



# MANAGEMENT SYSTEM MANUAL

## ATL 8.14 R/V Atlantis SCBA Refill Procedures

Originator:

Gary Chiljean

Approved By:

Albert F. Suchy

### 1. Purpose

The purpose of this procedure is to establish guidelines for refilling Self-Contained Breathing Apparatuses (SCBAs) on board R/V Atlantis.

### 2. Responsibility

Aboard Atlantis, the Alvin Group is responsible for refilling air bottles. When the Alvin group is not on board, the Third Mate or other person designated by the Master is responsible for refilling air bottles.

### 3. General

R/V Atlantis uses the Worthington Model Air Compressor for refilling SCBA air bottles on board the vessel. The air compressor is located in the forward, uppermost portion of the Alvin hangar, starboard side. This is the only compressor to be used for filling SCBA air bottles.

Before refilling the air bottles, make physical and visual checks of the compressor unit. Check the compressor's oil level, belts, orientation of air valves (open/closed), airline (whip), and O-ring seals. Confirm that all gear and equipment are in good order before proceeding.

Special caution must be exercised while working with this high-pressure system. The potential of an equipment failure exists. Protective eyewear must be worn at all times while operating the compressor. The operator must apply particular caution while handling inline pressure gauges and high-pressure air lines. Bottles must be refilled slowly. As air pressure increases inside the bottle, heat is generated. Refilling the bottle slowly allows the heat to dissipate at a more even rate. This will result in an air bottle that is more thoroughly charged and may reduce the risk of mishaps. Pressurize bottles to the recommended levels. DO NOT OVER-PRESSURIZE.

#### A. Procedures for Filling Air Bottles

1. Close manual drain switch (above on/off switch)
2. Confirm manual vent valve is open
3. Confirm filter bank manual drain valve is closed
4. Confirm valve from compressor filter is opened.
5. Connect air bottle adapter to compressor whip
6. Close inline whip valve
7. Close whip bleeder valve
8. Turn on compressor. Watch pressure gauges for compressor stages 1,2,3 and 4



# MANAGEMENT SYSTEM MANUAL

## ATL 8.14 R/V Atlantis SCBA Refill Procedures

Originator:

Gary Chiljean

Approved By:

Albert F. Suchy

9. Slowly open scuba charge pressure valve. The filter bank pressure gauge and the scuba charge pressure gauge should begin to equalize. As a result of this, the compressor may restart automatically to rebuild pressure lost to the scuba charge. Soon the filter bank pressure and the scuba charge pressure will become relevantly the same. Keep in mind that the compressor should shut down around 2800 PSI and restart when the pressure falls below the working level.
  10. Clear (blow out) the whip line by opening the whip bleeder valve and slowly opening the inline whip valve. When you are satisfied, first close the inline whip valve and then close the whip bleeder valve.
  11. Attach the adapter to the bottle to be refilled. Make sure the connection is tight. (Do not cross-thread the connection.)
  12. Open the valve on the air bottle to it's maximum
  13. Slowly open the inline whip valve. The pressure between the air bottle and the compressor will start to equalize. Once again, because of the drop in pressure in the filter bank and the scuba charge, the compressor may restart.
  14. When the bottle is filled to the desired pressure, close the air bottle valve.
  15. Close the inline whip valve.
  16. Bleed off the pressure from the whip and adapter by solely opening the whip bleeder valve
  17. Disconnect the air bottle from the adapter.
- B. Refilling a second air bottle
1. Close the whip bleeder valve
  2. Attach the adapter to the air bottle
  3. Open the air bottle valve to maximum
  4. Slowly open the inline whip valve
  5. Close the air bottle valve when the desired pressure is achieved and bleed off the whip
- C. Procedures for shutting down the compressor
1. Turn off compressor
  2. Bleed off pressure from adapter and whip
  3. Slowly open the filter bank manual drain valve and drain off all pressure
  4. Close filter bank manual drain valve
  5. Open manual drain switch
  6. Close scuba charge whip valve
  7. Close filter bank pressure valve
  8. Close the manual vent valve