

# DACOR REPAIR MANUAL VOLUME ONE

## SECTION 1

### REGULATORS



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## Listing of Dacor Regulator Models By Year:

MODEL	DESCRIPTION	YEAR OF FIRST PRODUCTION	YEAR OF LAST PRODUCTION
100	SINGLE HOSE PISTON	1969	1979
200	SINGLE HOSE DIAPHRAGM	1969	1979
400	SINGLE HOSE BAL. DIAPHRAGM	1969	1979
800	MODEL 400 WITH RESERVE	1969	1979
C3N	TWO HOSE	1974	1979
C3	TWO HOSE	1966	1974
C2	TWO HOSE	1962	1965
R4	TWO HOSE	1964	1974
R3	TWO HOSE	1962	1963
R2	TWO HOSE	1958	1961
R1	TWO HOSE	1956	1957
D1	SINGLE HOSE DIAPHRAGM	1962	1968
D2	SINGLE HOSE DIAPHRAGM	1966	1968
DR2	MODEL D2 WITH RESERVE	1966	1968

### PACER LINE OF REGULATORS.

150	SINGLE HOSE PISTON	1980	----
260	SINGLE HOSE BALANCED PISTON	1987	CURRENT
300	SINGLE HOSE BALANCED DIAPHRAGM	1979	1984
350	SINGLE HOSE BALANCED DIAPHRAGM	1983	1985
360	SINGLE HOSE BALANCED DIAPHRAGM	1986	CURRENT
460	SINGLE HOSE BALANCED PISTON	1989	CURRENT
600	SINGLE HOSE FLOW THRU PISTON	1979	1984
650	SINGLE HOSE FLOW THRU PISTON	1982	1985
760	SINGLE HOSE FLOW THRU PISTON	1987	CURRENT
900	SINGLE HOSE BALANCED DIAPHRAGM	1979	1984
950	SINGLE HOSE BALANCED DIAPHRAGM	1982	1986
960	SINGLE HOSE BALANCED DIAPHRAGM	1987	CURRENT

FORMULA SERIES	1989	CURRENT
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## REGULATORS: GENERAL TROUBLE SHOOTING

To properly service a diving regulator, DACOR recommends the unit be completely disassembled, and all metal parts cleaned in a cleaning solution, to remove any and all salt, chlorine, bromine, corrosion etc. that might be present. After complete and thorough rinsing in clean, fresh water, rinse in baking soda solution. Then rinse again in fresh water. Air must be blown through regulator to remove any residual water, all parts would be inspected, and all worn or damaged parts replaced. Reassembly of the units should produce a serviced regulator as good as new, and just as important, a satisfied customer.

After use of any cleaner, all parts must be thoroughly rinsed in clean fresh water, including running fresh water through and in all cavities, ports, passageways, etc. This will insure the removal of any cleaning acids still present in the cleaned parts.

Any time a regulator is serviced, it is important that the areas where seats seal, a few sealing areas, be polished. Corrosion, scratches, and small nicks can allow by-pass of air, causing a leak at the seat. In most cases, these defects can be polished out by using a DACOR polishing stick, or even a pencil eraser.

When polishing, a very light touch is required. Don't try to grind down the cone, just lightly polish. When finished, be sure to blow air through the regulator, to remove any particles that might have broken off the polishing stick.

Quite often, a slow free-flow initially can be detected as a first or second stage problem by placing the regulator on a cylinder and taking a breath, or activating the purge. If the free-flow resumes immediately, it is probably a second stage malfunction; if there is any hesitation before the free-flow resumes, it is probably the first stage malfunctioning. Proceed accordingly.

Although silicone spray and grease has been credited with prolonging the life of the so-called "soft" or rubber parts of a regulator, the regulator serviceman should be careful not to place any lubricant on rubber areas that form face seals, primarily the edges of the high pressure and second stage diaphragms. To do so will heighten the possibility of the edge of the diaphragm slipping out of the sealing area. Should it occur at the high pressure diaphragm, a heavy air leak will occur in that area. More commonly, should it occur at the low pressure diaphragm, much water will enter the second stage of the regulator, creating a bad problem for a diver. To protect your customers, be sure no lubricant of any kind is present on the edges of the diaphragm when you reassemble a regulator.

In older units, carefully check all "soft" or rubber parts for deterioration. They must be soft and pliable for easy operation of the unit, and any that seem

hard, gummy, damaged, etc. must be replaced with new. The rate of deterioration depends on usage of the unit, with salt water, swimming pools, heat, and sun accelerating the rate of deterioration.

NOTE: DURING THE REMOVAL OF HIGH PRESSURE DIAPHRAGMS CARE MUST BE TAKEN TO INSURE THAT THE SEATING SURFACE IN THE REGULATOR BODY IS NOT DAMAGED IN ANY WAY SINCE THIS MAY RESULT IN LEAKAGE OF LOW PRESSURE AIR PAST THE DIAPHRAGM AND THIS WILL REQUIRE THE REPLACEMENT OF THE MAIN BODY.

Proper inspection and lubrication of "O" rings is of utmost importance when rebuilding diving equipment. A damaged "O" ring will allow leakage and a poorly lubricated "O" ring will wear and/or be damaged. To forestall this problem, all "O" rings should be removed from the "O" ring groove, prior to cleaning the metal parts and closely inspected. Any "O" rings found damaged or, mis-shapen must be discarded, and replaced with new. Correct lubrication requires a thin film of a silicone based lubricant over the entire surface area of an "O" ring, not just the area visible when the "O" ring is mounted in the groove.

When installing the sintered filter into the main body of the regulator high pressure stage, the rough side should face out, (upstream) the fine side should face in, (downstream).

Close inspection of the spring clip, will reveal that one edge is rounded slightly, and one edge is sharp. Proper installation of this clip will place the sharper edge facing out, thus greatly reducing the possibility of the spring clip being displaced from its groove.

All single hose regulators will have two or more pressure ports in the first stage main body. One or more ports on regulators will be high pressure ports for use with an underwater pressure gauge, or other high pressure accessories and may be marked "H.P." Any other ports will be for low, or intermediate second stage pressure. High pressure internal port orifices will always be much smaller in size than the orifice in a low pressure port. This will insure a high pressure reading, yet not allow a great volume of air to pass through it, should an underwater pressure gauge be damaged or the hose cut while diving. The low pressure port, on the other hand, will have large orifices, to insure a large air volume reaching the second stage and/or accessories being used by the diver. If there is one low pressure port, the hose leading to the second stage of the regulator will be installed in it. If there is more than one low pressure port, they are for octopus second stages, inflatable vests, or other low pressure devices. Normally, all pressure ports, with the exception of the low pressure port leading to the second stage, will have plugs mounted in them at time of purchase.

## REGULATORS: GENERAL TROUBLE SHOOTING (Cont.)

Installing octopus regulators, underwater pressure gauges, etc., must be done correctly to avoid problems. Therefore, it is important to know the difference between low and high pressure ports on the first stage main body.

In brief, always remember that high pressure ports have small orifices, low pressure ports have large orifices. This could prevent an irate diver telling you his underwater pressure gauge is defective; it only reads 140PSI.

If a unit becomes difficult to breath at low tank pressure, check the sintered filter (first stage) for foreign matter, which may range from tank rust to the most common, corrosion from salt water or swimming pool. Although a unit may work fine at the surface with a full cylinder, lower tank pressure or diving at depth may not allow enough volume of air through a contaminated filter to allow a diver to breath comfortably.

### “WHAT TO LOOK FOR”

#### Free-flow from second stage.

If problem is in second stage, check the following: (Correction procedures are detailed in the repair manual under each specific regulator).

1. Lever in second stage too high.
2. Valve seat carrier spring is weak.
3. Second stage seat is worn or damaged.
4. Sealing surface cone on valve seat is worn or damaged.
5. Intermediate pressure is over 145 P.S.I. (First stage adjustment required).

#### If problem is in first stage of piston unit, check the following:

1. High pressure seat is worn or damaged.
2. Sealing surface on small end of piston is worn or damaged.
3. Due to mis-alignment of high pressure seat and/or piston, hard and soft sealing surfaces are not meeting squarely.

#### If problem is in first stage of balanced diaphragm, check the following:

1. High pressure seat is worn or damaged.
2. “O” ring(s) in high pressure sealing area (module, shaft, of high pressure seat, etc.) worn or damaged.
3. Sealing surface on cone is worn or damaged.

#### Difficult inhalation from regulator:

1. High pressure diaphragm has become hardened from age, or other reasons. (These will usually occur on older units with neoprene rubber diaphragm).
2. Intermediate pressure is below 135 P.S.I. (Difficult inhalation usually occurs at depth).
3. Lever too low.
4. Sintered filter on first stage corroded or contaminated. (Usually occurs with low air pressure in cylinder).

#### Water in Second Stage:

1. Foreign material lodged under exhaust valve(s).
2. Exhaust valve(s) damaged.
3. Hole in second stage diaphragm.
4. Edge of second stage diaphragm is not firmly seated between top cover and bottom box assembly.
5. On Aero second stage only, mouthpiece does not cover square openings on mouthpiece tube of bottom box.

NOTE: There often is a small amount of water collected at the extreme bottom of the second stage. While the diver is in a normal face-down swimming position, this water does not present a problem. However, should the diver go into an upside-down position, it can allow this water to enter the mouthpiece. This should cause no real problem, but it does convince many divers that their regulator has a leak, when in fact, it does not. Questioning the diver as when he/she had this water leakage can resolve this problem.

#### Weak purge:

1. Second stage lever too low.
2. Valve seat carrier spring is weak. (When proper spring load is attained, adjust lever height).

## GENERAL TECHNICAL TIPS

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The following are service and maintenance tips we feel might be useful while trouble shooting regulators. Although they may not account for all problems you may encounter, they can save a great deal of time in narrowing the problem.

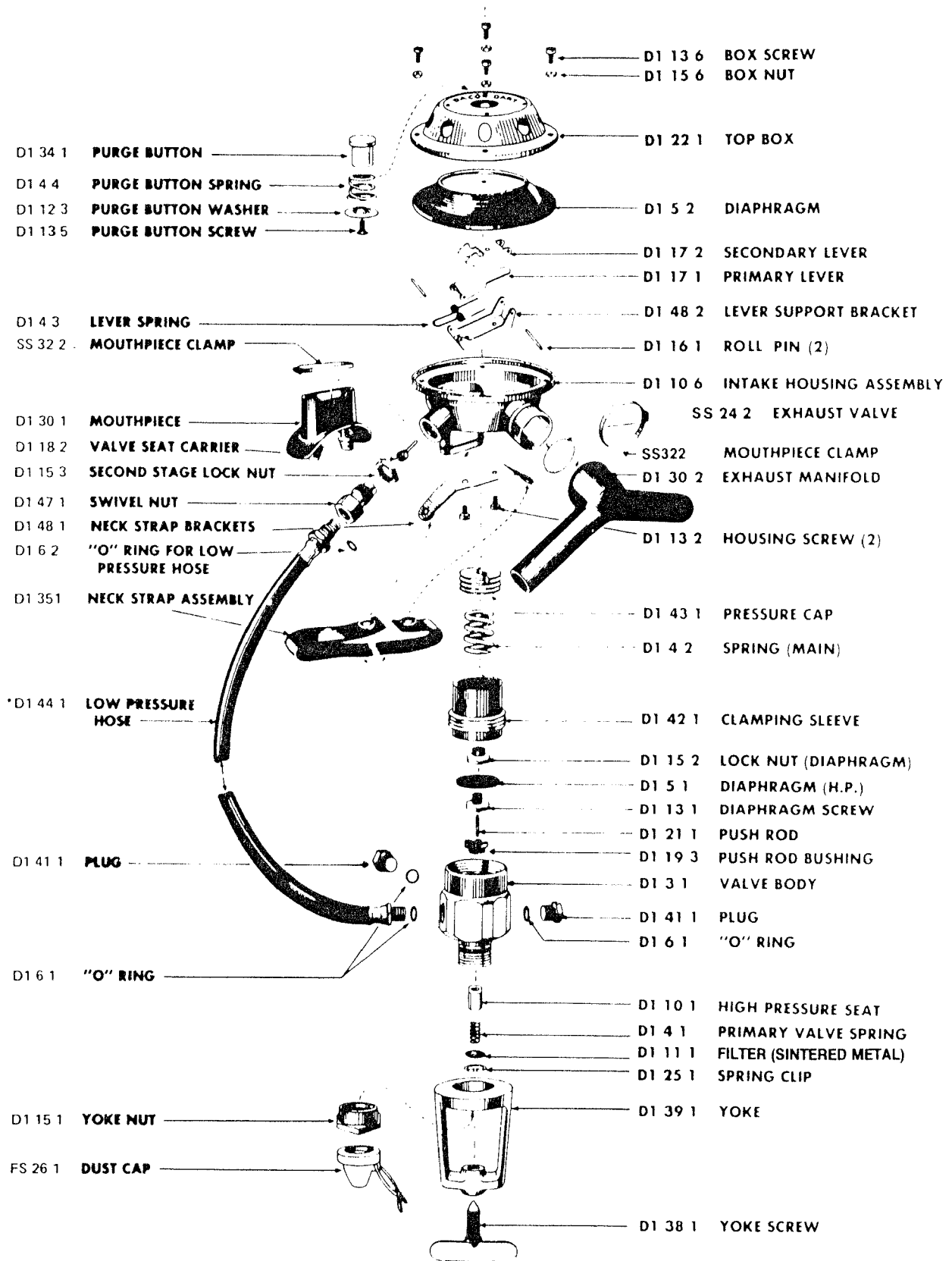
### **Second Stages:**

1. If you have a second stage that seems to have a "double effort" (initially hard crack opening effort and then a sudden ease of effort) during inhalation, check the following:
  - A. Check the fit between the legs of the lever and the seat carrier. There should be a small (.01" to .04" diametrical) amount of clearance between the ends of the legs of the lever and the outside diameter of the seat carrier. If no clearance is present, remove the lever and carefully spread the lever legs by prying them apart until this small (.01" to .04" diametrical) clearance is achieved.
  - B. On mechanically balanced second stages check the square edges on the seat carrier for nicks or burrs. These can be cleaned up with a polishing stick.
2. If you have a second stage that is experiencing diaphragm "chatter", examine the valve housing position. If the valve housing is twisted, it will cause uneven contact between the lever and the diaphragm plate. If it is a plastic second stage simply re-position the valve housing by loosening the nut and tightening after adjustment is made. If this occurs in a metal second stage and you feel that it is not due to misuse, simply return the unit to Dacor for replacement.
3. If you have a wet breathing plastic second stage, check the following:
  - A. Visually check the outside sealing surface at the exhaust valve area of the bottom box for molding defects or cuts and scratches. If molding defects are found, return the bottom box to Dacor for replacement. If defects are due to misuse, you can try to polish them out, or replace the bottom box at owner's expense.
  - B. On some units that have minor scratches due to misuse you can try to use the newer style of exhaust valves that have a stiffening rib around the outer edge. This design tends to be more forgiving than the non-ribbed design.

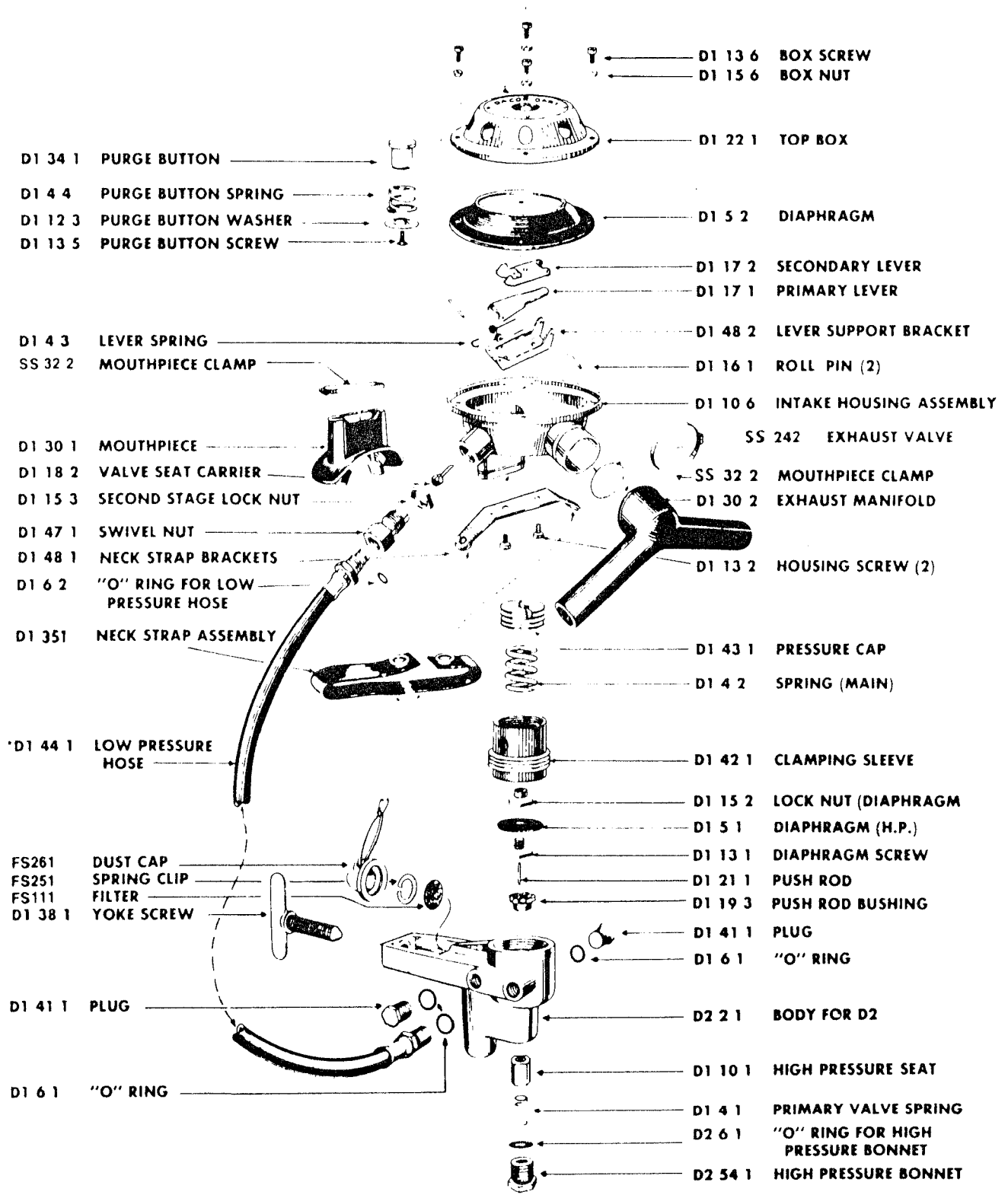
### **First Stages:**

1. If you encounter a balanced first stage that has an intermediate pressure drift, and you are sure that the seat is not the cause, try using a new balanced chamber. If the "O" ring in the balance chamber has dirt or if it is cut, it will result in an intermediate pressure drift.
2. As a general recommendation remember "**do not over lubricate parts.**" Use silicone sprays and greases sparingly.

# DACOR DART D1 Regulator



# DACOR DART D2 Regulator



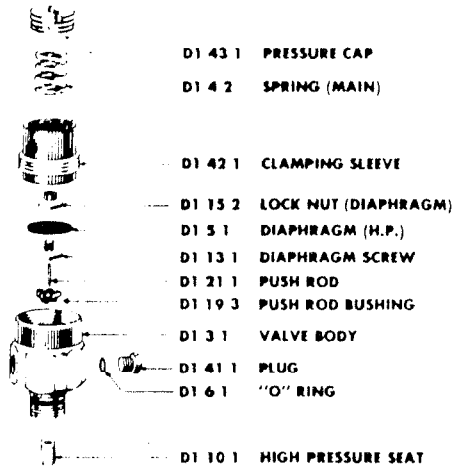
\*D144 1 hose is superseded by D1 11010 hose assembly. To use D11010 hose assembly add one of two adaptors. Adaptor No. D147 2 for Dart with second stage hose connection port measuring 1/2" thread size. Adaptor No. D147 4 for Dart with second stage hose connection port measuring 13/32" thread size. These adaptors replace D1 47 1 swivel nut.

# DACOR DART D1 & D2 Regulators (TROUBLE SHOOTING)

## PROBLEM: REGULATOR LEAKS AIR

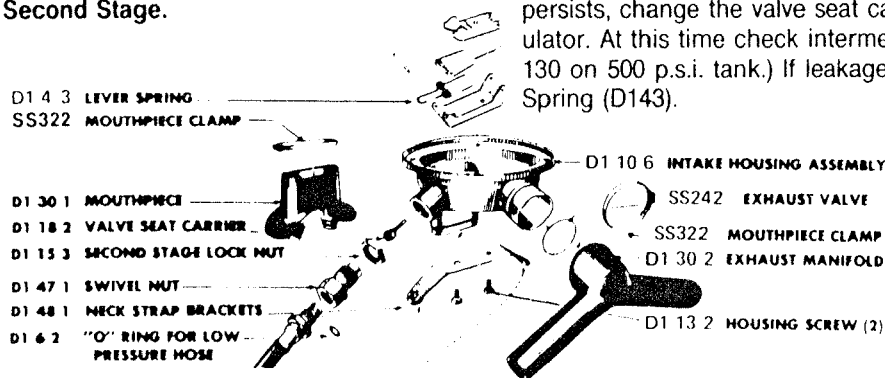
**Reason A:**  
High pressure leak 1st Stage.

**Solution:** Remove bonnet assembly, composed of pressure cap (D1431), spring (D142) (main) clamping sleeve (D1421) and the high pressure diaphragm assembly. Check for high pressure seat leak by either sound or a small amount of water on the Push Rod Bushing (D1193). If leakage is present replace High Pressure Seat (D1101) and polish orifice area with our polishing stick (DA 20 1). Blow out orifice area with high pressure air. Reassemble in reverse order. Set the intermediate pressure to 130 p.s.i. on a 500 p.s.i. cylinder by adjusting the pressure cap (D1431) downward in a clockwise motion using a gauge connected in the auxiliary low pressure port. No creeping of the intermediate pressure should be tolerated.



**Reason B:**  
Demand leakage in Second Stage.

**Solution:** Loosen the second stage locknut (D1153) and adjust the swivel nut (D1471) inward. If leakage stops, relock the locknut. If leakage persists, change the valve seat carrier (D1182) and reset the regulator. At this time check intermediate pressure, (No higher than 130 on 500 p.s.i. tank.) If leakage still persists, replace the Lever Spring (D143).

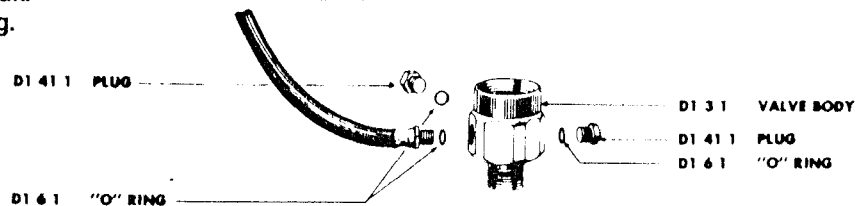


**Reason C:**  
Leak around High Pressure Diaphragm (D151), Clamping Sleeve loose (D1421) or Diaphragm Screw loose (D1131).

**Solution:** Purge System — Tighten the Clamping Sleeve (D1421). If leakage persists, check the diaphragm locknut (D1152) for looseness. Inspect the diaphragm (D151) for a torn surface. Replace if necessary.

**Reason D:**  
Accessory Port leak. Damaged "O" Ring.

**Solution:** Replace "O" Ring (D161) and lubricate lightly with DACOR "O" Ring Lube.



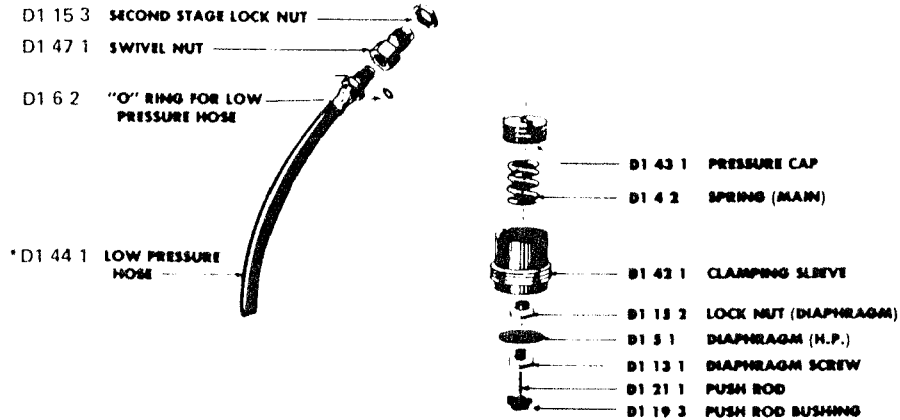


# DACOR DART D1 & D2 Regulators (TROUBLE SHOOTING, Cont.)

## PROBLEM: REGULATOR LEAKS AIR

**Reason E:**  
Leak at Swivel Connection — Damaged "O" Ring (D162).

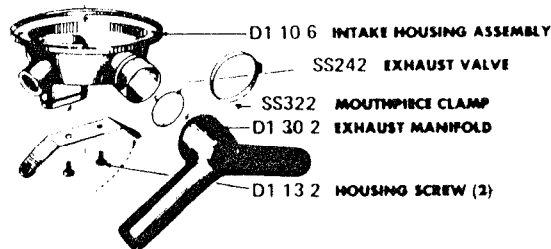
**Solution:** Disassemble and clean both male and female portions. Remove and replace "O" Ring (D162) and lubricate lightly with DACOR "O" Lube.



## PROBLEM: WATER LEAKS INTO DEMAND REGULATOR

**Reason A:**  
Contamination in Exhaust Valve

**Solution:** Clean in fresh water. Blow water through valve by purging with fingers over the mouthpiece.

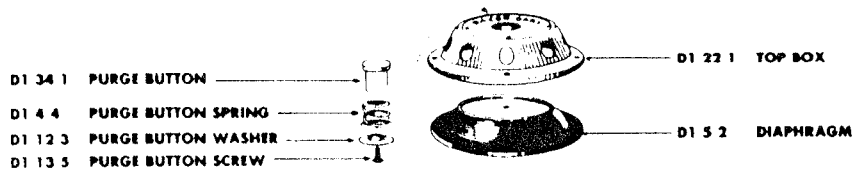


**Reason B:**  
Mouthpiece Clamp loose (SS 32 2).

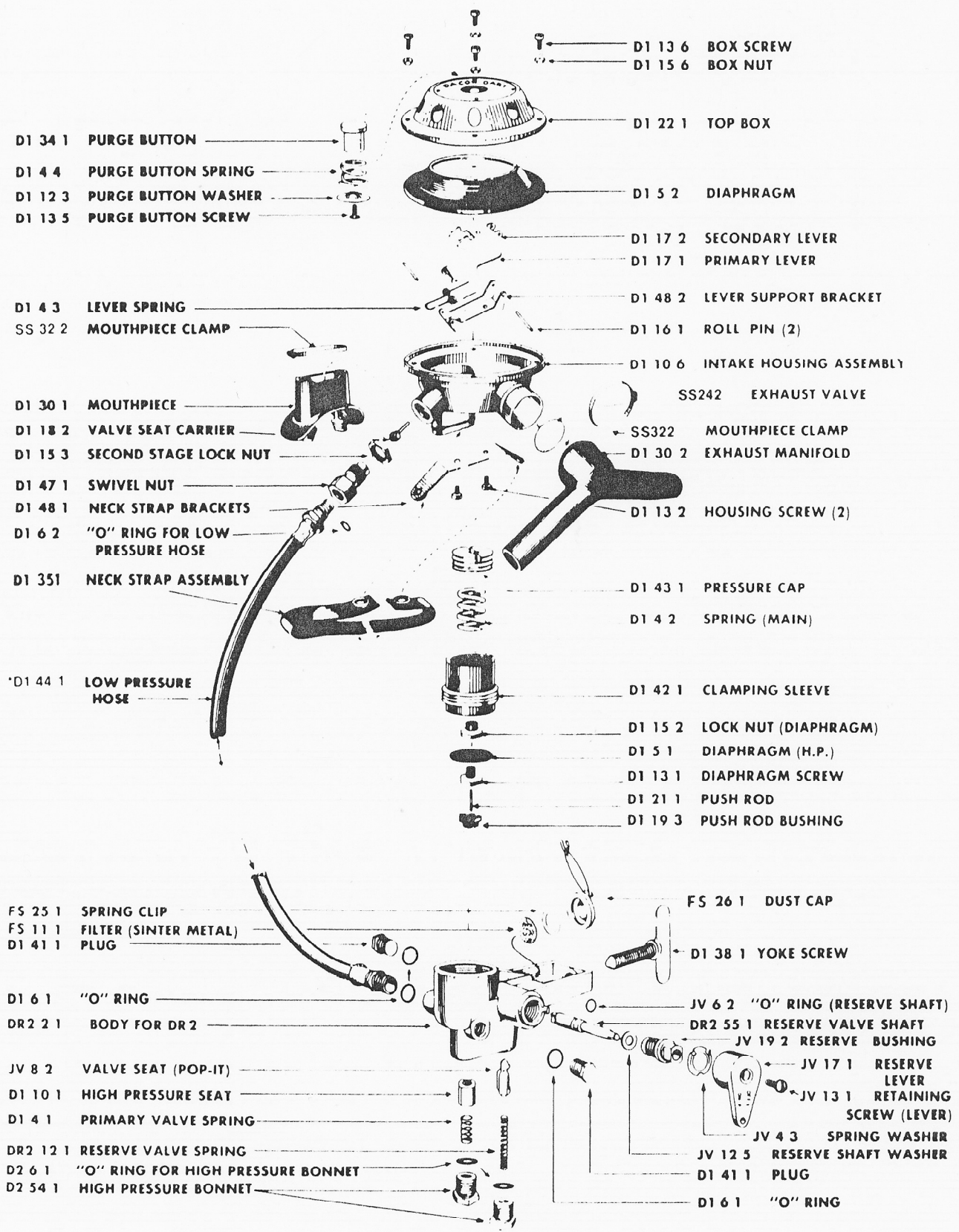
**Solution:** Replace, tighten new clamp with plier before cutting off tab.

**Reason C:**  
Hole in Diaphragm (D152).

**Solution:** Replace Diaphragm (D152).



# DACOR DART DR2 Regulator



# DACOR DART DR2 Regulator (TROUBLE SHOOTING)

## PROBLEM: REGULATOR BREATHEs HARD

**Reason A:**  
Improper lever height.

**Solution:** Install regulator on 500 p.s.i. cylinder. With pressure setting gauge attached to one low pressure outlet, adjust the pressure cap (D1431) downward until a pressure of 170 p.s.i. registers on the gauge. Adjust Swivel Nut (D1471) counter-clockwise, until slight leakage occurs. Then adjust Swivel Nut (clockwise) until leakage stops. Tighten the Swivel Nut (D1471) to lock against the Housing Assembly (D1106). Back off pressure cap to 130 p.s.i. on gauge by purging through second stage.

**Reason B:**  
Interstage pressure too low.

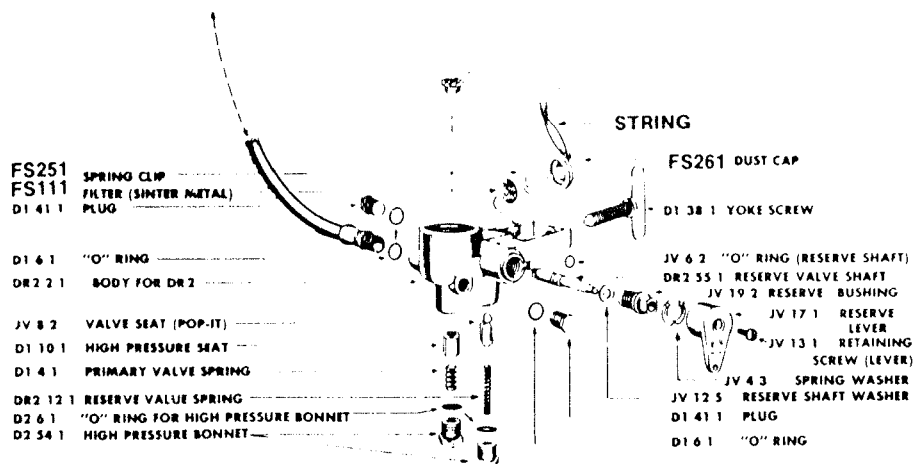
**Solution:** Check intermediate pressure — must be 130 p.s.i. at 500 p.s.i.

## (SAME AS D2 BUT WITH RESERVE IN 1ST STAGE)

**Reason:**  
Leakage from reserve arm due to worn JV62 "O" Ring.

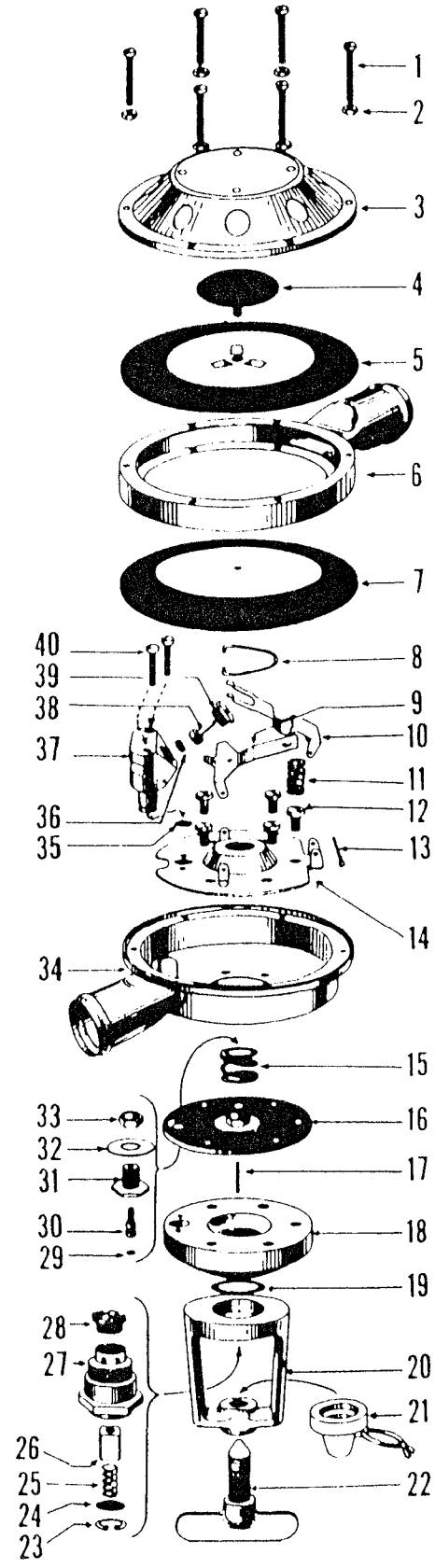
**Solution:** Remove the Reserve Shaft (DR2551), clean and replace the JV62 "O" Ring. Lubricate lightly with DACOR "O" lube. Note, the Reserve Shaft Washer (JV125) must be replaced at this time.

(NOTE: These items no longer manufactured or stocked by DACOR.)

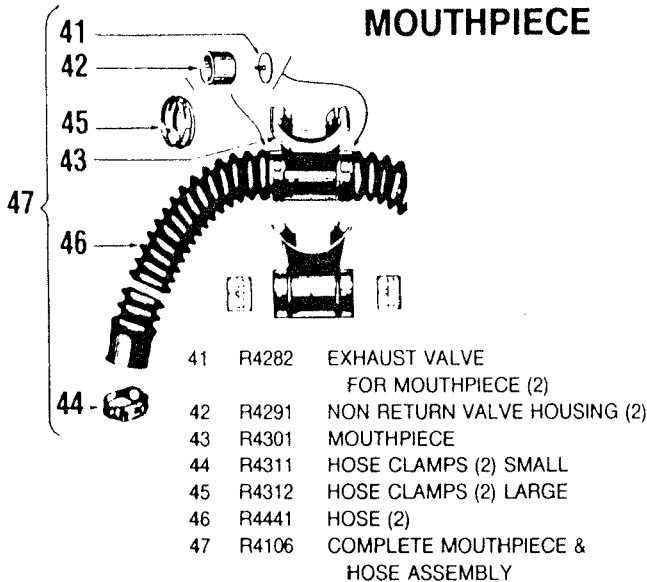


# DACOR R4 Regulator

ITEM	PART NO.	DESCRIPTION
1	R4135	COVER SCREW (6)
2	D1156	BOX NUT
3	R4221	TOP BOX
4	R4241	EXHAUST VALVE
5	R453	EXHAUST DIAPHRAGM
6	R4105	EXHAUST RING ASSEMBLY
7	R452	INTAKE DIAPHRAGM
8	R4251	SPRING CLIP DEMAND VALVE
9	R4172	PRIMARY LEVER
10	R4171	SECONDARY LEVER
11	R442	PRIMARY LEVER SPRING
12	R4132	SPRING RETAINER SCREW (5)
13	C3N361	COTTER PIN (SUPERSEDES R4162 ROLL PIN)*
14	R4161	SPRING RETAINER
15	R441	HIGH PRESSURE SPRING
16	R451	HIGH PRESSURE DIAPHRAGM
17	FS212	PUSH ROD
18	R432	MAIN BODY
19	R4121	WASHER (GASKET)
20	D1391	YOKE
21	FS261	DUST CAP
22	D1381	YOKE SCREW
23	FS251	SPRING CLIP
24	FS111	FILTER (SINTERED METAL)
25	R444	PRIMARY VALVE SPRING
26	D1101	HIGH PRESSURE SEAT
27	R431	VALVE BODY
28	D1193	PUSH ROD BUSHING
29	R464	ADJUSTING SCREW "O" RING
30	R4131	ADJUSTING SCREW
31	R4141	CENTER BOLT
32	R4122	DIAPHRAGM WASHER
33	R4151	DIAPHRAGM NUT
34	R4102	BOTTOM BOX ASSEMBLY
35	R462	"O" RING FOR S.S. VALVE BODY
36	R471	SEAT
37	R433	SECOND STAGE BODY
38	R4181	VALVE SEAT CARRIER
39	R4192	S.S. SEAT BUSHING
40	R4134	S.S. VALVE SCREWS (2)



## MOUTHPIECE



\*COTTER PIN used in late 1974 production models and for all replacements.

# Service Procedure: DACOR R-4 Regulator

## To Disassemble:

- STEP-1.** Remove mouthpiece (43) from hoses, loosening large hose clamps (45) by prying up locking lip with pointed instrument (awl, etc.) and gently pulling hose (46) from mouthpiece. A slight twisting motion will facilitate this operation.
- STEP-2.** Remove non-return valve housing (42) from mouthpiece by squeezing shoulder of mouthpiece until housing "pops" out.
- STEP-3.** Remove exhaust valve (41) by gently pulling from housing.
- STEP-4.** Remove hoses from regulator by loosening small hose clamps (44) (See Para. 1) and gently pulling hose from regulator. A slight twisting motion will facilitate this operation.
- STEP-5.** Remove box nuts (2).
- STEP-6.** At this point, the top box (3), exhaust diaphragm (5), and exhaust valve (4), the exhaust ring assembly (6), and the intake diaphragm (7) will usually separate from the bottom box assembly (34) in one group. They can be removed separately by removing the cover screws (1) and, if necessary, gently prying apart. Primary and secondary levers are now available for adjustment.
- STEP-7.** Remove the exhaust valve (4) from exhaust diaphragm (5) by a gentle pulling action.
- STEP-8.** Remove spring clip (8), primary lever (9) and primary lever spring (11) by gently spreading arms of spring clip.
- STEP-9.** Remove seat bushing (39) by turning counter clockwise with wrench. Remove valve seat carrier (38). Seat (36) is now accessible.
- STEP-10.** Remove second stage body (37) by removing valve screws (40) with thin-bladed screw driver, and gently pulling body straight out of bottom box assembly (34). "O" ring (35) is now accessible.
- STEP-11.** Remove spring retainer (14) bottom box high pressure spring (15) and high pressure diaphragm (16) by removing the five spring retainer screws (12). Because of the spring tension of the high pressure diaphragm spring, this operation must be done with care.
- STEP-12.** Remove push rod (17).
- STEP-13.** Remove push rod bushing (28) by turning counter clockwise with small socket wrench.
- STEP-14.** Remove filter (24) by releasing spring clip (23) using circlip pliers.
- STEP-15.** Remove primary valve spring (25) and high pressure seat (26).

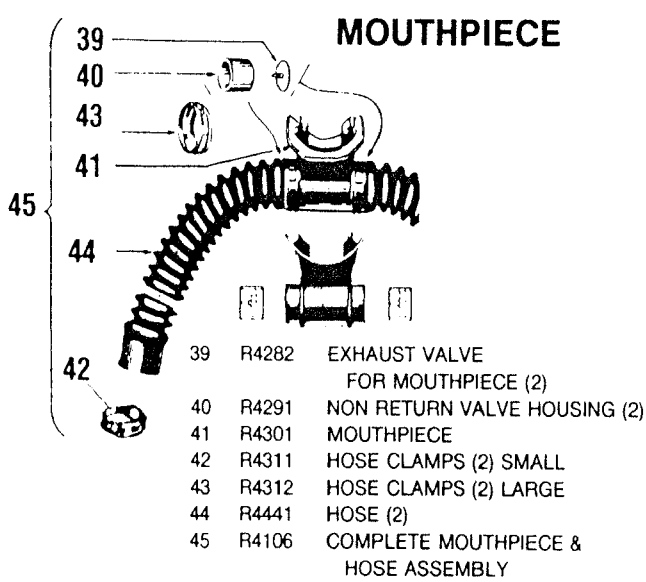
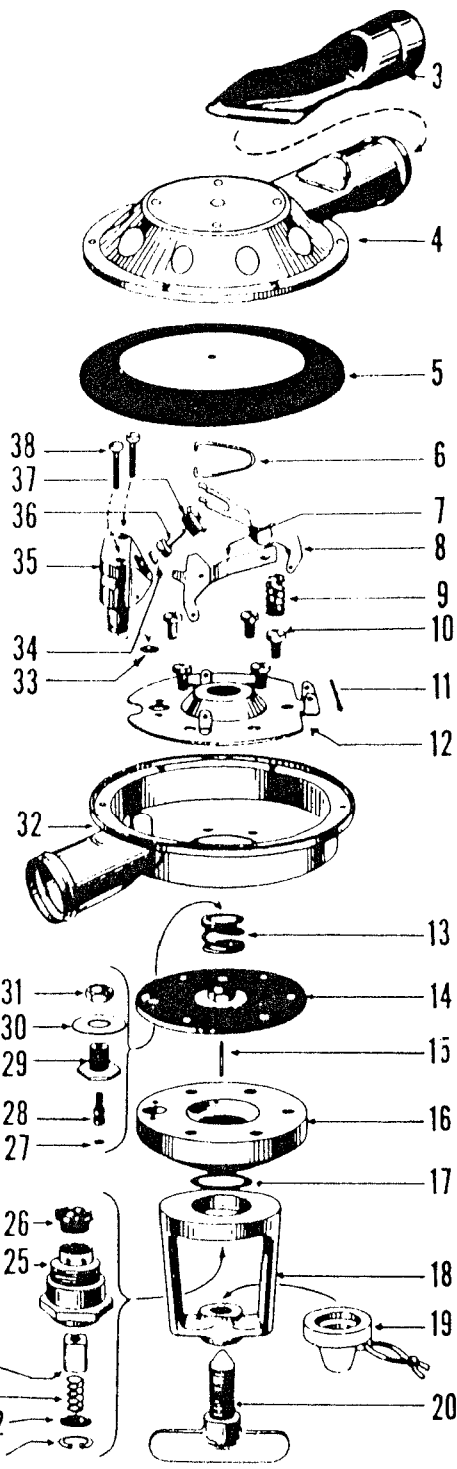
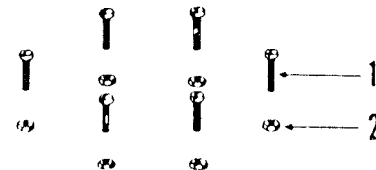
*NOTE: Separation of valve body (27) from main body (18) must be done with special tools, and should be done only by your Authorized Dacor Service Center.*

## To Assemble:

- STEP-1.** Replace high pressure seat (26) and primary valve spring (25) in valve body (27).
- STEP-2.** Replace filter (24) and spring clip (23) using circlip pliers. Be sure spring clip is seated in groove on inside of valve body chamber.
- STEP-3.** Replace push rod bushing (28) and push rod (17). To be sure push rod slides easily into bushing, lubricate push rod slightly.
- STEP-4.** Replace high pressure diaphragm (16), high pressure spring (15), bottom box (34), and spring retainer (14) in that order. This operation is tricky because of the spring tension involved. All the holes must be lined up using as a guide the slightly larger hole used by the second stage body (37). Replace all five spring retainer screws (12), in the proper holes, turning them down tightly. Using two centering pins in opposite holes will facilitate this operation by holding the component parts in the proper position until the first two screws are in place.
- STEP-5.** Test intermediate pressure at this point by placing regulator on air source and inserting the model PSGA adaptor, mounted on the PSG pressure setting gauge, into the orifice normally occupied by the second stage body. Holding gauge firmly down, and with bleeder valve open, open cylinder valve. Close bleeder. Pressure at low pressure (300 p.s.i.) should be 140 p.s.i.; at high pressure (2475 p.s.i.) should be 115 p.s.i. To increase intermediate pressure, turn adjusting screw (30) clockwise; to decrease intermediate pressure, turn adjusting screw (30) counter clockwise. When proper pressure is attained, turn off cylinder valve, and open bleeder valve. DO NOT let go of the test gauge until all air is released from gauge.
- STEP-6.** Replace second stage body (37), after lubricating "O" ring (35). Be sure valve screws (40) are tight.
- STEP-7.** Replace valve seat (36) in valve seat carrier (38) — replace valve seat carrier in 2nd stage body.
- STEP-8.** Replace bushing in 2nd stage body using wrench to make snug.
- STEP-9.** Replace spring clip, primary lever, and secondary lever, and primary lever spring. Arch of spring clip should be under levers.
- STEP-10.** Replace exhaust valve (4) on exhaust diaphragm (5). Moistening or using liquid soap on tip of shaft of exhaust valve will facilitate installing it.
- STEP-11.** Replace intake diaphragm (7), exhaust ring assembly (6), exhaust diaphragm (5) and top box (3) in that order, using six cover screws (1).
- NOTE: Diaphragms should be mounted bell up.*  
*NOTE: It will be easier to remount these parts as a unit; that is placing the cover screws in position on the top box. Install exhaust diaphragm mounting the exhaust ring assembly, last the intake diaphragm and mounting these parts as a unit, onto the bottom box assembly. See Page 1-14 for correct assembly position.*
- STEP-12.** Replace six box nuts (2). They should be made snug, but not tight.
- STEP-13.** Replace exhaust valves (41) in non-return housings (42). Again, moistening or liquid soap on shaft of exhaust valves will facilitate mounting.
- STEP-14.** Replace housings in mouthpiece (43), mounting them so that both will face left. (Air flow will be from right to left on assembled unit).
- STEP-15.** Replace hoses (46) on mouthpiece (43), using large hose clamps (45) (long-nosed pliers can be used for this).
- STEP-16.** Replace hose assembly (47) on regulator. At this point check your work by breathing thru unit. If you cannot inhale or exhale, reverse hoses at regulator. If you can inhale but not exhale, left side valve is incorrectly mounted. If you can exhale but not inhale, right side valve is incorrectly mounted. If unit breaths correctly, replace small hose clamps (44). (Again, long-nosed pliers can be used for this.)

# CLIPPER C3 Regulator

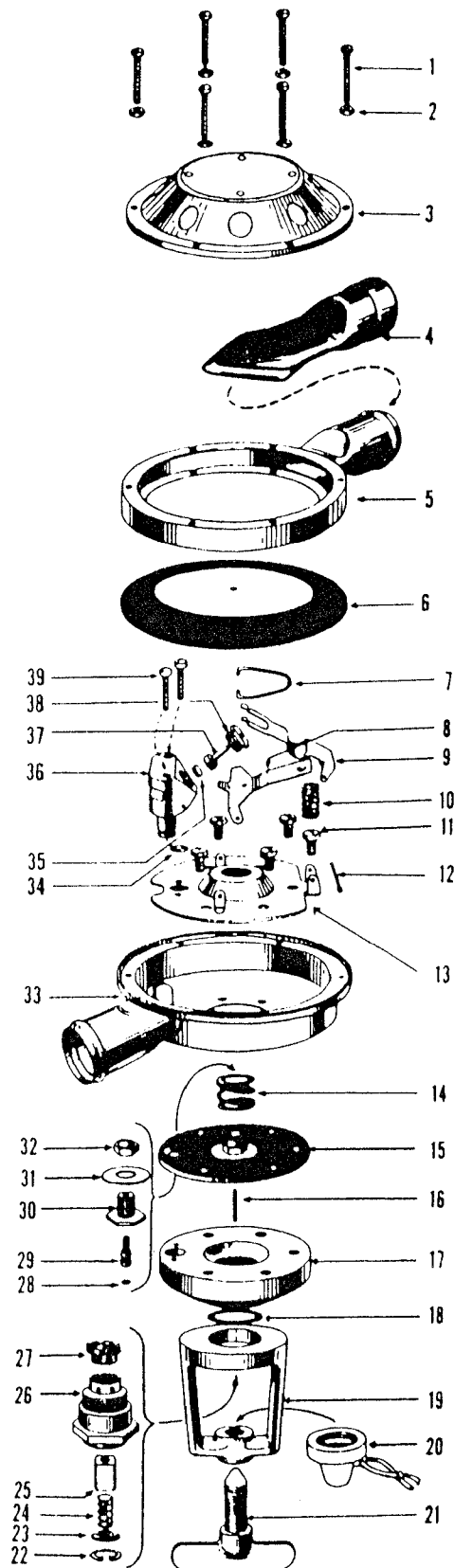
ITEM	PART NO.	DESCRIPTION
1	D1136	BOX SCREW
2	D1156	BOX NUT
3	C3241	EXHALATION VALVE
4	C3101	TOP BOX
5	R452	INTAKE DIAPHRAGM
6	R4251	SPRING CLIP DEMAND VALVE
7	R4172	PRIMARY LEVER
8	R4171	SECONDARY LEVER
9	R442	PRIMARY LEVER SPRING
10	R4132	SPRING RETAINER SCREW (5)
11	C3N361	COTTER PIN (SUPERSEDES R4162 ROLL PIN)*
12	R4161	SPRING RETAINER
13	R441	HIGH PRESSURE SPRING
14	R451	HIGH PRESSURE DIAPHRAGM
15	FS212	PUSH ROD
16	R432	MAIN BODY
17	R4121	WASHER (GASKET)
18	D1391	YOKE
19	FS261	DUST CAP
20	D1381	YOKE SCREW
21	FS251	SPRING CLIP
22	FS111	FILTER (SINTERED METAL)
23	R444	PRIMARY VALVE SPRING
24	D1101	HIGH PRESSURE SEAT
25	R431	VALVE BODY
26	D1193	PUSH ROD BUSHING
27	R464	ADJUSTING SCREW "O" RING
28	R4131	ADJUSTING SCREW
29	R4141	CENTER BOLT
30	R4122	DIAPHRAGM WASHER
31	R4151	DIAPHRAGM NUT
32	R4102	BOTTOM BOX ASSEMBLY
33	R462	"O" RING FOR S.S. VALVE BODY
34	R471	SEAT
35	R433	SECOND STAGE BODY
36	R4181	VALVE SEAT CARRIER
37	R4192	S.S. SEAT BUSHING
38	R4134	S.S. VALVE SCREWS (2)



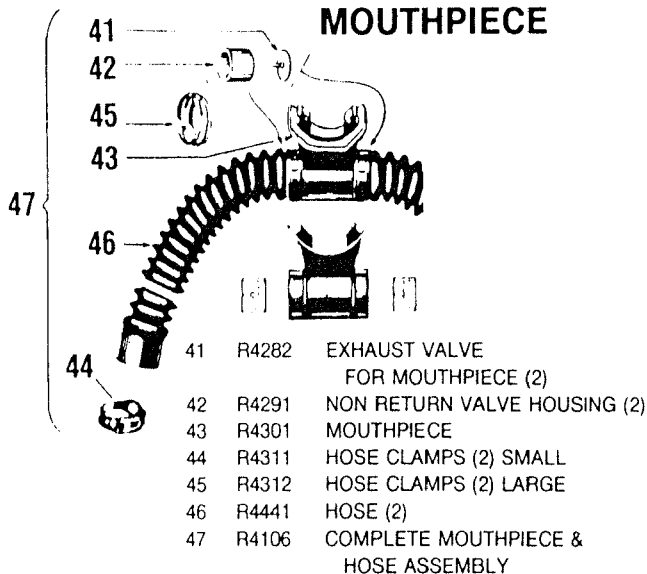
\*COTTER PIN used in late 1974 production models and for all replacements.

# CLIPPER C3N Regulator

ITEM	PART NO.	DESCRIPTION
1	R4135	COVER SCREW (6)
2	D1156	BOX NUT
3	R4221	TOP BOX
4	C3241	EXHALATION VALVE
5	R4105	EXHAUST RING ASSEMBLY
6	R452	INTAKE DIAPHRAGM
7	R4251	SPRING CLIP DEMAND VALVE
8	R4172	PRIMARY LEVER
9	R4171	SECONDARY LEVER
10	R442	PRIMARY LEVER SPRING
11	R4132	SPRING RETAINER SCREW (5)
12	C3N361	COTTER PIN
13	R4161	SPRING RETAINER
14	R441	HIGH PRESSURE SPRING
15	R451	HIGH PRESSURE DIAPHRAGM
16	FS212	PUSH ROD
17	R432	MAIN BODY
18	R4121	WASHER (GASKET)
19	D1391	YOKE
20	FS261	DUST CAP
21	D1381	YOKE SCREW
22	FS251	SPRING CLIP
23	FS111	FILTER (SINTERED METAL)
24	R444	PRIMARY VALVE SPRING
25	D1101	HIGH PRESSURE SEAT
26	R431	VALVE BODY
27	D1193	PUSH ROD BUSHING
28	R464	ADJUSTING SCREW "O" RING
29	R4131	ADJUSTING SCREW (incl. R464)
30	R4141	CENTER BOLT
31	R4122	DIAPHRAGM WASHER
32	R4151	DIAPHRAGM NUT
33	R4102	BOTTOM BOX ASSEMBLY
34	R462	"O" RING FOR S.S. VALVE BODY
35	R471	SEAT
36	R433	SECOND STAGE BODY
37	R4181	VALVE SEAT CARRIER (incl. R471)
38	R4192	S.S. SEAT BUSHING
39	R4134	S.S. VALVE SCREWS (2)



## MOUTHPIECE



# Service Procedure: CLIPPER C3 & C3N Series Regulators:

## To Disassemble:

- STEP-1.** Remove mouthpiece (41) from hoses, loosening large hose clamps (43) by prying up locking lip with pointed instrument (awl, etc.) and gently pulling hose (44) from mouthpiece. A slight twisting motion will facilitate this operation.
- STEP-2.** Remove non-return valve housing (40) from mouthpiece by squeezing shoulder of mouthpiece until housing "pops" out.
- STEP-3.** Remove exhaust valve (39) by gently pulling from housing.
- STEP-4.** Remove hoses from regulator by loosening small hose clamps (44) (See Para. 1) and gently pulling hose from regulator. A slight twisting motion will facilitate this operation.
- STEP-5.** Remove box nuts (2).
- STEP-6.** Remove top box (4) from bottom box assembly (32). Usually the intake diaphragm (5) will remain in place on the top box (4) during this operation. They can be separated by gently pulling the intake diaphragm from the box screws (1). Primary (7) and secondary (8) levers are now available for adjustment.
- STEP-7.** Remove the exhalation valve (3) from top box by gently working it free.
- STEP-8.** Remove spring clip (21), primary lever (7) and primary lever spring (9) by gently spreading arms of spring clip.

- STEP-9.** Remove seat bushing (37) by turning counter clockwise with wrench. Remove valve seat carrier (36). Seat (34) is now accessible.
- STEP-10.** Remove second stage body (35) by removing valve screws (38) with thin-bladed screw driver, and gently pulling body straight out of bottom box assembly (32). "O" ring (33) is now accessible.
- STEP-11.** Remove spring retainer (12) bottom box high pressure spring (13) and high pressure diaphragm (14) by removing the five spring retainer screws (10). Because of the spring tension of the high pressure diaphragm spring, this operation must be done with care.
- STEP-12.** Remove push rod (15).
- STEP-13.** Remove push rod bushing (26) by turning counter clockwise with small socket wrench.
- STEP-14.** Remove filter (22) by releasing spring clip (21) using circlip pliers.
- STEP-15.** Remove primary valve spring (23) and high pressure seat (24).  
*NOTE: Separation of valve body (25) from main body (16) must be done with special tools, and should be done only by your Authorized Dacor Service Center.*

## To Assemble:

- STEP-1.** Replace high pressure seat (24) and primary valve spring (23) in valve body (25).
- STEP-2.** Replace filter (22) and spring clip (21) using circlip pliers. Be sure spring clip is seated in groove on inside of valve body chamber.
- STEP-3.** Replace push rod bushing (26) and push rod (15). To be sure push rod slides easily into bushing, lubricate push rod slightly.
- STEP-4.** Replace high pressure diaphragm (14), high pressure spring (13), bottom box (33), and spring retainer (12) in that order. This operation is tricky because of the spring tension involved. All the holes must be lined up using as a guide the slightly larger hole used by the second stage body (37). Replace all five spring retainer screws (10), in the proper holes, turning them down tightly. Using two centering pins in opposite holes will facilitate this operation by holding the component parts in the proper position until the first two screws are in place.
- STEP-5.** Test intermediate pressure at this point by placing regulator on air source and inserting the model PSGA adaptor, mounted on the PSG pressure setting gauge, into the orifice normally occupied by the second stage body. Holding gauge firmly down, and with bleeder valve open, open cylinder valve. Close bleeder. Pressure at low pressure (300 p.s.i.) should be 140 p.s.i.; at high pressure (2475 p.s.i.) should be 115 p.s.i. To increase intermediate pressure, turn adjusting screw (30) clockwise; to decrease intermediate pressure, turn adjusting screw (30) counter clockwise. When proper pressure is attained, turn off cylinder valve, and open bleeder valve. DO NOT let go of the test gauge until all air is released from gauge.
- STEP-6.** Replace second stage body (35), after lubricating "O" ring (33). Be sure valve screws (38) are tight.
- STEP-7.** Replace valve seat (34) in valve seat carrier (36) — replace valve seat carrier in 2nd stage body.
- STEP-8.** Replace bushing in 2nd stage body using wrench to make snug.
- STEP-9.** Replace spring clip, primary lever, and secondary lever, and primary lever spring. Arch of spring clip should be under levers.
- STEP-10.** Replace exhalation valve (3), folding about one inch of it back over the top box sleeve.
- STEP-11.** Replace intake diaphragm (5). To be sure diaphragm is replaced correctly, lay on a clean, flat surface so that the outer perimeter of diaphragm is flat, and the metal wear plate is up and off the surface. This is the proper position for mounting diaphragm in bottom box (32).
- STEP-12.** Replace box screws (1).
- STEP-13.** Replace six bolt nuts (2). They should be made snug, but not tight.
- STEP-14.** Replace exhaust valves (39) in non-return housings (40). Again, moistening or liquid soap on shaft of exhaust valves will facilitate mounting.
- STEP-15.** Replace housings in mouthpiece (41), mounting them so that both will face left. (Air flow will be from right to left on assembled unit).
- STEP-16.** Replace hoses (44) on mouthpiece (41), using large hose clamps (43) (long-nosed pliers can be used for this).
- STEP-17.** Replace hose assembly (45) on regulator. At this point check your work by breathing thru unit. If you cannot inhale or exhale, reverse hoses at regulator. If you can inhale but not exhale, left side valve is incorrectly mounted. If you can exhale but not inhale, right side valve is incorrectly mounted. If unit breaths correctly, replace small hose clamps (42). (Again, long-nosed pliers can be used for this.)



# TROUBLE SHOOTING: R4, C3 & C3N Regulators

**Note:** Before checking any regulator, be sure cylinder valve is working, and there is air in the cylinder.

## PROBLEM: DIFFICULT INHALATION; NO INHALATION:

**Reason:**  
Non-return valve (R4 28 2) on intake side of mouth-piece is sticking.

**Solution:** Free non return valves.  
See: Disassembly of R4 steps 1 & 2.  
Also: Assembly of R4 steps 14 & 15.

**Reason:**  
Primary lever (9) too low.

**Solution:** Adjust primary lever to proper height.  
**For R4 —**  
See: Disassembly of R4 steps 5 & 6.  
Assembly of R4 steps 11 & 12.

**Reason:**  
Non-return valve (R4 28 2) on intake side of mouth-piece is deteriorated. This valve should be soft and pliable.

**Solution:** Replace non return valves.  
See: Disassembly of R4 steps 1 thru 3.  
Also: Assembly of R4 steps 13 thru 15.

**For C3 —**  
See: Disassembly Steps 5 & 6.  
Assembly Steps 11, 12 & 13.

**Reason:**  
Filter (FS 11 1) restricted because of corrosion and/or particulate blockage. This condition usually will occur only when cylinder is less than half full.

**Solution:** Replace filter.  
See: Disassembly of R4 step 14.  
Also: Assembly of R4 step 2.

**Reason:**  
Intake diaphragm deteriorated. This piece must be soft and pliable.

**Solution:** Replace intake diaphragm.  
**For R4 —**  
See: Disassembly of R4 steps 5 & 6.  
Assembly of R4 steps 11 & 12.

**Reason:**  
Intermediate pressure too low.

**Solution:** Reset to proper pressure.  
**For R4 —**  
See: Disassembly of R4 steps 5, 6, 8 and 10.  
Also: Assembly of R4 steps 5, 6, 9, 11 and 12.

**Reason:**  
Exhaust diaphragm (R4 5 3) deteriorated on R4 regulator only.

**For C3 —**  
See: Disassembly Steps 5 & 6.  
Assembly Steps 11, 12 & 13.

**Solution:** Replace exhaust diaphragm.  
See: Disassembly of R4 steps 5 & 6.  
Assembly of R4 steps 11 & 12.

**Reason:**  
Secondary lever (10) too low.

**Solution:** Adjust ears of secondary lever by bending up. There should be 1/32" between lever and intake diaphragm when unit is under pressure.  
**For R4 —**  
See: Disassembly of R4 steps 5 & 6.  
Also: Assembly of R4 steps 11 & 12.  
**For C3 —**  
See: Disassembly Steps 5 & 6.  
Assembly Steps 11, 12 & 13.

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## PROBLEM: DIFFICULT EXHALATION; NO EXHALATION:

- |   |  |  |  |
|---|--|--|--|
| <p><b>Reason:</b><br/>Exhaust valve in regulator is sticking. R4 — item 4; C3 — item 3.</p>     | <p><b>Solution:</b> Free valve.<br/><b>For R4 —</b><br/>See: Disassembly of R4 steps 5 &amp; 6.<br/>Assembly of R4 steps 11 &amp; 12.<br/><b>For C3 —</b><br/>See: Disassembly Steps 5 &amp; 6.<br/>Assembly Steps 11, 12 &amp; 13.</p>                          | <p><b>Reason:</b><br/>Non return valve on exhaust side of mouth-piece is sticking.</p>     | <p><b>Solution:</b> Free non return valves.<br/>See: Disassembly of R4 steps 1 &amp; 2.<br/>Assembly of R4 steps 14 &amp; 15.</p>    |
| <p><b>Reason:</b><br/>Exhaust valve in regulator is deteriorated. R4 — item 4; C3 — item 3.</p> | <p><b>Solution:</b> Replace exhaust valve.<br/><b>For R4 —</b><br/>See: Disassembly of R4 steps 5, 6 &amp; 7.<br/>Assembly of R4 steps 10, 11 &amp; 12.<br/><b>For C3 —</b><br/>See: Disassembly Steps 5, 6 &amp; 7.<br/>Assembly Steps 10, 11, 12 &amp; 13.</p> | <p><b>Reason:</b><br/>Non return valve on exhaust side of mouth-piece is deteriorated.</p> | <p><b>Solution:</b> Replace non return valves.<br/>See: Disassembly of R4 steps 1 &amp; 2.<br/>Assembly of R4 steps 14 &amp; 15.</p> |

## PROBLEM: REGULATOR FREE-FLOWS (AIR EXITS CONTINUOUSLY THROUGH MOUTHPIECE.)

- |  |  |  |
|--|--|--|
| <p><b>Reason:</b><br/>High pressure seat worn or damaged. R4 — item 26; C3 — item 24.</p>  | <p><b>Solution:</b> Replace high pressure seat.<br/>See: Disassembly of R4 steps 14 &amp; 15.<br/>Assembly of R4 steps 1 &amp; 2.</p>  | <p><b>For C3 —</b><br/>See: Disassembly of C3.<br/>Assembly of C3.</p>   |
| <p><b>Reason:</b><br/>Low pressure seat worn or damaged. R4 — item 36; C3 — item 34. This seat is found in the valve seat carrier. R4 — item 38; C3 — item 36.</p>   | <p><b>Solution:</b> Replace low pressure seat.<br/><b>For R4 —</b><br/>See: Disassembly of R4 steps 5, 6, 8 and 9.<br/>Assembly of R4 steps 7, 8, 9, 11 &amp; 12.<br/><b>For C3 —</b><br/>See: Disassembly Steps 5, 6, 8 &amp; 9.<br/>Assembly Steps 7, 8, 9, 11, 12 &amp; 13.</p> | <p><b>Reason:</b><br/>Intake diaphragm: R4 — item 7<br/>C3 — item 5<br/>and or exhaust diaphragm is deteriorated, R4 — item 5<br/>C3 — item .<br/>These pieces must be soft and pliable.</p>   |
| <p><b>Reason:</b><br/>Corrosion inside regulator, preventing parts from moving easily. In severe cases.<br/>Push rod:<br/>R4 — item 17<br/>C3 — item 15<br/>High pressure seat:<br/>R4 — item 26<br/>C3 — item 24<br/>Valve seat carrier:<br/>R4 — item 38<br/>C3 — item 36<br/>are frozen in open position.</p> | <p><b>Solution:</b> Unit must be completely disassembled, all parts must be cleaned in a cleaning solution. Damaged parts must be replaced.<br/><b>For R4 —</b><br/>See: Disassembly of R4.<br/>Assembly of R4.</p>  | <p><b>For R4 —</b><br/>See: Disassembly of R4 steps 5, 6, 8 &amp; 10.<br/>Assembly of R4 steps 5, 6, 9, 11 &amp; 12.<br/><b>For C3 —</b><br/>See: Disassembly Steps 5, 6, 8 &amp; 10.<br/>Assembly Steps 5, 6, 9, 11, 12 &amp; 13.</p> |

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## (CONT) REGULATOR FREE FLOWS (AIR EXITS CONTINUOUSLY THROUGH MOUTHPIECE)

<p><b>Reason:</b> Primary and/or secondary lever too high.</p>	<p><b>Solution:</b> Adjust lever height. <b>For R4 —</b> See: Disassembly of R4 steps 5 &amp; 6. Assembly of R4 steps 11 &amp; 12. <b>For C3 —</b> See: Disassembly Steps 5 &amp; 6. Assembly Steps 11, 12 &amp; 13.</p>	<p><b>Reason:</b> Spring retainer screws (R4 13 2) and/or valve screws (R4 13 4) are loose.</p>	<p><b>Solution:</b> Tighten spring retainer and valve screws. <b>For R4 —</b> See: Disassembly of R4 steps 5, 6 &amp; 8. Assembly of R4 steps 9, 11 &amp; 12. <b>For C3 —</b> See: Disassembly Steps 5, 6 &amp; 8. Assembly Steps 9, 11, 12 &amp; 13.</p>
<p><b>Reason:</b> Worn and/or damaged "O" ring located on stud of second stage block. R4 — item 35 C3 — item 33</p>	<p><b>Solution:</b> Replace "O" ring. <b>For R4 —</b> See: Disassembly of R4 steps 5, 6, 8 &amp; 10. Assembly of R4 steps 6, 9, 11 &amp; 12. <b>For C3 —</b> See: Disassembly Steps 5, 6, 8 &amp; 10. Assembly Steps 6, 9, 11, 12 &amp; 13.</p>		

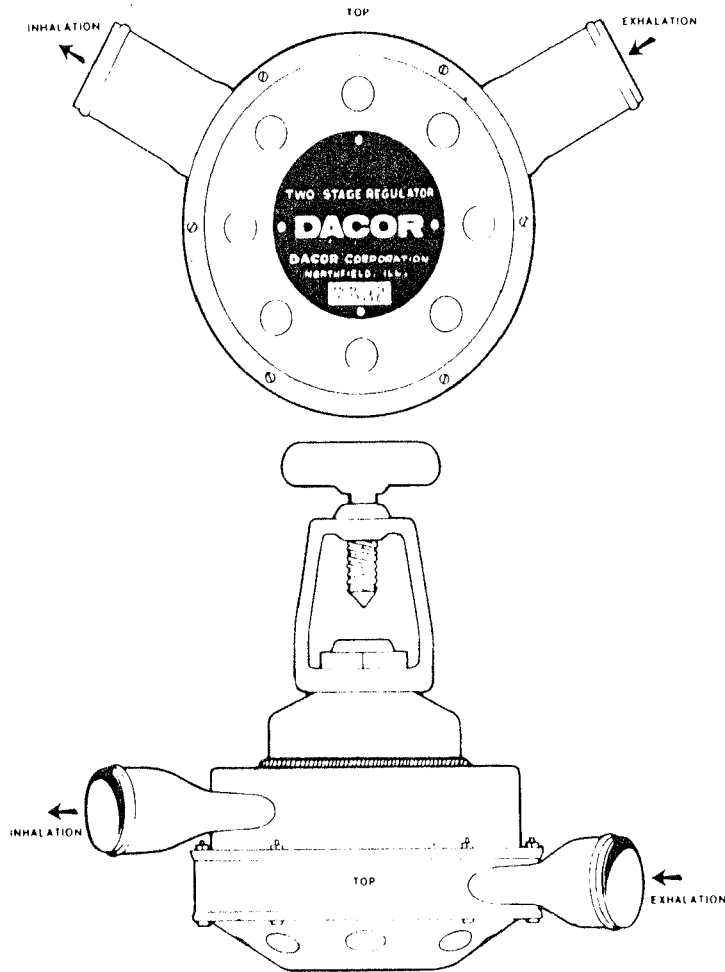
## PROBLEM: AIR LEAK APPARENT AROUND EDGES OF HIGH PRESSURE DIAPHRAGM, LOCATED BETWEEN MAIN BODY (R4 3 2) AND BOTTOM BOX (R4 10 2).

<p><b>Reason:</b> Spring retainer screws and/or valve screws (R4 13 4) are loose. R4 — items 11, 39; C3 — items 10, 38.</p>	<p><b>Solution:</b> Tighten spring retainer and valve screws. <b>For R4 —</b> See: Disassembly of R4 steps 5, 6 &amp; 8. Assembly of R4 steps 9, 11 &amp; 12.</p>	<p><b>For C3 —</b> See: Disassembly Steps 5, 6 &amp; 8. Assembly Steps 9, 11, 12 &amp; 13.</p>
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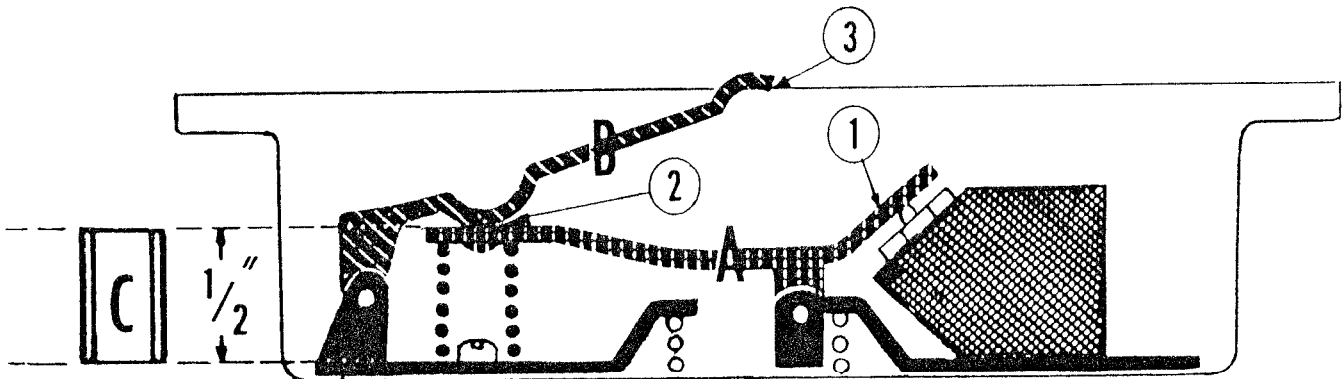
## PROBLEM: REGULATOR LEAKS WATER INTO MOUTHPIECE

<p><b>Reason:</b> Exhaust valve has deteriorated. R4 — item 4 C3 — item 3</p>	<p><b>Solution:</b> Replace exhaust valve. <b>For R4 —</b> See: Disassembly of R4 steps 5, 6 &amp; 7. Assembly of R4 steps 10, 11 &amp; 12. <b>For C3 —</b> See: Disassembly Steps 5, 6 &amp; 7. Assembly Steps 10, 11, 12 &amp; 13.</p>	<p><b>Reason:</b> Hose clamps loose.</p>	<p><b>Solution:</b> Tighten hose clamps. See: Assembly of R4 steps 15 &amp; 16.</p>
<p><b>Reason:</b> Non return valves, located in mouthpiece, have deteriorated. R4 — item 41 C3 — item 39</p>	<p><b>Solution:</b> Replace non return valves. See: Disassembly of R4 steps 1, 2 &amp; 3. Assembly of R4 steps 13, 14 &amp; 15.</p>	<p><b>Reason:</b> Intake diaphragm and/or exhaust diaphragm deteriorated and/or damaged. (C3 Series has exhaust valve only.)</p>	<p><b>Solution:</b> Replace intake and/or exhaust diaphragm. <b>For R4 —</b> See: Disassembly of R4 steps 5 &amp; 6. Assembly of R4 steps 11 &amp; 12. <b>For C3 —</b> See: Disassembly Steps 5, 6 &amp; 7. Assembly Steps 10, 11, 12 &amp; 13.</p>
<p><b>Reason:</b> One or both hoses damaged. R4 — item 46 C3 — item 44</p>	<p><b>Solution:</b> Replace one or both hoses. See: Disassembly of R4 steps 1 &amp; 4. Assembly of R4 steps 15 &amp; 16.</p>		

## HOSE POSITION



## LEVER HEIGHT ADJUSTMENT



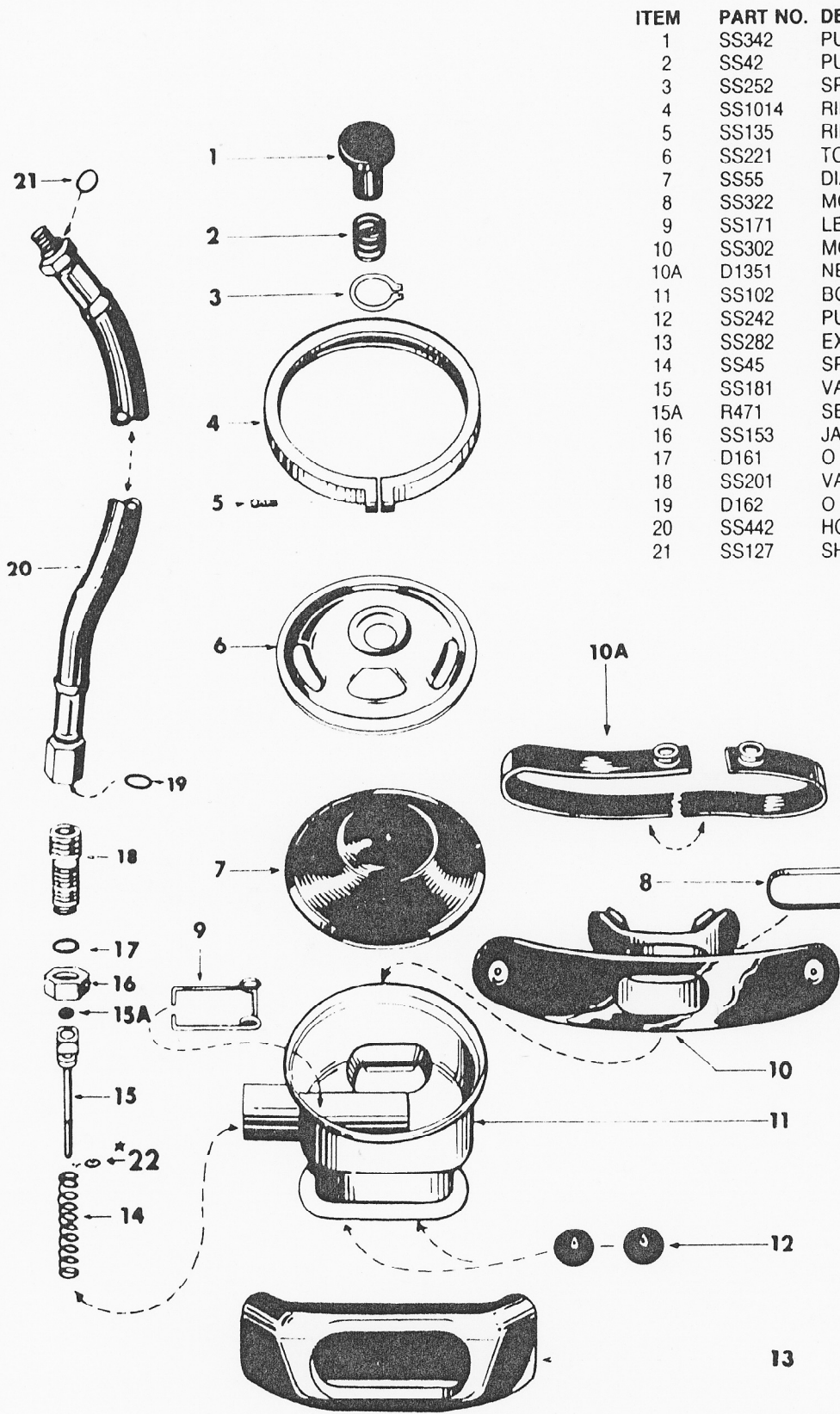
### To Adjust Primary Lever (A):

- Bend ear at (1) up. This will raise (2) or
- Bend ear at (1) down. This will lower (2)
- A D1101 High Pressure Seat makes an excellent height gauge (C), the length being one-half inch (measured from floor to top side of Lever "A").

### To Adjust Secondary Lever (B):

- Raise or lower ears at (3) by bending.
- Bend ears up or down so that the tips of ears are slightly above level of cover as shown at (3) in diagram. (As seen at eye level). NOTE: This adjustment must be done Before air is turned on.

# OLYMPIC Regulators 100, 200, 400, and 800, (SECOND STAGE)



ITEM	PART NO.	DESCRIPTION
1	SS342	PURGE BUTTON
2	SS42	PURGE BUTTON SPRING
3	SS252	SPRING CLIP
4	SS1014	RING
5	SS135	RING SCREW
6	SS221	TOP COVER
7	SS55	DIAPHRAGM
8	SS322	MOUTHPIECE CLAMP
9	SS171	LEVER SPRING
10	SS302	MOUTHPIECE
10A	D1351	NECK STRAP
11	SS102	BOTTOM BOX ASSEMBLY
12	SS242	PURGE VALVE
13	SS282	EXHAUST MANIFOLD
14	SS45	SPRING
15	SS181	VALVE SEAT CARRIER
15A	R471	SEAT
16	SS153	JAM NUT
17	D161	O RING
18	SS201	VALVE SEAT
19	D162	O RING
20	SS442	HOSE
21	SS127	SHIM WASHER*

\*Used on some second stages to attain proper load on valve seat carrier spring.

# Service Procedure: OLYMPIC 100, 200, 400 & 800 Regulators, (SECOND STAGE)

## To Disassemble:

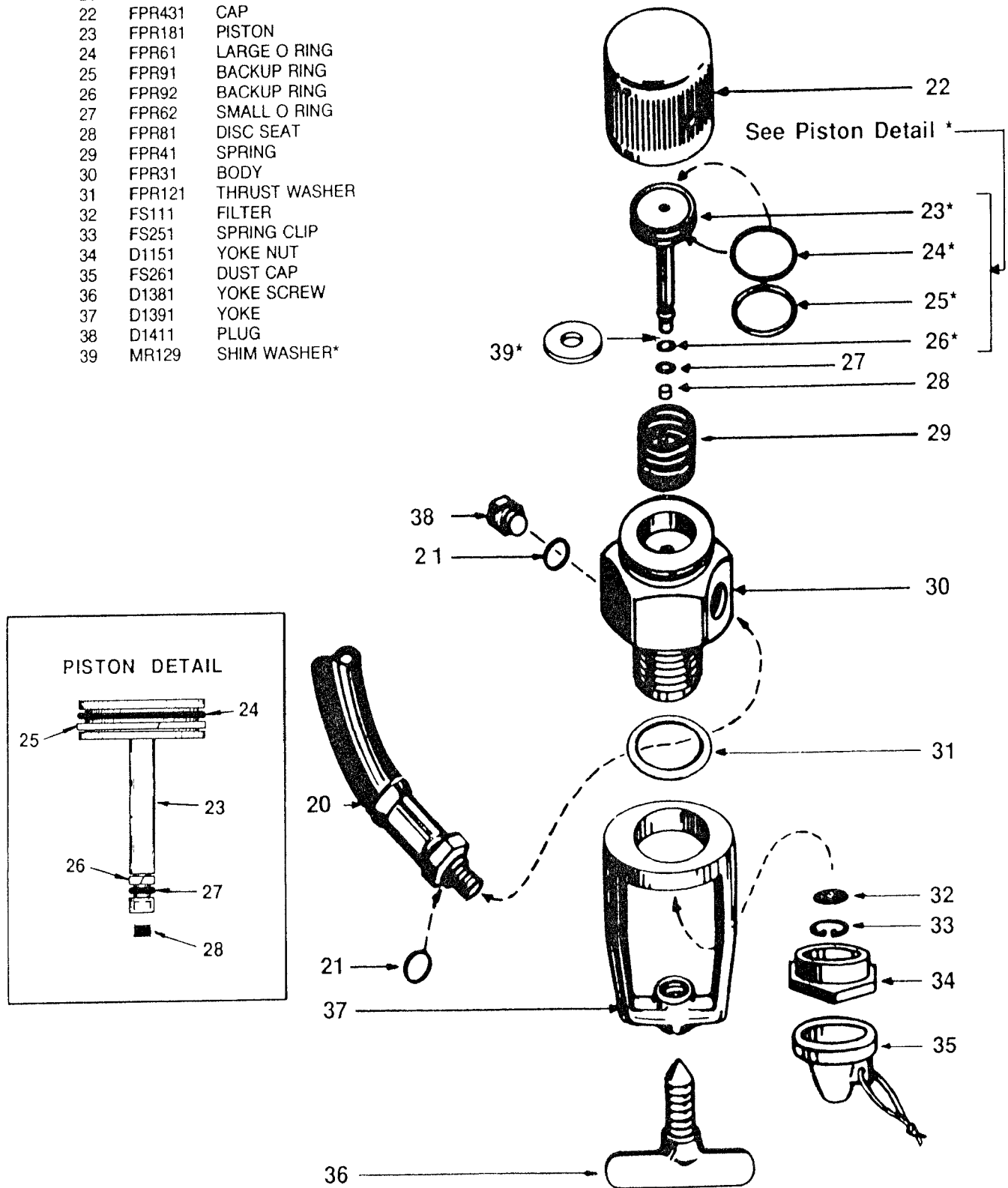
- STEP-1.** Remove hose (20), using wrench to loosen from valve seat (18) "O" ring (19) is now accessible.
- STEP-2.** Remove exhaust manifold (13) by pulling free from one end of manifold sleeve, then working loose from bottom box. Exhaust valves are now accessible.
- STEP-3.** Remove mouthpiece (10) by removing mouthpiece clamp (8) and gently pulling free from mouthpiece sleeve. (Do not remove unless you have replacement clamp because this piece has a one-time use only, and will be destroyed upon removal.)
- STEP-4.** Remove ring screw (5) and ring (4). Remove top cover (6) and diaphragm (7). Purge button (1) and purge button spring (2) may be removed by release of purge button spring clip (3).
- STEP-5.** Remove lever spring (9) by gently spreading ends of spring until entire lever is free of machined bushing in bottom box (11). To lessen the possibility of the spring lever binding in the machined part, lower the height of the spring by turning the valve seat in (clockwise) BEFORE REMOVING the lever spring.
- STEP-6.** Remove valve seat (18) by loosening jam nut (16) and turning valve seat counter clockwise until it is free of bottom box. Care must be taken not to damage the polished cone during this stage, and at any time the valve seat is not mounted in the bottom box assembly. "O" ring (17) is now accessible.
- STEP-7.** Remove jam nut (16) from valve seat.
- STEP-8.** Remove valve seat carrier (15) and spring (14) by tipping bottom box assembly down until both pieces slide out. Seat (15A) can be removed by prying out with thumbnail, small knife blade, etc.
- STEP-9.** Remove purge valve (12) by gently pulling free from bottom box assembly.

## To Assemble:

- STEP-1.** Install purge valves (12) by pulling stem portion of valve through opening from the outside of bottom can assembly (11), to the inside. NOTE: Valves can be replaced without opening 2nd stage assembly, by pushing stem portion of valve through the port from the outside. Be sure shaft is firmly seated in port.
- STEP-2.** Install seat (15A) in valve seat carrier (15).
- STEP-3.** Install valve seat carrier spring (14) on shaft of valve seat carrier; replace both pieces in bushing of bottom box assembly (11). Square end of shaft must be inserted firmly into square channel at end of chamber. A light coating of silicone grease should be applied to shoulder and square end of shaft before installing.
- STEP-4.** Install jam nut (16) on valve seat.
- STEP-5.** Install valve seat (18), after lightly greasing and installing "O" ring (17). Using care not to damage polished cone, turn valve seat in until about 5/8ths" of the square end of the valve seat carrier is visible on the inside of the bottom box assembly. Turn jam nut (16) finger tight against bottom box assembly.
- STEP-6.** Install lever spring (9). Coils of spring must be up, and caution must be exercised so as not to over-spread the arms of the spring during installation. Back off valve seat by turning counter-clockwise until coils of lever spring are approximately 3/16ths" above lip of bottom box assembly.
- STEP-7.** Install diaphragm (7) with metal plate down (toward bottom box assembly). Be sure outer rim of diaphragm is seated in groove of bottom box assembly.
- STEP-8.** Install top cover (6). Model number (100, 200, etc.) on top cover should be mounted toward the bottom, or toward the exhaust manifold (13).
- STEP-9.** Install ring (4) with ring screw (5) under model number.
- STEP-10.** Install exhaust manifold by engaging one end in lip of exhaust tube, then stretching manifold over balance of exhaust tube lip. Lubricating with soap water will facilitate proper positioning. Do not use grease as lubricant, because the residual properties could cause loss of the manifold.
- STEP-11.** Install mouthpiece (10) on mouthpiece tube. A new mouthpiece clamp (8) must be used, and can be tightened with pliers. Any excess material must be cut off.
- STEP-12.** Install hose (20), after lightly lubricating "O" ring (19) with a silicone grease.
- STEP-13.** To adjust second stage lever spring height and attain proper air flow on demand, plus proper purge button action, proceed as follows:
- Place regulator on air source, such as a diving cylinder.
  - Open cylinder valve.
  - Be sure the intermediate pressure is correct for the regulator being adjusted.
  - Hose nut and jam nut must be loosened approx. one turn.
  - Grasp hose in left hand, as near to the second stage of the regulator as is comfortable. Grasp second stage in right hand.
  - Rotate second stage toward you (counter-clockwise) until heavy free-flow is attained.
  - Rotate second stage away from you (clockwise) until free-flow stops. The closer to the cut-off point you stop this rotation, the better the performance of the regulator will be.
  - Tighten jam nut.
  - Tighten hose nut.
- Test by (A) breathing thru unit. Air must come easily and freely, but should have no free-flow. Test by (B) depressing purge button. A heavy flow of air should be attained. If unit fails A and/or B, loosen the hose and the jam nut; readjust unit.

# OLYMPIC 100 Regulator, (FIRST STAGE)

ITEM	PART NO.	DESCRIPTION
20	SS442	HOSE
21	D161	O RING
22	FPR431	CAP
23	FPR181	PISTON
24	FPR61	LARGE O RING
25	FPR91	BACKUP RING
26	FPR92	BACKUP RING
27	FPR62	SMALL O RING
28	FPR81	DISC SEAT
29	FPR41	SPRING
30	FPR31	BODY
31	FPR121	THRUST WASHER
32	FS111	FILTER
33	FS251	SPRING CLIP
34	D1151	YOKE NUT
35	FS261	DUST CAP
36	D1381	YOKE SCREW
37	D1391	YOKE
38	D1411	PLUG
39	MR129	SHIM WASHER*



\*Used on some pistons to increase intermediate pressure.

# Service Procedure: OLYMPIC 100 Regulator, (FIRST STAGE)

## To Disassemble:

- STEP-1.** Remove hose (20) from main body (30), using 9/16" wrench. "O" ring (21) will now be accessible.
- STEP-2.** Remove cap (22) from main body by turning counter clockwise.
- STEP-3.** Remove piston (23) from cap by pulling gently on shaft of piston. "O" rings (24) and (27) and back-up rings (25) and (26) will now be accessible for lubricating and/or replacement, and disc seat (28) will be accessible for inspection and/or replacement. Cone seat in main body will also be accessible for inspection and/or polishing.
- STEP-4.** Remove disc seat from end of piston shaft by inserting wire through piston shaft and pushing disc seat free from shaft. A paper clip straightened out, makes an excellent tool for this operation.
- STEP-5.** Remove spring (29) from main body.
- STEP-6.** Use circlip pliers to remove spring clip (33) from main body.
- STEP-7.** Remove filter (32) from main body.
- STEP-8.** To remove yoke (37) and thrust washer (31), use wrench to loosen yoke nut (34) from main body, turning nut counter clockwise.
- STEP-9.** Remove plug (38) or TAG underwater pressure gauge by turning counter-clockwise with wrench. "O" ring (21) will now be accessible.

## To Assemble:

- STEP-1.** Install plug (38), (or Tag Underwater pressure gauge) after lightly lubricating "O" ring (21) with silicone grease. **Remember high pressure port has small orifice, low pressure port has large orifice.**
- STEP-2.** Install spring (29) in main body (30).
- STEP-3.** Install new disc seat (28) in piston shaft end (23), by placing disc seat on clean flat surface, face down, beveled side up. Push piston shaft down on disc seat, until disc seat is firmly in place.
- STEP-4.** Mount "O" rings (24, 27) and back-up rings (25, 26) on piston after lubricating them lightly with silicone grease. "O" rings must be mounted on the pressure side of the "O" ring groove, the back-up rings on the ambient side. (See detail view for correct placement).
- STEP-5.** Install piston assembly in cap (22).
- STEP-6.** Screw cap onto main body (30), making it hand tight.
- STEP-7.** install new filter (32) (rough side out) and spring clip (33), using circlip pliers. Be sure spring clip (sharp edge out) is seated in groove situated inside main body.
- STEP-8.** Install thrust washer (31), yoke (37), and yoke nut (34). Use 1" open end wrench to tighten yoke nut to main body.
- STEP-9.** Install hose (20), after lightly lubricating "O" ring (21) with silicone grease.
- STEP-10.** To check intermediate pressure on the 100, mount unit on air source. (A diving cylinder is fine). Install an Olympic pressure setting gauge (Model GPS) between hose and valve seat which is located on the second stage assembly. If air source is low, (300 p.s.i.) gauge should read 120 p.s.i. (approx.) if air source is high, (2250 p.s.i.) gauge should read 140 p.s.i. The intermediate pressure on the 100 is controlled by the piston spring (29), and all units leaving DACOR are correct. Service personnel should have no problem in this area. However, in the event that the unforeseen should occur, intermediate pressure can be increased by using a stainless steel shim washer (39) on shaft of piston. If a unit is over correct pressure, a new spring must be installed.

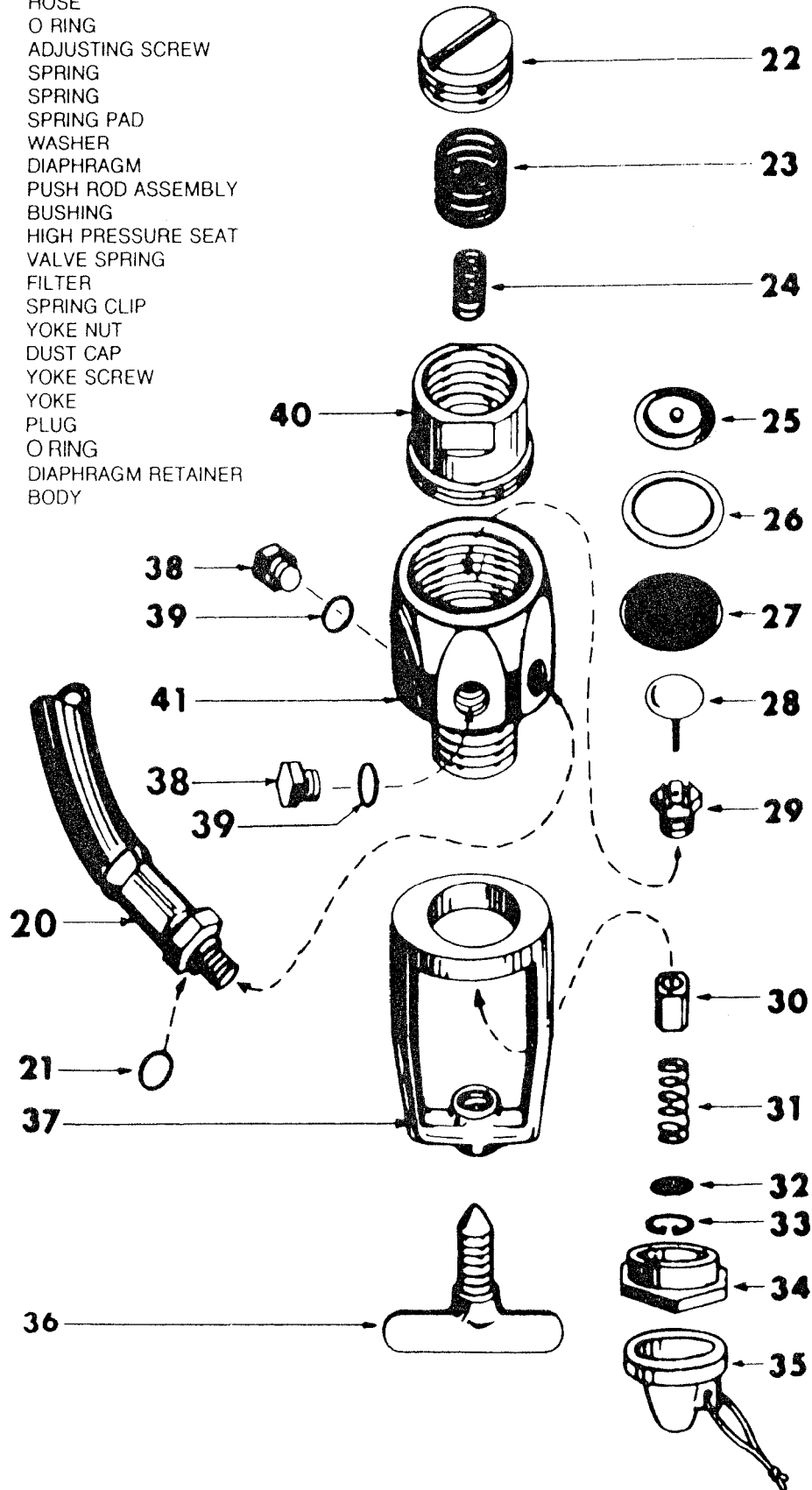


# OLYMPIC 200 Regulator, (FIRST STAGE)

ITEM	PART NO.	DESCRIPTION
20	SS442	HOSE
21	D161	O RING
22	FS201	ADJUSTING SCREW
23	★★FS41	SPRING
24	★★FS42	SPRING
25	FS161	SPRING PAD
26	FS121	WASHER
27	FS51	DIAPHRAGM
28	FS108	PUSH ROD ASSEMBLY
29	FS193	BUSHING
30	D1101	HIGH PRESSURE SEAT
31	D141	VALVE SPRING
32	FS111	FILTER
33	FS251	SPRING CLIP
34	D1151	YOKE NUT
35	FS261	DUST CAP
36	D1381	YOKE SCREW
37	D1391	YOKE
38	★D1411	PLUG
39	D161	O RING
40	FS421	DIAPHRAGM RETAINER
41	FS31	BODY

★★ Replaced by  
0040-53  
FS44

★ = Plug  
0410-02  
FS-41-2



# Service Procedure: OLYMPIC 200 Regulator, (FIRST STAGE)

## To Disassemble:

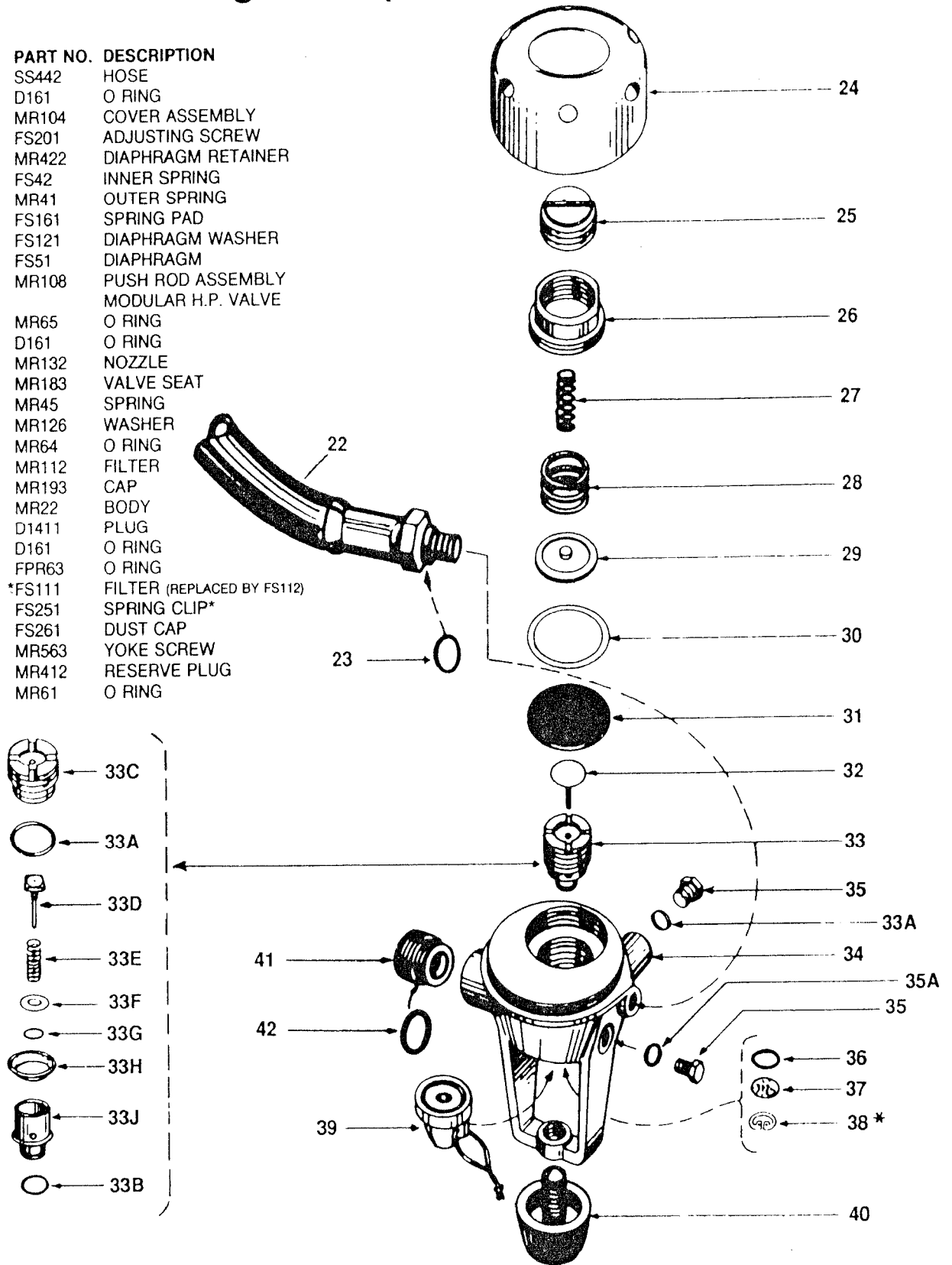
- STEP-1.** Remove hose (20) from main body (41), using 9/16th's wrench. "O" ring (21) will now be accessible.
- STEP-2.** Remove plugs (38) and/or TAG underwater pressure gauge from main body, using wrench. "O" ring (21) will now be accessible. NOTE: Later model 200 regulators have one high pressure port and two low pressure ports, for use as an octopus unit. Older models have one high pressure port, and one low pressure port.
- STEP-3.** Remove adjusting screw (22) from diaphragm retainer (39).
- STEP-4.** Remove springs (23) and (24) from diaphragm retainer (39).
- STEP-5.** Remove diaphragm retainer (39) from main body (40).
- STEP-6.** Remove spring pad (25), washer (26) and diaphragm (27) from main body.
- STEP-7.** Remove push rod assembly (28) and bushing (29) from main body. Use a 1/2" socket to remove bushing.
- STEP-8.** Remove spring clip (33) from main body, using circlip pliers. Remove filter (32). CAUTION: There is a slight spring tension under the filter, so it is suggested that the spring clip be removed slowly to prevent part loss.
- STEP-9.** Remove valve spring (31), and high pressure seat (30) from main body.
- STEP-10.** Remove yoke (37), and yoke nut (34) with wrench.
- STEP-11.** Remove yoke screw (36) from yoke and thoroughly clean.


## To Assemble:

- STEP-1.** Install high pressure seat (30) and valve spring (31).
- STEP-2.** Install new filter (32) (rough side out) and spring clip (sharp edge out), using circlip pliers. Be sure spring clip is firmly seated in groove situated inside main body.
- STEP-3.** Install yoke (37) and yoke nut (34). Use 1" open end wrench to tighten yoke nut to main body.
- STEP-4.** Install bushing (29) into main body. (Tighten snugly with 1/2" nut driver. Do not over tighten).
- STEP-5.** Install push rod assembly (28) in center hole of bushing (29).
- STEP-6.** Install diaphragm (27) in main body.
- STEP-7.** Install washer (26) in main body, after lubricating lightly with silicone grease. The side with the rounded edge should be against the diaphragm.
- STEP-8.** Install spring pad (25) on diaphragm.
- STEP-9.** Install diaphragm retainer (39) on main body. Tighten snugly with wrench. Do not over tighten, or you will damage diaphragm.
- STEP-10.** Install two springs (23, 24).
- STEP-11.** Install adjusting screw (22).
- STEP-12.** Install plugs (38) (and/or Tag Underwater Pressure Gauge) after lightly lubricating "O" ring (21) with silicone grease. Remember the high pressure port has small orifice, low pressure ports have large orifice.
- STEP-13.** Install hose (20) on main body, after lightly lubricating "O" ring (21) with silicone grease.
- STEP-14.** Install yoke screw (36) into yoke (37).
- STEP-15.** To adjust intermediate pressure on the 200, mount unit on air source. (A diving cylinder is fine). Install an OLYMPIC pressure setting gauge (Model GPS) between hose and valve seat which is located on the second stage assembly. Open tank valve. If air source is low, (300 p.s.i.) gauge should read 140 p.s.i. If air source is high pressure (2250 p.s.i.), gauge should read 120 p.s.i. (approx.) Adjustment is made by turning adjusting screw in (clockwise) to increase intermediate pressure, and by turning adjusting screw out (counter-clockwise) to reduce intermediate pressure.

# OLYMPIC 400 Regulator, (FIRST STAGE)

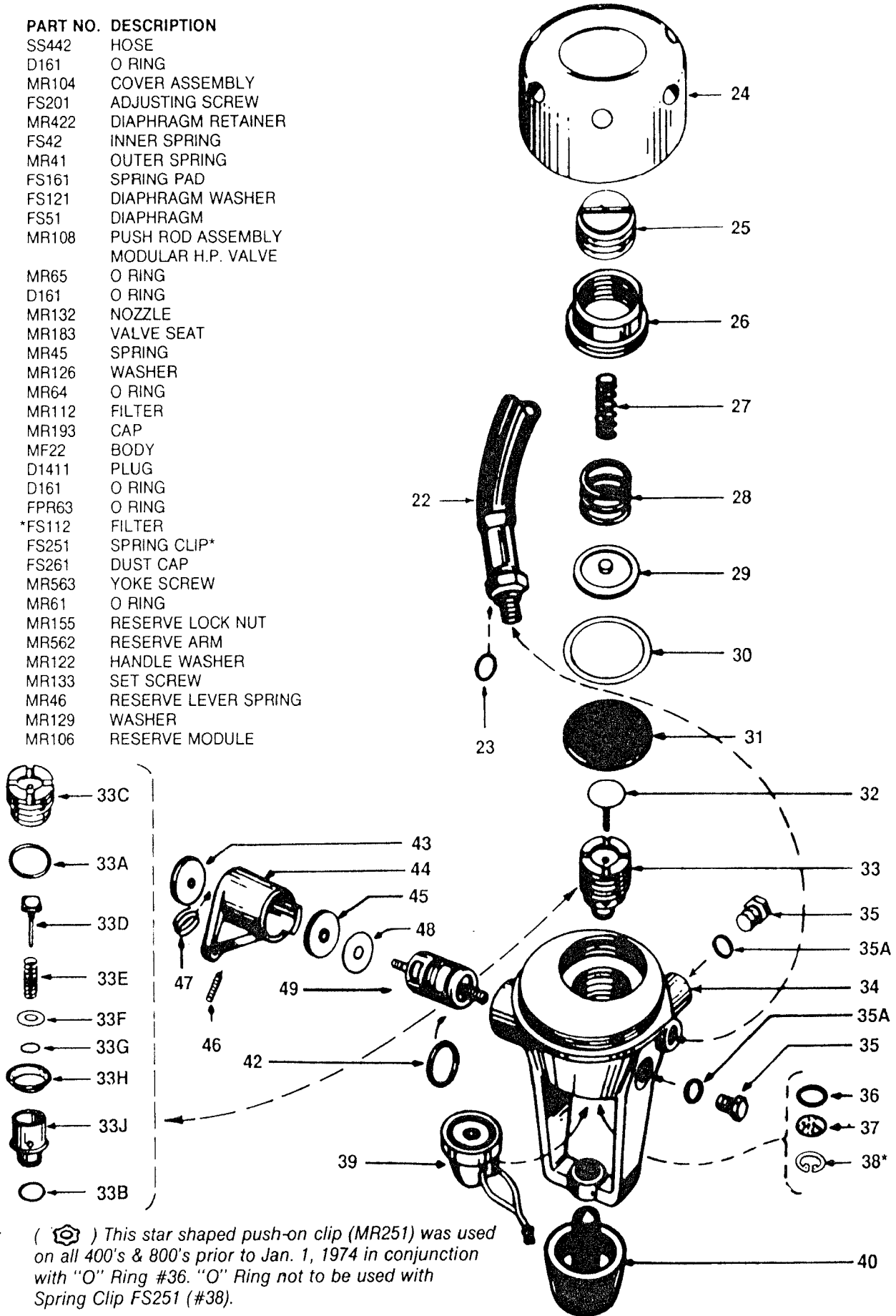
ITEM	PART NO.	DESCRIPTION
22	SS442	HOSE
23	D161	O RING
24	MR104	COVER ASSEMBLY
25	FS201	ADJUSTING SCREW
26	MR422	DIAPHRAGM RETAINER
27	FS42	INNER SPRING
28	MR41	OUTER SPRING
29	FS161	SPRING PAD
30	FS121	DIAPHRAGM WASHER
31	FS51	DIAPHRAGM
32	MR108	PUSH ROD ASSEMBLY
33		MODULAR H.P. VALVE
33A	MR65	O RING
33B	D161	O RING
33C	MR132	NOZZLE
33D	MR183	VALVE SEAT
33E	MR45	SPRING
33F	MR126	WASHER
33G	MR64	O RING
33H	MR112	FILTER
33J	MR193	CAP
34	MR22	BODY
35	D1411	PLUG
35A	D161	O RING
36	FPR63	O RING
37	*FS111	FILTER (REPLACED BY FS112)
38	FS251	SPRING CLIP*
39	FS261	DUST CAP
40	MR563	YOKE SCREW
41	MR412	RESERVE PLUG
42	MR61	O RING




\*Note: (  ) This star shaped push-on clip (MR251) was used on all 400's & 800's prior to Jan. 1, 1974 in conjunction with "O" Ring #36. "O" Ring not to be used with Spring Clip FS251.

# OLYMPIC 800 Regulator, (FIRST STAGE)

ITEM	PART NO.	DESCRIPTION
22	SS442	HOSE
23	D161	O RING
24	MR104	COVER ASSEMBLY
25	FS201	ADJUSTING SCREW
26	MR422	DIAPHRAGM RETAINER
27	FS42	INNER SPRING
28	MR41	OUTER SPRING
29	FS161	SPRING PAD
30	FS121	DIAPHRAGM WASHER
31	FS51	DIAPHRAGM
32	MR108	PUSH ROD ASSEMBLY
33		MODULAR H.P. VALVE
33A	MR65	O RING
33B	D161	O RING
33C	MR132	NOZZLE
33D	MR183	VALVE SEAT
33E	MR45	SPRING
33F	MR126	WASHER
33G	MR64	O RING
33H	MR112	FILTER
33J	MR193	CAP
34	MF22	BODY
35	D1411	PLUG
35A	D161	O RING
36	FPR63	O RING
37	*FS112	FILTER
38	FS251	SPRING CLIP*
39	FS261	DUST CAP
40	MR563	YOKE SCREW
42	MR61	O RING
43	MR155	RESERVE LOCK NUT
44	MR562	RESERVE ARM
45	MR122	HANDLE WASHER
46	MR133	SET SCREW
47	MR46	RESERVE LEVER SPRING
48	MR129	WASHER
49	MR106	RESERVE MODULE



\*Note: (  ) This star shaped push-on clip (MR251) was used on all 400's & 800's prior to Jan. 1, 1974 in conjunction with "O" Ring #36. "O" Ring not to be used with Spring Clip FS251 (#38).

# Service Procedure: OLYMPIC 400 & 800 Regulators, (FIRST STAGE)

## To Disassemble:

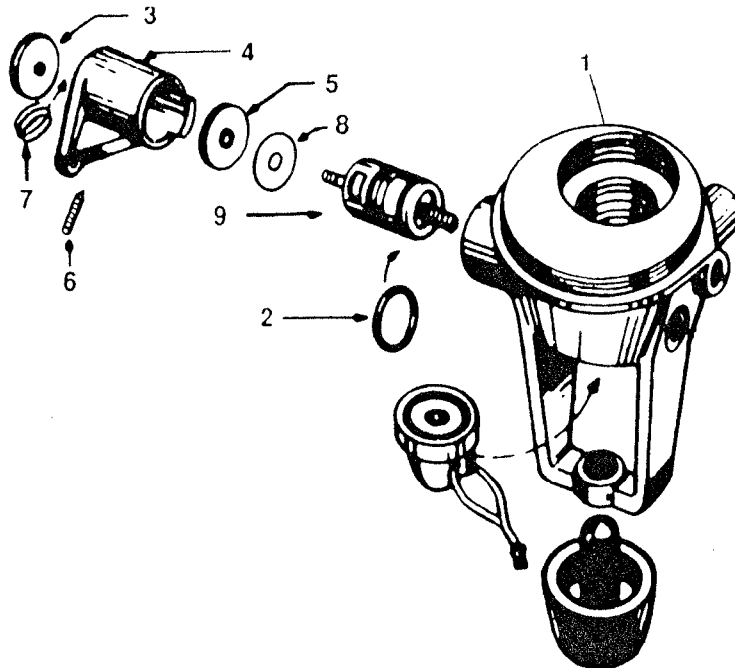
- STEP-1.** Remove hose (22) from body (34) using 9/16" wrench. "O" ring (23) is now accessible.
- STEP-2.** Remove cover assembly (24) from main body by turning counter-clockwise.
- STEP-3.** Remove adjusting screw (25) from diaphragm retainer (26).
- STEP-4.** Remove springs (27) and (28) from diaphragm retainer (26).
- STEP-5.** Remove diaphragm retainer (26).
- STEP-6.** Remove spring pad (29), diaphragm washer (30), and diaphragm (31) from body (34).
- STEP-7.** Remove push rod assembly (32) from modular high pressure reduction valve (33).
- STEP-8.** Remove modular high pressure reduction valve from body as follows: **A.** Remove nozzle (33C) from main body, using a large bladed screwdriver, and turning counter clockwise. "O" ring (33A) will now be accessible. **B.** Remove valve seat (33D) and spring (33E) from cap (33J). **C.** Remove cap from main body. This can be done easily by gently pulling cap out with long nosed pliers. "O" ring (33B) will now be accessible. **D.** Remove filter (33H) from cap. **E.** Remove washer (33F) and "O" ring (33G) from cap.
- STEP-9.** To remove filter (37) and "O" ring (36), the push on clip (38) must be pried out with a sharp instrument (awl, etc.). Due to the fact that this clip is usually destroyed in the removal process, it is not recommended that this assembly be removed unless the filter is to be replaced.  
Note: Later model 400 and 800 regulators will have the standard spring clip. This can be removed with circlip pliers.
- STEP-10.** Remove plugs (35) (and/or Tag underwater pressure gauge) from main body by turning counter clockwise, using 9/16" or 5/8" wrench. "O" ring (35A) will now be accessible.
- STEP-11.** On "400" model only — remove reserve plug (41) by turning counter clockwise, using large bladed screwdriver. "O" ring (42) will now be accessible.

## To Assemble:

- STEP-1.** Install reserve plug (41) after lubricating "O" ring (42) lightly.
- STEP-2.** Install "O" ring (36), new filter (37), and push-on clip (38) in that order. Clip must be forced into high pressure chamber until filter is held snugly in place.  
Note: Later models of 400 and 800 regulators will have spring clip.
- STEP-3.** Install modular high pressure reduction valve as follows: **A.** Place "O" ring (33G) and washer (33F) in bottom of cap after lightly lubricating "O" ring. **B.** Place filter on cap (33J). **C.** Install "O" ring (33B) on cap, lubricating "O" ring. **D.** Install cap assembly in main body. Push unit firmly into place with fingers. A faint click will be heard as cap seats. **E.** Install valve seat (33D) and spring (33E) in cap. **F.** Install "O" ring (33A) on nozzle (33C), lubricating lightly. **G.** Install nozzle in main body, using large blade screwdriver, turning clockwise until nozzle bottoms.  
Note: Care must be taken to be sure valve seat is centered, or cone of nozzle will cut rubber seat when tightened. To avoid this possibility, use a straight wire run through the port of the nozzle and into the hollow shaft of the valve seat while starting the installation of the nozzle. (A straightened paper clip is ideal for this operation).
- STEP-4.** Install plugs (35) (and/or Tag underwater pressure gauge), after lightly lubricating "O" rings (35A). Remember high pressure port has small orifice, low pressure port has large orifice.
- STEP-5.** Install push rod assembly (32). Be sure push rod is seated firmly through orifice of module.
- STEP-6.** Install diaphragm (31), diaphragm washer (30), and spring pad (29) in body, in that order. Lightly lubricate washer and spring pad before installing.
- STEP-7.** Install diaphragm retainer (26), using 1-1/8" open end wrench to make snug. Do not over tighten.
- STEP-8.** Install springs (27, 28) in diaphragm retainer (26).
- STEP-9.** Install adjusting screw (25).
- STEP-10.** Install hose on body after lubricating "O" ring (23).
- STEP-11.** To adjust intermediate pressure, mount regulator on air source, (cylinder, etc.) Install pressure setting gauge (model GPS) between hose and valve seat which is located on the second stage assembly. To increase intermediate pressure, turn adjusting screw clockwise. To decrease pressure, turn adjusting screw counter clockwise. Gauge should read 140 p.s.i. at high pressure (2475 p.s.i.).
- STEP-12.** Install cover assembly (24).

# OLYMPIC 800 Regulator (RESERVE)

ITEM	PART NO.	DESCRIPTION
1	MR22	BODY
2	MR61	O RING
3	MR155	RESERVE LOCK NUT
4	MR562	RESERVE ARM
5	MR122	HANDLE WASHER
6	MR133	SET SCREW
7	MR46	RESERVE LEVER SPRING
8	MR129	WASHER
9	MR106	RESERVE MODULE



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# Service Procedure: OLYMPIC 800 Regulator (RESERVE)

## To Disassemble:

- STEP-1.** Remove reserve lock nut (3) and Reserve lever spring (7).
- STEP-2.** Loosen set screw (6).
- STEP-3.** Remove reserve arm (4), handle washer (5) and washer (8).
- STEP-4.** Using 11/16" open end wrench, remove reserve module (9) by turning counter

clockwise. "O" ring (2) will now be accessible. Valve seat in main body will now be accessible for inspection and/or polishing. Note: Reserve module is not designed to be disassembled. If module proves to be defective, entire module must be replaced.

## To Assemble:

- STEP-1.** Inspect bore and threads in main body (1). Area must be free of dirt and foreign particles.
- STEP-2.** Install reserve module, after lubricating "O" ring (2) lightly with silicone grease. Modular body must be pressed into bore until threads are engaged, to avoid damaging "O" ring. Tighten snugly with 11/16" wrench. Do not over tighten.
- STEP-3.** Install washer (8) on shaft.
- STEP-4.** Install handle washer (5) on shaft. Be sure square hole of washer is fitted over square of shaft.
- STEP-5.** Position of reserve must now be adjusted. An air source of 300 p.s.i. must be used, (a diving cylinder containing 300 p.s.i. is ideal). Place regulator on cylinder with reserve to the left side, and open valve. Depress purge button on second stage and turn handle washer clockwise with fingertips. At position where air flow through regulator becomes minimal or stops, release purge button, and leave

- handle washer in that position.
- STEP-6.** Place reserve arm (4) on shaft with arm in up or "off" position and tighten set screw.
- STEP-7.** Install reserve lever spring (7) and reserve lock nut (3) on shaft and tighten until crown of lock nut is flush with reserve arm face.
- STEP-8.** Test reserve by placing reserve arm in down or "on" position. Depress purge button. Air should flow freely. Still depressing purge button, move arm to up or "off" position. Air flow should become minimal or shut off completely. Should reserve fail this test, repeat step 5.  
Note: If reserve arm will not move up and down easily, loosen lock nut.

## Intermediate Pressure Settings for DACOR Regulators OLYMPIC Series, 100, 200, 400, 800.

All Dacor Olympic second stages are identical. All have the anti-free flow feature, plus the double exhaust valves that make the Olympic the easiest exhaling regulator in the field today. Our second stages are engineered to give maximum performance with an intermediate pressure of 140 p.s.i. so it is important to service personnel that they have a knowledge of pressure setting Dacor first stages.

### DACOR OLYMPIC 100, Piston FIRST STAGE

This unit is not adjustable in the normal sense. Intermediate pressure is controlled by the piston spring, and any deviation from the norm must be corrected by adding stainless steel shim washers (8) to increase pressure, and by replacing the spring in the unlikely event that the pressures are too high. Proper pressure readings on our 100 are as follows:

Source	Intermediate
2250 p.s.i.	140 p.s.i.
300 p.s.i.	120 p.s.i. (Approx.)

### DACOR 200 OLYMPIC Upstream Diaphragm FIRST STAGE

This unit is completely adjustable by turning the adjusting screw clockwise to increase intermediate pressure; counter clockwise to decrease this pressure. Proper pressure readings on our 200 are as follows:

Source	Intermediate
2250 p.s.i.	120 p.s.i. (Approx.)
300 p.s.i.	140 p.s.i.

### DACOR 400-800, Balanced Diaphragm FIRST STAGE

This unit, which uses natural forces to balance, rather than springs, is adjustable by turning the adjusting screw clockwise to increase intermediate pressure; counter clockwise to decrease this pressure. Proper pressure readings on our 400 and 800 are as follows:

Source	Intermediate
3000 p.s.i.	140 p.s.i.
2250 p.s.i.	140 p.s.i.
300 p.s.i.	140 p.s.i.

REGULATOR	SOURCE PRESSURE	INTERMED PRESSURE	SOURCE PRESSURE	INTERMED PRESSURE	EASILY ADJUSTABLE	SINGLE HOSE
100	2250 p.s.i.	140 p.s.i.	300 p.s.i.	120 p.s.i.	NO	YES
200	2250 p.s.i.	120 p.s.i.	300 p.s.i.	140 p.s.i.	YES	YES
400	2250 p.s.i.	140 p.s.i.	300 p.s.i.	140 p.s.i.	YES	YES
800	2250 p.s.i.	140 p.s.i.	300 p.s.i.	140 p.s.i.	YES	YES



# OLYMPIC 100, 200, 400, 800 Regulators (Trouble Shooting)

## PROBLEM: AIR FREE-FLOW THROUGH MOUTHPIECE:

**Reason A:**  
Lever spring (9) is set too high.

**Solution:** Adjust lever spring.  
**See:** Assembly of 100, 200, 400, 800 SECOND STAGE. Step 13.

**Reason B:**  
Valve seat carrier (15) or valve seat disc (15A) is worn or damaged.

**Solution:** Replace valve seat carrier and/or valve seat.

**See:** Disassembly of 100, 200, 400, 800 SECOND STAGE. Steps 4 thru 8.  
— Assembly of 100, 200, 400, 800 SECOND STAGE. Steps 2 thru 9 and 13.

**Note:** Valve seat disc can be replaced in valve seat carrier, if valve seat carrier is not damaged.

**Reason C:**  
High pressure seat is worn or damaged.  
100 — item 28.  
200 — item 30.  
400 & 800 — item 33D.

**Solution:** Replace high pressure seat.

**For 100 —**

**See:** Disassembly of 100, FIRST STAGE. Steps 2 thru 4.  
— Assembly of 100, FIRST STAGE. Steps 3 thru 6.

**For 200 —**

**See:** Disassembly of 200, FIRST STAGE. Steps 8 & 9.  
— Assembly of 200, FIRST STAGE. Steps 1 & 2.

**For 400 and 800 —**

**See:** Disassembly of 400 & 800, FIRST STAGE. Steps 2 thru 8B.  
— Assembly of 400 & 800, FIRST STAGE. Steps 4E thru 12.

**Reason D:**  
Intermediate pressure is too high.

100 — item 29.  
200 — NA.  
400 — NA.  
800 — NA.

**Solution:** Reset to proper intermediate pressure.

**For 100 —**

**See:** Disassembly of 100, FIRST STAGE. Steps 2 & 5.  
— Assembly of 100 FIRST STAGE. Steps 2 & 6.

**For 200 —**

**See:** Assembly of 200, FIRST STAGE. Step 15.

**For 400 and 800 —**

**See:** Disassembly of 400 & 800 FIRST STAGE. Step 2.  
— Assembly of 400 & 800 FIRST STAGE. Steps 11 & 12.

**Reason E:**  
High pressure valve seat cone located in main body is corroded or damaged. (On 100 & 200 models only).

100 — item 30.  
200 — item 40.

**Solution:** Polish valve seat with polishing stick. If not available, a common pencil eraser will do. To reach valve seat,

**For 100 —**

**See:** Disassembly of 100 FIRST STAGE. Steps 2, 3 & 5.  
— Assembly of 100 FIRST STAGE. Steps 2, 5 & 6.

**For 200 —**

**See:** Disassembly of 200 FIRST STAGE. Steps 8 & 9.  
— Assembly of 200 FIRST STAGE. Steps 1 & 2.

**Reason F:**  
High pressure valve seat cone, located in modular high pressure reduction valve is corroded or damaged. (On 400 & 800 models only).

400 — item 33C.  
800 — item 33C.

**Solution:** Polish high pressure valve seat cone.

**See:** Disassembly of 400 & 800 FIRST STAGE. Steps 2 thru 8A.

**Note:** Polish cone on inside of nozzle with polishing stick.

**PROBLEM: DIFFICULT INHALATION IN BREATHING CYCLE:**

**Reason A:**  
Lever spring is set too high.  
100, 200, 400, 800 — item 9.

**Solution:** Reset lever spring.  
**See:** Assembly of 100, 200, 400, 800 SECOND STAGE. Step 13.

**Reason B:**  
Corrosion or foreign matter in filter. Difficult breathing will normally become very pronounced at lower tank pressure.  
100 — item 32.  
200 — item 32.  
400 — item 37.  
800 — item 37.

**Solution:** Replace filter.  
**For 100 —**  
**See:** Disassembly of 100 FIRST STAGE. Steps 6 & 7.  
— Assembly of 100 FIRST STAGE. Step 7.

**For 200 —**  
**See:** Disassembly of 200 FIRST STAGE. Step 8  
— Assembly of 200 FIRST STAGE. Step 2.

**For 400 and 800 —**  
**See:** Disassembly of 400 & 800 FIRST STAGE. Step 9.  
— Assembly of 400 & 800 FIRST STAGE. Step 2.

**Reason C:**  
Intermediate pressure set too low:

**Solution:** Adjust intermediate pressure.  
**For 100 —**  
**See:** Disassembly of 100 FIRST STAGE. Steps 2, 3 & 5.  
— Assembly of 100 FIRST STAGE. Steps 2, 5, 6 & 10.

**For 200 —**  
**See:** Assembly of 200 FIRST STAGE. Step 14.

**For 400 and 800 —**  
**See:** Disassembly of 400 & 800 FIRST STAGE. Step 2.  
Assembly of 400 & 800 FIRST STAGE. Steps 11 & 12.

**Reason D:**  
Low pressure diaphragm has lost resiliency.  
100, 200, 400, 800 — item 7.

**Solution:** Replace low pressure diaphragm.  
**See:** Disassembly of 100, 200, 400, 800 SECOND STAGE. Step 4.  
— Assembly of 100, 200, 400, 800 SECOND STAGE. Steps 7, 8 & 9.

**Reason E:**  
Second stage valve seat carrier is damaged, causing friction to restrict its movements.  
100, 200, 400, 800 — item 15.

**Solution:** Replace valve seat carrier.  
**See:** Disassembly of 100, 200, 400, 800 SECOND STAGE. Steps 1, 4, 5, 6 & 8.  
— Assembly of 100, 200, 400, 800 SECOND STAGE. Steps 2 thru 9 & 13.

**Reason F:**  
Valve seat carrier is corroded, usually resulting from improper post-dive rinsing.

**Solution:** Clean valve seat carrier.  
**See:** Disassembly of 100, 200, 400, 800 SECOND STAGE. Steps 1, 4, 5, 6 & 8.  
— Assembly of 100, 200, 400, 800 SECOND STAGE. Steps 2 thru 9 & 13.

**Reason G:**  
Angle of lever spring is less than 37½°. This occurs if attempts to adjust lever height are made by bending lever spring.

**Solution:** Replace lever spring.  
**See:** Disassembly of 100, 200, 400, 800 SECOND STAGE. Steps 4 & 5.  
— Assembly of 100, 200, 400, 800 SECOND STAGE. Steps 6 thru 9 & 13.

**PROBLEM: REGULATOR WILL NOT PURGE CORRECTLY:**

**Reason A:**  
Lever spring out of adjustment.  
100, 200, 400, 800 — item 9.

**Solution:** Adjust lever spring.  
**See:** Assembly of 100, 200, 400, 800 SECOND STAGE. Step 13.

**Reason B:**  
Purge button spring broken.  
100, 200, 400, 800 — item 2.

**Solution:** Replace purge button spring.  
**See:** Disassembly of 100, 200, 400, 800 SECOND STAGE. Step 4.  
— Assembly of 100, 200, 400, 800 SECOND STAGE. Steps 8 & 9.

CONTINUED ON NEXT PAGE:

**(CONT.) PROBLEM: REGULATOR WILL NOT PURGE CORRECTLY:**

**Reason C:**  
Intermediate pressure low.

**Solution:** Adjust intermediate pressure.  
**For 100 —** Disassembly of 100 FIRST STAGE. Step 2. Assembly of 100 FIRST STAGE. Steps 6 & 10.  
**For 200 —**  
**See:** Assembly of 200 FIRST STAGE. Step 15.  
**For 400 and 800 —**  
**See:** Disassembly of 400 & 800 FIRST STAGE. Step 2.  
 — Assembly of 400 & 800 FIRST STAGE. Steps 11 & 12.

**Reason D:**  
Angle of lever spring is less than 37½°. This occurs if attempts are made to adjust lever height by bending lever spring.

**Solution:** Replace lever spring.  
**See:** Disassembly of 100, 200, 400, 800 SECOND STAGE. Steps 4 & 5.  
 — Assembly of 100, 200, 400, 800 SECOND STAGE. Steps 6 thru 9 & 13.

**PROBLEM: WATER ENTERING REGULATOR:**

**Reason A:**  
Hole in mouthpiece. 100, 200, 400, 800 — item 10.

**Solution:** Check mouthpiece carefully for cuts, etc., if any are found replace mouthpiece.  
**See:** Disassembly of 100, 200, 400, 800 SECOND STAGE. Step 3.  
 — Assembly of 100, 200, 400, 800 SECOND STAGE. Step 11.

**Reason D:**  
Purge valve material deteriorated. 100, 200, 400, 800 — item 12.

**Solution:** Replace purge valves.  
**See:** Disassembly of 100, 200, 400, 800 SECOND STAGE. Steps 2 & 9.  
 — Assembly of 100, 200, 400, 800 SECOND STAGE. Steps 1 & 10.

**Reason B:**  
Foreign material trapped under purge valves. 100, 200, 400, 800 — item 12.

**Solution:** Clean thoroughly by running clean, fresh water into mouthpiece, and out of exhaust ports. Inspect to be sure area is cleaned.  
**See:** Disassembly of 100, 200, 400, 800 SECOND STAGE. Steps 2 & 9.  
 — Assembly of 100, 200, 400, 800 SECOND STAGE. Steps 1 & 10.

**Reason E:**  
Purge valve(s) missing. 100, 200, 400, 800 — item 12.

**Solution:** Replace purge valves.  
**See:** Disassembly of 100, 200, 400, 800 SECOND STAGE. Steps 2 & 9.

**Reason F:**  
Hole in low pressure diaphragm. 100, 200, 400, 800 — item 7.

**Solution:** Replace diaphragm.  
**See:** Disassembly of 100, 200, 400, 800 SECOND STAGE. Step 4.  
 — Assembly of 100, 200, 400, 800 SECOND STAGE. Steps 7 thru 9.

**Reason C:**  
Purge valve(s) not seated correctly. 100, 200, 400, 800 — item 12.

**Solution:** Be surge purge valve(s) are seated flatly against bottom box assembly.  
**See:** Disassembly of 100, 200, 400, 800 SECOND STAGE. Steps 2 & 9.  
 — Assembly of 100, 200, 400, 800 SECOND STAGE. Steps 1 & 10.

**Reason G:**  
Low pressure diaphragm not seated under top cover correctly. 100, 200, 400, 800 — item 7.

**Solution:** Reseat diaphragm. If diaphragm is damaged replace.  
**See:** Disassembly of 100, 200, 400, 800 SECOND STAGE. Step 4.  
 — Assembly of 100, 200, 400, 800 SECOND STAGE. Steps 7 thru 9.

**PROBLEM: REGULATOR WILL NOT SEAL ON VALVE:**

**Reason A:**  
Cylinder valve "O" ring worn, damaged or missing.

**Solution:** Replace "O" ring.

mounted on cylinder. Proper care of your regulator will prevent this problem.

**Reason B:**  
Face of body (area where regulator seals on valve) is worn or damaged.

**Solution:** Replace body. This must be done by an authorized Dacor Service Center. This piece is one of the most expensive parts of a regulator, so it is recommended that care be taken when mounting regulator to be sure it is on correctly and placing dust cap in position when regulator is not

**Reason C:**  
Yoke nut is loose not allowing facing to seat on "O" ring. (On 100 and 200 only).  
100 & 200 — Item 34.

**Solution:** Tighten yoke nut.

**PROBLEM: 800 RESERVE NOT HOLDING 300 P.S.I. IN RESERVE:**

**Reason A:**  
Reserve module out of adjustment.

**Solution:** Adjust reserve.  
**See:** Disassembly of 800 Reserve. Steps 1, 2 & 3.  
— Assembly of 800 Reserve. Steps 3 thru 8.

**Reason C:**  
Corrosion or slight damage to valve seat.

**Solution:** Polish seat with polishing stick.  
**See:** Disassembly of 800 Reserve. Steps 1 thru 4.  
— Assembly of 800 Reserve. Steps 1 thru 8.

**Reason B:**  
Reserve module seat worn or damaged.  
800 Reserve Module — item 9.

**Solution:** Replace reserve module.  
**See:** Disassembly of 800 Reserve. Steps 1 thru 4.  
— Assembly of 800 Reserve. Steps 1 thru 8.

**PROBLEM: AIR LEAK AT 800 RESERVE:**

**Reason A:**  
"O" ring worn or damaged. Item 2.

**Solution:** Replace "O" ring.  
**See:** Disassembly of 800 Reserve. Steps 1 thru 4.  
— Assembly of 800 Reserve. Steps 1 thru 8.

**PROBLEM: DIFFICULTY IN EXHALING:**

**Reason A:**  
Purge valves sticking (adhering) to housing.  
100, 200, 400, 800 — item 12.

**Solution:** Free purge valves.  
**See:** Disassembly of 100, 200, 400, 800 SECOND STAGE. Step 2.  
— Assembly of 100, 200, 400, 800 SECOND STAGE. Step 10.

**Reason B:**  
Purge valve material deteriorated.

**Solution:** Check purge valves. They should be soft and pliable. If they are not, replace.  
**See:** Disassembly of 100, 200, 400, 800 SECOND STAGE. Steps 2 & 9.  
— Assembly of 100, 200, 400, 800 SECOND STAGE. Steps 1 & 10.

**PROBLEM: LEAKING AIR AT HOSE FITTING (SECOND STAGE):**

<p><b>Reason A:</b> Fitting loose at valve seat. 100, 200, 400, 800 — items 18 &amp; 16.</p>	<p><b>Solution:</b> Be sure nut is snug against sleeve of bottom box assembly. Tighten hose nut.</p>	<p><b>Reason B:</b> Worn or damaged "O" ring. 100, 200, 400, 800 — item 19.</p>	<p><b>Solution:</b> Replace "O" ring. <b>See:</b> Disassembly of 100, 200, 400, 800 SECOND STAGE. Step 1. — Assembly of 100, 200, 400, 800 SECOND STAGE. Step 12.</p>
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**PROBLEM: LEAKING HOSE:**

<p><b>Reason A:</b> Hose damaged or cut.</p>	<p><b>Solution:</b> Replace hose.</p>
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**PROBLEM: AIR LEAK AT HOSE FITTING (FIRST STAGE):**

<p><b>Reason A:</b> Hose loose at main body.</p>	<p><b>Solution:</b> Tighten hose fitting to main body.</p>	<p><b>For 200 —</b> <b>See:</b> Disassembly of 200 FIRST STAGE. Step 1. Assembly of 200 FIRST STAGE. Step 13.</p>
<p><b>Reason B:</b> Worn or damaged "O" ring. 100 — item 21. 200 — item 21. 400 — item 23. 800 — item 23.</p>	<p><b>Solution:</b> Replace "O" rings, lubricating lightly with silicone grease.</p>	<p><b>For 400 and 800 —</b> <b>See:</b> Disassembly of 400 &amp; 800 FIRST STAGE. Step 1. — Assembly of 400 &amp; 800 FIRST STAGE. Step 10.</p>
	<p><b>For 100 —</b> <b>See:</b> Disassembly of 100 FIRST STAGE. Step 1. — Assembly of 100 FIRST STAGE. Step 9.</p>	

**PROBLEM: AIR LEAK AROUND HIGH PRESSURE DIAPHRAGM:**

<p><b>Reason A:</b> Diaphragm retainer loose. 100 — NA. 200 — item 39. 400 — item 26. 800 — item 26.</p>	<p><b>Solution:</b> Tighten diaphragm retainer with wrench.</p>
	<p><b>For 200 —</b> <b>See:</b> Assembly of 200 FIRST STAGE. Step 9.</p>
	<p><b>For 400 and 800 —</b> <b>See:</b> Assembly of 400 &amp; 800 FIRST STAGE. Steps 7 and 12.</p>

**PROBLEM: AIR LEAK AT ACCESSORY PLUG:**

<p><b>Reason A:</b> Accessory plug is loose. 100 — item 38. 200 — item 38. 400 &amp; 800 — item 35.</p>	<p><b>Solution:</b> Tighten accessory plug with ½" wrench, turning clockwise.</p>	<p><b>For 200 —</b> <b>See:</b> Disassembly of 200 FIRST STAGE. Step 2. — Assembly of 200 FIRST STAGE. Step 12.</p>
<p><b>Reason B:</b> "O" ring is worn or damaged. 100 — item 21. 200 — item 21. 400 — item 35A. 800 — item 35A.</p>	<p><b>Solution:</b> Replace "O" ring.</p>	<p><b>For 400 and 800 —</b> <b>See:</b> Disassembly of 400 &amp; 800 FIRST STAGE. Step 10. — Assembly of 400 &amp; 800 FIRST STAGE. Step 4.</p>
	<p><b>For 100 —</b> <b>See:</b> Disassembly of 100 FIRST STAGE. Step 9. — Assembly of 100 FIRST STAGE. Step 1.</p>	