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TM 8-617

WAR DEPARTMENT TECHNICAL MANUAL

U.S. Dept of Army

MASK TYPE OXYGEN THERAPY OUTFIT, COMPLETE, AND OXYGEN THERAPY OUTFIT, WITH MANIFOLD

WAR DEPARTMENT • *14 AUGUST 1944*

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WAR DEPARTMENT • 14 AUGUST 1944

United States Government Printing Office
Washington : 1944

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WAR DEPARTMENT,

WASHINGTON 25, D. C., 14 August 1944.

TM 8-617, Mask Tvpe Oxygen Therapy Outfit, Complete, and Oxygen Therapy Outfit, with Manifold, is published for the information and guidance of all concerned.

[A.G. 300.7 (26 Jun 44).]

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:

J. A. ULIO,
Major General,
The Adjutant General.

DISTRIBUTION:

As prescribed in paragraph 9a, FM 21 – 6: except ROTC (0) ; ID 8(2) ; IR 8(2) ; IC 8(2) ; Med Tech Sch (2).

ID 8: T/O and E 8 – 550.

IR 8: T/O and E 8 – 510, 8 – 560, 8 – 580, 8 – 581.

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For explanation of symbols, see FM 21 – 6.

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CHAPTER 1

GENERAL

1. SCOPE. This manual is published for the information and guidance of all persons charged with the operation and maintenance of Medical Department Items No. 37126, Mask Type Oxygen Therapy Outfit, Complete, and No. 93643, Oxygen Therapy Outfit, With Manifold. The manual is concerned chiefly with the assembly, operation, maintenance, and repair of these units. There are appended standard nomenclature lists of parts with reference to illustrations and quantities of parts.

2. DESCRIPTION. The equipment considered in this manual is used in the administration of oxygen or a mixture of 80 percent helium and 20 percent oxygen.

a. Item No. 37126, Mask Type Oxygen Therapy Outfit, Complete, is for the administration of oxygen or a mixture of helium and oxygen to one patient.

b. Item No. 93643, Oxygen Therapy Outfit, With Manifold, is for the administration of oxygen or a mixture of helium and oxygen to one or two patients.

3. MANUFACTURERS. The two types of equipment are manufactured by both the Oxygen Equipment Manufacturing Company, 405 East 62nd Street, New York, N. Y., and The Heidbrink Division of The Ohio Chemical and Manufacturing Company, 1177 Marquette Street, N. E., Cleveland, Ohio.

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CHAPTER 2

OXYGEN EQUIPMENT MANUFACTURING COMPANY

Section I. Packing and Assembling

4. COMPONENT PARTS AND ASSEMBLING. a. Item No. 37126, Mask Type Oxygen Therapy Outfit, Complete, is packed in a carton containing one regulator with two gauges, one oxygen concentration meter, one adapter, one nasal mask, one oronasal mask, supply tubing and mask parts.

b. To assemble the Mask Type Oxygen Therapy Outfit, as shown in figure 1, proceed as follows:

(1) Attach the oxygen concentration meter, 9R10694 (fig. 1), to the regulator, 9R10601 (fig. 1), by screwing the union nut, attached to the meter, on the regulator outlet restrictor bushing, 9R10680 (fig. 1), and tighten with a wrench.

(2) Slip one end of the supply tubing, 9R10722 (fig. 1), over the outlet on the back of the meter and attach the other end of the tube to the inlet of the inspiratory valve, 9R10716 (fig. 1).

(3) Slip the mouth of the oxygen collecting bag, 9R10626 (fig. 1), over the lower end of the inspiratory valve. Make certain that the valve inlet to which the tubing has been attached is pointing downward, as shown in figure 1.

(4) Fit the desired type of mask or facepiece over the upper end of the inspiratory valve.

(5) When a medical type gas cylinder is to be used, screw the adapter, 9R10616 (fig. 1), into the regulator inlet connector and insert a fiber washer, 9R10682 (fig. 1), into the end of the adapter. When a commercial-type gas cylinder is to be used the adapter is not necessary.

c. Item No. 93643, Oxygen Therapy Outfit With Manifold, is packed in a carton which contains one regulator with two gauges, one manifold (either type "A" or type "B – B"), one adapter, two nasal masks, two oronasal masks, supply tubing and mask parts.

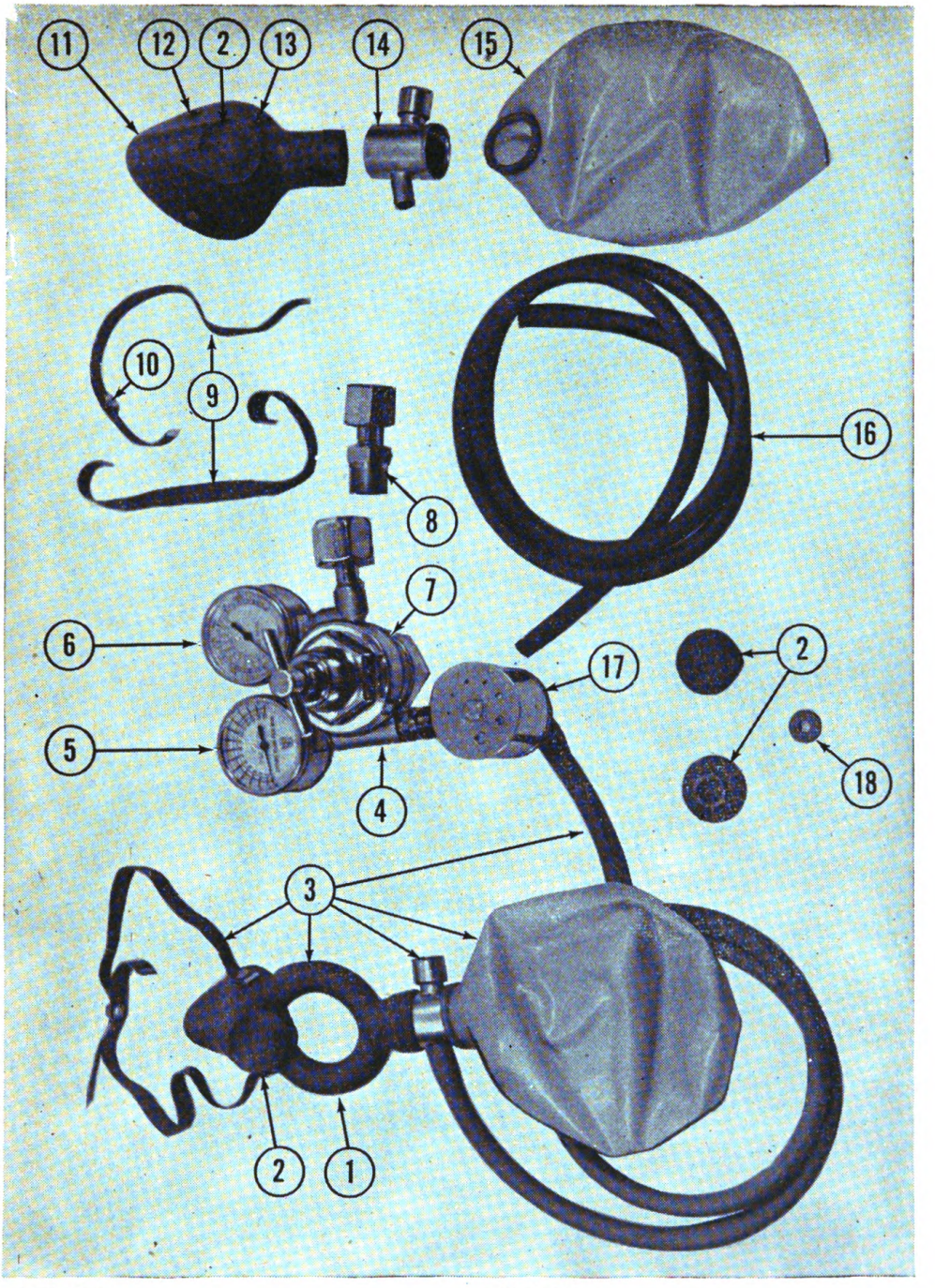
d. To assemble the Oxygen Therapy Outfit With Manifold, as shown in figure 2, proceed as follows:

(1) Attach the manifold to the regulator by screwing the union nut onto the regulator outlet restrictor bushing and tighten with a wrench.

(2) Fit the ends of the supply tubes, 9R10624 (fig. 2), over each of the manifold plug-in valves, 9R10742 (figs. 3, 4, and 5), and attach the other ends of the tubes to the inlets of the two air intake valves, 9R10720 (fig. 2).

(3) For assembly of collecting bags, masks, and adapter proceed as outlined in paragraph 4b(3), (4), and (5).

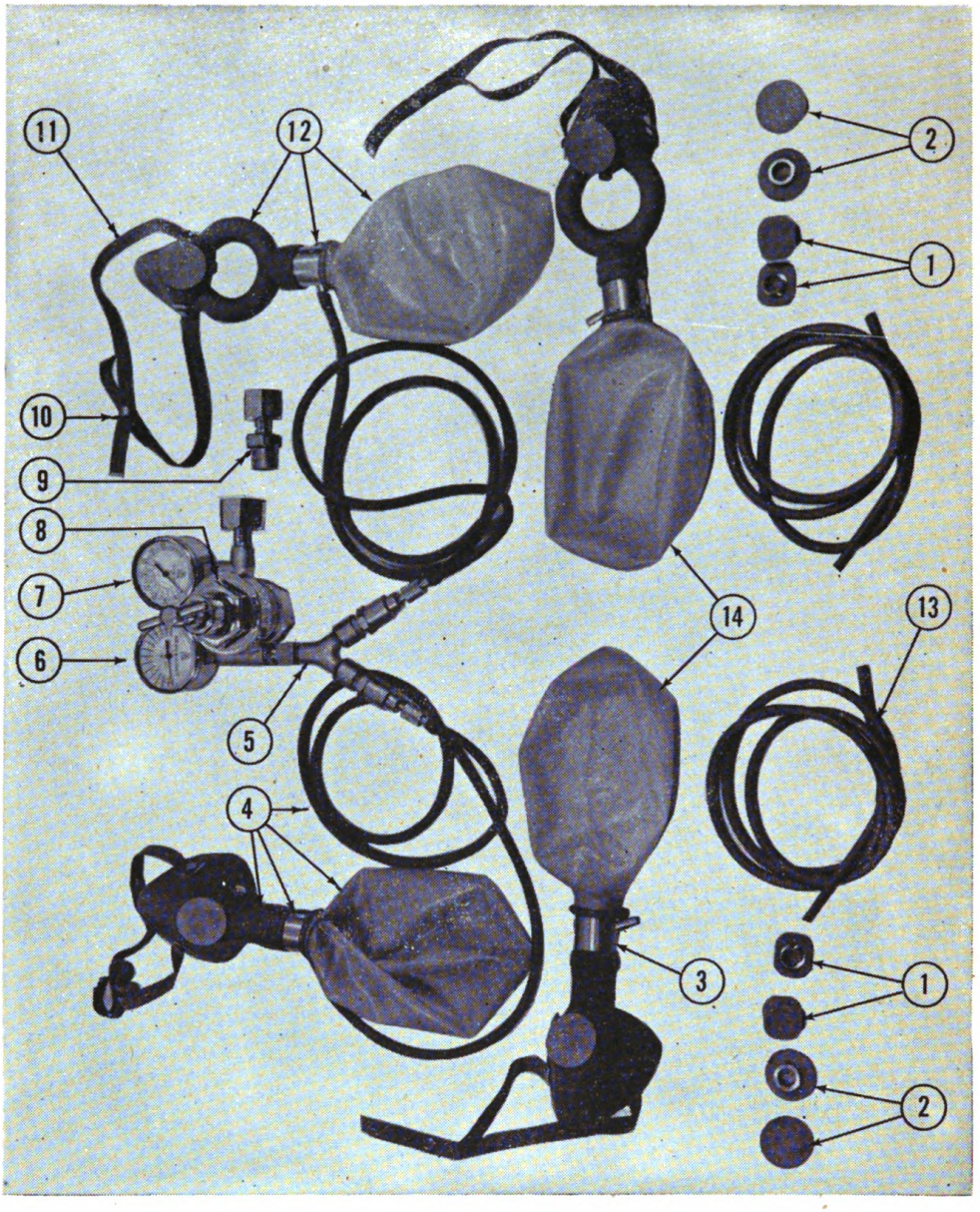
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Med. Dept. No.	Nomenclature
1. 9R10701	Facepiece, Nasal, Rubber.
2. 9R10620	Valve, Expiratory, Flutter.
3. 9R10696	Mask, Nasal, Complete.
4. 9R10680	Bushing, Restrictor, Outlet, Regulator.
5. 9R10612	Gauge, Liter Flow.
6. 9R10604	Gauge, High Pressure.
7. 9R10601	Regulator, Pressure Reducing, Complete.
8. 77890	Cylinder, Valve Adapter, High Pressure.
9. 9R10622	Strap, Retainer.
10. 9R10712	Button, Retainer Strap, Adjusting, Plastic.
11. 9R10702	Facepiece, Oronasal, Rubber.
12. 9R10704	Button, Retainer, Strap, Facepiece.
13. 9R10706	Button, Wagensteen.
14. 9R10716	Valve, Inspiratory, Metal.
15. 9R10626	Bag, Rubber, 2/3 Liter.
16. 9R10722	Tubing, Rubber, 1/2 Inch O. D., 3/8 Inch I. D. x 55 Inch.
17. 9R10694	Meter, Oxgyen, Concentration.
18. 9R10682	Washer, 11/16 Inch O. D., 1/4 Inch I. D. x 1/8 Inch, Fiber.

Figure 1. Item No. 37126 Mask Type Oxygen Therapy Outfit, Complete, manufactured by the Oxygen Equipment Manufacturing Company.

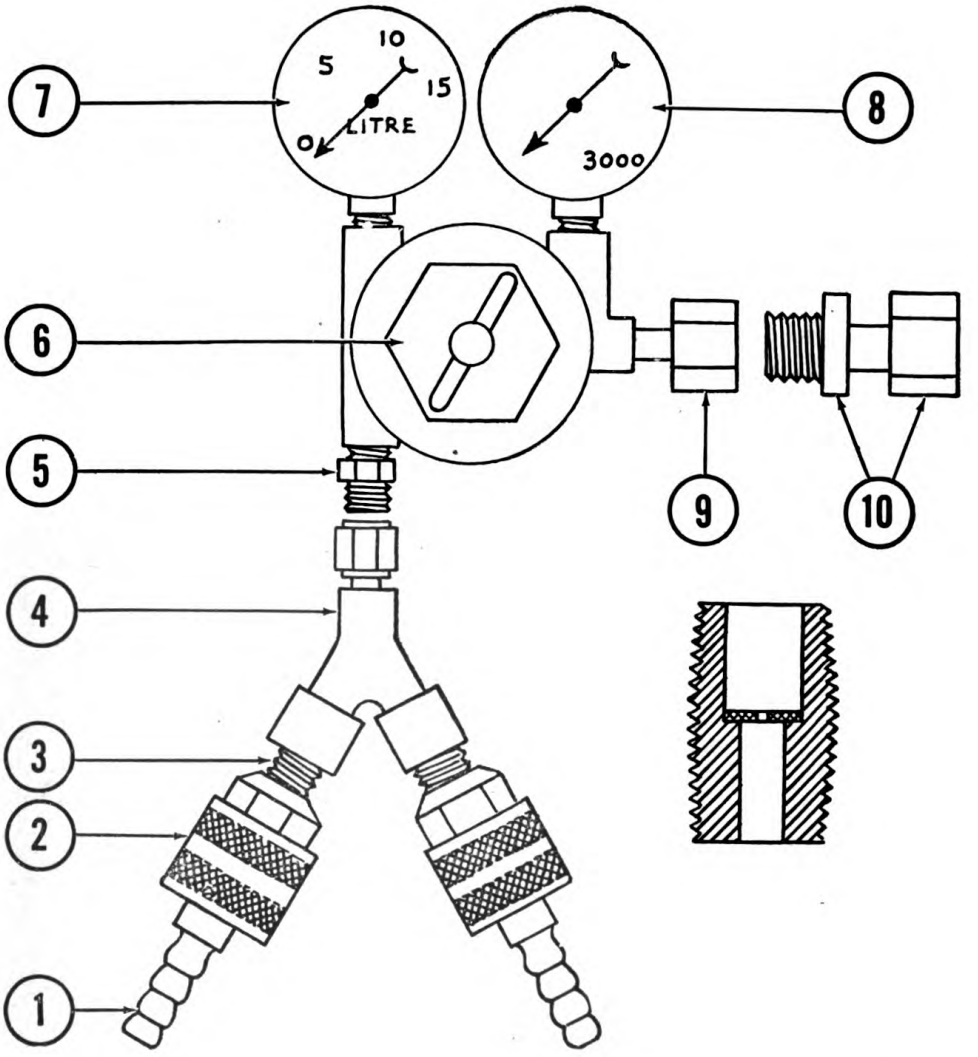
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Med. Dept. No.	*Nomenclature*
1. 9R10628	Valve, Inspiratory, Flutter.
2. 9R10620	Valve, Expiratory, Flutter.
3. 9R10720	Valve, Air Intake, Metal.
4. 9R10768	Mask, Oronasal, Complete.
5. 9R10610	Manifold, Regulator, Complete
6. 9R10612	Gauge, Liter Flow.
7. 9R10604	Gauge, High Pressure.
8. 9R10601	Regulator, Pressure Reducing, Complete.
9. 77890	Cylinder, Valve Adapter, High Pressure.
10. 9R10712	Button, Retainer Strap, Adjusting, Plastic.
11. 9R10622	Strap, Retainer.
12. 9R10766	Mask, Nasal, Complete.
13. 9R10624	Tubing, Rubber, 3/8 Inch O. D., 1/8 Inch I.D. x 55 Inch.
14. 9R10626	Bag, Rubber, 2/3 Liter.

Figure 2. Item No. 93643 Oxygen Therapy Outfit, with Manifold, manufactured by Oxygen Equipment Manufacturing Company.

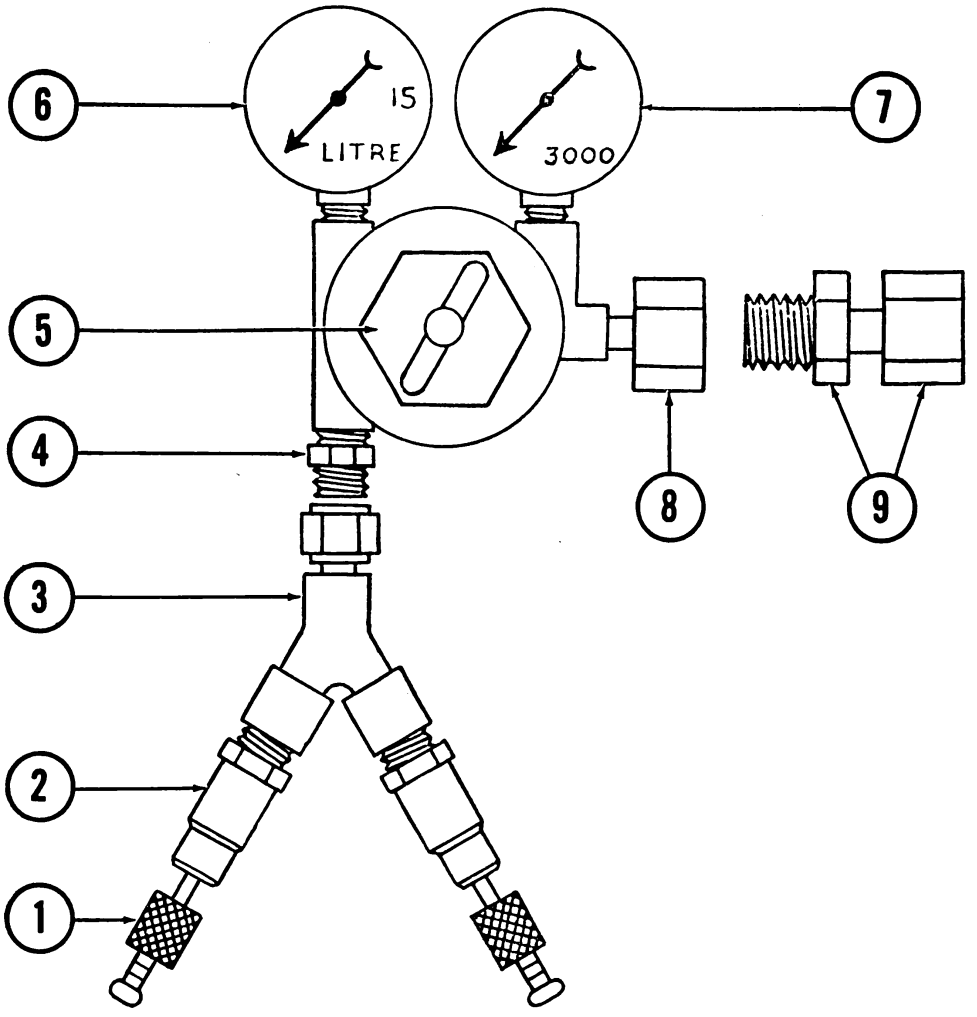
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Med. Dept. No.	Nomenclature
1. 9R10738	Connector Hose.
2. 9R10736	Valve, Check, Automatic.
3. 9R10734	Nipple, Pipe, Short.
4. 9R10732	Casting, "Y" Manifold.
5. 9R10680	Bushing, Restrictor, Outlet, Regulator.
6. 9R10601	Regulator, Pressure Reducing, Complete.
7. 9R10612	Gauge, Liter Flow.
8. 9R10604	Gauge, High Pressure.
9. 9R10678	Connector, Inlet, Regulator.
10. 77890	Adapter.

Figure 3. Regulator Manifold Complete, Type "A," 9R10610.

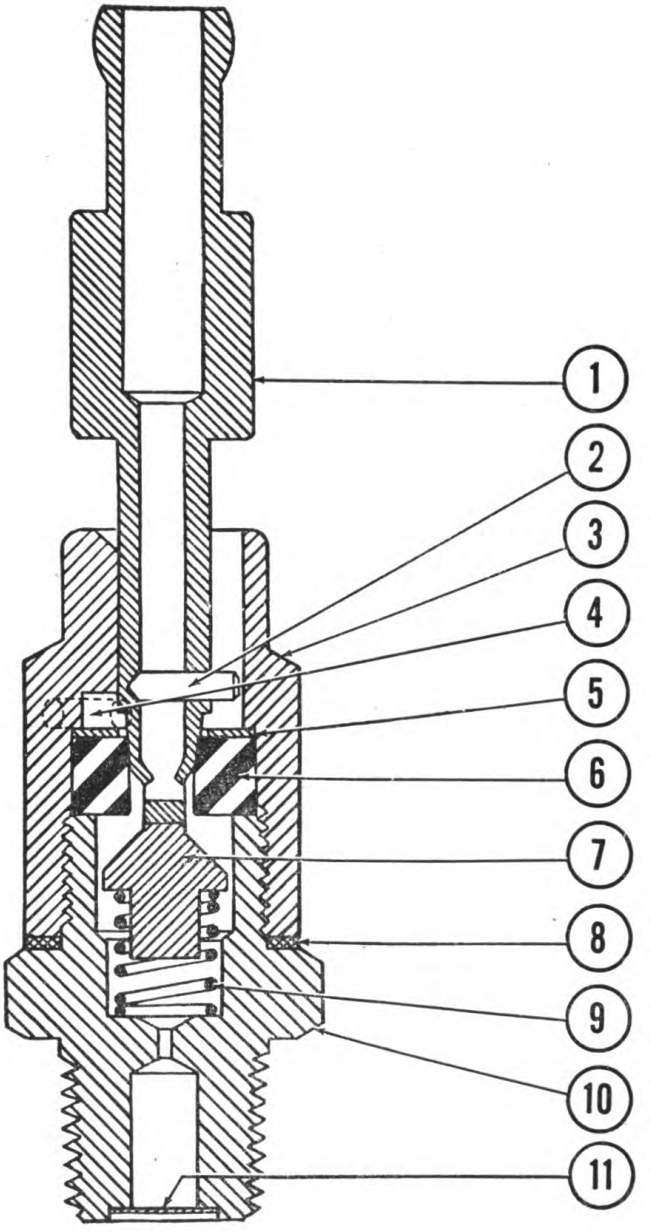
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Med. Dept. No.	*Nomenclature*
1. 9R10744	Stem, Plug-in Valve.
2. 9R10748	Bonnet, Plug-in Valve.
3. 9R10732	Casting, "Y" Manifold.
4. 9R10680	Bushing, Restrictor, Outlet, Regulator.
5. 9R10601	Regulator, Pressure Reducing, Complete.
6. 9R10612	Gauge, Liter Flow.
7. 9R10604	Gauge, High Pressure.
8. 9R10678	Connector, Inlet, Regulator.
9. 77890	Adapter.

Figure 4. Regulator Manifold Complete, Type "B – B," 9R10610.

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Med. Dept. No.	Nomenclature
1. 9R10744	Stem, Plug-in Valve.
2. 9R10746	Pin, Plug-in Valve Stem.
3. 9R10748	Bonnet, Plug-in Valve.
4. 9R10750	Pin, Bonnet, Plug-in Valve.
5. 9R10752	Washer, Plug-in Valve Seat.
6. 9R10754	Seat, Plug-in Valve.
7. 9R10756	Check, Plug-in Valve.
8. 9R10758	Washer, Plug-in Valve Bonnet.
9. 9R10760	Spring, Plug-in Valve.
10. 9R10762	Body, 3/4 Inch Hex, Plug-in Valve.
11. 9R10764	Screen, Plug-in Valve.

Figure 5. Plug-in valve for Type "B – B" Manifold, 9R10742.

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5. DISASSEMBLING AND PACKING. To disassemble and pack the equipment proceed as follows:

a. Disconnect the oxygen concentration meter or manifold from the regulator.

b. Disconnect the tube or tubes.

c. Disconnect the masks and bags from the inspiratory or air intake valves.

d. Pack all the parts of one outfit into a stout box or carton, preferably the original carton if it is in good condition. Pack paper or rags around the regulator for protection and to keep it from moving during transit.

Section II. OPERATION

6. CONNECTING AND TESTING REGULATOR. a. Before connecting the regulator to the gas cylinder, open the cylinder valve for a moment to dislodge any dirt which would otherwise be discharged into the regulator and cause interior damage. Connect the regulator to the cylinder, using the adapter if necessary, and tighten with a wrench.

b. To prevent the loss of gas make certain that the connections are tight by proceeding as follows:

(1) Close the regulator valve by turning the adjusting screw counterclockwise until it is loose, then open the gas cylinder valve.

(2) Apply a thin film of soap suds around all connections with a shaving brush or paint brush.

(3) If bubbles occur, a leakage is indicated at that point. Tightening of the connection will often stop the leak, but if not, specific repairs may be required as described in section III.

c. Tests for leakage when using a manifold may be made as described above except that the regulator valve is left open and the manifold outlets closed by removing both of the plug-in valves.

7. ADJUSTING THE MASK. The mask, either nasal or oronasal, is placed over the nose or nose and mouth of the patient and adjusted with the headbands. The headbands should be tightened just enough to make a snug fit so that no leakage occurs between the face and the mask rim. Be sure that the flutter valve is in good condition and functions properly.

8. GAS CONCENTRATION. a. When using item No. 37126 Mask Type Oxygen Therapy Outfit, with the oxygen concentration meter, the percentage of oxygen concentration may be adjusted from 40 percent to 95 or 100 percent by turning the top plate of the meter to the desired percentage. The flow of gas should be such that the oxygen collecting bag fills and partially closes while the patient is breathing. To increase the flow turn the regulator adjusting screw in a clockwise direction. To decrease the flow turn in a counterclockwise direction.

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b. For use with helium-oxygen mixture (80 percent to 20 percent) set the meter disc at 95 plus percent, and use a flow of 7 to 10 liters per minute.

c. When using the Oxygen Therapy Outfit, With Manifold, item No. 93643, approximate oxygen concentrations may be obtained by the use of the following table:

Flow in Liters Per Minute	*Percentage of Oxygen*
2	35 – 44
3 – 4	50 – 60
8 – 10	90 – 100

The rate of flow may be adjusted with the regulator adjusting screw as described in paragraph 8a.

d. When using an 80 percent helium and 20 percent oxygen mixture the rate of flow should be approximately 7 to 10 liters per minute.

e. When treatment is momentarily finished, first turn off the cylinder valve allowing the gas to escape from the regulator and facepiece. When all oxygen is released close the regulator valve by turning counterclockwise until it turns freely.

9. HUMIDIFICATION. Enough moisture usually remains in the mask from the patient's previously expired air to provide sufficiently high and comfortable humidity. When using the oxygen concentration meter the moisture content may be increased by introducing water into the meter up to the top of the transparent window which is just below the meter outlet.

10. PURPOSE OF WAGENSTEEN BUTTON. The Wagensteen Button, 9R10706 (fig. 1), is used to plug the hole near the bottom of the facepiece. The button should be removed only when it is desired to use a Wagensteen tube while oxygen is being administered to the patient.

Section III. MAINTENANCE AND REPAIR

11. MAINTENANCE. a. All the rubber parts should be cleaned, after each use, by washing with soap and water or an aqueous sterilizing solution at room temperature, then rinse and dry thoroughly. Do not sterilize the rubber parts by boiling or autoclaving. The metal inspiratory valve should be washed and rinsed, then wrapped in gauze and boiled for three minutes. Clean other metal parts with a nonflammable cleaning fluid.

b. The following precautions should be taken to lengthen the life of the equipment:

(1) Never use any oil or substance containing oil on any part of the oxygen control equipment.

(2) Keep the equipment clean and dry.

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(3) Clean the regulator inlet and the gas cylinder valve before connecting the regulator.

(4) Do not tamper with regulator parts.

(5) When starting to administer gas open the gas cylinder valve slowly.

12. REPAIRS AND REPLACEMENTS. a. Masks. Minor leaks in masks may often be repaired with rubber patches but when a mask develops a bad leak or becomes worn, it should be replaced with a new mask. The expiratory flutter valve may be replaced by merely snapping out the old valve and metal holder and inserting a new one. An extra flutter valve is packed with each mask.

b. Air intake valve. To replace the square flutter valve, 9R10628 (fig. 2), in the air intake valve, 9R10720 (fig. 2), push out the metal flutter valve holder with a screw driver or similar tool. To insert the new square flutter valve place it on the ball of the finger and insert it in the air intake valve over the sleeve in which it fits, then force in until it snaps into place.

c. How to replace regulator seat. Refer to figures 6 and 7 and proceed as follows:

(1) Turn adjusting screw, 9R10642, to the right to lift the seat, 9R10602, off the nozzle, 9R10666. This step is important.

(2) Place the back cap, 9R10672, in a vise and tap the outlet lug of the regulator body with a small hammer to loosen the body to the left. When it is loose, use a wrench and keep turning to the left until the back cap is removed.

Note. If available, use the regulator body holder, 9R10692 (fig. 8) and the hexagonal bonnet wrench, 9R10690 (fig. 8), instead of the vise and wrench mentioned above.

(3) Remove the four yoke screws, 9R10676, in seat retainer centerpiece, 9R10668.

(4) Remove the seat retaining ring, 9R10608, with the regulator screw driver, 9R10684 (fig. 9), or a similar one. Push the old seat, 9R10602, out of the seat retaining ring.

(5) Insert a new seat by pushing or tapping it snugly in place with a block of wood taking care not to scratch the seating surface. The seat is tapered so that only one face will go into the retaining ring.

(6) Replace the parts using a new back cap washer, 9R10606. Dip the new washer in water to lubricate and insure against tearing it. Tighten all parts so that there will be no leakage.

(7) Back off the adjusting screw by turning to the left.

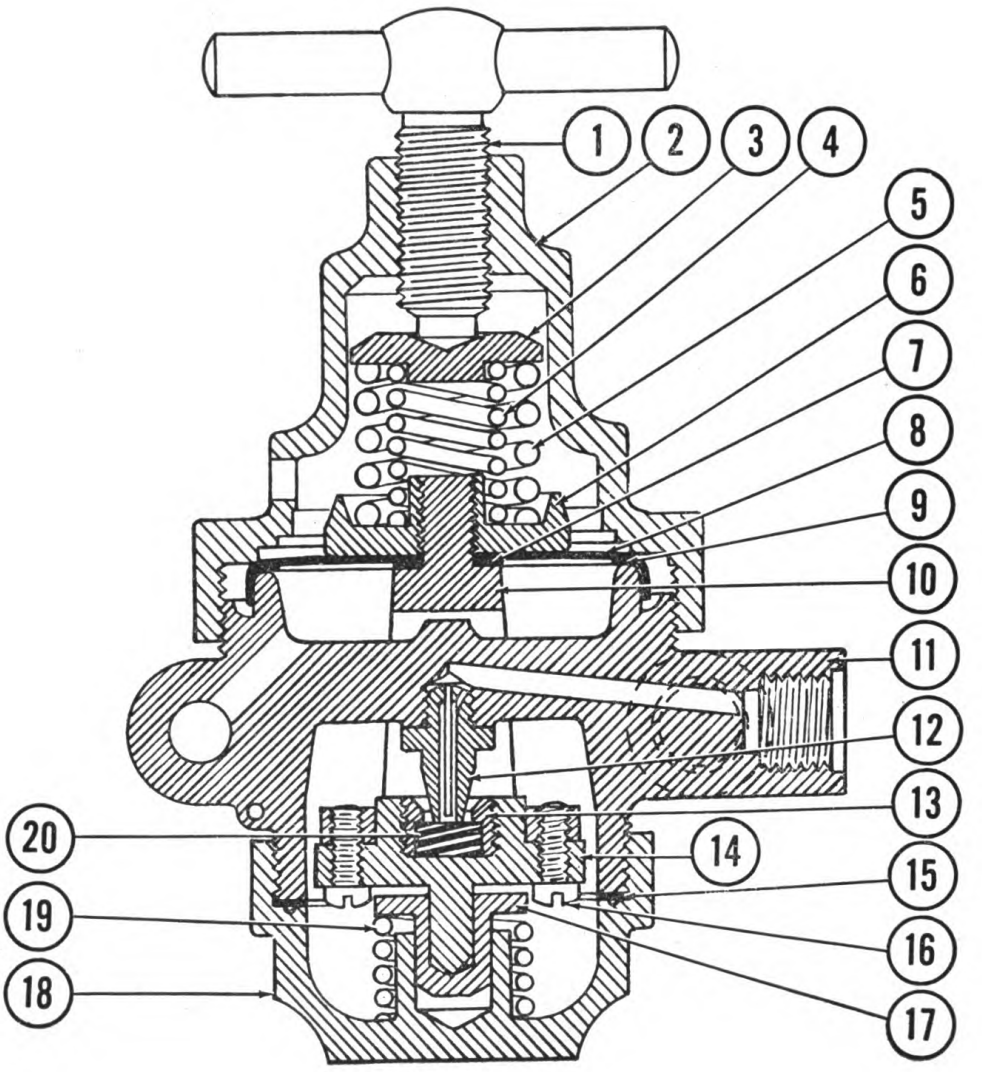
(8) To make the seat gas tight, attach the regulator to a gas cylinder and, while holding a finger tight over the outlet bushing, turn the adjusting screw all the way in (right), then all the way out (left).

d. How to replace regulator diaphragm. Refer to figures 6 and 7, and proceed as follows:

(1) Remove back cap and seat retainer centerpiece as outlined in paragraph 12c (1), (2), and (3).

(2) Place two flat faces of the hex bonnet, 9R10644, in a vise.

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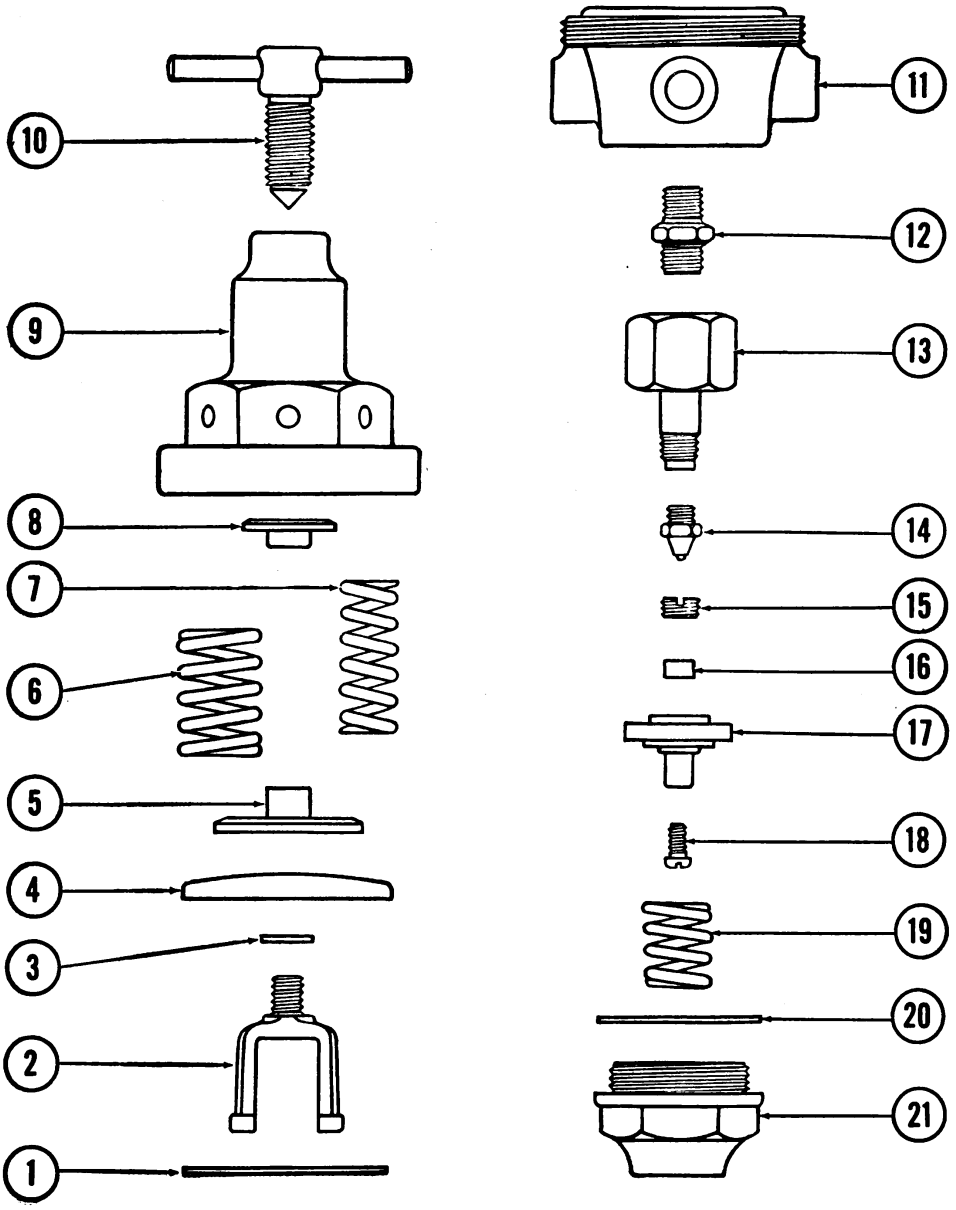


Med. Dept. No.	*Nomenclature*
1. 9R10642	Screw, Adjusting, Regulator.
2. 9R10644	Bonnet, Regulator.
3. 9R10648	Button, Spring, Regulator.
4. 9R10650	Spring, Light, Regulator.
5. 9R10652	Spring, Heavy, Regulator.
6. 9R10654	Plate, Diaphragm, Regulator.
7. 9R10662	Washer, Regulator Yoke.
8. 9R10656	Diaphragm, Regulator.
9. 9R10658	Washer, Regulator Diaphragm.
10. 9R10660	Yoke, Regulator.

Med. Dept. No.	*Nomenclature*
11. 9R10664	Casting, Body, Regulator.
12. 9R10666	Nozzle, Regulator.
13. 9R10608	Ring, Seat Retaining.
14. 9R10668	Centerpiece, Seat Retainer, Regulator.
15. 9R10606	Washer, Back Cap.
16. 9R10676	Screw, Regulator Yoke.
17. 9R10670	Guide, Centerpiece, Regulator.
18. 9R10672	Back Cap, Regulator.
19. 9R10674	Spring, Regulator Back Cap.
20. 9R10602	Seat, Regulator.

Figure 6. Pressure Reducing Regulator, 9R10601, Oxygen Equipment Manufacturing Company.

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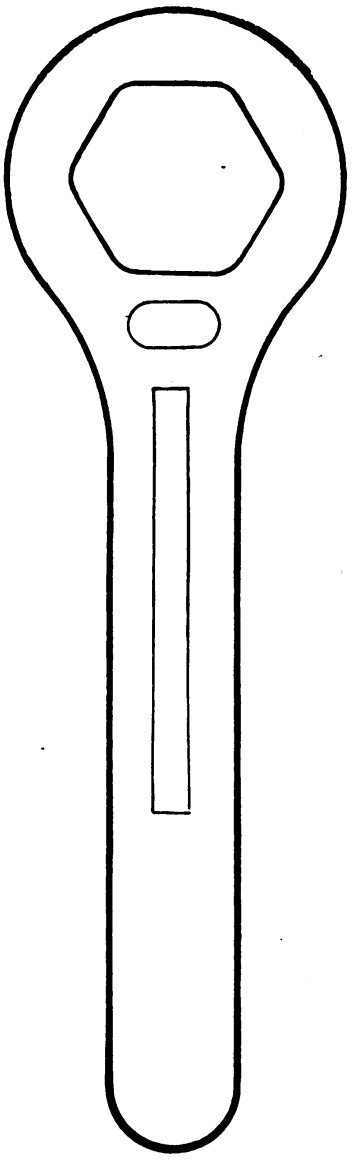


Med. Dept. No.	Nomenclature
1. 9R10658	Washer, Regulator Diaphragm.
2. 9R10660	Yoke, Regulator.
3. 9R10662	Washer, Regulator Yoke.
4. 9R10656	Diaphragm, Regulator.
5. 9R10654	Plate, Diaphragm, Regulator.
6. 9R10652	Spring, Heavy, Regulator.
7. 9R10650	Spring, Light, Regulator.
8. 9R10648	Button, Spring, Regulator.
9. 9R10644	Bonnet, Regulator.
10. 9R10642	Screw, Adjusting, Regulator.
11. 9R10664	Casting, Body, Regulator.

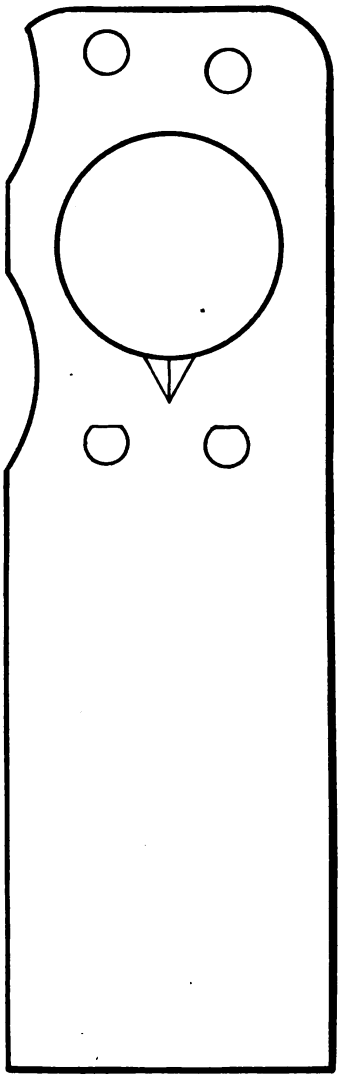
Med. Dept. No.	Nomenclature
12. 9R10680	Bushing, Restrictor, Outlet, Regulator.
13. 9R10678	Connector, Inlet, Regulator.
14. 9R10666	Nozzle, Regulator.
15. 9R10608	Ring, Seat Retaining.
16. 9R10602	Seat, Regulator.
17. 9R10668	Centerpiece, Seat Retainer, Regulator.
18. 9R10676	Screw, Regulator Yoke.
19. 9R10674	Spring, Regulator Back Cap.
20. 9R10606	Washer, Back Cap.
21. 9R10672	Back Cap, Regulator.

Figure 7. Parts for Pressure Reducing Regulator.

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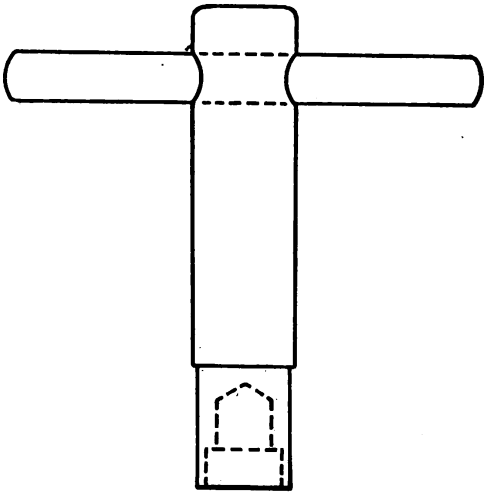
HEXAGONAL
BONNET
WRENCH



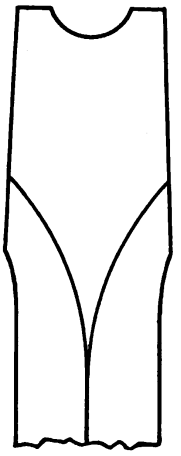
REGULATOR
BODY
HOLDER

Figure 8. Hexagonal bonnet wrench, 9R10690, and Regulator body holder, 9R10692.

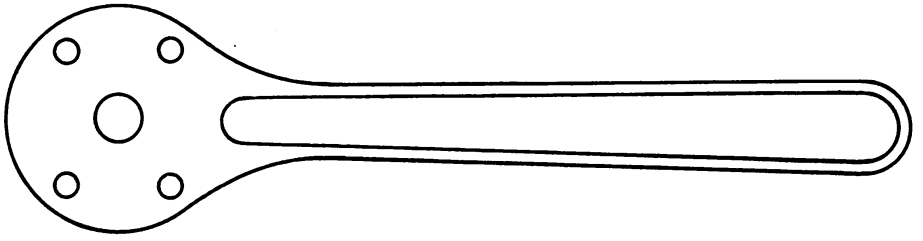
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REGULATOR
NOZZLE WRENCH



REGULATOR
SCREW DRIVER HEAD



REGULATOR CENTER PIECE HOLDER

Figure 9. Screw Driver Head, 9R10684, Regulator Centerpiece Holder, 9R10686, and Regulator Nozzle Wrench, 9R10688.

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(3) Using a wrench turn the regulator body, 9R10664, to the left and unscrew the bonnet, 9R10644.

(4) Remove the old diaphragm, 9R10656, diaphragm plate, 9R10654, and yoke, 9R10660, by prying under the edge of the diaphragm with a screw driver.

(5) Disassemble the diaphragm plate from the yoke with a screw driver and pliers.

(6) Put a new diphragm on the yoke using a new alloy yoke washer, 9R10662, (dipped in water) between the yoke and the bottom of the diaphragm. Install the diaphragm plate to the yoke and tighten snugly with pliers and screw driver. Dip a new diaphragm washer in water and install it between the bottom of the diaphragm and the body.

(7) Replace the assembly of yoke and diaphragm using care to place the yoke so that it is centered about the bridge and does not touch it at any point. The legs of the yoke should be concentrically parallel to the edges of the bridge. The regulator centerpiece holder, 9R10686 (fig. 9), should be used if it is available.

(8) Replace both springs, 9R10650 and 9R10652, and the spring button, 9R10648, on top of the diaphragm plate.

(9) Screw on the bonnet, 9R10644, and tighten with a wrench.

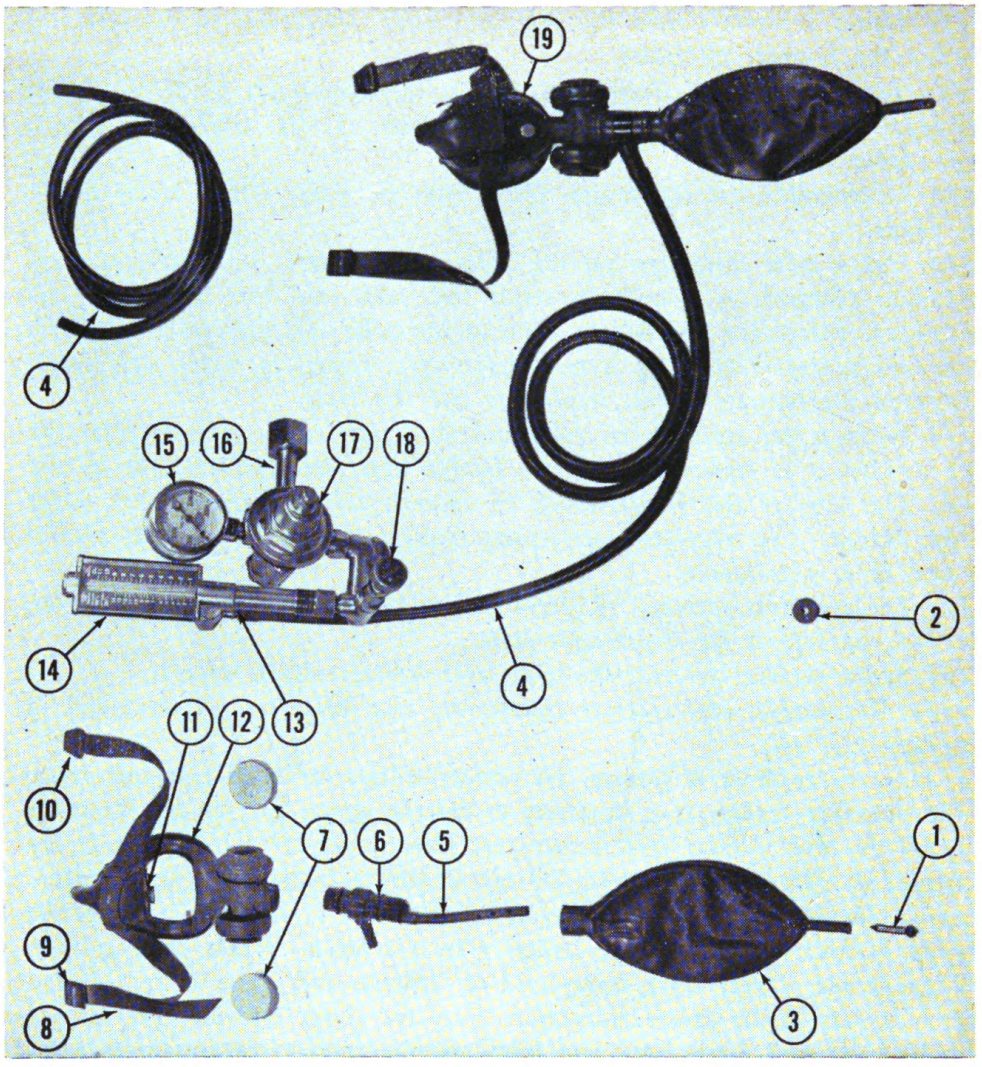
(10) Reassemble seat retainer centerpiece and back cap as described in paragraph 12c (6).

e. How to replace a gauge. To remove either the high pressure gauge or the liter flow gauge, it is necessary to tap the gauge boss on the regulator body all the way around with a hammer. This cracks the litharge which has been used to form a hard cement. Do not attempt to remove the gauge before breaking the litharge as it might result in a fracture of the nipple. After the litharge is cracked unscrew the gauge with a wrench. When putting on a new gauge use a very thick compound of litharge and glycerin on the first several threads of the gauge connection. Turn the gauge into the body several turns by hand and rotate back and forth several times to be certain that the compound thoroughly covers the threads. Do not employ too much force when tightening the gauge. Allow the cement to dry for at least thirty minutes before testing or using the gauge.

Caution: Do not use ordinary luting compounds as they are highly combustible in contact with oxygen. Such products as white lead, linseed oil, etc., must never be used.

13. SPECIAL REPAIR TOOLS. In the repairs described above certain tools are mentioned which are made especially for the regulator. These tools include a hexagonal bonnet wrench, 9R10690, a regulator body holder, 9R10692 (see fig. 8), a special screw driver, 9R10684, regulator centerpiece holder, 9R10686, and regulator nozzle wrench, 9R10688 (see fig. 9).

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Med. Dept. No.	Nomenclature
1. 9R10820	Plug, Oxygen Bag.
2. 9R03136	Washer, Regulator, 23/36 Inch O. D., 3/16 Inch I. D., 1/16 Inch Thick, Fiber.
3. 9R10426	Bag, Rubber, 2/3 Liter.
4. 9R10424	Tubing, Rubber, 3/8 Inch O. D., 3/16 Inch I. D., 55 Inch Long.
5. 9R10428	Tube, Rubber, Perforated, 5 Inch.
6. 9R10814	Connector, Bag to Mask, Plastic.
7. 9R10420	Disc, Valve, Sponge Rubber.
8. 9R10422	Strap, Retainer.
9. 9R10810	Slide, Adjusting, Retainer Strap.
10. 9R10808	Hook, Retainer Strap.
11. 9R10804	Button, Wagensteen.
12. 9R10800	Facepiece, Nasal, Rubber.
13. 9R10490	Outlet, Flowmeter.
14. 9R10472	Flowmeter, Oxygen, Helium-Oxygen, Complete.
15. 9R10414	Gauge, 3,000 Lb., High Pressure.
16. 9R10430	Tube, Inlet, Tapered.
17. 9R11492	Regulator, Tank, Complete.
18. 9R10506	Stem, Needle Valve.
19. 9R10802	Facepiece, Oronasal, Rubber.

Figure 10. Item 37126, Mask Type Oxygen Therapy Outfit, Complete, manufactured by the Ohio Chemical and Manufacturing Company.

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CHAPTER 3

HEIDBRINK DIVISION OF OHIO CHEMICAL AND MANUFACTURING COMPANY

Section I. PACKING AND ASSEMBLING

14. COMPONENT PARTS AND ASSEMBLING. a. Item No. 37126, Mask Type Oxygen Therapy Outfit, Complete, is packed in a carton containing one regulator with a high pressure gauge and a flowmeter attached, one adapter, one nasal mask, one oronasal mask, supply tubing and mask parts.

b. To assemble the Mask Type Oxygen Therapy Outfit, as shown in fig. 10, proceed as follows:

(1) Slip one end of the rubber supply tubing, 9R10424, over the flowmeter outlet, 9R10490, and attach the other end of the tube to the inlet of the plastic, bag to mask connector, 9R10814.

(2) Insert the lower end of the plastic connector, the end with the perforated rubber tube, 9R10428, into the mouth of the rubber bag, 9R10426.

(3) Fit the desired type of mask over the upper end of the plastic connector.

(4) When a commercial type gas cylinder is to be used screw the adapter, 77890, into the regular inlet connector and tighten with a wrench. When a medical type gas cylinder is to be used the adapter is not necessary.

c. Item No. 93643 Oxygen Therapy Outfit, With Manifold is packed in a carton containing one regulator with a high pressure gauge, a flowmeter, and a manifold with two outlet valves attached, one adapter, two nasal masks, two oronasal masks, supply tubing and mask parts as shown in figures 11 and 12.

d. To assemble the Oxygen Therapy Outfit, With Manifold, as shown in figure 11, proceed as follows:

(1) One tube must always be fitted over the flowmeter outlet, 9R10490, and another tube is then attached to either one of the outlet valves on the manifold, 9R10532, by means of the plug-in coupling, 9R10550 (fig. 13). The other ends of the two tubes are attached to the inlets of two plastic bag to mask connectors.

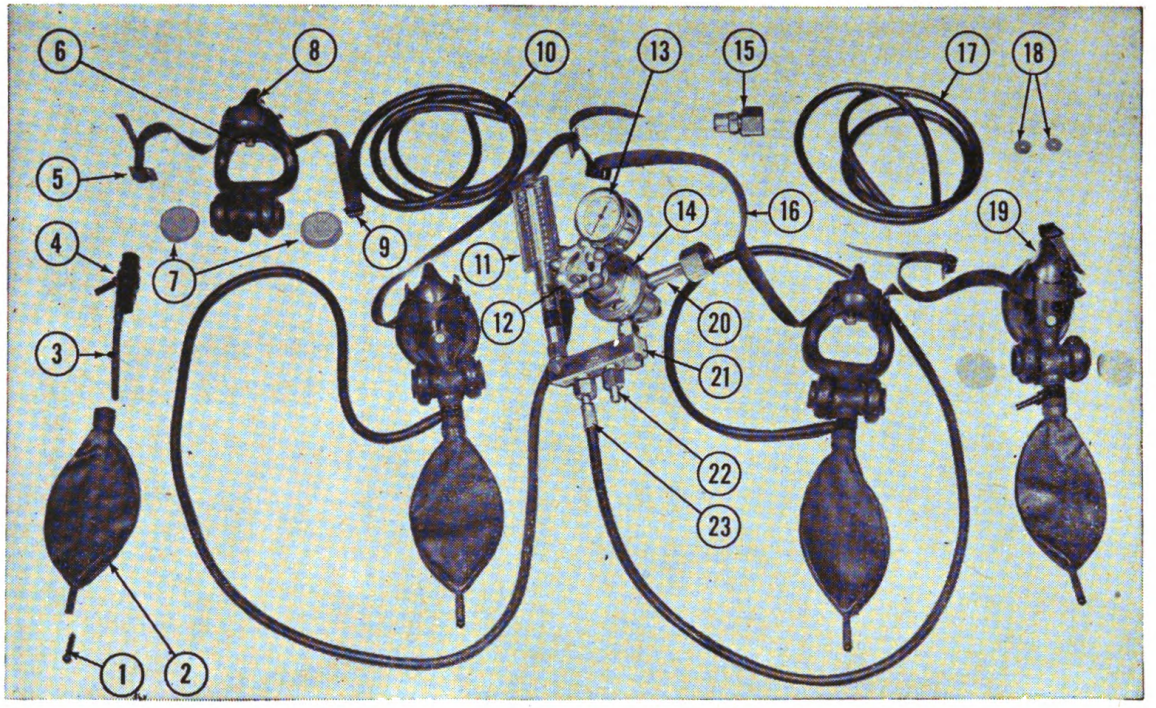
(2) For assembly of the collecting bags, masks and adapter, proceed as outlined in paragraph 14b (2), (3), and (4).

15. DISASSEMBLING AND PACKING. To disassemble and pack the equipment proceed as follows:

a. Disconnect the tube or tubes.

b. Disconnect the mask or masks from the bag to mask connector.

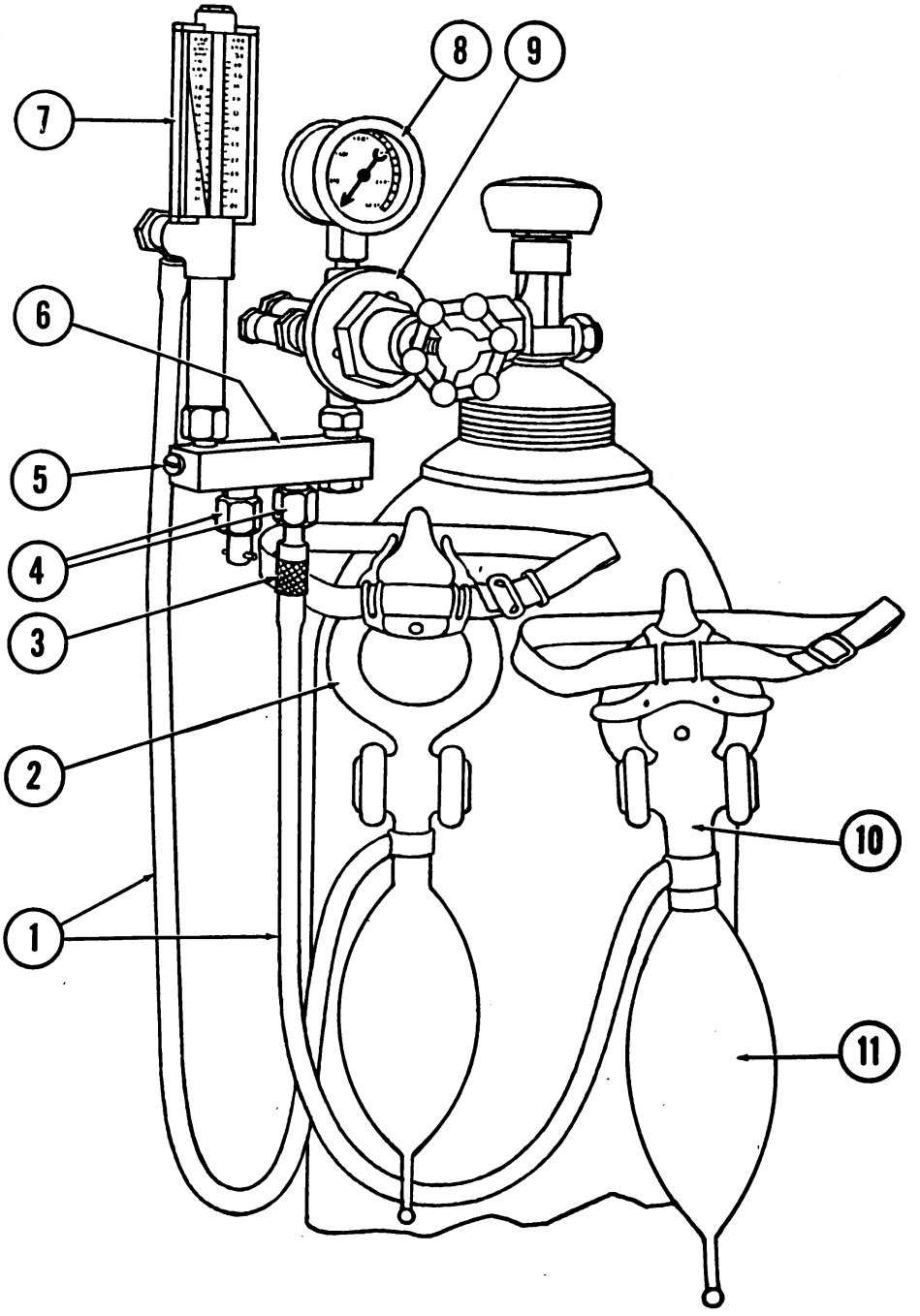
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Med. Dept. No.	Nomenclature
1. 9R10820	Plug, Oxygen Bag.
2. 9R10426	Bag, Rubber, 2/3 Liter.
3. 9R10428	Tube, Rubber, Perforated, 5 Inch.
4. 9R10814	Connector, Bag to Mask Plastic.
5. 9R10810	Slide, Adjusting, Retainer Strap.
6. 9R10804	Button, Wagensteen.
7. 9R10420	Disc, Valve, Sponge Rubber.
8. 9R10800	Facepiece, Nasal, Rubber.
9. 9R10808	Hook, Retainer Strap.
10. 9R10424	Tubing, Rubber, 3/8 Inch O. D., 3/16 Inch I. D., 55 Inch Long.
11. 9R10472	Flowmeter, Oxygen, Helium-Oxygen, Complete.
12. 9R10528	Screw, Adjusting, Handwheel, Regulator.
13. 9R10414	Gauge, 3,000 lb., High Pressure.
14. 9R10526	Regulator, Tank, Complete.
15. 77890	Cylinder, Valve Adapter, High Pressure.
16. 9R10422	Strap, Retainer.
17. 9R10424	Tubing, Rubber, 3/8 Inch O. D., 3/16 Inch I. D., 55 Inch Long.
18. 9R03136	Washer, Regulator, 23/36 Inch O. D., 3/16 inch I. D., 1/16 Inch Thick Fiber.
19. 9R10802	Facepiece, Oronasal, Rubber.
20. 9R10430	Tube, Inlet, Tapered.
21. 9R10532	Manifold, Complete.
22. 9R10534	Valve, Outlet, Manifold, Complete.
23. 9R10550	Coupling, Plug-in, Complete.

Figure 11. Item 93643, Oxygen Therapy Outfit, with Manifold as manufactured by the Ohio Chemical and Manufacturing Company.

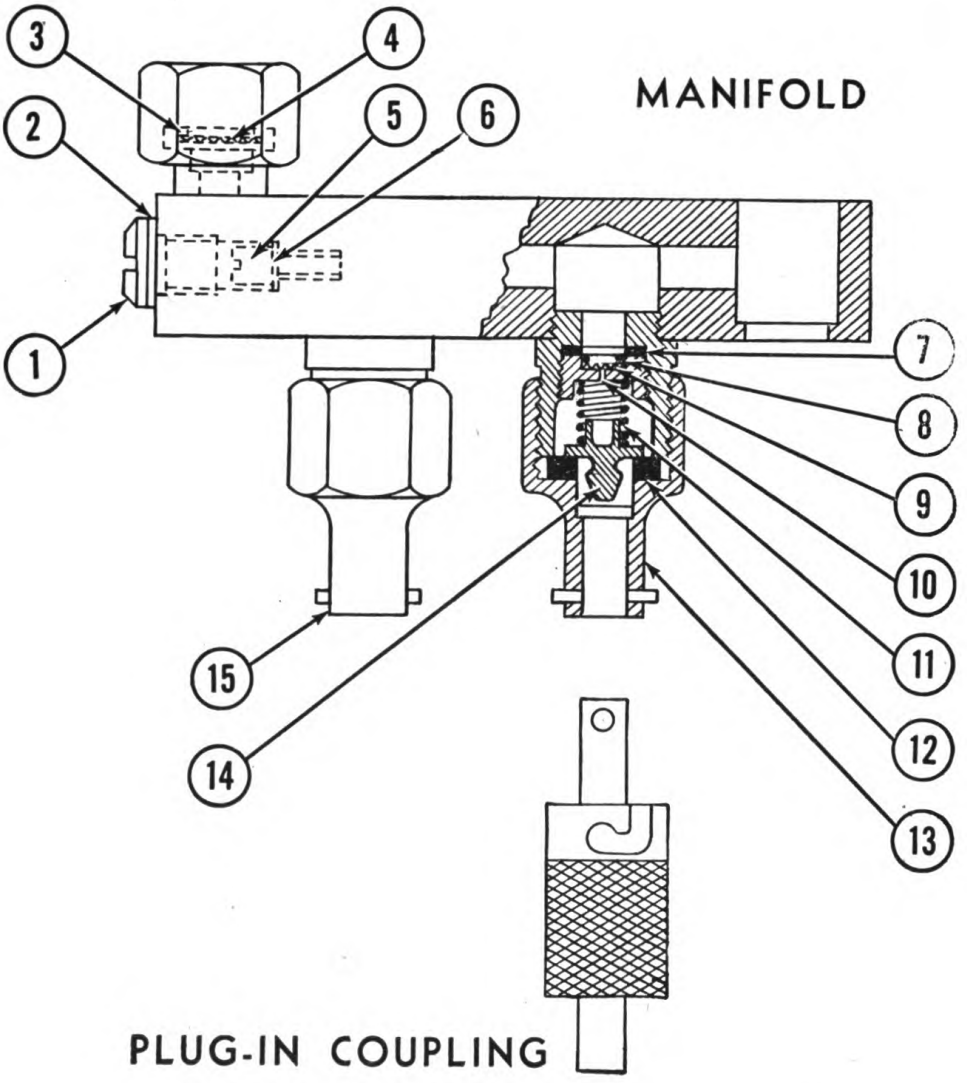
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Med. Dept. No.	*Nomenclature*
1. 9R10424	Tubing, Rubber, 3/8 Inch O. D., 3/16 Inch I. D., 55 Inch Long.
2. 9R10800	Facepiece, Nasal, Rubber.
3. 9R10550	Coupling, Plug-in, Complete.
4. 9R10534	Valve, Outlet, Manifold, Complete.
5. 9R10552	Screw, Cap, Manifold, Flowport.
6. 9R10532	Manifold, Complete.
7. 9R10472	Flowmeter, Oxygen, Helium-Oxygen, Complete.
8. 9R10414	Gauge, 3000 Lb., High Pressure.
9. 9R10526	Regulator, Tank, Complete: With handwheel adjusting screw.
10. 9R10802	Facepiece, Oronasal, Rubber.
11. 9R10426	Bag, Rubber, 2/3 Liter.

Figu e 12. Item 93643, Complete Assembly of Oxygen Therapy Outfit, with Manifold, as manufactured by the Ohio Chemical and Manufacturing Company.

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Med. Dept. No.	Nomenclature
1. 9R10552	Screw, Cap, Manifold, Flowport.
2. 9R10554	Gasket, Fiber, Manifold, Flowport.
3. 9R10474	Ring, Retaining, Flowmeter.
4. 9R10524	Screen Copper, Flowmeter Union Nut.
5. 9R10556	Flowport, Manifold.
6. 9R10558	Gasket, Flowport.
7. 9R10560	Gasket, Limit Port, Manifold.
8. 9R10546	Ring, Retainer, Outlet Manifold.
9. 9R10548	Screen, Outlet Manifold.
10. 9R10544	Port, Limit, Outlet Manifold.
11. 9R10538	Spring, Outlet Manifold Valve.
12. 9R10542	Seal, Gasket, Moulded, Outlet Manifold.
13. 9R10536	Body, Outlet Manifold Valve.
14. 9R10540	Valve, Disc, Outlet Manifold.
15. 9R10534	Valve, Outlet, Manifold, Complete.

Figure 13. Details of manifold, 9R10532, and plug-in coupling, 9R10550.

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c. Pack all the component parts of one outfit in a stout box or carton, preferably the original carton if it is in good condition. Pack paper or rags around the regulator, gauge and flowmeter for protection and to keep the parts from moving during transit.

Section II. OPERATION

16. CONNECTING AND TESTING REGULATOR. a. Proceed as described in paragraph 6a.

b. To test for gas leakage when not using a manifold proceed as outlined in paragraph 6b.

c. To test for gas leakage when using a manifold proceed as follows:

(1) Remove the plug-in coupling from the manifold outlet valve and remove the supply tubing from the flowmeter outlet.

(2) Apply a thin film of soap suds around all connections and on the ends of the manifold outlet valves.

(3) Open the regulator until the flowmeter registers one liter per minute, then close the flowmeter outlet with a thumb or finger and watch for bubbles which indicate a leak.

17. ADJUSTING THE MASK. The mask, either nasal, 9R10800 (figs. 12 and 14) or oronasal, 9R10802 (figs. 12 and 14) is placed over the nose or nose and mouth of the patient and adjusted with the headbands. Pull the headbands just tight enough to make a snug fit and to prevent leakage between the face and the rim of the mask.

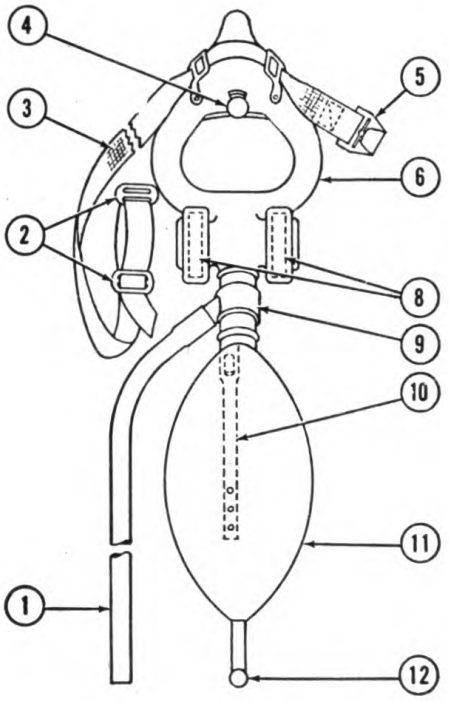
18. GAS CONCENTRATION. a. The following rates of flow will provide the approximate percentages of oxygen in the inspired air and may be used for either one or two patients:

	Percentage of oxygen		
Liters per minute	Small person	Medium size person	Large person
3	45 – 60	40 – 55	35 – 50
4	60 – 75	55 – 70	50 – 65
5	75 – 90	70 – 80	65 – 75
6	90 – 100	80 – 90	75 – 85
7	.....	90 – 100	85 – 92
8	.....	.....	92 – 100

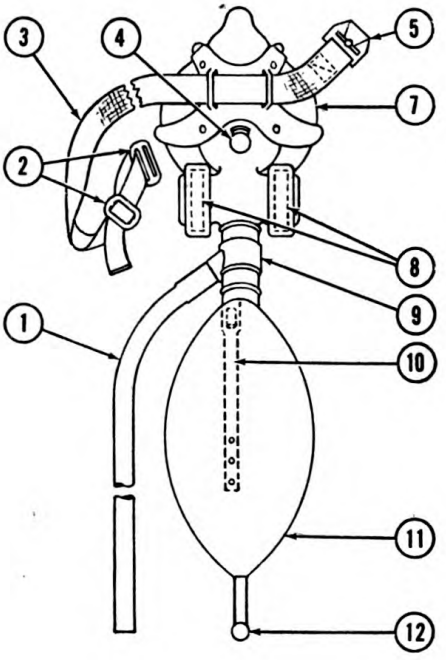
b. The rate of flow is adjusted with the needle valve, 9R10506 (fig. 10) when using item No. 37126 Mask Type Oxygen Therapy Outfit, or the regulator handwheel adjusting screw, 9R10528 (fig. 11) when using item No. 93643 Oxygen Therapy Outfit With Manifold

c. When administering a mixture of 80 percent helium and 20 percent oxygen the flow should be adjusted to the respiratory volume of the patient

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NASAL MASK



ORONASAL MASK

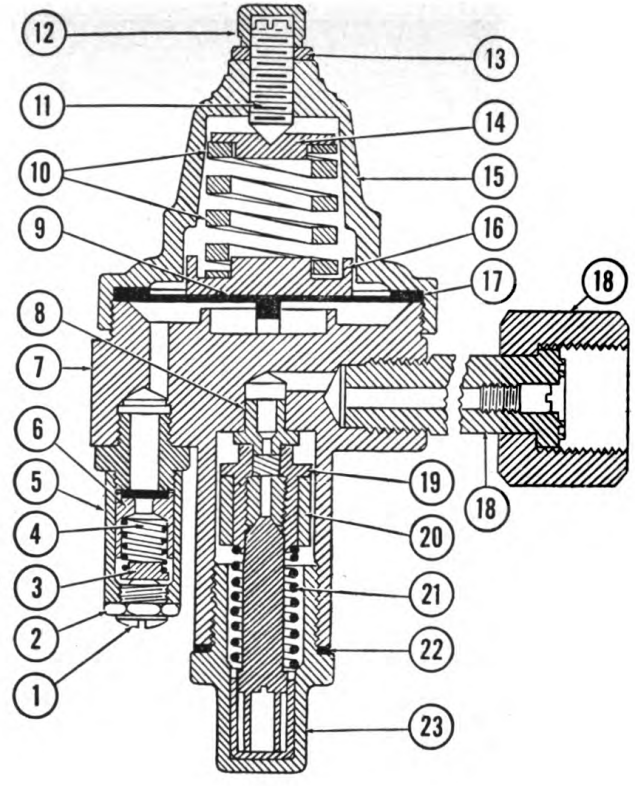
Med. Dept. No.	*Nomenclature*
1. 9R10424	Tubing, Rubber, 3/8 Inch O. D., 3/16 Inch I. D., 55 Inch Long.
2. 9R10810	Slide, Adjusting, Retainer Strap.
3. 9R10422	Strap, Retainer.
4. 9R10804	Button, Wagensteen.
5. 9R10808	Hook, Retainer Strap.
6. 9R10800	Facepiece, Nasal, Rubber.

Med. Dept. No.	*Nomenclature*
7. 9R10802	Facepiece, Oronasal, Rubber.
8. 9R10420	Disc, Valve, Sponge Rubber.
9. 9R10814	Connector, Bag to Mask, Plastic.
10. 9R10428	Tube, Rubber, Perforated, 5 Inch.
11. 9R10426	Bag, Rubber, 2/3 Liter.
12. 9R10820	Plug, Oxygen Bag.

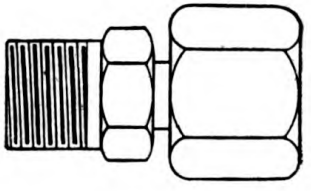
Figure 14. Items 37127, Mask Type Oxygen Therapy Outfit, Mask Nasal, and 37128, Mask Type Oxygen Therapy Outfit, Mask Oronasal, as manufactured by the Ohio Chemical and Manufacturing Company.

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Med. Dept. No.	Nomenclature
1. 9R10458	Screw, Adjusting, Safety Valve.
2. 9R10460	Nut, Lock, Safety Valve.
3. 9R10462	Seat, Spring, Safety Valve.
4. 9R10464	Spring, Steel, Safety Valve.
5. 9R10456	Body, Knurled, Safety Valve.
6. 9R10404	Seat, Plunger, Safety Valve.
6. 9R10466	Plunger, Safety Valve.
7. 9R10442	Casting, Body, Regulator.
8. 9R10440	Nozzle, Regulator.
9. 9R10406	Diaphragm, Regulator.
10. 9R10448	Spring, Regulator, Diaphragm.
11. 9R10494	Screw, Adjusting, Regulator.
12. 9R10496	Cap, Regulator Adjusting Screw.
13. 9R10498	Nut, Lock, Regulator Adjusting Screw.
14. 9R10450	Cap, Spring, Regulator Diaphragm.
15. 9R10452	Cap, Bell, Regulator.
16. 9R10446	Seat, Spring, Regulator Diaphragm.
17. 9R10444	Gasket, Fiber, Regulator Diaphragm.
18. 9R10430	Tube, Inlet, Tapered.
19. 9R10402	Valve, Regulator.
20. 9R10438	Cage, Valve, Ball-bearing, Regulator.
21. 9R10436	Spring, Regulator Valve.
22. 9R10434	Gasket, Regulator Cap-nut.
23. 9R10432	Cap-nut, Hexagonal, Regulator.



REGULATOR



ADAPTER

Figure 15. Pressure reducing regulator, 9R10492, and Adapter, 77890, manufactured by the Ohio Chemical and Manufacturing Company.

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and should be such that the oxygen bag does not quite empty with each inspiration. With the average patient the flow, after about two hours of treatment, will be between six and nine liters per minute.

d. When treatment is momentarily finished, first turn off cylinder valve, allowing the gas to escape from the regulator and facepiece, then close the regulator valve or needle valve depending on which type outfit is being used.

19. HUMIDIFICATION. Enough moisture remains in the mask or oxygen bag from the patient's previously expired air to provide for a sufficiently high and comfortable humidity.

20. PURPOSE OF WAGENSTEEN BUTTON. Refer to paragraph 10.

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Section III. MAINTENANCE AND REPAIR

21. MAINTENANCE. a. All the rubber parts should be cleaned, after each use, by washing with soap and water or an aqueous sterilizing solution at room temperature, then rinse thoroughly dry. After sterilizing, remove the sponge rubber valve discs, 9R10420 (fig. 11), squeeze out the fluid and then replace them.

b. The precautions listed in paragraph 11b should be observed.

22. REPAIRS AND REPLACEMENTS. a. Masks. Minor leaks in masks may often be repaired with rubber patches. However, when masks develop bad leaks or become worn they should be replaced with new ones.

b. How to replace regulator valve. Refer to figure 15 and proceed as follows:

(1) If the regulator has a handwheel adjusting screw turn the screw to the left to loosen.

(2) Remove the hexagonal cap-nut, 9R10432, with a wrench and remove the fiber gasket, 9R10434, the valve spring, 9R10436, the regulator valve, 9R10402, and the ball-bearing valve cage, 9R10438.

(3) Blow out any debris which has accumulated inside and wipe out the valve chamber with a clean, lintless cloth.

(4) Clean the regulator nozzle, 9R10440.

(5) Put in a new regulator valve, reassemble all parts and tighten the cap-nut firmly.

c. How to replace safety valve seat. Refer to figure 15 and proceed as follows:

(1) Screw off the knurled safety valve body with fingers. If necessary, loosen it first with pliers.

(2) Drop out the valve plunger, 9R10466, and spring, 9R10464.

(3) Wipe off the black rubber plunger seat, 9R10404, or if it is in bad condition punch it out and put in a new one.

(4) Reassemble all the parts and test the valve. If there is still a leak, loosen the lock nut, 9R10460, and gradually tighten the adjusting screw, 9R10458, until the leakage stops. Tighten the lock nut.

Note. Do not disturb the safety valve adjusting screw unless necessary.

d. How to replace regulator diaphragm. Refer to figure 15 and proceed as follows:

(1) If the regulator has a handwheel adjusting screw, turn the screw to the left to loosen.

(2) Screw off the bell cap, 9R10452, and lift off the diaphragm spring, 9R10448, the spring cap, 9R10450, and the spring seat, 9R10446.

(3) Remove the diaphragm, 9R10406, and replace with a new one.

(4) Paint a thin film of sealing graphite on the outer edge of the surface of the diaphragm where it contacts the diaphragm seat on the regulator body casting, 9R10442.

Caution: Do not substitute grease or oil for graphite.

(5) Clean the diaphragm seat and reassemble all the parts and tighten the bell cap firmly.

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e. How to replace high pressure gauge. Do not try to repair the gauge. Replace it with a new gauge, 9R10414. Unscrew the gauge with a wrench and replace with a new one. Tighten with wrench so that there is no gas leakage.

Caution: Do not use ordinary luting compounds. If the gauge cannot be tightened so there is no leakage, unscrew the gauge and use the procedure referred to in paragraph 12e.

f. How to replace flowmeter rod. Refer to figure 16 and proceed as follows:

(1) Disconnect the rubber supply tubing from the flowmeter outlet.

(2) Unscrew the union nut, 9R10470, and remove the flowmeter.

(3) Invert the flowmeter and with a knife or screw driver remove the small retaining ring, 9R10474.

(4) Place the palm of one hand over the end of the float chamber, 9R10476, turn the flowmeter right side up and let the rod, 9R103114, drop out gently in the hand. Handle the flowmeter rod carefully with clean, dry hands.

(5) Insert a new flowmeter rod by inverting the flowmeter and dropping rod gently into it. If the rod does not drop all the way into the glass tube, but protrudes about one-half inch, do not try to force it in, but gently shake it until it falls down into the tube.

(6) Replace the retaining ring and attach the flowmeter to the union nut.

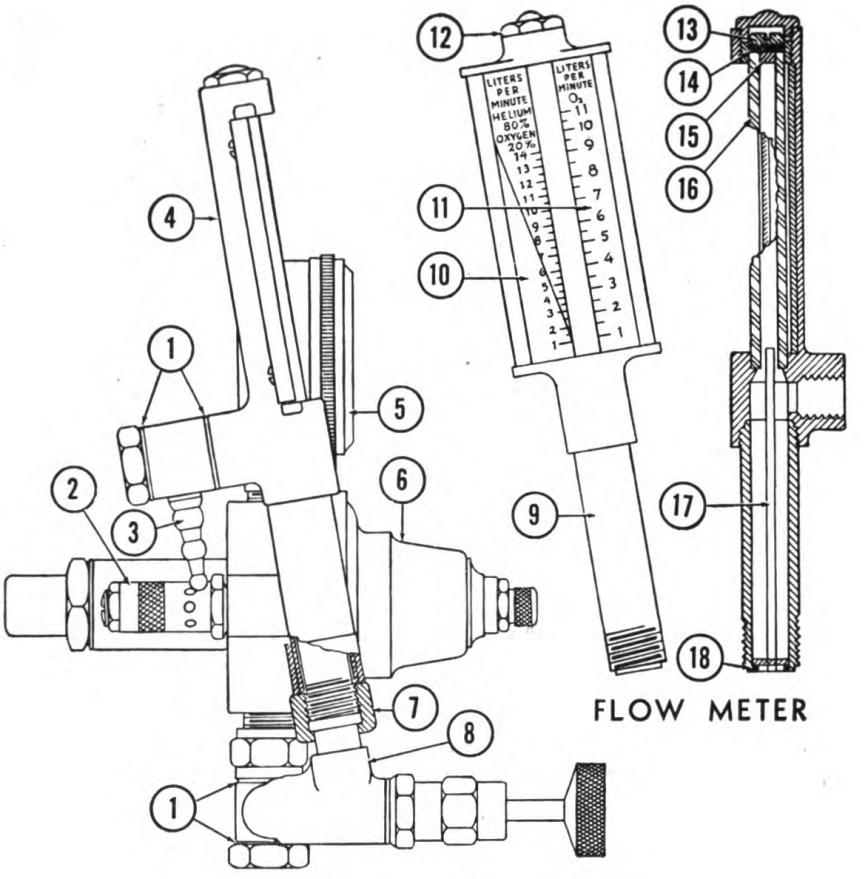
g. How to replace flowmeter glass tube. Refer to figure 16 and proceed as follows:

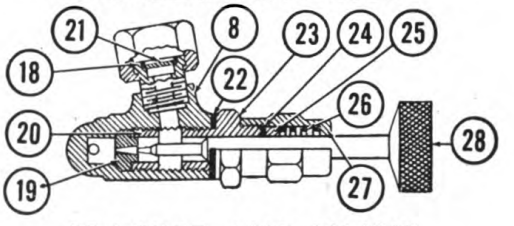
(1) Remove the flowmeter cap-nut, 9R10486, the cap screw, 9R10484, and the rubber gasket, 9R10482.

(2) Invert the flowmeter and drop out the glass tube, 9R03112. If the tube needs cleaning use an ordinary pipe cleaner and remove all lint. Do not blow into the tube, because the tube, chamber and float must be absolutely dry when assembled.

(3) If tube is broken, replace it with a new tube and reassemble the gasket, cap screw and cap nut.

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BRACKET AND VALVE

Med. Dept. No.	*Nomenclature*
1. 9R10468	Washer, Metal.
2. 9R03150	Valve, Safety, Complete.
3. 9R10490	Outlet, Flowmeter.
4. 9R10472	Flowmeter, Oxygen, Helium-Oxygen, Complete.
5. 9R10414	Gauge, 3000 Lb., High Pressure.
6. 9R10492	Regulator, Tank, Complete.
7. 9R10470	Nut, Union.
8. 9R10504	Bracket, Needle Valve.
9. 9R10476	Chamber, Float, Flowmeter.
10. 9R10480	Scale, Helium-Oxygen, Liters per Minute, Flowmeter.
11. 9R10478	Scale, Oxygen, Liters per Minute, Flowmeter.
12. 9R10486	Nut, Cap, Flowmeter.
13. 9R10484	Screw, Cap, Flowmeter.
14. 9R10483	Gasket, Rubber, Flowmeter Cap Screw.
15. 9R10482	Gasket, Rubber, Flowmeter Glass Tube.
16. 9R03112	Tube, Flowmeter, Glass.
17. 9R03114	Rod, Flowmeter, Oxygen, Indicating.
18. 9R10474	Ring, Retaining, Flowmeter.
19. 9R10522	Seat, Copper, Needle Valve.
20. 9R10520	Retainer, Seat, Needle Valve.
21. 9R10524	Screen, Copper, Flowmeter Union-nut.
22. 9R10518	Gasket, Fiber, Needle Valve.
23. 9R10516	Stud, Hex, Needle Valve.
24. 9R10514	Disc, Packing, Needle Valve Bushing.
25. 9R10512	Bushing, Brass, Needle Valve.
26. 9R10510	Spring, Needle Valve.
27. 9R10508	Nut, Packing, Needle Valve.
28. 9R10506	Stem, Needle Valve.

Figure 16. Details of flowmeter, 9R10472, and bracket and valve assembly, 9R10502.

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APPENDIX

STANDARD NOMENCLATURE LIST OF PARTS

1. OXYGEN EQUIPMENT MANUFACTURING COMPANY

	Medical Dept. No.	Nomenclature	Quantity	Figure No.
	77890	MEDICAL DEPARTMENT ITEM: CYLINDER, VALVE ADAPTER, HIGH PRESSURE: For connecting commercial tanks to medical valve.	1	1, 2, 3, 4
		Uncommon parts Parts for: 37126 Mask Type Oxygen Therapy Outfit, Complete; 93643 Oxygen Therapy Outfit, with Manifold:		
	9R10601	REGULATOR, PRESSURE REDUCING, COMPLETE.	1	1, 2, 3. 4, 6
*	9R10602	SEAT, REGULATOR.	1	6, 7
*	9R10604	GAUGE, HIGH PRESSURE.	1	1, 2, 3, 4
*	9R10606	WASHER, BACK CAP.	1	6, 7
*	9R10608	RING, SEAT RETAINING.	1	6, 7
*	9R10612	GAUGE, LITER FLOW.	1	1, 2, 3, 4
*	9R10618	DISC, GLASS GAUGE.	2	—
	9R10642	SCREW, ADJUSTING, REGULATOR.	1	6, 7
	9R10644	BONNET, REGULATOR.	1	6, 7
	9R10648	BUTTON, SPRING, REGULATOR.	1	6, 7
	9R10650	SPRING, LIGHT, REGULATOR.	1	6, 7
	9R10652	SPRING, HEAVY, REGULATOR.	1	6, 7
	9R10654	PLATE, DIAPHRAGM, REGULATOR.	1	6, 7
*	9R10656	DIAPHRAGM, REGULATOR.	1	6, 7
*	9R10658	WASHER, REGULATOR, DIAPHRAGM.	1	6, 7
	9R10660	YOKE, REGULATOR.	1	6, 7
*	9R10662	WASHER, REGULATOR YOKE.	1	6, 7
	9R10664	CASTING, BODY, REGULATOR.	1	6, 7
	9R10666	NOZZLE, REGULATOR.	1	6, 7
	9R10668	CENTERPIECE SEAT RETAINER, REGULATOR.	1	6, 7
	9R10670	GUIDE, CENTERPIECE, REGULATOR.	1	6, 7
	9R10672	BACK CAP, REGULATOR.	1	6, 7
	9R10674	SPRING, REGULATOR BACK CAP.	1	6, 7
	9R10676	SCREW, REGULATOR YOKE.	4	6, 7
	9R10678	CONNECTOR, INLET, REGULATOR: Complete with screen insert and cylinder union nut.	1	3, 4, 7
	9R10680	BUSHING, RESTRICTOR, OUTLET, REGULATOR.	1	3, 4, 7
*	9R10682	WASHER, 11/16 INCH O.D., ¼ INCH I.D. x ⅛ INCH, FIBER.	1	1
	9R10684	REGULATOR REPAIR TOOLS: SCREW DRIVER, REGULATOR.	–	8
	9R10686	HOLDER, REGULATOR CENTERPIECE.	–	8

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	Medical Dept. No.	Nomenclature	Quantity	Figure No.
	9R10688	WRENCH, NOZZLE, REGULATOR.	–	8
	9R10690	WRENCH, HEXAGONAL BONNET.	–	9
	9R10692	HOLDER, REGULATOR BODY.	–	9
		Parts for: 37126 Mask Type Oxygen Therapy Outfit, Complete:		
	9R10694	METER, OXYGEN CONCENTRATION: Complete with union nut.	1	1
*	9R10696	MASK, NASAL, COMPLETE: With tubing and bag assembly.	1	1
*	9R10698	MASK, ORONASAL, COMPLETE: With tubing and bag assembly.	1	—
		Parts for: 93643 Oxygen Therapy Outfit, with Manifold:		
*	9R10610	MANIFOLD, REGULATOR, COMPLETE: Assembly.	1	2, 3, 4
	9R10732	CASTING, "Y" MANIFOLD: Complete with union nut.	1	3, 4
	9R10734	NIPPLE, PIPE, SHORT: Complete with orifice disc for type "A" manifold.	2	3
	9R10736	VALVE, CHECK, AUTOMATIC: For type "A" manifold.	2	3
	9R10738	CONNECTOR, HOSE: For ¼ inch I.D. tubing.	2	3
	9R10742	VALVE, PLUG-IN: For type "B – B" manifold.	2	4, 5
	9R10744	STEM, PLUG-IN VALVE.	2	5
	9R70746	PIN, PLUG-IN VALVE STEM.	2	5
	9R10748	BONNET, PLUG-IN VALVE.	2	5
	9R10750	PIN, BONNET, PLUG-IN VALVE.	2	5
	9R10752	WASHER, PLUG-IN VALVE SEAT.	2	5
	9R10754	SEAT, PLUG-IN VALVE.	2	5
	9R10756	CHECK, PLUG-IN VALVE.	2	5
	9R10758	WASHER, PLUG-IN VALVE BONNET.	2	5
	9R10760	SPRING, PLUG-IN VALVE.	2	5
	9R10762	BODY, ¾ INCH, HEX, PLUG-IN VALVE.	2	5
	9R10764	SCREEN, PLUG-IN VALVE.	2	5
*	9R10766	MASK, NASAL, COMPLETE: With tubing and bag assembly.	2	2
*	9R10768	MASK, ORONASAL, COMPLETE: With tubing and bag assembly.	2	2
		Parts for: 9R10696 Mask, Nasal, Complete: 9R10698 Mask, Oronasal, Complete: 9R10766 Mask, Nasal, Complete: 9R10768 Mask, Oronasal, Complete:	2 for item 37126 4 for item 93643	1, 2
*	9R10620	VALVE, EXPIRATORY FLUTTER.		
*	9R10622	STRAP, RETAINER.	4 for item 37126 8 for item 93643	1, 2
*	9R10626	BAG, RUBBER, ⅔ LITER: For nasal and oronasal mask.	2 for item 37126 4 for item 93643	1, 2

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	Medical Dept. No.	Nomenclature	Quantity	Figure No.
	9R10704	BUTTON, RETAINER STRAP, FACEPIECE.	4 for item 37126 8 for item 93643	1, 2
*	9R10706	BUTTON, WAGENSTEEN.	2 for item 37126 4 for item 93643	1, 2
	9R10712	BUTTON, RETAINER STRAP, ADJUSTING, PLASTIC.	2 for item 37126 4 for item 93643	1, 2
	9R10716	Parts for: 9R10696 Mask, Nasal, Complete: 9R10698 Mask, Oronasal, Complete: VALVE, INSPIRATORY, METAL: With 7/16 inch tubing outlet.	2	1
*	9R10722	TUBING, RUBBER, ½ INCH O.D., ⅜ INCH I.D. x 55 INCH.	2	1
*	9R10624	Parts for: 9R10766 Mask, Nasal, Complete: 9R10768 Mask, Oronasal, Complete: TUBING, RUBBER, ⅜ INCH O.D., ⅛ INCH I.D. x 55 INCH.	4	2
*	9R10628	VALVE, INSPIRATORY FLUTTER.	4	2
	9R10720	VALVE, AIR INTAKE, METAL: With ¼ inch tubing outlet.	4	2
*	9R10701	Parts for: 9R10696 Mask, Nasal, Complete: 9R10766 Mask, Nasal, Complete: FACEPIECE, NASAL, RUBBER: With no accessories.	1 for item 37126 2 for item 93643	1, 2
*	9R10702	Parts for: 9R10698 Mask, Oronasal, Complete: 9R10768 Mask, Oronasal, Complete: FACEPIECE, ORONASAL, RUBBER: With no accessories.	1 for item 37126 2 for item 93643	1, 2

2. HEIDBRINK DIVISION OF OHIO CHEMICAL AND MFG. CO.

	Medical Dept. No.	Nomenclature	Quantity	Figure No.
		Medical Department Items		
*	37127	MASK TYPE OXYGEN THERAPY OUTFIT, MASK, NASAL: Complete with tubing and bag assembly.	1 on item 37126 2 on item 93643	10, 11, 12, 14
*	37128	MASK TYPE OXYGEN THERAPY OUTFIT, MASK, ORONASAL: Complete with tubing and bag assembly.	1 on item 37126 2 on item 93643	10, 11, 12, 14
*	77890	CYLINDER, VALVE ADAPTER, HIGH PRESSURE: For connecting commercial tanks to medical valve.	1	10, 11, 15
		Uncommon parts		
* A	9R03112	TUBE, FLOWMETER, GLASS.	1	16

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	Medical Dept. No.	Nomenclature	Quantity	Figure No.
* A	9R03114	ROD, FLOWMETER, OXYGEN INDICATING.	1	16
* A	9R03120	GASKET, FLOWMETER, METAL, 9/16 INCH O.D.—5/16 INCH I.D. x 1/32 INCH THICK.	1	—
*	9R03136	WASHER, REGULATOR, 23/36 INCH O.D., 3/16 INCH I.D., 1/16 INCH THICK, FIBER: For large cylinder.	1	10, 11
A	9R03150	VALVE, SAFETY, COMPLETE: Assembly.	1	16
*	9R10402	VALVE, REGULATOR.	1	15
*	9R10404	SEAT, PLUNGER, SAFETY VALVE.	1	15
*	9R10406	DIAPHRAGM, REGULATOR.	1	15
*	9R10414	GAUGE, 3000 LB., HIGH PRESSURE.	1	10, 11, 12, 16
	9R10430	TUBE, INLET, TAPERED: Complete with screen insert and cylinder union nut.	1	10, 11, 15
	9R10432	CAP-NUT, HEXAGONAL, REGULATOR.	1	15
*	9R10434	GASKET, REGULATOR CAP-NUT.	1	15
	9R10436	SPRING, REGULATOR VALVE.	1	15
	9R10438	CAGE, VALVE, BALL-BEARING, REGULATOR.	1	15
	9R10440	NOZZLE, REGULATOR.	1	15
	9R10442	CASTING, BODY, REGULATOR.	1	15
*	9R10444	GASKET, FIBER, REGULATOR, DIAPHRAGM.	1	15
	9R10446	SEAT, SPRING, REGULATOR DIAPHRAGM.	1	15
	9R10448	SPRING, REGULATOR DIAPHRAGM.	1	15
	9R10450	CAP, SPRING, REGULATOR DIAPHRAGM.	1	15
	9R10452	CAP, BELL, REGULATOR.	1	15
	9R10456	BODY, KNURLED, SAFETY VALVE.	1	15
	9R10458	SCREW, ADJUSTING, SAFETY VALVE.	1	15
	9R10460	NUT, LOCK, SAFETY VALVE.	1	15
	9R10462	SEAT, SPRING, SAFETY VALVE.	1	15
	9R10464	SPRING, STEEL, SAFETY VALVE.	1	15
	9R10466	PLUNGER, SAFETY VALVE.	1	15
	9R10468	WASHER, METAL: For bracket or manifold connection.	4	16
	9R10470	NUT, UNION: For connecting flowmeter to bracket or manifold.	1	16
	9R10472	FLOWMETER, OXYGEN, HELIUM-OXYGEN, COMPLETE.	1	10, 11, 12, 16
	9R10474	RING, RETAINING, FLOWMETER.	2	13, 16
	9R10476	CHAMBER, FLOAT, FLOWMETER.	1	16
	9R10478	SCALE, OXYGEN, LITERS PER MINUTE, FLOWMETER.	1	16
	9R10480	SCALE, HELIUM-OXYGEN, LITERS PER MINUTE, FLOWMETER.	1	16
	9R10482	GASKET, RUBBER, FLOWMETER, GLASS TUBE.	1	16
	9R10483	GASKET, RUBBER, FLOWMETER, CAP SCREW.	1	16

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	Medical Dept. No.	Nomenclature	Quantity	Figure No.
	9R10484	SCREW, CAP, FLOWMETER.	1	16
	9R10486	NUT, CAP, FLOWMETER.	1	16
	9R10490	OUTLET, FLOWMETER.	1	10, 16
	9R10524	SCREEN, COPPER, FLOWMETER UNION NUT.	1	13, 16
	9R10492	Parts for: 37126 Mask Type Oxygen Therapy Outfit, Complete: REGULATOR, TANK, COMPLETE: With set adjusting screw.	1	16
	9R10494	SCREW, ADJUSTING, REGULATOR: Without hand wheel.	1	15
	9R10496	CAP, REGULATOR ADJUSTING SCREW.	1	15
	9R10498	NUT, LOCK, REGULATOR ADJUSTING SCREW.	1	15
	9R10502	ASSEMBLY, BRACKET AND VALVE, COMPLETE.	1	16
	9R10504	BRACKET, NEEDLE VALVE.	1	16
	9R10506	STEM NEEDLE VALVE.	1	10, 16
	9R10508	NUT, PACKING, NEEDLE VALVE.	1	16
	9R10510	SPRING, NEEDLE VALVE.	1	16
	9R10512	BUSHING, BRASS, NEEDLE VALVE.	1	16
*	9R10514	DISC, PACKING, NEEDLE VALVE BUSHING.	3	16
	9R10516	STUD, HEX, NEEDLE VALVE.	1	16
	9R10518	GASKET, FIBER, NEEDLE VALVE.	1	16
	9R10520	RETAINER, SEAT, NEEDLE VALVE.	1	16
	9R10522	SEAT, COPPER, NEEDLE VALVE.	1	16
	9R10526	Parts for: 93643 Oxygen Therapy Outfit, with Manifold: REGULATOR, TANK, COMPLETE: With handwheel adjusting screw.	1	11, 12
	9R10528	SCREW, ADJUSTING, HANDWHEEL, REGULATOR.	1	11, 12
	9R10498	NUT, LOCK, REGULATOR ADJUSTING SCREW.	2	15
	9R10530	WASHER, LOCK NUT, ADJUSTING SCREW.	1	
	9R10532	MANIFOLD, COMPLETE.	1	11, 12, 13
	9R10534	VALVE, OUTLET, MANIFOLD, COMPLETE.	2	11, 12, 13
	9R10536	BODY, OUTLET MANIFOLD VALVE.	2	13
	9R10538	SPRING, OUTLET MANIFOLD VALVE.	2	13
	9R10540	VALVE, DISC, OUTLET MANIFOLD.	2	13
	9R10542	SEAT, GASKET, MOLDED, OUTLET MANIFOLD.	2	13
	9R10544	PORT, LIMIT, OUTLET MANIFOLD.	2	13
	9R10546	RING, RETAINER, OUTLET MANIFOLD.	2	13
	9R10548	SCREEN, OUTLET MANIFOLD.	2	13
	9R10550	COUPLING, PLUG-IN, COMPLETE.	1	11, 12, 13
	9R10552	SCREW, CAP, MANIFOLD FLOWPORT.	1	12, 13
	9R10554	GASKET, FIBER, MANIFOLD FLOWPORT.	1	13
	9R10556	FLOWPORT, MANIFOLD.	1	13

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	Medical Dept. No.	Nomenclature	Quantity	Figure No.
	9R10558	GASKET, FLOWPORT.	1	13
	9R10560	GASKET, LIMIT PORT, MANIFOLD.	2	13
*	9R10420	Parts for: 37127 Mask Type Oxygen Therapy Outfit, Mask, Nasal; 37128 Mask Type Oxygen Therapy Outfit, Mask Oronasal: DISC, VALVE, SPONGE RUBBER: For nasal and oronasal, mask.	4 on item 37126 8 on item 93643	11, 14
*	9R10422	STRAP, RETAINER: Without slide and hook.	2 on item 37126 4 on item 93643	10, 11, 14
*	9R10424	TUBING, RUBBER, 3/8 INCH O.D., 3/16 INCH I.D., 55 INCH LONG.	2 on item 37126 4 on item 93643	10, 11, 12, 14
*	9R10426	BAG, RUBBER, 2/3 LITER: For nasal and oronasal, mask.	2 on item 37126 4 on item 93643	10, 11, 12, 14
*	9R10428	TUBE, RUBBER, PERFORATED, 5 INCH: For inside nasal and oronasal bag.	2 on item 37126 4 on item 93643	10, 11, 14
*	9R10804	BUTTON, WAGENSTEEN.	2 on item 37126 4 on item 93643	10, 11, 14
	9R10808	HOOK, RETAINER STRAP.	2 on item 37126 4 on item 93643	10, 11, 14
	9R10810	SLIDE, ADJUSTING, RETAINER STRAP.	2 on item 37126 4 on item 93643	10, 11, 14
	9R10814	CONNECTOR, BAG TO MASK, PLASTIC.	2 on item 37126 4 on item 93643	10, 11, 14
	9R10820	PLUG, OXYGEN BAG.	2 on item 37126 4 on item 93643	10, 11, 14
*	9R10800	Parts for: 37127 Mask Type Oxygen Therapy Outfit, Mask, Nasal: FACEPIECE, NASAL, RUBBER: With two spring metal clips.	1 for item 37126 2 for item 93643	10, 11, 12, 14
*	9R10802	Parts for: 37128 Mask Type Oxygen Therapy Outfit, Mask, Oronasal: FACEPIECE, ORONASAL, RUBBER: With one spring metal clip.	1 for item 37126 2 for item 93643	10, 11, 12, 14

* To be requisitioned when required from the Supply Depot.
No asterisk indicates that item is not stocked as a Spare Part, but can be obtained by special requisition.
A These parts are also used in Medical Department Item No. 93500.

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