

## **Oxygen Technician blender Course OXYTEC**

**Day 1 0900-1300hrs, 1400-1700hrs**

**Location - Classroom**

**Topics Covered:-**

- Introduction to Nitrox
- Oxygen gas fundamentals
- Human body tolerance to Oxygen
- Fire risks, boiling freezing points, manufacture
- Types of oxygen available for purchase
- Oxygen hazards, fire, compression issues
- Isentropic hazards
- Accident examples/ horror stories
- Causes of Oxygen fires
- SI 2169 Oxygen blending system regulations
- Requirements for oxygen service equipment
- Understanding Oxygen compatibility in materials
- Metal compatibility issues
- Synthetic materials compatibility issues
- Contaminants found in oxygen systems
- Air quality requirements when blending with Oxygen
- Filtration design & requirements to produce Oxygen Clean Air
- Ignition sources to be avoided
- Legal Insurance aspects of equipment used with 100% Oxygen
- Depth limits for divers breathing elevated Oxygen mixtures
- Oxygen content measurement – molecular blending considerations
- Acceptance sign off procedure for purchasers
- Delivery methods for blended gases
- Blending equipment types
- Oxygen & Nitrox compatible compressors
- Oil and grease types for use with Air, Nitrox, and oxygen systems
- Compressor and gas blending installations
- Partial Pressure Blending systems
- Continuous blending systems
- Problems with oxygen compatible oils
- Exploding compressor photos and horror stories
- Produce of high Oxygen content gases by Nitrogen depletion
- Designing safe filling stations
- Accepting Cylinders for filling
- Helium mixtures
- Why use Heliox mixtures; Heliox, Trimix, heliair
- Filling mathematic and equations for Nitrox, Heliox, Trimix
- Argon use in diving
- Maintaining and converting equipment for use with oxygen
- Insurance company considerations when using high oxygen content gases
- Work area and tool preparation for working on 100% Oxygen
- Cleaning processes for regulators, valves, hoses, cylinders etc
- Cylinder marking regulations

## **Oxygen Technician blender Course OXYTEC**

**Day 2 0900-1300hrs, 1400-1700hrs**

**Location - Workshop**

**Workshop Practice Covered**

- Cylinder inspection and acceptance prior to filling
- Demonstration – fill a Nitrox cylinder by partial pressure blending
- Demonstration – fill a Nitrox cylinder by continuous pressure blending
- Technician practice - Fill a Nitrox tank by partial pressure techniques
- Technicians practice - Fill a Nitrox cylinder using continuous blending techniques
- Top up a partially filled Nitrox tank by continuous blending.
- Demonstration - Fill an Oxygen cylinder with using the Haskell Oxygen booster pump
- Oxygen/Nitrox/Helium analyzer high accuracy calibration techniques
- Partial pressure blend a tank of trimix (oxygen/helium/nitrogen)
- Strip an Oxygen high pressure regulator and contaminate it with engine oil
- Observe gross oil contamination using UV fluorescence
- Oxygen clean a the previously grossly contaminated high pressure oxygen regulator
- Test the cleaned high pressure regulator on 207bars/3,000psi 100% Oxygen
- Student practice
- EXAM