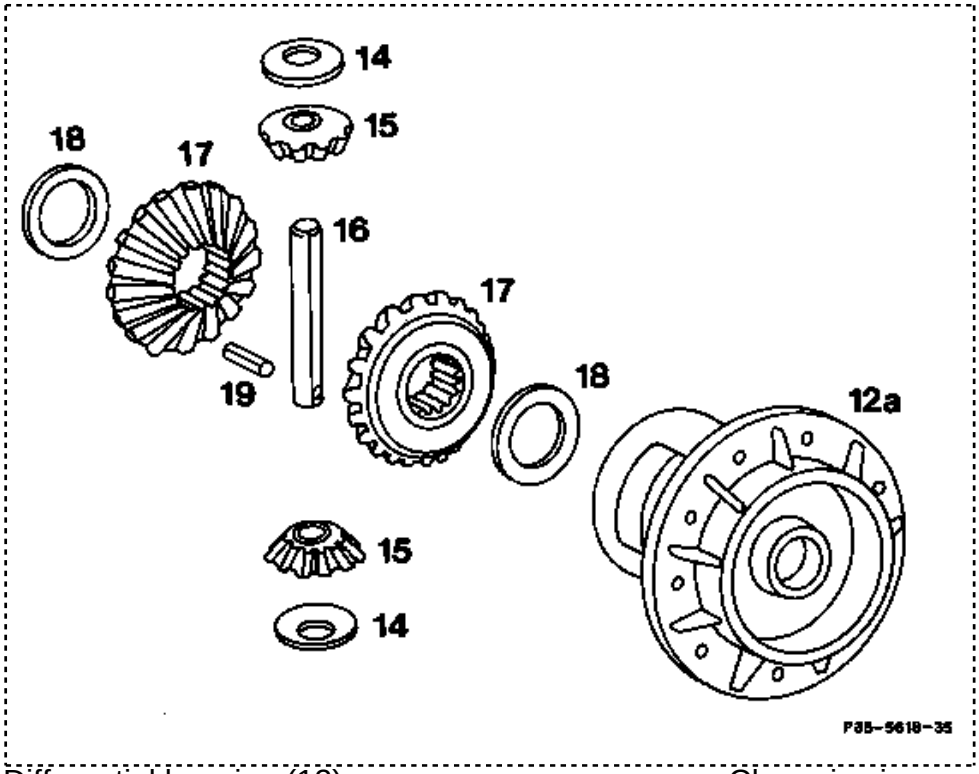
35-560 Repairing differential

Preceding work:
Removing and installing rear axle center piece (35-520)
Dismantling and assembling rear axle center piece, adjusting crown wheel/pinion (35-550)

Operation no. of operation texts and work units or standard texts and flat rates:
35-0815.

Standard differential with 210 mm dia. crown wheel (reinforced)



Differential housing (12)	Clamp in vice, remove from vice. Clamp 201 589 02 31 00.
Dowel sleeve (19)	Drive out, drive in, replace.
Differential pin (16)	Press out, press in, remove. Drive out differential pin using drift 126 589 02 25 00.
Differential bevel gears (15), rear axle shaft gears (17), thrust washers (18) and spherical washers (14)	Crank out, crank in, remove (paragraphs 4-5 and 7-8). When assembling, center rear axle shaft gears and thrust washers with alignment tool 116 589 18 61 00. Center bevel differential gears and spherical washers with alignment tool 126 589 02 15 00. **Check friction torque**. Nominal value 40-90 Nm (paragraph 9).
Check	All parts to see if they can be reinstalled.

Adjustment of differential gears

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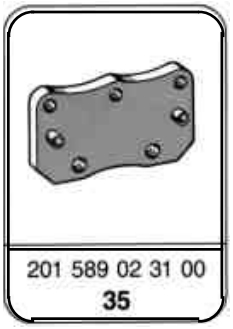
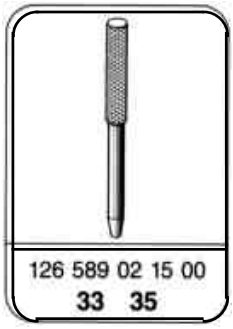
Friction torque when full differential assembly slips	40-90 Nm

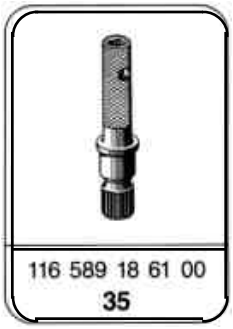
Differential housing

Permissible radial run-out of differential housing at crown wheel location			0.02 mm
Permissible lateral run-out of differential housing at flange surface for crown wheel			0.02 mm
Thrust washer on rear axle shaft gear	Gauge	Crown wheel dia.210 mm	1.3 up to 1.7 mm
	Graduation		0.05 to 0.05 mm
Dowel sleeve		Crown wheel dia.210 mm	6×45 mm

Special tools

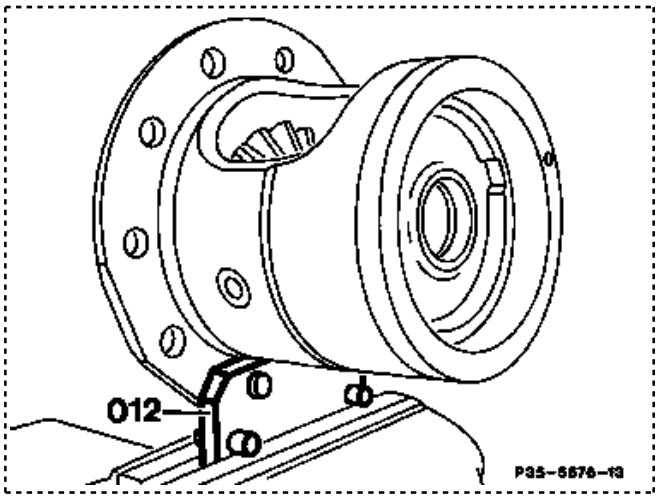






Dismantling

1 Fasten differential housing onto clamp (012)
201 589 02 31 00 and clamp in a vice.



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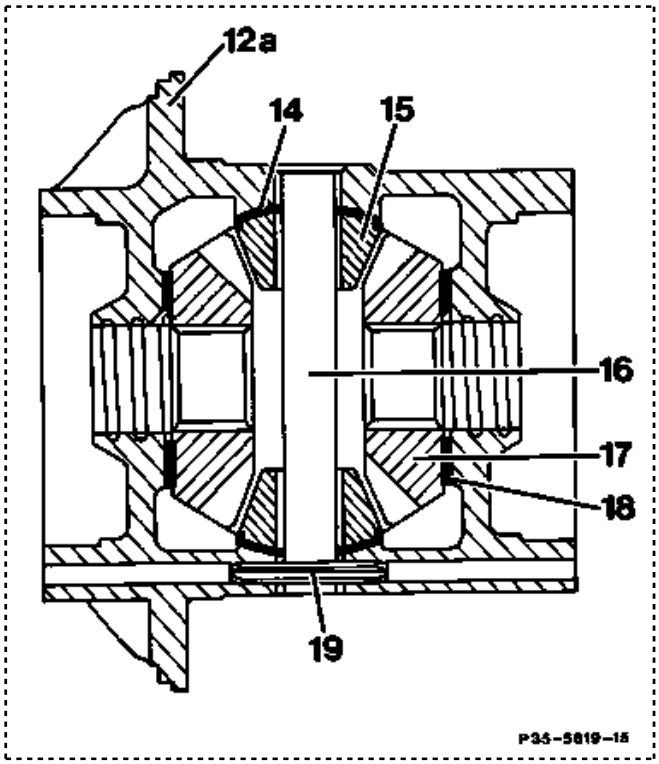
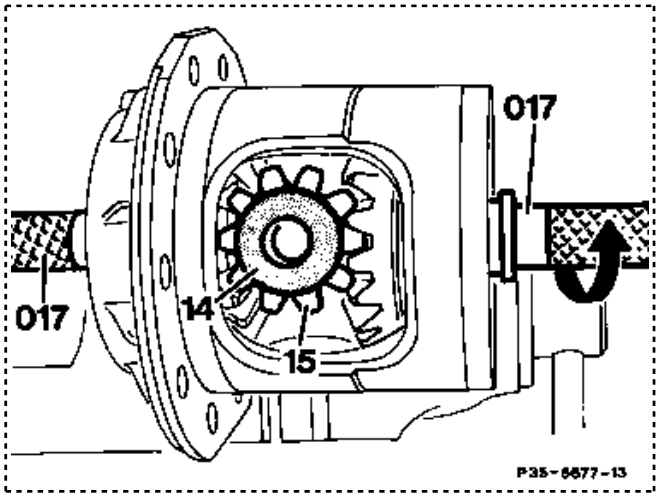
2 Drive dowel sleeve (19) for differential pin (16) out of differential housing (12a) using a suitable drift.

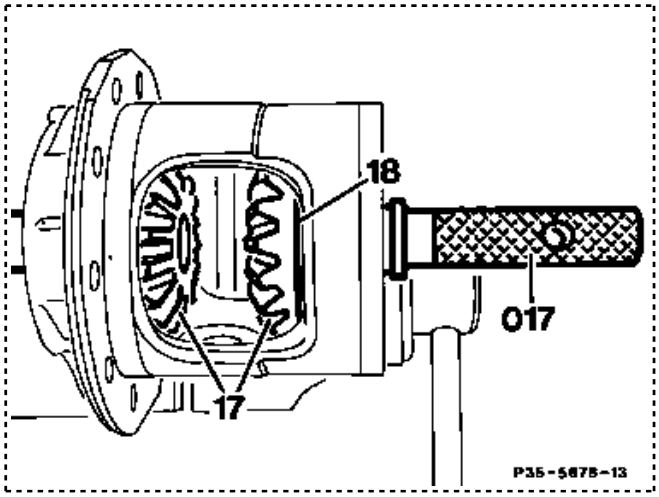
3 Drive differential pin (16) out of differential housing using drift.
Drift 126 589 02 15 00



4 Crank out differential bevel gears (15) and thrust washers (14) using alignment tool (017) 116 589 18 61 00, and remove.



5 Remove rear axle shaft gears (17) with thrust washers from differential housing.



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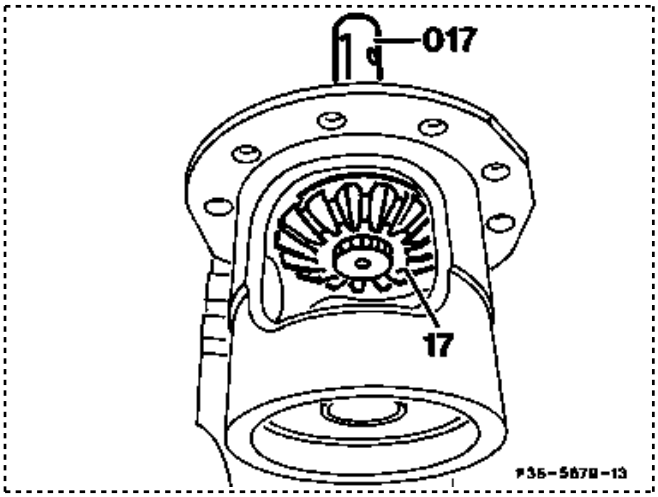
6 Check all parts to see whether they can be reinstalled. Always replace differential bevel gears, thrust washers and spherical washers that have overheated or show signs of scoring.

Assembling

7 Install left-hand rear axle shaft gear (17, on crown wheel side) in differential housing with previously removed, approx. 0.2 mm thick thrust washer and center using alignment tool (017) 126 589 18 61 00.

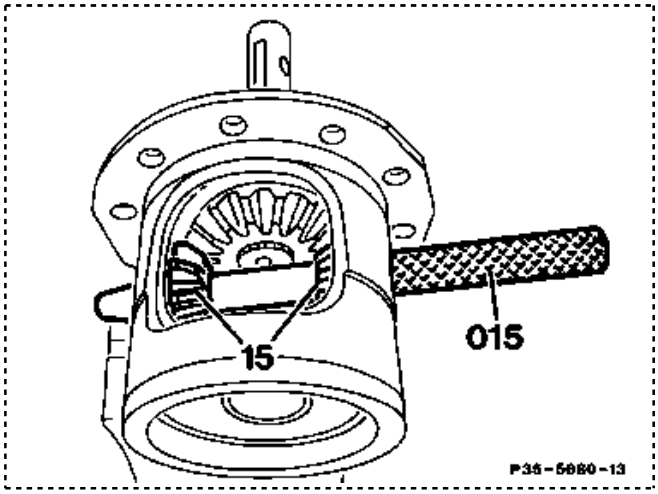


8 Fit both differential bevel gears (15) and center using alignment tool (015) 126 589 02 15 00.

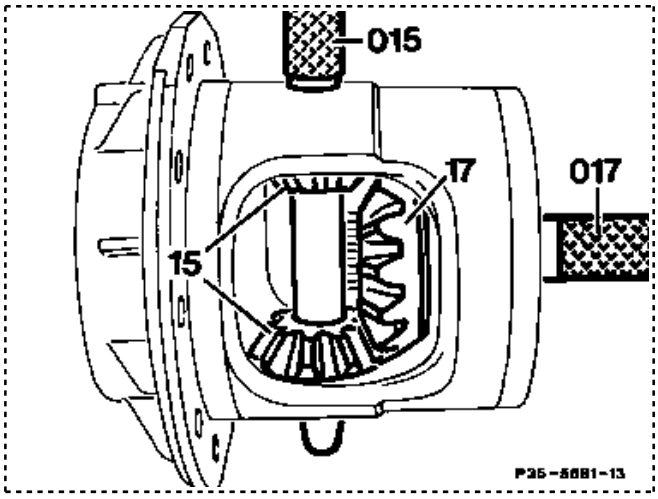
9 Check friction torque.

Note

Select the gauge of the thrust washers for the rear axle shaft gears so that the friction torque on each side is **approx. 20-30 Nm**.



10 Repeat the instructions in paragraphs 7 to 9 with the right-hand rear axle shaft gear.



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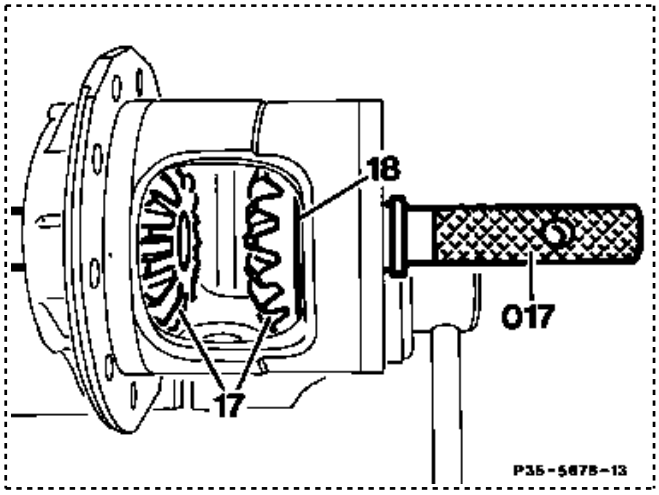
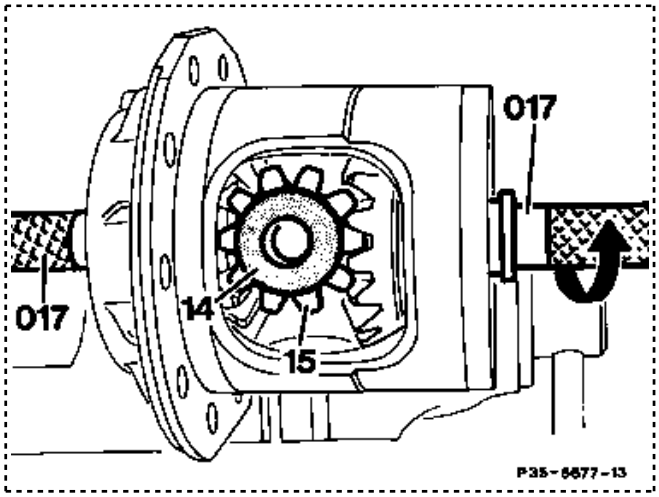
11 Coat thrust washers (18) on both sides with molycote grease and place on rear axle shaft gear.

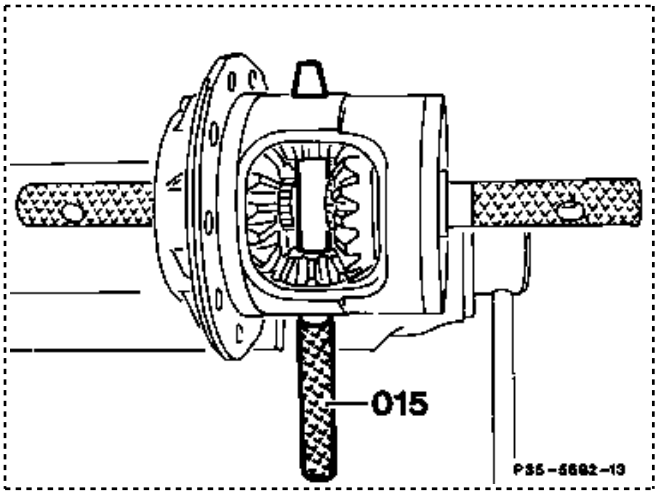
12 Install both rear axle shaft gears (17) in differential housing and center using alignment tool (017)
116 589 18 61 00.



13 Install both differential bevel gears (15) together with spherical washers (14) in differential housing and crank in using alignment tool (017).



14 In place of the differential pin, push alignment tool (015) 126 589 02 15 00 into differential housing to center differential bevel gears and spherical washers.



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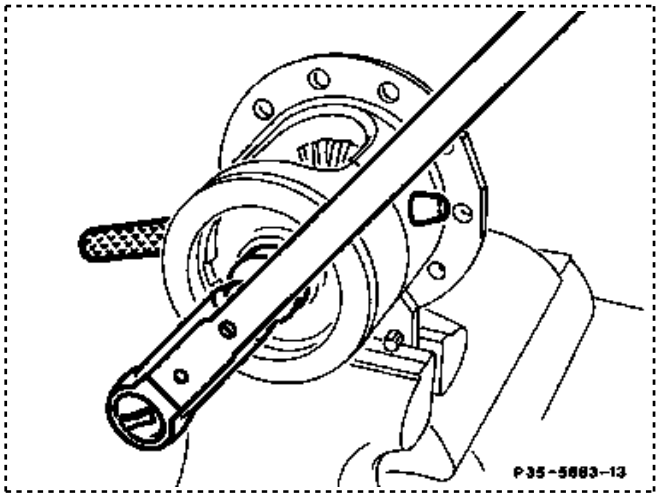
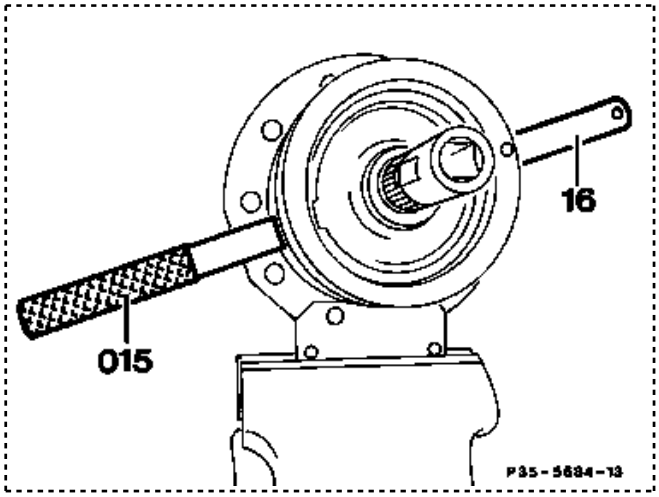
15 Check total drive torque.

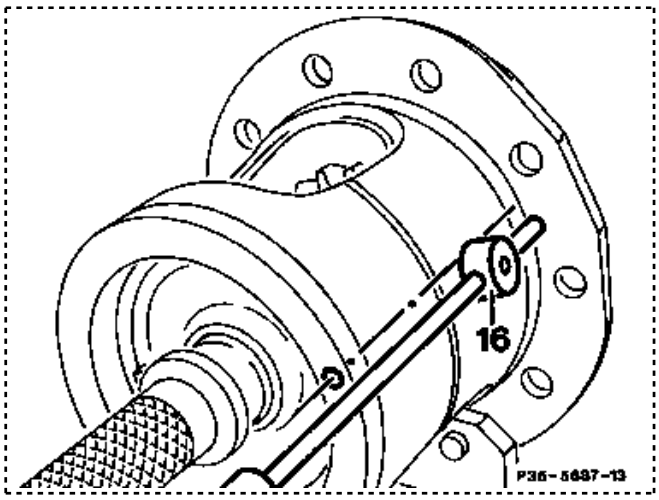
Note
The friction torque should be **40-90 Nm**, although if impeded the measured value can rise to as much as
100 Nm.



16 Drive in differential pin (16) and remove alignment tool (015).



17 When driving in the differential pin (16), watch the bore for the dowel sleeve. Use a suitable tool to check that the bores are correctly aligned (dashed line) and correct if necessary.



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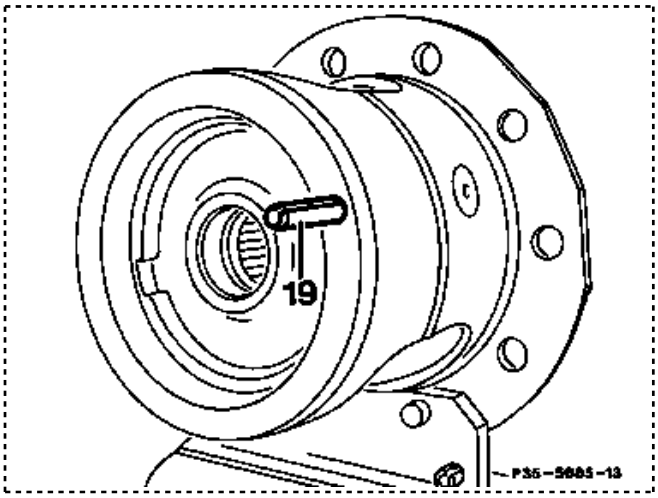
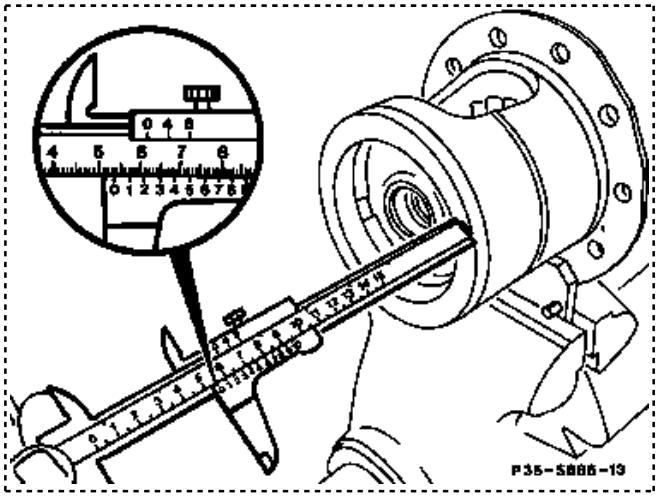
18 Press new dowel sleeve (19) into differential housing using a suitable drift.



19 Press in dowel sleeve approx. 53.5 mm, measured from the end face.

20 Remove differential housing from clamp and vice.



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