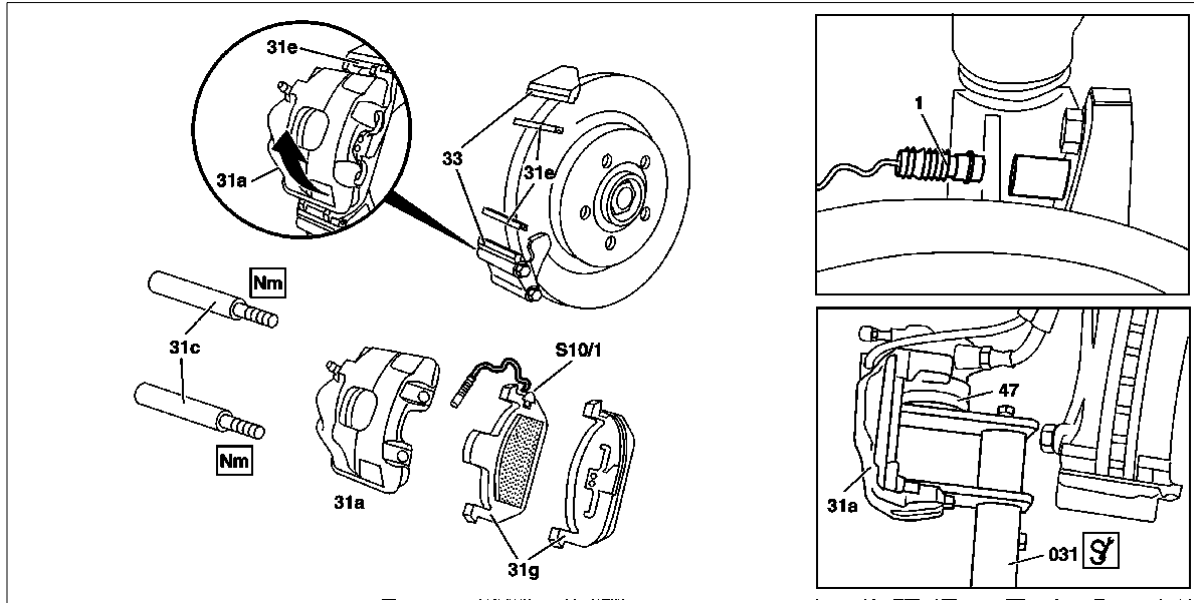
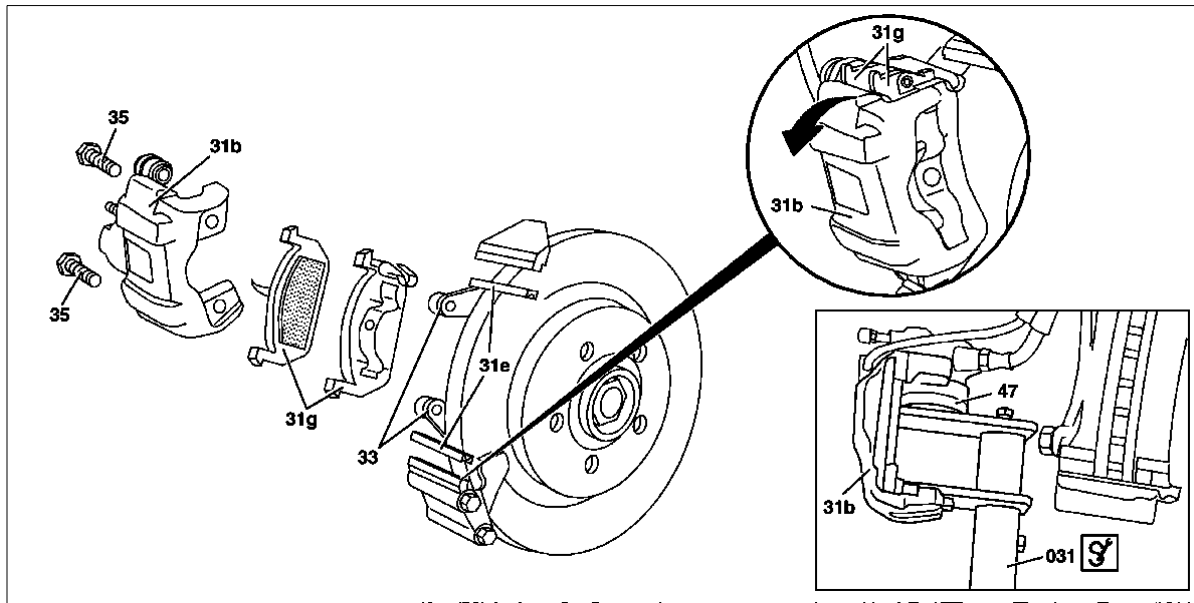


AR42.10- P- 0160GH	Remove/ install brake pad on floating brake caliper	3.2.97
MODEL 163.113 #A up to 289564, 163.113 #X up to 754619, 163.154 #A up to 289564, 163.136 MODEL 163.154 /157 with CODE (494a) USA version		



P42.10- 0449- 09

Front axle



P42.10- 0452- 09

Rear axle

<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	All models
<input type="checkbox"/>		Notes on repairs to brake system	All models
1		Remove wheels	
e		Remove/ install wheels, rotate if necessary	
<input type="checkbox"/>		Inspecting	
			AS42.50-Z-0001-01A
			AH42.50-P-0001-01A
			AH42.00-P-0003-01A
			AP40.10-P-4050GH

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, for this reason. Inspect brake system for leaks with pressure tester.	AP42.10-P-4251GH AR42.10-P-0015GH
3	Check floating caliper (31a, 31b) for leaks and dust seal for damage.	<input type="checkbox"/> Visual inspection, if necessary: Repair floating brake caliper.	AR42.10-P-0153GH
<input type="checkbox"/>	Remove/ Install		
4.1	Unplug contact sensor connector (1)	<input type="checkbox"/> Only present on left floating caliper.	
5	Unscrew guide bolts (31c) on front axle.	<input type="checkbox"/> Installation: Replace the guide bolts. <input type="checkbox"/>	*BA42.10-P-1004-03A
6	Remove floating caliper (31a, 31b) from wheel carrier	<input type="checkbox"/> Installation: Replace self- locking bolts (35). <input type="checkbox"/>	*BA42.10-P-1002-17A
7	Remove floating caliper (31a, 31b) together with brake pads (31g) and fasten to one side	<input type="checkbox"/> Hang the floating caliper up to relieve the strain on the brake hose. Front axle: swivel floating caliper (31a) upwards (arrow) and remove. Rear axle: swivel floating caliper (31b) downwards (arrow) and remove. <input type="checkbox"/> Leave brake hose connected.	
8	Remove brake pads (31g)	<input type="checkbox"/> Brake pads (31g) must 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"/> Installation: Only the brake pads (31g) approved by Mercedes- Benz may be built- in as a set. Brake pads are different, pay attention to installation position. <input type="checkbox"/> Insert inner brake pad with riveted spring into piston then insert outer brake pad into floating caliper (31a, 31b) and install floating caliper.	
9.1	Press out left front brake pad contact sensor (S10/ 1) out of pad backing plate of brake pad (31g) <input type="checkbox"/> Notes on installing contact sensor for brake lining wear indicator	If installed. <input type="checkbox"/> Installation: Replace defective left front brake pad contact sensor (S10/ 1). Always install contact sensor on inner brake pad. Models 129, 140, 163, 170, 202, 203, 208, 209, 210, 211, 215, 220, 230, 690.6	AH42.10-P-0003-01A
10	Press back piston (47) using resetting device (031)	<input type="checkbox"/> Draw off some brake fluid beforehand to prevent the brake fluid overflowing when pressing back the piston (47). If the piston is difficult to move: Repair floating caliper. <input type="checkbox"/> Resetting device	AR42.10-P-0153GH *000589524300
11	Clean bearing surface of brake pads (31g) in floating calipers (31a, 31b).	<input type="checkbox"/> Brake caliper brush	*000589266800
12	Remove slide rails (31e).	<input type="checkbox"/> Installation: Replace slide rails (31e) of brake pads (31g) at wheel carrier (33).	
13	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. 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
14			
15	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

Front axle floating caliper

Number	Designation	Model 163.136	Model 163.154/ 157 I
BA42.10- P- 1004- 03A	Guide bolts, floating caliper to brake caliper support	Nm 30	30

Front axle floating caliper

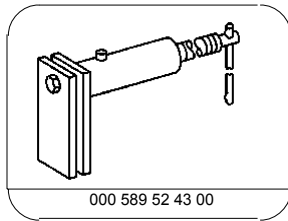
Number	Designation		Model 163.113 up to VIN A289564, X754619 163.154 up to VIN A289564 except	Model 170.435/ 444/ 445/ 447/ 449/ 465	Model 170.466
BA42.10- P- 1004- 03A	Guide bolts, floating caliper to brake caliper support	Nm	30	25	25

Rear axle floating caliper

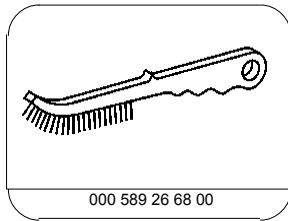
Number	Designation		Model 163.136	Model 163.154/ 157 	Model 163.113 to VIN A289564, X754619 163.154 to VIN A289564
BA42.10- P- 1002- 17A	Self- locking bolt, floating caliper to wheel carrier	Nm	23	23	23

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



Brake caliper brush

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	<input type="checkbox"/>
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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:

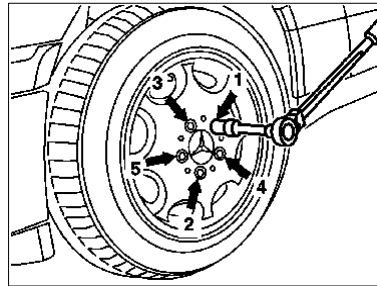
- If, due to the extent of the damage to the vehicle, or from the position and external appearance of the hydraulic unit it can be recognized that the hydraulic unit has received a heavy blow, the hydraulic unit should be replaced.

Indications of this are e.g.:

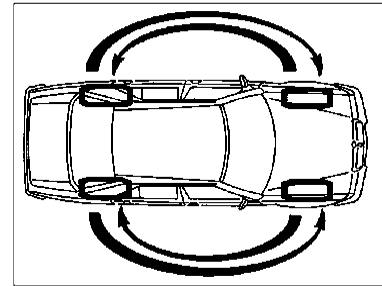
- Hydraulic lines kinked
- Connections on hydraulic unit leaking
- Cables or plug connections damaged
- The metal block of the hydraulic unit has signs of damage
- The hydraulic unit has sprung out of the bracket and cannot be inserted again without a lot of force.
- If the above conditions do not apply, 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

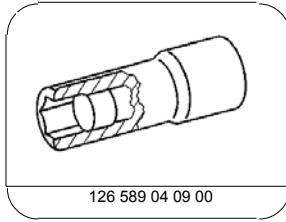


P40.10- 0004- 01

<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
C			

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



126 589 04 09 00

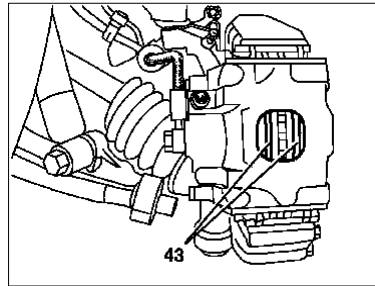
Wrench socket

Commercially available tools (see Workshop Equipment Manual)

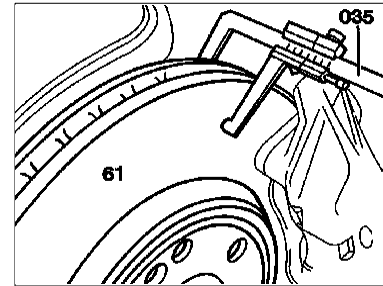
Number	Designation	Make (e. g.)	Order number
WH58.30-Z-1002- 10A	Electric or compressed air impact wrench with limited tightening torque, see <ul style="list-style-type: none"> □ trial reports on test benches and tools for Mercedes Benz workshops, Volume 2, 40.1 □ Workshop Equipment Manual Volume 1 "G"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

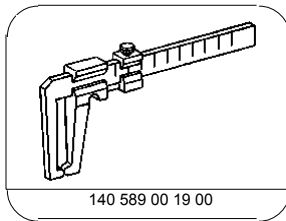
Test values for rear axle brake discs

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

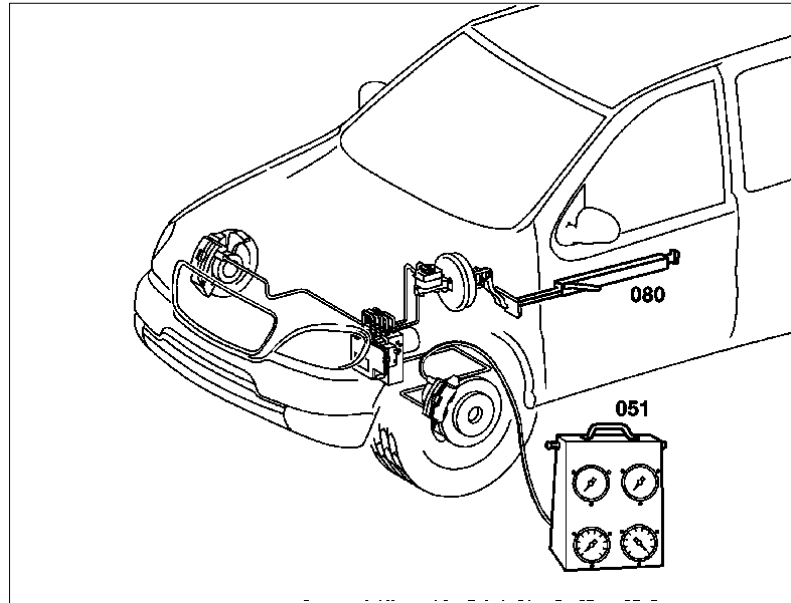


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Caliper gauge

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

 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

 Front axle floating caliper

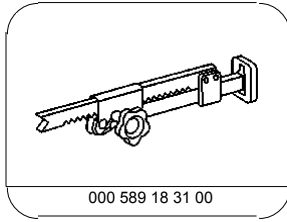
Number	Designation	Model 163.113 up to VIN A289564, X754619 163.154 up to VIN A289564 except
BA42.10- P- 1002- 03A	Bleed screw on front axle floating caliper	Nm

 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

 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



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 up to 289564,

163.113 #X up to 754619,

163.154 #A up to 289564,

163.136

MODEL 163.154 /157 with CODE (494a) USA version

31a Front axle floating brake caliper

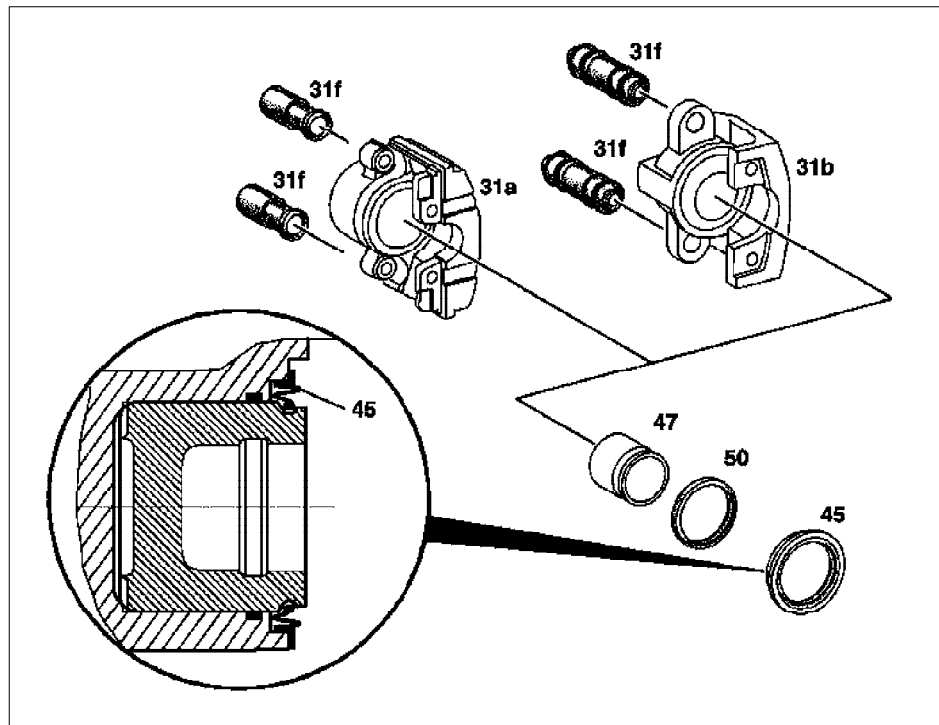
31b Rear axle floating brake caliper

31f Guide bushes

45 Dust cap



47 Piston

50 Piston seal



P42.10-0448-06


☒	Remove		
1	Remove front axle floating caliper (31a) or rear axle floating caliper (31b).	Front axle. Rear axle.	AR42.10-P-0070GH AR42.10-P-0080GH
☑ ☑	Disassemble/assemble		
2	Press out piston (47) carefully with compressed air.	<p>i Insert stop block in brake caliper.</p> <p>i If piston (47) is rusted tight, install new front axle floating brake caliper (31a) or rear axle floating brake caliper (31b).</p> <p>i Installation: coat cylinder bore with brake fluid: "</p>	<p>BB00.40-P-0330-01A BB00.40-P-0331-00A</p>
☞ BB	General brake fluid	For all vehicle models	
☞ BB	Brake fluids (DOT 4 plus)		
3	Remove dust cap (45) from front axle floating brake caliper (31a) or rear axle floating brake caliper (31b).	<p>i Floating caliper and repair kit must be from same manufacturer.</p> <p>i Installation: Put dust cap (45) over piston (47) and insert into cylinder bore together with piston. Push in piston using both hands. Ensure correct seating.</p>	
4	Remove piston seal (50) from groove in cylinder bore.	<p>i Floating caliper and repair kit must be from same manufacturer.</p> <p>i Installation: Coat new piston seal (50) with brake fluid: "</p>	<p>BB00.40-P-0330-01A BB00.40-P-0331-00A</p>
☞ BB	General brake fluid	For all vehicle models	
☞ BB	Brake fluids (DOT 4 plus)		

5	 <p>Check piston (47) and cylinder bore of front axle floating caliper (31a) or rear axle floating caliper (31b) and replace if necessary. Notes if piston or cylinder bore are damaged on fixed or floating caliper</p>	Models 129, 140, 163.113 /136 /154 /157, 168, 170, 202, 208, 210, 215, 220, 460, 461, 463 Test values for front axle floating caliper Test values for rear axle floating caliper.	AH42.10-P-9406-03A *BE42.10-P-1001-03A *BE42.10-P-1001-14A
6	Remove and install new guide bushes (31f)		
7	Assemble in reverse order		
	Install		
8	Install front axle floating caliper (31a) or rear axle floating caliper (31b)	Front axle. Rear axle.	AR42.10-P-0070GH AR42.10-P-0080GH


Test values for front axle floating caliper

Number	Designation			Model 163.136	Model 163.113 up to VIN A289564, X745619	Model 163.154 up to VIN A289564
BE42.10-P-1001-03A	Front axle floating caliper	Housing -ž new	mm	60	60	60
		Channel width	mm	-	-	-
		Brake disks ž	mm	303	303	303
		Brake disk thickness	mm	26	26	26

Test values for front axle floating caliper

Number	Designation			Model 163.154/157 
BE42.10-P-1001-03A	Front axle floating caliper	Housing -ž new	mm	60
		Channel width	mm	-
		Brake disks ž	mm	303
		Brake disk thickness	mm	26

Test values for rear brake floating calipers

Number	Designation			Model 163.113 up to VIN A289564, X754619	Model 163.136	Model 163.154 up to VIN A289564	Model 163.154/ 157 
BE42.10-P-1001-14A	Rear axle floating caliper	Housing -ž new	mm	44	44	44	44
		Channel width	mm	-	-	-	-
		Brake disks ž	mm	285	285	285	285
		Brake disk thickness	mm	15	15	15	15

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.

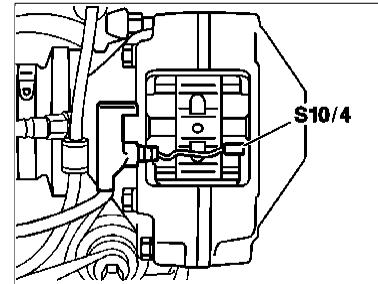
Vehicles with ETS, ESP or ASR have contact sensors for the brake lining- wear indicator.

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

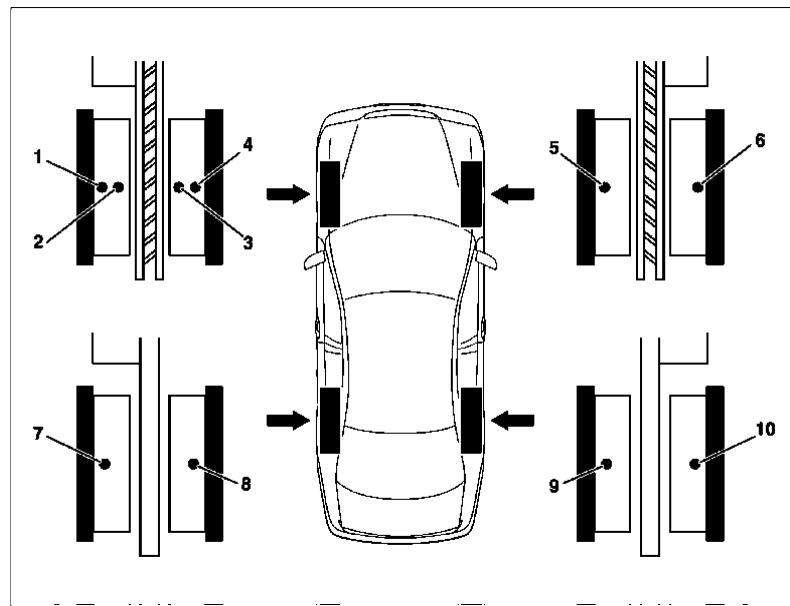
S10/ 4 Right rear brake pad contact sensor



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"/>
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"/>
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"/>

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.