

SAA LECTURE No E2



PRINCIPLES OF SCUBA (SELF CONTAINED UNDERWATER BREATHING APPARATUS)

Cylinder

To transport compressed air

WC = Water capacity WP = Working pressure

Various sizes: 2 ltr WC – 18 ltr WC

Various working pressures: 170 bar – 300 bar

Contents WC ltr x WP bar

Construction

Steel or Aluminium Alloy

Cylinder boot, cylinder pillar valve/crossflow, O-rings

Tests

Visual test every 2 years, Hydraulic every 4 years

Regulations

The important cylinder markings

Steel: BS 5054 part 1

Aluminium Alloy: BS 5054 part 3

Know your cylinder markings

Regulator (Demand Valve)

To supply air at the correct ambient water pressure, single hose, twin hose.

1st Stage

Connects to cylinder pillar valve, reduces cylinder pressure to 8-10 bar above ambient pressure.

2nd Stage

A mouthpiece connects to 1st stage by hose – automatically regulates and provides air at surrounding water pressure on demand, upstream/downstream. Should be serviced by a competent technician each year.

Contents Gauge

Monitors cylinder pressure/contents connected by a reinforced hose to high pressure (HP) port. Must be easily read in gloom – must have a reserve zone.

Backpack

(Harness) Carries cylinder

Adjustable bands and body straps

Do not purchase until after Lecture E4

Maintenance

Before dives check for damage and adjustment. After all dives wash in fresh water.

Safety

Never leave cylinders standing in heat or sun

Always handle with care

Buy from a well-known source

SCUBA is potentially very dangerous

You will be trained to assemble and maintain your equipment

SCUBA is your life support system –

Look after it!