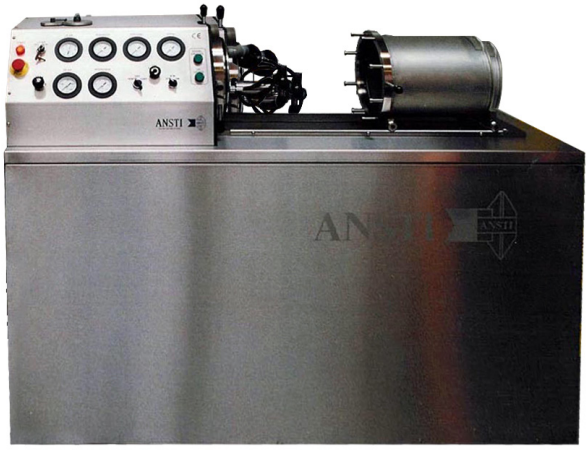
Demand Regulator Test Station

(DRTS)



Introduction

The ANSTI Demand Regulator Test Station (DRTS) is a cost effective, fully calibrated, turnkey system specifically designed to measure the dynamic performance of new and serviced SCUBA demand regulators to 80msw (dry) at the maximum ventilation requirements of EN250:2014. It is suitable for use by a manufacturer for both the initial phase of product development and for routine testing of production demand regulators.

The system is designed to combine the effectiveness of a compact test pressure vessel with a fixed 2.5 litre displacement breathing machine test. The system is fully integrated into a control console and linked to the ANSTI computerised data acquisition system. The test station will allow you to quickly identify regulators passing / failing specified test criteria and to print Test Certificates. There is push button control of breathing rate (10, 15, 20, 25, 30 & 40 breaths per minute) providing ventilations in the range of 25 to 100 litres per minute. The test vessel is fitted with a quick release lid system and automatic Chamber Depth Control (CDC) to ensure accurate and safe testing.

The test station is very “user-friendly” providing a rapid method of test which is both simple and accurate. The software allows dual display of the standard Pressure-Volume Diagram with corresponding performance of the first stage output pressure.

General

The system has approval to European and American design codes. It is supplied as an integrated, fully calibrated turnkey package. A Technical Manual is supplied with comprehensive details of the equipment and contains full Operating Instructions.

Test vessel

The horizontal test vessel is constructed from Stainless Steel and rated to a maximum working pressure of 80 msw. Micro-switches and lights indicate when the chamber is fully closed and engaged so pressurisation can proceed. Fitted with automatic control the chamber depth can be pre-set (and adjusted during testing) to a maximum depth of 80 msw.

Breathing simulator

The Breathing Simulator is constructed from Hard Anodised Aluminium / Stainless Steel and rated to a maximum working pressure of 8 bar. Mounted on a machined, solid base plate it is designed and built for maximum robustness, reliability, and longevity. It has a pre-set tidal volume of 2.5 litres and push button control of breathing rate (10, 15, 20, 25, 30 & 40 breaths per minute) providing ventilations in the range of 25 to 100 litres per minute.

Computer & instrumentation

The ANSTI data acquisition module is based on a PC linked to the USB port high speed data acquisition card. The system generates a range of real time displays of mouthpiece pressure, chamber depth, interstage pressure, and HP cylinder pressure whilst simultaneously generating real time displays of the Pressure-Volume diagram and Interstage-Volume. It also provides a data archiving and retrieval for visual display and optional printing of test results.

Test station

Items 1 and 2 are fully integrated into a stainless steel fabricated test station that also incorporates the instrumentation, test sequence controls, pneumatic systems, and the automatic Chamber Depth Controller (CDC).

Order Codes

Item

DRTS