

Chapter 4

LIQUID OXYGEN PACKAGE UNIT (802548)

(Ref. No. 6D/2527)

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Introduction

1. The liquid oxygen package unit (802548) Ref. No. 6D/2527 consists of two 3½ litre liquid oxygen systems installed in aircraft as a single unit. In the event of failure of one system, the other system automatically comes into operation. This equip-

ment includes a number of referenced items already embodied in liquid oxygen systems and described in this publication. Also certain items similar to existing reference items, but operating at a different pressure. The principal components of this package unit are as follows.

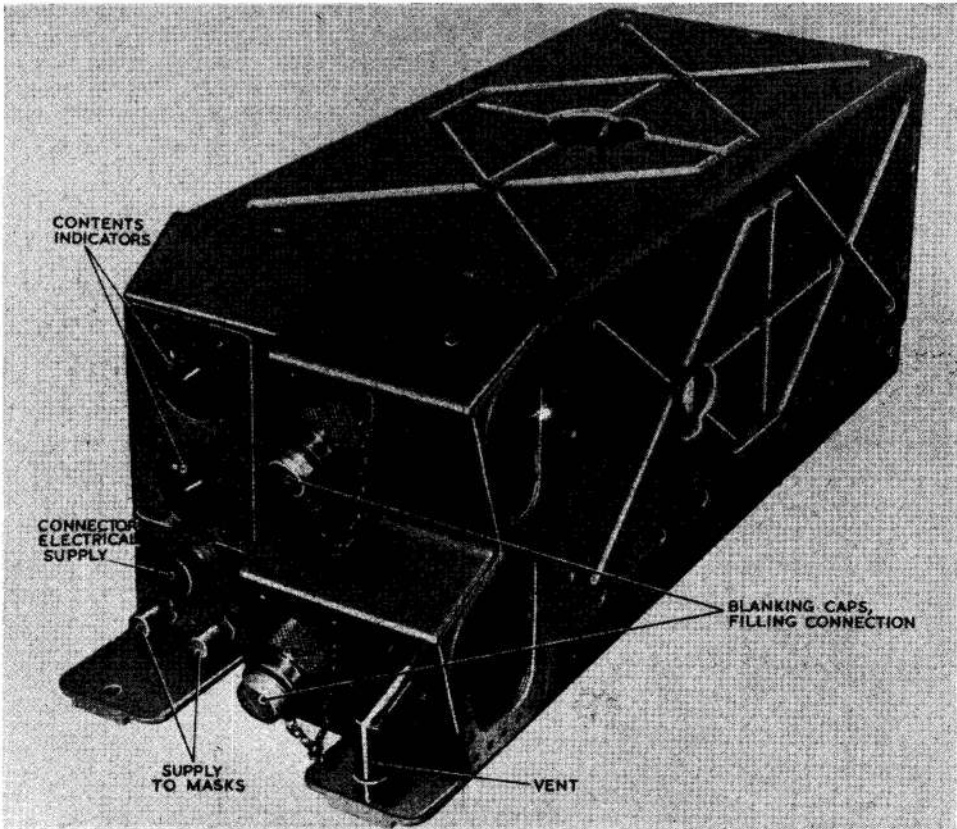


Fig. 1. Liquid oxygen package unit (802548), Ref. No. 6D/2527

Component	Type	Part No.	Ref. No.	Remarks
Container (3½ litre)	LGC5	802872	6D/2584	2 off
Fill and Vent valve	FVB3	802168	6D/2529	2 off
Pressure control valve	PCV3	802704	6D/2531	2 off
Liquid check valve	NRV23	801419	6D/2264	2 off
Contents gauge control unit	CMB2	802213	6D/2362	2 off
Contents indicator	CID8	803161	6D/2605	2 off

WARNING . . .

The presence of oil or grease in contact with oxygen at high pressure is dangerous since it introduces a grave risk of explosion.

DESCRIPTION

3. The systems are mounted in tandem on a common base plate assembly which incorporates drip tray, front and rear end panels. Referring to fig. 1, the front panel embodies the filling and vent connections, indicators 1 and 2, oxygen supply connections 1 and 2, and electrical connection for aircraft d.c. supply. The rear panel is hinged (fig. 2) and may be moved to a horizontal position for access to the contents gauge control units. Located immediately under the base are two longitudinal supports provided as a means for fixing the unit in aircraft.

Containers (802872) Ref. No. 6D/2584

4. The containers (802872) Ref. No. 6D/2584 consists of a double-walled stainless steel vessel with its annular space evacuated for insulation. The vacuum is sealed and remains hard throughout the life of the container. Each liquid oxygen container is supported on three fabric-lined shoes

fixed to the base plate, with three straps and three vertically disposed tie rods for security of attachment. Details of liquid oxygen containers are given in Sect. 3, Chap. 1.

Fill, vent and build-up valve (802168) Ref. No. 6D/2529

5. The fill, vent and build-up valve (802168) Ref. No. 6D/2529 is located in fig. 3. These two items are identical in construction and application. They are mounted in the front panel of the unit one above the other, extending through the panel (fig. 1) and tilting downwards to facilitate the connecting up of the liquid oxygen replenishing hose. For further details of construction and principle of operation, reference should be made to Sect. 1, Chap. 1.

Pressure control valve (802704)

6. The pressure control valve (802704) is also duplicated in this unit, both valves are secured to the base assembly. The pressure control valve shown in fig. 2 operates in conjunction with the foremost liquid oxygen system. A corresponding pressure control valve, for the rear liquid oxygen system, is located at the other side of the unit. This valve is described in Sect. 1, Chap. 2.

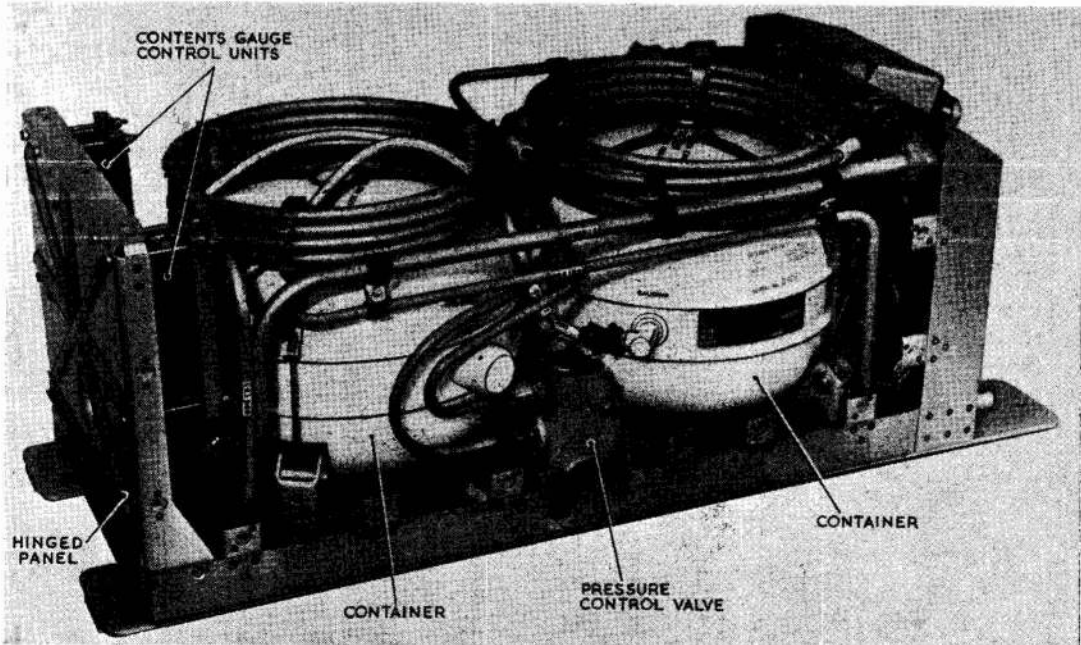


Fig. 2. Cover removed, showing layout of systems

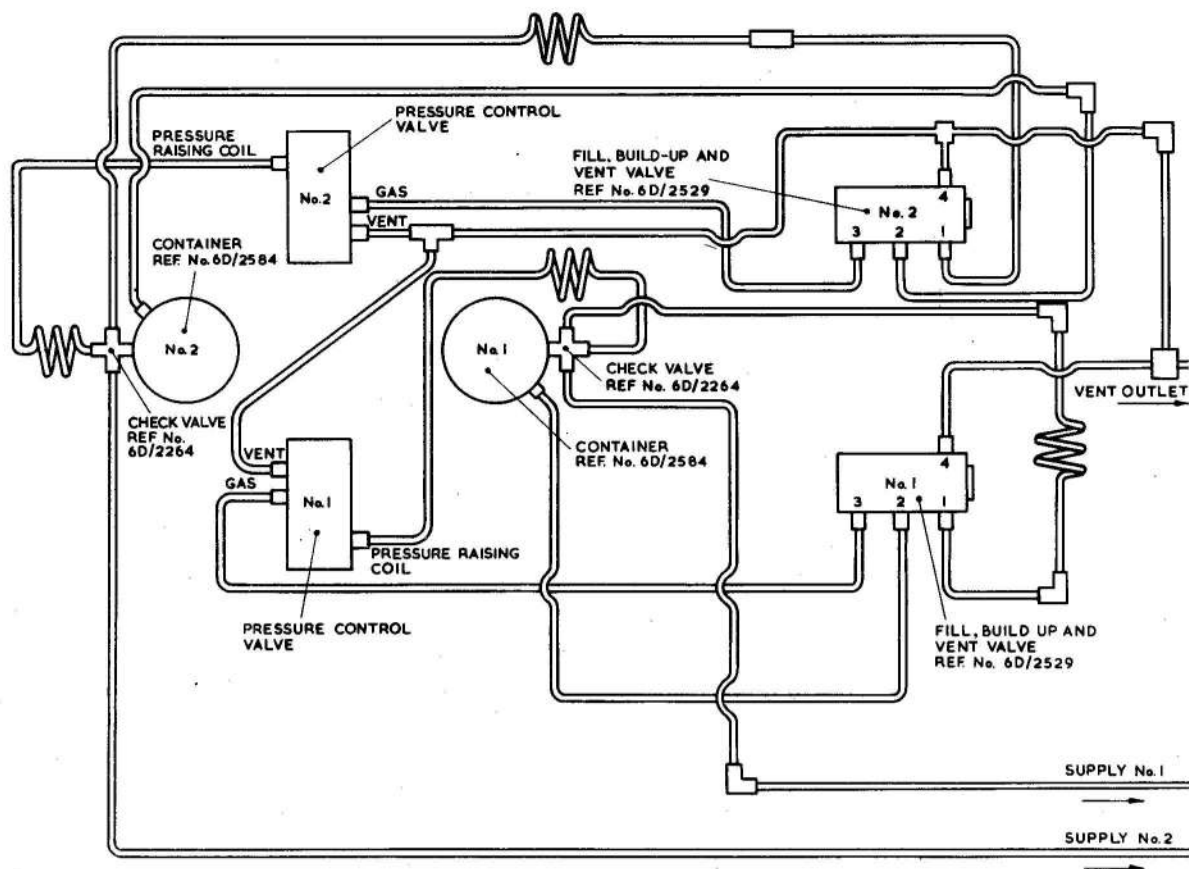


Fig. 3. Diagram of pipelines and components (Schematic)

Liquid check valve (801419) Ref. No. 6D/2264

7. The liquid check valve (801419) Ref. No. 6D/2264 used with this liquid oxygen package unit is of the 2-way non-return valve type, which enables two liquid oxygen containers to be linked together and provide duplicate safety in the event of one system failure. For further details in respect of this item reference should be made to Sect. 1, Chap. 3.

Contents gauge control unit, Mk. 2 (802213), Ref. No. 6D/2362

8. Two contents gauge control units, (802213) Ref. No. 6D/2362 are mounted on the rear panel of this unit (fig. 3). These units are provided to convert capacitance values, provided by the quantity of liquid oxygen available in the container, for reproduction in a contents indicator located on the front panel. This item is described in Sect. 2, Chap. 1.

Contents indicator (803161) Ref. No. 6D/2605

9. Two contents indicators (803161) Ref. No. 6D/2605 are employed as shown in fig. 1. They

are of the ratiometer type instrument which measure the ratio of two currents. The dial presentation contains 0, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ and F calibration markings. A failure arc at either end of the scale is provided as an indication of malfunctioning of the electrical circuit. This indicator is described in Sect. 2, Chap. 2.

Base assembly

10. The base assembly consists of a base plate/drip tray mounted on two metal members, which are secured in aircraft with four bolts and nuts. A U-shaped light-alloy sheet metal cover encloses the complete unit. The cover is secured with set screws located along the side members and around both end panels.

SERVICING

11. Information in respect of servicing, purging of systems and fault finding are given in Part 1, Sect. 3, Chap. 3. Details of servicing procedure for individual components are given in Appendices to the appropriate Chapters.

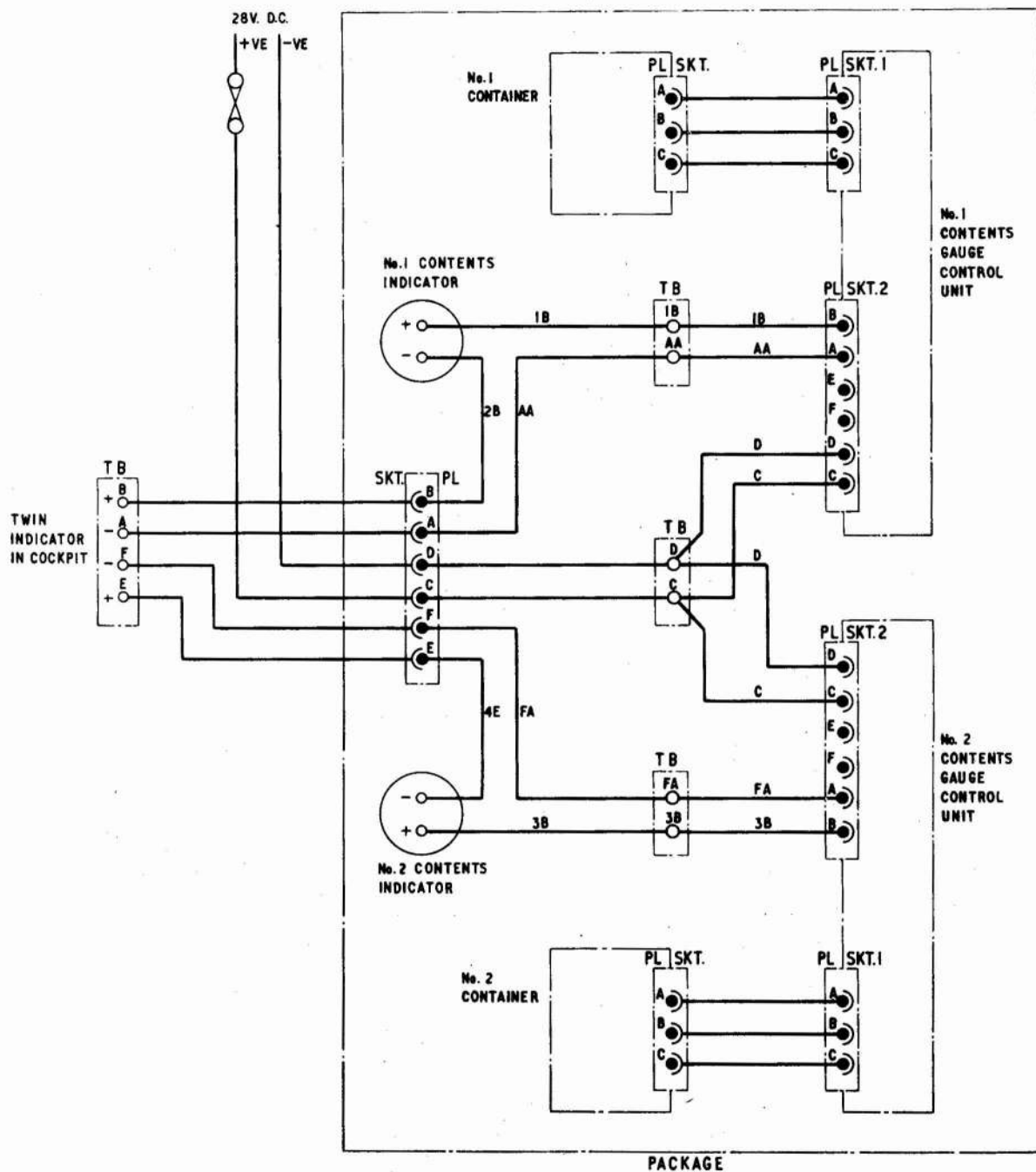


Fig. 4. Wiring diagram

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