

Service Instruction Manual

Fourth Issue



SERIES I AND II
and
TRIUMPH "RENOWN" MODELS

PROPELLER SHAFT SECTION K

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PROPELLER SHAFT

INDEX

	<i>Page</i>		<i>Page</i>
Type and description	1	Dismantling propeller shaft	2
Lubrication and maintenance instructions	1	To examine and check for wear	3
Removal of propeller shaft	1	To refit propeller shaft	4

ILLUSTRATIONS

<i>Fig.</i>		<i>Page</i>	<i>Fig.</i>		<i>Page</i>
1	Propeller shaft details	1	4	Removing bearing race with special punch	2
2	Tapping sleeve yoke to release bearing race	2	5	Removing yoke	3
3	Removing bearing race by hand	2	6	Fitting new oil seals	3

PROPELLER SHAFT

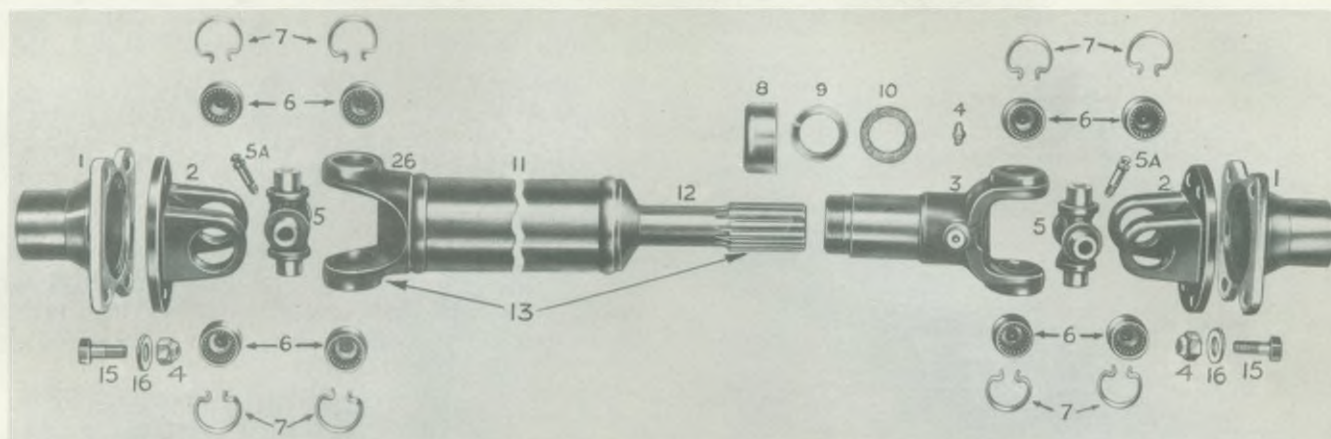


Fig. 1.

Propeller shaft details

NOTATION FOR FIG. 1

Fig.	Item
1	Companion Flange.
2	Flange Yoke.
3	Sleeve Yoke Assembly.
4	Greaser for Splines.
5	Spider Journal Assembly (less Greaser).
5A	Greaser for Journal Assembly
6	Bearing Race Assembly.
7	Snap Ring.
8	Dust Cap.
9	Steel Washer.
10	Cork Washer.
11	Tube.
12	Slip Stub Shaft.
13	Propeller Shaft Assembly.
14	Simmonds Nut.
15	Flange Bolt.
16	Washer.

DESCRIPTION

The propeller shafts and universal joints fitted to the Vanguard and Renown models are Hardy Spicer Series 1300, the tube diameters being 2", and the overall length of the assemblies being 3' 4 $\frac{15}{16}$ " and 3' 7 $\frac{1}{2}$ " respectively.

Details of these propeller shafts are as shown in exploded form in Fig. 1.

When the rear axle rises and falls, with the flexing of the springs, the arc of the axle's travel necessitates variations in the length of the propeller shaft which is provided for by the fitting of a sliding spline at the front end of the assembly. The splined end of the propeller shaft is shown under Notation 13 in Fig. 1.

A universal joint is supplied at each end, consisting of a central spider having four trunnions, four needle roller bearings and two yokes as can be appreciated by a study of Fig. 1.

LUBRICATION

Each spider is provided with a grease nipple and there is one fitted on the sleeve yoke assembly (3) to lubricate the sliding spline. After dismantling and before reassembly, the inside splines of the sleeve yoke should be liberally smeared with grease.

Each of the two journal assemblies are provided with a grease nipple which should be lubricated each 5,000 miles in accordance with the lubrication recommendation made in the summary in "General Data" Section.

If a large amount of grease exudes from the oil seals, the joint should be dismantled and new oil seals fitted.

MAINTENANCE INSTRUCTIONS

To test for wear.

Wear on the thrust faces is located by testing the lift in the joint by hand.

Any circumferential movement of the shaft relative to the flange yokes indicates wear in the needle roller bearings and/or the sliding splines.

REMOVAL OF PROPELLER SHAFT

1. Jack up one rear wheel clear of the ground to enable the propeller shaft to be rotated.
2. Remove nuts from bolts at both flange yokes engaging first gear, as necessary to hold the shaft from turning when slackening nuts.
3. Tap out bolts and remove propeller shaft assembly.

PROPELLER SHAFT

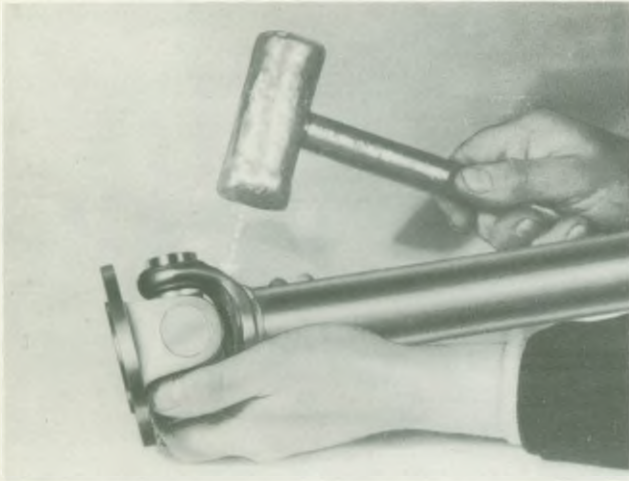


Fig. 2. Tapping sleeve yoke to release bearing race

TO DISMANTLE PROPELLER SHAFT

Before commencing to dismantle propeller shaft see if "arrow" location marks are visible when the parts are clean. If no markings are visible, re-mark to ensure correct reassembly.

Having unscrewed the dust cap (8, Fig. 1), pull sleeve yoke assembly (3, Fig. 1) off shaft. Clean enamel from snap rings and top of bearing races. Remove all snap rings by pinching ears together with a suitable pair of circlip pliers and subsequently prising out these with a screwdriver. If ring does not snap out of groove readily, tap end of bearing race lightly inwards to relieve the

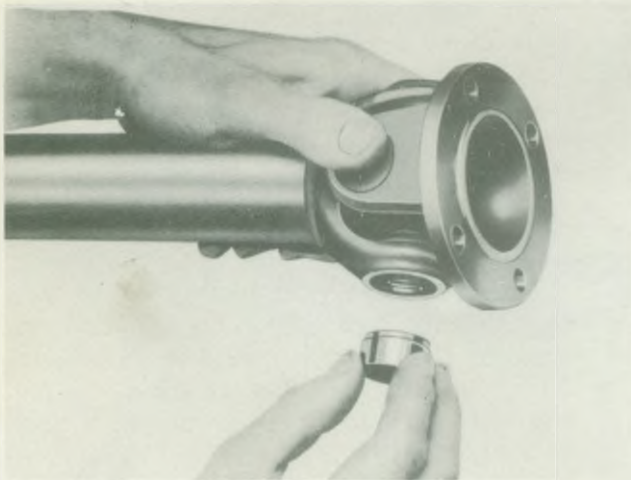


Fig. 3. Removing bearing race by hand

pressure against ring. Holding joint in left hand with splined sleeve yoke lug on top, tap yoke arms lightly with soft hammer as shown in Fig. 2. Top bearing should begin to emerge, turn joint over and finally remove with fingers as shown in Fig. 3.

If necessary tap bearing race from inside with small diameter bar, as shown in Fig. 4, taking care not to damage the bearing race. This operation will destroy the oil seal and

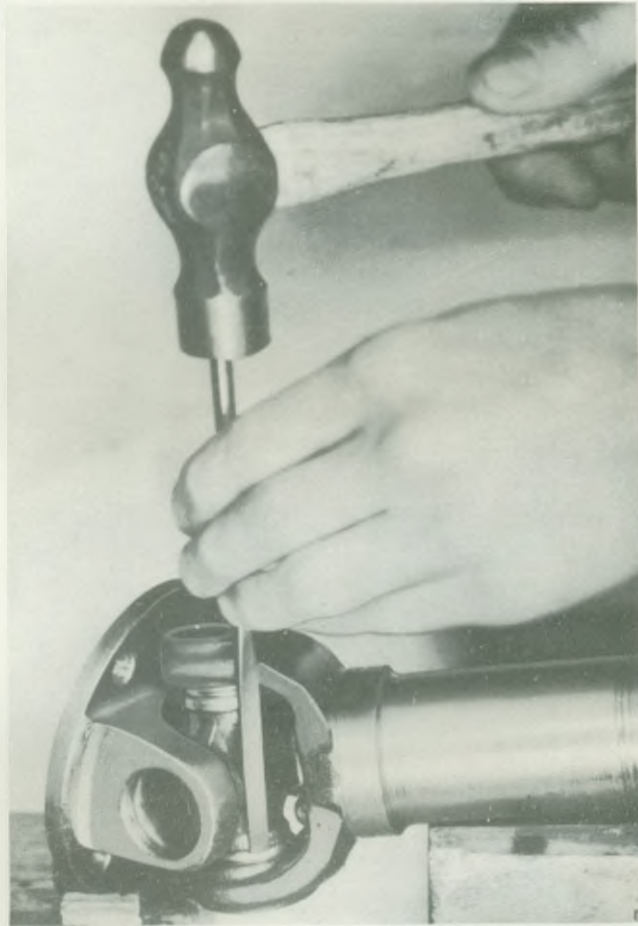


Fig. 4. Removing bearing race with special punch

necessitate fitting replacement parts when re-assembling, keep joint in this position whilst removing bearing race, so as to avoid dropping the needle rollers.

Repeat the operation described in previous paragraph for the opposite bearing. The splined sleeve yoke can now be removed as shown in Fig. 5.

Rest the two exposed trunnions on wood or lead blocks, then tap flange yoke with soft hammer to remove the two remaining bearing races.

PROPELLER SHAFT

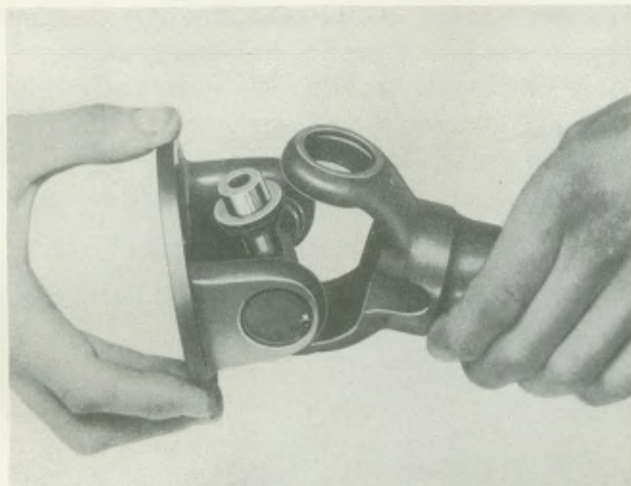


Fig. 5. Removing the yoke

TO EXAMINE AND CHECK FOR WEAR

The parts most likely to show signs of wear after long usage are the bearing races and spider trunnions. Should looseness in the fit of these parts, load markings, or distortion be observed, they must be renewed complete, as no oversize journal bearing races are provided. It is essential that bearing races are a light drive fit in the yoke. In the rare event of wear having taken place in the yoke cross hole, the holes will most certainly be oval, and such yokes must be replaced.

In the case of wear of the cross holes in a fixed yoke, which is part of the tubular shaft assembly, only in cases of absolute emergency should this be replaced by welding in a new yoke. The normal procedure is to replace by a complete shaft assembly. The other parts likely to show signs of wear are the splines of the sleeve yoke, or splined stub shaft. A total of .004" circumferential movement, measured on the outside diameter of the spline, should not be exceeded.

In the event of the splined stub shaft requiring renewal this must be dealt with in the same way as the fixed yoke, *i.e.*, a replacement tubular shaft assembly fitted.

TO ASSEMBLE

See that trunnion assemblies are well lubricated with one of the greases recommended. Assemble needle rollers in bearing recess, smearing the walls of the races with vaseline, or lubricant, to retain the rollers in place.

It is advisable to replace cork gaskets and gasket retainers (oil seals) on the trunnions using a tubular drift as shown in Fig. 6. The spider

journal shoulders should be shellacked prior to fitting retainers to ensure a good oil seal. Ensure that the trunnions are clean and free from shellac before fitting needle rollers.

Insert spider in flange yoke. Then using a soft-nosed drift about $\frac{1}{32}$ " smaller in diameter than the hole in the yoke, tap the bearing into position. It is essential that bearing races are a light drive fit in the yoke holes. Repeat this operation for the other three bearings.

Refit snap rings with a suitable pair of circlip pliers, ensuring that rings engage properly with their respective grooves. If joint appears to bind after assembly, tap lightly with a soft hammer, thus relieving any pressure of the bearings on the ends of the trunnions.

WHEN REPLACING SLIDING JOINT ON SHAFT BE SURE THAT SLIDING AND FIXED YOKES ARE IN THE SAME PLANE AND ARROW MARKINGS COINCIDE. A single universal joint does not transmit uniform motion when the driving and driven shafts are out of line, but when two joints are used as in the case of a propeller shaft, and are set in correct relation the one to the other, the errors of one

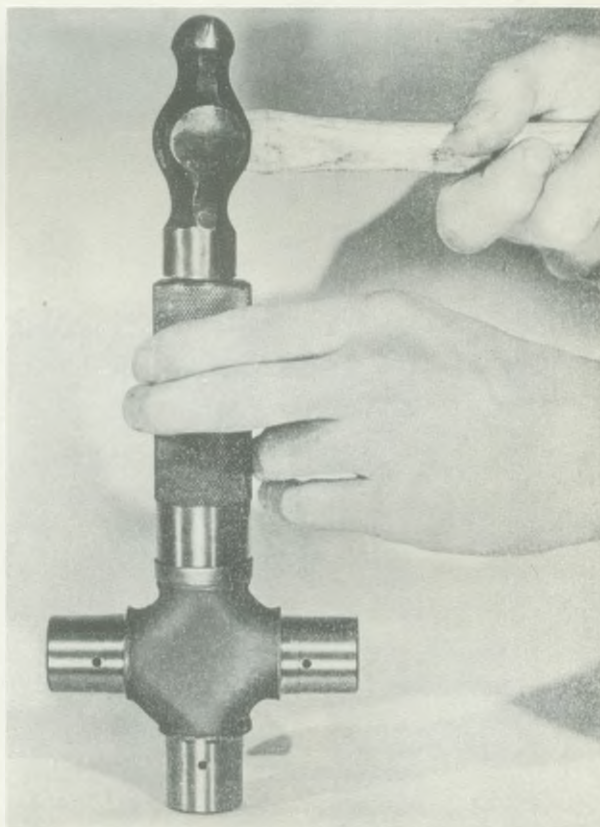


Fig. 6.

Fitting new oil seals

PROPELLER SHAFT

are corrected by the discrepancies of the other, and uniform motion is then transmitted. Hence the importance of re-engaging the splines correctly when they have been taken apart.

TO REFIT PROPELLER SHAFT

Wipe companion flange and flange yoke

faces clean, to ensure the pilot flange registering properly and joint faces bedding evenly all round. Insert bolts, and see that all nuts are evenly tightened all round and are securely locked. Dust cap to be screwed up by hand as far as possible. Sliding joint is always placed towards front of vehicle.