

Breathing machine

Description:

The apparatus comprises essentially 3 main parts:

A pneumatic cylinder and a slave cylinder for CO₂ dead space testing;

A geared electric motor and mechanical drive mechanism;

Control gear for the motor and solenoid operated valves.



By making the appropriate adjustments to the motor controller and the mechanical drive mechanism respectively, the pneumatic cylinder is capable of providing any one of five pre-set swept volumes of 1.0, 1.5, 1.75, 2.0 and 2.5 litres at variable rates up to 40 strokes per minute.

The slave cylinder provides a swept volume equivalent to 5% of that of the main cylinder.

In order to provide positive airflow control, four solenoid-operated valves are provided. The solenoids are controlled by photoelectric switches.

The valves should be connected in line with the 1" bore PVC tubing provided (1/2" bore for the CO₂ circuit). The exact connection arrangement of the tubing and the valves, with respect to the dummy headform which carries the facemask under test, will depend upon the standard being employed. An example is given EN136, full face masks.

Available versions:

The breathing machine comes in 4 variants:

Single ended with CO₂ slave cylinder (suitable for most work);

Double ended main lung with single ended CO₂ slave cylinder;

Single ended without CO₂ slave cylinder (suitable for breathing resistance measurements);

Double ended main lung only (suitable for breathing resistance measurements or performing simulated wearing).

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Breathing machine (continued)

Services required:

Bench mounted
110/230 volts AC, 50/60Hz, mains electricity

Approximate packed size & weight:

130 x 75 x 60 cm, 150 kg

Relevant standards:

EN 136
EN 140, EN 149
EN 12941, EN 12942
EN 13274-3, EN 13274-6
EN 14594