

CHAPTER 3

A/P23P-14A(V) RESPIRATOR ASSEMBLY

Section 3-1. Description

3-1. GENERAL.

3-2. The A/P23P-14A(V) Respirator Assembly is composed of the MCK-3A/P Mask with nose occluder, the Lower Assembly and the A/P37S-1 Intercom Set.

3-3. The Respirator Assembly is the above the neck portion of the chemical, biological and radiological (CBR) protective assembly. It is designed to provide aircrewmembers with the necessary head, eye, and respiratory protection to guard against the toxic and lethal effects of nuclear fallout and chemical and biological agents. During in-flight and ground operations, the respirator fits beneath standard issued helmets and protective equipment with a minimum of interference (figure 3-1).

3-4. The Pusher Fan provides the aircrewmember with a blown and filtered air supply (figure 3-1).

3-5. The A/P37S-1 Intercom Set provides the aircrewmember with direct voice communication while wearing the respirator and protective helmet (figure 3-1).

3-6. CONFIGURATION.

3-7. The A/P23P-14A(V) Respirator Assembly is shown in figure 3-1. There are no variants at this time.

3-8. COMPONENT DESCRIPTION.

3-9. MCK-3A/P MASK. The mask includes the components as described in the following paragraphs.

3-10. Hood Assembly. The hood assembly (figure 3-2), made of an impervious bromo-butyl rubber, covers the entire head and extends down past the neck area where it is bonded to the upper edge of the bellows. The lower edge of the hood is bonded to the apron. The neck seal, made of natural rubber, is bonded to the inner surface of the bellows, isolating the head and neck.

3-11. Faceplate. A molded, one-piece, polycarbonate faceplate (figure 3-3) is sealed into the front of the hood. The upper part, or optical area, is transparent. The lower part (painted black) is shaped to fit the wearer's lower face. The inner perimeter of the mask hood overlaps the faceplate and is sealed to its outer edges. A strip of rubber, secured to the inner surfaces of the hood and faceplate, seals the faceplate to the hood. A strip of foam rubber is bonded over the sealing strip for comfort when the hood is worn. Attached to or mounted on the faceplate is a nose occluder, a toggle harness, an anti-suffocation disconnect, an internal drink tube for the drink facility and a microphone assembly.

NOTE

The left or right side refers to the aircrewmember's left or right side, when wearing the MCK-3A/P Mask.

3-12. Orinasal Mask. The orinasal mask (figure 3-3), molded of soft silicone rubber, fits over the wearer's nose and mouth. The orinasal mask incorporates a turned-under edge, increasing the seal around the wearer's face. The orinasal mask is mounted within the shaped faceplate. Located on the right-side of the orinasal mask is an externally mounted deflector plate constructed of Noryl plastic. This plate deflects the blown air across the faceplate, keeping the visual area mist-free. Other features located within the orinasal mask are the inhalation duct, exhalation duct, microphone duct, and drink facility port.

3-13. Faceplate Ripaway Tab. The faceplate ripaway tab (figure 3-4) consists of a rubber coated nylon strip and attached tab bonded to the lower right portion of the faceplate. The nylon strip bonds the faceplate to the butyl cowl. Pulling the ripaway tab creates a slit between the faceplate and cowl. The faceplate can then be removed from the cowl by placing fingers into the slit and pulling the faceplate from the cowl. A red colored servicing clip is to be in position at all times the mask is not worn, particularly during handling, maintenance, and servicing operations. The servicing clip prevents inadvertent removal of the nylon strip.

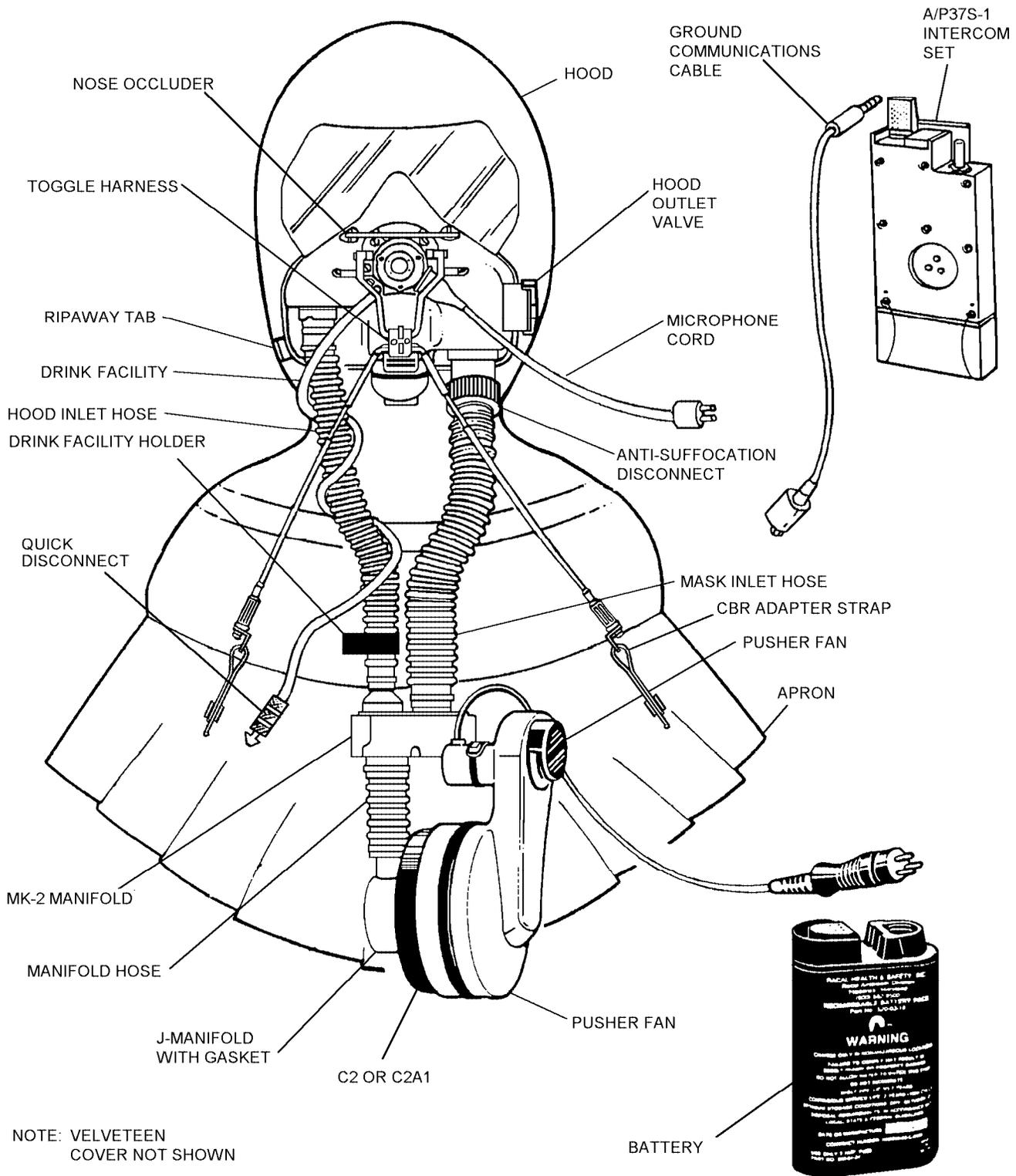


Figure 3-1. A/P23P-14A(V) Respirator Assembly (Upgrade), Non Oxygen

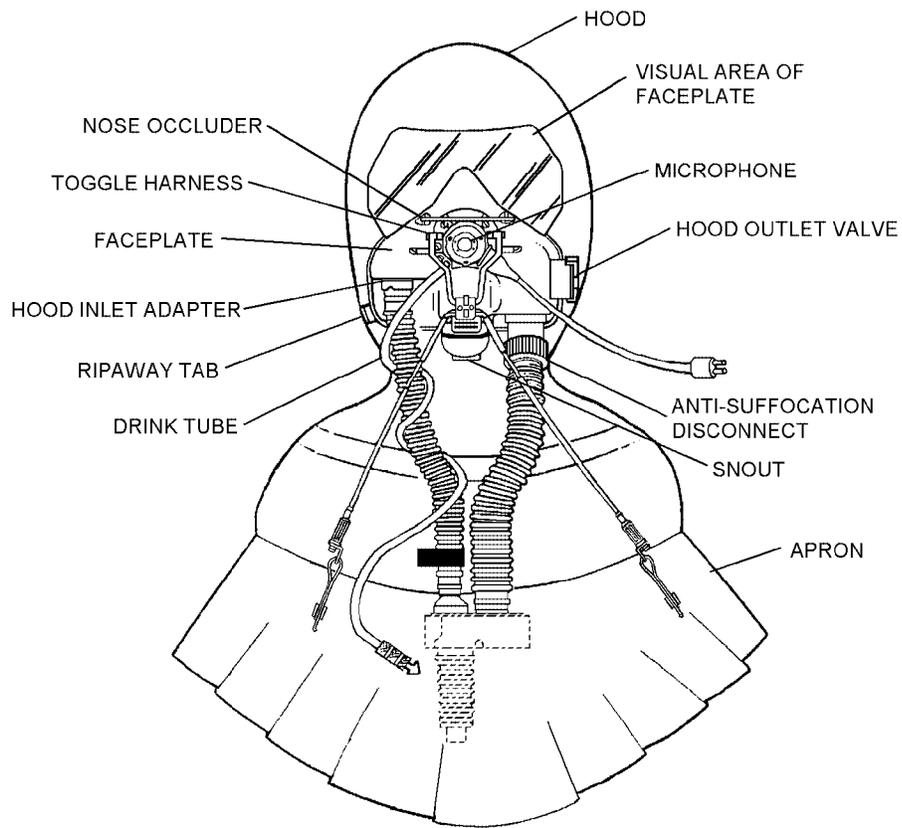


Figure 3-2. MCK-3A/P Mask Assembly

3-2

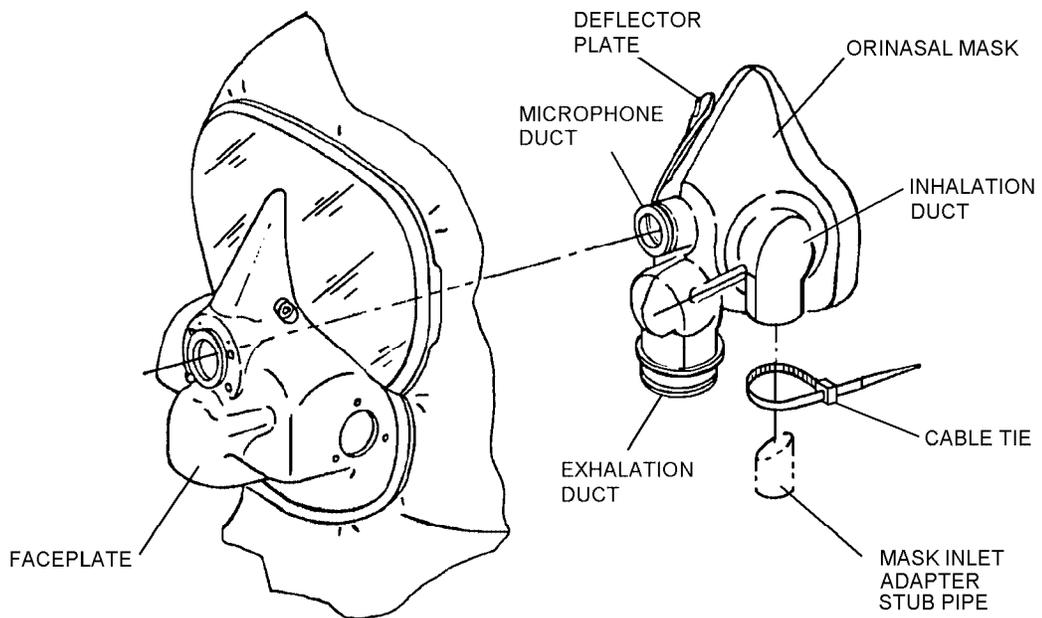


Figure 3-3. Faceplate/Orinasal Mask

3-3

3-14. Hood Inlet Adapter. The hood inlet adapter (figure 3-5) is positioned within a port to the right side of the faceplate and connects the hood inlet hose from the MK-2 manifold assembly to the hood compartment of the mask.

3-15. Hood Outlet Valve. The hood outlet valve (figure 3-6) is mounted on the left side of the faceplate, below the visual area and above the oxygen inlet adapter on the orinascal mask. The valve consists of a stepped rubber valve, valve seat, an external slotted cover, and a manually operated shut-off lever. The purpose of the hood outlet valve is to permit the hood demisting air to exit the hood. The valve can be closed in the event the pusher fan fails to provide a supply of blown air.

3-16. Hood Inlet Valve. The hood inlet valve (figure 3-7) is located within the MK-2 manifold. The valve consists of a stepped rubber valve and valve seat. The purpose of this valve is to prevent air from being drawn from the hood compartment into the orinascal mask via the MK-2 manifold in the event of high volume breathing demand or pusher fan failure.

3-17. Inhalation Valve and Iceguard. The inhalation valve (figure 3-8), mounted in the left side of the orinascal mask, consists of a molded plastic valve seat, with a stepped rubber valve inserted into the molding

by its shaft. An iceguard, in the form of a fine mesh, covers the outlet port of the valve. The iceguard is retained in position by lugs engaging slots in the valve seat. The purpose of the inhalation valve is to allow filtered blown air to enter the orinascal mask.

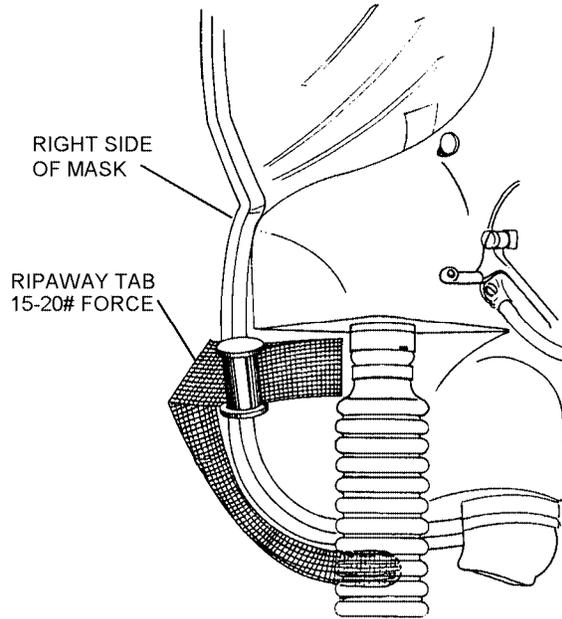


Figure 3-4. Faceplate Ripaway Tab

3-4

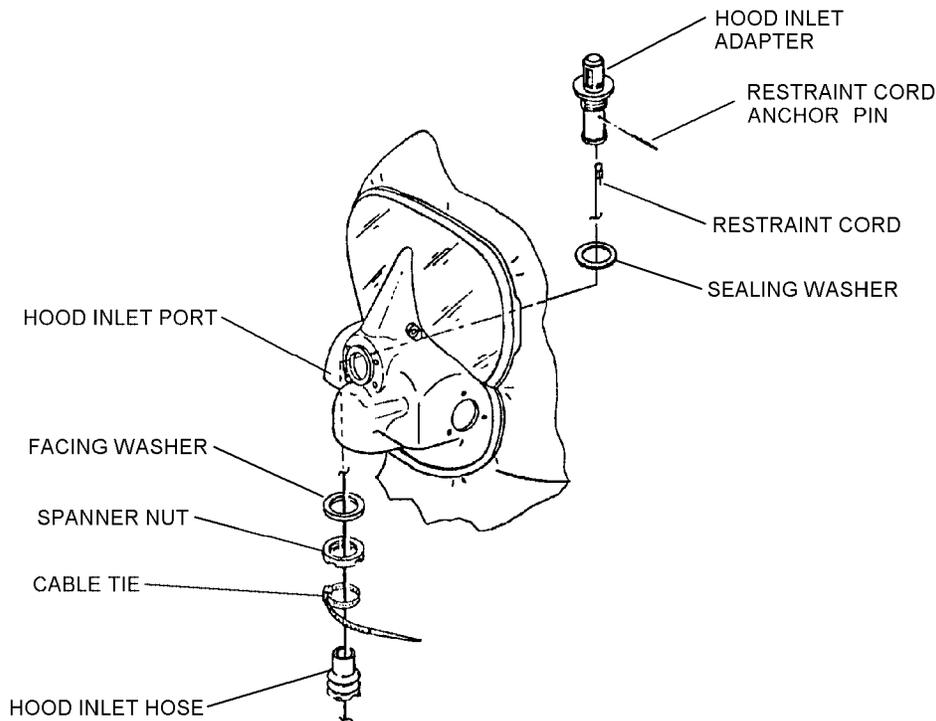


Figure 3-5. Hood Inlet Adapter

3-5

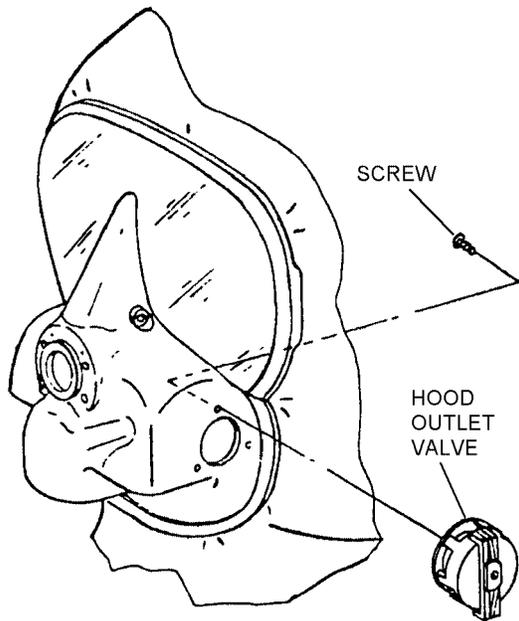


Figure 3-6. Hood Outlet Valve

3-6

3-18. Compensated Exhalation Valve. The compensated exhalation valve (figure 3-9) is a molded plastic outlet valve mounted within the exhalation duct of the orinatal mask, with its compensated chamber connected into the orinatal mask inlet. The purpose of the compensated exhalation valve is to allow exhaled gases to be expelled into the environment when the pressure inside the orinatal mask is greater than the pressure in the outlet housing chamber.

3-19. Exhalation Outlet Valve. The exhalation outlet valve (figure 3-9) is a secondary valve fitted in the exhalation duct below the compensated exhalation valve. The exhalation outlet valve consists of a stepped rubber valve positioned on a valve holder which is secured by an externally mounted spacer washer and ring nut. This secondary valve will prevent the inward leakage of contaminated air in the event of the compensated exhalation valve sticking in the open position. The small volume of air trapped between the compensated exhalation valve and the exhalation outlet valve will greatly reduce inward leakage in the event of pusher fan failure.

3-20. Snout. The snout (figure 3-9) is clamped to the ring nut securing the exhalation outlet valve to the faceplate. The snout, made from material of low thermal conductivity, acts as a chamber to trap the warm exhaled air and prevents freezing of the exhalation valves. The snout opens to the environment by a downward facing slot.

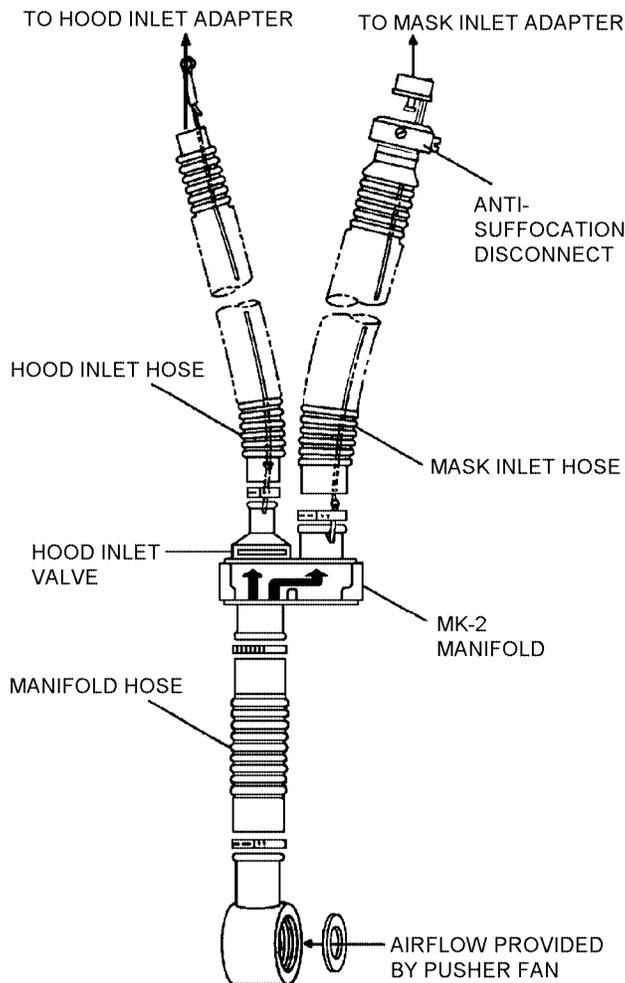


Figure 3-7. MK-2 Manifold Assembly

3-7

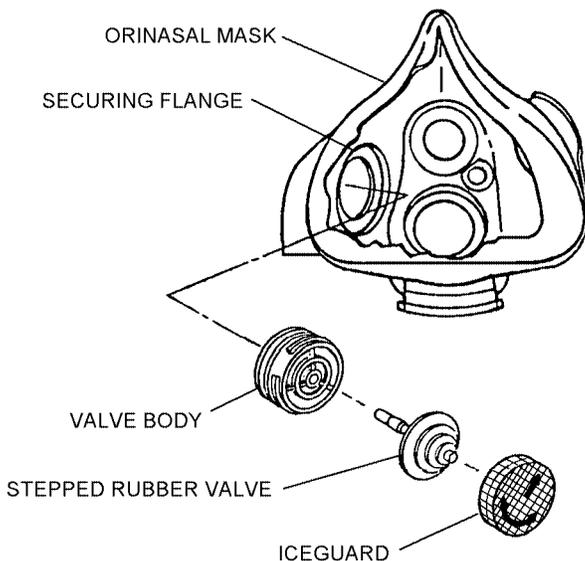


Figure 3-8. Inhalation Valve Assembly

3-8

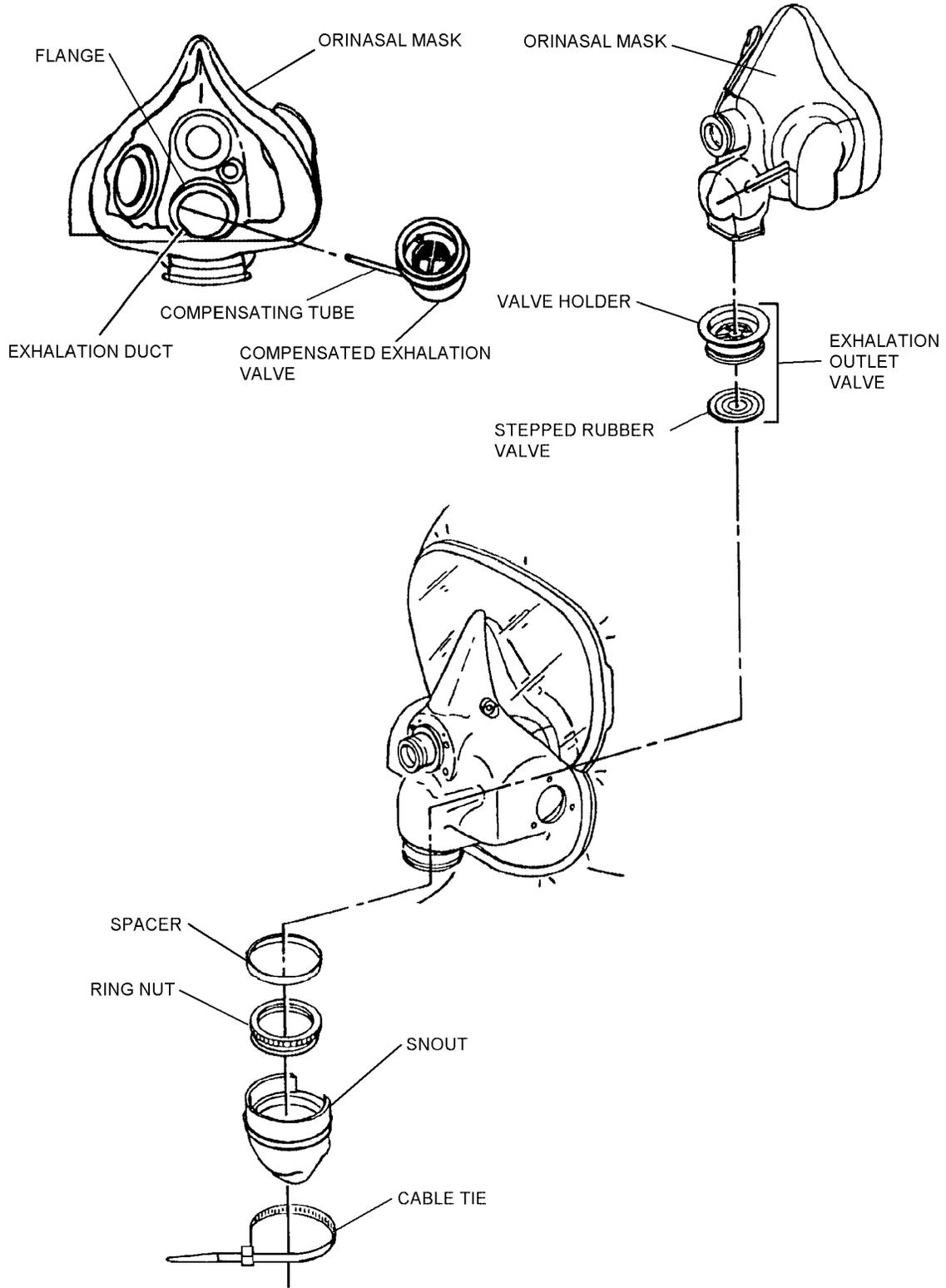


Figure 3-9. Compensated Exhalation Valve/Exhalation Outlet Valve/Snout

3-21. Anti-Suffocation Disconnect/Mask Inlet Adapter. The anti-suffocation disconnect, located at the upper end of the mask inlet hose, is manually unlocked from the mask inlet adapter on the faceplate by an inward clockwise rotation of a knurled locking ring toward the mask, which breaks a shear screw (figure 3-10). Two (2) torque buttons aid in the application of pressure to break the shear screw for quick disconnect in emergency situations. The mask inlet hose may then be separated from the mask inlet adapter by pulling firmly down on the hose.

3-22. Canteen and Drink Facility. The drink facility (figure 3-11) consists of an internal drink tube (mouthpiece) located within the orinasal mask, a butyl external drink tube that is wrapped around the hood inlet hose and a self-sealing quick disconnect at the canteen end. A two quart collapsible canteen (NIIN 01-118-8173) and cover (NIIN 01-118-8175), fitted with a shoulder strap is connected to the drink facility and provides drinking water to the aircrewmember. An M-1 canteen cap (NIIN 00-930-2077) is fitted to the canteen. The quick disconnect is stored in the rubber quick disconnect holder on the hood inlet hose when not in use, or to drink, attached to the M-1 canteen cap on the canteen. The drink facility is CBR resistant and may be used in a contaminated environment if connected to the canteen in an uncontaminated environment. For additional information, see the applicable aircraft NATOPS manual.

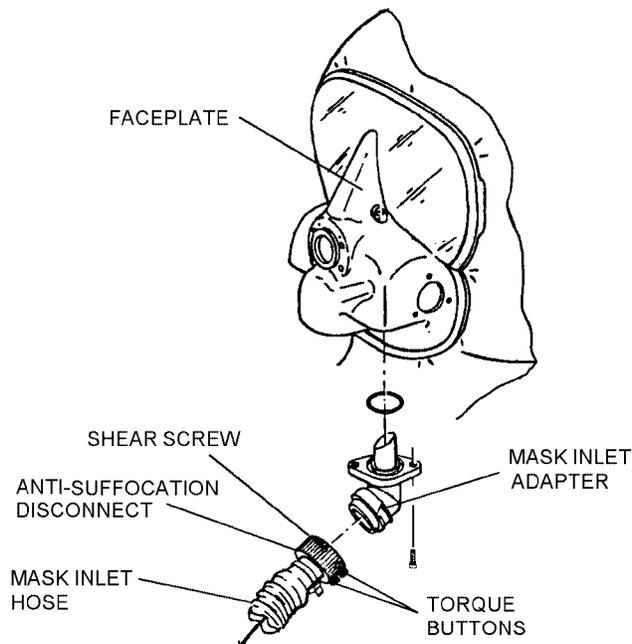


Figure 3-10. Anti-Suffocation Disconnect/Mask Inlet Adapter

3-10

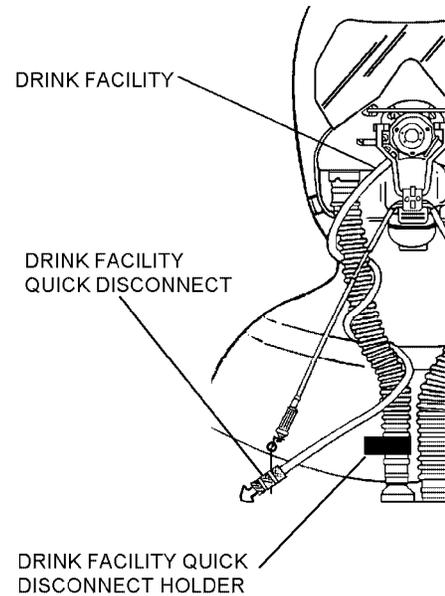


Figure 3-11. Drink Facility

3-11

WARNING

If canteen is disconnected in a CBR contaminated environment, do not reconnect until all matching connectors are free of contamination.

NOTE

The label, mounted on front of mounting bracket of toggle harness identifies manufacturer, part number, and serial number of the MCK-3A/P Mask.

3-23. Toggle Harness Assembly. The toggle harness assembly (figure 3-12) is mounted on the front of the faceplate, around the microphone. The assembly is held in place by four (4) countersunk screws which pass through the MCK-3A/P Mask harness assembly and into the faceplate. The screws are drawn tight by four self-locking nuts. A V-shaped hinged bow, which freely pivots upward or downward, is suspended from two rectangular studs protruding from the MCK-3A/P Mask harness assembly. Attached to the end of the bow is a toggle plate which pivots upward and downward and provides the tension for tightening the MCK-3A/P Mask to the aircrewmember's face. Two cable assemblies are connected to the toggle plate, and each is fitted with an adjustable swivel link which allows the cable assemblies to be adjusted approximately 1 inch in length for proper mask tension. The swivel link is attached to the CBR adapter strap which is used to couple a helmet to the MCK-3A/P Mask. The adapter strap is attached to the swivel link with C-clips. When coupling, the cable

assemblies should lie over the hooks on the V-bow before the swivel link is connected to the helmet.

3-24. Microphone Assembly. The microphone assembly (figure 3-13) consists of a microphone, communication cable, and terminal plug that can be connected to the socket of an aircrew helmet. The microphone is fitted through the central pod of the faceplate and into the rubber port of the orinasal mask, assuring a seal of the orinasal mask housing within the faceplate. The microphone is retained in place by a cable tie, cinched around the rubber portion of the orinasal mask that protrudes outward through the faceplate.

3-25. Hood Inlet Hose. The hood inlet hose connects the hood inlet adapter on the right side of the orinasal mask to the right outlet port of the MK-2 manifold.

3-26. Mask Inlet Hose. The mask inlet hose connects the oxygen inlet adapter on the left side of the orinasal mask to the left outlet port of the MK-2 manifold.

WARNING

Either a nose occluder or butyl rubber blanking plugs must be installed to ensure CBR protection.

NOTE

Most aircrewmembers may fly with just blanking plugs installed; however, it is recommended that nose occluders be fitted and installed for all aircrewmembers to facilitate the valsalva procedure.

3-27. Nose Occluder. The optional nose occluder assembly (figure 3-14) is mounted through the nose bridge of the faceplate. The assembly is available in sizes ranging from 4 mm to 7 mm in increments of 1 mm in both short and long size ranges. The occluder consists of a pair of shaft subassemblies, with nylon rollers, that can be swept down over the nose area of the orinasal mask. The shaft assemblies are operated by manually raising the stirrup that is mounted externally on the faceplate surface. Butyl rubber blanking plugs installed in the faceplate nose occluder bushings shall not be removed unless a nose occluder is being installed. Protection against chemical agents will not be degraded if the plugs are properly installed and remain fully seated.

3-28. LOWER ASSEMBLY. The lower assembly (figure 3-15) consists of the MK-2 manifold and pusher fan subassembly.

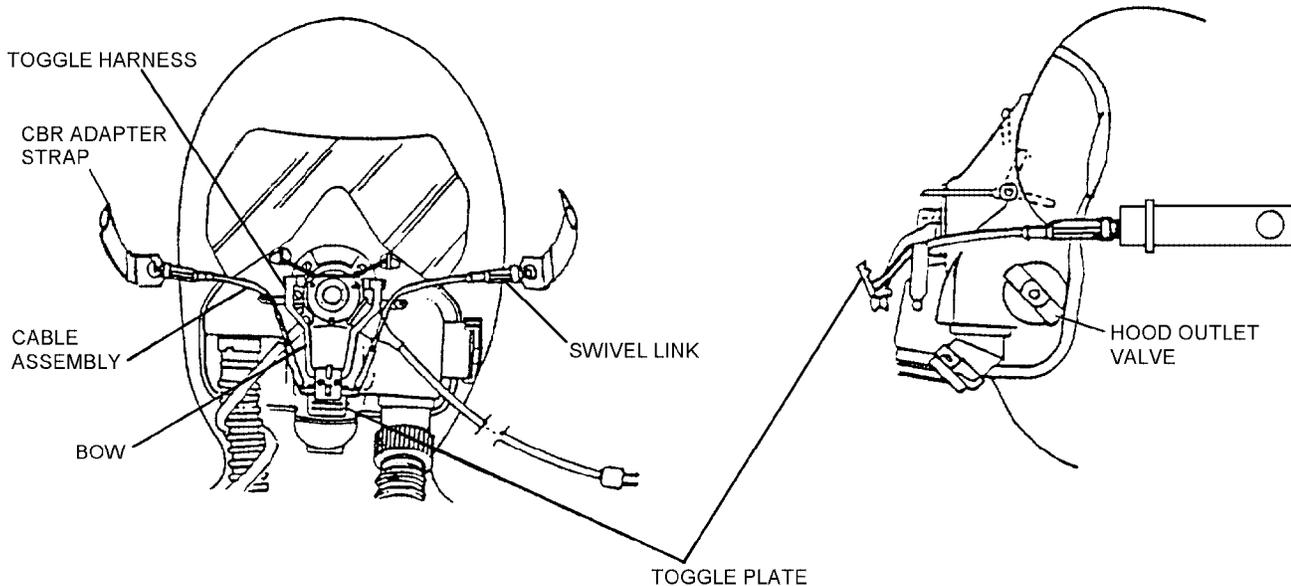


Figure 3-12. Toggle Harness Assembly

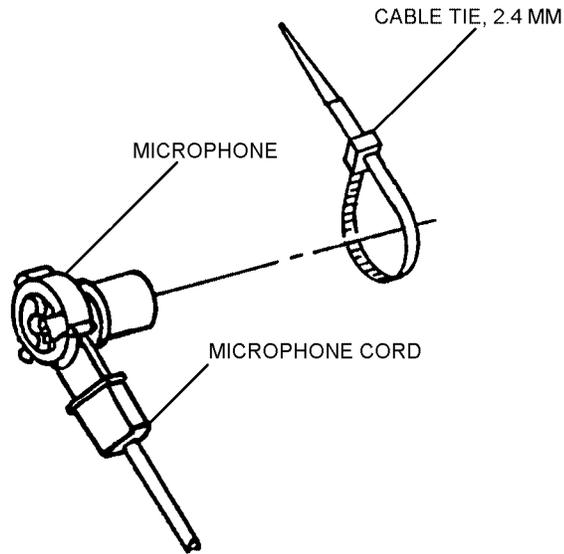


Figure 3-13. Microphone Assembly

3-13

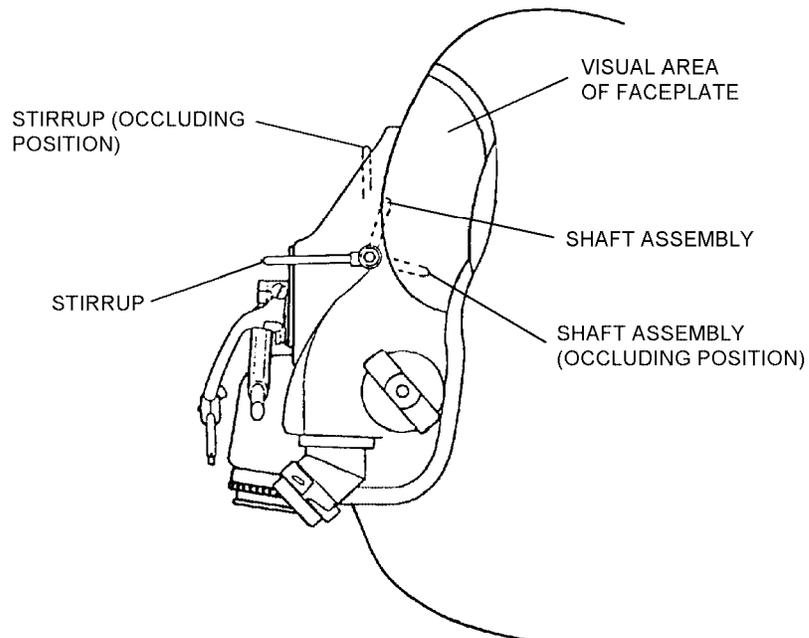


Figure 3-14. Nose Occluder

3-14

3-29. MK-2 Manifold. The MK-2 manifold is a three port crossover valve receiving connecting hoses from the MCK-3A/P Mask and a hose from the pusher fan subassembly (manifold hose).

3-30. Pusher Fan Subassembly. The Pusher Fan Subassembly consists of the following:

3-31. Manifold Hose. The Manifold hose is manufactured from ethylene propylene rubber and is corrugated for flexibility. The 3/4 inch end of the hose is secured to the MK-2 manifold inlet and the 7/8 inch end is secured to the J-manifold, using stepless low profile clamps.

3-32. J-Manifold. The J-manifold is manufactured from aluminum stock. The large circular end of the manifold is threaded to accept a C2 or C2A1 canister and contains a rubber gasket that provides the canister with an airtight seal. The other end is connected to the manifold hose.

3-33. Canister. The C2 canister is a standard, NATO approved, charcoal filter canister. It is currently being replaced by the C2A1 canister. Either the C2 or C2A1 canister may be used with the A/P23-14A(V) Respirator Assembly.

3-34. Pusher Fan with Battery. The pusher fan consists of a molded rubber boot, housing, and an internal centrifugal fan. The large, open end of the rubber boot fits over the C2 or C2A1 canister and is secured with a cable tie. An electrical cord connects the fan to a rechargeable NiCad battery or non-rechargeable Lithium Battery. The battery is a self-contained unit capable of providing four hours of continuous power. An on/off push switch is located on top of the battery.

3-35. ADDITIONAL EQUIPMENT.

3-36. A/P37S-1 Intercom Set. The A/P37S-1 Intercom Set consists of a slim-line rectangular case convenient for storage in a pocket (figure 3-16). The intercom unit contains a battery-powered audio frequency amplifier, a single three-position toggle switch, and two jack sockets protected by hinged cover flaps. Sidetone is automatically provided at both headsets. The intercom set is turned on by plugging the communications cord into either of the two jack sockets. Communication is established via a transducer mounted within the

intercom unit. When the toggle switch is set to the off position (furthest away from the jack sockets) the transducer remains switched out of circuit. Moving the toggle switch into its central position connects the transducer into its microphone (MIC) mode. Communication between two headsets then remains available, but speech signals from any source received at the transducer are also transmitted to both headsets. Moving (and holding) the toggle switch towards the jack sockets switches the speech signals from both headset positions. When released, the toggle switch returns to the central (MIC) position.

3-37. ARS Fitting Frames. The Aircrew Respirator Spectacle fitting frames provide a means for fitting aircrew personnel with corrective lenses, and are compatible with the MCK-3A/P Mask. The ARS fitting frames are supplied in five sizes (figure 3-17). Fitting frames with prescription lenses shall be ordered through the Naval Ophthalmic Support and Training Activity (NOSTRA), Yorktown, Virginia. Prescriptions shall be mailed or faxed, utilizing Form DD771 (figure 3-19), to NOSTRA requesting ARS fitting frames. An alternate method of ordering frames and lenses may be found on website at www.srts.amedd.army.mil. Specify the temple length. Contact:

NOSTRA, MATERIAL MANAGER
160 Main Rd., Suite 350
Yorktown, VA 23691
Fax DSN: 953-4511
COM: 757-887-4511
Phone DSN: 953-4261
COM: 757-887-4261

3-38. Transit Case. The transit case is provided as a means of protection for the MCK-3A/P mask, intercommunication unit, fitting frames, intercom cord, drink facility, optional skull cap, sweatband, and talc powder during transit or storage (figure 3-18).

3-39. CMU-23A/P Survival Vest - MK-2 Manifold Assembly and Pusher Fan Retention Pocket. ACC 616 provided instructions for the fabrication of a retention pocket and for mounting the pocket on either the SV-2 survival vest or the CMU-23/P survival vest (figure 3-20). Once these vests are modified, they are redesignated the CMU-23A/P survival vest. Refer to NAVAIR 13-1-6.7-2, Aircrew Personal Protective Equipment (Clothing) for inspection and maintenance of the CMU-23A/P vest.

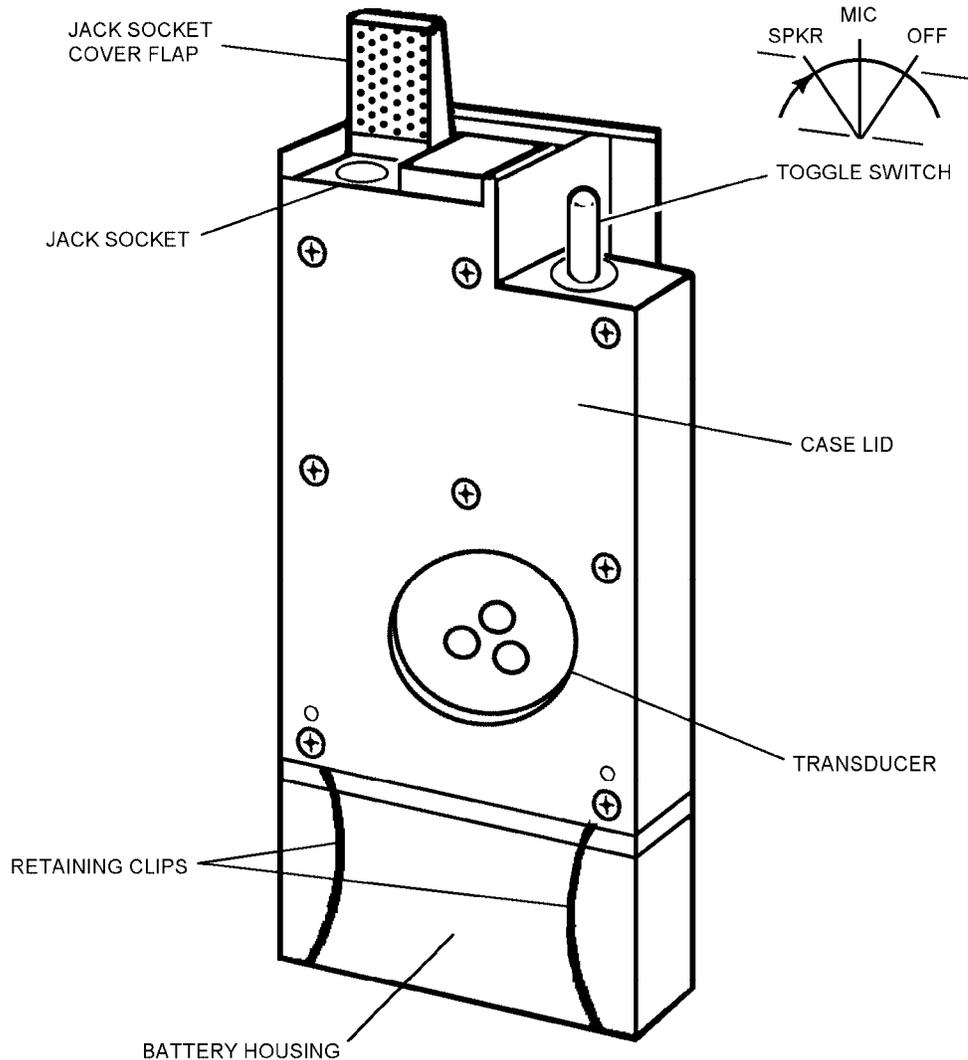


Figure 3-16. A/P37S-1 Intercom Set

3-16

3-40. HGU-67/P Helmet and HGU-84/P Series Helmet. The HGU-67/P helmet and HGU-84/P series helmets are used with the A/P23P-14A(V) respirator assembly. These helmets are form-fitted and configured as necessary to meet application requirements. Refer to NAVAIR 13-1-6.7-3 for inspection and maintenance procedures.

3-41. APPLICATION.

3-42. The Respirator Assembly is intended for use by helicopter aircrew personnel for both ground and in-

flight operations. Helmets will be worn over the MCK-3A/P Mask to provide head protection for in-flight operations. Refer to NAVAIR 13-1-6.7-3 for applicable helmets.

3-43. FUNCTION AND OPERATION.

3-44. NORMAL OPERATION.

3-45. MCK-3A/P Mask. The inside of the mask is divided into two compartments (figure 3-23), the orinal area and the hood compartment. This configuration

provides for a separate breathing and ventilation facility. Filtered air is supplied via the lower assembly.

3-46. Orinasal Mask. The mask inlet hose permits passage of air into the orinasal mask. As the user inhales, air passes through the inhalation valve to the user. Air will also enter the compensating tube extending into the inhalation duct from the compensated exhalation valve, exerting pressure on the backside of the valve which prevents the escape of air and the entry of agents through the exhalation outlet. Exhalation re-seats the stepped rubber inhalation valve so that exhaled air exits the assembly through the exhalation outlet valve (figure 3-23).

3-47. Nose Occluder. The nose occluder, incorporated into the faceplate, permits the aircrewmember to equalize pressure during flight. When properly fitted, raising the occluder stirrup on the outside of the faceplate should pinch the nose closed, facilitating the valsalva maneuver enabling the aircrewmember to clear his ears.

3-48. Toggle Harness Assembly. The toggle harness assembly provides the proper retention necessary for securing the MCK-3A/P Mask to a protective helmet.

3-49. Hood Compartment. The hood inlet hose supplies air to the assembly for hood pressurization and lens defogging. Pressurization of the hood ensures no harmful agents can enter and helps cool the user's head. Lens defogging is accomplished by directing the

incoming air across the lens by means of a deflector plate attached to the orinasal mask. Air exits the hood compartment through the hood outlet valve. The hood outlet valve can be closed in the event the pusher fan fails (figure 3-21). This feature prevents any toxic agent or contaminant from entering the hood compartment of the respirator. When closed, the hood outlet valve prevents water from entering the hood compartment, while the aircrewmember is seated in the upright position, on emergency immersion into water.

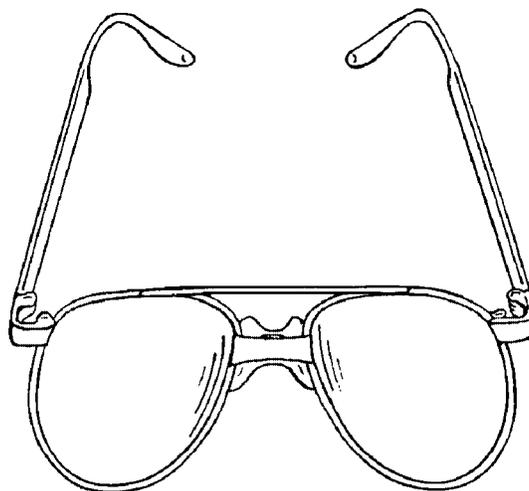


Figure 3-17. ARS Fitting Frames

3-17

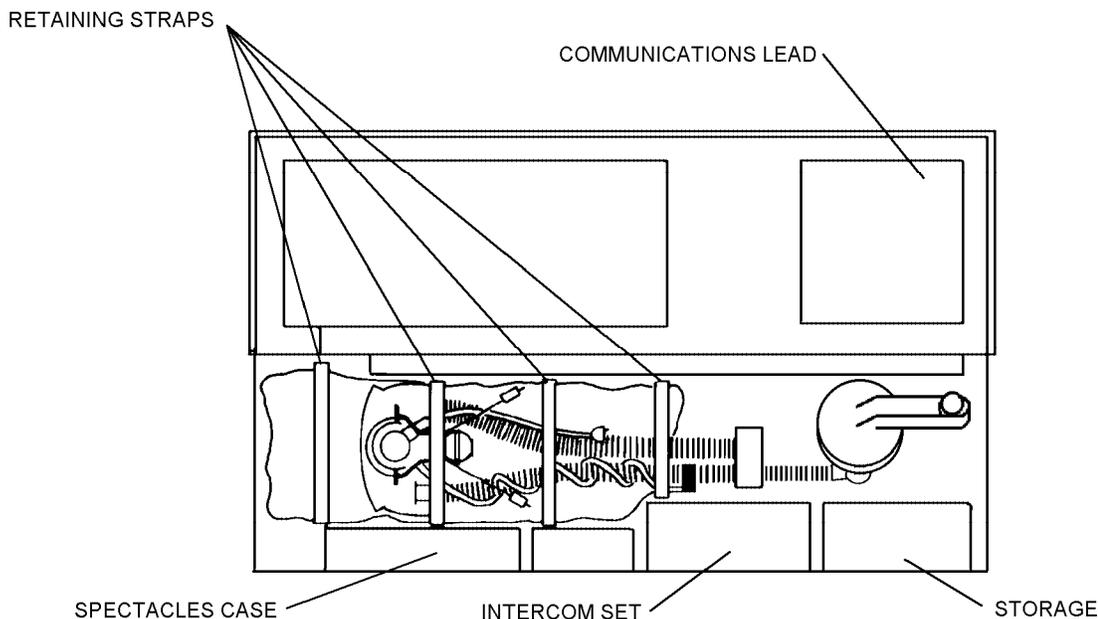


Figure 3-18. Transit Case

3-18

EYEWEAR PRESCRIPTION		DATE	ORDER NUMBER
TO: (Optical Laboratory, including ZIP Code) NOSTRA PO BOX 350 YORKTOWN, VA 23691-0350		FROM: (Station & Location, including ZIP Code)	
NAME (Last, first, middle initial) GRADE AND SERVICE NUMBER/SOCIAL SECURITY ACCOUNT NO			AGE
UNIT AND ADDRESS			
<input type="checkbox"/> ACTIVE DUTY <input type="checkbox"/> RETIRED <input type="checkbox"/> OTHER (Specify)		<input type="checkbox"/> USA <input type="checkbox"/> USN <input type="checkbox"/> USAF <input type="checkbox"/> USPHS <input type="checkbox"/> USCG <input type="checkbox"/> OTHER (Specify)	
PRESCRIPTION			
SPECTACLES: <input type="checkbox"/> MALE <input type="checkbox"/> FEMALE		AVIATION SPECTACLES <input type="checkbox"/> N-15 <input type="checkbox"/> COATED <input type="checkbox"/> CLEAR	
OTHER: <input type="checkbox"/> REPAIR <input type="checkbox"/> PROTECTIVE MASK INSERT (Specify type and position)			
INTERPUPILLARY DISTANCE	NEAR	EYE SIZE	BRIDGE SIZE
TEMPLE LENGTH AND STYLE		NUMBER PAIRS	CASE
SINGLE VISION			
	SPHERE	CYLINDER	AXIS
	DECENTRATION IN OUT	PRISM	BASE
R			
L			
MULTIVISION			
ADD FOR NEAR	MULTIFOCAL INSTRUCTIONS		TOTAL DECENTRATION
	SEGMENT HT	DECENTRATION NEAR	
R			
L			
SPECIAL LENSES OR FRAME (Details and/or circumstances necessitating prior approval under current instructions and/or regulations. Only identical duplicate prescriptions and components should be ordered on the same DD Form 771.)			
TYPED OR PRINTED NAME, GRADE, TITLE AND SIGNATURE OF APPROVING AUTHORITY			
TYPED OR PRINTED NAME, GRADE, TITLE AND SIGNATURE OF PRESCRIBING OFFICER			
DISTRIBUTION OF COPIES	CLINIC Originating Prescription - Removes Copy 3 for insertion in patient's Health Record (DD Form 722). Sends Copies 1 and 2 to designated optical laboratory. LABORATORY - Retains Copy 1 for file. Returns Copy 2 with completed spectacles.		

DD FORM 771
1 SEP 66

EDITION OF 1 DEC 66. MAY BE USED.

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Figure 3-19. ARS Fitting Frames Ordering Form

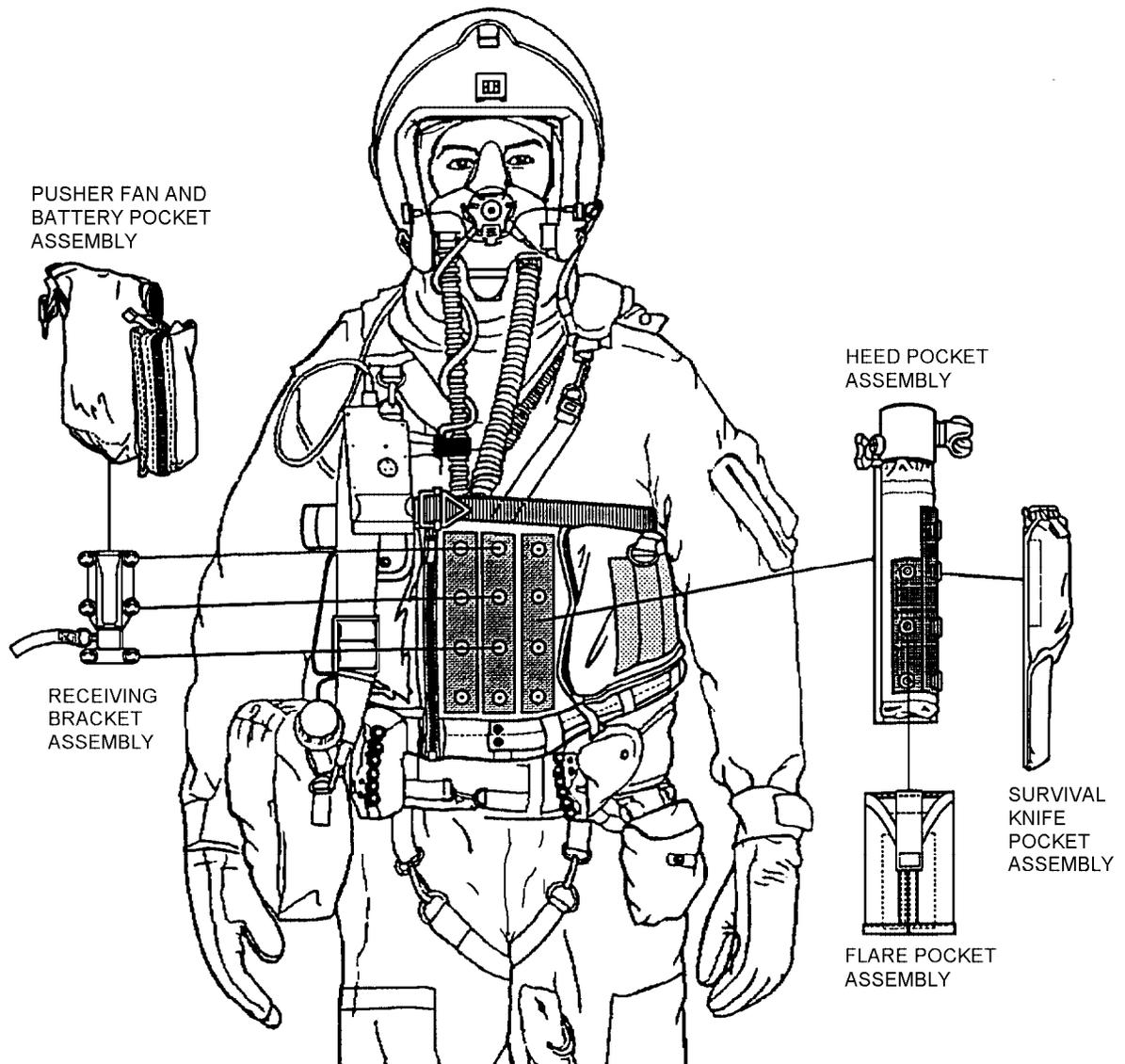


Figure 3-20. CMU-23A/P Survival Vest

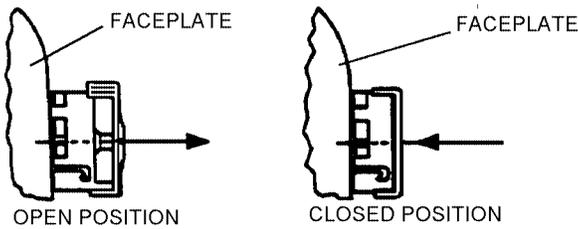


Figure 3-21. Hood Outlet Valve Operation

3-21

3-50. Drink Facility. When wearing the A/P23P-14A(V) and the associated below-the-neck (BTN) garments, the thermal burden placed on the user increases dramatically. This, in turn, significantly increases the risk of dehydration. To prevent, or minimize, the physiological effects of dehydration, a drink facility has been incorporated into the design of the respirator. It is mandatory that the lower end of the drink tube be connected to the canteen cap prior to exposure to a potentially CB contaminated environment. Connecting or disconnecting the drink tube at any other time risks compromising the protection afforded by the respirator assembly. The aircrewmember drinks by maneuvering the upper end of the tube, located inside the orinasal mask, into the mouth. The aircrewmember then gently squeezes the canteen to force the liquid up the tube and into the mouth. It is recommended that the aircrewmember drink small amounts of fluid at regular intervals rather than wait for the body to signal its need for fluid replacement. Operation of the drink facility is as follows:

1. Connection and use of the drink facility (figure 3-22).

- a. In a CB contaminant free ready room remove drink facility quick disconnect from drink facility holder.
- b. Open canteen cap.
- c. Connect drink facility quick disconnect to canteen cap.
- d. To drink, squeeze canteen hard with both hands, against chest or under right arm, or hold canteen upside down over head.
- e. Pause and blow into canteen periodically to avoid canteen collapsing.

2. Disconnecting drink facility. It is mandatory that drink facility not be disconnected until doffing the entire ensemble in a clean or decontaminated area. However, if the drink facility needs to be removed, proceed as follows:



If canteen is disconnected in a CB contaminated environment, do not reconnect until all matching connectors are free of CB contamination.

- a. Disconnect drink facility from canteen by pulling and twisting connector valve. Close canteen cap flap.
- b. Secure free end of drink facility by inserting it into drink facility holder mounted on hood inlet hose.
- c. Unhook canteen from straps. Connect straps together to facilitate finding them later.
- d. Properly stow canteen.

3-51. Microphone Assembly. The microphone assembly allows the aircrewmember to communicate while wearing the MCK-3A/P Mask during flight and on-ground.

3-52. Lower Assembly. The Lower Assembly provides the aircrewmember with filtered air for both the hood and orinasal mask compartments.

3-53. MK-2 Manifold. The MK-2 Manifold receives filtered air from the pusher fan subassembly and passes it on to the hood and orinasal mask compartments via the hood inlet hose and mask inlet hose.

3-54. Pusher Fan Subassembly. The battery operated pusher fan forces ambient air through a C2 or C2A1 filter canister, and into the manifold hose and on to the the MK-2 manifold where it is distributed to the hood and mask inlet hoses. This low, positive pressure air prevents the entry of CB contaminants. C2 or C2A1 canisters are standard issue NATO charcoal filters that act as a protective barrier against CB agents. The pusher fan battery is either a dc voltage NiCad rechargeable battery (which allows the pusher fan to operate for 3 1/2 to 4 hours of continuous use) or a non-rechargeable Lithium Battery (capable of providing 10 hours of continuous use). The battery power is turned ON/OFF by pressing the rubber boot covered ON/OFF switch on top of the battery opposite the pusher fan battery terminal cable.

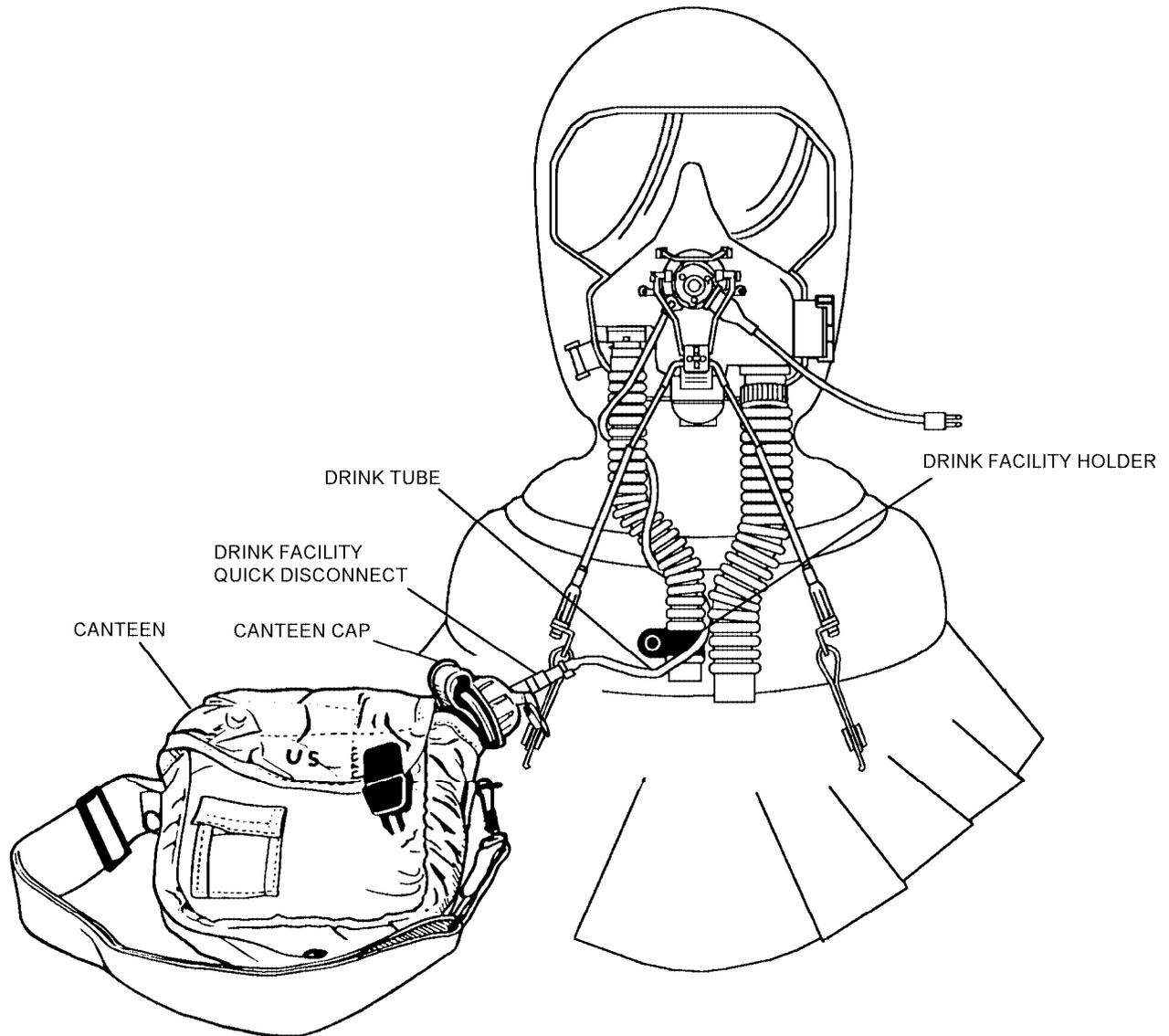
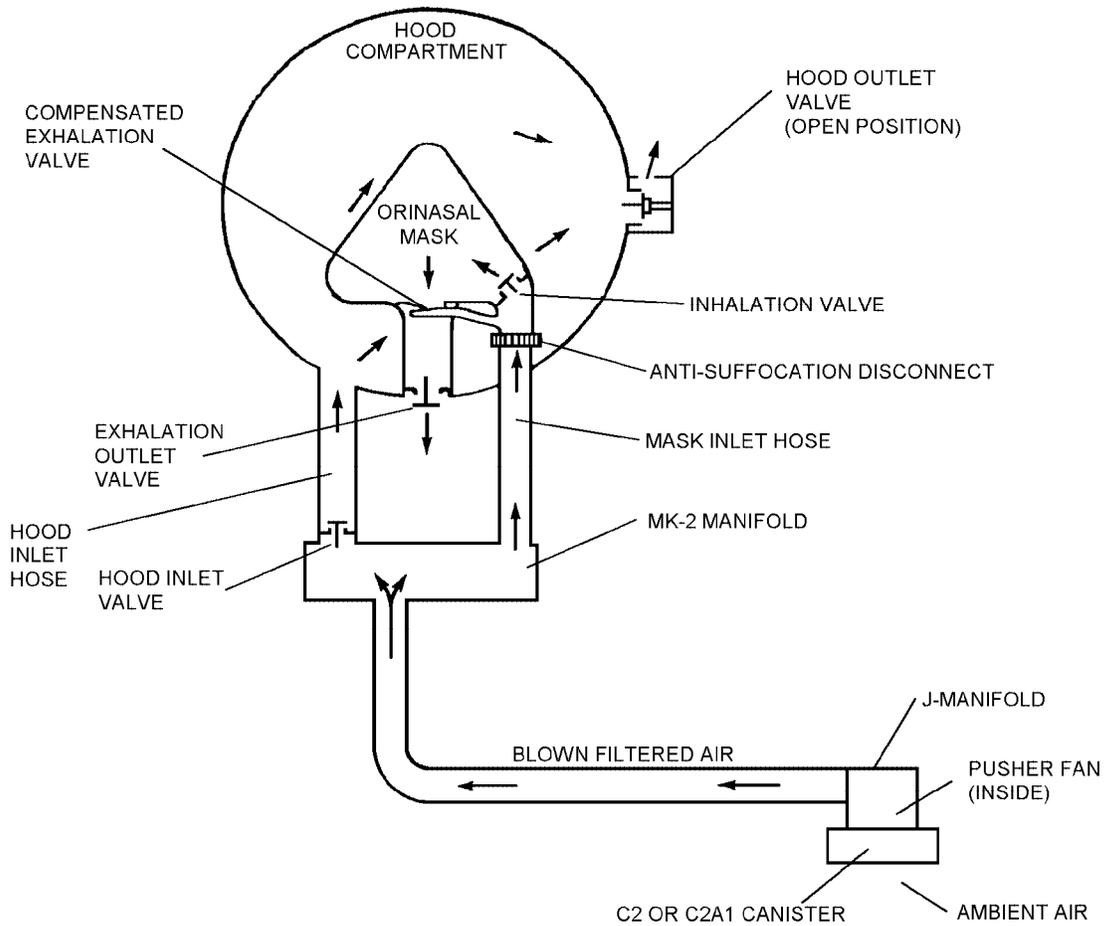


Figure 3-22. Connection of Drink Facility to Canteen

3-22

3-55. A/P37S-1 Intercom Set. The intercom set allows communications with another person via the second jack socket directly connected to that person's own intercom set. Also, by means of the transducer, communication can be established with any person not equipped with an intercom. With the toggle switch in the OFF position (away from the jack sockets), communication is possible between similarly equipped personnel, when both are plugged into the same unit. Operation of the A/P37S-1 Intercom Set, is as follows:

1. Moving the toggle switch to the MIC (center) position activates the microphone function of the transducer. The transducer will then transmit ambient sounds to the user.
2. Moving and holding the toggle switch towards the jack sockets activates the loudspeaker function of the transducer, enabling the user to speak to ground personnel who are not equipped with an intercom set. By moving the switch back to MIC position he can hear them.



3-23

Figure 3-23. MCK-3A/P Mask Air Flow Schematic

3-56. EMERGENCY OPERATION.

3-57. The A/P23P-14A(V) respirator assembly provides two methods of preventing suffocation, and obtaining access to UNFILTERED ambient air. Either the anti-suffocation disconnect can be disconnected or the faceplate ripaway feature utilized. Detailed information concerning these procedures, as well as emergency egress over water is contained in the aircraft NATOPS Emergency Procedures section. Refer to figures 3-24 and 3-25.

3-58. Anti-Suffocation Disconnect.

1. Grasp connector with left hand.
2. Twist inward toward faceplate one-quarter turn clockwise, shearing brass shear screw, and unlocking connector.

3. Pull away to uncouple connector.

4. The anti-suffocation disconnect may then be reattached later, allowing the user to again breathe filtered air (figure 3-24).

3-59. Faceplate Ripaway.

NOTE

Once removed, the faceplate may not be reattached, but the microphone inside the faceplate may still be utilized.

1. Prior to attempting to use ripaway feature, visor and other helmet mounted equipment must be raised or removed.

2. Firmly grasp ripaway tab located under right cheek bone with right hand and pull straight out until tab breaks free from faceplate.

3. Continue pulling tab toward chin until tab ribbon completely separates from hood and faceplate (figure 3-25).

4. Release toggle harness from helmet mounted snaps.

5. Insert fingers of left hand into gap created by separating ribbon, grasp faceplate firmly and pull toward the left.

3-60. REFERENCE NUMBERS, ITEMS, AND SUPPLY DATA.

3-61. ILLUSTRATED PARTS BREAKDOWN. Section 3-5, Illustrated Parts Breakdown (IPB), lists and illustrates the detailed components of the Respirator Assembly. Figure and index numbers and reference or part numbers are provided for identification and procurement of replacement components. Source, Maintenance, and Recoverability codes are provided for procurable items.

Section 3-2. Modifications

3-62. GENERAL.

3-63. There are no modifications to the Respirator Assembly authorized at this time.

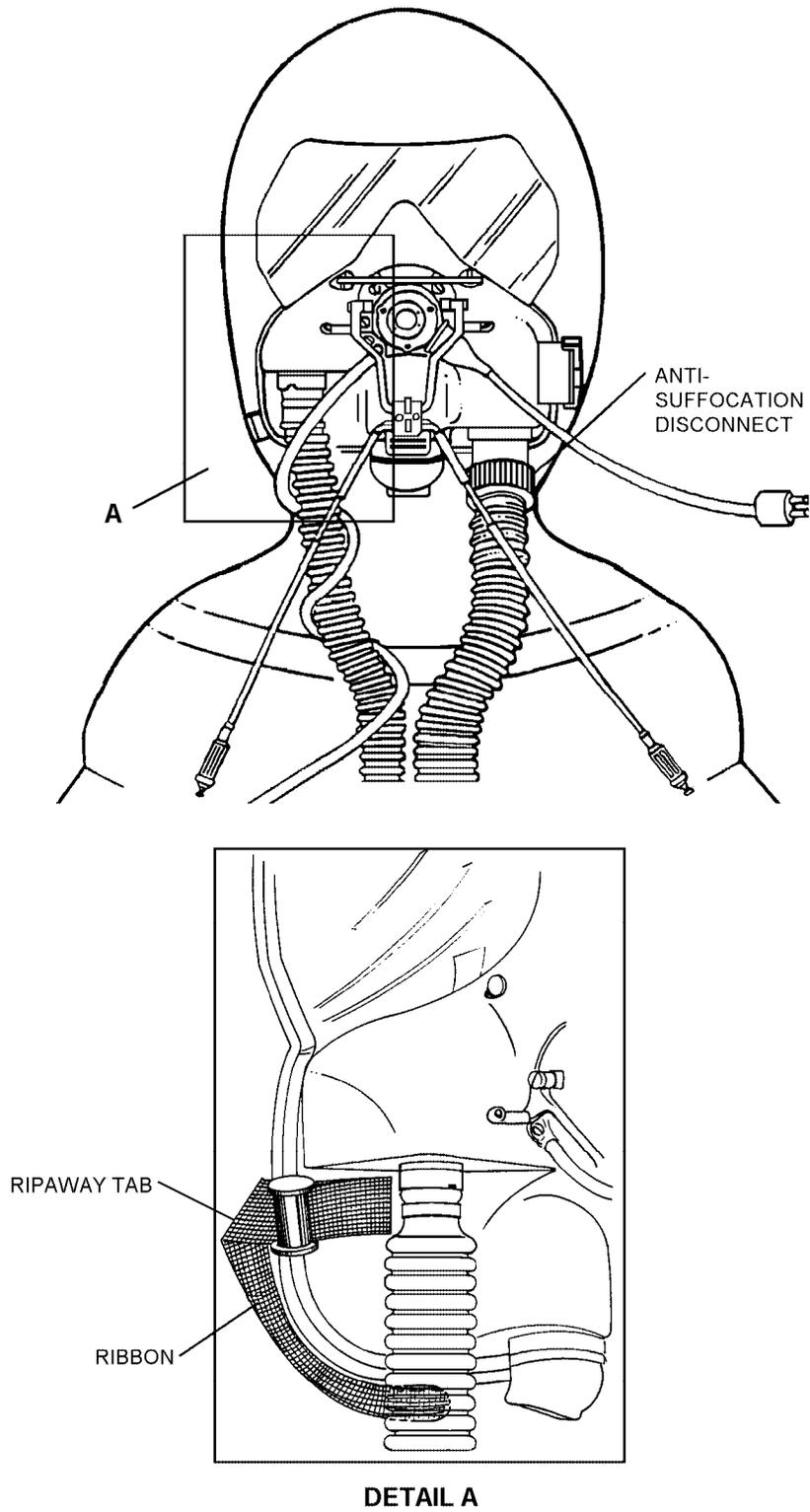
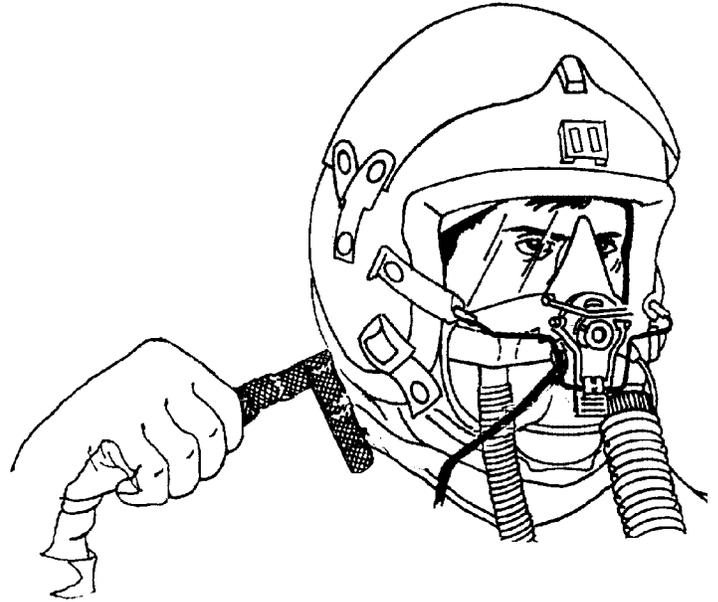


Figure 3-24. Emergency Ripaway Tab



STEP 1. LOCATE RIPAWAY TAB AND GRASP WITH RIGHT HAND.



STEP 2. PULL TAB UNTIL HOOD RIPS AND TAB RIBBON SEPARATES FROM HOOD.



STEP 3. UNSNAP CBR ADAPTER STRAPS.



STEP 4. PLACE FINGERS IN SLIT AND RIP FACEPLATE AWAY FROM FACE WITH LEFT HAND.

Figure 3-25. Anti-Suffocation Ripaway Procedure

Section 3-3. Fitting

3-64. GENERAL.

3-65. The concept of fitting refers to, and encompasses, sizing, fitting, and adjustment of the MCK-3A/P Mask and nose occluder. The procedures contained in this section shall be performed at the designated organizational maintenance level by a qualified Aircrew Survival Equipmentman (PR).

3-66. SIZING.

3-67. Procedures are provided in this section to fit the wearer with the proper orinasal mask, hood and nose occluder sizes.

3-68. PREPARATION OF COMPONENTS AND PROCEDURAL STEPS.

NOTE

To make up a complete assembly, the appropriate mask assembly and appropriate nose occluder kit must be individually requisitioned (see materials required).

Materials Required (Cont)

Quantity	Description	Reference Number
1	Kit, Nose Occluder, 6 mm long	CL 6566
1	Kit, Nose Occluder, 7 mm long	CL 6567
1	Kit, Nose Occluder, 4 mm short	CL 6568
1	Kit, Nose Occluder, 5 mm short	CL 6569
1	Kit, Nose Occluder, 6 mm short	CL 6570
1	Kit, Nose Occluder, 7 mm short	CL 6571

Materials Required

Quantity	Description	Reference Number
As required	Krytox, Type II, 240 AC	NIIN 00-961-8995
1	MCK-3A/P Mask Assembly (P Mask), Standard Hood	3297AS251-1
1	MCK-3A/P Mask Assembly (P Mask), Extra-large Hood	3297AS251-3
1	MCK-3A/P Mask Assembly (Q Mask), Standard Hood	3297AS251-4
1	MCK-3A/P Mask Assembly (Q Mask), Extra-small Hood	3297AS251-5
1	Kit, Nose Occluder, 4 mm long	CL 6564
1	Kit, Nose Occluder, 5 mm long	CL 6565

Support Equipment Required

Quantity	Description	Reference Number
1	Screwdriver, Jeweler's Head	—
1	Nut Driver, 1/8-inch	—

3-69. INITIAL FITTING, SIZING, AND ADJUSTMENT.

3-70. Mask Preparation. Preparation for fitting and use of the mask shall proceed as follows:

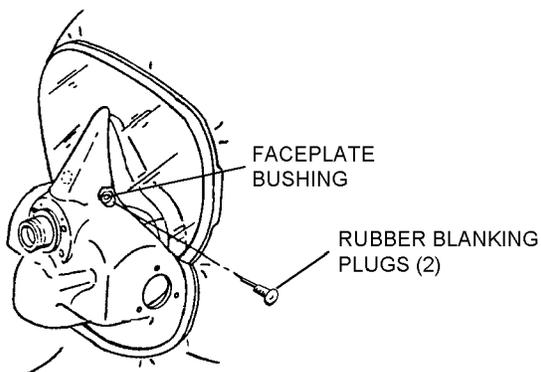
1. Remove selected mask from transit case and retain transit case.
2. Remove all packaging materials and coverings from mask except red colored servicing clip, which shall remain installed over faceplate ripaway tab. Ensure all hoses and valves are free from obstruction.
3. Verify orinasal mask size corresponds to part number on identification plate.

NOTE

Retain blanking plugs for future use, if removed.

If nose occluders are not available or val-salva capability is not critical, nose occluder blanking plugs, P/N CL 6131, shall remain installed.

4. If nose occluder is to be installed, remove rubber blanking plugs from nose occluder faceplate bushing in mask faceplate.



Step 4 - Para 3-70

3p70s4

5. Install rubber gasket, initially supplied with respirator, into J-manifold, ensuring it is fully seated in the groove and lies flat.

6. Verify securely attached installation of stepless low profile clamps securing hood and mask inlet hoses to MK-2 manifold, and manifold hose to MK-2 and J-manifolds.

3-71. Orinasal Mask Sizing.

1. Invert hood to expose orinasal mask.



Subject shall be careful not to tear neck seal when donning mask.

2. Instruct subject to hold orinasal mask to the face in its normal position with firm pressure. Cover the end of hose below manifold to prevent intake of air, and have the subject attempt to inhale deeply to test seal of orinasal mask to the face. If leakage is evident around orinasal mask edge, switch to larger or smaller size orinasal mask and retest.

3. Once subject is satisfied with the orinasal mask-to-face sealing, proceed with nose occluder fitting.

3-72. Initial Fitting of Nose Occluder. Table 3-1 provides the most practical method of selecting the proper nose occluder kit to fit the individual wearer. The table lists the available nose occluder kits, their dimensions, and the proportion of aircrew personnel using the individual kits. (For example, 75% of aircrew personnel requiring installation of a nose occluder used CL 6566). Begin the initial fitting process by using kit CL 6566, since that kit is most commonly used. If the kit does not fit properly, try the next most commonly used kit and continue the progression until a suitable fit is found. Each kit should contain the following:

Item Part	Part Number	Quantity
Shaft Assembly	As required	2
O-ring	Ref	4
Stirrup Assembly	Ref	1
C-clip	Ref	2
Facing Washer	Ref	2

Table 3-1. Nose Occluder Assembly

BOTTOM ROLLER COLOR A	NOSE OCCLUDER KIT	ARM LENGTH LONG OR SHORT	DIMENSION W	% USED
Brown	CL 6564	L	4 mm	1%
Red	CL 6565	L	5 mm	5%
Orange	CL 6566	L	6 mm	75%
Deep Cream	CL 6567	L	7 mm	5%
Green	CL 6568	S	4 mm	1%
Blue	CL 6569	S	5 mm	7%
Violet	CL 6570	S	6 mm	5%
Grey	CL 6571	S	7 mm	1%

CAUTION

When assembling nose occluder into mask, care should be taken not to force any parts together. Nose occluder and faceplate bushings which are in good working order should fit together snugly but easily. Bushings are black coated brass inserts which are press fitted into the faceplate and sealed with a silicone rubber sealant. Using excessive pressure could dislodge nose occluder faceplate bushings.

NOTE

It is suggested that prior to assembling nose occluder in mask, the shaft assemblies and stirrup be engaged several times to remove any excess coating on splines. If the splines do not engage smoothly after this, they may be out of specification and should be replaced. Use Krytox sparingly to ensure that the shaft assembly splines will fit properly into the stirrup splines without excessive force.

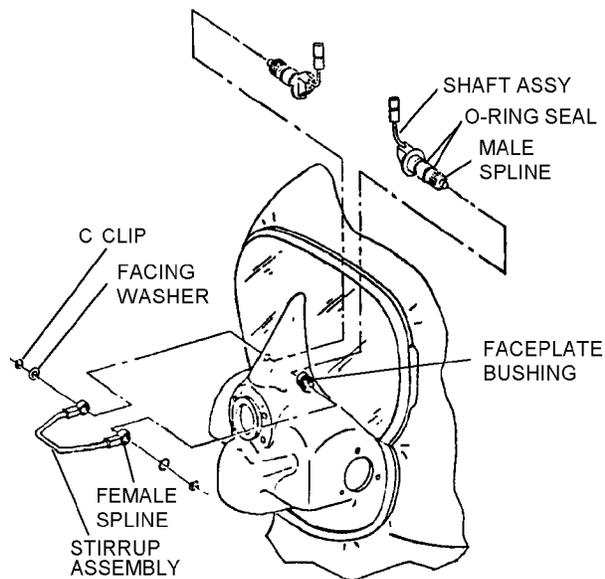
There are no published repair procedures for either spline interference or faceplate bushings at this time.

1. After selecting proper nose occluder kit, before assembling nose occluder to stirrup assembly, apply Krytox lubricant to splined ends of nose occluder shaft assembly (figure 3-26). Work splines of both

shaft assemblies in and out of stirrup assembly splines several times until the male splines engage smoothly with the female splines.

2. Inspect and lightly lubricate two O-ring seals on shaft assembly (figure 3-26).

3. Insert one shaft assembly through the inside of the faceplate bushing. Position roller portion of shaft assembly flush against inner side of faceplate nose bridge and then engage the splines. Repeat for opposite shaft assembly.



Step 3 - Para 3-72

3p72s3

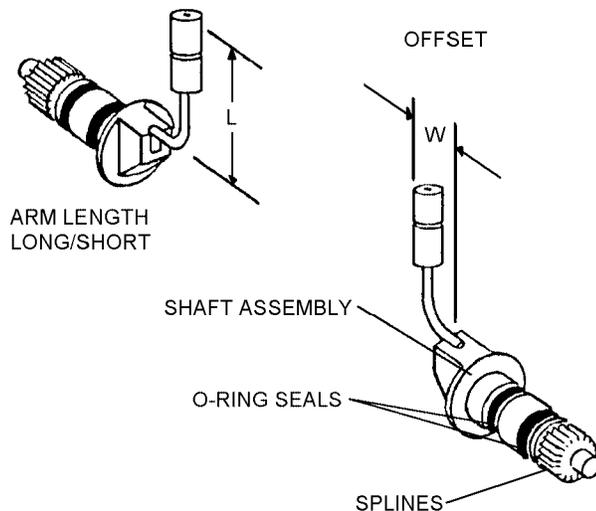


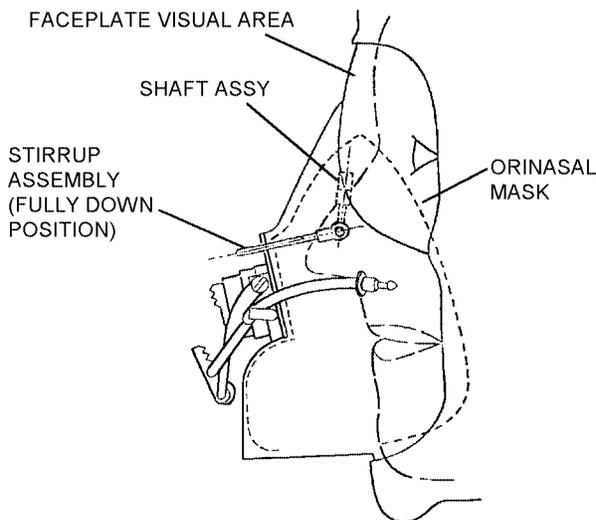
Figure 3-26. Nose Occluder Shaft Assemblies

3-26

4. Position stirrup assembly to be fully down onto outer portion of faceplate.

5. Maintain the relative positions of shaft assemblies and stirrup, then ease shaft assemblies through faceplate bushing to engage splines of the stirrups.

6. With hood inverted, instruct the subject to hold orinasal mask firmly to the face, simulating its normal position. Have subject raise stirrup assembly and valsalva by trying to expel air through the nose. Check for smoothness of operation, and ensure stirrup travel limits roller movement and not vice versa. If proper function is achieved, i.e. subject suitably valsalvas with no air leakage through the nose, proceed to [paragraph 3-74](#). If proper function is not achieved, proceed with [step 7](#).

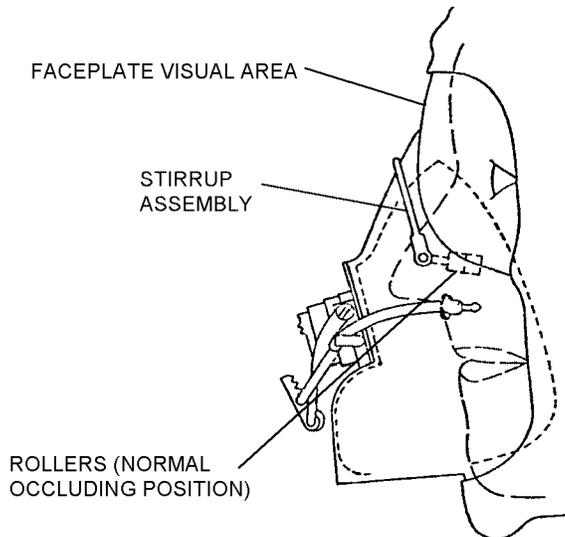


Steps 4 and 5 - Para 3-72

3p72s4

NOTE

Do not install washers or C-clips until paragraph 3-80.



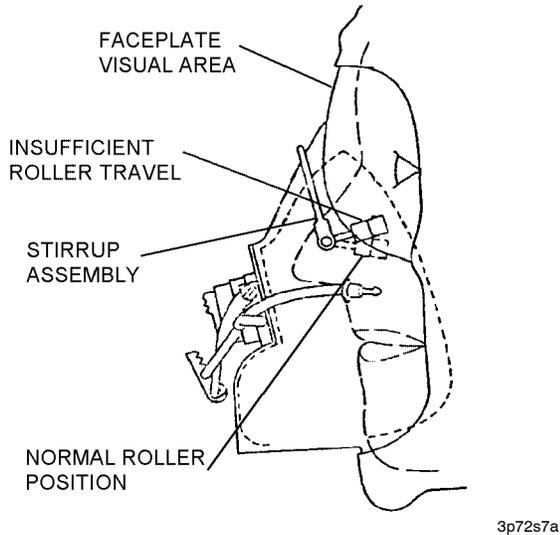
Step 6 - Para 3-72

3p72s6

NAVAIR 13-1-6.10

7. If leakage of air through the nose is evident, determine which of the following adjustments should be made and perform corrective action (figure 3-27).

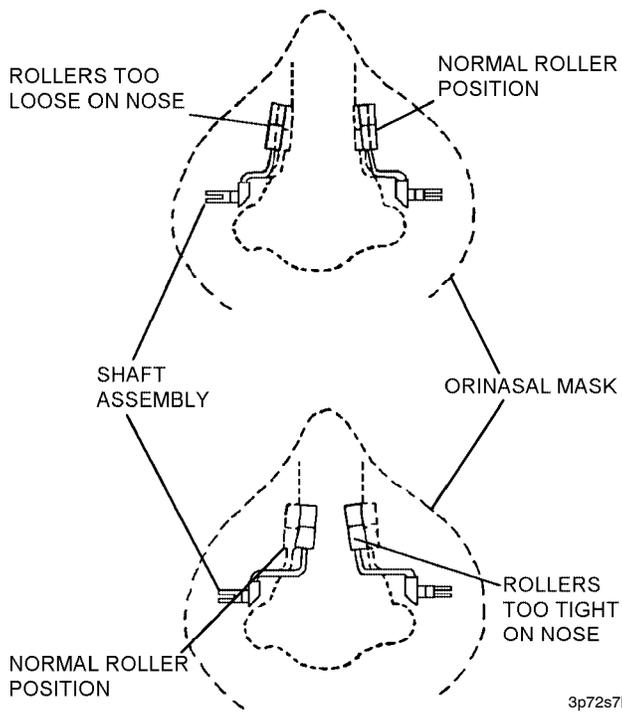
a. Insufficient roller travel down the nose to occlude. Proceed to [step 8](#), Insufficient Roller Travel.



Step 7a - Para 3-72

3p72s7a

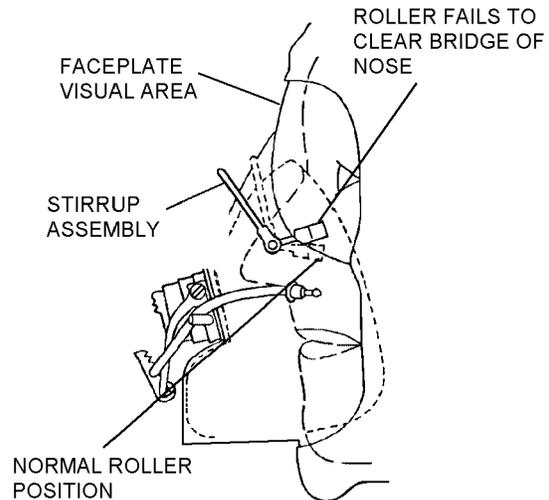
b. Improper Roller Width; rollers pass in front of bridge of nose but are too tight or too loose for proper occlusion. Proceed to [step 9](#), Improper Roller Width.



Step 7b - Para 3-72

3p72s7b

c. Improper roller arm length; rollers fail to clear bridge of nose, or are too far back on nose to properly occlude. Proceed to [step 10](#), Improper Roller Arm Length.



Step 7c - Para 3-72

3p72s7c

NOTE

If excessive spline adjustments are made, discomfort to wearer may result due to pressure exerted on the nose by occluder in its resting position.

8. Insufficient Roller Travel: If roller travel is at fault, more travel is necessary to achieve proper occluding position; a slight spline adjustment away from orinasal mask nose bridge is necessary. Adjust and repeat [step 6](#). If, after several spline adjustments, more pressure on the nose is necessary and/or wearer experiences discomfort due to pressure exerted by the rollers in their resting position, select a nose occluder kit of the same arm size, larger offset. Repeat [steps 2 through 6](#). Once the subject becomes satisfied with the performance and comfort of the nose occluder, proceed with [paragraph 3-74](#).

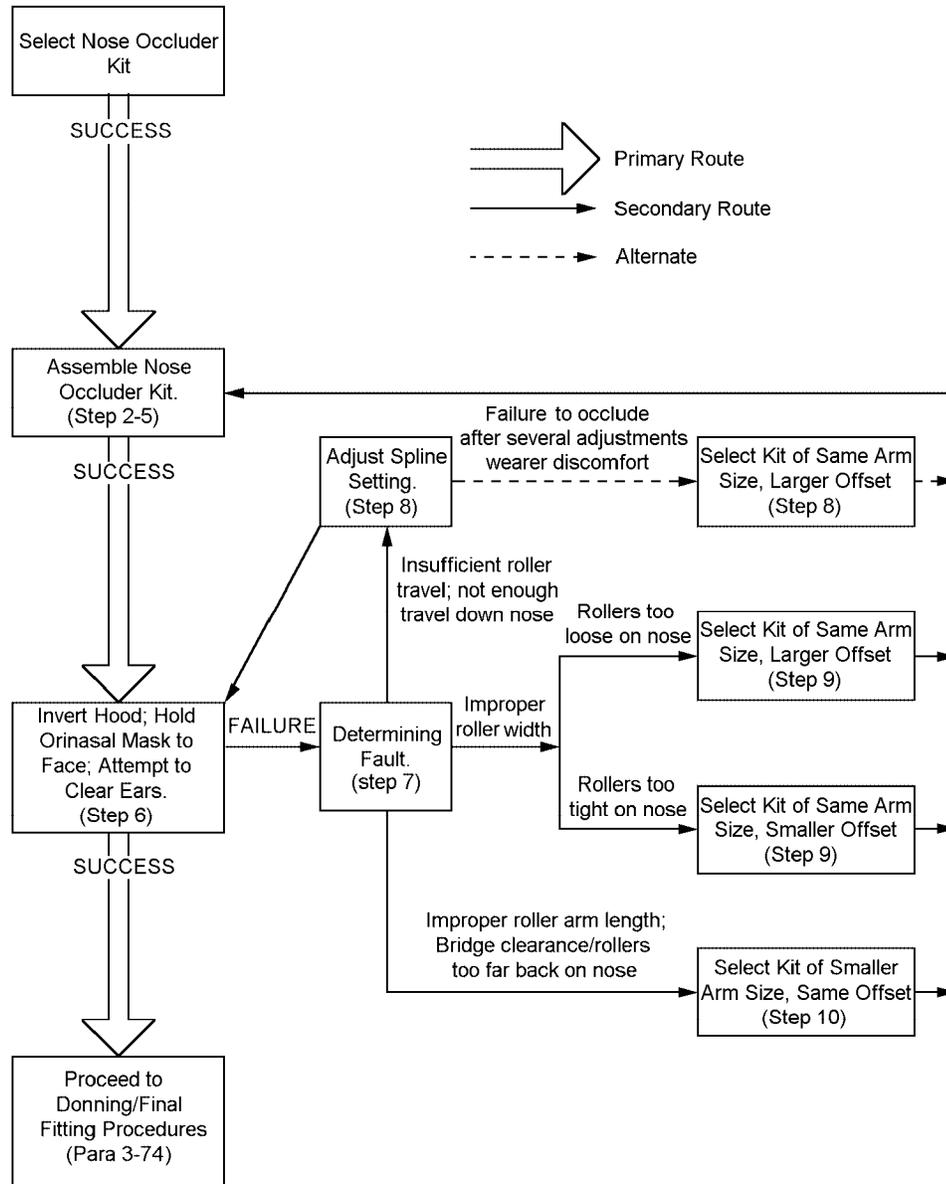


Figure 3-27. Nose Occluder Fitting Flow Diagram

NAVAIR 13-1-6.10

9. Improper Roller Width: If the distance between rollers is at fault and the rollers are too loose on nose (in the occluding position), select a kit of the same arm size, with a larger offset. If partial occlusion was achieved but the rollers are too tight on the nose, select a kit of same arm size with a smaller offset. Repeat [steps 2 through 6](#). Once subject becomes satisfied with performance and comfort of the nose occluder, proceed with [paragraph 3-74](#).

10. Improper Roller Arm Length: If rollers seat too far back on the nose, or are blocked by the bridge of the nose upon occlusion, select a kit of smaller arm size, same offset. Repeat [steps 2 through 6](#). Once subject becomes satisfied with the performance and comfort of the nose occluder, proceed with [paragraph 3-74](#).

3-73. FINAL FITTING AND ADJUSTMENT.

3-74. Donning for Fitting. Donning of the respirator assembly shall be supervised by a qualified Aircrew Survival Equipmentman (PR), and shall proceed as follows:

NOTE

The pusher fan must be assembled to the manifold hose on the MCK-3A/P mask and MK-2 manifold assembly prior to donning the system for fitting. Assembly instructions are provided in [paragraph 3-208](#).

1. Have subject don appropriate Survival Vest in accordance with NAVAIR 13-1-6.7 Series.

2. Subject shall don skull cap, head band, etc., if so desired. These items are recommended to improve comfort and to keep perspiration out of the eyes.

3. Turn pusher fan on.



Be careful not to tear neck dam when donning mask.

4. Holding skull cap in place, instruct subject to place hands inside neck seal with palms together and pull open. Slide down over head. Adjust mask for comfort and good visibility.

5. Assist wearer in seating mask neck seal, ensuring neck seal is not rolled-up and lies flat. Ensure hood outlet valve is open.

6. Turn pusher fan off.

7. Subject shall don helmet (see NAVAIR 13-1-6.7-3 manual for information on applicable helmets) and tighten and secure chin strap.

8. Turn pusher fan ON.

9. Subject shall connect helmet adapter strap snap to eyelet studs on helmet as shown in [figure 3-28](#).

NOTE

Toggle harness cables shall lie over hooks on faceplate front, with V-bow in the up position.

10. Flip V-bow down into flight position, and adjust swivel link for proper tensioning.

NOTE

Adjustment of toggle harness assembly is made by rotating adjustable swivel link. It may be necessary to flip toggle plate in the down position for proper tensioning.

11. With filtered air supply flowing, clamp hood inlet hose by application of slight finger and thumb pressure. Request wearer to hold breath, and test adequacy of orinasal mask-to-face sealing. If air is felt leaking out from edge of orinasal mask, further adjustment of toggle harness assembly should be made and the orinasal mask-to-face seal retested. If on retest leakage is still evident, replace with a smaller or larger size orinasal mask.

3-75. Final Fitting of Nose Occluder. Instruct subject to raise stirrup and attempt to clear the ears. In some cases there will be a tendency for faceplate to lift slightly as user attempts to pass rollers over the bridge of the nose. This may be accompanied by failure of rollers to pass over the bridge, and thus interfering with their effective downward travel; both conditions can prevent proper occlusion. However, these effects usually may be overcome by instructing subject to hold and force faceplate down with thumb and three fingers, while using index finger to raise stirrup assembly. If unsuccessful, refer to [paragraph 3-72, step 6](#).

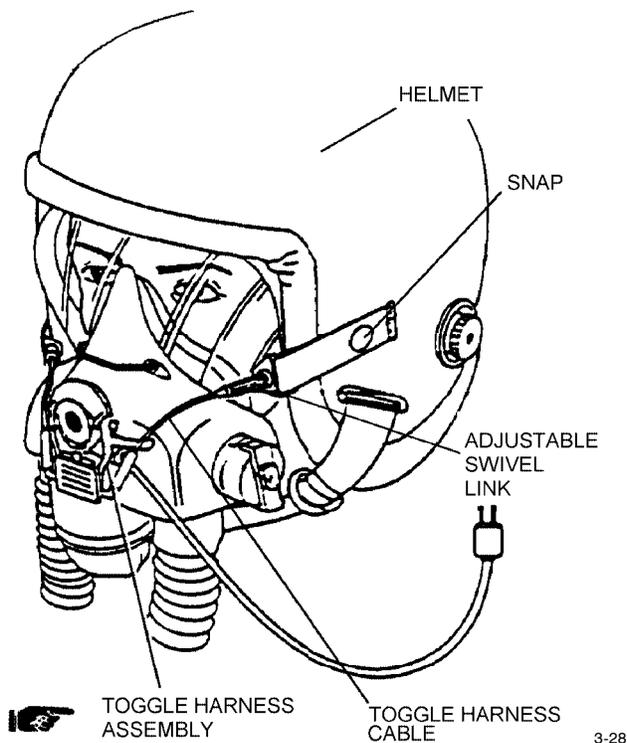
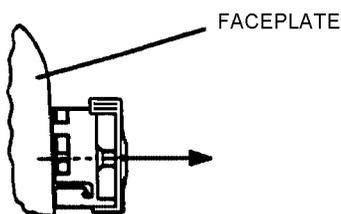


Figure 3-28. Connection of Toggle Harness Assembly to Helmet

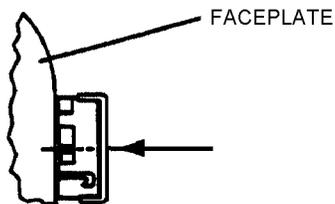
3-76. WEARER FAMILIARIZATION PROCEDURES.

3-77. Hood Outlet Valve Familiarization.

1. Request user to operate hood outlet valve from the open to closed position and back to open position by pulling and rotating hood outlet valve lever as illustrated.



OPEN POSITION



CLOSED POSITION

Step 1 - Para 3-77

3p77s1

2. The cycle from open to closed and return to open is to be repeated until aircrewmember is satisfied with operation of valve.

NOTE

Valve shall be in its open position for normal flight operation.



If pusher fan fails to operate in a contaminated environment or if aircrewmember is immersed in water, close valve.

3-78. Anti-Suffocation Disconnect Familiarization.

1. Remove and retain brass shear screw.

2. Request aircrewmember to uncouple (clockwise rotation) and then withdraw anti-suffocation disconnect from the mask inlet adapter.

NOTE

The cycle of connecting and reconnecting anti-suffocation disconnect is to be repeated until aircrewmember is satisfied as to orientation and operation of the anti-suffocation disconnect facility.

3. At final reconnection of the anti-suffocation disconnect, ensure mask inlet hose is not twisted.



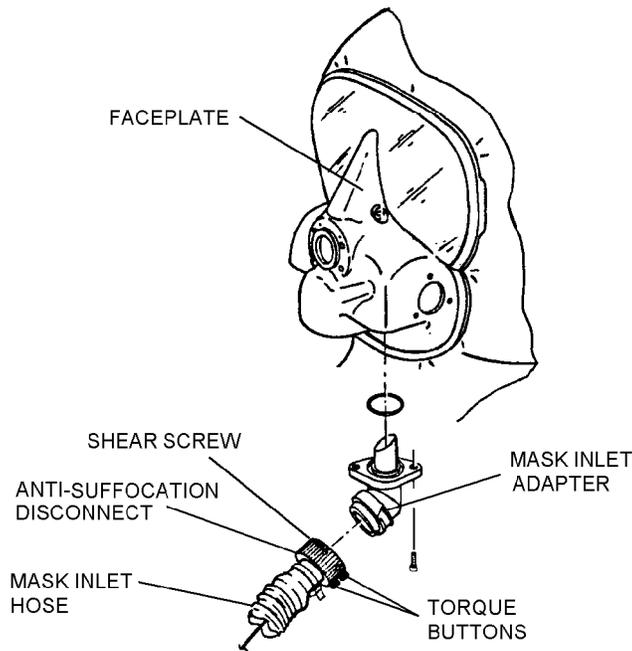
Ensure shear screw is installed.

4. Fit shear screw (brass) to lock connector.

5. Apply a slight twisting motion to connector to assure shear screw engages edges of locking slot machined in mask inlet adapter.

NAVAIR 13-1-6.10

6. Examine the mask inlet adapter, particularly for damage and security of attachment.



Step 6 - Para 3-78

3p78s6

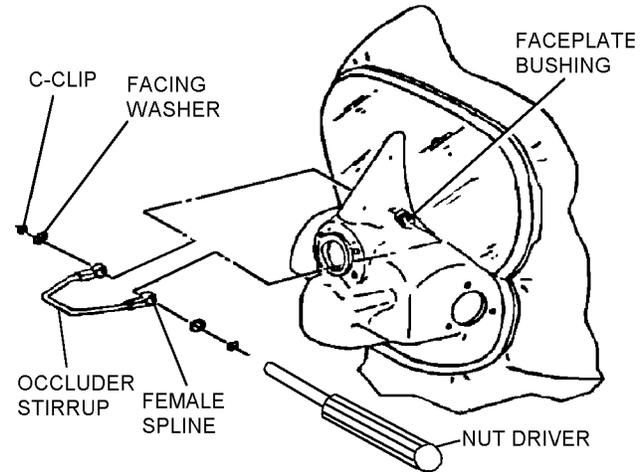
3-79. DOFFING AFTER FITTING. After fitting, have subject remove respirator assembly as follows:

1. Disconnect helmet adapter straps from helmet studs.
2. Assist wearer to doff his protective helmet.
3. Assist wearer to doff mask, being careful not to disturb or dislodge the (as-yet unlocked) nose occluder components.
4. Switch the pusher fan OFF.
5. Remove survival vest.

3-80. LOCKING STIRRUP ASSEMBLY. Lock stirrup assembly in position by applying appropriate washers and C-clips to external end of each shaft assembly. For ease of C-clip installation, proceed as follows:

1. Ensure the stirrup assembly is in the down position. If right handed, use left hand inside of mask to support shaft assembly during C-clip installation, vice versa if left handed.

2. Ensure the shaft assembly is completely seated through stirrup end. Place washer on shaft end and ensure C-clip groove is visible with washer in place.



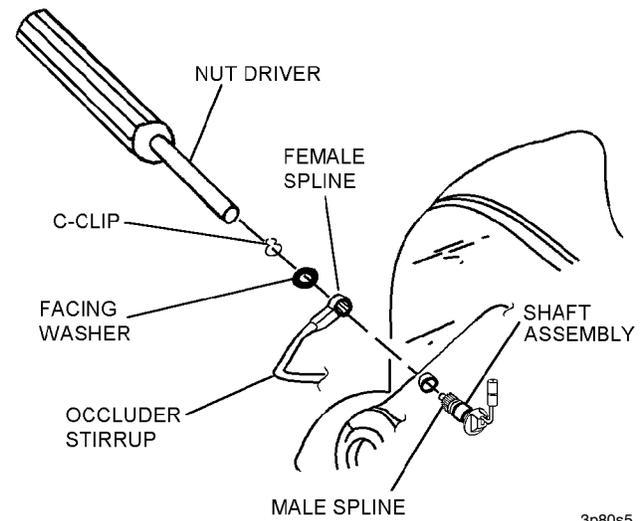
Step 2 - Para 3-80

3p80s2

3. Apply Krytox to the end of a 1/8-inch nut driver. Krytox will serve as an installation lubricant and will hold C-clip in place on the nut driver.

4. Place C-clip on end of nut driver and adjust C-clip to be centered over the nut driver opening.

5. Line up 1/8-inch nut driver directly over center of shaft end and press C-clip into groove. Verify C-clip is properly seated.



Step 5 - Para 3-80

3p80s5

6. Repeat steps 1 thru 5 for opposite side.

7. After fitting is complete, clean mask assembly in accordance with paragraph 3-92.

Section 3-4. Maintenance

3-81. GENERAL.

3-82. This section contains procedural steps for inspecting, testing, troubleshooting, disassembling, cleaning, repairing, and assembling the A/P23P-14A(V) Respirator Assembly.

3-83. INSPECTIONS.

NOTE

Only a small quantity of respirator assemblies shall be opened or removed for in-flight proficiency training and for fitting aircrew. Training masks may be rotated among aircrewmembers when properly cleaned in accordance with this manual to maintain proper hygiene. The remaining quantities will be permanently stored in their transit cases inside the sealed bag. If the plastic bags can no longer be partially vacuum packed and heat sealed in their original condition, refer to Storage in Chapter 2. Inspections do not need to be performed unless the masks are removed from storage and placed in service for contingency in-flight or training missions. Respirators that have been removed from their sealed plastic bag and are in the Calendar Inspection cycle may be vacuum packed and resealed in a plastic or foil bag and removed from all inspection cycles during long term storage.

3-84. PLACE-IN-SERVICE INSPECTION. The Place-In-Service Inspection shall be performed by a qualified Aircrew Survival Equipmentman (PR). The inspection shall include Visual Inspection, battery charging (NiCad battery only), cleaning of the internal surfaces, functional checks and bench testing of all assemblies and their component parts where specified. Visual Inspection, battery charging, and cleaning of the internal surfaces shall be performed at Organizational Maintenance Level (O-Level). Bench testing shall be performed at the Intermediate Maintenance Level (I-Level). For Rapid Deployment Forces (RDF), all testing will be performed at O-Level. An appropriate OPNAVINST 4790.2 Series form will be issued for each respirator and each intercom set.

Materials Required		
Quantity	Description	Reference Number
As Required	Pad, Gauze	—
As Required	Water	—

Materials Required (Cont)

Quantity	Description	Reference Number
As Required	Cloth, Cotton	—
As Required	Cloth, Abrasive	—
As Required	Cleaning Compound Type I	MIL-C-43616
As Required	Towelettes, SANI-COM	No. 3205 (CAGE 18195)
As Required	Bleach, Laundry	A-A-1427 NIIN 00-598-7316
1	Brush, Sable	—
1	Brush, Acid	NIIN 00-514-2417
As Required	Swab, Cotton	—
As Required	Alcohol, Isopropyl Rubbing	TT-I-735 NIIN 00-655-8366
As Required	Cloth, Chamois	—
1	Cable Tie, 3.6 mm	CL 6226

Support Equipment Required

Quantity	Description	Reference Number
1	Cable Tie Tool	NIIN 00-937-5438
1	Pliers, Side Cutting, 4-inch	—
1	Screwdriver	—
1	Pincer Tool, Low Profile	Oetiker 14100055
	or	
1	Pliers, Hose Clamp	NIIN 01-073-4187

3-85. Unpacking Transit Case.

1. Unpack transit case as follows (refer to figure 3-18):

- a. Cut open plastic storage bag.
- b. Remove and retain silica gel desiccant.
- c. Remove transit case from storage bag. Retain bag for future use.
- d. Remove mask from transit case.
- e. Check the transit case packing list to confirm all items are included.

2. Document in accordance with OPNAVINST 4790.2 Series.

CAUTION

When performing maintenance on the respirator assemblies, avoid pulling on rip-away tab assembly. Keep red servicing clip in place during all handling.

3-86. Visual Inspection.

3-87. Mask Assembly. Inspect the mask assembly as follows:

CAUTION

Avoid excessive stretching of neck seal when inverting hood to inspect internal components. Damaged neck seals may not be repaired nor replaced.

1. Hood, apron and neck seal for damage, deterioration and security of bonded joints. Invert hood to inspect internal seams.

2. Inhalation valve for freedom from obstruction. Remove iceguard and inspect stepped rubber valve for dirt or signs of obstruction. Ensure it is properly oriented per [paragraph 3-196](#).

3. Iceguard for damage and blockage. Refit per [paragraph 3-196](#).

4. If nose occluder is installed, check shaft assemblies on nose occluder for damage and security of attachment.

5. Orinasal mask for damage and deterioration to face sealing edge, and area contacted by shaft assemblies of nose occluder.

6. Orinasal mask inhalation duct connection to mask inlet adapter. Check cable tie for security of attachment ([figure 3-29](#)).

7. Orinasal mask deflector plate for damage, security of attachment, and correct positioning on orinasal mask.

8. Ensure compensated exhalation valve is free from obstruction by gently depressing metal valve plate using a non-metallic probe. Release valve plate. Inspect valve for security within orinasal mask housing.

9. Inner face of hood outlet valve for freedom from obstructions.

10. Hood-to-faceplate sealing strip and padding strip for damage, deterioration, and security of bonded joints.

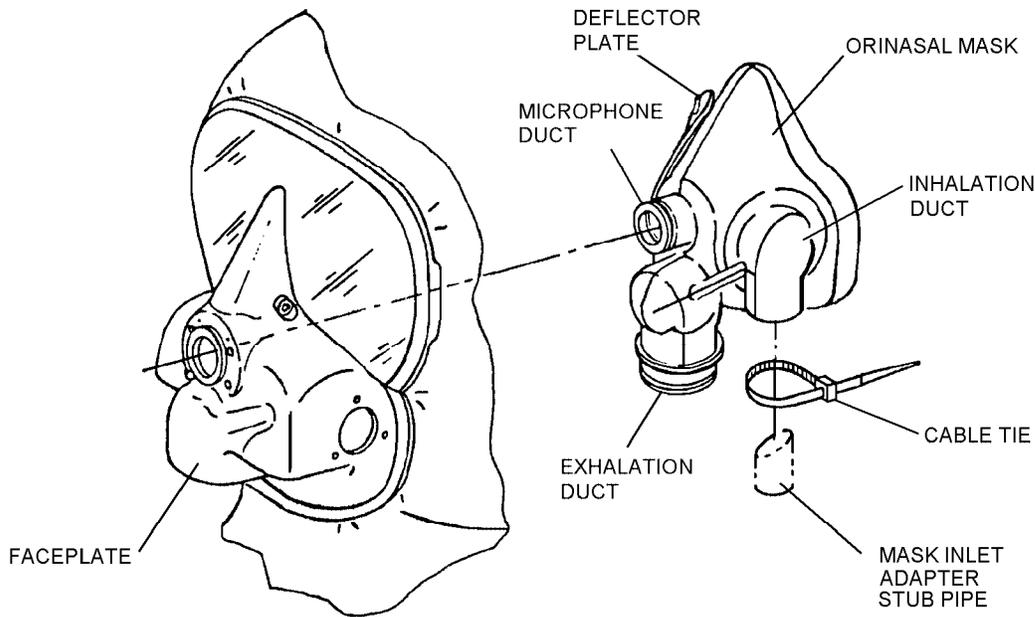


Figure 3-29. Faceplate/Orinasal Mask Cable Tie Installation

11. Inside portion of hood inlet adapter for damage, security of attachment, and freedom from obstruction. Carefully restore hood to normal position.

12. Toggle harness assembly and faceplate for damage and security in vicinity of mask harness attachment screws. Check all harness assembly nuts, screws, cables, and connector links. Inspect for security and attachment of cable assemblies, toggle plate, and helmet adapter straps.

13. If nose occluder is not installed, ensure rubber blanking plugs are installed and fully seated in faceplate nose occluder bushings.

14. Microphone connecting lead for damage, deterioration, fraying, and security of attachment.

15. Anti-suffocation disconnect and mask inlet adapter for obvious damage and security of attachment.

a. Remove brass shear screw and ensure it has not been sheared.

b. Disengage anti-suffocation disconnect from the mask inlet adapter.

c. Check anti-suffocation disconnect O-ring for damage.

d. Check ferrule for damage and attachment of the restraint cord.

e. Reconnect anti-suffocation disconnect to mask inlet adapter and reinstall brass shear screw. Ensure mask inlet hose is not twisted or kinked.

16. Hood inlet hose for damage, deterioration, and security of attachment.

17. MK-2 manifold assembly for damage.

18. Drink facility for damage and security of attachment.

3-88. Pusher Fan Subassembly. Inspect the pusher fan subassembly as follows:

1. Pusher fan body for signs of rips, tears, or damage.

2. Power cord for loose or corroded ends.

3. Obtain a RFI (Ready-for-Issue) Battery (refer to [Chapter 6](#)).

a. If a new battery is required, conduct the Place-in-Service Inspection in accordance with [Chapter 6](#).

b. If a RFI battery is going to be used, conduct a visual inspection and functional check.

3-89. A/P37S-1 Intercommunications Set. Inspect the A/P37S-1 Intercommunications Set as follows:

1. Ensure no mechanical damage, cracks or dents are found on intercom unit.

2. Communication cord and patch cord shall have no frayed wires, corroded pins or receptacles.

3. Ensure battery is not leaking fluid or any other substance.

4. Ensure mechanical integrity of intercom unit by checking for loose knobs, loose hardwire jack connection or a broken spring clip.

3-90. Battery Charging (NiCad only). Refer to [Chapter 6](#) for battery charging, discharging, storage and troubleshooting.

3-91. Bench Testing. Perform bench test on MCK-3A/P mask in accordance with [paragraph 3-111](#).

3-92. Cleaning. The MCK-3A/P mask assembly shall be cleaned following fitting or operational use. Cleaning shall be accomplished by a qualified Aircrew Survival Equipmentman (PR) using the following procedures.

Materials Required

Quantity	Description	Reference Number
As Required	Pad, Gauze	—
As Required	Water	—
As Required	Cloth, Cotton	—
As Required	Towelettes, SANI-COM	No. 3205 (CAGE 18195)
As Required	Bleach, Laundry	A-A-1427 NIIN 00-598-7316
1	Brush, Sable	—
As Required	Alcohol, Isopropyl Rubbing	TT-I-735 NIIN 00-655-8366
As Required	Swab, Cotton	—
As Required	Cloth, Chamois	—
1	Cable Tie 3.6 mm	CL 6226

Support Equipment Required

Quantity	Description	Reference Number
1	Cable Tie Tool, Standard	MS90387-1
1	Canteen	NIIN 01-118-8173
1	Canteen Cap, M-1	NIIN 00-930-2077
1	Pliers, Side Cutting, 4-inch	—



Do not clean inhalation or exhalation valves with SANI-COM towelettes or sanitizing solution.

NOTE

If SANI-COM No. 3205 Cleansing Towelettes are not available, clear water may be used instead.



Avoid excessive stretching of the neck seal when inverting hood to inspect internal components. Damaged neck seals may not be repaired nor replaced.

1. Invert hood and carefully fold inside out to expose orinasal mask.

2. Clean inner hood.

a. Clean internal surfaces of hood using a clean gauze pad moistened with water.

b. Wipe excess water from hood with a clean, dry cotton cloth and allow to air dry.



Excessive dirt, sand, dried liquid nourishment, or vomit in mask assembly can degrade protection against CB agents.

3. Inspect interior of mask assembly. If excessive dirt, sand, dried liquid nourishment, or vomit is observed in mask assembly, mask shall be disassembled and all component parts cleaned in accordance with paragraph 3-156. If internal compartments of valves or hoses cannot be thoroughly cleaned, they shall be replaced.

4. Clean orinasal mask.

a. Clean internal surfaces of orinasal mask with cleansing towelettes (SANI-COM No. 3205) being sure to wipe under the rolled-over edges of orinasal mask. An alternate cleaning procedure is to moisten a gauze pad with clear water and squeeze to remove excess to prevent dripping. Wipe interior of mask, exclusive of valves, being sure to wipe under the rolled-over edges of orinasal mask.

b. Wipe microphone with a towelette or moistened gauze pad.

c. Allow to air dry.

5. Clean inhalation valve.

a. Turn iceguard 90° and lift it from the inhalation valve assembly.

b. Gently lift valve with finger and clean underside of valve and valve seat with a sable brush moistened with water.

c. Clean top of valve in the same manner.

d. Allow to air dry.

e. Clean iceguard with a sable brush and water to remove any foreign particles from the mesh.

f. Allow to air dry.

g. Reinstall iceguard by engaging two tabs on iceguard and turning it 90° so that arrow points toward exhalation valve. Ensure iceguard is fully seated.

CAUTION

Do not attempt to clean movable plate in center of compensated exhalation valve with a cotton swab. The valve plate is delicate, and lint from cotton swab may become lodged in valve. For detailed cleaning of compensated exhalation valve, see [paragraph 3-164](#).

6. Clean compensated exhalation valve.

a. Clean exposed plastic area of compensated exhalation valve using a sable brush or cotton swab moistened with water. If valve is excessively dirty, isopropyl alcohol may be used. Ensure no lint or brush hairs remain in exhalation valve.

b. Clean movable plate in center of valve using a sable brush moistened with water or isopropyl alcohol.

c. Allow to air dry.

CAUTION

Abrasive cleaners, adhesives, and solvents must not be applied to visual areas of faceplate. Velveteen covers are not to be used for cleaning or polishing.

Damage or scratches to faceplate cannot be repaired. Use care when cleaning faceplate.

7. Clean inner surface of faceplate.

a. Clean inner visual area of faceplate using water with soft cotton cloth or dampened chamois.

b. Wipe faceplate with clean, dry cotton cloth to remove excess water.

c. Allow to air dry.

8. Clean canteen and drink facility.

CAUTION

Do not allow sanitizing solution to come into contact with inside of faceplate.

a. Prepare sanitizing solution by mixing 1 tablespoon of laundry bleach with 2 quarts of water. Pour half of the sanitizing solution into two quart canteen.

b. Attach canteen to drink facility quick disconnect.

c. Position a plastic bowl or another suitable container to catch sanitizing solution, then invert canteen and squeeze to force sanitizing solution through drink facility until canteen is empty.

d. Disconnect canteen from drink facility quick disconnect.

e. Fill canteen half way with clean water and connect to drink facility quick disconnect. Invert canteen and squeeze to force clean water through drink facility until canteen is empty.

f. Disconnect canteen from drink facility quick disconnect.

g. Connect a dry canteen to drink facility quick disconnect. Squeeze canteen to force any remaining water out of drink facility.

h. Disconnect canteen from drink facility quick disconnect.

9. Restore hood to normal position.

10. Clean external surface of faceplate visual area in same manner as [step 7](#).

11. Clean exhalation outlet valve.

a. Remove snout to expose exhalation outlet valve ([paragraph 3-130](#)). Cut cable tie and ease snout from ring nut of exhalation outlet valve holder.

b. Grasp the raised rubber knob at valve center and pull valve off its seating pin.

c. Clean both sides of valve, and valve seat using a sable brush moistened with water.

d. Set valve aside to air dry with knob side of valve facing down on bench. Allow valve seat area to air dry.

e. Reinstall valve on seating pin, ensuring it is fully seated on pin.

f. Reinstall snout over ring nut of exhalation outlet valve holder ([paragraph 3-200, step 3](#)).

(1) Position 3.6 mm black cable tie around snout with locking head to right of snout.

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(2) Secure cable tie using cable tie tool set to INT position.

12. Clean outer hood.

a. Wipe external surface of hood using a clean gauze pad moistened with water.

b. Wipe excess water from hood with a clean, dry cotton cloth and allow to air dry.

13. Refit velveteen cover.

a. Inspect velveteen cover for dirt and abrasive particles.

b. Ensure velveteen side is folded inward and reinstall cover over visual area of faceplate.

NOTE

Rubber products have a natural memory, and may develop permanent wrinkles or folds over a period of time when stored wrinkled or folded.

14. Carefully place MCK-3A/P and pusher fan sub-assembly in its transit case with as few folds and wrinkles as possible. Secure with retaining straps as illustrated on the transit case lid (refer to [paragraph 3-93](#)).

3-93. Transit and Ready-for-Use Storage. To prepare the MCK-3A/P and pusher fan subassembly for transit or ready-for-use storage, proceed as follows:

1. Fit velveteen cover, ensuring correct position on the faceplate.

2. Ensure stirrup assembly is in its downmost position (when fitted).

3. Ensure red servicing clip is installed over rip-away tab.

4. Place mask face-up in transit case, ensuring toggle harness and microphone cord are positioned away from optical areas.

5. Carefully fold hood in and around faceplate, ensuring all hoses lie flat and are free from kinks.

6. Secure with retaining straps as illustrated on transit case lid.

3-94. PREFLIGHT INSPECTION. The Preflight Inspection shall include a general spot check to ensure A/P23P-14A(V) Respirator Assembly is clean and operating properly. The Preflight Inspection shall be performed before each flight by aircrew personnel. To perform Preflight Inspection, proceed as follows:

Materials Required		
Quantity	Description	Reference Number
As Required	Pad, Gauze	—
As Required	Towlettes, SANI-COM	No. 3205 (CAGE 18195)
As Required	Water	—
As Required	Cloth, Cotton	—
As Required	Cloth, Chamois	—
As Required	Cloth, Abrasive	—
As Required	Brush, Acid	NIIN 00-514-2417
As Required	Cleaning Compound Type I	MIL-C-436116
As Required	Anti-Fogging Kit	NIIN 00-127-7193

3-95. Visual Inspection.

3-96. MCK-3A/P Mask Assembly. Inspect mask assembly as follows:

1. If nose occluder is not installed, ensure blanking plugs are installed and fully seated in faceplate nose occluder bushings.



Avoid excessive stretching of neck seal when inverting hood to inspect internal components. Damaged neck seals may not be repaired nor replaced.

2. Carefully fold hood inside out to expose original mask.



Presence of foreign matter in mask may degrade its performance and subject wearer to contamination.

3. Inspect for presence of foreign matter. If foreign matter is present, mask shall be thoroughly

cleaned before use in accordance with [paragraph 3-92](#).

4. Clean inner lens area in accordance with [paragraph 3-92](#) and allow to dry completely. When dry, apply anti-fogging compound to lens and allow to completely dry. Return hood to its normal position.

5. Inspect toggle harness for security of attachment and proper operation.

6. Clean outer lens area in accordance with [paragraph 3-92](#) and allow to thoroughly dry. Apply anti-fogging compound to outer lens and allow to dry.

3-97. Lower Assembly. Inspect lower assembly as follows:

1. Inspect MK-2 manifold for damage.

2. Inspect pusher fan subassembly as follows:

a. Ensure both ends of manifold hose are secured with stepless low profile clamps; one to the MK-2 manifold right-side inlet port and one to the J-manifold. Carefully check the hose for damage.

b. Remove and inspect J-manifold gasket and inspect for damage. Reinstall.

c. Inspect C2 or C2A1 canister for obvious damage. Ensure C2 or C2A1 canister is securely fastened to J-manifold (fully hand-tightened).

d. Inspect pusher fan for signs of rips, tears, or obvious damage. Check fan operation. Rotate the electrical cord at both battery terminal and pusher fan junction.

e. Position pusher fan on filter canister so that it is oriented with the intake uppermost as in [figure 3-15](#). Secure in place with a cable tie.

3. Inspect battery as follows:

a. Case for swelling, cracks, leaks, or contamination.

b. Receptacle for corrosion or other damage.

c. Missing fuse extractor knob (NiCad only).

3-98. Intercommunications Unit. Inspect intercommunications unit as follows:

1. Ensure no cracks, dents or mechanical damage is found on intercom unit.

2. Communication cord and patch cord shall have no frayed wires, corroded pins or receptacles.

3. Ensure 9V battery (NIIN 01-900-2139) is not leaking fluid or any other substance.

4. Ensure mechanical integrity of intercom unit by checking for loose knobs, loose hardwire jack connection or a broken spring clip.

5. Perform functional check in accordance with the following:

a. Connect intercom unit to mask microphone and aircrew helmet with the ground communications cord as indicated in [table 3-1A](#) and [figure 3-30](#).

b. Switch intercom unit toggle to the MIC position.

c. Talk into intercom unit and have aircrew confirm sound in helmet earphones.

d. Switch and hold toggle to the SPKR position.

e. Instruct aircrew to talk and confirm sound coming from intercom transducer.

f. If the intercom unit fails the functional check, replace intercom unit and repeat [steps a thru e](#).

g. Switch toggle back to the OFF position and secure intercom unit to the survival vest.

3-99. Functional Test of Respirator Assembly.

1. Have aircrew don respirator assembly with pusher fan ON.

2. Perform functional test as follows:

a. Close hood outlet valve.

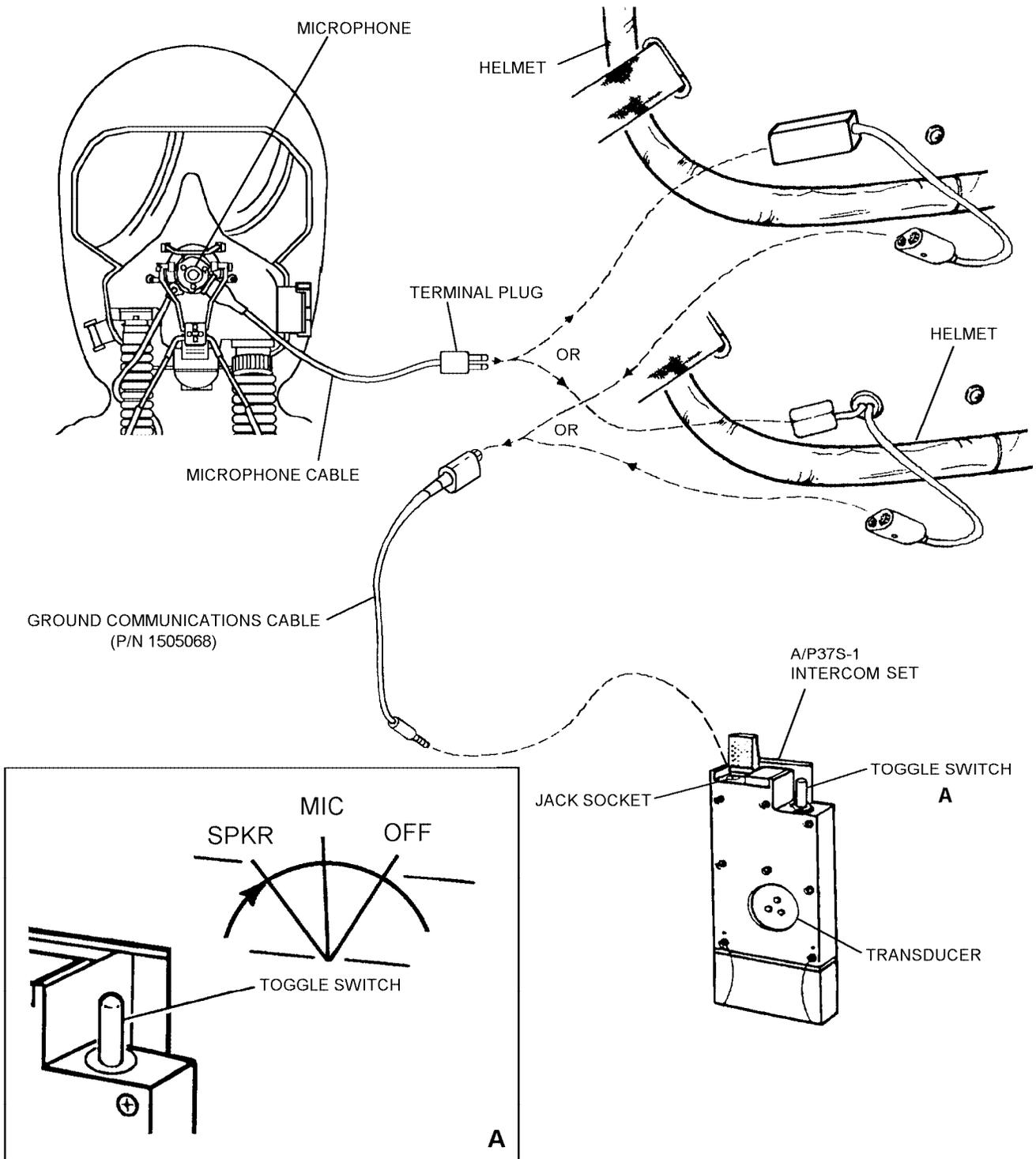


Figure 3-30. Communication System Interconnect

Table 3-1A. CBR Communications Cords

Priority Aircraft	CBR Mask	Helmet	Helmet Connector	CBR Communications Cord		Amp (Note 2)
				Ground (Note 1)	In-flight	
CH-46D	A/P23P-14A(V)	HGU-84/5P	CX-4832A or CX-12972	CL 6922 (4832 ICU)	N/R	None
CH-46E	A/P23P-14A(V)	HGU-84/6P	CX-13128/A (Note 3)	CX-4707C/A	N/R	None
AH-1W	A/P23P-14A(V)	HGU-67/P	CX-13165	CL 6922 (4832 ICU)	CX-4434/U	None
UH-1N	A/P23P-14A(V)	HGU-84/2P	CX-4832A or CX-12972	1505068	N/R	None
CH-53D	A/P23P-14A(V)	HGU-84/7P - pilot/copilot HGU-84/4P - crew	CX-4832A or CX-12972	CL 6922 (4832 ICU)	N/R	AM-3597C/A
CH-53E	A/P23P-14A(V)	HGU-84/1P	CX-4832A	CL 6922 (4832 ICU)	N/R	AM-3597C/A

Notes: 1. Ground communications cords are supplied within each respirator assembly transit case. If not, they must be ordered through normal supply channels.
 2. Amplifiers are not provided and must be ordered through normal supply channels. Amplifiers are attached to the end of the respirator assembly microphone and are for flight use only.
 3. The M22442/19-1 (CX-12972/AR) Communication Cable is an authorized alternative for the M22442/28-1 (CX-13128/A) Communication Cable

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- b. Ensure pusher fan is ON.
- c. Ensure hood inflates.
- d. Open hood outlet valve to ensure proper operation. (Pusher fan air should vent through valve.)
- e. Pinch-off hood inlet hose with fingers. Air should not vent through the hood outlet valve. Release hose.
- f. Pinch-off mask inlet hose with fingers. Air should vent through hood outlet valve. Release hose.
- g. Switch OFF pusher fan.

- 3. Remove red servicing clip from faceplate rip-away tab and place in transit case.
- 4. Ensure pusher fan and battery are in survival vest mounting pocket.

3-100. POSTFLIGHT INSPECTION. The Postflight Inspection, consisting of a visual inspection and cleaning of the A/P23P-14A(V) respirator assembly, shall be performed by a qualified Aircrew Survival Equipmentman (PR) at Organizational Level after each flight. To perform the Postflight Inspection, proceed as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Pad, Gauze	—
As Required	Water	—
As Required	Cloth, Cotton	—
As Required	Cloth, Abrasive	—
As Required	Towelettes, SANI-COM	No. 3205 (CAGE 18195)
As Required	Bleach, Laundry	A-A-1427 NIIN 00-598-7316
As Required	Cleaning Compound, Type I	MIL-C-43616
1	Brush, Acid	NIIN 00-514-2417
1	Brush, Sable	—
As Required	Cotton Swab	—
As Required	Alcohol, Isopropyl Rubbing	TT-I-735 NIIN 00-655-8366

Materials Required (Cont)

Quantity	Description	Reference Number
As Required	Cloth, Chamois	—
1	Cable Tie, 3.6 mm	CL 6226

Support Equipment Required

Quantity	Description	Reference Number
1	Pliers, Side Cutting, 4-inch	—
1	Cable Tie Tool, Standard	MS90387-1

3-101. Visual Inspection.

3-102. Mask Assembly. Inspect mask assembly as follows:

- 1. Hood, apron and neck seal for rips, tears or other damage, and integrity of seams.

WARNING

Scratches and gouges in lens area of polycarbonate faceplate compromise visual acuity and the protective qualities of the respirator, rendering it unusable and shall be cause for removal from service.

- 2. Faceplate for scratches, gouges or other damage, and security of attaching parts.

CAUTION

Avoid excessive stretching of neck seal when inverting the hood to inspect internal components. Damaged neck seals may not be repaired or replaced.

- 3. Orinal mask for obvious damage and missing parts. If nose occluders have been installed, check nose bridge area for abrasion or other damage.

- 4. Anti-suffocation disconnect to ensure integrity of the brass shear screw.

- 5. Hood and mask inlet hoses for damage and security of attachment.

- 6. Reinstall red servicing clip over faceplate rip-away tab.

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3-103. Lower Assembly. Inspect lower assembly as follows:

1. Inspect MK-2 manifold for missing screws or other damage.
2. Remove pusher fan and battery from survival vest mounting pocket.



Disconnecting pusher fan from battery by any method other than grasping plug may result in damage to power cord and may lead to an in-flight failure of pusher fan.

3. Disconnect battery from pusher fan and check for missing parts, swelling, cracking or other damage.
4. Remove filter canister from pusher fan and discard, except for canisters used for training purposes which may be retained and reused for other training flights.
5. Inspect pusher fan for rips, tears or other damage.
6. Remove and inspect J-manifold gasket for damage. Reinstall or replace as necessary.

3-104. Intercommunications Unit. Inspect as follows:

1. Ensure no cracks, dents or other mechanical damage is found on intercom unit.
2. Comm cord and patch cord shall have no frayed wires, corroded pins or receptacles.
3. Ensure battery is not leaking fluid or any other substance.
4. Ensure mechanical integrity of intercom unit by checking for loose knobs, loose hardwire jack connection or a broken spring clip.

3-105. Cleaning. Clean respirator assembly in accordance with [paragraph 3-92](#).

3-106. Transit and Ready-for-Use Storage. Following cleaning, pack respirator assembly in accordance with [paragraph 3-93](#).

NOTE

Calendar Inspection of the respirator assembly does not commence until the respiratory assembly is removed from its vacuum sealed foil bag.

3-107. SPECIAL INSPECTION. The Special Inspection shall be performed on the A/P23P-14A(V) respirator assembly by a qualified Aircrew Survival Equipmentman (PR) at 90-day intervals for CBR assemblies being used for training, and every 270 days for those assemblies placed in service for operational use. The inspection shall include Visual Inspection, battery voltage check, bench testing, and cleaning of all assemblies and their component parts where specified. Battery shall be inspected in accordance with [Chapter 6. Organizational Level Maintenance \(O level\)](#) shall route all assemblies and their component parts to Intermediate Level Maintenance (I level) for Visual Inspection, bench testing, and cleaning where specified.

Materials Required

Quantity	Description	Reference Number
As Required	Pad, Gauze	—
As Required	Swab, Cotton	—
As Required	Towelettes, SANI-COM	No. 3205 (CAGE 18195)
As Required	Bleach, Laundry	A-A-1427 NIIN 00-598-7316
As Required	Water	—
As Required	Alcohol, Isopropyl Rubbing	TT-I-735 NIIN 00-655-8366
As Required	Cleaning Compound, Type I	MIL-C-43616
As Required	Cloth, Chamois	—
As Required	Cloth, Cotton	—
As Required	Cloth Abrasive	—
1	Brush, Acid	NIIN 00-514-2417
1	Brush, Sable	—
1	Cable Tie, 3.6 mm	CL 6226
As Required	Cable Tie	3297AS204-3
As Required	Cable Tie	3297AS204-2
As Required	Cable Tie	3297AS204-1

Support Equipment Required

Quantity	Description	Reference Number
1	Cable Tie Tool, Standard	MS90387-1
1	Cable Tie Tool, Heavy Duty	NIIN 00-937-5438
1	Pincer Tool, Low Profile	Oetiker 14100055
	or	
1	Pliers, Hose Clamp	NIIN 01-073-4187
1	Pliers, side cutting, 4-inch	NIIN 00-514-2417

1. Unpack respirator assembly.

2. Visually inspect the respirator assembly in accordance with [paragraph 3-86](#).

3. Perform bench test on respirator assembly in accordance with [paragraph 3-111](#).

4. Clean respirator assembly in accordance with [paragraph 3-92](#).

NOTE

Rubber products have a natural memory, and may develop permanent wrinkles or folds over a period of time when stored, wrinkled or folded.

5. Stow respirator assembly. Carefully place respirator assembly in its transit case with as few folds and wrinkles as possible. Secure with retaining straps as illustrated on transit case lid.

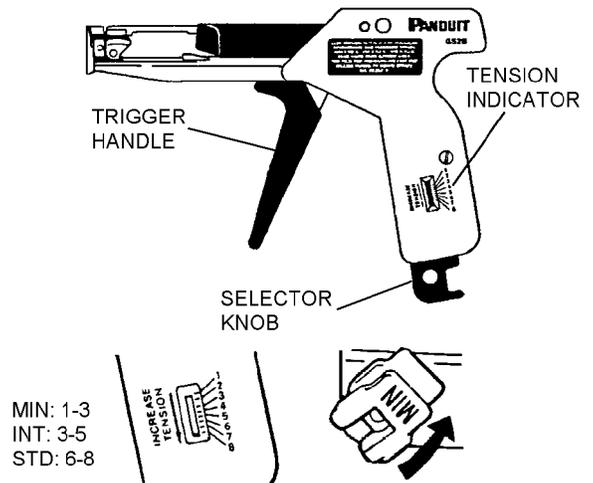
6. Document in accordance with OPNAVINST 4790.2 Series.

3-108. CABLE TIE AND STEPLESS LOW PROFILE CLAMP INSTALLATION PROCEDURES.

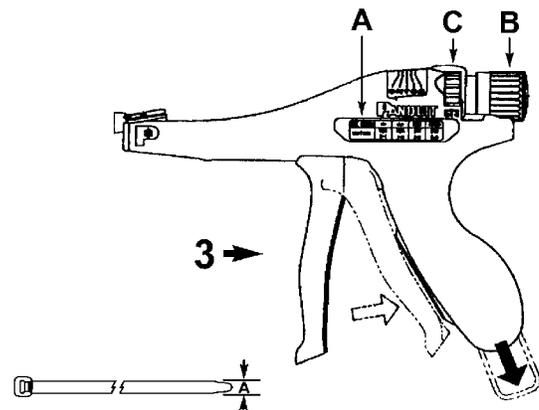
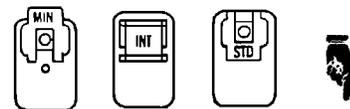
3-109. CABLE TIE INSTALLATION. The following cable tie installation procedures shall be used as required (refer to [table 3-2](#)).

1. Locate selector knob on bottom of cable tie tool's handle and flip knob to the correct position for cable ties being installed.

2. Adjust the tension indicator on handle of tool by turning selector knob clockwise to increase tension, or counter-clockwise to decrease tension.



SELECTOR KNOB SETTINGS



A		SUBMIN .070" (1.8mm)	MIN .098" (2.5mm)	INT .142" (3.6mm)	STD .190" (4.8mm)
B		MIN	INT	STD	
C		0 - 1	1 - 3	3 - 5	5 - 8

MS90387-1 SHOWN

Steps 1 and 2 - Para 3-109

3p109s1

Table 3-2. Cable Tie Tool, Cable Tie and Low Profile Clamp Selection Chart

Panduit or Equivalent

P/N GS2B (STD) MS90387-1			P/N GS4H (Heavy) NIIN 00-937-5438		
Tension	Setting	lbs	Tension	Setting	lbs
MIN INT STD	1-3 3-5 6-8	4 (18 lbs) 7 (30 lbs)	STD HVY	1-4 5-8	8 (65 lbs)

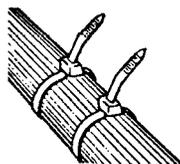
Cable Ties (with Barb)

CL P/N	Width	Application	Tension
6225	2.4 mm	Microphone, drink facility	INT (No. 4)
6226	3.6 mm	Snout, orinasal mask inhalation duct	INT (No. 4)
6227	4.8 mm	Hood inlet adapter, anti-suffocation disconnect	STD (No. 7)
6528	7.6 mm	Pusher fan	HVY (No. 8)

Low Profile Clamps

CL P/N	Dia.	Application
6592	16.5 mm	MK-2 Manifold outlet port (right)
6593	21.9 mm	MK-2 Manifold outlet port (left)
3297AS201-3	28.6 mm	MK-2 Manifold inlet port, J-Manifold

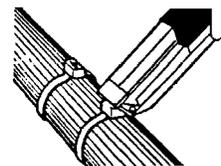
3. Loop cable tie around component to be secured, with head facing outward and insert tip through head. Pull cable tie snug by hand. Refer to Step 4 for proper position of cable tie head on the component.



Step 3 - Para 3-109

3p109s3

4. Insert tail of cable tie into tool. With nose of tool flush to cable tie head, squeeze trigger handle. Tool will tighten cable tie and cut off excess.



Step 4 - Para 3-109

3p109s4

NOTE

Cable tie shall secure component snugly to mask, so that inadvertent disconnection is not possible. However, at no time shall component show signs of distortion upon installation of cable tie.

3-110. STEPLESS LOW PROFILE CLAMP INSTALLATION. The following stepless low profile clamp installation procedures shall be used as required (refer to [table 3-2](#)).

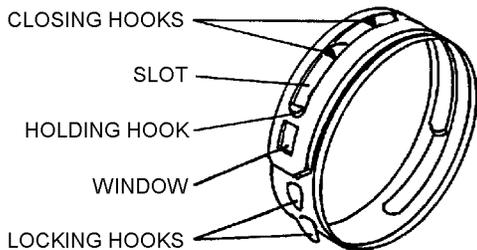
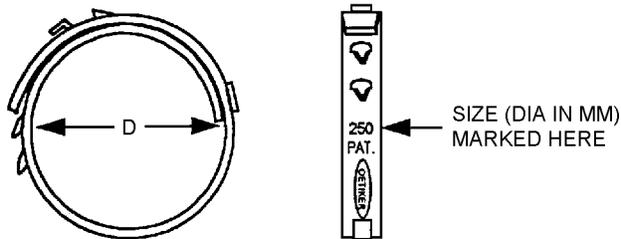


It is critical the correct size clamp be used. Size of clamp is marked in MM just above PAT marking on the clamp.



Do not over expand clamp.

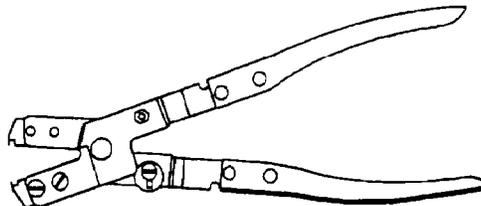
1. Place low profile clamp over end of hose or tube to be clamped. The clamp may be slightly expanded to fit over end of hose or tube.
2. Engage lock tab in slot. This is a pre-clamping position only.



Step 2 - Para 3-110

3p110s2

3. Insert pointed tips of low profile pincers into tensioning hook and tensioning tunnel.



OETIKER 14100055 OR PLIERS, HOSE CLAMP, NIIN 01-073-4187

Step 3 - Para 3-110

3p110s3

4. Secure clamp by drawing closing hooks together. When both slot and window are directly over the hooks, press end of clamp down with thumb to engage clamp. Release tension on tool and inspect hooks for proper engagement.
5. To remove clamp, engage tips of low profile pincer in closing hooks as in [step 3](#) above. Draw hooks together and disengage windows from locking hooks.

3-111. BENCH TESTS.

3-112. The A/P23P-14A(V) Respirator Assembly shall be bench tested by a qualified Aircrew Survival Equipmentman (PR) during Place-in-Service and Special Inspections. Where specified, test results shall be recorded on the Performance Test Sheet included as [figure 3-31](#).

Materials Required

Quantity	Description	Reference Number
As Required	Leak Detection Compound	MIL-L-25567
As Required	Paper, Absorbent	—
As Required	Cable Tie, 3.6 mm	CL 6226
1	Acid Brush	NIIN 00-514-2417
1	Latex Coating SPRAYLAT A	—

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Support Equipment Required

Quantity	Description	Reference Number
1	Cable Tie Tool	NIIN 00-937-5438
1	External Power Supply	NIIN 00-165-3838 (or Equivalent)
1	Pliers, Side Cutting 4-inch	3297AS201-4
1	Test Set, Respirator Assembly, A/E47T-28	6200005

3-112A. The bench test will determine serviceability of the following components:

1. Pusher fan.
2. Inhalation and hood inlet valve.
3. Exhalation outlet valve.
4. Compensated exhalation valve.
5. Mask assembly.
6. Hood assembly.

NOTE

A Technical Data Indoctrination Package is available for the CBR Respirator Test Set A/E47T-28, PIN# 113914. It is available in VHS, CD, DVD or electronically on the PMA-202 Website [HTTPS://pma202.navair.navy.mil/](https://pma202.navair.navy.mil/). For further information, contact your FAILSAFE Representative or Aeromedical Safety Officer.

3-113. Bench tests shall be performed with the digital A/E47T-28 Test Set, Meggitt Avionics, Part No. 6200005 (figure 3-32). The tests shall be performed as close to normal temperature and pressure conditions (NTP) as possible (+20°C and 760mm-Hg), and all pressures are quoted as gage pressures (that pressure difference above standard atmospheric pressure).

3-114. Testing of A/E47T-28 test set shall be performed (in sequence) daily, prior to testing any part of the respirator assembly, and each time the test set is moved. Open each test set and verify all required items have been indicated (table 3-3). Refer to NAVAIR 17-15HB-21 for portable test set testing procedures.

3-115. A/P23P-14A(V) RESPIRATOR ASSEMBLY.

The following bench tests shall be performed on respirator assemblies in the sequence they appear. Where specified, test results shall be recorded on Performance Test Sheet indicated in figure 3-31. The test sheet should be reproduced locally. Before start of testing,

A/E47T-28 test set shall have been tested as required in NAVAIR 17-15HB-21.

3-116. Pusher Fan - Pressure Test. Bench test pusher fan subassembly as follows:

NOTE

Where specified, test results shall be recorded on the Performance Test Sheet.

A power supply adapter, P/N 3297AS623-1, (see figure 3-33) is recommended for use during all tests requiring a pusher fan. If power supply adapter is not available, pusher fan can be wired directly to external power supply (figure 3-34).

3-117. Pressure Test.

1. If attached, remove pusher fan from J-manifold.

NOTE

Ensure J-manifold gasket is seated in base of J-manifold.

2. Attach adapter #2 to pusher fan.
3. With the external power supply in the ON position, set output to 3.75 Vdc @ 1 amp.
4. Turn external power supply OFF.
5. If using power supply adapter, connect test leads from power supply to power supply adapter and plug pusher fan into power supply adapter.
6. If not using power supply adapter, connect test leads to pins of pusher fan plug as shown in figure 3-34. If a dc power supply is not available, connect pusher fan plug to a battery.

7. Connect free end of adapter #2 to T2.
8. Close V1 and V3.
9. Set V4 to OPEN.
10. Set V2 to 2.
11. Turn on the power supply. Allow pusher fan to stabilize for a period of 1 minute.
12. Manometer reading shall be 2.6 in H₂O or higher. Record the results on Performance Test Sheet. If reading is not 2.6 in H₂O or higher, refer to double shoot procedure in table 3-4.
13. Turn OFF power supply.
14. Remove adapter #2 from T2.
15. Remove adapter #2 from pusher fan.
16. Disconnect pusher fan plug.

PERFORMANCE TEST SHEET

DATE _____ MASK P/N _____
 OPERATOR: _____ DIGITAL TEST SET S/N: _____
 MASK S/N: _____

PUSHER FAN - PRESSURE TEST

REQUIRED READING	ACTUAL READING
2.6 IN. H ₂ O OR HIGHER	

NOTE: BEFORE PROCEEDING, THE PUSHER FAN MUST HAVE PASSED THE PRESSURE TEST.

INHALATION & HOOD INLET VALVE - REVERSE LEAKAGE TEST

REQUIRED READING	ACTUAL READING @ T = 7 SEC.
BETWEEN -2 AND -4 IN. H ₂ O	

EXHALATION OUTLET VALVE - REVERSE LEAKAGE TEST

REQUIRED READING	ACTUAL READING @ T = 12 SEC.
BETWEEN 0.5 AND 1.0 IN. H ₂ O	

COMPENSATED EXHALATION VALVE - FUNCTIONAL TEST

	REQUIRED READING	ACTUAL READING	DOES AIR VENT?
1	2.6 IN. H ₂ O OR HIGHER		
	NOT MORE THAN 1.5 IN. H ₂ O		
2	2.6 IN. H ₂ O OR HIGHER		
	NOT MORE THAN 1.5 IN. H ₂ O		
3	2.6 IN. H ₂ O OR HIGHER		
	NOT MORE THAN 1.5 IN. H ₂ O		

Figure 3-31. Performance Test Sheet (Sheet 1 of 2)

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MASK ASSEMBLY - OVERALL LEAKAGE TEST

REQUIRED READING	ACTUAL READING
BETWEEN 1.95 AND 2.0 IN. H ₂ O	

NOTE: THE FOLLOWING TEST IS ONLY TO BE PERFORMED AS A BACKUP TEST TO THE MASK ASSEMBLY - OVERALL LEAKAGE TEST IN HELPING TO ISOLATE A DEFICIENCY

HOOD ASSEMBLY - OVERALL LEAKAGE TEST

REQUIRED READING	ACTUAL READING
BETWEEN 1.95 AND 2.0 IN. H ₂ O	

CIRCLE ONE: PASS OR FAIL, IF FAIL, LIST REASONS BELOW:

Figure 3-31. Performance Test Sheet (Sheet 2 of 2)

Table 3-3. Portable Test Set Test Equipment

Nomenclature	Qty	Part Number
Hood Support Assembly	1	1501751
Neck Seal Test Assembly	1	6330002
Blank Male B1	1	1501792
Blank B2	1	818068
Blank B3	1	6330006
Blank B4	1	6330005
Blank B5 - Mask Inlet Adapter	1	1501242
Blank B6 - Hood Inlet	1	1501257
Blank B7 - Canister	3	1501766
Adapter E	1	1501803
Adapter G	1	6330003
Adapter H	1	6330004
Adapter J	1	1501853
Adapter K	1	6330008
Adapter M	1	8005097
Adapter No. 2	1	6089050
O-rings, Spares	Assorted	—

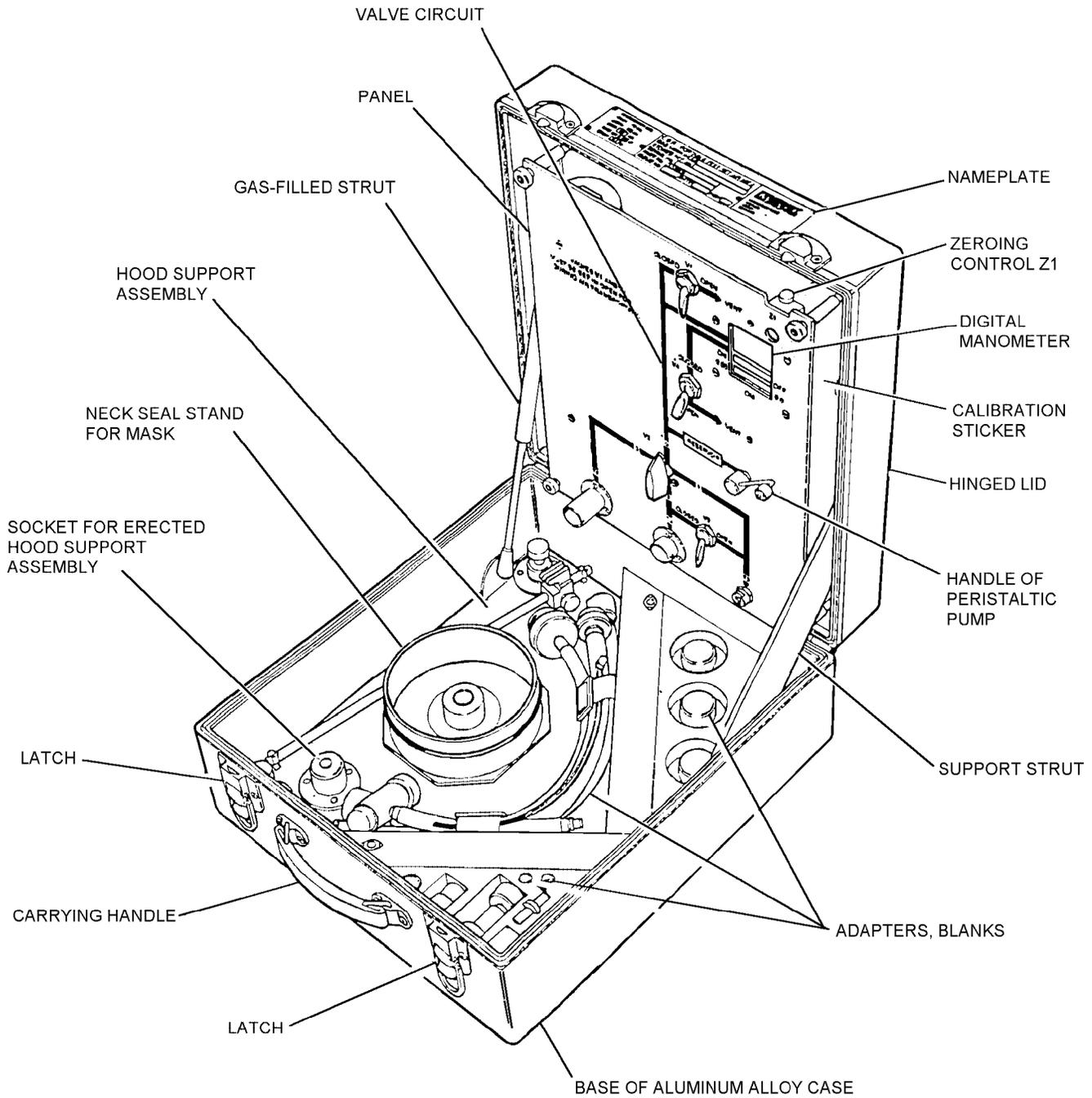
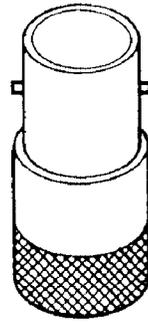
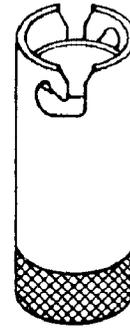


Figure 3-32. Respirator Assembly Test Set Components - A/E47T-28 (Sheet 1 of 3)

3-32-1



BLANK B1



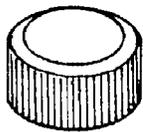
BLANK B2



BLANK B3



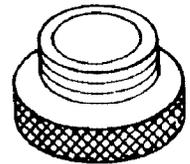
BLANK B4



BLANK B5



BLANK B6



BLANK B7

BLANKS NOT DRAWN TO SCALE

Figure 3-32. Respirator Assembly Test Set Components - A/E47T-28 (Sheet 2 of 3)

3-32-2

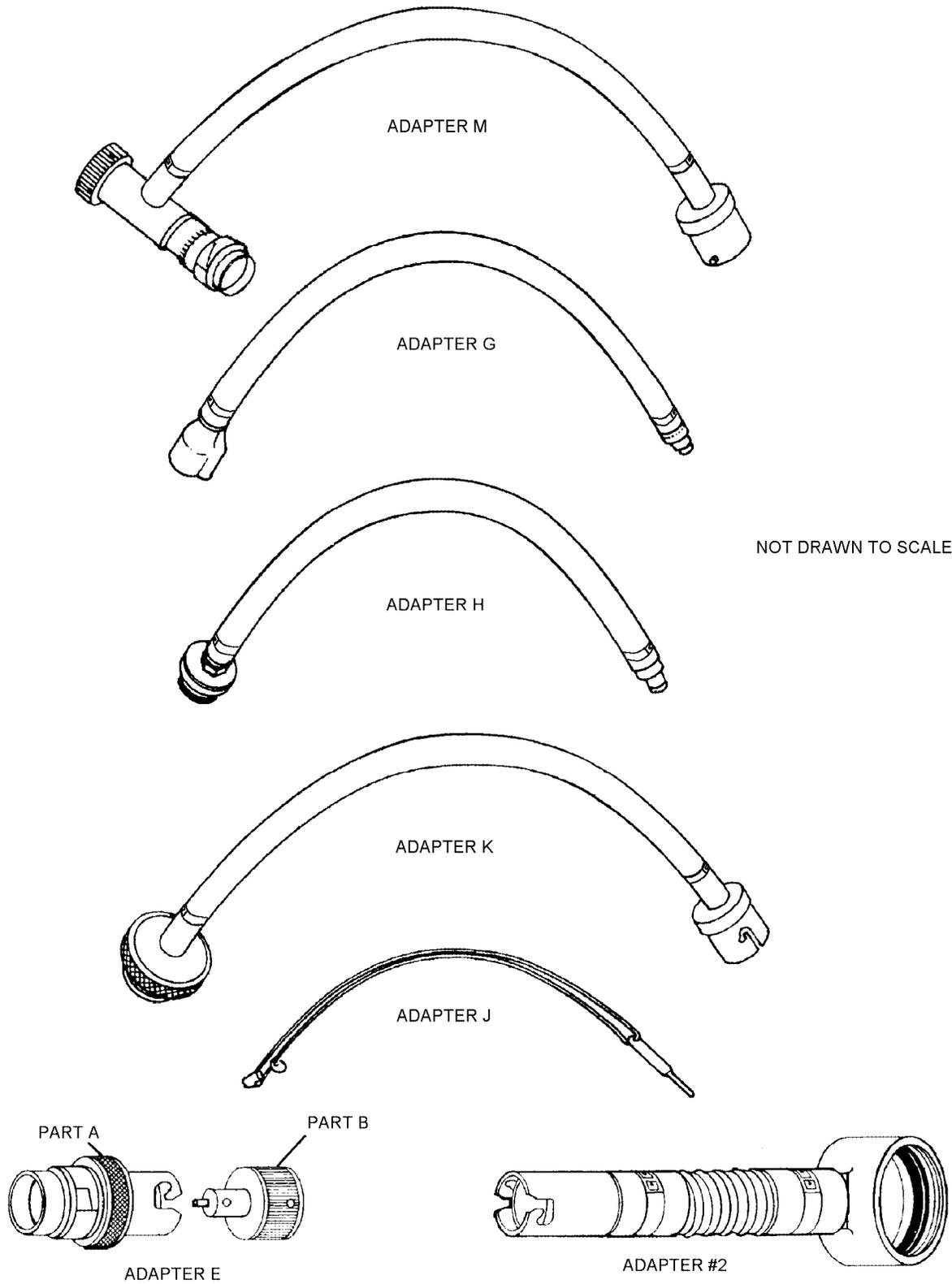


Figure 3-32. Respirator Assembly Test Set Components - A/E47T-28 (Sheet 3 of 3)

3-32-3

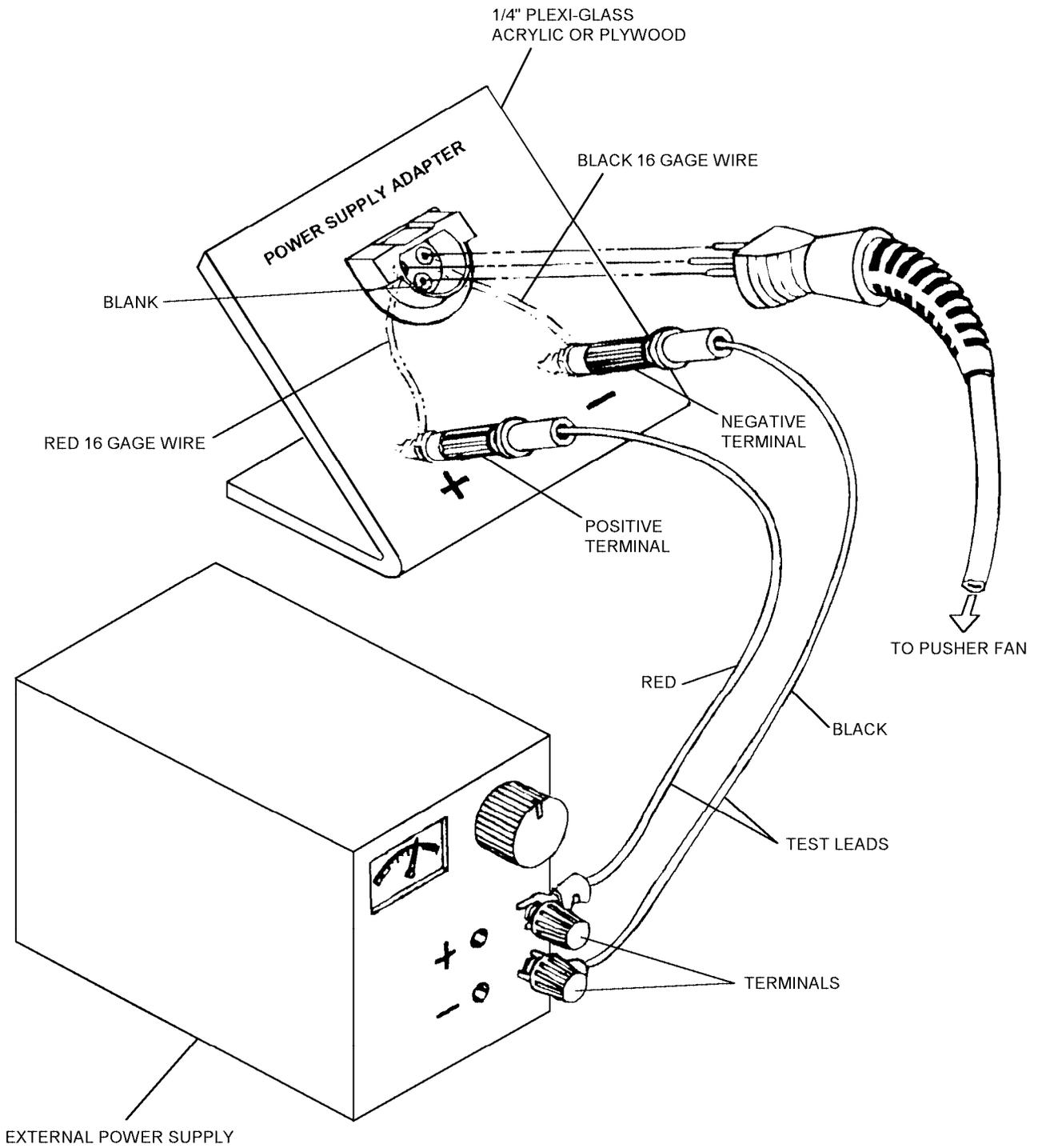


Figure 3-33. Power Supply Adapter (P/N 3297AS623-1) Pusher Fan Pressure Test

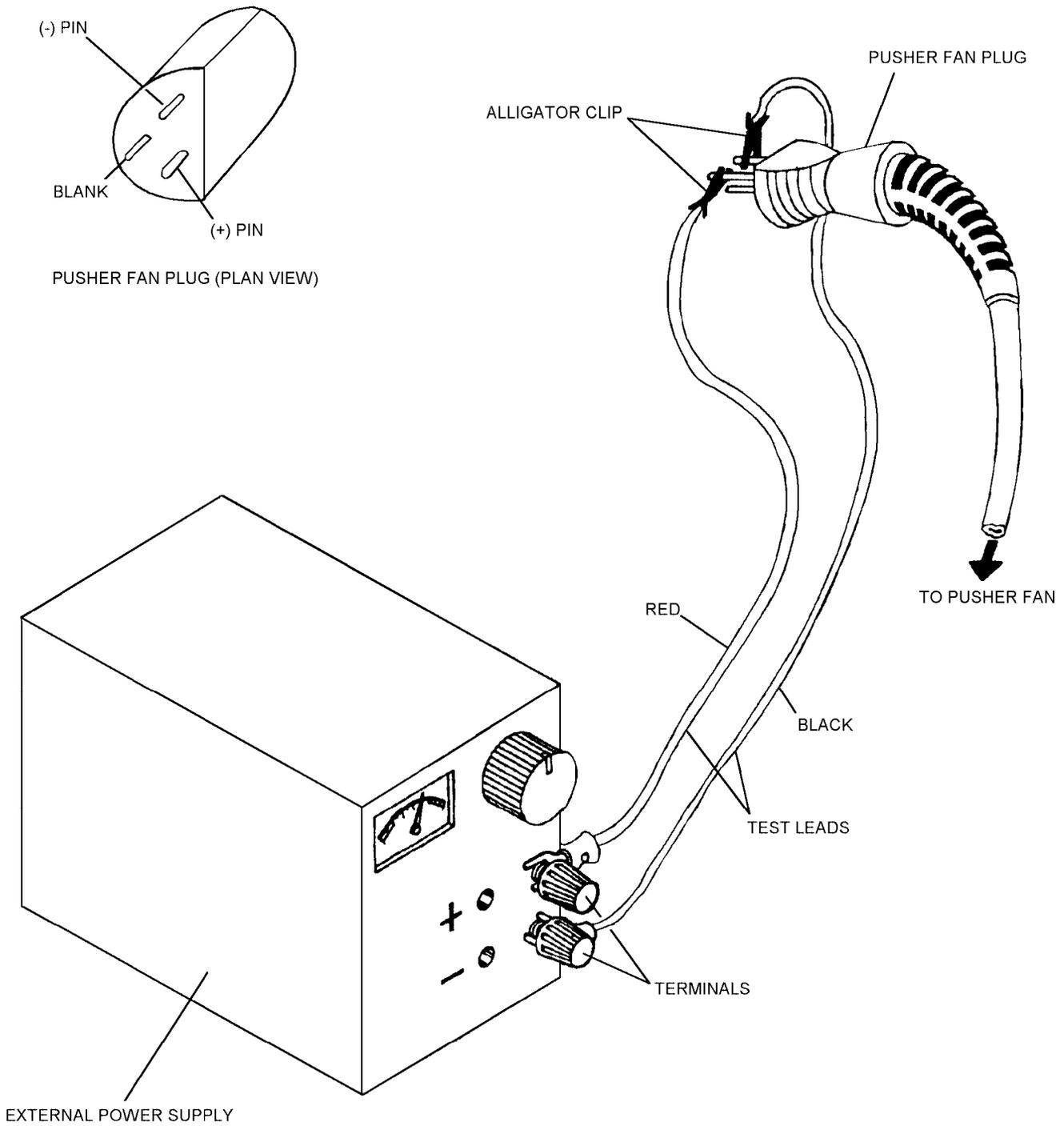


Figure 3-34. Pusher Fan Pressure Test Direct Wiring

3-118. Faceplate Visual Area - Protective Coating.



Apply a latex coating to the outside visual area of the faceplate. This will help protect the faceplate from damage during testing. Where time does not allow the use of SPRAYLAT latex coating, the velveteen cover shall be fitted to protect the optical area during testing.

1. Apply an even coat of latex coating to the outer visual area of the faceplate using a 1-inch brush.
2. Allow the coating to dry several hours, or overnight if possible. The coating turns from white to clear and becomes tough as it dries.

3-119. Inhalation and Hood Inlet Valve - Reverse Leakage Test. Bench Test mask as follows:

NOTE

Digital test set and pusher fan shall have successfully passed their required tests (paragraphs 3-114 and 3-116, respectively) prior to performing the following tests.

The following tests shall be performed in the order they appear.

Ensure red servicing clip is installed on ripaway tab to prevent inadvertent actuation during bench testing.

Materials Required

Quantity	Description	Reference Number
As Required	Leak Detection Compound	MIL-L-25567
As Required	Paper, Absorbent	—
As Required	Latex Coating SPRAYLAT A	—
1	Brush, 1 inch	NIIN 00-260-1306
1	Cable tie, 3.6 mm	CL 6226

Support Equipment Required

Quantity	Description	Reference Number
1	Cable Tie Tool	NIIN 00-937-5438
1	Digital Multimeter	—
1	Pliers, Side cutting, 4-inch	—
1	Screwdriver, #1 Phillips	—

1. Remove pusher fan from J-manifold.
2. Support mask toggle harness on hood support clamp (figure 3-35).
3. Remove and retain brass shear screw from anti-suffocation disconnect.
4. Disconnect anti-suffocation disconnect from mask inlet adapter.
5. Connect adapter M between mask inlet adapter and anti-suffocation disconnect (figure 3-36).
6. Connect free end of adapter M to T1 (figure 3-37).
7. Fit blank B7 to J-manifold.
8. Set V1 and V3 to CLOSED.
9. Set V2 to 3.
10. Ensure V4 is OPEN.



Overpressurization will collapse stepped rubber valve into valve seat.

11. Rotate pump handle (P1) counter-clockwise until digital manometer reads -4 in. H₂O. Once digital manometer reads -4 in. H₂O, observe and note suction reading on digital manometer during a period of 7 seconds. Do not allow pressure to exceed -4.25 in. H₂O. Reading shall be between -2 and -4 in. H₂O. Record results on Performance Test Sheet. If reading is not between -2 and -4 in. H₂O after 7 sec, refer to troubleshooting procedures in table 3-4.
12. Set V1 to OPEN.
13. Remove adapter M from T1.
14. Remove adapter M from the anti-suffocation disconnect and mask inlet adapter.

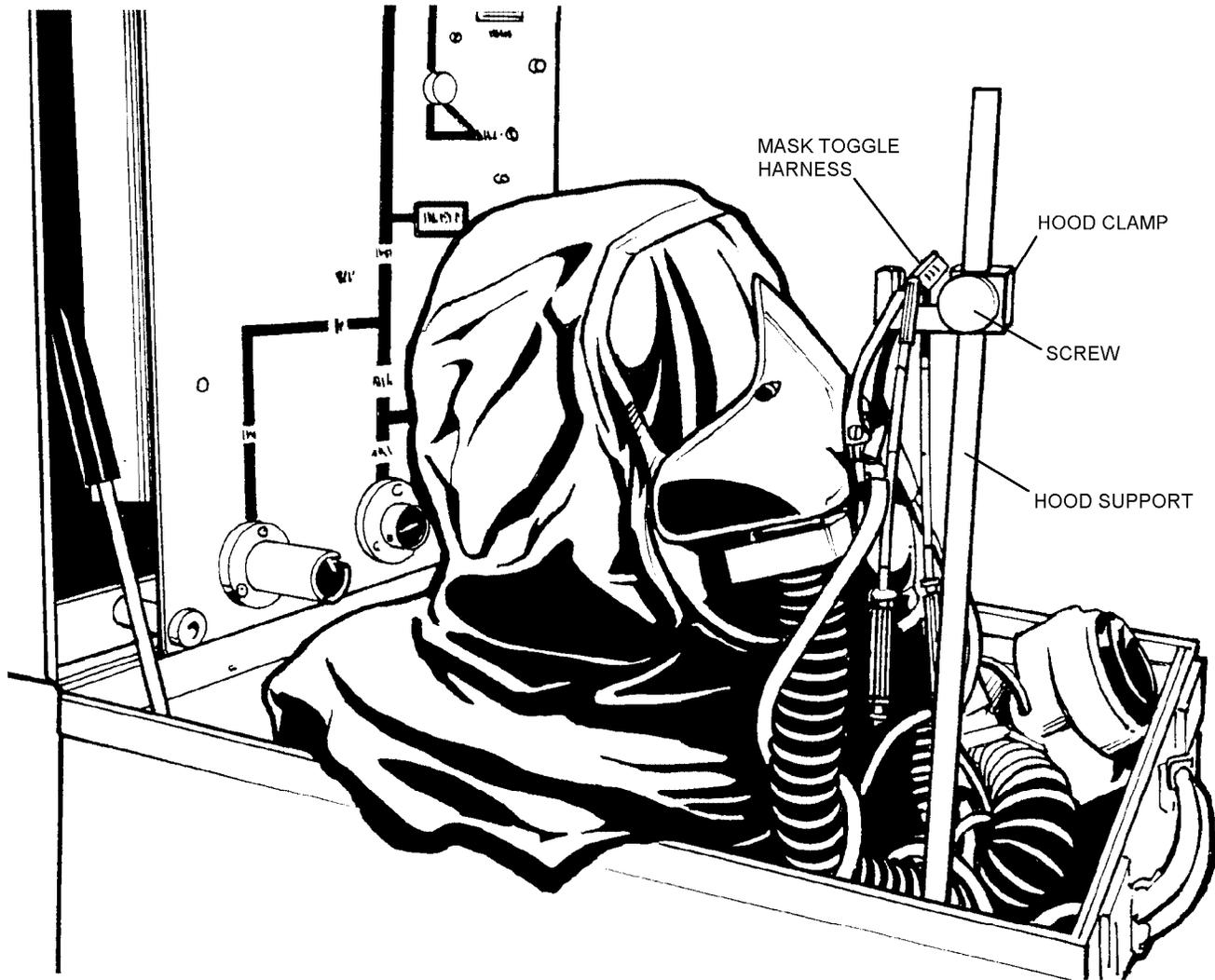


Figure 3-35. Hood Support Clamp

3-35

15. Remove blank B7 from J-manifold.

3-120. Exhalation Outlet Valve - Reverse Leakage Test.

1. Remove and discard cable tie from rubber snout.
2. Remove snout.
3. Invert hood and prop open compensated exhalation valve (inside orinasal mask) using adapter J (figure 3-38).

NOTE

Wetting the O-ring on adapter H, with water, will make it easier to fit exhalation valve port. Ensure O-ring does not roll out of its seat.

4. Slowly push adapter H into the exhalation valve port. Push straight in until O-ring is no longer visible (figure 3-39).
5. Connect free end of adapter H to T3 (figure 3-40).
6. Set V1 to CLOSED.
7. Set V2 to 1.

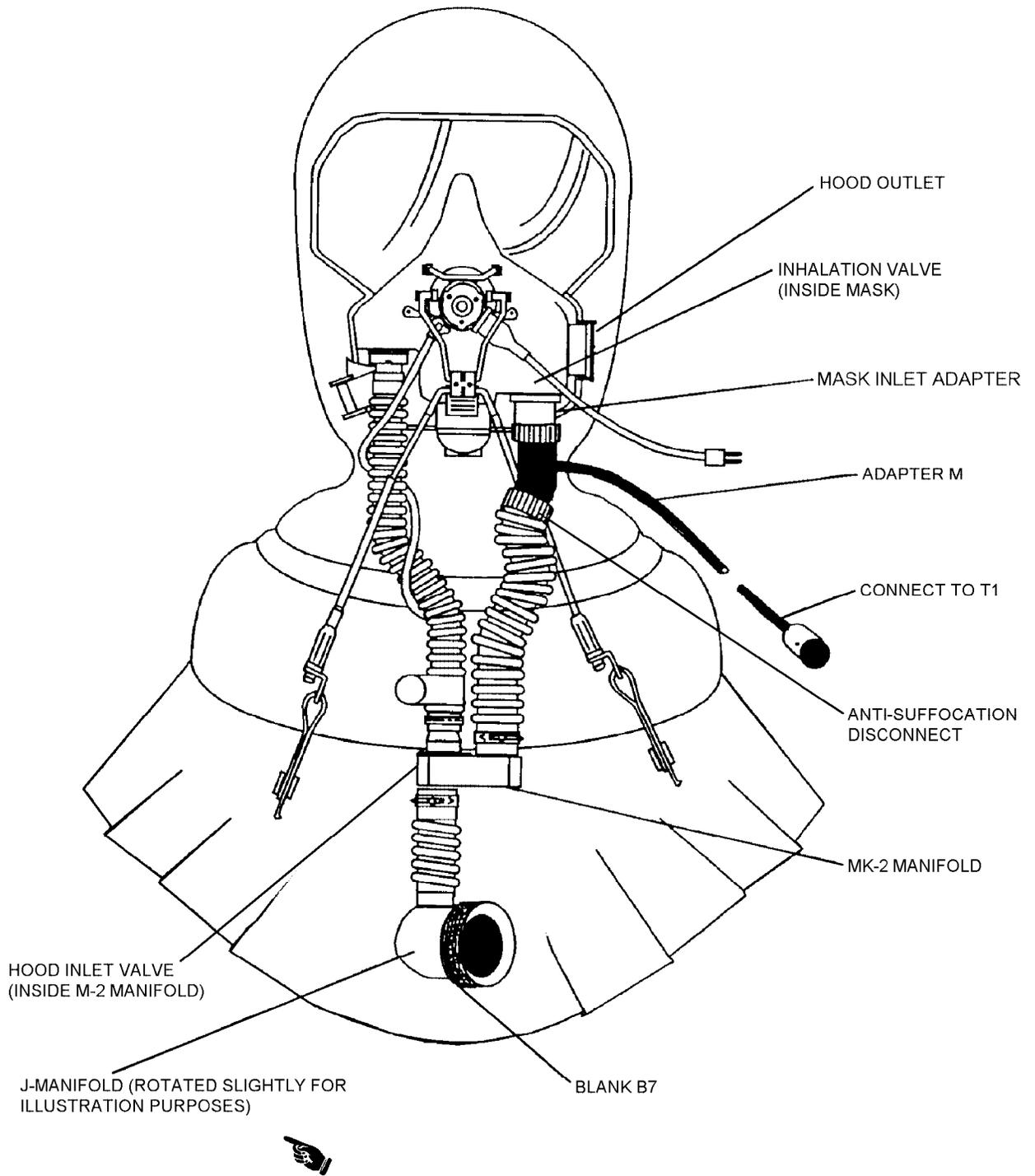
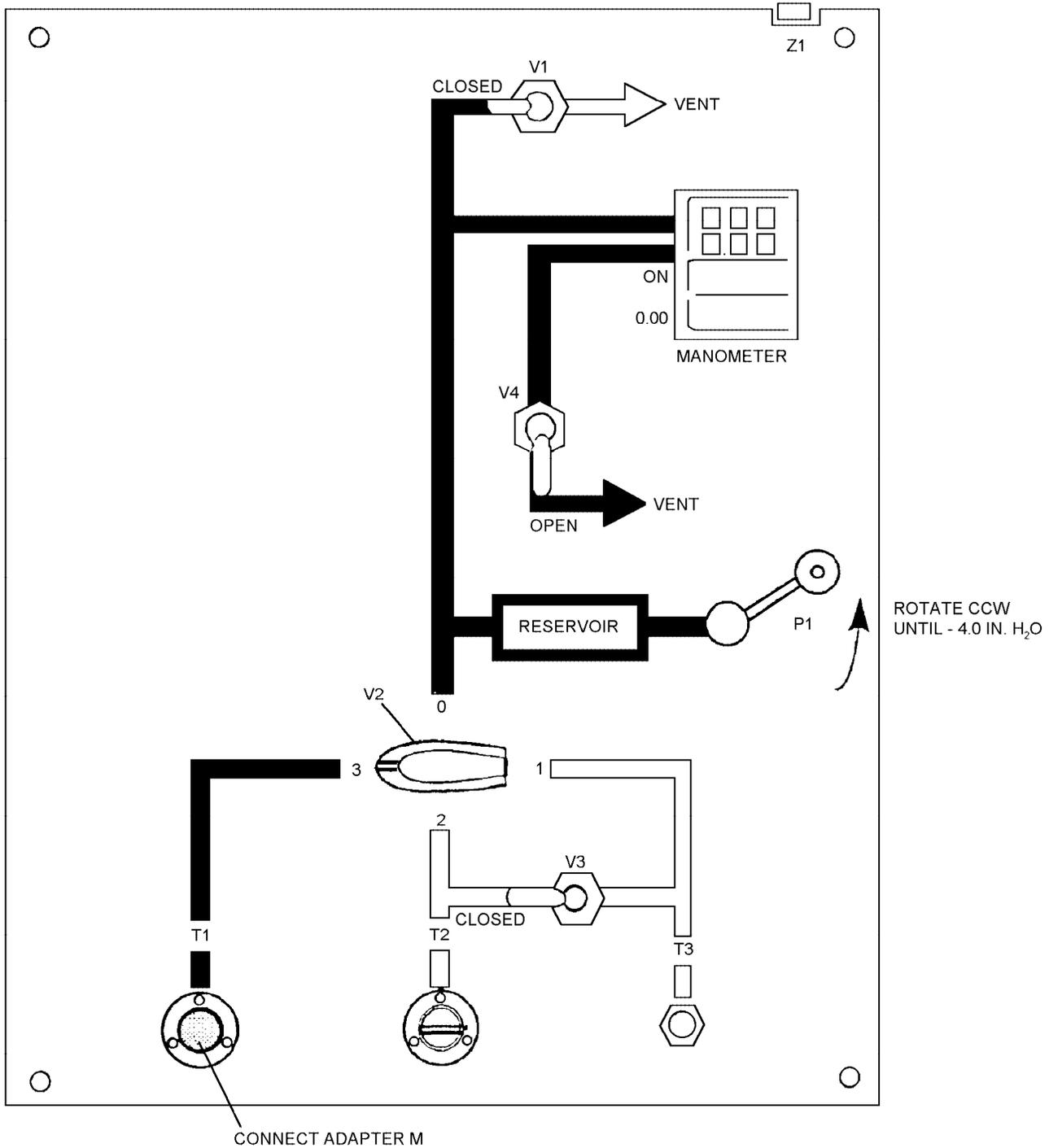


Figure 3-36. Inhalation and Hood Inlet Valves - Reverse Leakage Test



3-37

Figure 3-37. Test Panel Configuration - Inhalation and Hood Inlet Valves - Reverse Leakage Test

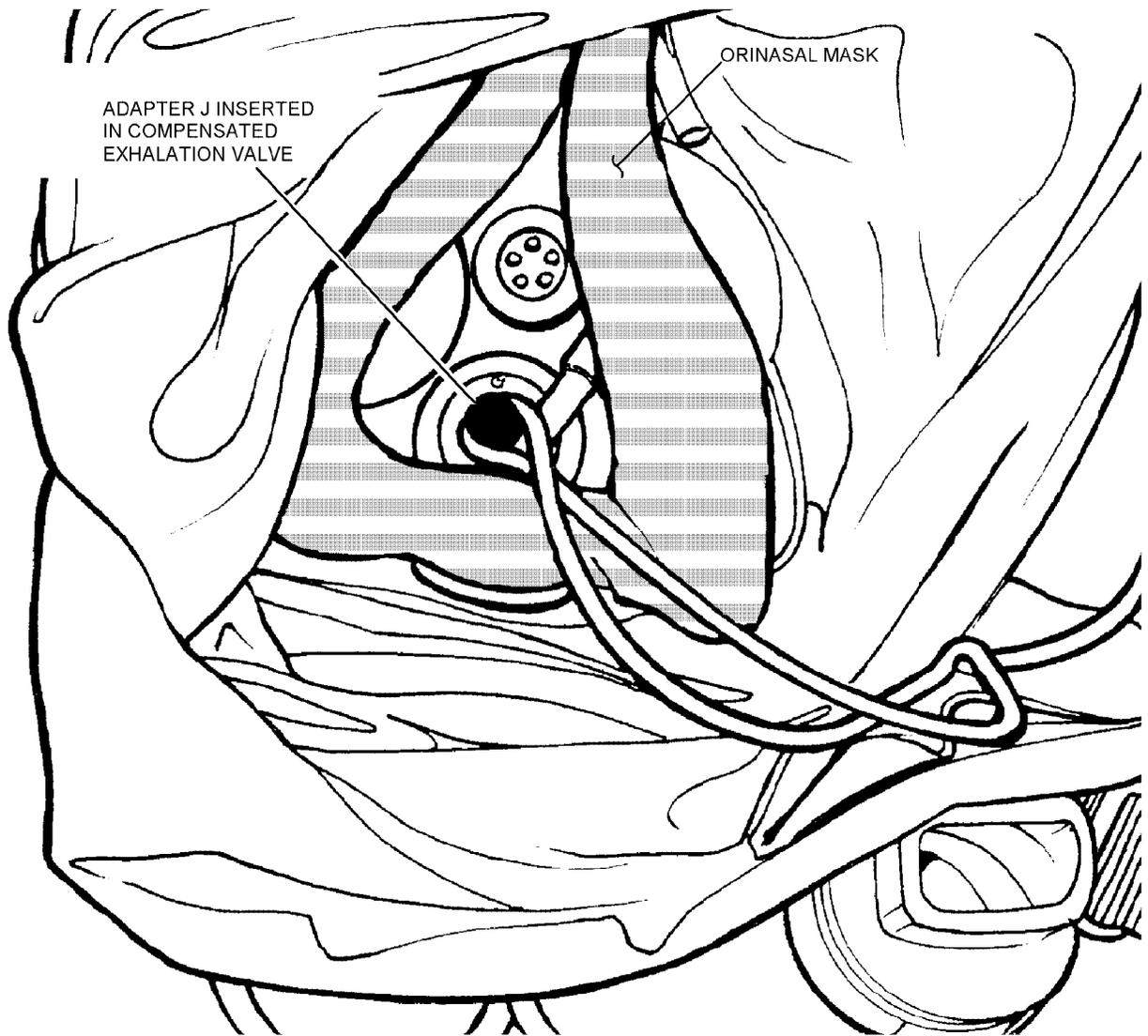


Figure 3-38. Inverted Hood

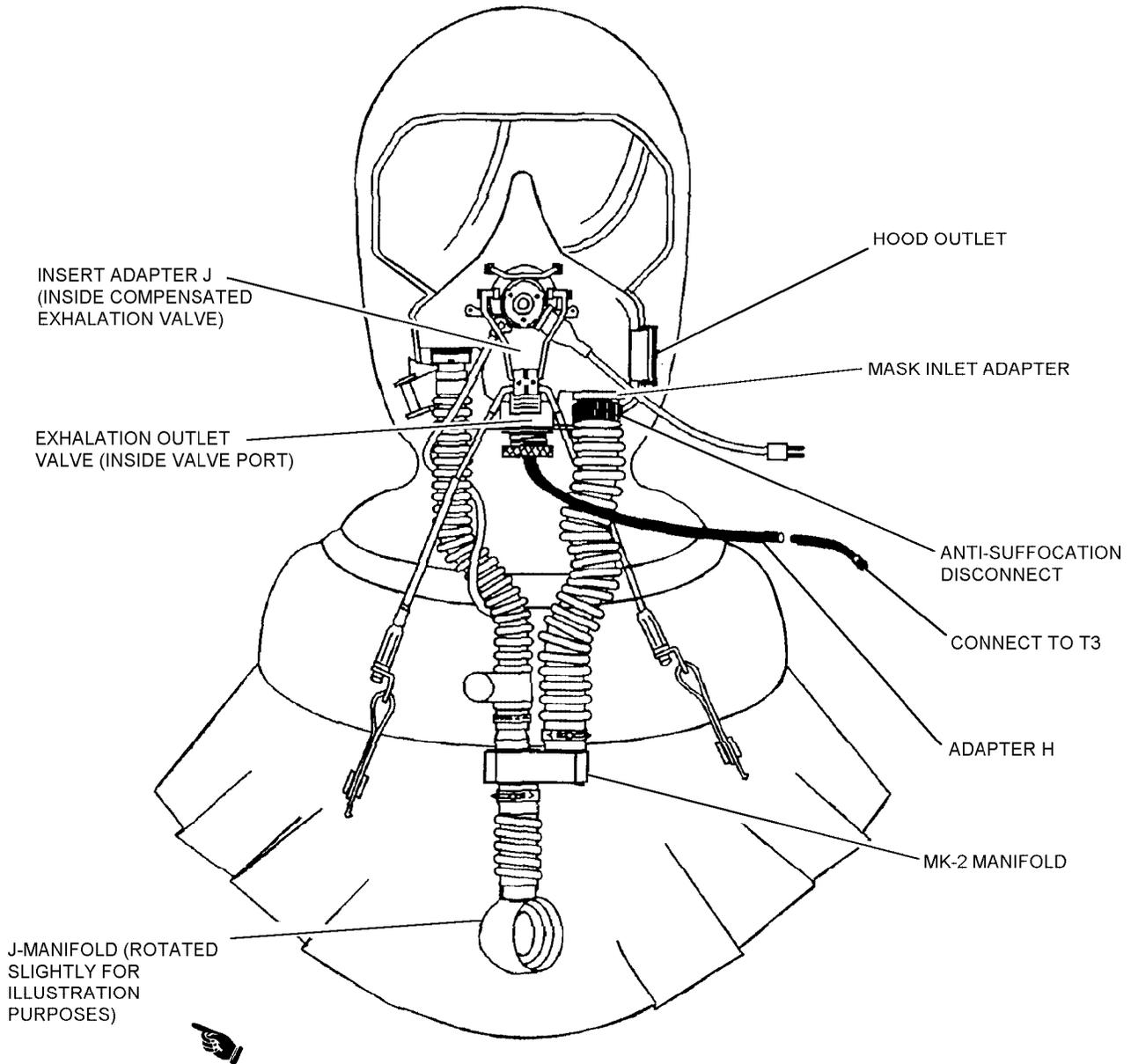


Figure 3-39. Exhalation Outlet Valve - Reverse Leakage Test

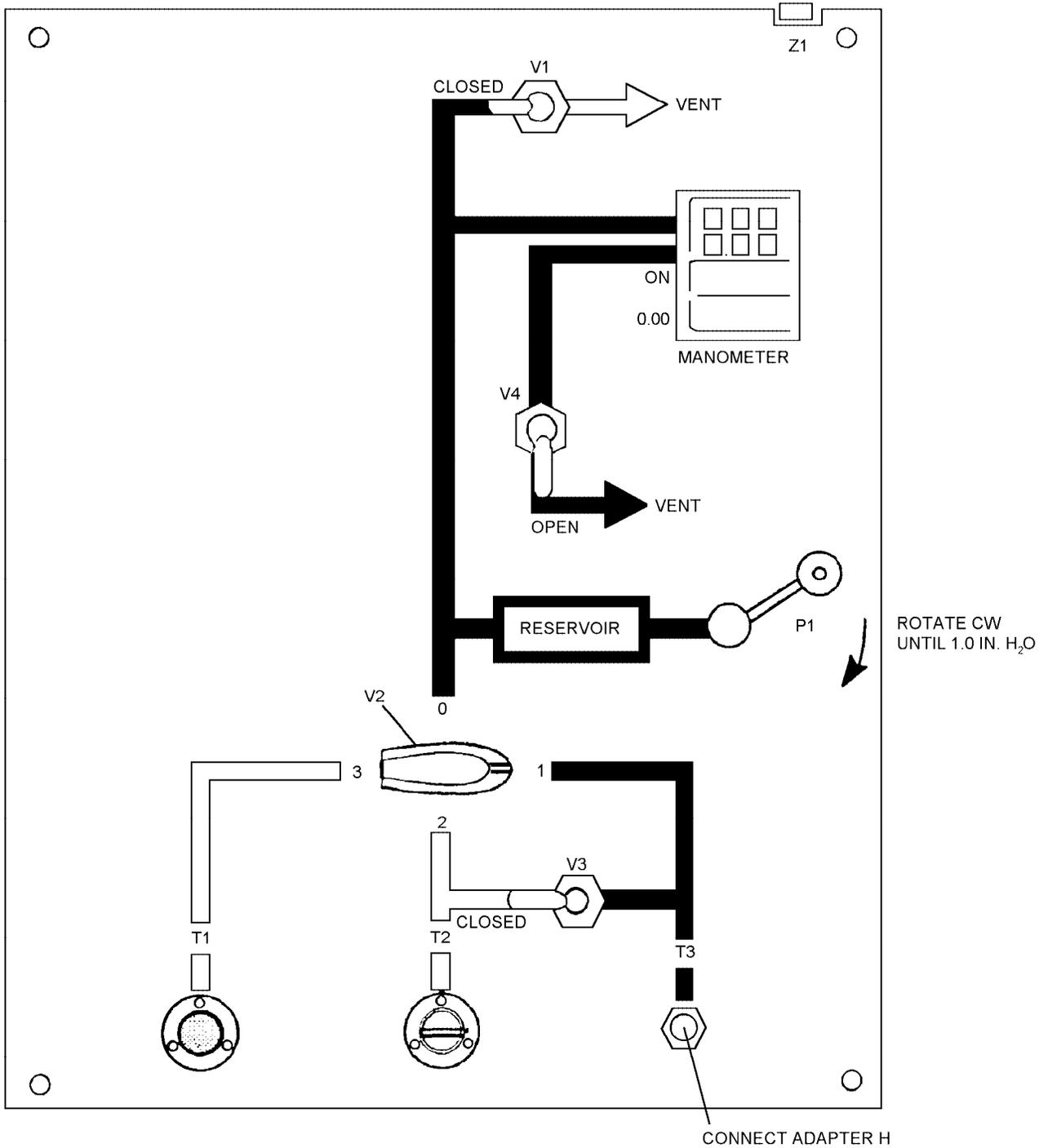


Figure 3-40. Test Panel Configuration Exhalation Outlet Valve - Reverse Leakage Test

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8. Set V3 to CLOSED.

9. Set V4 to OPEN.

10. Very slowly, rotate pump handle (P1) clockwise until digital manometer reads 1 in. H₂O. Once digital manometer reaches 1 in. H₂O observe and note the pressure reading during a 12 second period. The digital manometer reading shall be between 0.5 and 1.0 in. H₂O. Record the results on Performance Test Sheet. If the reading is not between 0.5 and 1.0 in. H₂O after 12 seconds, refer to troubleshooting procedures in [table 3-4](#).

11. Set V1 to OPEN.

12. Remove adapter H from T3 and exhalation valve port.

13. Remove adapter J from the compensated exhalation valve.

3-121. Compensated Exhalation Valve - Function Test.

1. Ensure brass shear screw is removed from anti-suffocation disconnect.

2. Separate anti-suffocation disconnect from mask inlet adapter.

3. Connect adapter E between anti-suffocation disconnect and mask inlet adapter ([figure 3-41](#)).

4. Connect adapter G to T3 and neck seal test stand ([figure 3-42](#)).

WARNING

Be careful not to rip the neck seal when fitting to neck seal test stand.

5. Fit respirator neck seal to neck seal test stand and secure with O-ring ([figure 3-43](#)).

6. Close the hood outlet valve.

7. Fit pusher fan to J-manifold (if not already connected).

8. Connect power supply to pusher fan (as performed during pusher fan pressure test).

NOTE

If a dc power supply is not available, a fully charged NiCad battery (P/N 3297AS601-1) or a lithium manganese dioxide battery (P/N 3297AS601-2) may be used.

9. Set V1 to CLOSED.

10. Set V2 to 1.

11. Ensure V3 is CLOSED.

12. Ensure V4 is OPEN.

13. Turn power supply on and note pressure on digital manometer after hood is fully inflated. Ensure external power supply is providing an output of 3.75 Vdc at 1 amp. Allow to stabilize for a period of 1 minute before taking a reading. Digital manometer shall read 2.6 in. H₂O or higher. Record result on Performance Test Sheet. If manometer does not read 2.6 in. H₂O or higher, refer to troubleshooting procedures in [table 3-4](#).

14. Disconnect adapter E (quick disconnect) into two halves. Ensure air vents from mask exhalation valve port.

15. Observe and note pressure shall not be more than 1.5 in. H₂O. Record result on the Performance Test Sheet. If pressure is more than 1.5 in. H₂O, refer to troubleshooting procedures in [table 3-4](#).

16. Re-connect adapter E (quick disconnect).

17. Repeat the test procedure from [steps 14-16](#) three times.

18. Turn OFF power supply.

19. Open hood outlet valve.

20. Disconnect pusher fan from power supply.

21. Remove adapter E from mask inlet adapter and anti-suffocation disconnect.

22. Reconnect mask inlet adapter and anti-suffocation disconnect.

23. Reassemble adapter E.

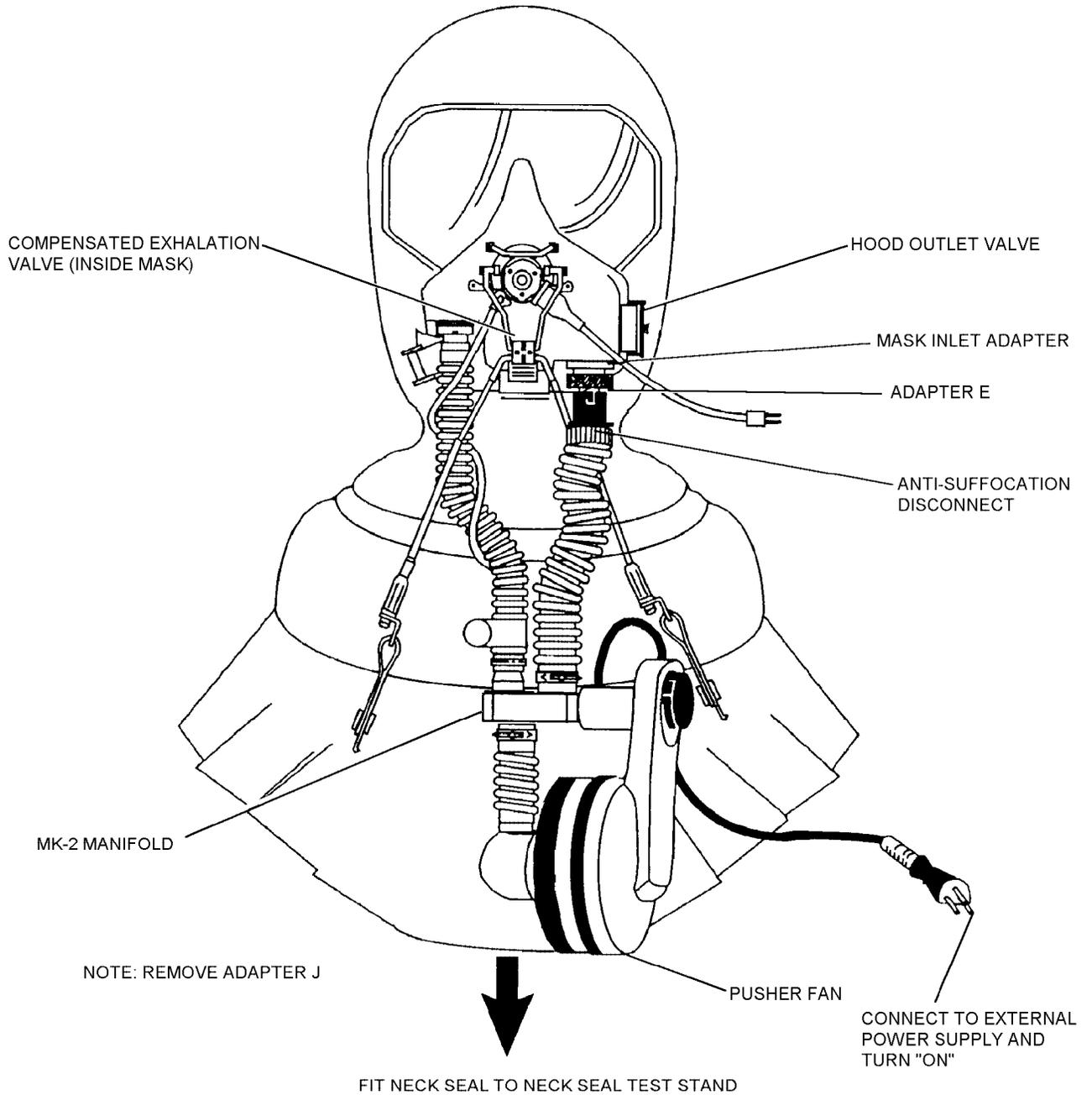


Figure 3-41. Compensated Exhalation Valve - Functional Test

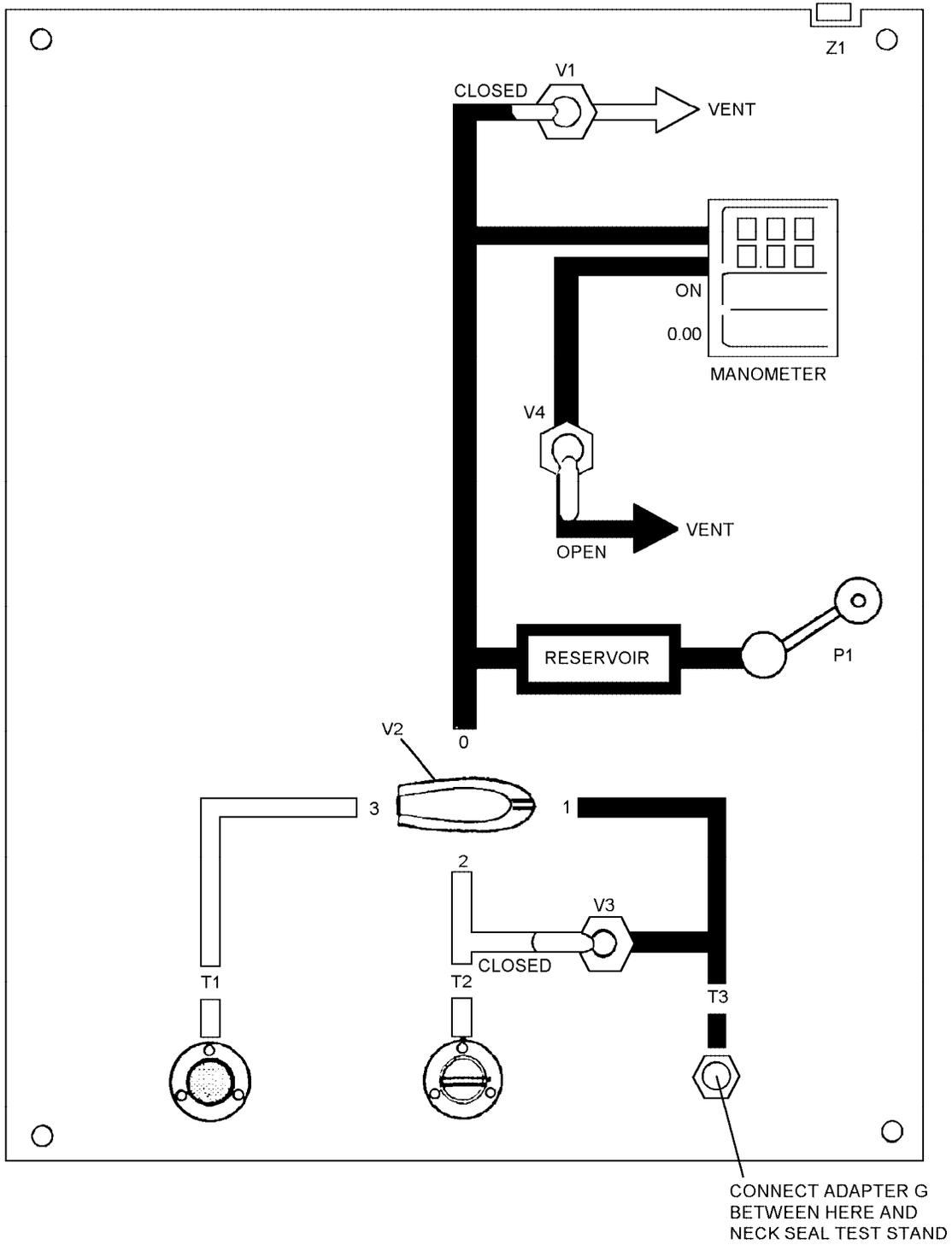


Figure 3-42. Test Panel Configuration - Compensated Exhalation Valve - Functional Test

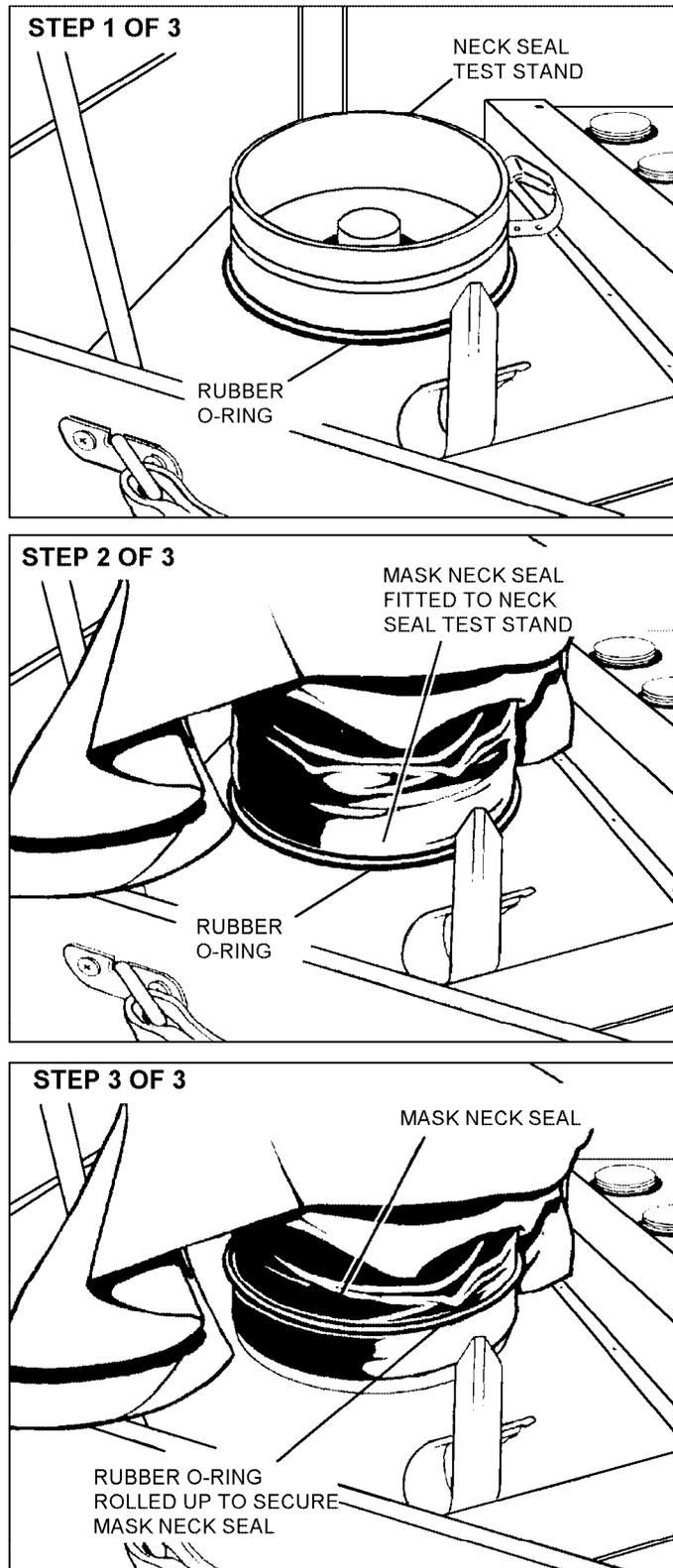


Figure 3-43. Neck Seal Test Stand

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3-122. Mask Assembly - Overall Leakage Test.

1. Ensure neck seal is properly fitted to neck seal test stand (figure 3-43).
2. Fit blank B7 to J-manifold (figure 3-44).
3. Ensure adapter G is correctly fitted between T3 and neck seal test stand port (figure 3-45).
4. Close hood outlet valve.

NOTE

Wetting O-ring on adapter H, with water, will make it easier to fit the exhalation valve port. Ensure O-ring does not roll out of its seat.

5. Slowly push adapter H into the exhalation valve port. Push straight-in until O-ring is no longer visible.
6. Fit blank B4 to free end of adapter H.
7. Screw pusher fan into test adapter #2.
8. Connect free end of test adapter #2 to T2.
9. Set V1 to CLOSED.
10. Set V2 to 1.
11. Set V3 and V4 to OPEN.
12. Connect pusher fan to power supply. Ensure power supply output is on and set to 3.75 Vdc at 1 amp.
13. Inflate hood until 2 in. H₂O is indicated on digital manometer, then set V3 to CLOSED.
14. Allow system to stabilize for a period of one minute. Switch V3 from CLOSED to OPEN to maintain 2 in. H₂O.
15. Set V3 to CLOSED and turn off power supply to pusher fan.
16. Observe and note pressure on digital manometer is between 2.0 and 1.95 in. H₂O after one min-

ute. It may be necessary to exceed 2 in. H₂O and repeat several times until pressure stabilizes. Record the result on Performance Test Sheet. If manometer does not read between 1.95 and 2.0 in. H₂O, refer to troubleshooting procedures in table 3-4.

17. Open hood outlet valve.
18. Set V1 to OPEN.
19. Disconnect pusher fan from external power supply.
20. Disconnect adapter #2 from T2.
21. Remove adapter #2 from pusher fan.
22. Remove respirator from neck seal test stand.
23. Remove adapter G from T3 and neck seal test stand.
24. Remove adapter H and blank B4.
25. Refit snout and secure with a 3.6mm wide, black cable tie. Tension with a cable tie tool set to STD setting. Position cable tie head close to mask.
26. Remove blank B7 from J-manifold.
27. Refit pusher fan assembly to J-manifold.
28. Refit shear screw to anti-suffocation disconnect.
29. Complete Performance Test Sheet.

NOTE

The following test should only be performed to help isolate a leak in the mask.

3-123. Hood Assembly - Overall Leakage Test

1. Remove shear screw and retain. Detach hood and orinasal mask hoses from mask in accordance with disassembly procedures.
2. Remove cable tie securing snout to faceplate. Remove snout.

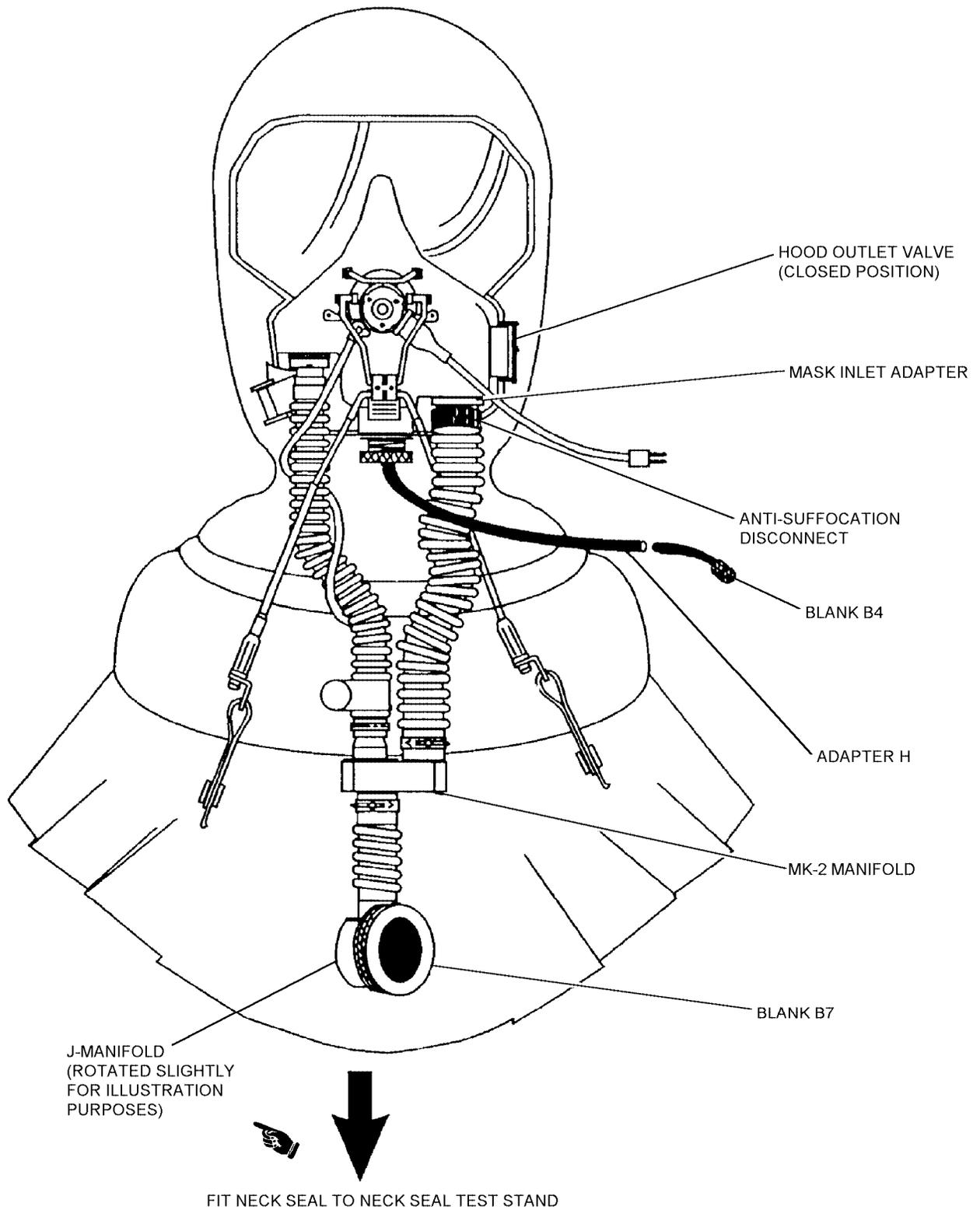


Figure 3-44. Mask Assembly - Overall Leakage Test

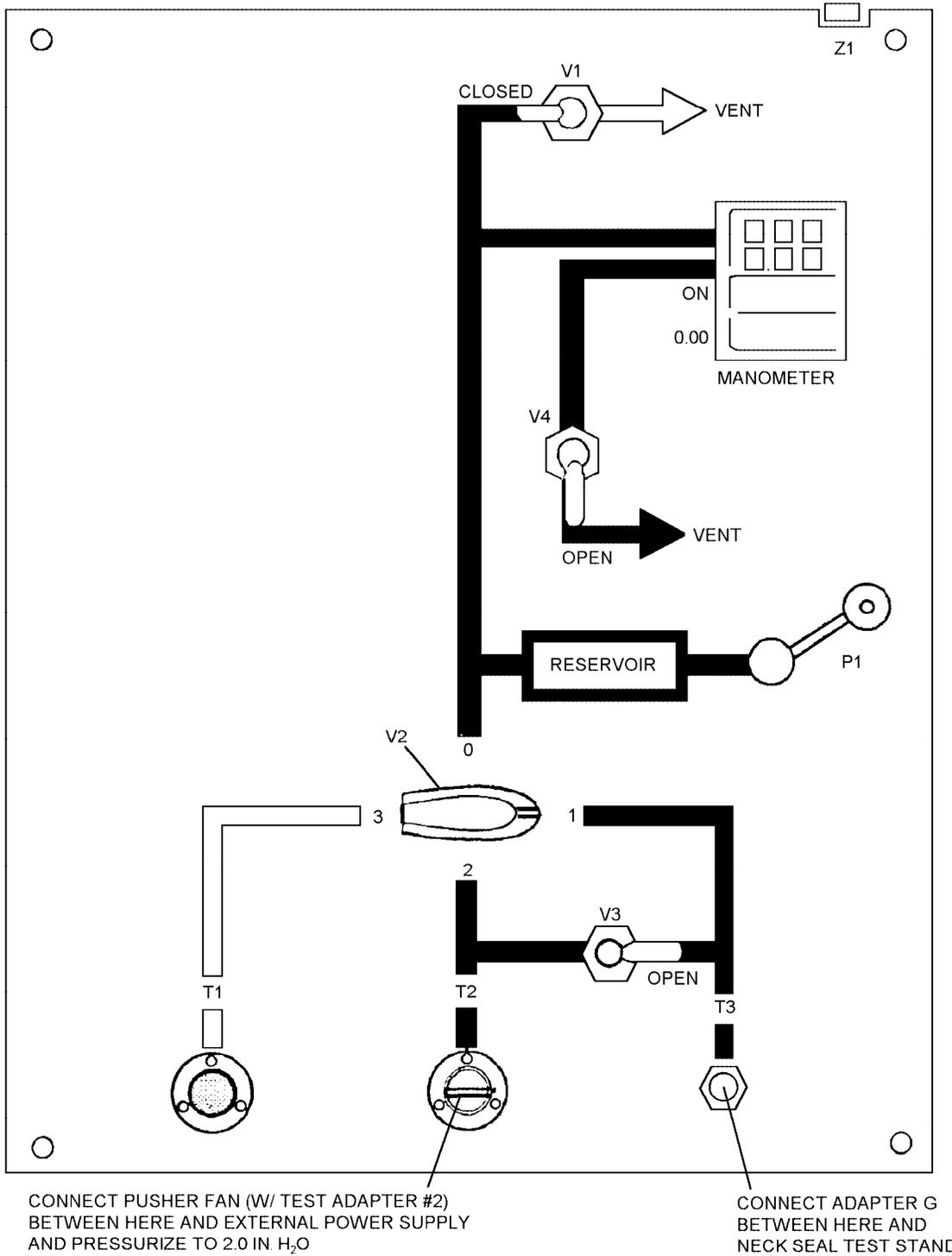


Figure 3-45. Test Panel Configuration - Mask Assembly - Overall Leakage Test

3. Connect adapter H to mask exhalation outlet valve port.
 4. Fit blank B4 to free end of adapter H.
 5. Support mask on hanger by its toggle harness.
 6. Fit hood assembly to neck seal test stand and adjust neck seal to lie without creasing the sealing ring.
 7. Close hood outlet valve.
 8. Connect one end of adapter G to T3 and other end to neck seal test stand port.
 9. Fit blank B5 to the mask inlet adapter (figure 3-46).
 10. Fit blank B6 to hood inlet adapter (figure 3-46).
 11. Remove pusher fan from the J-manifold.
 12. Screw pusher fan canister into J-manifold of test adapter #2.
 13. Connect test adapter #2 to T2 (figure 3-47).
 14. Connect power supply to pusher fan and turn on. Ensure power supply is set to 3.75 Vdc at 1 amp.
 15. Set V2 to 1 and V3 to OPEN position. Inflate hood until 2 in. H₂O is indicated on digital manometer.
 16. Set V1 to CLOSED position. Set V4 to OPEN. Allow pressure within hood to stabilize, if necessary, by adjusting V1 (opening and closing) to maintain 2 in. H₂O.
 17. When stabilized, set V1 to CLOSED. In the event reading is too high, reduce pressure by opening the hood outlet valve. Set power supply switch to off.
 18. Observe pressure indicated on digital manometer. The pressure shall be between 1.95 and 2.0 in. H₂O during a one minute period. If manometer fails to indicate or if pressure is not between 1.95 and 2.0 in. H₂O, refer to troubleshooting procedures in table 3-4. Record results on Performance Test Sheet.
 19. Set V1 to OPEN.
 20. Open the hood outlet valve.
 21. Disconnect test adapter #2 from T2 and disconnect from external power supply.
 22. Remove pusher fan from test adapter #2.
 23. Replace pusher fan to J-manifold.
 24. Remove adapter G.
 25. Remove blanks B4, B5, and B6.
 26. Remove mask from neck seal stand and support hanger. Fit velveteen cover.
 27. Remove adapter H from the exhalation valve port.
 28. Refit snout hood and orinasal mask hoses (refer to assembly section).
 29. Peel away protective coating (if applied) to faceplate area prior to bench testing. Ensure no traces remain on visual area.
- 3-124. RESPIRATOR ASSEMBLY TROUBLESHOOTING.**
- 3-125. Refer to Respirator Assembly - Troubleshooting, table 3-4, for troubleshooting procedures.

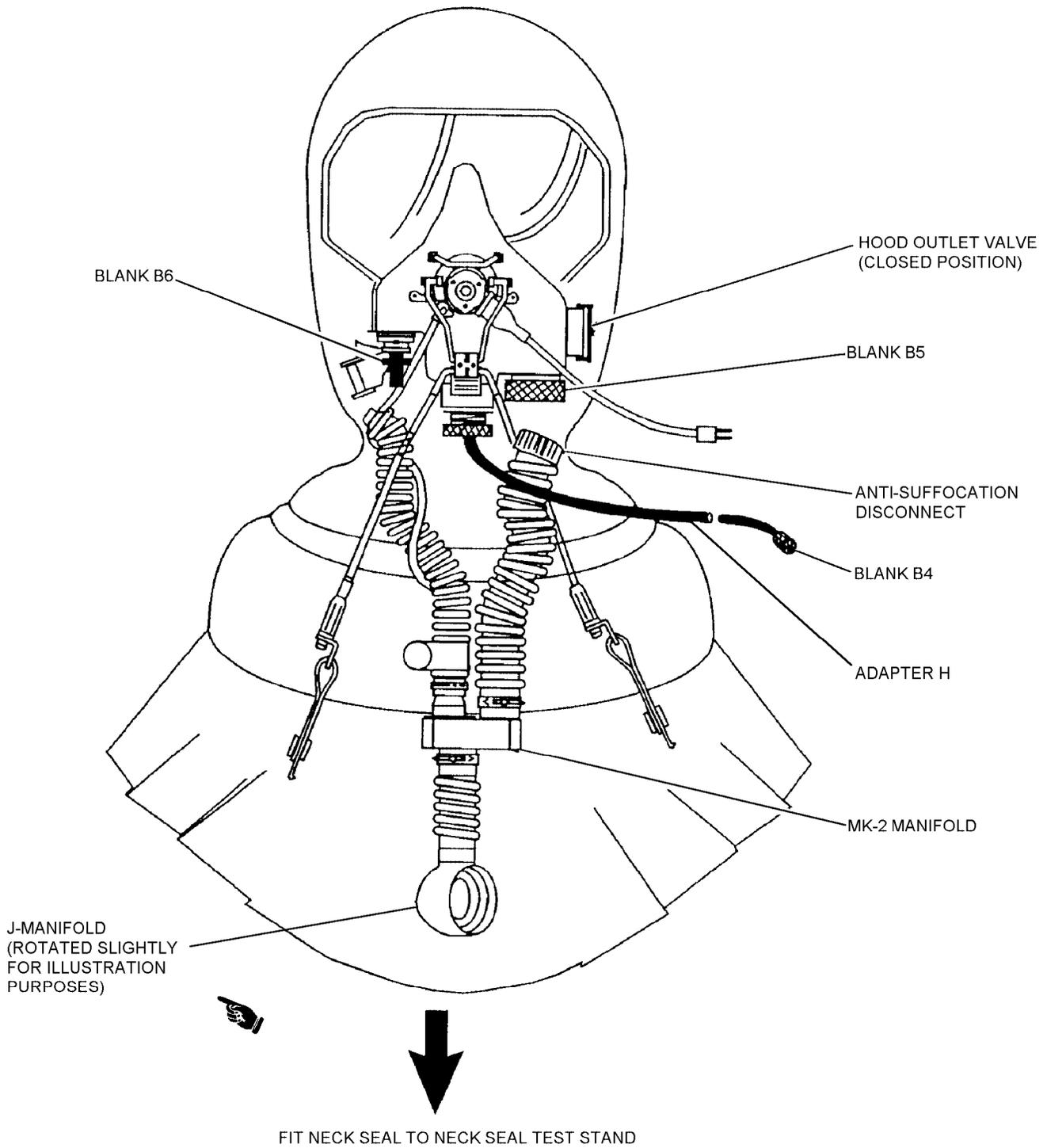


Figure 3-46. Hood Assembly - Overall Leakage Test

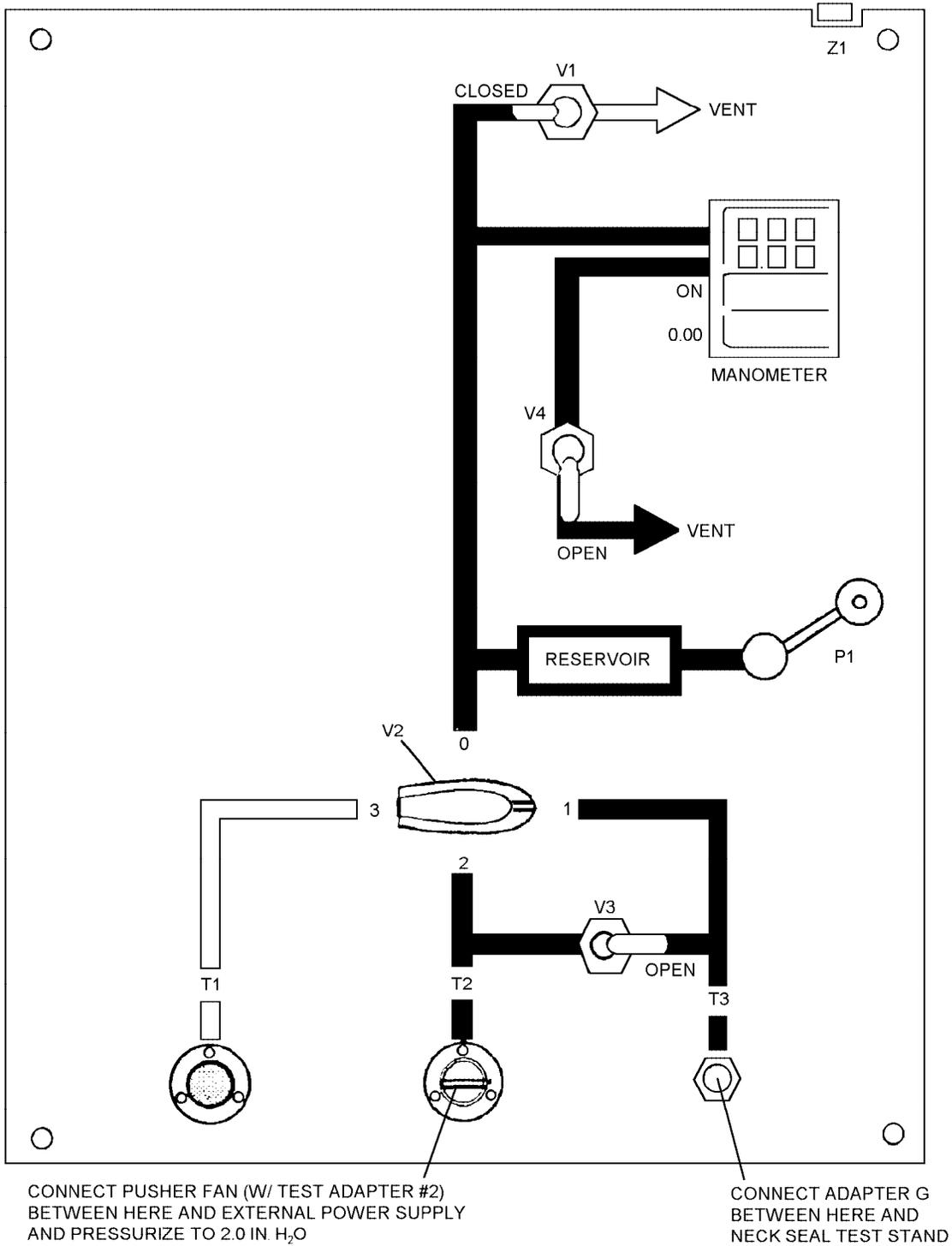


Figure 3-47. Test Panel Configuration - Hood Assembly - Overall Leakage Test

Table 3-4. Respirator Assembly - Troubleshooting

Trouble	Probable Cause	Remedy
PUSHER FAN - PRESSURE TEST		
Digital manometer does not read at least 2.6 in. H ₂ O or nothing happens.	Incorrect output setting on power supply or incorrect wiring.	Adjust power setting to 3.75V @ 1 amp. and check wiring.
	Used lithium battery. Check usage and/or shelf life.	Replace with new battery.
	Adapter #2 leaking or loose connections on test set.	Check for leakage.
	Bad pusher fan motor.	Replace w/new pusher fan.
INHALATION AND HOOD INLET VALVE - REVERSE LEAKAGE TEST		
Digital manometer does not read between -2 and -4 in. H ₂ O after 7 sec.	Leakage through hood inlet valve.	Disconnect adapter M from mask inlet adapter only. Separate adapter E into two halves. Insert part A half into the open end of adapter M. Retest. If it passes, suspect inhalation valve. If it fails, disassemble hood inlet valve and inspect the stepped rubber valve. Clean or replace and retest.
	Leakage through inhalation valve.	Disconnect anti-suffocation disconnect from Adapter M. Insert blank B5 into open end of adapter M. Retest. If it passes, suspect hood inlet valve. If it fails, remove iceguard and examine stepped rubber valve. Clean or replace and retest.
	Leakage through adapter M, test connections or incorrect valve settings.	Check, repair or replace.
EXHALATION OUTLET VALVE - REVERSE LEAKAGE TEST		
Digital manometer does not read between 0.5 and 1.0 in. H ₂ O after 12 sec.	Dirty or leaky valve.	Remove stepped rubber valve from valve seat. Clean seat and valve, and retest. If it fails, replace and retest
	Loose connection or incorrect valve settings.	Check all connections for secure attachment. Check valve settings.
NOTE: If a respirator assembly part or component requires repair, replacement or disassembly, refer to the appropriate section.		

Table 3-4. Respirator Assembly - Troubleshooting (Cont)

Trouble	Probable Cause	Remedy
COMPENSATED EXHALATION VALVE		
Digital manometer does not read at least 2.6 in. H ₂ O.	Hood outlet valve open.	Select hood outlet valve to CLOSE position.
	Compensated exhalation valve faulty.	Examine valve plate for correct operation by gently depressing plate against spring tension several times to exercise valve. Replace valve if suspect. Make sure J-prop has not been left in valve from previous test.
	Neck seal not correctly seated on neck seal test stand.	Seat correctly.
	Pusher fan faulty or power supply not set to correct settings. Dead or low battery.	Ensure power supply is set at 3.75V @ 1 amp. If using battery, check battery life and/or shelf life. Service or replace with new battery as required.
	Incorrect valve settings or loose test connections.	Check all valve settings for correct settings and check all connections for security of attachment.
Digital manometer does not read less than 1.5 in. H ₂ O when adapter E is separated.	Valve plate stuck.	Examine valve plate. Replace valve if suspect.
MASK ASSEMBLY - OVERALL LEAKAGE TEST		
Digital manometer does not read between 1.95 and 2.0 in. H ₂ O.	Incorrect valve settings or loose test connections.	Check all valve settings for correct settings and check all connections for security of attachment.
	Pusher fan faulty or power supply not set to correct settings. Dead or low battery.	Ensure power supply is set at 3.75V @ 1 amp. If using battery, check battery life and/or shelf life. Service or replace with new battery.
	Neck seal not correctly seated on neck seal test stand.	Seat correctly.
	Hood outlet valve open or valve not seated correctly.	Seat valve to closed position. Examine for dirt/dust. Clean as necessary.

Table 3-4. Respirator Assembly - Troubleshooting (Cont)

Trouble	Probable Cause	Remedy
Digital manometer does not read between 1.95 and 2.0 in. H ₂ O. (Cont)	Hole/split in rubber cowl or neck dam.	Examine for tears/holes. Replace if tears or holes are present.
	Holes/splits in mask inlet hose or hood inlet hose.	Examine for tears/holes. Replace if tears or holes are present.
	Occluded mask or hood inlet hose.	Ensure free from kinks.
	Drink Facility.	Examine for leaks and security of attachment.
HOOD ASSEMBLY - OVERALL LEAKAGE TEST		
Digital manometer does not read between 1.95 and 2.0 in. H ₂ O.	Pusher fan faulty or power supply not set to correct settings. Dead or low battery.	Ensure power supply is set at 3.75V @ 1 amp. If using battery, check battery life and/or shelf life. Service or replace with new battery as required.
	Neck seal not correctly seated on neck seal test stand.	Seat correctly.
	Hood outlet valve open or valve not seated correctly.	Select valve to closed position. Examine for dirt/dust. Clean as necessary.
	Hole/split in rubber cowl or neck dam.	Examine for tears/holes. Replace if tears or holes are present.
	Incorrect valve settings or loose test connections.	Check all valve settings for correct settings and check all connections for security of attachment.

3-126. DISASSEMBLY.

3-127. Instructions for disassembling the A/P23P-14A(V) respirator assembly are contained in the following paragraphs. Disassemble respirator assembly only as far as is required to correct malfunctions. Disassembly instructions can be followed in sequence for complete disassembly, or each step can

be done separately, as required for that specific part or subassembly. All damaged or affected parts shall be replaced when the respirator assembly is disassembled. All replacement parts shall have the same part number as the damaged or removed part. To disassemble respirator assembly or any of its components, proceed as follows:

CAUTION

Only parts listed in the Illustrated Parts Breakdown (IPB) are authorized to be disassembled.

Materials Required

Quantity	Description	Reference Number
As Required	Latex Coating, SPRAYLAT A	—

Support Equipment Required

Quantity	Description	Reference Number
1	Screwdriver, Jeweler's	—
1	Pliers, side-cutting, 4 in.	—
1	Screwdriver, 6 X 1/8 in STD	—
1	Pliers, flat nose, 4-3/4-in.	—
1	Wrench, socket 1/4-in. square drive	—
1	Pincer Tool, Low Profile	Oetiker 14100055
	or	
1	Pliers, Hose Clamp	NIIN 01-073-4187
1	Nut Driver, 3/8-in.	GGG-W-657

CAUTION

All replacement/disassembly, inspection, repair, and assembly must be done on benches having good lighting.

Apply a latex coating to outside visual area of faceplate before disassembly to protect optical area of faceplate from damage. Refer to [paragraph 3-118](#), for application instructions. The velveteen cover may be installed over the visual area when latex coating (SPRAYLAT) is not available or time is not sufficient to permit drying.

3-128. MCK-3A/P MASK COMPONENTS REMOVAL.

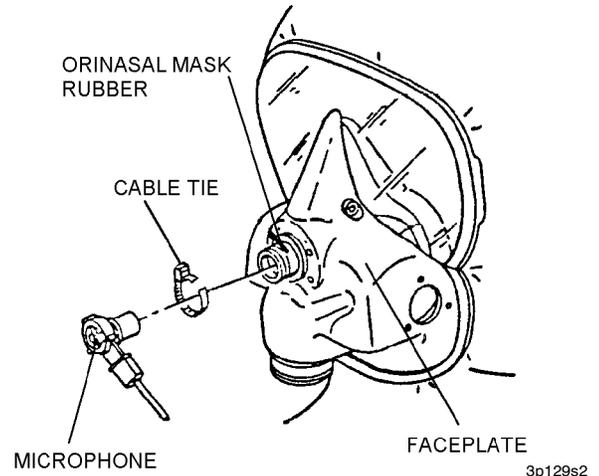
3-129. Microphone Removal.

1. Using side cutting pliers, remove and discard cable tie that secures orinasal mask rubber to microphone, taking care not to damage orinasal mask rubber.

2. Carefully remove microphone from orinasal mask by twisting exposed portion of microphone, while at the same time pushing microphone out from inside of orinasal mask.

CAUTION

Do not use pigtail as a lever to remove microphone - it will break.

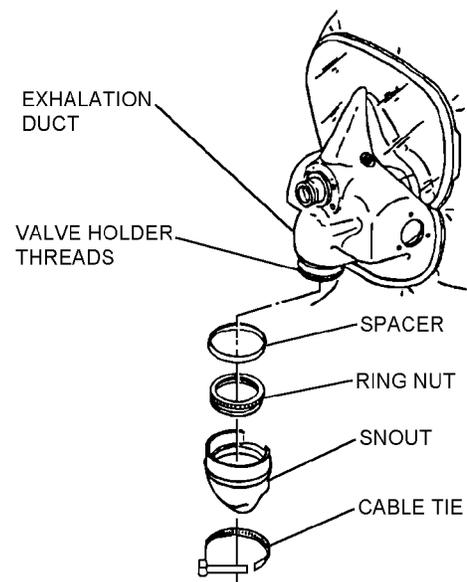


Step 2 - Para 3-129

3-130. Snout Removal.

1. Remove rubber snout by cutting cable tie and easing snout from ring nut of exhalation outlet valve holder.

2. If removing orinasal mask, remove ring nut and spacer that clamps orinasal mask to faceplate.



Steps 1 and 2 - Para 3-130

3-131. Drink Facility Removal.



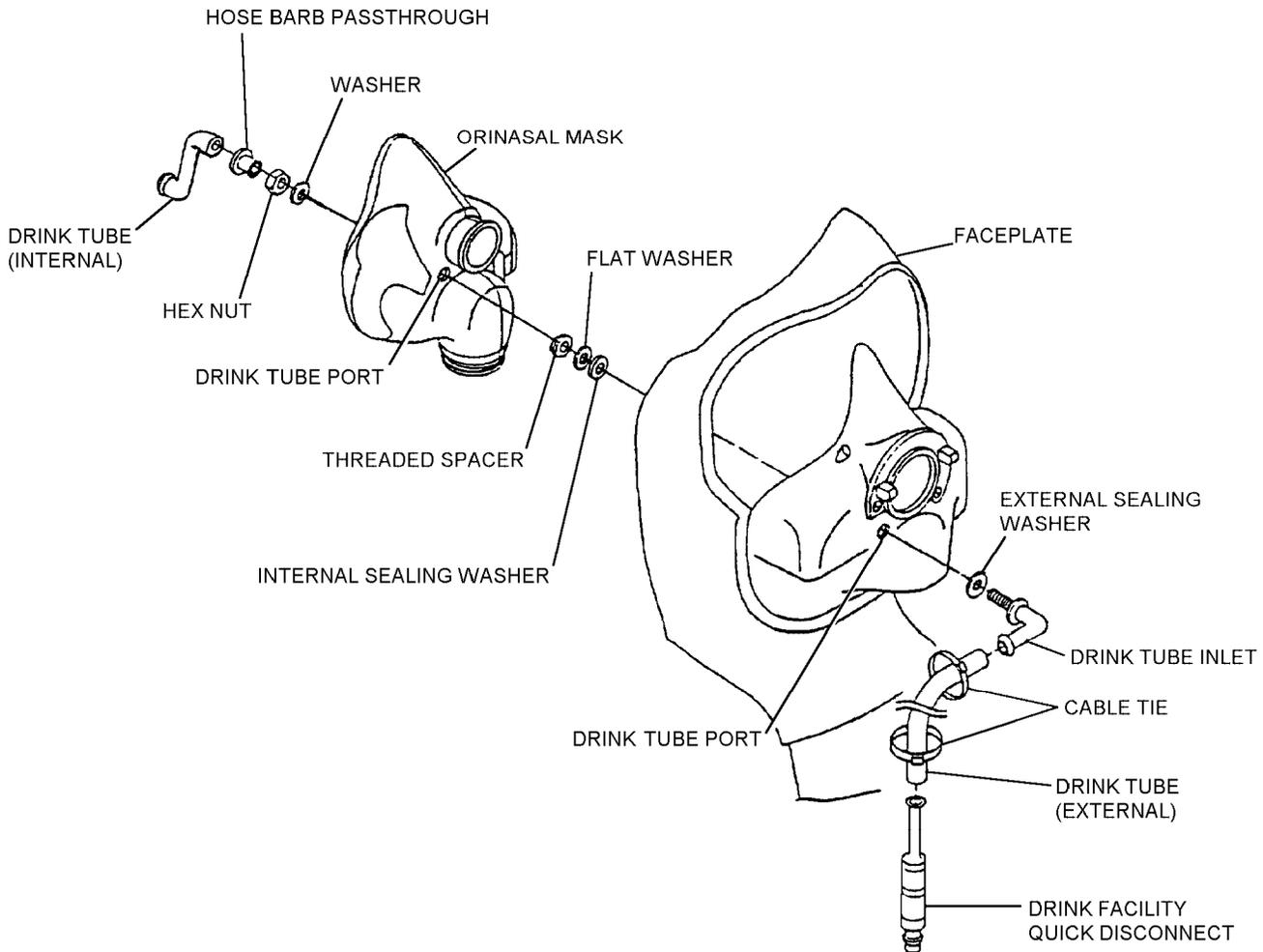
Be careful not to damage external drink tube when removing cable tie. If drink tube is cut, nicked, or damaged in any way, discard and replace with new drink tube.

NOTE

In order to remove Drink Facility Assembly from mask, orinasal mask removal will be required.

1. If not previously accomplished, remove microphone by first cutting cable tie securing it in orinasal mask cavity, then gently pushing it out of cavity from inside the hood.

2. Invert hood to expose the orinasal mask.
3. Carefully remove internal drink tube from hose barb pass through.
4. Using a 3/8-inch nut driver, remove and retain hose barb pass through and underlying hex nut from drink tube inlet. Remove and retain flat metal washer from drink tube inlet.
5. Carefully pull orinasal mask over threaded end of drink tube inlet in order to expose threaded spacer, flat metal washer and internal sealing washer between orinasal mask and faceplate.
6. Using a 3/8-inch nut driver, remove and retain threaded spacer. Remove and retain flat metal washer and internal sealing washer.
7. Remove drink tube inlet and external sealing washer from outside of faceplate by pulling it away from faceplate.



Steps 1 thru 7 - Para 3-131

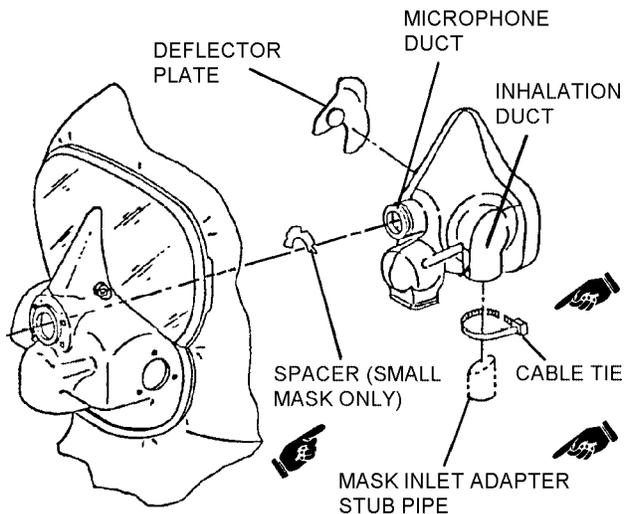
3p131s1

3-132. Orinasal Mask Removal.



Ensure components in paragraphs 3-129 and 3-130 have been removed prior to removing orinasal mask. Also ensure that paragraph 3-131, steps 1 through 3 have been completed.

1. Invert hood to expose orinasal mask.
2. Cut, remove and discard the cable tie securing orinasal mask inhalation duct to the mask inlet adapter.
3. Remove orinasal mask from within faceplate. If disassembling a small orinasal mask, remove and retain spacer.
4. Remove orinasal mask deflector plate, if required.
5. If needed, complete disassembly of drink facility assembly in accordance with steps 4 through 7, paragraph 3-131.



Steps 1 thru 5 - Para 3-132

3p132s1



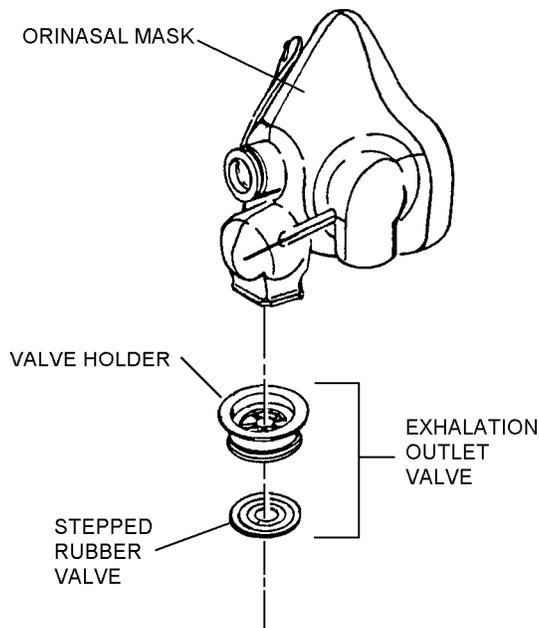
Ensure components in steps 1 through 4 have been removed prior to removing exhalation outlet valve. If only stepped rubber valve is to be removed, microphone, drink facility and orinasal mask removal will not be necessary. Carefully pull stepped rubber valve off valve holder.

3-133. Exhalation Outlet Valve Removal.

NOTE

If removing only stepped rubber valve, it is not necessary to perform procedures in paragraphs 3-129, 3-131 or 3-132.

1. Ease exhalation outlet valve from orinasal mask duct.

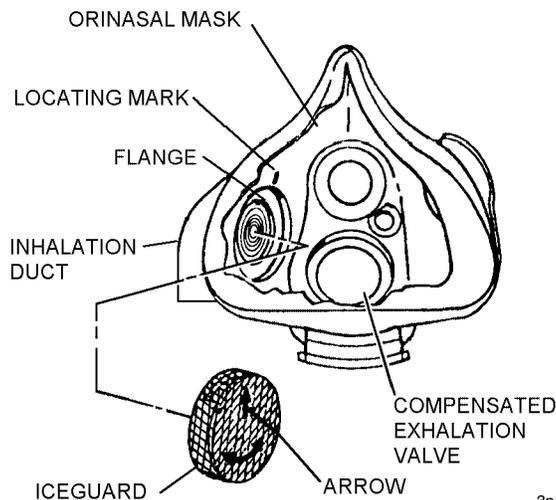


Step 1 - Para 3-133

3p133s1

3-134. Iceguard and Inhalation Valve Removal.

1. Remove iceguard by rotating iceguard body until engraved arrow is in line with mark molded on orinasal mask interior.

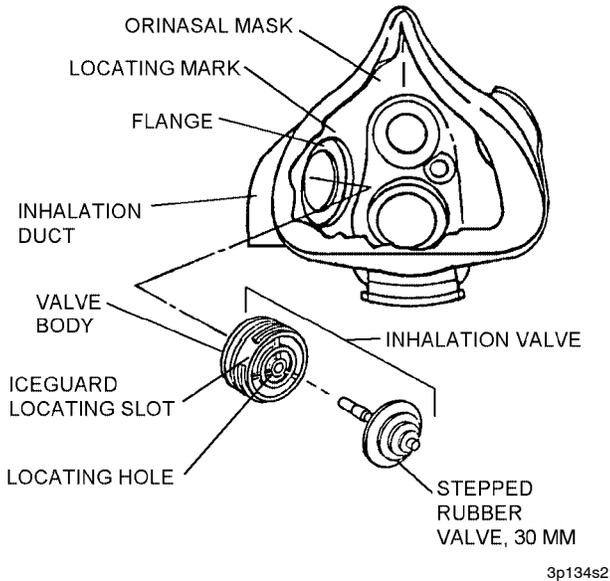


Step 1 - Para 3-134

3p134s1

NAVAIR 13-1-6.10

2. Remove inhalation valve by easing its valve body from flange of orinasal mask.



Step 2 - Para 3-134

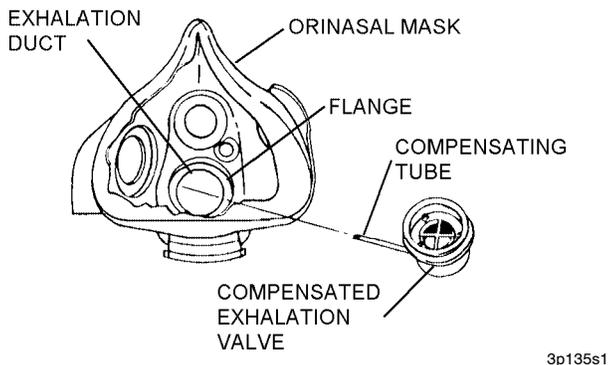
3-135. Compensated Exhalation Valve Removal.



Ensure orinasal mask has been removed, as specified in [paragraph 3-132](#).

1. Remove compensated exhalation valve body from its securing flange by gently pushing into orinasal mask cavity from exhalation duct.

2. Carefully withdraw compensating tube from within connecting passage.



Steps 1 and 2 - Para 3-135

NOTE

Compensated exhalation valve is not to be dismantled. If defective, valve shall be replaced.

3-136. Mask Inlet Hose/Anti-Suffocation Disconnect Removal.

1. Remove shear screw (brass) from anti-suffocation disconnect and disengage from the mask inlet adapter.

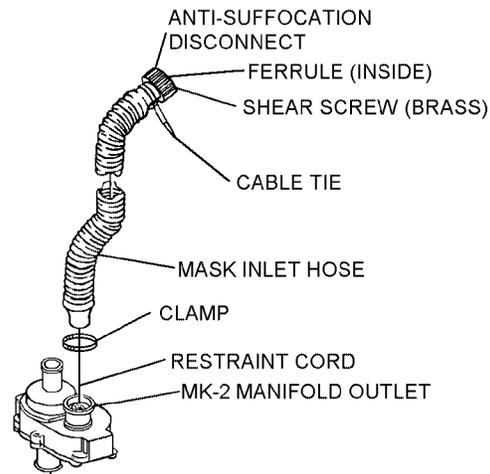
2. Disconnect restraint cord from ferrule located within the anti-suffocation disconnect. Retain ferrule.

3. Cut, remove and discard cable tie securing mask inlet hose to the anti-suffocation disconnect.

4. Pry mask inlet hose from the anti-suffocation disconnect.

5. Using low profile pincer, remove and retain stepless low profile clamp securing the mask inlet hose to left MK-2 manifold outlet port.

6. Remove mask inlet hose from manifold. Discard and replace hose if damaged.



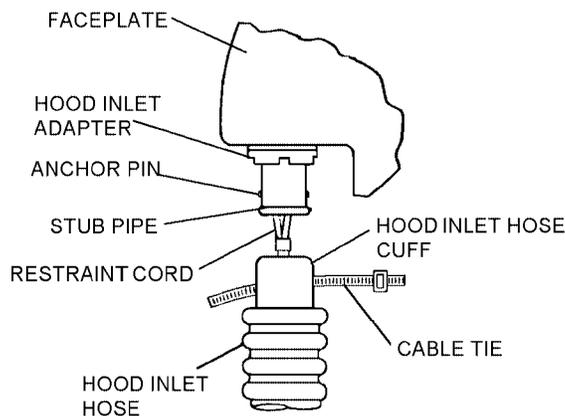
Steps 1 thru 6 - Para 3-136

3-137. Mask Inlet Adapter Removal.

1. Remove shear screw (brass) from the anti-suffocation disconnect. Disengage anti-suffocation disconnect from mask inlet adapter if not done previously in [paragraph 3-136](#).

2. Remove two screws securing mask inlet adapter to faceplate.

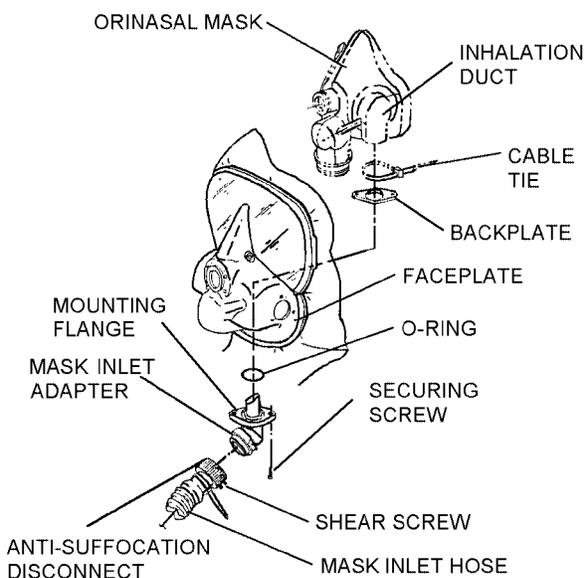
3. Invert hood to expose inner side of mask.
4. Cut and discard cable tie securing orinasal mask to mask inlet adapter if not previously done in [paragraph 3-132](#).
5. Withdraw mask inlet adapter from the faceplate.
6. Remove backplate.
7. Remove and discard sealing O-ring.



3p138s1

Steps 1 thru 4 - Para 3-138

5. Using low profile pincer tool, remove and retain (if not damaged) stepless low profile clamp (16.5 mm P/N CL 6592) securing hood inlet hose to MK-2 manifold.
6. Ease hood inlet hose from MK-2 manifold and remove hose. Leave restraint cord attached to manifold.
7. If damaged, discard and replace hood inlet hose.

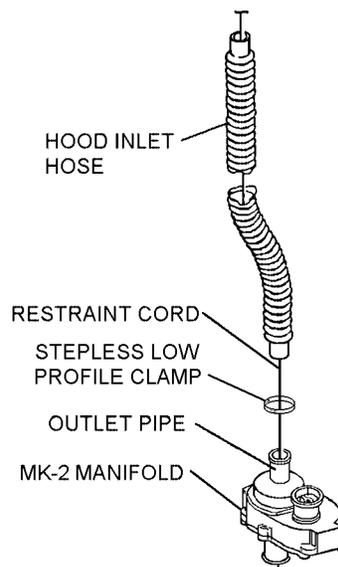


3p137s1

Steps 1 thru 7 - Para 3-137

3-138. Hood Inlet Hose Removal.

1. Cut, remove and discard cable tie securing hood inlet hose to hood inlet adapter.
2. Pry hood inlet hose off hood inlet adapter.
3. Remove and discard the PVC tape covering restraint cord anchor pin.
4. Withdraw and retain hood restraint cord anchor pin from within duct of hood inlet adapter using flat nose pliers.



3p138s5

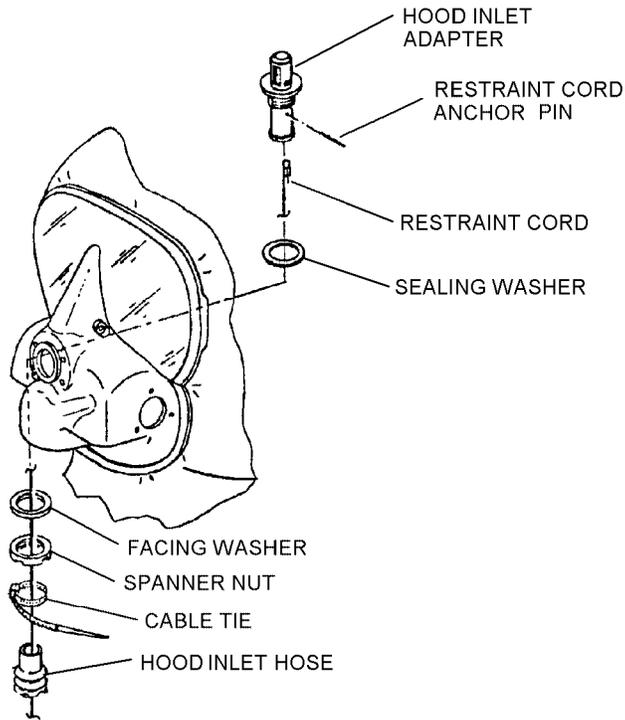
Steps 5 thru 7 - Para 3-138

3-139. Hood Inlet Adapter Removal.

1. Remove hood inlet hose as specified in [paragraph 3-138](#) if not already done.

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2. Remove hood inlet spanner nut securing hood inlet adapter to faceplate.
3. Remove facing washer.
4. Invert hood to expose inner side of mask.
5. Remove hood inlet adapter and discard sealing washer.



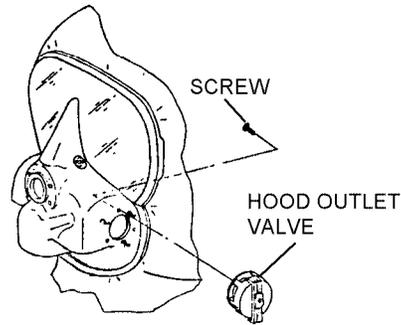
Steps 1 thru 5 - Para 3-139

3-140. Hood Outlet Valve Removal.



Ensure orinasal mask is removed as specified in [paragraph 3-132](#).

1. Invert hood to expose inner side of mask.
2. Remove and retain three screws securing hood outlet valve to orinasal mask.
3. Remove valve assembly.

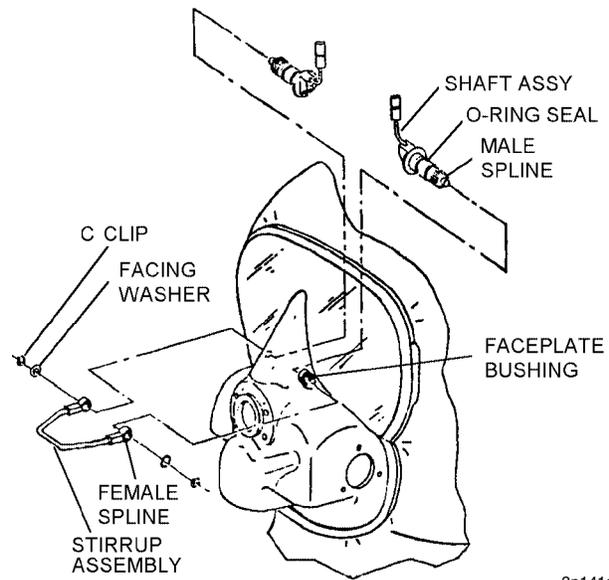


3p140s1

Steps 1 thru 3 - Para 3-140

3-141. Nose Occluder Removal.

1. Remove the C-clips from nose occluder stirrup.
2. Remove facing washers.
3. Invert hood to expose inner side of mask.
4. Ease shaft assembly through nose occluder stirrup, then through faceplate bushing.
5. Remove shaft assembly from mask.
6. Remove two rubber O-ring seals from shaft assembly and discard.



3p141s1

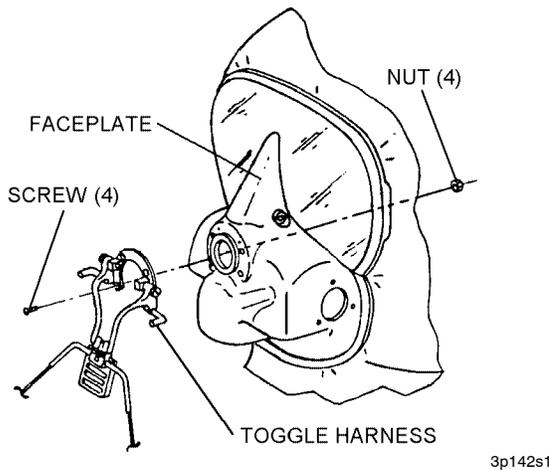
Steps 1 thru 6 - Para 3-141

3-142. Toggle Harness Removal.



Ensure orinasal mask is removed as specified in [paragraph 3-132](#).

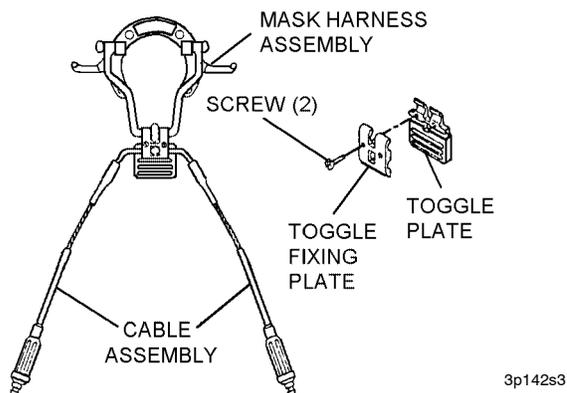
1. Invert hood to expose inner side of mask.
2. Remove four screws and nuts securing toggle harness to faceplate. Retain hardware.



Steps 1 and 2 - Para 3-142

3. Remove two screws to remove toggle plate and toggle fixing plate from harness assembly.

4. Remove two cable assemblies.



Steps 3 and 4 - Para 3-142

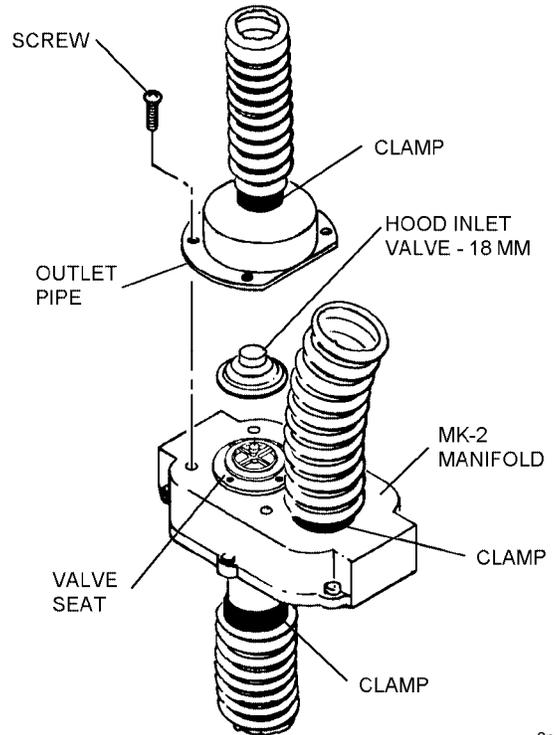
3-143. Hood Inlet Valve Removal.

1. Remove four screws securing outlet pipe to the MK-2 Manifold, and remove the outlet pipe.

2. Inspect valve for dirt and debris, clean with water if necessary.

3. If valve is defective, grasp by the center stub and lift it off metal stem on valve seat.

4. Install new valve and reassemble outlet pipe to MK-2 Manifold using a thin coating of sealing compound on screws.



Steps 1 thru 4 - Para 3-143

5. Retest.

3-144. LOWER ASSEMBLY REMOVAL.

3-145. MK-2 Manifold Removal.

3-146. Mask Inlet Hose. Carefully remove and retain (if not damaged), stepless low profile clamp securing mask inlet hose to left outlet port of manifold so as not to damage the mask inlet hose or outlet port. Pry mask inlet hose off manifold left outlet port ([figure 3-48](#)).

3-147. Hood Inlet Hose. Carefully remove and retain (if not damaged), stepless low profile clamp securing hood inlet hose to right outlet port of manifold so as not to damage hood inlet hose or outlet port. Pry the hood inlet hose off of right outlet port ([figure 3-48](#)).

3-148. Manifold Hose. Carefully remove and retain (if not damaged), stepless low profile clamp securing manifold hose to inlet port so as not to damage inlet port. Pry manifold hose off of inlet port. ([figure 3-48](#)).

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3-149. Pusher Fan Subassembly Removal (figure 3-49).

3-150. Manifold Hose (3/4 inch - 7/8 inch). Carefully remove and retain (if not damaged) the stepless low profile clamp securing manifold hose to J-manifold so as not to damage J-manifold port. Pry manifold hose off port. Retain manifold hose.

3-151. J-Manifold and Gasket. Unscrew J-manifold from the C2 or C2A1 canister. Retain J-manifold. Pull J-manifold gasket from threaded end of J-manifold. Retain gasket.

3-152. Pusher Fan and C2 or C2A1 Canister. Carefully cut, remove, and discard cable tie securing pusher fan to C2 or C2A1 canister. Pull pusher fan off of C2 or C2A1 canister. Retain pusher fan and C2 or C2A1 canister.

3-153. Pusher Fan Battery. Disconnect battery from pusher fan by grasping and pulling pusher fan plug from battery. Retain battery for storage or recharge.

3-154. CLEANING OF DISASSEMBLED COMPONENTS.

3-155. Disassembled component parts of the A/P23P-14A(V) Respirator Assembly shall be thoroughly cleaned to remove all traces of sealing compound, sealing varnish, lubricant, and other foreign matter such as dirt, sand, dried liquid nourishment, or vomit. If internal compartments of valves and hoses cannot be thoroughly cleaned, they shall be replaced. Cleaning of disassembled components shall be performed by a qualified Aircrew Survival Equipmentman (PR). Cleaning procedures are as follows:

Materials Required		
Quantity	Description	Reference Number
As Required	Toothpick	—
As Required	Swab, Cotton	—
As Required	Soap Mild	—
As Required	Cloth, Cotton	—
As Required	Pad, Gauze	—
As Required	Solvent, Toluene	NIIN 00-281-2002
As Required	Alcohol, Isopropyl Rubbing	TT-I-735 NIIN 00-655-8366
1	Brush, Sable	—
As Required	Water	—
As Required	Towelettes, SANI-COM,	No. 3205 (CAGE 18195)

Materials Required (Cont)

Quantity	Description	Reference Number
As Required	Bleach, Laundry	A-A-1427 NIIN 00-598-7316
As Required	Cleaner, Tobacco Pipe	—
1	Brush, Acid	NIIN 00-514-2417
As Required	Cleaning Compound, Type 1	MIL-C-43616
As Required	Cloth, Abrasive	—
As Required	Cloth, Cotton	—
1 pr.	Gloves, Acrylonitrile rubber or Neoprene	—



When cleaning mask, do not allow solvent to come in contact with the faceplate.

Velveteen covers are not to be used for cleaning or polishing.

3-156. MCK-3A/P MASK ASSEMBLY CLEANING.

3-157. Toggle Harness Cleaning.

1. Remove all traces of sealing compound (silicone rubber) using a gauze pad. If necessary, gently scrape sealing compound with fingernail or toothpick to loosen it.

2. Remove sealing compound from toggle harness and four attaching screws in a similar manner.

3-158. Nose Occluder Cleaning.

1. Clean lubricant from nose occluder shaft assemblies and faceplate bushings with a cotton swab using mild soap and warm water.

2. Rinse soap from shaft assemblies using a cotton swab and warm water.

3. Wipe shaft assemblies with a clean dry cloth. Allow to air dry completely.

3-159. Hood Outlet Valve Cleaning.

1. Remove all traces of sealing compound (silicone rubber) from around the areas of hood outlet port of faceplate using a gauze pad. If necessary, gently scrape sealing compound with fingernail or toothpick to loosen it.

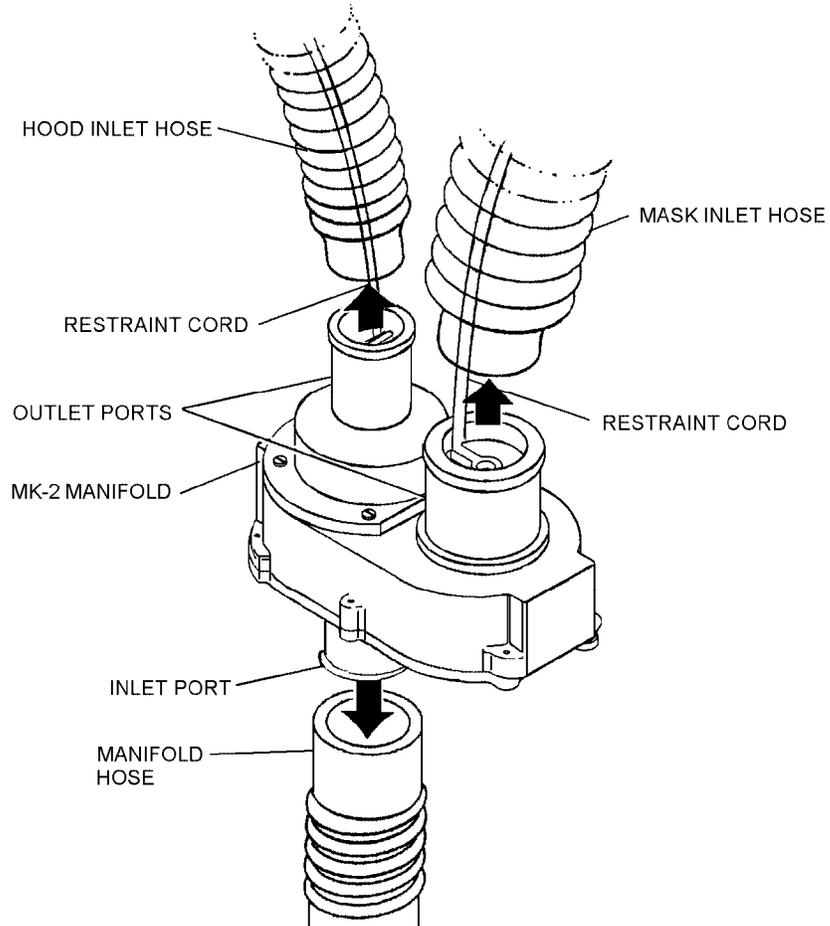


Figure 3-48. Removal of Hoses from MK-2 Manifold

3-48

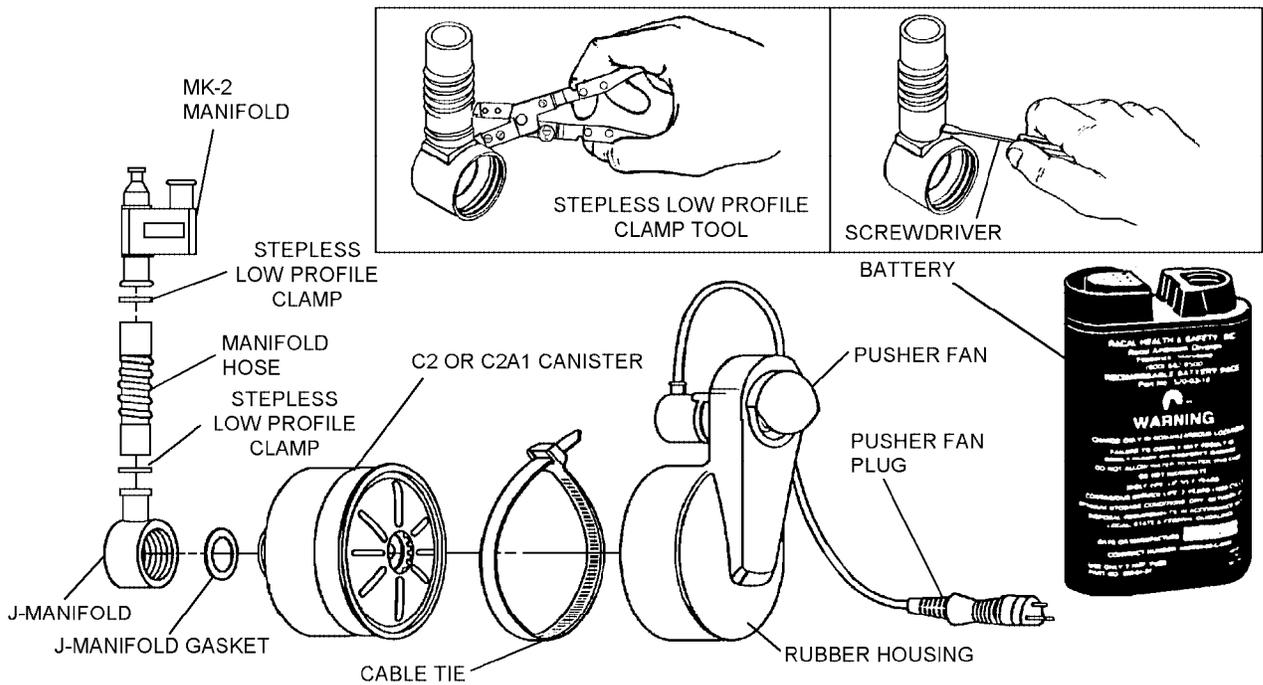


Figure 3-49. Disassembly of Lower Assembly

3-49

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2. Remove sealing compound from the hood outlet valve and three attaching screws in a similar manner.

3-160. Hood Inlet Adapter Cleaning.

1. Remove any traces of sealing varnish or sealant from outer surface of hood inlet adapter using a gauze pad moistened with solvent.

2. Wipe cleaned surfaces dry using a clean, dry gauze pad.

3-161. MK-2 Manifold Ports Cleaning.

1. Clean surface of manifold ports using a gauze pad moistened with solvent.

2. Wipe cleaned surfaces dry using a clean, dry gauze pad.

3-162. Mask Inlet Adapter Cleaning.

1. Remove all traces of sealing compound (silicone rubber) from around areas of mask inlet adapter, back plate and faceplate using a gauze pad. If necessary, gently scrape sealing compound with a fingernail or toothpick to loosen it.

2. Remove sealing compound from attaching screws in a similar manner.

3-163. Anti-Suffocation Disconnect Cleaning.

1. Remove any traces of sealing varnish from outer surface of manifold outlet port using a gauze pad moistened with solvent.

2. Wipe cleaned surfaces using a clean, dry gauze pad.



The compensated exhalation valve must be removed from orinasal mask before internal cleaning with isopropyl alcohol.

3-164. Compensated Exhalation Valve Cleaning.

1. Add isopropyl alcohol to a container of sufficient size to partially submerge compensated exhalation valve.

NOTE

Valve plate cannot be depressed while compensating tube is covered.

2. Cover end of compensating tube with finger to prevent alcohol from entering tube.

3. Submerge valve in alcohol and using a sable brush, gently clean the valve.

4. Gently shake excess alcohol from valve and allow to air dry.

3-165. Inhalation Valve Cleaning.

1. Turn iceguard 90° and lift it from the inhalation valve assembly.



Do not clean inhalation valve with SANI-COM towelettes or sanitizing solution.

2. Gently lift valve with finger and clean underside of valve and valve seat with a sable brush moistened with water.

3. Clean top of valve in same manner.

4. Allow to air dry.

5. Clean iceguard with a sable brush and water to remove any foreign particles from mesh.

6. Allow to air dry.

3-166. Snout and Exhalation Outlet Valve Cleaning.

1. Remove snout to expose exhalation outlet valve (paragraph 3-130). Cut cable tie and ease snout from ring nut of exhalation outlet valve holder.

2. Grasp raised rubber knob at valve center and pull valve off its seating pin.



Do not clean inhalation or exhalation valves with SANI-COM towelettes or sanitizing solution.

3. Clean both sides of valve, and valve seat using a sable brush moistened with water.
4. Set valve aside to air dry with knob side of valve facing down on bench. Allow valve seat area to air dry.
5. Reinstall valve on seating pin, ensuring it is fully seated on pin.
6. Clean snout with a gauze pad moistened with water.
7. Wipe dry with a clean, dry cotton cloth.

3-167. Drink Tube Cleaning.

1. Remove all traces of sealing compound (silicone rubber) from drink tube's mounting flange, backing plate, hex nut, and screw using a gauze pad. If necessary, gently scrape sealing compound with fingernail or toothpick to loosen it.
2. Remove all traces of sealing compound from faceplate's drink tube port in a similar manner.

3-168. Orinasal Mask Cleaning.

1. Avoiding the valves, clean internal surfaces of the orinasal mask with cleansing towelettes (SANI-COM No. 3205) being sure to wipe under rolled-over edges of orinasal mask.
2. Wipe the microphone with a towelette.
3. Allow to air dry.

3-169. Faceplate, Hood, Hoses, Apron, and Neck Seal Cleaning.



Abrasive cleaners, adhesives, and solvents must not be applied to visual areas of faceplate. Velveteen covers are not to be used for cleaning or polishing.



Damage or scratches to the faceplate cannot be repaired. Use care when cleaning the faceplate.

1. Clean the inner visual area of the faceplate using water with a soft cotton cloth or dampened cham-
ois.
2. Wipe faceplate with clean, dry cotton cloth to remove excess water.
3. Allow to air dry.
4. Clean interior and exterior surfaces of hood, apron, and neck seal with a gauze pad moistened with water.
5. Clean all hoses with gauze pad moistened with water.
6. Wipe excess water from hood, apron, and neck seal using a clean, dry cotton cloth.
7. Allow to air dry.

3-170. LOWER ASSEMBLY CLEANING.

3-171. MK-2 Manifold Cleaning.

3-172. Metallic Components.

1. Remove any traces of sealing varnish from outer surface of the MK-2 manifold inlet and outlet ports using a gauze pad moistened with solvent.
2. Wipe cleaned surface dry using a clean, dry gauze pad.

3-173. Hood Inlet Valve.



When cleaning hood inlet valve, apply only moderate pressure so as not to damage the valve.

1. Remove hood inlet valve in accordance with [paragraph 3-143](#).
2. Soak hood inlet valve in water for five minutes. Components shall be fully submerged and cleaned using a soft brush or clean lint-free cloth.
3. After the soaking is complete, remove hood inlet valve using acrylonitrile rubber, or neoprene gloves, and place on a clean surface, preferably a lint-free cloth.
4. Cover all parts until dry.

5. Install valve and reassemble outlet pipe to MK-2 manifold using a thin coating of sealing compound on screws.

6. If parts are not to be immediately assembled, package in approved plastic bags.

3-174. Pusher Fan Subassembly Cleaning.

3-175. J-Manifold and Gasket. Remove any traces of adhesive or lubricant from outer surface of J-manifold port using a gauze pad moistened with solvent. If necessary, scrape residual adhesive with fingernail or toothpick to loosen. Clean J-manifold gasket using a gauze pad moistened with water and allow to air dry. Wipe cleaned surfaces dry using a clean dry gauze pad.

3-176. Pusher Fan. Remove pusher fan assembly from respirator assembly by carefully cutting cable tie that secures the C2 or C2A1 canister to pusher fan. Remove C2 or C2A1 canister from pusher fan. Clean internal and external surfaces of pusher fan with cleansing towelettes. Moisten gauze pad with water and squeeze to remove excess to prevent dripping. Wipe pusher fan interior and pusher fan inlet. Allow to air dry.

3-177. C2 or C2A1 Canister. Clean, using a cleansing towelette to remove dirt, grime or any other debris from external surfaces or threads. Wipe cleaned surfaces dry using a clean dry gauze pad. Be sure no moisture remains inside canister.

3-178. Battery. Clean, using a cleansing towelette to remove dirt, grime or any other debris from the external surfaces. If dirt or debris is found in the battery receptacle, it should be removed using a toothpick or pipe cleaner. If 3-pin receptacle is corroded, battery pack should be replaced. Wipe cleaned surfaces dry using a clean dry gauze pad.

3-179. PROCEDURES AND CRITERIA FOR REPLACEMENT OF FILTER CANISTERS.

3-180. C2 OR C2A1 CANISTER REPLACEMENT.

The C2 or C2A1 canister is the only filter canister recommended for use with the A/P23P-14A(V) respirator assembly. They are designed to remove toxic and/or irritating chemical vapors, gases, and particulate contaminants including biological organism likely to be used in warfare. Protective capability can be affected by environmental conditions. Hot and humid climates will degrade protection after two months, basic cold climates after twenty-four months, and all other climates after twelve months. Unit NBC officers will provide specific instructions for replacement depending on the unique tactical situation.

WARNING

Only the C2 or C2A1 canister (NIIN 01-119-2315) shall be used as part of A/P23P-14A(V) Respirator Assembly.

Wear protective mask and clothing, in accordance with local standard operating procedures, when replacing or disposing of a canister that has been exposed to a toxic agent.

J-manifold gaskets are occasionally displaced from manifold when C2 or C2A1 canister is removed. Visual inspection to ensure that the gasket is in place must be performed when C2 or C2A1 canisters are removed or installed.

Filter canisters do not provide protection against ammonia gas or carbon monoxide. Protection against sulfur dioxide gas can be provided for only 5 to 10 minutes.

3-181. Criteria for C2 or C2A1 Replacement. Replace canisters after any of the following occurrences:

1. Physical damage.
 - a. Canister is cracked, split, dented on a seam, dented deeper than 1/4 inch, crushed or has holes.
 - b. Threads are damaged or dented.
 - c. Lip of threaded neck is dented in excess of 1/32 inch deep.
 - d. Body of canister has rust or pitting.
 - e. Seams have excessive rust (approximately greater than 10% of seam length).
2. Canister has been immersed in water.
3. Canister inlets clogged with dirt, oil, grease, or other foreign matter.
4. Excessive resistance to airflow or an increase in breathing resistance is felt.
5. The lot number of canister is listed as unserviceable in SB 3-30-2.
6. CB agent contamination.

NOTE

Upon its availability, refer to U.S. Navy/ U.S. Marine Corps Nuclear, Biological & Chemical (NBC) Defense Handbook for detailed procedures for disposition of contaminated canisters. Until its issuance refer to the U.S. Army Field Manual, FM 3-5, NBC Decontamination and the Naval Aviation Nuclear, Biological, and Chemical Defense Resource Manual.

a. Canisters have been exposed to any agents for any period of time exceeding twenty-four hours under battlefield conditions during typical missions.

b. Prior to a mission where CB agents may be employed.

7. When directed by unit commander or higher authority.

3-182. Canister Replacement Procedures.

1. Carefully cut, remove, and discard cable tie securing pusher fan to C2 or C2A1 canister.

2. Remove pusher fan from C2 or C2A1 canister and retain.

3. Unscrew (counterclockwise) C2 or C2A1 canister from J-manifold.

4. Remove and inspect J-manifold gasket.

NOTE

Replace with new gasket only if damage or deterioration is evident.

5. Clean J-manifold using a gauze pad moistened with isopropyl alcohol and allow to air dry.

6. Clean gasket using a gauze pad moistened with water and allow to air dry.

7. Clean pusher fan.

8. Reinstall J-manifold gasket ensuring gasket is fully seated and flat. Gasket should be below threads in J-manifold canister opening.

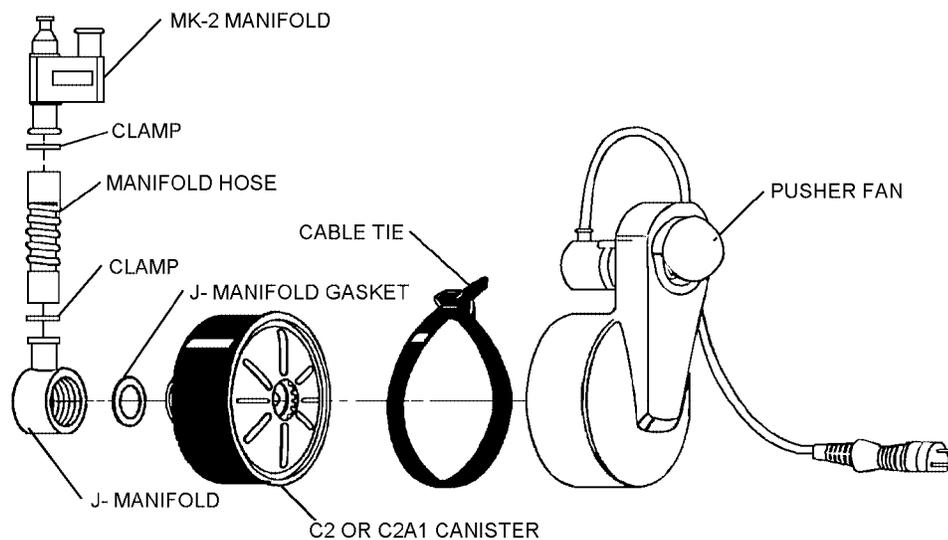
9. Screw replacement C2 or C2A1 canister clockwise into J-manifold until hand tight.

NOTE

Ensure canister plug and cap are removed.

10. Slide pusher fan rubber housing over C2 or C2A1 canister until canister lip bottoms in rubber housing. Ensure pusher fan is positioned as shown.

11. Using cable tie tool preset to HVY (No. 8) setting, install cable tie around rubber housing to secure canister inside rubber housing. Ensure cable tie connection is tight.



Steps 8 thru 11 - Para 3-182

3p182s8

NAVAIR 13-1-6.10

3-183. Pusher Fan Battery. Plug pusher fan cord into battery pack. Be careful when inserting plug to avoid breaking off any of the prongs. Ensure plug bottoms out in battery socket.

3-184. ASSEMBLY.

3-185. Instructions for assembling the A/P23P-14A(V) Respirator Assembly are contained in the following paragraphs. The instructions can be followed in sequence for the complete assembly of respirator assemblies, or each step can be done separately as required for that specific part. To assemble respirator assembly or any of its components, proceed as follows:

Materials Required		
Quantity	Description	Reference Number
As Required	Sealing Compound, Type I, White	NIIN 00-877-8972
As Required	Lubricant, KRYTOX, Type II, 240 AC	NIIN 00-961-8995
As Required	Varnish, Sealing	TBD
As Required	Cloth, Cotton	—
As Required	Tape, PCV, 1/4-inch	—
As Required	Thread Locking Compound, Locktite 222	NIIN 01-085-3639
1	Adapter, Clip	1505165
As Required	Cable Tie, 4.8 mm	CL 6227
As Required	Cable Tie, 3.6 mm	CL 6226
As Required	Cable Tie, 2.4 mm	CL 6225
As Required	Cable Tie, 7.6 mm, 18 inch	CL 6528
As Required	Sealant, RTV 732	—
2	Stepless Low Profile Clamp (28.6 mm)	3297AS201-3
1	Stepless Low Profile Clamp (21.9 mm)	CL 6593
1	Stepless Low Profile Clamp (16.5 mm)	CL 6592
As Required	Adhesive	NIIN 00-117-8738
1	Applicator Brush	—
4	O-ring	—

Support Equipment Required

Quantity	Description	Reference Number
1	Cable Tie Tool, Heavy Duty	NIIN 00-937-5438
1	Elastrator	NIIN 01-124-0649
1	Pincer Tool, Low Profile	Oetiker 14100055
	or	
1	Pliers, Hose Clamp	NIIN 01-073-4187
1	Screwdriver, 6 X 1/8-inch Std	—
1	Screwdriver, Slot Head	—
1	Square Drive, 1/4-inch	—
1	Torque Driver	—
1	Cable Tie Tool, Standard	MS90387-1
1	Nut Driver, 1/8-inch	—
1	Nut Driver, 3/8-inch	GGG-W-657

NOTE

All parts must be cleaned in accordance with [paragraph 3-154](#) before assembly can begin.

Refer to [paragraph 3-109](#) for cable tie installation procedures.

Refer to [paragraph 3-110](#) for stepless low profile clamp installation procedures.

Repair of the MCK-3A/P Mask components other than hood, bellows and apron, shall be limited to replacement of defective parts as determined by inspection and troubleshooting.

3-186. MCK-3A/P MASK ASSEMBLY.

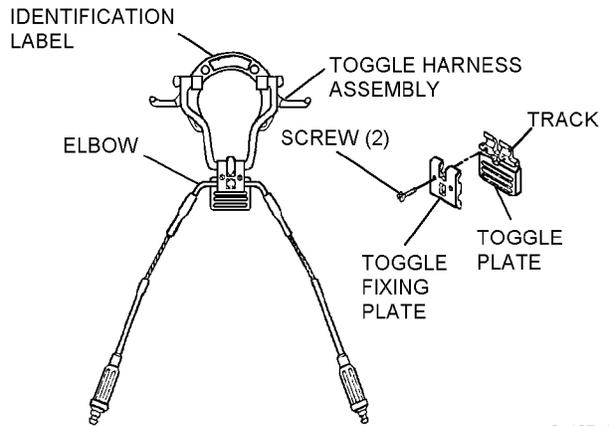
NOTE

In order to improve clarity of the illustration in the following mask assembly instructions, the toggle harness and nose occluder assemblies will appear only in figures addressing these items.

3-187. Toggle Harness Installation.

1. Place elbow portions of replacement cable assemblies (P/N 1505083) into track located on front of toggle plate.

2. Align mask harness assembly with upper lips of the toggle plate. Fasten toggle fixing plate to front of toggle plate using two screws.

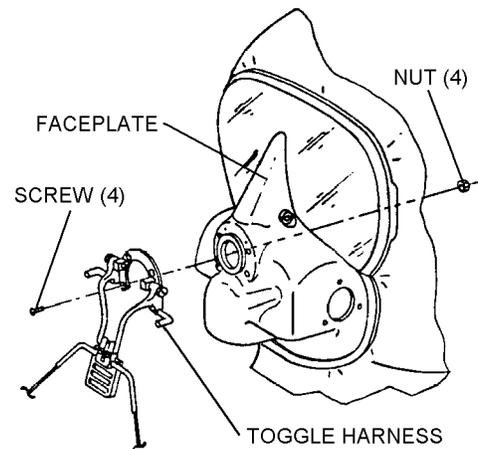


Steps 1 and 2 - Para 3-187

3p187s1

3. Coat the countersunk portions of the four mounting screws using sealing compound.

4. Fasten toggle harness assembly to faceplate using four coated screws.



Steps 3 thru 5 - Para 3-187

3p187s3

CAUTION

Do not overtighten. Overtightening screws will crack polycarbonate faceplate.

5. Invert hood, attach and tighten nuts to screw entering faceplate using torque wrench set to 40-42 oz. in.

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3-188. Nose Occluder Installation.

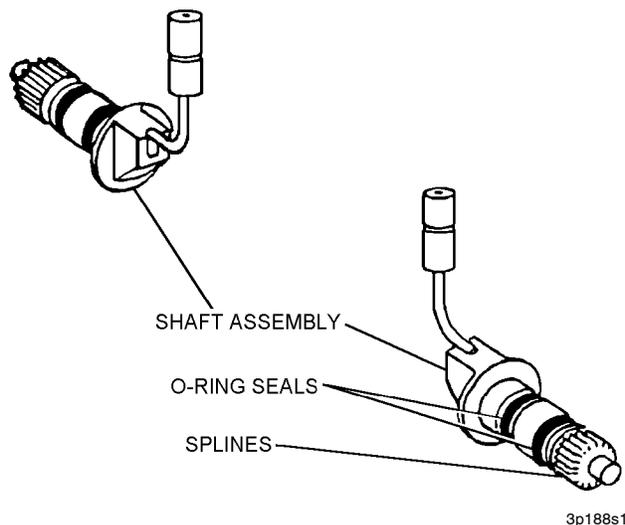
CAUTION

When assembling nose occluder into mask, care should be taken not to force any parts together. Nose occluder and faceplate bushings which are in good working order should fit together snugly but easily. Bushings are black coated brass inserts which are press fitted into the faceplate and sealed with a silicone rubber sealant. Using excessive pressure could dislodge nose occluder faceplate bushings.

NOTE

It is suggested that prior to assembling nose occluder in mask, the shaft assemblies and stirrup be engaged several times to remove any excess coating on splines. If the splines do not engage smoothly after this, they may be out of specification and should be replaced. Use Krytox sparingly to ensure that shaft assembly splines will properly fit into the stirrup splines without excess force. There are no published repair procedures for either spline interference or faceplate bushings at this time.

1. After selecting proper nose occluder kit, before assembling nose occluder to stirrup assembly, apply Krytox lubricant to splined ends of nose occluder shaft assemblies. Work splines in and out of stirrup assembly splines several times until male splines engage smoothly with female splines.



Steps 1 and 2 - Para 3-188

2. Inspect and lightly lubricate two O-ring seals on shaft assemblies.

3. Insert one shaft assembly through inside of faceplate bushing. Position roller portion of assembly flush against inner side of faceplate nose bridge and then engage splines. Repeat for opposite shaft assembly.

4. Position stirrup assembly to be fully down into outer portion of faceplate.

5. Maintain relative positions of shaft assemblies and stirrup, and then ease shaft assemblies through faceplate bushing to engage splines of stirrups.

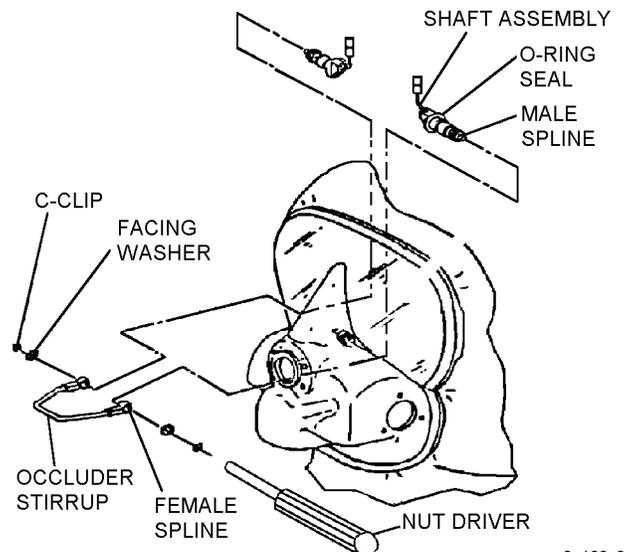
6. Ensure stirrup assembly is in down position. If right handed, use left hand inside of mask to support shaft assembly during C-clip installation, vice versa if left handed.

7. Ensure shaft assembly is completely seated through stirrup end. Place washer on shaft end. Ensure C-clip groove is visible with washer in place.

8. Apply Krytox to end of a 1/8-inch nut driver. Krytox will serve as an installation lubricant and will hold C-clip in place on nut driver.

9. Place C-clip on end of nut driver and adjust C-clip to be centered over nut driver opening.

10. Line up 1/8-inch nut driver directly over center of shaft end and press C-clip into groove. Verify C-clip is properly seated.



Steps 3 thru 10 - Para 3-188

11. Repeat steps 3 through 10 for opposite side.

NAVAIR 13-1-6.10

3-189. Hood Outlet Valve Installation.

1. Coat threaded portions of the three securing screws with a thin, even coat of sealing compound (type I, white).

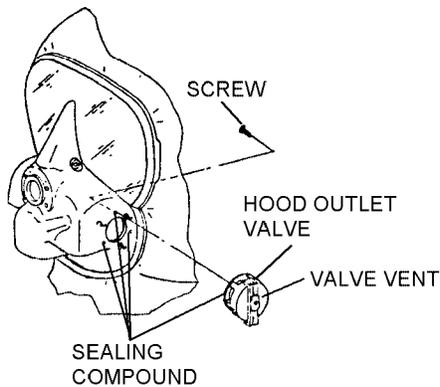
2. Apply an even film of sealing compound to mating surface of hood outlet valve and to faceplate joint. Place valve over hood outlet port with valve vent positioned to discharge towards rear of hood.

CAUTION

Do not overtighten. Overtightening screws will crack polycarbonate faceplate.

3. Install coated screws to secure valve into place. Tighten the screws with torque screwdriver set to 8-10 oz. in.

4. Remove any excess sealing compound using clean, dry absorbent cloth.



Steps 1 thru 4 - Para 3-189

3p189s1

3-190. Hood Inlet Adapter Installation.

1. Invert the hood to expose inner side of mask.

2. Position a new sealing washer (Part No. 1500835) and install hood inlet adapter through faceplate port, taking care to align flat side on adapter flange with molded flat on faceplate port.

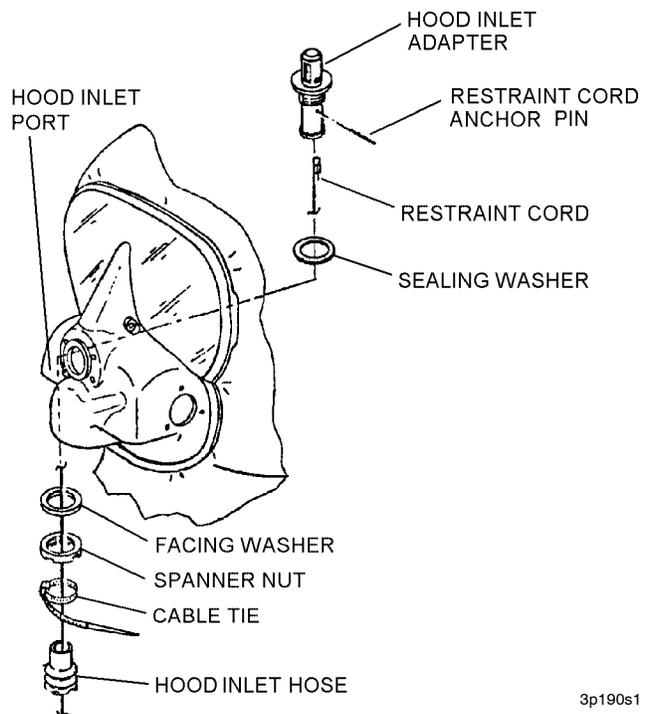
3. Restore hood to its normal position.

3-88

CAUTION

Do not overtighten. Overtightening spanner nut will crack polycarbonate faceplate.

4. Install facing washer, then fit spanner nut. Tighten spanner nut using ring nut spanner attached to torque wrench set to 14-16 lb. in.



3p190s1

Steps 1 thru 4 - Para 3-190

5. Install hood inlet hose in accordance with [paragraph 3-191](#).

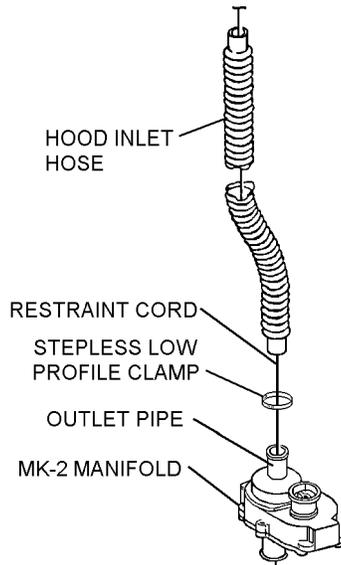
3-191. Hood Inlet Hose Installation.

1. Feed free end of restraint cord through hood inlet hose.

2. Install a 16.5 mm stepless low profile clamp (CL 6592) around hood inlet hose cuff. Position the locking head toward the wearer.

3. Engage cuff of hood inlet hose over manifold outlet pipe, then hand-seat cuff to fully engage hose on manifold outlet.

4. Using a low profile pincer, secure the stepless low profile clamp in place.



Steps 1 thru 4 - Para 3-191

3p191s1

5. Insert loop formed at free end of restraint cord into orifice of hood inlet adapter.

6. Fit restraint cord anchor pin through hood inlet adapter, engaging loop of restraint cord and terminating flush with sides of hood inlet adapter. Wrap one turn of PVC tape, 1/4 inch wide, around external circumference of the hood inlet adapter to overlay both ends of pin. Smooth the tape and apply without crease or wrinkle.

7. Apply a thin, even coat of sealing varnish to external surface of the stub pipe, taking care not to apply any sealing varnish to the inner surface of the hood inlet adapter.

8. Center loop of the restraint cord around the anchor pin.

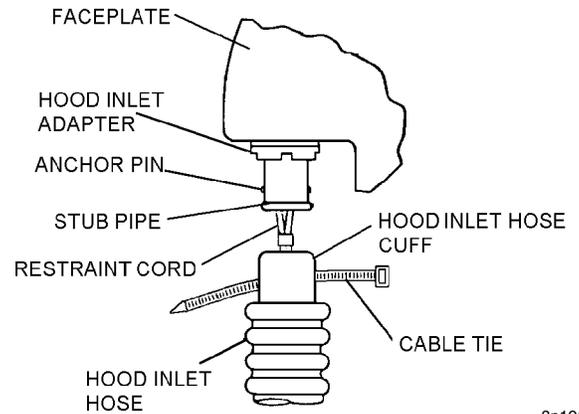
9. Engage cuff of hood inlet hose over stub pipe of the hood inlet adapter, then push cuff down for full engagement.

10. Rotate cuff around stub pipe to assure an even spread of sealing varnish over inner surface of cuff.

11. Remove any excess sealing varnish using clean, dry absorbent cloth.

12. Ensure hood inlet hose is straight and free of twists.

13. Position a 4.8 mm cable tie to attach the hood inlet hose to hood inlet adapter such that locking head is facing to left rear end of connector.



3p191s7

Steps 7 thru 13 - Para 3-191

14. Set cable tie tool (MS90387-1) to its STD (No. 7) setting, then tension cable tie to secure hood inlet hose connection to hood inlet adapter. Remove and discard excess portion of cable tie.

3-192. Mask Inlet Adapter Installation.

1. Install a new O-ring (P/N 1500956) within mounting flange on the mask inlet adapter.

2. Insert mask inlet adapter through faceplate port.

3. Invert hood to expose inside of faceplate.

4. Insert backplate over mask inlet adapter stub pipe, assuring backplate, faceplate, and mounting flange screw holes are aligned.

5. Return hood to normal position.

6. Apply a thin, even coat of sealing compound to threaded portion of two securing screws.

7. Thread the screws through holes in mask inlet mounting flange and faceplate to engage backplate.



Do not overtighten. Overtightening screws will crack polycarbonate faceplate.

8. Ensure sealing O-ring is correctly positioned to seal mask inlet adapter to faceplate, then tighten screws with torque wrench set to 40-42 oz. in.

9. Remove any excess sealing compound using a clean, dry absorbent cloth.

10. If orinasal mask was not removed, proceed with step 14. If orinasal mask was removed, proceed with step 11.

11. Ensure orinasal mask is centered within faceplate, then engage orinasal mask inhalation duct over mask inlet adapter; ensure a firm fit.

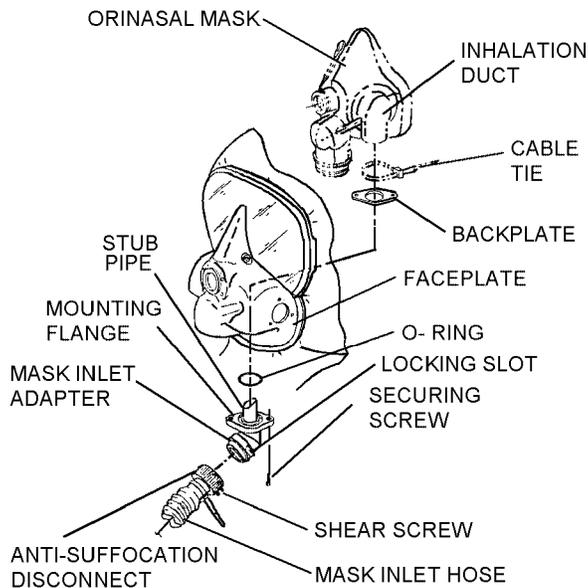
NAVAIR 13-1-6.10

12. Clamp orinasal mask inhalation duct to mask inlet adapter stub pipe using a 3.6 mm cable tie with locking head positioned between orinasal mask and faceplate, on the inhalation duct.

13. Using a cable tie tool preset to its INT tension setting, secure inhalation duct to mask inlet adapter stub pipe. Remove and discard excess portion of cable tie.

14. Connect anti-suffocation disconnect to mask inlet adapter, taking care to assure the mask inlet hose is not twisted.

15. Install shear screw (brass) to lock anti-suffocation disconnect.



Steps 1 thru 15 - Para 3-192

3p192s1

3-193. Mask Inlet Hose/Anti-Suffocation Disconnect Installation.

1. Feed free end of restraint cord through mask inlet hose and anti-suffocation disconnect.

2. Using a bowline knot, tie restraint cord to restraint cord pin.

3. Coat external surface of the anti-suffocation disconnect with a thin, even coat of sealing varnish.

4. Ease one end of the mask inlet hose cuff onto manifold outlet, and other cuff onto anti-suffocation disconnect.

5. Rotate both ends of mask inlet hose around their respective connections to ensure an even spread of varnish.

3-90

6. Fully seat the mask inlet hose connections, then adjust to lie without kinks.

7. Position a 21.9 mm stepless low profile clamp to secure mask inlet hose to manifold outlet. Position locking head toward the wearer.

8. Using a low profile pincer tool, secure stepless low profile clamp in place.

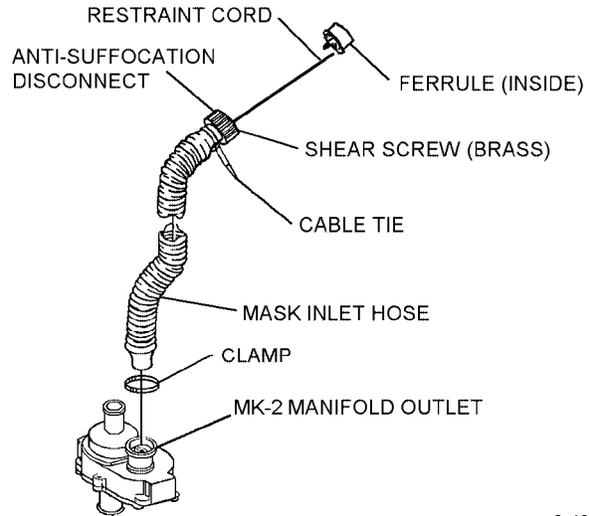
9. Position a 4.8 mm cable tie to secure mask inlet hose to anti-suffocation disconnect. Position locking head toward wearer.

10. Install cable tie into place using cable tie tool, preset to the STD No. 7 tension setting. Remove and discard excess portion of cable tie.

11. Center the ferrule within the anti-suffocation disconnect, then connect mask inlet hose to mask inlet adapter, taking care to assure mask inlet hose is not twisted.

12. Install the shear screw (brass) to lock anti-suffocation disconnect.

13. Apply a slight clockwise, then counterclockwise twist to the anti-suffocation disconnect to ensure the shear screw (brass) has engaged locking slot.



Steps 1 thru 13 - Para 3-193

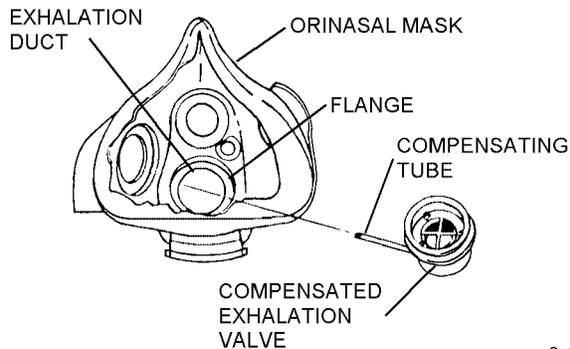
3p193s1

3-194. Compensated Exhalation Valve Installation.

NOTE

A lubricant (KRYTOX, Type II, 240 AC) should be provided to aid in this procedure. Ensure no lubricant enters hose opening.

1. Gently work valve's compensating tube into the connective passage between exhalation duct and inhalation duct. Take extreme care not to break or bend compensating tube or puncture the rubber of connective passage.

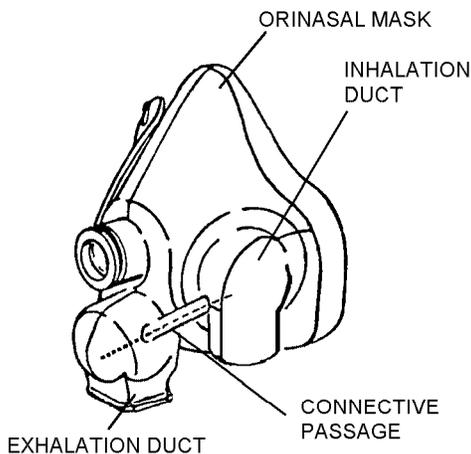


3p194s1

Step 1 - Para 3-194

2. Ensure orifice of compensating tube lies flush with orifice of inhalation duct, and is free of obstruction.

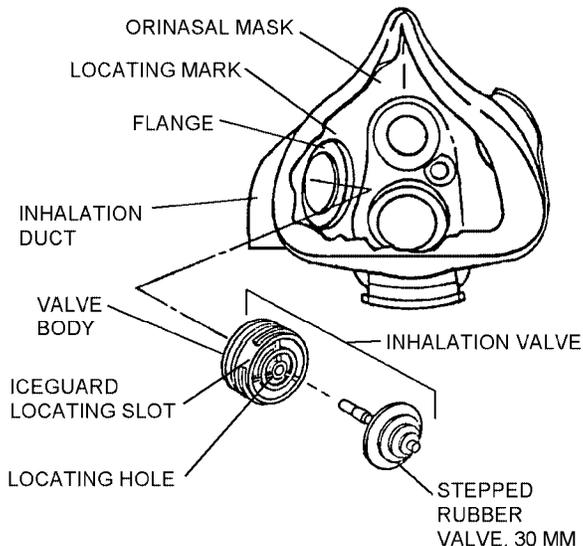
3. Install compensated exhalation valve body into flange of exhalation duct. Ensure valve body is fully engaged within flange.



3p194s2

Steps 2 and 3 - Para 3-194

3-195. Inhalation Valve Installation. Install inhalation valve to flange of inhalation duct, taking care to assure iceguard locating slots of valve holder are aligned at 90° to molded locating mark on interior of orinasal mask.



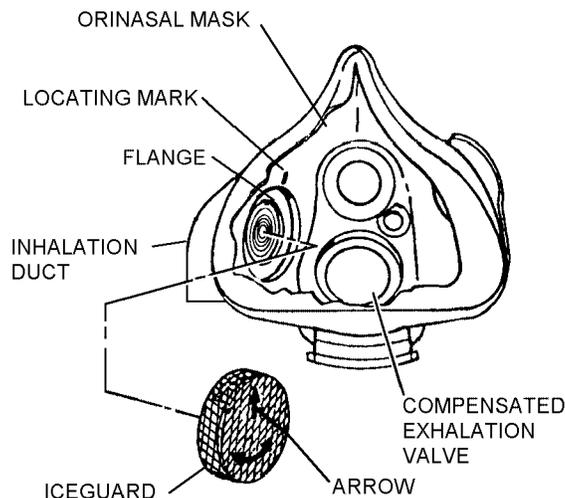
3p195

Para 3-195

3-196. Iceguard Installation.

1. Align arrow engraved on iceguard body with locating mark molded on orinasal mask interior.

2. Apply a light pressure to iceguard and engage lugs into slots in the inhalation valve holder, then rotate iceguard clockwise 90°. When iceguard is installed correctly, engraved arrow points towards the compensated exhalation valve.

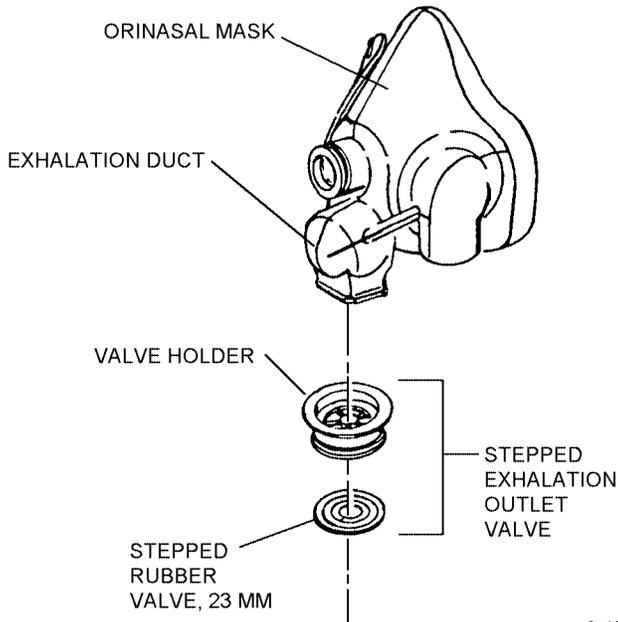


3p196s1

Steps 1 and 2 - Para 3-196

NAVAIR 13-1-6.10

3-197. Exhalation Outlet Valve Installation. Using an elastator, spread mask exhalation duct. Install assembled stepped exhalation outlet valve into exhalation duct, ensuring an even fit of valve holder within duct.



Para 3-197

3p197

3-198. Drink Facility Installation.

NOTE

Orinasal mask must be removed before installing drink facility.

1. Invert hood to expose orinasal mask, but do not cover faceplate.

2. Place external sealing washer (P/N 3297AS401-7) over threaded end of drink tube inlet (P/N 3297AS401-3) orienting it so edges align with edges of drink tube inlet.

3. Insert threaded end of drink tube inlet through faceplate.

4. Install internal sealing (rubber) washer (P/N 3297AS401-6), followed by the flat (metal) washer (P/N AN960-XC10L), over threaded end of drink tube inlet.



To avoid damaging faceplate, do not over-tighten spacer.

5. Carefully attach threaded spacer (P/N 3297AS401-1) onto drink tube inlet so hexagon shaped face of spacer is oriented toward inlet surface of faceplate. Tighten threaded spacer using a torque wrench set to 8.5 - 9.2 lb. in., while ensuring that the concave edges of external sealing washer and inlet base fit correctly between raised ridge of orinasal mask cavity.

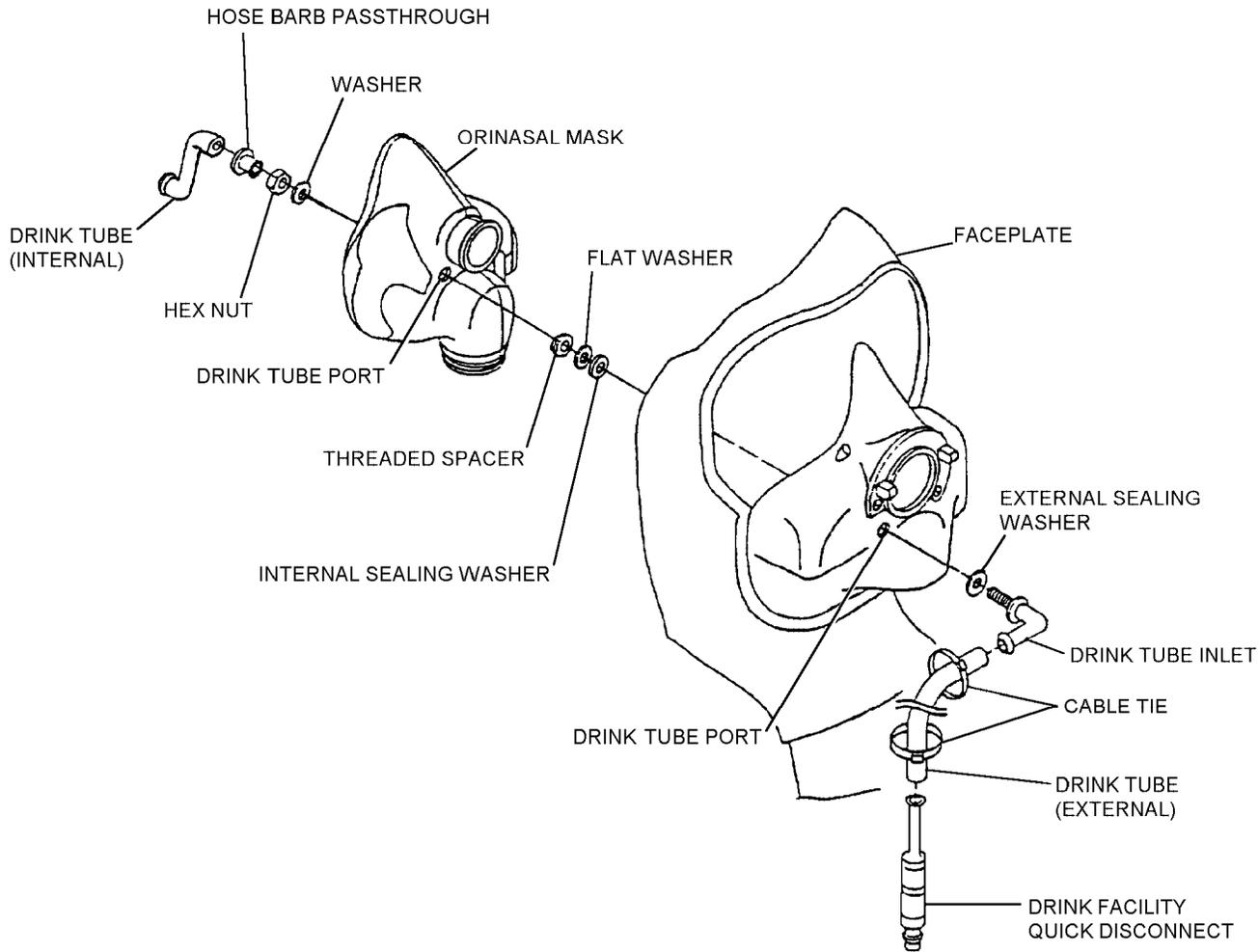
6. Carefully manipulate orinasal mask to insert threaded end of drink tube inlet into hole located immediately above and to the right of compensated exhalation valve. Ensure microphone cavity extends through faceplate.

7. Place (metal) washer (P/N AN960-XC10L) over threaded end of drink tube inlet, followed by the nut. Continue threading hex nut (P/N MS35649-204B) onto inlet until enough threads are exposed to allow threading hose barb (P/N 3297AS401-4) onto inlet.

8. Thread hose barb pass through onto drink tube inlet, with the hexagon-shaped face toward hex nut, until it makes contact with hex nut. Align edges so 3/8-inch nut driver will engage both at the same time.

9. Using 3/8-inch nut driver, tighten hex nut and hose barb until the edge of compensated exhalation valve cavity begins to distort.

10. Place internal drink tube over hose barb, positioning barbed end over compensated exhalation valve.



Steps 1 thru 10 - Para 3-198

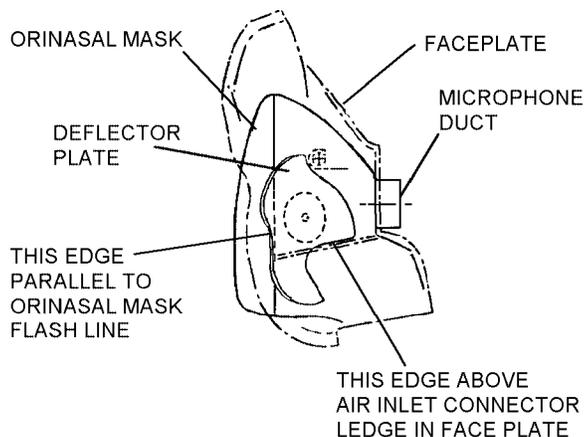
3p198s1

11. Perform mask assembly overall leakage test in accordance with [paragraph 3-122](#).

3-199. Orinasal Mask Installation.

1. Insert orinasal mask deflector plate into orinasal mask as shown. The lower straight edge of deflector plate should be parallel to edge above air inlet connector ledge in faceplate and should not strike the ledge.

2. Ensure proper positioning of deflector plate on orinasal mask.



Steps 1 and 2 - Para 3-199

3p199s1

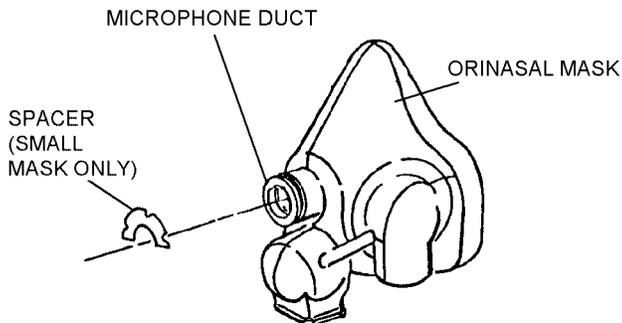
NAVAIR 13-1-6.10

3. Ensure all component parts are installed on orinasal mask in accordance with paragraphs 3-194 through 3-197.



Spacer must be inserted between small orinasal mask microphone duct and inside of faceplate prior to orinasal mask installation.

4. For small-size orinasal mask (Q designation) only, invert hood and position black spacer inside faceplate. Align notches in spacer with nuts securing toggle harness assembly to inner surface of faceplate.



Step 4 - Para 3-199

3p199s4

5. With hood remaining inverted, place orinasal mask into faceplate by easing inverted, place orinasal mask into faceplate by easing flange of microphone duct and that of exhalation duct through their respective faceplate ports. For small orinasal mask, ensure spacer remains in proper location.

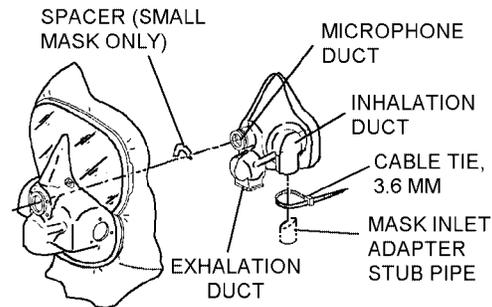
6. Center orinasal mask within faceplate, then engage the inhalation duct over mask inlet adapter stub pipe, ensuring a firm fit. Ensure threaded portion of drink tube assembly passes through grommet in orinasal mask.

7. Clamp inhalation duct to mask inlet adapter stub pipe, using a 3.6 mm cable tie (CL 6226) with locking head positioned between left-hand side of mask inlet adapter and faceplate.

8. Using a cable tie tool preset to its INT (No. 4) tension setting, secure inhalation duct to mask inlet adapter, stub pipe. Remove and discard excess portion of cable tie.

9. If not already done, apply a thin, even coat of thread locking compound to threaded portion of drink

tube assembly, then fit and tighten locknut using a torque wrench set to 11.5-12.5 in.-lb.



3p199s5

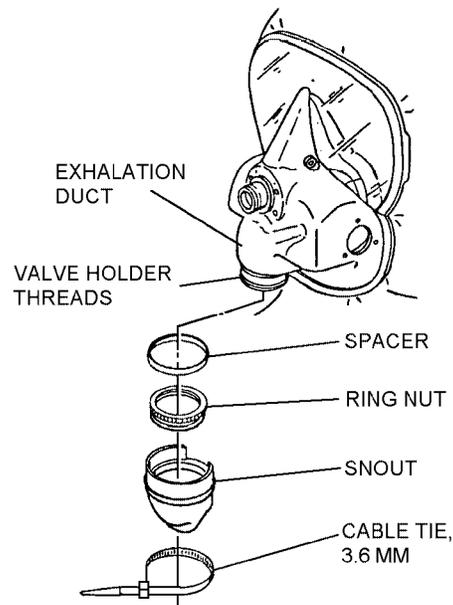
Steps 5 thru 9 - Para 3-199

3-200. Snout Installation.

1. Ease lip of exhalation duct through port of faceplate, ensuring valve is not disturbed within duct, then install spacer.

2. Screw ring nut to threaded portion of valve holder (knurled ring facing up), sealing orinasal mask rubber to faceplate.

3. Install snout over ring nut and position a 3.6 mm cable tie (CL 6226) with locking head located to right of snout. Install with cable tie tool set to INT (No. 4) position. Remove excess portion of cable tie.

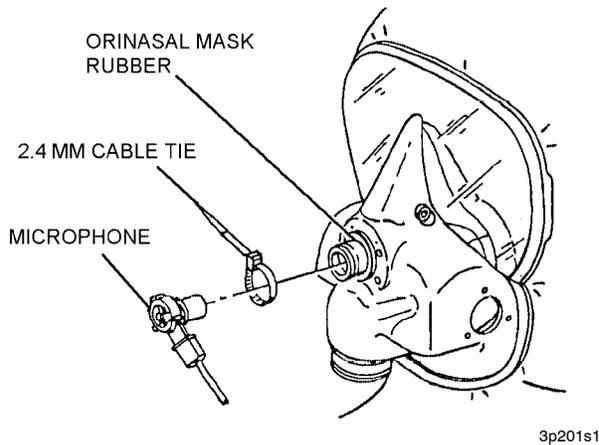


3p200s1

Steps 1 thru 3 - Para 3-200

3-201. Microphone Installation.

1. Push microphone into orinasal mask rubber duct, taking care not to push orinasal mask rubber back into faceplate port.
2. Position a 2.4 mm cable tie around orinasal mask rubber with locking head of cable tie located to the lower right of microphone.
3. Using a cable tie tool preset to the INT tension position, clamp orinasal mask rubber to microphone.
4. Remove and discard excess portion of cable tie.

**Steps 1 thru 4 - Para 3-201****3-202. Blanking Plug - Nose Occluder Faceplate Bushing Installation.**

1. Insert blanking plug in nose occluder bushing from outside of mask.
2. Press blanking plug fully into bushing. Ensure plug rim contacts bushing.
3. Invert hood and ensure lip on end of plug protrudes past end of nose occluder bushing on inner surface of faceplate.
4. Perform Mask Assembly Overall Leakage Test.

3-203. LOWER ASSEMBLY.**3-204. Pusher Fan Subassembly Installation.****3-205. Manifold Hose to MK-2 Manifold Assembly.****WARNING**

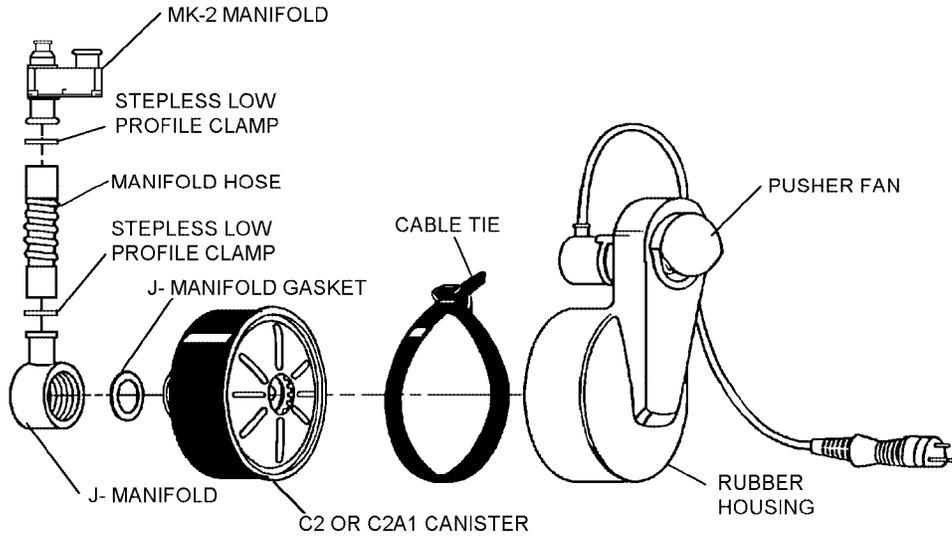
To prevent contamination of inner surfaces, do not apply adhesive within 1/4 inch from end of manifold port.

1. Install a new 28.6 mm stepless low profile clamp (P/N 3297AS201-3) over 3/4 inch end of manifold hose.
2. Install 3/4-inch end of manifold hose on MK-2 manifold inlet port.
3. Using low profile pincer, secure clamp in place around hose approximately 1/2 inch from end of hose. Ensure connection is tight.

3-206. Manifold Hose to J-Manifold and Gasket Installation.**WARNING**

To prevent contamination of inner surfaces, do not apply adhesive within 1/4 inch from end of manifold port.

1. Install a new 28.6 mm stepless low profile clamp (P/N 3297AS201-3) over free end of manifold hose.
2. Insert J-manifold into 7/8-inch (larger) end of hose until hose is flush with MK-2 manifold shoulder. Ensure J-manifold is positioned with canister opening to right as shown.
3. Using low profile pincer, secure clamp in place around hose approximately 1/2 inch from end of hose. Ensure clamp is below J-manifold retention lip, tight and positioned as shown.
4. Insert J-manifold gasket. Ensure gasket is flat and properly seated.
5. Ensure all connectors are tight and positioned properly.
6. Ensure all components are aligned as shown.



Steps 1 thru 6 - Para 3-206

3p206s1

3-207. C2 or C2A1 Canister Installation (figure 3-50).

WARNING

Either C2 or C2A1 may be used. Do not use any other filter canister.

1. Inspect gasket (P/N 3297AS211-1) for proper seating in manifold.
2. Screw canister (clockwise) into J-manifold until it is in contact with gasket and fully hand tighten.

3-208. Pusher Fan Installation (figure 3-50).

1. Ensure pusher fan has been tested according to pusher fan bench test paragraph 3-116.
2. Slide pusher fan rubber housing over canister until filler canister lip bottoms out in rubber housing. Ensure pusher fan is positioned as shown.
3. Ensure pusher fan intake port is positioned with intake port as shown.

4. Using cable tie tool (NIIN 00-937-5438) preset to HVY (No. 8), install 18 inch cable tie centered around the canister and rubber housing and secure canister to pusher fan rubber housing. Ensure cable tie is tight and positioned as shown.

5. Ensure pusher fan is secured properly to C2 or C2A1 canister.

NOTE

Peel away protective latex coating, if applied to faceplate visual area.

6. Perform Calendar Inspection in accordance with paragraph 3-107.

7. Document in accordance with OPNAVINST 4790.2 Series.

3-209. Pusher Fan Battery Installation. Plug pusher fan cord into the battery pack. Be careful when inserting plug so as not to break off any of the prongs. Be sure plug bottoms out in battery socket.

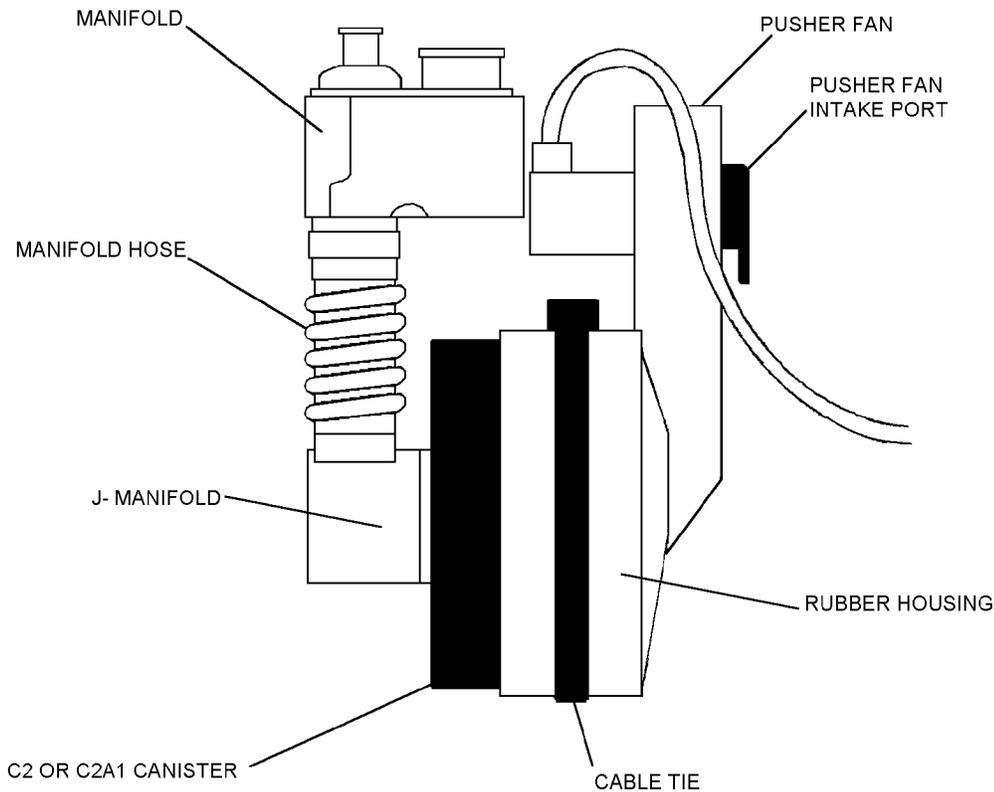


Figure 3-50. Installation of C2 or C2A1 Canister and Pusher Fan

003050

Section 3-5. Illustrated Parts Breakdown

3-210. GENERAL.

3-211. This section lists and illustrates only replaceable components of the respirator assemblies. The IPB is intended for use in identification, procurement and the issuance of replacement components. It also illustrates the necessary disassembly and assembly relationships. Installation, operation, and maintenance of the respirator assemblies shall be performed only by authorized personnel using the instructions set forth in the preceding sections. Source, Maintenance and Recoverability codes are provided for procurable items.



Only parts listed in the IPB are authorized to be procured at this time.

NOTE

For more complete information on the IPB, Group Assembly Parts List and SM&R Code, refer to Chapter 2, Section 2-4, NAVSUPINST 4423.29, OPNAVINST 4410.2A, and NAVSUP P-719.

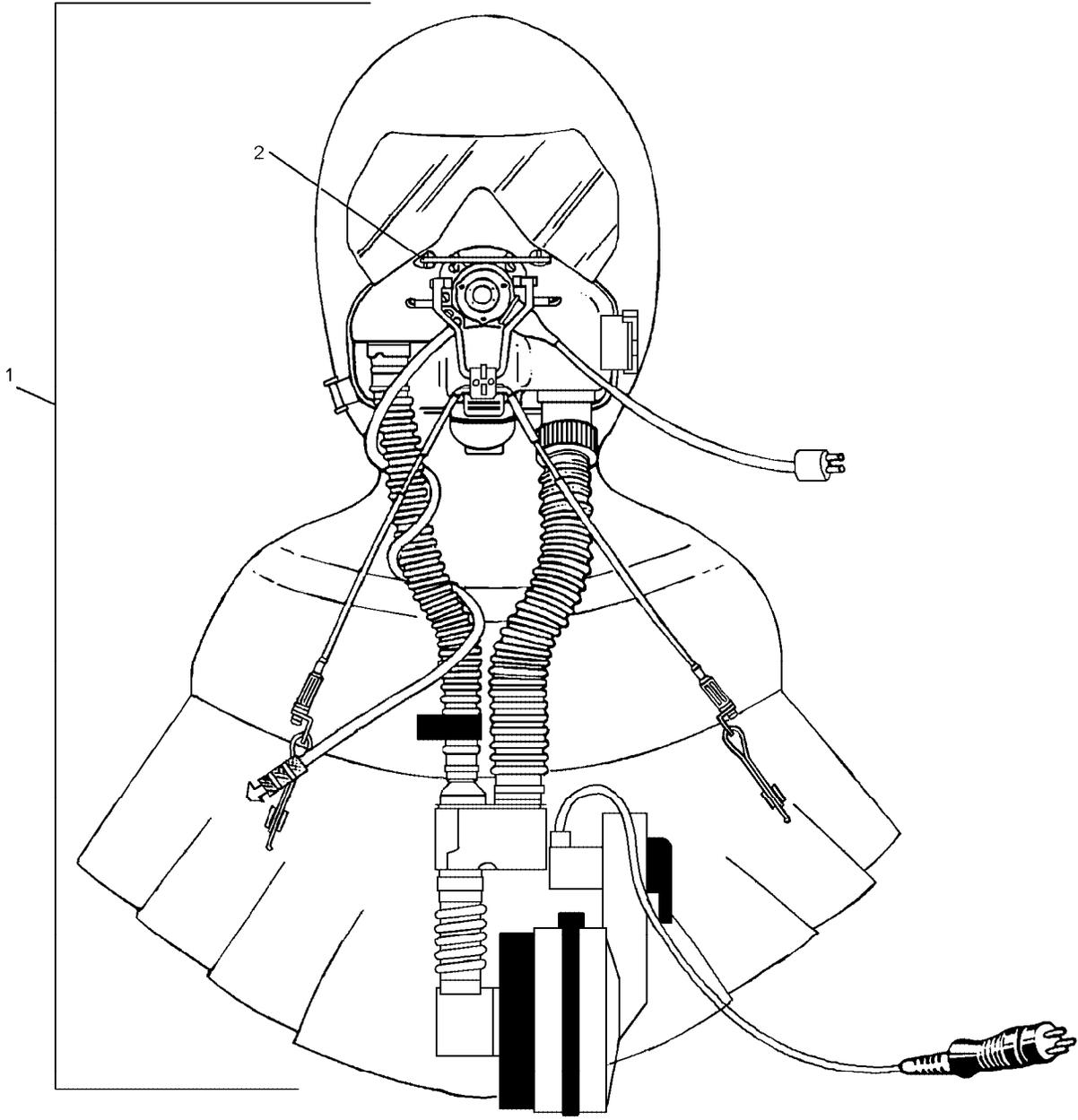


Figure 3-51. Respirator Assembly (Nose Occluder Identified)

Figure and Index Number	Part Number	Description	Units Per Assembly	Usable On Code
		1 2 3 4 5 6 7		
3-51-1	3297AS250-1	RESPIRATOR ASSEMBLY STANDARD HOOD (P MASK)	REF	
	3297AS250-3	RESPIRATOR ASSEMBLY EXTRA LARGE HOOD (P MASK)	1	
	3297AS250-4	RESPIRATOR ASSEMBLY STANDARD HOOD (Q MASK)	1	
	3297AS250-5	RESPIRATOR ASSEMBLY EXTRA SMALL HOOD (Q MASK)	1	
	-2	1501010	OCCLUDER, NOSE 4 MM LONG	1
1501011		OCCLUDER, NOSE 5 MM LONG	1	
1501012		OCCLUDER, NOSE 6 MM LONG	1	
1501013		OCCLUDER, NOSE 7 MM LONG	1	
1501014		OCCLUDER, NOSE 4 MM SHORT	1	
1501015		OCCLUDER, NOSE 5 MM SHORT	1	
1501016		OCCLUDER, NOSE 6 MM SHORT	1	
1501017		OCCLUDER, NOSE 7 MM SHORT	1	

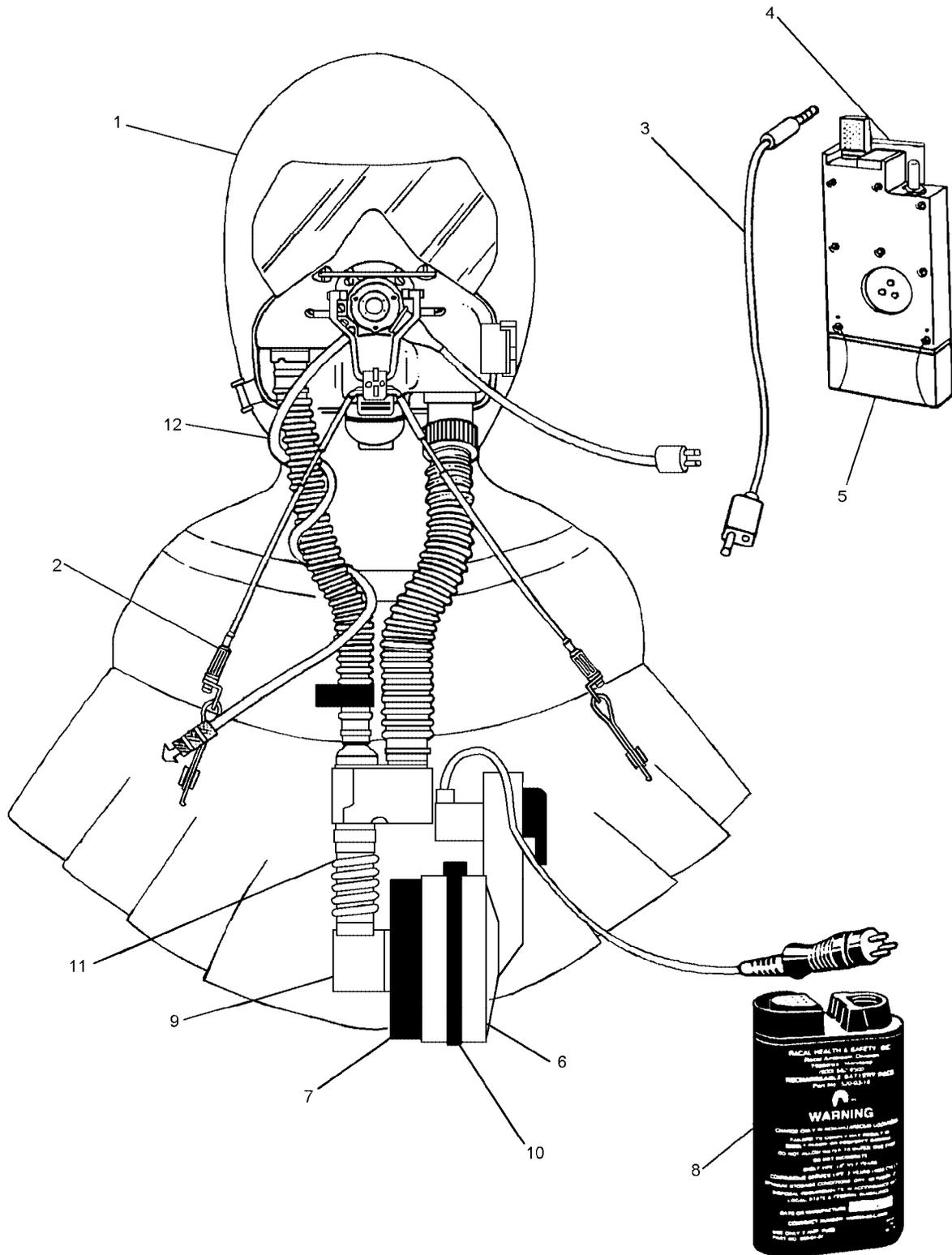


Figure 3-52. Respirator Assembly (Major Components Identified)

Figure and Index Number	Part Number	Description	Units Per Assembly	Usable On Code
		1 2 3 4 5 6 7		
3-52	3297AS250-1	RESPIRATOR ASSEMBLY STANDARD HOOD (P MASK)	REF	A
	3297AS250-3	RESPIRATOR ASSEMBLY EXTRA LARGE HOOD (P MASK)	REF	C
	3297AS250-4	RESPIRATOR ASSEMBLY STANDARD HOOD (Q MASK)	REF	D
	3297AS250-5	RESPIRATOR ASSEMBLY EXTRA SMALL HOOD (Q MASK)	REF	E
	-1	608916	. MASK MCK-3A/P STANDARD HOOD (P MASK)	1
608918		. MASK MCK-3A/P EXTRA LARGE HOOD (P MASK)	1	C
608919		. MASK MCK-3A/P STANDARD HOOD (Q MASK)	1	D
608920		. MASK MCK-3A/P EXTRA SMALL HOOD (Q MASK)	1	E
-2	1503332	. WIRE TOGGLE HARNESS ASSEMBLY	1	
-3	1505068	. COMMUNICATION CABLE	1	
-4	1507926	. INTERCOM SET A/P37S-1 (REPLACES 1505060)	1	
-5	—	. . 9V BATTERY & HOUSING	1	
-6	3297AS600-1	. PUSHER FAN	1	
-7	DS-3-1520	. C2A1 CANISTER (NOTE 1)	1	
	DS-3-1500	. C2 CANISTER (NOTE 1)	1	
-8	3297AS601-1	. BATTERY	1	
	3297AS601-2	. BATTERY	1	
-9	3297AS210-1	. J-MANIFOLD	1	
-10	CL 6528	. CABLE TIE, 7.6 MM (18 IN)	1	
-11	3297AS203-1	. HOSE, CBR PROTECTIVE (MANIFOLD HOSE)	1	
-12	3297AS401-1	. DRINK FACILITY ASSEMBLY	1	
Notes:		1. The C2A1 Canister will replace the C2 Canister thru attrition.		

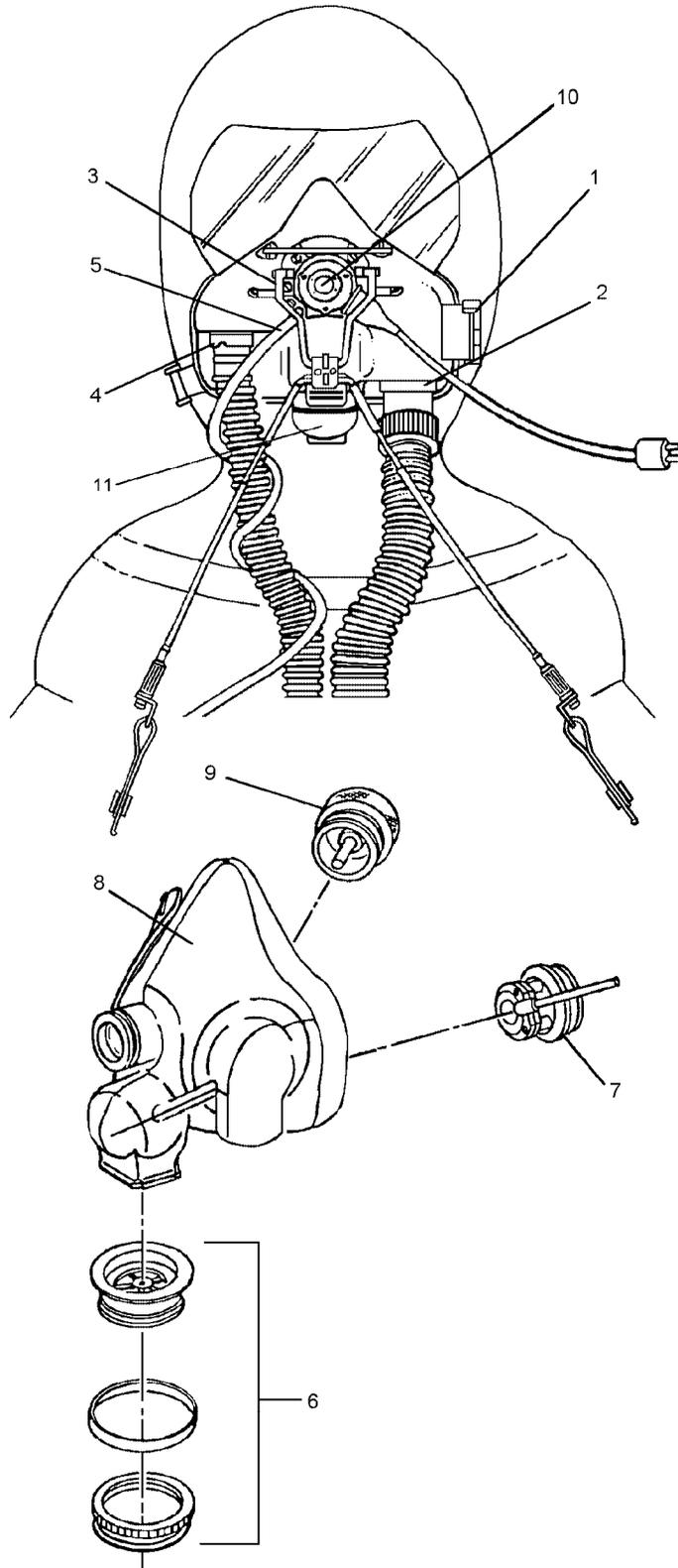
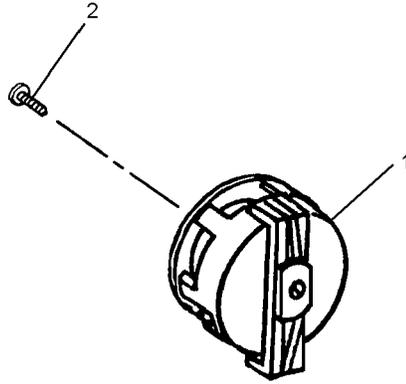


Figure 3-53. MCK-3A/P Mask Assembly

Figure and Index Number	Part Number	Description							Units Per Assembly	Usable On Code
		1	2	3	4	5	6	7		
3-53	608016 608018 608019 608020	MCK-3A/P MASK ASSEMBLY							REF	
-1	—	.	HOOD OUTLET VALVE ASSEMBLY					REF		
			(FIGURE 3-54 FOR BREAKDOWN)							
-2	—	.	MASK INLET ADAPTER ASSEMBLY					REF		
			(FIGURE 3-55)							
-3	—	.	TOGGLE HARNESS ASSEMBLY					REF		
			(FIGURE 3-56)							
-4	—	.	HOOD INLET ADAPTER ASSEMBLY					REF		
			(FIGURE 3-57)							
-5	—	.	DRINK FACILITY ASSEMBLY					REF		
			(FIGURE 3-58)							
-6	—	.	EXHALATION OUTLET VALVE					REF		
			ASSEMBLY (FIGURE 3-59)							
-7	—	.	COMPENSATED EXHALATION VALVE					REF		
			ASSEMBLY (FIGURE 3-60)							
-8	—	.	ORINASAL MASK ASSEMBLY, LARGE (P) ...					REF	A	
			(FIGURE 3-61)							
	—	.	ORINASAL MASK ASSEMBLY, SMALL (Q) ...					REF	B	
			(FIGURE 3-61)							
-9	—	.	INHALATION VALVE ASSEMBLY					REF		
			(FIGURE 3-62)							
-10	—	.	MICROPHONE ASSEMBLY					REF		
			(FIGURE 3-63)							
-11	—	.	SNOUT ASSEMBLY (FIGURE 3-64)					REF		



3-54

Figure 3-54. Hood Outlet Valve Assembly

Figure and Index Number	Part Number	Description							Units Per Assembly	Usable On Code
		1	2	3	4	5	6	7		
3-54	—	HOOD OUTLET VALVE ASSEMBLY							REF	
-1	1505043	. VALVE, HOOD OUTLET							1	
-2	808372	. . SCREW, PAN HEAD							3	

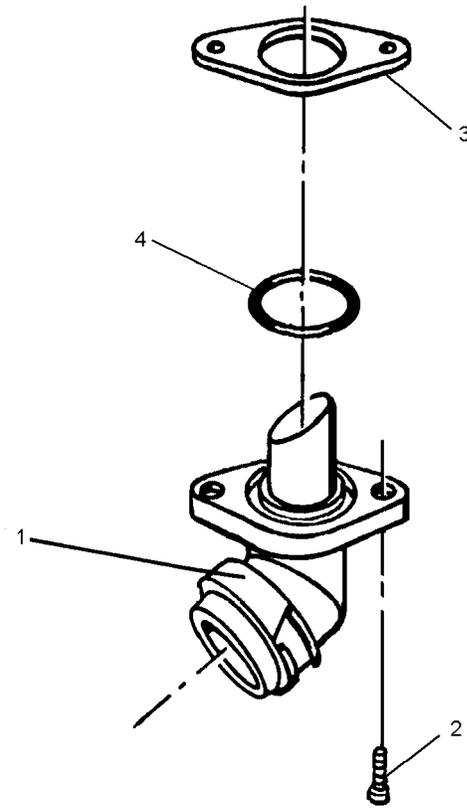
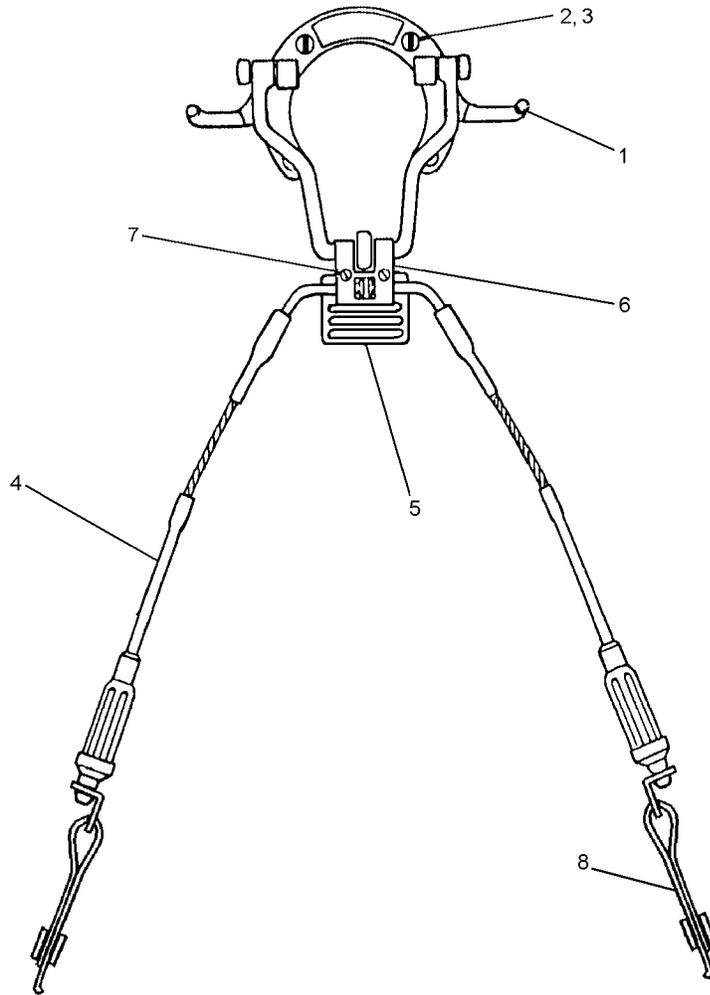


Figure 3-55. Mask Inlet Adapter Assembly

3-55

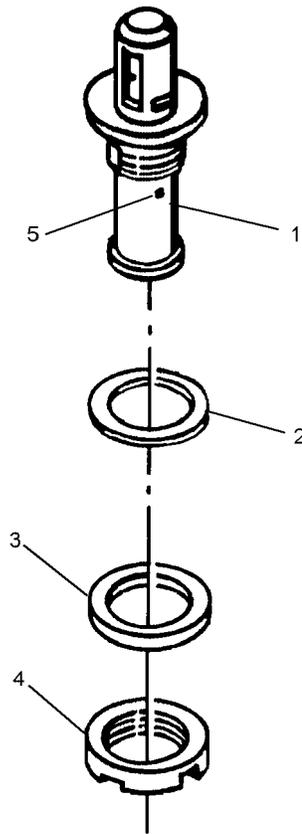
Figure and Index Number	Part Number	Description							Units Per Assembly	Usable On Code
		1	2	3	4	5	6	7		
3-55	—	MASK INLET ADAPTER ASSEMBLY							REF	
-1	1501091	. ADAPTER, MASK INLET							1	
-2	814478	. . SCREW, PAN HEAD							2	
-3	1500955	. . BACKPLATE							1	
-4	1500956	. . O-RING							1	



3-56

Figure 3-56. Wire Toggle Harness Assembly

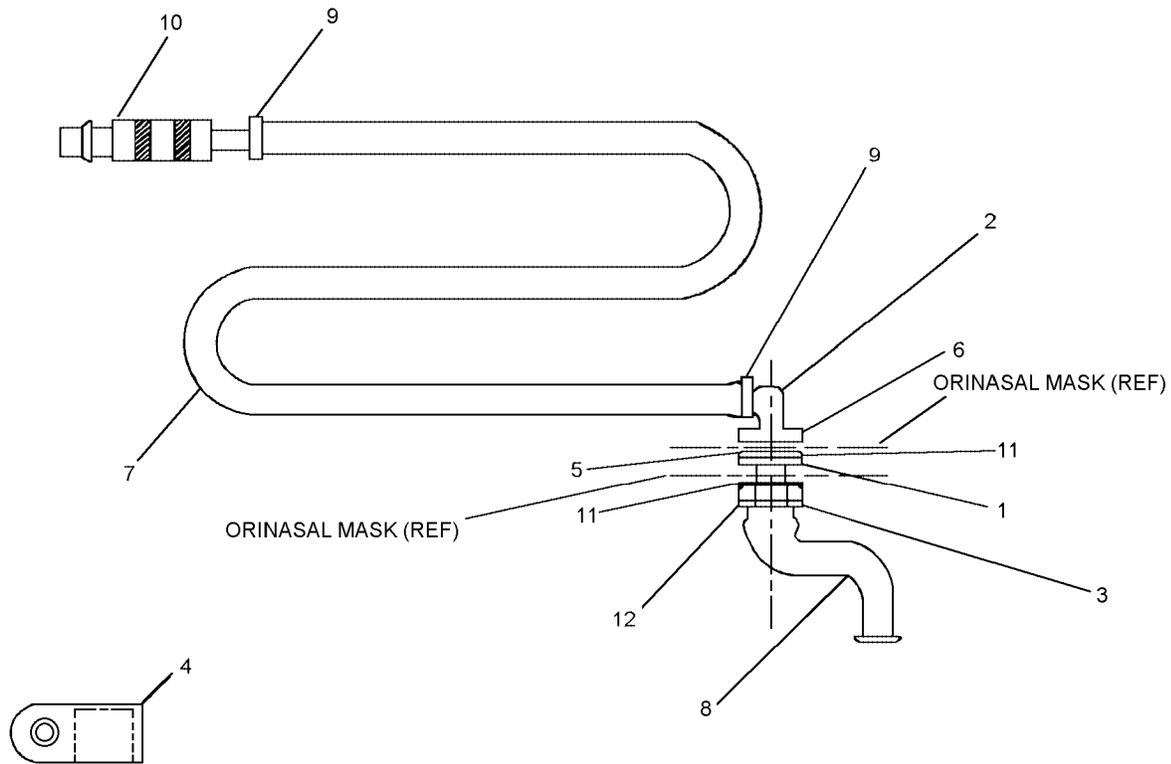
Figure and Index Number	Part Number	Description							Units Per Assembly	Usable On Code
		1	2	3	4	5	6	7		
3-56	1503332	WIRE TOGGLE HARNESS ASSEMBLY							REF	
-1	1503453	. HARNESS, MASK							1	
-2	—	. . SCREW, COUNTERSUNK							4	
-3	—	. . NUT							4	
-4	1505083	. CABLE ASSEMBLY							2	
	1503626	. TOGGLE PLATE KIT							1	
-5	—	. . PLATE, TOGGLE*							1	
-6	—	. . TOGGLE FIXING PLATE*							1	
-7	—	. . SCREW*							2	
-8	—	. STRAP, ADAPTER							2	
*supplied in kit										



3-57

Figure 3-57. Hood Inlet Adapter Assembly

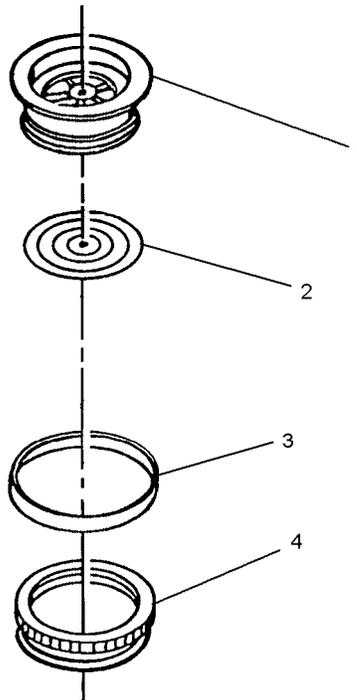
Figure and Index Number	Part Number	Description							Units Per Assembly	Usable On Code
		1	2	3	4	5	6	7		
3-57	—	HOOD INLET ADAPTER ASSEMBLY							REF	
-1	1500719	. ADAPTER, HOOD INLET							1	
-2	1500835	. . WASHER, SEALING							1	
-3	1500834	. . WASHER, FACING							1	
-4	1500720	. . NUT							1	
-5	1500953	. . PIN, CORD RESTRAINING							1	



3-58

Figure 3-58. Drink Facility Assembly

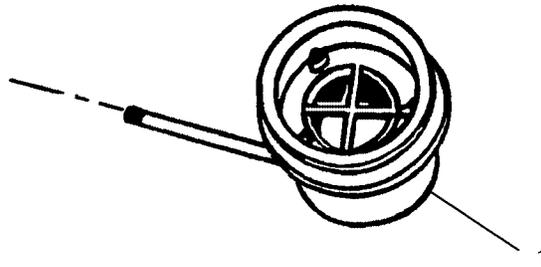
Figure and Index Number	Part Number	Description	Units Per Assembly							Usable On Code	
			1	2	3	4	5	6	7		
3-58	3297AS401-1	DRINK FACILITY ASSEMBLY								REF	
-1	3297AS401-2	. SPACER								1	
-2	3297AS401-3	. DRINK TUBE, INLET								1	
-3	3297AS401-4	. HOSE BARB, DRINK TUBE, PASS THRU								1	
-4	3297AS401-5	. DRINK TUBE FACILITY HOLDER								1	
-5	3297AS401-6	. WASHER, INTERNAL SEALING								1	
-6	3297AS401-7	. WASHER, EXTERNAL SEALING								1	
-7	3297AS401-8	. DRINK TUBE, EXTERNAL								1	
-8	3297AS401-9	. DRINK TUBE, INTERNAL								1	
-9	CL 6225	. CABLE TIE, 2.4 MM								2	
-10	3297AS402-1	. DRINK FACILITY, QUICK DISCONNECT								1	
-11	AN960-XC10L	. WASHER, FLAT								2	
-12	MS35649-204	. NUT, PLAIN, HEXAGON								1	



3-59

Figure 3-59. Exhalation Outlet Valve Assembly

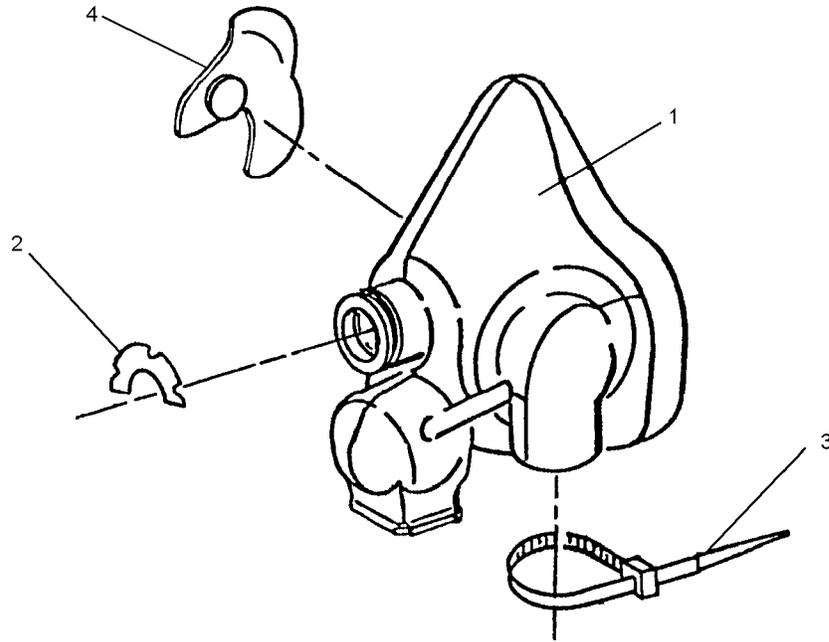
Figure and Index Number	Part Number	Description							Units Per Assembly	Usable On Code
		1	2	3	4	5	6	7		
3-59	—	EXHALATION OUTLET VALVE ASSEMBLY							REF	
-1	1503232	.							1	
-2	1500873	.	.						1	
-3	1503233	.							1	
-4	1500830	.							1	



3-60

Figure 3-60. Compensated Exhalation Valve Assembly

Figure and Index Number	Part Number	Description							Units Per Assembly	Usable On Code
		1	2	3	4	5	6	7		
3-60 -1	— 1500875	COMPENSATED EXHALATION VALVE VALVE, COMPENSATED EXHALATION							REF 1	



3-61

Figure 3-61. Orinasal Mask Assembly

Figure and Index Number	Part Number	Description							Units Per Assembly	Usable On Code
		1	2	3	4	5	6	7		
3-61	—	ORINASAL MASK ASSEMBLY, LARGE (P)							REF	A
	—	ORINASAL MASK ASSEMBLY, SMALL (Q)							REF	B
-1	818538	.							1	A
	818539	.							1	B
-2	1503334	.							1	B
-3	CL 6226	.							1	
-4	1500840	.							1	

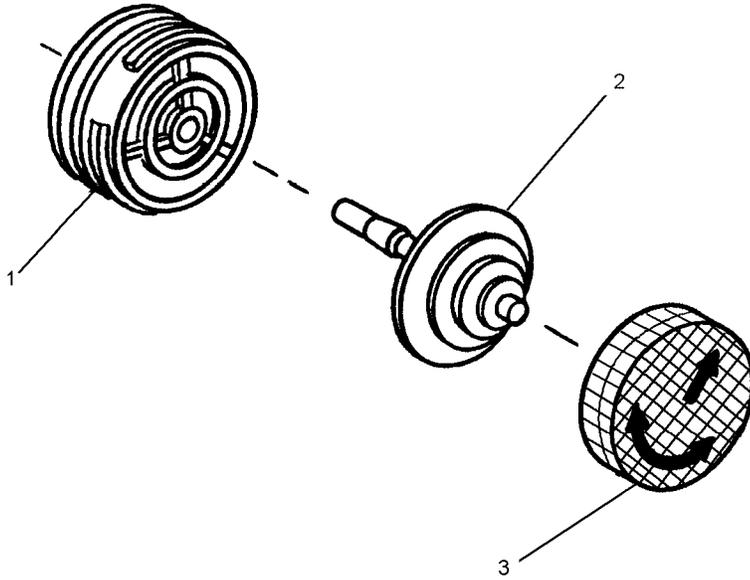


Figure 3-62. Inhalation Valve Assembly

3-62

Figure and Index Number	Part Number	Description							Units Per Assembly	Usable On Code
		1	2	3	4	5	6	7		
3-62	—	INHALATION VALVE ASSEMBLY							REF	
-1	1500939	. VALVE, BODY							1	
-2	1500937	. . VALVE, STEPPED RUBBER, 30 MM							1	
-3	6089075	. . ICEGUARD							1	

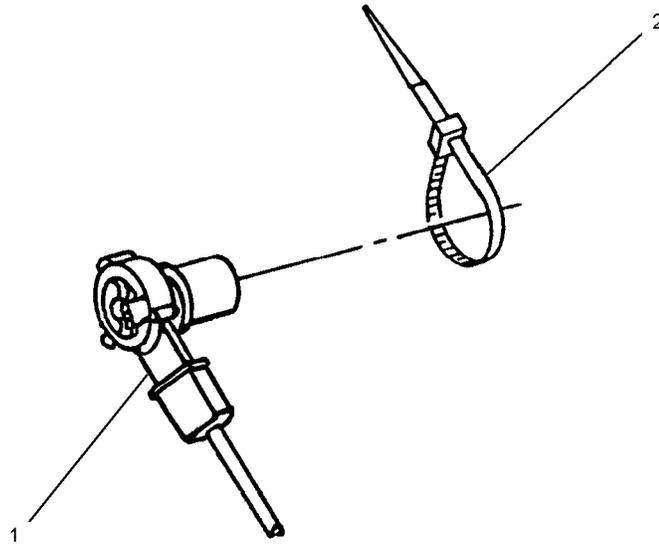


Figure 3-63. Microphone Assembly

3-63

Figure and Index Number	Part Number	Description							Units Per Assembly	Usable On Code
		1	2	3	4	5	6	7		
3-63	—	MICROPHONE ASSEMBLY							REF	
-1	1503344	.							1	
-2	CL 6225	.							1	

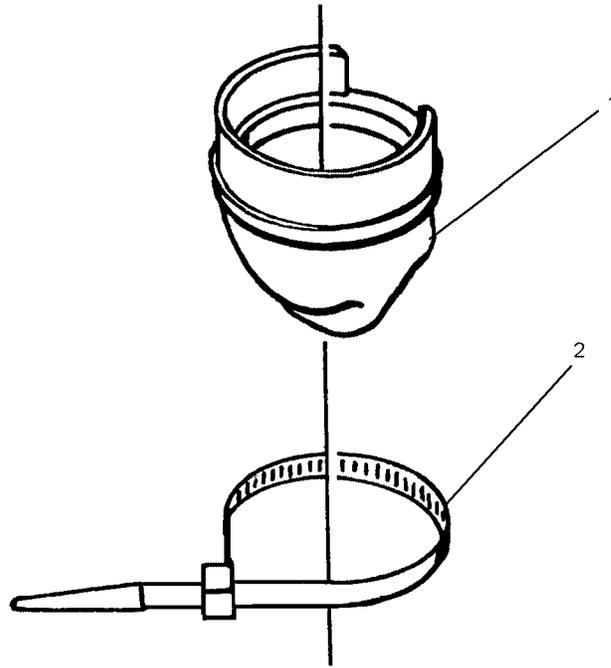


Figure 3-64. Snout Assembly

3-64

Figure and Index Number	Part Number	Description							Units Per Assembly	Usable On Code
		1	2	3	4	5	6	7		
3-64	—	SNOUT ASSEMBLY							REF	
-1	1500831	.							1	
-2	CL 6226	.							1	

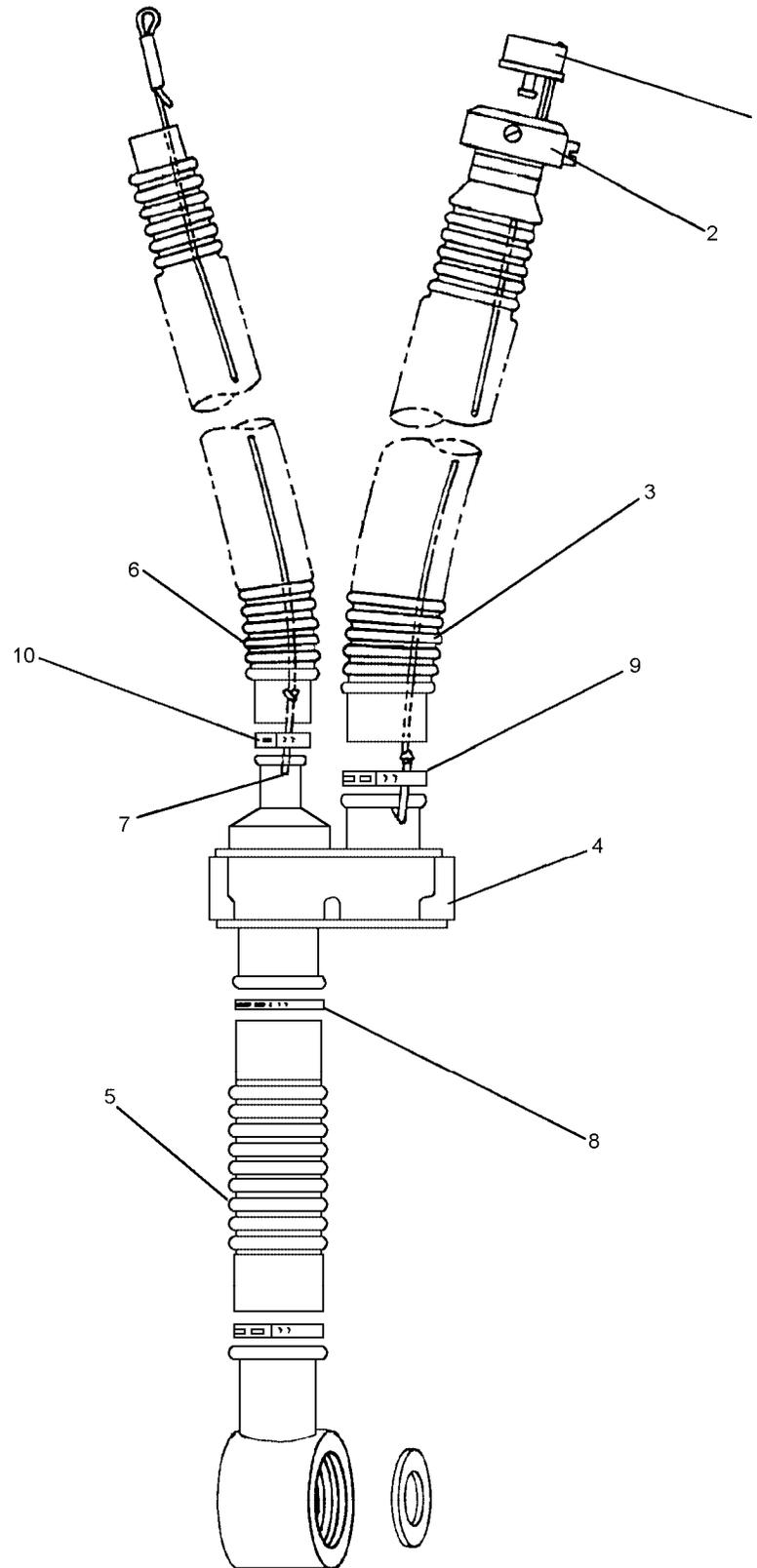
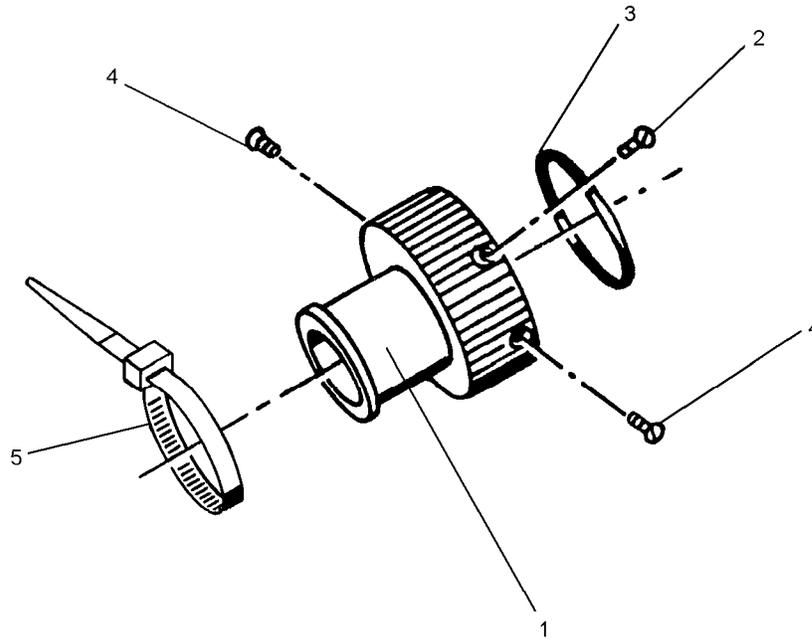


Figure 3-65. MK-2 Manifold Assembly and Associated Components

NAVAIR 13-1-6.10

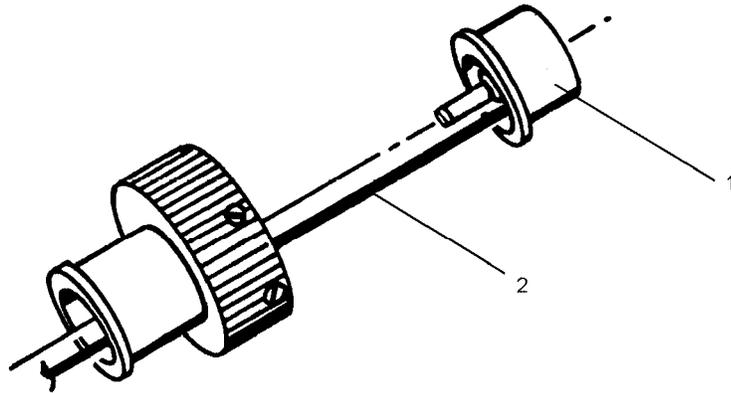
Figure and Index Number	Part Number	Description	Units Per Assembly	Usable On Code
		1 2 3 4 5 6 7		
3-65	6089058	MANIFOLD ASSEMBLY, MK-2 (REPLACES 1502519)	REF	
-1	—	. ANTI-SUFFOCATION DISCONNECT ASSEMBLY (FIGURE 3-66)	REF	
-2	—	. FERRULE ASSEMBLY (FIGURE 3-67)	REF	
-3	—	. MASK INLET HOSE ASSEMBLY (FIGURE 3-68)	REF	
-4	6089126	. MANIFOLD	1	
	1500872	. . VALVE, HOOD INLET, STEPPED RUBBER, 18 MM	1	
-5	3297AS203-1	. HOSE, CBR PROTECTIVE (MANIFOLD HOSE)	REF	
-6	—	. HOOD INLET HOSE ASSEMBLY (FIGURE 3-69)	REF	
-7	1500953	. PIN, HOOD RESTRAINT CORD	1	
-8	3297AS201-3	. STEPLESS LOW PROFILE CLAMP, 28.6 MM ..	2	
-9	CL 6593	. STEPLESS LOW PROFILE CLAMP, 21.9 MM ..	1	
-10	CL 6592	. STEPLESS LOW PROFILE CLAMP, 16.5 MM ..	1	



3-66

Figure 3-66. Anti-Suffocation Disconnect Assembly

Figure and Index Number	Part Number	Description							Units Per Assembly	Usable On Code
		1	2	3	4	5	6	7		
3-66	—	ANTI-SUFFOCATION DISCONNECT							REF	
-1	1505121	. DISCONNECT, ANTI-SUFFOCATION							1	
-2	1505075	. SCREW, BRASS SHEAR							1	
-3	6089125	. . O-RING, RUBBER							1	
-4	—	. . SCREW, SECURING							2	
-5	CL 6227	. . CABLE TIE, 4.8 MM							1	



3-67

Figure 3-67. Ferrule Assembly

Figure and Index Number	Part Number	Description							Units Per Assembly	Usable On Code
		1	2	3	4	5	6	7		
3-67	—	FERRULE ASSEMBLY							REF	
-1	1505123	.							1	
-2	6089128	.							1	

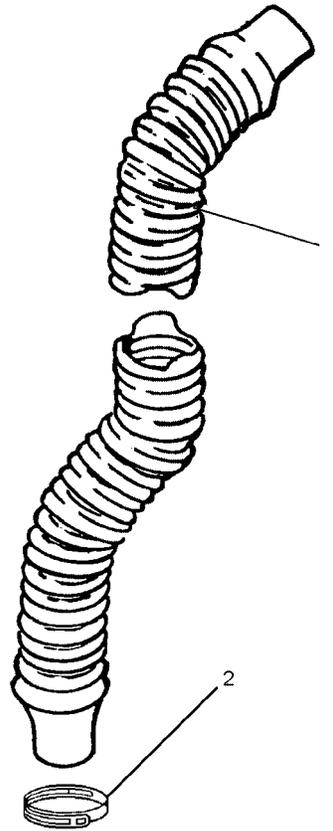


Figure 3-68. Mask Inlet Hose Assembly

3-68

Figure and Index Number	Part Number	Description							Units Per Assembly	Usable On Code
		1	2	3	4	5	6	7		
3-68	—	MASK INLET HOSE ASSEMBLY							REF	
-1	1505122	.							1	
-2	CL 6593	.							1	

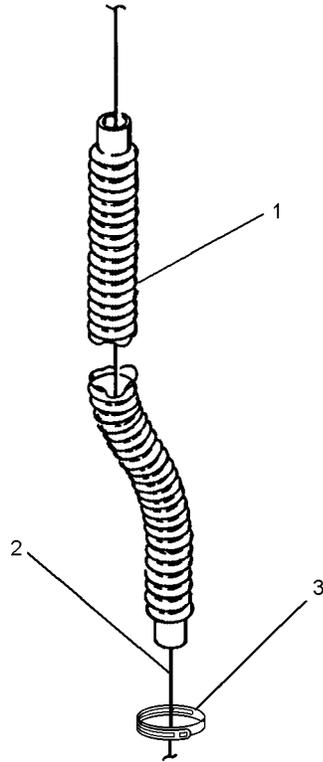


Figure 3-69. Hood Inlet Hose Assembly

3-69

Figure and Index Number	Part Number	Description							Units Per Assembly	Usable On Code
		1	2	3	4	5	6	7		
3-69	—	HOOD INLET HOSE							REF	
-1	6089068	.							1	
-2	1505126	.							1	
-3	CL 6592	.							1	

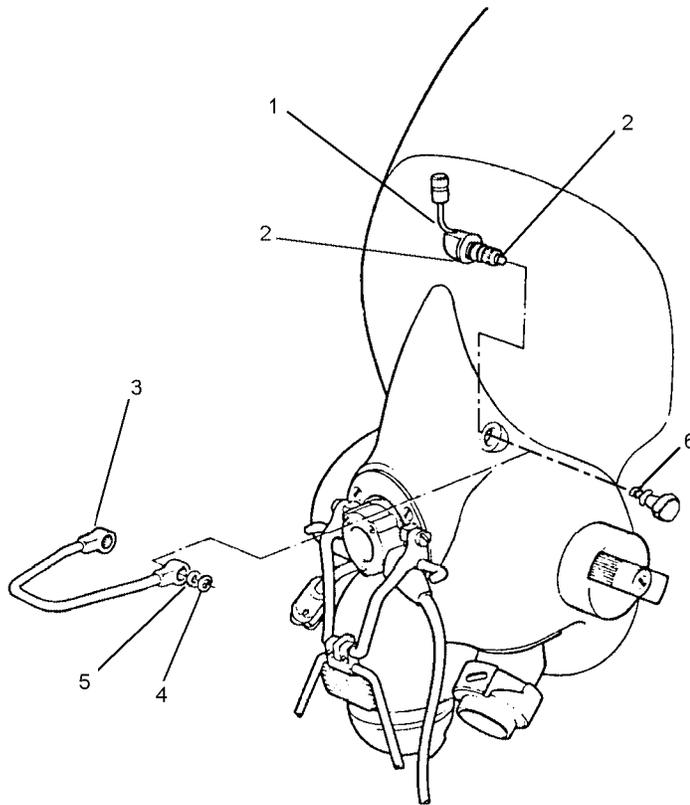


Figure 3-70. Nose Occluder Assembly

NAVAIR 13-1-6.10

Figure and Index Number	Part Number	Description	Units Per Assembly	Usable On Code
		1 2 3 4 5 6 7		
3-70	1501010	OCCLUDER, NOSE, 4 MM LONG	REF	
	1501011	OCCLUDER, NOSE, 5 MM LONG	REF	
	1501012	OCCLUDER, NOSE, 6 MM LONG	REF	
	1501013	OCCLUDER, NOSE, 7 MM LONG	REF	
	1501014	OCCLUDER, NOSE, 4 MM SHORT	REF	
	1501015	OCCLUDER, NOSE, 5 MM SHORT	REF	
	1501016	OCCLUDER, NOSE, 6 MM SHORT	REF	
-1	1501017	OCCLUDER, NOSE, 7 MM SHORT	REF	
	1500985	. SHAFT ASSEMBLY	2	
	1500986	. SHAFT ASSEMBLY	2	
	1500987	. SHAFT ASSEMBLY	2	
	1500988	. SHAFT ASSEMBLY	2	
	1500989	. SHAFT ASSEMBLY	2	
	1500990	. SHAFT ASSEMBLY	2	
-2	1500991	. SHAFT ASSEMBLY	2	
	1500992	. SHAFT ASSEMBLY	2	
-3	815938	. O-RING	2	
-4	1500982	. STIRRUP ASSEMBLY	1	
-5	1500936	. C-CLIP	2	
-6	1501183	. WASHER, FACING	2	
	CL 6131	PLUG, BLANKING (NOTE 1)	2	
Notes :		1. Blanking plugs are to be installed when nose occluder is not installed.		

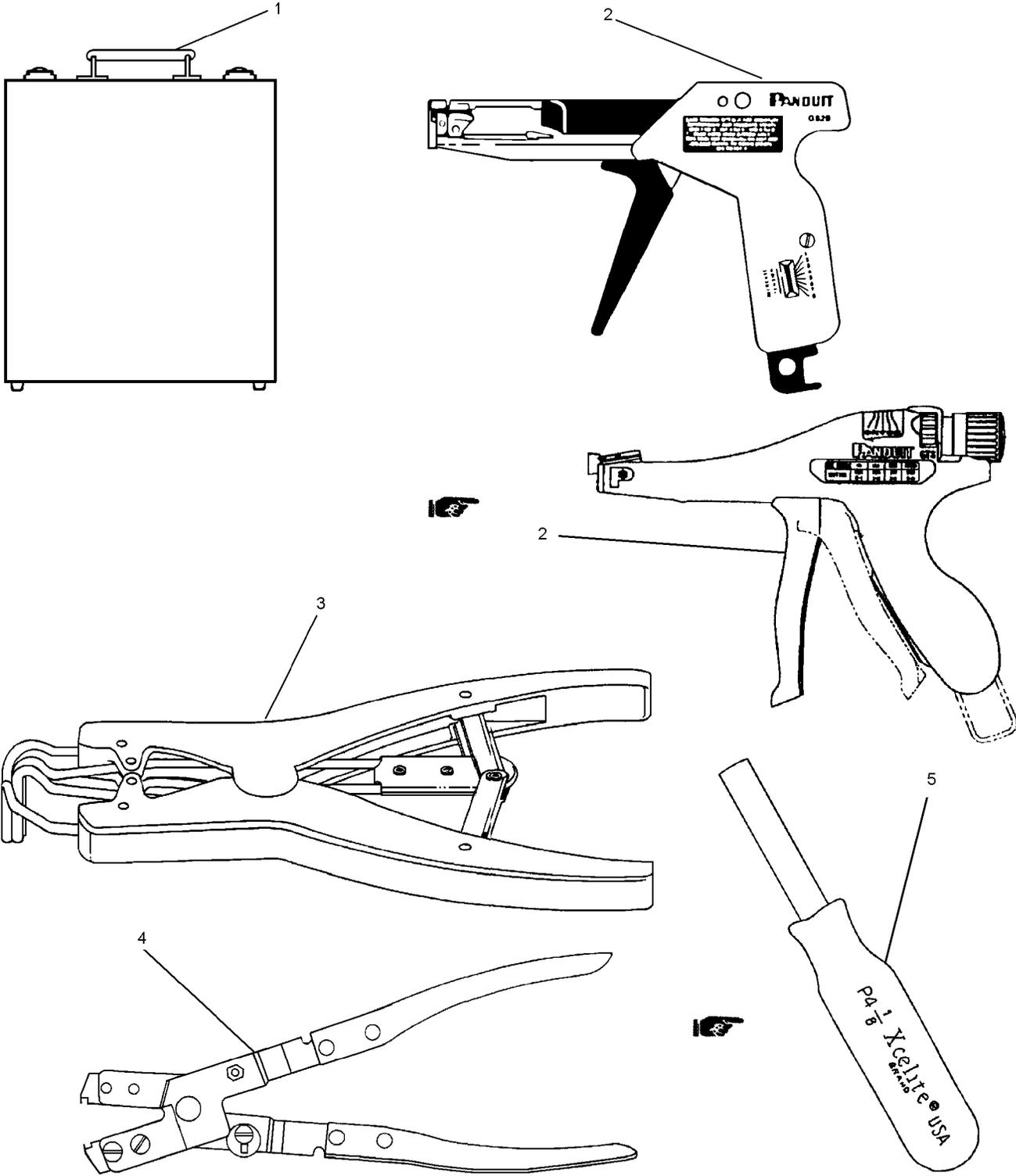


Figure 3-71. Special Support Equipment

003071

NAVAIR 13-1-6.10

Figure and Index Number	Part Number	Description	Units Per Assembly	Usable On Code
		1 2 3 4 5 6 7		
3-71	—	EQUIPMENT, SPECIAL SUPPORT	REF	
-1	6200005	. TEST SET, RESPIRATOR ASSEMBLY	1	
		A/E47T-28		
-2	MS90387-1	. TOOL, CABLE TIE, STANDARD OR	1	
		EQUIVALENT		
	5120-00-937-5438	. TOOL, CABLE TIE, HEAVY DUTY	1	
-3	5120-01-124-0649	. ELASTRATOR	1	
	1502768	. SPANNER, RING NUT	1	
		(NOT ILLUSTRATED)		
-4	14100055	. PINCER TOOL, LOW PROFILE	1	*
	5120-01-073-4187	. PLIERS, HOSE CLAMP	1	*
		(NOT ILLUSTRATED)		
-5	191-382	. NUT DRIVER, 1/8 INCH (JENSEN TOOLS	1	
		OR EQUIVALENT)(Note)		
Notes : 1. Available from Jensen Tools, Phone: 978-682-9844.				

NUMERICAL INDEX

Part Number	Figure and Index Number	SM&R Code	Part Number	Figure and Index Number	SM&R Code
AN960-XC10L	3-58-11		1501012	3-51-2	PAGGG
CL 6131	3-70-6			3-70	PAGGG
CL 6225	3-58-9	PAOZZ	1501013	3-51-2	PAGGG
	3-63-2	PAOZZ		3-70	PAGGG
CL 6226	3-61-3	PAOZZ	1501014	3-51-2	PAGGG
	3-64-2	PAOZZ		3-70	PAGGG
CL 6227	3-66-5	PAOZZ	1501015	3-51-2	PAGGG
CL 6528	3-52-10	PAOZZ		3-70	PAGGG
CL 6592	3-65-10	PAGZZ	1501016	3-51-2	PAGGG
	3-69-3	PAGZZ		3-70	PAGGG
CL 6593	3-65-9	PAGZZ	1501017	3-51-2	PAGGG
	3-68-2	PAGZZ		3-70	PAGGG
DS-3-1500	3-52-7	PAOZZ	1501091	3-55-1	XAOZZ
DS-3-1520	3-52-7	PAOZZ	1501183	3-70-5	PAGZZ
MS35649-204	3-58-12	XAOZZ	1502768	3-71-3	
MS90387-1	3-71-2	XAOZZ	1503232	3-59-1	PAGGG
1410055	3-71-4	XAOZZ	1503233	3-59-3	XAOZZ
1500719	3-57-1	XAOZZ	1503332	3-52-2	PAGGG
1500720	3-57-4	XAOZZ		3-56	PAGGG
1500830	3-59-4	XAOZZ	1503334	3-61-2	PAGZZ
1500831	3-64-1	PAGZZ	1503344	3-63-1	PAGZZ
1500834	3-57-3	XAOZZ	1503453	3-56-1	XAOZZ
1500835	3-57-2	PAGZZ	1503626	3-56-4	XAOZZ
1500840	3-61-4	PAGZZ	1505043	3-54-1	PAGZZ
1500872	3-65-4	PAGZZ	1505068	3-52-3	
1500873	3-59-2	PAGZZ	1505075	3-66-2	PAGZZ
1500875	3-60-1	PAGZZ	1505083	3-56-4	PAGZZ
1500936	3-70-4	PAGZZ	1505121	3-66-1	XAOZZ
1500937	3-62-2	XAOZZ	1505122	3-68-1	PAGZZ
1500939	3-62-1	PAGGG	1505123	3-67-1	XAOZZ
1500953	3-57-5	XAOZZ	1505126	3-69-2	XAOZZ
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1500987	3-70-1	XAOZZ		3-52	AGGGG
1500988	3-70-1	XAOZZ	3297AS250-3	3-51-1	AGGGG
1500989	3-70-1	XAOZZ		3-52	AGGGG
1500990	3-70-1	XAOZZ	3297AS250-4	3-51-1	AGGGG
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