

## 32–600 General jobs on vehicles with hydropneumatic suspension

### Oil grade/filling capacity

Model	116.036	126.033 126.037
Total capacity of system	approx. 5.8 l	approx. 4.7 l
Filling capacity of oil supply tank up to markings on oil dipstick	max. approx. 3.6 l	max. approx. 2.3 l
	min. approx. 2.6 l	min. approx. 1.8 l
Oil grade	hydraulic oil (refer to Specifications for service products sheet 344) <sup>1)</sup>	

<sup>1)</sup> Available in 1-liter cans part no. 000 989 85 03.

### Tightening torque

		Nm
Line connections	M 14 x 1.5	30
	M 10 x 1	11

### Special tools

Box wrench element open 11 mm 1/4" square, complete with change-over ratchet and 2 extensions for pressure oil lines



116 589 00 17 00

Filter funnel



126 589 12 63 00

### Routine jobs comprise the following:

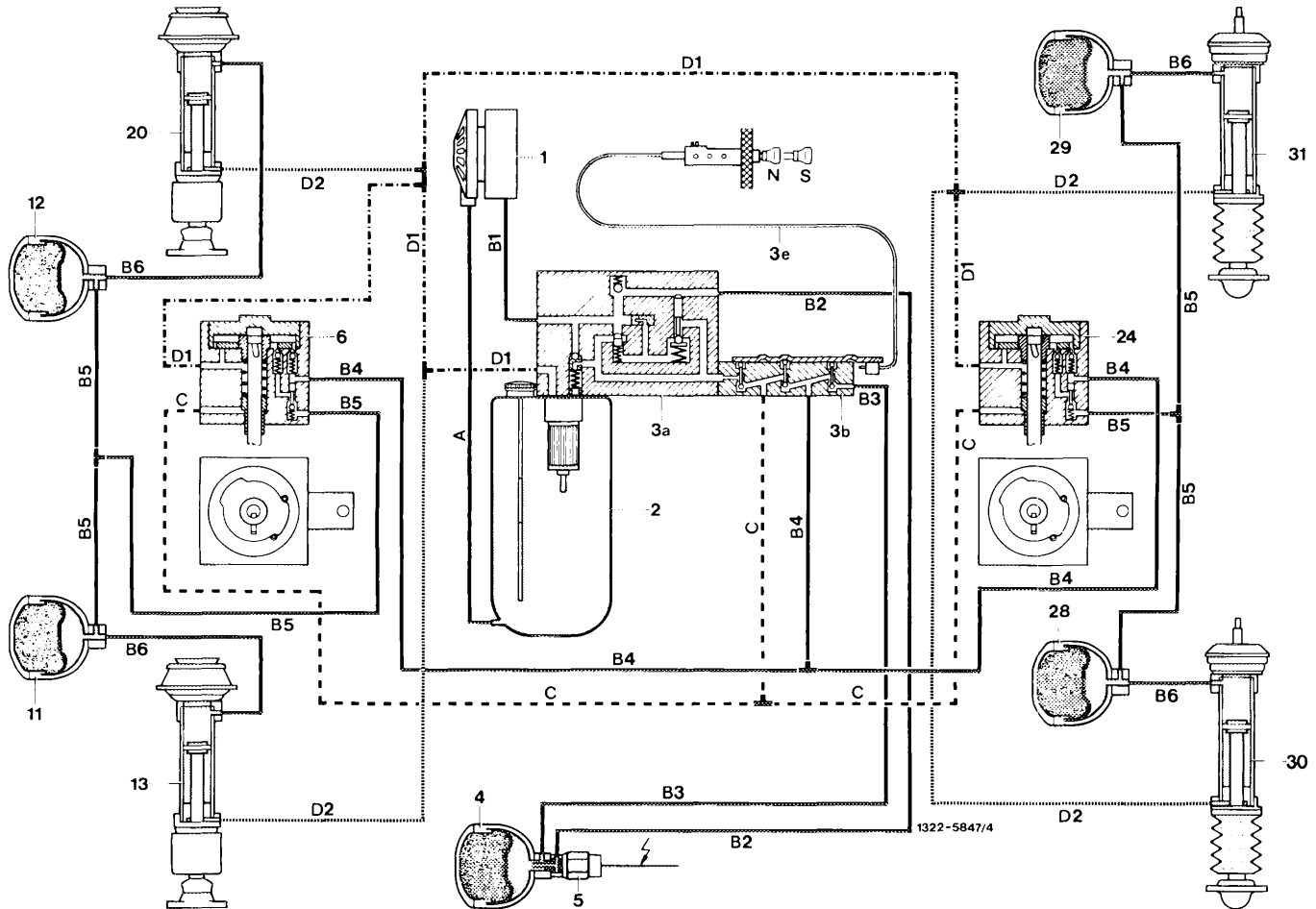
- A. Checking and correcting oil level in suspension system.
- B. Deenergizing suspension system (for testing pressure reservoirs)
- C. Depressurizing pressure oil system up to level controllers (for testing pressure oil pump, valve unit, electric pressure switch and central reservoir)
- D. Filling suspension system.
- E. Jacking up vehicle.
- F. Line connections of suspension system
- G. Emergency rubber buffer for front and rear axle
- H. Transportation of vehicle
- I. Towing of vehicle
- K. Instructions for adjusting (aiming) headlamps

## General notes for working on suspension system

Prior to starting the jobs during which a pressure line for level controller or suspension elements will be released, depressurize system.

Following assembly jobs of suspension system during which an oil line connection will be released, check respective part of installation for leaks.

### Model 116.036



#### Diagram hydropneumatic suspension

- 1 Pressure oil pump
- 2 Oil supply tank
- 3 Valve unit (pressure regulator and adjusting switch)
- 3a Pressure regulator of valve unit
- 3b Adjusting switch of valve unit
- 3e Cable control for adjusting switch of valve unit
- 4 Central reservoir
- 5 Electric pressure switch for warning lamp
- 6 Level controller for front axle
- 11 Pressure reservoir for front axle left
- 12 Pressure reservoir for front axle right
- 13 Tube shock for front axle left
- 20 Tube shock for front axle right
- 24 Level controller for rear axle
- 28 Pressure reservoir for rear axle left
- 29 Pressure reservoir for rear axle right
- 30 Tube shock for rear axle left
- 31 Tube shock for rear axle right

- A Suction line oil supply tank – pressure oil pump
- B1 Pressure line pressure oil pump – pressure regulator on valve unit
- B2 Pressure line pressure regulator on valve unit – central reservoir
- B3 Pressure line central reservoir – adjusting switch of valve unit
- B4 Pressure line adjusting switch of valve unit – level controller on front and rear axle
- B5 Pressure line level controller – pressure reservoir
- C Control pressure line for “higher level” adjusting switch – level controller
- D1 Return line level controller – pressure regulator
- D2 Return line for leak oil of tube shocks

- Pressure line
- - - Return line
- · - · - Pressure control line for higher level
- · · · · Return line for leak oil of tube shocks

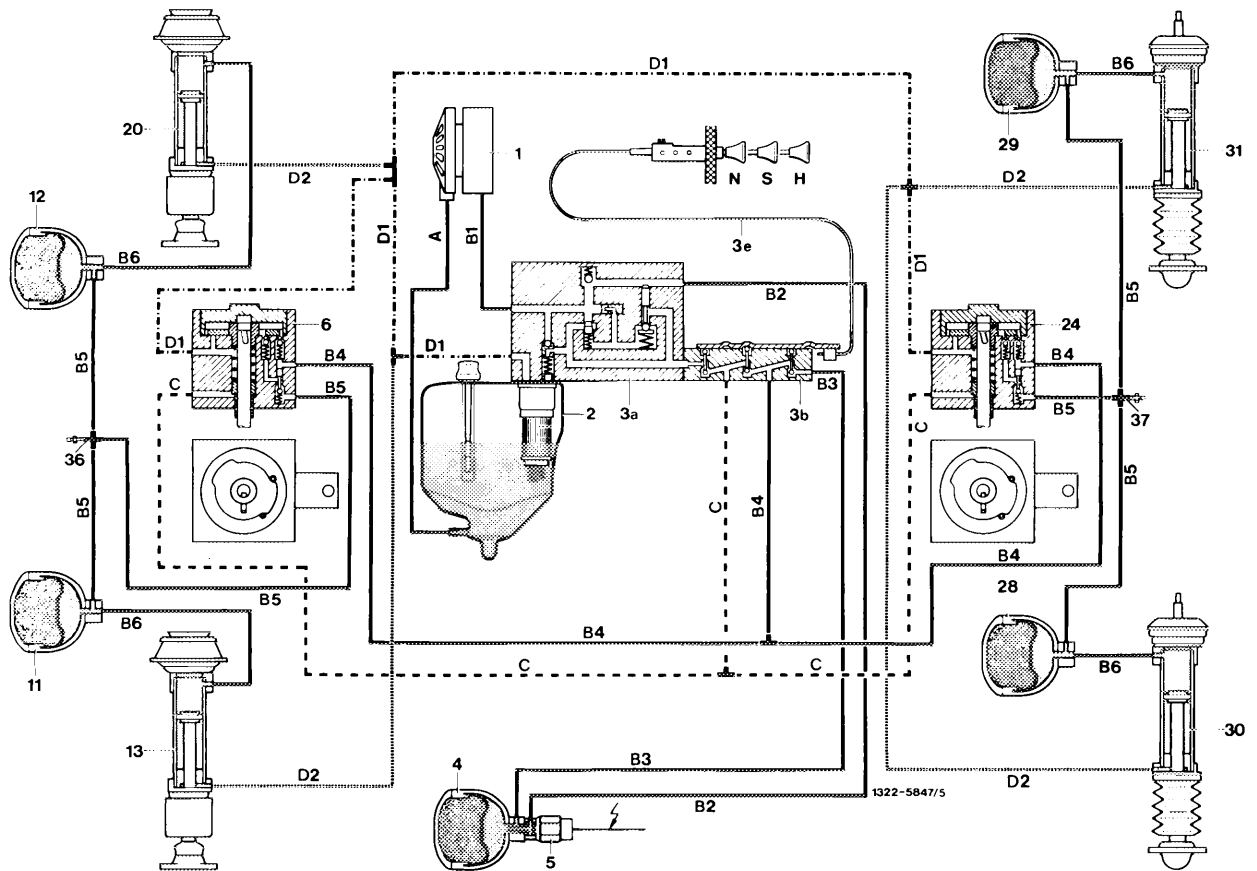


Diagram hydropneumatic suspension

- 1 Pressure oil pump
- 2 Oil supply tank
- 3a Pressure regulator of valve unit
- 3b Adjusting switch of valve unit
- 3e Cable control for adjusting switch of valve unit
- 4 Central reservoir
- 5 Electric pressure switch for warning lamp
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- 13 Tube shock for front axle left
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- 24 Level controller for rear axle
- 28 Pressure reservoir for rear axle left
- 29 Pressure reservoir for rear axle right
- 30 Tube shock for rear axle left
- 31 Tube shock for rear axle right
- 36 Distributor front axle
- 37 Distributor rear axle

- A Suction line oil supply tank – pressure oil pump
- B1 Pressure line pressure oil pump – pressure regulator on valve unit
- B2 Pressure line pressure regulator on valve unit – central reservoir
- B3 Pressure line central reservoir – adjusting switch of valve unit
- B4 Pressure line adjusting switch of valve unit – level controller on front and rear axle
- B5 Pressure line level controller – pressure reservoir
- B6 Pressure line pressure reservoir – tube shock
- C Control pressure line for "higher level" adjusting switch – level controller
- D1 Return line level controller – pressure regulator
- D2 Return line for leak oil of tube shocks

- Pressure line
- - - Return line
- · - · - Pressure control line for higher level
- ..... Return line for leak oil of tube shocks

## Note

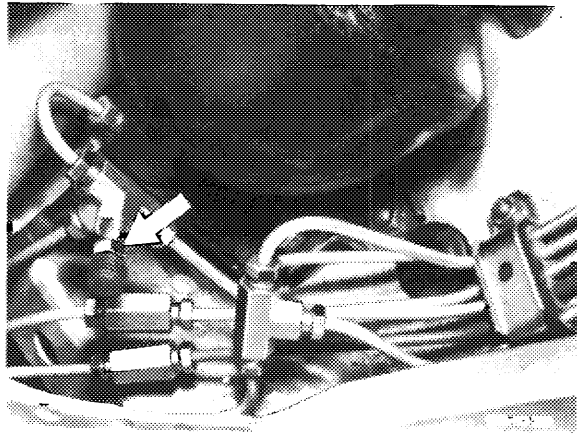
One vent screw each is located in connecting line between lefthand and righthand pressure reservoir. The vent screws serve for exhausting the pressure out of system between level controllers and suspension elements if, in the event of repairs, the check valves in level controllers can no longer be unlocked via pressure in central reservoir.

On vehicles without vent screw (model 116.036 to chassis end no. 001 985) carefully release the respective pressure line connection (designation B5) and discharge the pressure.

### Layout front axle

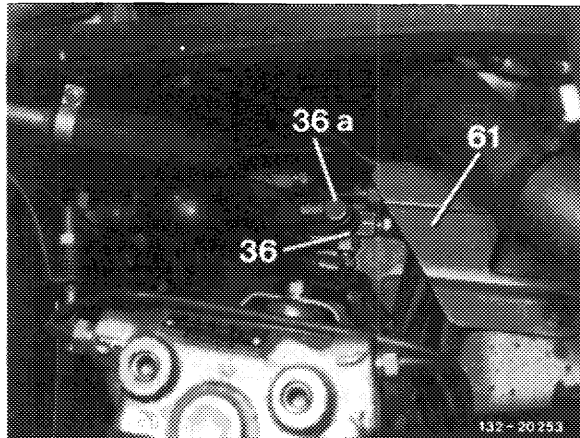
#### Model 116.036

The distributor with vent screw is located in engine compartment at the right in range of righthand pressure reservoir.



#### Models 126.033; 126.037

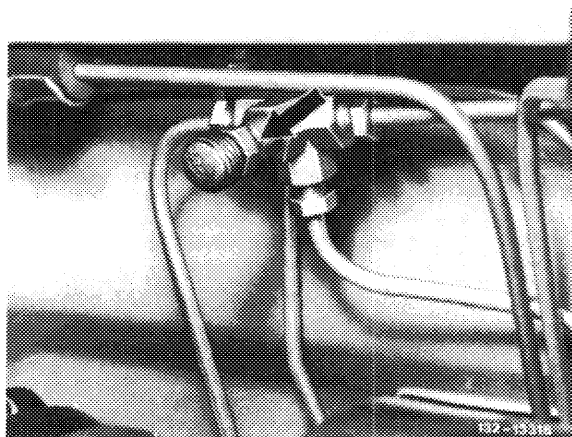
The distributor with vent screw is located in engine compartment at the left in range of oil supply tank.



36 Distributor front axle  
36a Vent screw  
61 Shielding plate

### Layout rear axle

The distributor with vent screw (models 116 and 126) is located on cross member in range of rear axle center piece.

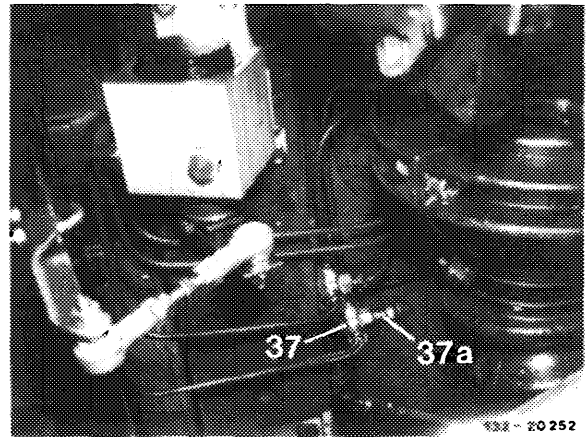


116.036

**Attention!**

Prior to opening vent screw, plug suitable oil drain hose over vent screw. Carefully drain oil into clean vessel or into oil supply tank.

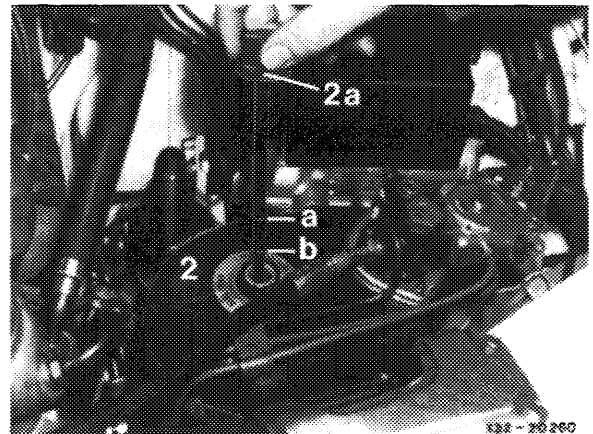
- 126.033; 126.037
- 37 Distributor rear axle
- 37a Vent screw



**A. Checking and correcting oil level in suspension system**

With vehicle resting on its wheels ready-for-driving and at normal vehicle level, run engine for a short moment. With engine stopped, remove closing cover (2a) of oil supply tank. Wipe oil dipstick with lint-free cloth and read oil level after inserting dipstick once again.

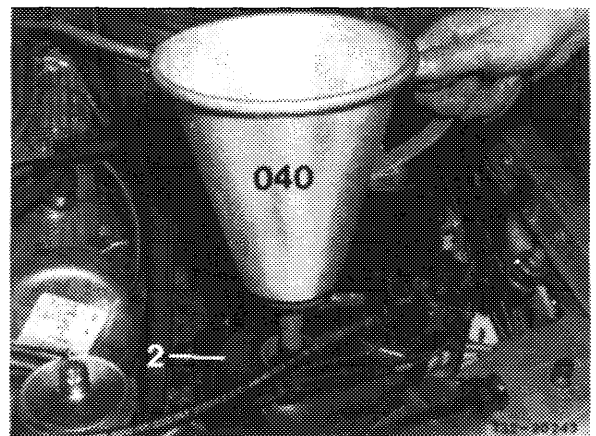
- a Max. mark
- b Min. mark
- 2 Oil supply tank
- 2a Oil dipstick



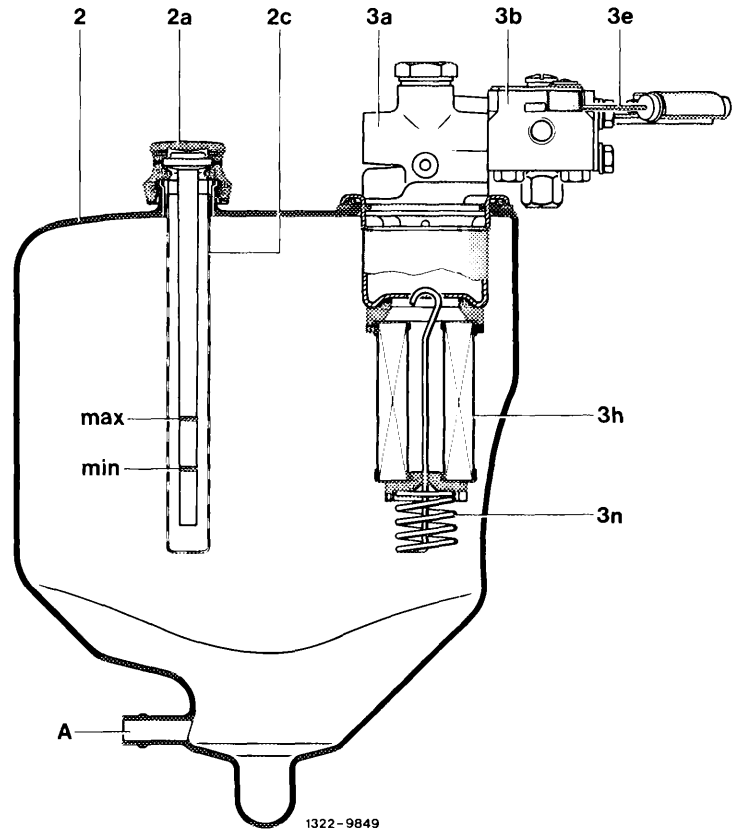
Use filter funnel (040) for filling-in oil.

**Attention!**

Use only hydraulic oils approved by us (refer to "Specifications for service products").



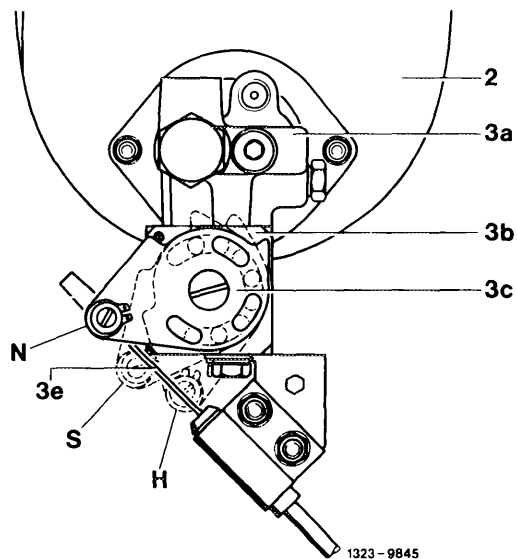
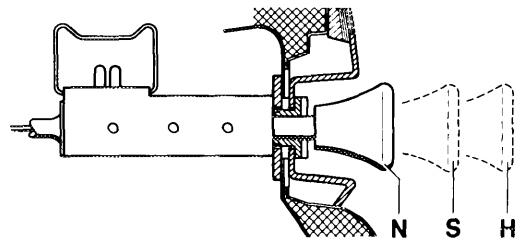
Do not fill in oil beyond max. mark of oil dipstick!



- 2 Oil supply tank
  - 2a Closing cap with oil dipstick
  - 2c Filling strainer
  - 3a Pressure regulator
  - 3b Adjusting switch
  - 3e Adjusting control
  - 3h Filter
  - 3n Holding spring
- A Suction line oil supply tank – pressure oil pump
- Oil level with vehicle unloaded:  
 Max. mark  
 Min. mark

**B. Depressurizing suspension elements**  
 (for checking pressure reservoir)

Adjusting switch of valve unit in position "N" = normal level or "H" = higher level.



- 2 Oil supply tank
- 3a Pressure regulator of valve unit
- 3b Adjusting switch of valve unit
- 3c Control disk
- 3e Puller for adjusting switch

Positions of adjusting switch:  
 N = normal level  
 switch pushed down or control disk against stop at front  
 S = detent position  
 switch locked in center position or control disk pulled into 1st detent  
 H = higher level  
 switch fully pulled or control disk pulled into 2nd detent.

**Note:** In positions "H" and "S" warning lamp at right in instrument cluster is lighting up (red with vehicle symbol).

Fill central reservoir by running engine for a short period.

Jackup vehicle at the front and rear (40–010). Taking load from wheels will thereby move the level controller into position “emptying”, so that the suspension elements will be drained. The oil return proceeds via level controllers and pressure regulator to oil supply tank.

**Attention!**

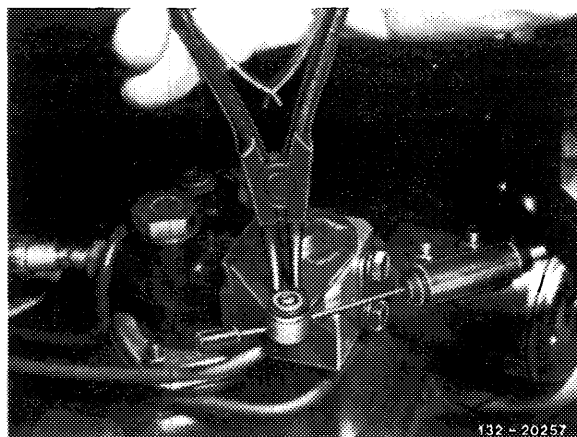
If the pressure in central reservoir is too low or if the adjusting switch has been moved prior to jacking up into position “S” = detent position or in position “M” = assembly, the check valves in level controllers will hold the pressure in suspension elements. In such a case, discharge the pressure each time via vent screw between level controller and pressure reservoir.

The pressure in suspension elements can also be locked-in unintentionally, if, e.g., with the engine running a level controller with disconnected connecting rod is in position “filling”. Here, the suspension elements of the respective axle are filled to cut-out pressure of pressure regulator. In such a case, automatic unlocking is no longer possible. Here, too, the pressure must be discharged by means of a pressure line connection (B5) or via vent plug.

### C. Depressurizing pressure oil system up to level controllers

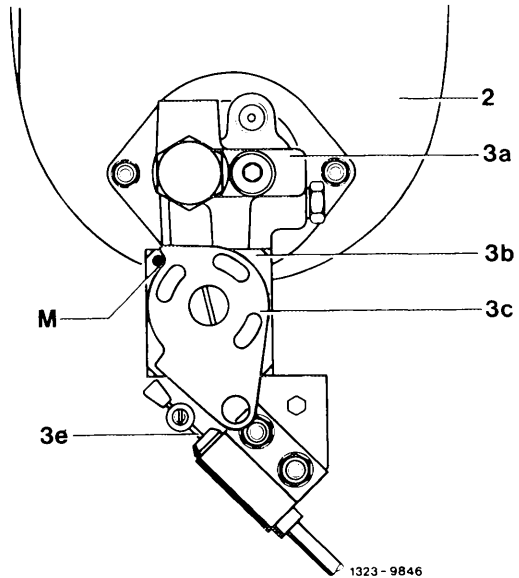
(for checking pressure oil pump, valve unit, electric pressure switch and central reservoir)

Move adjusting switch of valve unit into position “M” = assembly. For this purpose, disconnect cable control for adjusting switch after removing retaining ring and pull control disk up to stop toward the rear.



If on cable control for adjusting switch the stud has been unintentionally released, readjust cable control.

For this purpose, completely push in switch on instrument panel and move control disk forward up to stop into position “N” = normal level.



- 2 Oil supply tank
- 3a Pressure regulator of valve unit
- 3b Adjusting switch of valve unit
- 3c Control disk
- 3e Puller for adjusting switch

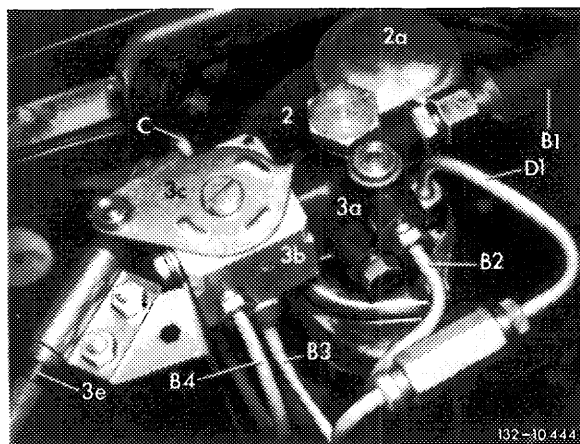
Position of adjusting switch:  
M = assembly

After tightening stud, actuate cable control several times while checking whether, with switch pushed in, the control disk rests against stop.

#### D. Filling suspension system

If the suction line oil supply tank — oil pressure pump or the pressure line pressure oil pump — pressure regulator have been disconnected during checkup or assembly jobs, the pressure oil pump must be vented.

For this purpose, with the engine running, hold pressure hose (B1) disconnected on pressure regulator into oil supply tank until oil is flowing out uniformly. Only then, after stopping engine, connect hose to pressure regulator.



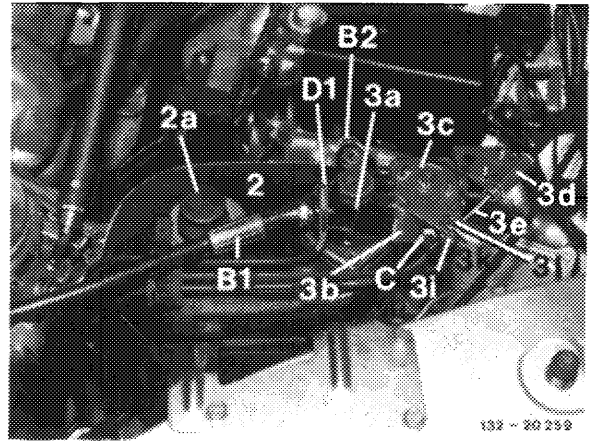
- Model 116.036
- 3a Pressure regulator
- 3b Adjusting switch
- B1 Pressure hose

132-10.444



Models 126.033; 126.037

3a Pressure regulator  
3b Adjusting switch  
B1 Pressure hose



For filling system, move adjusting switch into position "N" and run engine at approx. 2500/min.

Filling time of central reservoir or pressure oil system up to level controllers approx. 30 s.

Filling time of entire suspension system approx. 100 s.

The oil supply tank must be adequately filled all the time.

**Note:** If the vehicle is again put into ready-to-drive condition after testing and assembly jobs, continue filling procedure until the vehicle is no longer lifted, that is, until the specified vehicle level is attained.

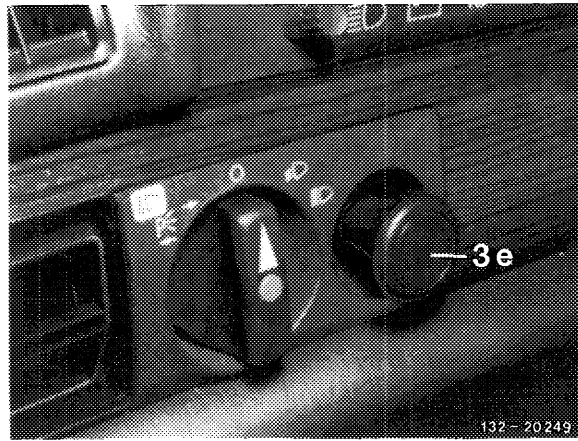
During filling procedure, extinguishing of red warning lamp **does not** indicate that the vehicle is ready for driving.



23 Warning lamp (red, with vehicle symbol)

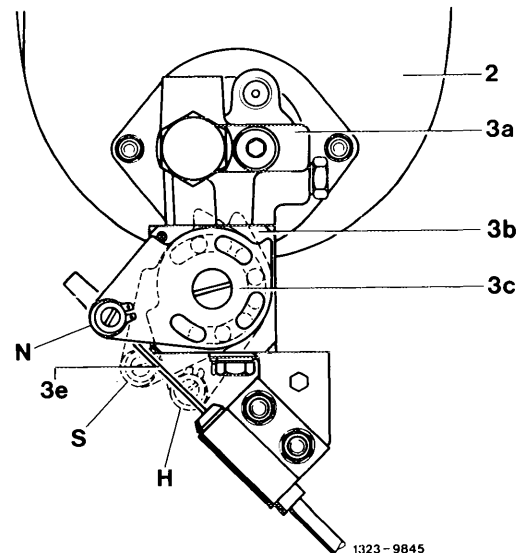
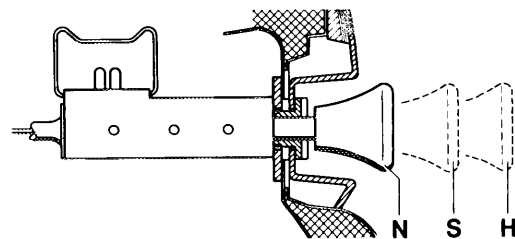
## E. Jacking up vehicle

For jacking up in workshop or by means of vehicle jack, move adjusting switch into position "S" = detent position.



When lowering vehicle for assembly jobs and checkups with suspension elements empty, make sure that the vehicle is lowered only to the point where the level controllers are in "filling" position (particularly important for workshop pits with wheel deflection boards).

Then fill suspension element by running engine.



- 2 Oil supply tank
- 3a Pressure regulator of valve unit
- 3b Adjusting switch of valve unit
- 3c Control disk
- 3e Puller for adjusting switch

Positions of adjusting switch:

- N = normal level  
switch pushed down or control disk against stop at front
- S = detent position  
switch locked in center position or control disk pulled into 1st detent
- H = higher level  
switch fully pulled or control disk pulled into 2nd detent

**Note:** In positions "H" and "S" warning lamp at right in instrument cluster is lighting up (red with vehicle symbol).

## F. Line connections of suspension system

### **Caution! Pressure oil is dangerous! High pressures!**

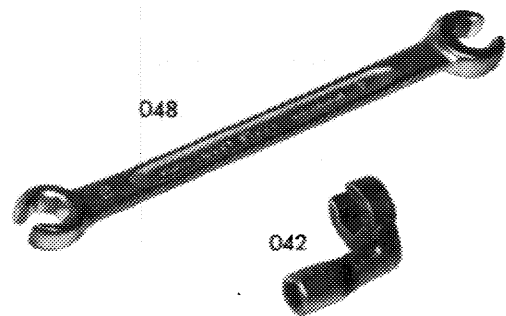
To avoid accidents, deenergize system prior to loosening pressure oil line connections.

Clean contaminated line connections prior to disconnection.

Close disconnected lines and hoses, as well as connections to individual units immediately by means of blind plugs!

**For loosening and tightening pressure lines, use open box wrenches (048), but never normal open end wrenches to avoid damage to line connections. For better access of individual line connections, for example on level regulator, use open end box wrench element (042).**

For hollow screws and screw connections, use solid copper sealing rings of specified dimensions only. Replace sealing rings on principle.



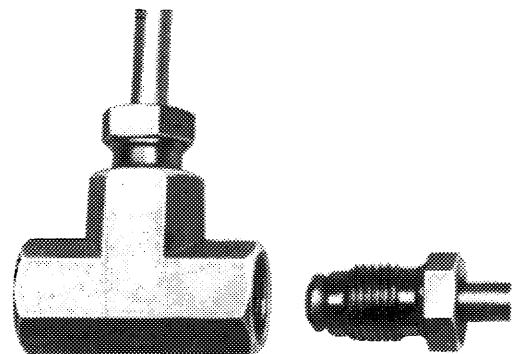
042 Box wrench element open 11 mm 1/4" square (available complete only with change-over ratchet and 2 extensions)

048 Open double box wrench 10 x 11 mm

132-10367

The tightening torques specified for screw connections and coupling screws of respective lines are reference values.

When tightening coupling screws of lines on distributors and on valve unit, apply required counterhold.



132-10425

## G. Emergency operation of rubber buffers for front and rear axle

**Installation is required when level on both axles is down** to the point where trouble in suspension system can be expected while driving.

**Installation is required with the level on one axle down** to the point where trouble at the respective level controller or suspension elements of this axle may be expected while driving or being towed.

**Installation is required during an extended transportation of the vehicle**, for example, when vehicle is shipped overseas, for the duration of the transportation.

With the emergency rubber buffers installed, drive or permit towing only at moderate speed matched to road conditions.

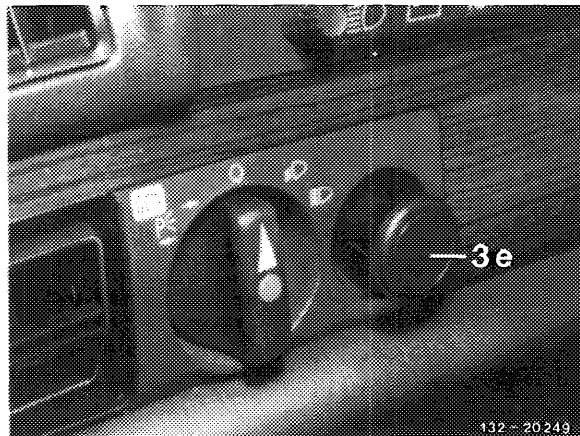
Emergency rubber buffers are available at all Mercedes-Benz service stations as an accessory or can be obtained whenever required.

### Installation

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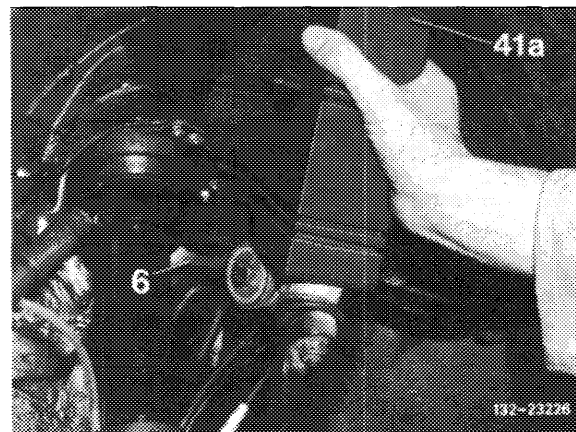
- 1 Step on pedal of parking brake down to final, attainable detent.
- 2 Engage selector lever into position "P".
- 3 Move cable control for adjusting switch of valve unit into position S = "detent position" (detent in center position).

3e Cable control for adjusting switch of valve unit

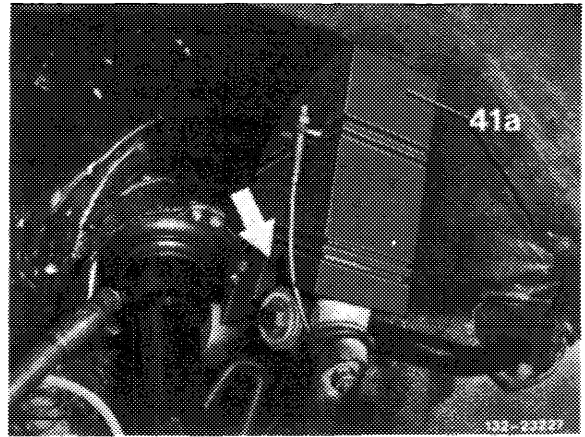


### Front axle

- 4 Jack up vehicle until both front wheels are simultaneously free of load. For this purpose, when using vehicle jack, lift one end first and support against frame, then jack up opposite end.



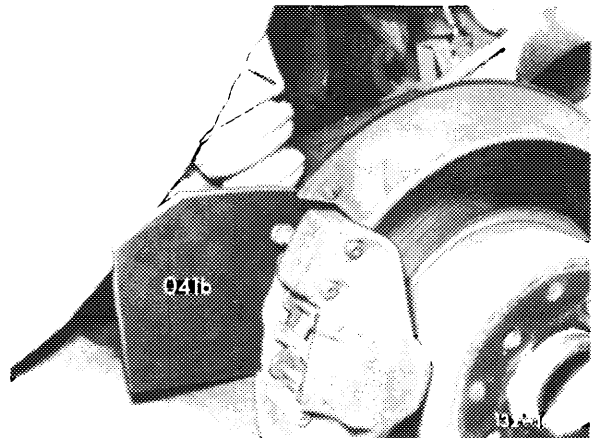
5 Place emergency rubber buffers (left and right the same, 041a) on upper control arm (6) while making sure that the cut-out in the rubber buffer engages on control arm (arrow). Attach rubber buffer by means of clamp to upper control arm.



#### Rear axle

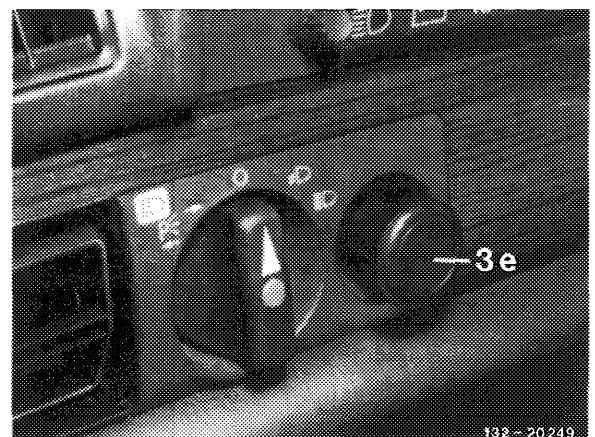
6 Protect vehicle with chocks against front wheels against moving off. Jack up vehicle so that both rear wheels are simultaneously free of load. For this reason, when jacking up with vehicle jack, lift one end first and support against frame, then jack up opposite end.

7 Remove rear wheels, plug-on rubber buffer (041b) when seen in driving direction marked at the left with "L" and at the right with "R" and permit to engage. If required, push axle slightly down, mount wheels, lower vehicle.



#### H. Transportation of vehicle

For shorter transports of vehicle (ferry, automobile in car train) the cable control for adjusting switch of valve unit should be in position S = "detent position" (detent in center position) during transportation. It will be of advantage to adjust to position H = "higher level" (pull switch completely pulled out) while driving on loading ramps to increase ground clearance. Then move adjusting switch into position "S".

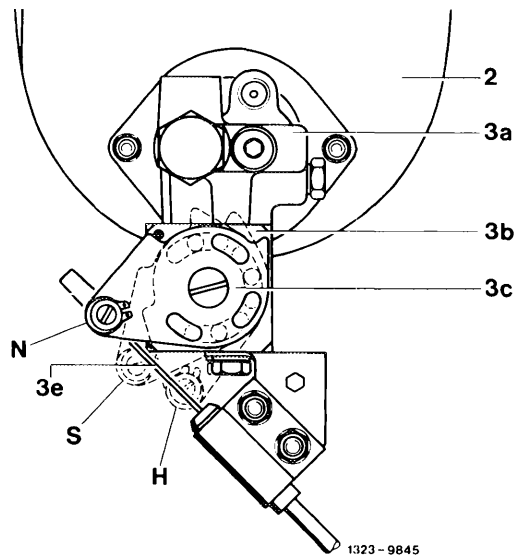
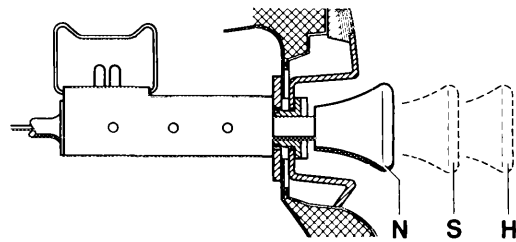


**Note:** On the USA version, the position "higher level" cannot be adjusted by means of the pull switch on instrument panel.

For extended transportation of vehicle, for example shipment overseas, the installation of emergency rubber buffers on front and rear axle may be additionally required in addition to position "S" of adjusting switch, to avoid damage in the event of a relapsed level.

## J. Towing of vehicle

During the towing operation, the cable control for the adjusting switch of the valve unit must be in position S = "detent position" (detent in center position).



- 2 Oil supply tank
- 3a Pressure regulator of valve unit
- 3b Adjusting switch of valve unit
- 3c Control disk
- 3e Puller for adjusting switch

Positions of adjusting switch:

- N = normal level  
switch pushed down or control disk against stop at front
- S = detent position  
switch locked in center position or control disk pulled into 1st detent
- H = higher level  
switch fully pulled or control disk pulled into 2nd detent

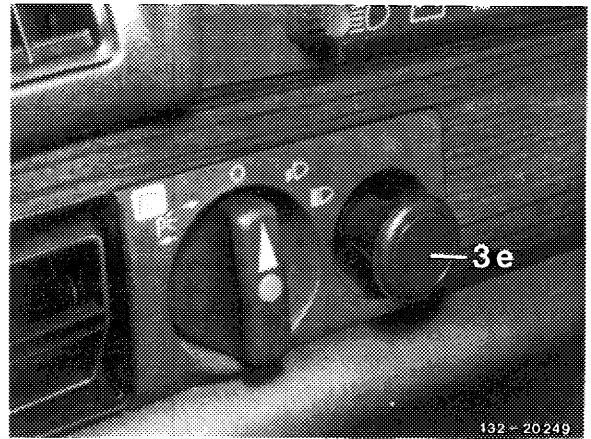
**Note:** In positions "H" and "S" warning lamp at right in instrument cluster is lighting up (red with vehicle symbol).

## K. Instructions for adjusting headlamps

To adjust headlamps, the level controllers on front and rear axle must have set the vehicle to a uniform level. Due to different response of level controllers (e.g. at front axle due to a load and at rear axle due to a no load condition or vice versa) the idle travel of the level controllers may lead to an incorrect adjustment (aiming) of the headlamps.

## Adjustment

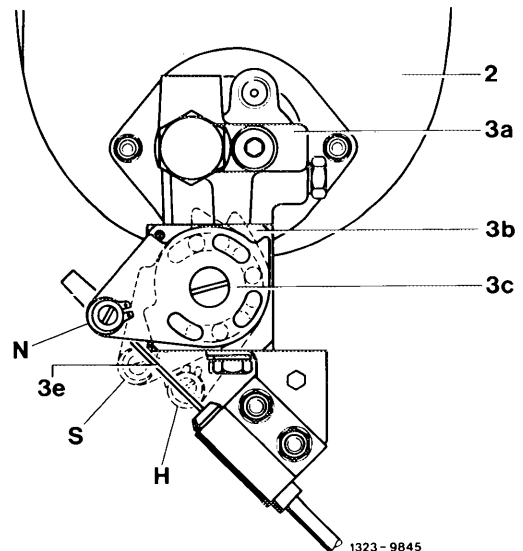
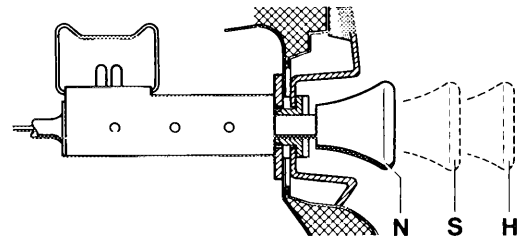
- 1 Move cable control for adjusting switch of valve unit into position N = "normal level" (switch on instrument panel completely pushed).
- 2 To fill central reservoir, run engine at approx. 2500/min (normal filling time of empty central reservoir up to cut-out pressure approx. 30 s).
- 3 Move adjusting switch of valve unit into position H = "higher level" (switch completely pulled). After approx. 10 s reset to position N = "normal level".
- 4 Adjust headlamps.



### Attention!

After moving adjusting switch from position "H" into position "N", and while adjusting headlamps, do not put vehicle into a load or no-load condition!

**Note:** On USA-Version vehicles, the "higher level" position cannot be set by means of pull switch on instrument panel. For this reason, during adjusting jobs, set adjusting switch of valve unit to "higher level" after disconnecting cable control.



- 2 Oil supply tank
- 3a Pressure regulator of valve unit
- 3b Adjusting switch of valve unit
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- 3e Puller for adjusting switch

### Positions of adjusting switch:

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