PROPELLER SHAFT OPERATIONS

Description	Operation No.
Front propeller shaft	
—remove and refit	47.15.02
—overhaul	47.15.11
Power take-off to winch shaft	
—remove and refit	A47.15.18
—overhaul	A47.15.19
Rear propeller shaft	
—remove and refit	47.15.03
—overhaul	47.15.12

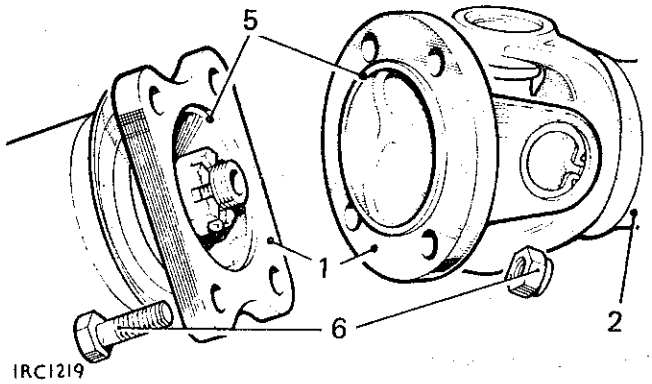
PROPELLER SHAFT

–Remove and refit

Front propeller shaft	47.15.02
Rear propeller shaft	47.15.03

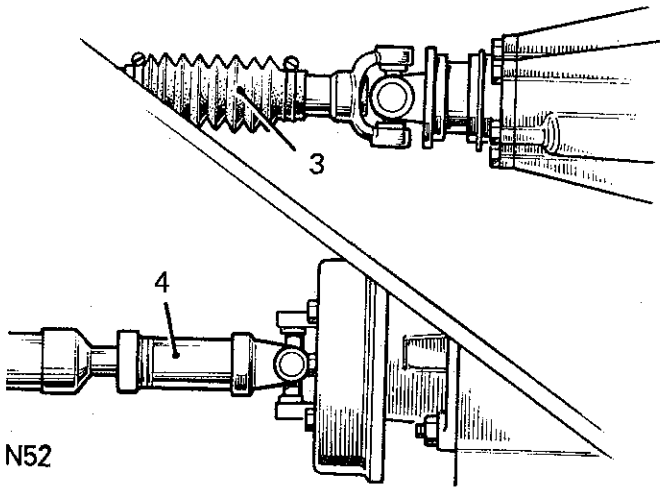
Removing

1. Disconnect the coupling flanges.
2. Withdraw the propeller shaft.



Refitting

3. Front propeller shaft – locate the shaft in position with the sleeve end towards the front axle.
4. Rear propeller shaft – locate the shaft in position with the sleeve end towards the gearbox.
5. Ensure that the registers on the coupling flanges engage.
6. Secure the coupling flange fixings.



PROPELLER SHAFT

—Overhaul

Front propeller shaft	**47.15.11**
Rear propeller shaft	**47.15.12**

Dismantling

1. Remove the propeller shaft 47.15.02, 47.15.03.
2. Front propeller shaft – release the two hose clips and slide the rubber grommet along the shaft.
3. Check that the alignment marks on the splined sleeve and the splined shaft are clearly visible. If necessary, make new alignment marks.
4. Unscrew the dust cap.
5. Withdraw the sliding joint.
6. Clean the splined shaft and the splined sleeve.
7. Temporarily locate the splined shaft into the sleeve, maintaining the marked alignment.
8. Secure the shaft in a vice.
9. Mount a dial test indicator to read off the outside diameter of the shaft splines.
10. Check the circumferential movement between the sleeve and shaft. If the movement exceeds 0,1 mm (0.004 in) fit a new propeller shaft complete.

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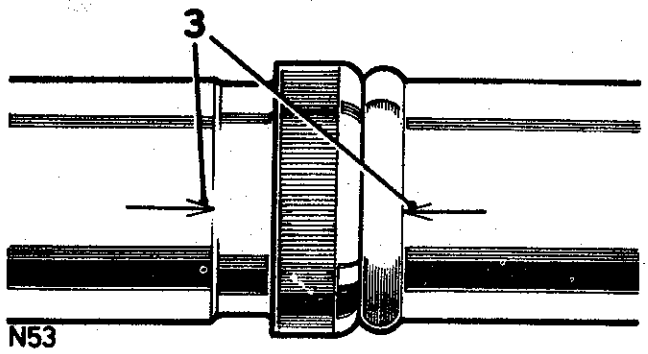

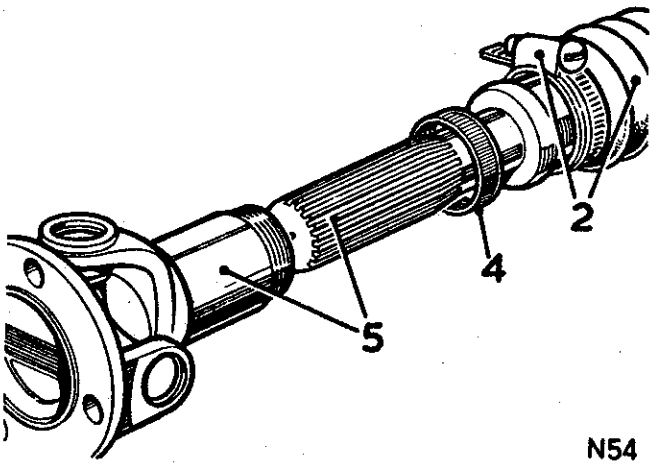

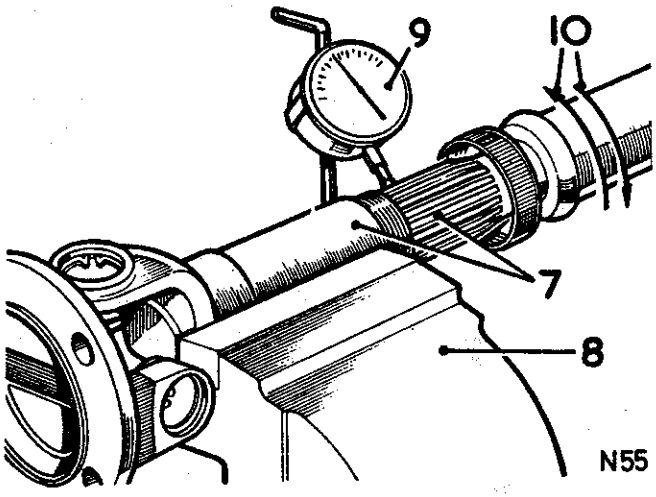

11. Clean any dirt and enamel from the circlips and the tops of the bearing races.
12. Remove the circlips.
13. Remove the grease nipple from the universal joint.
14. Locate the yoke of the splined sleeve onto a suitable piece of tube which has a slightly larger internal diameter than the journal bearing.
15. Using a brass drift, drive the universal joint downward until it is just clear of the lower yoke.
16. Lift the sleeve clear of the tube and withdraw the bearing downward to avoid dropping the needle rollers.
17. Repeat items 14 to 16 for the opposite bearing.

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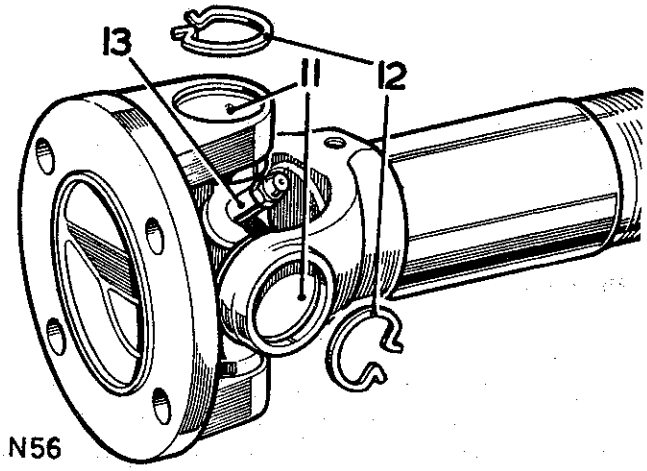

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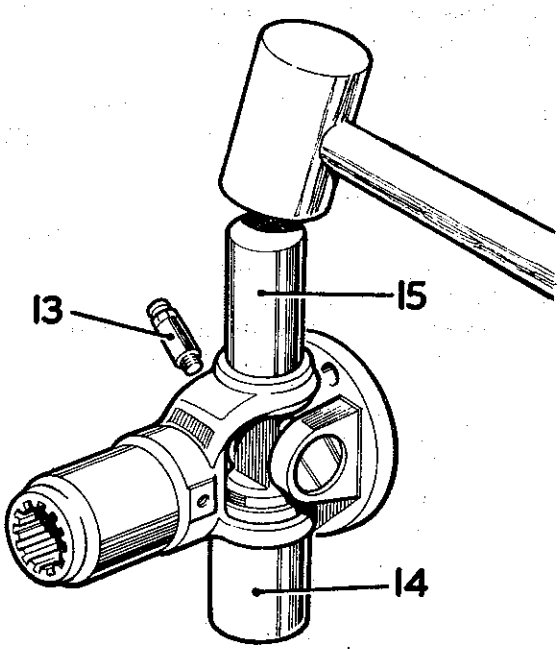

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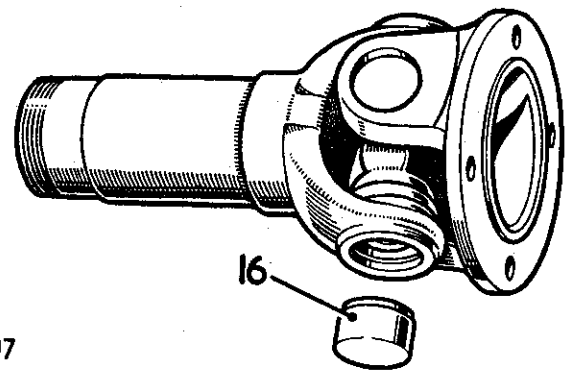

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18. Withdraw the splined sleeve from the flanged yoke.
19. Remove the bearings from the flanged yoke in the manner already described.
20. Repeat items 14 to 19 for the splined shaft.

Inspecting

21. Examine all components for obvious wear or damage.
22. If the journal or bearings for the universal joints show any signs of wear, load markings or distortion, they must be replaced complete. Replacement journal assemblies comprise a spider complete with oil seals and bearings.
23. In the event of wear in any of the eight yoke cross holes, rendering them oval, a new propeller shaft complete must be fitted.

Reassembling

24. Assemble the needle rollers in the bearing races, if necessary using a smear of vaseline to retain them in place. About half-fill the races with a recommended grease.
25. Insert the journal, complete with seals, into the flange yoke holes with the grease nipple tapping pointing away from the flange.
26. Place the flanged yoke on a suitable flat support.
27. Place the first bearing in position.
28. Using a brass drift, slightly smaller in diameter than the hole in the yoke, tap the bearing into position.

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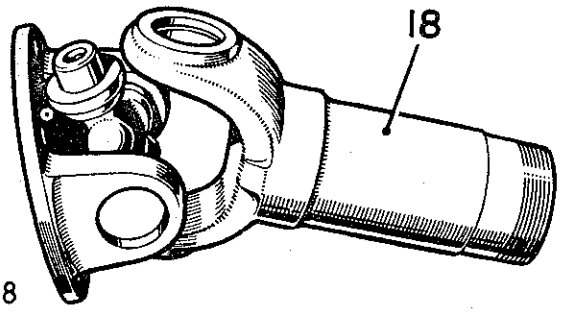

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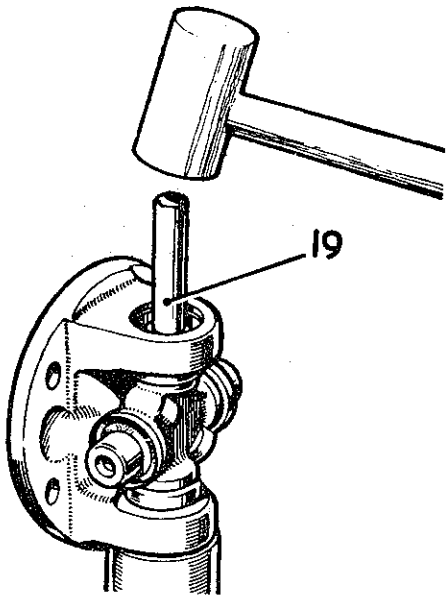

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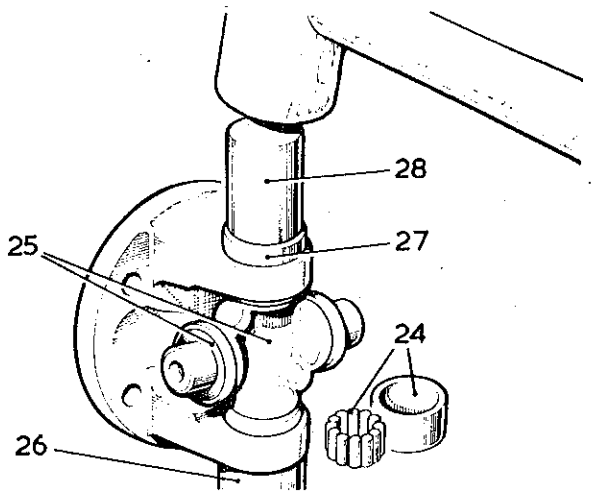

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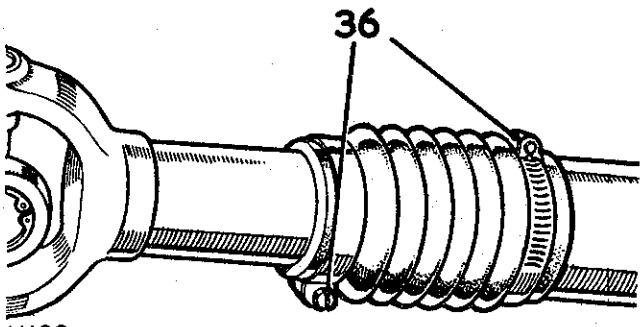
29. Fit the circlip to retain the bearing.

NOTE: The bearing outer races must be a drive fit, otherwise fit a new propeller shaft complete.

30. Repeat 26 to 29 for the other three bearings comprising the universal joint.
31. Ensure that all four circlips are firmly located in their grooves. If the joint appears to bind, tap the yoke ears lightly with a soft mallet.
32. Repeat 24 to 31 for the other universal joint.
33. Front propeller shaft – slide the rubber grommet and hose clips over the shaft.
34. Liberally smear the splines of the shaft and sleeve with the recommended grease.
35. Assemble the splined shaft and sleeve maintaining the marked alignment.
36. Front propeller shaft – place the rubber grommet in position and secure the hose clips 180° to each other to maintain balance.
37. Fit the grease nipple to the universal joint.
38. Lubricate the propeller shaft at the grease points.

CAUTION: Do not fill the sliding joint with grease, use sufficient to lubricate the splines only, otherwise hydraulicing will result.

39. Refit the propeller shaft. 47.15.02, 47.15.03.



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Power take-off to winch shaft

–Remove and refit **A47.15.18**

Removing

1. Remove power take-off A37.33.01.
2. Remove grub screw from winch input shaft.
3. Remove centre bearing mountings and remove shaft.

Refitting

4. Reverse 1 to 3.

–Overhaul **A47.15.19**

Dismantling

1. To remove drive shaft, refer A37.33.01 and A47.15.18.
2. Remove grub screws from hub joints.
3. Dismantle joints from drive shaft.
4. Remove centre bearing lock washer.
5. Remove centre bearing from drive shaft.
6. For dismantling of joints, refer to 47.15.11 for general procedure.

Reassembling

7. Refer to 47.15.11 for general procedure.
8. Reverse 1 to 5.
9. When assembled, using grease fittings in place of plugs, fill joints and refit plugs.