



Installation instructions

Conversion to AMG sports suspension Model 140 (Sedan) without level control on rear axle

32.15

Models 140.02/03/04/050/051/134

Valid for vehicles with new, retracted rear axle spring.

Used as of production no. 9 181 244

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

Models with the following levels of equipment are excluded:

- With rear axle level control (code 480)
- With trailer coupling (code 550)

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

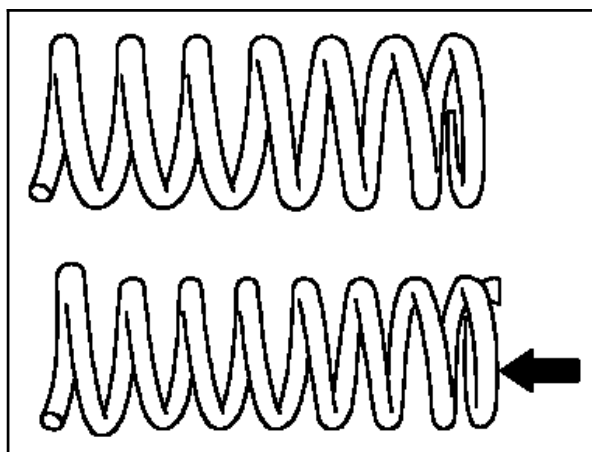
These installation instructions are valid for the assembly of the following suspension kits:

- B6 602 0042 - Front axle rating system up to 35
- B6 602 0043 - Front axle rating system as of 42
- B6 602 0044 - Front axle rating system as of 65
- B6 602 0045 - Front axle rating system as of 88



As in the transition phase in the period January/February 1995, on some occasions vehicles were also still built with the previous rear axle spring, for the sake of safety, we recommend an additional visual inspection on the vehicle before ordering the suspension kit.

New, retracted rear axle spring (arrow).



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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/rear axle shock absorber
- Front axle/rear axle springs

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

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

Trailer operation

Trailers may not be operated with the models stated in conjunction with AMG sports suspension.

Wheel/tire combinations

The following wheel/tire combinations can be used.

1. MB 16-inch tires
2. MB 18-inch tires
3. AMG 18-inch tires (one-piece AMG light-alloy disk wheel, cast)

Front axle = Rear axle

255/45 ZR 18

8.5 J x 18 H2 ET 47

4. AMG 18-inch tires (multi-piece AMG light-alloy disk wheel, forged)

Front axle = Rear axle

255/45 ZR 18

8.5 J x 18 H2 ET 44

5. AMG 19-inch tires (one-piece AMG light-alloy disk wheel, cast)

Front axle = Rear axle

255/40 ZR 19

8.5 J x 19 H2 ET 46

6. AMG 19-inch tires (one-piece AMG light-alloy disk wheel, cast)

Front axle

Rear axle

255/40 ZR 19

285/35 ZR 19

8.5 J x 19 H2 ET 46

9.5 J x 19 H2 ET 46

Note

Recommended tire brands can be obtained from the Service Information "Summer tires in conjunction with AMG optional extras and AMG light alloy wheels from the range of accessories".

All wheel-related details such as tightening torques, wheel bolts, inflation pressures etc. are listed in the following installation instructions.

40.24 Conversion to 255/45 R18 tire and 8.5 J x 18H2 ET44 multi-piece disk wheel.

40.28 Conversion to 255/45 R18 tire and 8.5 J x 18H2 ET47 one-piece disk wheel.

40.35 Conversion to 255/40 R19 tire and 8.5 J x 19H2 ET46 one-piece disk wheel.

40.36 Conversion to 285/35 R19 tire and 9.5 J x 19H2 ET46 one-piece disk wheel.

Use of snow chains

Snow chains may only be used in conjunction with MB 16-inch standard production tires.

B. Installation of AMG sports suspension

1. Assignment of parts to suspension kits

Kit no.	Kit 1	Kit 2	Kit 3	Kit 4
Part no. (B6)	B6 602 0042	B6 602 0043	B6 602 0044	B6 602 0045
Front axle rating system	up to 35	as of 42	as of 65	as of 88
Front axle spring	HWA140 321 01 04	HWA140 321 02 04	HWA140 321 03 04	HWA140 321 04 04
Front axle shock absorber	HWA140 323 01 00 HWA140 323 02 00 ^{*)}			
Rear axle rating system	up to 52		as of 54	
Rear axle spring	HWA140 324 05 04		HWA140 324 06 04	
Rear axle shock absorber	HWA140 326 01 00			

^{*)} Alternatives, installation permissible in pairs only.

2. Removal and installation of suspension parts

- Front axle/rear axle springs
- Front axle/rear axle shock absorbers

Proceed in accordance with MB guidelines.

For this, refer to current repair microfilm
"Steel suspension, 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 the 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:

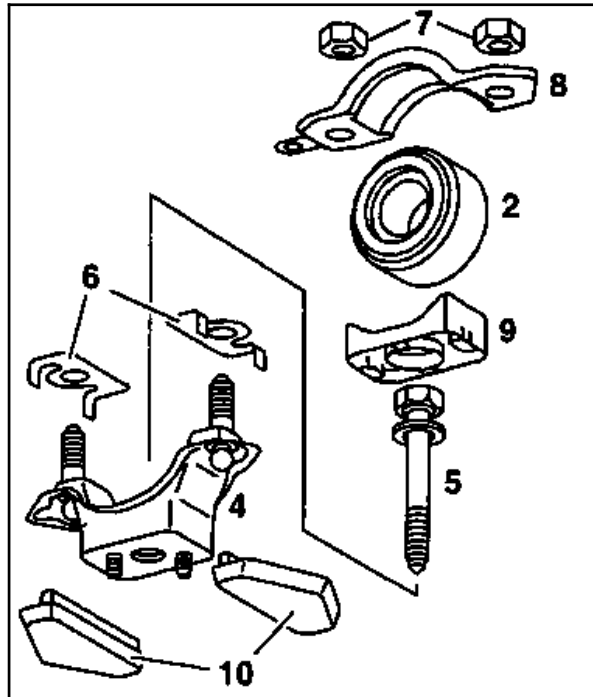
A 5 mm change at the rear spring rubber mount (corresponds to one stud) raises or lowers the vehicle level by approx. 7 mm.

- 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.



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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 × 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	W/V 140 C 140
9	Shim*)	A140 323 00 84	2	

10	Rubber stop*)	A140 331 01 44	4	
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*) Standard production component on model W/V/C 140

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 steel suspension

Special equipment "AMG sports suspension"

Vehicle level in mm

Model	Front axle without level control ready-to-drive	Rear axle ready-to-drive
140.02	- 10 ± 10	0 ± 10
140.03		
140.04		
140.050		
140.051		
140.134		

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

Model	140		
Camber ¹⁾)	Wheels in straight ahead position (Toe-in value 0)	- 0° 20' +10' - 20'	(- 0.35° +0.15°) - 0.35°
	Permissible difference between left and right	0° 20'	(0.35°)
Caster ¹⁾)	Wheels in straight ahead position (Toe-in value 0)	10° 10' ± 30'	(10.15° ± 0.50°)
	With wheels turned	9° 55' ± 30'	(9.90° ± 0.50°)
	Permissible difference between left and right	0° 30'	(0.50°)
Toe-in ¹⁾) (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 ²⁾)	- 0° 55' ± 30'	(0.90° ± 0.50°)	
Maximum permissible steer angle of the wheel on the inside of the curve ³⁾)	40°	(40.00°)	
Ball point position ⁴⁾)	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

¹⁾ Tolerances only for test. Aim for nominal value during adjustment.

²⁾ Value without toe-in.

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

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

Wheel alignment at the rear axle Model 140 (sedan)

Total toe-in (ready-to-drive level) ¹⁾)	0° 30' +05' - 10'	(0.50° +0.10°) - 0.15°
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Values in brackets in decimal degrees

¹⁾ Values for adjustment, toe-in evenly distributed between both wheels.

Camber values at rear axle with vehicle level control Model 140 (sedan)

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 front axle spring rubber mounts

Part no.	Number of lugs	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

Survey of rear axle spring rubber mounts

Part no.	Number of lugs	Height "s" (mm)
A140 325 01 84	1	8
A140 325 02 84	2	13
A140 325 03 84	3	18
A140 325 04 84	4	23

Conversion to AMG sports suspension

Front axle rating system for model and version

Models 140	Special equipment code	028	032	033	042
Sales designation		S280	S320	S320 Long wheelbase	S420
Basic rating system		25	25	27	45
Air conditioning in rear	582	8	8	8	8
Stationary heater	228/230	3	3	3	3
Automatic transmission	420/425	4	Standard	Standard	Standard
Electric tilting/sliding roof	412/414	3	3	3	3
Headlamp washer system	600	1	1	1	1
Electrically adjustable right front seat	222/242/247	1	1	1	1
Electrically adjustable left front seat	221/241/247	1	1	1	1
Fire extinguisher	682	1	1	1	1
Telephone	274/270/272	1	1	1	1
Radio	510/512/515	1	1	1	1
Audio system	810	1	1	1	1
AMG body kit	772	1	1	1	1
Electrically adjustable steering column	441	1	1	1	1
ETS	212	Standard	Standard	Standard	-
ASR	471	2	2	2	Standard

Front axle rating system for model and version

Models 140	Special equipment code	043	050	051	134
Sales designation		S420 Long wheelbase	S500	S500 Long wheelbase	S350 Turbo Diesel
Basic rating system		47	47	50	35
Air conditioning in rear	582	8	8	8	8
Stationary heater	228/230	3	3	3	3
Automatic transmission	420/425	Standard	Standard	Standard	Standard
Electric tilting/sliding roof	412/414	3	3	3	3
Headlamp washer system	600	1	1	1	1
Electrically adjustable right front seat	222/242/ 247	1	1	1	1
Electrically adjustable left front seat	221/241/ 247	1	1	1	1
Fire extinguisher	682	1	1	1	1
Car telephone and accessories	274/270/ 272	1	1	1	1
Radio	510/512/ 515	1	1	1	1
Audio system	810	1	1	1	1
AMG body kit	772	1	1	1	1
Electrically adjustable steering column	441	1	1	1	1
ETS	212	-	-	-	Standard
ASR	471	Standard	Standard	Standard	-

Assignment of front springs to spring rubber mounts

Total rating system	Front spring part no.	Shim/Number of studs			
		1	2	3	4
up to		Part no. A 06	140 321 . . 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

Conversion to AMG sports suspension

Rear axle rating system for model and version

Model 140	Special equipment code	028	032	033	042
Sales designation		S280	S320	S320 Long wheelbase	S420
Basic rating system		23	23	23	28
Air conditioning in rear	582	8	8	8	8
Refrigerator box in trunk	307	6	6	6	6
Automatic transmission	420/425	1	Standard	Standard	Standard
Electric tilting/sliding roof	412/414	3	3	3	3
Electrically adjustable right front seat	222/242/ 247	1	1	1	1
Electrically adjustable left front seat	221/241/ 247	1	1	1	1
Electric rear seat adjuster	223	4	4	4	4
Electric roller-blind for rear window	540	1	1	1	1

Telephone	274/270/ 272	2	2	2	2
CD changer	819/816	2	2	2	2
Audio system	810	1	1	1	1
AMG body kit	772	1	1	1	1
ETS	212	Standard	Standard	Standard	-
ASR	471	2	2	2	Standard

Rear axle rating system for model and version

Models 140	Special equipment code	043	050	051	134
Sales designation		S420 Long wheelbase	S500	S500 Long wheelbase	S350 Turbo Diesel
Basic rating system		28	28	28	25
Air conditioning in rear	582	8	8	8	8
Refrigerator box in trunk	307	6	6	6	6
Automatic transmission	420/425	Serie	Standard	Standard	Standard
Electric tilting/sliding roof	412/414	3	3	3	3
Electrically adjustable right front seat	222/242/ 247	1	1	1	1
Electrically adjustable left front seat	221/241/ 247	1	1	1	1
Electric rear backrest adjuster	223	4	4	4	4
Electric roller-blind for rear window	540	1	1	1	1
Telephone	274/270/ 272	2	2	2	2
CD changer	819/816	2	2	2	2
Audio system	810	1	1	1	1
AMG body kit	772	1	1	1	1
ETS	212	-	-	-	Standard
ASR	471	Standard	Standard	Standard	-

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 . . 84 01	02	03	04
<32 42 52	H WA140 324 01 04	blue*)	red blue blue	red red	
54 64 >64	H WA140 324 02 04	blue blue	red red blue	red	

*) Color marking (load group) of springs