

35-520 R and R rear axle differential housing with rear axle shafts

D. Model 126

Oil types and filling capacities

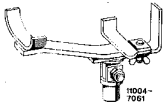
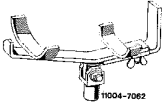


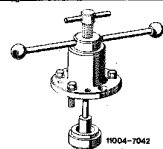
Standard differential	Hypoid gear oil SAE 90 refer to Specifications for service products page no. 235	
Differential with limited slip (positive traction) (Information label on rear axle housing)	Special hypoid gear oil refer to Specifications for service products page no. 235.3	
Capacity	large center piece	1.3 liter
	small center piece	1.0 liter

Tightening torques

Nm

Hex. screws for fastening rear rubber bearing to rear axle end cover	120
Hex. screws, self-locking for fastening rear rubber bearing to frame floor	30
Hex. screw for fastening rear axle shaft to rear axle shaft flange	30
Self-locking hex. nuts for fastening rear axle center piece to rear axle carrier	100
Clamping nut of propeller shaft	30-40
Studs on rear axle housing	50

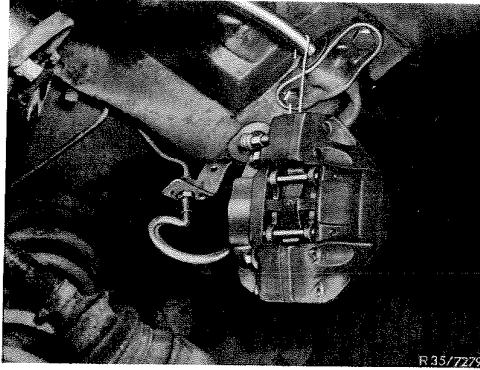
Special tools

Vehicle jack top for removal and installation of rear axle center piece	Small center piece		115 589 35 63 00
	Large center piece		116 589 02 63 00
Torque wrench with plug-in ratchet 1/2" square	25-130 Nm		001 589 66 21 00
	40-200 Nm		001 589 67 21 00
Open end wrench 46 mm for torque wrench for clamping nut of propeller shaft			126 589 00 01 00
Assembly fixture for removing and installing rear axle shaft on rear axle shaft flange			116 589 24 61 00

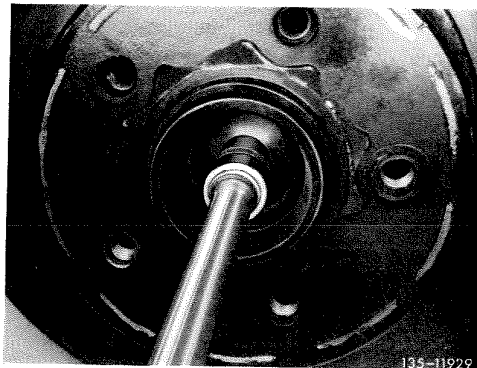
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Removal

- 1 Drain oil from rear axle.
- 2 On vehicles without starting torque compensation, unscrew fixed caliper on the right and hang up by means of a hook.



- 3 Loosen hex. screw on both sides and remove together with spacing sleeve and clamping disc for fastening rear axle shaft to rear axle shaft flange.



- 4 If required, force rear axle shaft out of rear axle shaft flange (78) by means of assembly fixture (05a-05c).

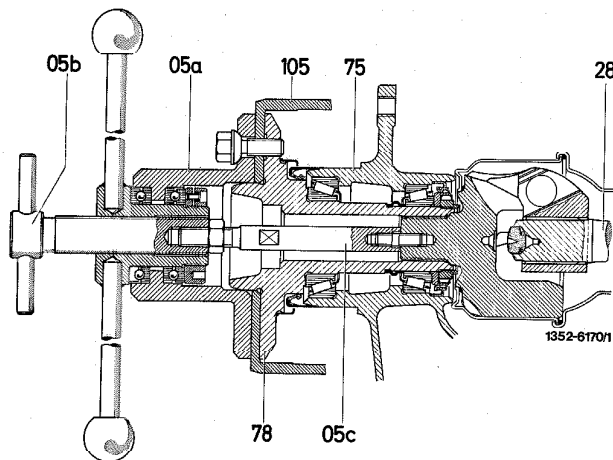
Attention!

When removing assembly fixture, make sure to hold rear axle shaft well and do not drop, since otherwise housing for synchromesh joint may become damaged and may leak.

If in spite of complete retraction the rear axle shaft cannot be removed, loosen rubber bearing from frame floor and rear axle center piece from rear axle carrier.

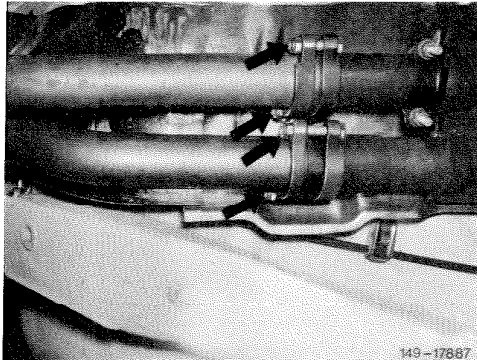
Lower center piece and swivel toward one side. Then remove rear axle shaft from rear axle shaft flange.

Do not loosen shock absorbers, since they are required for holding axle.

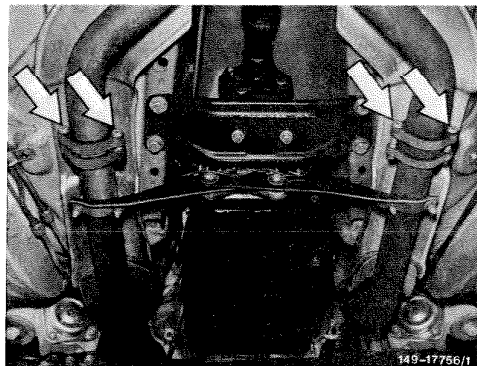


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5 Remove exhaust system as from plug connection (arrows).

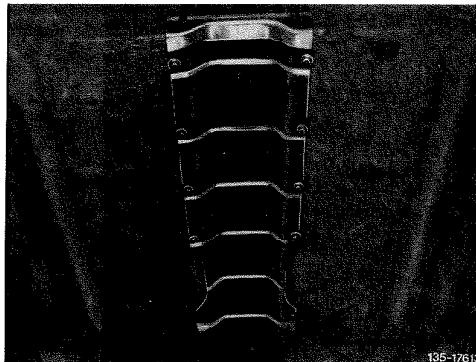


Model 126.02

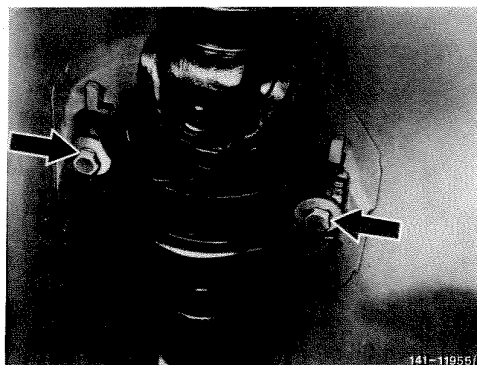


Model 126.03/04

6 Unscrew shielding plate.

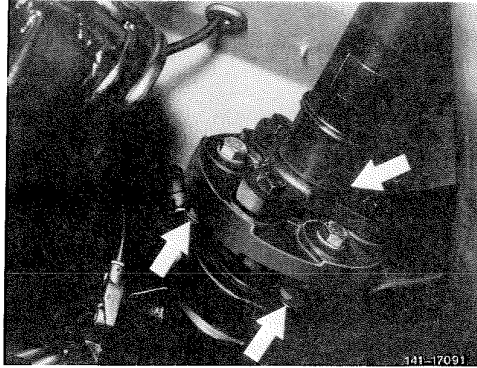


7 Loosen clamping nut and unscrew propeller shaft intermediate bearing on frame floor (arrows).



35-520 R and R rear axle differential housing with rear axle shafts

8 Unflange propeller shaft on rear axle and push forward out of centering (arrows).



Attention!

Secure propeller shaft with wire against dropping down, using the two fastening screws of exhaust shielding plate for this purpose (arrows).

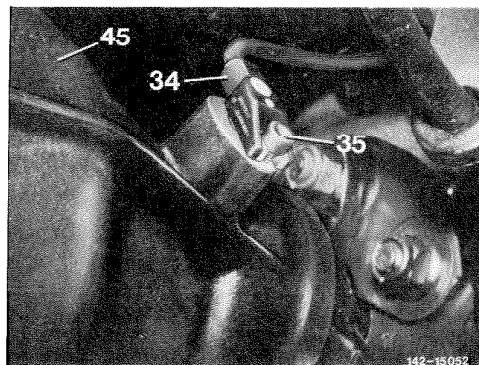


9 Vehicles with ABS

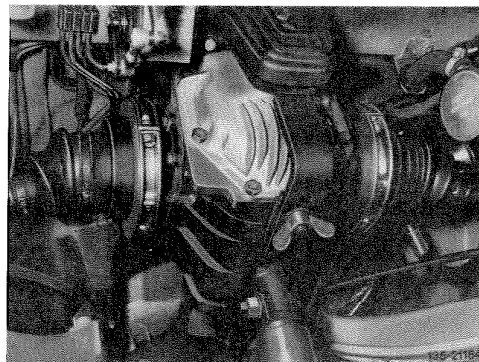
a Loosen hex. socket screw (35) and remove rpm sensor (34) from rear axle housing (45).

Attention!

Protect rpm sensor against damage. Do not put cable under tensile stress.

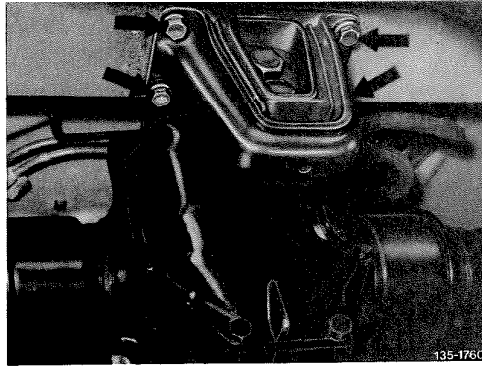


10 Support rear axle housing by means of a vehicle jack or pitlift and top.



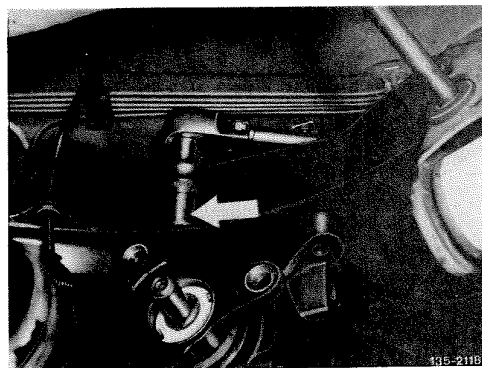
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11 Unscrew rear rubber bearing from frame floor (arrows).

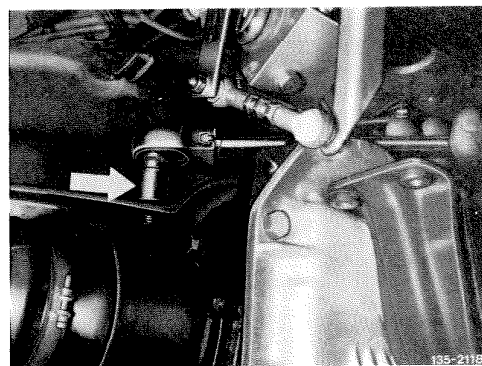


12 Lower vehicle jack or pitlift until self-locking hex nuts are accessible.

13 Unscrew rear axle center piece at front from rear axle carrier (arrow).



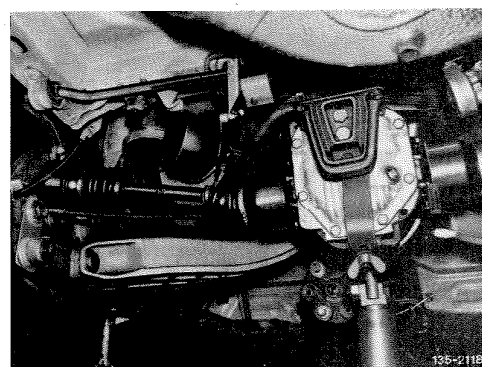
14 Unscrew rear axle center piece at the rear from rear axle carrier (arrow).



15 Lower rear axle center piece and remove together with rear axle shafts.

Attention!

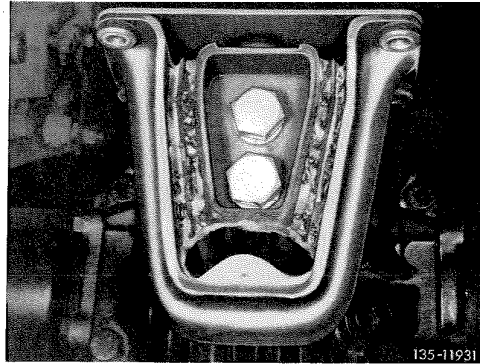
When carrying rear axle center piece together with rear axle shafts, make sure that the rear axle shafts are **not dropping down**. Otherwise, the housings of the two inner synchromesh joints may become damaged and may leak.



35-520 R and R rear axle differential housing with rear axle shafts

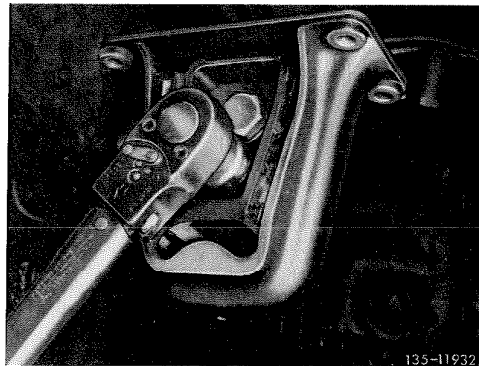
16 Unscrew rubber bearings from rear axle center piece.

17 Check rubber bearings and renew, if required.

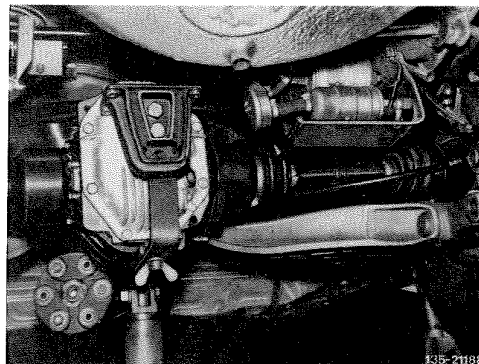


Installation

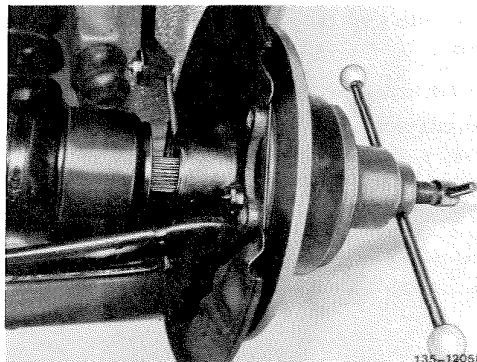
18 Attach rubber bearing to rear axle center piece. Tighten hex. screws to 120 Nm.



19 Place rear axle center piece together with rear axle shafts on vehicle jack top and move into installation position.



20 Introduce both rear axle shafts each into rear axle shaft flange by means of assembly fixture.

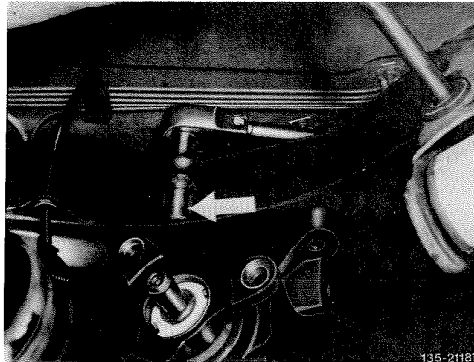


35-520 R and R rear axle differential housing with rear axle shafts

21 Lift rear axle center piece and mount on rear axle carrier. Prior to positioning self-locking hex. nuts, add washers. Tighten self-locking hex. nuts to 100 Nm.

Attention!

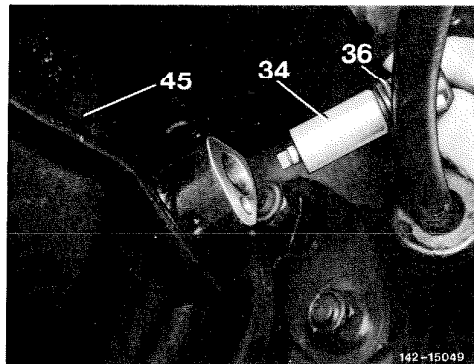
Replace self-locking hex. nuts on principle.



22 Vehicles with ABS

Note: Prior to installation make sure that no metallic foreign particles are located on magnetic edge of rpm sensor.

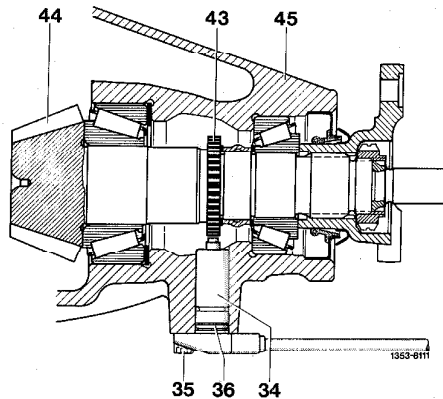
a Replace O-ring (36) on rpm sensor (34).



b Insert rpm sensor (34) into rear axle housing (45), making sure that the O-ring (36) is not damaged.

Note: Use self-locking hex. socket screw only once.

c Attach rpm sensor to rear axle housing by means of hex. socket screw (35).

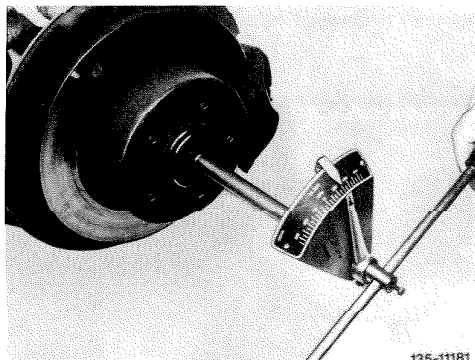


34 Rpm sensor	43 Gear wheel (rotor)
35 Hex. socket screw	44 Drive pinion
36 O-ring	45 Rear axle housing

23 Mount hex. screw M 8 x 85 with clamping disc and spacing sleeve (67.5 mm long) and tighten to 30 Nm.

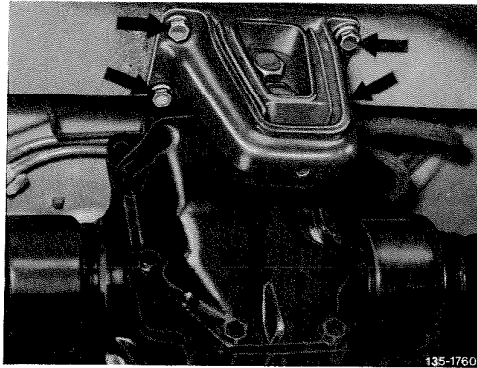
Attention!

Replace clamping disc after one-time use. Provide clamping disc with oil in range of screw head.



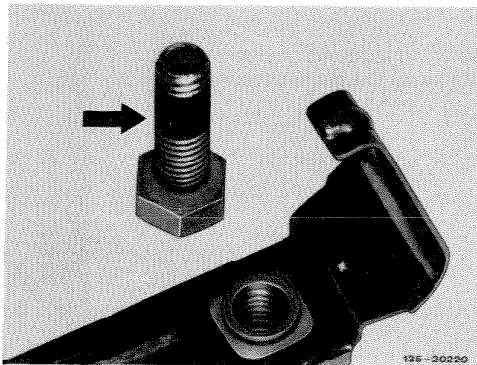
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24 Lift rear axle center piece up to frame floor and attach rubber bearing to frame floor. Tightening torque of self-locking hex. screws 1st version or hex. screws 2nd version 30 N.m.



25 In the event of repairs, replace 1st version by 2nd version.

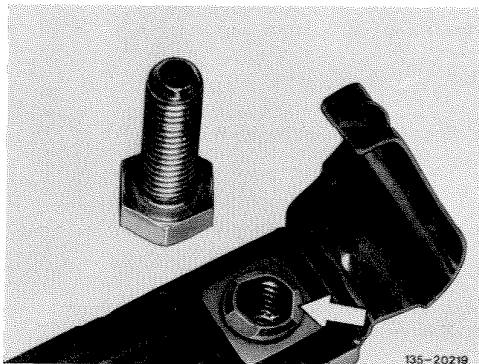
1st version
Self-locking hex. screws
(arrow) and holder with nut
without lock



Attention!

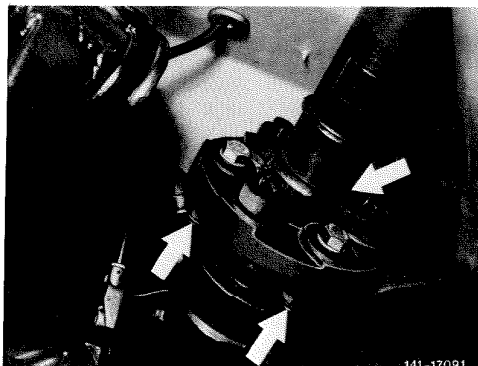
Always renew holder of 2nd version after one-time use on principle.

2nd version
Hex. screws without lock and
holder with self-locking
nuts (arrow)



26 Mount propeller shaft to universal flange of drive pinion.

27 Attach propeller shaft intermediate bearing to frame floor, but do not yet tighten.

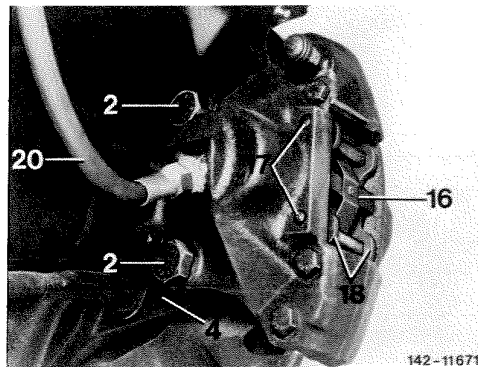


35-520 R and R rear axle differential housing with rear axle shafts

28 Mount fixed caliper. Tightening torque of self-locking hex. screws 90 Nm.

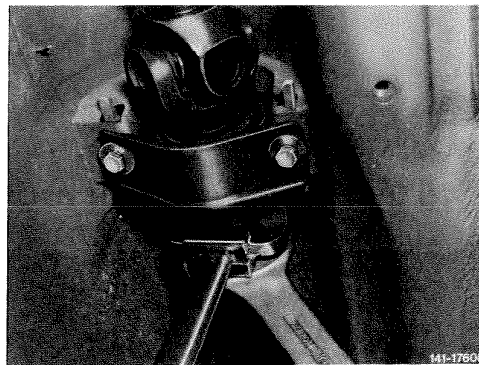
Attention!

Use self-locking hex. screws only once.



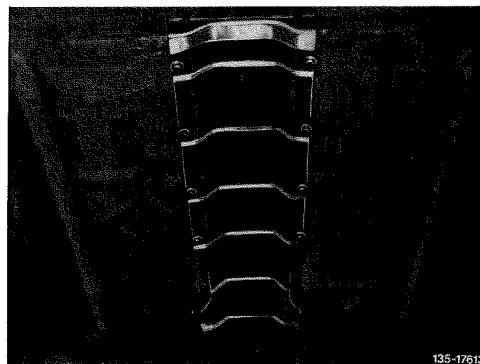
29 Fill oil into rear axle up to overflow in filler hole.

30 Tighten clamping nut on propeller shaft to 30-40 Nm.

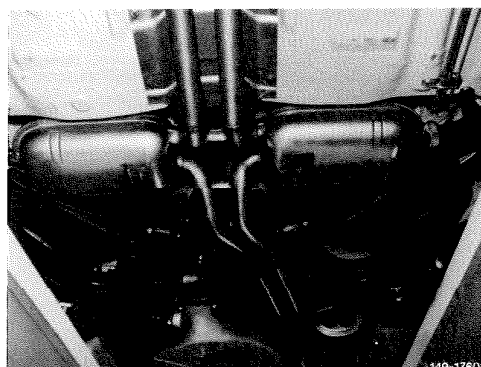


31 Tighten propeller shaft intermediate bearing.

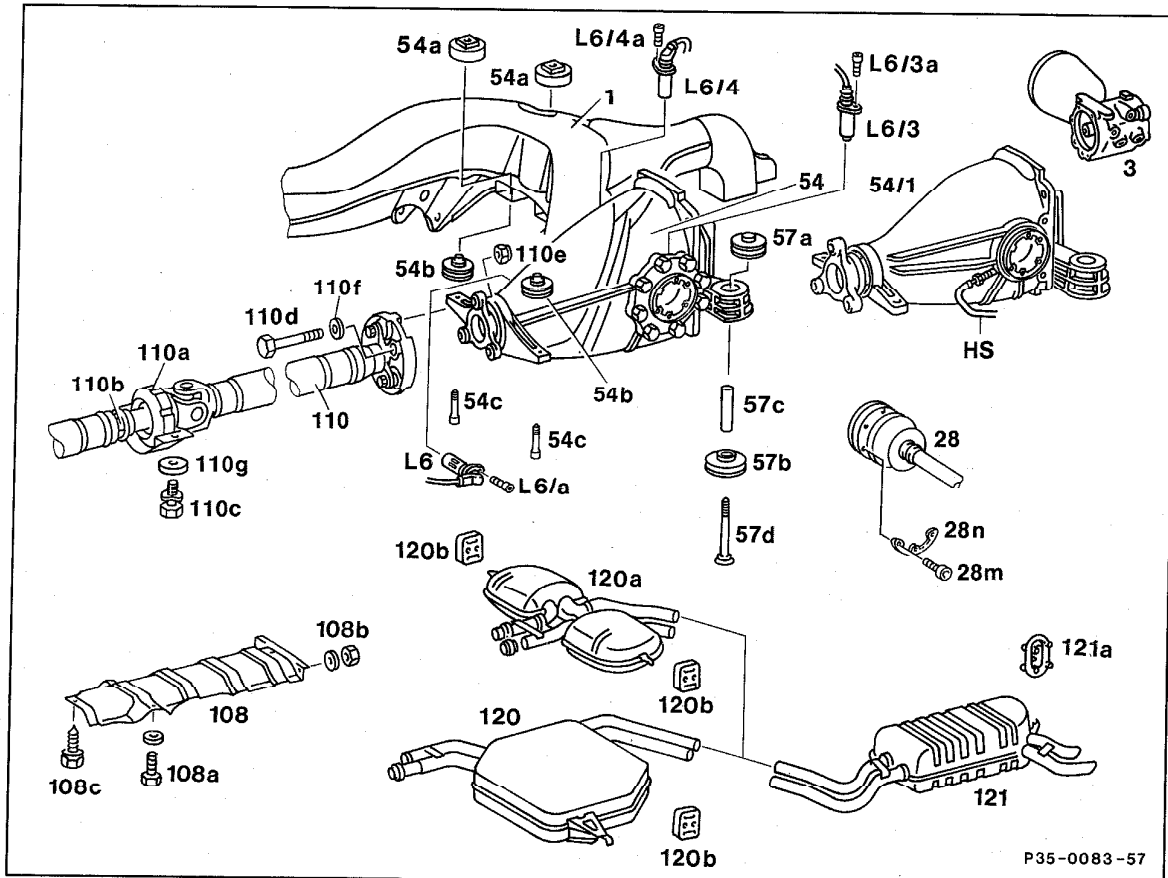
32 Mount shielding plate.



33 Install exhaust system (49-100).



35-520 R and R rear axle differential housing



P35-0083-57

P35-0083-57

- | | |
|---|---|
| Vehicles with ASD (54/1) | release pressure in hydraulic unit (3).
Disconnect HS line on differential housing,
connect (step 9). |
| Rear axle differential housing (54, 54/1) | drain oil, fill (step 1). |
| Exhaust system (120-121a) | remove, install (49-100). |
| Muffler guard plate (108) | remove, install, 25 Nm (step 3). |
| Gland nut on drive shaft (110b) | loosen, tighten, 30-40 Nm.
Torque wrench 001 589 66 21 00,
open-end wrench 126 589 00 01 00. |
| Drive shaft intermediate bearing (110a) | remove from frame floor, install, 25 Nm. |

35-520 R and R rear axle differential housing

Drive shaft (110)	remove at joint flange of differential housing, install (step 5). Push drive shaft forward out of centering device (step 6). Replace self-locking hex. nuts: M10 = 40 Nm; M12 = 60 Nm.
Rear axle shafts (28)	remove at connection flanges, install. Tie rear axle shafts up with wire on rear springs (step 10). Replace self-locking serrated or Allen screws. Oil threads and bolt head contact surface on M10 bolts. M10 = 70 Nm; M12 = 125-145 Nm.
Rear self-locking serrated bolts (57d)	loosen, tighten and replace. 110 Nm (step 13).
Front self-locking Allen bolts (54c)	loosen, tighten and replace. 60 Nm (step 14).
Vehicle speed signal sensors, ABS/ASR (L6, L6/3 and L6/4)	remove, install. On vehicles with ASR this is only possible after lowering the rear axle differential housing. Replace self-locking Allen bolts (L6a, L6/3a and L6/4a), 8 Nm (steps 7, 8 and 15).
Rubber supports (54a, 54b, 57a, 57b)	check for reusability, replace if required.

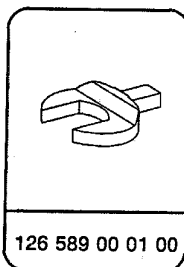
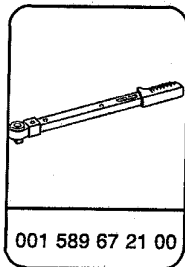
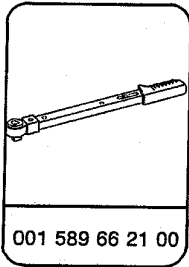
Oil types and capacities

Standard differential	Hypoid gear oil SAE 90 refer to Factory Approved Service Products list 1)
Limited slip differential with ASD (indicator plate on rear axle housing)	Special hypoid gear oil refer to Factory Approved Service Products list 1)
Capacity, differential housing with ring gear dia. 210	1.3 liters
Capacity, differential housing with ring gear dia. 185	1.0 liters

1) Supplied with owner's literature or available through your local authorized Mercedes-Benz Dealer.

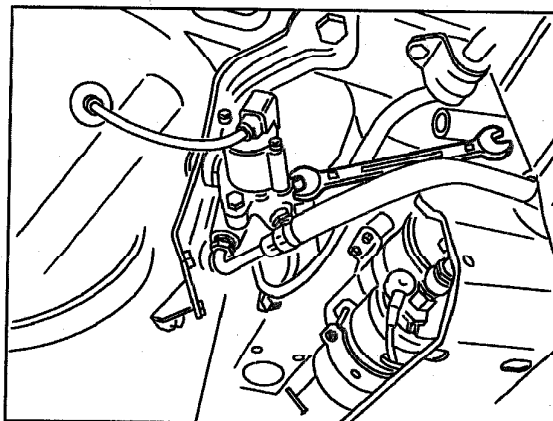
35-520 R and R rear axle differential housing

Special tools



Note

On vehicles with ASD the pressure must be released in the hydraulic unit. Check oil level, correct if required and bleed system (35-519).



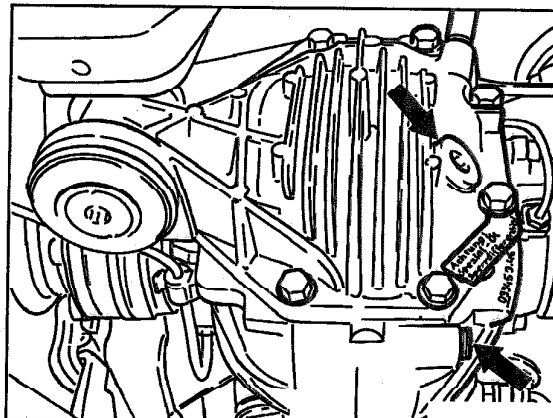
P35-2209-13

Removal, installation

- 1 Drain oil from rear axle, fill (arrows).

Installation note

Pay attention to oil types and capacities, see data.



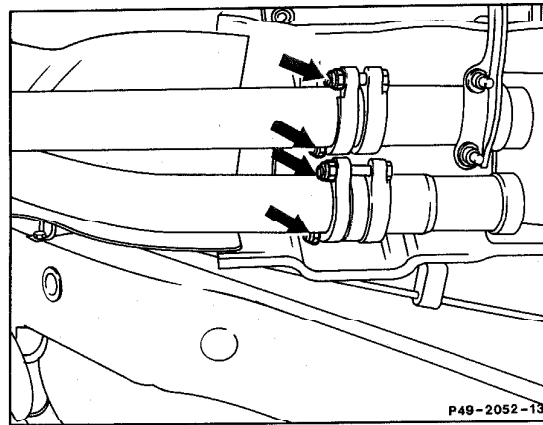
P35-2239-13

2 Remove exhaust system beginning at inserted connection (arrows) (49-100).

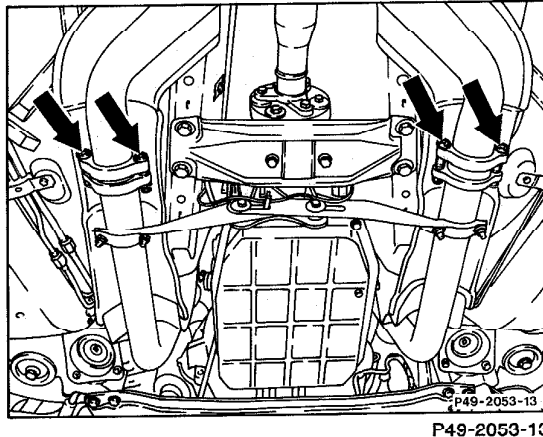
Vehicles with catalytic converter

Disconnect plug connector for O2 sensor. When installing assure that lines are positioned correctly.

Arrangement, model 126.02



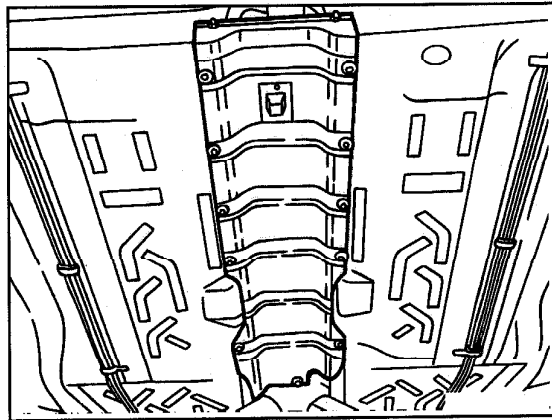
Arrangement, model 126.03/04



3 Remove exhaust guard plate, install.

Installation note

Tightening torque for M8 hex. nuts and bolts:
25 Nm.



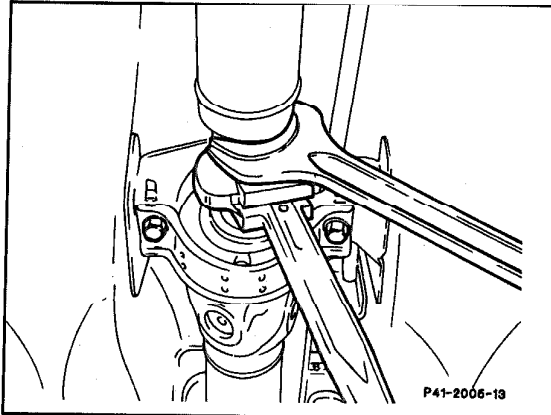
35-520 R and R rear axle differential housing

4 Loosen gland nut on drive shaft, tighten and screw drive shaft intermediate bearing off at frame floor, screw on.

Installation note

Gland nut 30-40 Nm, drive shaft intermediate bearing 25 Nm.

Torque wrench 001 589 66 21 00,
open-end wrench 46 mm 126 589 00 01 00.



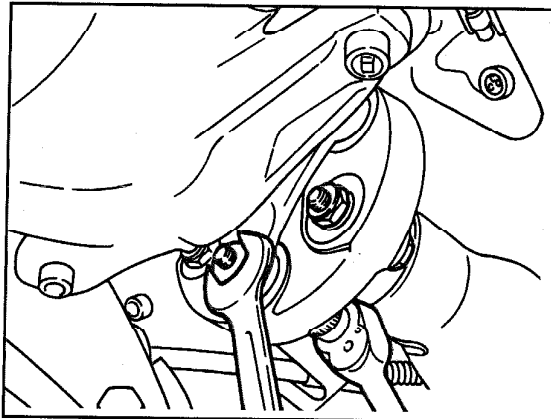
P41-2005-13

5 Disconnect drive shaft at rear axle differential housing, install.

Installation note

Replace self-locking hex. nuts.

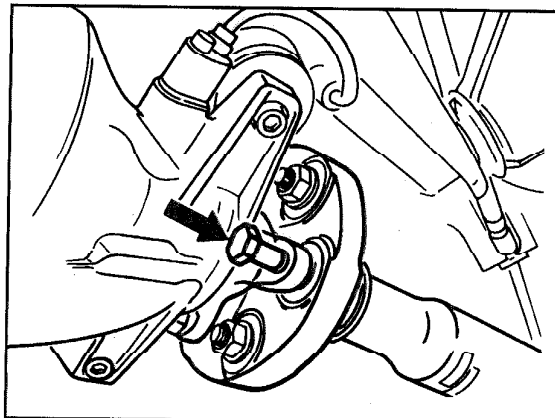
Tightening torque: M10 = 40 Nm,
M12 = 60 Nm.



P35-2218-13

Note

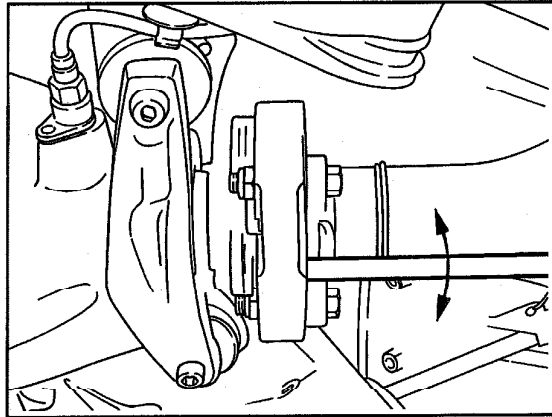
On models 126.03/04 up to approx. beginning of 10/85 the three hex. head bolts for mounting the joint plate on the joint flange must be installed from the rear toward the front for reasons of space. The bolts can only be inserted when the joint flange is located at the same height as the point on the rear axle housing marked with an arrow.



P35-2467-13

35-520 R and R rear axle differential housing

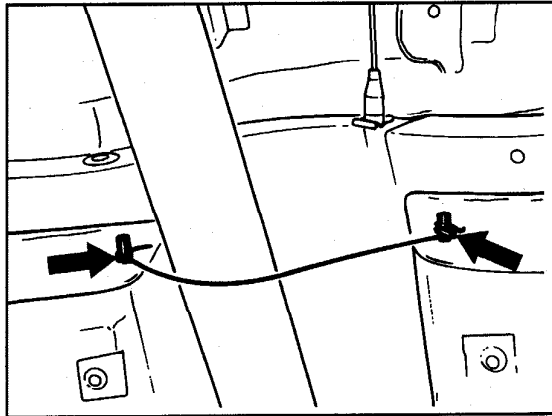
6 Push drive shaft toward front out of centering device. Previously loosen fitted sleeves from joint flange in radial direction with suitable punch.



P35-2214-13

⚠ CAUTION!

Secure drive shaft against falling with binding wire; for this purpose use two mounting screws of exhaust guard plate (arrows).



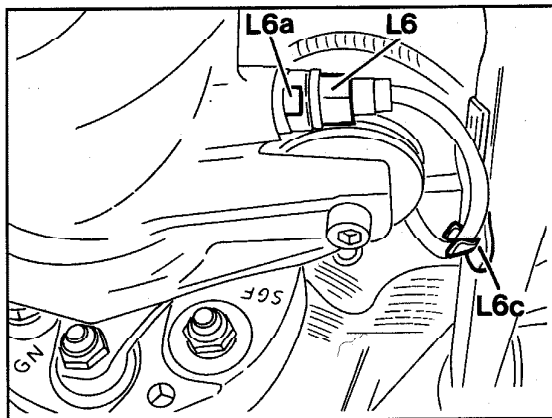
P35-2463-13

7 Screw out Allen bolt (L6a), screw in. Remove vehicle speed signal sensor (L6) from rear axle housing, install.

8 Cover magnetic blade on vehicle speed signal sensor and opening in rear axle housing.

⚠ CAUTION!

Protect vehicle speed signal sensor against damage.
Do not pull on line.

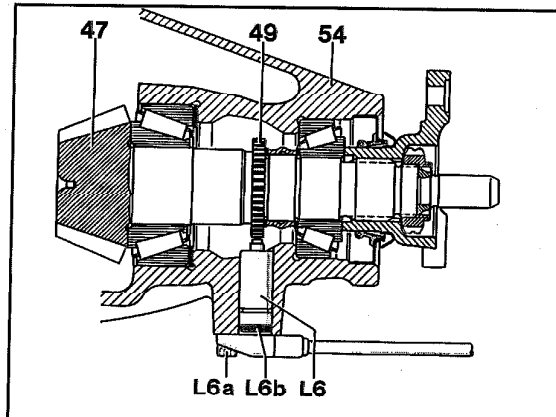


P35-2216-13

35-520 R and R rear axle differential housing

Installation note

Replace self-locking Allen bolt (L6a). Check O-ring (L6b) for damage. Assure that no metal residues are present on magnetic blade of vehicle speed signal sensor. Check oil level and add oil up to height of fill opening. Tightening torque 8 Nm.



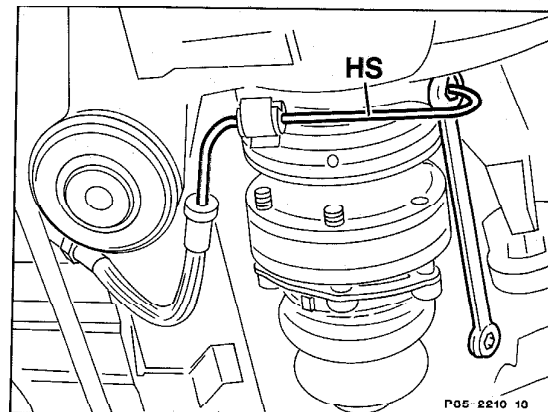
P42-0237-13

Vehicles with ASD

9 Screw off HS line on ring cylinder, screw on and clip out of holder, clip in. Plug connections with suitable rubber stoppers.

Installation note

Check line connection for leakage and good hose position. Bleed hydraulic system if required.



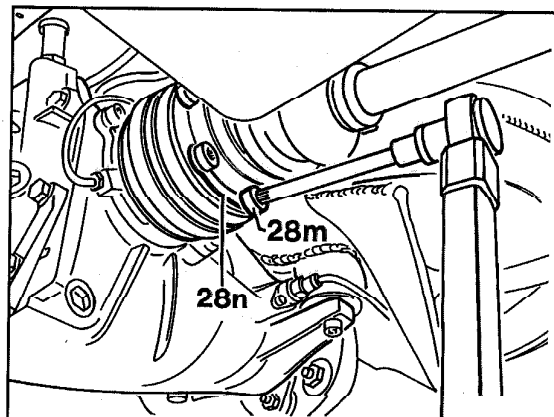
POS 2210 10

P35-2210-13

10 Screw off rear axle shafts at connection flanges, screw on.

Installation note

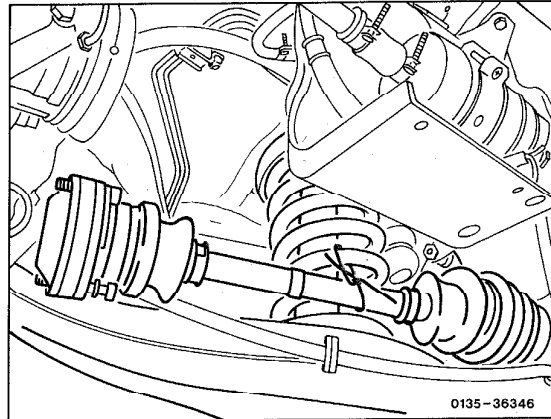
Replace self-locking serrated or Allen bolts. Tightening torque: M10 = 70 Nm, oil bolt head contact surface and thread, M12 = 125-145 Nm.



0135-36345

35-520 R and R rear axle differential housing

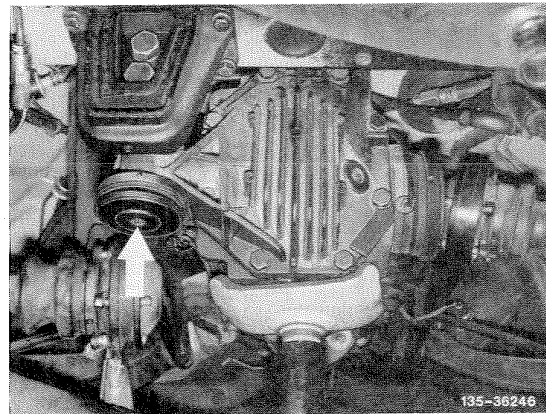
11 Press rear axle shafts together and fasten to rear springs with binding wire, unfasten.



0135-36346

12 Support rear axle differential housing with jack or pit lift.

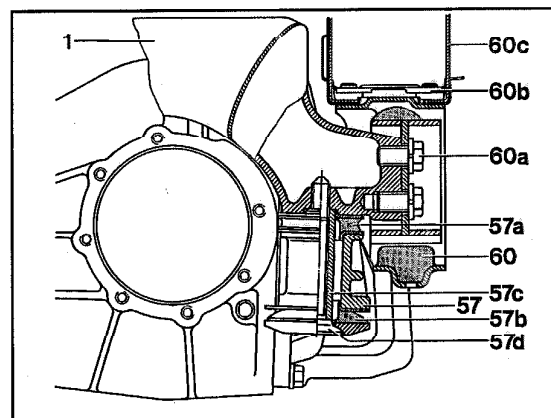
13 Screw off rear self-locking serrated screw on cover, screw on and remove together with rubber supports, install (arrow).



135-36246

Installation note

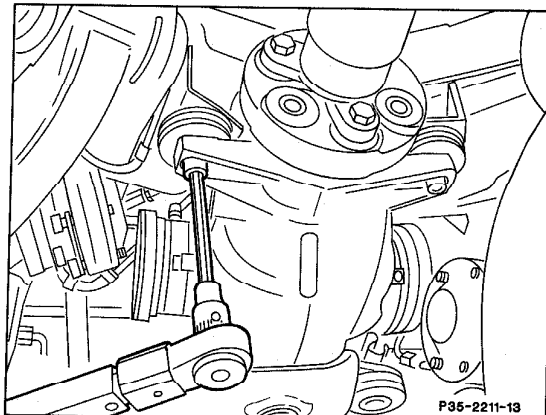
Install rear upper and lower rubber support (57a, 57b) with sleeve (57c) and new self-locking serrated bolt (57d). Check rubber supports for damage, replace if required. Tightening torque: 110 Nm.



P35-0070-13

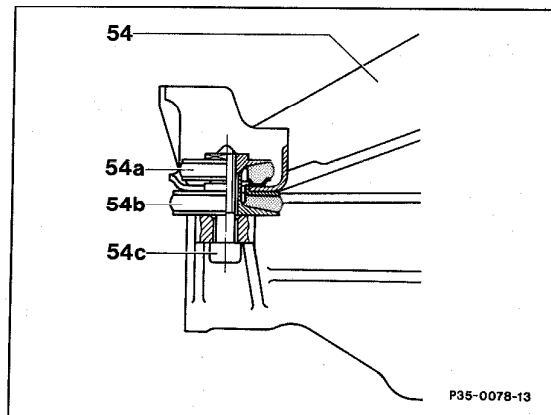
35-520 R and R rear axle differential housing

14 Loosen front self-locking Allen bolts, tighten.



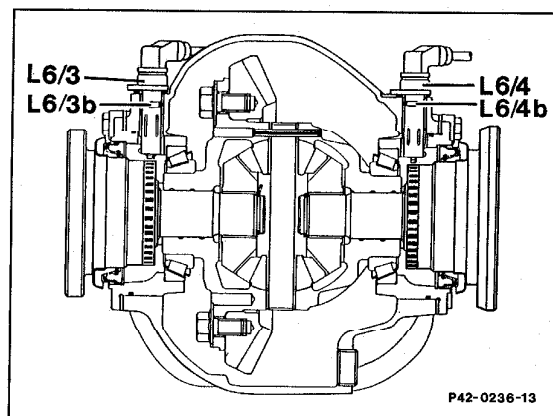
Installation note

Check front rubber supports (54a, 54b) for damage, replace if required. Position rubber support on differential housing and press upward against stop on rear axle carrier. Replace self-locking Allen bolts (54c), tightening torque: 60 Nm.



Vehicles with ASR

15 Carefully lower rear axle differential housing until self-locking Allen bolts in vehicle speed signal sensors (L6/3, L6/4) can be reached to loosen or tighten, raise. Do not pull against lines for vehicle speed signal sensors.

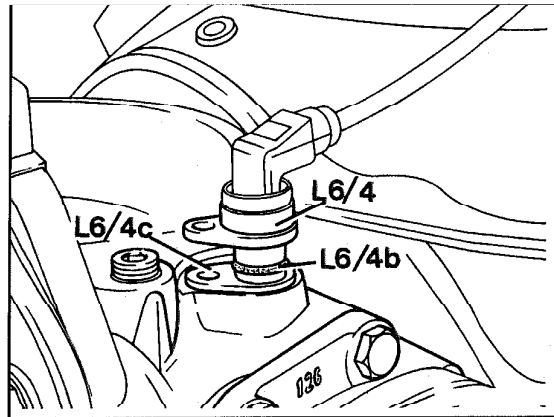


L6/3 Vehicle speed signal sensor, left
L6/4 Vehicle speed signal sensor, right
L6/3b, L6/4b O-ring

35-520 R and R rear axle differential housing

Installation note

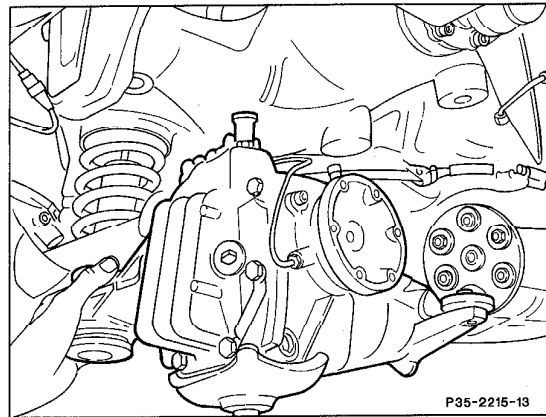
Replace O-ring (L6/4b). Before installation assure that spacer (L6/4c) is seated properly. Moreover foreign bodies must not be present on the magnetic blade of the vehicle speed signal sensor. Replace self-locking Allen bolts. Assure that lines are positioned correctly.



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16 Lower rear axle differential housing, or lift.

17 Install in opposite order.



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