

Chapter 10 OXYGEN SYSTEM

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DESCRIPTION AND OPERATION

Introduction

1. The installation differs from the normal high-pressure system in that provision is made for pressure breathing equipment. Details of the functioning of the various components in the system are contained in A.P.1275A, which should be read in conjunction with the information given in this Chapter. Fig. 1 is a schematic diagram of the system indicating the relative positions of the components and fig. 2 shows the installation of the equipment and pipe runs in the aircraft.

Each oxygen pipe is conventionally marked with a narrow white and blue band (Sect. 2, Chap. 4). To avoid the risk of explosion, it is important that all components and pipe lines of the oxygen system are kept free from oil, grease or moisture.

Pressure breathing equipment

2. To provide for the pressure breathing equipment, a selector valve (fig. 1) is interposed between the oxygen regulator and the economiser. The valve which is situated adjacent to the economiser (fig. 2), is manually operated and has two positions, P.B. and ECON. In normal use, the control lever is wire locked in the ECON position, thus directing the flow of oxygen from the regulator direct to the economiser and thence back through the valve to the pilot's supply tube (fig. 1). When pressure breathing equipment is to be used, the control lever must be set and wire locked in the P.B. position, thus by-passing the economiser and directing the supply from the regulator straight to the pilot's supply tube. The use of pressure breathing equipment entails the replacement of the Mk. 1 quick-release socket, in the pilot's supply tube, by a Mk. 3 quick-release socket. This change-over from

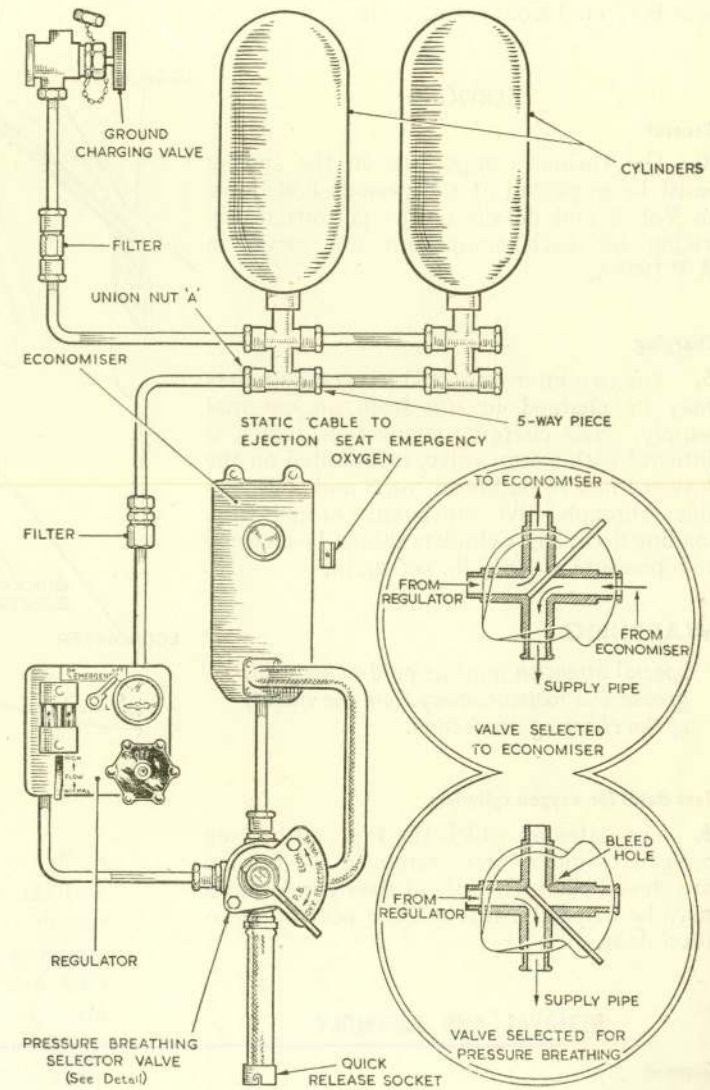


Fig. 1. Oxygen system

economiser to pressure breathing cannot, therefore, be made during flight.

Ejection seat (fig. 2)

3. The main oxygen service is broken automatically by a quick-release plug on ejection and a cable anchored alongside the economiser, operates the self-contained ejection seat emergency oxygen supply, as the seat is ejected from the aircraft.

SERVICING

General

4. The various components in the system must be inspected at the periods laid down in Vol. 4 and details of the permitted servicing for each component are given in A.P.1275A.

Charging

5. The two interconnected oxygen cylinders may be charged *in situ* from an external supply. The charging connection, which is integral with a stop valve, is mounted on the forward face of bulkhead No. 3 and is accessible through the starboard ammunition loading door. The cylinders should be charged to a pressure of 1,800 lb. per sq. in.

WARNING

Special attention must be paid to keep oil, grease and moisture away from the vicinity of the charging connection.

Test dates for oxygen cylinders

6. The dates on which the top and bottom oxygen cylinders were removed for testing are stencilled on the side of the cylinder, and may be inspected through the port ammunition door.

REMOVAL AND ASSEMBLY

General

7. All components of the system, with the exception of the cylinders, are mounted in

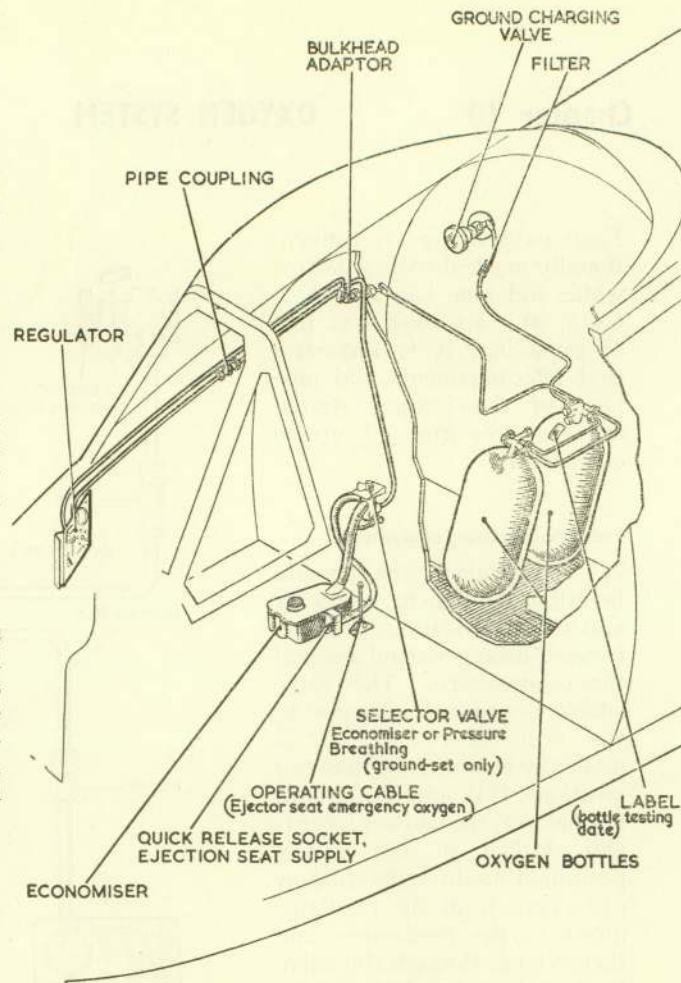


Fig. 2. Oxygen installation

easily accessible positions in the aircraft and the procedure for their removal will be readily apparent. Before removing any component, ensure that the supply is turned OFF and fit blanking caps where connections are broken. If it is required to remove the oxygen cylinders, the filter or the regulator, all pressure from the cylinders must be released first by slackening the union nut "A" securing the supply pipe from the

aft cylinder (fig. 1) and allowing the oxygen to escape *slowly* until the contents gauge on the regulator drops to zero.

Note . . .

The control valve on the regulator must be turned ON in order to obtain a reading on the contents gauge.

Oxygen cylinders

8. With the radio installation and mountings removed, and the pressure in the cylinders released (para. 7), the procedure is as follows:—

- (1) Remove the four pipe connections from the head of the aft cylinder.
- (2) Release the clip securing the charging connection supply pipe and, taking care to avoid kinking, move the pipe clear.
- (3) Release the two securing straps and remove the cylinder.

Note . . .

When replacing the cylinders they must be positioned so that the test dates, stencilled on the side of the bottle can be readily inspected through the port ammunition door opening.

- (4) Remove the bolts securing the aft cylinder to the side members.
- (5) Remove the lower or forward cylinder complete with pipes attached.

9. When reassembling the cylinders, the recommended sequence of operations to be followed is in the reverse order to that given above.

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