

Chapter 25

SWIVEL COUPLING

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<i>Swivel coupling</i>	1

Introduction

1. This swivel coupling unit is incorporated in a specific aircraft hydraulic system and provides sealed swivel joints in rigid hydraulic pipe lines. The unit described and illustrated in the chapter is a basic type, variants are given in the appendices.

Description

2. The unit comprises two pipe assemblies joined by a centre swivel connection and having a fixed-olive connection at one end and a banjo swivel connection at the other. Each swivel joint consists of a female connection swivelling on a connection post, which is retained by a collar secured in

position with a pin. The connections are drilled and grooved for the passage of fluid and each connection post carries sealing and backing rings to prevent leakage.

SERVICING**Leakage**

3. Leakage from a swivel joint will indicate a faulty sealing ring which must be renewed.

Dismantling

4. (1) Remove the pin and collar from each swivel coupling. Remove the fixed-olive connection and the banjo connection from the outer ends of the pipe assemblies and separate the centre connection.

(2) Remove the sealing rings and the backing rings from the connection posts.

Assembling

5. Coat all sealing rings with a thin film of grease XG-315 before assembling into the unit.

(1) Fit all connection posts with the inner backing rings and sealing rings. Assemble the fixed-olive connection and the banjo connection to the outer ends of the pipe assemblies and connect the two pipe assemblies at the centre coupling.

(2) Fit the remaining sealing and backing rings to the connection posts.

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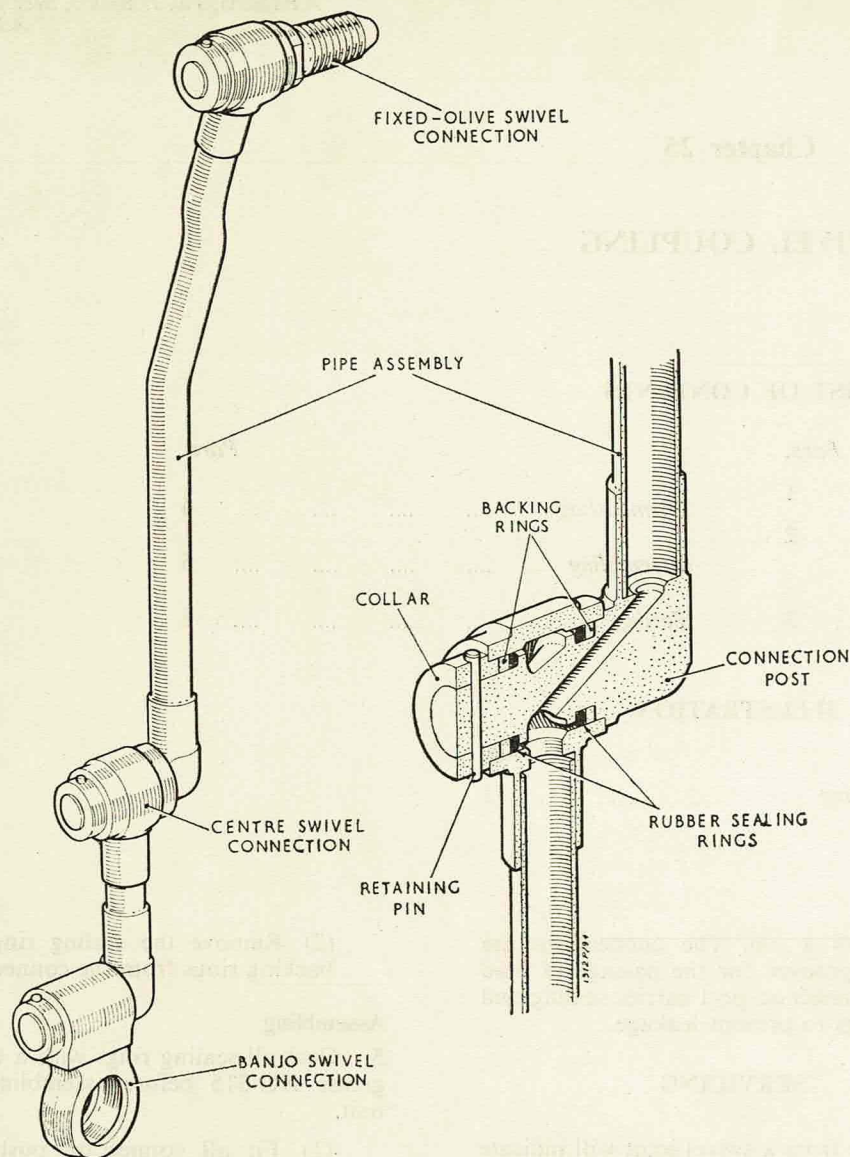


Fig. 1. Swivel coupling

Note . . .

The sealing rings must be adjacent to the shoulder formed on the swivel post and the rough side of the backing ring in contact with the sealing ring.

- (3) Fit the collars and retain them in position with the pins. Lock the pins with wire.

Testing

6. A static hydraulic test rig will be required to carry out the following tests.

- (1) Connect the supply line of the test rig to the fixed-olive connection. Operate the hand pump and fluid should flow freely from the banjo connection.

- (2) Blank off the banjo connection and apply a pressure of 4,950 lb/in² in easy stages. There must be no leakage. Release the pressure.

- (3) Apply a pressure of 100 lb/in² and rotate the pipe assemblies through an arc of 180 deg. then 360 deg. ten times. There must be no leakage. Release the pressure. If movement of the coupling is restricted move it as far as possible.

- (4) Repeat (3) but with a pressure of 3,300 lb/in² applied. Leakage must not occur. During this test check the torque required to move the pipe assemblies, this must not exceed 25 lb/in². Release the pressure and disconnect the supply line.

Note . . .

Prior to carrying out the torque check, the swivel must be 'freed' by moving to and fro approximately ten times.

Appendix 1 **SWIVEL COUPLING UNIT**

Type No. 1.01002.001
1.01002.002

Introduction

1. These units are similar to that described and illustrated in the chapter. The units differ only in that they are handed; Type No. 1.01002.001 is for port and 1.01002.002 is for starboard installation.

Appendix 2 **SWIVEL COUPLING UNIT**

Type No. 1.00699.003
1.00699.004

Introduction

1. These units are similar to that described in the chapter except for the shape of the longer pipe assembly. Type No. 1.00699.003 is for port and Type No. 1.00699.004 is for starboard installation.

Appendix 3 **SWIVEL COUPLING UNIT** **Type No. 1.00699.005 (Port)** **1.00699.006 (Starboard)**

Introduction

1. These units are identical to that described in the chapter except for dimensional differences.

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