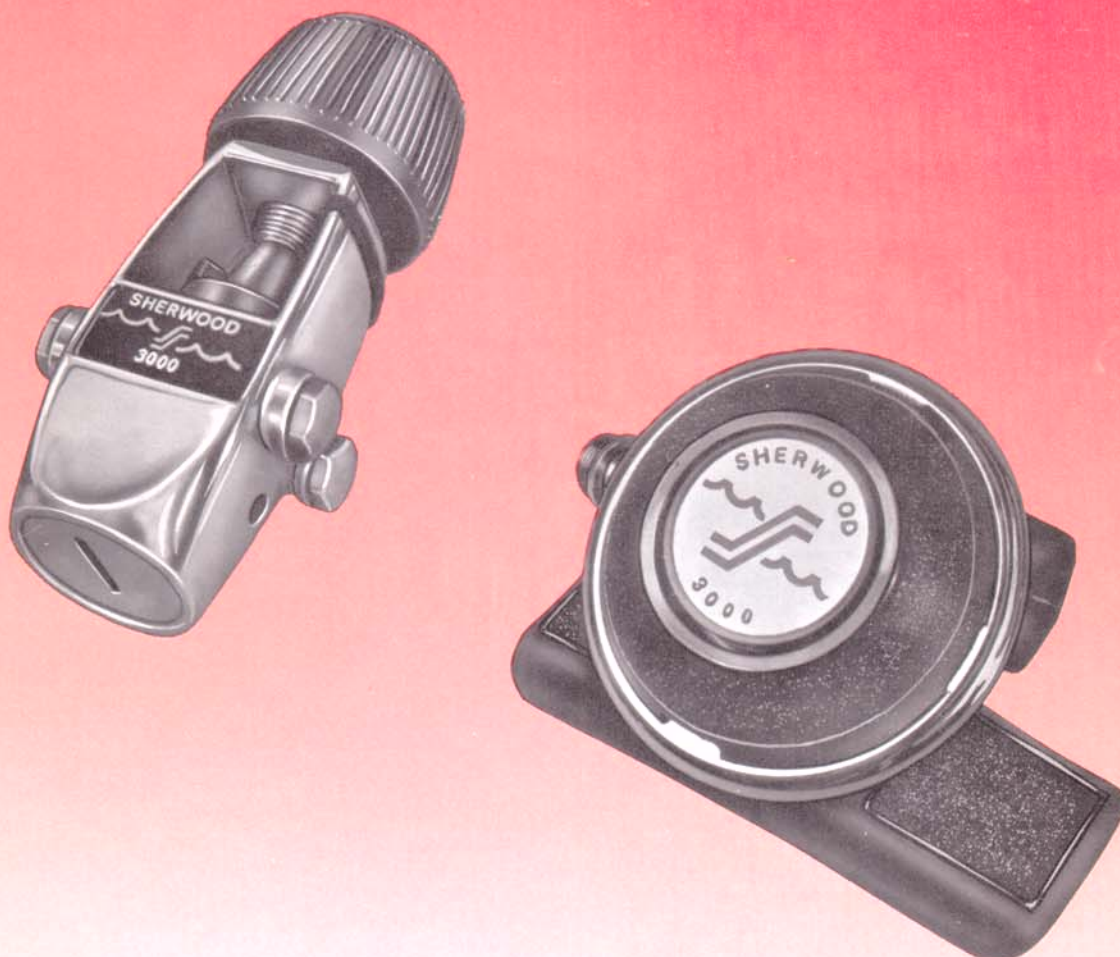


## ASSEMBLY AND MAINTENANCE GUIDE

FOR REFERENCE ONLY  
SOME PARTS MAY NO LONGER BE AVAILABLE  
SOME TECHNICAL BULLETINS MAY APPLY TO THIS REGULATOR



**SHERWOOD**  
SRB 3000 REGULATOR



## SRB 3005 FIRST STAGE REGULATOR

1	Knob	11	Piston
2	Star washer	12	End cap
3	Filter	13	Port plug
4	Port plug	14	Port plug
5	Star washer		
6	Body		
7	Port plug		
8	Port plug		
9	Spring		
10	Piston		
11	Piston		
12	End cap		
13	Port plug		
14	Port plug		



## ASSEMBLY AND MAINTENANCE SRB 3005 FIRST STAGE REGULATOR

### DISASSEMBLY

Note: Standard inspection of components shall be performed during disassembly of the regulator.

1. Remove knob (1) from body (6).
2. Remove the end cap (12).
3. Remove the piston (10) from the end cap.
4. Remove the spring (9) any shims (8) from the regulator body.
5. Remove the star washer (2) and filter (3) and discard.
6. Remove any port plugs from the body and clean the assembly in an ultrasonic bath with a suitable solution such as white vinegar.

**NOTE:** Excessive time in white vinegar can cause peeling of the chrome. Use the weak acid solution only long enough to remove corrosion from the parts.

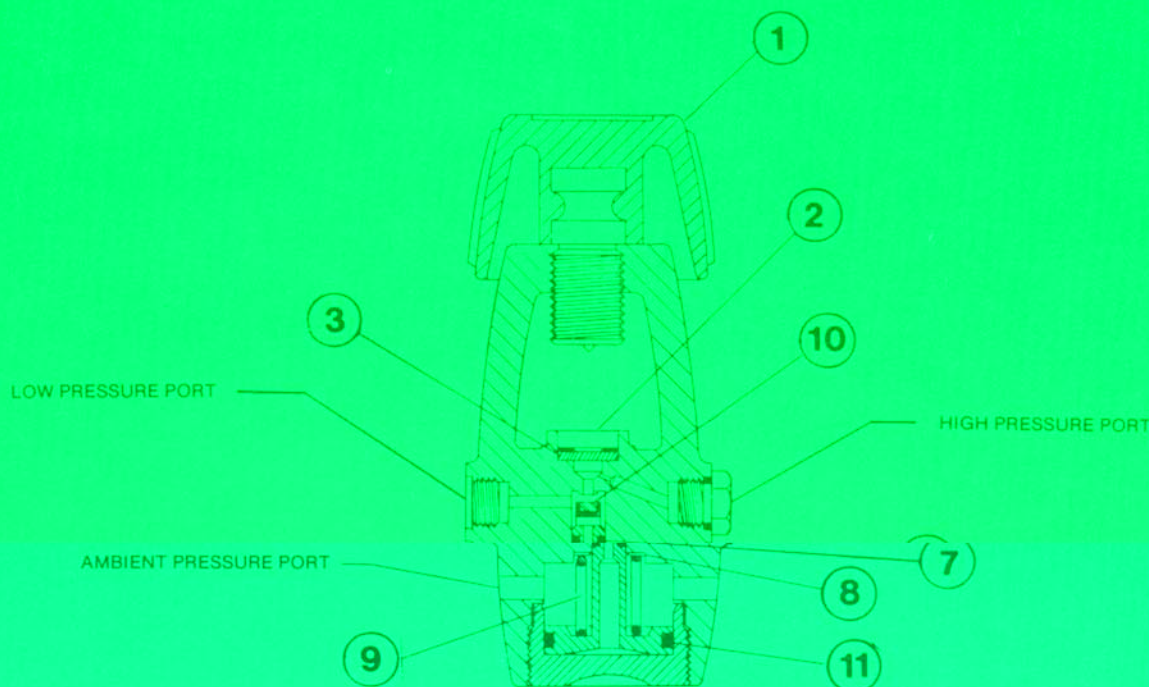
SRB 3005 REGULATOR  
1ST STAGE

TORQUE  
75 IN. LBS.

**SHERWOOD**  
SRB 3005 REGULATOR



# SRB 3005 FIRST STAGE REGULATOR



## ASSEMBLY

1. Lubricate o-rings (7) and (11) for the piston and install.

NOTE: Be sure the teflon seat in the piston (10) is free of nicks, scratches, and imperfections. Any imperfection will increase the lockup pressure above the desired setting, or the lockup pressure will slowly creep to a higher pressure after the initial lockup is attained.

2. Gently place the piston into the cap (12). Place the spring (9) onto the piston and any shims (8) onto the spring.

3. Assemble the cap (with piston, spring, and shims), into the body (6) and secure with 75 in. lbs. torque.

4. Install new filter (3) rough side up, and star washer (2).

5. Install Cap & Cord Assembly (14) and knob (1) onto body. For salt water use, lightly lubricate knob assembly threads to prevent corrosion.

## TEST

Always test the first stage regulator with Sherwood's test gauge and relief valve P/N SYA-4700. (The demand valve acts as a relief valve in the event of a malfunction).

1. Introduce 2700-3000 PSIG to the system. If new piston and orifice have been installed, demand regulator may pop slightly during seating process. Flow air through demand valve on test gauge several times to get all parts properly seated.

2. Submerge first stage regulator into water. Shake regulator to remove any

trapped bubbles. If after several minutes a small stream of bubbles is seen exiting from ambient pressure port then inspect piston o-rings (7), (11) and sealing surfaces. Replace as necessary.

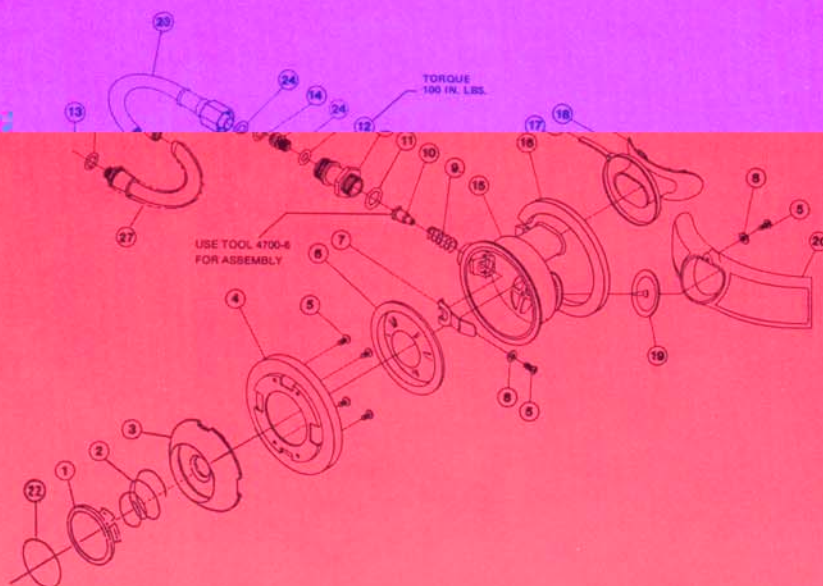
3. Check 1st stage pressure; that is outlet pressure of the first stage regulator during a no flow condition. The lockup pressure shall be 135-150 at 2700-3000 PSIG inlet pressure. If lockup pressure is low and spring has been replaced, add shims. (If original spring has been reused, replace original shims). If lockup pressure is high, remove shims (8).

# SHERWOOD

## SRB 3005 REGULATOR



NO.	CAT. NO.	DESCRIPTION
	SRB 3005	DEMAND REGULATOR
1	3004-1	PURGE BUTTON
2	4006-12	SPRING, PURGE BUTTON
3	3004-2	BEZEL, PURGE BUTTON
4	2-4006-1	COVER
5	4000-9	SCREW
6	4006-13	DIAPHRAGM
7	19-4006-9	LEVER, DEMAND VALVE
8	9-4006-17	WASHER
9	978-10	SPRING
10	4006-21	STEM ASSY.
11	G906A	O-RING (was 4006-14)
12	1-4006-19	HOUSING, DEMAND VALVE
13	G011B	O-RING (was 3329-6)
14	29-4006-20	VALVE SEAT
15	2-4006-5	CASE, ASS'Y.
16	3840-3B	RING, RETAINING
17	3786-9	CLIP
18	3786-7	MOUTH BIT
19	4006-15	VALVE, EXHALATION
20	4006-8	EXHAUST TEE
21	G010D	O-RING (was 1322-21)
22	3004-3	DECAL
23	3809-50-31	HOSE ASS'Y.
24	G010D	O-RING (was 1322-21)



## ASSEMBLY AND MAINTENANCE SRB 3004 DEMAND REGULATOR

### DISASSEMBLY

1. Remove the bezel retaining ring (16) by inserting a screw driver in the groove provided and gently prying down and out.
2. Remove the front cover (4) and the diaphragm (6).
3. While depressing the lever (7) unscrew the demand valve housing (12).

4. Remove the exhaust Tee (20) and mouth bit (18).
5. Using the demand valve stem socket (4700-6), remove the Phillips head screw (5) from the end of the poppet assembly (10). Discard poppet assembly.
6. Remove the adjustable orifice (14) from the demand valve housing (12).

7. Clean all the metal components in the ultrasonic bath with a mild solution of white vinegar or equivalent.  
NOTE: Excessive time in white vinegar can cause peeling of chrome. Use the mild acid solution only enough to remove corrosion from the parts.
8. Wash with fresh water and dry.

### ASSEMBLY

1. Pre-thread the poppet stem assembly (10) two or three threads using the self-tapping screw (5), then remove screw.
2. Place the poppet assembly face down on your clean workbench.
3. Place the spring (9) on the poppet.
4. Place the washer (8) on the screw (5) and place it in the hole in the lever support.

5. Push the entire assembly down over the poppet stem and start to screw a couple of turns into the shaft of the poppet.
6. Compare the lever with a known good lever. If the geometry is bad, replace the lever.
7. Turn the assembly upside down and press on the poppet (10) with your thumb, insert the lever under the washer and screw.
8. Using tool 4700-6 and Phillips screw driver, completely tighten screw (5) until it bottoms on poppet assembly.

9. Lubricate and install O-ring (11) onto the demand valve housing (12).
  10. Install the demand valve housing (12) onto the case assembly (15).
  11. Lubricate the O-ring (24) with Dow Corning III and install it onto the adjustable orifice (14).
  12. Push the adjustable orifice (14) into the demand valve housing (12).
- NOTE: At this point, do not engage threads.

**SHERWOOD**  
SRB 3004 REGULATOR



## ADJUSTING

NOTE: The finest adjustments can be made using a pail of water on the repair bench and adjusting the second stage using bubbles as visual air flow indicator at the lever support assembly (8).

1. Using second stage adjusting tool, (P/N SYA 4701), adjust the second stage adjustable orifice inward until no air escapes from the second stage. How far in the orifice is adjusted depends on second stage use. Just barely stop the bubbles for a primary regulator, but adjust further in on an octopus second stage to prevent free flows.

NOTE: Adjustable orifice (14) should be turned only when lever (7) is depressed to prevent damaging the poppet face (1) with the sharp cutting edge of the orifice (14).

2. After setting the spring tension, the lever should be set so that it just touches the diaphragm when assembly of the

second stage is completed. If the lever is too high, a potential free flow problem exists. If the lever is too low, there will be a hesitation in the breathing performance of the regulator and an increase in breathing resistance.

3. Using tool 4005-16, check the lever height. (See figure 1).

4. To change the lever height, insert the slot on the tool onto the lever just below the bend point. (See figure 2).

5. Move the lever off of the stop ears of the lever support and bend the lever with the thumb using the adjusting tool to hold the lever. Apply all bending force on the lever outboard of the adjusting tool towards lever tip. Never bend lever at the pivot support.

6. Check the lever height.

7. Continue to bend with the thumb and check the lever height until the lever is the same height as the tool.

8. Insert new exhaust valve (19) from the outside of second stage body.

9. Install the diaphragm (6), the front cover assembly (1,2,3,4) and the retaining ring (16).

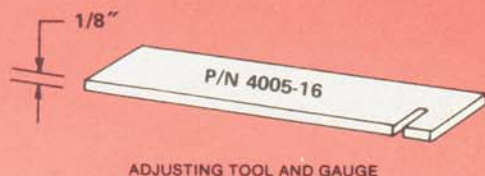
10. Place your thumb in the opening in the exhaust T and stretch it over the boss on the second stage body. Secure it with either a screw (5) and washer (8) or snap it into place, depending on model.

11. Check the inhalation resistance of the regulator by slowly submerging it in water, purge downward. Air should start to flow before water reaches the mouth piece.

12. Turn off the air and purge the regulator.

13. With the regulator still on the tank, try to inhale on the regulator. No air should enter the second stage.

14. If air enters the second stage, check for leaks around the purge valve and diaphragm.



ADJUSTING TOOL AND GAUGE

FIGURE 1

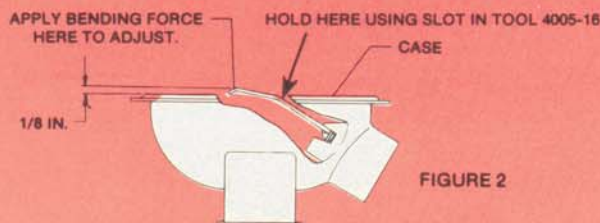


FIGURE 2

## TROUBLE SHOOTING FIRST AND SECOND STAGES

### SMALL FREE FLOW FROM SECOND STAGE

A. Check first stage output pressure; if proper, continue.

NOTE: If Sherwood Second Stage is being used as an octopus on another make of regulator, it must be readjusted for the different hose pressure of that make.

B. Check adjustment of the second stage using adjustable orifice tool (SYA4701).

1. If unable to stop flow by adjusting orifice spring tension, disassemble second stage and inspect the seat for mechanical damage or foreign particles embedded in sealing surface.

2. Inspect the orifice cutting edge for mechanical damage and corrosion.

3. Clean or replace as necessary.

4. Readjust orifice.

C. Check lever height.

### HIGH INHALATION RESISTANCE

A. Check first stage pressure.

B. Check adjustment of orifice.

NOTE: If second stage poppet is dirty or worn, orifice may have to be adjusted to such a point to stop bubbling that inhalation resistance is beyond acceptable range.

C. Check lever height using tool (4005-16).

D. Inspect diaphragm for stiffness. Replace if necessary.

### STICKY EXHALATION

A. Replace exhalation valve.

B. Clean mating areas.

### WATER IN SECOND STAGE

A. A deteriorating exhalation valve.

B. A damaged diaphragm.

C. Bent exhaust valve support.

D. Leaking braze joint.

### HIGH INHALATION RESISTANCE ONLY AT GREATER DEPTHS OR LOW TANK PRESSURE.

A. Replace first stage inlet filter.

### NOISY INHALATION (HUMMING OR BUZZING)

Caused by spring mass resonance. Depending on what parts are resonating one or more of the following actions will stop the buzzing.

A. If in first stage — Rotate main spring end to end and reinstall.

— Install a new piston.

— Install new spring.

B. If in second stage — Rotate poppet spring end to end.

— Install new poppet and orifice.

— Install new spring.

**SHERWOOD**  
SRB 3000 REGULATOR



a division of HARSCO corporation

Gas Control Products:

120 Church St./Lockport, NY 14094-0790

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# **SHERWOOD**

## **SBR 3000 REGULATOR**

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