HEED III
HELICOPTER EMERGENCY EGRESS DEVICE
FOR MODELS 175M / 175MT / 175T / 175TC / 175TC-H / 175T-H

TECHNICAL / USER MANUAL

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THE LEADER IN SELF-RESCUE BREATHING SYSTEMS.

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HOW HEED WORKS

Helicopter Emergency Egress Device (HEED) is a complete miniature emergency breathing system all-in-one unit. It is composed of a balanced single stage demand regulator, high pressure tank, check valve (refill port), and pressure indicator (in the form of a dial gauge or pressure indicator with stem).

The system is always on and ready for immediate use. Upon inhalation, the diaphragm depresses the long lever against the short lever pressing the poppet assembly down and away from the poppet seat. This action allows air to flow from the tank into the regulator chamber and out the mouthpiece. On exhalation, the diaphragm is forced upward, closing the poppet assembly, and air exits the regulator chamber through the exhaust ports.

MOUNTING INSTRUCTIONS:

Yellow Covered Holster: This holster is designed to be worn on a belt at the waist and resides on either side of the hip. This holster can also be sewn on the flight jacket in various locations. Since this holster covers the HEED III completely, it protects the entire unit from dropping or being damaged.

Black Holster: This holster is designed to be sewn onto the flight jacket. The suggested location

is on the SV-2B vest as currently prescribed for the HEED II (Air Crew System Change No. 493 TDC 66). There is a projection of 1 1/8th of 2 inch wide nylon webbing at each end of the holster. This can be attached to the flight jacket by using size E nylon thread and sewing 8 to 10 stitches per inch in a box pattern 1 inch high by 1¾ inch wide. The completed sewing operation needs to provide a minimum of 60 pound pull-strength (three times the strength required to activate the system). An alternative mounting procedure is to mount the holster by using snaps on the holster and flight jacket.

NOTE: It is important that the operator be able to grip the regulator having sufficient clearance for a pull of at least 6 inches.

PRE USE CHECK:

1. Check Pressure Indicator- The unit is operational for each model as follows:
   a. Pin Style Indicator – Top of pin is between the green notch and the top face of the indicator.
   b. Dial Gauge Indicator – Needle is within green zone (range from 2600 to 3000 psi).

2. Check for obvious physical damage, broken or loose parts.

TO USE THE HEED:

1. Reach with your hand for the regulator and grab securely.

2. Pull regulator vertically toward your mouth.

3. If the system is used underwater:
   a. Hard purge button model: Exhale into the mouthpiece to clear water from the regulator prior to inhalation.
   b. Soft purge button model: Press purge button to expel water from the regulator prior to inhalation.

4. Place mouthpiece in your mouth and breath normally.

   NOTE: The HEED utilizes a balanced regulator which means it will provide air in any orientation including the regulator being upside down or sideways.

REFILLING HEED FROM A FILL STATION USING #920CM ADAPTER:

1. Unscrew the CHECK VALVE CAP by turning counter-clockwise.

2. Screw the #920CM REFILL ADAPTER onto the CHECK VALVE until it is finger tight.

3. Attach the yoke from the compressor or fill station to the #920CM REFILL ADAPTER.

   NOTE: If line is pressurized over 3000 PSI, adjust the line pressure to 3000 PSI.

4. Turn the valve on your compressor or fill station ON.
5. Refill the tank to 3000 PSI. Regulate the flow so that it takes approximately 45-60 seconds to fill the tank.

NOTE: It is absolutely necessary to fill slowly and to refrain from overfilling to protect the safety burst disc inside the regulator from rupturing. To prevent damage fill no faster than 45 to 60 seconds. If the burst disc is ruptured, a new one must be installed before HEED III can be filled. The burst disc is a standard 3300 PSI burst disc.

6. When the tank is full, turn the compressor or fill station valve OFF.

7. Remove the #920CM REFILL ADAPTER and screw the CHECK VALVE CAP onto the check valve.

8. Check the PRESSURE INDICATOR. If the tank is full, the dial gauge will read 3000 PSI or if unit has pressure indicator with stem, stem will be flush to edge of indicator.

REFILLING HEED FROM A SCUBA TANK USING #910CM ADAPTER:

1. Remove the CHECK VALVE CAP from the check valve by turning counter clockwise.

2. Attach the #910CM refill adapter to the HEED and turn the ADAPTER BLEED SCREW clockwise until tight.

3. Attach #910CM adapter to the SCUBA tank.

CAUTION: DO NOT stand directly over the top of HEED regulator.

4. Open the SCUBA tank valve and fill the HEED SLOWLY to prevent heat build up. Regulate the flow so that it takes approximately 30 seconds to fill.

NOTE: It is absolutely necessary to fill slowly and to refrain from overfilling to protect the safety burst disc inside the regulator from rupturing. To prevent damage fill no faster than 45 to 60 seconds. If the burst disc is ruptured, a new one must be installed before HEED III can be filled. The burst disc is a standard 3300 PSI burst disc.

5. When HEED equalizes with SCUBA tank air flow will stop.

NOTE: If SCUBA tank WAS NOT FULL at beginning of refill procedure, then the HEED will not be filled to its recommended full capacity, diminishing available air volume.

6. Close the SCUBA tank valve.

7. Open the ADAPTER BLEED SCREW by turning counter-clockwise one turn to relieve pressure in the adapter.

WARNING: Do not open the BLEED SCREW of the adapter more than one full turn while under pressure.

8. Remove the #910CM adapter from the SCUBA tank and then from the HEED. Close ADAPTER BLEED SCREW on refill adapter.

9. Replace the CHECK VALVE CAP onto the check valve.

10. Check the PRESSURE INDICATOR. If the tank is full, the dial gauge will read 3000 PSI or if unit has pressure indicator with stem, stem will be flush to edge of indicator.

GENERAL SERVICING INFORMATION

NOTE: If a leak or damage is found at any point the unit should be referred for service! See Service Manual for specific procedures.

PRE-USE CHECK:

1. Visually check dial gauge for needle to be within green zone or pressure indicator stem to be flush to edge of indicator. If unit does not read in those zones then perform the ANNUAL CHECK below to determine if the unit is actually leaking or if it just needs to be filled.

2. Look for obvious physical damage, such as broken or loose parts. Check openings of diaphragm cover for presence of foreign objects or punctures of blue diaphragm. Check that all parts are clean and securely attached.

ANNUAL CHECK:

1. Perform an annual leak test. A leak test consists of completely submerging the unit into a tub of water; shake the unit back and forth several times so that all trapped air is released; hold the unit still and watch for any leaks for 60 seconds (spend 20 seconds at each of the following: mouthpiece opening, side ports, and tank o-ring areas).

   NOTE: A leak is defined as a continuous bubble at a constant rate.

FIVE YEAR SERVICE:

1. Every five years the regulator should be overhauled with a complete overhaul kit. Refer to our Service Manual for complete instructions. Only personnel certified to repair HEED can perform the repair.

2. The HEED tank has a DOT 3AL 3000 rating. With this rating, HEED tanks ARE REQUIRED to be hydrotested every five years. DOT also requires that any cylinder exposed to fire or heat in excess of 350 degrees Fahrenheit be condemned.

   NOTE: Any cylinder that shows signs of corrosion, pitting or damage during any service checks should be evaluated further.

ROUTINE CARE:

1. DO NOT immerse in or use solvents, acids or other chemical cleaners on the HEED

system. Hot, soapy water may be used for cleaning when necessary.

2. Corrosion resistant materials are used in all parts of HEED. If used in salt water or a chlorinated swimming pool, we recommend that the unit be filled, then rinsed with clean, fresh water and allow to dry before storage for maximum performance and reliability.

3. HEED units should be stored in clean, dry environments.

SERIALIZATION:

All HEED systems are identified with individual serial numbers. Serial numbers are located on the regulator to the right of the mouthpiece.

SYSTEM DESCRIPTION AND SPECIFICATIONS

CYLINDER VOLUME:	1.7 CU.FT. / 48 LITERS
DURATON OF BREATHING:	APPROX. 2 –5 MIN.* *Varies upon users lung capacity, physical exertion, depth of usage in water and several other factors
TANK PRESSURE:	3000 PSI / 200 BAR
BURST DISC RATE:	3300 PSI; BURSTS BETWEEN 4500-5000 PSI
DIAMETER:	2.25" / 5.71 CM
LENGTH:	8.75" / 22.23 CM
SURFACE WEIGHT:	1.51 LBS. / .687 KG
SURFACE BREATHS:	30 (BASED ON 1.6 LITER BREATH SIZE)
OPERATIONAL TEMPERATURES:	-30C / -22F +70C / +158F
BUOYANCY:	Nearly neutrally buoyant
ALTITUDE TESTED TO:	35,000 FEET
CYLINDER DOT RATING:	DOT 3AL 3000

NOTE: Due to this tank rating the HEED requires hydrotesting every 5 years.