

Chapter 3

SWIVEL PIPE UNIT (WITH RESTRICTOR)

Type No. 1.00430.002

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Introduction

1. This swivel pipe unit is attached to a specific nose undercarriage jack to supply fluid for closing the jack and to permit movement of the jack during operation. The unit incorporates a restrictor valve to reduce the rate of fluid flow to and from the jack.

Description

2. The unit consists of two pipe assemblies

forming a centre swivel joint and having fixed connections at the outer ends for attachment to the jack and airframe respectively. The swivel joints each consist of a coupling post rotating in a coupling body and retained by a collar and split pin. The bore of each coupling post, sealed by a screwed plug soldered in position, is linked by radial holes to an annular groove in the post, which coincides with an annular groove in the body. Additional grooves in the coupling body house sealing

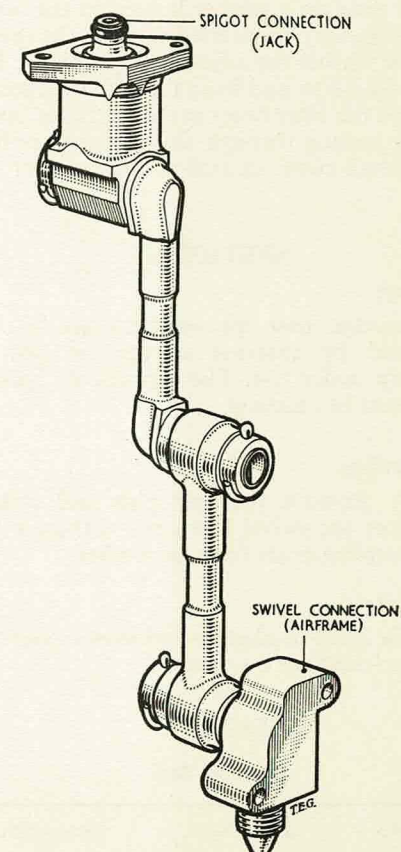


Fig. 1. Swivel pipe unit (with restrictor)

rings and backing rings to prevent the leakage of fluid. The pipes are soldered into the relevant posts and coupling bodies.

3. The airframe connection has lugs for attachment purposes and is formed integral with a pipe adapter. The jack connection consists of a valve body into which is screwed a valve housing retaining a restrictor assembly to regulate the flow of fluid to and from the jack. The body is flanged for attachment to the jack; and the housing, fitted with a sealing ring, is formed integral with a spigot connection through which fluid passes to the jack. The spigot is grooved for a sealing ring and backing ring. The restrictor assembly comprises a sealed restrictor body positioned between spacers in the housing. The inner spacer rests on a washer located in the body, and shims may be inserted between the spacer and the washer for adjustment purposes. The flow of fluid to and from the jack is deflected through the filter holes in the restrictor body, before passing through the restrictor orifice, by a small plate secured at each end of the body.

SERVICING

Leakage

4. Leakage past the sealing rings will be indicated by external seepage or loss of pressure under test. The appropriate sealing ring must be renewed.

Dismantling

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

Note . . .

The screwed plugs are soldered in position and must not be removed.

TABLE 1
Special tool

Ref. No.	Part No.	Description
27Q/	03022TA01	Test adapter

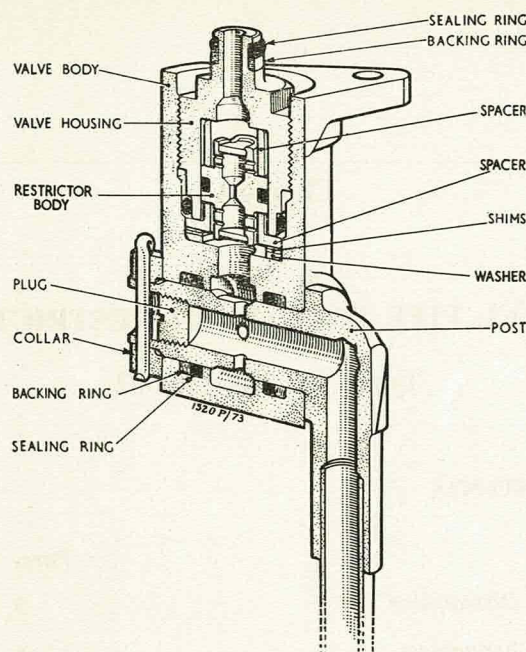


Fig. 2. Details showing restrictor valve

- (2) Remove the sealing rings and backing rings from the spigot connection and the coupling bodies.
- (3) Unscrew the valve housing from the valve body and withdraw the restrictor body and the spacer from the housing. Withdraw the spacer, the shims if fitted, and the washer from the valve body.

Note . . .

The plates are peened in the restrictor body and must not be removed.

Assembling

6. All sealing rings are to be lightly coated with Grease XG-315 (34B/9100519) before being assembled in the unit.

- (1) Insert the appropriate spacer, with the chamfer leading, into the valve housing. Ensure that the sealing ring is fitted to the restrictor body and insert the body into the housing to abut the spacer.
- (2) Insert the washer into the valve body with the chamfered face innermost, followed

by the second spacer with the flat face innermost. Fit the sealing ring to the valve housing and screw the housing into the valve body. Tighten the housing, applying a torque load of 100 to 120 lb. in. Check that the faces of the housing and body are flush and, if necessary, fit shims to the required thickness to obtain this condition.

- (3) Fit the sealing ring and backing ring to the spigot connection of the valve housing, and the sealing rings and backing rings to the coupling bodies, with the rough faces of the backing rings adjacent to the sealing rings.
- (4) Slide the coupling bodies over the relevant coupling posts and secure the assemblies with the collars and split pins.

Testing

7. A static hydraulic test rig is required, together with the test adapter quoted in Table 1.

- (1) Bolt the test adapter to the valve body and connect the supply line of the static hydraulic test rig to the airframe connection. Apply pressure and fluid should flow freely from the jack connection.
- (2) Blank off the test adapter at the jack connection and gradually apply a pressure of 6,000 lb/in² with the unit remaining static. Leakage is not permissible. Release the pressure.
- (3) With the jack connection blanked off, apply a pressure of 100 lb/in² at the airframe connection. Rotate each swivel joint through an angle of 180 degrees and back ten times and through 360 degrees ten times (five clockwise and five anti-clockwise). If a swivel joint is prevented from moving through 360 degrees by the obstruction of other pipes etc., it should be moved as far as possible. Leakage is not permissible.
- (4) Repeat the test in (3), applying a pressure of 4,000 lb/in² and check that the torque required to rotate each swivel joint at this pressure does not exceed 25 lb. in. Release the pressure, disconnect the supply line and remove the test adapter.

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