



WHEELS

AND

TYRES





FRONT WHEEL HUBS.

GENERAL:

Two single row journal ball bearings are fitted to the front hubs as shown in Fig. 1. They take both the axial (thrust) and the radial loads. The bearings are correctly packed with ball bearing grease in the first instance, and should need no attention between general overhauls of the chassis. The hub cap and wheel disc assembly for both right-hand and left-hand hubs have right-hand threads.

TO REMOVE A FRONT HUB:

- (i) Prior to jacking up the car at the front, remove the hub cap and wheel disc assembly, using the special spanner, RF-3851 and then slacken back a turn or two, the five wheel securing nuts, using the special wheel brace RF-3375.
- (ii) Jack up the car and place a suitable block of wood or trestle under the lower triangle lever and in line with the coil spring of the front suspension. Remove the jack. Unscrew the five wheel securing nuts and remove the wheel.
- (iii) Slacken off the square ended adjuster screw of the front brake mechanism by turning it in an anti-clockwise direction as far as possible, to make sure that the brake shoe linings are clear of the drum.
- (iv) With the aid of two large screwdrivers, prise back (remove) the dust cover (9 Fig. 1) from the hub which is held in position in the hub by an interference fit.
- (v) Remove the sealing strip from the split pin (12), remove the split pin. Remove the retaining nut (13). **NOTE:** The nut (13) on the right-hand side stub axle, has a right-hand thread, and the nut on the left-hand side stub axle, has a left-hand thread. Remove the washer (11) and the adjusting washer (10).
- (vi) Screw the Road Wheel Hub Extractor, Tool No: 3752/T1005 on to the hub and withdraw the hub complete with the brake drum from the stub axle.

TO REMOVE THE BALL BEARINGS FROM A FRONT HUB:

- (i) Place two long flat levers (diametrically opposite to one another), under the lip of the oil retaining cover (4) and on the brake drum, and squarely prise off (remove) the cover. This is held in position on the rear of the hub by an interference fit of 0.0023" to 0.0053" (0.06 to 0.013 mm).
- NOTE:** The oil retaining cover (4) on the right-hand side hub, has a right-hand Acme Thread and the rear of the cover is boldly stamped "Off-side - Right Hand". The cover (4) fitted to the left-hand side hub, has a left-hand Acme Thread and the rear of the cover is boldly stamped "Near -Side - Left-hand". Therefore a cover must always be refitted to its respective hub.

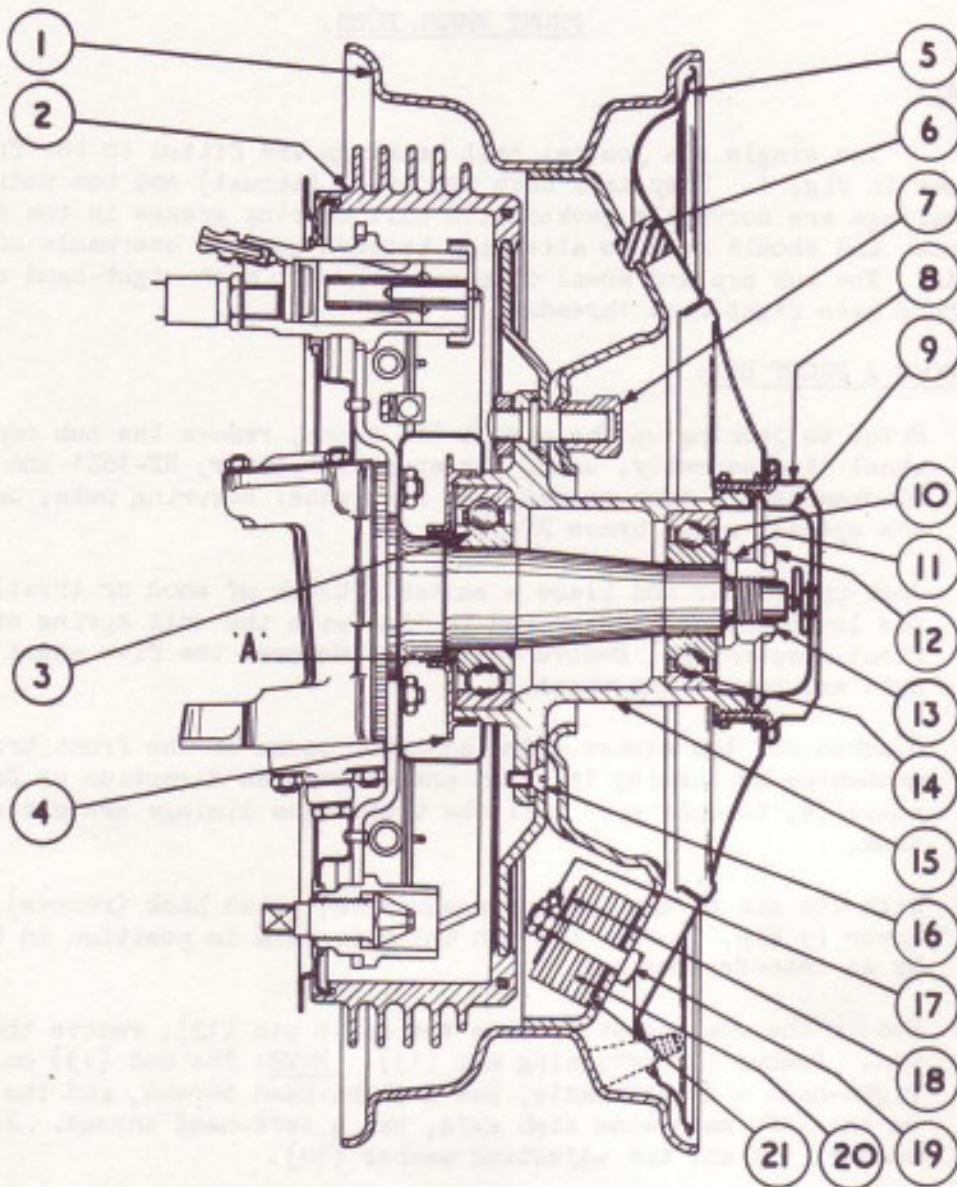


FIG. 1. SECTION THROUGH FRONT HUB.

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| 1. Well base rim | 12. Split pin. |
| 2. Brake Drum. | 13. Retaining Nut. |
| 3. Ball Bearing, inner end. | 14. Ball Bearing, outer end. |
| 4. Cover - Oil retaining. | 15. Hub. |
| 5. Wheel disc. | 16. Retaining screw - brake drum. |
| 6. Rubber Pad - Wheel disc. | 17. Locknuts. |
| 7. Wheel securing nut. | 18. Steel washer. |
| 8. Hub cap. | 19. Bolt. |
| 9. Dust cover. | 20. Lead balance weights. |
| 10. Adjusting washer(range of) | 21. Fibre washer. |
| 11. Washer. | |



- (ii) Pass a hardwood drift through the inner bearing and squarely tap out the outer bearing, then remove the inner bearing.
- (iii) Thoroughly clean all dismantled parts, also clean away the old grease from the hub and stub axle.

INSPECTION OF HUB BEARINGS:

The ball bearings on inspection may require replacement due to noise or fair wear and tear after a considerable mileage has been covered. The only method of inspection, apart from obvious damage, is to test for side play and noise. In regard to side play, it must be borne in mind that as the ball bearings have to take considerable side thrust, special Hoffman or Fischer bearings are used, having greater diametric clearance for the balls than is normal, in order that the resolved line of force is brought round to a more favourable angle. For this reason, bearings should not be condemned merely because the side play appears to be excessive, judge for noise as well, and if O.K., pass the bearings unless side play denotes obvious wear. In testing for noise, thoroughly wash the bearing out in paraffin to remove old grease and foreign matter, and oil with a good quality engine oil. Then spin the bearing by hand, when it should be possible to feel any roughness caused by worn or damaged balls and tracks. Replace the bearing if lumpy or excessively rough.

TO REPLENISH A FRONT HUB WITH GREASE AND REFIT THE BALL BEARINGS:

- (i) IMPORTANT NOTE: Care must be taken that the hub bearings are not over-lubricated, otherwise in spite of the Acme thread on the oil retaining cover (4) and the grease catcher, it is possible that the lubricant may find its way to the brake shoes, when in all probability the linings would be ruined. The hub/s should be lubricated as follows:- 1.6 ounces (45 gms) of either one of the undermentioned grades of grease should be applied to the hub close to the two ball bearings.

- a) Price's Belmoline HMP.
- b) Wakefield's Castrolase HM, Hub Grease.
- c) Shell Retinax H.
- d) Vacuum Mobilgrease No:5.

- (ii) If the original bearings are to be refitted, then add a few drops of engine oil to each bearing and lightly pack each side of the ball cage of each bearing with the recommended grease.
- (iii) With the correct weight of grease applied to the hub as specified, fit the outer ball bearing (14) to the hub and then fit the inner ball bearing (3). Refit the oil retaining cover (4).

TO REFIT A FRONT HUB:

- (i) Refit the hub and brake drum assembly to the stub axle, making sure that it is driven fully home, i.e. until the face of the inner race of the inner end ball bearing (3) makes contact against the distance piece ('A' Fig.1) fitted to the stub axle. This distance piece is a press fit on the stub axle.



- (ii) Place the adjusting washer (10) so that it spigots on the end of the stub axle, then place the washer (11) in position and tighten up the retaining nut (13). **NOTE:** The adjusting washer (10) should be just rotatable by hand after the retaining nut (13) has been fully tightened. Should this not be so, then choose an adjusting washer from the range available to give the desired condition.
- (iii) With the retaining nut fully tightened, secure with a new split pin (12) of the correct size. Refit the dust cover (9).
- (iv) Re-adjust the front brake/s by rotating the adjuster screw in a clockwise direction until considerable resistance is felt. Should the last "click" require noticeably greater force to obtain, the adjuster screw should be turned back to the previous "click". This will give the correct brake adjustment. Also check and adjust as necessary, the brake on the opposite side.
- (v) Refit the wheel and the hub cap and wheel disc assembly. **NOTE:** The hub cap (8) is necessary only to retain the disc and should therefore not be overtightened. The correct tension is attained by giving the hub cap ONE COMPLETE TURN with the special spanner (RF-3851) after the disc has been felt to be in light contact with the rubber pads (6) on the wheel centre. There should be a small gap approximately 0.100" (2.5 mm) between the edge of the disc and the wheel. Over-tightening distorts and brings the disc in contact with the wheel, thus causing creaks and rattles.