

Chapter 18 SWIVEL COUPLING UNIT

Type No. 1.00505.001

LIST OF CONTENTS

	<i>Para.</i>		<i>Para.</i>
<i>Introduction</i>	1	<i>Dismantling</i>	5
<i>Description</i>	2	<i>Assembling</i>	6
Servicing		<i>Testing</i>	7
<i>Leakage</i>	4		

ILLUSTRATION

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

Introduction

1. The swivel coupling unit is attached to a specific main undercarriage and provides sealed swivel joints in rigid hydraulic pipe lines.

Description

2. Two triple pipe assemblies are joined to form a centre swivel joint, comprising the swivel post of one assembly inserted into the swivel coupling banjo of the second pipe assembly. Swivel posts at the outer ends of the pipes carry the swivel blocks, each of which is identical and formed with lugs for attachment purposes. Three adapter unions are screwed into each swivel block against bonded seals.

3. The swivel posts and the coupling banjo are brazed over the pipes and the swivel posts

have three longitudinal drillings to provide individual passages from the pipes to the three annular grooves in the posts, which coincide with similar grooves in the bore of the coupling banjo and the swivel blocks. Grub screws, soldered in position, blank the longitudinal drillings. Additional grooves in the swivel blocks and the coupling banjo house sealing rings and anti-extrusion rings, which seal off one fluid passage from another and prevent the leakage of fluid. The swivel posts are retained in the swivel blocks and the coupling banjo by collars, secured by split pins.

SERVICING

Leakage

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

Dismantling

5. (1) Remove the split pins and collars from the swivel joints, then withdraw the swivel posts from the coupling banjo and the swivel blocks.
- (2) Remove the sealing rings and the anti-extrusion rings from the coupling banjo and the swivel blocks.
- (3) Unscrew the adapter unions from each swivel block and remove the bonded seals.

Note . . .

The grub screws are soldered in position and must not be removed.

Assembling

6. All sealing rings, except bonded seals, are to be coated with Grease XG-315

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(34B/9100519) before being assembled in the unit.

- (1) Fit the sealing rings and the anti-extrusion rings to the coupling banjo and the swivel blocks, with the rough faces of the anti-extrusion rings adjacent to the sealing rings.
- (2) Locate the coupling banjo over one of the swivel posts on the straight pipe assembly and secure the assembly with the collar and split pin.

Note . . .

The swivel posts on the outer ends of the pipe assembly must face in opposite directions when the assemblies are connected together.

- (3) Position a bonded seal on each adapter union and screw the unions into the swivel blocks. Tighten each adapter union with a torque loading of 60/66 lb/in. Wire-lock the unions together in threes.
- (4) Locate the swivel blocks over the swivel posts at the ends of the pipes and secure the blocks with the collars and split pins.

Testing

7. A static hydraulic test rig is required.

- (1) Referring to *fig. 1*, connect the supply line of the static hydraulic test rig to one of the connections N and apply pressure. Fluid should flow freely from the open connection N.
- (2) Blank off the open connection N and gradually apply a pressure of 2250 lb/in² with the unit remaining static. Leakage is not permissible. Release the pressure.
- (3) Raise the pressure to 100 lb/in² and rotate each swivel joint through 180 deg. and back ten times and through 360 deg. ten times (five clockwise and five anti-clockwise). If a swivel joint cannot be rotated through the full range of 360 deg. due to the obstruction of the other pipe,

it is to be rotated as far as possible. Leakage is not permissible.

- (4) Repeat the test in (3), applying a pressure of 1,500 lb/in² and check that the torque required to rotate each swivel joint at

this pressure does not exceed 55 lb/in². Release the pressure, disconnect the supply line and remove the blank.

- (5) Repeat the tests in (1), (2), (3) and (4), to the connections R-R, and E-E.

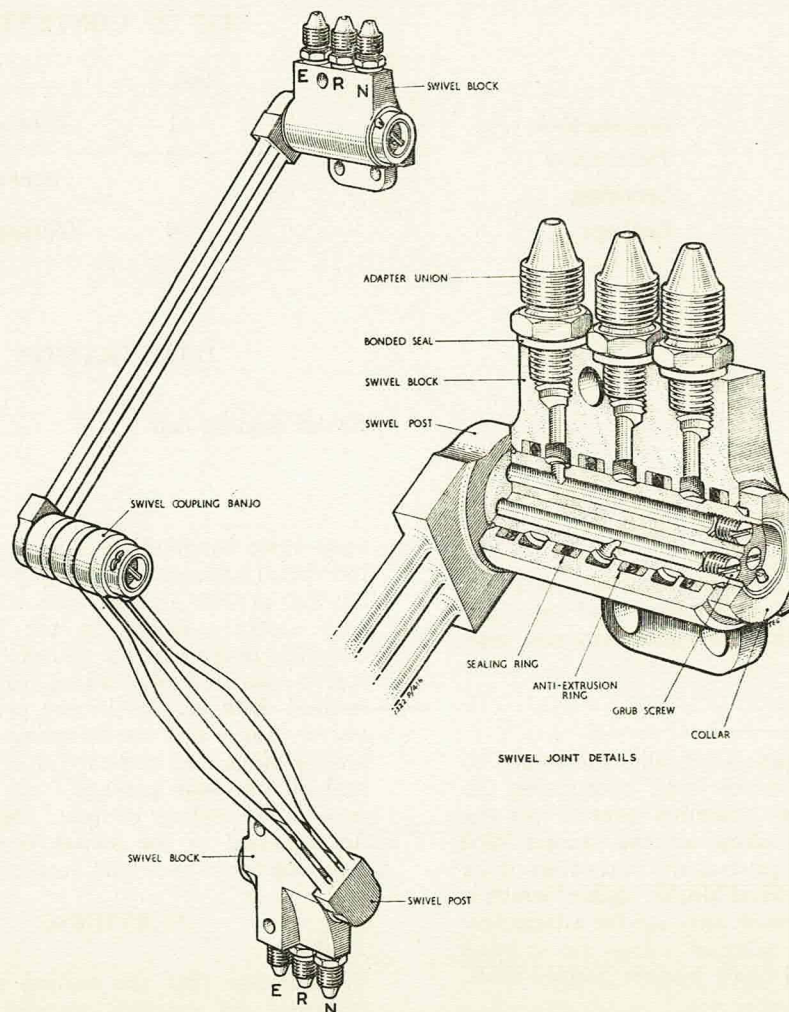


Fig. 1. Swivel coupling unit

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