

MODEL 164, 209, 211, 215, 216, 219, 220, 221, 230, 240, 251 with CODE (219) Distronic (DTR)

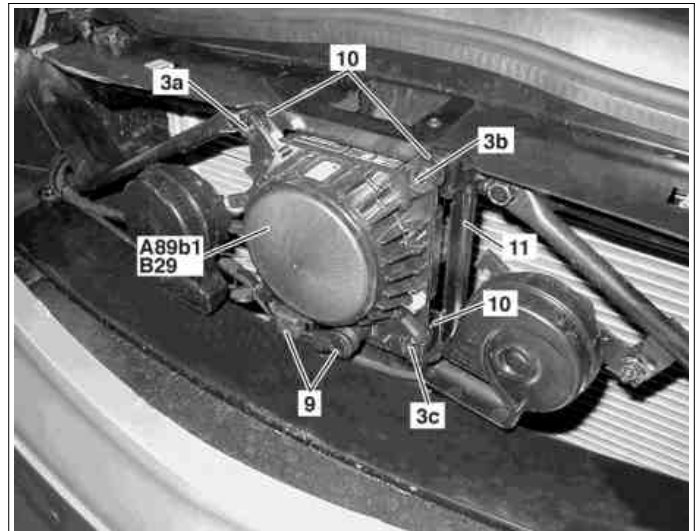
MODEL 216, 221 with CODE (233) Distronic Plus

MODEL 164, 251 up to model year 2009

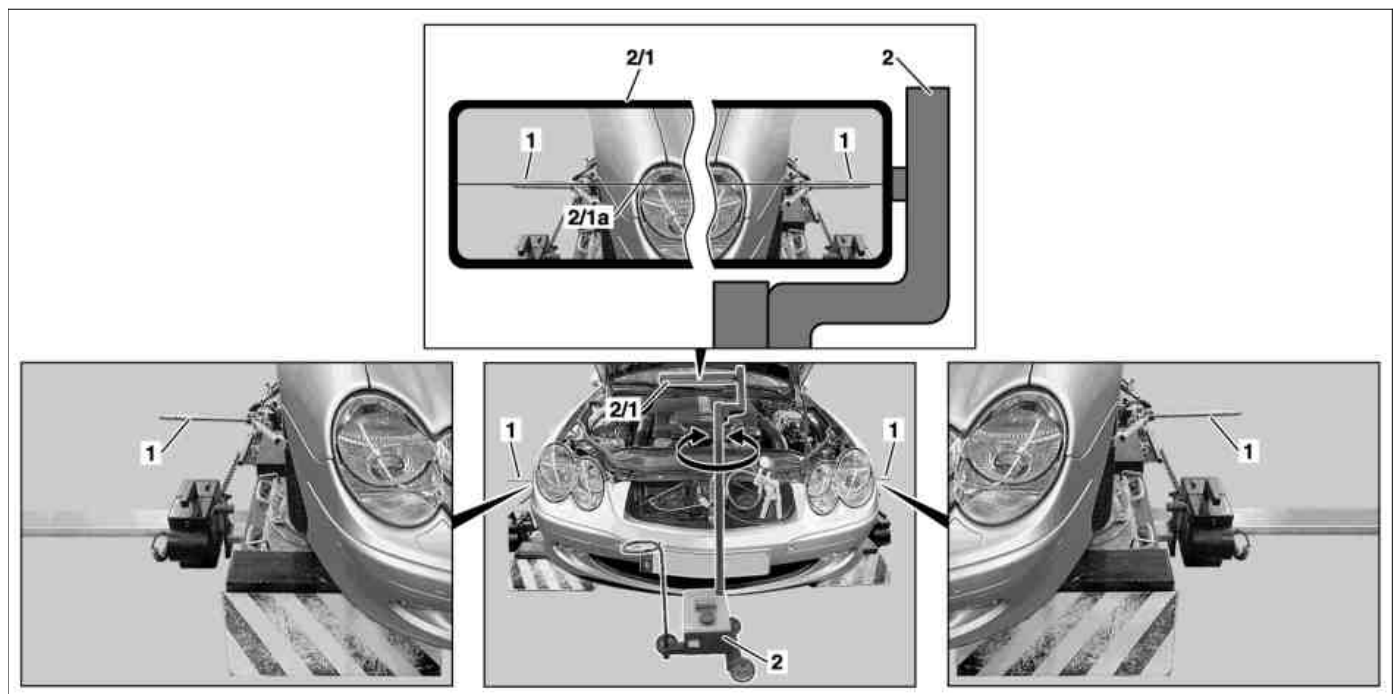
Shown on model 230 with arched radar sensor

- 3a Adjustment screw
- 3b Adjustment screw
- 3c Adjustment screw
- 9 Plug connections
- 10 Clips
- 11 Bracket

- A89b1 DTR radar sensor (applies to vehicles with non-arched (flat) radar sensor)
- B29 DTR radar sensor (applies to vehicles with arched radar sensor)



P30.30-2056-11



P30.30-2057-09


shown on model 230

- 1 Guide rods
- 2 Headlamp adjustment testing unit

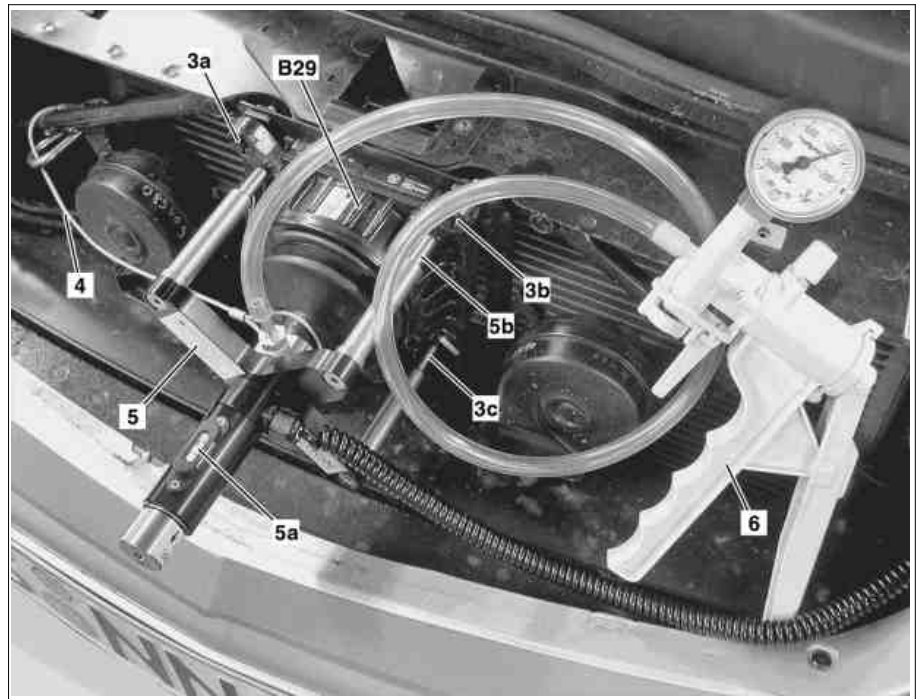
2/1 Overhead mirror

2/1a Mirror reticule in overhead mirror

**Vehicle with an arched radar sensor**


- 3a Adjustment screw
- 3b Adjustment screw
- 3c Adjustment screw
- 4 Fastening strap
- 5 Optical adjusting device
- 5a Bubble level
- 5b Spacer pins
- 6  Hand vacuum pump

B29 DTR radar sensor

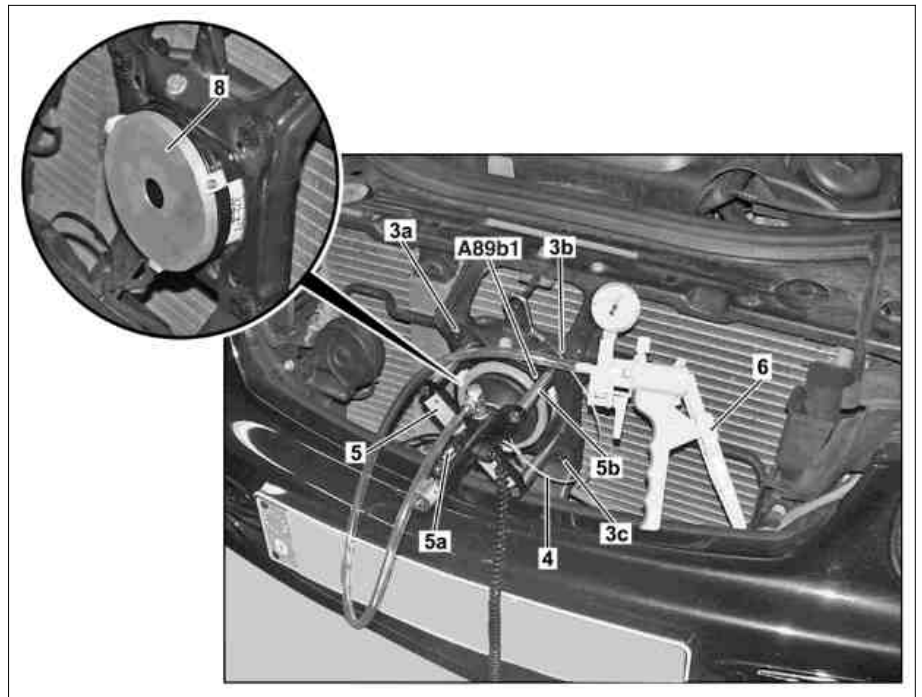


P30.30-2044-06

**Vehicle with a radar sensor that is not arched (flat)**

- 3a Adjustment screw
- 3b Adjustment screw
- 3c Adjustment screw
- 4 Fastening strap
- 5 Optical adjusting device
- 5a Bubble level
- 5b Spacer pins
- 6  Hand vacuum pump
- 8 Spacer ring

A89b1 DTR radar sensor






P30.30-2070-06

**7 Center of reticule**

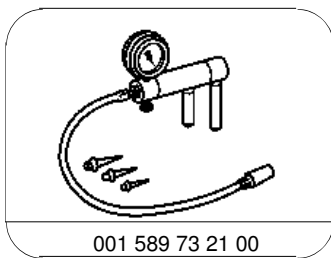


P30.30-2025-11

	<b>Measuring, adjusting</b>		
<b>Danger!</b>	<b>Risk of injury</b> to skin and eyes from laser beams	Never look directly into the laser beam. Do not attempt to suppress natural reflex of eyelids. Avoid direct skin contact with the laser beam. If damage to the eye is suspected, consult an eye specialist immediately.	AS30.30-Z-0001-01A
<b>i</b>	Initialization of the DTR control unit (A89n1) is necessary after: - Replacement of the DTR controller unit (A89) - Replacement of the steering column tube module (N80) - Replacement of the rotational speed sensor and lateral acceleration (B24/15) (model 209, 211, 215, 216, 219, 220, 221, 230, 240) - Replacement of the yaw rate sensor for lateral and longitudinal acceleration (B24/15) (model 164, 251)		
<b>i</b>	Adjustment of the DTR radar sensor (A89b1, B29) is necessary after: - Replacement of or detachment/attachment of the DTR controller unit (A89) - Mechanical damage to the DTR radar sensor (A89b1, B29) - Accident repair in front area - Alterations on the camber, track width, caster or of the level of the vehicle at the front or rear axle		
1 <b>AD</b>	Conduct quick test with STAR DIAGNOSIS Connect STAR DIAGNOSIS and read out fault memory		AD00.00-P-2000-04A
<b>Danger!</b>  2	<b>Risk of injury</b> caused by <b>fingers being pinched or crushed</b> when removing, installing or aligning hoods, doors, trunk lids, liftgates or sliding roof  Open engine hood	Keep body parts and limbs well clear of moving parts.  Model 164 Model 209 Model 211 Model 219 Model 215, 220 Model 216, 221 Model 230 Model 240 Model 251	AS00.00-Z-0011-01A  AR88.40-P-1000GZ <b>AR88.40-P-1000Q</b> AR88.40-P-1000T AR88.40-P-1000TX AR88.40-P-1000M  AR88.40-P-1000R AR88.40-P-1000H AR88.40-P-1000RT
3.1	Remove radiator grille	Model 164.1 up to model year 09, 164.8 Model 164.1 as of model year 09 Model 216 Model 219 Model 230 Model 251	AR88.40-P-4001GZ AR88.40-P-4001GZA  AR88.40-P-4001TX AR88.40-P-4001R AR88.40-P-4001RT
3.2	Remove bumper	Model 240	AR88.20-P-2000H
4	Check DTR radar sensor (A89b1, B29)	Only conduct visual test on mechanical damages.. Check if: ● DTR radar sensor (A89b1, B29) is damaged or dirty ● Connectors (9) are loose On the DTR radar sensor (A89b1) only one connector is available. ● Clips (10) for mounting adjusting bolts (3a, 3b, 3c) are loose or defective. ● Spacers between clips (10) for mounting adjusting bolts (3a, 3b, 3c) and the DTR radar sensor (A89b1, B29) are available.	
5	Perform a wheel alignment check	Model 164 Model 209 Model 211 Model 219 Model 215, 220 except code (979) special protection version except code (Z07) highest protection	AR40.20-P-0200GZ <b>AR40.20-P-0200P</b> AR40.20-P-0200T AR40.20-P-0200TX AR40.20-P-0200I

		Model 220 with code (979) special protection version with code (Z07) highest protection Model 216, 221 Model 230 Model 240 Model 251	AR40.20-P-0200MB  AR40.20-P-0200SX AR40.20-P-0200R AR40.20-P-0200H AR40.20-P-0200RT
6	Align front wheels to the geometric driving axle	<b>i</b> The front wheels must be aligned to the geometric driving axle.	
7	Remove front measuring heads from the quick tensioning holders		
8	Fit the measuring rods (1) onto the quick tensioning holders in place of measuring heads		
9	Attach the spacer ring (8) to the DTR radar sensor (A89b1)	Only for vehicles with non-arched (flat) DTR radar sensor (A89b1). <b>i</b> Use a spacer ring (8) from the DISTRONIC adjusting device. DISTRONIC adjustment device <a href="#">gotis://E_30_01.0</a>	
10	Align headlamp setting/test equipment (2) with the guide rods (1) and adjust the height to the position of the DTR radar sensor (A89b1, B29)	<b>i</b> Observe operating instructions of headlamp adjustment testing unit (2).  <b>i</b> Headlamp adjustment testing unit (2) must stand on even surface, parallel to contact patch. <b>i</b> Set headlamp range adjustment at headlamp adjustment testing unit (2) to "0". Headlamp aimer - mobile <a href="#">gotis://E_82_01.0</a>	
11	Fit optical adjusting device (5) with distance pins (5b) onto DTR radar sensor (A89b1, B29) and firmly suction using the  hand vacuum pump (6)	<b>w</b> In order to secure the optical adjusting device (5) from falling down, hang up fastening strap (4) at vehicle.  <b>i</b> In order to guarantee a secure seating of optical adjusting device (5) on DTR radar sensor (A89b1, B29), Vaseline should be applied to the rubber lip of suction bell and the  hand vacuum pump (6) should be evacuated from 600 to 700 mbar.  Hand vacuum pump DISTRONIC adjustment device <a href="#">gotis://E_30_01.0</a>	*001589732100
12	Align headlamp adjustment testing unit (2) to vehicle	<b>i</b> For alignment look into overhead mirror (2/1). Align headlamp adjustment testing unit (2) by rotating (arrow) around the vertical axis, in such a way, that the right and the left sounding rods (1) overlap with mirror reticule (2/1a) in the overhead mirror (2/1).	
13	Connect optical adjusting device (5) to cigarette lighter	<b>i</b> On vehicles with code 889 Keyless Go: press the Keyless Go start and stop pushbutton once without depressing the brake pedal - the laser in the optical adjusting device (5) is activated. <b>i</b> On vehicles without Keyless Go: turn ignition key to position "1" - the laser in the optical adjusting device (5) is activated.	
14	Connect STAR DIAGNOSIS and starting off automatic calibration level	Only for vehicles with code 489, AIRmatic or with code 487, Active Body Control (ABC).	
15	Read off point of impact of laser beam in headlight adjustment testing unit (2)	<b>i</b> Point of impact and cross-hair center (7) must match.	
16	Adjust horizontal adjustment of DTR radar sensor (A89b1, B29), for this step bring point of impact to height of reticule center (7) by twisting adjusting bolt (3a) at DTR radar sensor (A89b1, B29) in the headlamp adjustment testing unit (2)	<b>i</b> In case of a correction, ensure that adjustment screw (3a) is turned counterclockwise by one piece first (eliminate threaded play).  <b>i</b> The adjusting bolt (3b) is only to be twisted in the case, that range of adjustment of the adjusting bolts (3a, 3c), would not be adequate for a correction.	

17	Set vertical adjustment of DTR radar sensor (A89b1, B29); for this step point of impact must overlap with the reticule center (7) in the headlamp adjustment testing unit (2) through twisting of the adjusting bolt (3c) at the DTR radar sensor (A89b1, B29)	<p><b>i</b> For vertical alignment of optical adjusting device (5), observe bubble level (5a). In case of a correction, ensure that adjustment screw (3c) is turned counterclockwise by one piece first (eliminate threaded play).</p> <p><b>i</b> The adjusting bolt (3b) is only to be twisted in the case, that range of adjustment of the adjusting bolts (3a, 3c), would not be adequate for a correction.</p>	
18	Remove optical adjusting device (5)	<b>i</b> Remove vaseline from the DTR radar sensor (A89b1, B29).	
19	Remove the spacer ring (8) of the DTR radar sensor (A89b1)	<p>Only for vehicles with non-arched (flat) DTR radar sensor (A89b1).</p> <p><b>!</b> The spacer ring (8) must be removed to ensure that DTR radar sensor (A89b1) functions correctly.</p>	
20	Reset the learning values with STAR DIAGNOSIS		
21.1	Install radiator trim	<p>Model 164.1 up to model year 09, 164.8</p> <p>Model 164.1 as of model year 09</p> <p>Model 216</p> <p>Model 219</p> <p>Model 230</p> <p>Model 251</p>	<p>AR88.40-P-4001GZ</p> <p>AR88.40-P-4001GZA</p> <p>AR88.40-P-4001TX</p> <p>AR88.40-P-4001R</p> <p>AR88.40-P-4001RT</p>
21.2	Install bumper	Model 240	AR88.20-P-2000H
22	Close engine hood	<p>Model 164</p> <p>Model 209</p> <p>Model 211</p> <p>Model 219</p> <p>Model 215, 220</p> <p>Model 216, 221</p> <p>Model 230</p> <p>Model 240</p> <p>Model 251</p>	<p>AR88.40-P-1000GZ</p> <p><b>AR88.40-P-1000Q</b></p> <p>AR88.40-P-1000T</p> <p>AR88.40-P-1000TX</p> <p>AR88.40-P-1000M</p> <p>AR88.40-P-1000R</p> <p>AR88.40-P-1000H</p> <p>AR88.40-P-1000RT</p>



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Hand vacuum pump