CHAPTER 6

QUICK-DONNING OXYGEN MASK ASSEMBLY TYPE MBU-10/P

Section 6-1. Description

6-1. GENERAL.

6-2. This chapter contains maintenance and test procedures for the Quick-Donning Oxygen Mask Assembly, Type MBU-10/P, (P/N 358-1501) (manufactured by Scott Aviation Co. CAGE 92114) (figure 6-1).

6-3. The Oxygen Mask Assembly consists of a hanging suspension holder, a suspension assembly, an oxygen mask assembly, a cable and plug assembly and a dust cover. The oxygen mask assembly is supplied in one size (regular).

6-4. CONFIGURATION.

6-5. The single configuration of the Quick-Donning Oxygen Mask Assembly consists of a hanging suspension holder which is mounted in the aircraft to facilitate stowage, a suspension assembly which incorporates a bracket assembly, cushions, straps, retention assemblies, and yoke assembly (the electrical switching mechanism is located in the yoke assembly), an oxygen mask assembly which is of a hard shell and molded rubber construction that incorporates the microphone, valve assembly, cord and snap assembly, connector, hose, cable guides, and clamps, and a cable and plug assembly.

6-6. FUNCTION.

6-7. The Quick-Donning Oxygen Mask Assembly permits the aircrewmember to breathe gaseous oxygen. Oxygen supply enters the facepiece through the valve located at the bottom of the mask. Exhaled air passes out through the same valve. The exhalation portion of the valve is constructed so that only a pressure of one millimeter of mercury greater than the inlet pressure being supplied by the regulator, will force open the valve and allow exhaled air to flow from the mask. The mask also provides automatic electrical switching from the headset microphone to the oxygen mask microphone. This feature permits the aircrewmember while wearing the mask to transmit the same as with the headset microphone, without the need to unplug the headset microphone and then plug in the oxygen mask microphone.

6-8. DONNING PROCEDURES.

6-9. The Oxygen Mask Assembly Quick-Donning feature permits extremely rapid removal from stowage and donning with one hand in the event of an emergency. Remove the mask assembly from the suspension holder by firmly grasping the mask assembly. With the hand placed around the yoke tab, pull down and away from the hanging suspension holder. Place the mask assembly over the head until the nape pad of the suspension assembly contacts the base of the skull (figure 6-2). Pull mask assembly forward and down, causing automatic unfolding of the suspension assembly, until it rests comfortably on the face (figure 6-2). Microphone switching is automatically accomplished when the mask is unfolded.

6-10. SUSPENSION ASSEMBLY ADJUSTMENT.

6-11. To adjust the suspension assembly proceed as follows:

1. If the suspension assembly is too loose, tighten top adjustment strap until proper fit is obtained.

2. If the suspension assembly is too tight, loosen top adjustment strap assembly until proper fit is obtained.

6-12. SERVICE LIFE.

6-13. Service life for the Quick-Donning Oxygen Mask assembly, as established by the cognizant engineering activity, is indefinite. The mask is considered serviceable if it meets periodic inspection requirements.

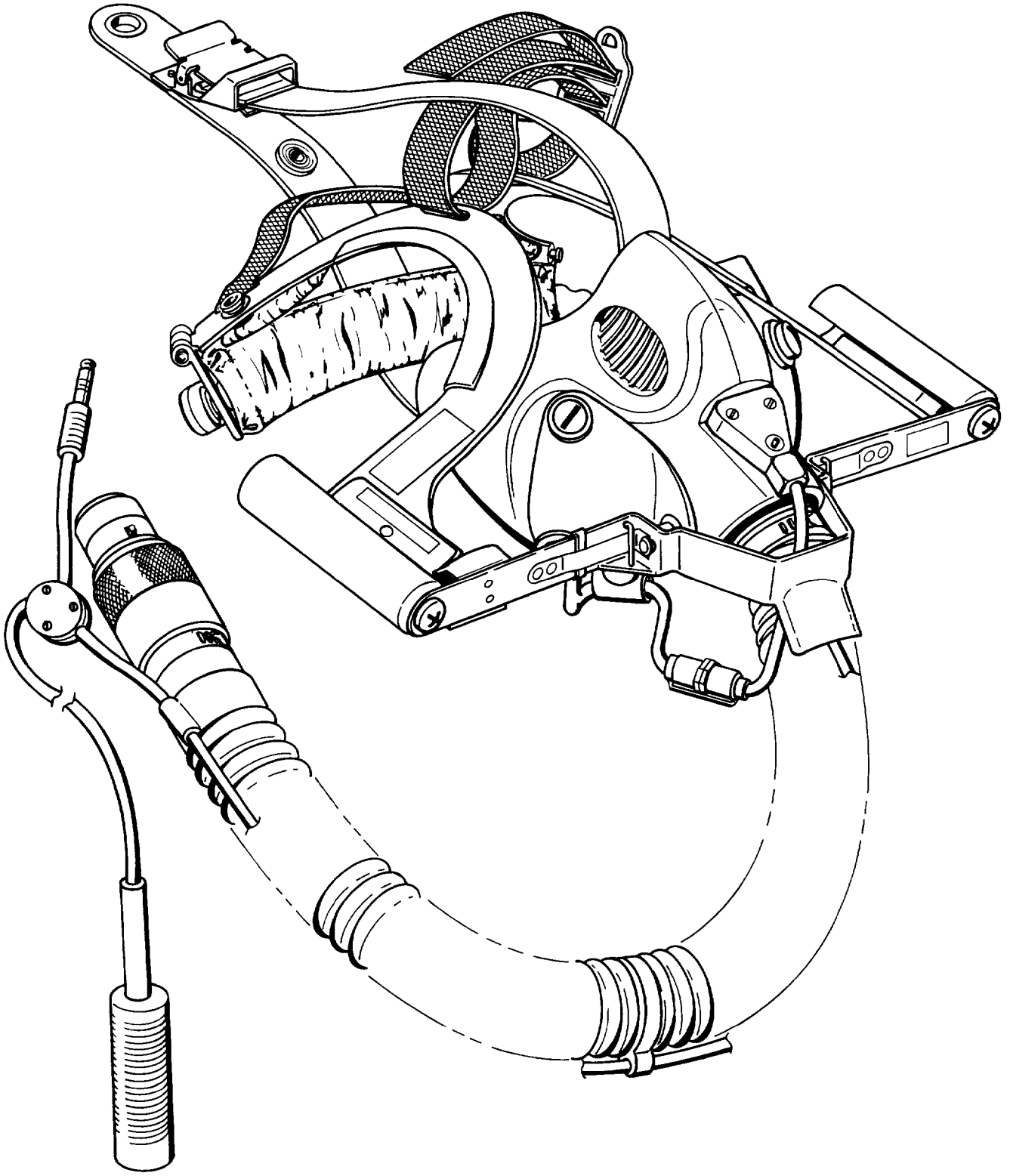

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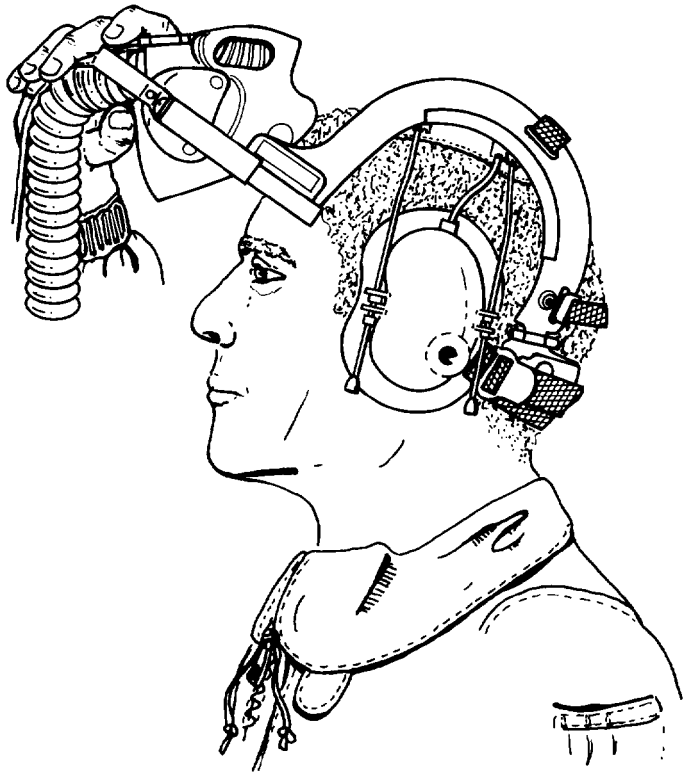
Figure 6-1. MBU-10/P Oxygen Mask



STEP 1. STARTING POSITION

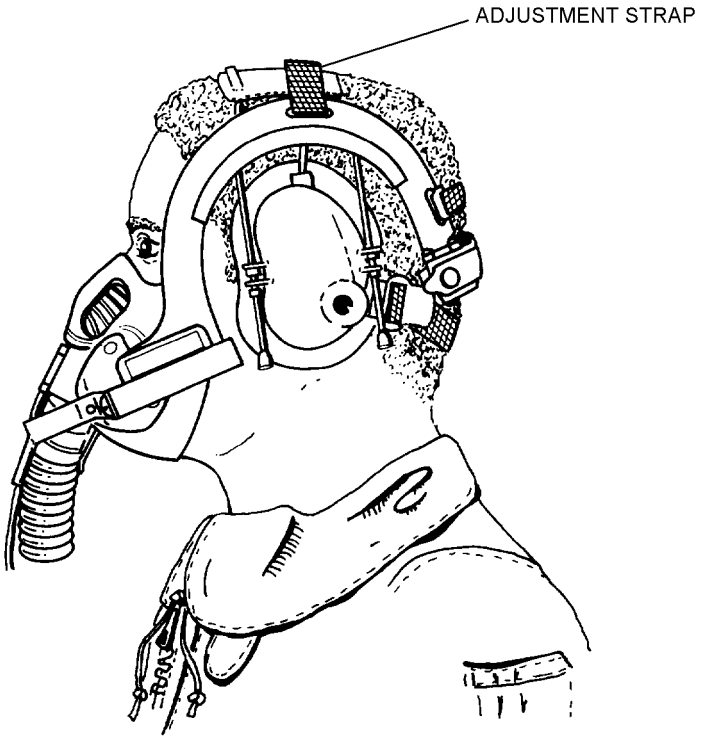


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Figure 6-2. Donning Procedure

Section 6-2. Modifications

6-14. GENERAL.

6-15. No modifications are required or authorized for the Quick-Donning Oxygen Mask Assembly.

Section 6-3. Maintenance

6-16. GENERAL.

6-17. This section contains procedural steps for disassembly, cleaning, inspection, assembly, functional testing, sanitizing and stowage. All work shall be performed in a clean, dust-free area.

NOTE

Upon completion of any maintenance action (e.g., inspection, repair, modification, etc.) be sure to complete the required Maintenance Data Collection System Forms.

6-18. INSPECTION.

6-19. PREFLIGHT INSPECTION. The Preflight Inspection consists of a Visual Inspection and Functional Test performed before each flight by the aircrewmember by whom the mask is to be used. Perform the inspection as follows:

1. Examine mask and hose for deterioration, abrasion, cracks, cuts, and security of attachment of mask-to-hose.

2. Inspect bracket and pad assembly for dents, bends, corrosion, deterioration and fraying of adjustment strap, and other obvious damage.

3. Inspect headset and microphone for cracks, damaged wiring, corrosion, and other obvious damage.

4. Examine cleanliness of entire mask assembly.

NOTE

If malfunctions are found or suspected, return mask assembly to aviator's equipment branch for corrective action.

6-20. ACCEPTANCE/SPECIAL INSPECTION. The Acceptance/Special Inspection consists of a Visual Inspection followed by a Functional Test. This inspection and test shall be performed in conjunction with the aircraft inspection requirements for the aircraft in which the mask assembly is installed. To perform the inspection, proceed as follows:

1. Visually inspect the mask assembly in accordance with paragraph 6-24.

2. Functionally test the mask assembly in accordance with paragraph 6-26.

3. Sanitize the mask in accordance with paragraph 6-27.

6-21. CALENDAR/PHASE/SDLM INSPECTION. A Calendar/Phase/SDLM inspection shall be performed

upon issue and in accordance with the Planned Maintenance System (PMS) of the aircraft (see PMS publications for specific interval). The Calendar/Phase/SDLM Inspection consists of the following:

1. Disassembly (paragraph 6-22).
2. Cleaning (paragraph 6-23).
3. Visual Inspection (paragraph 6-24).
4. Assembly (paragraph 6-25).
5. Functional Test (paragraph 6-26).
6. Sanitizing (paragraph 6-27).

6-22. Disassembly. To disassemble Quick-Donning Oxygen Mask Assembly, proceed as follows:

Support Equipment Required

Quantity	Description	Reference Number
1	Elastrator	00-6276 (CAGE 92114)
1	Hose Clamp Pliers	450-813 (CAGE 92114)
1	Wrench	211-838 (CAGE 92114)

NOTE

Refer to figure 6-4 for index numbers during disassembly.

CAUTION

To prevent damage to mask material, do not use mechanical assist (screwdriver) when removing delivery hose.

1. Unclip pull the dot snap and unplug switch, cable and plug assembly (1) from microphone cable assembly (2).

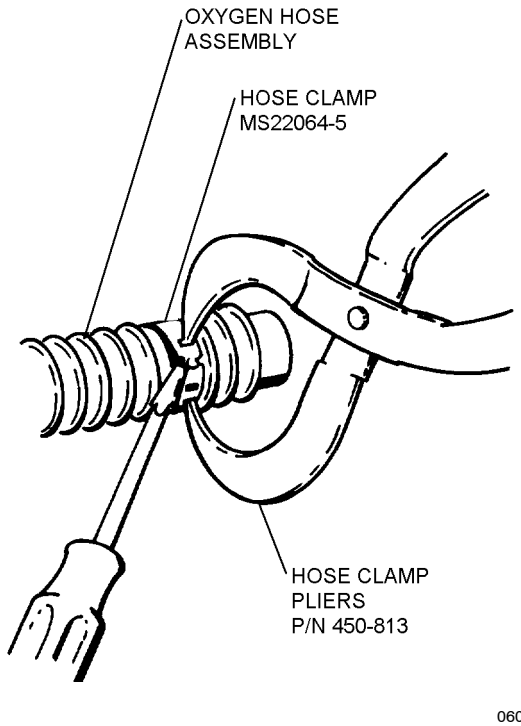
2. Depress two clips and remove bracket and pad assembly (3) from hard shell adapter (4).

3. Remove hard shell adapter (4) from facepiece (8) by removing four tee nuts (5), four nylon washers (6) and four screws (7).

4. Depress red button on microphone connector assembly (13) and unplug microphone cable assembly (2).

5. Disconnect hose assembly (9) from oxygen valve (18) by removing upper clamp (10) and untying cord (11).

6. Remove oxygen hose connector (12) from oxygen hose (9) by removing lower clamp (10) and unclipping cord (11).



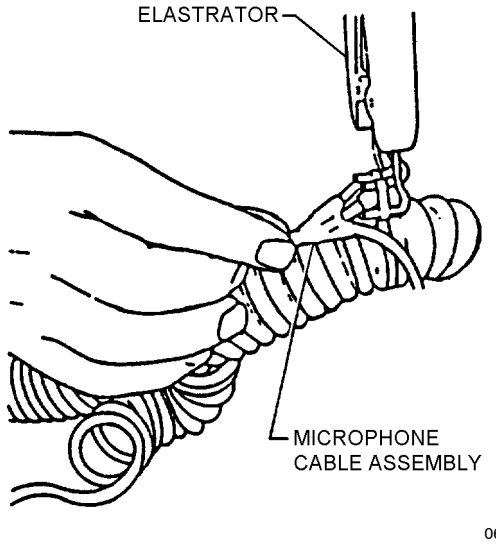
Steps 5 and 6 - Para 6-22

7. Remove microphone connector assembly (13), microphone bracket (16) and microphone assembly (15) from facepiece (8) by removing two screws (14).

8. Remove oxygen valve (18), sealing washer (19), sealing washer (20), cap bearing (21) and valve nut (22) from facepiece (8) using wrench (P/N 211-838).

9. Remove microphone assembly (15) from microphone bracket (16) by removing two screws (17) and unplugging.

10. Remove microphone cable assembly (2) from oxygen hose (9) by stretching open upper cable guide (23) with an elastrator, then repeat with center cable guide (23) and lower cable guide (24).



Step 10 - Para 6-22

6-23. Cleaning. Masks not on a personal issue basis shall be cleaned after each use and during the Calendar/Phase Inspection. To clean the mask, proceed as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Benzalkonium Chloride Solution	MIL-B-37451
As Required	Cloth, Lint-Free, Type II	MIL-C-85043
As Required	Cotton Swabs	—

Materials Required (Cont)

Quantity	Description	Reference Number
As Required	Detergent, General Purpose Type I	MIL-D-16791
	or	
As Required	Soap, Laundry Low-filter	P-S-600
As Required	Isopropyl Alcohol	TT-A-735A

Support Equipment Required

Quantity	Description	Reference Number
1	Brush, Soft Bristle	—

NOTE

The detergent solution is preferred since there is no risk of contamination due to undissolved soap powder residue.

1. DETERGENT SOLUTION. Make a 1-percent by weight solution of cleaning compound (Detergent, General Purpose) by adding 1/4 to 1/2 ounce (liquid) of the compound to one gallon of water.

NOTE

If it is necessary that the soap powder solution be used, agitate solution and use only the lather to clean the mask.

2. SOAP POWDER SOLUTION. Make a suitable soap solution by adding approximately 4 tablespoons of soap powder to one gallon of water. Hardness of water may require more soap but the solution must be sufficiently strong to readily form lather when agitated. Make sure that all soap particles are dissolved.

WARNING

Do not use alcohol in any form to clean masks. Do not use any flammable solvents or liquid toxicants for cleaning.

3. Using a soft bristle brush, apply cleaning solution to mask and oxygen hose. After application of cleaning solution to mask and delivery hose, submerge entire mask and delivery hose in cleaning solution and agitate thoroughly. Rinse in clean, potable cold water and shake off excess.

4. Clean all O-rings and rubber gaskets using same procedures in step 3.

5. To clean the inhalation/exhalation oxygen valve, proceed as follows:

CAUTION

The inhalation/exhalation valve must be removed from mask before cleaning. Isopropyl alcohol must not come in contact with the oxygen mask.

a. Obtain a small container large enough to partially submerge the oxygen valve.

NOTE

If a 70% solution of isopropyl alcohol is not available, mix 3 parts water and 7 parts isopropyl alcohol.

b. Fill container half full with benzalkonium chloride solution or a 70% solution of isopropyl alcohol.

CAUTION

Do not submerge the oxygen valve in water. Do not probe any portion of the valve.

c. Hold base portion of valve; submerge in partially filled container, and wash operating portion of valve in alcohol solution. Normally only a few seconds are required to remove stains and residue.

d. Use a cotton swab saturated in benzalkonium chloride solution or isopropyl alcohol to remove stubborn residue. LIGHTLY rub only exhalation plate.

e. Gently shake excess solution from oxygen valve and allow to air-dry completely.

NOTE

Trapped isopropyl alcohol will evaporate in approximately 15 minutes.

6. To clean the microphone, proceed as follows:

a. Wipe microphone with a cotton swab or soft, clean cloth dampened lightly in cleaning solution.

b. Rinse with a second cotton swab dampened lightly in clean, potable cold water. Make sure no lint remains on microphone.

CAUTION

Do not use compressed gas for drying as valves may be damaged.

7. A dry swab can be used to assist in drying washed items. Be careful that lint is not trapped in valves or mask crevices. Air-dry in a ventilated area out of direct sunlight. The mask and delivery hose may be forced-air dried using a stream of clean, dried, oil-free air or nitrogen. Make sure that parts are completely dry before reassembling mask.

NOTE

Examine valves, mask, and hose for undissolved soap powder. Ensure that mask and valves are completely dry and lint-free.

6-24. Visual Inspection. To visually inspect the Quick-Donning Oxygen Mask Assembly examine the following:

NOTE

Repair of the Quick-Donning Oxygen Mask Assembly shall be limited to parts replacement. Any hole or tear that occurs in any component is basis for rejection of that component.

1. Mask for deterioration; material imperfections embedded foreign matter; dirty, rough, misaligned, cracked, nicked or otherwise flawed surface; any component loose or not properly attached. Replace defective components or mask assembly.

2. Exhalation/inhalation valve for nicks, grooves, scratches, or any other damage affecting sealing action. If valve is defective, replace the valve.

3. Headstraps/suspension assembly for fraying, deterioration, or cuts. Hardware for corrosion or other damage. Replace defective components.

4. Delivery hose for deterioration, cuts, abrasion creased or flat spots. Replace defective hose.

5. Communications cable/microphone for electrical continuity and proper operation. Replace defective components.

6-25. Assembly. To assemble the Quick-Donning Oxygen Mask Assembly, proceed as follows:

Support Equipment Required

Quantity	Description	Reference Number
1	Elastrator	00-6276 (CAGE 92114)
1	Hose Clamp Pliers	450-813 (CAGE 92114)
1	Nylon Cord Attachment Hook	Fabricate IAW figure 6-3
1	Wrench	211-838 (CAGE 92114)

NOTE

Refer to figure 6-4 for index numbers during assembly.

1. Insert sealing washer (19) on oxygen valve (18) and install oxygen valve (18) on to facepiece (8).

2. Hold oxygen valve (18) in place, install sealing washer (20), cap bearing (21) and valve nut (22).

3. Tighten valve nut (22) by hand then tighten with wrench.

4. Plug microphone assembly (15) into microphone bracket (16) and secure with two screws (17).

5. Install microphone connector assembly (13), microphone assembly (15), and microphone bracket (16) into facepiece (8) and secure with two screws (14).

NOTE

Locally manufacture nylon attachment hook out of steel wire 1/16 inch in diameter for attaching nylon cord to oxygen valve (figure 6-3).

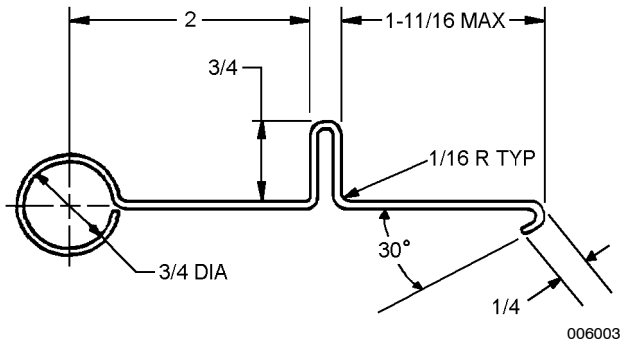
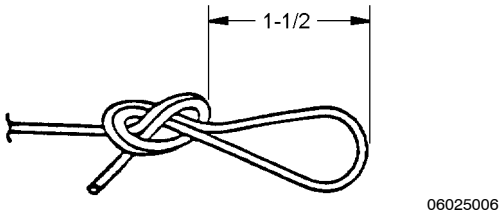


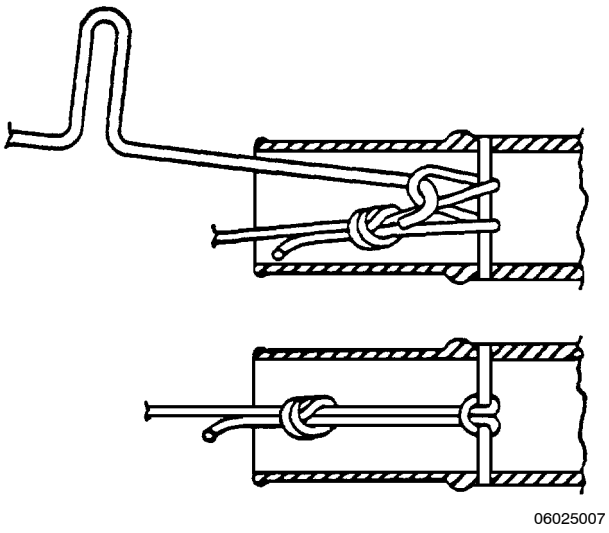
Figure 6-3. Nylon Cord Attachment Hook

6. Take the nylon cord and form a 1-1/2 inch loop and secure with a bowline knot.



Step 6 - Para 6-25

7. Using nylon cord attachment hook, secure nylon cord to oxygen valve (18) with a larks head knot.



Step 7 - Para 6-25

8. Route nylon cord (11) through hose assembly (9). Attach hose assembly (9) to oxygen valve (18) and secure with upper hose clamp (10) using hose clamp pliers.

9. Clip nylon cord (11) to oxygen hose connector (12). Attach oxygen hose connector (12) to hose assembly (9) and secure with bottom hose clamp (10) using hose clamp pliers.

10. Jerk hose sharply at mask facepiece and oxygen hose connector (12) to ensure securing of attachment.

CAUTION

Do not overexpand cable guides with elastrator. Open only enough to pass cable assembly through opening.

11. Using elastrator spread cable guides (24) and (23) and route microphone cable assembly (2) through cable guide (24) and two cable guides (23).

12. Attach adapter (4) to facepiece (8) and secure with four tee nuts (5), four nylon washers (6) and four screws (7).

13. Clip bracket and pad assembly (3) to adapter (4).

14. Plug microphone cable (2) into microphone connector (13) and switch, cable and plug assembly (1).

15. Attach switch, cable and plug assembly (1) with pull the dot snap to adapter (4).

6-26. Mask Functional Test. To test the mask after inspection, proceed as follows:

1. Plug inlet end of connector assembly by any suitable method.

2. Holding mask close to face, but not sealed to face, inhale deeply. Then press mask firmly to face, forming a tight seal, and exhale forcibly. If the exhalation valve is operating properly, the exhalation with be smooth and with minimum resistance.

3. Affix mask assembly to face, adjusting straps for a snug, comfortable, leak-tight fit. With inlet end of hose assembly blocked, inhale sharply and deeply and hold inhalation (keep inhaling) as long as possible. If there is no leakage through mask hose, fittings, or exhalation valve, and as soon as all residual air in mask and hose has been inhaled, further inhalation with be impossible.

4. Obtain assistance from Avionics Branch to ensure proper continuity of communications leads.

6-27. Sanitizing Masks. Masks not on a personal-issue basis shall be sanitized after each use as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Cloth, Lint-Free, Type II	MIL-C-85043
As Required	Pad, Gauze	—
As Required	Sanitizing Solution, Thimerosal	NIIN 00-128-5695
As Required	Spray SBT-12, Antiseptic, Aersol	—

NOTE

One-quarter pint of Thimerosal, as issued, is sufficient to sanitize at least 10 masks.

1. Moisten a gauze pad with solution, squeeze to prevent dripping, and wipe interior of mask, exclusive of valves and microphone. Ensure that sanitizing solution penetrates all crevices.

2. Wipe valves and microphone with a clean, dry cloth. Ensure that no lint remains in mask, on valves, or on microphone.

NOTE

If Thimerosal is not available, an alternate sanitizer, Aerosol Antiseptic Spray SBT-12 (dibromosalicyl bromanicide), manufactured by Lever Brothers, Inc., can be used. Directions for use are indicated on the container.

6-28. After sanitizing, place dust cover over facepiece and attach suspension strap to bracket and pad assembly. If mask assembly is not to placed in immediate service, store in accordance with paragraph 6-29.

6-29. MASK STORAGE.

6-30. Masks not used on a personal-issue basis are to be sanitized before storage. Place the mask assembly in a plastic bag or any other suitable container that

will keep the mask clean, dry, and lint-free. Stored masks must have ample ventilation and not be exposed to excessive heat or direct sunlight. The masks are not to be stored in an area where other flight gear will be stored on top of them.

Section 6-4. Illustrated Parts Breakdown

6-31. GENERAL.

6-32. This Section lists and illustrates the procurable parts of the Quick-Donning Oxygen Mask Assembly, Type MBU-10/P.

6-33. The Illustrated Parts Breakdown should be used during maintenance when requisitioning and identifying parts.

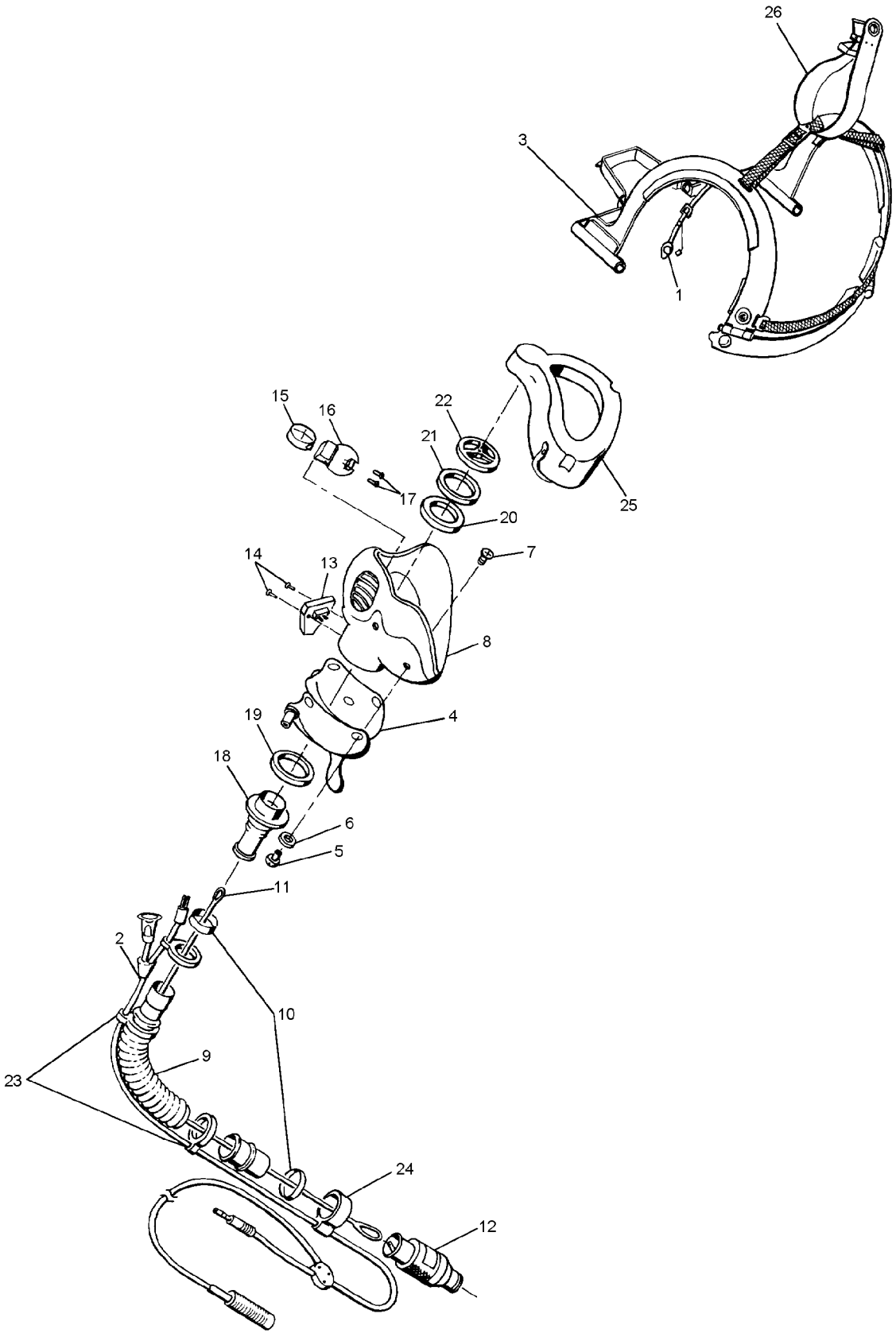


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Figure 6-4. MBU-10/P Oxygen Mask Assembly, IPB

Figure and Index Number	Part Number	Description 1 2 3 4 5 6 7	Units Per Assembly	Usable On Code
6-4	358-1501-1	OXYGEN MASK ASSEMBLY, MBU-10/P	REF	A
-1	358-1355-1	. SWITCH, CABLE, AND PLUG ASSEMBLY	1	
-2	358-1358	. MICROPHONE CABLE, ASSEMBLY	1	
-3	358-1306	. BRACKET AND PAD ASSEMBLY	1	
-4	358-1522	. ADAPTER	1	
-5	834-12	. TEE NUT	4	
-6	00-4607-1	. WASHER, Nylon	4	
-7	AB2662V3N	. SCREW	4	
-8	834-26-2	. FACEPIECE	1	
-9	834-18	. HOSE	1	
-10	MS22064-5	. CLAMP, Hose	2	
-11	339-06-1	. CORD AND SNAP ASSEMBLY	1	
-12	232-94A	. CONNECTOR, Hose Assembly	1	
-13	834-37	. CONNECTOR ASSEMBLY, Microphone	1	
-14	MS35276-209	. SCREW	2	
-15	M-101/AIC	. MICROPHONE ASSEMBLY	1	
		ATTACHING PARTS		
-16	00-6268	. BRACKET, Microphone	1	
-17	00-4547	. SCREW	2	
		-----*-----		
-18	211-60	. VALVE, Oxygen	1	
		ATTACHING PARTS		
-19	211-65	. SEALING WASHER	1	
-20	211-408	. SEALING WASHER	1	
-21	211-415	. CAP BEARING	1	
-22	211-283	. VALVE NUT	1	
		-----*-----		
-23	249-425	. UPPER AND CENTER CABLE GUIDE	2	
-24	450-13	. LOWER CABLE GUIDE	1	
-25	834-49	. DUST COVER, Assembly	1	
-26	358-643C	. SUSPENSION STRAP	1	

NUMERICAL INDEX

Part Number	Figure and Index Number	SM&R Code
AB2662V3N	6-4-7	PAOZZ
M-101/AIC	6-4-15	PAOZZ
MS22064-5	6-4-10	PAOZZ
MS35276-209	6-4-14	PAOZZ
00-4547	6-4-17	
00-4607-1	6-4-6	
00-6268	6-4-16	PAOZZ
211-60	6-4-18	
211-65	6-4-19	
211-283	6-4-22	
211-408	6-4-20	
211-415	6-4-21	
232-94A	6-4-12	PAOZZ
249-425	6-4-23	
339-06-1	6-4-11	PAOZZ
358-643C	6-4-26	PAOZZ
358-1306	6-4-3	
358-1355-1	6-4-1	
358-1358	6-4-2	
358-1501-1	6-4	PAOZZ
358-1522	6-4-4	
450-13	6-4-24	
834-12	6-4-5	PAOZZ
834-18	6-4-9	PAOZZ
834-25-2	6-4-8	PAOZZ
834-37	6-4-13	PAOZZ
834-49	6-4-25	

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