CHAPTER 8

CHEST MOUNTED OXYGEN REGULATOR

CRU-82/P, P/N 3260014-0401

Section 8-1. Description

8-1. GENERAL.

8-2. Chest Mounted Oxygen Regulator (CRU-82/P), P/N 3260014-0401, (figure 8-1) is manufactured by Litton Life Support, formerly Clifton Precision (CAGE 99251) and is designed to regulate oxygen enriched air to the aircrewmember during flight. Table 8-1 contains the leading particulars for the regulator.

Table 8-1. Leading Particulars

Recommended Inlet Pressure	5 to 120 psig
Flow	0 to 100 lpm
Operating Altitude Range	0 to 50,000 feet
Operating Temperature Range ...	-65°F to +160°F
Weight	9.5 ounces

WARNING

At no time shall the CRU-82/P Chest Mounted Oxygen Regulator be used at operational altitudes above 50,000 feet. Life support requirements cannot be reliably maintained by the CRU-82/P regulator above specified altitudes.

8-3. The Chest Mounted Oxygen Regulator reduces and regulates supply pressure for breathing oxygen enriched air. The safety-pressure feature automatically maintains a positive pressure in the mask of 0.40 to 2.5 inches of water (inH_2O) at all altitudes up to and including 34,000 feet. The pressure-breathing feature maintains a positive pressure in the mask of up to 20.0 inH_2O at altitudes between 34,000 and 50,000 feet, with the positive pressure increasing in proportion to the altitude. Chest Mounted Oxygen Regulators can be used routinely up to approximately 43,000 feet. However, due to human limitations, chest mounted regulators shall not be used above 41,000 feet except for very short periods.

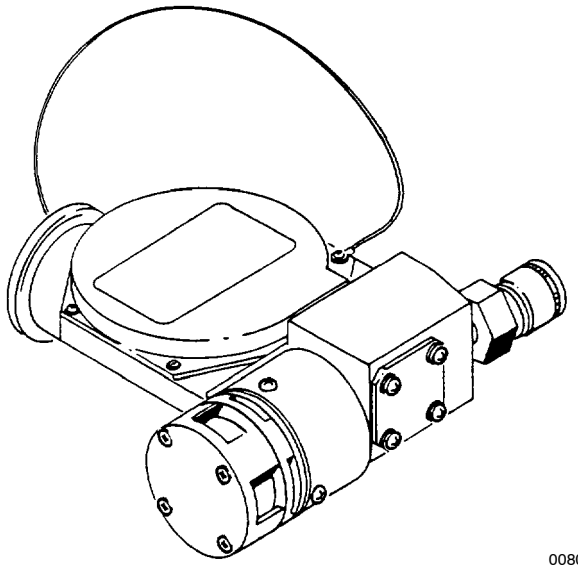

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Figure 8-1. Chest Mounted Oxygen Regulator, CRU-82/P, P/N 3260014-0401

8-4. CONFIGURATION.

8-5. Chest Mounted regulators are designed for use with the MBU-14 series oxygen mask as part of the oxygen system in aircraft with onboard oxygen generating systems.

8-6. FUNCTION.

8-7. Operational characteristics and performance for which oxygen regulator (P/N 3260014-0401) is designed are as follows (figure 8-2):

1. Oxygen enriched air, at an inlet pressure of 5 to 120 psi, enters the regulator through the inlet (19), flows through the inlet screen (18), and is controlled by the balanced main valve (6).

2. At lower altitudes, the pressure breathing aneroid (14) is compressed, opening the gas loading valve (8) and venting bleed air through the aneroid chamber and out the ambient pod (13). The safety pressure spring (4) loads the diaphragm lever (5) to produce a positive safety pressure at the regulator outlet (1) in the range of 0.4 to 2.5 inches of water.

3. At higher altitudes, the pressure breathing aneroid (14) assembly expands due to the low ambient pressure. Oxygen enriched air then flows through the bleed orifice (7) in the housing assembly (23) to provide gas loading on the diaphragm (3) and spring assembly (20). The gas loading valve (8) meters bleed gas flow to maintain proper gas loading pressure on the breathing diaphragm (3), thus providing controlled pressure breathing.

8-8. REFERENCE NUMBERS, ITEMS, AND SUPPLY DATA.

8-9. The Illustrated Parts Breakdown, Section 8-5, contains information on each assembly, subassembly, and component part of the regulator. The figure and index numbers, reference or part number, description, and units per assembly are provided with the breakdown.

Section 8-2. Modifications

8-10. GENERAL.

8-11. There are no modifications to oxygen regulator (P/N 3260014-0401) required/authorized at this time.

Section 8-3. Performance Test Sheet Preparation

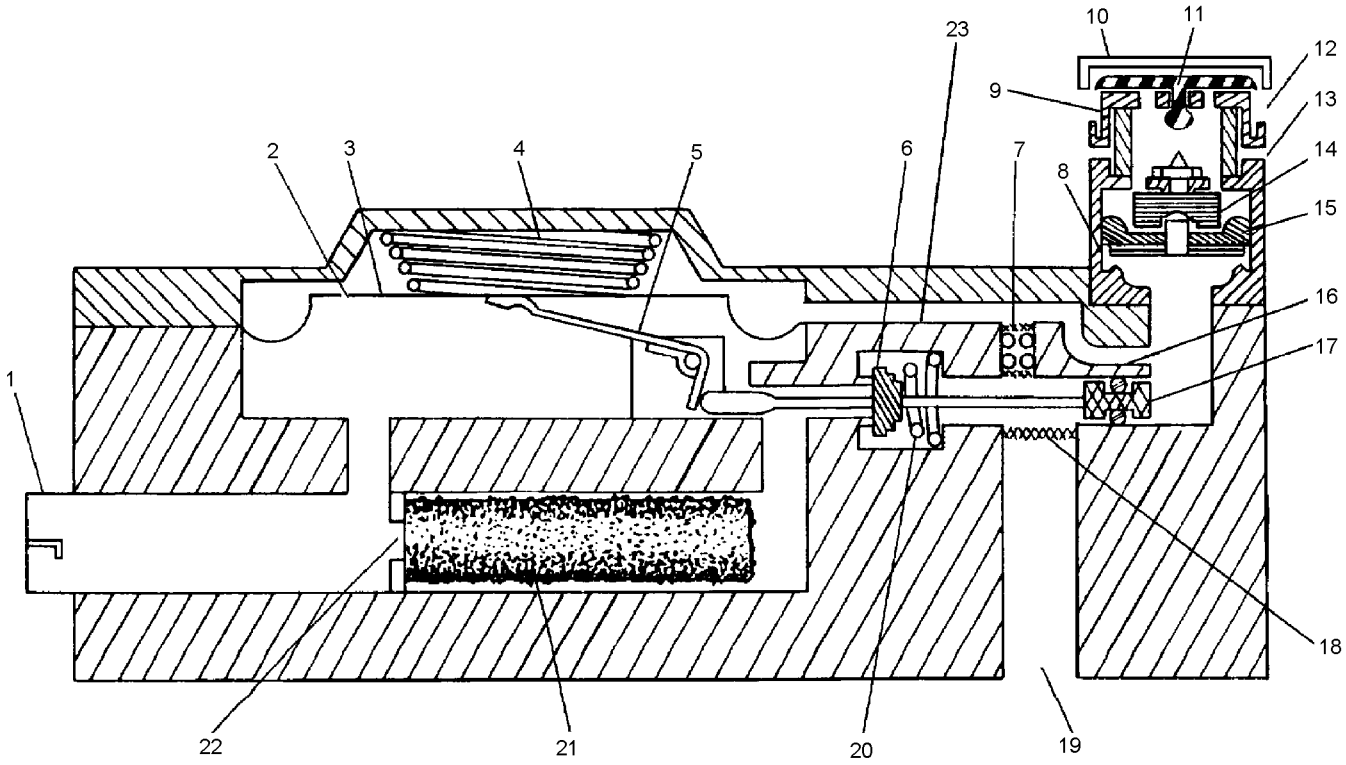
8-12. GENERAL.

8-13. Preparation of the Oxygen Regulator Performance Test Sheet used during Bench Tests requires that all actual flow values provided in this section be converted to indicated flow values. Actual flow values are stated in liters per minute (lpm), a value which cannot be measured by the manometers used in the test stands. The test stand manometers are calibrated to indicate inches of water (inH_2O) pressure. Conversion of actual flows (lpm) to indicated flows (inH_2O) can be accomplished using the various graphs which are prepared for, and accompany each individual test stand. Note that 0 liters per minute need not be converted, since 0 lpm = 0 inH_2O.

NOTE

The various graphs supplied with each Oxygen Systems Components Test Stand, Model 1172AS100 or Model 1316AS100 are used in converting flows. The graphs supplied are not interchangeable between test stands. The Model 3260014-0401 regulator delivers 100% oxygen enriched air at all times. Therefore only the nitrogen (N_2) line on the Outlet Graph for the specified altitude will be used.

8-14. The Performance Test Sheet shall be prepared as shown in the figure 8-3. The Performance Test Sheet illustrated is a sample only, but may be reproduced for local use.



1. OUTLET
2. BLEED ORIFICE
3. BREATHING DIAPHRAGM
4. SAFETY PRESSURE SPRING
5. LEVER
6. BALANCED MAIN VALVE
7. BLEED ORIFICE
8. GAS LOADING VALVE
9. VENT FILTER
10. VENT VALVE COVER
11. VENT VALVE
12. VENT PORT
13. AMBIENT PORT
14. PRESSURE BREATHING ANEROID
15. VALVE GUIDE
16. PASSAGEWAY
17. PISTON AND SEAL
18. INLET SCREEN
19. INLET
20. SPRING
21. OUTLET FILTER
22. OUTLET ORIFICE
23. HOUSING ASSEMBLY

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Figure 8-2. Chest Mounted Oxygen Regulator CRU-82/P Schematic Diagram

8-15. The following tests require conversion of flows from actual lpm to indicated inH_2O.

1. Safety Pressure Test.

2. Pressure Breathing Test.

8-16. REGULATOR PERFORMANCE TESTS.

8-17. SAFETY PRESSURE TEST. To convert the 50 and 100 lpm flow, proceed as follows:

1. Using the specified altitude output graph, locate the 50 lpm line on the bottom of the graph and trace the line up to where it intersects the N_2 line.

2. Trace the line from the point of intersection across the graph to the left-hand column to determine inH_2O.

3. Using the specified altitude output graph, locate the 100 lpm line on the bottom of the graph and trace the line up to where it intersects the N_2 line.

4. Trace the line from the point of intersection across the graph to the left-hand column to determine inH_2O.

8-18. PRESSURE BREATHING TEST. To convert the 100 lpm flows, proceed as follows:

1. Using the specified altitude output graph, locate the 100 lpm line on the bottom of the graph and trace the line up to where it intersects the N_2 line.

2. Trace the line from the point of intersection across the graph to the left-hand column to determine inH_2O.

3. Repeat steps 1 and 2 for all actual flows given in Pressure Breathing Test section of figure 8-3.

Section 8-4. Maintenance

8-19. GENERAL.

8-20. This section contains the procedural steps for inspecting, testing, troubleshooting, disassembling, cleaning, assembling, and adjusting the Chest Mounted Oxygen Regulator (CRU-82/P), P/N 3260014-0401.

NOTE

The regulator will be considered beyond economical repair when the cost of the parts exceeds approximately 75 percent of the cost of the regulator.

Upon completion of any maintenance action to a regulator (e.g., inspection, repair, modification, etc.) make necessary entries on appropriate forms in accordance with OPNAVINST 4790.2 Series.

8-21. The Chest Mounted Oxygen Regulator (CRU-82/P), P/N 3260014-0401, shall be maintained at the lowest level of maintenance authorized to perform the maintenance functions. Major repair of the regulator is not authorized. Minor repairs and testing shall be performed at the Intermediate Maintenance level. Minor repairs include replacement of worn, defective, or otherwise damaged parts with available replacement component parts. Minor repairs to component parts (chasing crossed threads or slightly damaged threads or smoothing of slight burrs) is authorized where such repair does not cause leakage.

8-22. The regulator shall remain in service for as long as it continues to function correctly and does not require excessive repair. All affected silicone rubber parts shall be replaced routinely whenever a regulator is disassembled for repair.

8-23. Procedural steps outlined in this section are listed under the inspection cycle in which they are required and are further listed in the sequence in which they normally occur.

REGULATOR PERFORMANCE TEST SHEET

CLIFTON PRECISION REGULATOR
TYPE CRU-82/P (OBOGS) (P/N 3260014-0401)

DATE: _____ REGULATOR SERIAL NO: _____ TEST STAND SERIAL NO: _____

TEST STAND OPERATOR: _____ CDI _____

1. OVERALL LEAKAGE TEST: 70 PSIG. (ALLOWABLE LEAKAGE 750 CCM) LEAKAGE _____ CCM _____

2. DEMAND VALVE LEAKAGE TEST: NOTE: READING AFTER 5 MINUTES SHALL NOT EXCEED ± 0.1 INH_2O DIFFERENCE FROM INITIAL READING

   30 PSIG INLET PRESSURE — INITIAL OUTLET READING _____ 0 - 1.5 INH_2O
   5 MINUTES READING _____ 0 - 1.5 INH_2O

   120 PSIG INLET PRESSURE — INITIAL OUTLET READING _____ 0 - 1.5 INH_2O
   5 MINUTES READING _____ 0 - 1.5 INH_2O

3. SAFETY PRESSURE TEST:

ALTITUDE (FEET)	INLET PRESS. (PSIG)	0 LPM FLOW (INH_2O)	OUTLET PRESS. (INH_2O)	READING	50 LPM FLOW (INH_2O)	OUTLET PRESS. (INH_2O)	READING	100 LPM FLOW (INH_2O)	OUTLET PRESS. (INH_2O)	READING
SEA LEVEL	10	0	0.0 - 1.5			0.0 - 1.5			0.5 - 3.0	
SEA LEVEL	90	0	0.0 - 1.5			0.0 - 1.5			0.5 - 3.0	
10,000	10	0	0.0 - 1.5			0.0 - 1.5			0.5 - 3.0	
10,000	90	0	0.0 - 1.5			0.0 - 1.5			0.5 - 3.0	
30,000	10	0	0.0 - 1.5			0.0 - 1.5			0.5 - 3.0	
30,000	90	0	0.0 - 1.5			0.0 - 1.5			0.5 - 3.0	

4. PRESSURE BREATHING TEST:

ALTITUDE (FEET)	INLET PRESS. (PSIG)	0 LPM FLOW (INH_2O)	OUTLET PRESS. (INH_2O)	READING	100 LPM FLOW (INH_2O)	OUTLET PRESS. (INH_2O)	READING
34,000	10	0	0.0 - 2.7			0.5 - 3.7	
34,000	90	0	0.0 - 2.7			0.5 - 3.7	
45,000	10	0	13.0 - 16.0			13.0 - 16.0	
45,000	90	0	13.0 - 16.0			13.0 - 16.0	
50,000	10	0	16.0 - 20.0			16.0 - 20.0	
50,000	90	0	16.0 - 20.0			16.0 - 20.0	

Figure 8-3. Regulator Performance Test Sheet

8-24. INSPECTION.

8-25. DAILY/PREFLIGHT INSPECTION.

8-26. The Daily/Preflight Inspection is a visual-type inspection performed by the aircrewmember to whom the regulator is issued, daily or prior to each flight. To perform the inspection, visually inspect the following:

WARNING

When working with oxygen, make certain that clothing, tubing fittings, and equipment are force of oil, grease, fuel, hydraulic fluid, or any combustible material. Fire or explosion can result when even slight traces of combustible material come in contact with oxygen under pressure.

1. Inlet and outlet connections for security of attachment.

2. Regulator body for bends, dents, scratches, corrosion, condition of nameplate, cracks, or any other damage.

3. Perform a functional test in accordance with paragraph 8-29.

8-27. If discrepancies are found or suspected, the defective regulator shall be removed and a Ready For Issue (RFI) regulator installed. The defective regulator shall be taken to the Aviator's Equipment Branch for the required corrective maintenance action.

8-28. SPECIAL INSPECTIONS.

8-29. Special Inspections are required at specified intervals other than Daily/Preflight or Calendar Inspections. The interval for Chest Mounted Oxygen Regulator is 30 days. This inspection consists of a Visual Inspection and a Functional Test, both performed by personnel of Aviator's Equipment Branch. To perform the Special Inspection, proceed as follows:

1. Visually inspect the regulator in accordance with paragraph 8-26.

WARNING

When working with oxygen, make certain that clothing, tubing fittings, and equipment are free of oil, grease, fuel, hydraulic fluid, or any combustible material. Fire or explosion can result when even slight traces of combustible material comes in contact with oxygen under pressure.

2. Functionally test the regulator by attaching the oxygen mask, regulator, and hose assembly to a suitable oxygen supply source.

3. Turn supply source on. There should be a flow of oxygen through the mask.

NOTE

Resistance during exhalation is due to positive pressure feature of the regulator.

4. Don mask and breathe. There should be a slight resistance on exhalation and no mechanical noise or vibrations from the regulator.

5. Make necessary entries on appropriate form in accordance with OPNAVINST 4790.2 Series.

8-30. CALENDAR INSPECTION.

8-31. The Calendar Inspection shall be performed on all Chest Mounted regulators upon issue prior to being installed in an in-service personal oxygen configuration, and shall be performed on all Chest Mounted regulators in service at least every 90 days.

8-32. The Calendar Inspection consists of a Visual Inspection and a Bench Test. All work shall be performed in a clean, dust-free and oil-free area.

8-33. Visual Inspection. To visually inspect the regulator, proceed as follows:

1. Disconnect the communications connections.

2. Loosen hose clamp securing regulator outlet to mask delivery hose, and remove regulator from hose. Retain hose clamp.

3. Loosen locknut and remove regulator-to-seat kit hose from regulator inlet.

4. Inspect regulator inlet and outlet for foreign objects, din, corrosion, bends, dents, cracks, and other damage. Ensure regulator inlet filter is properly installed.

5. Inspect regulator body for bends, dents, cracks, corrosion, condition of nameplate, security of screws, and fittings for other obvious damage.

8-34. Regulators failing the Visual Inspection or the Bench Test (paragraph 8-35) shall be repaired, if specified repair is authorized. SM&R Codes define repairable components and level of maintenance authorized for repair. Further explanation is contained in the Naval Aviation Maintenance Program Manual, OPNAVINST 4790.2 Series.

8-35. BENCH TEST.

WARNING

Because of possible vacuum pump explosion, only water-pumped nitrogen, Type I, Class I, Grade B (Fed Spec BB-N-411) shall be used in testing oxygen regulators.

For oxygen test stands and purging equipment, use only nitrogen from gray cylinders marked NITROGEN OIL FREE in white letters. Two 3-inch wide black bands mark the tops of these cylinders.

Do not use the 3500 psig water-pumped, oil-free, gaseous nitrogen cylinders which are normally components of aircraft servicing carts. The possibility exists that these cylinders may be contaminated.

8-36. The Bench Test shall be performed using an Oxygen System Components Test Stand, Model 1172AS100 or 1316AS100. Refer to appropriate Ground Support Equipment Manual for identification of test stand controls and indicators referred to in the Bench Test procedures that follow. Do not attempt to perform any Bench Test before becoming thoroughly familiar with the test stand. Utilize Performance Test Sheet when performing Bench Test (figure 8-3).

WARNING

Ensure altitude chamber is configured in accordance with NAVAIR 17-15BC-21, WP003 00, Figure 3, sheets 2 thru 4 as applicable. Ensure High Pressure or Low Pressure Hose Assembly listed in NAVAIR 17-15BC-21, WP031 00, Figure 1 or Figure 2 is attached to N_2 Input Connection (18) or Tee Connection (28) in altitude chamber as applicable for the oxygen regulator being tested. Remove hose assembly not being used and cap connection (18) or (28) when not in use. For regulators requiring inlet pressures greater than 175 psig, the High Pressure Hose Assembly in NAVAIR 17-15BC-21, WP031 00, Figure 1 shall be used.

The outlet filter installed in the regulator shall be removed and inspected prior to bench testing to ensure it remains intact and has not become brittle due to age.

NOTE

Index numbers refer to figure 8-7 unless otherwise noted.

8-37. INSPECTION OF OUTLET FILTER. To inspect the outlet filter, proceed as follows:

1. Remove retaining ring (40), flow disc (41), screen (42), and outlet filter (43) from outlet of housing assembly (36).

2. Inspect outlet of housing assembly (36) for filter particles from outlet filters (43).

3. Inspect outlet filter (43) to ensure it remains spongy and not brittle.

4. If the outlet filter (43) is not in good condition it must be replaced and the regulator must be disassembled, cleaned, and reassembled in accordance with paragraphs 8-44, 8-52, and 8-58.

5. If the outlet filter (43) is in good condition, install outlet filter (43), screen (42), flow disc (41), into outlet of housing assembly (36) and secure in place with retaining ring (40). Continue on to body leakage test.

8-38. LUBRICATION OF MAIN VALVE AND STEM ASSEMBLY. The main valve and stem assembly must be lubricated prior to performing Bench Test every 90 days. To lubricate the main valve and stem assembly, proceed as follows:

1. Disassemble the main valve and stem assembly in accordance with paragraph 8-49.

2. Lubricate and reassemble main valve and stem assembly in accordance with paragraph 8-63.

3. Perform lever assembly (6) adjustment in accordance with paragraph 8-69.

4. Proceed with the Overall Leakage Test (paragraph 8-39).

8-39. OVERALL LEAKAGE TEST. To perform the Overall Leakage Test, proceed as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Nitrogen, Oil-free, Water Pumped, Type I, Class I, Grade B	Fed Spec BB-N-411 NIIN 00-985-7275

Support Equipment Required

Quantity	Description	Reference Number
1	Adapter Assembly	AN816-6D NIIN 00-196-9580
1	Oxygen System Components Test Stand	1172AS100 or 1316AS100

WARNING

Prior to use, inspect leak detection compound. Compound which is not clear and free from suspended material/sediment is considered contaminated and shall be disposed of. A compound giving off peculiar odors such as acetone or alcohol is considered contaminated and shall be disposed of.

1. Cap regulator outlet.

2. Remove lug from tee connector (28), install adapter, and cap INPUT connection (18).

3. Connect oxygen regulator inlet to hose attached to N_2 tee connector (28).

4. Ensure all test stand valves are in the secured position then open N_2 supply cylinder valve.

5. Turn inlet ON/OFF valve (L) on.

6. Adjust LOW PRESS. REGULATOR (N) so that REGULATED LOW PRESS. gage (11) and N2 input press. gage (27) indicate 70 psig.

NOTE

When flows are drawn through the in-system leakage rotameters, inlet pressure of 70 psig will normally be used as this is the pressure used to calibrate the rotameters.

7. Turn LEAK SELECTOR valve (F) to HIGH position.

8. Slowly turn leakage ON/OFF valve (G) on and inlet press. ON/OFF valve (L) off.

9. Leakage will be indicated on HIGH RANGE LEAKAGE rotameter (8). Allowable leakage is 750 ccm.

10. Record reading on Performance Test Sheet.

11. If excessive leakage is indicated, refer to table 8-2, Troubleshooting (Overall Leakage Test), for probable causes and remedies.

12. Close LEAKAGE ON/OFF valve (G).

8-40. DEMAND VALVE LEAKAGE TEST. To perform the Demand Valve Leakage Test, proceed as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Nitrogen, Oil-free, Water Pumped, Type I, Class I, Grade B	Fed Spec BB-N-411 NIIN 00-985-7275

Support Equipment Required

Quantity	Description	Reference Number
1	Adapter Assembly	AN816-6D NIIN 00-196-9580
1	Oxygen System Components Test Stand	1172AS100 or 1316AS100

1. Uncap regulator outlet.

NOTE

For remaining test do not substitute flared tube fitting (P/N 1643340-1) or inlet fitting modified, 90° elbow (P/N 1654461-1) (46, figure 8-7). Using substitute fitting will give a false indication of regulator failure.

Ensure regulator outlet and piezometer (26) are one inch apart.

2. Connect the regulator outlet to piezometer (26).

3. Place PRESS. SELECTOR valve (D) in HG position.

4. Using LOW PRESS. REGULATOR (N) and SYSTEM BLEED valve (S), adjust pressure to 30 psig as indicated on REGULATOR LOW PRESS. gage (11).

5. Turn vacuum pump on.

6. Turn INLET PRESS. ON/OFF valve (L) to ON position slowly.

7. Open OUTPUT valve (C) slightly to draw a flow through the regulator, then close valve (C). Place PRESS. SELECTOR valve (D) in H_2O position.

8. Observe PRESS./SUCTION manometer (4) and record initial reading on Performance Test Sheet in space provided. (Reading should be 0.0 to 1.5 inH_2O).

9. Observe PRESS./SUCTION manometer (4) for five minutes. Pressure must not increase or decrease more than 0.1 inH_2O from the initial reading taken. Record reading on Performance Test Sheet.

10. Using LOW PRESS. REGULATOR (N), increase inlet pressure to 120 psig as indicated on N_2 INPUT PRESS. gage (27).

11. Repeat steps 8 and 9.

12. If excessive leakage is indicated, refer to table 8-3, Troubleshooting (Demand Valve Leakage Test) for probable cause and remedies.

13. Leave position of all controls and connections unchanged.

Table 8-2. Troubleshooting (Overall Leakage Test)

Trouble	Probable Cause	Remedy
Note: Index numbers in this table refer to figure 8-7.		
Overall leakage.	Loose external screws.	Tighten external screws (2).
	Damaged performed packing (4).	Replace preformed packing (4) (paragraph 8-48).
	Damaged preformed packing (44).	Replace preformed packing (44) (paragraph 8-51).
	Damaged diaphragm and spring assembly (5).	Replace diaphragm and spring assembly (5) (paragraph 8-48).
	Damaged preformed packing (21).	Replace main valve and stem assembly (11) (paragraph 8-49).

Table 8-3. Troubleshooting (Demand Valve Leakage Test)

Trouble	Probable Cause	Remedy
Note: Index numbers in this table refer to figure 8-7.		
Outlet reading exceeds limits.	Defective main valve and stem assembly (11).	Replace main valve and stem assembly (11) assembly (11) (paragraph 8-49).

8-41. SAFETY PRESSURE TEST. To perform Safety Pressure Test, proceed as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Nitrogen, Oil-free, Water Pumped, Type I, Class I, Grade B	Fed Spec BB-N-411 NIIN 00-985-7275

Support Equipment Required

Quantity	Description	Reference Number
1	Adapter Assembly	AN816-6D NIIN 00-196-9580
1	Oxygen System Components Test Stand	1172AS100 or 1316AS100

CAUTION

Open FLUTTER DAMPENER valve (J) one quarter turn. If regulator causes PRESS./SUCTION manometer (4) to flutter, open FLUTTER DAMPENER valve (J) slowly until flutter is eliminated. If at altitude, descend to sea level prior to opening valve (J) as PRESS./SUCTION manometer can be easily overloaded. When ascending to altitude, maintain an output flow of 3.0 inH_2O.

1. Using LOW PRESS. regulator (N) and SYSTEM BLEED valve (S), set an inlet pressure of 10 psig.

CAUTION

If inlet pressure falls below 10 psig, it will cause PRESS./SUCTION MANOMETER (4) to overload.

NOTE

Ensure inlet pressure is maintained when performing high flows.

2. Using OUTPUT valve (C), setflows of 0, 50, and 100 lpm and record readings from PRESS./SUCTION manometer (4) on Performance Test Sheet.

3. Using LOW PRESS./REGULATOR (N), increase inlet pressure to 90 psig.

4. Using OUTPUT valve (C), set flows of 0, 50, and 100 lpm and record readings from PRESS./SUCTION manometer (4) on Performance Test Sheet.

5. Open OUTPUT valve (C) and draw a flow of 3.0 inH_2O.

6. Using VACUUM CONTROL valve (B) ascend to test altitudes of 10,000 and 30,000 ft. and repeat steps 1, 2, 3, and 4.

7. If safety pressure flows are not within limits, locate probable cause using table 8-4, Troubleshooting (Safety Pressure Test).

Table 8-4. Troubleshooting (Safety Pressure Test)

Trouble	Probable Cause	Remedy
Note: Index numbers in this table refer to figure 8-7.		
Low safety pressure.	Inlet screen (45) blocked.	Remove foreign material from inlet screen (45).
	Outlet filter (43) and screen (42) blocked.	Remove and clean outlet filter (43) and screen (42).
	Valve retainer (16) misaligned or dry.	Lubricate or align flow ports of valve retainer (16) with opening to flared inlet fitting (46) (paragraph 8-49).
	Incorrect height on lever assembly (6).	Adjust height of lever assembly (6) with lever height gauge (paragraph 8-69).
	Damaged lever assembly (6).	Replace lever assembly (6) (paragraph 8-48).
	Damaged diaphragm and spring assembly (5).	Replace diaphragm and spring assembly (5) (paragraph 8-48).
	Defective main valve and stem assembly (11).	Replace or lubricate main valve and stem assembly (11) (paragraph 8-49).
High safety.	Incorrect height on lever assembly (6).	Adjust height of lever assembly (6) with lever height gauge (paragraph 8-69).
	Damaged lever assembly (6).	Replace lever assembly (6) (paragraph 8-48).
	Damaged diaphragm and spring assembly (5).	Replace diaphragm and spring assembly (5) (paragraph 8-48).

8-42. PRESSURE BREATHING TEST. To perform the Pressure Breathing Test, proceed as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Nitrogen, Oil-free, Water Pumped, Type I, Class I, Grade B	Fed Spec BB-N-411 NIIN 00-985-7275

Support Equipment Required

Quantity	Description	Reference Number
1	Adapter Assembly	AN816-6D NIIN 00-196-9580
1	Oxygen System Components Test Stand	1172AS100 or 1316AS100

1. Using LOW PRESS. REGULATOR (N) and SYSTEM BLEED valve (S), set an inlet pressure of 10 psig.

2. Open OUTPUT valve (C) and draw a flow of 3.0 inH_2O.

3. Using VACUUM CONTROL valve (B), ascend to 34,000 ft.

4. Using OUTPUT valve (C), set flows of 0 and 100 lpm and record readings from PRESS./SUCTION manometer (4) on Performance Test Sheet.

5. Using LOW PRESS. REGULATOR (N), increase inlet pressure to 90 psig.

6. Using OUTPUT valve (C), set flows of 0 and 100 lpm and record readings from PRESS./SUCTION manometer (4) on Performance Test Sheet.

7. Open OUTPUT valve (C) and draw a flow of 3.0 inH_2O.

8. Using VACUUM CONTROL valve (B) ascend to test altitudes of 45,000 and 50,000 ft.

9. Repeat steps 1, 4, 5, and 6.

10. Close OUTPUT valve (C).

CAUTION

Ensure that at least 90 psig is on N_2 INPUT PRESS. gage (27) in order to eliminate the suction on PRESS./SUCTION MANOMETER (4).

11. Open CHAMBER BLEED valve (K) and descend to sea level.

12. Turn INLET PRESS. ON/OFF valve (L) to OFF position.

13. Disconnect regulator from test stand and secure all test valves.

14. If pressure breathing outlet pressures are not within tolerance, locate probable cause using table 8-5, Troubleshooting Pressure Breathing Test.

8-43. REGULATOR OXYGEN PURGE. After completion of all tests, the regulator shall be purged with oxygen as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Aviator's Breathing Oxygen, Type 1	MIL-O-27210
As Required	Bag, Plastic	MIL-B-117 (CAGE 81349)

WARNING

Do not use oxygen test stand to regulate the oxygen pressure.

1. Connect regulator inlet to a regulated source of aviator's breathing oxygen.

CAUTION

Never block the outlet of the regulator while a pressure is applied to the inlet. This will seriously damage the regulator.

2. Apply 90 psig to regulator inlet; allow oxygen to flow 1 to 3 minutes.

3. Shut off oxygen source and disconnect regulator.

NOTE

All equipment forwarded from the Organizational Level maintenance to the Intermediate Level shall be accompanied by the appropriate form in accordance with OPNAVINST 4790.2 Series. The test stand operator and CDI shall sign the Performance Test Sheet, and the original or a copy shall be forwarded to the organizational custodian. Upon completion of the Bench Test/or Calendar Inspection, the organizational custodian shall retain the appropriate forms in accordance with OPNAVINST 4790.2 Series.

4. Affix serviceable condition label with CDI stamp and date to regulator.

5. After completion of oxygen purge, place regulator in a plastic bag for storage.

Table 8-5. Troubleshooting (Pressure Breathing Test)

Trouble	Probable Cause	Remedy
Note: Index numbers in this table refer to figure 8-7.		
Low or high pressure breathing at all altitudes.	Aneroid assembly (30) out of adjustment.	Adjust Aneroid (30) in accordance with paragraph 8-68.
Can not adjust pressure breathing schedule within limits.	Aneroid assembly (30) or gas loading valve seat (33) defective.	Replace defective aneroid (30) or gas loading valve seat (33) paragraph 8-62.

8-44. DISASSEMBLY.

8-45. Disassemble the regulator using figure 8-7 as a guide for identifying parts. Do not remove the identification plate unless replacement is necessary. Special instructions for disassembling the regulator are contained in the following paragraphs.

8-46. Disassemble the regulator only as far as required to correct any malfunctions.

8-47. All affected silicone rubber parts shall be replaced each time a regulator is disassembled for replacement of damaged parts. All replacement parts shall be of the same part number as the damaged or removed part and must be individually requisitioned.

CAUTION

All disassembly, inspection, repair, and assembly must be done on benches having good lighting and in an area provided with air conditioning or air filtering. Walls, floor and ceiling should have a smooth finish, and be painted with a non-chalking paint which can be kept clean and dust-free. It is desirable to keep all parts for each individual regulator separated. Make careful note of the location and quantity of all shims, spacers, and packings. Plastic partitioned boxes with covers or similar storage facilities should be used to keep the parts segregated and protected from dirt and moisture. Plastic bags are also useful for storing subassemblies and component parts after cleaning and inspection until ready for assemblies.

NOTE

Special tools shall be requisitioned directly from the manufacturer (99251) or obtain commercial equivalent.

Index numbers for the following paragraphs refer to figure 8-7.

8-48. DIAPHRAGM, SPRING, AND LEVER ASSEMBLY. To disassemble the Diaphragm, Spring, and Lever Assembly proceed as follows:

1. Remove four screws (2), lockwashers (3), and the attached end of cap and cord assembly (39) from cover assembly (1).

2. Slide cover assembly (1) away from housing assembly (36) until connector tube on the cover assembly (1) is clear of the housing assembly (36).

3. Lift the cover assembly (1) off of housing assembly (36).

NOTE

The diaphragm and spring assembly (5) may lift off with the cover assembly (1).

4. Remove the diaphragm and spring assembly (5).

5. Remove and discard preformed packing (4) from housing assembly (36).

6. Remove lever assembly (6) by removing two screws (7), lockwashers (8), and flatwashers (9) securing lever assembly (6) to housing assembly (36).

8-49. MAIN VALVE AND STEM ASSEMBLY. To disassemble the Main Valve and Stem Assembly proceed as follows:

CAUTION

Do not touch any outer cylindrical parts of main valve and stem assembly with either fingers or tools. Grip center stem only by using tweezers. Disturbing lubrication or contaminating sealing surfaces can affect regulator performance by adding friction or causing leaks. Do not touch or damage sealing surfaces of main valve stem assembly or inner diameter of valve seat.

1. Place regulator on workbench with main valve and stem assembly plate (12) upward.

CAUTION

Main valve and stem assembly (11) is spring loaded. Be sure to remove plate (12) slowly so that parts are retained in housing assembly (36).

2. Remove four screws (13) and four lockwashers (14) securing plate (12) to housing assembly (36).

3. Remove plate (12) from housing assembly (36).

4. Remove preformed packing (15) from housing assembly (36).

5. Remove main valve retainer (16) with attached preformed packing (17) from housing assembly (36).

6. Use tweezers to remove conical spring (18), valve assembly (19), and main valve seat (20) from housing assembly (36).

7. Use tweezers to remove preformed packing (21).

8. Dispose of all parts removed.

8-50. ANEROID ASSEMBLY. To disassemble the Aneroid Assembly proceed as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Nitrogen, Oil-free, Water Pumped, Type I, Class I, Grade B	Fed Spec BB-N-411 NIIN 00-985-7275
As Required	Acetone	O-A-51

1. Remove three screws (38) and lockwashers (37) from housing assembly (36).

CAUTION

Gas loading seat (33) and preformed packing (35) remain in housing assembly (36) secured by screw (34). These parts shall not be removed unless replacement is necessary.

NOTE

Valve cover (22) and all parts through gas loading valve (32) are removed from housing assembly (36) as a unit for further disassembly.

2. Remove vent valve (24), with valve cover (22) and Aneroid Assembly (30), and spacer (31) with gas loading valve (32), from the housing assembly (36).

WARNING

The gas loading valve (32) has sharp edges.

CAUTION

The gas loading valve (32) is critical to proper operation of the regulator and must be handled carefully. Do not use any tools on the gas loading valve (32) or gas loading valve seat (33).

NOTE

The gas loading valve (32) is attached to spacer (31) with sealing compound at the factory and may be difficult to remove.

3. Visually inspect exposed face of gas loading valve (32) and exposed surface of gas loading valve seat (33) for scratches, excessive wear, dirt, oil, corrosion or other foreign material.

4. If the gas loading valve seat (33) fails visual inspection and must be replaced, proceed as follows:

a. Remove screw (34) and use tweezers to remove gas loading valve seat (33) and preformed packing (35).

5. If the gas loading valve (32) fails visual inspection and must be replaced, proceed as follows:

WARNING

The gas loading valve (32) has sharp edges.

a. Unscrew the gas loading valve (32) and spacer (31) counterclockwise from Aneroid Assembly (30).

b. Remove spacer (31) from gas loading valve (32).

c. If gas loading valve (32) and spacer (31) do not readily separate, soak in a small amount of acetone until sealing compound dissolves and parts wash clean.

d. Blow dry using oil-free nitrogen.

6. Remove four screws (23) securing valve cover (22) to aneroid mounting disc (28).

NOTE

Vent valve (24) will be attached to cover (25).

7. Remove valve cover (22), vent valve (24), cover (25), and filter (26).

NOTE

A 5/16 inch socket may be needed for removing nut (27) securing aneroid mounting disc (28) to Aneroid Assembly (30).

8. Remove nut (27) securing aneroid mounting disc (28) to the Aneroid Assembly (30).

9. Unscrew Aneroid Assembly (30) from aneroid mounting disc (28).

10. Remove preformed packing (29) from aneroid mounting disc (28).

8-51. OUTLET FILTER AND SCREEN. To disassemble the Outlet Filter and Screen proceed as follows:

Support Equipment Required

Quantity	Description	Reference Number
1	Pliers, Retaining Ring	3301098-6001

1. Remove cap assembly (39) from outlet of regulator.

2. Use tweezers to remove preformed packing (44) from housing assembly (36).

NOTE

After the internal retaining ring (40) has been removed, the flow disc (41) and screen (42) can fall out of the regulator. Hold the regulator with the outlet end up. The flow disc (41) does not wear out and must stay with the regulator.

3. Use retaining ring pliers to remove internal retaining ring (40).

4. Use tweezers to remove flow disc (41) and screen (42).

5. Use tweezers to remove outlet filter (43) from housing assembly (36).

6. Remove flared tube fitting (46) from regulator inlet.

8-52. CLEANING.

8-53. To clean the disassembled oxygen regulator main assembly and component parts, proceed as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Bag, Plastic	MIL-B-117
As Required	Nitrogen, Oil-free, Water Pumped, Type I, Class I, Grade B	Fed Spec BB-N-411 NIIN 00-985-7275

* If available (optional item)

WARNING

Do not use oil, or any material containing oil in conjunction with oxygen equipment. Oil, even in a minute quantity, coming in contact with oxygen can cause explosion or fire. Dust, lint and fine metal particles are also dangerous.

Use respiratory and eye protective equipment during cleaning and blow drying procedures.

1. Clean all metallic parts using procedures outlined in NAVAIR 13-1-6.4-1. Blow dry with oil-free nitrogen.

2. Prior to installation; wash all silicone-rubber parts in distilled water and blow dry with oil-free nitrogen.

3. After cleaning, all internal surfaces shall be examined for cleanliness. Should further contamination be found, reclean the parts in accordance with step 1.

4. Cleaned parts shall be sealed in plastic bags for storage. Bag all complete assemblies that are not immediately returned to service.

8-54. INSPECTION OF DISASSEMBLED PARTS.

8-55. Inspect the disassembled parts in accordance with the following general instructions and table 8-6.

1. All silicone rubber parts shall be replaced each time the regulator is disassembled.

2. Inspect all metal parts for cracks, nicks, burrs, scratches, or other imperfections which could cause leakage or malfunctions in the regulator.

3. Inspect all threaded areas of parts for condition and cleanliness.

4. Ensure that all parts and cavities are clean and free of foreign material.

5. Inspect identification plate for condition and legibility.

NOTE

All springs used in this regulator are designed to the manufacturer's specification. If defective springs are detected, replace with new spring having same part number.

6. Inspect screens, filters, and springs for obstructions, distortion, and corrosion.

7. Refer to table 8-6 for specific inspection procedures.

8-56. LUBRICATION.

WARNING

Do not use oil, or any material containing oil, in conjunction with oxygen equipment. Oil, even in a minute quantity, coming in contact with oxygen can cause explosion or fire. Dust, lint, or fine metal particles are also dangerous.

8-57. Parts which require lubrication, and lubricants required will be covered during the assembly portion of this section.

Table 8-6. Inspection of Disassembled Regulator

Nomenclature	Figure and Index No.	Inspect for
Diaphragm & Spring.	8-7-5	Pinholes, minute ruptures, discoloring, spotting, or other damage likely to cause leakage in diaphragm. Check diaphragm rim for cuts or other damage on sealing surface.
Valve Assembly.	-19	Scratches, corrosion, excessive wear.
Main Valve Seat.	-20	Nicks, scratches or excessive wear on seating area.
Vent Valve.	-24	Tears on seating surface.
Aneroid Assembly leaks.	-30	Pinholes, minute ruptures, discoloring, spotting, or other damage likely to cause.
Gas Loading Valve.	-32	Scratches, excessive wear, dirt, oil, corrosion or other foreign material.
Gas Loading Valve Seat.	-33	Scratches, excessive wear, dirt, oil, corrosion or other foreign material.

8-58. ASSEMBLY.

8-59. Assembly of the regulator components is essentially the reverse of disassembly, with special instructions noted.

WARNING

Prior to use, inspect leak detection compound. Compound which is not clear and free from suspended material/sediment is considered contaminated and shall be disposed of. A compound giving off peculiar odors such as acetone or alcohol is considered contaminated and shall be disposed of.

NOTE

All silicone-rubber parts shall be discarded, and replaced with new items at time of assembly. The new items shall be washed in accordance with paragraph 8-53, step 2 prior to installation.

8-60. ASSEMBLY OF COMPONENTS. Individual components are first assembled into the major subassemblies for installation into the main assembly. This assembly will be performed in accordance with the following paragraphs.

NOTE

Index numbers for the following paragraph refer to figure 8-7.

8-61. OUTLET FILTER AND SCREEN. To assemble the Outlet Filter and Screen proceed as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Krytox 240 AC, Type II, Lubricant	NIIN 00-961-8995

Support Equipment Required

Quantity	Description	Reference Number
1	Pliers, Retaining Ring	3301098-6001
1	Punch, Hollow, Retaining Ring	3301114-1

1. Install outlet filter (43) in housing assembly (36).

2. Use tweezers to install screen (42) and flow disc (41) in housing assembly (36).

3. Use retaining ring pliers to install retaining ring (40) in housing assembly (36). Use the retaining ring hollow punch to set the retaining ring in the groove at edge of housing assembly (36).

4. Using Krytox 240 AC, lightly lubricate preformed packing (44) and use tweezers to install preformed packing (44) in housing assembly (36).

5. Install cap assembly (39) on outlet of regulator housing assembly.

8-62. ANEROID ASSEMBLY. To assemble the Aneroid Assembly, proceed as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Compound, Sealing	MIL-S-22473 GRH
As Required	Glyptal	1201B (CAGE 24452)
As Required	Krytox 240 AC, Type II, Lubricant	NIIN 00-961-8995

1. If removed, lightly lubricate new preformed packing (35) Krytox 240 AC and position on gas loading valve seat (33).

2. Install gas loading valve seat (33) in housing assembly (36).

3. Apply sealing compound to screw (34) and secure gas loading valve seat (33) with screw (34).

4. Screw Aneroid Assembly (30) into aneroid mounting disc (28).

CAUTION

Do not overtighten nut (27) on stem of Aneroid Assembly (30).

5. Install nut (27) on stem of Aneroid Assembly (30).

6. Lightly lubricate new preformed packing (29) with Krytox 240 AC and install on aneroid mounting disc (28).

CAUTION

When working with the gas loading valve (32), do not use any mechanical tools such as pliers, etc.

7. Install spacer (31) onto gas loading valve (32) using sealing compound.

8. Install gas loading valve (32) onto Aneroid Assembly (30) until face of gas loading valve (32) is 3/4 inch from lip of the aneroid mounting disc as illustrated in figure 8-4.

9. Install filter (26) over nut (27).

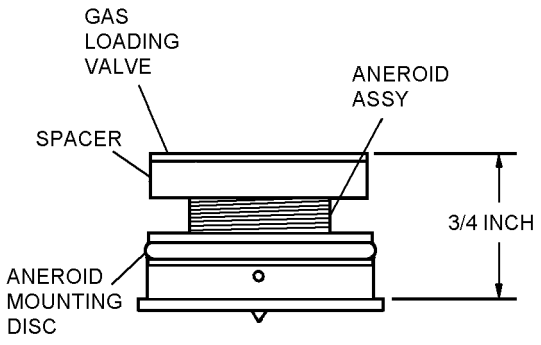


Figure 8-4. Gas Loading Valve/Aneroid Mounting Disc Assembly Dimensions

10. Install vent valve (24) and cover (25). Install retaining ring (49) over tip of vent valve (24) to secure vent valve (24) to cover (25). Position cover (25) over aneroid mounting disc (28).

11. Install valve cover (22) over vent valve (24).

12. Install four screws (23) into valve cover (22).

13. Install aneroid mounting disc (28) into housing assembly (36) and secure with three lockwashers (37) and screws (38).

14. Apply a Glyptal dot to top of screws (38).

8-63. MAIN VALVE AND STEM ASSEMBLY. To assemble the Main Valve and Stem Assembly proceed as follows:

Materials Required

Quantity	Description	Reference Number
	Grease, Molybdenum	Molykote-Z (CAGE 94499) NIIN 00-053-0101

CAUTION

Use clean tweezers for installing components of the Main Valve and Stem Assembly (11). Do not touch components with hands.

1. Clean tweezers in cleaning compound.

NOTE

The plate (12), lockwashers (14), and screws (13) used on shipping container (10) are to be used in installing new Main Valve and Stem Assembly (11) in housing assembly (36).

2. Remove four screws (13) and lockwashers (14) that secure plate (12) to shipping container (10).

NOTE

An extra preformed packing (51) has been positioned between the valve assembly (19) and shipping container (10). This preformed packing may be discarded.

3. Remove Main Valve and Stem Assembly (11) from shipping container.

4. Install preformed packing (21) and main valve seat (20) with beveled side facing up in housing assembly (36).

5. Apply Molykote-Z to entire length and circumference of valve assembly (19).

NOTE

The six external rings on valve stem are for sound attenuation. Openings on the rings must be positioned alternately at 180° apart.

6. Install valve assembly (19) in housing assembly (36).

WARNING

Ensure that the small end of conical spring (18) is installed on valve assembly (19). Failure to do so will result in failure of the oxygen regulator delivering insufficient or excessive outlet pressure, resulting in possible loss of aircraft or aircrew.

7. Position conical spring (18) with small end of spring on valve assembly (19).

8. Apply Molykote-Z to inside diameter of main valve retainer (16).

9. Position flow ports of main valve retainer (16) with attached preformed packing (17), with opening toward flared tube fitting (46) and install main valve retainer (16) in housing assembly (36).

10. Install preformed packing (15) in housing assembly (36).

11. Install new plate (12) from shipping container (10) over the main valve retainer (16) and secure with four screws (13) and lockwashers (14).

8-64. LEVER ASSEMBLY. To assemble the Lever Assembly proceed as follows:

1. Position Lever Assembly (6) in housing assembly (36).

2. Secure Lever Assembly (6) with two screws (7), lockwashers (8), and flat washers (9).

3. Perform Lever Assembly adjustment procedures in paragraph 8-69.

8-65. DIAPHRAGM AND SPRING ASSEMBLY. To assemble the Diaphragm and Spring Assembly proceed as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Compound, Sealing	MIL-S-22473 GRH
As Required	Glyptal	1201B (CAGE 24452)
As Required	Krytox 240 AC, Type II, Lubricant	NIIN 00-961-8995
As Required	Lubricant, Flurocarbon	MIL-L-60326
As Required	Power, Talcum	A-A-42A
As Required	Tape, Anti-seize	MIL-T-27730

NOTE

If spring is separated from diaphragm during maintenance, secure with adhesive.

1. Apply a thin film of fluorocarbon lubricant to top contact surface of Lever Assembly (6) and center metal portion of Diaphragm and Spring Assembly (5).

2. Lightly lubricate new preformed packing (4) with Krytox 240 AC and install in housing assembly (36).

3. Lightly dust Diaphragm and Spring Assembly (5) with talcum powder and blow off excess.

4. Install the Diaphragm and Spring Assembly (5) by lightly pressing the diaphragm onto the groove on housing assembly (36).

5. Center spring of Diaphragm and Spring Assembly (5) in spring guide of cover assembly (1).

CAUTION

When removing or installing cover assembly (1), note that there is a resistance between the connector tube of cover assembly (1) and the preformed packing (4) in cover assembly (1). Excessive force could damage the preformed packing (4) or the connector tube on the cover assembly (1).

6. Carefully press the cover assembly (1) onto housing assembly (36), inserting connector tube into the housing assembly (36). Ensure that the diaphragm sealing edge is properly seated in grove of the housing assembly.

7. Install cord end of cap and cord assembly (39) on cover assembly (1).

8. Secure cover assembly (1) with four screws (2) and lockwashers (3).

NOTE

Inlet fitting modified, 90 ° elbow (P/N 1654461-1) (figure 8-7) may be used vice flared tube fitting (46). If inlet fitting modified, 90° elbow is used, refer to NAVAIR 13-1-6.7-3 for aircrew orientation of 90° elbow.

9. Wrap two turns of anti-seize tape around pipe threads of flared tube fitting (46). Screw flared tube fitting (46) into inlet of regulator housing (36) finger tight, then tighten one to two turns with a wrench.

8-66. ALIGNMENT, ADJUSTMENT AND CALIBRATION.

8-67. All alignment, adjustments, and calibration shall be accomplished during assembly and testing of the regulator in accordance with the following paragraphs:

NOTE

Unless otherwise noted, index numbers refer to figure 8-7.

8-68. ADJUSTMENT OF THE PRESSURE BREATHING ANEROID. To adjust the Pressure Breathing Aneroid, proceed as follows: Refer to paragraph 8-42 for test procedures.

1. Remove four screws (23) securing valve cover (22) to aneroid mounting disc (28).

2. Remove valve cover (22), vent valve (24), cover (25), and filter (26).

NOTE

Adjusting aneroid assembly clockwise increases the outlet pressure. Adjusting aneroid assembly counterclockwise decreases the outlet pressure. A change of 1/8 revolution will cause a change in the water pressure of approximately 1.0 inch.

3. Loosen nut (27).

4. Hold the aneroid in place with 1/8 inch wrench when loosening or tightening aneroid locking nut.

5. Make small angular adjustments to aneroid assembly (30).

6. Tighten nut (27) after each adjustment.

7. Perform Pressure Breathing Test in accordance with paragraph 8-42 after each adjustment of aneroid assembly (30).

8. When final adjustments to pressure breathing have been completed, install filter (26), cover (25), vent valve (24), and valve cover (22).

9. Install four screws (23) into valve cover (22) and apply a Glyptal dot to top of screws.

8-69. LEVER ASSEMBLY ADJUSTMENT. To adjust the Lever Assembly, proceed as follows:

Special Tools

Description	Reference Number
Gage, Lever Height	3301113-1 or Local Manufacture IAW Figure 8-5.

1. Remove cover assembly (1) and diaphragm and spring assembly (5) to gain access to lever assembly (6) (paragraph 8-48).

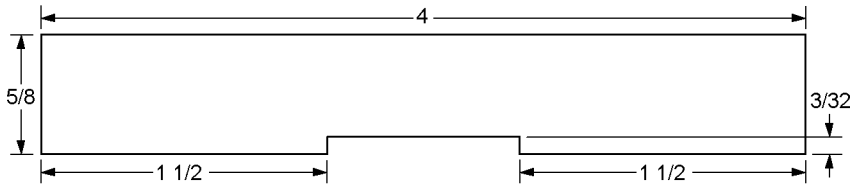
NOTE

Keep bottom of lever assembly (6) square with housing assembly (36) when adjusting lever assembly (6). Bottom of lever assembly (6) should be moved back towards main valve and stem assembly (1).

2. Loosen screws (7). Position lever height gage, on housing assembly (36) across lever assembly (6) (figure 8-6). Slide lever assembly fore or aft along attaching screw slots until lever assembly just touches the bottom edge of lever height gage notch (figure 8-6).

3. Tighten screws (7) and recheck the clearance of lever assembly (6) with lever height gage.

4. Assemble regulator.



NOTE: MADE FROM 3/16 INCH ALUMINUM STOCK.

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Figure 8-5. Lever Height Gage

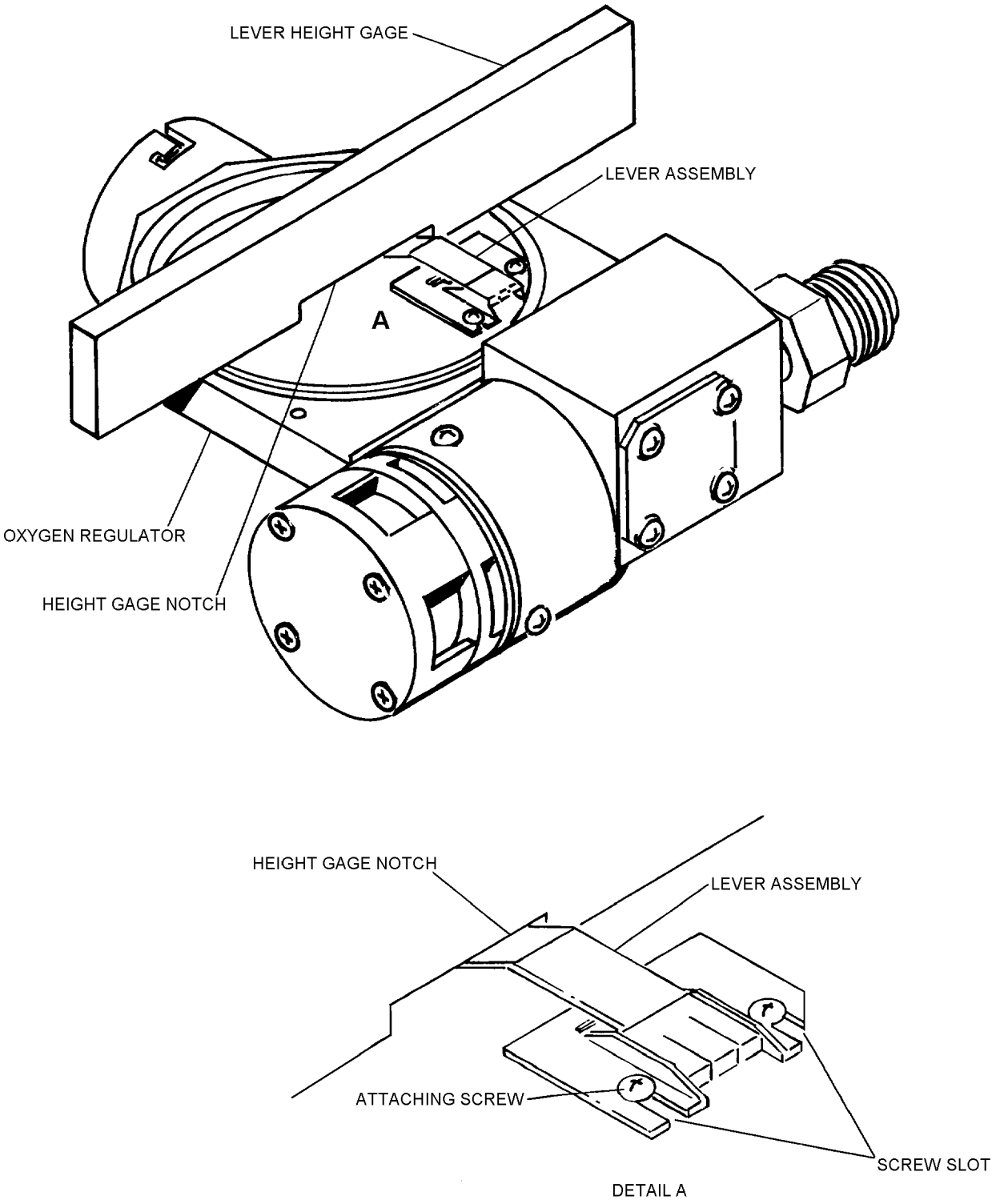

Figure 8-6. Lever Height Adjustment

Section 8-5. Illustrated Parts Breakdown

8-70. GENERAL.

8-71. This section lists and illustrates the procurable parts of the Chest Mounted Oxygen Regulator (CRU-82P), P/N 3260014-0401.

8-72. The Illustrated Parts Breakdown should be used during maintenance when requisitioning and identifying parts.

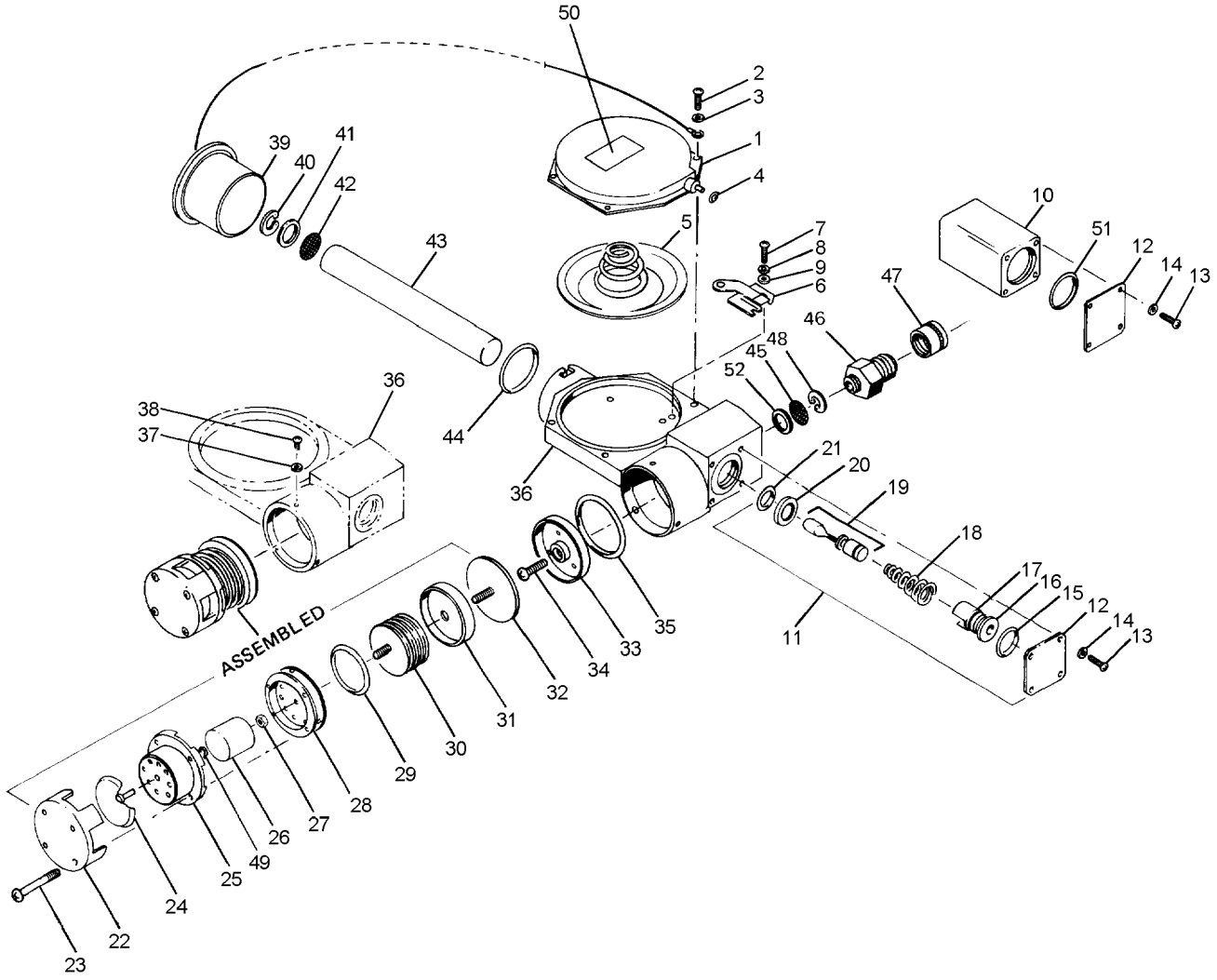

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Figure 8-7. Chest Mounted Oxygen Regulator (CRU-82/P)

Figure and Index Number	Part Number	Description 1 2 3 4 5 6 7	Units Per Assembly	Usable On Code
8-7	3260014-0401	REGULATOR, Oxygen, Chest Mounted, (CRU-82/P)	REF	
-1	163893-1	. COVER ASSEMBLY	1	
		(ATTACHING PARTS)		
-2	MS51957-3	. SCREW, Machine	4	
-3	MS35338-153	. LOCKWASHER	4	
		---*---		
-4	1602321-7	. PACKING, Preformed	1	
-5	1632265-2	. DIAPHRAGM ASSEMBLY	1	
-6	1632642-1	. LEVER ASSEMBLY	1	
		(ATTACHING PARTS)		
-7	MS51957-3	. SCREW, Machine	2	
-8	MS35338-153	. LOCKWASHER	2	
-9	1603660-25	. WASHER, Flat	2	
		---*---		
-10	1632786-1	. CONTAINER, Shipping (Note 1)	1	
-11	1632785-1	. MAIN VALVE AND STEM ASSEMBLY (Note 2)	1	
-12	1632693-1	. . PLATE	1	
		(ATTACHING PARTS)		
-13	MS51957-3	. . SCREW	4	
-14	MS35338-153	. . LOCKWASHER	4	
		---*---		
-15	1602321-5	. . PACKING, Preformed	1	
-16	1632643-1	. . RETAINER, Main Valve	1	
-17	1602321-59	. . PACKING, Preformed	1	
-18	1632692-1	. . SPRING, Conical	1	
-19	1632694-2	. . VALVE ASSEMBLY	1	
-20	163245-1	. . VALVE SEAT, Main	1	
-21	1602321-59	. . PACKING, Preformed	1	
-22	1632805-1	. COVER, Valve	1	
		(ATTACHING PARTS)		
-23	MS51959-8	. SCREW, Machine	4	
		---*---		
-24	1632862-1	. VALVE, Vent	1	
-25	1632589-1	. COVER	1	
-26	1632528-3	. FILTER	1	
-27	1611712-1	. NUT	1	
-28	1632456-1	. DISC, Aneroid Mounting	1	
-29	MS9068-023	. PACKING, Preformed	1	
-30	1643050-1	. ANEROID ASSEMBLY	1	
-31	1632695-1	. SPACER	1	
-32	1632260-2	. VALVE, Gas Loading	1	
-33	163088-3	. SEAT, Gas Loading Valve	1	
		(ATTACHING PARTS)		
-34	MS51959-26	. SCREW, Machine	1	
		---*---		

Figure and Index Number	Part Number	Description 1 2 3 4 5 6 7	Units Per Assembly	Usable On Code
8-7-35	1602321-18	. PACKING, Preformed	1	
-36	1632650-1	. HOUSING ASSEMBLY (ATTACHING PARTS FOR ASSEMBLED ITEMS 22 THRU 32)	1	
-37	MS35338-153	. LOCKWASHER	3	
-38	MS51957-3	. SCREW, Machine ---*---	3	
-39	1622021-5	. CAP AND CORD ASSEMBLY	1	
-40	MS16625-4050	. RING, Retaining, Internal	1	
-41	1632307-5	. DISC, Flow	1	
	1632307-6	(ALTERNATE PART)		
	1632307-7	(ALTERNATE PART)		
	1632307-8	(ALTERNATE PART)		
	1632307-9	(ALTERNATE PART)		
-42	1631278-3	. SCREEN	1	
-43	1631882-1	. FILTER, Outlet	1	
-44	1602321-73	. PACKING, Preformed	1	
-45	1632651-1	. SCREEN	1	
-46	1643340-1	. FITTING, Flared Tube	1	
	1654461-1	. INLET FITTING, Modified 90-degree Elbow	1	
-47	812787-8	. CAP, Protective	1	
-48	1632689-1	. RING, Retaining	1	
-49	MS16633-4009	. RING, Retaining, External	1	
-50	1632697-1	. PLATE, Identification	1	
-51	1602321-66	. PACKING, Preformed	1	
-52	1632691-1	. GASKET	1	
	Notes: 1. Shipping Container, P/N 1632786-1, used only for shipping Main Valve and Stem Assembly. 2. Index numbers 12 thru 21 come as one assembly. Order Main Valve and Stem Assembly, P/N 1632785-1.			

NUMERICAL INDEX

Part Number	Figure and Index Number	SM&R Code
MS16625-4050	8-7-40	PAOZZ
MS16633-4009	8-7-49	PAOZZ
MS35338-153	8-7-3	PAOZZ
	8-7-8	
	8-7-14	
	8-7-37	
MS51957-3	8-7-2	PAOZZ
	8-7-7	
	8-7-13	
	8-7-38	
MS51959-8	8-7-23	PAOZZ
MS51959-26	8-7-34	PAOZZ
MS9068-023	8-7-29	PAOZZ
1602321-18	8-7-35	PAOZZ
1602321-5	8-7-15	PAGZZ
1602321-59	8-7-17	PAOZZ
	8-7-21	
1602321-66	8-7-51	PAOZZ
1602321-7	8-7-4	PAGZZ
1602321-73	8-7-44	PAGZZ
1603660-25	8-7-9	PAGZZ
1611712-1	8-7-27	PAGZZ
1622021-5	8-7-39	
1630883-1	8-7-33	
1630893-1	8-7-1	
1631278-3	8-7-42	PAGZZ
1631882-1	8-7-43	PAGZZ
1632260-2	8-7-32	PAGZZ
1632265-2	8-7-5	PAGZZ
1632307-5	8-7-41	PAGZZ
1632307-6	8-7-41	PAGZZ
1632307-7	8-7-41	PAGZZ
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1632456-1	8-7-28	PAGZZ
1632528-3	8-7-26	PAGZZ
1632589-1	8-7-25	
1632642-1	8-7-6	PAGZZ
1632643-1	8-7-16	
1632645-1	8-7-20	
1632650-1	8-7-36	
1632651-1	8-7-45	PAGZZ
1632689-1	8-7-48	PAGZZ
1632691-1	8-7-52	PAGZZ
1632692-1	8-7-18	
1632693-1	8-7-12	
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1632695-1	8-7-31	PAGZZ
1632697-1	8-7-50	
1632785-1	8-7-11	PAGZZ
1632786-1	8-7-10	
1632805-1	8-7-22	
1632862-1	8-7-24	
1643050-1	8-7-30	PAGZZ
1643340-1	8-7-46	PAGZZ
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