove the plastic poppet body (92) from the 2nd stage metal poppet body (30).
21. Remove the inlet fitting (94) using wrench (B-9).
22. Gently press the poppet housing (91) into the 2nd stage case, then remove the O-Ring (66) from its seat in the case.
23. Remove the O-Ring (83) from poppet housing (91).
24. Remove the exhaust valve (40).

NOTE
REMOVE THE EXHAUST VALVE ONLY IF THE SPARE PART IS AVAILABLE.

CLEANING

WARNING ⚠

WHEN WORKING WITH ANY KIND OF ACID, PROTECT EYES AND SKIN ADEQUATELY.

Cleaning requires all reusable parts to be carefully cleaned by scrubbing with a soft brush in a mild detergent and water solution. Before reassembly, make sure all parts have been carefully rinsed and dried. Metal parts should be cleaned in an ultrasonic cleaner with fresh water and a mild acid solution (white vinegar diluted with warm water is recommended).

WARNING ⚠

ACIDS MAY DAMAGE RUBBER AND PLASTIC PARTS. BEFORE CLEANING METAL PARTS, MAKE SURE THAT ALL RUBBER AND PLASTIC PARTS HAVE BEEN REMOVED.

INSPECTION

The following components of the 2nd stage should be replace during routine service. In view of their relatively low cost, O-rings should be replaced at any service.

Quantity	Ref.	Description	Code	
2	(27)	O-Ring 2025	Code 110205	code Viton 110411
1	(72)	O-Ring 2043	Code 110215	code Viton 110415
1	(29)	O-Ring 3-906	Code 110191	code Viton 110408
1	(66)	O-Ring 2062	Code 110220	code Viton 110417
3	(83)	O-Ring 2068	Code 110225	code Viton 110420
1	(19)	O-Ring 106	Code 110106	code Viton 110402
1	(47)	2nd stage rubber poppet seat	Code 184062	
1	(33)	2nd stage demand lever regulating nut	Code 185051	
1	(40)	Exhaust valve	Code 184006	
1	(43)	Clamp	Code 157984	

If the following parts are not replaced, they should be inspected with a jeweler's loop or similar magnifying device for the flaws listed below:

DO NOT USE ANY PART WITH THESE FLAWS:

Description	Ref.	Inspection
Second stage case	(32)	Inspect the sealing surfaces for cracks or scratches.
Seat connector	(21)	Inspect the tapered seating surface for nicks, flat spots and scratches.
Diaphragm	(36)	Inspect for any tears or pin holes, distortion of the outer bead and any signs of the disk detaching from the diaphragm.
O-Rings	(27-66-29-72-83)	Inspect for cuts, tears or contamination. The presence of any of these flaws may cause leakage.
2nd stage poppet seat	(47)	Inspect for cuts, cracks or any rubber deformation.
2nd stage poppet body	(92)	Inspect for cuts, cracks or wear.
Demand lever regulating nut	(33)	Inspect for proper operation and for possible oxidation. Replacement is recommended at each revision.
Mouthpiece	(44)	Inspect for cuts, cracks or deterioration.
Exhaust tee	(41)	Inspect for cracks or tears.
Hose	(26)	Inspect for any cracks, blisters, cuts or any other signs of damage.
Spring	(31)	Inspect for cracked or broken coils.

REASSEMBLY

Before reassembly, lightly lubricate all O-rings with silicone grease (General Electric Versalube G-322 or equivalent). Lubricating the O-rings before reassembly will minimize the risk of damage during the reassembly.

WARNING ⚠

IF THE SECOND STAGE IS USED FOR ENRICHED AIR DIVING, IT MUST BE PERFECTLY CLEANED AND FREE FROM RESIDUAL SILICONE OR FROM ANY FOREIGN MATTER. VITON O-RINGS CAN BE LUBRICATED WITH SPECIFIC OXYGEN COMPATIBLE GREASE. **DO NO USE SILICONE GREASE.**

1. Carefully install a new exhaust valve (40) by pulling the silicone stem through the center hole of the exhaust valve seat in the 2nd stage case.

WARNING ⚠

THE VALVE STEM SHOULD NOT BE PULLED EXCESSIVELY AS DAMAGE TO THE EXHAUST VALVE MAY OCCUR.

2. With scissors, cut approximately 7 mm. off of the silicone stem.
3. Reassemble the poppet body (92) on the 2nd stage poppet stem (30).
4. Insert the rubber poppet seat (47) into the plastic poppet body (92).
5. Place the 2nd stage poppet assembly and the spring (31) onto special tool (B-6).
6. Insert 2nd stage poppet and spring (31) into the poppet housing (91), gently pressing (Fig. 3).

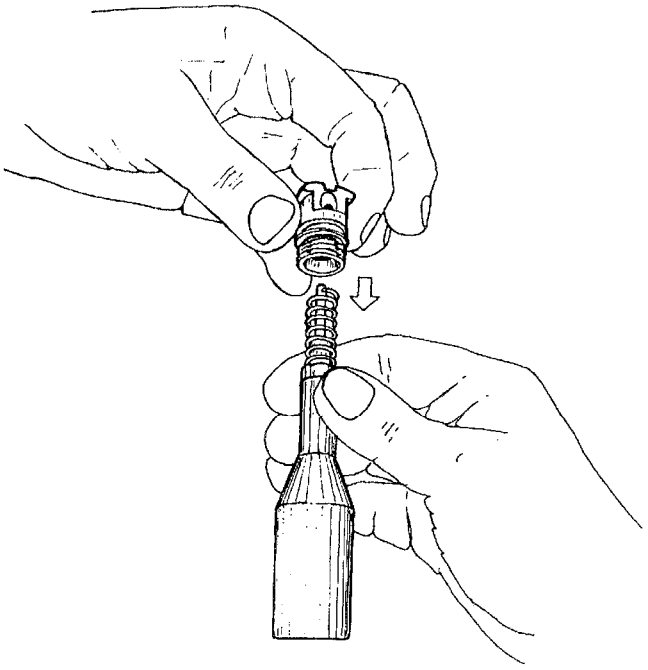


FIG. 3

IMPORTANT ⚠

TO PLACE CORRECTLY THE 2ND STAGE POPPET STEM IN THE POPPET HOUSING HOLE, TURN THE POPPET HOUSING LEFT AND RIGHT.

7. Position the demand lever (35) in the groove of the poppet housing (91).

8. Insert washer (34) over the stem of the poppet assembly and tighten the regulating nut (33) using the special tool (B-12 or B-20). (Fig. 4)

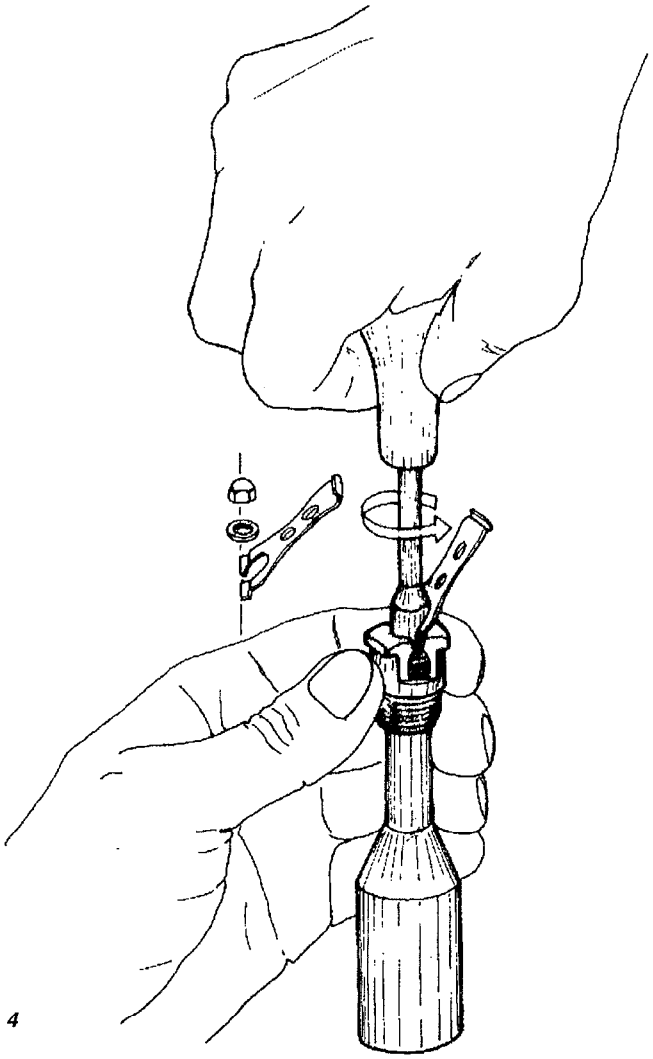


FIG. 4

NOTE
TO MAKE SURE THE LEVER IS FREE OF MOVEMENT, OPERATE A FEW TIMES.

9. Correctly place the poppet housing assembly in the 2nd stage case.

IMPORTANT ⚠

CHECK THAT THE POPPET HOUSING IS CORRECTLY PLACED THROUGH THE HOLE OF THE 2nd STAGE CASE (FIG. 5)

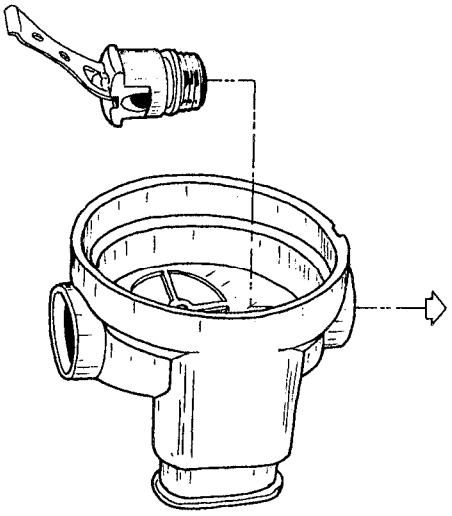


FIG. 5

10. Place O-Ring (83) in its seat on the case, using the special tool (B-6). (Fig. 6)

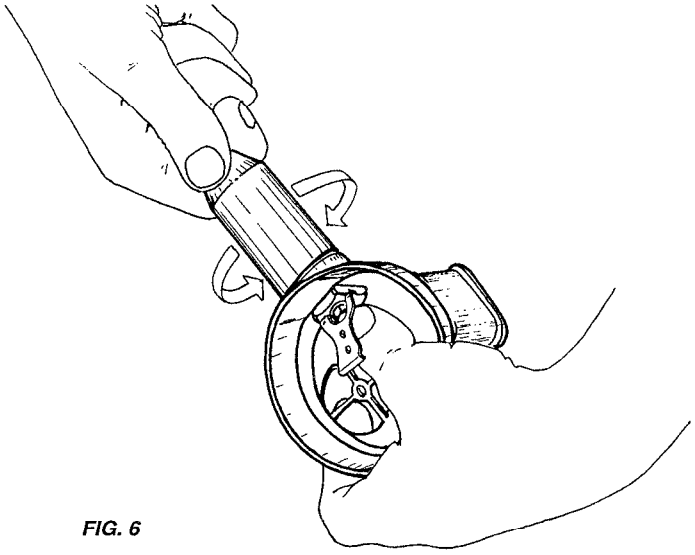


FIG. 6

11. Place O-Ring (66) in the poppet housing seat (91).
12. Tighten the inlet fitting (94) using wrench (B-9).

NOTE
IF USING A TORQUE WRENCH, SET THE TORQUE FOR 8 – 8,5 N/m. 6-6.5 FT/ lbs.

13. Install O-Ring (27) in the groove of the seat connector (21).
14. Insert and thread seat connector (21) into the hose connector (28), by using the Allen wrench (B-4) until the tapered end protrudes from the hose connector.

WARNING ⚠

THE SEAT CONNECTOR MUST PROTRUDE FROM THE HOSE CONNECTOR 3.8 mm MAXIMUM.

15. Place O-Ring (29) in the hose connector seat (28).
16. Using wrench (B-9) hold the inlet fitting (94) and using wrench (B-17) tighten the connector assembly.
17. Place O-Ring (27) into the swivel hose connector (26).
18. Tighten the hose (26) onto the hose connector (28) using two wrenches (B-17).

ADJUSTMENT AND FINAL ASSEMBLY

To obtain correct adjustment of the regulator:

A. Equipment for repair service must have high and low pressure air at disposal.

B. An intermediate pressure gauge is needed (a gauge with MAX 30 - 40 BAR scale, for the accuracy of the regulation).

1. Connect an intermediate pressure gauge to a 3/8" port of the 1st stage, using wrench (B-18).
2. Attach the hose with the 2nd stage partially finished on D.F.C. port, and tighten with wrench (B-I8).
3. Place the assembly on the valve system (of a tank or a Test Bench).
4. Depress the demand lever while slowly opening the tank valve. When air begins to flow, slowly release demand lever.
5. Read on the gauge if the intermediate pressure for the 1st stage is correct.

WARNING ⚠

READING OF THE 1ST STAGE INTERMEDIATE PRESSURE SHOULD BE EFFECTED WHILE THE 2ND STAGE IS NOT OPERATING. FOR ADJUSTMENTS OF THE 1ST STAGE, SEE THE SPECIAL MANUAL.

ADJUSTMENT PROCEDURE

To effect correct adjustments, the 2nd stage should be supplied with correct intermediate pressure. Thanks to their shape, 2nd stages allow two different kinds of adjustment.

Procedure A

1. Position lever height gauge so that the two ends rest on the edge of the 2nd stage case (See Fig.7).

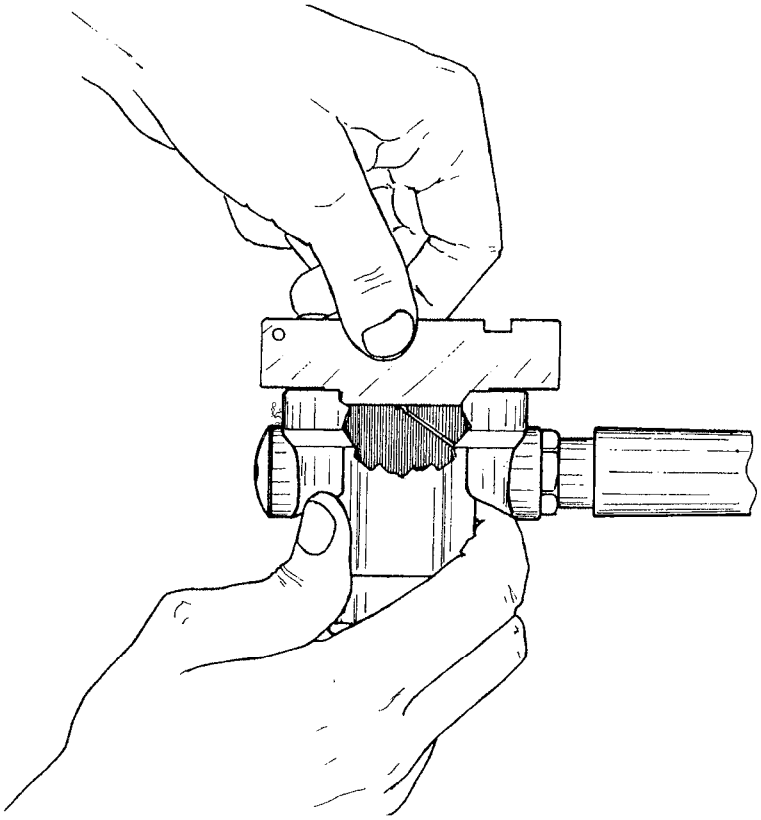


FIG. 7

2. Tighten or loosen the lever lock nut (33) using tools (B-12) or (B-20) to adjust demand lever (35).

IMPORTANT ⚠

THE DEMAND LEVER IS CORRECTLY ADJUSTED WHEN IT ALMOST TOUCHES THE GAUGE AND NO AIR FLOWS.

3. Depress and release the demand lever several times.
4. Place the 2nd stage diaphragm (36) into the case.
5. Place the diaphragm ring (78).
6. Install the purge cover.

NOTE

POSITION THE PURGE COVER AND ALIGN THE TWO HOLES (OF THE CASE AND OF THE COVER) FOR THE SAFETY CATCH HOUSING.

7. Insert the safety catch.

Procedure B

1. Place the 2nd stage diaphragm (36) in the 2nd stage case.
2. Insert the diaphragm ring (78).
3. Install the purge cover.

WARNING ⚠

POSITION THE PURGE COVER AND ALIGN THE TWO HOLES (OF THE CASE AND OF THE COVER) FOR THE SAFETY CATCH SEAT.

4. Insert the safety catch (63).
5. Through the plug seat, tighten or loosen the lock nut (32) using wrench (B-12), to adjust the demand lever (35).

WARNING ⚠

THE DEMAND LEVER IS CORRECTLY ADJUSTED WHEN DEPRESSING THE PURGE BUTTON IT YELDS 1 MM OF TRAVEL BEFORE AIR BEGINS TO FLOW.

6. Depress the purge button several times.
7. Place the O-Ring (72) on the case plug (54).
8. Thread the case plug into plug seat using wrench (B-8).

NOTE

IF USING A TORQUE WRENCH, SET THE TORQUE FOR 90 N/cm.

9. Place the hose protector (46).
10. Remove the valve system.
11. Remove the intermediate pressure gauge and thread the plug and O-ring.
12. Install the exhaust tee (41) over the mounting flange of the 2nd stage case.

WARNING ⚠

CHECK THAT THE LIP OF THE EXHAUST TEE FITS FULLY OVER THE FLANGE.
LIGHTLY LUBRICATING THE EXHAUST TEE WITH LIQUID SOAP OR DETERGENT WILL MAKE THE ASSEMBLY EASIER. DO NOT USE SILICONE DETERGENT. THE USE OF IT MAY CAUSE PROBLEMS TO SOME COMPONENTS (DIAPHRAGMS) AND THE EXHAUST TEE COULD COME OFF DURING OPERATION.

13. Install the mouthpiece (44) and secure it in place with a new clamp (43).

FINAL CHECKS AND ADJUSTMENTS

The checks described below are designed to verify the perfect operation of the regulator.

VALUES OF "CRACKING" PRESSURE FOR SECOND STAGES		
MODEL	**INCHES OF H_2O**	**Cm OF H_2O**
2ND STAGE	1 - 1.5	2.5 – 3.8
2ND STAGE OCTOPUS	1.2 - 1.6	3.0 – 4

Tab. A

1. Mount the regulator on the control valve (of a tank or a Test Bench).
2. Using the laboratory Test Bench, after calibrating the First stage, breathe in through the mouthpiece and read the "cracking" pressure on the **U**-gauge at the instant when the gauge detects a drop in the intermediate pressure.

WARNING ⚠

IN THE ABSENCE OF A TEST BENCH IT IS POSSIBLE TO RUN AN APPROXIMATE CHECK ON THE CRACKING PRESSURE USING A BASIN OF WATER AND CARRYING OUT THE PROCEDURE BELOW:

a. Slowly submerge the Second stage in the water with the mouthpiece facing up, without allowing water to go inside.

b. When the water level, measured on the mouthpiece fitting with reference to the point indicated in the diagram (Fig. 8), falls between the "cracking" values indicated in Table A, the air must start to flow. (see Tab.**A**)

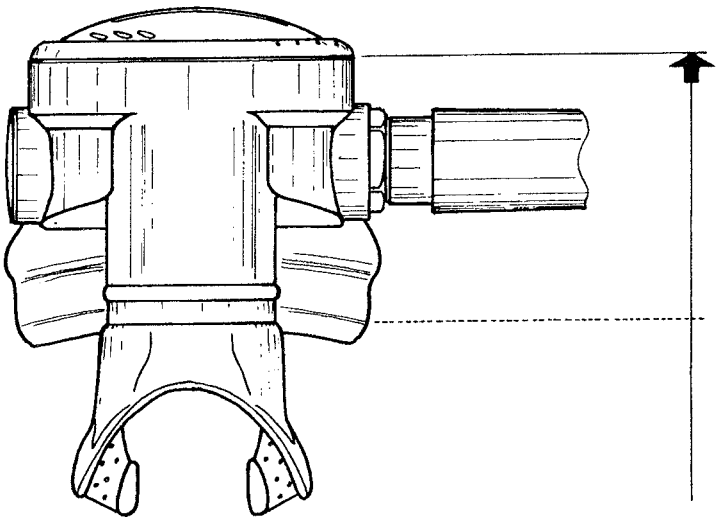


FIG. 8

SECOND STAGE MODEL	POINT OF REFERENCE
FURY	WHERE STARTS THE 2ND STAGE CASE (32) (Fig. 8)

3. If the cracking pressure does not fall between the values specified in the table, proceed as follow:
   a. If the cracking value is **greater**, it is necessary to reduce the loading on the spring.
   b. If the cracking value is **lower**, it is necessary to increase the loading on the spring.

WARNING ⚠

AFTER CARRYING OUT THE OPERATIONS DESCRIBED IN STEPS 3A AND 3B (TO REDUCE OR TO INCREASE), ALWAYS REPEAT THE ADJUSTMENT OF THE DEMAND LEVER, AS DESCRIBED IN THE MANUAL.

4. Submerge the Second stage in water with the mouthpiece facing up, allowing water to enter the exhaust tee and keeping it in the water for about 30 seconds.
5. Remove the Second stage from water and then turn the mouthpiece downward.
6. Check for any traces of water inside the Second stage.

WARNING ⚠

IF MORE THAN A FEW DROPS OF WATER COME OUT OF THE SECOND STAGE, CHECK SEALS ON THE MOUTHPIECE CLAMP, THE EXHAUST VALVE AND THE RIM OF THE DIAPHRAGM.

7. Press the purge button a few times and check that it operates smoothly and does not jam.
8. Completely submerge the Second stage in water (allowing water to enter the mouthpiece) and check for any air leaks.

FURY 2nd STAGE TROUBLESHOOTING

PROBLEM	MODEL	PROBABLE CAUSE	SOLUTION
- 1 - CONSTANT OR INTERMITTENT AIR LEAKS FROM THE SECOND STAGE	FURY	1) Second stage poppet pad dirty or damaged	1) Clean, invert or replace
		2) Sealing surface of seat connector dirty or damaged	1) Clean or replace
		3) Intermediate pressure too high	1) Adjust intermediate pressure
		4) Demand lever set too high	1) Adjust correctly
		5) Second stage poppet spring incorrectly positioned or damaged	1) Position correctly or replace
		6) O-Ring seat in adjustable seat connector dirty or damaged	1) Clean or replace
		7) Adjustable seat connector too low	1) Adjust correctly
- 2 - CRACKING PRESSURE TOO HIGH	FURY	1) Demand lever set too low	1) Adjust correctly
		2) Intermediate pressure too low	1) Adjust correctly
		3) Hole for Second stage poppet in Second stage body obstructed	1) Clean thoroughly
		4) Tank valve not fully open	1) Open the tank valve completely
		5) Second stage spring deformed and/or damaged	1) Replace
		6) First stage filter obstructed	1) Overhaul the First stage and replace the spring if necessary
		7) Loading of poppet spring too high	1) Adjust correctly and replace the spring if necessary
- 3 - CRACKING PRESSURE TOO LOW	FURY	1) Intermediate pressure too high	1) Adjust correctly
		2) 2nd stage spring deformed and/or damaged	1) Replace
		3) Loading of poppet spring too low	1) Adjust correctly and replace the spring if necessary
- 4 - AIR LEAK BETWEEN THE SWIVEL HOSE COUPLING AND THE SECOND STAGE CONNECTOR	FURY	1) Swivel hose coupling defective	1) Replace the O-Ring
		2) Sealing surface of hose connector O-ring dirty or damaged	1) Clean or replace the hose connector

FURY 2nd STAGE TROUBLESHOOTING

PROBLEM	MODEL	PROBABLE CAUSE	SOLUTION
- 5 - TRACES OF WATER INSIDE THE SECOND STAGE	FURY ADJ	1) Exhaust valve dirty, incorrectly positioned or damaged	1) Clean, position correctly or replace
		2) Exhaust valve support dirty or damaged	1) Clean or replace the 2nd stage case
		3) Diaphragm dirty, incorrectly positioned or damaged	1) Clean, position correctly or replace
		4) Mouthpiece loose or damaged	1) Tighten with a new clamp, or replace
		5) Seat connector O-ring defective	1) Replace
		6) Spacer ring incorrectly positioned or damaged	1) Check the position of the spacer ring or replace
		7) Retaining ring incorrectly positioned or damaged	1) Check the position of the retaining ring or replace
		8) Cover incorrectly clamped	1) Lock down the screws
		9) Sealing surfaces and sealing O-Rings of the plug between the threaded tab and the Second stage case, and between the inlet fitting and the Second stage case	1) Check and clean any sealing surface, and replace O-Rings and damaged components
- 6 - THE BUTTON PURGE OF THE COVER JAMS	FURY ADJ	1) Button seat dirty	1) Clean
		1) Defective spring	1) Replace the spring
- 7 - VIBRATIONS DURING THE INHALATION PHASE	FURY ADJ	1) Diaphragm incorrectly positioned	1) Position correctly
		2) Demand lever incorrectly adjusted	1) Adjust correctly
		3) Poppet spring incorrectly positioned or defective	1) Position correctly or replace

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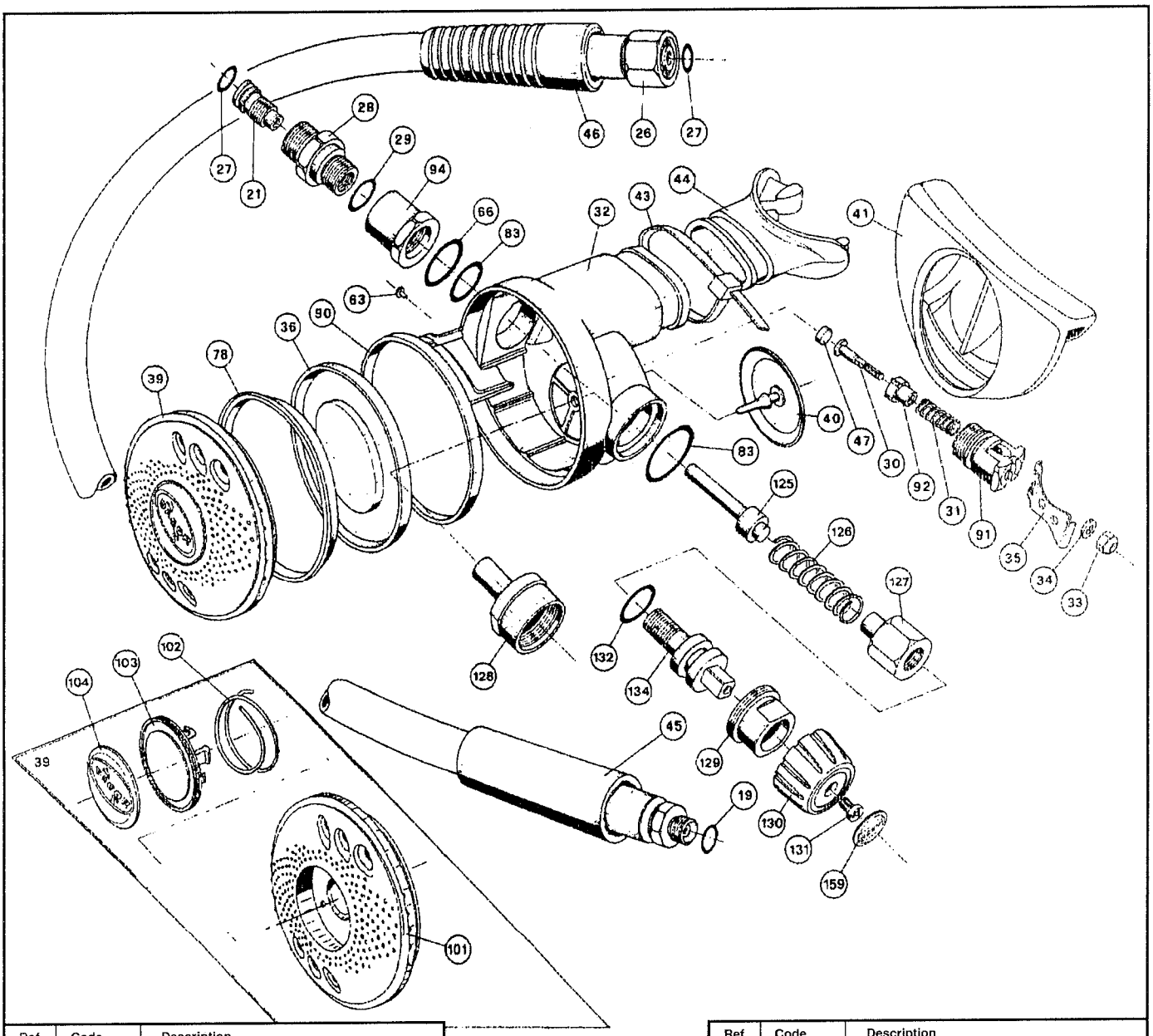

Ref.	Code	Description
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21	46186023	2nd stage seat connector
26	46187069	Hose super flow Fury ADJ
27	46110205	OR 2025
28	46184282	Hose connector
29	46110191	OR 3-906
30	46184219	Poppet metal body, 2nd stage
31	46185057	Poppet spring, 2nd stage
32	46187066	Case Fury ADJ tamp., 2nd stage
33	46185051	Lock nut, lever
34	46185049	Washer, 2nd stage
35	46185104	Demand lever, CWD
36	46184225	Diaphragm
40	46184006	Exhaust valve, 2nd stage
41	46186266	Exhaust tee, 2nd stage 98
43	47157984	Clamp 200x4,8 black
44	46185086	Mouthpiece, black (GS)
45	46187061	Hose protector, 2nd stage Fury
46	46187014	Hose protector, 1st stage Dacor
47	46184062	Rubber poppet seat
63	46184289	Safety catch, cover
66	46110220	OR 2062
78	46184224	Diaphragm ring
83	46110225	OR 2068

Ref.	Code	Description
90	46184222	Spacer ring
91	46184218	Poppet housing
92	46184220	Metal poppet body 2nd stage
94	46184216	Inlet fitting
101	46187065	Cover
102	46184287	Spring, button
103	46184065	Minicompact button
104	46187042	Label, button
125	46184685	Adjusting shaft
126	43163325	Spring, Sten grad. Lever
127	46184686	Adjusting bushing
128	46184684	Adjusting body
129	46184688	Adjusting plug
130	46187067	Adjusting knob
131	46184696	Screw m 3x8 UNI 7689
132	46110114	OR 114
134	46184687	Adjusting pin
159	46187055	Label
		ASSEMBLIES
	46187240	2°Stage Fury ADJ assy
	46187228	Maintenance kit 2nd stage Fury ADJ
		(19-27-29-33-40-43-47-66-73-83-114)

SECOND STAGE FURY ADJ

DISASSEMBLY

1. Unscrew the First stage hose using wrench (B-18).
2. Remove mouthpiece clamp (43) by cutting it with the appropriate tool.

NOTE
REMOVE THE MOUTHPIECE CLAMP ONLY IF THE CORRESPONDING SPARE PART IS AVAILABLE.

3. Remove the mouthpiece (44).
4. Remove the exhaust tee (41).
5. Using two wrenches (B-17) remove the hose connector assembly from Second stage.
6. Remove O-Ring (27) from hose connector.
7. Holding the inlet fitting in place with wrench (B-9) and remove hose connector (28) with wrench (B-17). (Fig.1)

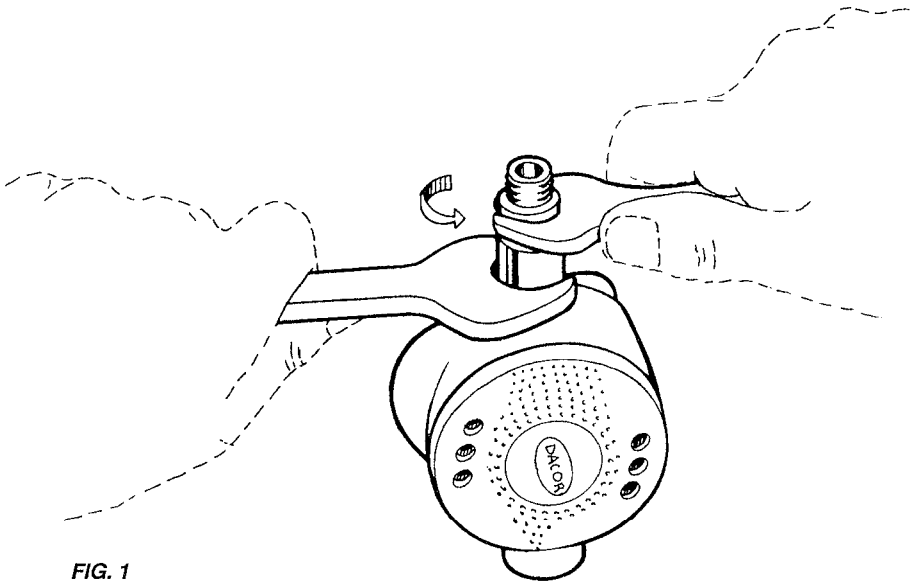

FIG. 1

8. Remove O-Ring (29) from hose connector (28).
9. Unscrew Second stage seat connector (21) from hose connector (28) using the Allen wrench (B-4).
10. Remove O-Ring (27) from Second stage seat connector (21).
11. Remove safety catch (63).
12. Remove purge cover (39).

NOTE
DISASSEMBLY OF THE PURGE COVER ASSEMBLY (PURGE BUTTON, SPRING AND COVER) IS NOT NECESSARY UNLESS THE COVER IS SEVERLY ENCRUSTED, DIRTY OR WHENEVER THE PURGE BUTTON DOES NOT RETURN TO ITS NORMAL POSITION.

13. Remove diaphragm ring (78), diaphragm (36) and spacer ring (90) from 2nd stage case.

14. Remove the Dacor sticker from the adjustment knob (130).
15. Unscrew screw (131).
16. Remove adjustment knob (130).
17. Extract adjustment plug (129) using wrench (B-26).
18. Using pliers remove the assembly including the adjustment pin (134) with its O-Ring, the adjustment bushing (127) and the spring (126).
19. Remove the spring (126).
20. Extract the pin (134) from the bushing (127).
21. Remove O-Ring (132) from pin (134).
22. Extract the adjustment shaft (125) from the body (128).
23. Gently pressing, press the adjustment body (128) into the case and remove the O-Ring (83) from its seat on the 2nd stage case.
24. Place the 2nd stage case on the special tool (B-6) gently pressing. Then, using nut driver (B-12), unscrew lock nut (33) and remove demand lever (35) and washer (34). (Fig. 2)

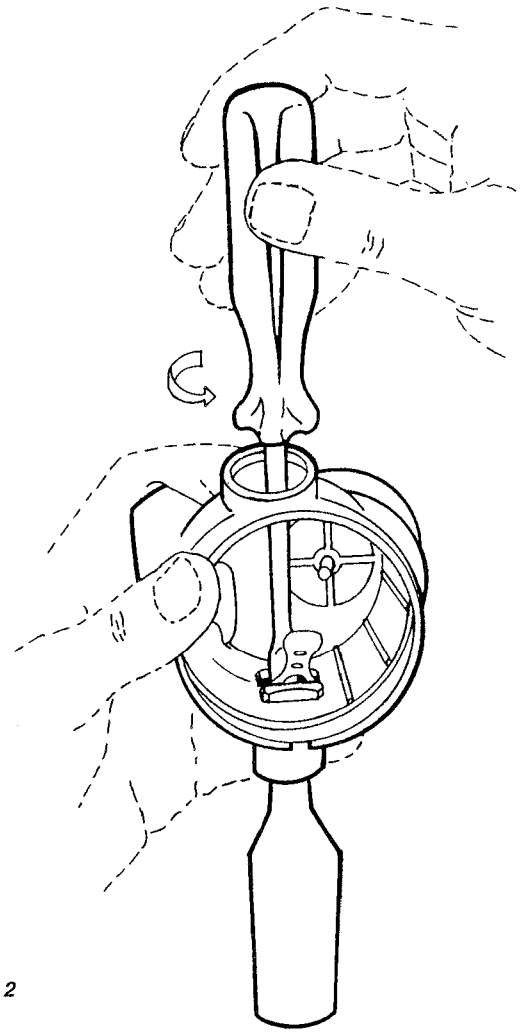

FIG. 2

25. Lift the 2nd stage case from the special tool (B-6) and remove the 2nd stage poppet and the spring (31).
26. Remove the poppet seat (47) gently pressing the poppet body (92) towards the threaded end.
27. Remove the plastic poppet body (92) from the 2nd stage metal poppet body (30).

28. Remove the inlet fitting (94) using wrench (B-9).
29. Gently press the poppet housing (91) into the 2nd stage case, and then remove the O-Ring (66) from its seat in the case.
30. Remove the O-Ring (83) from poppet housing (91).
31. Remove the exhaust valve (40).

NOTE
REMOVE THE EXHAUST VALVE ONLY IF THE SPARE PART IS AVAILABLE.

CLEANING

WARNING ⚠

WHEN WORKING WITH ANY KIND OF ACID, PROTECT EYES AND SKIN ADEQUATELY.

Cleaning requires all reusable parts to be carefully cleaned by scrubbing with a soft brush in a mild detergent and water solution. Before reassembly, make sure all parts have been carefully rinsed and dried. Metal parts should be cleaned in an ultrasonic cleaner with fresh water and a mild acid solution (white vinegar diluted with warm water is recommended).

WARNING ⚠

ACIDS MAY DAMAGE RUBBER AND PLASTIC PARTS. BEFORE CLEANING METAL PARTS, MAKE SURE THAT ALL RUBBER AND PLASTIC PARTS HAVE BEEN REMOVED.

INSPECTION

The following components of the 2nd stage should be replaced during routine service. In view of their relatively low cost, O-rings should be replaced at any service.

Quantity	Ref.	Description	Code
2	(27)	O-Ring 2025	Code 46110205
1	(29)	O-Ring 2050	Code 46110211
1	(66)	O-Ring 2062	Code 46110220
2	(83)	O-Ring 2068	Code 46110225
1	(47)	2nd stage rubber poppet seat	Code 46184062
1	(33)	2nd stage demand lever regulating nut	Code 46185051
1	(40)	Exhaust valve	Code 46184006
1	(43)	Clamp	Code 47157984
1	(19)	O-Ring 106	Code 46110106
1	(132)	O-Ring 114	Code 46110114

If the following parts are not replaced, they should be inspected with a jeweler's loop or similar magnifying device for the flaws listed below:

DO NOT USE ANY PART WITH THESE FLAWS:

Second stage case	(32)	Inspect the sealing surfaces for cracks or scratches.
Seat connector	(21)	Inspect the tapered seating surface for nicks, flat spots and scratches.
Diaphragm	(36)	Inspect for any tears or pin holes, distortion of the outer bead and any signs of the disk detaching from the diaphragm.
O-Rings	(27-66-29-72-83)	Inspect for cuts, tears or contamination. The presence of any of these flaws may cause leakage.
2nd stage poppet seat	(47)	Inspect for cuts, cracks or any rubber deformation.
2nd stage poppet body	(92)	Inspect for cuts, cracks or wear.
Demand lever regulating nut	(33)	Inspect for operating and for possible oxidation. Replacement is recommended at each revision.
Mouthpiece	(44)	Inspect for cuts, cracks or deterioration.
Exhaust tee	(41)	Inspect for cracks or tears.
Hose	(26)	Inspect for any cracks, blisters, cuts or any other signs of damage.
Spring	(31)	Inspect for cracked or broken coils.

REASSEMBLY

Before reassembly, lightly lubricate all O-rings with silicone grease (General Electric Versalube G-322 or equivalent). Lubricating the O-rings before reassembly will minimize the risk of damage during the reassembly.

1. Carefully install a new exhaust valve (40) by pulling the silicone stem through the center hole of the exhaust valve seat in the 2nd stage case.

WARNING ⚠

THE VALVE STEM SHOULD NOT BE PULLED EXCESSIVELY AS DAMAGE TO THE EXHAUST VALVE MAY OCCUR.

2. With scissors, cut approximately 7 mm. off of the silicone stem.
3. Reassemble the poppet body (92) on the 2nd stage poppet stem (30).
4. Insert the rubber poppet seat (47) into the plastic poppet body (92).
5. Place the 2nd stage poppet assembly and the spring (31) onto special tool (B-6).
6. Insert 2nd stage poppet and spring (31) into the poppet housing (91), gently pressing (Fig. 3).

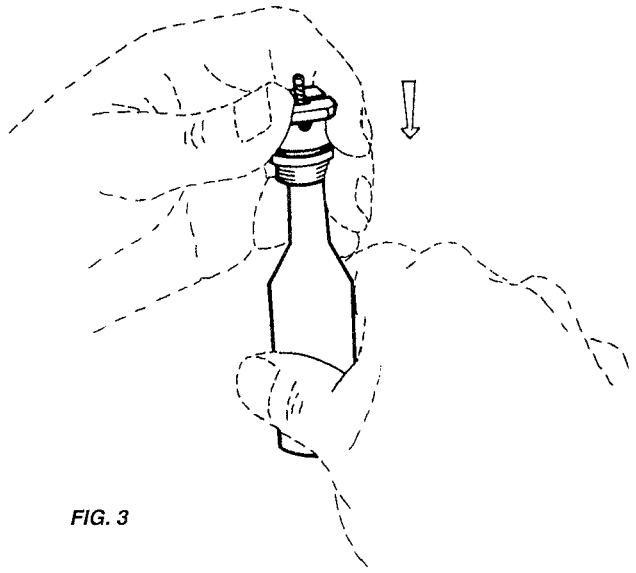

FIG. 3

IMPORTANT ⚠

TO PLACE CORRECTLY THE 2ND STAGE POPPET STEM IN THE POPPET HOUSING HOLE, TURN THE POPPET HOUSING LEFT AND RIGHT.

7. Position the demand lever (35) in the groove of the poppet housing (91).
8. Insert washer (34) over the stem of the poppet assembly and tighten the regulating nut (33) using the special tool (B-12 or B-20). (Fig. 4)

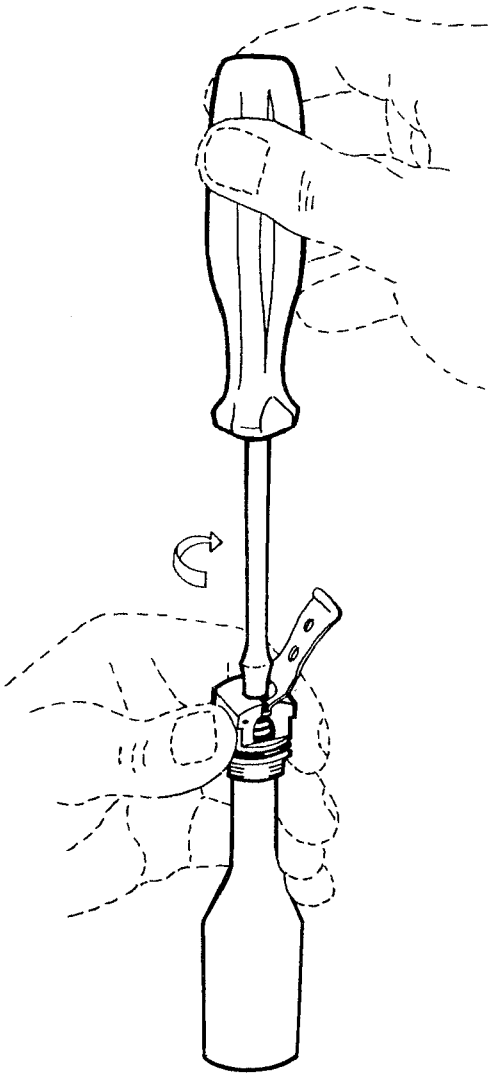

FIG. 4

NOTE

TO MAKE SURE THE LEVER IS FREE OF MOVEMENT, OPERATE A FEW TIMES.

9. Correctly place the poppet housing assembly in the 2nd stage case.

IMPORTANT ⚠

CHECK THAT THE POPPET HOUSING IS CORRECTLY PLACED THROUGH THE HOLE OF THE 2nd STAGE CASE (FIG. 5)

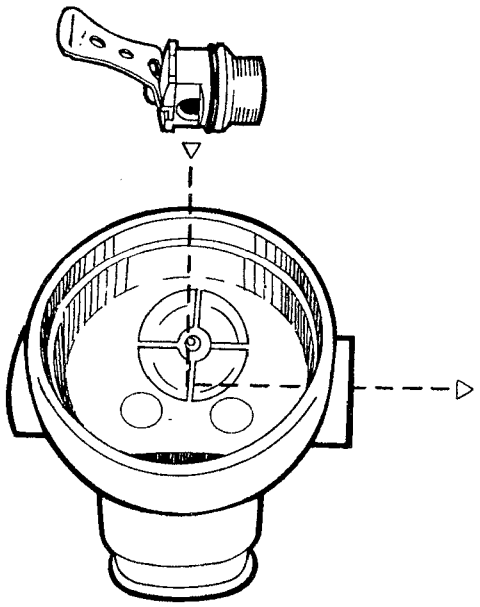

FIG. 5

10. Place O-Ring (83) in its seat on the case, using the special tool (B-6). (Fig. 6)

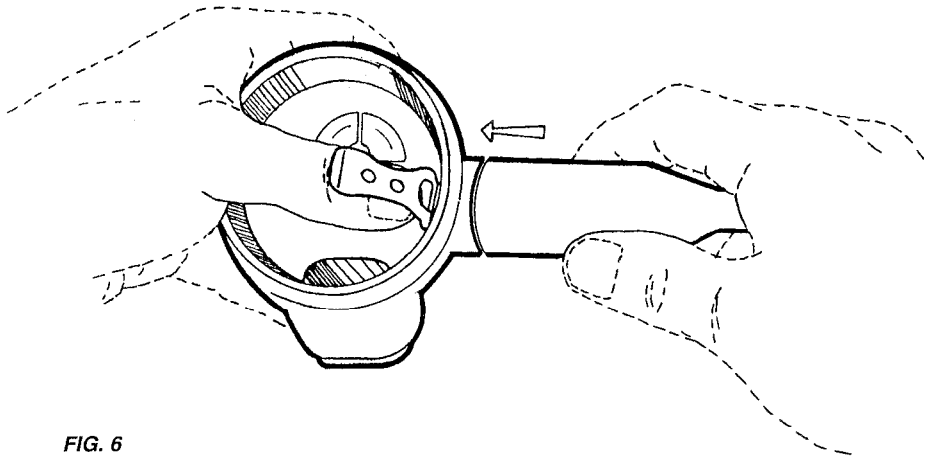

FIG. 6

11. Place O-Ring (66) in the poppet housing seat (91).
12. Tighten the inlet fitting (94) using wrench (B-9).

NOTE

IF USING A TORQUE WRENCH, SET THE TORQUE FOR 8 – 8.5 N/m or 6.0 ft/lbs-6.5 ft/lbs.

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13. Install O-Ring (27) in the groove of the seat connector (21).
14. Insert and thread seat connector (21) into the hose connector (28), by using the Allen wrench (B-4) until the tapered end protrudes from the hose connector.

WARNING ⚠

THE SEAT CONNECTOR MUST PROTRUDE FROM THE HOSE CONNECTOR 3.8 mm MAXIMUM.

15. Place O-Ring (29) in the hose connector seat (28).
16. Using wrench (B-9) hold the inlet fitting (94) and using wrench (B-17) tighten the connector assembly.
17. Place O-Ring (27) into the swivel hose connector (26).
18. Tighten the hose (26) onto the hose connector (28) using two wrenches (B-17).

ADJUSTMENT AND FINAL ASSEMBLY

To obtain correct adjustment of the regulator:

A. Equipment for repair service must have high and low pressure air at disposal.

B. An intermediate pressure gauge is needed (a gauge with MAX 30 - 40 BAR scale, for the accuracy of the regulation).

1. Connect an intermediate pressure gauge to a 3/8" port of the 1st stage, using wrench (B-16).
2. Attach the hose with the 2nd stage partially finished on D.F.C. port, and tighten with wrench (B-18).
3. Place the assembly on the valve system (of a tank or a Test Bench).
4. Depress the demand lever while slowly opening the tank valve. When air begins to flow, slowly release demand lever.
5. Read on the gauge if the intermediate pressure for the 1st stage is correct.

WARNING ⚠

READING OF THE 1ST STAGE INTERMEDIATE PRESSURE SHOULD BE EFFECTED WHILE THE 2ND STAGE IS NOT OPERATING. FOR ADJUSTMENTS OF THE 1ST STAGE, SEE THE SPECIAL MANUAL.

ADJUSTMENT PROCEDURE

To effect correct adjustments, the 2nd stage should be supplied with correct intermediate pressure.

1. Position lever height gauge so that the two ends rest on the edge of the 2nd stage case (See Fig.7).

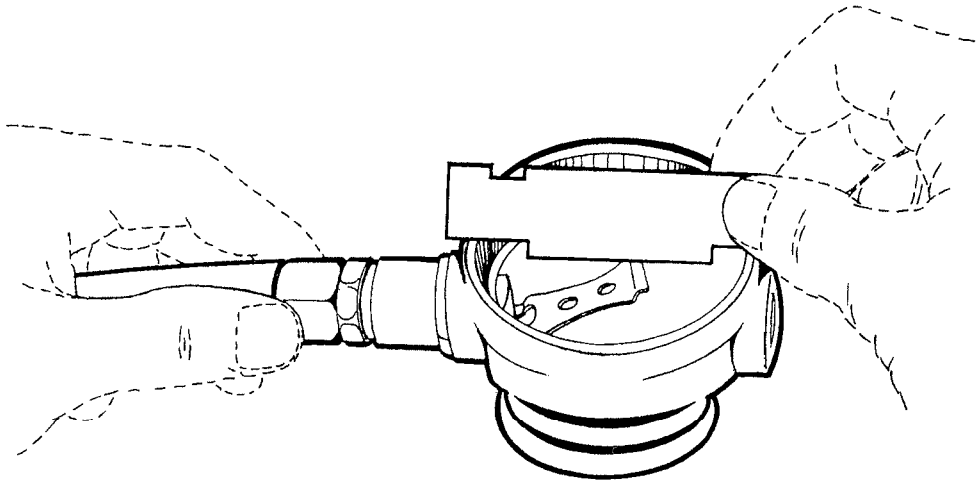

FIG. 7

2. Tighten or loosen the lever lock nut (133) using tool (B-12) to adjust demand lever (35).

IMPORTANT ⚠

THE DEMAND LEVER IS CORRECTLY ADJUSTED WHEN IT ALMOST TOUCHES THE GAUGE AND NO AIR FLOWS.

3. Depress and release the demand lever several times.

ASSEMBLY OF THE EXTERNAL ADJUSTMENT SYSTEM

WARNING ⚠

DURING THE ASSEMBLY OF THE ADJUSTMENT SYSTEM WE RECOMEND TO OPERATE WHILE THE 2ND STAGE IS NOT SUPPLIED WITH PRESSURIZED AIR, THEREFORE DISASSEMBLE THE REGULATOR FROM VALVE SYSTEM (OF THE TANK OR OF THE TEST BENCH).

4. Correctly insert the adjustment body (128) in the 2nd stage case (32).
5. Position O-Ring (83) in the 2nd stage case (32), using tool (B-6). (Fig. 8)

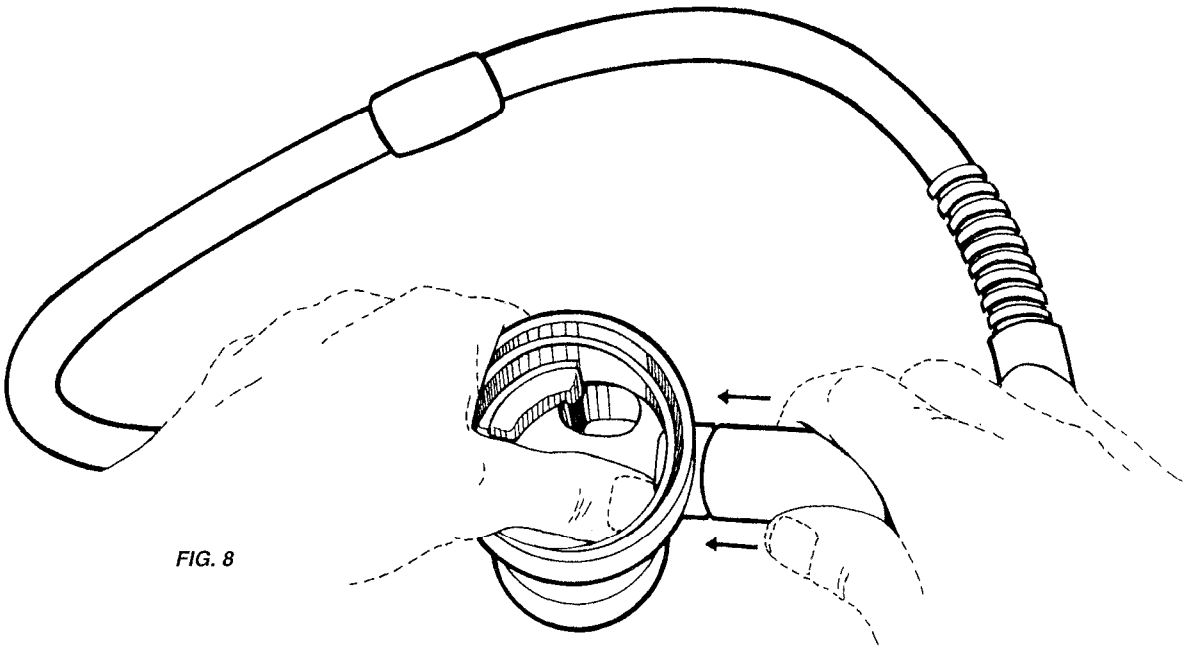

FIG. 8

6. Insert adjustment shaft (125) in the adjustment body (128).

WARNING ⚠

CHECK THAT THE ADJUSTMENT BODY IS IN A CORRECT POSITION IN THE 2ND STAGE CASE HOUSING AND THAT THE ADJUST MENT SHAFT IS OVER THE REGULATING NUT.

7. Install O-Ring (132) in the adjustment pin housing (134).
8. Screw the adjustment pin (134) clockwise in the bushing (127).
9. Insert the spring (126) on the adjustment bushing (127).
10. Insert the assembly made up of adjustment pin (134), bushing (127) and spring (126) in the adjustment body (128).

WARNING ⚠

CHECK THE SPRING IS CORRECTLY INSERTED ON THE SHAFT. CHECK THAT THE ADJUSTMENT BODY KEEPS A CORRECT POSITION IN THE 2NS STAGE CASE HOUSING.

11. Tighten the adjusting plug (129) using wrench (B-26).

WARNING ⚠

IF USING A TORQUE WRENCH, SET THE TORQUE FOR 2 – 2,5 N/M OR 1.5-2.0 FT/LBS
CHECK THAT THE ADJUSTING SHAFT IS CORRECTLY POSITIONED OVER THE REGULATING NUT AND THAT IT IS FREE OF MOVEMENT IN THE ADJUSTMENT BODY.

12. Position the knob (130) on the plug (129).
13. Using a screwdriver, tighten the screw (131).

FINAL ASSEMBLY

IMPORTANT ⚠

TO OBTAIN CORRECT FINAL ASSEMBLY WE RECOMEND TO SUPPLY THE REGULATOR WITH CORRECT INTERMEDIATE PRESSURE, CONNECTING THE REGULATOR TO THE VALVE SYSTEM OF A TANK OR OF A TEST BENCH, AS INDICATED AT 1-2-3-4-5 SECTION OF THE "ADJUSTMENT AND FINAL ASSEMBLY".

1. Correctly insert the spacer ring (90) in the 2nd stage case.
2. Place the diaphragm (36), and the relevant diaphragm ring (78), in the 2nd stage case housing.
3. Tighten the cover (39).

IMPORTANT ⚠

POSITION THE PURGE COVER AND ALIGN THE TWO HOLES (OF THE 2ND STAGE CASE AND OF THE COVER) FOR THE SAFETY CATCH HOUSING.

4. Insert the safety catch (63).
5. Install the exhaust tee (41) over the mounting flange of the 2nd stage case.

WARNING ⚠

CHECK THAT THE LIP OF THE EXHAUST TEE FITS FULLY OVER THE FLANGE.
LIGHTLY LUBRICATING THE EXHAUST TEE WITH LIQUID SOAP OR DETERGENT WILL MAKE THE ASSEMBLY EASIER. DO NOT USE SILICONE DETERGENT. THE USE OF IT MAY CAUSE PROBLEMS TO SOME COMPONENTS (DIAPHRAGMS) AND THE EXHAUST TEE COULD COME OFF DURING OPERATION.

6. Install the mouthpiece (44) and secure it in place with a new clamp (43).

FINAL CHECKS AND ADJUSTMENTS

The checks described below are designed to verify the perfect operation of the regulator.

VALUES OF "CRACKING" PRESSURE FOR SECOND STAGES		
KNOB ADJUSTMENT....	**INCHES OF H_2O**	**Cm OF H_2O**
MINIMUM CRACKING VALUE (Completely turn counterclockwise)	1	2,4 – 2,6
MAXIMUM CRACKING VALUE (Completely turn clockwise)	1,4	3,4 – 3,6

Tab. A

1. Mount the regulator on the control valve (of a tank or a Test Bench).
2. Using the laboratory Test Bench, after calibrating the First stage, breathe in through the mouthpiece and read the "cracking" pressure on the **U**-gauge at the instant when the gauge detects a drop in the intermediate pressure.

WARNING ⚠

IN THE ABSENCE OF A TEST BENCH IT IS POSSIBLE TO RUN AN APPROXIMATE CHECK ON THE CRACKING PRESSURE USING A BASIN OF WATER AND CARRYING OUT THE PROCEDURE BELOW:

a. Slowly submerge the Second stage in the water with the mouthpiece facing up, without allowing water to go inside.

b. When the water level, measured on the mouthpiece fitting with reference to the point indicated in the diagram (FIG.9), falls between the "cracking" values indicated in Table A, the air must start to flow. (see Tab. **A**)

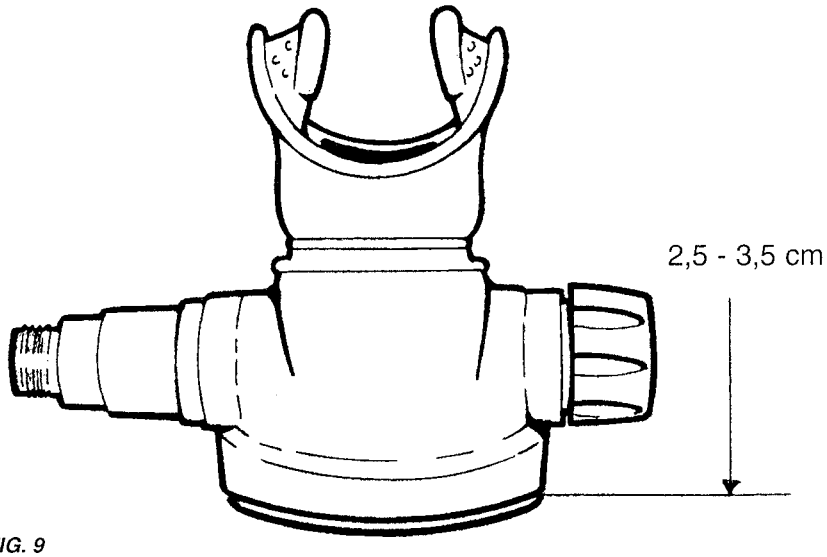

FIG. 9

SECOND STAGE MODEL	POINT OF REFERENCE
FURY ADJ	WHERE STARTS THE 2ND STAGE CASE (32) (Fig. 9)

3. If the cracking pressure does not fall between the values specified in the table, proceed as follow:
   a. If the cracking value is **greater**, it is necessary to reduce the loading on the spring. Using the Allen wrench (B-4) reduce the adjustment seat protrusion.
   b. If the cracking value is **lower**, it is necessary to increase the loading on the spring. Using the Allen wrench (B-4), increase the adjustment seat protrusion (MAX 3,8 mm).

WARNING ⚠

AFTER CARRYING OUT THE OPERATIONS DESCRIBED IN STEPS 3A AND 3B (TO REDUCE OR TO INCREASE), ALWAYS REPEAT THE ADJUSTMENT OF THE DEMAND LEVER, AS DESCRIBED IN THE MANUAL.
TO PROCEED WITH SUCH AN OPERATION YOU MUST DISASSEMBE THE EXTERNAL ADJUSTMENT SYSTEM.

4. Submerge the Second stage in water with the mouthpiece facing up, allowing water to enter the exhaust tee and keeping it in the water for about 30 seconds.
5. Remove the Second stage from water and then turn the mouthpiece downward.
6. Check for any traces of water inside the Second stage.

WARNING ⚠

IF MORE THAN A FEW DROPS OF WATER COME OUT OF THE SECOND STAGE, CHECK SEALS ON THE MOUTHPIECE CLAMP, THE EXHAUST VALVE AND THE RIM OF THE DIAPHRAGM.

7. Press the purge button a few times and check that it operates smoothly and does not jam.
8. Completely submerge the Second stage in water (allowing water to enter the mouthpiece) and check for any air leaks.

FURY ADJ 2nd STAGE TROUBLESHOOTING

PROBLEM	MODEL	PROBABLE CAUSE	SOLUTION
- 1 - CONSTANT OR INTERMITTENT AIR LEAKS FROM THE SECOND STAGE	FURY ADJ	1) Second stage poppet pad dirty or damaged	1) Clean, invert or replace
		2) Sealing surface of seat connector dirty or damaged	1) Clean or replace
		3) Intermediate pressure too high	1) Adjust intermediate pressure
		4) Demand lever set too high	1) Adjust correctly
		5) Second stage poppet spring incorrectly positioned or damaged	1) Position correctly or replace
		6) O-Ring seat in adjustable seat connector dirty or damaged	1) Clean or replace
		7) Adjustable seat connector too low	1) Adjust correctly
- 2 - CRACKING PRESSURE TOO HIGH	FURY ADJ	1) Demand lever set too low	1) Adjust correctly
		2) Intermediate pressure too low	1) Adjust correctly
		3) Hole for Second stage poppet in Second stage body obstructed	1) Clean thoroughly
		4) Tank valve not fully open	1) Open the tank valve completely
		5) Second stage spring deformed and/or damaged	1) Replace
		6) First stage filter obstructed	1) Overhaul the First stage and replace the spring if necessary
		7) Loading of poppet spring too high	1) Adjust correctly and replace the spring if necessary
		8) External adjusting shaft not free of movement	1) Clean or replace
		9) External adjusting knob at MAX. loading position	1) Set at MIN. loading
- 3 - CRACKING PRESSURE TOO LOW	FURY ADJ	1) Intermediate pressure too high	1) Adjust correctly
		2) 2nd stage spring deformed and/or damaged	1) Replace
		3) Loading of poppet spring too low	1) Adjust correctly and replace the spring if necessary
		4) External adjusting knob at MIN. loading position	1) Set at MAX. loading
- 4 - AIR LEAK BETWEEN THE SWIVEL HOSE COUPLING AND THE SECOND STAGE CONNECTOR	FURY ADJ	1) Swivel hose coupling defective	1) Replace the O-Ring
		2) Sealing surface of hose connector O-ring dirty or damaged	1) Clean or replace the hose connector

FURY ADJ 2nd STAGE TROUBLESHOOTING

PROBLEM	MODEL	PROBABLE CAUSE	SOLUTION
- 5 - TRACES OF WATER INSIDE THE SECOND STAGE	FURY ADJ	1) Exhaust valve dirty, incorrectly positioned or damaged	1) Clean, position correctly or replace
		2) Exhaust valve support dirty or damaged	1) Clean or replace the 2nd stage case
		3) Diaphragm dirty, incorrectly positioned or damaged	1) Clean, position correctly or replace
		4) Mouthpiece loose or damaged	1) Tighten with a new clamp, or replace
		5) Seat connector O-ring defective	1) Replace
		6) Spacer ring incorrectly positioned or damaged	1) Check the position of the spacer ring or replace
		7) Retaining ring incorrectly positioned or damaged	1) Check the position of the retaining ring or replace
		8) Cover incorrectly clamped	1) Lock down the screws
		9) Sealing surfaces and sealing O-Rings of the plug between the threaded tab and the Second stage case, and between the inlet fitting and the Second stage case	1) Check and clean any sealing surface, and replace O-Rings and damaged components
- 6 - THE BUTTON PURGE OF THE COVER JAMS	FURY ADJ	1) Button seat dirty	1) Clean
		1) Defective spring	1) Replace the spring
- 7 - VIBRATIONS DURING THE INHALATION PHASE	FURY ADJ	1) Diaphragm incorrectly positioned	1) Position correctly
		2) Demand lever incorrectly adjusted	1) Adjust correctly
		3) Poppet spring incorrectly positioned or defective	1) Position correctly or replace

DACOR REPAIR MANUAL
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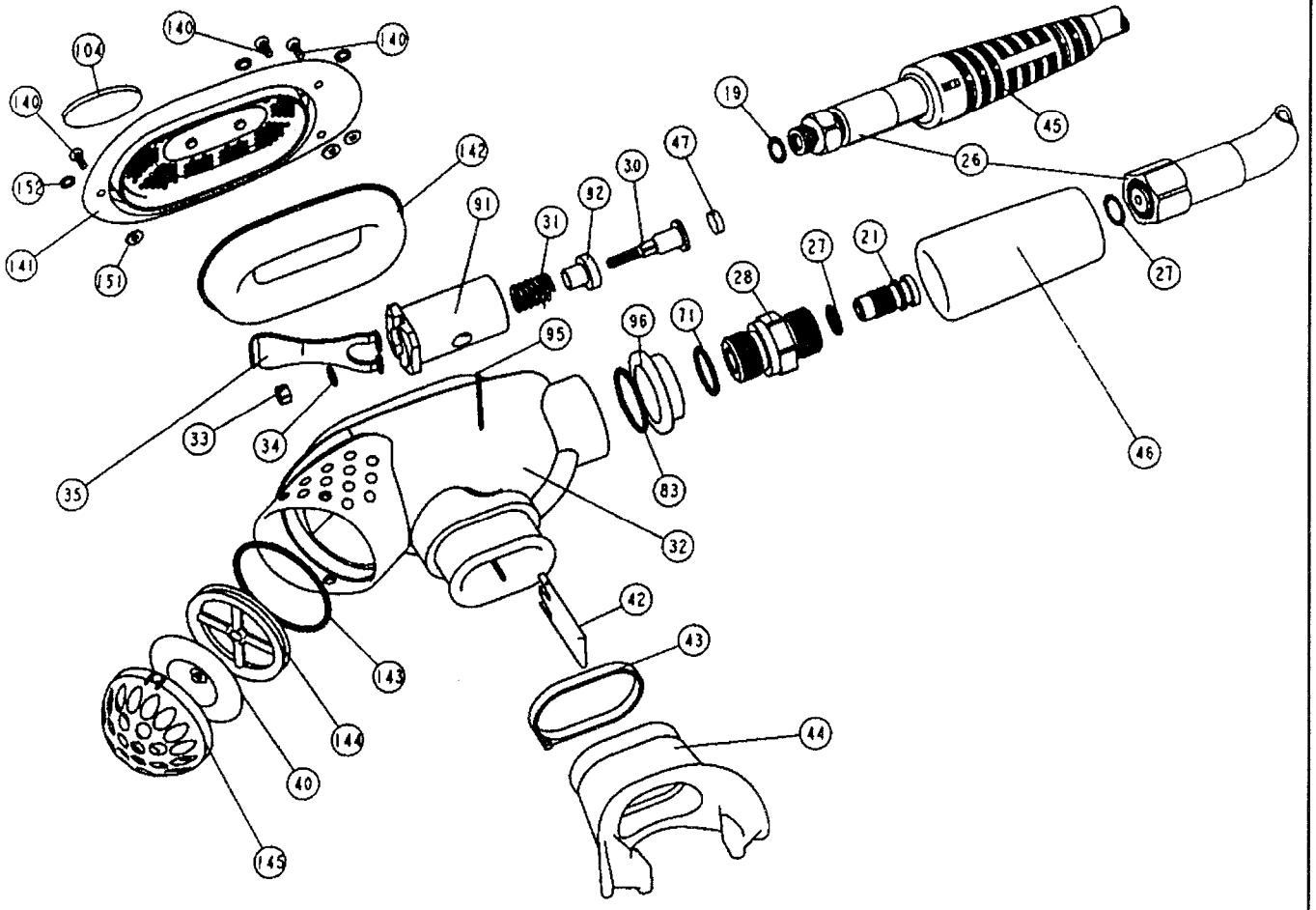
SECTION 2

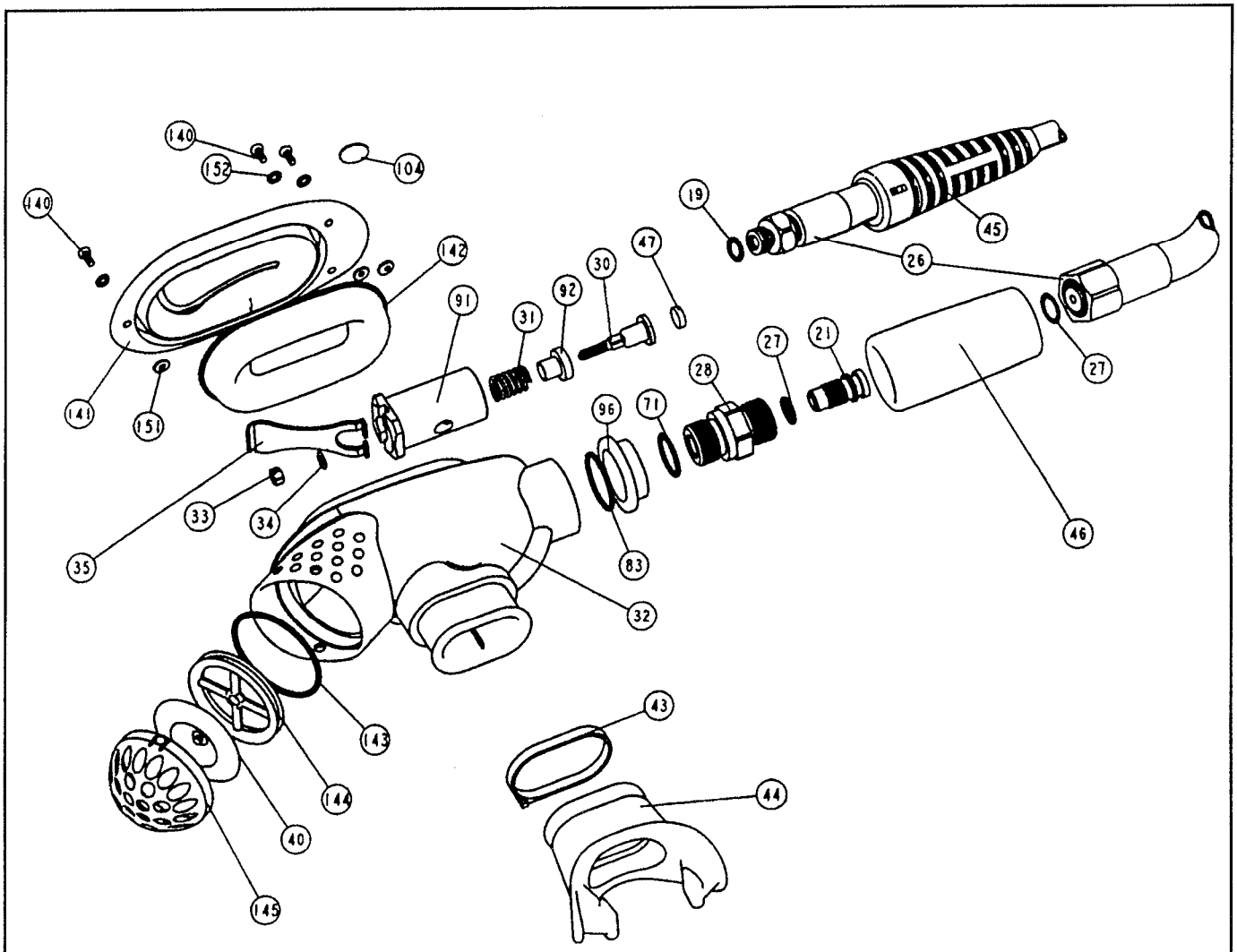
SECOND STAGE REGULATOR

SECOND STAGE
VIPER TEC - VIPER



Ref.	Code	Description
152	46187005	Whasher UNI 6592 D 4,5
151	46187008	Whasher 1,8x5x0,5
145	46187023	Exhasher valve protection, grey
144	46187025	Exhasher valve seat
143	46110175	O-ring 2125
143	46110430	O-ring 2125 Viton
142	46187009	Oval diaphragm
141	46187029	Cover Viper Tec
140	46187004	Screw cover M 2x5 DIN 7985-A4
104	46187031	Oval label
96	46187035	Retaining ringg, grey
96	46187054	Retaining ringg, green
95	46187010	Pin
92	46184221	Poppet plastic body
91	46187033	Poppet housing
83	46110225	O-ring 2068
83	46110420	O-ring 2068 Viton
71	46110211	O-ring 2050
71	46110413	O-ring 2050 Viton
47	46184062	Poppet seat,rubber
46	46187014	Hose protector first stage
45	46187036	Hose protector second stage
44	46185086	Mouthpiece
43	47157984	Mouthpiece clamp
42	46184235	Vane

Ref.	Code	Description
40	46184006	Exhasher valve
35	46187027	Demand lever
34	46185049	Whasher, demand lever
33	46185051	Locknut,demand lever
32	46187021	Case Viper Tec
32	46187052	Case Viper Tec Nitrox
31	46185059	Poppet spring
30	46184219	Poppet body 1
28	46184282	Hose connector
27	46110205	O-ring 2025
27	46110411	O-ring 2025 Viton
26	46187037	Hose Super Flow 3/8" UNF
21	46186023	Poppet seat
19	46110106	O-ring 106
19	46110402	O-ring 106 Viton
		ASSEMBLIES
***	46187237	2nd stage Viper Tec assy
***	46200150	Case 2nd stage Viper Tec with Vane
		(32-42-95)
***	46200149	Case 2nd stage Viper Tec Nitrox with Vane
		(32-42-95)
***	46187222	Maintenance kit 2nd stage Viper Tec/Viper
		(19-27-33-40-43-47-71-83-143)
***	46187223	Maintenance kit 2nd stage Viper Tec/Viper Nitrox
		(19-27-33-40-43-47-71-83-143)



Ref.	Code	Description
152	46187005	Whasher UNI 6592 D 4,5
151	46187008	Whasher 1,8x5x0,5
145	46187022	Exhasher valve protection, black
145	46187024	Exhasher valve protection, yellow
144	46187025	Exhasher valve seat second stage
143	46110175	O-ring 2125
143	46110430	O-ring 2125 Viton
142	46187009	Oval diaphragm
141	46187030	Cover Viper, black
141	46187028	Cover Viper, yellow
140	46187004	Screw cover M 2x5 DIN 7985-A4
104	46187032	Oval label
96	46187038	Retaining ringg, yellow
96	46184280	Retaining ringg, black
96	46187054	Retaining ringg, green
92	46184221	Poppet plastic body
91	46187033	Poppet housing
83	46110225	O-ring 2068
83	46110420	O-ring 2068 Viton
71	46110211	O-ring 2050
71	46110413	O-ring 2050 Viton
47	46184062	Poppet seat,rubber
46	46187014	Hose protector first stage
45	46187036	Hose protector second stage
44	46185086	Mouthpiece

Ref.	Code	Description
43	47157984	Mouthpiece clamp
40	46184006	Exhasher valve
35	46187027	Demand lever
34	46185049	Whasher, demand lever
33	46185051	Locknut,demand lever
32	46187020	Case Viper
32	46187019	Case Viper octopus
32	46187051	Case Viper Nitrox
32	46187050	Case octopus Nitrox
31	46185059	Poppet spring
30	46184219	Poppet body 1
28	46184282	Hose connector
27	46110205	O-ring 2025
27	46110411	O-ring 2025 Viton
26	46187043	Hose Hi-Flow Dacor, black
26	46187044	Hose octopus Hi-Flow Dacor, yellow
21	46186023	Poppet seat
19	46110106	O-ring 106
19	46110402	O-ring 106 Viton
		ASSEMBLIES
***	46187238	2nd stage Viper assy
***	46187222	Maintenance kit 2nd stage Viper Tec/Viper (19-27-33-40-43-47-71-83-143)
***	46187223	Maintenance kit 2nd stage Viper Tec/Viper Nitrox (19-27-33-40-43-47-71-83-143)

SECOND STAGE VIPER TEC - VIPER - OCTOPUS VIPER

DISASSEMBLY

1. Using the open end wrench (B-18), unscrew the hose (26) from the first stage.
2. Using cutting nippers (or pliers), cut the mouthpiece clamp (43) and remove the mouthpiece (44).

> ***NOTE***
> ***DO NOT CUT THE MOUTHPIECE CLAMP IF A REPLACEMENT PART IS NOT AVAILABLE***

3. Move the hose protector (46) away from the hose coupling.
4. Using two wrenches (B-17) unscrew the hose (26) from the case assembly connector (28).
5. Remove the O-rings from the swivel coupling (27) and from the First Stage connector (19) on the hose.
6. Using the open end wrench (B-17), unscrew the case assembly connector (28).
7. Using the Allen wrench (B-4), fully unscrew the seat connector (21) and remove the O-ring (27).
8. Remove the O-ring (71) from the case assembly connector (28).
9. Remove the retaining ring (96).
10. Using a small Phillips screwdriver (Type "USAG 326 PH 0), back off the three fixing screws (140) of the cover (141).

> ***NOTE***
> ***DURING DISASSEMBLY OF THE COVER, TAKE CARE NOT TO LOSE THE SCREWS (140) AND WASHERS.***
> ***THE TECHNICIAN IS ADVISED NOT TO FULLY REMOVE THE SCREWS (140), THE METAL WASHERS (152) AND THE PLASTIC WASHERS (151) FROM THE COVER.***

11. Remove the oval diaphragm (142).
12. Using a small screwdriver (Type "USAG 326 PH 0), press down the fasteners of the exhaust grid (145) to disassemble it from the second stage case (32). (FIG. 1).

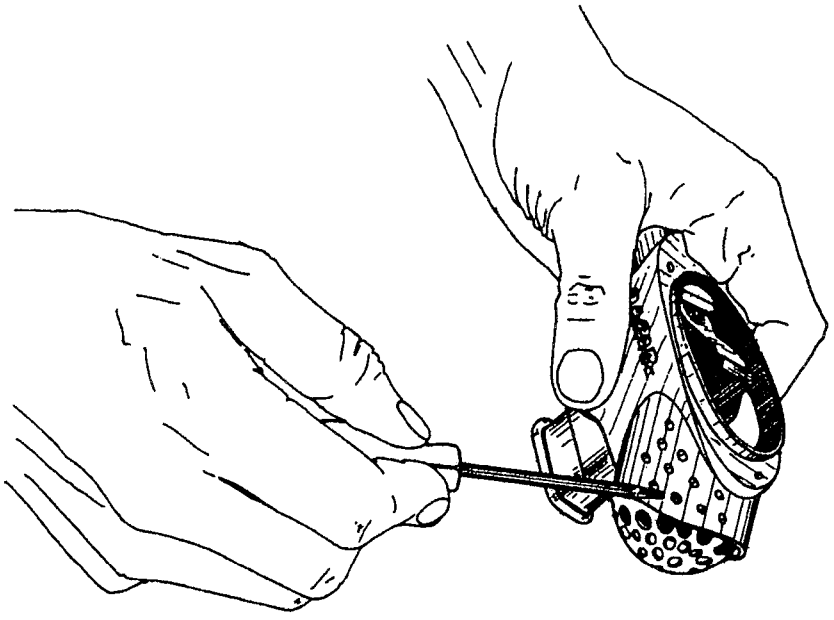


FIG. 1

13. Pushing from the inside of the second stage case (32), disassemble the exhaust valve support (144) (FIG.2).

NOTE
DACOR RECCOMENDS NEVER EXERT ANY KIND OF PRESSURE ON THE HOUSING OF THE PURGE VALVE (EITHER ON THE CENTER OR ON THE RADIUS). OPERATE ONLY ON THE CIRCUMFERENCE OF THE PURGE VALVE.

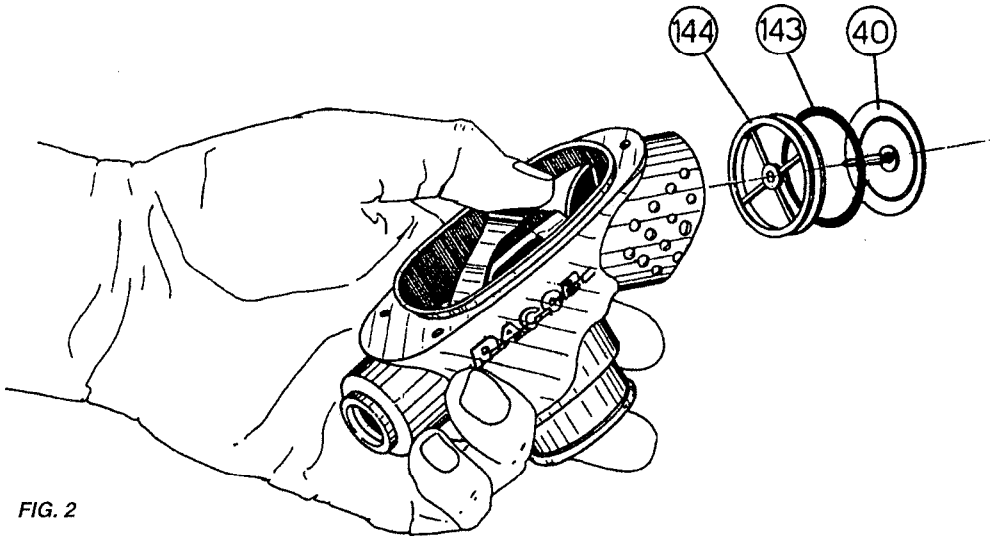


FIG. 2

14. Remove the exhaust valve (40) and the O-ring (143) from the exhaust valve support (144).
15. Using the special tool (B-12), unscrew the demand lever fixing nut (33) and remove the demand lever (35), the washer (34), the poppet (30) and the spring (31). (FIG. 3)

WARNING ⚠

TO PREVENT THE SECOND STAGE POPPET (30) FROM BEING EJECTED, DACOR RECOMMENDS COVERING THE OPENING OF THE DEMAND LEVER CONNECTOR (91).

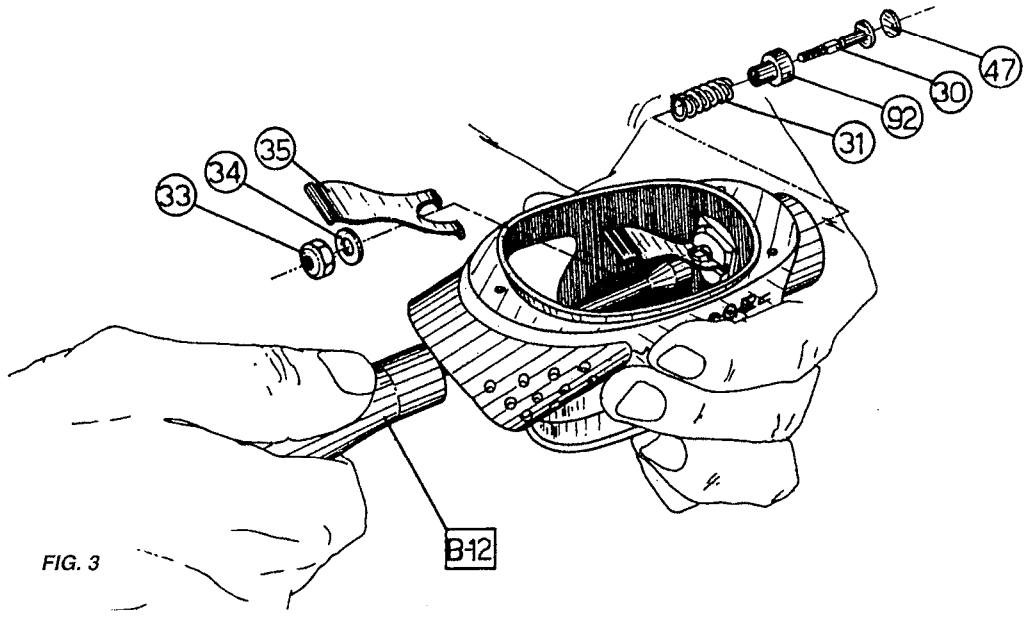


FIG. 3

16. Remove the rubber poppet seat (47) from the 2nd stage poppet, exerting a slight pressure on the threaded stem.
17. Disassemble the poppet seat holder (92) from the 2nd stage poppet stem (30).
18. Push the demand lever connector (91) into the second stage case.
19. Remove the O-ring (83) from its seat in the second stage case (32).

ONLY FOR VIPER TEC VERSION:

WARNING ⚠

THE PIVOTING FLOW VANE (42) SHOULD **ONLY** BE DISASSEMBLED IN THE EVENT OF DEFECTIVE OPERATION.

20. Using a pair of pliers, completely remove the pin (95) to release the pivoting flow vane (42).

CLEANING

WARNING ⚠

WHEN WORKING WITH ANY KIND OF ACID, USE ADEQUATE PROTECTIVE GEAR FOR EYES AND SKIN.

For routine cleaning of reusable rubber components, wash all parts in a mixture of hot water and mild detergent, scrubbing if necessary with a soft brush. Do not use solvents or acids on rubber components. Chrome plated brass and stainless steel parts can be cleaned with an ultrasonic cleaner in fresh water or, if the necessary equipment is not available, in a mild acid solution (for example white vinegar, diluted with hot water as necessary).
Make sure that all components have been rinsed and dried before proceeding with reassembly.

WARNING ⚠

ACIDS OR OTHER SOLVENTS MAY DAMAGE PLASTIC AND RUBBER PARTS. BEFORE CLEANING METAL COMPONENTS, MAKE SURE THAT ALL SEALS AND OTHER PARTS SUBJECT TO DETERIORATION HAVE BEEN REMOVED.

INSPECTION

Certain key components of the second stage should be replaced at each scheduled overhaul. Moreover, in view of their relatively low cost, all the O-rings should also be replaced.

The components to replace are:

- 1 O-ring 2050	(71)	- cod. 46110211	cod. Viton 46110413
- 1 O-ring 2068	(83)	- cod. 46110225	cod. Viton 46110420
- 2 O-rings 2025	(27)	- cod. 46110205	cod. Viton 46110411
- 1 O-ring 106 Bp	(19)	- cod. 46110106	cod. Viton 46110402
- 1 O-ring 2125	(143)	- cod. 46110175	cod. Viton 46110430
- 1 2nd stage poppet seat	(47)	- cod. 46184062	
- 1 2nd stage demand lever adjusting nut	(33)	- cod. 46185051	
- 1 Exhaust valve	(40)	- cod. 46184006	
- 1 Mouthpiece clamp	(43)	- cod. 47157984	

If these components are not replaced, they should at least be inspected with a jeweler's magnifying glass for the following defects:

DO NOT USE PARTS WITH THE FOLLOWING DEFECTS:

2nd stage case: (32) Inspect the sealing surfaces for scratches, cracks or deformation. Check that the threaded holes for the cover screws are clean. In the VIPER TEC version, also check the correct operation of the pivoting flow vane.

Cover: (141) Inspect the sealing surfaces for scratches, cracks, deformation or foreign particles. Make sure that the purge button area is not damaged or deformed.

Seat connector: (21) Check that the sealing surface and the O-ring seat are intact.

Diaphragm: (142) Check for tears or pinholes around the metal disk, deformation of the outer rim or signs of separation of the diaphragm from the metal disk.

O-rings: (19-27-71-83-143) Inspect for deformation, cuts, chipping or foreign particles. The presence of any of these defects may result in leakage. It is recommended to replace the O-rings at each overhaul.

2nd stage poppet body: (92) Inspect for cracks, cuts or deformation.

2nd stage rubber poppet seat: (47) Check for cuts, burrs or abrasion of the rubber. It is recommended to replace the poppet seat at each overhaul.

WARNING ⚠

IF THE SURFACE OF THE 2ND STAGE POPPET SEAT SHOWS SIGNS OF DAMAGE, IT SHOULD BE REPLACED. IF A REPLACEMENT PART IS NOT AVAILABLE, THE POPPET SEAT CAN BE TURNED OVER, AFTER HAVING CHECKED THAT THE SURFACE IS PERFECTLY INTACT.

Demand lever adjusting nut: (33) Verify its self-locking capacity and inspect for rust. It is recommended to replace it at each scheduled overhaul.

Mouthpiece: (44) Inspect for cuts, tears or signs of wear.

Exhaust valve support: (144) Inspect the exhaust valve sealing surface and the O-ring seat for scratches or foreign particles.

Exhaust valve (40) Inspect for cuts, pinholes, tears or signs of wear. It is recommended to replace it at each scheduled overhaul.

Hose: (26) Inspect the hose for splits, blistering or any other signs of damage and check the integrity of the O-ring seats.

Springs: (31) Check for any split or broken coils.

Threaded parts: Check that the threads are clean and undamaged.

REASSEMBLY

Before reassembling, lightly lubricate all the O-rings with silicone grease (General Electric Versalube G 322 or equivalent). Lubrication reduces the likelihood of damage during reassembly.

WARNING ⚠

IF THE SECOND STAGE IS USED FOR DIVING WITH OXYGEN-RICH MIXTURES, IT MUST BE PERFECTLY CLEANED OF ANY RESIDUAL SILICONE OR OTHER IMPURITIES. VITON O-RINGS CAN BE LUBRICATED WITH SPECIAL OXYGEN-COMPATIBLE GREASE. **DO NOT USE SILICONE GREASE!**

ONLY FOR VIPER TEC VERSION:

1. Using a pair of pliers, partially insert the pin (95) in its hole in the 2nd stage case.
2. Fit the pivoting flow vane (42) inside the mouthpiece fitting, orienting the smoother surface toward the bypass tube; after having aligned the holes, push the pin (95) all the way into the mouthpiece fitting.

FOR ALL VIPER VERSIONS:

3. Fit the O-ring (143) on the seat of the exhaust valve support (144).
4. Rest the exhaust valve support (144) on its seat in the second stage case (32).

WARNING ⚠

REST THE EXHAUST VALVE HOLDER IN A PERFECTLY LEVEL POSITION, AND WITH THE TAPERED SEAT OF THE CENTER HOLE DIRECTED TOWARD THE OUTSIDE OF THE SECOND STAGE CASE.

5. Insert the tool (B-35) in the special tool (B-6)
6. Rest the tool (B-35) against the exhaust valve support, and push it into its seat in the second stage case (32).

WARNING ⚠

CHECK THAT THE O-RING IS CORRECTLY POSITIONED INSIDE THE SECOND STAGE.

7. With the help of a pair of pliers, carefully fit a new exhaust valve (40), pulling the silicone stem through the center hole of the exhaust valve support (144).

WARNING ⚠

DO NOT PULL TOO HARD ON THE STEM TO AVOID DAMAGING THE EXHAUST VALVE.

8. Correctly reassemble the poppet seat holder (92) on the 2nd stage poppet stem (30) and fit the rubber poppet seat (47).
9. Place the complete 2nd stage poppet assembly and its spring (31) on the special tool (B-6).
10. Exerting a slight pressure, correctly insert the 2nd stage poppet assembly and its spring into the fitting of the demand lever connector (91). (FIG. 4).

WARNING ⚠

ROTATE THE DEMAND LEVER CONNECTOR TO THE RIGHT AND LEFT TO OBTAIN CORRECT POSITIONING OF THE 2ND STAGE POPPET. (FIG. 4).

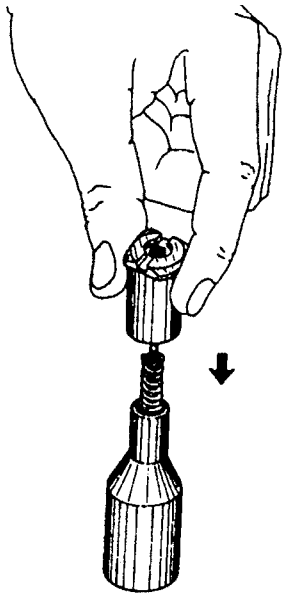


FIG. 4

11. Correctly position the demand lever in the groove of the demand lever connector (91), fit the washer (34) on the poppet stem and lock down the adjusting nut (33) through a few turns, using the special wrench (B-12). (FIG. 5).

NOTE
CAREFULLY CHECK THAT THE DEMAND LEVER IS CORRECTLY POSITIONED INSIDE THE DEMAND LEVER CONNECTOR. (FIG. 5)

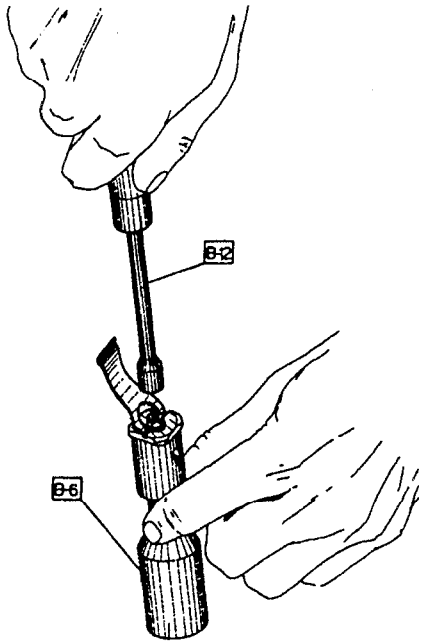


FIG. 5

NOTE
OPERATE THE DEMAND LEVER A FEW TIMES, TO ENSURE THAT IT IS ABLE TO MOVE FREELY.

12. Correctly insert the demand lever connector (91) in the seat of the second stage case (32). (Fig. 6)

WARNING ⚠

CAREFULLY CHECK THAT THE DEMAND LEVER CONNECTOR IS CORRECTLY POSITIONED AND ORIENTED INSIDE ITS SEAT IN THE 2ND STAGE CASE. (FIG. 6)

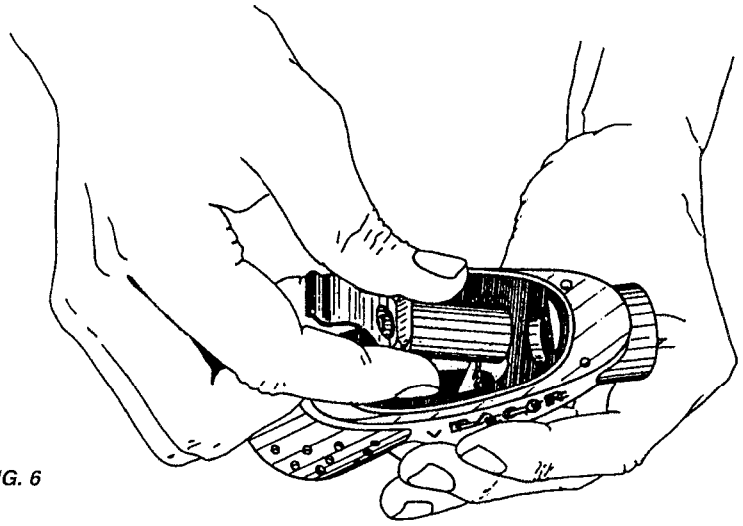


FIG. 6

13. Fit the O-ring (83) in its corresponding seat, with the help of the special tool (B-6). (FIG. 7)

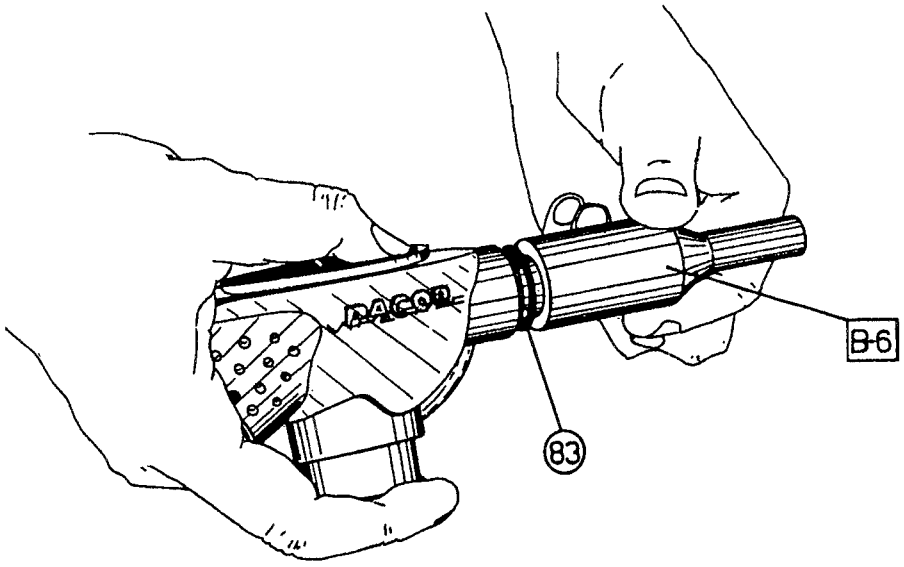


FIG. 7

14. Fit the O-ring (71) on the case assembly connector (28).
15. Fit the O-ring (27) on the seat connector (21).
16. Using the Allen wrench (B-4) correctly lock down the seat connector onto the case assembly connector, so that it projects by about 3 mm.

WARNING ⚠

THE POPPET SEAT (31) SHOULD NOT PROTRUDE MORE THAN 3.8 MM FROM THE CASE ASSEMBLY CONNECTOR (28). USE THE GAUGE (CODE: XXXXXX) TO CHECK THE MAXIMUM PROJECTION OF THE POPPET SEAT.

17. Correctly fit the retaining ring (96).
18. Screw the case assembly connector into the demand lever connector, using the open end wrench (B-17) to lock it down without excessive force.

NOTE

IF A TORQUE WRENCH IS USED, SET A MAXIMUM TORQUE OF 8 - 8.5 N/m (70.8 – 75.2 in/lb).

19. Fit the oval diaphragm (142) in its seat in the cover (141).

WARNING ⚠

CHECK THAT THE COVER AND DIAPHRAGM SEALING SURFACE ON THE SECOND STAGE CASE ARE PERFECTLY CLEAN AND INTACT.

CHECK THAT THE DIAPHRAGM IS CORRECTLY POSITIONED INSIDE THE COVER AND THAT THE THREE PLASTIC WASHERS (151) ARE PRESENT.

20. Correctly position the cover (141) together with the oval diaphragm (142) on the second stage case (32).

WARNING ⚠

CHECK THE CORRECT POSITIONING OF THE DIAPHRAGM DURING ASSEMBLY OF THE COVER.

21. Using a Phillips screwdriver (Type "USAG 326 PH 0), lightly lock down the three fixing screws (140) of the cover (141).

ATTENTION ⚠

IT IS RECOMMENDED TO LUBRICATE THE THREE COVER FIXING SCREWS WITH SILICONE GREASE.

22. Fit O-rings (27) and (19) respectively inside the swivel coupling and the first stage connector of the hose (26).
23. Using two open end wrenches (B-17), screw the swivel hose coupling (26) into the case assembly connector (28).

ADJUSTMENTS

WARNING ⚠

TO ENSURE SUFFICIENTLY ACCURATE REGULATOR ADJUSTMENTS, THE REPAIR SHOP MUST BE PROVIDED WITH BOTH LOW- AND HIGH-PRESSURE AIR SUPPLIES. MOREOVER, A PRESSURE GAUGE IS NECESSARY FOR CHECKING THE INTERMEDIATE PRESSURE.

(N.B: THE PRESSURE GAUGE MUST HAVE A MAXIMUM FULL SCALE VALUE OF 30-40 BAR (441-588 P.S.I.), FOR GREATER ACCURACY OF ADJUSTMENT).

1. Screw the intermediate pressure measuring gauge (cod. 106252) into one of the low pressure ports (3/8"), using the special wrench (B-18).
2. Using wrench (B-18), assemble the hose with the partially finished second stage on the port marked D.F.C. (if present).
3. Assemble the regulator on the air valve (of the test bench or tank). (FIG. 8)

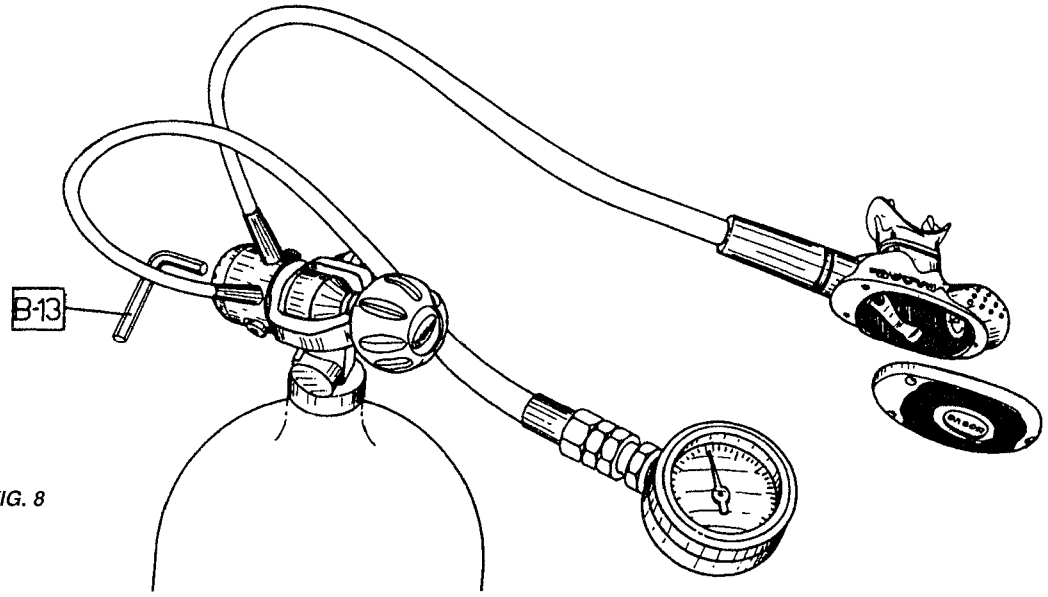


FIG. 8

4. Depress the second stage demand lever, slowly open the tank valve and, almost at the same time, release the demand lever.
5. Read the pressure gauge to check whether the calibration of the first stage is correct.

WARNING ⚠

THE FIRST STAGE INTERMEDIATE PRESSURE MUST BE MEASURED WHEN THERE IS NO AIR COMING OUT.
FOR CALIBRATION OF THE FIRST STAGE, REFER TO THE SEPARATE MANUAL.

ADJUSTING THE DEMAND LEVER

WARNING ⚠

ALL THE FOLLOWING ADJUSTMENTS MUST BE CARRIED OUT WITH THE SECOND STAGE ALWAYS CONNECTED TO A SUITABLE INTERMEDIATE PRESSURE SUPPLY.

6. Raise the exhaust valve with the special tool (B-12) and lock down or back off the adjusting nut (33) to regulate the height of the demand lever (35). (FIG.9).

WARNING ⚠

THE DEMAND LEVER IS CORRECTLY ADJUSTED WHEN THERE IS ABOUT 1 MM OF PLAY, ON PRESSING THE PURGE BUTTON, BEFORE AIR STARTS TO COME OUT.

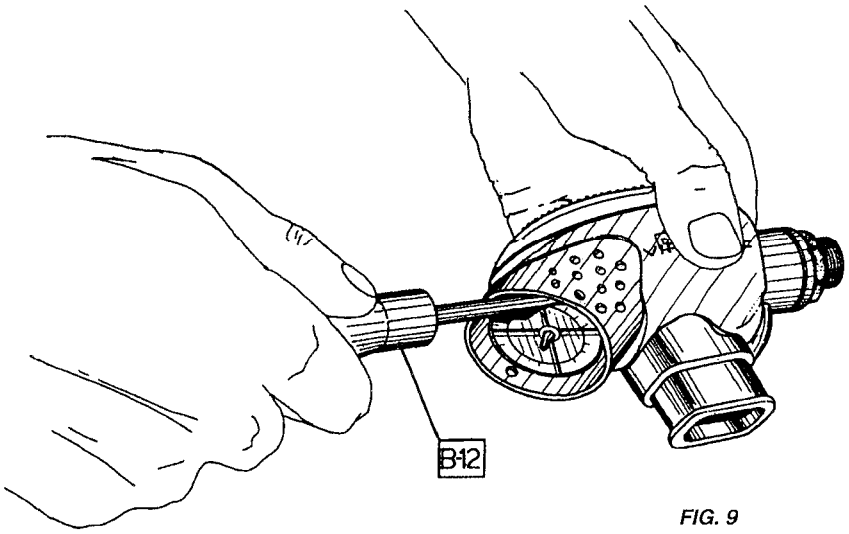


FIG. 9

7. Operate the purge button a few times.
8. Assemble the exhaust grid (145) by engaging its fasteners in their corresponding seats on the second stage case (32).
9. Carefully assemble the mouthpiece (44) securing it with a new mouthpiece clamp (43).

FINAL CHECKS AND ADJUSTMENTS

WARNING ⚠

THE CHECKS DESCRIBED BELOW ARE DESIGNED TO VERIFY THE PERFECT OPERATION OF REGULATOR. THE SPECIFIED VALUES ARE APPLICABLE TO REGULATORS SUBJECT TO ANNUAL OVERHAULS.

VALUES OF "CRACKING" PRESSURE FOR SECOND STAGES		
MODEL	**Inches of H_2O**	**cm of H_2O**
VIPER TEC - VIPER	1 - 1.5	2.5 - 3.8
OCTOPUS VIPER	1.2 - 1.6	3.0 - 4

1. Mount the regulator on the control valve. (of a tank or Test Bench).
2. Using the laboratory Test Bench (cod. 785501) or the portable Test Bench (cod. 785510), after calibrating the first stage, breath in through the mouthpiece and read the "cracking" pressure (value required to trigger air delivery) on the U-gauge, at the instant when the gauge detects a drop in the intermediate pressure.

WARNING ⚠

IN THE ABSENCE OF A TEST BENCH IT IS POSSIBLE TO RUN AN APPROXIMATE CHECK ON THE CRACKING PRESSURE USING A BASIN OF WATER AND CARRYING OUT THE PROCEDURE BELOW:

A. SLOWLY SUBMERGE THE SECOND STAGE IN THE WATER WITH THE MOUTHPIECE FACING UP, WITHOUT ALLOWING WATER TO GO INSIDE.

B. WHEN THE WATER LEVEL, MEASURED ON THE MOUTHPIECE FITTING WITH REFERENCE TO THE POINT INDICATED IN THE DIAGRAM (FIG. 10), FALLS BETWEEN THE CRACKING VALUES INDICATED IN "TABLE A", THE AIR MUST START TO FLOW.

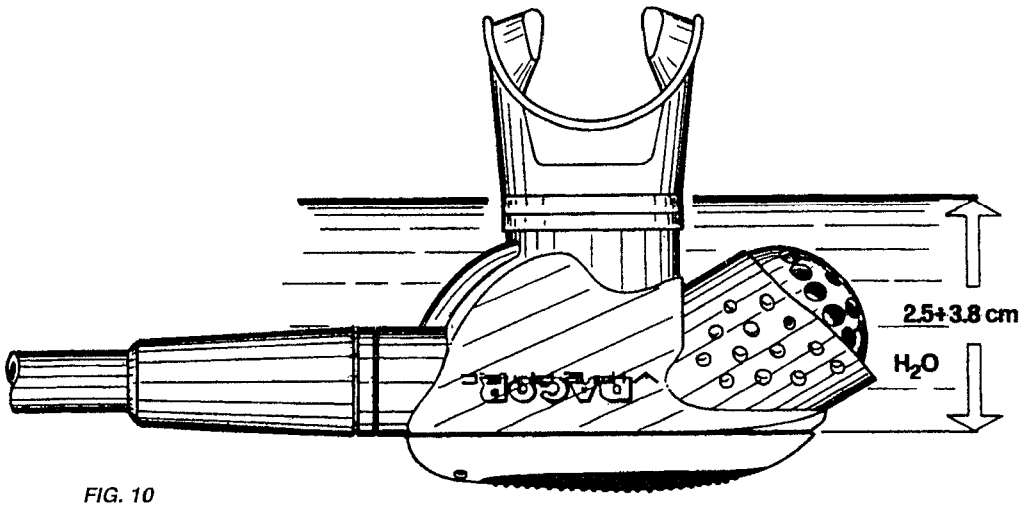


FIG. 10

SECOND STAGE MODEL	POINT OF REFERENCE
VIPER TEC - VIPER - OCTOPUS VIPER	FROM THE LINE OF CONTACT BETWEEN THE SECOND STAGE CASE AND COVER (FIG. 10)

3. If the cracking pressure does not fall between the values specified in the table, proceed as follows:
   a. If the cracking pressure is **greater**, it is necessary to reduce the loading on the spring.
      – Using the Allen wrench, (B - 4) reduce the projection of the seat connector (21) from the case assembly connector (28).
      – If the second stage does not permit adjustment of the spring loading, it is necessary to replace the spring (31).

   b. If the cracking pressure is **lower**, it is necessary to increase the loading on the spring.
      – Using the Allen wrench, (B - 4) reduce the projection (max 3.8 mm) of the seat connector (21) from the case assembly connector (28).
      – If the second stage does not permit adjustment of the spring loading, it is necessary to replace the spring (31).

WARNING ⚠

AFTER CARRYING OUT THE OPERATIONS DESCRIBED IN STEPS (3A AND 3B), ALWAYS REPEAT THE ADJUSTMENT OF THE DEMAND LEVER (35)

4. Submerge the second stage in water with the mouthpiece facing up, allowing water to enter the exhaust tee and keeping it in the water for about 30 seconds.
5. Remove the second stage from the water and then turn the mouthpiece downward.
6. Check for any traces of water inside the second stage.

WARNING ⚠

IF MORE THAN A FEW DROPS OF WATER COME OUT OF THE SECOND STAGE, CHECK SEALS ON THE MOUTHPIECE CLAMP, THE EXHAUST VALVE AND THE RIM OF THE DIAPHRAGM.

7. Press the purge button, and check that it operates smoothly and does not jam.
8. Completely submerge the second stage in water (allowing water to enter the mouthpiece) and check for any air leaks.

VIPERTEC – VIPER – OCTOPUS VIPER 2nd STAGE TROUBLESHOOTING

PROBLEM	MODEL	PROBABLE CAUSE	SOLUTION
- 1 - CONSTANT OR INTERMITTENT AIR LEAKS FROM THE SECOND STAGE	VIPER TEC VIPER	1) Second stage poppet pad dirty or damaged	1) Clean, invert or replace
		2) Sealing surface of seat connector dirty or damaged	1) Clean or replace
		3) Intermediate pressure too high	1) Adjust intermediate pressure
		4) Demand lever set too high	1) Adjust correctly
		5) Second stage poppet spring incorrectly positioned or damaged	1) Position correctly or replace
		6) O-ring seat in adjustable seat connector dirty or damaged	1) Clean and replace
		7) Adjustable seat connector too low	1) Adjust correctly
- 2 - CRACKING PRESSURE TOO HIGH	VIPER TEC VIPER	1) Demand lever set too low	1) Adjust correctly
		2) Intermediate pressure too low	1) Adjust correctly
		3) Hole for second stage poppet in second stage body obstructed	1) Clean thoroughly
		4) Tank valve not fully open	1) Open the tank valve completely
		5) Second stage spring deformed and/or damaged	1) Replace
		6) First stage filter obstructed	1) Overhaul first stage and replace the filter
		7) Loading of poppet spring too high	1) Adjust correctly and replace the spring if necessary
	VIPER TEC	8) Pivoting flow vane dirty and/or damaged	1) Clean and/or replace the damaged components
- 3 - CRACKING PRESSURE TOO LOW	VIPER TEC VIPER	1) Intermediate pressure too high	1) Adjust correctly
		2) Second stage spring deformed and/or damaged	1) Replace
		3) Loading of spring too low	1) Adjust correctly and replace spring if necessary
- 4 - AIR LEAK BETWEEN THE SWIVEL HOSE COUPLING AND THE SECOND STAGE CONNECTOR	VIPER TEC VIPER	1) Swivel hose coupling O-ring defective	1) Replace the O-ring
		2) Sealing surface of hose connector O-ring dirty or damaged	1) Clean or replace the hose connector

VIPERTEC – VIPER – OCTOPUS VIPER 2nd STAGE TROUBLESHOOTING

PROBLEM	MODEL	PROBABLE CAUSE	SOLUTION
- 5 - TRACES OF WATER INSIDE THE SECOND STAGE	VIPER TEC VIPER	1) Exhaust valve dirty, incorrectly positioned or damaged	1) Clean, position correctly or replace
		2) Exhaust valve support dirty or damaged	1) Clean or replace the exhaust valve support
		3) Exhaust valve support O-ring dirty or damaged	1) Clean or replace
		4) Diaphragm dirty, incorrectly positioned or damaged	1) Clean, position correctly or replace
		5) Mouthpiece loose or damaged	1) Tighten with a new clamp or replace
		6) Seat connector O-ring defective	1) Replace
		7) Cover incorrectly clamped	1) Lock down the screws
		8) Diaphragm sealing surfaces of the second stage case dirty or damaged	1) Clean or replace
- 6 - VIBRATIONS DURING THE INHALATION PHASE	VIPER TEC VIPER	1) Poppet spring incorrectly positioned or defective	1) Position correctly or replace
		2) Diaphragm incorrectly positioned	1) Position correctly
		3) Demand lever incorrectly adjusted	1) Adjust correctly

DACOR REPAIR MANUAL
VOLUME THREE
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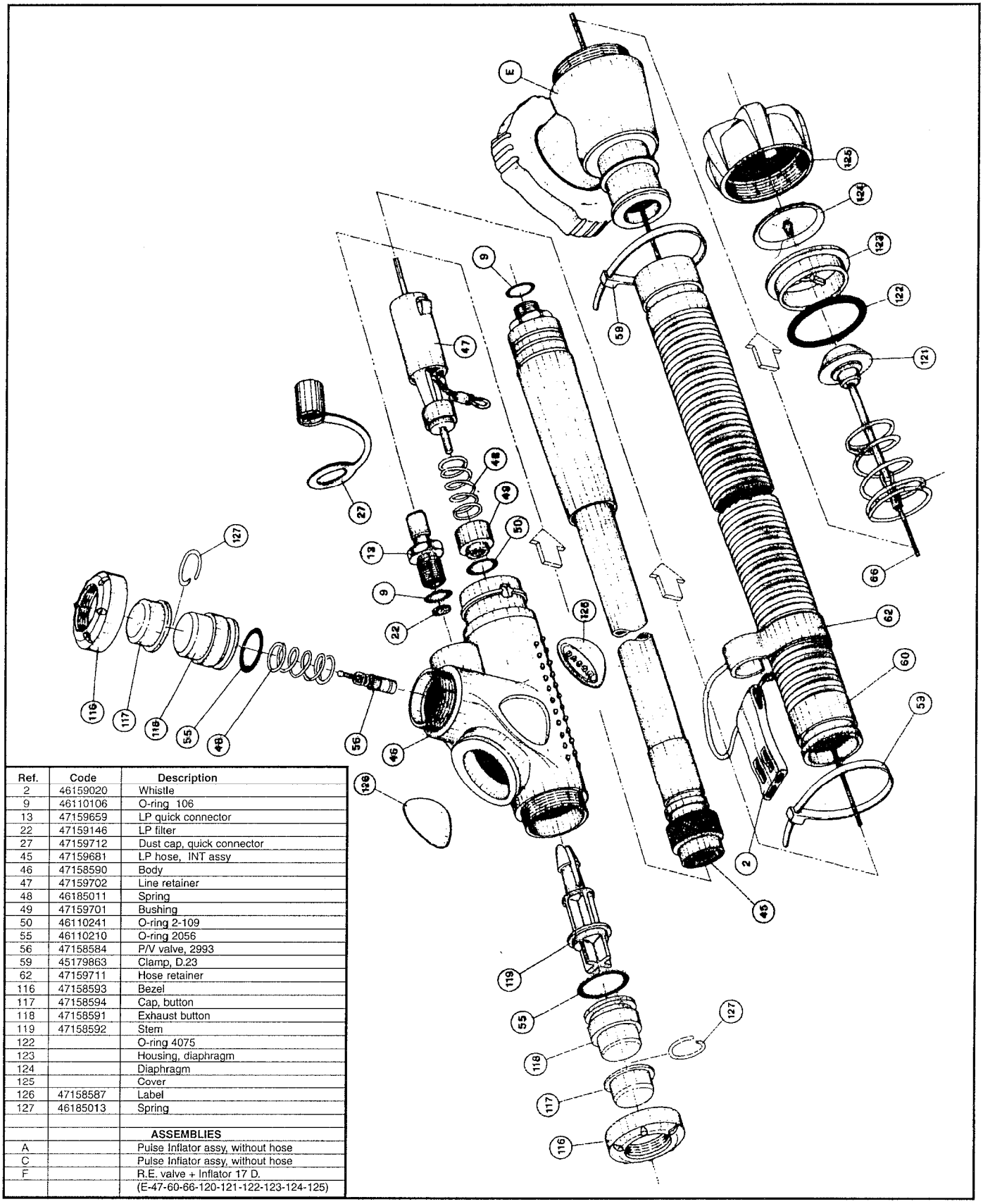
SECTION 3

JACKETS INFLATOR

PULSE INFLATOR



Ref.	Code	Description
2	46159020	Whistle
9	46110106	O-ring 106
13	47159659	LP quick connector
22	47159146	LP filter
27	47159712	Dust cap, quick connector
45	47159681	LP hose, INT assy
46	47158590	Body
47	47159702	Line retainer
48	46185011	Spring
49	47159701	Bushing
50	46110241	O-ring 2-109
55	46110210	O-ring 2056
56	47158584	P/V valve, 2993
59	45179863	Clamp, D.23
62	47159711	Hose retainer
116	47158593	Bezel
117	47158594	Cap, button
118	47158591	Exhaust button
119	47158592	Stem
122		O-ring 4075
123		Housing, diaphragm
124		Diaphragm
125		Cover
126	47158587	Label
127	46185013	Spring
		ASSEMBLIES
A		Pulse Inflator assy, without hose
C		Pulse Inflator assy, without hose
F		R.E. valve + Inflator 17 D.
		(E-47-60-66-120-121-122-123-124-125)

PULSE INFLATOR

DISASSEMBLY OF THE INFLATOR

1. Remove R.E. valve locking ring and unscrew the inflator group from jacket bag.
2. Remove the seal of the locking ring on the jacket.

DISASSEMBLY OF THE INFLATOR BODY

1. Remove clamp (59) using the special tool (for example with cutting nippers) and extract the inflator body (46) from corrugated hose (60).
2. Lightly clamp the inflator group (46) in a vice with plastic jaws.
3. Use two small screwdrivers to depress simultaneously the two tabs on the anchoring bushing (47), then remove the anchoring bushing from the inflator body (46). (Fig. 1)

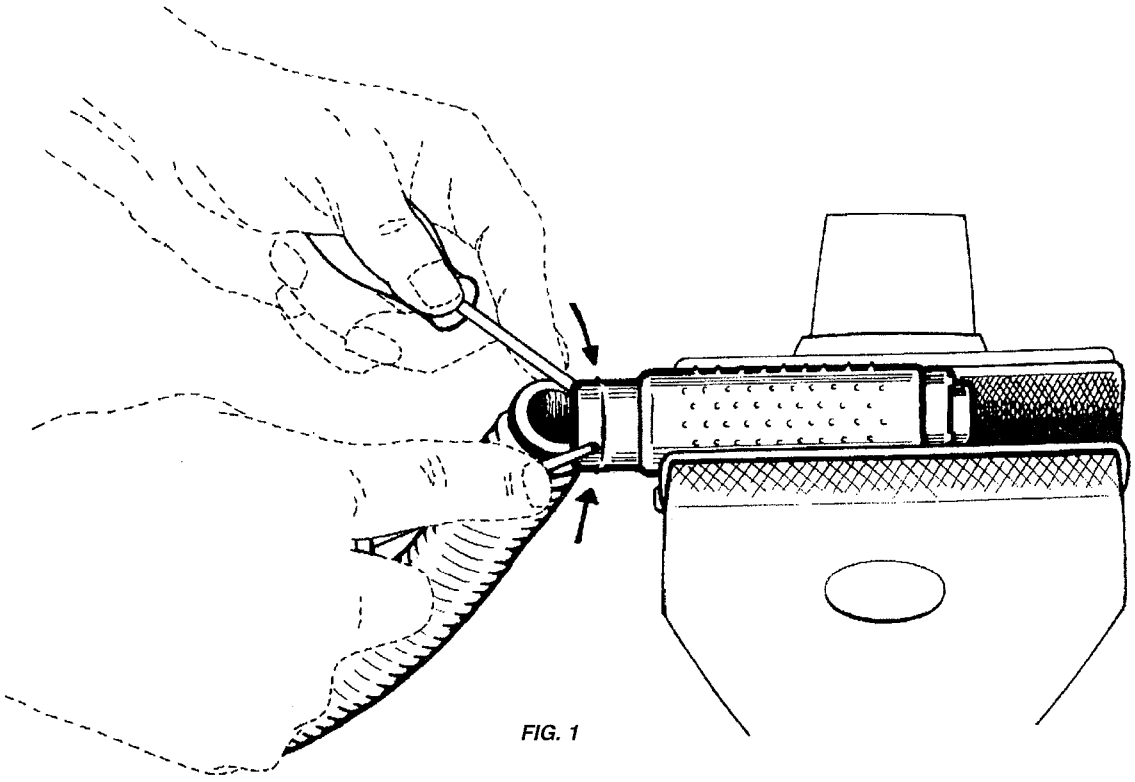


FIG. 1

4. Remove spring (48) from the anchoring bushing (47).
5. Unscrew male quick connector (13) using wrench (B-18).
6. Remove O-Ring (9) from quick connector (13).
7. Extract the fabric filter (22) from the inflator body (46).
8. Unscrew the locking ring (116).
9. Remove the button protection (117) and the corresponding spring (127).
10. Extract inflation button (118) and remove spring (48).
11. Remove O-Ring (55) from inflation button (118).

12. Unscrew poppet (56) using special tool (C-2) or pliers (Fig. 2).

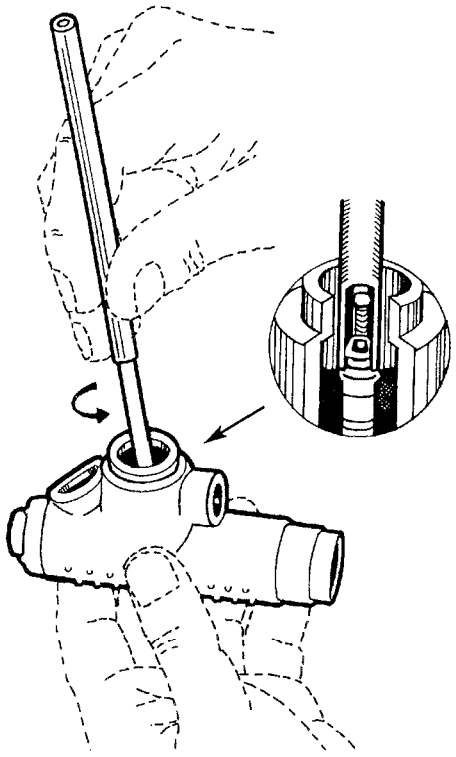


FIG. 2

DISASSEMBLY OF EXHAUST BUTTON

1. Unscrew the locking ring (116).
2. Extract the button protection (117) and the spring (127).
3. Remove button (118).
4. Remove the O-Ring (55) from the button (118).
5. Introduce special tool (code 106190) with its largest diameter into the inflator body (46), then lightly pressing extract the button stem (119), using pliers (Fig. 3)

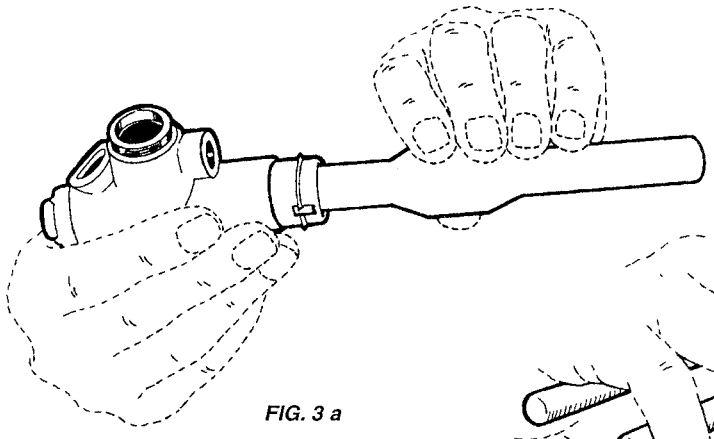


FIG. 3 a

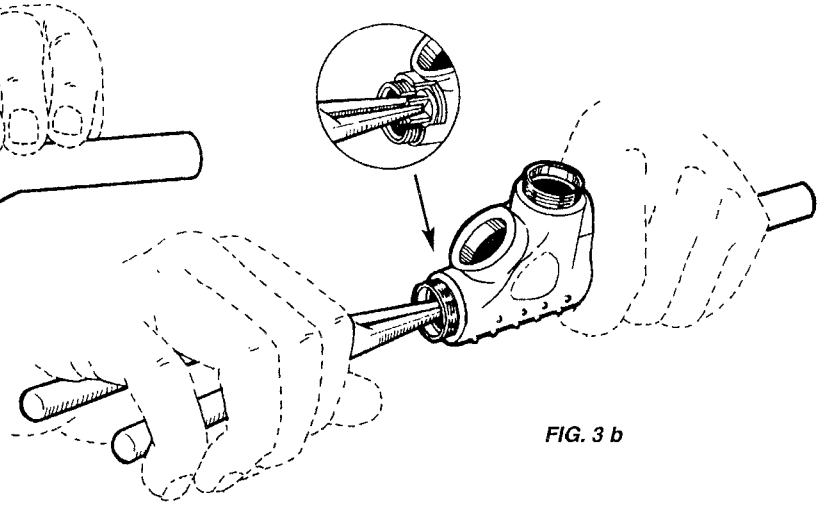


FIG. 3 b

6. Extract the special tool and remove exhaust O-Ring bushing (49).
7. Remove O-Ring (50) from exhaust O-Ring bushing (49).

DISASSEMBLY OF THE R.E. VALVE

1. Unscrew the cover (125).
2. Extract the diaphragm-holder (123) and the diaphragm (124).

> ***NOTE***
> ***IT IS RECOMMENDED TO DISASSEMBLE THE DIAPHRAGM FROM ITS SEAT ONLY IF DAMAGED.***

3. Remove O-Ring (122) from its seat.

CLEANING

WARNING ⚠

WHEN WORKING WITH ANY KIND OF ACID, PROTECT EYES AND SKIN ADEQUATELY.

Cleaning requires all reusable parts to be carefully cleaned by scrubbing with a soft brush in a mild detergent and water solution. Before reassembly, make sure all parts have been carefully rinsed and dried. Metal parts should be cleaned in an ultrasonic cleaner with fresh water and a mild acid solution (white vinegar diluted with warm water is recommended).

WARNING ⚠

ACIDS MAY DAMAGE RUBBER AND PLASTIC PARTS. BEFORE CLEANING METAL PARTS, MAKE SURE THAT ALL RUBBER AND PLASTIC PARTS HAVE BEEN REMOVED.

INSPECTION

The following components of the 1st stage should be replace during routine service. In view of their relatively low cost, O-rings should be all replaced at any service.

We recommend replacing the following components:

1 LP fabric filter	(22)	Code 47159146
1 O-Ring, inflation button bushing	(50)	Code 46110241
2 O-Ring, inflation/exhaust button	(55)	Code 46110210
1 O-Ring, quick connector	(9)	Code 46110106
1 Poppet, exhaust button	(56)	Code 46158584

WARNING ⚠

DACOR RECOMMENDS TO REPLACE THE QUICK CONNECTOR O-RING (CODE 110107) OF TH LP HOSE.

If the following parts are not replaced, they should be inspected with a jeweler's loop or similar magnifying device for the flaws listed below:

DO NOT USE ANY PART WITH THESE FLAWS:

Quick connector:	Check for scratches, corrosion or damaged plating.
LP filter:	Inspect for any deposits of dust on the surface.
Inflator body:	Inspect for signs of breakage and check the integrity of all O-Ring seals. Check the threads for signs of damage.
Exhaust/Inflation button:	Inspect for scratches in the O-Ring seal.
Valve:	Inspect for signs of corrosion or contamination.
O-Rings:	Inspect for cuts, deformation or foreign matter. The presence of any of these defects may result in leakage.
Exhaust O-Ring bushing:	Check for scratches or cuts.
Corrugated hose assy.:	Inspect for small holes or signs of damage, for cuts on poppet body and on threaded parts and seals.
Diaphragm-holder:	Inspect for scratches on the surface or the presence of foreign particles.
Diaphragm:	Inspect for salt deposits or foreign particles.
Cover:	Check the integrity of threads.
O-Rings seals:	Inspect all metal surfaces which come into contact with the O-Rings or other seals, and check for any scratches, chipping, deteriorated plating or foreign particles.
Springs:	Inspect for cracking or broken coils.

REASSEMBLY

Before reassembly, lightly lubricate all O-rings with silicone grease (General Electric Versalube G-322 or equivalent). Lubricating the O-rings before reassembly will minimize the risk of damage during the reassembly.

WARNING ⚠

TAKE PARTICULAR CARE WHEN REASSEMBLING THE THREADED METAL COMPONENTS IN THEIR CORRESPONDING PLASTIC SEATS.

ASSEMBLY OF THE EXHAUST BUTTON

1. Introduce the exhaust button stem (119) in the inflator body (46), up to coupling.
2. Position the O-Ring (50) on the exhaust O-Ring bushing (49).
3. Insert the bushing on special tool (code 106190). (Fig. 4)

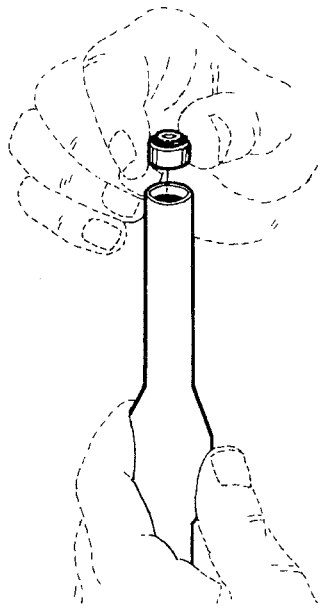


FIG. 4

4. Introduce special tool into inflator body (46) up to bushing (49) coupling with the exhaust button stem (119). (Fig. 5)

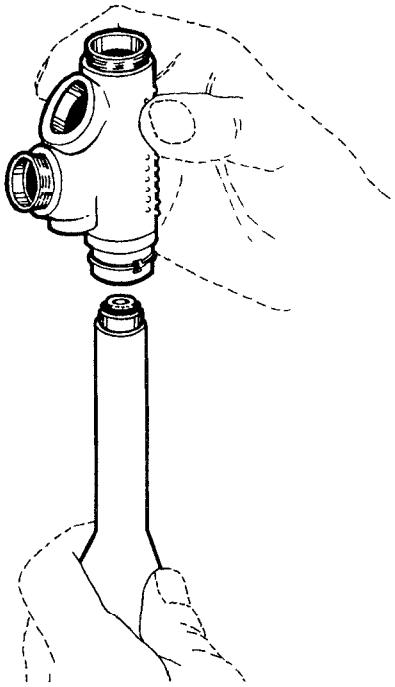


FIG. 5

5. Place the O-Ring (55) into the exhaust button seat (118).
6. Keeping special tool into the inflator body (46), position the exhaust button (118), the spring (127), the button protection (117) and screw locking ring in (116) (Fig. 6).

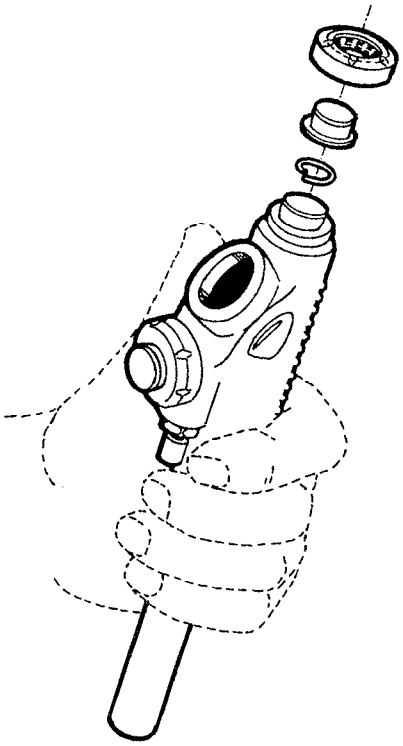


FIG. 6

7. Remove special tool from the inflator body and screw in the locking ring (116).

ASSEMBLY OF THE INFLATION BUTTON

1. Screw poppet (56) in the special seat of the inflator body (46), using the special tool (C-2).

WARNING ⚠

IF A TORQUE WRENCH IS USED, SET THE TORQUE FOR 0.2 N/m.

2. Place the spring (48) in its seat on the inflator body (46).
3. Fit the O-Ring (55) in the exhaust button seat (118).
4. Place the exhaust button (118) on the spring (48).
5. Insert the spring (127) and the button protection (117) on the exhaust button (118).
6. Screw in the locking ring (116).
7. Insert the fabric filter (22) into the quick connector seat (13).

WARNING ⚠

POSITION THE FABRIC FILTER USING A PLASTIC ROD.

8. Reassemble the O-Ring (9) on the quick connector (13).
9. Tighten the quick connector (13) on the control assembly using wrench (B-18).

WARNING ⚠

IF A TORQUE WRENCH IS USED, SET THE TORQUE FOR 4- 4,5 N/m or 3-3.5 ft/lbs.

ASSEMBLY OF THE R.E. VALVE

1. Position O-Ring (122) in its seat.
2. Position the diaphragm holder (123) and diaphragm (124) over the O-Ring (122).
3. Screw the cover (125).
4. Fix the corrugated hose (60) with a clamp (59).

ASSEMBLY OF CORRUGATED HOSE

1. Position the spring (48) on anchor bushing (47).
2. Insert the anchor bushing (47) and the spring (48) inside the inflator assembly (46).

WARNING ⚠

CHECK THAT THE TABS OF THE ANCHOR BUSHING ARE CORRECTLY ENGAGED IN THE SEATS ON THE INFLATOR UNIT.

3. Fit the corrugated hose (60) on the inflator assembly (46) and secure it with a clamp (59).

ASSEMBLY OF THE CORRUGATED HOSE ON THE BC VEST

1. Place a new seal in the BC seat.
2. Position the corrugated hose complete with R.E. Valve and LP inflator on the BC bag, screwing down the ring of the R.E. Valve.

FINALS CHECKS

WARNING ⚠

DO NOT CONNECT THE INFLATOR HOSE TO THE HP PORT OF THE FIRST STAGE, TO PREVENT EXPLOSIONS WHICH MAY RESULT IN SERIOUS INJURY OR EVEN DEATH.

1. Connect the inflator hose (45) to the low pressure port (3/8") of the First stage.
2. Connect the hose (45) to the coupling (13) of the inflator assembly (46).
3. Slowly open the tank valve and submerge the corrugated hose in water, checking for any air leaks or spontaneous inflation of the BC.
4. Press the inflation button (118) until the BC is fully inflated and the over-expansion relief valve opens.
5. Submerge in water, checking for air leakage.
6. Using the R.E. Valve and the exhaust button (118) deflate and re-inflate a few times, to make sure that both the over-expansion relief valve (R.E. Valve) and the seals are operating correctly.

NOTE

IN THE EVENT OF AIR LEAKING FROM THE JACKET, REFER TO RELEVANT TROUBLESHOOTING SECTION OF THE MANUAL.

7. Leave the BC inflated for about two hours to check the tightness of the valves and detect the presence of cuts or small holes.

NOTE

CUTS OR SMALL HOLES IN THE BC BUOYANCY BAG CAN BE REPAIRED USING A SPECIAL ADHESIVE (FOR EXAMPLE, ' AQUA-SURE ').

PULSE INFLATOR TROUBLESHOOTING

PROBLEM	MODEL	PROBABLE CAUSE	SOLUTION
- 1 - AIR LEAKS FROM QUICK CONNECTOR	PULSE INFLATOR	1) Hose coupling O-Ring dirty or damaged	1) Replace O-Ring
		2) Inflator quick connector scratched or damaged	1) Replace quick connector
		3) O-Ring seal of inflator body dirty or damaged	1) Replace O-Ring
- 2 - AIR LEAKS FROM EXHAUST BUTTON	PULSE INFLATOR	1) O-Ring dirty or damaged	1) Clean the seat or replace O-Ring
		2) Spring damaged	1) Replace the spring
		3) Inflator body damaged	1) Replace the body
- 3 - AIR LEAKS FROM INFLATION BUTTON	PULSE INFLATOR	1) O-Ring dirty or damaged	1) Clean the seat or replace O-Ring
		2) Inflator body damaged	1) Replace the body
- 4 - AIR LEAKS FROM R.E.VALVE	PULSE INFLATOR	1) O-Ring dirty or damaged	1) Clean the seat or replace O-Ring
		2) Diaphragm-holder dirty or damaged	1) Clean or replace the holder
		3) Diaphragm dirty or damaged	1) Clean or replace the diaphragm
- 5 - AIR LEAKS FROM CORRUGATED HOSE	PULSE INFLATOR	1) Clamp missing or loose	1) Replace clamp
		2) Corrugated hose dirty or damaged	1) Clean or replace corrugated hose
- 6 - AIR LEAKS BETWEEN R.E. VALVE AND BC COUPLING	PULSE INFLATOR	1) Seal dirty or damgaed	1) Clean or replace seal
		2) R.E. Valve group incorrectly positioned on the BC connector	1) Disassemble the R.E. Valve group and position it correctly
- 7 - CONTINUOUS AIR FLOW INTO BC WITHOUT OPERATING THE EXHAUST BUTTON	PULSE INFLATOR	1) Valve damaged or incorrectly positioned	1) Replace valve
		2) Inflator body dirty or damaged	1) Clean or replace
- 8 - PRESSING INFLATION BUTTON THE BC INFLATES SLOWLY OR NOT AT ALL	PULSE INFLATOR	1) Valve damaged or incorrectly positioned	1) Replace the valve
		2) Filter dirty	1) Replace filter
- 9 - R.E. VALVE FAILS TO WORK WHEN CONTROL IS OPERATED	PULSE INFLATOR	1) Cord damaged	1) Replace corrugated hose assembly