

THE PRESSURE TEST

Leaks on an immersion suit compromise the thermal protection which the suit was designed to provide. The seams on an immersion suit are stress points where leaks may sometimes be found in older suits, the possible result of a breakdown in the glue used to bond the suit together. Leaks are typically caused by aging, as well as exposure to poor storage conditions, such as being stored wet. As most leaks are invisible to the naked eye, a pressure test is required to reveal any hidden leaks which may not have been evident during the visual inspection. Tools and equipment are provided by Revere Supply Co. Inc. for servicing suits. (See Figure 3-6)

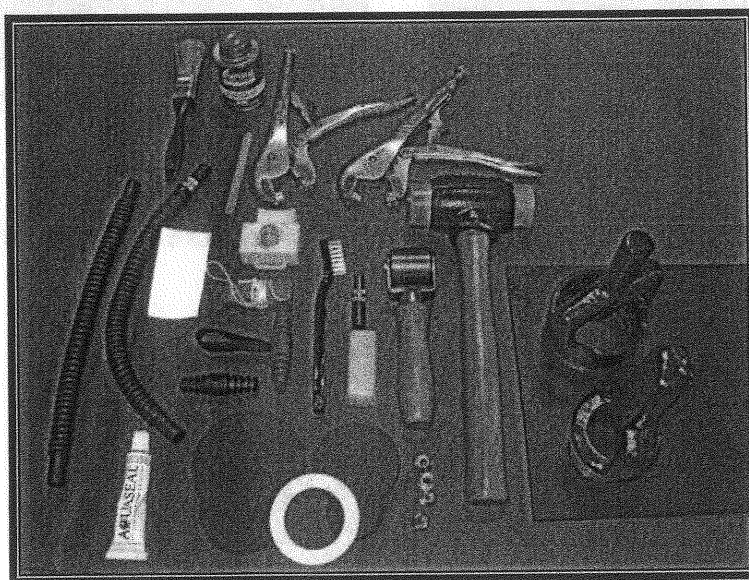


Figure 3-6

Before beginning the pressure test, the service technician must first complete the visual inspection.

1. On a flat surface which will not be damaged by prolonged exposure to water, lay out the immersion suit, face up.
2. Place the inflation headpiece (Part No. 80-1500-101) into the neck area of the suit and close the main zipper up over the headpiece (See Figures 3-7 and 3-8). To gain a proper seal pull on the headpiece while holding the suit steady so that it will lodge snugly in the neck. Close the spray shield. Finally, duct tape should be placed over the toe valves (if applicable) to complete the seal.

Note: Use of an inflatable head piece is not recommended. The inflatable head piece (peanut) creates a seal between the neck of the suit and the inflatable head piece, however, it will not always indicate a leak even if the leak exists.

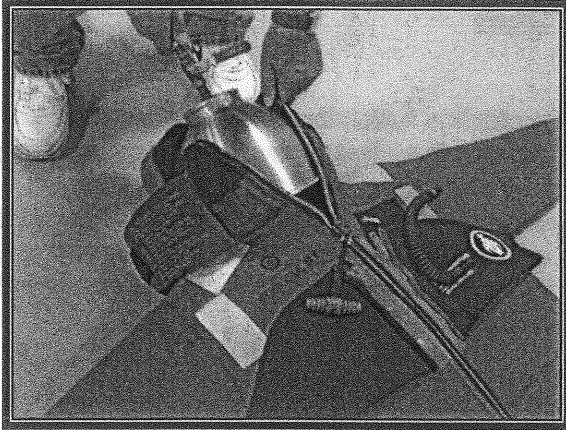


Figure 3-7



Figure 3-8

3. Open the valve on the headpiece to allow air from the compressor into the suit, filling it between 0.1 and 0.2 psi, or until firm to the touch (See Figure 3-9). Read the gauge attached to the headpiece to monitor the amount of pressure inside the suit. At the same time, look at the suit to see that it isn't slack or overfilled.

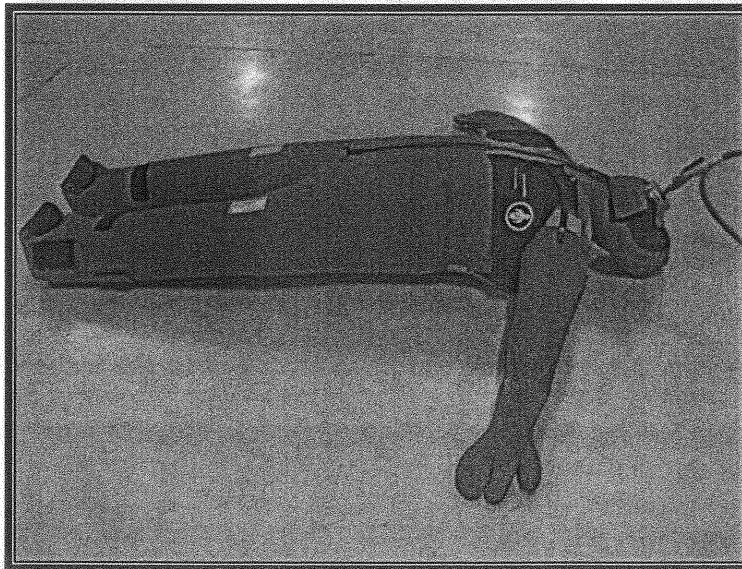


Figure 3-9

4. When the suit is properly filled, turn off or lower the air output on the headpiece so that the suit will remain full of air at steady pressure.
5. The water sprayer should be filled with approximately 4 tablespoons of dishwashing soap. Add luke warm water, filling the tank to about 2/3 its capacity. Pump up the pressure on the sprayer and adjust the spray nozzle so that it emits a strong, wide spray or soapy water.

6. Choose a point on the immersion suit and begin to spray the soapy water over the seams of the entire suit. The soapy water should cover the seam and the material on either side of it thoroughly. While spraying, carefully observe the suit where it is being sprayed, looking for any leaks which will be revealed in the form of bubbles on the suit. If a leak is found, mark the spot directly on the suit with a fabric pencil.

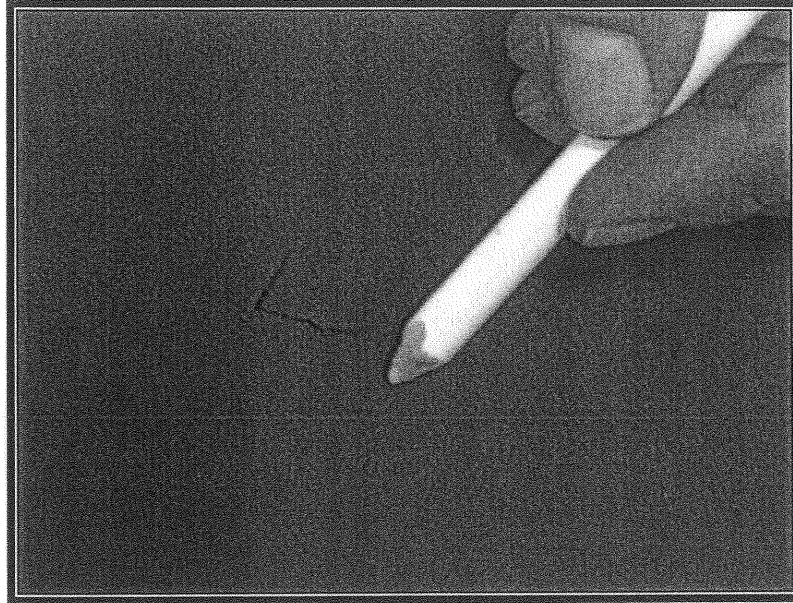


Figure 3-10

Note: The service technician who is pressure testing suits should begin and end their tests in the same sequence every time. An example of this sequence would be to start with the seams on the right glove, progress around all the seams on the suit, and end with the right glove. In this manner a routine will be developed and this methodical approach will help ensure that every seam on every suit has been tested for leaks.

7. After the seams on the front of the suit have been checked, the main zipper and the seams which run parallel to it should be spread with the soapy solution and observed for leaks. When this is completed, turn the suit over and test the seams on the back of the suit.
8. The service technician must record any leaks which appear on a suit on the worksheet. Located on the back of the Inspection/Repair Form.
9. Repair List are several suit diagrams, front and back, which can be used for this purpose. When a leak is found on a suit, write the suit's serial number under one of these diagrams. Then record the location of the leak or leaks on the suit, by placing an "X" on the diagram in the exact location where the leak was found. For example, if the suit was found to have a leak on the left side of the neck, a fabric pencil mark should have been placed clearly on the suit, establishing the exact boundaries of the leak and an "X" should be marked on the left side of the neck on the worksheet diagram.

10. After the suit itself has been tested, inflate the high rider ring until it is completely filled and bulges slightly. Spray the seams on the high rider ring and around the base of the inflation hose, observing carefully for any leaks. If any leaks are revealed, the high rider ring must be replaced. If the high rider ring is free of leaks, wait until it is completely dry and reattach it to the suit.

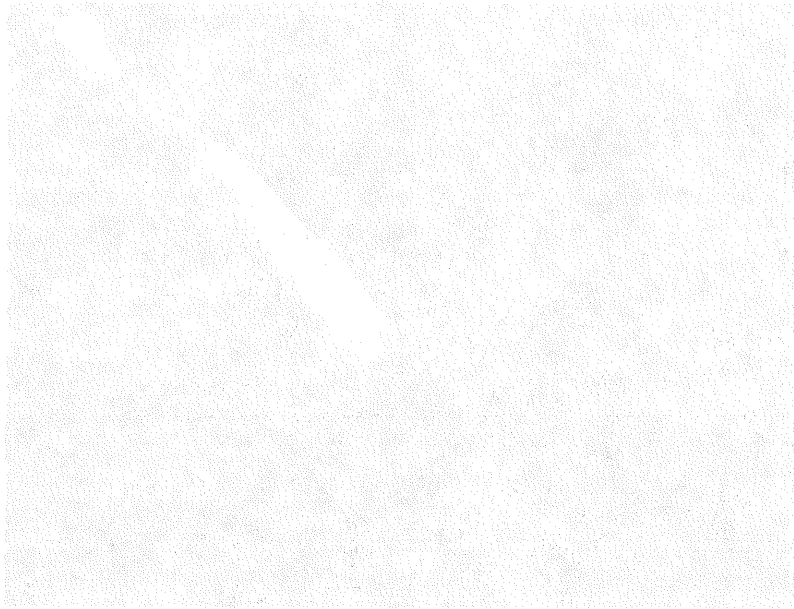


Figure 3-10



DRYING SUITS

After a suit is pressure tested, it should be hung up to dry for 24 hours. At normal room temperature, a suit will dry completely during this time due to evaporation. Suits should never be left outside to dry in direct sunlight as this can have an adverse effect on the retroreflective tape, as well as the neoprene and glue used in the suit's components. A fan can be placed in front of suits as they dry to speed up the evaporation of the water on the suits. If a suit is wet on the inside it must be turned inside out and hung up to dry for 24 hours, or until the suit is completely dry.



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Bagging Suits

After a suit has been serviced and then dried, it must be returned to its storage bag. Roll out the suit face up and quickly check to see that everything removable has been reattached to the suit (i.e., High Rider Ring, P.F.D. lights, Whistle, Flares). Make sure that the main zipper is almost fully open, leaving approximately one inch of the zipper closed. This is done so that in the event that the zipper becomes corroded it can be loosened by pulling it in either direction. If all the components of the suit are present roll both legs of the suit up toward the torso until they reach the chest area, making sure not to fold the inflation hose. When the legs are rolled up completely to the chest, pull the hood of the suit down over the rolled up legs. While holding the hood down over the rolled up legs, fold both arms over the hood. When the suit is rolled up and folded in this manner it can then be easily slid into the storage bag. The suit can then be easily removed from the storage bag when it is needed. Finally, close the storage bag by snapping each bag snap together.

Inspection Patch Requirements

Please see Section 4 – Instructions for Attaching the Inspection Patch.



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