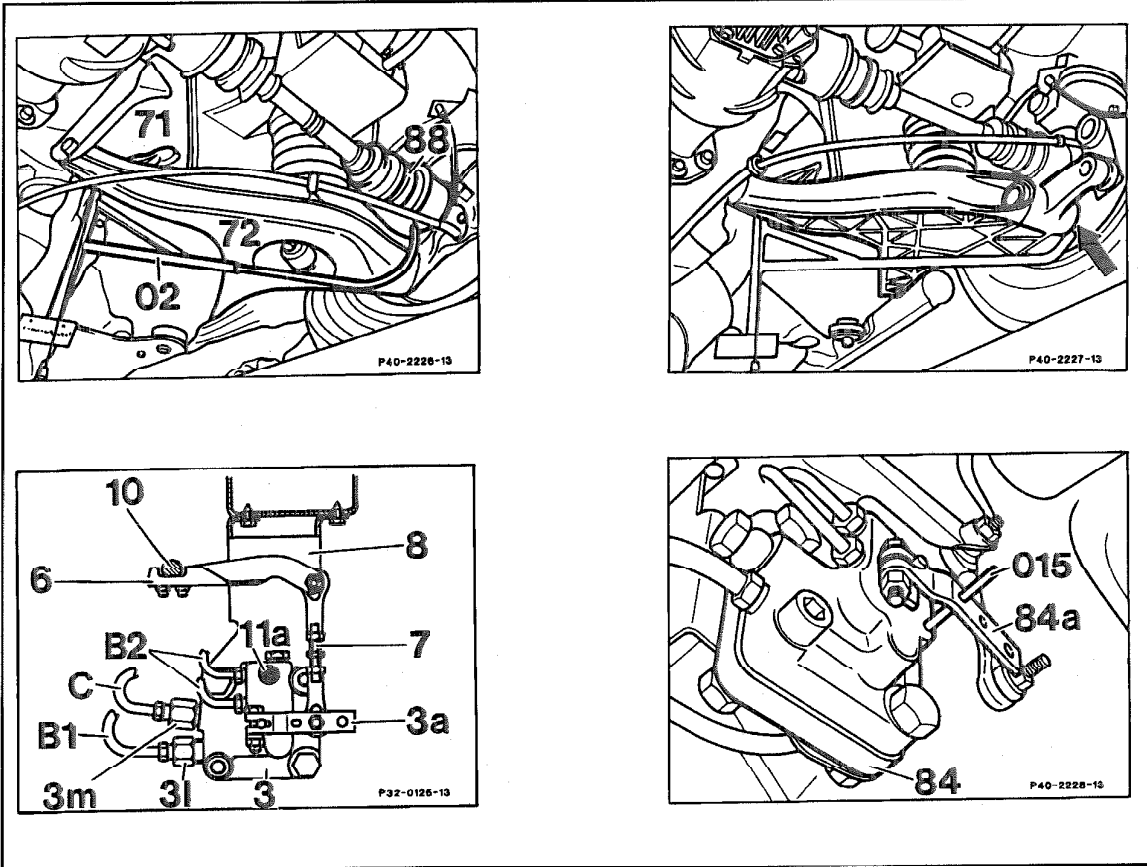


40-310 Checking vehicle level on rear axle of vehicles with level control

Preliminary work:
 Positioning of wheels (40-210)
 Check and adjust vehicle level on front and rear axle (40-300)



P40-0109-57

Vehicle	to repair place vehicle on sliding supports. Load rear of vehicle. Check level in supply tank, top up if necessary.
Engine	run engine for approx. 1 minute at approx. 2000 rpm.
Level controller	shortly actuate with hand, to position "filling" and then to "emptying" (fig. 4).
Vehicle level on rear axle	determine by measuring position of semi-trailing arm. Measuring device 107 589 02 21 00 or 107 589 01 21 00.

40-310 Checking vehicle level on rear axle of vehicles with level control

Rear of vehicle	is to be pulled down with pulling device 201 589 11 31 00 until control point has been reached (fig. 4). Vehicle can also be loaded with weights up to control point.
Level controller	retain middle position with pin (fig. 5). When adjustment is correct pin must enter with little effort.
For control point adjustment	
Connecting rod (7)	detach, attach, check ball joints (fig. 4,7)
Control point (see table)	adjust, by adjusting connecting rod properly. The connecting rod must fit, without excessive pulling and pressing, over the controller fixed in middle position (fig. 5)

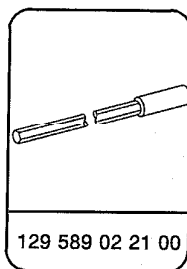
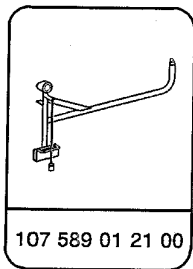
CAUTION!

Use correct bore (fig. 7). Remove pin for middle position after adjustment.

Rear of vehicle	unload, or remove pulling device, if installed (fig. 9).
Test drive	perform with test load, and check vehicle level again (fig. 10).
Lighting system, front	adjust (82-040).

Special tools

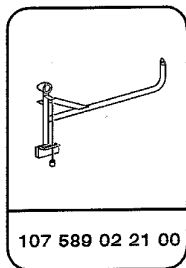
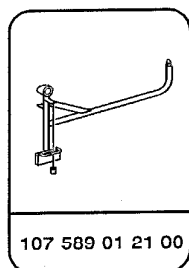
Version up to 07/85



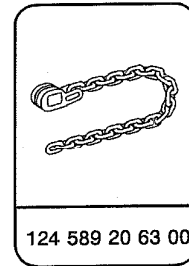
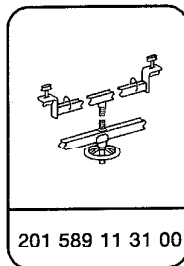
The previously used measuring devices (till 07/85) can be converted using mount 107 589 01 21 12. Thereafter mark measuring devices with new part number (starting 08/85).

40-310 Checking vehicle level on rear axle of vehicles with level control

Version starting 08/85



Version for all models



Equipment (self-made)

Weights for loading vehicle	2 × 5 kg
(e.g. for measuring the vehicle level on vehicles with level control and for fuel level compensation)	5 × 10 kg
	5 × 20 kg

Conventional tools

Sliding plates for rear wheels (1 m long)	e.g. Beissbarth P1/109 Bosch EFAW 406
---	--

Checking and adjustment values for vehicle level when laden

Model	Level control point ¹⁾ adjusting value in mm	Level control point ¹⁾ Checking value in mm ²⁾
126 Semi-trailing arm suspension	8 ± 2	8 ± 10
126 semi-trailing arm suspension with anti-squat geometry	101 ± 2	101 ± 10

¹⁾ Before checking and adjusting, the level values for the rear axle at curb weight must lie within the tolerance (40-300).

²⁾ The difference in tolerance of the vehicle level between the values for adjustment and the values for checkup result through idle travel of lever controller, however, it has no influence on accuracy of control while driving.

40-310 Checking vehicle level on rear axle of vehicles with level control

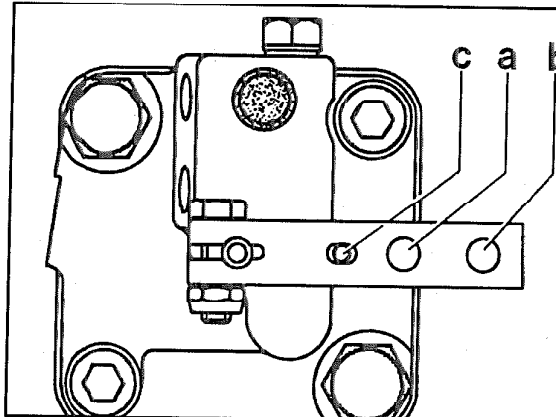
Permissible difference of vehicle level measured between left and right side of vehicle	with measuring dev. approx.	8 mm
	with tape measure approx.	15 mm ¹⁾

¹⁾ Measured from center of wheel to edge of fender well.

Location of connecting rod on lever of level controller

Bore "a", rear axle without anti-squat geometry

Bore "b", rear axle with anti-squat geometry



P32-0135-13

- a, b Bores for ball joint of connecting rod
- c Locating bores in lever and in housing in center position of control shaft for pin 4 mm dia.

Note

The level control system on the rear axle is a hydropneumatic auxiliary suspension which is automatically connected at a given deflection. On sedans, for example, the level control begins to operate starting from a load of two persons on the front seats and approx. 40 kg luggage in trunk. The control point for the loaded vehicle is the respective level which meets the projected level of the respective vehicle.

A prerequisite for correct functioning of the level control, as well as for good driving comfort and optimal driving characteristics is a vehicle level set according to specifications both in curb weight conditions as well as under load.

In curb weight condition the rear end of the vehicle is supported by the rear springs and the basic pressure in the suspension elements only. The basic pressure is maintained by drain valve in level controller, independent of the respective position of lever.

 **CAUTION!**

A rear end which is too low in curb weight condition should never be set higher by adjusting the connecting rod of the level controller.

The result would be a continuously and excessively high level under load. The results would be poor driving characteristics, there would be oil flow and knocking noises during deflection, and the ball head would be too high for operation of a trailer.

Under high load, as well as during acceleration, the max. pressure in suspension elements limited by level controller would be additionally attained, so that the opening noise of the pressure relief valve would be constantly heard during such driving conditions as a whistling and knocking noise. Therefore, if the vehicle is too low in curb weight condition, corrections on rear springs are required.

A prerequisite for evaluating the curb weight level is, however, that the full basic pressure in the suspension elements is available.

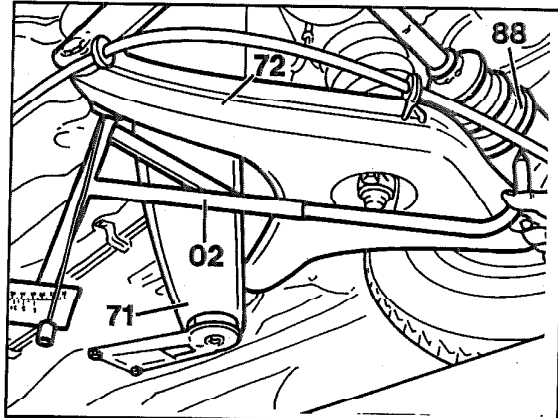
For this reason, prior to measuring the vehicle level (semi-trailing arm position), the level controller must be momentarily moved upwards into "filling" position and then downwards into "emptying" position, with the connecting rod disconnected and the engine running.

Before beginning with the checkup of the vehicle level on the rear axle with a load, check level of curb weight vehicle, and correct if necessary (see 40-300).

40-310 Checking vehicle level on rear axle of vehicles with level control

Previous jobs:

- 1 Place vehicle on measuring rig (Positioning of wheels 40-220).
- 2 Check curb weight vehicle level, i.e. prior to checkup and adjustment of level control point, the level values of the rear axle at curb weight must be within the tolerance (40-300).
- 3 Check oil level in supply tank, top up.
- 4 For checking and adjusting the level control point use measuring instrument (02) 107 589 01 21 00 for semi-trailing arm suspension or 107 589 02 21 00 for semi-trailing arm suspension with anti-squat geometry. There are two possibilities for loading the vehicle for adjusting the control point.

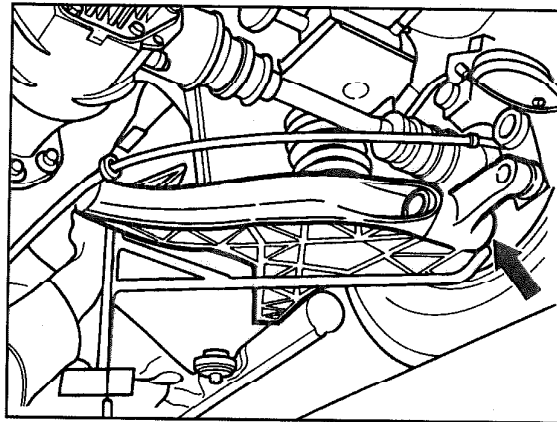


P40-2286-13

- Semi-trailing arm suspension
- 02 Measuring instrument for semi-trailing arm position
 - 71 Rear axle carrier
 - 72 Semi-trailing arm
 - 88 Rear axle shaft

a. Load rear end with weights

- Place weights in trunk until the level is 10 mm below level control point.
- Disconnect connecting rod from level controller with the engine running at approx. 2000 rpm, and induce pressure on the level controller (push lever on level controller up to position "F") until the measuring device indicates the specified level value for a loaded rear axle (control point).



P40-2227-13

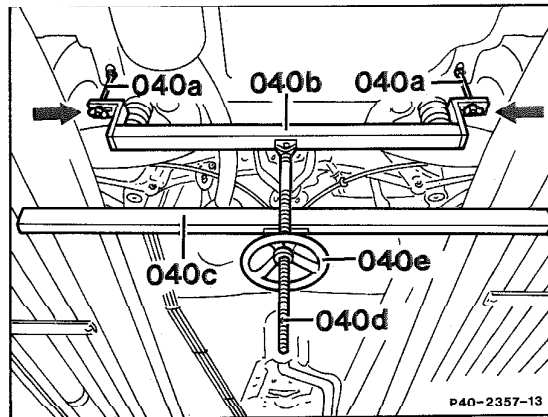
- Semi-trailing arm suspension
with anti-squat geometry

40-310 Checking vehicle level on rear axle of vehicles with level control

b. Pull down rear of vehicle with pulling device 201 589 11 31 00

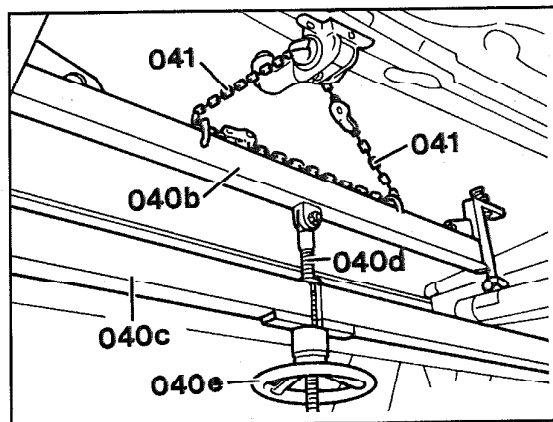
- Attach pulling device

a) On vehicles without trailer hitch attach and lock (arrows) the upper cross member of pulling device (040b) via adapter bolts (040a). Bolts fit openings, sealed with rubber grommets, in frame side member. Attach lower cross member (040c) with spindle (040d) to pit or hoist.



P40-2357-13

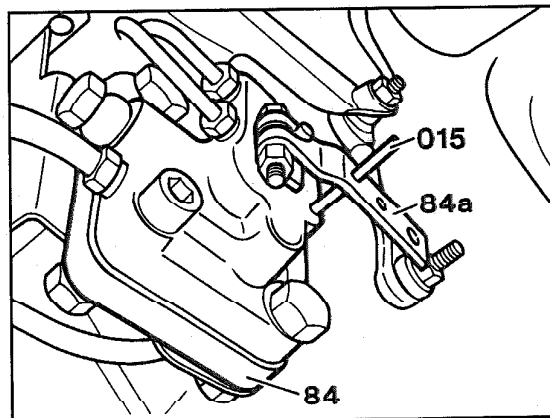
b) On vehicles with a trailer hitch on which the openings in the frame side member are covered up by the trailer hitch. Attach pulling device with two additional chains (041) to the inner eyelets on trailer hitch. Attach lower cross member (040c) with spindle (040d) to pit or hoist.



P40-2358-13

- Pull down rear end of vehicle, until the measuring device indicates the predetermined level control point.

5 Check middle position of level controller (84) by inserting the 4 mm Ø retaining pin. If the retaining pin (015) cannot be inserted in the connecting rod (84a) or only through pulling and pressing, adjustment has to be carried out.

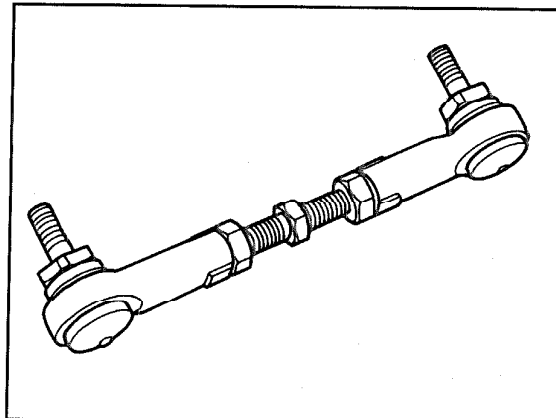


P40-2228-13

40-310 Checking vehicle level on rear axle of vehicles with level control

6 For loosening connecting rod on level controller, always unscrew hex. nut on lever of level controller. If required, hold ball pin in position with an open-end 10 mm wrench. Never pull ball pin out of ball socket.

Check ball joints of connecting rod.

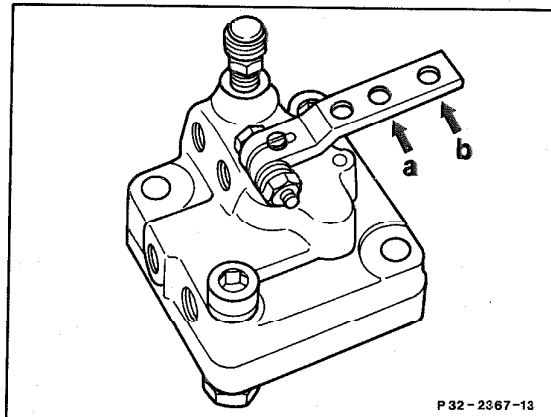


P32-2368-13

7 Fasten connecting rod to the correct bores. Bore "a" is for swing axle without anti-squat geometry. Bore "b" is for swing axle with anti-squat geometry.

Note

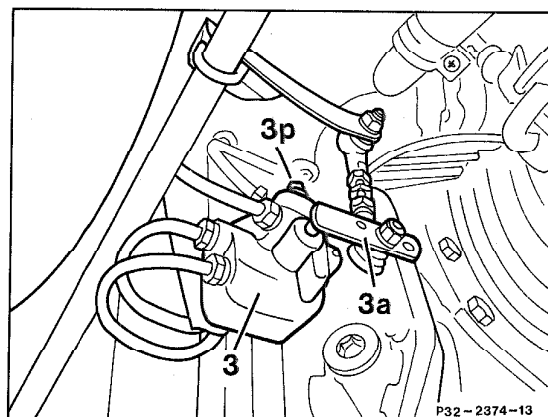
Following adjustment work on level controller, it is absolutely necessary to remove pin. Failure to do so, causes severe damage to the level controller!



P32-2367-13

P32-2367-13

8 Starting 08/85 the rear axle center part will be elastically suspended. The level controller is therefore moved from the left to the right side, and will at the same time be replaced by the level controller of model 124. The testing and adjusting methods have not changed.



P32-2374-13

- 3 Level controller
- 3a Lever on level controller
- 3p Oil drain plug

40-310 Checking vehicle level on rear axle of vehicles with level control

9 Remove pulling device.

10 Carry out test drive with test load. Check vehicle level.

Before each check of vehicle level, run engine for about 1 minute at approx. 2000 rpm.

11 Adjust headlamps (82-040).