

Chapter 20

SWIVEL COUPLING UNIT

TYPE No. 1.00474.001

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ILLUSTRATION

	Fig.
<i>Swivel coupling unit</i>	1

Introduction

1. This unit provides sealed swivel joints in rigid hydraulic pipe lines.

Description

2. Two pairs of pipes are secured end to end to form the swivel jointed unit. One end section consists of two swivel posts which are connected by two parallel pipes, brazed into a block formed on each post. Two annular grooves on the posts individually communicate through drillings to the pipes. A swivel bracket integral with an airframe attachment flange and tapped for two pipe connection adapters, fitted with bonded seals, is retained over the outermost of the posts by a collar and a split pin. The bracket houses three sets of sealing rings and backing rings and these seal off the grooves which are aligned with the pipe connections.

3. The other end section comprises an identical swivel post and swivel bracket at its

outer end. This is connected by a pair of curved pipes to a swivel coupling into which the centre joint swivel post of the other section is secured by a collar and split pin. The swivel coupling also accommodates identical sets of sealing and backing rings.

SERVICING**Leakage**

4. Leakage past the sealing rings will be indicated by loss of pressure during testing. The appropriate sealing rings must be renewed.

Dismantling

5. (1) Remove the split pins and collars and withdraw the swivel posts from the brackets and the swivel coupling.

(2) Remove the sealing rings and backing rings from the brackets and the swivel coupling.

(3) Unscrew the pipe connections together with the bonded seals, from the brackets.

Assembling

6. All sealing rings are to be lightly coated with Grease XG.-315 (34B/9100519).

(1) Fit the sealing rings and backing rings to the brackets and to the swivel coupling. The rough faces of the backing rings are to be adjacent to the sealing rings.

(2) Slide the swivel brackets and the swivel coupling over the appropriate swivel posts, locate the collar and secure the joints with split pins.

(3) Fit bonded seals to the pipe connections and screw the connections into the swivel brackets. Wire-lock each pair of connections together.

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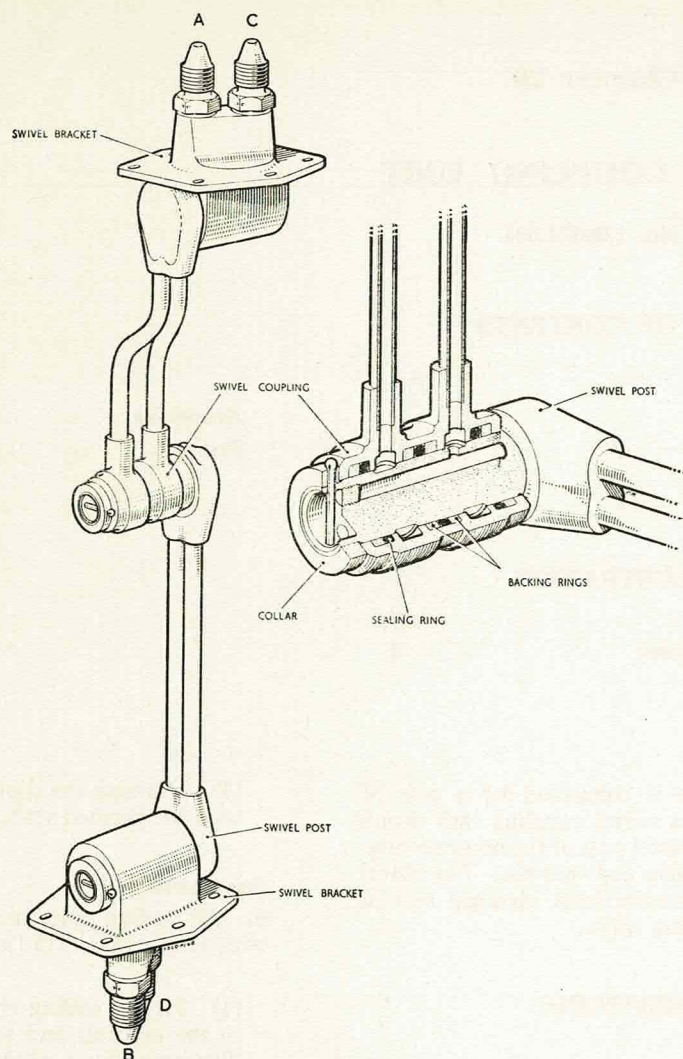


Fig. 1. Swivel coupling unit

Testing

7. A static hydraulic test rig is required.

(1) Referring to *fig. 1*, connect the test rig supply line to connections A and C in turn and apply pressure. A free flow of fluid must be possible from A to B and from C to D.

(2) Blank off connections B and D. With the test rig supply line connected to A and the unit in the static condition, gradually apply pressure in stages up to 1,800 lb/in². Leakage is not permissible. Release the pressure.

(3) Transfer the supply line to connection C and gradually apply pressure in stages up to 1,800 lb/in². Leakage is not permissible. Release the pressure.

(4) Apply a pressure of 100 lb/in². Move each swivel joint separately through an angle of 180 deg. and back ten times, then rotate each joint separately through 360 deg. ten times, five times clockwise and five times anti-clockwise. Leakage is not permissible.

(5) Increase the pressure to 1,200 lb/in². Repeat the swivel joint movements as in (4). Leakage is not permissible. Check the torque required to move each joint. This must not exceed 25 lb. in. at this operating pressure.

(6) Release the pressure and transfer the supply line to connection A. Repeat the tests in (4) and (5).

(7) Release the pressure, disconnect the supply line and remove the blanking caps.

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