

**Syllabus Number: 3.B.34 / BOD n. 188 ( 09-06-2014 )**  
**CMAS Compressor Operator Training Programme**  
**Minimum Training Programme Content**

**1. Required theoretical knowledge**

**1.1 Subject Area 1: Introduction**

- 1.1.1 The participant shall be provided with all such information, as provided for in Clause 4.2 of Chapter 1 in order to enable him to take an informed decision about his participation in the CMAS Compressor Operator Training Programme.
- 1.1.2 The participant shall be provided with the information about the CMAS as provided for in Clause 4.3 of Chapter 1.

**1.2 Subject Area 2: Equipment and Safety**

- 1.2.1 The participant shall have an appropriate knowledge concerning the physical characteristics operating principles, maintenance and use of the following items of personal protection equipment.
  - 1.2.1.1 Personal Protection Equipment (PPE)
    - 1.2.1.1.1 Safety eye glasses or suitable personal eye protection. Must be worn during all practical sessions.
    - 1.2.1.1.2 Ear Muffs/Plugs or suitable personal ear protection. Must be worn when compressor is working.
    - 1.2.1.1.3 Proper attire must be observed during all practical sessions (clothing, hair etc.).
  - 1.2.1.2 Specific Equipment
    - 1.2.1.2.1 A dive compressor in good working order. A stationary compressor or a portable is acceptable.
    - 1.2.1.2.2 Dive cylinders in test for filling during practical sessions
    - 1.2.1.2.3 Dive compressor log.
    - 1.2.1.2.4 Additional safety equipment, Fire extinguisher etc.
  - 1.2.1.3 General Safety
    - 1.2.1.3.1 Notes and warning signs displayed on compressors, power units and electric switch controls.
    - 1.2.1.3.2 Compressor manual and/or manufacture's recommendations.
    - 1.2.1.3.3 Local and national laws regarding high pressure compressors and high pressure vessels

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**Note:** Prior to the commencement of class, students should consult with a CMAS representative to verify personal protection equipment requirements and suitability.

## 1.3 Subject Area 3: Physics and theory of dive compressor operation and cylinder filling

1.3.1 The participant shall have an appropriate knowledge concerning the physical principles and their application to compressor operation and hazards relating to:

### 1.3.1.1 Compressor Types

1.3.1.1.1 Stationary, portable

1.3.1.1.2 Power units- Electric motors and combustion engines

1.3.1.1.3 Installation of dive compressor, outdoor location and indoor location

### 1.3.1.2 Compressor design and function

1.3.1.2.1 Gas physics

1.3.1.2.2 Parts of compressor and basic layout

1.3.1.2.3 Compression and cooling

1.3.1.2.4 Filling stations, nitrox systems and storage tanks

### 1.3.1.3 Breathing air quality and filtration

1.3.1.3.1 Air contamination

1.3.1.3.2 Air quality EN12021

1.3.1.3.3 Filtration systems (Filters, PMV valve etc.)

### 1.3.1.4 Operation and basic maintenance checks

1.3.1.4.1 Preoperational compressor checks (compressor log, oil levels etc.)

1.3.1.4.2 Compressor location

1.3.1.4.3 Cylinder connection and filling

1.3.1.4.4 Condensate drain and compressor shutdown

1.3.1.4.5 Post operational compressor checks and log filling

### 1.3.1.5 Dive cylinders

1.3.1.5.1 Cylinder types

1.3.1.5.2 Cylinder marking and colour codes

1.3.1.5.3 Identification of test marks and/or labels

1.3.1.5.4 Cylinder valve thread types

1.3.1.5.5 Filling cylinders from storage tanks

## 2 Required Practical skills

2.1 Demonstrate proficiency in Dive Compressor operation and the safety considerations when filling dive cylinders.

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- 2.2 Demonstrate proficiency in cylinder identification, and the selection of cylinders adequate for safe filling.
- 2.3 Demonstrate awareness of breath air quality and possible contamination factors, taking into account compressor location and compressor log information.
- 2.4 Demonstrate proficiency in cylinder identification, and the selection of cylinders adequate for safe filling.
- 2.5 Demonstrate a safe and responsible demeanour throughout all training.