

**ADC 5/95**

**MINIMUM CRITERIA TO BE MET BY A  
SURFACE SUPPLY INLAND/INSHORE AIR DIVING PANEL  
FOR DIVING OPERATIONS IN THE U.K.**

**May 1995**

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**1. SCOPE**

There are numerous variations on surface supply inland/inshore air diving panel design which may be adopted to ensure safe operation. The schematic diagrams attached indicate the minimum configuration necessary to achieve safe operation, against which the safety of any diving panel can be assessed for this application. Other panel designs may be equally effective provided they are in line with the philosophy given in this guidance.

**2. OBJECTIVE**

The objective of this guidance is to provide the basic parameters which a panel must meet to ensure safe operation. It is not intended to provide a detailed design specification.

**3. APPLICATION**

This guidance is applicable in the UK.

**4. SUPPLY**

The diver and the stand-by (emergency) diver must each have an independent breathing air supply, i.e. supplied from different sources. Each line should be fitted with a non return valve, such that failure of the pipework in one supply does not

cause the other supply to exhaust through the failed component. Additionally, each diver must have a secondary (back-up) supply separate from the main air supply, although in this case the secondary supply may be the same to both divers.

## **5. PANEL COMPONENTS**

### **5.1 Incoming Supplies**

The typical components listed below should be fitted to each supply as identified in the schematic diagrams:

- (1) a filter to remove LP/HP impurities;
- (2) a gauge showing the incoming pressure, a regulator to reduce the pressure to that safe for supply to a diver, and a gauge showing the reduced pressure (see Section 5.4);
- (3) relief valve or other safety device to protect the diver should the regulator fail and the supply pressure rise to a level higher than safe.

The filter and regulator will normally be fitted close to the supply source although for HP supplies the regulator is often fitted in the panel.

It should be ensured, where appropriate, that components are capable of supplying two divers, e.g. sufficient flow is available etc:

### **5.2 Mimic Diagram**

A mimic diagram of the panel should be available where the pipework is not visible on the panel surface, and the pipework valves and gauges labelled to match.

### **5.3 Valves**

Consideration should be given to the type of valves used and their design layout to ensure maximum safety and ergonomity. The following guidance is given.

- (a) where practical, valves should be of the same type;
- (b) The "open" and "shut" positions should lie in the same respective orientation on all quarter turn valves;

- (c) the function and direction of all valves should be clearly labelled. Where appropriate this should be in line with the mimic diagram.

#### **5.4 Depth Indication**

Gauges should be provided in line with AODC 059 (Ref 1). In addition, the following guidance is given.

- (1) There must be two gauges available one for the working diver's depth and one for the stand-by (emergency) diver's depth. These gauges should be fitted with a small shut off valve which will permit input of air to allow the diver's depth to be determined.
- (2) There must be:
  - (a) a pressure gauge on the control panel indicating the pressure being supplied to the diver and sensitive enough to demonstrate pressure drop. During breathing, the flow characteristics should be such that pressure drop in excess of the norm (which may, typically, be 20% of the supply pressure) does not occur. Gauge accuracy should be such as to demonstrate this.
  - (b) an open/close valve between that pressure gauge and the diver's supply.

### **6. PERFORMANCE**

The completed system should be capable of delivering a minimum mass gas flow as required by the breathing apparatus connected to it.

### **7. EXAMINATION, TESTING AND CALIBRATION**

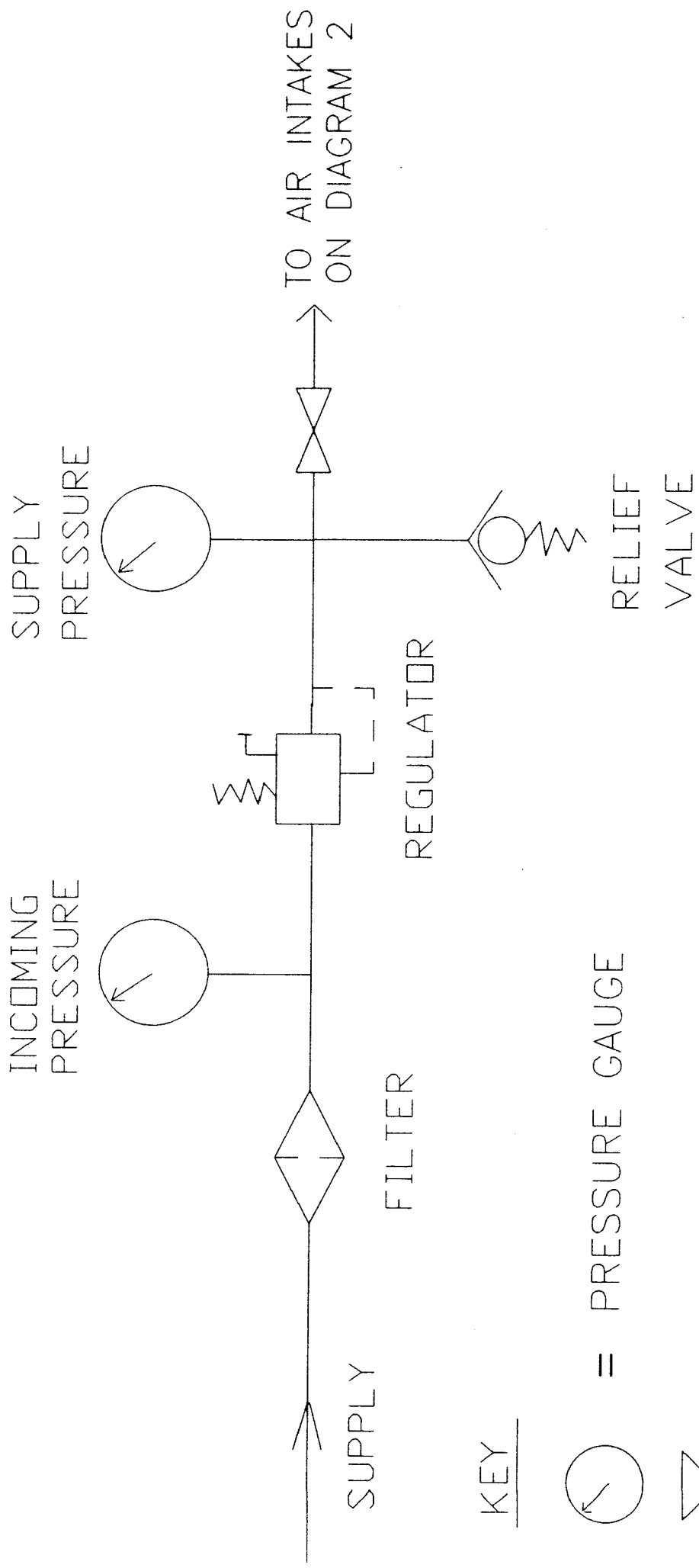
All equipment must be examined, tested and certified in accordance with AODC 059 and AODC 056 (Refs 1, 2) as appropriate. The latter incorporates and defines the requirements of SI 1981: 399 (Ref 3).

## **REFERENCES**

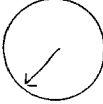
1. AODC 059 Pressure Gauges and Other Forms of Pressure Monitoring Equipment used in conjunction with Diving Operations.
2. AODC 056, Code of Practice on the Initial and Periodic Examination, Testing and Certification of Diving Plant and Equipment Offshore, Inshore, Inland and on UK Flag Ships, in accordance with UK Regulations.
3. SI 1981:399 – Diving Operations at Work Regulations.

# TYPICAL SUPPLY SETUP

DIAGRAM No 1



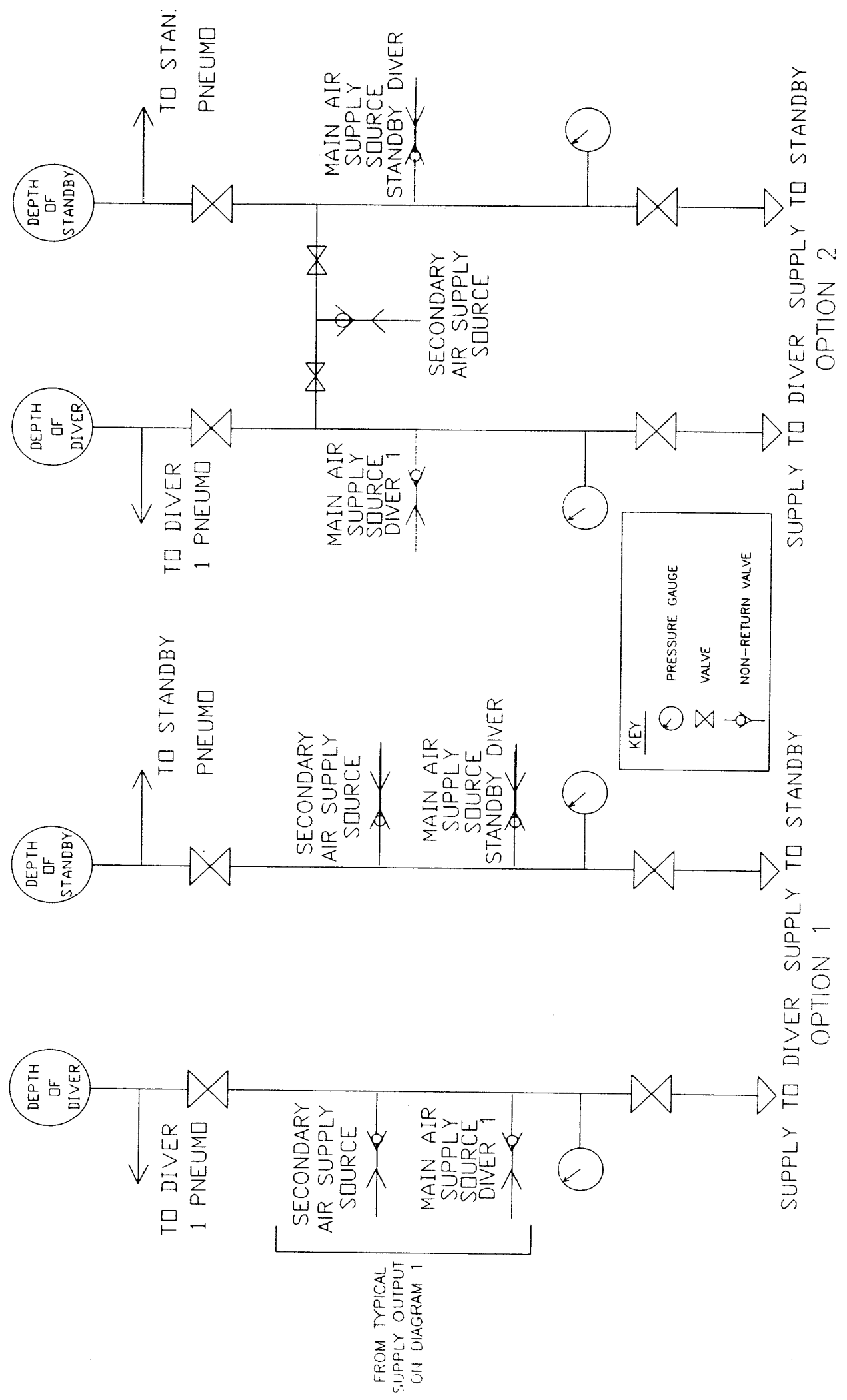
KEY

 = PRESSURE GAUGE

 = VALVE

DIAGRAM No 2

INLAND PANEL SCHEMATIC (ONE DIVER IN THE WATER WORKING)



FROM TYPICAL  
SUPPLY OUTPUT  
ON DIAGRAM 1