

**SECTION
K
HUBS, WHEELS AND TYRES**

SERVICE HANDBOOK

SILVER WRAITH — SILVER DAWN — BENTLEY MK. VI.
R. TYPE BENTLEY — PHANTOM IV.

SECTION K.

HUBS, WHEELS AND TYRES

FRONT HUBS - WHEELS - TYRE PRESSURES.

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SECTION K.

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FRONT HUBS:

Early series cars incorporated two single row journal ball bearings as shown in Fig. K1. As from Silver Wraith WME-1, Silver Dawn SCA-1 and Bentley B-1-GT, these ball bearings were replaced by two roller bearings as shown in Fig. K2. At the same time the method of wheel balancing was also changed, i.e., from a series of weighting washers in four fixed positions, to movable weights in variable positions.

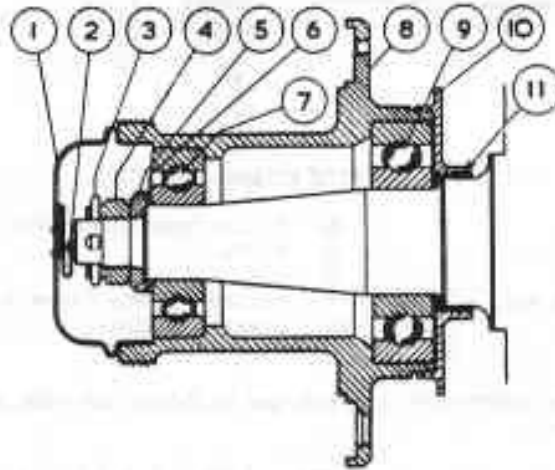


FIG. K1. HUB WITH BALL BEARING.

- | | |
|----------------------|----------------------|
| 1. Dust cover. | 7. Bearing (outer). |
| 2. Earth contact. | 8. Hub. |
| 3. Split pin. | 9. Bearing (inner). |
| 4. Castellated nut. | 10. Grease retainer. |
| 5. Key washer. | 11. Distance piece. |
| 6. Adjusting washer. | |

To Remove Front Hub:

1. Remove wheel, slacken off brake adjusters and with two screwdrivers, remove dust cover.
2. Early type - remove sealing strip and split pin (3, Fig. F1), remove retaining nut (4), washer (5), and adjusting washer (6). Note nut on R.H. axle has R.H. thread and nut on L.H. axle has L.H. thread.

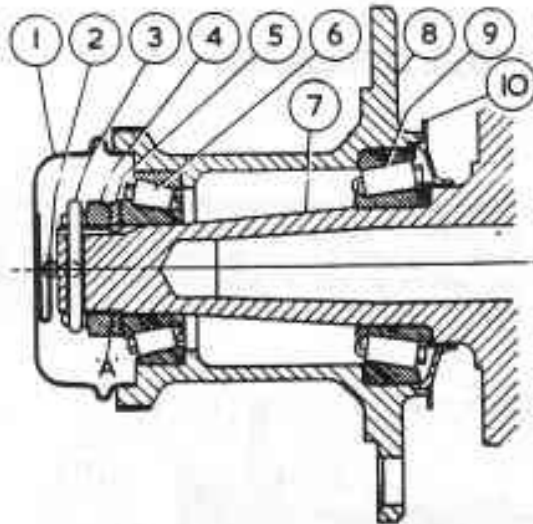


FIG. K2. HUB WITH ROLLER BEARINGS

- | | |
|---------------------|----------------------------|
| 1. Dust cover. | 6. Roller bearing (outer). |
| 2. Earth contact. | 7. Shaft. |
| 3. Split pin. | 8. Hub. |
| 4. Castellated nut. | 9. Roller bearing (inner). |
| 5. Key washer. | 10. Grease retainer. |

Screw extractor 3752/T1005 onto hub and withdraw hub complete with brake drum.

- 2a. Later type - remove sealing strip and split pin (3, Fig. K2) the nut (4) and washer (5), and withdraw hub by hand.

Normally the hub will withdraw complete with outer and inner taper roller bearing. Should the inner race of the inner bearing remain on stub axle, it will be found that grease retainer has parted from the hub. Prise inner race off stub axle with levers. Care must be taken not to damage roller cage or edges of grease retainer.

Note:- grease retainers are distinctly marked for assembly - "Off-side - Right-hand", or "Near-side - Left-hand".

3. To remove ball bearings from front hub, use two levers under lip of grease retaining cover (10, Fig. K1) and squarely prise off. Remove cover, this has an interference fit of .0023" to .0053". Covers have handed Acme threads and are clearly marked for re-assembly.

Pass a hardwood drift through inner bearing and tap out outer bearing, then remove inner bearing.

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To Refit Front Hub:

Only the correct amount of grease should be packed in each hub:-

Early type - 1.6 ozs. Retinax A.
Later type - 2.5 ozs. Retinax A.

Early Type:

1. Refit hub and brake drum assembly, ensure this is driven fully home, inner face of inner ball bearing contacts against distance piece (11. Fig. K1).

Replace adjusting washer (6) and plain washer (5) and tighten retaining nut.

Note:- adjusting washer (6) should just be rotatable by hand with nut fully tightened.

Later Type:

1. Place hub in position, followed by outer bearing. Fit key washer (5, Fig. F2) and tighten castellated nut sufficient to take up end float in hub.
Unscrew nut sufficient to allow two .002" feelers to be inserted, diametrically opposite one another, between nut and key washer "A", Fig. F2. With feelers in position tighten nut hand tight with box spanner, and split pin to lock, to give end float of .002" to .004".

WHEELS:

SILVER WRAITH - either 17" x 5" or 16" x 6.50" well-base rims.
SILVER DAWN - 16" x 5" - well-base rims.
BENTLEY - 16" x 5" - well-base rims.
PHANTOM IV - 17" x 5" - semi-drop centre rims.

TYRE PRESSURES:

The tables below show the correct method of determining tyre pressures, according to axle weights, in pounds.

To determine the correct tyre pressure, weigh the car, each axle in turn, with not more than 5 gallons of petrol in the tank, but otherwise in kerb-side condition. Read off on the appropriate table, the tyre pressure against the axle weight and size of tyre. If the tank is full, deduct 140 lbs. from the rear axle weight of Bentley Mk.VI, Bentley "R" type, Silver Dawn and Silver Wraith and 190 lbs. for Phantom IV, and add 20 lbs. to the front axle weights.

The tables do not apply to the Bentley Continental Sports Saloon, which is fitted with Special High Speed Tyres.

Filling the petrol tank reduces the front axle load by about 20 lbs. and passengers increase it by 150 lbs. The loaded front axle weight is assumed to be 130 lbs. greater than normal kerbside weight.

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Filling the petrol tank adds about 140 lbs. to the rear axle weight, 4 passengers will add another 450 lbs. making a total of 590 lbs. No allowance is made for a 5th passenger or for luggage. The loaded axle weight is assumed to be 600 lbs. above the normal kerbside condition, except in the case of Phantom IV when allowance is increased by 650 lbs. because of the larger petrol tank.

Obviously cars will usually run under this assumed weight, but some may often exceed it. It gives about the highest pressure which can be used for average conditions without undue harshness.

If a 5th passenger and 100-200 lbs. of luggage are carried, the rear tyre pressure should be increased by 3 lbs/sq.in. for better handling, and under Continental conditions, perhaps for better tyre life.

On limousines when 6 people are carried, the pressure should be increased by 4 lbs/sq.in.

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6.50" x 16" TYRES

<u>Pressure</u> <u>lbs/sq.in.</u>	<u>Pressure</u> <u>kg/sq.cm.</u>	<u>Weights - lbs.</u>	
		<u>Front</u>	<u>Rear</u>
15	1.05		
16	1.12		
17	1.19		
18	1.27		
19	1.34		
20	1.41	1722 - 1790	
21	1.48	1791 - 1860	
22	1.55	1861 - 1930	
23	1.62	1931 - 2000	
24	1.69	2001 - 2070	
25	1.76	2071 - 2140	
26	1.83	2141 - 2210	
27	1.90		
28	1.97		1745 - 1810
29	2.04		1811 - 1880
30	2.11		1881 - 1950
31	2.18		1951 - 2020
32	2.25		2021 - 2090
33	2.32		2091 - 2160
34	2.39		2161 - 2230
35	2.46		2231 - 2300
36	2.53		2301 - 2370
37	2.60		
38	2.67		
39	2.74		
40	2.81		

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7.00" x 16" TYRES

<u>Pressure</u> <u>lbs/sq.in.</u>	<u>Pressure</u> <u>Kg/sq.cm.</u>	<u>Weights - lbs.</u>	
		<u>Front</u>	<u>Rear</u>
15	1.05		
16	1.12		
17	1.19		
18	1.27		
19	1.34		
20	1.41	1921 - 1990	
21	1.48	1991 - 2060	
22	1.55	2061 - 2130	
23	1.62	2131 - 2200	
24	1.69	2201 - 2270	
25	1.76	2271 - 2340	
26	1.83	2341 - 2410	
27	1.90	2411 - 2480	
28	1.97		2011 - 2080
29	2.04		2081 - 2150
30	2.11		2151 - 2220
31	2.18		2221 - 2290
32	2.25		2291 - 2360
33	2.32		2361 - 2430
34	2.39		2431 - 2500
35	2.46		2501 - 2570
36	2.53		2571 - 2640
37	2.60		
38	2.67		
39	2.74		
40	2.81		

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7.50" x 16" TYRES

<u>Pressure lbs/sq.in.</u>	<u>Pressure Kg/sq.cm.</u>	<u>Weights - lbs.</u>	
		<u>Front</u>	<u>Rear</u>
15	1.05	1921 - 1995	
16	1.12	1996 - 2070	
17	1.19	2071 - 2145	
18	1.27	2146 - 2220	
19	1.34	2221 - 2295	
20	1.41	2296 - 2370	
21	1.48	2371 - 2445	1901 - 1975
22	1.55		1976 - 2050
23	1.62		2051 - 2125
24	1.69		2126 - 2200
25	1.76		2201 - 2275
26	1.83		2276 - 2350
27	1.90		2351 - 2425
28	1.97		2426 - 2500
29	2.04		2501 - 2575
30	2.11		2576 - 2650
31	2.18		2651 - 2725
32	2.25		2726 - 2800
33	2.32		2801 - 2875
34	2.39		2876 - 2950
35	2.46		2951 - 3025
36	2.53		3026 - 3100
37	2.60		3101 - 3175
38	2.67		3176 - 3250
39	2.74		
40	2.81		

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6.50" x 17" TYRES

<u>Pressure</u> <u>lbs/sq.in.</u>	<u>Pressure</u> <u>kg/sq.cm.</u>	<u>Weights - lbs.</u>	
		<u>Front</u>	<u>Rear</u>
15	1.05		
16	1.12		
17	1.19		
18	1.27		
19	1.34		
20	1.41	1810 - 1884	
21	1.48	1885 - 1959	
22	1.55	1960 - 2034	
23	1.62	2035 - 2109	
24	1.69	2110 - 2184	
25	1.76	2185 - 2259	
26	1.83	2260 - 2334	
27	1.90	2335 - 2409	1865 - 1939
28	1.97		1940 - 2014
29	2.04		2015 - 2089
30	2.11		2090 - 2164
31	2.18		2165 - 2239
32	2.25		2240 - 2314
33	2.32		2315 - 2389
34	2.39		2390 - 2464
35	2.46		2465 - 2539
36	2.53		2540 - 2614
37	2.60		2615 - 2689
38	2.67		2690 - 2764
39	2.74		
40	2.81		

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7.00" x 17" TYRES

Pressure lbs/sq.in.	Pressure kg/sq.cm.	Weights - lbs.	
		Front	Rear
15	1.05	1843 - 1936	
16	1.12		
17	1.19		
18	1.27		
19	1.34		
20	1.41	1843 - 1936	
21	1.48	1937 - 2030	
22	1.55	2031 - 2124	
23	1.62	2125 - 2218	
24	1.69	2219 - 2312	
25	1.76	2313 - 2406	
26	1.83	2407 - 2500	
27	1.90	2501 - 2594	1901 - 1994
28	1.97		1995 - 2088
29	2.04		2089 - 2182
30	2.11		2183 - 2276
31	2.18		2277 - 2370
32	2.25		2371 - 2464
33	2.32		2465 - 2558
34	2.39		2559 - 2652
35	2.46		2653 - 2746
36	2.53		2747 - 2840
37	2.60		2841 - 2934
38	2.67		2935 - 3028
39	2.74		3029 - 3122
40	2.81		3123 - 3216

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8.00" x 17" TYRES

<u>Pressure</u> <u>lbs/sq.in.</u>	<u>Pressure</u> <u>kg/sq.cm.</u>	<u>Weights - lbs.</u>	
		<u>Front</u>	<u>Rear</u>
15	1.05		
16	1.12		
17	1.19		
18	1.27		
19	1.34		
20	1.41		
21	1.48		
22	1.55		
23	1.62		
24	1.69		
25	1.76	2378 - 2486	
26	1.83	2487 - 2594	
27	1.90	2595 - 2702	
28	1.97	2703 - 2810	
29	2.04	2811 - 2918	
30	2.11	2919 - 3026	2399 - 2506
31	2.18		2507 - 2614
32	2.25		2615 - 2722
33	2.32		2723 - 2830
34	2.39		2831 - 2938
35	2.46		2939 - 3046
36	2.53		3047 - 3154
37	2.60		3155 - 3262
38	2.67		3263 - 3370
39	2.74		3371 - 3478
40	2.81		3479 - 3586