



CHAPTER 7

OXYGEN AND LIFE SUPPORT EQUIPMENT

MFF parachuting is physically demanding. It exposes the parachutist to extremes of temperature, rapid pressure changes, and long exposures at altitudes requiring supplemental oxygen. To prepare for this environment, the MFF parachutist must be thoroughly familiar with the use of oxygen, oxygen life support equipment, and the handling of oxygen supplies. All personnel participating in MFF operations must meet the physical requirements outlined in Chapter 1, regardless of altitude and type of aircraft used.

Oxygen Forms

The parachutist uses gaseous oxygen or liquid oxygen (LOX). A discussion follows on these forms of aviator's breathing oxygen and their containers.

Gaseous Oxygen

Gaseous aviator's breathing oxygen is designated Grade A, Type I, Military Specification MIL-0-27210E. No other manufactured oxygen is acceptable. The difference between aviator's and medical or technical (welder's) oxygen is the absence of water vapor. The purity requirement for aviator's oxygen is 99.5 percent by volume. It may not contain more than 0.005 milligram (mg) of water vapor per liter at 760 millimeters (mm) of mercury (Hg) and 68 degrees Fahrenheit. It must be odorless and free from contaminants, including drying agents. The other types of oxygen maybe adequate for breathing, but they usually contain excessive water vapor that, with the temperature drop encountered at altitude, could freeze and restrict the flow of oxygen through the oxygen system the parachutist uses.

Low Pressure. Low-pressure aviator's breathing oxygen is stored in yellow, lightweight, shatterproof cylinders. These cylinders are filled to a maximum pressure of 450 pounds per square inch (psi); however, they are normally filled in the range of 400 to 450 psi. They are considered empty when they reach 100 psi. If a cylinder is stored at a pressure less than 50 psi for more than 2 hours, it must be purged because of the water condensation that forms.

High Pressure. High-pressure aviator's breathing oxygen is stored in lime green, heavyweight, shatterproof bottles stenciled with AVIATOR'S BREATHING OXYGEN. These bottles can be filled to a maximum pressure of 2,200 psi; however, they are normally filled in the range of 1,800 to 2,200 psi.

Liquid Oxygen (LOX)

Liquid aviator's breathing oxygen is designated Grade B, Type II, Military Specification MIL-0-27210E. LOX's most common usage is in storage facilities and for aircraft oxygen supplies because a large quantity can be carried in a small space.

Oxygen Handling and Safety

Due to limited contact with oxygen and its handling, personnel may not fully appreciate the danger involved. Improper use and handling can result in property damage, serious injury, and death. Personnel handling oxygen must—

- Keep oil and grease away from oxygen. They must not handle oxygen equipment with greasy hands or clothing. They do not let fittings, hoses, or any other oxygen equipment get smeared with oil, grease, hydraulic fluid, or dirt. A drop of oil in the wrong place can cause an explosion.
- Keep oxygen away from fires. Small fires rapidly become large fires in the presence of oxygen supplies. Personnel handling oxygen must never permit smoking near oxygen equipment, while handling oxygen supplies, or when using oxygen life support equipment.
- Handle cylinders and valves carefully. Before opening cylinder valves, they ensure the cylinder is firmly supported. They never let a cylinder drop or tip over. Dropping a cylinder can damage or break the valve, allowing the gas to escape and to propel the cylinder a great distance, an obvious hazard. These personnel open and close the valves only by hand. If they cannot open and close them by hand, the cylinder must be returned to the depot for repair.

Oxygen Requirements

The lower density of oxygen at high altitude causes many physiological problems. For this reason, MFF parachutists and aircrews need additional oxygen. Figure 7-1 contains United States Air Force (USAF)-established requirements for supplemental oxygen for the MFF parachutist during unpressurized flight, Military Airlift Command (MAC) Regulations 55-130 and 55-141 outline these requirements. The following paragraphs briefly describe the requirements.

All personnel will prebreathe 100 percent oxygen at or below 10,000 feet MSL or cabin altitude below

10,000 feet MSL on any mission scheduled for a drop at or above 18,000 feet MSL.

The required prebreathing time will be completed prior to the 20-minute warning and before the cabin altitude ascends through 10,000 feet MSL.

A break in prebreathing requires restarting the prebreathing period or removing the individual(s) whose prebreathing was interrupted from the mission.

Prebreathing requires the presence of an Air Force physiological technician on board the aircraft.

All personnel on board during unpressurized operations above 10,000 feet MSL and higher will use oxygen. (Exception Parachutists may operate without supplemental oxygen during unpressurized flights up to 13,000 feet MSL provided the time above 10,000 feet MSL does not exceed 30 minutes each sortie.) See Figure 7-1.

Life Support Equipment

Life support equipment consists of the oxygen mask, the portable/bailout oxygen system with the AIROX VIII assembly and the six-man pre-breather portable oxygen system. This equipment is discussed in the paragraphs below.

Oxygen Mask

The oxygen mask is designed to be worn with parachutist helmets that have receivers for the bayonet lugs of the mask's harness assembly. Oxygen enters the facepiece through the valve located at the front of the mask. Exhaled air passes out through the same valve. The construction of the valve's exhalation port allows a pressure of only 1 millimeter of mercury greater than the pressure of the oxygen being supplied by the regulator to force open the valve and allow exhaled air to pass to the atmosphere. A 17.5-inch long convoluted silicone hose with a 3/4-inch internal diameter attaches to the mask. Inside the hose is an anti-stretch cord that prevents extreme stretching and hose separation in the windblast during free-fall. The mask has an integral microphone that adapts to the aircraft's communication system.

DEPLOYMENT ALTITUDE (IN FEET)	ON BOARD AIR	HALO OPERATIONS	HAHO OPERATIONS
BELOW 10,000 MSL	None	None	None
AT OR ABOVE 10,000 MSL BELOW 13,000 MSL See Note 1	Supplemental oxygen at normal when unpressurized flight exceeds 30 minutes	None	None
AT OR ABOVE 13,000 MSL BELOW 18,000 MSL See Notes 1 and 2	Supplemental oxygen at normal before ascending thru 10,000 feet MSL or cabin altitude	Supplemental oxygen at normal from 1-minute warning until canopy deployment below 10,000 feet MSL	Supplemental oxygen at normal until descent below 10,000 feet MSL
AT OR ABOVE 18,000 MSL BELOW 25,000 MSL See Notes 1 and 2	Prebreathe supplemental oxygen at 100% for 30 minutes	Supplemental oxygen at normal from 1-minute warning until canopy deployment below 10,000 feet MSL	Supplemental oxygen at normal from 1-minute warning until descent below 10,000 feet MSL
AT OR ABOVE 25,000 MSL BELOW 30,000 MSL See Notes 1 and 2	Prebreathe supplemental oxygen at 100% for 30 minutes HALO 45 minutes HAHO		
AT OR ABOVE 30,000 MSL BELOW 35,000 MSL See Notes 1 and 2	Prebreathe supplemental oxygen at 100% for 60 minutes		
AT OR ABOVE 35,000 MSL See Notes 1 and 2 NOTES: 1. Supplemental oxygen means each parachutist will have his own oxygen mask and regulator. 2. All prebreathing will be conducted at or below 10,000 feet MSL or 10,000 feet MSL cabin altitude.	Prebreathe supplemental oxygen at 100% for 75 minutes	Supplemental oxygen at 100% from 1-minute warning until free-fall below 35,000 feet MSL Supplemental oxygen at normal from below 35,000 feet MSL until canopy deployment below 10,000 feet MSL	Supplemental oxygen at 100% from 1-minute warning until free-fall below 35,000 feet MSL Supplemental oxygen at normal from below 35,000 feet MSL until canopy descent is below 10,000 feet MSL

Figure 7-1. Supplemental oxygen requirements for parachutists.

Types of Oxygen Masks. There are two types of oxygen masks currently in use. These masks are described in the paragraphs below.

The MBU-5/P pressure-demand oxygen mask has been a military standard for over 15 years (Figure 7-2). It has a soft, pliable silicone rubber facepiece with a separate plastic outer shell. Four facepiece sizes are available to fit the personnel.

The MBU-12/P pressure-demand oxygen mask is a replacement for the MBU-5/P mask (Figure 7-3). It has a soft, supple silicone rubber facepiece integrally bonded to a plastic hardshell. It seals firmly during pressure breathing and its four sizes provide proper fit and superior comfort during

extended wear. The lower profile design and four-point suspension are more stable during free-fall. Antiroll webs at the nose seal prevent downward roll off. The integral facepiece and hard-shell design permits good downward vision and increased head mobility.

Fitting the Oxygen Mask. Trained personnel must supervise mask fitting (Figure 7-4). When the mask fits properly, it should create a leak-tight seal around the sealing flange throughout the range of pressure breathing forces administered by regulators. The mask has a four-point suspension harness with offset bayonet connectors that the parachutist attaches to the receivers mounted on his helmet to fit the mask. For safety and to ensure

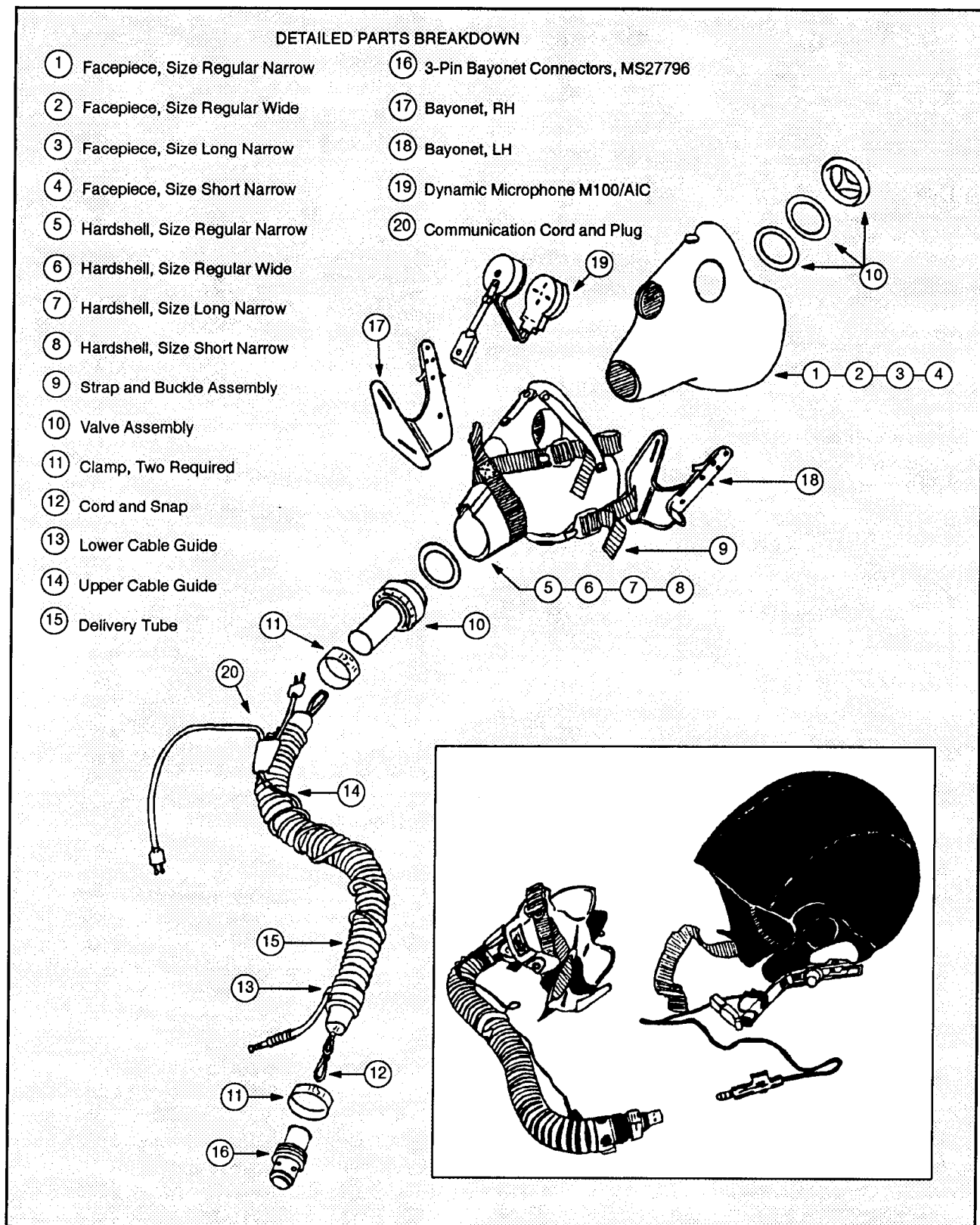


Figure 7-2. MBU-5/P pressure-demand oxygen mask.

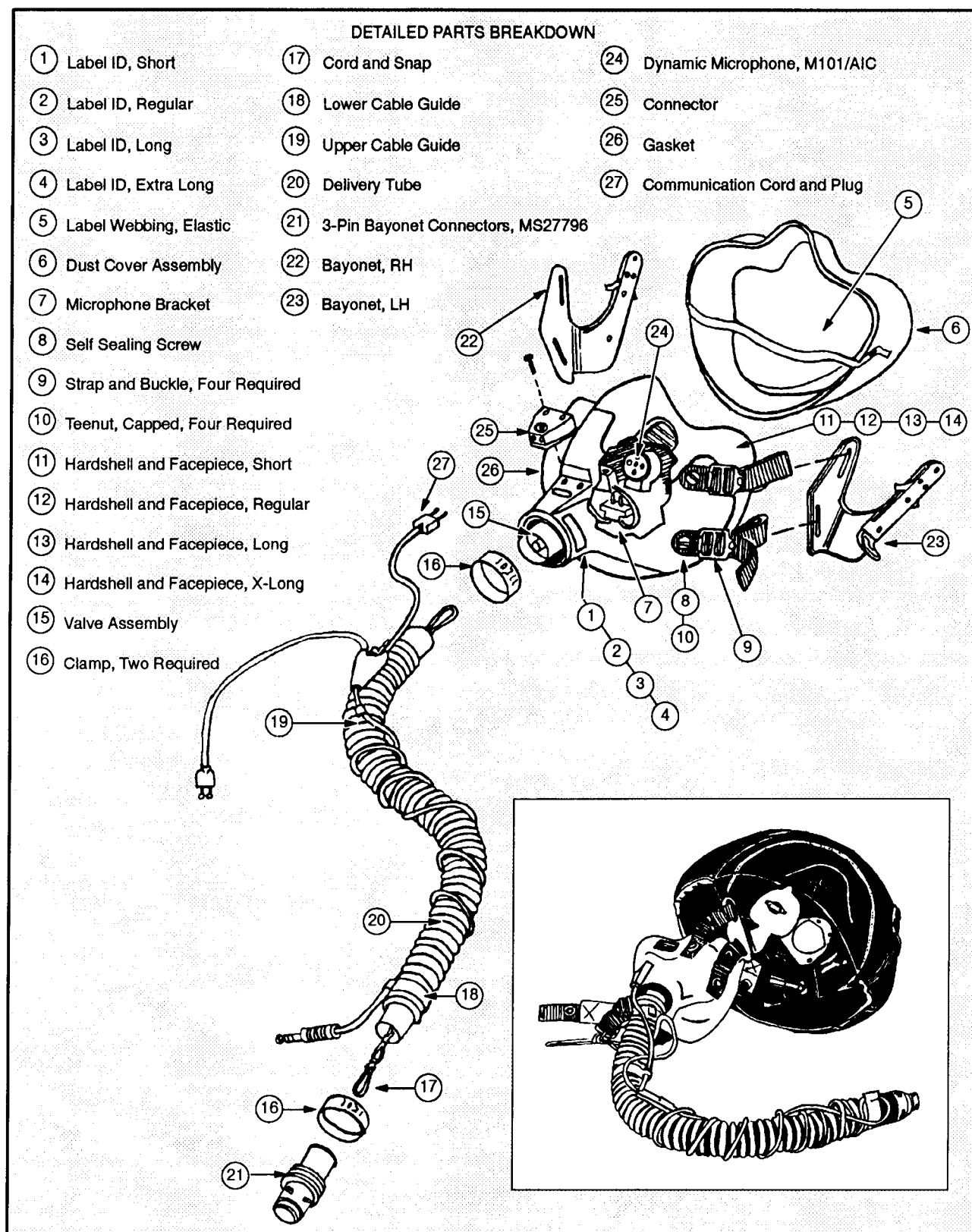


Figure 7-3. MBU-12/P pressure-demand oxygen mask.

STEP A



Mask and insert each bayonet lug into its bayonet receiver to the second locking position.

STEP B



Adjust the mask straps until the mask is comfortable and snug. Secure any excess strap.

STEP C



To test for seal, pull the two antisuffocation valve pins toward the chrome ring and inhale.

Figure 7-4. Fitting the oxygen mask.

proper fit, the MFF parachutist should be issued the same mask and helmet for each operation. To fit the oxygen mask the parachutist—

- Loosens the adjustment screws on the receivers on their helmets.
- Masks and inserts each bayonet lug into its bayonet receiver to the second locking position.
- Adjusts the mask straps until the mask is comfortable and snug but not so snug that the mask influences his vision. He secures any excess strap.
- Tests for seal by pulling the two pins of the antisuffocation valve towards the chrome ring closing the valve and inhaling.
- If the mask leaks around the face portion, readjusts the four straps and once again checks for seal. (If any other portion of the mask leaks, the mask must be replaced.)
- If a seal cannot be made at the face portion, exchanges the mask for the next size and repeats the fitting process.
- Tightens the receiver adjustment screws and secures the excess straps if a seal is achieved.

Cleaning the Oxygen Mask. The parachutist cleans his oxygen mask after each use IAW TM 55-1660-247-12. He carefully wipes all surfaces with gauze pads or a similar lint-free material dampened with 70 percent isopropyl alcohol (rubbing alcohol). If isopropyl alcohol is not available, he uses a solution of warm water and a mild liquid dishwashing detergent such as Ivory, Joy, or Lux. To rinse, he carefully wipes the masks with swabs soaked in clean water. He must take care not to wet the electronic parts. He must allow the mask to air dry. The masks must be stored in a dust-free environment, away from heat and sunlight. If the mask needs more extensive cleaning, the unit turns it in to the supporting life-support facility.

The 106-Cubic-inch Portable/Bailout Oxygen System with the AIROX VIII Assembly

The portable/bailout oxygen system with the AIROX VIII assembly is a constant-flow oxygen

metering system. This system consists of a pressure reducer and an oxygen and air controller with an integrated prebreather adapter. These components increase oxygen duration and permit comfortable exhalation with standard military pressure demand masks and associated connectors (Figure 7-5). This system—

- Has been approved for use from 0 to 35,000 feet MSL.
- Has an 8.2 liter per minute (LPM) nominal oxygen flow.
- Requires minimum maintenance.
- Has a qualified oxygen reducer.
- Interfaces with the MBU-5/P and MBU-12/P masks.
- Has an oxygen and air controller that mates with the CRU-60/P or MC-3A connectors.
- Has a charging valve.
- Has a 20 Micron oxygen/60 Mesh air inlet filter.
- Contains two 2.6-inch siphon tubes that protect the oxygen reducer from foreign matter in the cylinders.
- Has a toggle-type ON/OFF control valve.
- Has an oxygen relief valve.
- Reduces exhalation difficulty associated with constant-flow oxygen systems.
- Uses two 53-cubic-inch high-pressure cylinders.
- Weighs approximately 10.5 pounds.

AIROX VIII Assembly

The AIROX VIII assembly provides the MFF parachutist with a standoff parachuting capability up to 35,000 feet MSL (Figure 7-6). It extends the duration of two 53-cubic-inch oxygen cylinders and permits the use of any pressure demand mask and associated oxygen connectors. It eliminates the back pressure associated with constant-flow oxygen systems and has virtually no maintenance.

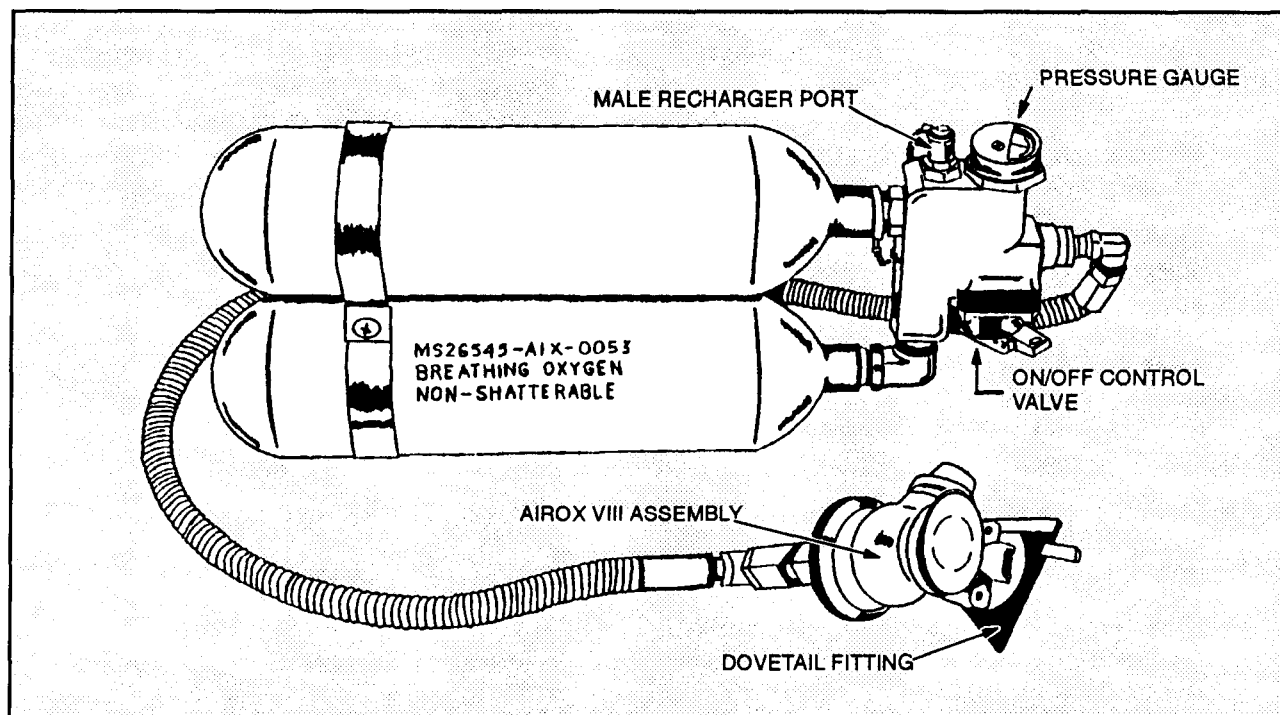


Figure 7-5. The 106-cubic-inch portable/bailout oxygen system with the AIROX VIII assembly.

The parachutist cannot overbreathe the system. When inhaling more volume than the unit delivers, an ambient air valve opens up negating the breathing starvation sensation felt with other constant-flow systems as cylinder pressure decreases.

The AIROX VIII assembly has a special prebreather adapter that allows simultaneous hookup of the prebreather unit and the bailout system to the AIROX unit. The parachutist then connects the AIROX VIII assembly to the MC-3A connector that leads to the oxygen mask. He then makes only one disconnection upon standing up. The connection from the prebreather connects to the ambient air port on the AIROX unit, thus preventing any ambient air from entering the parachutist's systems while prebreathing. When preparing to exit the aircraft, the parachutist stands up, turns on the bailout system, disconnects from the prebreather, and jumps.

To rig the AIROX VIII assembly with the portable/bailout oxygen system to the RAPS (see Figure 7-7), the parachutist—

- Threads the waistband extension through the keepers on the detachable pouch.

- Places the oxygen cylinders into the detachable pouch with the ON/OFF valve to his front. He secures it with the hook-pile straps.
- Routes the oxygen hose between his back and the parachute container, then between the horizontal adjustment strap and the waistband on his right side.
- Secures the dovetailed fitting in the receiving bracket on the right main lift web.
- Tightens the waistband and secures the left wing flap over the detachable pouch and the weapon (if used).

Six-Man Prebreather Portable Oxygen System

The six-man prebreather portable oxygen system was designed as a self-contained, easy to operate, small, lightweight and virtually maintenance-free oxygen system (Figure 7-8). Oxygen duration is based on altitude and individual consumption requirements. Therefore, the same volume of oxygen based on a given time at sea level will last longer at altitude, based on expansion of the gas.

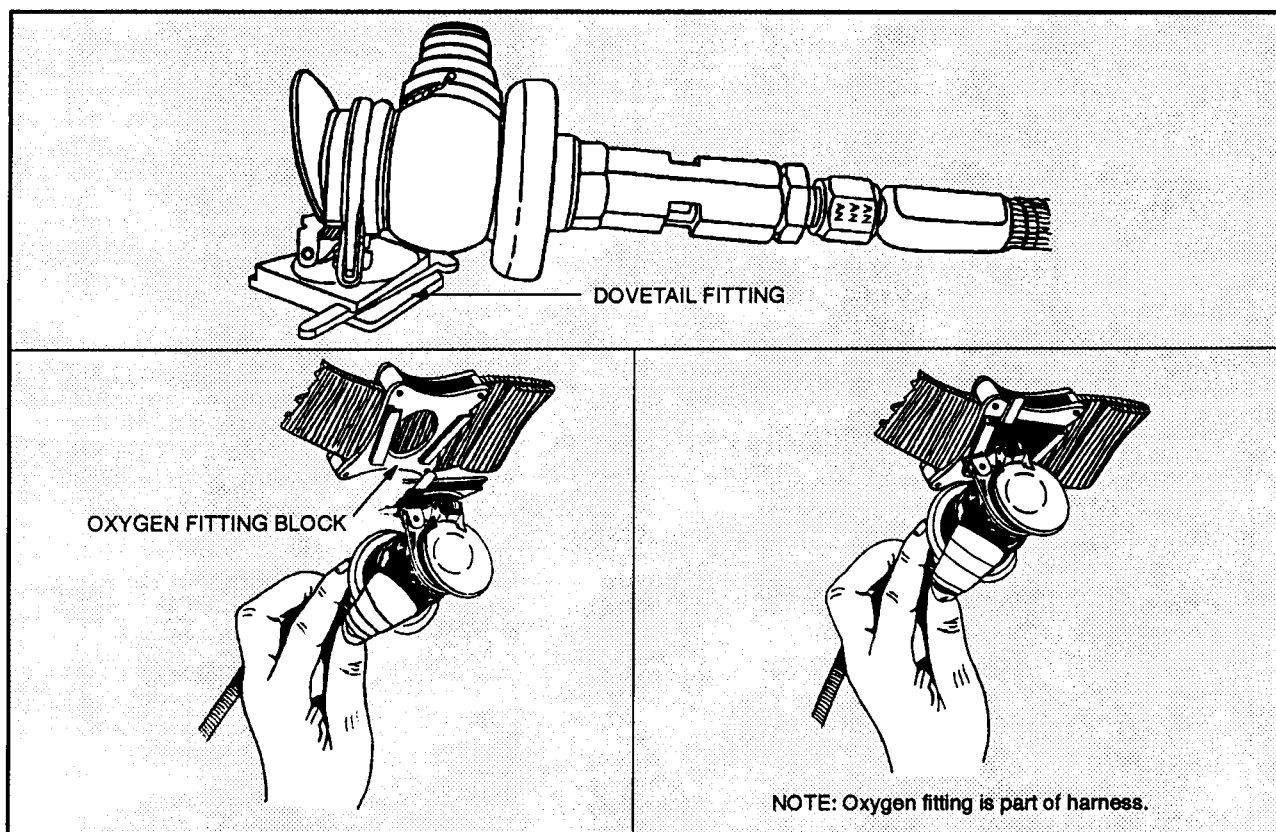


Figure 7-6. AIROX VIII assembly.

The system's size was based on placing it completely under the troop seats on a C-141B Starlifter aircraft and securing it with the existing 10,000-pound floor fittings. On the C130 aircraft, use the 5,000-pound tie downs. Its outer housing is of 4130 aircraft sheet steel, and recesses or steel guards protect the critical components. Color coding identifies certain parts, such as hoses and their mating parts, to prevent their misconnection.

The system has 100 percent oxygen capability for 1 hour for six parachutists while ascending to 35,000 feet MSL.

NOTE: With the CRU-79/P regulator, the system has an operational ceiling of 50,000 feet MSL.

Other system features are listed below:

- Weighs 106 pounds when filled.
- Measures 27.3 inches wide, 13.37 inches deep, and 10.99 inches high.
- Can provide oxygen for one to six parachutists.
- Has modular components.
- Is constructed to survive an 8G forward crash load.
- Has a recessed refilling point.
- Has an easily gripped and guarded ON/OFF knob.
- Has color coded and indexed oxygen connectors to ensure proper hose connections, including optional hose lengths to fit parachutist seating requirements.
- Has a steel guard around oxygen hose connectors.
- Interfaces with any pressure-demand mask and associated connectors.
- Can be refilled while being used.

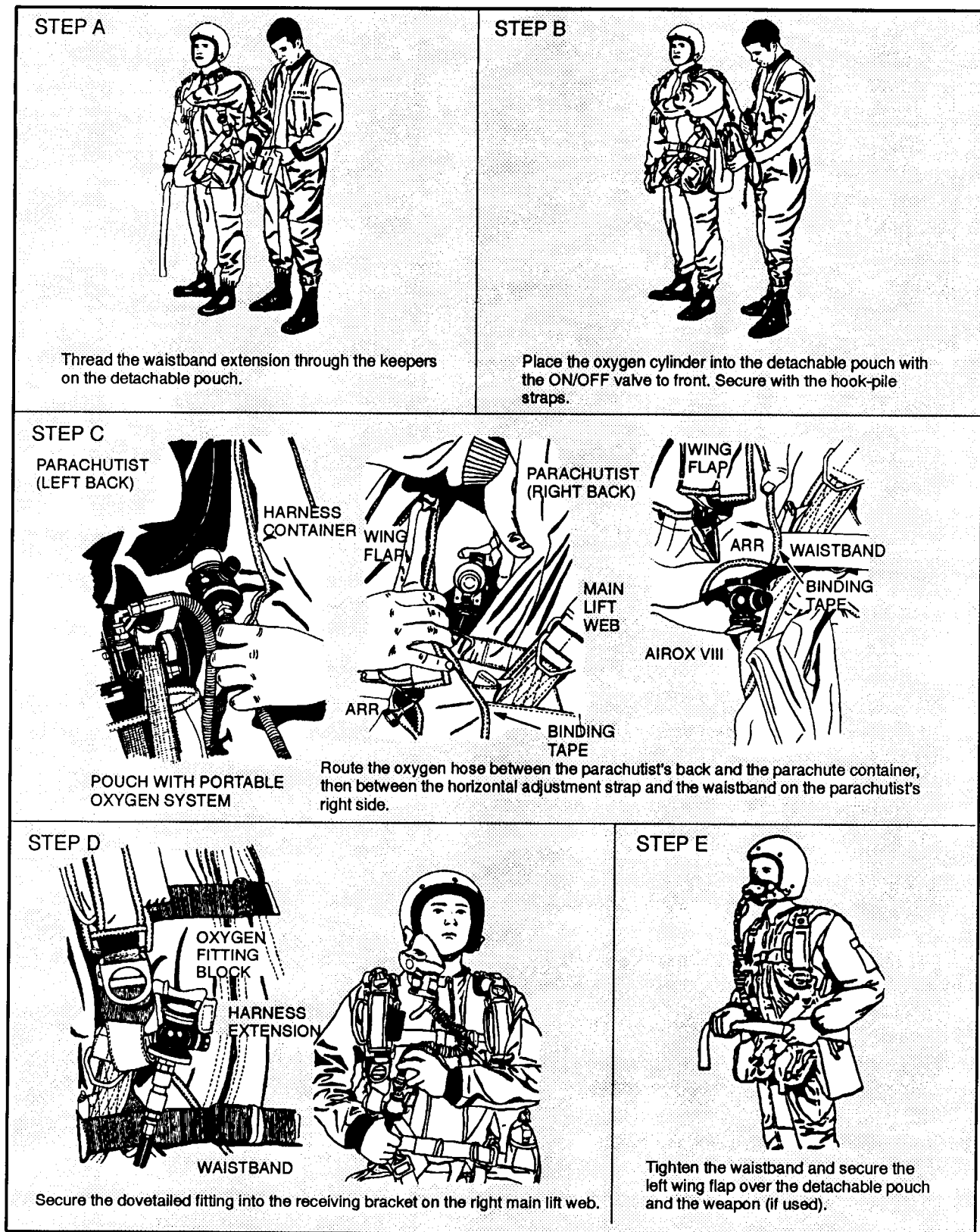


Figure 7-7. Rigging the portable/bailout oxygen system with the AIROX VIII assembly to the RAPS.

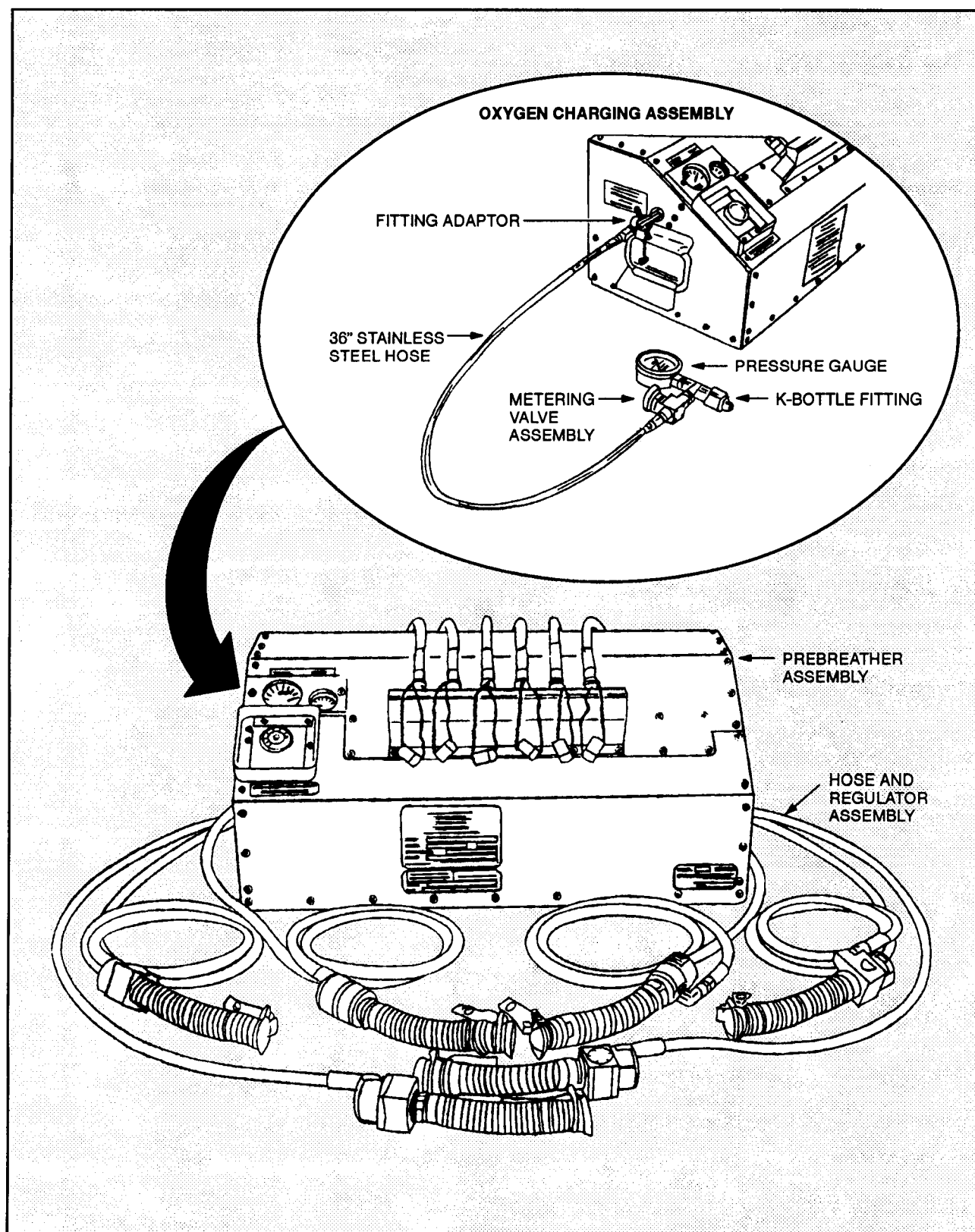


Figure 7-8. Six-man prebreather portable oxygen system.

MA-1 Portable Oxygen Assembly

The MA-1 portable oxygen assembly is a low-pressure system capable of supplying the parachutist with breathing oxygen for normal or emergency use. It is commonly called the walk-around bottle. The MA-1 is filled from the aircraft's oxygen supply. Pressure is indicated on the cylinder pressure gauge. The cylinder is considered full at 300 psi and empty at 100 psi. The MA-1 is operated by placing the selector knob at one of the four settings (NORM, 30M, 42M, and EMER) and breathing directly through the CRU connector receiver port or an attached oxygen mask (Figure 7-9).

The "PRICE" Check

Each letter of the acronym PRICE represents an area of or a specific item of oxygen equipment that the parachutist must check. The PRICE check

makes no provision for inspecting the mask or protective helmet. The parachutist checks—

- P - Pressure. He checks for full pressure on the particular system in use.
- R - Regulator. He checks everything on the particular regulator in use. He checks for dents, cracks, broken gauges, grease or oil, and movement of dials and levers. He checks the entire oxygen delivery system for leaks.
- I - Indicator. He checks to ensure the flow indicator shows that gas is flowing through the regulator from the storage system.
- C - Connections. He checks all hose connections.
- E - Emergency equipment. He does a complete PRICE check on any emergency oxygen equipment and the complete bailout system.

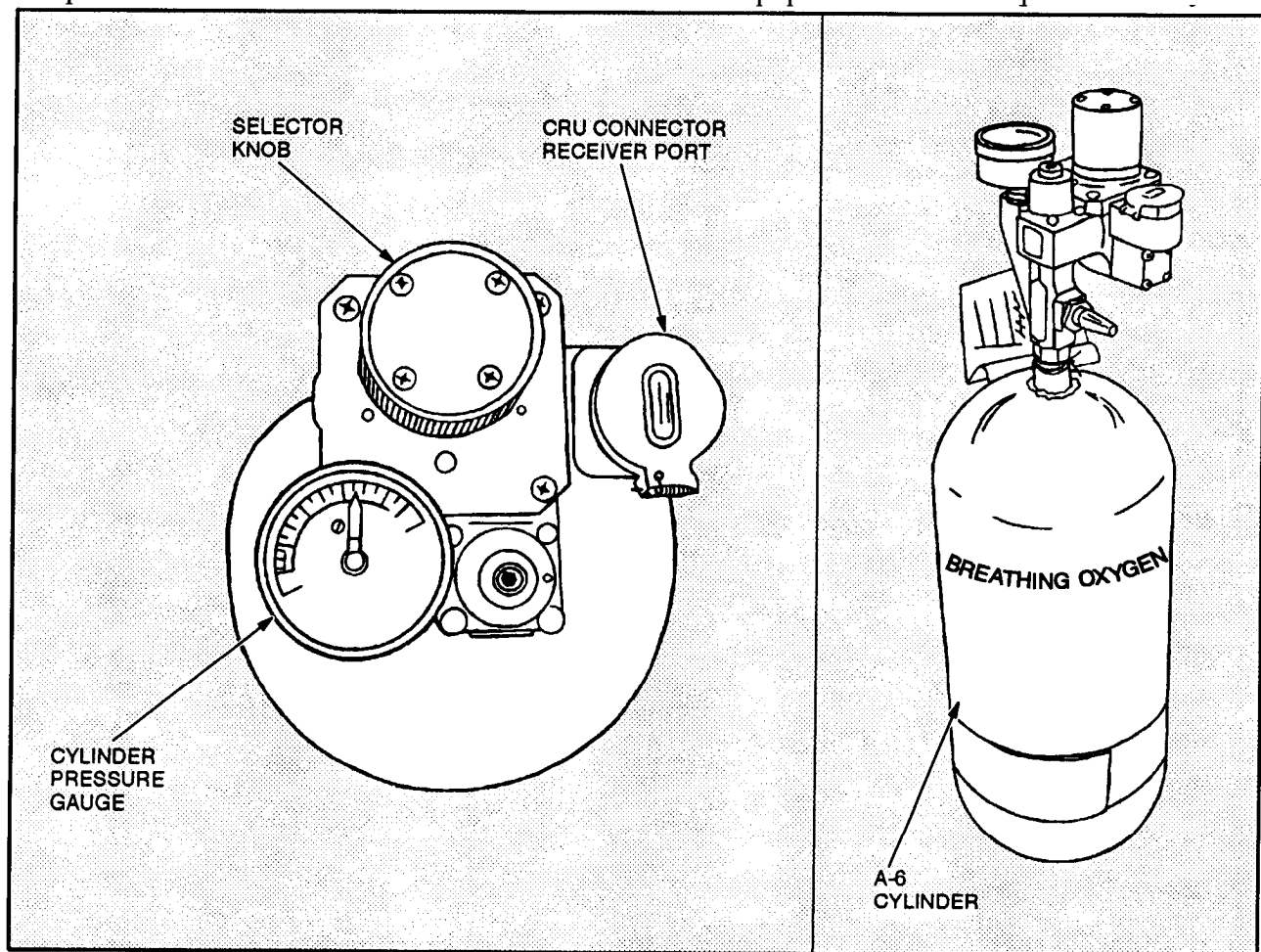


Figure 7-9. MA-1 portable oxygen assembly.

Safety Personnel

There must be oxygen safety personnel on board each aircraft during MFF operations using supplemental oxygen. Air Force physiological personnel must also be on board each aircraft when the mission requires oxygen prebreathing by the flight crew and parachutists. The oxygen safety personnel—

- Plan for all oxygen equipment required for the mission.
- Provide one additional mask of each size and one additional complete bailout system per six parachutists.
- Plan for one additional open oxygen station per every six parachutists in the event of a hose or regulator failure.
- Conduct preflight inspection and preflight operational checks of all oxygen equipment (Figures 7-10 through 7-13).
- Supervise the transportation and installation on board the aircraft of prebreathers and oxygen cylinders.
- Issue oxygen supply hoses to each parachutist and supervise hose connection.
- Ensure the parachutists mask properly, fully open shutoff valves on the prebreathers, and receive oxygen after the aircraft procedure signal "mask" is given.

WARNING

NEVER partially close the shutoff valve during oxygen use; this will result in a restriction of oxygen flow to the parachutist.

- Periodically check oxygen pressure and equipment function during use (approximately every 10 minutes),
- Monitor each parachutist for signs of hypoxia, bends, or chokes.
- Assist the parachutist with the activation of the bailout systems and inspect all bailout systems to ensure they were activated.

- Check the parachutist's hose connections on the AIROX VIII. If the parachutist still indicates a problem, activate the bailout system, move the parachutist to an open station, and deactivate the bailout system.

Prebreather Attachment

The prebreather oxygen assembly is normally located under the troop seats, and the oxygen supply hoses are routed up and behind the seats. The prebreather may also be positioned centerline in the aircraft using 10,000-pound tie-down fittings (C-141B), 5,000-pound tie-down fittings (C-130), or securing straps.

When using 10,000-pound tie-down fittings, the parachutist places the two large holes in the base plate of the prebreather over existing 10,000-pound tie-down fitting holes in the floor of the aircraft. Through the openings in the side of the prebreather, he places two 10,000-pound fittings (one through each end) into the mating receptacle now visible through the prebreather's baseplate. He then locks the fittings in place. These fittings will provide all the security necessary to hold the prebreather in place.

When using oxygen console tie-down assembly, the parachutist places two large holes in the prebreather's baseplate over the attached 5,000-pound ringed tie-down fittings. Next, he places securing adapters over the exposed rings and pushes the pins through the holes in the adapters until they lock. These fittings will provide all the security necessary to hold the prebreather in place (Figure 7-14).

Cargo straps are not necessary for added security when using the 10,000 pound tie-down fittings or oxygen console tie-down assembly. If the parachutist uses cargo straps in place of the tie-down fittings, he places the straps through the securing access holes at each end of the prebreather and cinches tight to existing fittings.

NOTE: The prebreather carrying handles are not stressed for use as securing points.

PREFLIGHT INSPECTION OF 106-CUBIC-INCH PORTABLE/BAILOUT OXYGEN SYSTEM

Check to ensure that—

- ☐ Cylinders are lime green and stenciled in white with the words AVIATOR'S BREATHING OXYGEN.
- ☐ No cracks, dents, or gouges are in the cylinders.
- ☐ Cylinder clamp and roller are on the bottom one-third of the cylinders and secure.
- ☐ Cylinders are tight into the pressure reducer body.
- ☐ Reducer body is not cracked or damaged.
- ☐ Filler valve, pressure gauge, and relief valve are tight into the pressure reducer body.
- ☐ Cap on the filler valve is secure and the filler cap lanyard is secured to both the cylinder and filler valve.
- ☐ Pressure gauge face is not damaged and the dial indicator is not sticking.
- ☐ ON/OFF control valve is secured to the pressure reducer body with four "allen" screws.
- ☐ Guide rails of the ON/OFF control valve are undamaged. Operating lever operates properly and the detent will hold the valve in the ON and OFF position.
- ☐ Union elbow is secured tightly to the top of the pressure reducer body and the elbow directs the hose over the pressure gauge.
- ☐ Hose assembly is not frayed or crushed, and the cloth covering is not worn and is free of oil or other contaminants.
- ☐ Hose assembly is securely attached to the union elbow and flow indicator.
- ☐ There is no obvious damage to the flow indicator body, the arrow points toward the AIROX, and the flow indicator is securely attached to the AIROX.
- ☐ View glass is clear indicating a no flow condition and the white sleeve, yellow sleeve, and spring are present.
- ☐ Blue tamper-proof dot is present directly below the ambient air port.
- ☐ Equalization port is free of foreign objects or debris.
- ☐ Brass set screw and brown tamper-proof dot are present.
- ☐ Body of the AIROX is not damaged or cracked.
- ☐ Ambient air port is securely attached to the AIROX and not damaged and the safety lock wire and screw are intact.
- ☐ Chrome ring is present and rotates freely.
- ☐ Gasket is present, clean, and free of nicks or tears.
- ☐ Inlet orifice is free of foreign objects or debris and the screen is present and not damaged.
- ☐ Cover of the outlet orifice is spring loaded and seats properly.
- ☐ No foreign objects or debris is in the outlet orifice and the screen is present and not damaged.
- ☐ Dovetail mounting plate is securely attached to the bracket.
- ☐ There is no damage to the dovetail mounting plate.
- ☐ Locking lever is spring loaded and functions properly.

PREFLIGHT OPERATIONAL FUNCTION CHECK

- ☐ Ensure the system is fully charged at 70 degrees Fahrenheit.
- ☐ Connect a mask to the outlet orifice and ensure that it is secure and that excessive force is not required to connect and disconnect.
- ☐ Turn the system on and seal the mask to the face.
- ☐ Inhale — yellow sleeve (on flow indicator) rises; exhale — yellow sleeve falls. Inhalation shall be normal with no undue exertion.
- ☐ Ensure there is no oxygen flow from the relief valve.
- ☐ Turn the system off, reseal the mask to the face, and ensure you can breath through the ambient air port.
- ☐ Connect a hose and regulator assembly to the ambient air port, ensure that it is secure and that excessive force is not required to connect and disconnect.

Figure 7-10. Sample portable/bailout oxygen system preflight inspection and preflight operational checklist.

PREFLIGHT INSPECTION OF SIX-MAN PREBREATHER

Check to ensure that—

- ☐ Unit has no obvious damage.
- ☐ Gauge faces are not broken.
- ☐ Dial indicators are not sticking.
- ☐ All screws are present and not coming loose.
- ☐ Handles are not separating from unit.
- ☐ Filler cap is present and tied down to unit.
- ☐ All female disconnect plugs are present and tied down to disconnect.
- ☐ Female disconnects are not distorted and the pins of the male connectors of the hose assemblies will engage with the collar of the female disconnect.
- ☐ Female disconnects are safety-wired to the adjacent female disconnect.
- ☐ Connector manifold guard does not interfere with the operation of the female disconnects or male connectors of the hose and regulator assembly.
- ☐ Both set screws in the on-off knob are present and not backing out.
- ☐ On-off valve stem is not bent.
- ☐ Container is not cut, damaged severely, or corroding.
- ☐ Unit is fully charged to 1800 psi at 70 degrees Fahrenheit.

PREFLIGHT INSPECTION OF THE HOSE AND REGULATOR ASSEMBLY

Check to ensure that—

- ☐ Each male connector has the proper amount of pins (red - 2 pins; yellow - 3 pins; grey - 4 pins) and the mating probe is not distorted.
- ☐ Male connector is tight in the hose assembly.
- ☐ Wire wrapping is not frayed and hose is not crushed.
- ☐ Cloth covering is free of oil or other contaminants.
- ☐ Red male connector is connected to 72-inch hose; yellow connector to 90-inch hose; and grey connector to 98-inch hose.
- ☐ Hose is tightly connected to regulator.
- ☐ Regulator is not cut or cracked.
- ☐ No foreign object or debris is in equalization port.
- ☐ Low-pressure hose is clamped to both the check valve and the regulator, and the clamps are safety wired.

- ☐ Cover is spring loaded and seats evenly over check valve.
- ☐ Check valve is spring loaded.

PREFLIGHT OPERATIONAL FUNCTION CHECK

- ☐ Turn the shutoff valve counterclockwise to the fully opened position (approximately 5 1/2 turns) (Figure 7-12).
- ☐ Ensure the reducer pressure gauge indicates 40-60 psi (Figure 7-12).
- ☐ Remove each disconnect plug in turn and depress the "poppet" of each disconnect (Figure 7-13A) and ensure oxygen flows from each disconnect.
- ☐ Close shutoff valve and ensure reducer pressure remains steady (40-60 psi).
- ☐ Bleed off the pressure through the disconnect manifold.
- ☐ Install all hose and regulator assemblies to their appropriate disconnect (Figure 13B). **(Ensure manifold pressure is bled before attaching hose and regulator assemblies.)**
- ☐ Connect an MBU-12/P mask to each hose and regulator assembly.

CAUTION

Failure to properly connect the hose and regulator assemblies to the prebreather using the above procedures could possibly damage the diaphragm of the CRU-79/P regulator and render the equipment inoperative.

- ☐ Open shutoff valve (approximately 5 1/2 turns).
- ☐ Listen for and feel the oxygen flow from each mask.
- ☐ Disconnect all but one mask and note the reducer pressure for a 3 to 5 second interval. The reducer pressure should not drop below 40 psi.
- ☐ Hold mask up to the face and inhale. Inhalation shall be normal with no undue exertion to breathe oxygen. Remove mask from hose and regulator assembly and ensure check valve closes and there is no flow from the hose and regulator assembly.
- ☐ Repeat the above step for each hose and regulator assembly.
- ☐ Close shutoff valve and bleed manifold pressure through one or more check valves until reducer pressure indicates zero.
- ☐ Monitor reducer pressure for 15 minutes. (Ensure gauge indicator remains at zero.)

Figure 7-11. Sample prebreather preflight inspection and preflight operational checklist.

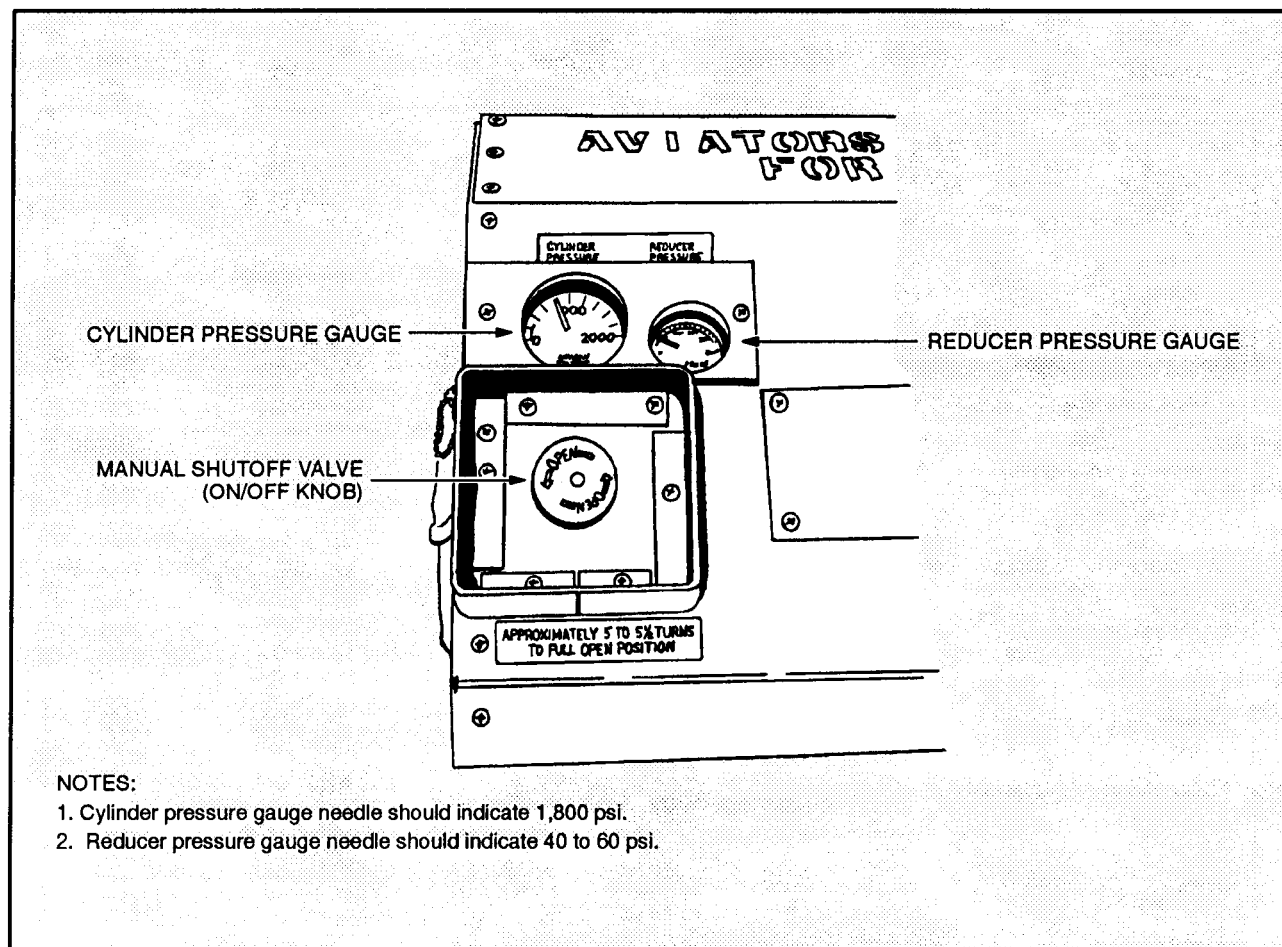


Figure 7-12. Pressure gauge and manual shutoff valve.

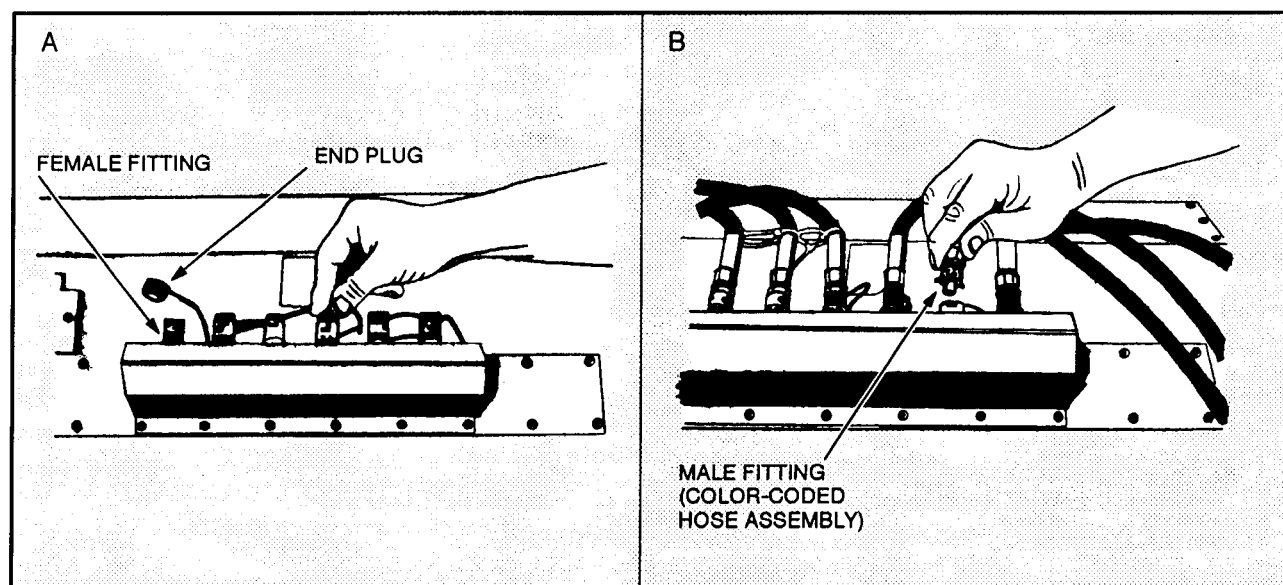


Figure 7-13. Removing end plugs and depressing "poppets".

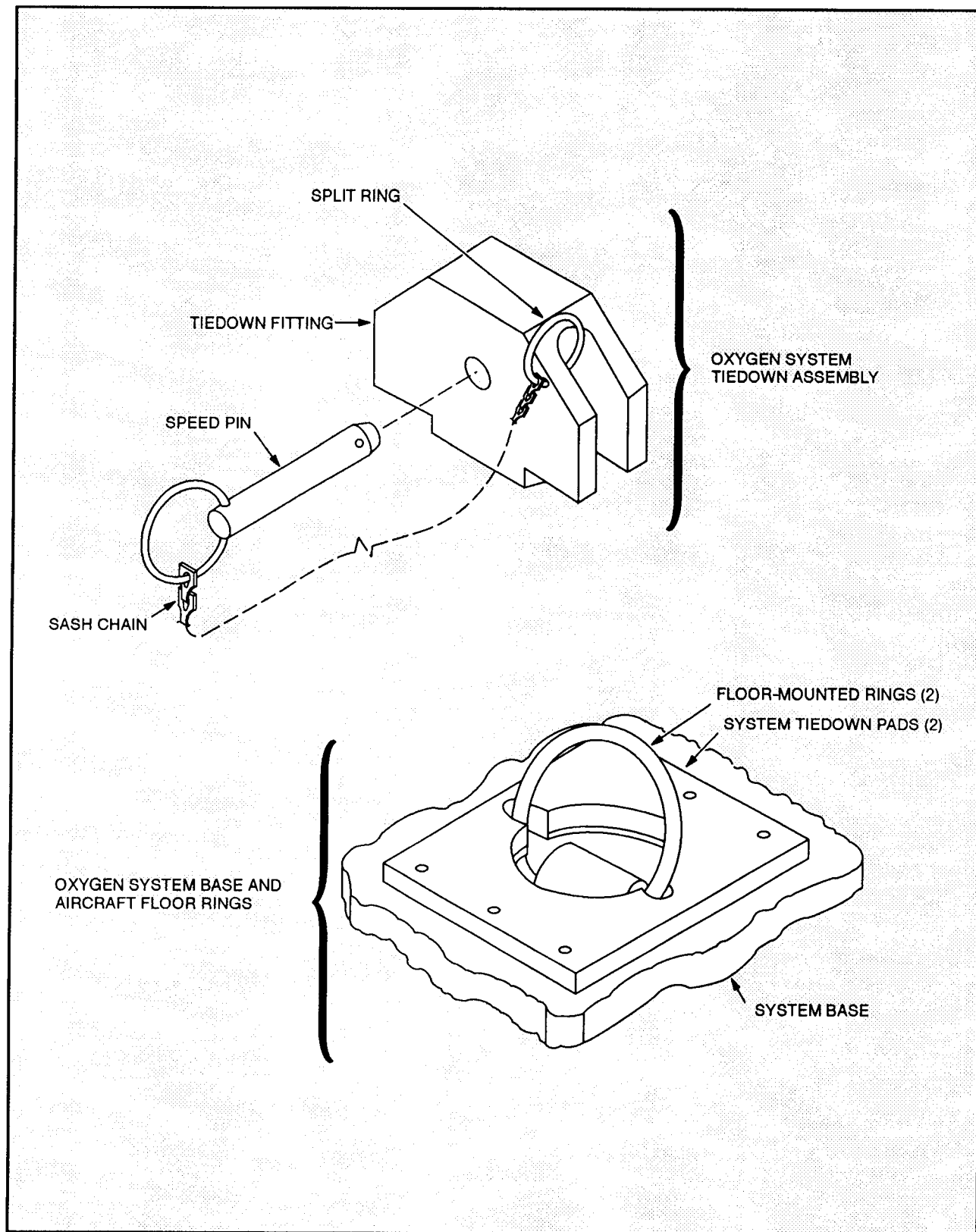


Figure 7-14. Tiedown assembly and installation.