

When these universal joints are installed, they are provided with a special lubricating compound sufficient to lubricate the spider trunnions for the whole of their service life. For this reason the joints require no maintenance. The grease fitting bore in the spider has been closed with a grub screw.

The fact that cars have no grease fittings on the universal joints of their propeller shaft proves that they have been provided with self-lubricating universal joints. Propeller shafts with standard universal joints cannot be subsequently converted to self-lubricating units by lubricating them with the special compound mentioned above since the ordinary spider seals are not suitable for permanent lubrication. The rubber sealing rings on self-lubricating universal joint have a higher sealing pressure which makes any lubricant leaks impossible.

d) Propeller Shafts as Replacement Parts

For reasons of standardization the reinforced universal joint spider Part No. 180 410 03 31 has also been installed in propeller shafts supplied as replacement parts. When front propeller shafts Part No. 180 410 16 01 (with 80 mm bolt-hole circle on the three-way flange) and with reinforced universal joint are installed on older cars of Models 190 SL and 220 a, it is no longer possible to lubricate the universal joint with a standard lubricator since the cut-out in the chassis base panel is too small. For this reason the universal joint on these cars must be lubricated by hand with Special Grease Gun 000 583 18 18 which has a curved mouth-piece.

e) Survey of Propeller Shafts / Date: December 31, 1959

| Model | Total propeller shaft Part No. | Front propeller shaft Part No. | Rear propeller shaft Part No. | Three-way flange bolt-hole circle | Model |
|---|--------------------------------|--------------------------------|-------------------------------|-----------------------------------|---|
| 180 180 D | 120 410 26 03 | 120 410 38 01 | 120 410 40 09 | 80 | For cars with twin-jointed and single-jointed rear axle, on Model 180 D 1st version (up to Chassis End No. 65 019 19) |
| 180 D | 120 410 27 03 | 120 410 14 01 | 120 410 41 02 | 90 | 2nd Version (as from Chassis End No. 65 019 20) |
| 180 a 190, 190 D 219 | 121 410 13 03 | 180 410 14 01 | 121 410 23 02 | 90 | On Model 219 2nd Version (as from Chassis End No. 65 007 41) |
| 190 SL | 121 410 17 03 | 180 410 16 01 | 121 410 24 02 | 80 | 1st Version (up to Chassis End No. 65 001 72) |
| 190 SL | 121 410 14 03 | 180 410 14 01 | 121 410 24 02 | 90 | 2nd Version (as from Chassis End No. 65 001 73) |
| 220 a | 180 410 14 03 | 180 410 16 01 | 180 410 23 02 | 80 | |
| 219 | 105 410 02 03 | 180 410 16 01 | 121 410 23 02 | 80 | 1st Version (up to Chassis End No. 65 007 40) |
| 220 S, 220 SE | 180 410 11 03 | 180 410 14 01 | 180 410 23 02 | 90 | |
| 220 S, 220 SE Convertible and Coupé | 180 410 12 03 | 180 410 14 01 | 180 410 24 02 | 90 | |
| 219 | 121 410 18 03 | 180 410 17 01 | 121 410 23 02 | 90 | For cars with hydraulic-automatic clutch |

| Model | Total propeller shaft Part No. | Front propeller shaft Part No. | Rear propeller shaft Part No. | Three-way flange bolt-hole circle | Remarks |
|-------------------------------------|--------------------------------|--------------------------------|-------------------------------|-----------------------------------|--|
| 220 S, 220 SE | 180 410 16 03 | 180 410 17 01 | 180 410 23 02 | 90 | For cars with hydraulic-automatic clutch |
| 220 S, 220 SE Convertible and Coupé | 180 410 17 03 | 180 410 17 01 | 180 410 24 02 | 90 | For cars with hydraulic-automatic clutch |
| 180 Db | 120 410 28 03 | 180 410 18 01 | 120 410 42 02 | 90 | With self-lubricating universal joints |
| 180 b, 190 b 190 Db | 121 410 19 03 | 180 410 18 01 | 121 410 25 02 | 90 | |

f) Repair of Self-Lubricating Universal Joints

The procedures necessary to repair the self-lubricating universal joints are the same as for those with grease fittings, but the following details require attention:

In order to safeguard the service life of the self-lubricating universal joints, the lubricating canals in the universal joint spider must be completely filled with the prescribed special lubricant. On a self-lubricating universal joint the sealing between universal joint spider and needle bearing bushings is of particular importance since the lubricant cannot be replenished. For this reason the sealing rings between universal joint spider and needle bearing bushings are installed with a much greater bearing pressure than the sealing rings of universal joints with grease fittings. It goes without saying that self-lubricating universal joints should not be lubricated with ordinary grease or roller bearing grease, but only with the specified compound. The complete universal joint spiders are supplied fully lubricated and it is imperative that they should be fitted in such a way that no lubricant can be lost.

If the lubricant has to be replenished for some reason and if the prescribed special lubricant (EXD 1310 of Mobil OIL AG) is not available, a similar compound can be made to meet **emergencies**. This compound should consist of 75% by volume of roller bearing grease and 25% by volume of hypoid transmission oil SAE 90. The ingredients should be mixed thoroughly.