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## **13. TDI – O<sub>2</sub> Equipment Service Technician Course**

### **13.1 Introduction**

This course enables the successful candidate to engage in the preparation of scuba equipment for Technical Diving Gases. The objective of this course is to train candidates in the proper procedures required for oxygen equipment cleaning.

### **13.2 Qualifications of Graduates**

Upon successful completion of this course candidates will be able to prepare scuba equipment for the use with EAN.

### **13.3 Who May Teach**

Who may teach this course:

1. Any active TDI Service Technician Instructor may teach this course.

### **13.4 Student – Instructor Ratio**

Academic:

1. Unlimited, so long as adequate facility, supplies and time are provided to insure comprehensive and complete training.

Confined Water (Swimming pool-like conditions):

1. N/A.

Open Water (Ocean, lake, quarry, spring, river or estuary):

1. N/A.

### **13.5 Student Pre-Requisites**

The student must:

1. Be a minimum age of eighteen (18).
2. Show proof of certification of TDI Nitrox Gas Blender or equivalent.
3. Provide proof of VIP certification through a recognized agency.
4. Provide proof of certification through a recognized manufacturing company regulator clinic.
5. Provide proof of employment through a recognized scuba related facility, manufacturer/distributor or proof of intent to acquire such employment.



## **13.6 Course Structure and Duration**

Open Water Execution:

1. N/A

Course Structure:

1. TDI allows instructors to structure courses according to the number of students participating and their skill level.

Duration:

1. The minimum number of classroom and briefing hours is six (6).

## **13.7 Administrative Requirements**

The following is the administrative tasks:

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the training schedule to the students.
4. Have the students complete the Liability Release and Medical history forms.
5. The instructor must review the liability Release and Medical Forms before starting on the course.

Upon successful completion of the course the Instructor must:

1. Complete the Student Registration Form and send the Registration Form to TDI HQ.
2. Award Card.

## **13.8 Training Material**

Required material

1. TDI Equipment Service Technician Manual.

Optional Material

1. TDI Equipment Service Technician PowerPoint Presentation.

## **13.9 Required Equipment**

### **13.10 Required Subject Areas**

The TDI Equipment Service Technician Manual is mandatory for use during this course but instructors may use any additional text or materials that they feel help present these topics.

1. The Responsibility of the Service Technician.
2. Oxygen Handling
  - A. Oxygen compatible systems components.
3. Equipment Servicing
  - A. Materials for use in oxygen cleaned systems
    - I. Lubricants.



- II. O-rings.
      - III. Cleaning chemicals.
    - B. Procedures of Oxygen Cleaning
      - I. Cylinders.
      - II. Valves.
      - III. Regulators.
      - IV. System components.
  - 4. Gas Production Equipment
    - A. Compressors.
    - B. Cylinders.
    - C. Filtration systems.
    - D. Gauges.
  - 5. Mixing Techniques
    - A. General considerations.
    - B. Continuous blending systems.
    - C. Membrane separation systems.
    - D. Pre-mix systems.
    - E. Partial pressure blending
      - I. Mathematics of partial pressure.
      - II. Mixing by weight (optional).
  - 6. Oxygen analysis
    - A. Procedures.
    - B. Oxygen analyzers.
  - 7. Cylinder Handling and Sign Out.

### **13.11 Required Skill Performance And Graduation Requirements**

In order to complete this course, students must:

1. Candidates must successfully service a cylinder valve and regulator for EAN use.
2. Satisfactorily complete the TDI Service Technician written examination.
3. Demonstrate proficiency in servicing scuba equipment for use with EAN.