

Chapter 5

QUICK-DISCONNECT COUPLING, NON SELF-SEALING
(Part No. 256000)

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LEADING PARTICULARS

Ref. No.	...	...	...	...	...	...	...	...	6D/—
Length (overall)	...	...	...	...	...	...	...	...	3.5 in.
Inlet connection (plug assembly)	...	...	...	...	...	...	...	...	$\frac{3}{8}$ in.—18 NTPF
Outlet connection (receptacle assembly)	...	...	...	...	...	...	...	...	$\frac{3}{4}$ in.—16 NF
Weight	...	...	...	...	...	...	...	...	0.5 lb.

Introduction

1. The quick-disconnect coupling, non self sealing (fig. 1) is fitted in certain aircraft liquid oxygen installations to provide a connection that affords positive engagement and permits rapid connection and disconnection.

DESCRIPTION

2. The unit (fig. 2) comprises a receptacle assembly (Part No. 256000-1) and a plug assembly (Part No. 256000-2) which, when engaged and installed in a liquid oxygen supply line, form a leak proof connection.

Receptacle assembly

3. This assembly consists of a poppet, bellows and fitting sub-assembly which is positioned and retained by an anti-friction ring and retaining ring in a cap and sleeve sub-assembly. One end of the poppet forms a seal with the seat of the plug assembly and the other end protrudes into the fitting and carries the bellows. The fitting, which is threaded externally and abuts the anti-friction ring, protrudes through the cap and sleeve sub-assembly. An internal spiral groove and two holes located in this sub-assembly provide the guide track and locating holes for the pins of the plug assembly.

Plug assembly

4. The plug assembly consists of a cylindrical

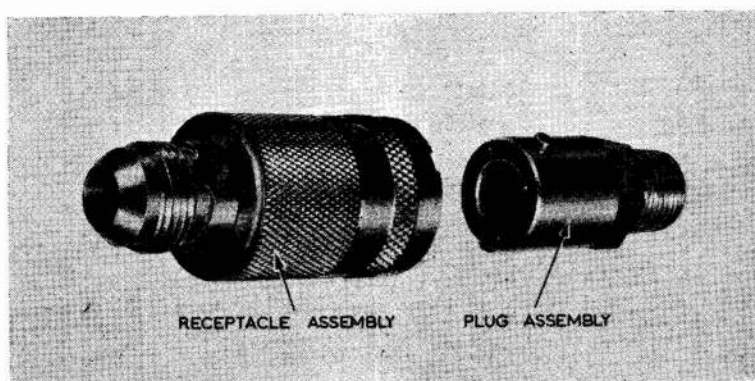


Fig. 1. Quick-disconnect coupling (Part No. 256000)

body, a Teflon seat and a seal end fitting. The body has an internal thread and houses the seat; two lock pins are fitted diametrically opposite to each other on the outer face of the body. The seal end fitting is threaded at each end and is screwed in the body and locates the seat.

OPERATION

5. When the receptacle assembly is connected to the plug assembly, the lock pins follow the guide track and are located in the two holes in the cap and sleeve sub-assembly. The poppet forms a seal with the seat and is retained positively on the seat by the action of the bellows.

INSTALLATION

6. Before installing the coupling in a liquid oxygen installation, refer to the relevant aircraft air publication for installation details. If it is required to test the coupling prior to installation, apply the standard serviceability tests (App. 1).

Caution . . .

When mating the coupling assemblies, ensure that both are free from moisture.

SERVICING

WARNING

Many materials, particularly oil and grease, are subject to spontaneous combustion when exposed to undiluted oxygen under pressure. Precautions must be taken, therefore, to exclude oil, grease and metal particles from the coupling.

7. Routine servicing consists of examining the unit for freedom from damage and corrosion. In addition the coupling should be checked for positive locking and freedom from leakage. If either connection is found to be defective, it should be disposed of in accordance with current Service procedure.

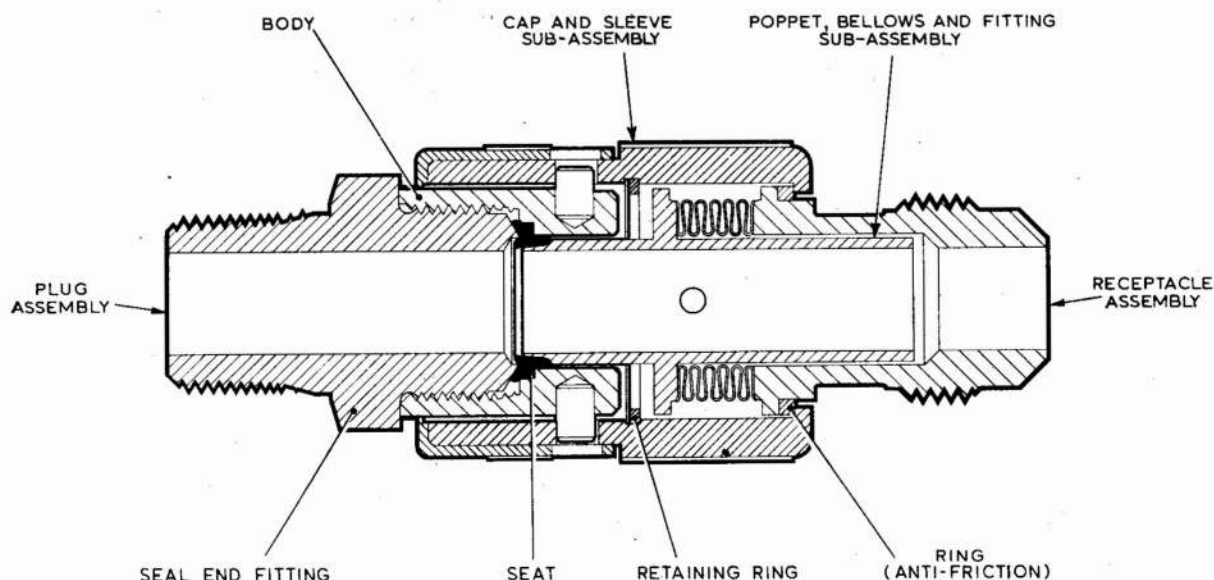


Fig. 2. Sectional view

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Appendix 1
STANDARD SERVICEABILITY TESTS
for
QUICK-DISCONNECT COUPLING, NON SELF SEALING
(Part No. 256000)

Introduction

1. The tests detailed in this Appendix should be applied before the unit is fitted in an aircraft liquid oxygen installation, when the serviceability of the unit is in doubt and at the appropriate examination periods at Equipment Depots.

TEST EQUIPMENT

2. The equipment required is as follows :—
- (1) Breathing oxygen test supply (170 lb/in²)
 - (2) Blanking cap
 - (3) Pressure gauge (Ref. No. 6C/263)
 - (4) Valve, master, Mk. 10A (Ref. No. 6D/2313)
 - (5) Torque spanner.

PARTICULARS OF TEST

3. The tests are to be applied under normal room temperature (+15°C) and pressure (29.92 in. Hg) conditions. The gas supply for the tests must be breathing oxygen.

4. Soap solution for leak testing must be prepared in accordance with the instructions contained in Part 1, Sect. 2, Chap. 1. Precautions

must be taken to prevent the solution entering the coupling, and all traces of soap and moisture must be removed when each test is finished.

WARNING

Many materials, particularly oil and grease, are subject to spontaneous combustion when exposed to undiluted oxygen under pressure. Precautions must be taken, therefore, to exclude oil, grease, dust and metal particles from the coupling and the test equipment.

TEST PROCEDURE**Operating test**

5. Complete five cycles of engaging and disengaging the plug and receptacle assemblies. The torque required for each cycle must not exceed 25 lb in.

Leak test

6. With one end of the coupling blanked, apply an internal pressure of 165 lb/in² from the opposite end. There must be no external leakage over a period of one minute. Repeat the test with the pressure applied to the opposite end of the unit.

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