Installation Instructions

Conversion to AMG sports chassis
Model 124 (4MATIC)
32.05

Models 124.226/230/290/330/333/393

Excluding vehicles without level control system on rear axle.

These installation instructions are valid for assembly of the following chassis kits:
B6 602 00 07

B6 602 00 10

The installation instructions are divided up
into the following sections:

A. Scope of conversion

B. Application range of chassis kits

C. Special tools

D. Front axle conversion

E. Rear axle conversion

F. Adjusting level control unit

G. Spring adjustment

H. Axle adjustment values

I. Information for ordering replacement
parts

Note

An entry in the vehicle documents is required in the Federal Republic of Germany. For this a copy of the respective sample report and certificate issued by the Mercedes-Benz workshop must be submitted to the TÜV/TÜA.

A. Scope of conversion

1. Front axle

- Springs and rubber bearings

- Damper struts and PU supplementary springs

2. Rear axle

- Springs and rubber bearings

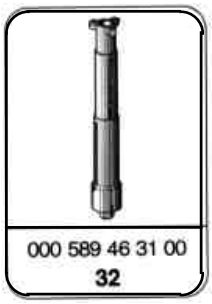
- Spring struts and PU supplementary springs

Note
The conversion parts listed in section A differ depending on the vehicle model and special equipment installed. The assignment of conversion parts to the individual vehicle models/equipment can be obtained from section G.

B. Application range of chassis kits

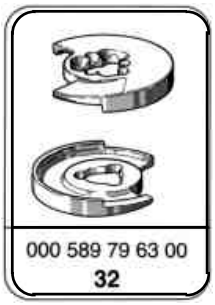
Chassis kit	Model 201					
	226	230	290	330	333	393
H WA124 320 09 30	X	X		X	X	
H WA124 320 12 30			X			X

C. Special tools

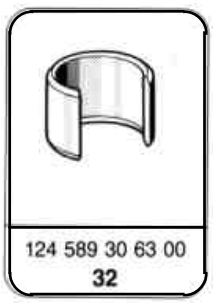


000 589 46 31 00
32

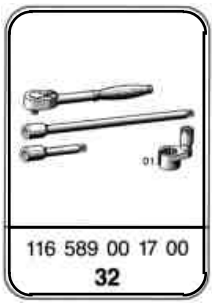
000 589 80 63 00
32



000 589 79 63 00
32

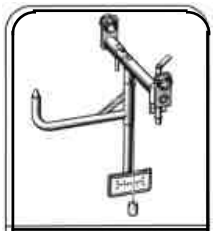


124 589 30 63 00
32



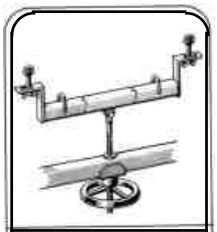
116 589 00 17 00
32

126 589 12 63 00
27 32



124 589 11 21 00
40

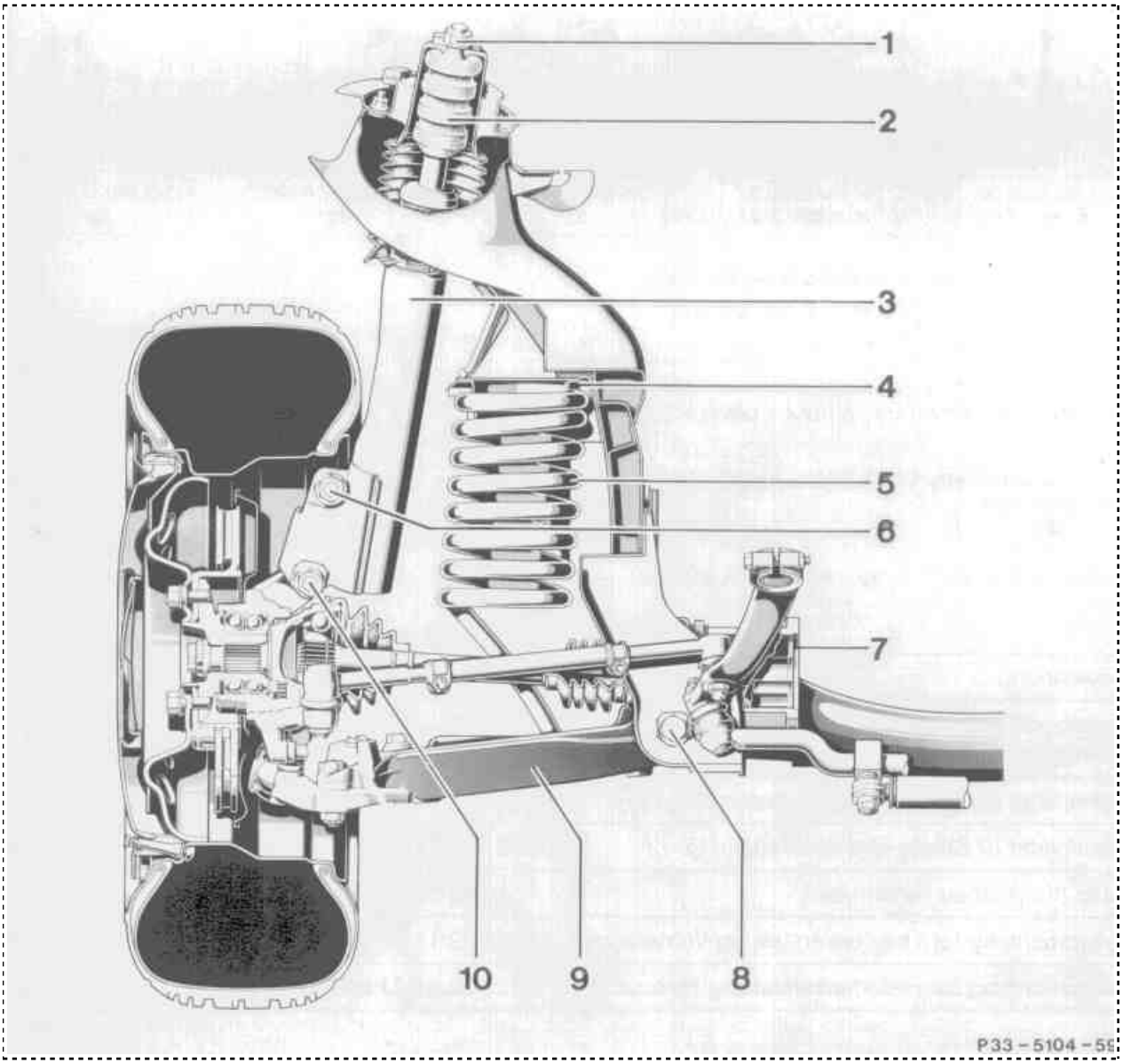
201 589 01 21 00
40



201 589 11 31 00
40

Description	Part no.
Clamp for front and rear springs (basic equipment)	000 589 46 31 00
Clamp plate (2 pieces) for front spring 4MATIC	000 589 80 63 00
Clamp plate (2 pieces) for rear spring	000 589 79 63 00
Sleeve (for removal of rear spring)	124 589 30 63 00
Box wrench insert 11 mm, 1/4" square, complete with reversible ratchet and 2 extensions for pressure oil lines	116 589 00 17 00
Filling funnel with filter	126 589 12 63 00
Measuring device for control arm position - front axle	124 589 11 21 00
Measuring device for spring link position - rear axle	201 589 01 21 00
Puller	201 589 11 31 00

D. Front axle conversion



1 Upper damper strut mounting
2 PU supplementary spring
3 Damper strut
4 Rubber bearing
5 Coil spring
6 Hexagon bolt (steering knuckle/damper strut, upper)
7 Axle shaft flange
8 Eccentric bolt for camber and caster adjustment
9 Control arm
10 Eccentric bolt (steering knuckle/damper strut, lower)

⚠

The damper struts act simultaneously as rebound stops for the front wheels. Therefore only slacken the upper mounting when the vehicle is on its wheels, the control arm is supported or the spring clamp is installed.

1. Removing springs and damper struts

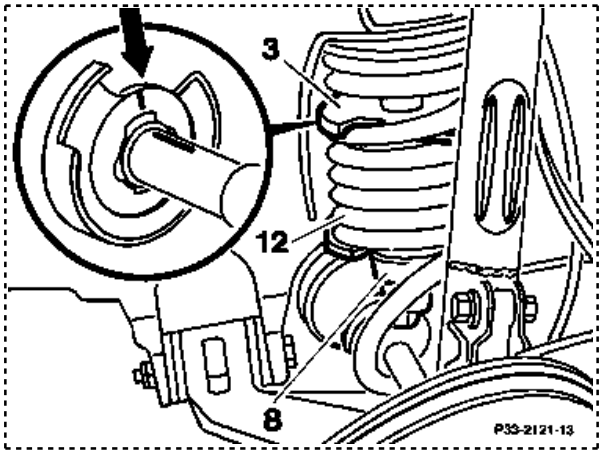
1.1 Mark installed position of all eccentric bolts to facilitate subsequent installation (up to vehicle end number 042 264).

1.2 Detach lower engine compartment cover.

1.3 Raise vehicle at front and detach front wheels.

1.4 Detach stabilizer at control arm.

1.5 Install clamp 000 589 46 31 00 and clamp spring until control arm is relieved of load.
The spring clamp should engage as many spring coils as possible.



⚠
Ensure correct seating of clamp.

1.6 Unscrew nuts from eccentric bolts. Press out eccentric bolts on front and rear control arm mounting and lower control arm.

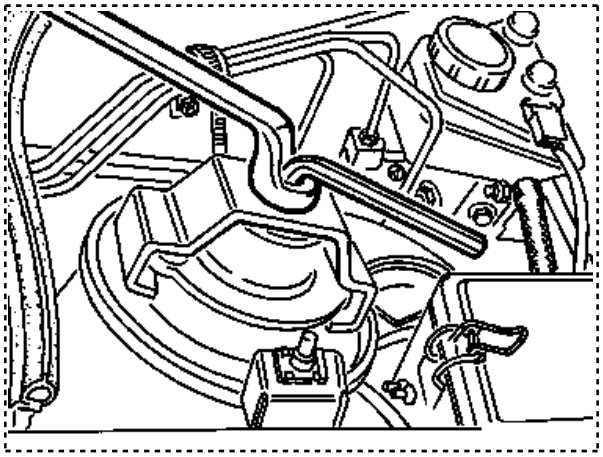
Note
If there is inadequate assembly clearance, unbolt left axle shaft (inner) at the axle flange.

1.7 Remove clamped spring and rubber bearing forwards.

1.8 Carefully release spring.

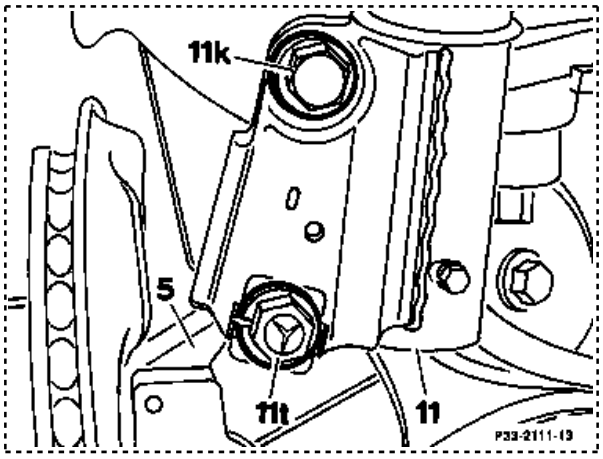
1.9 Unscrew upper fixing nut on damper strut using box wrench (WAF 22 mm), whilst steadying the piston rod with hexagon socket wrench (WAF 7 or 8 mm).

1.10 Detach brake hose support and cable support from damper strut.



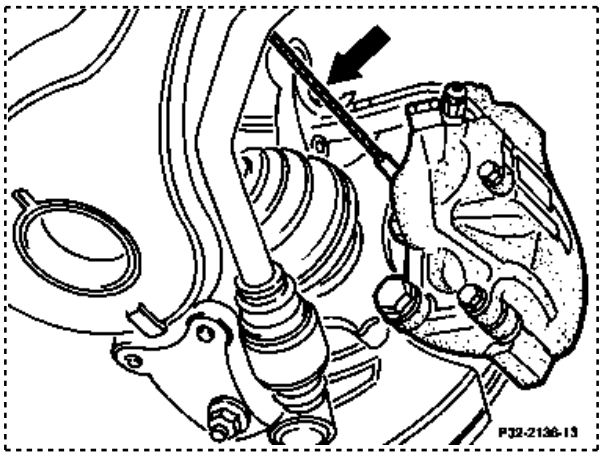
1.11 Unscrew eccentric bolt (11t) and hexagon bolt (11k) on lower damper strut mounting (11) at steering knuckle (5).

1.12 Remove damper strut downwards.



1.13 Secure steering knuckle with suitable bracket.

⚠
Protect brake hoses and electrical cables from damage.



2. Installing springs and damper struts

Note
Always replace self-locking nuts and microencapsulated bolts.

2.1 Fit stop ring for dust sealing cup and slide the PU supplementary springs onto piston rod.

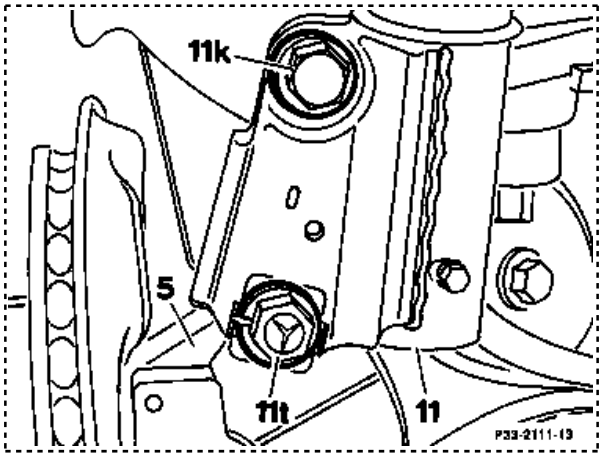
Note

In conjunction with AMG 17-inch rims additional compression travel limiting washers
(part no. H WA 124 323 01 44) are required which are pushed onto the piston rod above the PU supplementary spring.

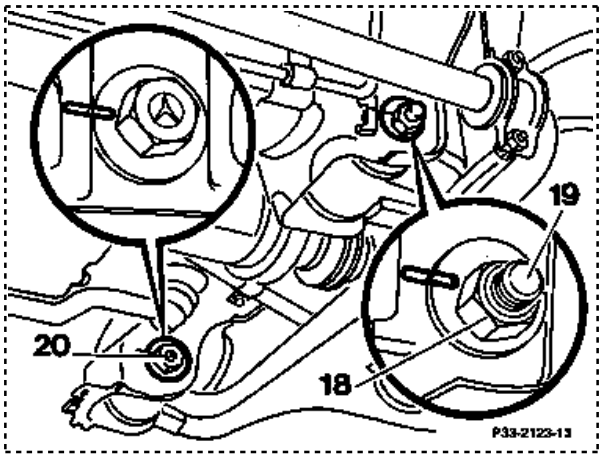
Information can be obtained from the relevant installation instructions for rims, if required.

2.2 Insert damper strut in the upper bearing from below.

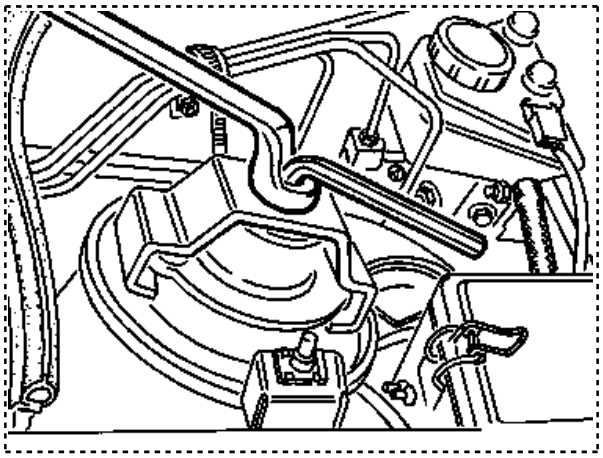
2.3 Install eccentric bolt (11t) and hexagon bolt
(11k) of the lower damper strut mounting (11) on
steering knuckle (5) with self-locking nuts (tightening torque 135 Nm).



2.4 Raise control arm, press in eccentric bolts (19,20) for adjusting camber and caster and tighten with self-locking hexagon nuts (18) (tightening torque 120 Nm).



2.5 Secure damper piston rod in upper damper
bearing with self-locking hexagon nut, whilst steadying piston rod using hexagon socket wrench (WAF 7 or 8 mm) (tightening torque 60 Nm).



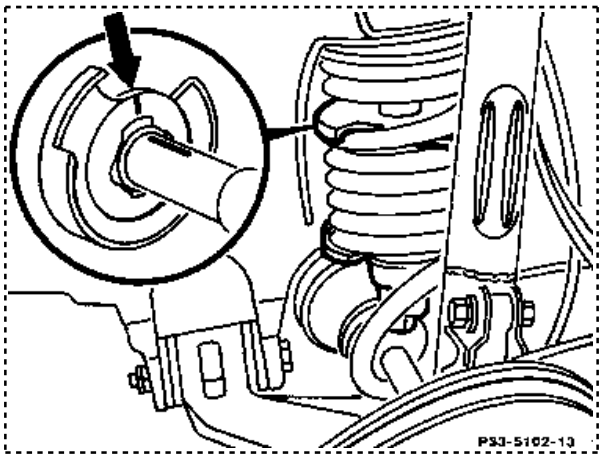
2.6 Screw brake hose and cable support onto
damper strut.

2.7 If required secure left axle shaft (inner) at
axle shaft flange (tightening torque 70 Nm).

2.8 Use clamp 000 589 46 31 00 to clamp coil
spring (engage as many coils as possible).

⚠
Ensure correct seating of clamp.

2.9 Install clamped spring and rubber bearing.



2.10 Release spring slowly.

⚠
Ensure that upper rubber bearing and lower coil runout are correctly seated in the frame floor and control arm respectively.

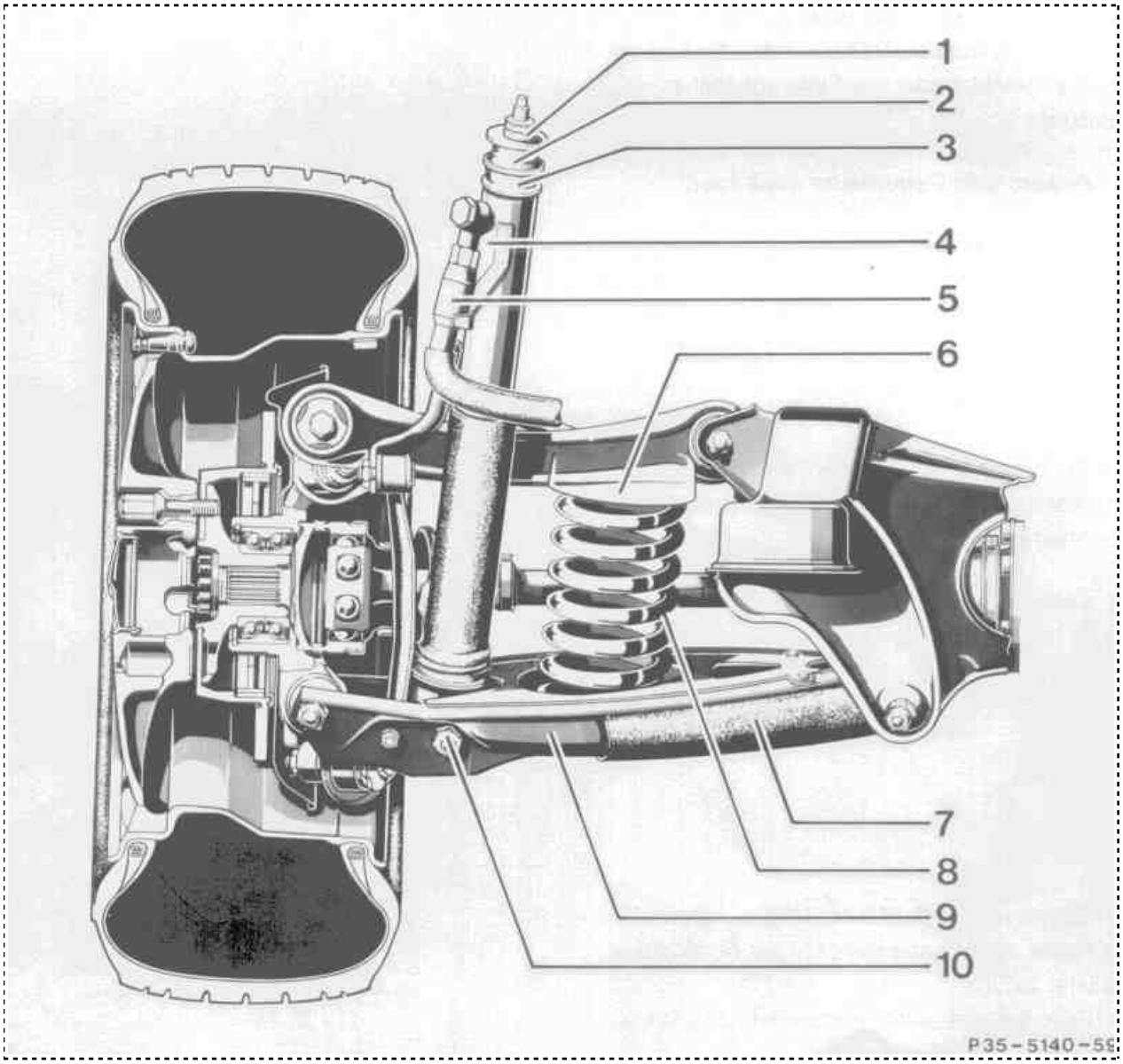
2.11 Fasten stabilizer to control arm (tightening torque 20 Nm).

2.12 Install lower engine compartment cover.

2.13 Fit front wheels.

2.14 Lower vehicle and tighten wheel bolts in line with the rim manufacturer's specifications.

E. Rear axle conversion



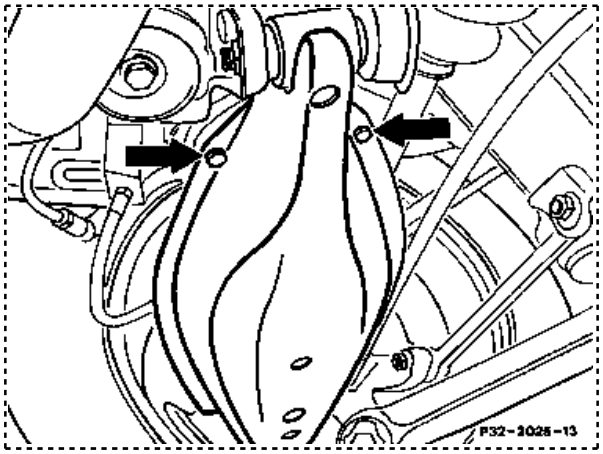
1 Upper spring strut mounting (also refer to section E, item 2.5)
2 Upper rubber ring with washer
3 Lower rubber ring
4 Spring strut
5 Pressure line (spring strut - spring-type cylinder)
6 Rubber bearing
7 Spring link cover
8 Coil spring
9 Spring link
10 Lower spring strut mounting

⚠
The damper struts act simultaneously as rebound stops for the front wheels.
Therefore only slacken the upper mounting when the vehicle is on its wheels, the control arm is supported or the spring clamp is installed.

1. Removing springs and spring struts

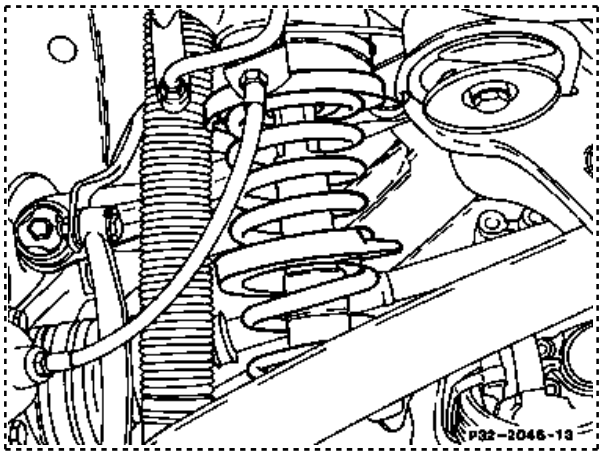
1.1 Raise vehicle at rear and detach rear wheels.

1.2 Unscrew hexagon bolts of spring link cover
and remove spring link cover.



1.3 Open oil drain plug in level control unit and
collect oil in a clean container (approx. 0.5 l).

1.4 Install clamp 000 589 46 31 00 and clamp
spring until spring link is relieved of load.
The spring clamp should engage at least 5½spring coils.



⚠
Ensure correct seating of clamp.

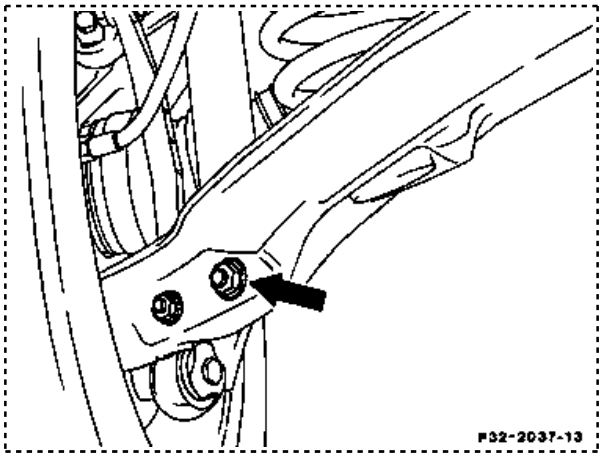
1.5 Support spring link using workshop jack.

1.6 Remove luggage compartment trim.

1.7 Unscrew upper fixing nuts on spring strut. Remove washer and rubber ring.

1.8 Lower spring link.

1.9 Unscrew hexagon nut on lower spring strut
mounting on spring link and press out fixing bolt.



1.10 Use box wrench socket 116 589 00 17 00
to slacken pressure hose connecting the spring-
type cylinder and spring strut on the damper side.

1.11 Remove spring strut from spring link.

1.10 Remove clamped spring and rubber bearing downwards.

1.12 Release spring carefully.

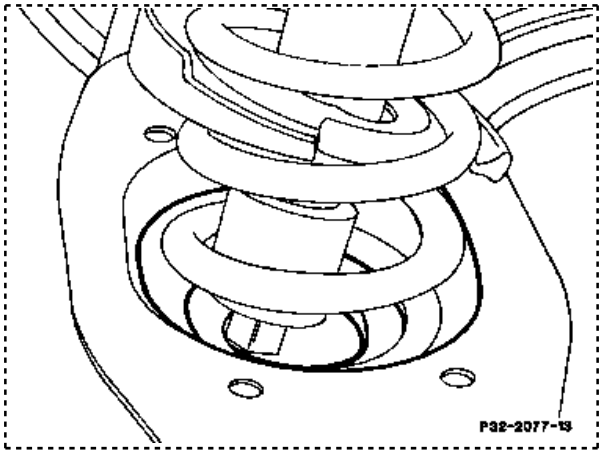
2. Installing springs and spring struts

Note
Always replace self-locking nuts and microencapsulated bolts.

2.1 Clamp coil spring using clamp
000 589 046 31 00 (at least 5½ coils).

⚠
Ensure correct seating of clamp.

2.2 Install clamped coil spring and rubber bearing.



2.3 Fit upper rubber ring to spring strut, install in spring link and mount lower screw connection (tightening torque 65 Nm).

Note

In contrast to the version on the sedan/ coupé spring struts for T-models are fixed at the bottom by two bolts.

2.4 Fasten pressure hose connecting spring-type cylinder to spring strut using new copper sealing rings A12 x 17 DIN 7603 - CU to spring strut (tightening torque 25 Nm).

⚠

Ensure adequate clearance of pressure hose connection to wheel house in bump and rebound condition (approx. 3 - 6 mm).

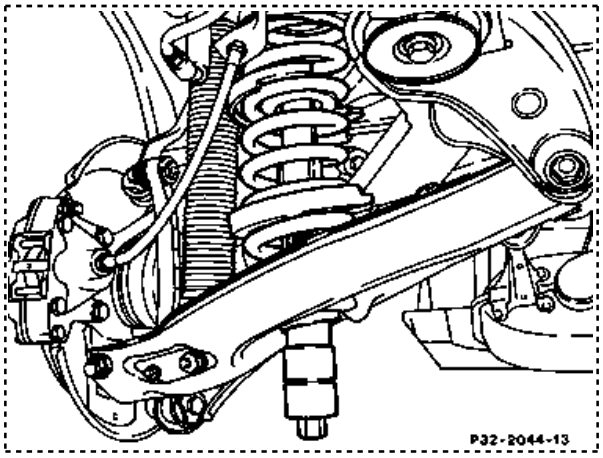
2.5 Assemble upper spring strut mounting. Tighten lower of the two hexagon nuts up to the
end of the thread (tightening torque 15 - 18 Nm)
and then lock with the upper nut (tightening torque 30 Nm).

Note

In contrast to the design on the sedan/ coupé, a
hexagon bolt with plate washer is used on T-models which is screwed into the internal thread
of the spring strut (tightening torque 25 Nm).

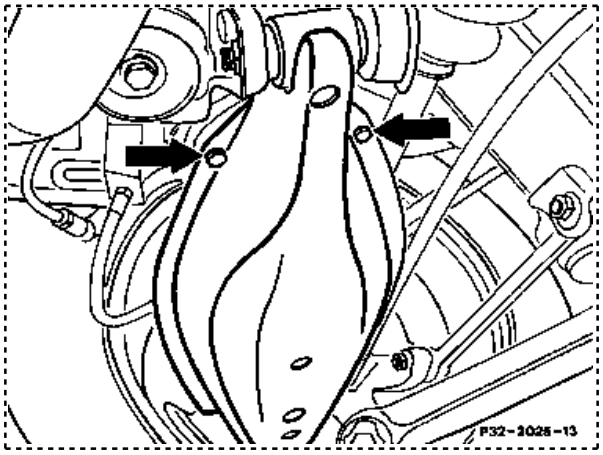
2.6 Install luggage compartment trim.

2.7 Release coil spring slowly.



⚠
Ensure that upper rubber bearing and lower coil runout are correctly seated in the frame floor and control arm respectively.

2.8 Install spring link cover.



2.8 Fit rear wheels.

2.9 Lower vehicle and tighten wheel bolts in line with the rim manufacturer's specifications.

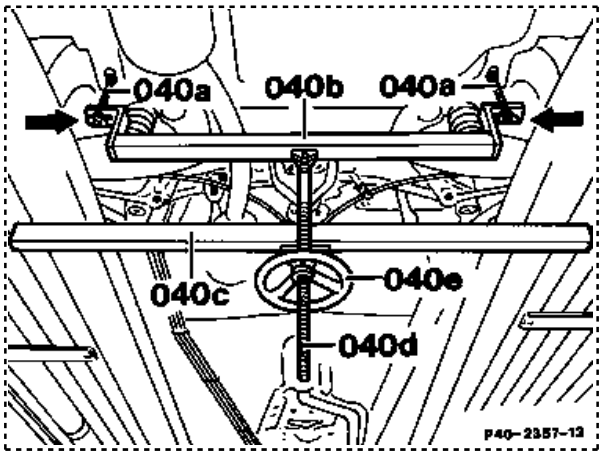
F. Adjusting level control unit

1. Detach connecting rod on level control unit.

2. Check/adjust control point nominal value.
The control point nominal value described in section H (axle adjustment values) can be checked or adjusted either by loading the luggage compartment when engine is running or by means of puller 201 589 11 31 00 when engine is stopped.

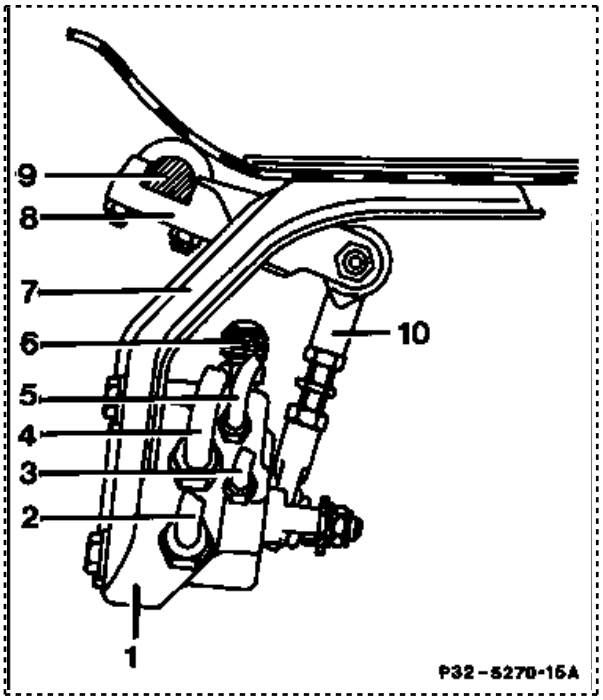
2.1 Testing/adjusting by loading the luggage compartment when engine is running:
Load luggage compartment until vehicle level at
rear axle is approx. 10 mm lower than the specified control point.
When engine is running (approx. 2 000 rpm) supply pressure to level control unit until the control point nominal value under load is displayed on the measuring equipment 201 589 01 21 00.

040a Locator pin
040b Upper transverse bush
040c Lower transverse bush
040d Puller spindle
040e Handwheel



2.2 Testing/adjusting by means of puller:
Use puller 201 589 01 21 00 to pull down the vehicle at rear until the control point nominal value under load is displayed on the measuring equipment 201 589 01 21 00.

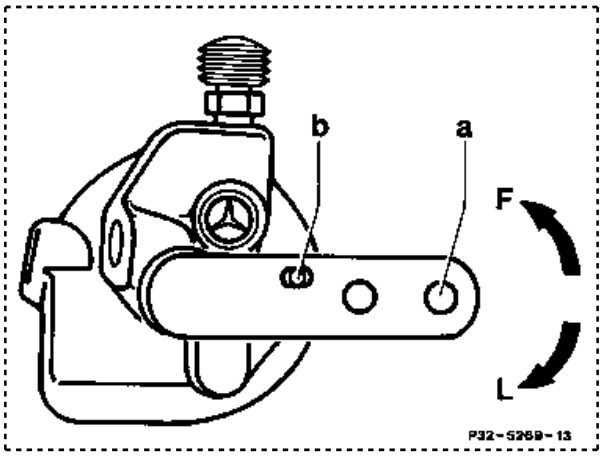
1 Level control unit
2 Pressure line, pressure oil pump - level control unit
3 Pressure line - spring-type cylinder, left
4 Return flow line, level control unit - oil reservoir
5 Pressure line - spring-type cylinder, right
6 Oil drain plug
7 Bracket
8 Lever on torsion bar
9 Torsion bar
10 Connecting rod



3. With the level at control point nominal value
and level control unit fixed in the center position,
adjust connecting rod (10) to the resultant length
and attach to lever (8) from the level control unit
side.

a Valid for sedan, coupé and T-model
b Locating pin dia . 4 mm

F Position "Fill"
L Position "Empty"



4. Remove locating pin (b).

5. Check oil level in reservoir of level control system, replenish if necessary.

Note
After the vehicle level has been adjusted the headlamp adjustment must be checked and corrected, if required.

G. Spring adjustment

Depending on the vehicle model and special equipment, different rubber bearings are required when converting to AMG sports chassis.

Should the vehicle level specified in section H (axle adjustment values) not be achieved, thinner or thicker rubber bearings can also be installed.

If required it is also possible to install different rubber bearings on the left and right-hand side.

1. Front axle rubber bearing

1.1 Rubber bearing points rating system on sedans and coupés

Design/ special equipment	Model 124					
	226	230	290	330	333	393
Basic number of points	36	39	38	50	55	55
Air conditioner or automatic climate control	7	7	7	7	7	7
Automatic transmission	4	4	4	5	S	S
Auxiliary heater	4	4	4	4	4	4
Tilting/silding sunroof	3	3	3	3	3	3
Anti-lock braking system (ABS)	2	2	2	2	2	2

S = standard production equipment

1.2 Allocation of front springs - rubber bearings on sedan and T-model

Total number of points	Front spring Homologation no.	Height of spring-rubber bearing (mm) depending on colour marking of spring blue	 red
36 - 47	003 124 321	8	13
48 - 59	003 124 321	13	18
60 - 71	003 124 321	18	23

1.3 Front spring rubber bearing

Height mm	Number of lugs "n"	Part no.
8	1	124 321 12 84
13	2	124 321 13 84
18	3	124 321 14 84
23	4	124 321 15 84

2. Rear axle rubber bearings

2.1 Rubber bearing points rating system on Sedan

Model/ special equipment	Model 124 226	 230	 330	 333
Basic num. of points	21	21	21	21
Towing fixture	7	7	7	7
Refrigerator box	6	6	6	6
Telephone	3	3	3	3
Tilting/sliding sun-roof	3	3	3	3
ASD	3	S	S	S

S = standard production equipment

2.2 T-model

Model/ special equipment	Model 124 290	 393
Basic num. of points	55	50
Towing fixture	7	7
Third row of seats	6	6
Refigerator box	6	6
Telephone	3	3
Tilting/sliding sun-roof	3	3
Auxiliary heater	2	2
Combined net/cover	2	2

2. Rear axle rubber bearings

2.1 Allocation of rear springs - rubber bearings on sedan

Total number of points	Rear spring with level control system Homologation no.	Height of spring rubber bearing (mm) depending on colour marking of spring	
		blue	red
21 - 31	003 124 322	8	13
32 - 43	003 124 322	13	18

2.2 T-model

Total number of points	Rear spring with level control system Homologation no.	Height of spring rubber bearing (mm) depending on colour marking of spring	
		blue	red
50 - 66	002 124 322	8	13
67 - 84	002 124 322	13	18

2.3 Rear spring rubber bearing

Height mm	Number of lugs "n"	Part no.
8	1	201 325 09 44
13	2	201 325 10 44
18	3	201 325 11 44

H. Axle adjustment values

1. Front axle

Camber	Wheels in straightahead position with 0 toe-in	- 0° 50'	+10' - 20'
	Permitted difference between left and right	0° 20'	
Caster	Wheels in straightahead position with 0 toe-in	10° 20'	±30'
	with steering at full lock	10° 05'	±30'
	Permitted difference between left and right	0° 30'	
Toe-in	Total	0° 20'	±10'
Toe-out on turns	at 20° steer angle [1)]	- 0° 55'	±30'
Control arm position		- 5 mm	+10 mm - 15 mm

1) No provision for adjustment

2. Rear axle

Camber	Ready-to-drive, unladen [1)]	- 1° 45'	±30'
Toe-in	Total	0° 25'	+10' - 05'

Spring link position	with level control system	- 10 mm	+10 mm - 12 mm
	Laden (control point)	- 25 mm	±2 mm [2] ±10 mm [3]

1) No provision for adjustment
2) Value for adjustment
3) Value for test

Note

- Perform chassis measurement with vehicle in ready-to-drive condition.
- Tolerances apply only for test.
- Try to achieve nominal values during adjustment.

I. Information for ordering replacement parts

The parts needed for installation can be obtained under the following part numbers:

Sedan

Quantity	Designation	Part no.
1	Chassis kit	H WA124 320 09 30 [1]
2	Damper strut	H WA124 320 07 30
2	Spring strut	H WA124 320 02 13
2	Front spring	H WA124 321 03 04
2	Rear spring	H WA124 324 03 04

1) Complete kit

Lieferzuständig: Werk 06 (ZVL Germersheim)

T-model

Quantity	Designation	Part no.
1	Chassis kit	H WA 124 320 12 30 [1]
2	Damper strut	H WA124 320 07 30
2	Spring strut	H WA124 320 01 13
2	Front spring	H WA124 321 03 04
2	Rear spring	H WA124 324 03 04

1) Complete kit

Available from: Plant 06 (ZVL Germersheim)