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Installation Instructions

Conversion to AMG sports chassis
Model 124
32.03

Excluding vehicles with special bodywork, 4MATIC, sedan with long wheelbase and all types without level control system on the rear axle and 124.036.

On models 124.031/051/133, the special equipment points rating system for the front axle must not exceed 69 (also refer to section G, spring adjustment) in order to ensure the specified control arm positions.

These installation instructions are valid for the assembly of the following chassis kits:
B6 602 00 03
B6 602 00 05
B6 602 00 08
B6 602 00 09

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. 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

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

B. Application range of chassis kits

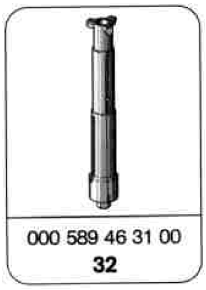
1. Sedan and coupé

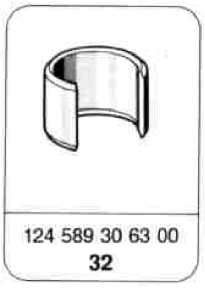
	4-cylinder model 124					5/6-cylinder model 124								
Chassis kit	020	021	023	043	120	026	030	031	050	051	125	128	130	133
H WA124 320 04 30	X	X	X	X	X									
H WA124 320 06 30						X	X	X	X	X	X	X	X	X

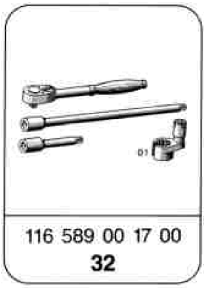
2. T-model

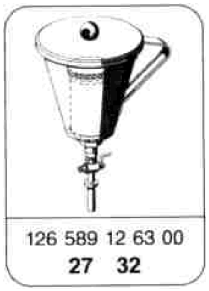
Chassis kit	4-cylinder model 124				5/6-cylinder model 124				
	080	081	083	180	090	091	185	190	193
H WA124 320 10 30	X	X	X	X					
H WA124 320 11 30					X	X	X	X	X

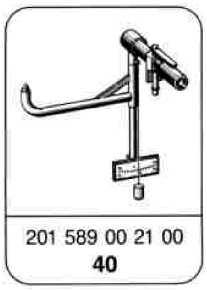
C. Special tools

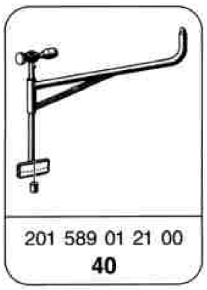


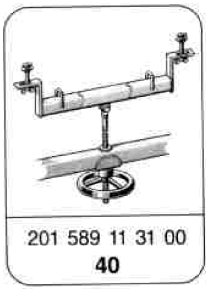






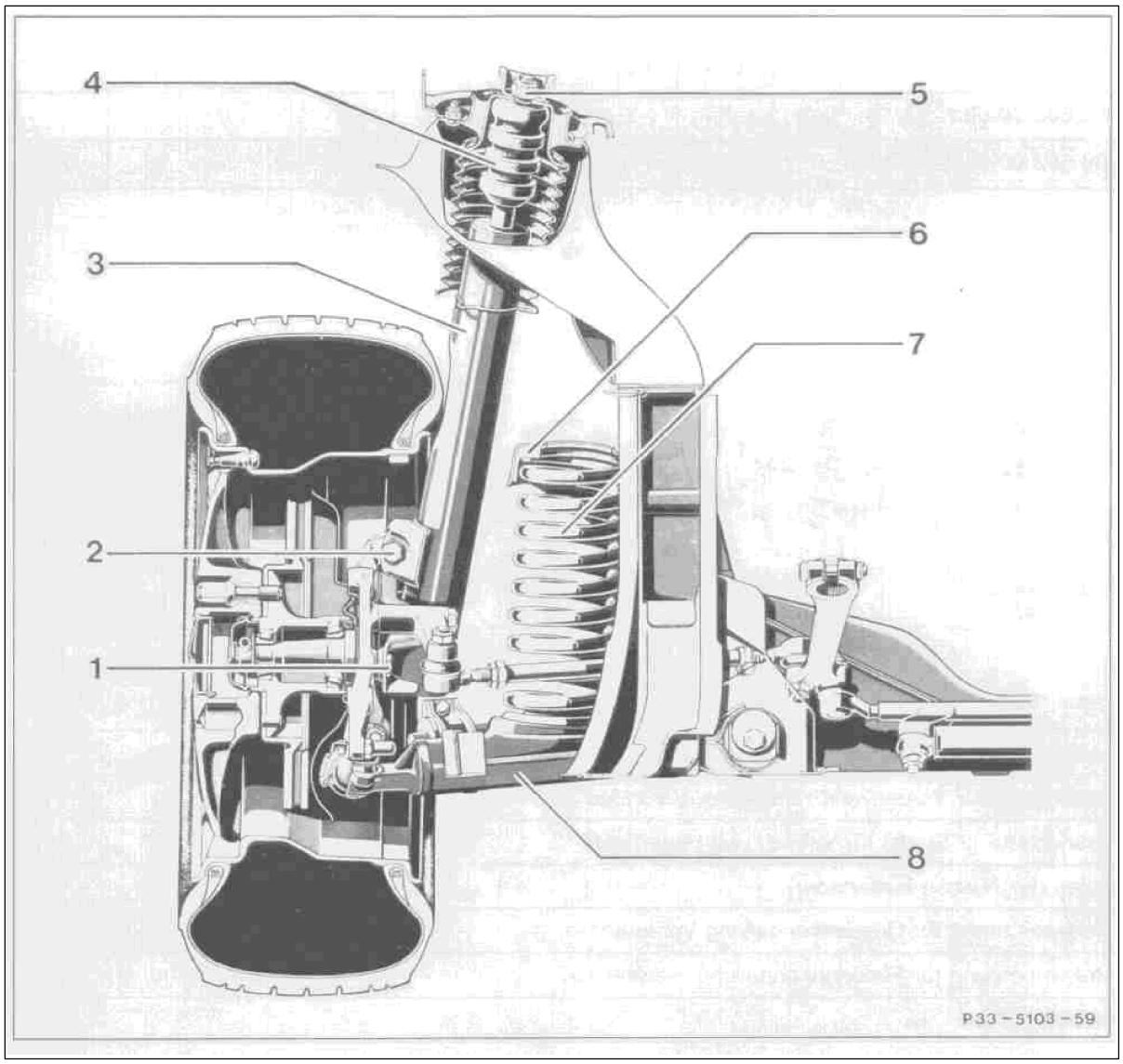






Description	Part no.
Clamp for front and rear springs (basic equipment)	000 589 46 31 00
Clamp plate (2 pieces) for front and rear springs	000 589 79 63 00
Sleeve (for removal of rear spring)	124 589 30 63 00
Open box wrench socket 11 mm, 1/4" square, complete with reversible ratchet and 2 extensions 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	201 589 00 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 Hexagon bolts - steering knuckle/damper strut, lower
2 Hexagon bolt - steering knuckle/damper strut, upper
3 Damper strut
4 PU supplementary spring
5 Upper damper strut mounting
6 Rubber bearing
7 Coil spring
8 Control arm

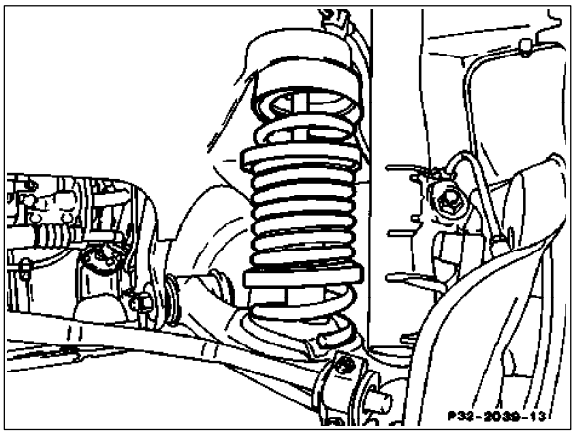
M

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 Raise vehicle at front and detach front wheels.

1.2 Install clamp 000 589 46 31 00 and clamp spring until control arm is relieved of load.
The spring clamp should engage at least 7½ spring coils.



M
Ensure correct seating of clamp.

1.3 Support control arm using workshop jack.

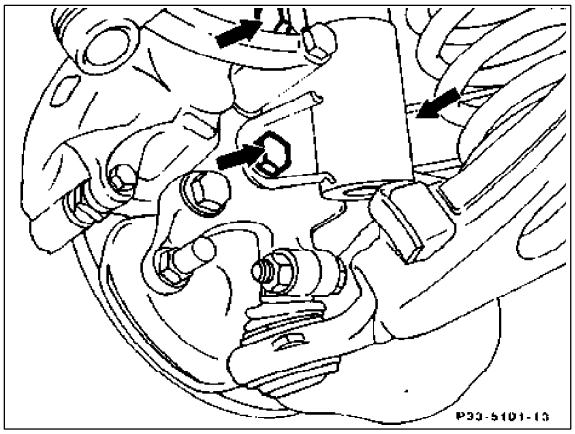
1.4 Unscrew upper fixing nut of damper strut with deep-offset box wrench (WAF 22 mm), whilst steadying the piston rod using hexagon socket wrench (WAF 7 or 8 mm).

1.5 Lower control arm and remove clamped spring and rubber bearing.

1.6 Carefully release spring.

1.7 Detach lower damper strut mounting on steering knuckle. For this step, unscrew self-locking hexagon nut and then unscrew microencapsulated hexagon bolts.

1.8 Remove damper strut downwards.



1.9 Secure steering knuckle using suitable bracket.

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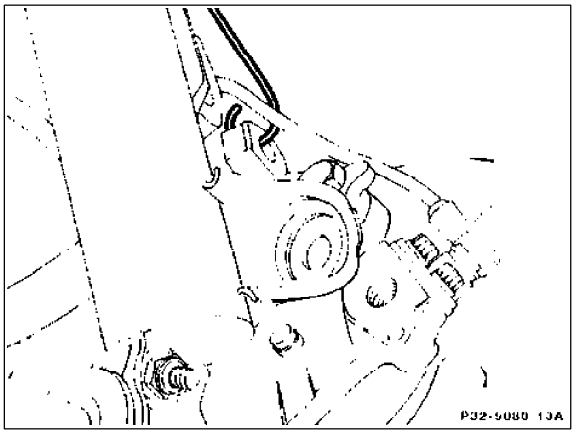
Protect brake hoses and electrical cables from damage.



2. Installing springs and damper struts

Note
Always replace self-locking nuts and microencapsulated bolts.

2.1 Fit stop ring for dust sealing cup to damper strut and slide the PU supplementary spring 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 Install damper strut in the upper mounting bearing from below.

2.3 Mount steering knuckle on damper strut.

Note
The guide pin on steering knuckle must engage in the bore on the damper strut.

2.4 Screw in the two lower microencapsulated hexagon bolts and tighten slightly.

2.5 Install upper hexagon bolt with washers and new self-locking hexagon nut and tighten slightly.

2.6 Tighten the two lower bolts (tightening torque 110 Nm), then tighten upper clamp connection (tightening torque 110 Nm).

Note

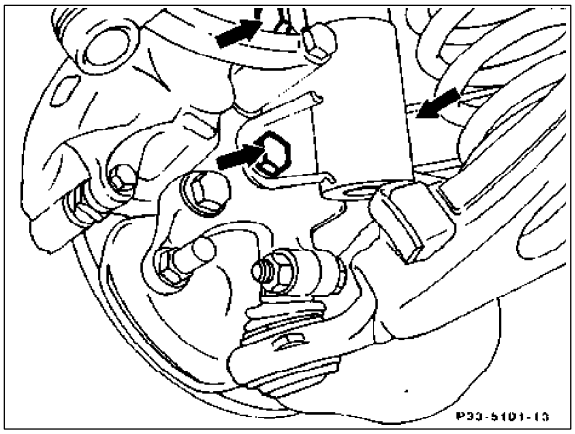
Note tightening sequence.

2.7 Raise control arm using workshop jack.
Secure damper piston rod strut with self-locking hexagon nut and washer in the upper damper bearing, whilst steadying piston rod using hexagon socket wrench (WAF 7 or 8 mm) (tightening torque 60 Nm).

2.8 Clamp coil spring with clamp
000 589 46 31 00 (at least 7½ coils).

M

Ensure correct seating of clamp.



2.9 Install clamped spring and rubber bearing.

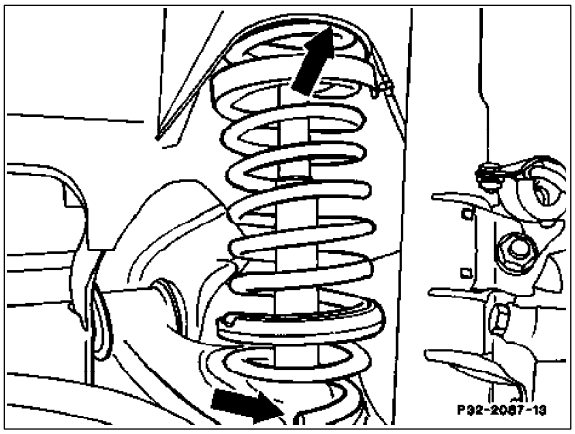
2.10 Release spring slowly.

M

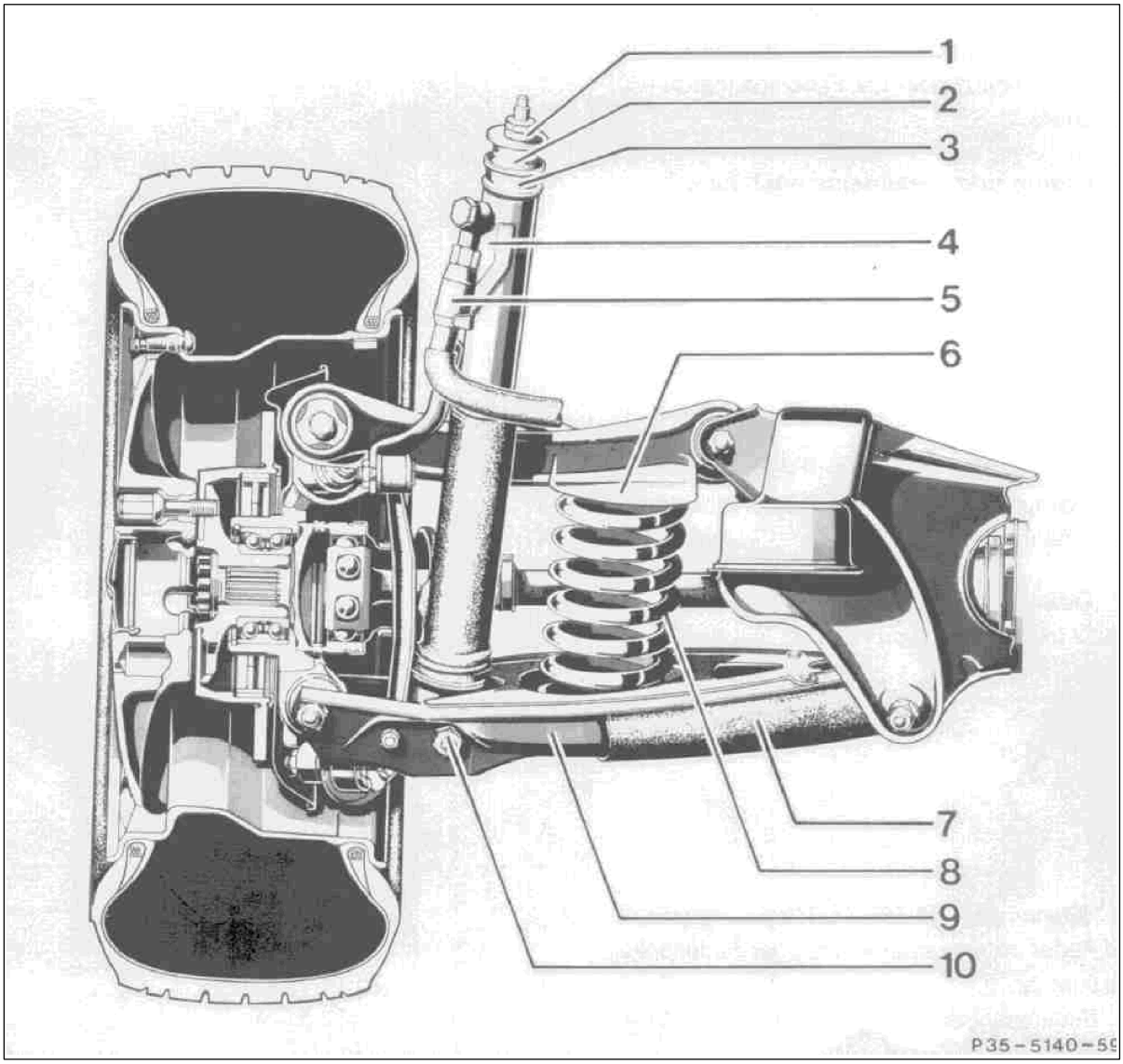
Ensure that upper rubber bearing and lower coil runout are correctly seated in the frame floor and control arm respectively.

2.11 Fit front wheels.

2.12 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

M

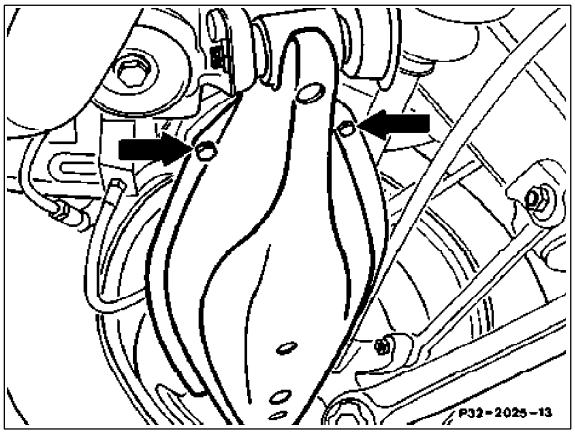
The spring struts act simultaneously as rebound stops for the rear wheels. Therefore only slacken the upper mounting when the vehicle is on its wheels, the control arm is supported or spring clamp is installed.

1. Removing springs and spring struts

1.1 Raise vehicle at rear and detach rear wheels.

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

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



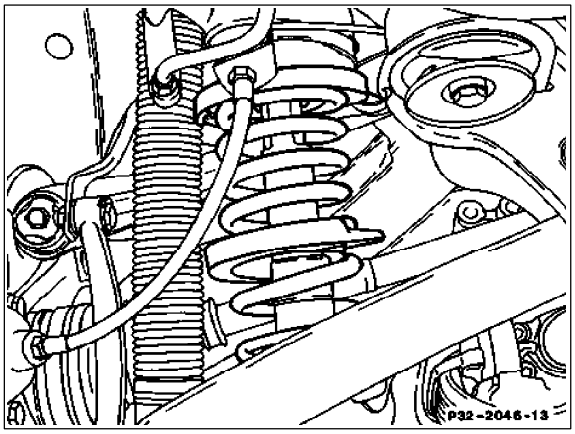
1.4 Install clamp 000 589 46 31 00 and clamp spring so that spring link is relieved of load.
The spring clamp should engage at least 5½ spring coils.

M

Ensure correct seating of clamp.

1.5 Support spring link with 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.

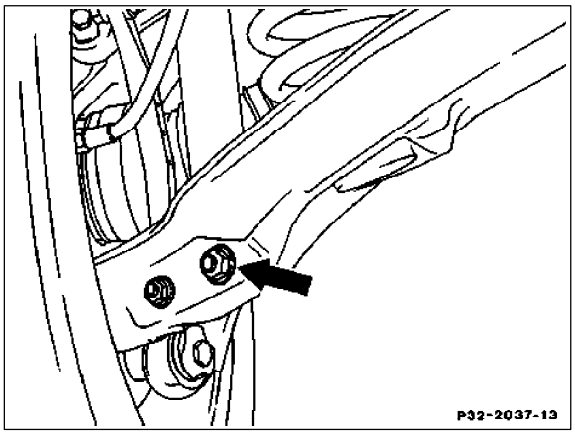
1.9 Unscrew hexagon nut of lower spring strut mounting on spring link and press out fixing bolt.

1.10 Use box wrench socket 116 589 00 17 00 to detach screw connection of pressure hose from spring-type cylinder to spring strut on the damper side.

1.11 Remove spring strut from spring link.

1.10 Remove clamp spring and rubber bearing downwards.

1.12 Release spring carefully.



2. Installing springs and spring struts

Note

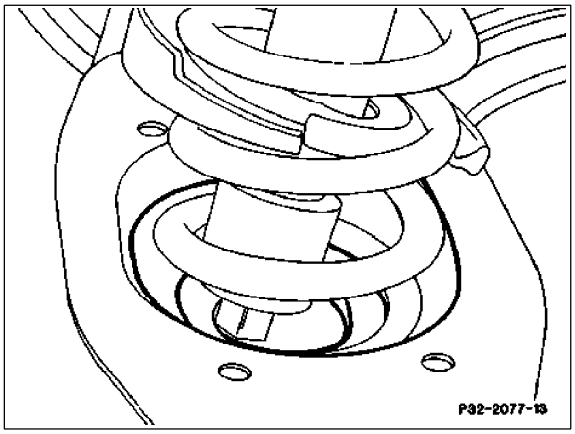
Always replace self-locking nuts and microencapsulated bolts.

2.1 Clamp coil spring using clamp 000 589 46 31 00 (at least 5½ coils).

M

Ensure correct seating of clamp.

2.2 Install clamped coil spring with rubber bearing.



2.3 Fit upper rubber ring to spring strut, install assembly in spring link and install 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 which connects spring-type cylinder to spring strut using new copper sealing rings A12 x 17 DIN 7603 - CU to spring strut (tightening torque 25 Nm).

M

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

2.5 Install 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

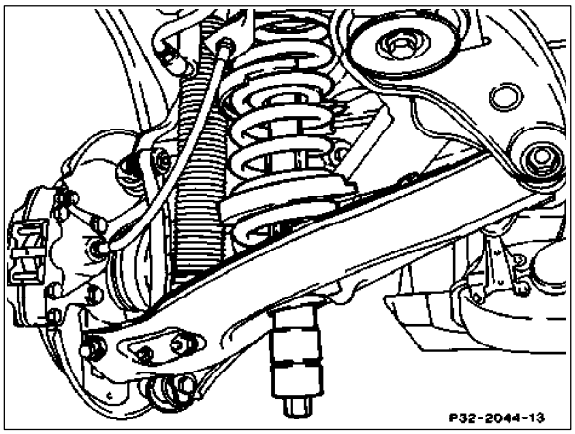
In contrast to the design on the sedan/coupé, a hexagon bolt with plate washer is used on T-models which is screwed into the internal thread of the spring strut (tightening torque
25 Nm).

2.6 Install luggage compartment trim.

2.7 Release coil spring slowly.

M

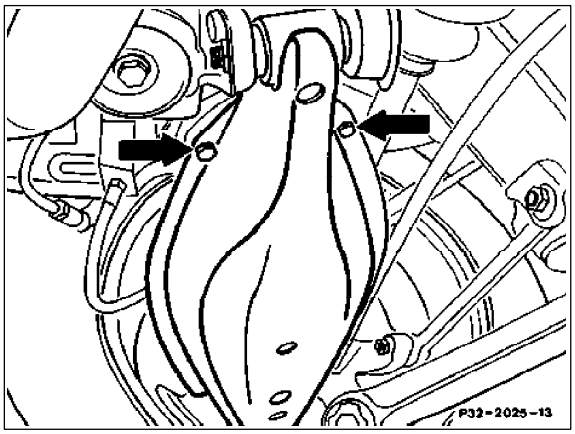
Ensure that upper rubber bearing and lower spring coil runout are correctly seated in the frame floor and control arm respectively.



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.



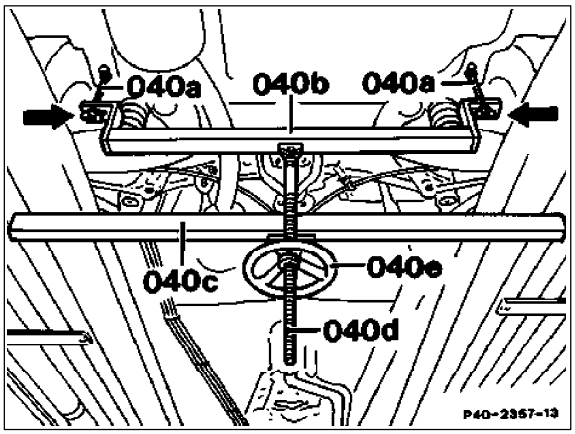
F. Adjusting level control unit

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.

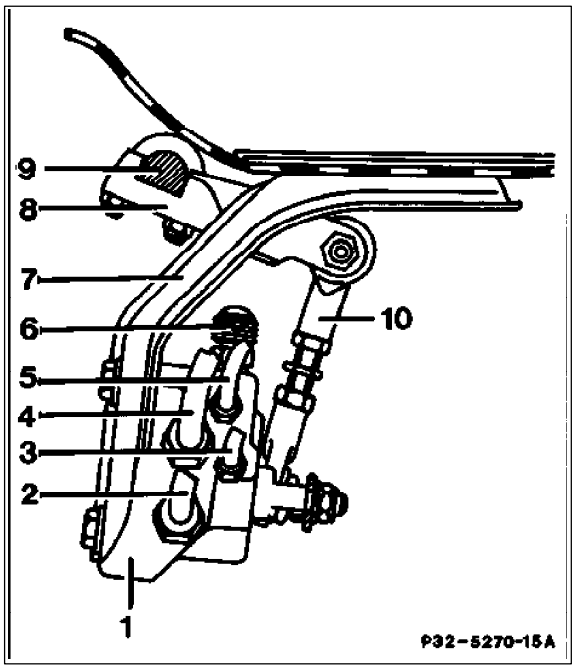
2.1 Testing/adjusting by loading the luggage compartment when engine is running:
Load luggage compartment until vehicle level at rear axle is approx. 10 mm lower than the specified control point.
When engine is running (approx. 2 000 rpm) supply pressure to level control unit until the control point 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 11 31 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.

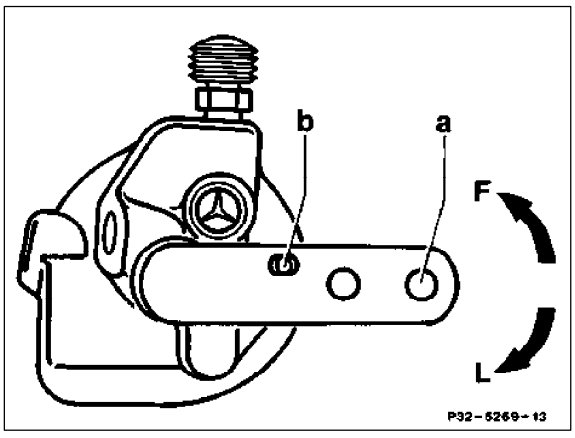
1 Level control unit
2 Pressure line, pressure oil pump - level control unit
3 Pressure line - spring-type cylinder, left
4 Return flow line, level control unit - oil reservoir
5 Pressure line - spring-type cylinder, right
6 Oil drain plug
7 Bracket
8 Lever on torsion bar
9 Torsion bar
10 Connecting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

Model/ special equipment	4-cylinder model 124					5/6-cylinder model 124								
	020	021	023	043	120	026	030	031	050	051	125	128	130	133
Basic number of points	24	23	26	31	24	40	41	50	39	48	35	40	45	56
Air conditioner or automatic climate control	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Automatic transmission	4	4	4	4	5	4	4	4	4	4	5	4	5	5
Auxiliary heater	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Tilting/silding sun-roof	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Level control system or ASD	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Larger battery	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Note

On models 124.031/051/133, the special equipment points rating system for the front axle must not exceed 69 (also refer to section F, spring adjustment) in order to ensure the specified control arm positions.

1.2 T-model

Model/ special equipment	4-cylinder model 124				5/6-cylinder model 124				
	080	081	083	180	090	091	185	190	193
Basic number of points	18	24	26	23	35	41	36	44	53
Air conditioner or automatic climate control	7	7	7	7	7	7	7	7	7
Automatic transmission	4	4	4	5	4	4	5	5	5
Auxiliary heater	4	4	4	4	4	4	4	4	4
Tilting/sliding sun-roof	3	3	3	3	3	3	3	3	3
Larger battery	2	2	2	2	2	2	2	2	2

1.3 Allocation of front springs - rubber bearings Sedan, coupe and T-model

Model	Total number of points	Front spring Homologation no.	Height of spring-rubber bearing (mm) depend. on colour marking of spring blue	red
4-cyl.	18 - 27	001 124 321	8	13
	28 - 39	001 124 321	13	18
	40 - 53	001 124 321	18	23
5/6-cyl.	35 - 46	002 124 321	8	13
	47 - 58	002 124 321	13	18
	59 - 69	002 124 321	18	23

1.4 Front spring rubber bearing

Height mm	Number of lugs "n"	Part no.
8	1	201 321 09 84
13	2	201 321 10 84
18	3	201 321 11 84
23	4	201 321 12 84

2. Rubber bearings - rear axle

2.1 Rubber bearing points rating system on sedan and coupé

Model/ special equipment	4-cylinder Model 124					5/6-cylinder Model 124								
	020	021	023	043	120	026	030	031	050	051	125	128	130	133
Basic number of points	20	20	23	25	24	26	26	28	28	31	24	26	26	28
Towing fixture	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Refrigerator box	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Telephone	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Tilting/sliding sun-roof	3	3	3	3	3	3	3	3	3	3	3	3	3	3
ASD	3	3	3	3	3	3	3	3	3	3	3	3	3	3

2.2 T-model

Model/ special equipment	4-cylinder model 124				5/6-cylinder model 124				
	080	081	083	180	090	091	185	190	193
Basic number of points	53	55	59	58	61	65	53	58	60
Towing fixture	7	7	7	7	7	7	7	7	7
Third row of seats	6	6	6	6	6	6	6	6	6
Refrigerator box	6	6	6	6	6	6	6	6	6
Telephone	3	3	3	3	3	3	3	3	3
Tilting/sliding sun-roof	3	3	3	3	3	3	3	3	3
ASD	3	3	3	3	3	3	3	3	3
Auxiliary heater	2	2	2	2	2	2	2	2	2
Combined net/cover	2	2	2	2	2	2	2	2	2

2.3 Allocation of rear springs - rubber bearings
Sedan and coupé

Model	Total number of points	Rear spring with level control system Homologation no.	Height of spring rubber bearing (mm) depend. on colour marking of spring blue	red
4-cyl.	20 - 33	003 124 322	8	13
	34 - 47	003 124 322	13	18
5/6-cyl.	24 - 38	003 124 322	8	13
	39 - 53	003 124 322	13	18

2.4 Allocation of rear springs - rubber bearings
T-model

Model	Total number of points	Rear spring with level control system Homologation no.	Height of spring rubber bearing (mm) depend. on colour marking of spring blue	red
4-cyl.	53 - 71	001 124 322	8	13
	72 - 91	001 124 322	13	18
5/6-cyl.	53 - 74	001 124 322	8	13
	75 - 97	001 124 322	13	18

2.5 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° 40'	±30'
	with steering at full lock	10° 25'	±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		- 10 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	-15 mm	+10 mm - 12 mm
	laden (control point)	- 35 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:

4-cylinder sedan and coupé 2003 accessory pricing = $2250 EUR (approx. $2800 USD) for complete kit

Quantity	Designation	Part no.
1	Chassis kit	B6 602 00 03 1)
2	Damper strut	H WA124 320 03 30
2	Spring strut	H WA124 321 01 13
2	Front spring	H WA124 321 01 04
2	Rear spring	H WA124 324 02 04

1) Complete kit

Note: Rear spring part numbers may be incorrect, data conflicts with Euro EPC

5/6-cylinder sedan and coupé 2003 accessory pricing = $2275 EUR (approx. $2850 USD) for complete kit

Quantity	Designation	Part no.
1	Chassis kit	B6 602 00 05 1)
2	Damper strut	H WA124 320 03 30
2	Spring strut	H WA124 321 01 13
2	Front spring	H WA124 321 02 04
2	Rear spring	H WA201 324 02 04

1) Complete kit

4-cylinder T-model Kit not shown on 2003 accessory price list

Quantity	Designation	Part no.
1	Chassis kit	B6 602 00 08 1)
2	Damper strut	H WA124 320 03 30
2	Spring strut	H WA124 321 02 13
2	Front spring	H WA124 321 01 04
2	Rear spring	H WA124 324 01 04

1) Complete kit

Note: Rear spring part numbers may be incorrect, data conflits with Euro EPC

5/6-cylinder T-model Kit not shown on 2003 accessory price list

Quantity	Designation	Part no.
1	Chassis kit	B6 602 00 09 1)
2	Damper strut	H WA124 320 03 30
2	Spring strut	H WA124 321 02 13
2	Front spring	H WA124 321 02 04
2	Rear spring	H WA201 324 01 04

1) Compete kit

Available from: Plant 06 (ZVL Germersheim)

Note: Late 124 chassis (approx. 1993-up) with AMG suspension used Mercedes Sportline springs (non-AMG) with AMG struts, and AMG shocks (non-SLS) or hydro spring legs (SLS). The Mercedes Sportline springs are much cheaper than the HWA- prefix AMG springs and there may not be a significant difference between them.

However, the late AMG chassis with MB springs still used the HWA-prefix AMG shocks/struts, which indicates there may be some functional difference between the MB Sportline shocks/struts, and the genuine AMG shocks/struts. (??) The AMG shocks/struts typically cost at least double what the Sportline items cost, when purchased separately (not part of the B6- accessory kit number.)

To order the kits, either contact AMG directly in Germany, or try: http://www.speed-autoteile.com/