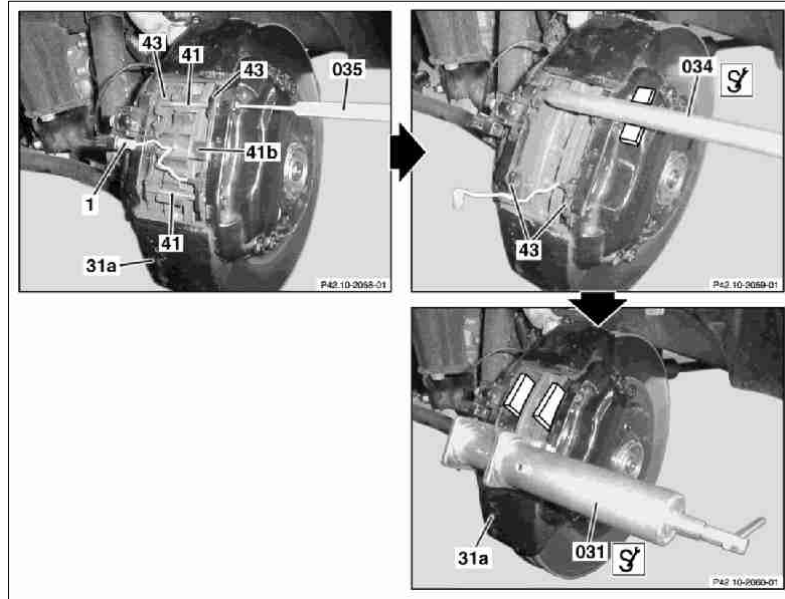


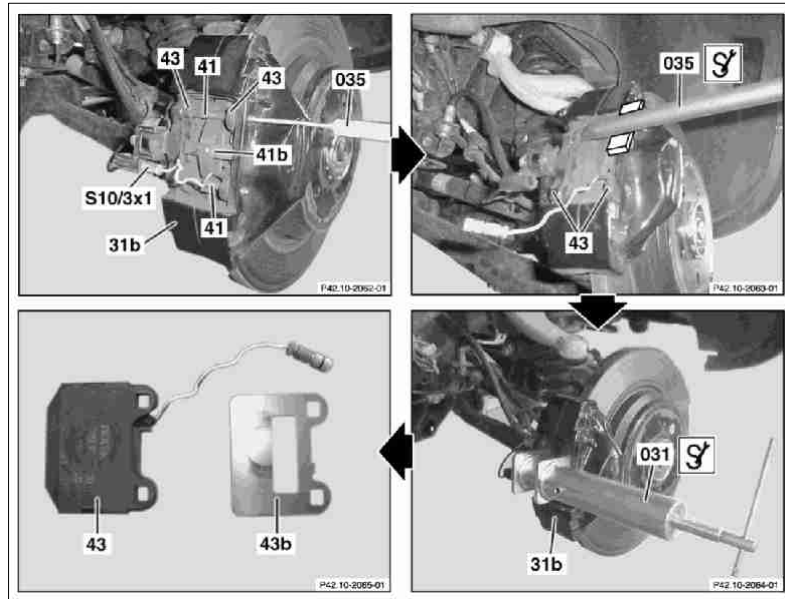
AR42.10- P- 0161GI	Removing and installing brake pads on fixed caliper	1.7.99
MODEL 163.113 / 128 / 154 / 157 / 172 / 174 / 175		

Front axle



P42.10- 2061- 06

Rear axle



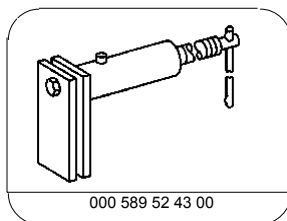
P42.10- 2066- 06

<input type="checkbox"/>	Remove/ Install		
<input type="checkbox"/>	Danger!	Risk of poisoning from swallowing brake fluid. Risk of injury from skin and eye contact with brake fluid.	Pour brake fluid only into suitable and appropriately marked containers. Wear protective clothing and eye protection when handling brake fluid.
<input type="checkbox"/>	Notes on brake fluid		AS42.50-Z-0001-01A
<input type="checkbox"/>	Notes on repairs to brake system		All models
<input type="checkbox"/>	Notes on repairs to brake system		All models
1	Remove wheels Remove/ install wheels, rotate if necessary		AP40.10-P-4050GH
<input type="checkbox"/>	Inspecting		
2	Check lining thickness of brake pads and condition of brake disks Check lining thickness of brake pads and condition of brake disks.	<input type="checkbox"/> If the brake pads are worn down beyond the permissible wear limit, the web between sealing groove and dust cap may be damaged: Inspect brake system for leaks with pressure tester.	AP42.10-P-4251GH AR42.10-P-0015GH
3	Check fixed caliper (31a, 31b) for leaks and dust seal for damage	<input type="checkbox"/> If the fixed caliper is leaking or the dust seal is damaged: Replace fixed caliper on front axle.	AR42.10-P-0070GI

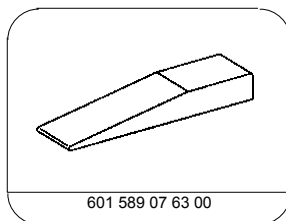
		Replace fixed caliper on rear axle.	AR42.10-P-0080GI
<input type="checkbox"/> <input type="checkbox"/>	Remove/ Install		
4.1	Unplug brake pad contact sensor connector (1) from plug connection and brake pad.	If installed. <input type="checkbox"/> Installation: Defective contact sensors must be replaced.	
<input type="checkbox"/>	Notes on installing contact sensor for brake lining wear indicator	Models 129, 140, 163, 170, 202, 203, 208, 209, 210, 211, 215, 220, 230, 690.6	AH42.10-P-0003-01A
5	Drive out retaining pins (41) using a suitable drift punch (035)	<input type="checkbox"/> Installation: Drive in retaining pins as far as the stop using a suitable drift. Loose retaining pins must be replaced.	
6	Remove retaining spring (41b)		
7	Pull brake pads (43) out of fixed caliper (31a or 31b)	<input type="checkbox"/> When pressing out the brake pads, insert a suitable wooden or plastic wedge between the lever and the fixed caliper. <input type="checkbox"/> Installation: Brake pads (43) with niro panel (43b) must be lubricated before installation: Molykote Cu- 7439 brake pad paste <input type="checkbox"/> Brake pads are to be disposed of as special waste. Please ask local authorities if it is permitted to dispose of these parts as household- like industrial refuse. <input type="checkbox"/> Only brake pad kits approved by Mercedes Benz must be installed. <input type="checkbox"/> If necessary, use the lever (034) to press out the brake pads if they are stuck: <input type="checkbox"/> Lever	AR42.10-P-0161-01GH *BR00.45-Z-1066-06A *123589133300
8	Press back piston using resetting device (031)	<input type="checkbox"/> Draw off some brake fluid beforehand if necessary to prevent the brake fluid overflowing when pressing back the piston. <input type="checkbox"/> On 4- piston fixed calipers on the front axle, secure one pair of upper and lower pistons with plastic wedges to prevent them from sliding out. Then press back the other pair of pistons using the resetting device. <input type="checkbox"/> Wedge <input type="checkbox"/> Resetting device If the piston is difficult to move: Replace fixed caliper on front axle. Replace fixed caliper on rear axle.	*601589076300 *000589524300 AR42.10-P-0070GI AR42.10-P-0080GI
9	Clean brake pad guides	<input type="checkbox"/> Do not use sharp or pointed implements to clean.	
10	Install in the reverse order		
<input type="checkbox"/> Danger!	Risk of accident when commissioning the vehicle due to a lack of braking effect when the service brake is operated for the first time after repair work.	Before commissioning the vehicle, operate the brake pedal several times until the pressure in the brake system is built up and maintained.	AS42.50-Z-0002-01A
11	Operate brake pedal several times until brake pads make contact with brake disks (firm resistance can be felt).		
12	Check brake fluid in brake fluid reservoir and correct if necessary	<input type="checkbox"/> Fill brake fluid to max. mark on brake fluid reservoir, suction off. <input type="checkbox"/>	*BF42.10-P-1001-01A

Brake fluid

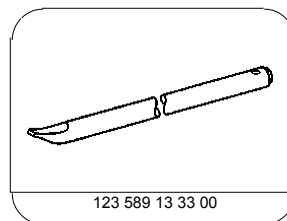
Number	Designation	Model 163
BF42.10- P- 1001- 01A	Brake fluid	Filling quantities Liters <input type="checkbox"/> 0.7- 0.9
		Specifications for Service Products Sheet BB00.40-P-0330-01A
		Sheet BB00.40-P-0331-00A



Resetting device



Wedge



Lever

Repair products

Number	Designation	Order number
BR00.45- Z- 1066- 06A	Molykote Cu- 7439 brake pad paste	001 989 87 51

AS42.50- Z- 0001- 01A	Risk of poisoning from swallowing brake fluid. Risk of injury from skin and eye contact with brake fluid	Pour brake fluid only into suitable and appropriately marked containers. Wear protective clothing and eye protection when handling brake fluid.	<input type="checkbox"/> Danger!
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Possible hazards

Risk of poisoning

Swallowing brake fluid can cause symptoms of poisoning such as headaches, dizziness, stomach pains, vomiting, diarrhea, cramps and unconsciousness. A dose of more than 100 cm³ can have fatal consequences.

Risk of injury

Contact with brake fluid can cause serious skin damage to unprotected skin.

Procedural guidelines and safety precautions

- Ensure that brake fluid is only accessible to authorized personnel.
- Store brake fluid in original containers only.
- Only store brake fluid in suitable, appropriately marked containers. Never use beverage bottles such as those for mineral water, beer etc.

- Wear safety glasses and protective clothing such as rubber gloves.

If rubber gloves cannot be worn, the following instructions must be observed:

- Allow brake fluid to act on the skin for as short a time as possible; wash affected skin with soap and water.
- Change contaminated clothing as quickly as possible.

First aid measures

- Wash affected skin with soap and water.
- Change contaminated clothing as quickly as possible.
- If brake fluid enters the eyes, flush immediately with plenty of clean water and seek medical attention if necessary.

AH42.50- P-0001- 01A	Notes on brake fluid	All models	□
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- Do not allow brake fluid to come into contact with the vehicle paintwork as it contains elements which act as solvents on the paintwork. If, in spite of taking appropriate care, brake fluid does come into contact with the paintwork, the affected surface must immediately be rinsed with copious amounts of water (do not rub off brake fluid).

□ Brake fluid is highly hygroscopic, i.e. it absorbs humidity, whereby the boiling point is lowered. For this reason the brake fluid should only be stored in enclosed, well sealed tanks (original container).

□ Used brake fluid may not be used again.
- Brake fluid is colorless to yellow colored and is therefore easily confused with mineral oil products. Brake fluid must therefore always be taken only from original containers and stored separately from mineral oil and other fluids.

□ For waste- disposal instructions relevant for locations in the Federal Republic of Germany see:
"Umweltschutz- Handbuch für Kfz- Reparaturbetriebe"
Publisher: Association of the German Automotive Industry
(Verband der Automobilindustrie e.V.) (VDA)
60625 Frankfurt am Main, Westendstrasse, Germany 61

AH42.00- P-0003- 01A	Notes on repairs to brake system	All models	<input type="checkbox"/>
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- During maintenance and repair work on the brake system ensure that no mineral oil, grease or similar substances enter the brake system
- New brake fluid must be used as washing and cleaning medium for cylinders, lines and expansion containers in the hydraulic braking system.
- If mineral oil is found in the brake system or mineral oil is suspected of being in the brake system, the following procedure must be carried out:
 1. Replace the tandem master brake cylinder or brake operating unit and expansion reservoir for brake fluid.
 2. Flush out entire brake system thoroughly with fresh brake fluid.
 3. All brake parts with components made from rubber, such as brake calipers, brake hoses, SBC/ ABS/ ETS/ ASR or ESP hydraulic unit, pressure reservoir, charge plunger unit and charging pump, which may have come into contact with mineral oil, must be replaced.
 4. Bleed the braking system.

Handling SBC/ ABS/ ETS/ ASR and ESP parts on vehicles involved in accidents:

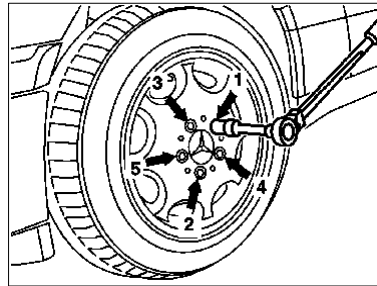
- If, due to the extent of the damage to the vehicle, or from the position and external appearance of the hydraulic unit it can be recognized that the hydraulic unit has received a heavy blow, the hydraulic unit should be replaced.

Indications of this are e.g.:

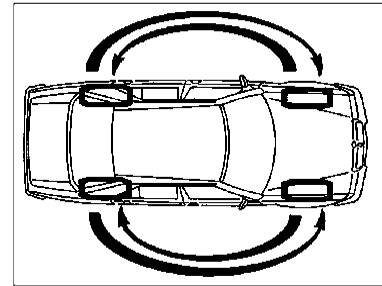
- Hydraulic lines kinked
- Connections on hydraulic unit leaking
- Cables or plug connections damaged
- The metal block of the hydraulic unit has signs of damage
- The hydraulic unit has sprung out of the bracket and cannot be inserted again without a lot of force.
- If the above conditions do not apply, the system must nevertheless be subjected to a thorough function test and the steps for testing the solenoid valves and pump must be carried out.

AP40.10- P- 4050GH	Remove/ install wheels, rotate if necessary	15.7.97
MODEL 163		

1- 5 Tightening sequence



P40.00- 0208- 01

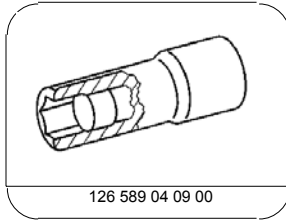


P40.10- 0004- 01

<input type="checkbox"/>	Remove		
<input type="checkbox"/> Danger!	Lethal injuries are possible if vehicle slips off of lifting platform	Align vehicle between the columns of the lifting platform and position the four support plates at the lifting platform support points specified by the vehicle manufacturer.	AS00.00-Z-0010-01A
<input type="checkbox"/>	Comply with notes on tires / rims		AH40.10-P-9411-01A
1	Raise vehicle.		AS00.00-Z-0010-01A
2	Unscrew wheel bolts, remove wheels		
3	Check wheel bolts	<input type="checkbox"/> The round contact shoulders on the lug bolts must be free of oil and grease. Replace bolts that have a damaged thread, worn dacromet coating at radius seat or corroded radius seat.	
4	Check tires for damage and wear - measure depth of tread		AP40.10-P-4051Z
5	Check disk wheels	<input type="checkbox"/> check for contamination, <input type="checkbox"/> check that spherical caps are free of oil and grease, <input type="checkbox"/> check centering, spherical caps and rim flanges for damage, <input type="checkbox"/> check corrosion of lay- on surface	
6	Check front wheel hub, brake disk bowl at attachment face for contamination and corrosion	Clean corroded surfaces with a wire brush or an emery cloth.	
<input type="checkbox"/>	Install		
7	Change wheels around if necessary retaining the same running direction	<input type="checkbox"/> This excludes vehicles with mixed tires at the front and rear axle. <input type="checkbox"/> Between 5,000 and 10,000 km according to wear.	
8	Fit wheels, tighten wheel bolts	<input type="checkbox"/> Observe tightening sequence "1- 5". <input type="checkbox"/> <input type="checkbox"/>	*BA40.10-P-1001-01A *126589040900
9	Lower vehicle, correct tire inflation pressure (including spare wheel)	<input type="checkbox"/> In the case of loss of tire pressure, determine cause and replace tire if necessary. <input type="checkbox"/> On versions with spare tire attached to underside of vehicle, check tire inflation pressure of spare tire before lowering the vehicle. <input type="checkbox"/> Deletion of spare tire with model 163.174 with TIREFIT	AH40.10-P-0001-01A

Wheels

Number	Designation	Models 163.113/ 128/ 136/ 154/157/ 172/ 175	Model 163.174
BA40.10- P- 1001- 01A	Wheel bolt	Nm 150	150



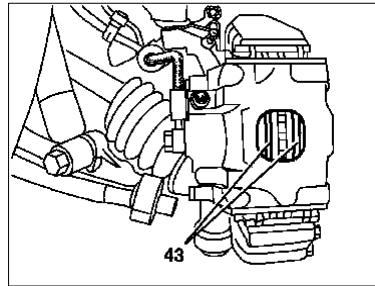
Wrench socket

Commercially available tools (see Workshop Equipment Manual)

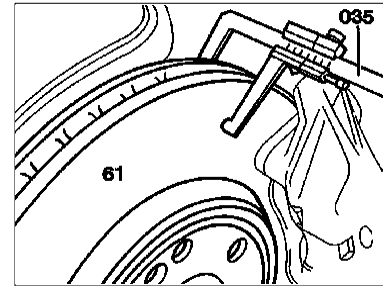
Number	Designation	Make (e. g.)	Order number
WH58.30- Z- 1002- 10A	Electric or compressed air impact wrench with limited tightening torque, see <ul style="list-style-type: none"> □ trial reports on test benches and tools for Mercedes Benz workshops, Volume 2, 40.1 □ Workshop Equipment Manual Volume 1 "G" Group 40 		651004700 6510053001

AP42.10- P- 4251GH	Check lining thickness of brake pads and condition of brake discs.	26.2.97
MODEL 163.113 /128 / 136 /154 / 157 /172 / 174 /175		
Service B		

Shown on vehicle with floating caliper



P42.10- 0442- 01



P42.10- 0201- 01

<input type="checkbox"/>	Remove		
1	Remove wheels		AP40.10-P-4050GH
<input type="checkbox"/>	Inspect		
2	Check thickness of brake pads (43) on front and rear axles	<input type="checkbox"/> Visual inspection, brake pads removed, observe recommended limit dimensions, so that the service limit is not violated before the next maintenance service: Floating brake caliper: front axle test values. Floating brake caliper: rear axle test values. Fixed brake caliper: front axle test values. Fixed brake caliper: rear axle test values. If necessary after checking, replace brake pads:	*BE42.10-P-1001-05C *BE42.10-P-1001-15A *BE42.10-P-1001-06F *BE42.10-P-1001-07B
f	Remove/ install brake pad on floating brake caliper	Floating brake caliper.	AR42.10-P-0160GH
f	Removing and installing brake pads on fixed caliper	Fixed brake caliper.	AR42.10-P-0161GI
3	Inspect brake disks (61) for scores and cracks	<input type="checkbox"/> Ventilated brake disks with hairline cracks up to a length of 25 mm, which be caused by high stresses, do not need to be replaced. <input type="checkbox"/> In the event of gaping cracks and score marks deeper than 0.5 mm, replace brake discs:	
f	Remove/ install brake disk	Floating brake caliper.	AR42.10-P-0220GH
f	Remove/ install brake disk	Fixed brake caliper.	AR42.10-P-0220GI
<input type="checkbox"/>	Measuring		
4	Measure thickness of brake discs on front and rear axles using caliper gage (035)	<input type="checkbox"/> Observe wear limits of brake disks, observe recommended limit dimensions so that the wear limit is not violated before the next maintenance service. <input type="checkbox"/> Caliper gage Inspection data of front axle. Test values for rear axle If necessary after checking, replace brake pads:	*140589001900 *BE42.10-P-1001-08B *BE42.10-P-1001-09B
f	Remove/ install brake disk	Floating brake caliper.	AR42.10-P-0220GH
f	Remove/ install brake disk	Fixed brake caliper.	AR42.10-P-0220GI
<input type="checkbox"/>	Install		
5	Mount wheels.		AP40.10-P-4050GH

Test values for brake pad in front floating caliper

Number	Designation	Model 163.113/ 136/ 154		Model 163.113/ 136/ 154	
		Model 163.157	inner brake pad	Model 163.157	outer brake pad
BE42.10- P- 1001- 05C	Brake pad thickness	New (with pad backing plate)	mm 16,5		15,5
		Service limit (without pad backing plate)	mm <input type="checkbox"/> 5		<input type="checkbox"/> 5

	Service limit (with pad backing plate) with maintenance service	mm	<input type="checkbox"/> 12	<input type="checkbox"/> 11
	Wear indicator activated	mm	<input type="checkbox"/> 2	-

Test values for brake pad in front fixed caliper

Number	Designation			Model 163.113/ 128/ 154/ 172/ 174/ 175, Model 163.157 except
BE42.10- P- 1001- 06F	Brake pad thickness	New (with pad backing plate)	mm	17,5
		Service limit (without pad backing plate)	mm	2
		Service limit (with pad backing plate) for maintenance service	mm	11
		Wear indicator activated	mm	7 <input type="checkbox"/> 1,

Test values for brake pad in rear fixed caliper

Number	Designation			Model 163.113/ 128/ 154/ 172/ 174/ 175, Model 157 except
BE42.10- P- 1001- 07B	Brake pad thickness	New (with pad backing plate)	mm	15,5
		Service limit (without pad backing plate)	mm	2
		Service limit (with pad backing plate) for servicing	mm	11
		Activation of wear indicator (if fitted)	mm	7 <input type="checkbox"/> 1,

Inspection data for front brake rotors

Number	Designation		Model 163.113/ 136/ 154, Model 163.157 with floating brake caliper	Model 163.113/ 128/ 154/ 172/ 174/ 175, Model 163.157 except with fixed brake caliper	
BE42.10- P- 1001- 08B	Brake disk thickness	New	mm	25	32
		Wear limit	mm	23	29,4
		Wear limit when performing maintenance	mm	23,5	30

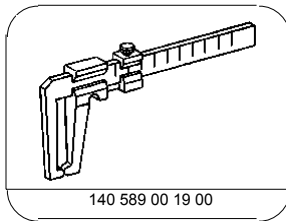
Test values for rear axle brake discs

Number	Designation		Model 163.113/ 136/ 154, Model 163.157 with floating brake caliper	Model 163.113/ 128/ 154/ 172/ 174/ 175, Model 163.157 except with fixed brake caliper
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BE42.10- P- 1001- 09B	Brake disk thickness	New	mm	15	14
		Wear limit	mm	13	12
		Wear limit when performing maintenance	mm	13,5	12,5

Test data of rear floating caliper brake pad

Number	Designation	Model 163.113/ 136/ 154, Model 163.157		
BE42.10- P- 1001- 15A	Brake pad thickness	New (with pad backing plate)	mm	15,5
		Service limit (without pad backing plate)	mm	□ 5
		Service limit (with pad backing plate) for maintenance service	mm	□ 11

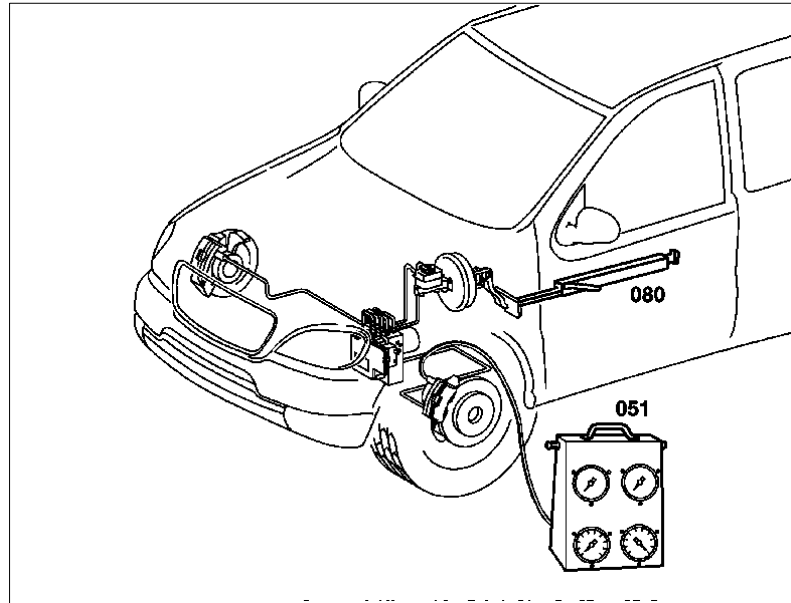


140 589 00 19 00

Caliper gauge

AR42.10- P- 0015GH	Checking braking system for leaks using pressure tester	3.2.97
MODEL 163.113 /128 / 136 /154 / 157 /172 / 174 /175		

Shown on vehicle with floating caliper



P42.10- 0445- 06

<input type="checkbox"/>	Inspecting		
<input type="checkbox"/> Danger!	Risk of poisoning from swallowing brake fluid. Risk of injury from skin and eye contact with brake fluid.	Pour brake fluid only into suitable and appropriately marked containers. Wear protective clothing and eye protection when handling brake fluid.	AS42.50-Z-0001-01A
<input type="checkbox"/>	Notes on brake fluid	All models	AH42.50-P-0001-01A
<input type="checkbox"/>	Notes if loss of brake fluid is not visible externally	Models 129, 140, 163, 168, 170, 202, 203, 208, 209, 210, 215, 220, 414, 460, 461, 463.200 / 204 / 206 /207 / 208 / 209 / 220 /221 / 224 / 225 /227 / 228 / 230 / 231 / 232 /233 / 240 /241 / 244 / 245 / 247 / 248 / 249 / 250 /254 / 300 /304 / 307 / 308 / 309 / 320 / 321 / 322 /323 / 324 /325 / 327 / 328 / 330 / 331 / 332 / 333	AH42.10-P-9406-02A
<input type="checkbox"/>	Notes on repairs to brake system	All models	AH42.00-P-0003-01A
1	Unscrew bleed screw at one floating or fixed caliper and connect pressure tester (051)	<input type="checkbox"/> Pressure tester <input type="checkbox"/> Pressure testers for hydraulic oil systems must not be used for systems with brake fluid otherwise the brake fluid will be mixed with mineral oil, which can result in a failure of the brakes. <input type="checkbox"/> After testing, only bleed the floating or fixed caliper to which the pressure tester was connected. <input type="checkbox"/> Floating caliper: front axle bleed screw: <input type="checkbox"/> Floating caliper: rear axle bleed screw: <input type="checkbox"/> Fixed caliper: front axle bleed screw: <input type="checkbox"/> Fixed caliper: rear axle bleed screw:	*WH58.30-Z-1024-15A *BA42.10-P-1002-03A *BA42.10-P-1001-17A *BA42.10-P-1002-02A *BA42.10-P-1002-01A
2	Bleed pressure tester (051).		
<input type="checkbox"/>	High pressure test		
<input type="checkbox"/> Danger!	Risk of accident from vehicle starting off by itself when engine running. Risk of injury as working around the engine during start- up or while running may result in contusions and burns	Secure vehicle to prevent it from moving off by itself. Wear closed and close- fitting work clothes. Do not grasp hot or rotating parts.	AS00.00-Z-0005-01A
3	Run engine at moderate speed then create as great a vacuum as possible by suddenly releasing the accelerator pedal		
4	Press down brake pedal as far as possible with brake pedal winch (080)	<input type="checkbox"/> The pressure loss during the test duration of 5 minutes must not exceed 5 % of the regulated value. <input type="checkbox"/> Brake pedal winch	*000589183100
<input type="checkbox"/>	Low- pressure check		

5	Turn off the engine and press the brake pedal until the vacuum is reduced		
6	Turn back brake pedal winch (080) until a line pressure of approx. 3 bar is still indicated on the pressure tester	<input type="checkbox"/> The line pressure must not fall throughout the duration of the test (2 minutes). <input type="checkbox"/> Brake pedal winch	*000589183100
7	Bleed brake system		AR42.10-P-0010GH

 Front axle fixed caliper

Number	Designation		Model 163.113 as of VIN A289565, X754620 163.154 as of VIN A289565 except	Model 163.128/172/ 174/ 175	Model 163.157 except
BA42.10- P- 1002- 02A	Bleeder screw at fixed caliper of front axle	Nm	18	18	18

 Front axle floating caliper

Number	Designation		Model 163.136	Model 163.154/ 157
BA42.10- P- 1002- 03A	Bleed screw on front axle floating caliper	Nm	18	18

 Front axle floating caliper

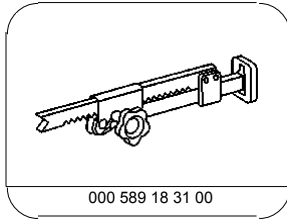
Number	Designation		Model 163.113 up to VIN A289564, X754619 163.154 up to VIN A289564 except
BA42.10- P- 1002- 03A	Bleed screw on front axle floating caliper	Nm	18

 Fixed caliper at rear

Number	Designation		Model 163.128/ 157/ 172/ 174/ 175	Model 163.113 as of VIN A289565, X754620 163.154 as of VIN A289565
BA42.10- P- 1002- 01A	Bleed screw on rear axle fixed caliper	Nm	18	18

 Rear axle floating caliper

Number	Designation		Model 163.136	Model 163.154/ 157 	Model 163.113 to VIN A289564, X754619 163.154 to VIN A289564
BA42.10- P- 1001- 17A	Bleed screw at rear axle floating caliper	Nm	18	18	18



000 589 18 31 00

Brake pedal winch

Commercially available tools (see Workshop Equipment Manual)

Number	Designation	Make (e. g.)	Order number
WH58.30- Z- 1024- 15A	Pressure tester (hydraulic single / dual circuit brake systems)	ATE D- 60488 Frankfurt, Germany	03.9305- 1020.4/ 01

MODEL 163.113 #A as of 289565,

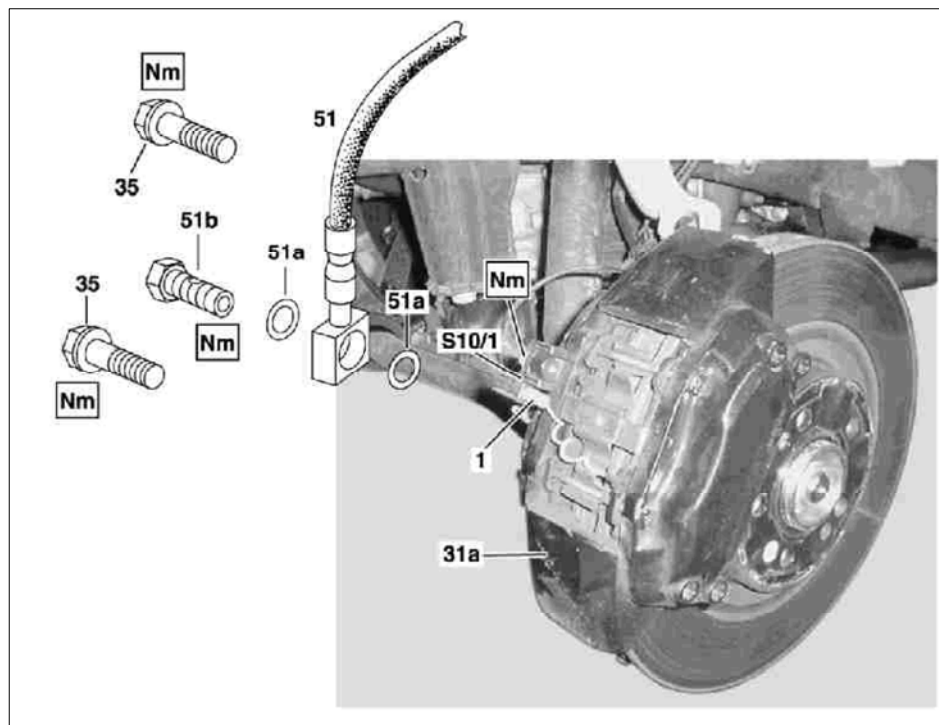
163.113 #X as of 754620,

163.128 /172 /174 /175

MODEL 163.154 #A as of 289565,

163.157 except CODE (494a) USA version

1	Contact sensor connector
31a	Fixed brake caliper
35	Self-locking bolts
51	Brake hose
51a	Gaskets
51b	Banjo bolt
S10/1	Left front brake pad contact sensor



P42.10-2056-06

	Remove/Install		
Danger!	Risk of poisoning from swallowing brake fluid. Risk of injury from skin and eye contact with brake fluid.	Pour brake fluid only into suitable and appropriately marked containers. Wear protective clothing and eye protection when handling brake fluid.	AS42.50-Z-0001-01A
Danger!	Risk of accident when commissioning the vehicle due to a lack of braking effect when the service brake is operated for the first time after repair work.	Before commissioning the vehicle, operate the brake pedal several times until the pressure in the brake system is built up and maintained.	AS42.50-Z-0002-01A
	Notes on brake fluid	All models	AH42.50-P-0001-01A
	Notes on repairs to brake system	All models	AH42.00-P-0003-01A
	Notes on installing brake hoses	Model 163	AH42.10-P-9406-01GH
1 	Remove wheels Remove/install wheels, rotate if necessary		AP40.10-P-4050GH
2.1	Unplug contact sensor connector (1)	If installed.	
3.1	Unscrew left front brake pad contact sensor (S10/1)	If installed. Installation: Install new self-locking bolts. Nm	*BA42.10-P-1003-02A
4	Depress brake pedal with the brake pedal wind sufficiently until the replenishing port in the brake master cylinder is shut off	Do not allow brake fluid supply reservoir to run completely empty. Open bleed screw at fixed caliper to reduce pressure. Brake pedal winch	*000589183100
5	Unscrew banjo bolt (51b) from fixed caliper	Installation Replace gaskets (51a). Nm	*BA42.10-P-1006-04A
6.1	Remove brake pads from fixed caliper	If necessary.	AR42.10-P-0161GI

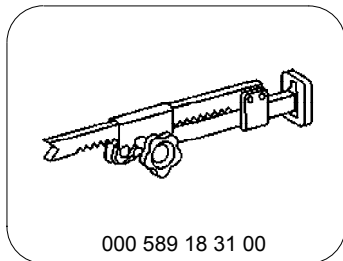
7	Detach fixed caliper (31a) from steering knuckle	i Installation: Replace self-locking bolts (35). i Always replace fixed brake calipers on the axle in pairs. Nm	*BA42.10-P-1001-02A
8	Install in the reverse order		
9	Bleed brake system		AR42.10-P-0010GH
10	⚠ Danger! Risk of accident when commissioning the vehicle due to a lack of braking effect when the service brake is operated for the first time after repair work. Operate brake pedal several times until brake pads make contact with brake discs (firm resistance can be felt).	Before commissioning the vehicle, operate the brake pedal several times until the pressure in the brake system is built up and maintained.	AS42.50-Z-0002-01A
11	Check brake system for leaks		AR42.10-P-0100-01A

Nm Front axle fixed caliper

Number	Designation		Model 163.113 as of VIN A289565, X754620 163.154 as of VIN A289565 except (USA)	Model 163.128/172/174/175	Model 163.157 except (USA)
BA42.10-P-1001-02A	Self-locking bolt, fixed caliper to steering knuckle	Nm	180	180	180
BA42.10-P-1003-02A	Bolt, brake pad contact sensor to fixed caliper	Nm	9	9	9

Nm Brake lines, brake hoses

Number	Designation		Model 163.128/172/174/175	Model 163.157 except (USA)	Model 163.113 as of VIN A289565, X754620 163.154 as of VIN A289565 except (USA)
BA42.10-P-1006-04A	Banjo bolt, brake hose to fixed caliper	Nm	33	33	33



000 589 18 31 00

Brake pedal winch

MODEL 163.113 #A as of 289565,

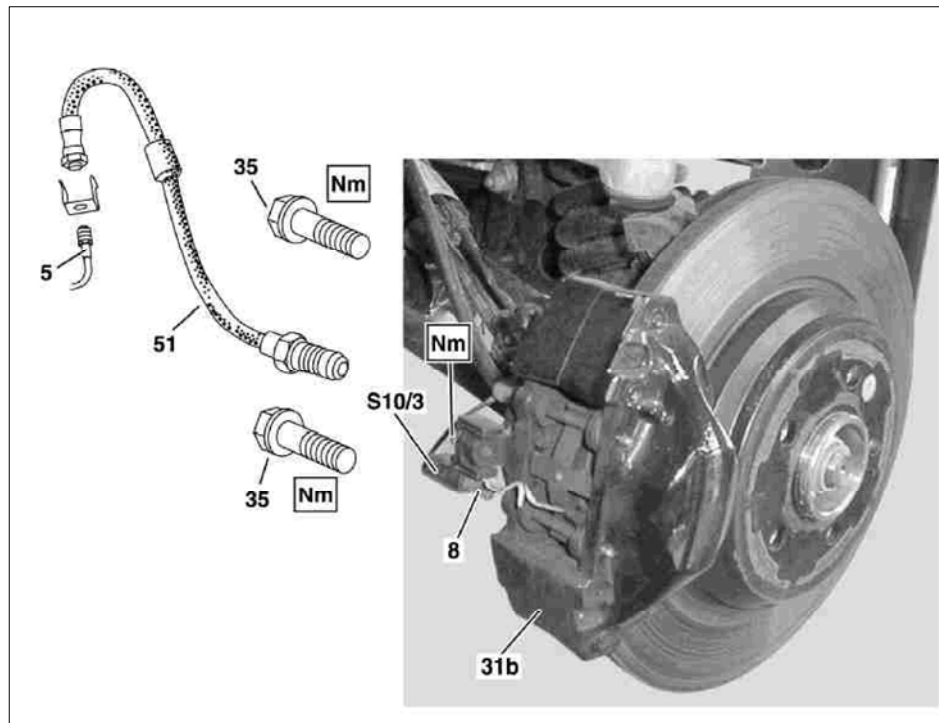
163.113 #X as of 754620,

163.128 /172 /174 /175

MODEL 163.154 #A as of 289565,

163.157 except CODE (494a) USA version

5 Brake line
 8 Contact sensor connector
 31b Fixed brake caliper
 35 Self-locking bolts
 51 Brake hose
 S10/3 Left rear brake pad contact sensor



P42.10-2057-06

	Remove/Install		
Danger!	Risk of poisoning from swallowing brake fluid. Risk of injury from skin and eye contact with brake fluid.	Pour brake fluid only into suitable and appropriately marked containers. Wear protective clothing and eye protection when handling brake fluid.	AS42.50-Z-0001-01A
Danger!	Risk of accident when commissioning the vehicle due to a lack of braking effect when the service brake is operated for the first time after repair work.	Before commissioning the vehicle, operate the brake pedal several times until the pressure in the brake system is built up and maintained.	AS42.50-Z-0002-01A
	Notes on brake fluid	All models	AH42.50-P-0001-01A
	Notes on repairs to brake system	All models	AH42.00-P-0003-01A
	Notes on installing brake hoses	Model 163	AH42.10-P-9406-01GH
1 	Remove wheels Remove/install wheels, rotate if necessary		AP40.10-P-4050GH
2	Disconnect brake hose (51) from brake line (5)	Plug connections with plugs to prevent brake fluid running out. Do not allow brake fluid supply reservoir to run completely empty. Box wrench bit	*BA42.10-P-1001-04A *000589750300
3	Disconnect brake hose (51) from fixed caliper (31b)	 Box wrench	*BA42.10-P-1002-04A *000589760300
4.1 	Unplug contact sensor connector (8) Notes on installing contact sensor for brake pad wear indicator	If installed. MODELS 129, 140, 163, 170, 202, 203, 208, 209, 210, 211, 215, 220, 230, 690.6	AH42.10-P-0003-01A

5.1	Unscrew left rear brake pad contact sensor (S10/3)	If installed. Installation: Replace self-locking bolt 	*BA42.10-P-1003-01A
6.1	Remove brake pads from fixed caliper	If necessary.	AR42.10-P-0161GI
7	Detach fixed caliper (31b) from wheel carrier	Installation: Replace self-locking bolts (35). Always replace fixed brake calipers on the axle in pairs. 	*BA42.10-P-1001-01A
8	Install in the reverse order		
9	Bleed brake system		AR42.10-P-0010GH
Danger!	Risk of accident when commissioning the vehicle due to a lack of braking effect when the service brake is operated for the first time after repair work. Operate brake pedal several times until brake pads make contact with brake discs (firm resistance can be felt).	Before commissioning the vehicle, operate the brake pedal several times until the pressure in the brake system is built up and maintained.	AS42.50-Z-0002-01A
10			
11	Check brake system for leaks		AR42.10-P-0100-01A

Rear axle fixed caliper

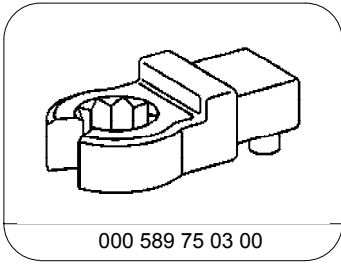
Number	Designation		Model 163.128/ 157/172/ 174/175	Model 163.113 as of VIN A289565, X754620 163.154 as of VIN A289565
BA42.10-P-1001-01A	Self-locking bolt, fixed caliper to wheel carrier	Nm	115	115
BA42.10-P-1003-01A	Bolt, brake pad wear sensor to fixed caliper	Nm	9	9

Brake lines, brake hoses

Number	Designation		Model 163.113 as of VIN A289565, X754620 163.154 as of VIN A289565 except	Model 163.113 to VIN A289564, X754619 163.154 to VIN A289564
BA42.10-P-1001-04A	Brake line to brake hose	Nm	18	18
BA42.10-P-1002-04A	Brake hose to fixed or floating caliper	Nm	18	18

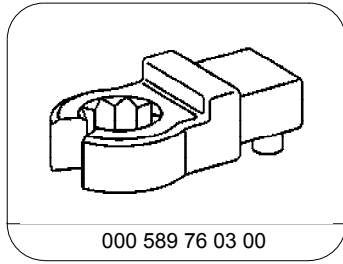
Brake lines, brake hoses

Number	Designation		Model 163.128/ 172/174/ 175	Model 163.136	Model 163.154/ 157	Model 163.157 except
BA42.10-P-1001-04A	Brake line to brake hose	Nm	18	18	18	18
BA42.10-P-1002-04A	Brake hose to fixed or floating caliper	Nm	18	18	18	18



000 589 75 03 00

Box wrench bit



000 589 76 03 00

Box wrench

AH42.10- P-0003- 01A	Note on installing contact sensor for brake lining wear indicator	MODEL 129, 140, 163, 168, 170, 202, 203, 208, 209, 210, 211, 215, 220, 230, 240, 690.6	<input type="checkbox"/>
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The following variants exist on the front axle:
One contact sensor, two contact sensors or four contact sensors.

When changing the brake pads fit as many contact sensors at the same position as there originally.

The following variants exist on the rear wheel brake:
No contact sensor, one contact sensor, two contact sensors or four contact sensors.

If only one contact sensor is fitted to a brake caliper, this is to be fitted to the same brake pad again and in the same position.

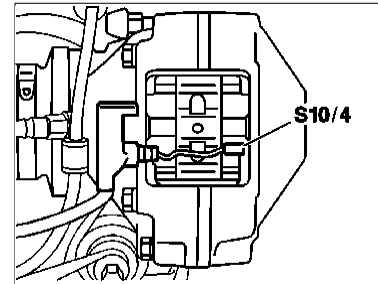
Vehicles with ETS, ESP or ASR have contact sensors for the brake lining- wear indicator.

In the event of moisture, contact sensors which have not been installed result in the brake lining wear indicator warning lamp lighting up.

The contact sensor line must be routed as shown in the picture. Only transparent (temperature-resistant) contact sensors must be installed at the rear axle.

Shown on model 129

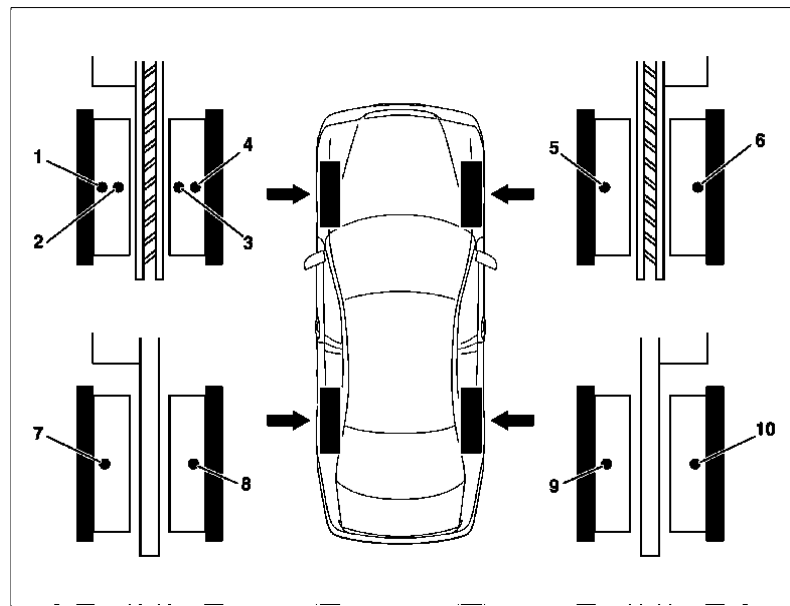
S10/ 4 Right rear brake pad contact sensor



P42.40- 0205- 01

Location of contact sensors
(not for model 163 and model 690.6)

For reasons of spare parts simplification the brake linings must be installed so that the contact sensors can be installed in the corresponding installation position. The corresponding installation position can be obtained from the tables below.



P42.10- 2231- 06

Model 129	Version	Front axle				Rear axle			
		1	4	5	6	7	8	9	10
up to 6/ 94	E28[AAC],E32	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
7/ 94 up to 6/ 96	E28[AAC],E32	<input type="checkbox"/>			<input type="checkbox"/>				
as of 7/ 96	E28[AAC],E32		<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>
up to 6/ 94	E50[AAC],E60	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7/ 94 up to 6/ 96	E50[AAC],E60	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
as of 7/ 96	E50[AAC],E60	<input type="checkbox"/>			<input type="checkbox"/>				

Model 140	Version	Front axle				Rear axle			
		1	4	5	6	7	8	9	10
up to 6/ 94	all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
7/ 94 up to 6/ 95	without ETS, ASR	<input type="checkbox"/>			<input type="checkbox"/>				
7/ 94 up to 6/ 95	with ETS, ASR	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
as of 7/ 95	all	<input type="checkbox"/>			<input type="checkbox"/>				

Model 168	Version	Front axle				Rear axle			
		1	4	5	6	7	8	9	10
	all				<input type="checkbox"/>				

Model 170	Version	Front axle				Rear axle			
		1	4	5	6	7	8	9	10
up to 6/ 96	E20, E20ML	<input type="checkbox"/>			<input type="checkbox"/>				
as of 7/ 96	E20, E20ML		<input type="checkbox"/>	<input type="checkbox"/>					
	E23ML		<input type="checkbox"/>	<input type="checkbox"/>					
	E32, E32ML	<input type="checkbox"/>			<input type="checkbox"/>				

Model 202	Version	Front axle				Rear axle			
		1	4	5	6	7	8	9	10
up to 6/ 94	with ASR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7/ 94 up to 6/ 95	with ASR	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>			
up to 6/ 95	without ASR	<input type="checkbox"/>			<input type="checkbox"/>				
7/ 95 up to 6/ 96	E18, E20, E23, E24, E28, E43AMT, D20, D22, DE22LA	<input type="checkbox"/>			<input type="checkbox"/>				
7/ 95 up to 6/ 96	E20ML, E23ML, D25LA		<input type="checkbox"/>	<input type="checkbox"/>					
as of 7/ 96	E18, E20, E23, D20, D22, DE22LA	<input type="checkbox"/>			<input type="checkbox"/>				
as of 7/ 96	E20ML, E23ML, E24, E28, D25LA		<input type="checkbox"/>	<input type="checkbox"/>					

Model 203	Version	Front axle				Rear axle			
		1	4	5	6	7	8	9	10
up to 3/ 01	except E32, E32ML		<input type="checkbox"/>	<input type="checkbox"/>					
up to 3/ 01	E32		<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>
up to 3/ 01	E32ML	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>
as of 4/ 01	except E32, E32ML			<input type="checkbox"/>					
as of 4/ 01	E32			<input type="checkbox"/>					<input type="checkbox"/>
as of 4/ 01	E32ML	<input type="checkbox"/>			<input type="checkbox"/>				<input type="checkbox"/>

Model 208	Version	Front axle				Rear axle			
		1	4	5	6	7	8	9	10
	except E43		<input type="checkbox"/>	<input type="checkbox"/>					
	E43	<input type="checkbox"/>			<input type="checkbox"/>				<input type="checkbox"/>

Model 209	Version	Front axle				Rear axle			
		1	3	4	5	7	8	9	10
	E20, E20ML			<input type="checkbox"/>					
	E32			<input type="checkbox"/>					<input type="checkbox"/>
	DE27LA			<input type="checkbox"/>					
	E50				<input type="checkbox"/>				<input type="checkbox"/>

Model 210	Version	Front axle				Rear axle			
		1	4	5	6	7	8	9	10
up to 6/ 96	with ASR except E42	<input type="checkbox"/>			<input type="checkbox"/>				
up to 6/ 96	without ASR except E42		<input type="checkbox"/>	<input type="checkbox"/>					
up to 6/ 96	E42 with ASR		<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>
up to 6/ 96	E42 without ASR	<input type="checkbox"/>			<input type="checkbox"/>				<input type="checkbox"/>
as of 7/ 96	except E43, E55AMT		<input type="checkbox"/>	<input type="checkbox"/>					
as of 7/ 96	E43, E55AMT	<input type="checkbox"/>			<input type="checkbox"/>				<input type="checkbox"/>

Model 211	Version	Front axle				Rear axle					
		1	2	3	4	5	6	7	8	9	10
up to 10/ 02	all		<input type="checkbox"/>				<input type="checkbox"/>				<input type="checkbox"/>
as of 11/ 02	except E50, DE40LA		<input type="checkbox"/>				<input type="checkbox"/>				<input type="checkbox"/>
as of 11/ 02	E50, DE40LA			<input type="checkbox"/>			<input type="checkbox"/>				<input type="checkbox"/>

Model 215	Version	Front axle				Rear axle			
		1	4	5	6	7	8	9	10
up to 8/ 02	all	<input type="checkbox"/>			<input type="checkbox"/>				<input type="checkbox"/>
as of 9/ 02	all				<input type="checkbox"/>				<input type="checkbox"/>

Model 220	Version	Front axle				Rear axle			
		1	4	5	6	7	8	9	10
up to 8/ 02	all	<input type="checkbox"/>			<input type="checkbox"/>				<input type="checkbox"/>
as of 9/ 02	all				<input type="checkbox"/>				<input type="checkbox"/>

Model 230	Version	Front axle				Rear axle			
		1	4	5	6	7	8	9	10
up to 8/ 02	all	<input type="checkbox"/>			<input type="checkbox"/>				<input type="checkbox"/>
as of 9/ 02	all				<input type="checkbox"/>				<input type="checkbox"/>

Model 240	Version	Front axle				Rear axle			
		1	4	5	6	7	8	9	10
	all	<input type="checkbox"/>			<input type="checkbox"/>				<input type="checkbox"/>

AR42.10-P-0161-01GH	Apply brake pad paste to brake pads	Model 163.113 /128 /154 /157 /172 /174 /175 with fixed brake caliper	
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Workshop equipment/MB testers (see Workshop Equipment Manual)

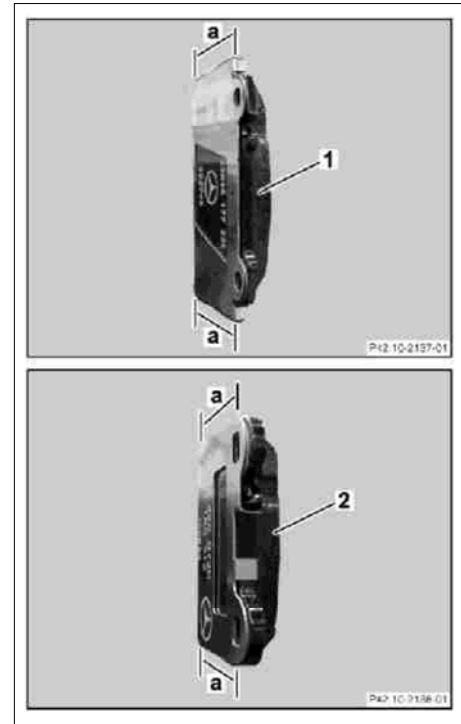
WE58.40-Z-1002-13A	Schickert brake cleaner, Wirtembergstrasse 70, D-70736 Fellbach/Minden
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Repair products

Number	Designation	Order number
BR00.45-Z-1066-06A	Molykote Cu-7439 brake pad paste	001 989 87 51

- 1 Clean edges (a) of brake pad base plate (1, 2) with a rag soaked in solvent.
- 2 Clean application points of brake pad in brake caliper with a rag soaked in solvent.
- 3 Apply 1 to 2 mm of Molykote Cu-7439 brake pad paste to the edges (a) of the brake pad base plate.

i Only apply brake pad paste to the edges (1). Brake pad paste must not touch the friction surface or any other parts other than those mentioned above. Remove excess brake pad paste immediately from front or back of brake pad.



P42.10-2139-03

AS42.50- Z- 0002- 01A	Risk of accident when commissioning the vehicle due to a lack of braking effect when the service brake is operated for the first time after repair work.	Before commissioning the vehicle, operate the brake pedal several times until the pressure in the brake system is built up and maintained.	<input type="checkbox"/> Danger!
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Danger of accident

The first time that the brakes are used after having performed any work on the braking system's hydraulics area, the risk of an accident is increased due to an impaired braking effect.

Safety guidelines/ precautions

- After finishing the work on the braking system's hydraulics area and before startup of the vehicle, press the brake pedal several times to build up pressure in the brake system.
- Once pressure has been built up in the brake system, the brake pedal should be held in this position for approximately 30 s, whereby the pressure in the brake system should not drop.