



Installation instructions

## Conversion to AMG sports suspension

### Model 140 (Sedan) with level control

32.11

### on rear axle

Models 140.02/03/04/05/134

Valid for vehicles with previous, cylindrical rear axle springs.

Used up to production no. 9 181 243

(refer to data card in maintenance booklet or the production plate on the lock cross-member in the engine compartment).

Installation of the suspension kit is not envisaged for USA models.

These installation instructions apply to the mounting of the following suspension kits:

B6 602 0015 - Front axle rating system up to 35

B6 602 0016 - Front axle rating system as of 42

B6 602 0017 - Front axle rating system as of 65

B6 602 0018 - Front axle rating system as of 88

The installation instructions are divided up into the following sections:

- A. AMG sports suspension
- B. Installation of AMG sports suspension
- C. Test and adjustment values
- D. Appendix to installation instructions

#### Note

After the conversion, in the Federal Republic of Germany, approval for the installation is required from an officially recognized expert or tester at a technical testing station for motor vehicles or from a test engineer of an officially recognized supervisory organisation. In addition, a copy of the respective expert's report on the parts and a Mercedes-Benz workshop confirmation must be submitted (refer to form in appendix).

## A. AMG sports suspension

The following parts of the suspension have been tuned to a sporting driving style:

- Front axle torsion bar
- Front axle shock absorbers
- Front axle/rear axle springs
- Rear axle spring struts

The vehicle level has been lowered relative to the standard production version.

### Front axle torsion bar dia. 30 mm

As part of a model refinement package, a modified front axle torsion bar of 30 mm dia. has been introduced on the AMG sports suspension as of 01/93. The previous torsion bars fitted in production with dias. of 26 or 28 mm are no longer used. AMG sports suspension with delivery dates prior to 01/93 can be retrofitted upon request with a front axle torsion bar of 30 mm dia. (B6 602 0019).

**Test and adjustment values** can be obtained from chapter C of these installation instructions.

### Wheel/tire combinations

The following wheel/tire combinations can be used.

#### 1. AMG 18 inch tires

Tire dimension: 255/45 ZR 18

Recommended tire brands can be obtained from Service Information

"Summer tires in conjunction with AMG special equipment and AMG light alloy wheels from the range of accessories".

Wheel dimension:  $8\frac{1}{2}$  J × 18 H2 ET 44

(multi-piece AMG light-alloy disk wheel, forged)

All wheel-related details such as tightening torques, wheel bolts, inflation pressures, etc. are listed in the installation instructions "Conversion to 255/45 ZR 18 tires and  $8\frac{1}{2}$  J × 18 H2 ET 44 disk wheel".

#### Note

To ensure adequate wheel clearance, the standard production steering stop pin must be replaced by stop pin part number A 129 330 00 80 in the case of 18" tires.

#### 2. MB 16 inch standard production tires

Snow chains may only be used in conjunction with MB standard production tires.

## B. Installation of AMG sports suspension

### 1. Assignment of springs and shock absorbers/spring struts on front and rear axle

Model 140.	Front axle		Rear axle with level control	
	Spring part no.	Shock absorber part no.	Spring part no.	Spring strut part no.
W203/ W4 320 01 13	H WA140 321 01 04 H WA140		H WA140 323 01 00	H WA140 324 03
W405/ W4 134	H WA140 321 02 04  H WA140 321 03 04 H WA140 321 04 04		H WA140 323 02 00*)	H WA140 324 04

\*) Optional, may only be fitted in pairs.

### 2. Removal and installation of suspension parts

- Front axle/rear axle springs
- Front axle shock absorber
- Rear axle spring strut

Proceed in accordance with MB guidelines.

For this, refer to current repair microfilm "Steel suspension, model 140" - main group 32 and "Level control, model 140" - main group 32.

The assignment of springs or spring rubber mounts on the front and rear axle can be obtained from chapter C of these installation instructions.

#### Note

If, in individual cases, the vehicle level should be outside the specified tolerance band after the installation of the AMG sports suspension despite correct assignment of springs and spring rubber mounts, the vehicle level is to be retroactively corrected by means of spring rubber mounts.

Front axle:

A 5 mm change at the front spring rubber mount (corresponds to one stud) raises or lowers the vehicle level by approx. 8 mm.

Rear axle:

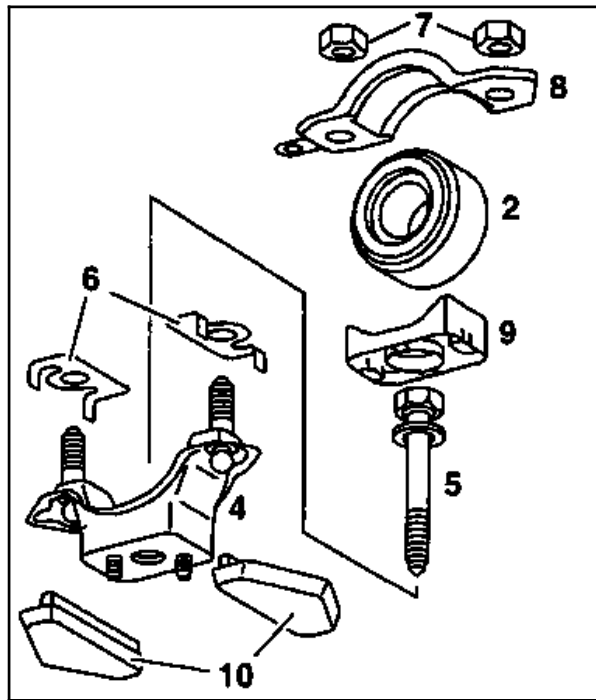
A 5 mm change at the rear spring rubber mount (corresponds to one stud) raises or lowers the vehicle level by approx. 7 mm.

- Front axle torsion bar dia. 30 mm

Proceed in accordance with MB guidelines.

For this, refer to the current repair microfilm "Steel suspension, model 140" - main group 32.

The parts required to install the reinforced front axle torsion bar are shown in the following as a supplement to the MB repair microfilm.



P32-5745-15

Item no.	Component designation	Part no.	Qty. p. veh.	Note
1	Front axle torsion bar dia. 30	A140 323 27 65	1	not illustrated
2	Rubber mount for torsion bar dia. 30	A140 323 14 85	2	
3	Self-locking hexagon nut M8*) (Torsion bar connecting rod)	913 004 012 008	2	$M_A = 70 \text{ Nm}$ not illustrated
4	Left/right housing (reinforced)	A140 320 21 29 left A140 320 20 29 right	1 1	
5	Hexagon bolt M14 x 1.5*) (microencapsulated)	A140 990 26 01	2	$M_A = 130 \pm 15 \text{ Nm}$
6	Reinforcement	A140 323 02 95	4	Note installed position!
7	Self-locking hexagon collared nut M8 (torsion bar mount*)	913 023 008 000	4	$M_A = 20 \text{ Nm}$
8	Bearing cap*)	A140 323 01 40 A140 323 17 43	2 2	140 (Sedan) 140 (Coupé)
9	Shim*)	A140 323 00 84	2	
10	Rubber stop*)	A140 331 01 44	4	

\*) Standard production component on model W/V/C 140

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### 3. Chassis measurement

Proceed in accordance with MB guidelines.

For this, refer to repair microfilm "Chassis measurement, model 140" - main group 40.

The adjustment values can be found in chapter C of these installation instructions.

## C. Test and adjustment values

### Model 140 with level control

#### Special equipment "AMG sports suspension"

#### Vehicle level in mm

Model <b>140.</b>	<b>Front axle</b>	<b>Rear axle</b>
	with level control  ready-to-drive	ready-to-drive <sup>1)</sup> laden (control point)
02/03/ 04/05/134	- 10 ± 10	0 ± 10      - 20 ± 2 <sup>2)</sup> - 20 ± 10 <sup>3)</sup>

<sup>1)</sup> Ready-to-drive values apply to basic pressure in spring struts.

<sup>2)</sup> Values for adjustment.

<sup>3)</sup> Values for test. The difference in vehicle level between adjustment and test results from the free play of the level controller which does not, however, affect control accuracy when driving.

#### Wheel alignment at front axle - ready-to-drive

Model	140		
Camber <sup>1)</sup>	Wheels in straight ahead position (Toe-in value 0)	- 0° 20' <sup>+10'</sup> - 20'	(- 0.35° <sup>+0.15°</sup> ) - 0.35°
	Permissible difference between left and right	0° 20'	(0.35°)
Caster <sup>1)</sup>	Wheels in straight ahead position (Toe-in value 0)	10° 10' ± 30'	(10.15° ± 0.50°)
	With sheels turned	9° 55' ± 30'	(9.90° ± 0.50°)
	Permissible difference between left and right	0° 30'	(0.50°)
Toe-in <sup>1)</sup> (Front wheels pressed apart with 90-110 N)	0° 35' ± 10'	(0.60° ± 0.15°)	
Toe difference angle for 20° angle of the wheel on the inside of the curve <sup>2)</sup>	- 0° 55' ± 30'	(0.90° ± 0.50°)	
Maximum permissible steer angle of the wheel on the inside of the curve <sup>3)</sup>	40°	(40.00°)	
Ball point position <sup>4)</sup>	10 ± 2 mm		
Permissible height deviation of the ball point position between the pitman arm and steering idler arm	3 mm		

Values in brackets in decimal degrees

<sup>1)</sup> Tolerances only for test. Aim for nominal value during adjustment.

<sup>2)</sup> Value without toe-in.

<sup>3)</sup> On the wheel on the outside of the curve, a 7° to 11° smaller steer angle results from the toe difference angle.

<sup>4)</sup> Correction upwards and downwards by shifting the steering idler arm on the bearing tube.

## Wheel alignment at rear axle

### Model 140

Total toe-in (ready-to-drive level) <sup>1)</sup>	0° 30' <sup>+0.5'</sup> (0.50° <sup>+0.10°</sup> ) - 10' - 0.15°
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Permissible range of toe-in per wheel <sup>2)</sup> (ready-to-drive level) between	0° 35' and 0° (0.60° and 0°)
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Values in brackets in decimal degrees

<sup>1)</sup> Values for adjustment, toe-in evenly distributed between both wheels.  
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✓ Values for adjustment, too in evenly distributed between both wheels.  
 ✗ Values for test. Correction not required.

## Camber values at rear axle at vehicle level Model 140

Camber (°)	Vehicle level (mm)
· 0° 15' ± 30' (- 0.25°)	± 0.50°) +40
· 0° 25' ± 30' (- 0.45°)	± 0.50°) +30
· 0° 40' ± 30' (- 0.65°)	± 0.50°) +20
· 0° 50' ± 30' (- 0.85°)	± 0.50°) +10
· 1° ± 30' (- 1.00°)	± 0.50°) 0
· 1° 15' ± 30' (- 1.25°)	± 0.50°) - 10
· 1° 30' ± 30' (- 1.50°)	± 0.50°) - 20
· 1° 45' ± 30' (- 1.75°)	± 0.50°) - 30
· 2° ± 30' (- 2.00°)	± 0.50°) - 40
· 2° 25' ± 30' (- 2.45°)	± 0.50°) - 50
· 2° 45' ± 30' (- 2.75°)	± 0.50°) - 60

✓ values in brackets in decimal degrees

## Survey of spring rubber mounts

### Note

Part is used on both front and rear axle!

Part no.	Number of studs	Height "s" (mm)
A140 321 06 84	1	8
A140 321 07 84	2	13
A140 321 08 84	3	18
A140 321 09 84	4	23

## Front axle rating system for model and version

Model 140.	028	032	033	042	043	050	051	056	057	134
Basic rating	19	19	19	36	37	36	38	79	80	44
Air conditioner	8	8	8	8	8	8	8	●	●	8
Automatic transmission 4/5-speed	4	4	4	●	●	●	●	●	●	●
Auxiliary heater	3	3	3	3	3	3	3	3	3	3
Electric rear seat adjuster	3	3	3	3	3	3	3	●	●	3
Sliding roof	3	3	3	3	3	3	3	●	●	3
Large battery	●	●	●	●	●	●	●	●	●	●
ASD/ASR	2	2	2	2	2	2	2	●	●	2
Fire extinguisher	1	1	1	1	1	1	1	●	●	1
Tempomat	1	1	1	●	●	●	●	●	●	●
Electric seat adjuster - front right	1	1	1	1	1	1	1	●	●	1
Headlamp cl. system	1	1	1	1	1	1	1	●	●	1
Radio	1	1	1	1	1	1	1	●	●	1
Airbag for driver and front pass.	●	●	●	●	●	●	●	●	●	●
Sound system	1	1	1	1	1	1	1	1	1	1
Telephone installation parts	1	1	1	1	1	1	1	1	1	1
AMG styling package	1	1	1	1	1	1	1	1	1	1
Electr. adjustable steering column	1	1	1	1	1	1	1	●	●	1
Rear axle level control	1	1	1	1	1	1	1	●	●	1

● = Standard production equipment

### Assignment of front springs to spring rubber mounts

Total rating	Front spring part no.	Shim/number of studs			
		1	2	3	4
up to		Part no. A140 321 06	84 07	84 08	09
21 28 35	H WA140 321 01 04	blue*)	red blue blue	red red	
42 50 57	H WA140 321 02 04	blue blue	red red blue	red	
65 73 80	H WA140 321 03 04	blue	red blue blue	red red	
88 96 >96	H WA140 321 04 04	blue blue	red red blue	red	



\*) Color marking (load group) of springs

### Rear axle rating system for model and version

Model 140	028	032	033	042	043	050	051	056	057	134
Basic rating	20	23	23	31	32	31	33	52	55	35
Trailer coupling	8	8	8	8	8	8	8	8	8	8
Air conditioner in rear	8	8	8	8	8	8	8	8	8	8
Refrigerator box in trunk	6	6	6	6	6	6	6	6	6	6
Electric rear seat adjuster	4	4	4	4	4	4	4	●	●	4
Sliding roof	3	3	3	3	3	3	3	●	●	3
Telephone installation parts	2	2	2	2	2	2	2	2	2	2
ASD/ASR	2	2	2	2	2	2	2	●	●	2
Rear axle level control	2	2	2	2	2	2	2	●	●	2
CD changer in trunk	2	2	2	2	2	2	2	2	2	2
Electric seat adjuster - front right	1	1	1	1	1	1	1	●	●	1
Automatic transmission	1	1	1	●	●	●	●	●	●	●
Sound system	1	1	1	1	1	1	1	1	1	1
Electric roller-blind for rear window	1	1	1	1	1	1	1	1	1	1
AMG styling package	1	1	1	1	1	1	1	1	1	1

● = Standard production equipment

### Assignment of rear springs to spring rubber mounts

Total rating	Rear spring part no.	Shim/number of studs			
		1	2	3	4
up to		Part no. A140 321 06	84 07	84 08	09
32 40 48	H WA140 324 03 04	blue*)	red blue blue	red red	
50 58 66 >66	H WA140 324 04 04	blue blue	red red blue blue	red	

\*) Color marking (load group) of springs