



Workshop Manual

Audi A1 2011 ➤

Audi A1 Sportback 2012 ➤

Brake system

Edition 09.2018



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List of Workshop Manual Repair Groups

Repair Group

- 00 - Technical data
- 45 - Anti-lock brake system
- 46 - Brakes - mechanism
- 47 - Brakes - hydraulics



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Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.



Contents

00 - Technical data	1
1 Identification	1
1.1 PR number and type of brake system	1
2 Safety precautions	2
2.1 Safety precautions when working on vehicles with start/stop system	2
2.2 Safety precautions when using testers and measuring instruments during a road test	2
3 Repair notes	3
3.1 Rules for cleanliness	3
3.2 General repair instructions	3
3.3 Contact corrosion	3
3.4 Notes on brake fluid	4
4 Technical data	5
4.1 Technical data for brakes	5
5 Brake test	7
5.1 General notes	7
5.2 Testing vehicles with front-wheel drive	7
5.3 Testing vehicles with four-wheel drive	7
45 - Anti-lock brake system	8
1 General notes	8
1.1 Notes for repair work on the ABS	8
2 Overview of fitting locations	9
2.1 Overview of fitting locations - ABS/ESP	9
3 Control unit and hydraulic unit	11
3.1 Exploded view - control unit and hydraulic unit	11
3.2 Removing and installing ABS control unit J104 / ABS hydraulic unit N55	15
3.3 Separating control unit from hydraulic unit	35
3.4 Attaching control unit to hydraulic unit	36
4 Sensors	39
4.1 Exploded view - front wheel speed sensor	39
4.2 Exploded view - rear wheel speed sensor	41
4.3 Removing and installing brake light switch	43
4.4 Removing and installing front wheel speed sensor G45 / G47	44
4.5 Removing and installing rear wheel speed sensor G44 / G46	45
4.6 Removing and installing parking brake contact switch	46
46 - Brakes - mechanism	48
1 Front brakes	48
1.1 Exploded view - front brakes	48
1.2 Removing and installing front brake pads	53
1.3 Removing and installing front brake caliper	62
1.4 Renewing front brake caliper (all brake versions)	67
1.5 Removing and installing brake carrier (1LJ/1ZC/1ZN/1ZS)	71
1.6 Removing and installing front brake disc (all brake versions)	73
1.7 Removing and installing front splash plate (all brake versions)	75
2 Rear brakes	77
2.1 Exploded view - rear brakes	77
2.2 Removing and installing brake pads	85
2.3 Removing and installing brake caliper	96
2.4 Renewing brake caliper	101
2.5 Removing and installing brake carrier	116
2.6 Removing and installing rear brake disc (all brake versions)	118



2.7	Removing and installing splash plate	119
3	Parking brake	123
3.1	Exploded view - parking brake	123
3.2	Removing and installing parking brake lever	124
3.3	Adjusting parking brake	125
3.4	Removing and installing brake cable (rear)	126
4	Brake pedal	131
4.1	Exploded view - brake pedal	131
4.2	Removing and installing mounting bracket	133
4.3	Separating brake pedal from brake servo	135
4.4	Connecting brake pedal to brake servo	135
4.5	Removing and installing brake pedal	136
47	Brakes - hydraulics	138
1	Front brake caliper	138
1.1	Exploded view - front brake caliper	138
1.2	Removing and installing brake caliper piston	140
2	Rear brake caliper	148
2.1	Exploded view - rear brake caliper	148
2.2	Removing and installing brake caliper piston	151
2.3	Renewing guide pin with protective cap	153
3	Brake servo / brake master cylinder	154
3.1	Exploded view - brake servo / brake master cylinder	154
3.2	Removing and installing brake servo	159
3.3	Removing and installing brake master cylinder	171
3.4	Removing and installing brake fluid reservoir	178
4	Vacuum system	183
4.1	Exploded view - electric vacuum pump	183
4.2	Exploded view - vacuum pump	185
4.3	Checking non-return valve	187
4.4	Removing and installing non-return valve	187
4.5	Removing and installing vacuum sender G608	189
4.6	Checking vacuum system	190
4.7	Removing and installing electric vacuum pump	194
4.8	Removing and installing vacuum pump	195
5	Brake lines	199
5.1	Routing of brake lines	199
5.2	Repairing brake lines	199
6	Hydraulic system	205
6.1	General notes on brake fluid	205
6.2	Pre-bleeding hydraulic system	207
6.3	Bleeding hydraulic system	207
6.4	Leak test	213



00 – Technical data

1 Identification

(ARL006059; Edition 09.2018)

⇒ **"1.1 PR number and type of brake system", page 1**

1.1 PR number and type of brake system

Vehicle data sticker

The type of brake system installed in the vehicle is indicated among other things by the corresponding PR number on the vehicle data sticker.

◆ Example of a vehicle data sticker:

A - Rear brakes (example)

B - Front brakes (example)

Fitting location of vehicle data sticker ⇒ Maintenance ; Booklet 819

-----21-7-0928 926 96
WAUZZZ 8R1 8A101698
8RB 0HY S0R
Q5 quat. TDI 3.0 V6
176 kW A7S
CCWA --- ---
LX7W/LX7W N3Q/CA
E0A 701 4UE 6XC 5SL 6TS
A 1KE J0Z 1LJ 5MA 7X 1AT 1BA
3FU F0A 8GR 0G7 0YD 0JJ
B T41 5KA 8BP U2A X9X 1N3
1XX 803 904 8Z5 D50
7T6 C2T 7K0 4X3 2K1
3L3 4KC 3Y0 4K4 5D7
7MG 01A 4GF
88.8 8.8 88.8 888
A00-10419

ELSA/Vehicle-specific notes

Information showing the type of brake installed can also be found in ELSA/Vehicle-specific notes.

◆ Example of information shown:

1KU - Rear brakes (example)

1LJ - Front brakes (example)

◆ For correct version refer to ⇒ Electronic parts catalogue "ET-KA"

◆ The tables ⇒ [page 5](#) explain the PR numbers. These are important to obtain the correct combination of brake calipers/brake discs and brake pads.

Fahrzeugdaten
Fahrzeugdaten
Marken: V Fahrzeugidentifizierung: WV222N62W0000219
Modelljahr: 2008 Beschreibung: Typen Transaktions T046A
Verkaufstyp: 1N043 Produktionsdatum: 2007-05-04
H08: C8A6 Auslieferungsdatum: ---
G08: 380 Leistung: ---
Farbausstattung
Typ Farbe Lacknummer Beschreibung
ausser (Karosserie/Gach) 80/8 LATW Reflexion Metall/Reflexion Metall
oben TY Comp. * --- (Hochwert/Schwarz)
Pr-Nummern
Pr-Nummern Herkunft Familie
1 013 L K12
2 018 L G1M
3 1AT L B1S
4 100 L A1V
5 100 L S1U
6 100 L A1B
7 100 L T10
8 100 L
9 100 L
10 100 L
11 100 L
12 100 L
13 100 L
14 100 L
15 100 L
16 100 L
17 100 L
18 100 L
19 100 L
20 100 L
21 100 L
22 100 L
23 100 L
24 100 L
25 100 L
26 100 L
1JA L
1KU L
1LJ L
1M L
N3 L
Lippenbremse
absolut
N00-10593



2 Safety precautions

⇒ "2.1 Safety precautions when working on vehicles with start/stop system", page 2

⇒ "2.2 Safety precautions when using testers and measuring instruments during a road test", page 2

2.1 Safety precautions when working on vehicles with start/stop system

When performing repairs on vehicles with start/stop system, note the following:



WARNING

Risk of injury due to automatic engine start on vehicles with start/stop system.

- ◆ *On vehicles with activated start/stop system (indicated by a message in the instrument cluster), the engine may start automatically if it needs to.*
- ◆ *Therefore it is important to ensure that the start/stop system is deactivated when performing repairs (switch off ignition, if required switch on ignition again).*

2.2 Safety precautions when using testers and measuring instruments during a road test

Please note the following if test and measuring equipment has to be used during a road test:



WARNING

Accidents can be caused if the driver is distracted by test equipment or if test equipment is not secured.

There is a risk of injury if the passenger's airbag is triggered during an accident.

- *The operation of test and measuring equipment during a road test distracts the driver's attention.*
- *There is an increased risk of injury if test and measuring equipment is not secured.*
- ◆ *All test equipment must be secured on the rear seat with a belt and operated by a 2nd person from this location.*



3 Repair notes

⇒ [“3.1 Rules for cleanliness”, page 3](#)

⇒ [“3.2 General repair instructions”, page 3](#)

⇒ [“3.3 Contact corrosion”, page 3](#)

⇒ [“3.4 Notes on brake fluid”, page 4](#)

3.1 Rules for cleanliness

- ◆ Absolute cleanliness is required when working on the anti-lock brake system; avoid any products that contain mineral oil, such as oil, grease, etc.
- ◆ Thoroughly clean all connections and the adjacent areas before loosening, but do not use aggressive cleaning agents such as brake cleaner, petrol, thinners or similar.
- ◆ After removal, place parts on a clean surface and cover them.
- ◆ If repairs cannot be completed immediately, carefully cover or seal open components (use sealing plugs from repair kit - 1H0 698 311 A-).
- ◆ Do not use fluffy cloths.
- ◆ Only remove replacement parts from packaging immediately prior to installation.
- ◆ Only use genuine spare parts from original packaging.
- ◆ When the system is open, do not work with compressed air and do not move the vehicle.
- ◆ Ensure that no brake fluid enters electrical connectors.

3.2 General repair instructions

- ◆ When performing repair work on brakes, hairline cracks are often found on the friction surface of the brake discs. Hairline cracks up to a length of 10 mm do not present a technical problem and do not justify a renewal of brake discs.
- ◆ Brake discs and pads with cracks going all the way across the friction surface must be renewed.

3.3 Contact corrosion

Contact corrosion can occur if unsuitable fasteners are used (e.g. bolts, nuts, washers, etc.).

For this reason, only fasteners with a special surface coating are fitted.

Additionally, all rubber and plastic parts and all adhesives are made of non-conductive materials.

Always install new parts as listed in the ⇒ Electronic parts catalogue “ETKA” if you are unsure of the suitability of parts.

Please note:

- ◆ We recommend using only genuine replacement parts; these have been tested and are compatible with aluminium.
- ◆ We recommend using Audi Genuine Accessories.
- ◆ Damage caused by contact corrosion is not covered by warranty.



3.4 Notes on brake fluid



WARNING

Risk to health

- ◆ *Brake fluid is poisonous and must NOT be drawn off by sucking through a hose.*
- ◆ *Use brake filling and bleeding equipment - VAS 5234- to extract brake fluid from brake fluid reservoir.*
- ◆ *Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.*
- ◆ *Protective gloves must be free of oil and grease.*
- ◆ *Risk of malfunction if brake fluid comes into contact with fluids containing mineral oils.*
- ◆ *Due to its corrosive effect, brake fluid must not be allowed to come into contact with paintwork. Rinse off brake fluid spillages immediately using plenty of water.*
- ◆ *Always observe the relevant environmental regulations for disposal.*
- ◆ *If the brake pads are worn and brake fluid has been topped up unnecessarily, brake fluid can overflow when the brake caliper pistons are pressed back into the brake cylinders.*
- ◆ *Before pressing the pistons back, check the brake fluid level. Brake fluid must be extracted if the fluid level is up to the "MAX" mark.*



4 Technical data

⇒ "4.1 Technical data for brakes", page 5

4.1 Technical data for brakes

Front brakes ¹⁾				
Brake		FS III	FN 3	FN 3
Factory code (PR No.)		1ZG	1ZC	1ZS
Brake disc, ventilated	Ø mm	256	288	310
Brake disc, bolt circle diameter	Ø mm	5/100	5/100	5/100
Brake disc, thickness (new)	mm	22	25	25
Brake disc, wear limit	mm	20	23	23
Brake pads, wear limit	mm	⇒ Maintenance ; Booklet 819		



Note

- ◆ Maximum lateral run-out of steel brake disc: 0.06 mm
- ◆ Perform measurement with brake disc installed.
- ◆ Use dial gauge bracket VAS 6079/1 and dial gauge VAS 6079.
- ◆ Remove any dirt and rust from brake disc.
- ◆ Perform measurement 10 mm from outer edge of brake disc.

1) For correct version refer to ⇒ Electronic parts catalogue "ETKA"

Front brakes ²⁾				
Factory code (PR No.)		1ZN	1ZM	1LJ ³⁾
Brake disc, ventilated	Ø mm	310	310	312
Brake disc, bolt circle diameter	Ø mm	5/100	5/100	5/112 ³⁾
Brake disc, thickness (new)	mm	25	25	25
Brake disc, wear limit	mm	23	23	23
Brake pads, wear limit	mm	⇒ Maintenance ; Booklet 819		

Please note for Audi A1 special model:

Brakes with PR number 1LJ: bolt circle diameter of brake disc = 112 mm

2) For correct version refer to ⇒ Electronic parts catalogue "ETKA"

3) PR 1LJ: bolt circle diameter of brake disc = 112 mm



Note

- ◆ Maximum lateral run-out of steel brake disc: 0.06 mm
- ◆ Perform measurement with brake disc installed.
- ◆ Use dial gauge bracket VAS 6079/1 and dial gauge VAS 6079.
- ◆ Remove any dirt and rust from brake disc.
- ◆ Perform measurement 10 mm from outer edge of brake disc.



Rear brakes ⁴⁾					
Brake		C 38	Z0H 38	Z0H 38	Z0H 38
Factory code (PR No.)		1KT	1KX	1KF	1KS ⁵⁾
Brake disc, non-ventilated	Ø mm	230	272	272	272
Brake disc, bolt circle diameter	Ø mm	5/100	5/100	5/100	5/112 ⁵⁾
Brake disc, thickness	mm	9	10	10	10
Brake disc, wear limit	mm	7	8	8	8
Brake pads, wear limit	mm	⇒ Maintenance ; Booklet 819			

Please note for Audi A1 special model:

Brakes with PR number 1KS: bolt circle diameter of brake disc = 112 mm

4) For correct version refer to ⇒ Electronic parts catalogue "ETKA"

5) PR 1KS: bolt circle diameter of brake disc = 112 mm



Note

- ◆ *Maximum lateral run-out of steel brake disc: 0.06 mm*
- ◆ *Perform measurement with brake disc installed.*
- ◆ *Use dial gauge bracket VAS 6079/1 and dial gauge VAS 6079.*
- ◆ *Remove any dirt and rust from brake disc.*
- ◆ *Perform measurement 10 mm from outer edge of brake disc.*



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5 Brake test

⇒ [“5.1 General notes”, page 7](#)

⇒ [“5.2 Testing vehicles with front-wheel drive”, page 7](#)

⇒ [“5.3 Testing vehicles with four-wheel drive”, page 7](#)

5.1 General notes

- ◆ The wheels are driven by the brake test rollers.
- ◆ During the test the gearbox must be in neutral on vehicles with manual gearbox or in position N on dual clutch gearbox.
- ◆ Follow the instructions provided by the manufacturer of the brake test equipment when performing the test.



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Electronic brake control systems are inoperative when the ignition is switched off.

5.2 Testing vehicles with front-wheel drive

Testing on a single-axle brake dynamometer

- ◆ Perform brake test on a single-axle brake dynamometer.
- ◆ The test speed must not exceed 6 km/h. Otherwise the EDL control can activate the brakes if the rollers start at different points in time.
- ◆ All brake test equipment approved by Audi meets these requirements.

5.3 Testing vehicles with four-wheel drive

Testing on a single-axle brake dynamometer for four-wheel drive vehicles

- ◆ The rollers drive the wheels of one axle in opposite directions to avoid transmitting torque to the other axle.
- ◆ The test speed must not exceed 6 km/h. Otherwise the EDL control can activate the brakes if the rollers start at different points in time.
- ◆ All brake test equipment approved by Audi meets these requirements.



45 – Anti-lock brake system

1 General notes

⇒ [“1.1 Notes for repair work on the ABS”, page 8](#)

1.1 Notes for repair work on the ABS

Malfunctions in the ABS system do not influence the brake system and servo action. The conventional braking system remains functional even without ABS. However, the vehicle's braking behaviour can change. After the ABS warning lamp comes on, the rear wheels can lock early when braking.



WARNING

The anti-lock brake system is basically maintenance-free.

Testing, removing, installing and repair work may only be performed by qualified personnel.

Failure to observe the information described in this Workshop Manual may result in damage to the system and could make the vehicle unsafe.

- ◆ Before carrying out repair work on the anti-lock brake system, determine the cause of the problem using self-diagnosis.
- ◆ When installing a new hydraulic control unit, always check its coding. ⇒ [Vehicle diagnostic tester](#)
- ◆ With ignition switched off, disconnect battery earth strap.
- ◆ When working with brake fluid, observe the relevant safety precautions and notes ⇒ [page 205](#) .
- ◆ Always bleed the brake system (using brake filling and bleeding equipment - VAS 5234-) after all work which involves opening the hydraulic system. In addition, a high- and low-pressure test should be carried out on the brake system ⇒ [page 213](#) .
- ◆ Only remove replacement parts from packaging immediately prior to installation.
- ◆ Only use genuine spare parts from original packaging.
- ◆ When the system is open, do not work with compressed air and do not move the vehicle.
- ◆ Ensure that no brake fluid enters electrical connectors.



2 Overview of fitting locations

⇒ "2.1 Overview of fitting locations - ABS/ESP", page 9

2.1 Overview of fitting locations - ABS/ESP

1 - Control button unit (at bottom left)

- ❑ Removing and installing
⇒ Electrical system;
Rep. gr. 96 ; Controls;
Removing and installing
switches in dash panel

2 - ABS warning lamp - K47-

3 - ESP warning lamp - K155-

4 - Brake system warning lamp - K118-

5 - Steering column electronics control unit - J527-

- ❑ Combined with airbag coil connector and return ring with slip ring - F138- and steering angle sender - G85-
- ❑ Checking ⇒ Vehicle diagnostic tester, Guided Fault Finding
- ❑ Removing and installing
⇒ Electrical system;
Rep. gr. 94 ; Steering column switch module;
Removing and installing steering column electronics control unit - J527-

6 - Diagnostic connection

- ❑ Fitting location: in driver's footwell

7 - Speed sensor

- ❑ Front right speed sensor - G45-
- ❑ Front left speed sensor - G47-
- ❑ Rear right speed sensor - G44-
- ❑ Rear left speed sensor - G46-
- ❑ Checking ⇒ Vehicle diagnostic tester, Guided Fault Finding
- ❑ Exploded view ⇒ [page 39](#) , ⇒ [page 41](#)

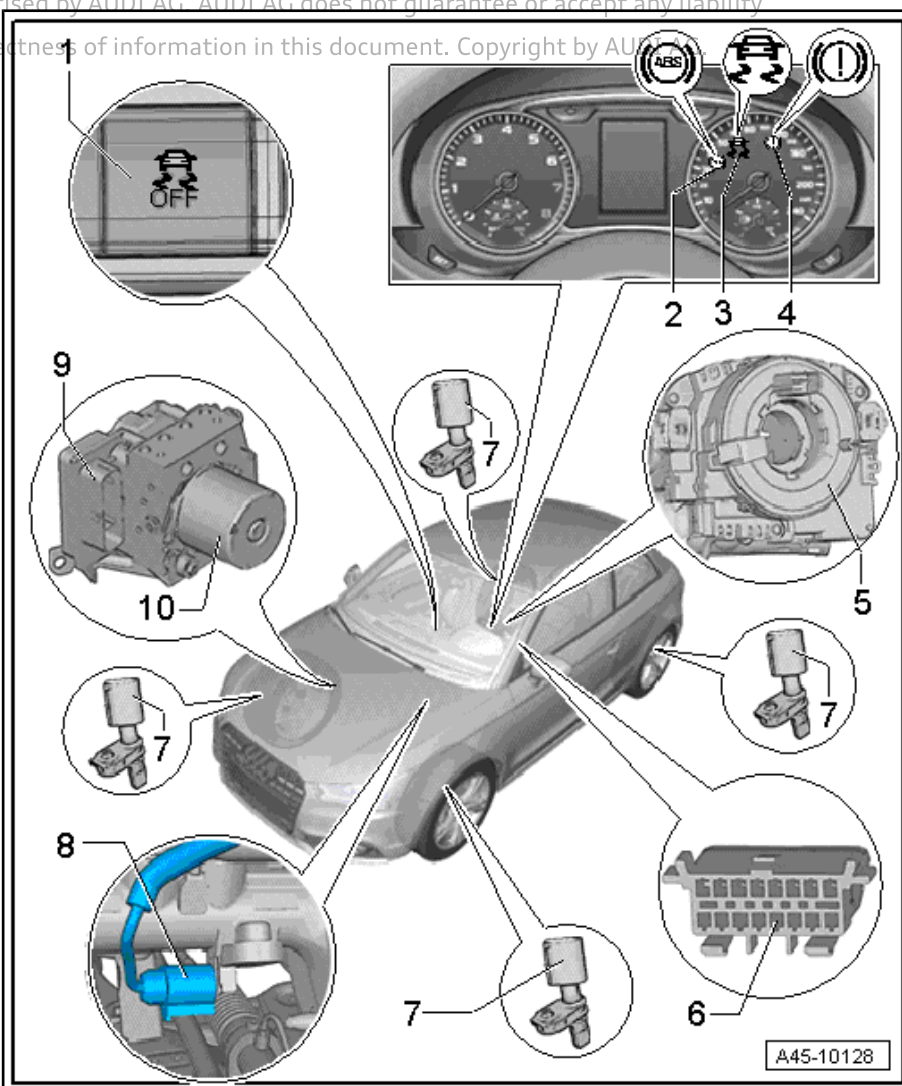
8 - Brake light switch - F-

- ❑ Location: on brake master cylinder
- ❑ Checking ⇒ Vehicle diagnostic tester, Guided Fault Finding
- ❑ Removing and installing ⇒ [page 43](#)

9 - ABS control unit - J104-

- ❑ The hydraulic unit and the control unit together form the hydraulic control unit.
- ❑ Fitting location:

◆ Audi A1 with front-wheel drive: on hydraulic unit in engine compartment (bottom right)





◆ Audi A1 quattro ➔ [page 10](#)

◆ Audi S1 ➔ [page 10](#)

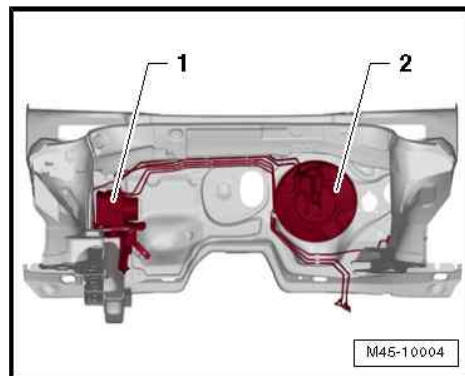
10 - ABS hydraulic unit - N55-

- The hydraulic unit and the control unit together form the hydraulic control unit.

Fitting location of ABS control unit - J104- / ABS hydraulic unit - N55- - Audi A1 quattro

ABS control unit - J104- and ABS hydraulic unit - N55- are located in the engine compartment (right-side)

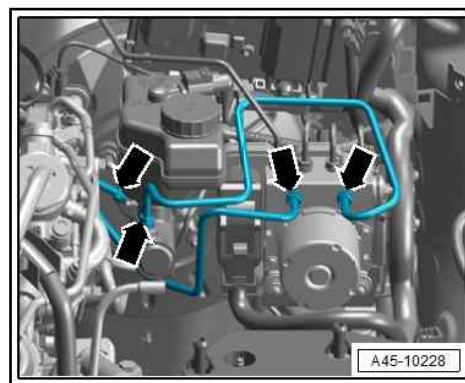
- 1 - ABS hydraulic unit - N55- with ABS control unit - J104-
- 2 - Brake servo with tandem brake master cylinder



Fitting location of ABS control unit - J104- / ABS hydraulic unit - N55- - Audi S1

ABS control unit - J104- and ABS hydraulic unit - N55- are located in the engine compartment (left-side)

- ◆ -Right arrows-: brake lines on ABS hydraulic unit - N55-
- ◆ -Left arrows-: brake lines leading to brake master cylinder



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3 Control unit and hydraulic unit

⇒ [“3.1 Exploded view - control unit and hydraulic unit”, page 11](#)

⇒ [“3.2 Removing and installing ABS control unit J104 / ABS hydraulic unit N55”, page 15](#)

⇒ [“3.3 Separating control unit from hydraulic unit”, page 35](#)

⇒ [“3.4 Attaching control unit to hydraulic unit”, page 36](#)

3.1 Exploded view - control unit and hydraulic unit



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

⇒ [“3.1.1 Exploded view - control unit and hydraulic unit, Audi A1”, page 11](#)

⇒ [“3.1.2 Exploded view - control unit and hydraulic unit, Audi S1”, page 13](#)

3.1.1 Exploded view - control unit and hydraulic unit, Audi A1



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1 - Brake lines

- ☐ Do not alter shape
- ☐ Tightening torque:
14 Nm

2 - ABS control unit - J104- with ABS hydraulic unit - N55-

- ☐ If the ABS control unit - J104- is defective, it can be detached from the ABS hydraulic unit - N55- and renewed separately
- ☐ If the ABS hydraulic unit - N55- is defective, it must be renewed together with the ABS control unit - J104-
- ☐ ⇒ ["3.2 Removing and installing ABS control unit J104 / ABS hydraulic unit N55", page 15](#)

3 - Brake lines

- ☐ To brake master cylinder
- ☐ Do not alter shape
- ☐ Tightening torque:
14 Nm

4 - Bracket

5 - Nut

- ☐ 20 Nm

6 - Nut

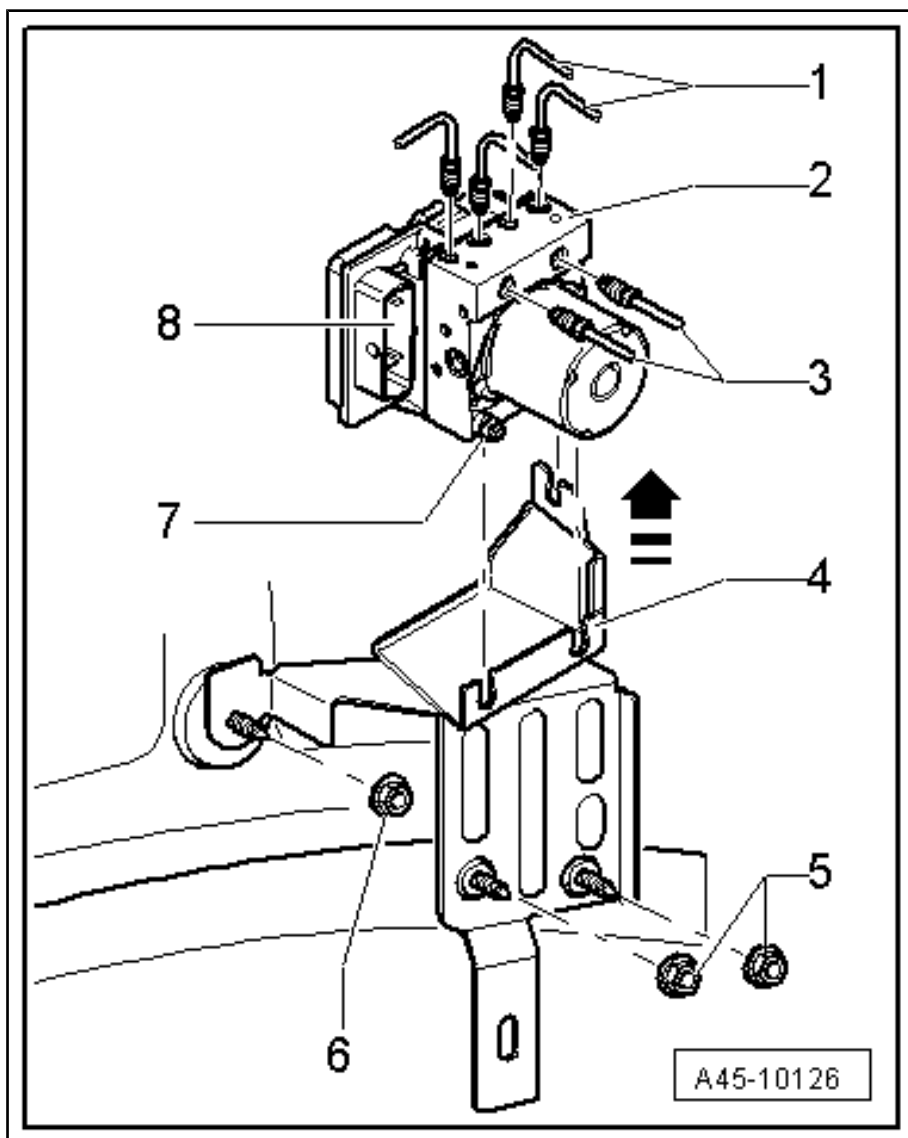
- ☐ 20 Nm

7 - Rubber buffer

- ☐ Slacken off nuts

8 - Electrical connector

- ☐ To control unit



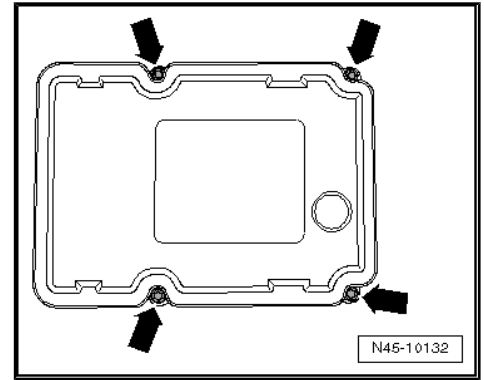
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ABS control unit - J104- to ABS hydraulic unit - N55- - tightening torque and sequence

– Tighten bolts in diagonal sequence and in stages as follows:

Stage	Bolts	Tightening torque
1.	-arrows-	Screw in by hand as far as stop
2.	-arrows-	Align sealing lugs evenly on all sides and preload with a torque of 1.5 ... 2 Nm
3.	-arrows-	3 Nm



Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.

3.1.2 Exploded view - control unit and hydraulic unit, Audi S1

Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.

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1 - Nut

- 20 Nm

2 - Bracket

3 - Rubber buffer

4 - Nut

- 8 Nm

5 - Washer

6 - Brake line

- Do not alter shape
- Tightening torque:
14 Nm

7 - ABS hydraulic unit - N55-

- ⇒ [“3.2.3 Removing and installing ABS control unit J104 / ABS hydraulic unit N55 - Audi S1”](#), page 30

8 - Brake line

- Do not alter shape
- Tightening torque:
14 Nm

9 - ABS control unit - J104-

- ⇒ [“3.2.3 Removing and installing ABS control unit J104 / ABS hydraulic unit N55 - Audi S1”](#), page 30

10 - Bolt

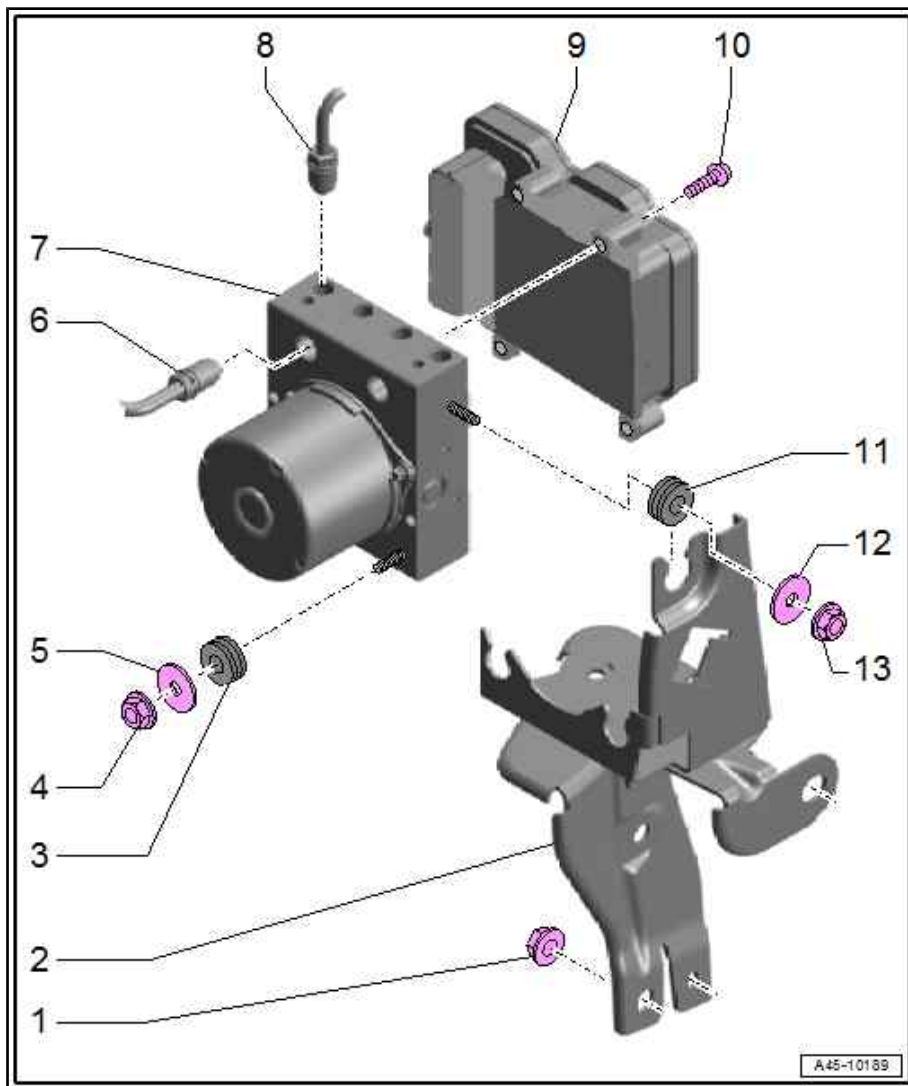
- Tightening torque and tightening sequence
⇒ [page 13](#)

11 - Rubber buffer

12 - Washer

13 - Nut

- 8 Nm



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Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.



3.2 Removing and installing ABS control unit - J104- / ABS hydraulic unit - N55-



Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.

⇒ [“3.2.1 Removing and installing ABS control unit J104 / ABS hydraulic unit N55 - Audi A1 with front-wheel drive”, page 15](#)

⇒ [“3.2.2 Removing and installing ABS control unit J104 / ABS hydraulic unit N55 - Audi A1 quattro”, page 20](#)

⇒ [“3.2.3 Removing and installing ABS control unit J104 / ABS hydraulic unit N55 - Audi S1”, page 30](#)

3.2.1 Removing and installing ABS control unit - J104- / ABS hydraulic unit - N55- - Audi A1 with front-wheel drive



Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.



Note

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When renewing ABS control unit - J104- / ABS hydraulic unit - N55-, select the “Replace” function for the ABS control unit - J104- / ABS hydraulic unit - N55- using ⇒ Vehicle diagnostic tester, [Guided Functions](#).

Special tools and workshop equipment required

- ◆ Vehicle diagnostic tester
- ◆ Torque wrench - V.A.G 1331-

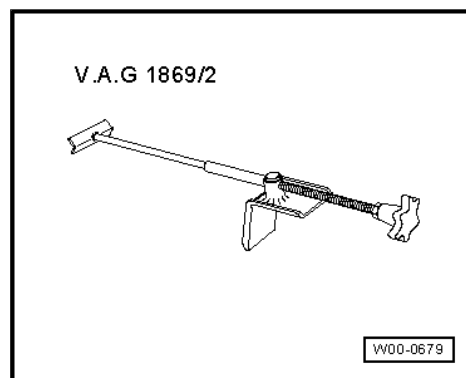
V.A.G 1331



W00-11166



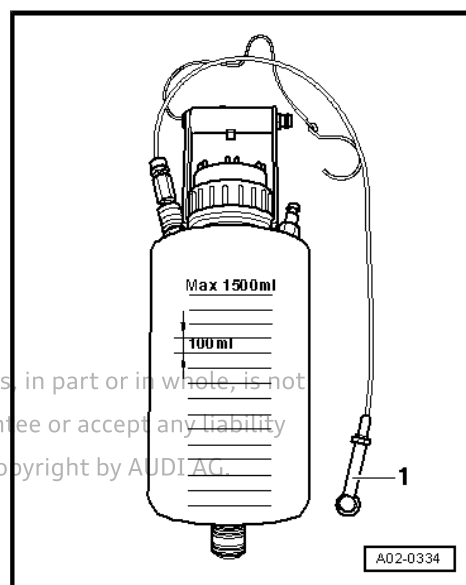
◆ Brake pedal actuator - V.A.G 1869/2-



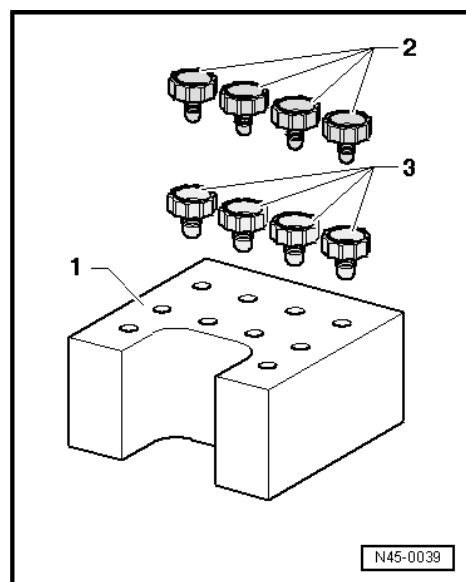
◆ Reservoir from brake filling and bleeding equipment - VAS 5234-



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◆ Sealing plugs (repair kit - 1H0 698 311 A-)



- 1 - Transport protection for contact pins (foam)
- 2 - M10 sealing plugs
- 3 - M12 sealing plugs



Removing

- Insert brake pedal actuator - V.A.G 1869/2- between brake pedal and driver's seat. Depress brake pedal by at least 60 mm.



Note

This closes the valves in the brake master cylinder and stops the brake fluid reservoir from running empty.



WARNING

Risk to health

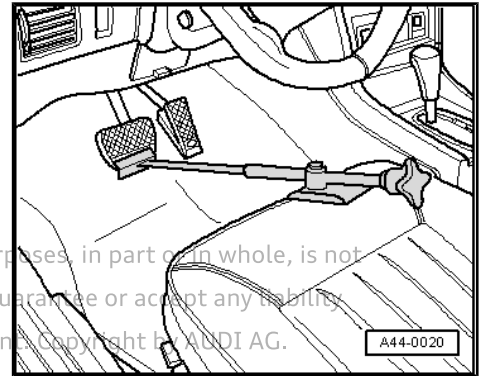
- ◆ *Brake fluid is poisonous and must NOT be drawn off by sucking through a hose.*
- ◆ *Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.*
- ◆ *Always observe the relevant environmental regulations for disposal.*

Risk of malfunction if brake fluid comes into contact with fluids containing mineral oils.

- ◆ *Brake fluid must NOT come into contact with fluids containing mineral oils (oil, petrol, cleaning agents). Protective gloves must be free of oil and grease.*

Risk of damage to paintwork surfaces

- ◆ *Due to its corrosive effect, brake fluid must not be allowed to come into contact with paintwork. Rinse off brake fluid spillages immediately using plenty of water.*

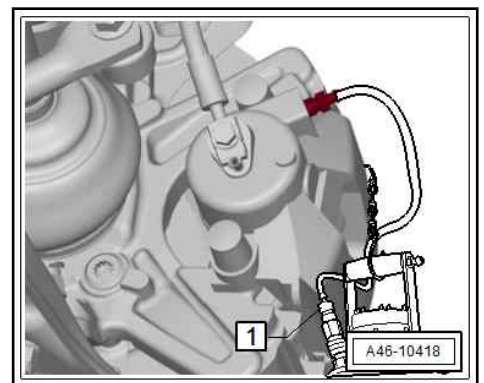


- Detach protective cap from bleeder screw on front left brake caliper.
- Connect hose -1- from reservoir as shown in illustration.
- Open bleeder screw to relieve pressure in brake system.
- Close bleeder screw and remove reservoir.
- Repeat procedure on rear left brake caliper.



Note

The brake pedal actuator - V.A.G 1869/2- must not be removed.



Vehicles with 1.4 ltr. engine with turbo and supercharger

- Remove pressure pipe and intake connecting pipe with regulating flap control unit - J808- ⇒ Rep. gr. 24 ; Intake manifold; Removing and installing regulating flap control unit - J808- .
- Remove charge air hose, unbolt charge air pipe and move to one side ⇒ Rep. gr. 21 ; Charge air system; Exploded view - charge air system .

Vehicles with TDI engine:

- Remove particulate filter ⇒ Rep. gr. 26 ; Emission control system; Removing and installing particulate filter .



All vehicles (continued):

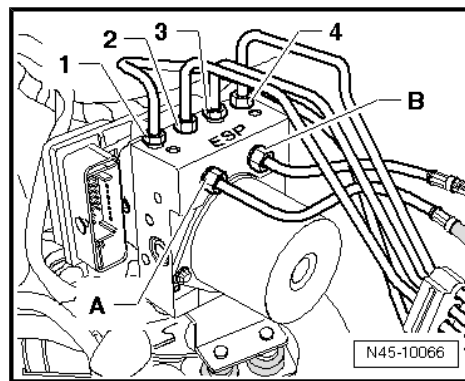
- Mark brake lines -A and B- coming from brake master cylinder and disconnect brake lines from ABS hydraulic unit - N55- .
- Mark brake lines -1 ... 4- and disconnect.
- Seal open connections immediately using clean sealing plugs from repair kit - 1H0 698 311 A- .



Caution

Risk of damage to brake lines

- ◆ ***Do not attempt to bend to a different shape.***

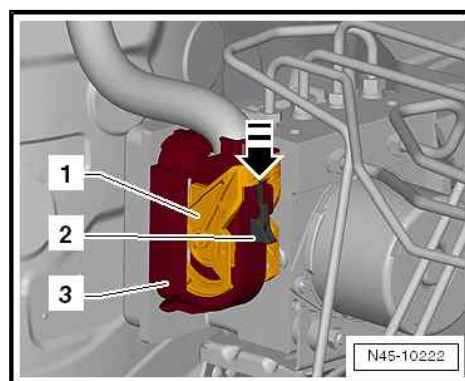


- Press locking slide -2- downwards -arrow-.
- Release electrical connector and unplug connector from control unit.
- To release electrical connector -3-, press locking bar -1- downwards and pull off connector.



Note

- ◆ ***Make sure brake fluid does not get into connector housing of control unit. This can result in corrosion of the contacts and failure of the system.***
- ◆ ***Use compressed air to carefully clean connector housing if necessary.***



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- Slacken nuts -arrows- securing rubber buffers until rubber buffers can be turned.
- Unscrew top nut (located at side) as far as shoulder on stud.
- Lift hydraulic control unit -1- out of bracket in direction of -arrow- and remove.

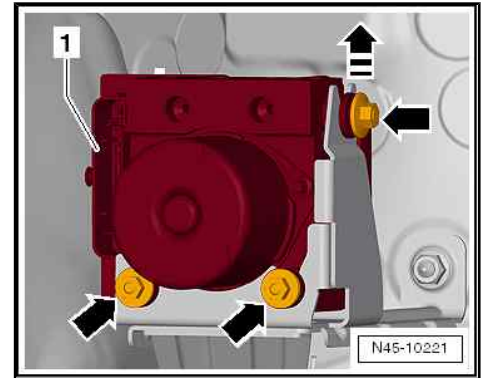
Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.



Note

- ◆ Do not remove the sealing plugs from the new hydraulic control unit until you are ready to fit the corresponding brake line.
 - ◆ If the sealing plugs are removed from the hydraulic control unit too soon, brake fluid may escape and it may not be possible to fill and bleed the unit properly.
- Attach bracket to hydraulic control unit.
 - Fit hydraulic control unit in bracket and tighten nuts.



Note

To facilitate installation, moisten the rubber mountings in the bracket slightly with water.

- Remove sealing plugs from new hydraulic unit.



Note

To facilitate installation, first insert all the brake lines in the hydraulic unit and then tighten the brake line connections.

- Insert all brake lines, tighten connections and clip brake lines into retainer on plenum chamber partition panel.
- Perform final control diagnosis after securing brake lines to hydraulic unit → Vehicle diagnostic tester.



Note

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Final control diagnosis can be used to establish whether line connections have been interchanged.

- Remove brake pedal actuator - V.A.G 1869/2- .
- Bleed brake system → [page 207](#) .



- When renewing ABS control unit - J104- / ABS hydraulic unit - N55- , select the "Replace" function for the ABS control unit - J104- / ABS hydraulic unit - N55- using ⇒ Vehicle diagnostic tester, Guided Functions.



WARNING

Risk of accident!

- ◆ ***Make sure that the brakes work properly before the vehicle is driven on the road.***

Tightening torques

- ◆ ⇒ ["3.1.1 Exploded view - control unit and hydraulic unit, Audi A1", page 11](#)
- ◆ Charge air pipe ⇒ Rep. gr. 21 ; Charge air system; Exploded view - charge air system
- ◆ Regulating flap control unit - J808- ⇒ Rep. gr. 24 ; Intake manifold; Exploded view - intake manifold
- ◆ Particulate filter ⇒ Rep. gr. 26 ; Emission control system; Exploded view - emission control system

3.2.2 Removing and installing ABS control unit - J104- / ABS hydraulic unit - N55- - Audi A1 quattro



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

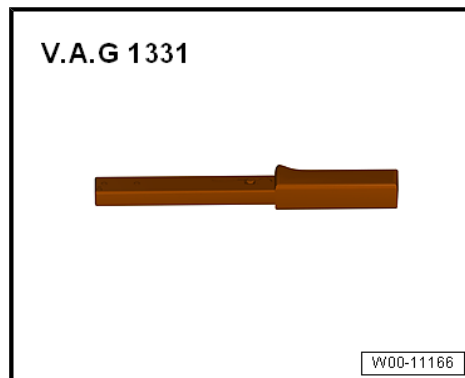


Note

When renewing ABS control unit - J104- / ABS hydraulic unit - N55- , select the "Replace" function for the ABS control unit - J104- / ABS hydraulic unit - N55- using ⇒ Vehicle diagnostic tester, Guided Functions.

Special tools and workshop equipment required

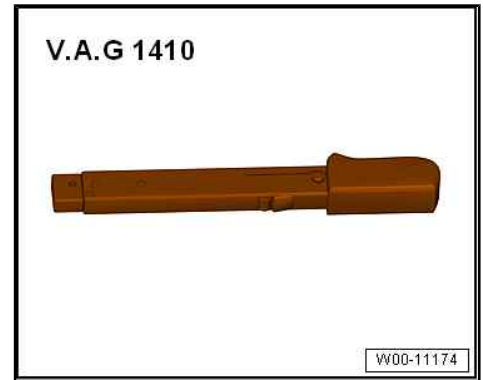
- ◆ Torque wrench - V.A.G 1331-



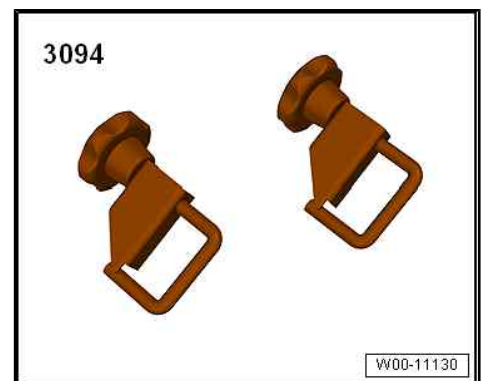
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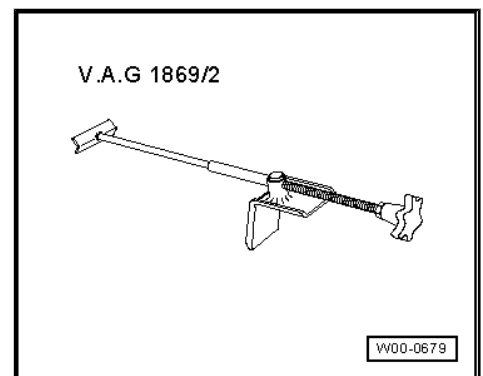
- ◆ Torque wrench - V.A.G 1410-



- ◆ Hose clamps up to 25 mm - 3094-



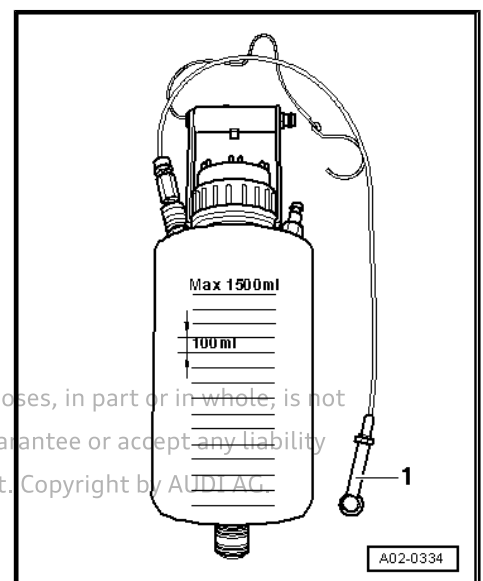
- ◆ Brake pedal actuator - V.A.G 1869/2-



- ◆ Reservoir from brake filling and bleeding equipment - VAS 5234-

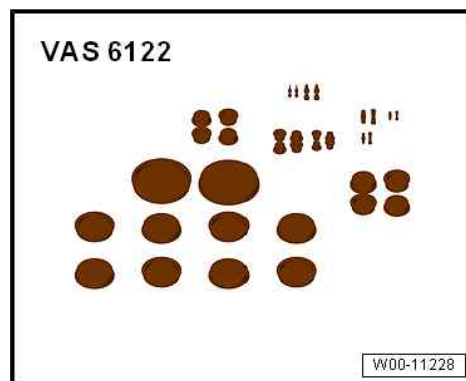


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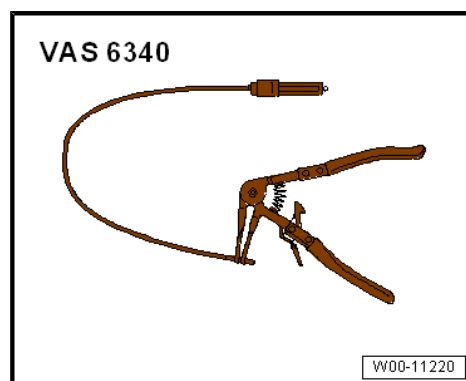




◆ Engine bung set - VAS 6122-



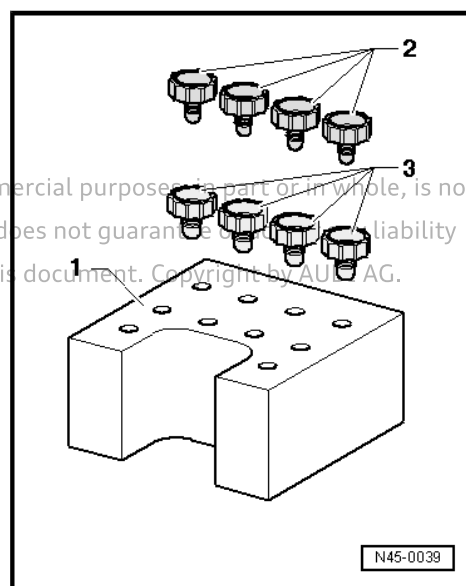
◆ Hose clip pliers - VAS 6340-



◆ Sealing plugs (repair kit - 1H0 698 311 A-)



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- 1 - Transport protection for contact pins (foam)
- 2 - M10 sealing plugs
- 3 - M12 sealing plugs

Removing

- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation .

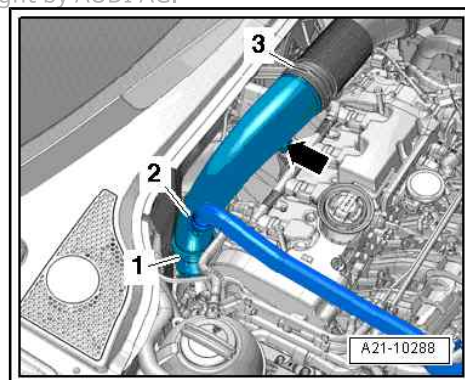


Caution

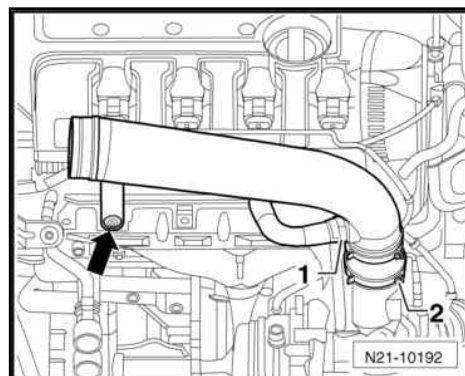
Risk of irreparable damage to electronic components when disconnecting battery

◆ *Observe notes on procedure for disconnecting the battery.*

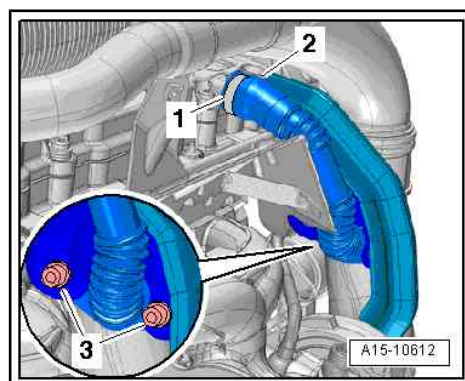
- Disconnect battery ⇒ Electrical system; Rep. gr. 27 ; Battery;
Disconnecting and connecting battery
- Remove engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .
- Remove bolt -arrow-.
- Release hose clips -1- and -3- and move air pipe -2- aside with hose connected.



- Release hose clip -2-.
- Remove intake hose between air pipe and turbocharger.
- Seal off turbocharger using clean plugs from engine bung set - VAS 6122- .



- Detach ACF line -2- from cylinder head cover.
- Remove bolts -3-.
- Detach crankcase breather pipe with heat shield from cylinder head cover.
- To do this, release hose clip -1-.





- Press locking slide -2- downwards in direction of -arrow-.
- Release locking bar -1- securing connector -3- on ABS control unit - J104- .
- To do this, press locking bar -1- downwards in direction of -arrow-.
- Unplug connector -3- towards front.



WARNING

Risk to health

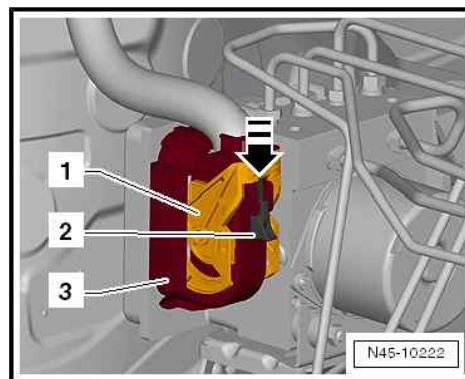
- ◆ **Brake fluid is poisonous and must NOT be drawn off by sucking through a hose.**
- ◆ **Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.**
- ◆ **Always observe the relevant environmental regulations for disposal.**

Risk of malfunction if brake fluid comes into contact with fluids containing mineral oils.

- ◆ **Brake fluid must NOT come into contact with fluids containing mineral oils (oil, petrol, cleaning agents). Protective gloves must be free of oil and grease.**

Risk of damage to paintwork surfaces

- ◆ **Due to its corrosive effect, brake fluid must not be allowed to come into contact with paintwork. Rinse off brake fluid spillages immediately using plenty of water.**

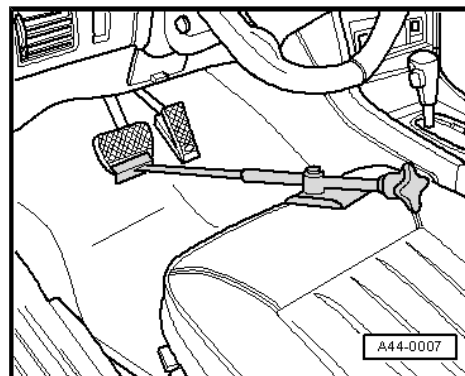


- Insert brake pedal actuator - V.A.G 1869/2- between brake pedal and driver's seat. Depress brake pedal by at least 60 mm.

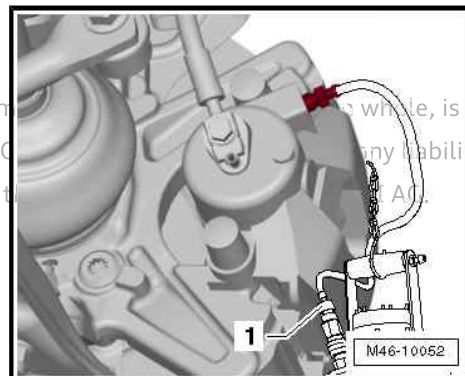


Note

This closes the valves in the brake master cylinder and stops the brake fluid reservoir from running empty.



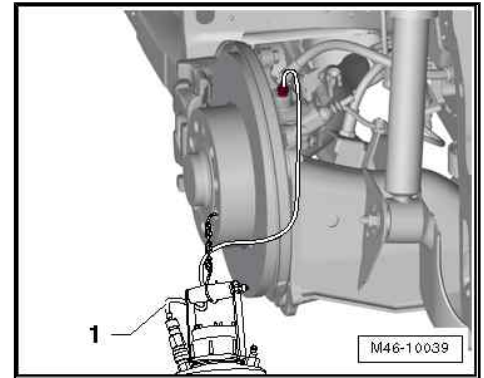
- Attach bleeder hose -1- of bleeder bottle to bleeder screw of front left brake caliper.
- Open bleeder screw.



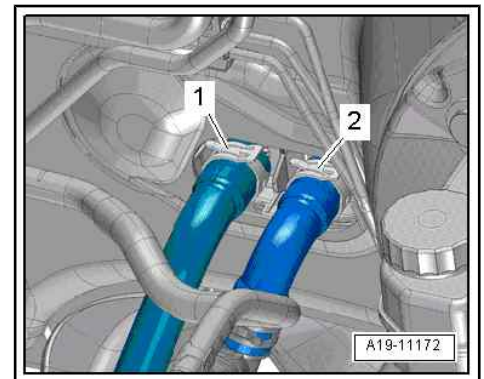
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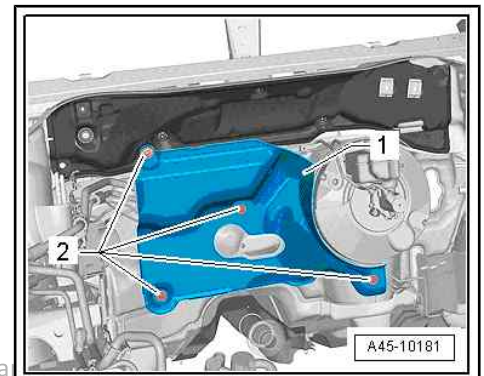
- Attach bleeder hose -1- of bleeder bottle to bleeder screw of rear left brake caliper.
- Open bleeder screw.
- Close bleeder screws (front left and rear left).
- Do not remove brake pedal actuator - V.A.G 1869/2- .
- Place sufficient lint-free cloths under the ABS hydraulic unit - N55- .



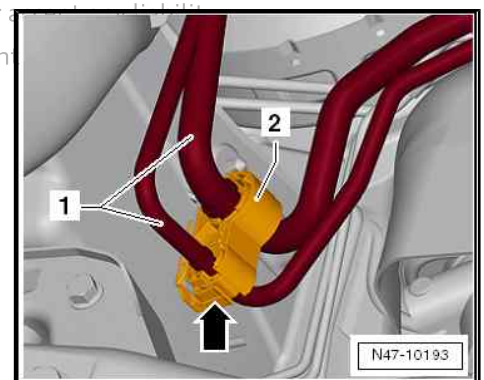
- Clamp off coolant hoses with hose clamps .
- Release hose clips -1- and -2- and disconnect coolant hoses from heat exchanger for heater.



- Remove bolts -2-.
- Detach heat shield -1-.

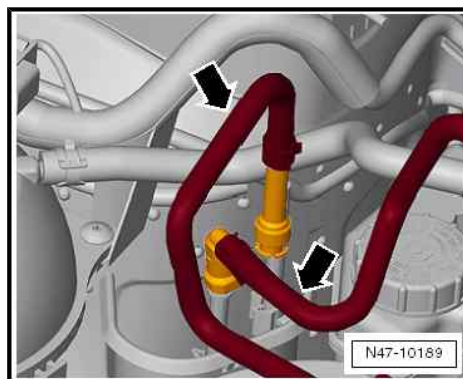


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- Carefully open retainer -2- at retaining tab -arrow-.
 - Unclip refrigerant line -1-.

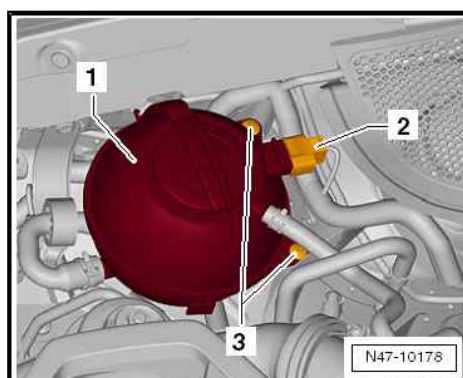




- Disconnect fuel lines -arrows- at connection in engine compartment (right-side).
- Move fuel lines aside.

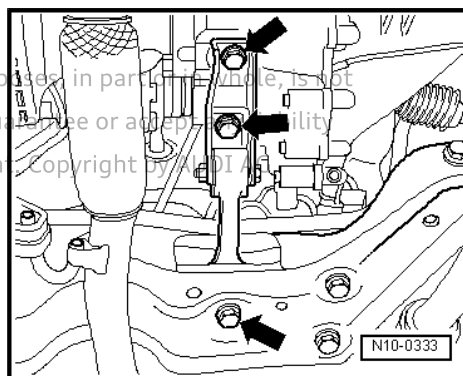


- Release and unplug connector -2-.
- Unscrew securing bolt -3-.
- Move coolant expansion tank -1- to one side.

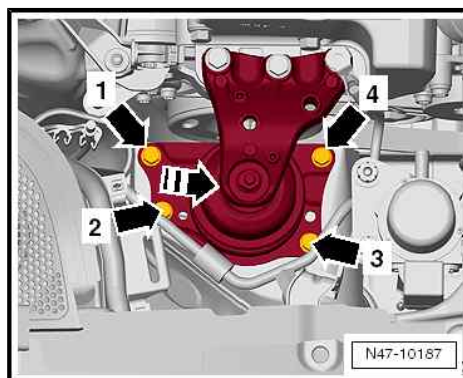


- Remove bolts -arrows- and detach pendulum support.

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- Remove bolts -1- to -4- from engine mounting.
- Pull engine 3.5 cm forwards in direction of -arrow- at engine mounting.





- Unclip brake lines -1- at retainers -arrows-.

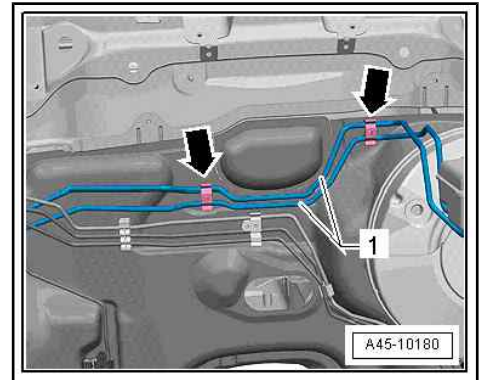


Caution

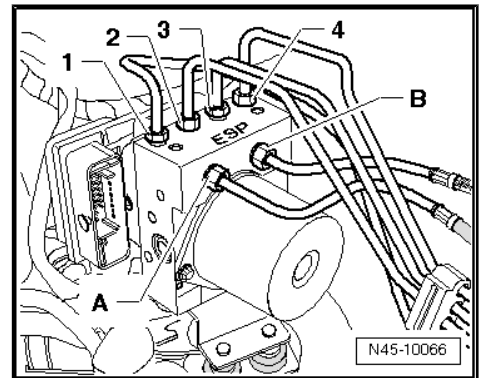
Risk of damage to brake lines

- ◆ *Do not attempt to bend to a different shape.*

Make sure that no brake fluid gets onto contacts.

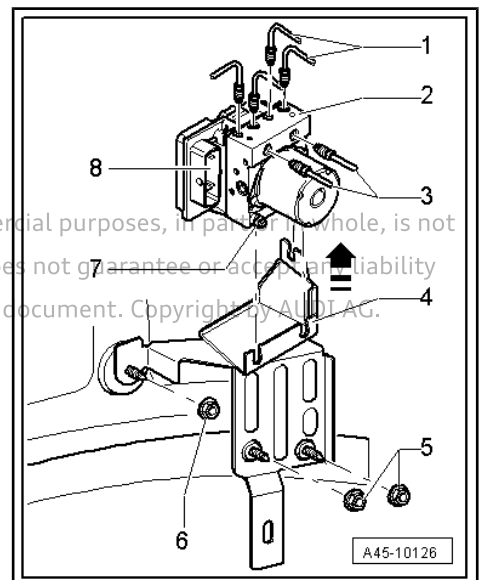


- First mark the two brake lines -A- and -B- coming from the brake master cylinder.
- Unscrew brake lines from ABS hydraulic unit - N55- .
- Mark brake lines -1- to -4- and unscrew brake lines.
- Seal open connections immediately using clean sealing plugs from repair kit - 1H0 698 311 A- .



Note

- ◆ *Make sure brake fluid does not get into connector housing of control unit. This can result in corrosion of the contacts and failure of the system.*
- ◆ *Use compressed air to carefully clean connector housing if necessary.*
- Remove nuts -5- and -6-.
- Detach bracket together with hydraulic control unit.
- Turn bracket so that nuts are accessible.



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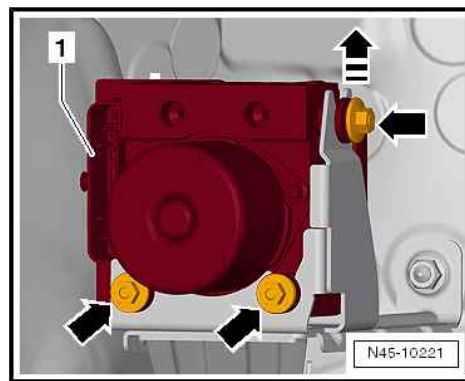


- Loosen three nuts -arrows- securing rubber dampers until rubber dampers can be turned.
- Unscrew top nut (located at side) as far as shoulder on stud.
- Lift hydraulic control unit -1- out of bracket in direction of -arrow- and remove.



Note

- ◆ *Fit transport protection after removing hydraulic control unit.*
- ◆ *No warranty claims for the hydraulic control unit can be accepted if the transport protection is not fitted.*



Installing

Install in reverse sequence, paying attention to the following:



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



Note

- ◆ *Do not remove the sealing plugs from the new hydraulic control unit until you are ready to fit the corresponding brake line.*
- ◆ *If the sealing plugs are removed from the hydraulic control unit too soon, brake fluid may escape and it may not be possible to fill and bleed the unit properly.*
- ◆ *To facilitate installation, moisten the rubber mountings in the bracket slightly with water.*
- ◆ *To facilitate installation, first insert all brake lines in the hydraulic unit.*
- ◆ *Then tighten the brake line connections.*

- Fit hydraulic control unit -1- in bracket.



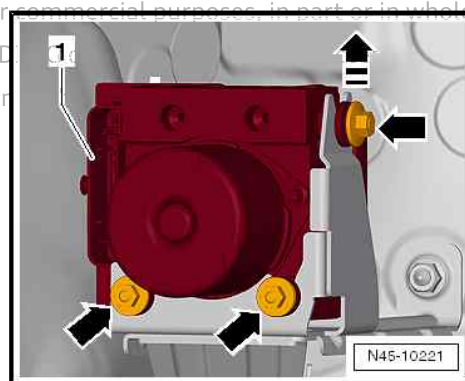
Caution

Malfunctions can occur if the unit is not fitted securely.

- ◆ ***Make sure that the rubber dampers are fitted correctly in the bracket when installing.***

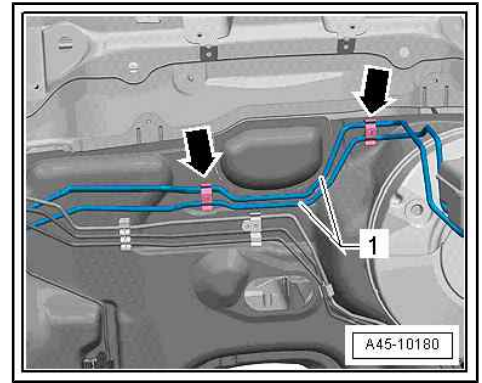
After installation, check that the ABS hydraulic unit - N55- is seated securely, otherwise malfunctions can occur.

- Remove sealing plugs from new hydraulic control unit.
- Insert all brake lines and tighten connections.





- Clip brake lines -1- into retainers -arrows- on plenum chamber partition panel.
- Remove brake pedal actuator - V.A.G 1869/2- .
- Bleed brake system ⇒ [page 207](#) .
- Bleed clutch system ⇒ Rep. gr. 30 ; Clutch mechanism; Bleeding clutch hydraulics .
- Install engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .
- Connect battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Check coolant level ⇒ Rep. gr. 19 ; Cooling system/coolant; Draining and filling cooling system .
- When renewing ABS control unit - J104- / ABS hydraulic unit - N55- , select the "Replace" function for the ABS control unit - J104- / ABS hydraulic unit - N55- using ⇒ Vehicle diagnostic tester, [Guided Functions](#).



WARNING

Risk of accident!

- ◆ **Make sure that the brakes work properly before the vehicle is driven on the road.**



Note

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Tightening torques

Component	Tightening torque
Bracket for hydraulic control unit to body	20 Nm
Nut securing rubber damper	8 Nm
Brake lines to hydraulic control unit	⇒ "3.1.1 Exploded view - control unit and hydraulic unit, Audi A1", page 11
Crankcase breather pipe	⇒ Rep. gr. 21 ; Turbocharger; Exploded view - turbocharger
Coolant expansion tank	5 Nm
Pendulum support	⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Exploded view - subframe
Engine mounting	⇒ Rep. gr. 10 ; Assembly mountings; Exploded view - assembly mountings
Heat shield	2.5 Nm



3.2.3 Removing and installing ABS control unit - J104- / ABS hydraulic unit - N55- - Audi S1



Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.

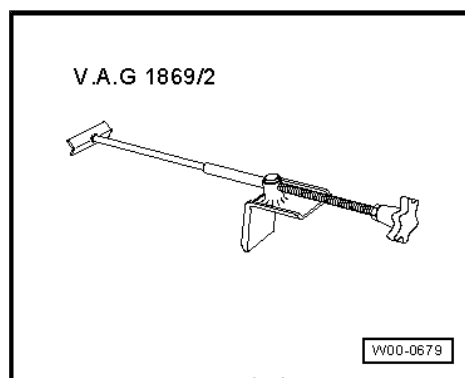


Note

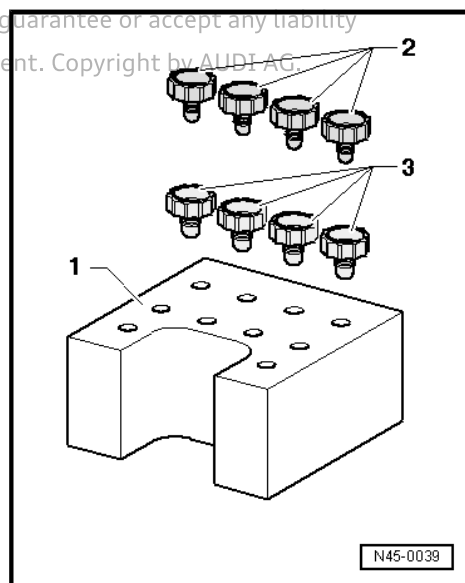
When renewing ABS control unit - J104- / ABS hydraulic unit - N55-, select the "Replace" function for the ABS control unit - J104- / ABS hydraulic unit - N55- using ⇒ Vehicle diagnostic tester, Guided Functions.

Special tools and workshop equipment required

- ◆ Vehicle diagnostic tester
- ◆ Brake pedal actuator - V.A.G 1869/2-



- ◆ Sealing plugs (repair kit - 1H0 698 311 A)



- 1 - Transport protection for contact pins (foam)
- 2 - M10 sealing plugs



3 - M12 sealing plugs

Removing

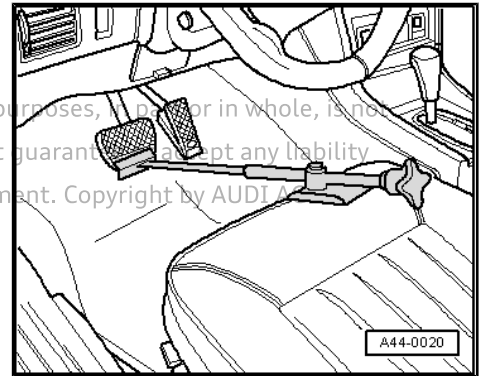
- Remove air cleaner housing ⇒ Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .
- Take engine control unit - J623- out of bracket ⇒ Rep. gr. 24 ; Engine control unit; Removing and installing engine control unit - J623- and tie up to one side.
- Insert brake pedal actuator - V.A.G 1869/2- between brake pedal and driver's seat. Depress brake pedal by at least 60 mm.



Note

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This closes the valves in the brake master cylinder and stops the brake fluid reservoir from running empty.



WARNING

Risk to health

- ◆ *Brake fluid is poisonous and must NOT be drawn off by sucking through a hose.*
- ◆ *Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.*
- ◆ *Always observe the relevant environmental regulations for disposal.*

Risk of malfunction if brake fluid comes into contact with fluids containing mineral oils.

- ◆ *Brake fluid must NOT come into contact with fluids containing mineral oils (oil, petrol, cleaning agents). Protective gloves must be free of oil and grease.*

Risk of damage to paintwork surfaces

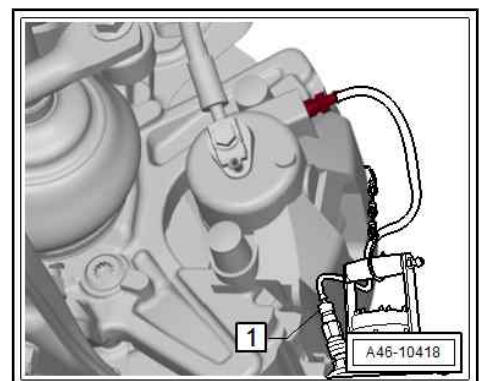
- ◆ *Due to its corrosive effect, brake fluid must not be allowed to come into contact with paintwork. Rinse off brake fluid spillages immediately using plenty of water.*

- Detach protective cap on bleeder screw of front left brake caliper.
- Fit bleeder hose -1- of reservoir onto bleeder screw.
- Open bleeder screw to relieve pressure in hydraulic system.
- Repeat this procedure at rear left brake.
- Close bleeder screws (front left and rear left).



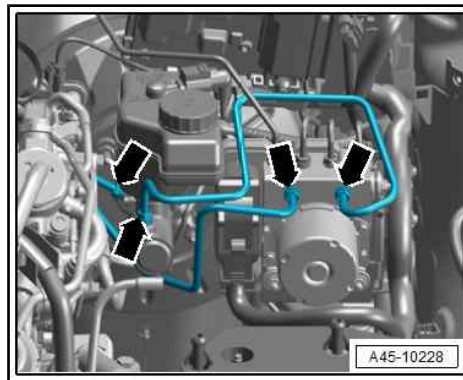
Note

The brake pedal actuator - V.A.G 1869/2- must not be removed.





- Place sufficient lint-free cloths -arrow- under control unit and hydraulic unit.
- Unscrew union screws -arrows- and detach brake lines -1, 2-.
- Mark, disconnect and seal remaining brake lines leading to brake calipers.



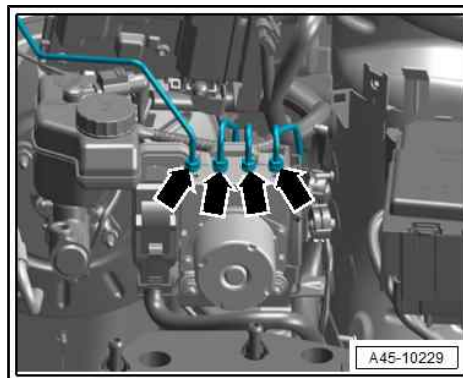
- Unscrew unions -arrows-, lift brake lines clear and tie up.
- Seal open connections immediately using clean sealing plugs from repair kit - 1H0 698 311 A- .



Caution

Risk of damage to brake lines

- ◆ ***Do not attempt to bend to a different shape.***

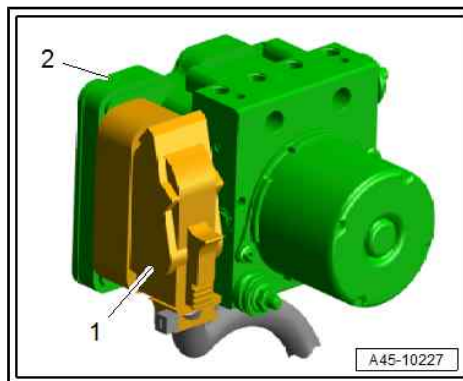


- Unplug electrical connector -1- on ABS control unit - J104-
-item 2-.



Note

- ◆ ***Make sure brake fluid does not get into connector housing of control unit. This can result in corrosion of the contacts and failure of the system.***
- ◆ ***Use compressed air to carefully clean connector housing if necessary.***



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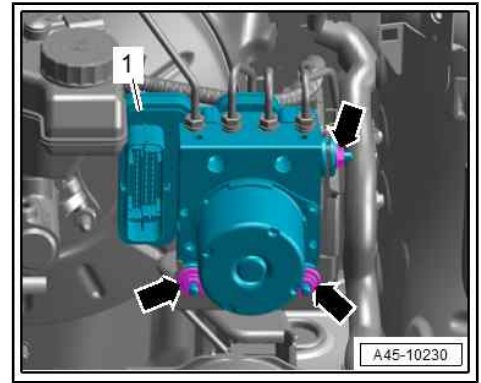
- Loosen nuts -arrows- and lift hydraulic unit with control unit -1- off bracket (pay attention to brake lines).



Caution

Risk of irreparable damage to hydraulic control unit

- ◆ ***Take care to protect the control unit from knocks and impact; if dropped, the hydraulic control unit can no longer be used.***



- Place hydraulic control unit base down on a clean flat surface.

Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



Note

- ◆ *Do not remove the sealing plugs from the new hydraulic control unit until you are ready to fit the corresponding brake line.*
- ◆ *If the sealing plugs are removed from the hydraulic control unit too soon, brake fluid may escape and it may not be possible to fill and bleed the unit properly.*



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- Fit hydraulic control unit in bracket and tighten nuts -arrows-.



Note

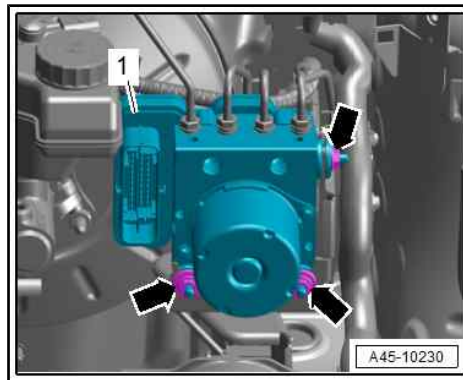
To facilitate installation, moisten the rubber mountings slightly with water.

- Remove sealing plugs from new hydraulic control unit.



Note

For easier installation, first insert all the brake lines in the hydraulic control unit and then tighten the brake line connections.



- Insert all brake lines and tighten connections.



Caution

Risk of ABS/ESP malfunctions

- ◆ **Mark brake line connections; do not interchange.**

- Perform final control diagnosis after securing brake lines to hydraulic control unit ⇒ Vehicle diagnostic tester.



Note

Final control diagnosis can be used to establish whether line connections have been interchanged.

- Install engine control unit - J623- ⇒ Rep. gr. 24 ; Engine control unit; Removing and installing engine control unit-J623-
- Install air cleaner housing ⇒ Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .
- Bleed brake system ⇒ [page 207](#) .
- When renewing ABS control unit - J104- / ABS hydraulic unit - N55- , select the “Replace” function for the ABS control unit - J104- / ABS hydraulic unit - N55- using ⇒ Vehicle diagnostic tester, Guided Functions.



WARNING

Risk of accident!

- ◆ **Make sure that the brakes work properly before the vehicle is driven on the road.**



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



Tightening torques

- ◆ ⇒ ["3.1.2 Exploded view - control unit and hydraulic unit, Audi S1", page 13](#)

3.3 Separating control unit from hydraulic unit



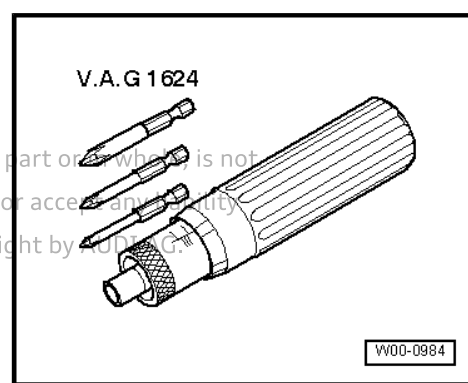
Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

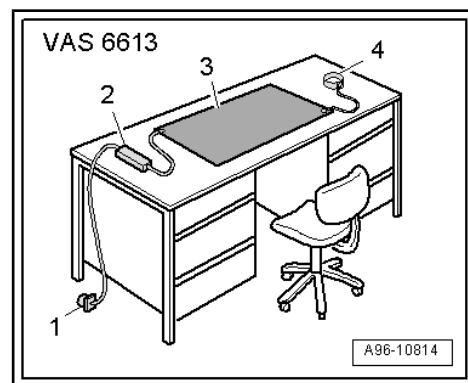
Special tools and workshop equipment required

- ◆ Torque screwdriver - V.A.G 1624-

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- ◆ ESD (electrostatic discharge) workplace - VAS 6613-



- ◆ External Torx socket E6 (commercially available)



Procedure

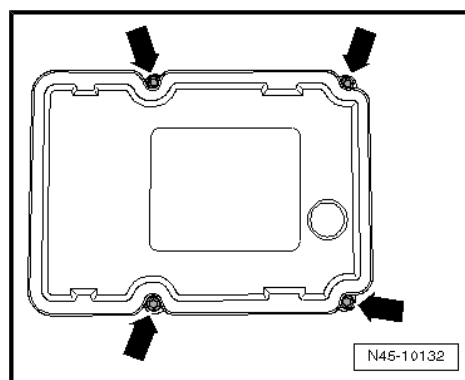


Caution

Risk of serious damage to components; the printed circuit is exposed when the control unit is detached.

- ◆ *Do not detach the return pump from the hydraulic unit.*
- ◆ *Make sure that no moisture or dirt enters the control unit.*
- ◆ *Avoid building up an electrostatic charge.*
- ◆ *Touch a suitable earthed object (e.g. ESD workplace - VAS 6613-) before working on electronic components.*
- ◆ *Do not touch the contacts or electronic components directly.*

- Place ABS control unit - J104- / ABS hydraulic unit - N55- base down on ESD workplace - VAS 6613- .
- Remove bolts -arrows- (external Torx head) for ABS control unit - J104- .
- Pull control unit off hydraulic unit, taking care to keep it straight while removing.
- Cover solenoids in hydraulic unit with a lint-free cloth.
- Check sealing surface of hydraulic unit to make sure it is clean. If necessary, clean with methylated spirits and a lint-free cloth.
- Pull control unit off hydraulic unit, taking care to keep it straight while removing.



Note

Do not attempt to repair the sealing surface of the hydraulic unit with a metal scraper, emery paper or similar.

- After disconnecting control unit and hydraulic unit, fit transportation protection for contact pins.

3.4 Attaching control unit to hydraulic unit



Note

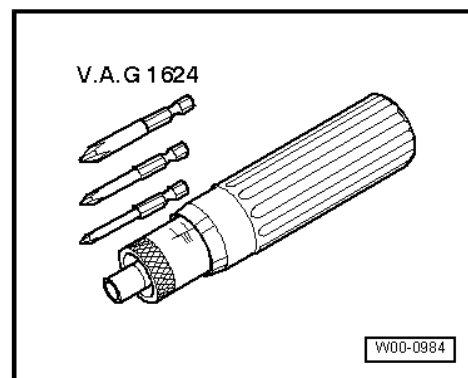
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- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

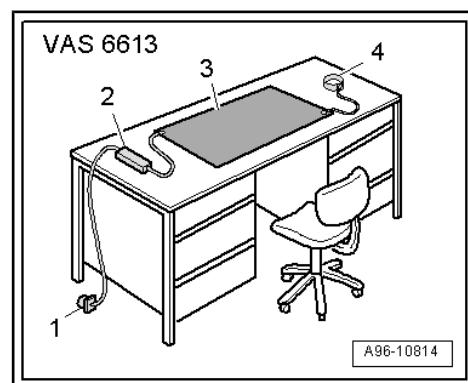
Special tools and workshop equipment required



- ◆ Torque screwdriver - V.A.G 1624-



- ◆ ESD (electrostatic discharge) workplace - VAS 6613-



- ◆ External Torx socket E6 (commercially available)

Procedure



Note

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Always install all parts in repair kit.



Caution

Risk of irreparable damage to control unit

- ◆ *Take care to protect the control unit from knocks and impact; if it is dropped, the control unit must no longer be used.*

- Clean surfaces before assembly.
- Fit control unit on hydraulic unit, making sure it is centralised and located correctly.

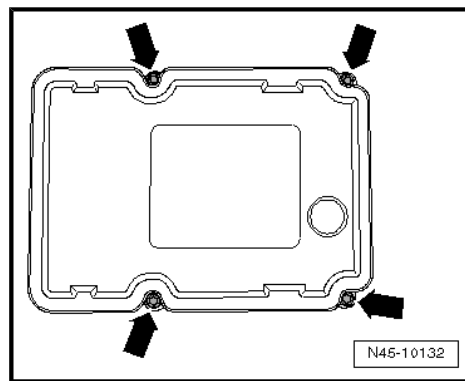


Note

- ◆ *The threads in the hydraulic unit for securing the control unit must not be recut.*
- ◆ *If the thread is damaged (bolts difficult to screw in by hand or cannot be tightened to specified torque), the hydraulic unit must be renewed.*
- ◆ *During the service life of the components, the control unit and hydraulic unit must not be separated and joined back together more than 5 times in total.*



- Tighten bolts -arrows- from repair kit in diagonal sequence and in stages ⇒ [page 13](#) .



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4 Sensors

⇒ ["4.1 Exploded view - front wheel speed sensor", page 39](#)

⇒ ["4.2 Exploded view - rear wheel speed sensor", page 41](#)

⇒ ["4.3 Removing and installing brake light switch", page 43](#)

⇒ ["4.4 Removing and installing front wheel speed sensor G45 / G47 ", page 44](#)

⇒ ["4.5 Removing and installing rear wheel speed sensor G44 / G46 ", page 45](#)

⇒ ["4.6 Removing and installing parking brake contact switch", page 46](#)

4.1 Exploded view - front wheel speed sensor



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



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1 - Wheel bearing unit

- ❑ ABS sensor ring is installed in wheel bearing
- ❑ Removing and installing
⇒ Running gear, axles, steering; Rep. gr. 40 ;
Wheel bearing; Removing and installing wheel bearing unit

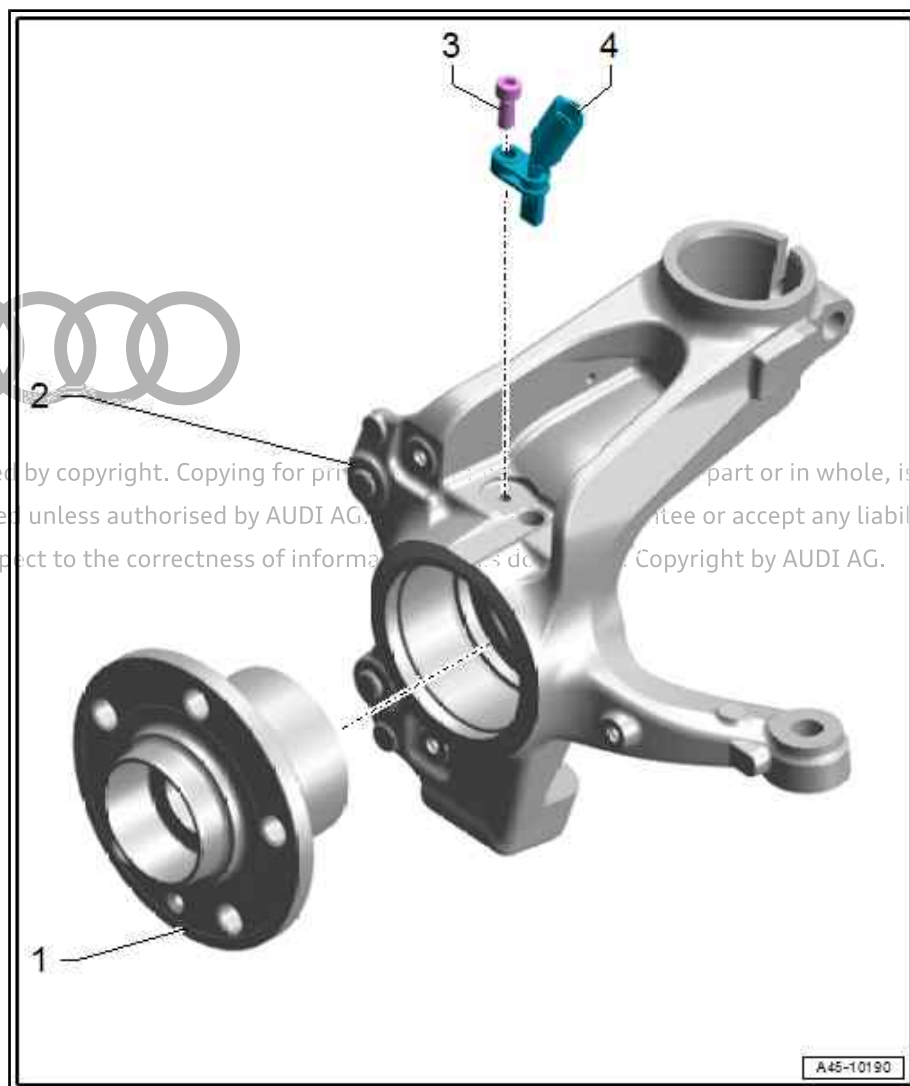
2 - Wheel bearing housing

3 - Bolt

- ❑ 9 Nm

4 - Speed sensor

- ❑ Front right speed sensor - G45- , front left speed sensor - G47-
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- ❑ Removing and installing
⇒ [page 44](#)



Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.



4.2 Exploded view - rear wheel speed sensor

⇒ ["4.2.1 Exploded view - rear wheel speed sensor, vehicles with front-wheel drive", page 41](#)

⇒ ["4.2.2 Exploded view - rear wheel speed sensor, vehicles with four-wheel drive", page 42](#)

4.2.1 Exploded view - rear wheel speed sensor, vehicles with front-wheel drive



Note

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- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

1 - Wheel bearing unit

- ☐ ABS sensor ring is installed in wheel bearing
- ☐ Removing and installing
⇒ Running gear, axles, steering; Rep. gr. 42 ; Wheel bearing, trailing arm; Removing and installing wheel bearing unit

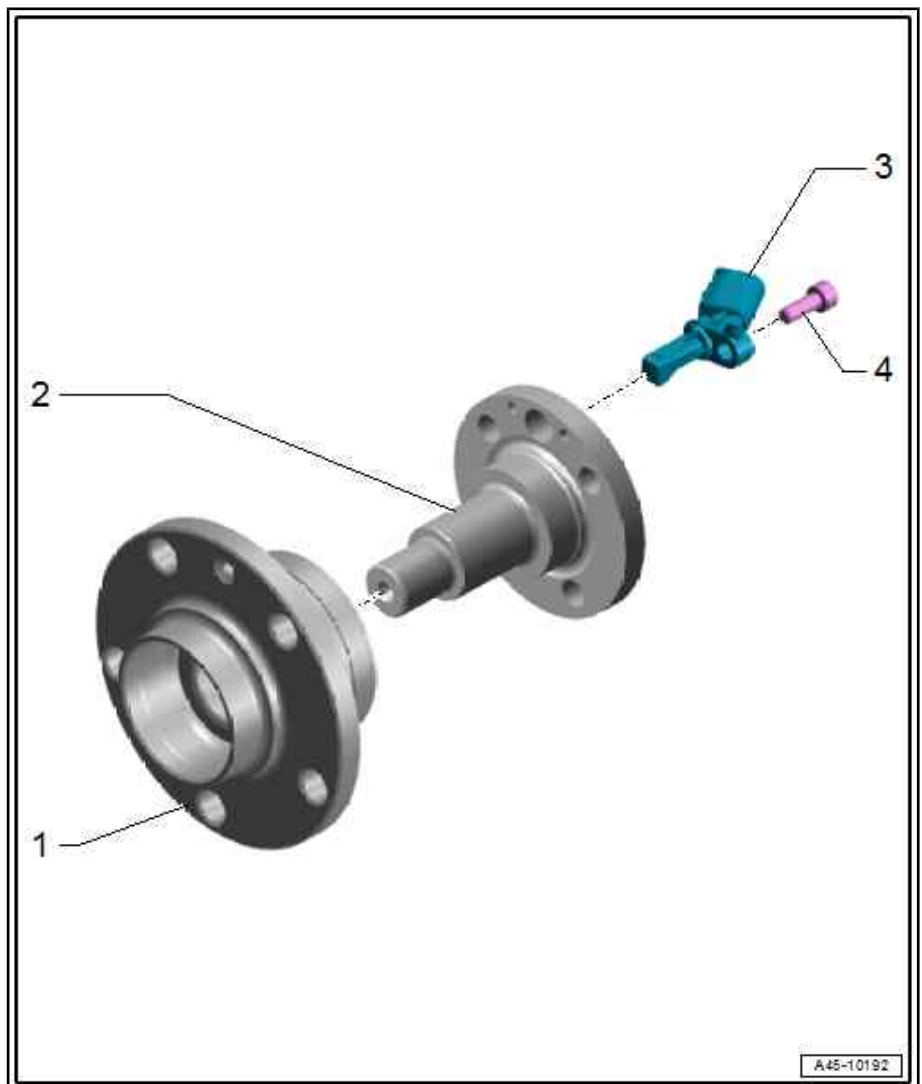
2 - Stub axle

3 - Speed sensor

- ☐ Rear right speed sensor - G44- , rear left speed sensor - G46-
- ☐ Removing and installing
⇒ [page 45](#)

4 - Bolt

- ☐ 9 Nm



A45-10192



Note



♦ Clean bolts and nuts before reusing.

♦ Always renew self-locking bolts/nuts.

♦ Always renew damaged bolts/nuts.

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4.2.2 Exploded view - rear wheel speed sensor, vehicles with four-wheel drive



Note

♦ Clean bolts and nuts before reusing.

♦ Always renew self-locking bolts/nuts.

♦ Always renew damaged bolts/nuts.

1 - Wheel bearing unit

- ☐ ABS sensor ring is installed in wheel bearing
- ☐ Removing and installing
⇒ Running gear, axles, steering; Rep. gr. 42 ; Wheel bearing, trailing arm; Removing and installing wheel bearing unit

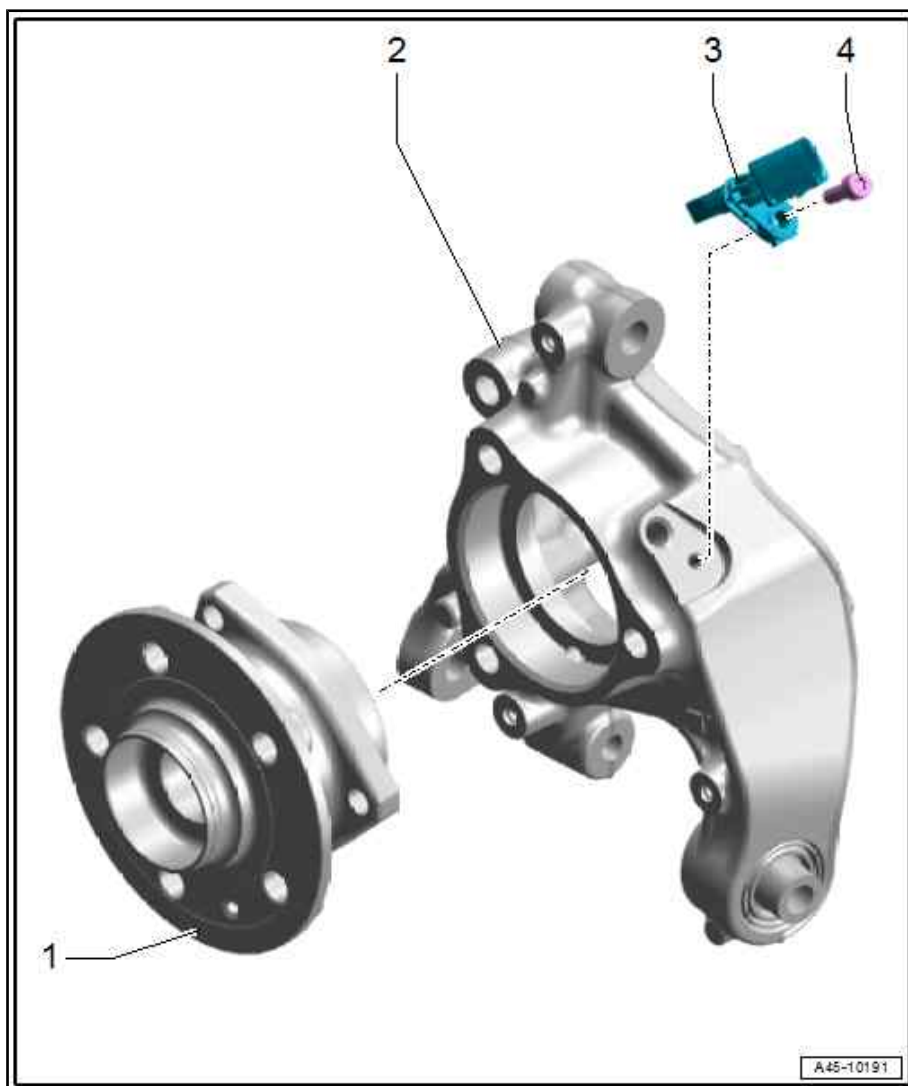
2 - Wheel bearing housing

3 - Speed sensor

- ☐ Rear right speed sensor - G44- , rear left speed sensor - G46-
- ☐ Removing and installing
⇒ [page 45](#)

4 - Bolt

- ☐ 9 Nm





Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

4.3 Removing and installing brake light switch



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1410-



Removing

- Remove air cleaner housing ⇒ Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing or ⇒ Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .
- Audi A1 quattro: Additionally remove intake hose ⇒ Rep. gr. 24 ; Air cleaner; Exploded view - air cleaner housing .

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- Unplug electrical connector -1-.
- Remove bolt -2-.
- Pull brake light switch - F- -item 3- out of brake master cylinder.

Installing

Installation is carried out in reverse order; note the following:



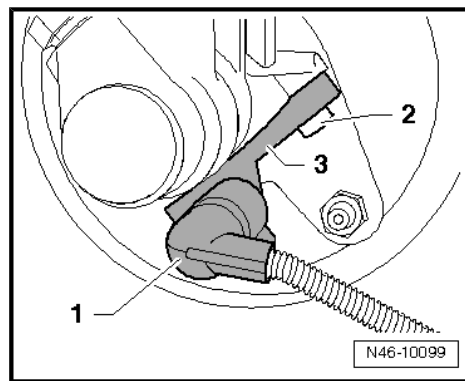
Note

- ♦ *Clean bolts and nuts before reusing.*
 - ♦ *Always renew self-locking bolts/nuts.*
 - ♦ *Always renew damaged bolts/nuts.*
- Pay attention to correct installation position. Brake light switch - F- must be seated in retaining tab on brake master cylinder.



Note

Make sure that the brake light switch works properly before the vehicle is driven on the road.



Tightening torques

Applies to	Tightening torque
Brake light switch - F- to brake master cylinder	7 Nm

4.4 Removing and installing front wheel speed sensor -G45- / -G47-



Note

- ♦ *Clean bolts and nuts before reusing.*
- ♦ *Always renew self-locking bolts/nuts.*
- ♦ *Always renew damaged bolts/nuts.*

Special tools and workshop equipment required

- ♦ Torque wrench - V.A.G 1410-



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- ♦ Lubricating paste - G 000 650-



Removing

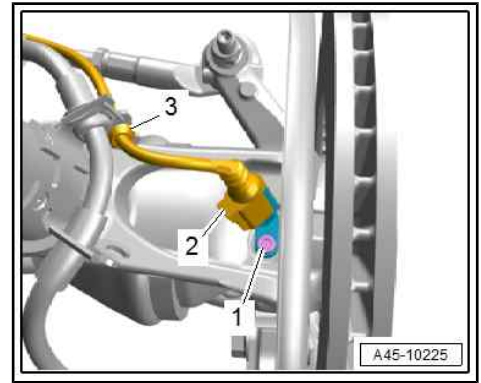
- Unplug electrical connector -2- from speed sensor.
- Remove bolt -1-.
- Pull speed sensor out of wheel bearing housing.

Installing



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



- Before inserting speed sensor, clean inner surface of fitting hole and coat speed sensor thoroughly with grease - G 000 650-.
- Fit and secure speed sensor.

Tightening torques

- ◆ ⇒ [“4.1 Exploded view - front wheel speed sensor”, page 39](#)

4.5 Removing and installing rear wheel speed sensor -G44- / -G46-

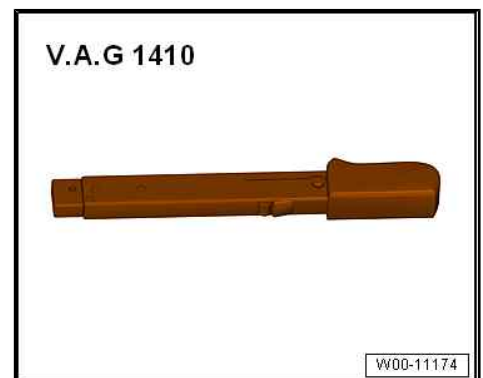


Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1410-



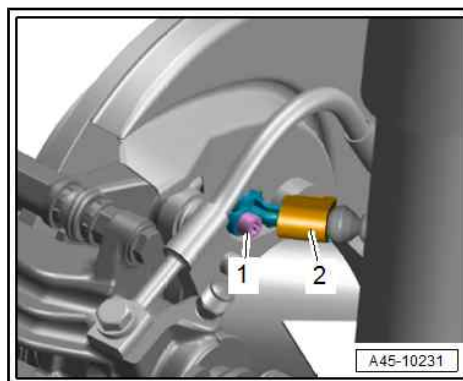
- ◆ Lubricating paste - G 000 650-



Removing

Vehicles with front-wheel drive:

- Unplug electrical connector -2- from speed sensor.
- Unscrew bolt -1- and pull speed sensor out of stub axle.



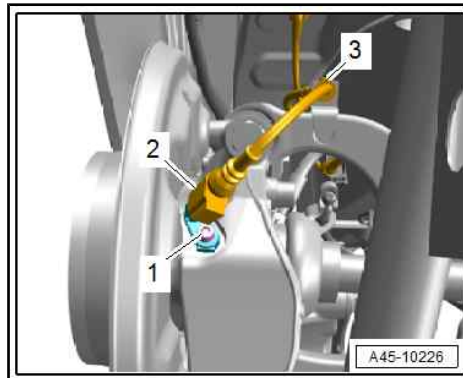
Four-wheel drive vehicles:

- Unplug electrical connector -2- from speed sensor.
- Unscrew bolt -1- and pull speed sensor out of wheel bearing housing.



Note

Disregard -item 3-.



Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*
- Before inserting speed sensor, clean inner surface of fitting hole and coat speed sensor thoroughly with grease - G 000 650- .
- Fit and secure speed sensor.

Tightening torques

- ◆ ⇒ [“4.2 Exploded view - rear wheel speed sensor”, page 41](#)

4.6 Removing and installing parking brake contact switch

Removing

- Remove parking brake lever trim ⇒ General body repairs, interior; Rep. gr. 68 ; Storage compartments/covers/trim panels; Removing and installing handbrake lever trim .

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- Release catches -arrows A- and detach parking brake contact switch - F321- -item 2- towards left side.
- Release catch -arrow B- and unplug electrical connector -1-.

Installing

Installation is carried out in reverse order; note the following:

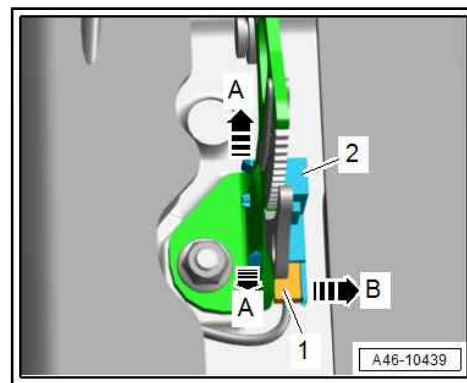
- Attach electrical connector and clip switch into place.



Note

Make sure that switch works properly before continuing installation.

- Install parking brake lever trim ⇒ General body repairs, interior; Rep. gr. 68 ; Storage compartments/covers/trim panels; Removing and installing handbrake lever trim .



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46 – Brakes - mechanism

1 Front brakes

⇒ [“1.1 Exploded view - front brakes”, page 48](#)

⇒ [“1.2 Removing and installing front brake pads”, page 53](#)

⇒ [“1.3 Removing and installing front brake caliper”, page 62](#)

⇒ [“1.4 Renewing front brake caliper \(all brake versions\)”, page 67](#)

⇒ [“1.5 Removing and installing brake carrier \(1LJ/1ZC/1ZN/1ZS\)”, page 71](#)

⇒ [“1.6 Removing and installing front brake disc \(all brake versions\)”, page 73](#)

⇒ [“1.7 Removing and installing front splash plate \(all brake versions\)”, page 75](#)

1.1 Exploded view - front brakes

⇒ [“1.1.1 Exploded view - front brakes \(1ZG\)”, page 48](#)

⇒ [“1.1.2 Exploded view - front brakes \(1LJ/1ZC/1ZN/1ZS\)”, page 51](#)

1.1.1 Exploded view - front brakes (1ZG)



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1 - Brake caliper

- ☐ For correct version refer to ⇒ Electronic parts catalogue "ETKA"
- ☐ ⇒ ["1.3.1 Removing and installing brake caliper \(1ZG\)", page 62](#)
- ☐ ⇒ ["1.4 Renewing front brake caliper \(all brake versions\)", page 67](#)
- ☐ ⇒ ["1.2.1 Removing and installing brake caliper piston \(1ZG\)", page 140](#)

2 - Bleeder screw

- ☐ 10 Nm

3 - Protective cap

4 - Banjo bolt

- ☐ Captive version with seals
- ☐ Clean sealing surface on brake caliper to remove corrosion
- ☐ 35 Nm



Note

Renew brake hose if banjo bolt is damaged.

5 - Brake hose

- ☐ With locating element
⇒ [page 50](#)
- ☐ Ensure correct routing: the brake hose must not be kinked, crushed or twisted or chafe against parts of the vehicle at any point
- ☐ Renew if damaged
- ☐ Ensure that lugs are properly seated in grooves in bracket

6 - Suspension strut

7 - Retaining springs

- ☐ Renew if damaged

8 - Bracket

- ☐ For brake line/hose

9 - Brake line

- ☐ Connection to brake hose 14 Nm

10 - Protective cap

11 - Guide pin

- ☐ 30 Nm

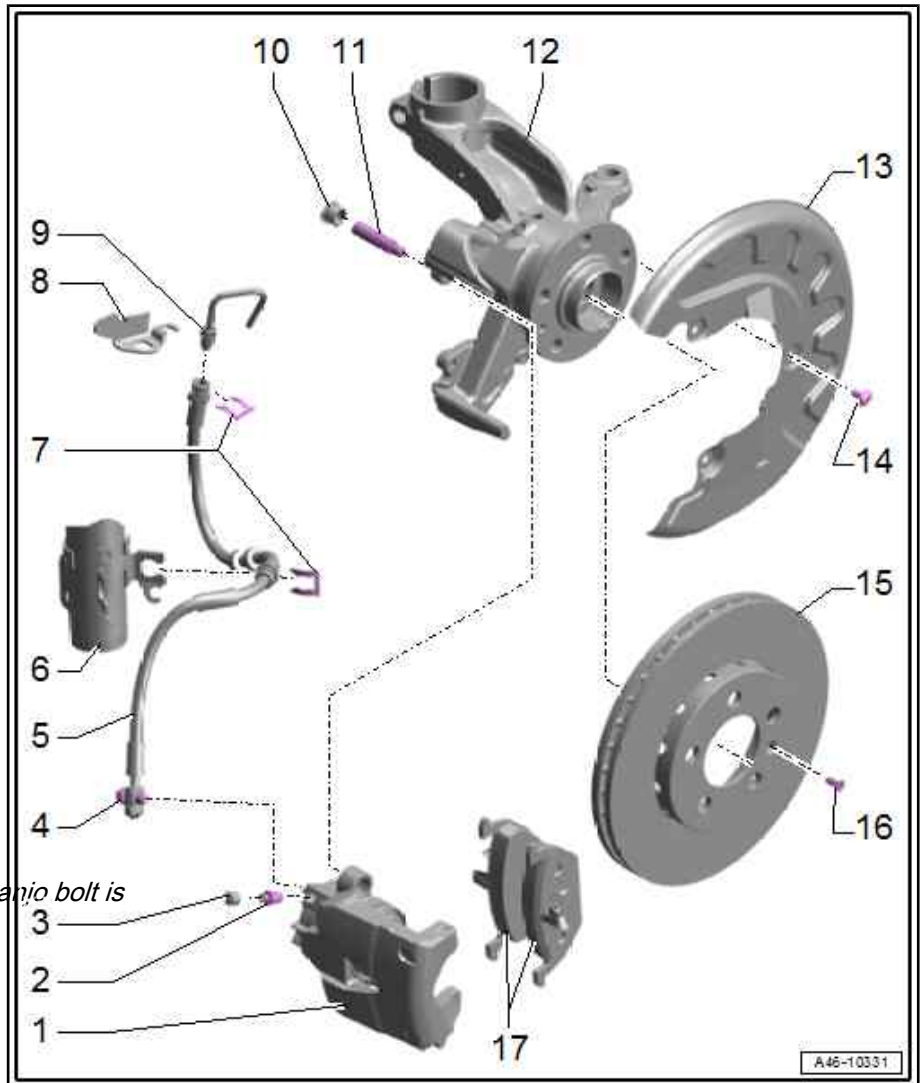
12 - Wheel bearing housing with brake carrier

13 - Splash plate for brakes

- ☐ ⇒ ["1.7 Removing and installing front splash plate \(all brake versions\)", page 75](#)

14 - Bolt

- ☐ 12 Nm



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15 - Brake disc

- ☐ For correct version refer to ➔ Electronic parts catalogue "ETKA"
- ☐ Wear limit ➔ [page 5](#)
- ☐ Always renew on both sides of axle
- ☐ ➔ ["1.6 Removing and installing front brake disc \(all brake versions\)", page 73](#)
- ☐ Do not force brake disc off wheel hub. Use rust remover if necessary to avoid damaging brake disc.



Note

◆ Bolt circle diameter of brake disc:
100 mm

◆ Bolt circle diameter of brake disc
PR 1LJ: 112 mm

16 - Bolt

- ☐ 5 Nm

17 - Brake pads

- ☐ For correct version refer to ➔ Electronic parts catalogue "ETKA"
- ☐ Checking thickness, wear limit ➔ Maintenance ; Booklet 819
- ☐ Always renew on both sides of axle
- ☐ ➔ ["1.2.1 Removing and installing brake pads \(1ZG\)", page 53](#)

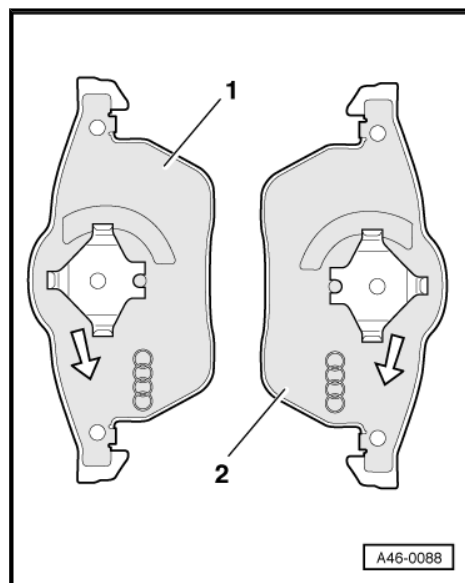


Note

- ◆ Clean bolts before reusing.
- ◆ Renew damaged bolts.
- ◆ Always renew self-locking bolts.

Installation position of brake pads

- When installed, arrow on backplate of brake pad -1, 2- must face downwards.



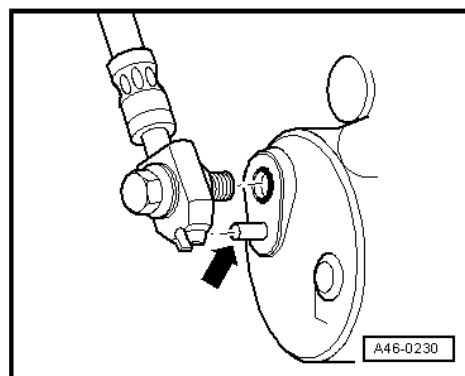
Installation position of brake hose on brake caliper

- Recess in banjo union must fit onto locating element -arrow-.



Note

Renew brake hose if banjo bolt is damaged.





1.1.2 Exploded view - front brakes (1LJ/1ZC/1ZN/1ZS)

1 - Brake caliper

- ☐ For correct version refer to ⇒ Electronic parts catalogue "ETKA"
- ☐ ⇒ ["1.3.2 Removing and installing brake caliper \(1LJ/1ZC/1ZN/1ZS\)", page 64](#)
- ☐ ⇒ ["1.4 Renewing front brake caliper \(all brake versions\)", page 67](#)
- ☐ ⇒ ["1.2.2 Removing and installing brake caliper piston \(1LJ/1ZC/1ZN/1ZS\)", page 143](#)

2 - Bleeder screw

- ☐ 10 Nm

3 - Protective cap

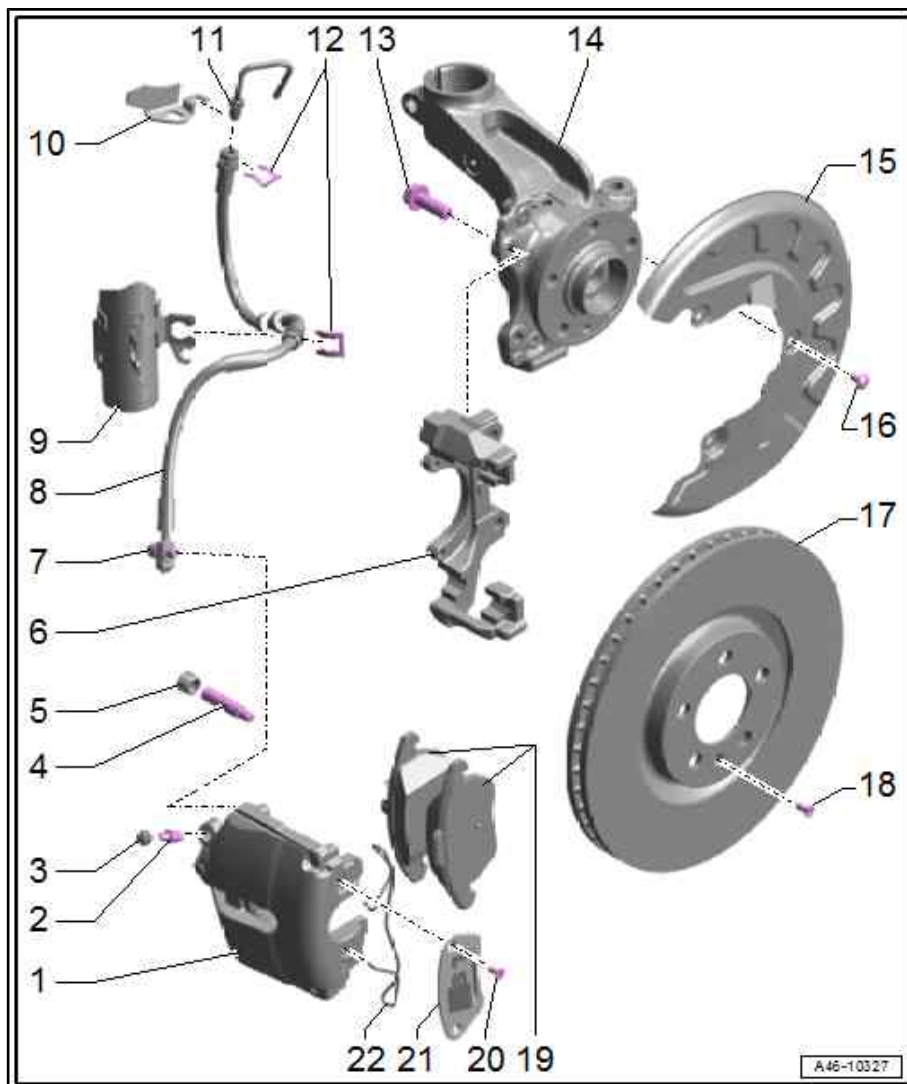
4 - Guide pin

- ☐ 30 Nm

5 - Protective cap

6 - Brake carrier

- ☐ Replacement carriers are supplied assembled and with sufficient grease on guide pins
- ☐ Renew protective caps if they have been damaged (repair kit); use grease sachet supplied to lubricate the guide pins
- ☐ ⇒ ["1.5 Removing and installing brake carrier \(1LJ/1ZC/1ZN/1ZS\)", page 71](#)



7 - Banjo bolt

- ☐ Captive version with seals
- ☐ Clean sealing surface on brake caliper to remove corrosion
- ☐ 35 Nm



Note

Renew brake hose if banjo bolt is damaged.

8 - Brake hose

- ☐ With locating element ⇒ [page 50](#)
- ☐ Ensure correct routing: the brake hose must not be kinked, crushed or twisted or chafe against parts of the vehicle at any point
- ☐ Renew if damaged
- ☐ Ensure that lugs are properly seated in grooves in bracket



9 - Suspension strut

10 - Bracket

- ☐ For brake line/hose

11 - Brake line

- ☐ Connection to brake hose 14 Nm

12 - Retaining springs

- ☐ Renew if damaged

13 - Bolt

- ☐ Clean part before reinstalling
- ☐ 125 Nm

14 - Wheel bearing housing

15 - Splash plate for brakes

- ☐ ⇒ ["1.7 Removing and installing front splash plate \(all brake versions\)", page 75](#)

16 - Bolt

- ☐ 12 Nm

17 - Brake disc

- ☐ For correct version refer to ⇒ Electronic parts catalogue "ETKA"
- ☐ Wear limit ⇒ [page 5](#)
- ☐ ⇒ ["1.6 Removing and installing front brake disc \(all brake versions\)", page 73](#)
- ☐ Do not force brake discs off wheel hub; if necessary, use rust remover, otherwise brake discs could be damaged.
- ☐ Always renew on both sides of axle



Note

- ◆ Bolt circle diameter of brake disc:
100 mm
- ◆ Bolt circle diameter of brake disc
PR 1LJ: 112 mm

18 - Bolt

- ☐ 5 Nm

19 - Brake pads

- ☐ For correct version refer to ⇒ Electronic parts catalogue "ETKA"
- ☐ Inner brake pad in brake caliper (left-side) with pad wear sender
- ☐ Checking thickness, wear limit ⇒ Maintenance ; Booklet 819
- ☐ ⇒ ["1.2.2 Removing and installing brake pads \(1LJ/1ZC/1ZN/1ZS\)", page 56](#)
- ☐ Always renew on both sides of axle
- ☐ Remove any adhesive foil from backplate before inserting
- ☐ Clean contact surfaces on brake caliper to brake pads.
- ☐ Installation position ⇒ [page 53](#)

20 - Bolt

- ☐ Only for brake version 1ZN
- ☐ 5 Nm

21 - Splash plate

- ☐ Only for brake version 1ZN

22 - Retaining spring

- ☐ Insert in both holes in brake caliper housing

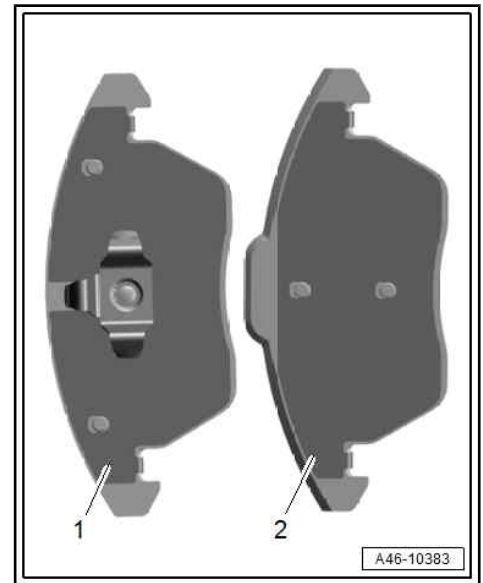


Note

- ◆ *Clean bolts before reusing.*
- ◆ *Renew damaged bolts.*
- ◆ *Always renew self-locking bolts.*

Installation position of brake pads

- Insert inner brake pad -1- with retaining spring into brake caliper (piston).
- Fit outer brake pad -2- on brake carrier.



1.2 Removing and installing front brake pads

⇒ ["1.2.1 Removing and installing brake pads \(1ZG\)", page 53](#)

⇒ ["1.2.2 Removing and installing brake pads \(1LJ/1ZC/1ZN/1ZS\)", page 56](#)

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1.2.1 Removing and installing brake pads (1ZG)



Note

- ◆ *Clean bolts before reusing.*
- ◆ *Renew damaged bolts.*
- ◆ *Always renew self-locking bolts.*

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331-

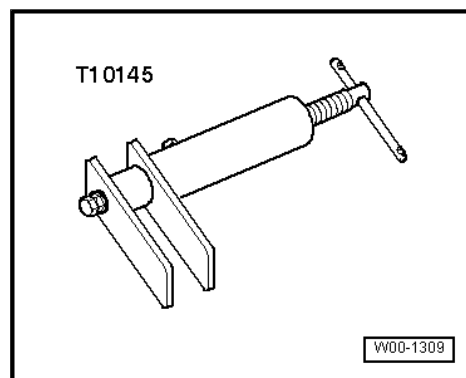
V.A.G 1331



WV00-11166



◆ Piston resetting appliance - T10145-



Removing



Note

Mark brake pads when removing them if they are to be reinstalled. Reinstall in their original position to prevent uneven braking.

- Remove brake caliper ➔ [page 62](#) .
- Take brake pads out of brake caliper.

Installing



Note

Coat brake pad backplate with lubricating paste. Coat guide pin (s) with lithium grease ➔ Electronic parts catalogue "ETKA".

Installation is carried out in reverse order; note the following:



Note

- ◆ *Clean bolts before reusing.*
 - ◆ *Renew damaged bolts.*
 - ◆ *Always renew self-locking bolts.*
- Check brake discs for wear ➔ [page 5](#) .



Note

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- ◆ *Always renew brake pads on both sides of axle.*
- ◆ *Install all parts supplied in the repair kit when fitting new brake pads.*



WARNING

Risk to health

- ◆ *Do not blow out the brake system with compressed air.*



Note

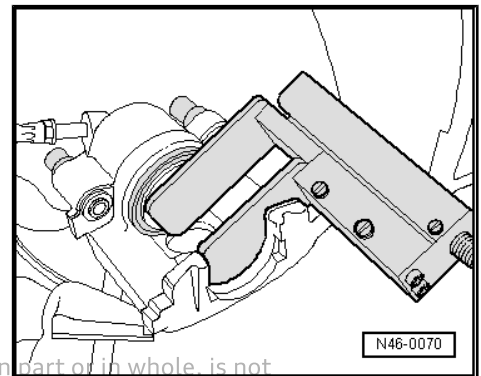
- ◆ Use only methylated spirits for cleaning the brake caliper housing.
- ◆ Check protective caps on brake caliper pistons for damage; if necessary, install all parts supplied in repair kit ➔ [page 140](#).



Caution

Escaping brake fluid can cause the vehicle to become dirty and may damage the paintwork.

- ◆ If the brake pads are worn and brake fluid has been topped up unnecessarily, brake fluid can overflow when the brake caliper pistons are pressed back into the brake cylinders.
 - ◆ Before pressing the pistons back, check the brake fluid level. Brake fluid must be extracted if the fluid level is up to the "MAX" mark.
 - ◆ Use brake filling and bleeding equipment - VAS 5234- to extract brake fluid from brake fluid reservoir.
- Press brake caliper pistons all the way back into caliper using piston resetting appliance - T10145- .



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- Clean contact surfaces -1, 2- on wheel bearing housing with brake carrier (to brake pads).
- If used pads are being re-fitted, take care to install the marked pads in their original positions.
- Insert brake pads in brake caliper, paying attention to installation position ⇒ [page 50](#) .
- Install brake caliper ⇒ [page 62](#) .



Note

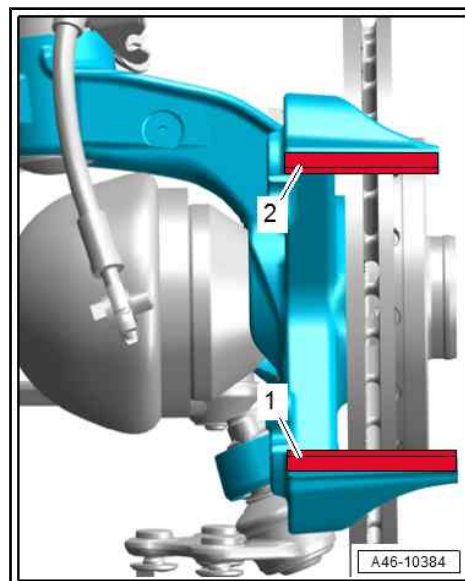
- ◆ Clean bolts before reusing.
- ◆ Renew damaged bolts.
- ◆ Always renew self-locking bolts.



WARNING

Risk of accident!

- ◆ **Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.**
- ◆ **Make sure that the brakes work properly before the vehicle is driven on the road.**



- Check brake fluid level and top up if necessary.

Tightening torques

- ◆ ⇒ ["1.1.1 Exploded view - front brakes \(1ZG\)", page 48](#)

1.2.2 Removing and installing brake pads (1LJ/1ZC/1ZN/1ZS)



Note

- ◆ Clean bolts before reusing.
- ◆ Renew damaged bolts.
- ◆ Always renew self-locking bolts.

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331-

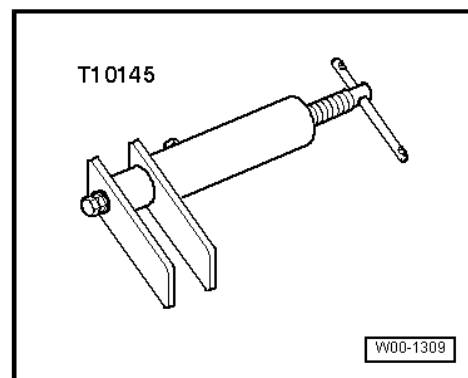
V.A.G 1331



W00-11166



◆ Piston resetting appliance - T10145-



Removing



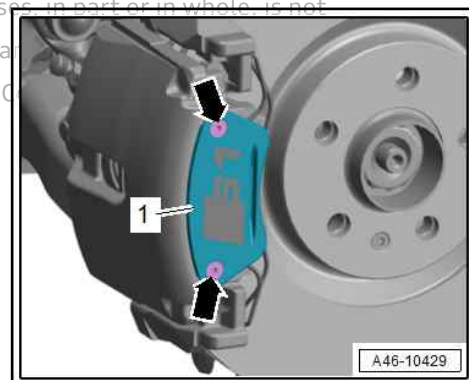
Note

*Mark brake pads when removing them if they are to be reinstalled.
Reinstall in their original position to prevent uneven braking.*

- Remove front wheel ➔ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .

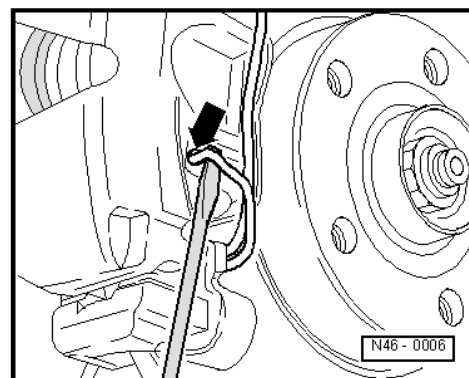
Brake version 1ZN:

- Remove bolts -arrows- and detach splash plate -1-.



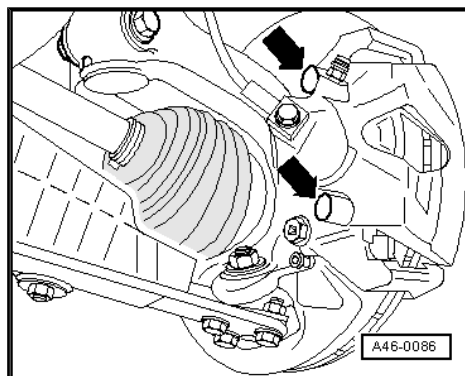
All brake versions (continued):

- Lever brake pad retaining spring out of brake caliper -arrow- with a screwdriver and remove.





- Remove protective caps -arrows-.



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- Remove guide pins -arrows-.
- Carefully pull brake caliper off brake disc with brake pads installed.



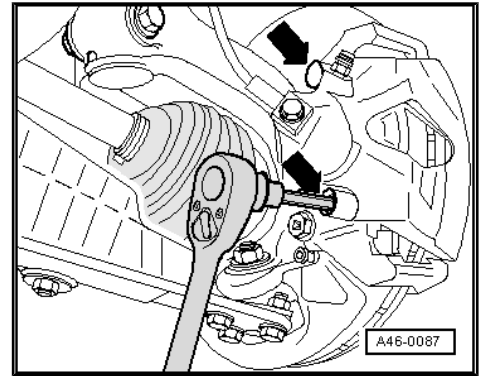
Caution

Risk of damage to brake hose

- ◆ *Do not leave the brake caliper hanging from the brake hose. Take care that brake hose is not damaged by weight of brake components.*
- ◆ *The brake hose must be renewed if it is damaged.*

Risk of damage to brake caliper pistons

- ◆ *Do not apply brake when brake caliper is removed.*



- Tie brake caliper to body with suitable wire.
- Take brake pad out of brake caliper or detach from brake carrier.

Installing



Note

Coat brake pad backplate with lubricating paste. Coat guide pin (s) with lithium grease ⇒ Electronic parts catalogue "ETKA".

Installation is carried out in reverse order; note the following:



Note

- ◆ *Clean bolts before reusing.*
 - ◆ *Renew damaged bolts.*
 - ◆ *Always renew self-locking bolts.*
- Check brake discs for wear ⇒ [page 5](#) .



Note

- ◆ *Always renew brake pads on both sides of axle.*
- ◆ *Install all parts supplied in the repair kit when fitting new brake pads.*



WARNING

Risk to health

- ◆ *Do not blow out the brake system with compressed air.*



Note

- ◆ Use only methylated spirits for cleaning the brake caliper housing.
- ◆ Check protective caps on brake caliper pistons for damage; if necessary, install all parts supplied in repair kit ➔ [page 143](#).

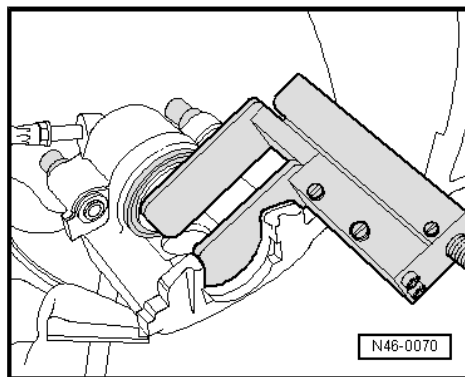


Caution

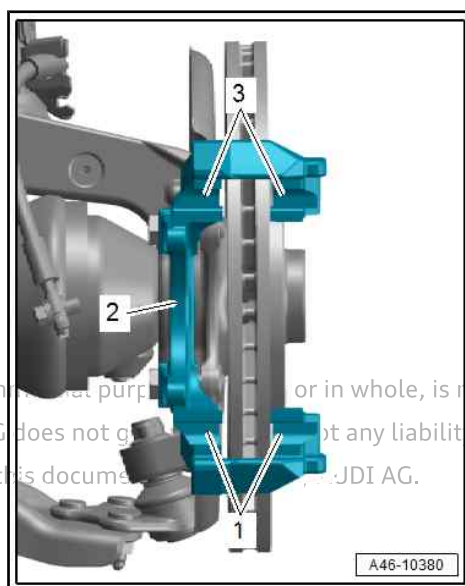
Escaping brake fluid can cause the vehicle to become dirty and may damage the paintwork.

- ◆ If the brake pads are worn and brake fluid has been topped up unnecessarily, brake fluid can overflow when the brake caliper pistons are pressed back into the brake cylinders.
- ◆ Before pressing the pistons back, check the brake fluid level. Brake fluid must be extracted if the fluid level is up to the "MAX" mark.
- ◆ Use brake filling and bleeding equipment - VAS 5234- to extract brake fluid from brake fluid reservoir.

- Press brake caliper pistons all the way back into caliper using piston resetting appliance - T10145-.
- Insert brake pads, paying attention to installation position ➔ [page 50](#).



- Clean contact surfaces -1, 3- on brake carrier -2- (to brake pads).
- If fitted, pull protective foil off pad backplates.
- If used pads are being re-fitted, take care to install the marked pads in their original positions.
- Insert brake pads, paying attention to installation position ➔ [page 53](#).
- Install brake caliper.

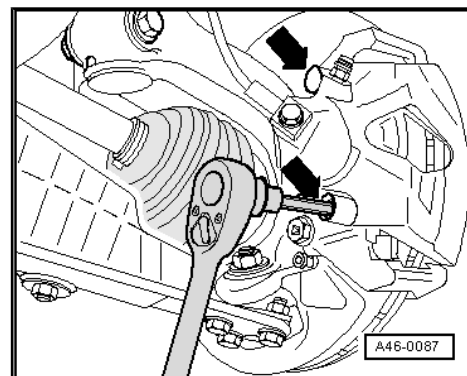


Note

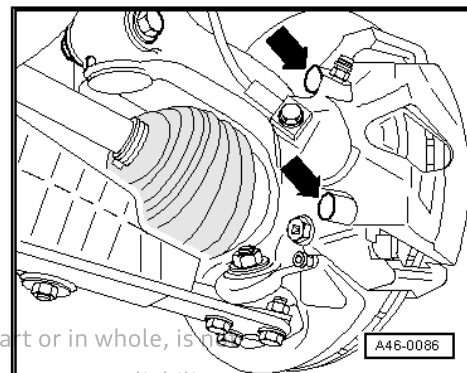
- ◆ Clean bolts before reusing.
- ◆ Renew damaged bolts.
- ◆ Always renew self-locking bolts.



- Bolt brake caliper to brake carrier with both guide pins -arrows-.
- Tighten guide pins.



- Fit protective caps -arrows-.

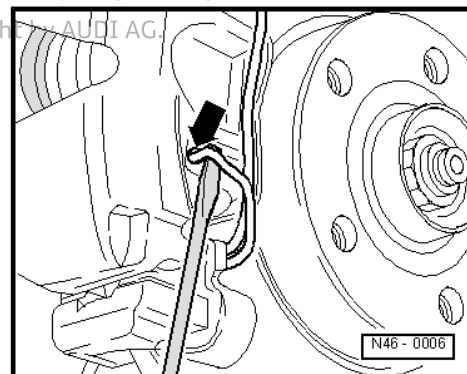


- Insert retaining spring -arrow- in brake caliper.

⚠ Caution

If the retaining spring is not installed correctly, this will result in a longer pedal travel.

- ◆ *After it has been inserted in the two holes, the retaining spring must then be pressed under the brake carrier so that the wear of the outer pad can be adjusted.*



- Fit front wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .

⚠ WARNING

Risk of accident!

- ◆ *Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.*
- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*

- Check brake fluid level and top up if necessary.

Tightening torques

- ◆ ⇒ [“1.1.2 Exploded view - front brakes \(1LJ/1ZC/1ZN/1ZS\)”, page 51](#)



1.3 Removing and installing front brake caliper

⇒ ["1.3.1 Removing and installing brake caliper \(1ZG\)", page 62](#)

⇒ ["1.3.2 Removing and installing brake caliper \(1LJ/1ZC/1ZN/1ZS\)", page 64](#)

1.3.1 Removing and installing brake caliper (1ZG)



Note

- ◆ Clean bolts before reusing.
- ◆ Renew damaged bolts.
- ◆ Always renew self-locking bolts.



Note

In the following procedure the brake caliper is removed together with the brake pads. The brake hose remains connected.

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331 -

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V.A.G 1331



W00-11166

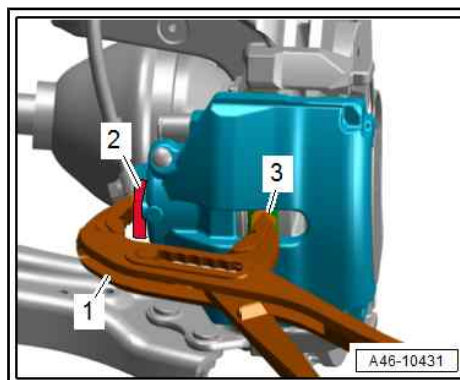
Removing

- Remove front wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .



Note

- ◆ To make it easier to remove the brake caliper from the brake disc, use suitable pliers -1- to press back the brake pad -3- slightly as shown in the illustration.
- ◆ To avoid damaging the paint on the caliper, insert a piece of rubber -2- between the caliper and the pliers.



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- Remove protective caps -arrows- from guide pins.
- Unscrew guide pins and detach brake caliper.



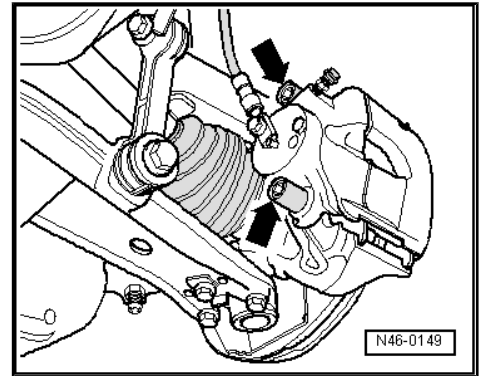
Caution

Risk of damage to brake hose

- ◆ *Do not leave the brake caliper hanging from the brake hose. Take care that brake hose is not damaged by weight of brake components.*
- ◆ *The brake hose must be renewed if it is damaged.*

Risk of damage to brake caliper pistons

- ◆ *Do not apply brake when brake caliper is removed.*



- Tie brake caliper to body with suitable wire.

Installing



WARNING

Risk to health

- ◆ *Do not blow out the brake system with compressed air.*



Note

- ◆ *Use only methylated spirits for cleaning the brake caliper housing.*
- ◆ *Clean bolts before reusing.*
- ◆ *Renew damaged bolts.*
- ◆ *Always renew self-locking bolts.*

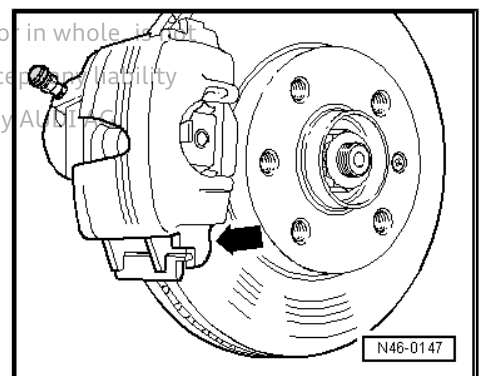
Locate the brake caliper in installation position as follows:

- First locate brake caliper at bottom of brake carrier, arrow.
- Then press brake caliper (with brake pads fitted) further over brake disc.
- Stud on brake caliper must be positioned behind guide on brake carrier.



Note

- ◆ *Clean bolts before reusing.*
- ◆ *Renew damaged bolts.*
- ◆ *Always renew self-locking bolts.*





- Tighten guide pins -arrows- and press on protective caps.
- Fit front wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .

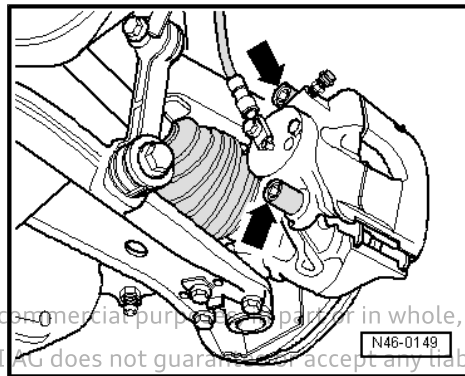


WARNING



Risk of accident!

- ◆ ***Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.***
- ◆ ***Make sure that the brakes work properly before the vehicle is driven on the road.***



- Check brake fluid level and top up if necessary.

Tightening torques

- ◆ ⇒ ["1.1.1 Exploded view - front brakes \(1ZG\)", page 48](#)

1.3.2 Removing and installing brake caliper (1LJ/1ZC/1ZN/1ZS)



Note

- ◆ *Clean bolts before reusing.*
- ◆ *Renew damaged bolts.*
- ◆ *Always renew self-locking bolts.*



Note

In the following procedure the brake caliper is removed together with the brake carrier and brake pads. The brake hose remains connected.

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1332-



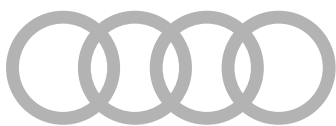
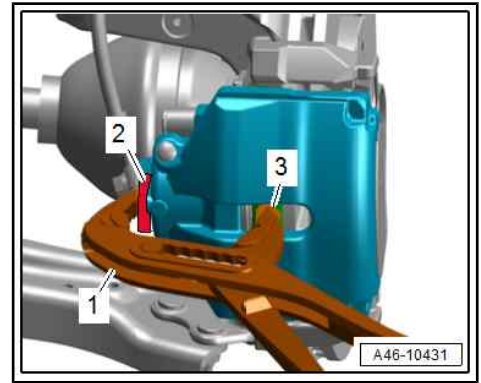
Removing

- Remove front wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .



Note

- ◆ To make it easier to remove the brake caliper from the brake disc, use suitable pliers -1- to press back the brake pad -3- slightly as shown in the illustration.
- ◆ To avoid damaging the paint on the caliper, insert a piece of rubber -2- between the caliper and the pliers.



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- Remove bolts -arrows- and carefully pull brake caliper and brake carrier off brake disc with pads installed.



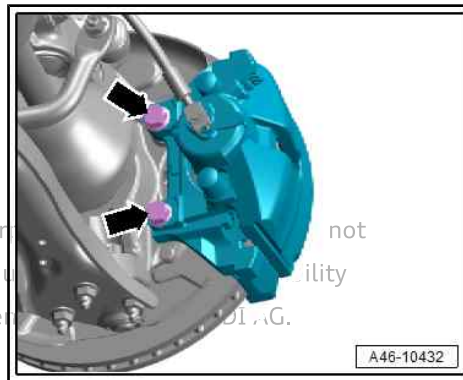
Caution

Risk of damage to brake hose

- ◆ **Do not leave the brake caliper hanging from the brake hose. Take care that brake hose is not damaged by weight of brake components.**
- ◆ **The brake hose must be renewed if it is damaged.**

Risk of damage to brake caliper pistons

- ◆ **Do not apply brake when brake caliper is removed.**



- Tie brake caliper to body with suitable wire.

Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ *Clean bolts before reusing.*
- ◆ *Renew damaged bolts.*
- ◆ *Always renew self-locking bolts.*



WARNING

Risk to health

- ◆ **Do not blow out the brake system with compressed air.**



Note

Use only methylated spirits for cleaning the brake caliper housing.

- Clean brake caliper.



Note

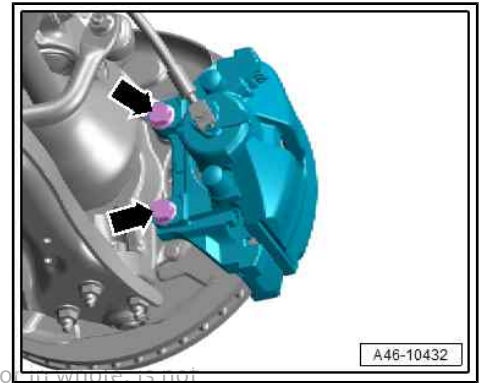
- ◆ *Clean bolts before reusing.*
- ◆ *Renew damaged bolts.*
- ◆ *Always renew self-locking bolts.*



- Slide brake caliper with brake carrier and brake pads fitted carefully over brake disc.
- Tighten bolts -arrows-.

i Note

- ◆ *Make sure the brake hose is routed correctly.*
- ◆ *The brake hose must not be kinked, crushed or twisted or chafe against parts of the vehicle at any point.*



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WARNING

Risk of accident!

- ◆ *Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.*
- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*

Tightening torques

- ◆ [⇒ "1.1.2 Exploded view - front brakes \(1LJ/1ZC/1ZN/1ZS\)", page 51](#)

1.4 Renewing front brake caliper (all brake versions)

i Note

- ◆ *Clean bolts before reusing.*
- ◆ *Renew damaged bolts.*
- ◆ *Always renew self-locking bolts.*

i Note

In the following procedure the brake caliper is removed and renewed. The brake hose is disconnected.

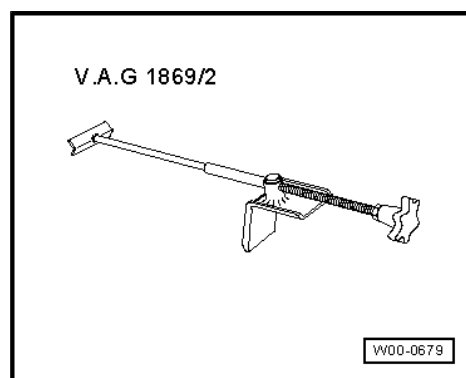
Special tools and workshop equipment required



◆ Torque wrench - V.A.G 1332-



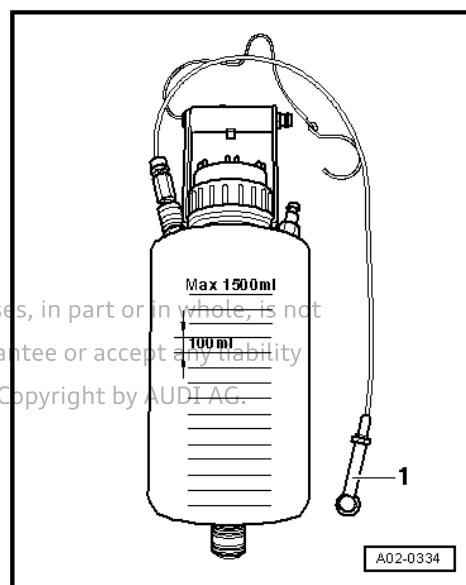
◆ Brake pedal actuator - V.A.G 1869/2-



◆ Reservoir from brake filling and bleeding equipment - VAS 5234-

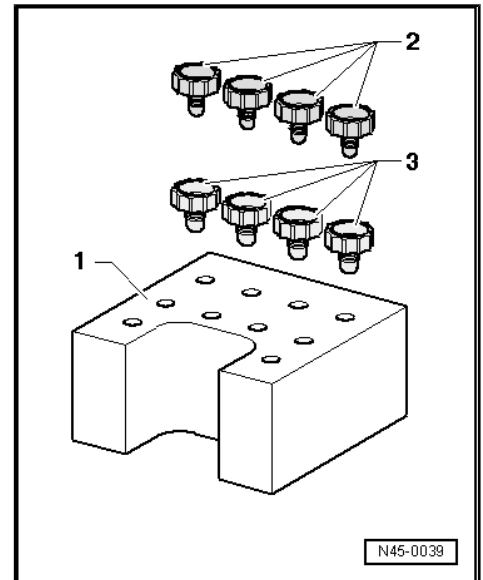


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- ◆ Sealing plugs (repair kit - 1H0 698 311 A-)



- 1 - Transport protection for contact pins (foam)
- 2 - M10 sealing plugs
- 3 - M12 sealing plugs

Removing

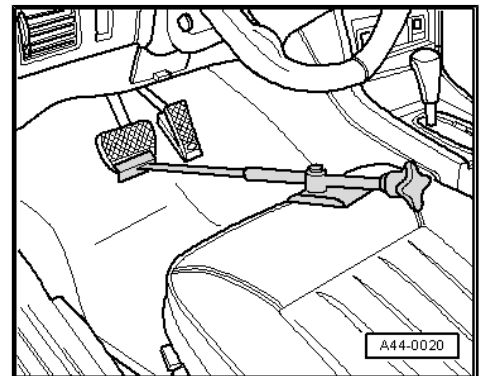
- Insert brake pedal actuator - V.A.G 1869/2- between brake pedal and driver's seat. Depress brake pedal at least 60 mm.



Note

This closes the valves in the brake master cylinder and stops the brake fluid reservoir from running empty.

- Remove front wheel ➔ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .



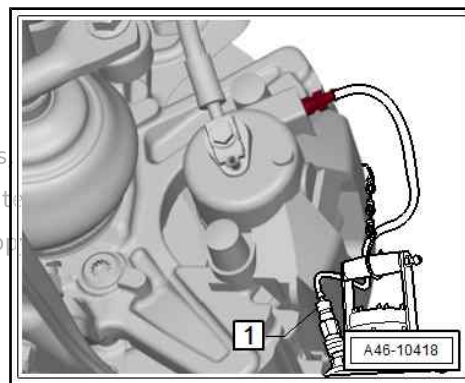


- Detach protective cap -3- from bleeder screw -1-.
- Fit bleeder hose -2- of reservoir onto bleeder screw.
- Open bleeder screw to relieve pressure in hydraulic system.
- Close bleeder screw and remove reservoir.



Note

- ◆ The brake pedal actuator - V.A.G 1869/2- must not be removed.
- ◆ Place a cloth under the connection to catch escaping brake fluid.



WARNING

Risk to health

- ◆ Brake fluid is poisonous and must NOT be drawn off by sucking through a hose.
- ◆ Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.
- ◆ Due to its corrosive effect, brake fluid must not be allowed to come into contact with paintwork. Rinse off brake fluid spillages immediately using plenty of water.

⇒ "3.4 Notes on brake fluid", page 4

- Disconnect brake hose -arrow- and detach brake caliper.



Note

Renew brake hose if banjo bolt is damaged.

- Seal open connections immediately using clean sealing plugs from repair kit - 1H0 698 311 A- .
- Take brake pads out of brake caliper.

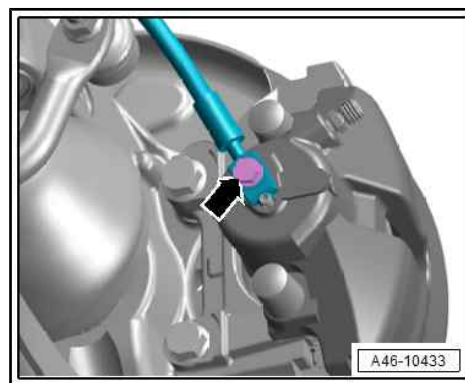
Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ Clean bolts before reusing.
- ◆ Renew damaged bolts.
- ◆ Always renew self-locking bolts.





- Screw banjo bolt -arrow- into caliper and tighten connection.



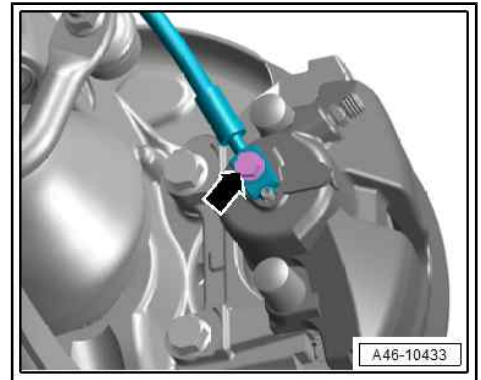
Note

Renew brake hose if banjo bolt is damaged.



Note

- ◆ *Make sure the brake hose is routed correctly.*
- ◆ *The brake hose must not be kinked, crushed or twisted or chafe against parts of the vehicle at any point.*



⇒ [“1.2.1 Removing and installing brake pads \(1ZG\)”, page 53](#)

⇒ [“1.2.2 Removing and installing brake pads \(1LJ/1ZC/1ZN/1ZS\)”, page 56](#)

- Remove brake pedal actuator - V.A.G 1869/2- .
- Bleed brake system (only at wheel where caliper was detached and brake line disconnected) ⇒ [page 207](#) .



Note

Bleed brake system (only at wheel where caliper was detached and brake line disconnected). If the brake pedal still feels “soft”, bleed the complete brake system ⇒ [page 207](#) .

- Fit front wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .



WARNING

Risk of accident!

- ◆ *Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.*
- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*

- Check brake fluid level and top up if necessary.

Tightening torques

- ◆ ⇒ [“1.1 Exploded view - front brakes”, page 48](#)

1.5 Removing and installing brake carrier (1LJ/1ZC/1ZN/1ZS)



Note

- ◆ *Clean bolts before reusing.*
- ◆ *Renew damaged bolts.*
- ◆ *Always renew self-locking bolts.*

Special tools and workshop equipment required



- ◆ Torque wrench - V.A.G 1332-



Removing

- Remove brake pads ⇒ [page 53](#) .
- Remove bolts -arrows- and detach brake carrier -1-.

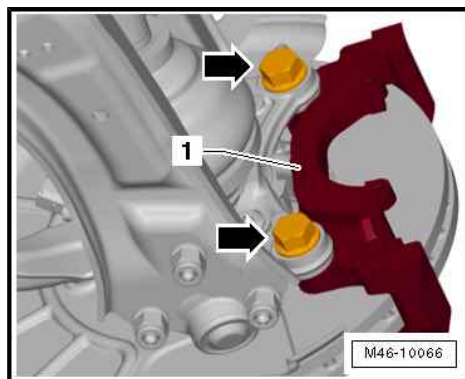
Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ Clean bolts before reusing.
- ◆ Renew damaged bolts.
- ◆ Always renew self-locking bolts.



WARNING

Risk to health

- ◆ Do not blow out the brake system with compressed air.



Note

Use only methylated spirits for cleaning the brake caliper housing.

- Install brake pads ⇒ [page 53](#) .



WARNING

Risk of accident!

- ◆ Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.
- ◆ Make sure that the brakes work properly before the vehicle is driven on the road.

Tightening torques

- ◆ ⇒ [“1.1 Exploded view - front brakes”, page 48](#)



1.6 Removing and installing front brake disc (all brake versions)



Note

- ◆ *Bolt circle diameter of brake disc: 100 mm*
- ◆ *Bolt circle diameter of brake disc PR 1LJ: 112 mm*

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331

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V.A.G 1331



W00-11166



Removing

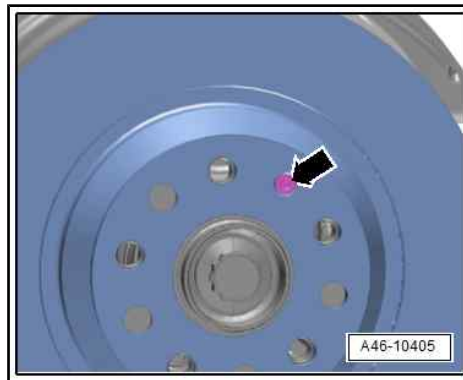
- Remove relevant brake caliper ⇒ [page 62](#) .
- Remove bolt -arrow- and take off brake disc.



Caution

Risk of damage to brake discs

- ◆ *Do not force brake disc off wheel hub. Use rust remover if necessary.*



Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ *Clean bolts before reusing.*
- ◆ *Renew damaged bolts.*
- ◆ *Always renew self-locking bolts.*
- Check brake discs for wear and damage before reinstalling:
- ◆ *Wear limit of brake discs ⇒ [page 5](#)*



Note

- ◆ *Always renew brake discs on both sides of axle.*
- ◆ *When doing so, also renew the brake pads on both sides of the axle.*
- Clean contact surface of brake disc and wheel hub thoroughly and remove corrosion.
- Fit brake disc onto wheel hub.



Note

Take care to keep the brake disc straight when fitting it on the wheel hub.



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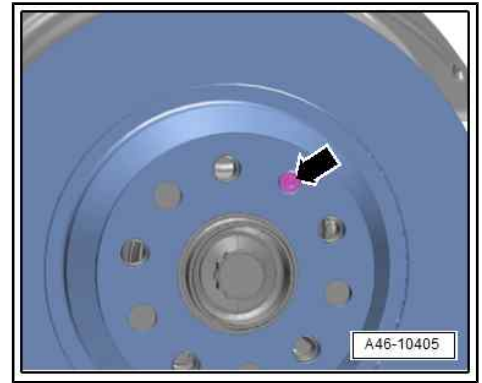
- Tighten bolt -arrow-.
- Install brake caliper ⇒ [page 62](#) .



WARNING

Risk of accident!

- ◆ *Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.*
- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*



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Tightening torques

- ◆ ⇒ ["1.1 Exploded view - front brakes" page 48](#)

1.7 Removing and installing front splash plate (all brake versions)

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331-

V.A.G 1331



WV00-11166



Removing

- Remove relevant brake disc ➔ [page 73](#) .
- Remove bolts -arrows-.
- Take off splash plate -1-.

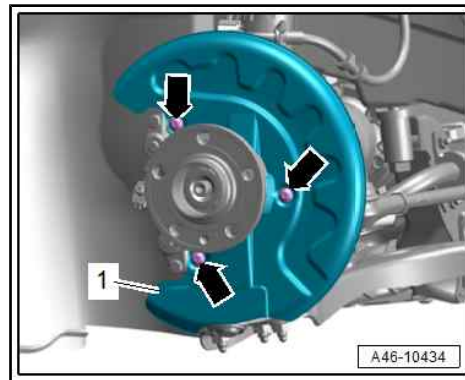
Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ *Clean bolts before reusing.*
 - ◆ *Renew damaged bolts.*
 - ◆ *Always renew self-locking bolts.*
- Clean splash plate and wheel hub.
 - Install brake disc ➔ [page 73](#) .



WARNING

Risk of accident!

- ◆ *Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.*
- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*

Tightening torques

- ◆ ➔ [“1.1 Exploded view - front brakes”, page 48](#)





2 Rear brakes

- ⇒ [“2.1 Exploded view - rear brakes”, page 77](#)
- ⇒ [“2.2 Removing and installing brake pads”, page 85](#)
- ⇒ [“2.3.1 Removing and installing brake caliper”, page 96](#)
- ⇒ [“2.3 Removing and installing brake caliper”, page 96](#)
- ⇒ [“2.4 Renewing brake caliper”, page 101](#)
- ⇒ [“2.5 Removing and installing brake carrier”, page 116](#)
- ⇒ [“2.6 Removing and installing rear brake disc \(all brake versions\)”, page 118](#)
- ⇒ [“2.7 Removing and installing splash plate”, page 119](#)

2.1 Exploded view - rear brakes

- ⇒ [“2.1.1 Exploded view - rear brakes \(1KT\)”, page 77](#)
- ⇒ [“2.1.2 Exploded view - rear brakes \(1KS\)”, page 80](#)
- ⇒ [“2.1.3 Exploded view - rear brakes \(1KF/1KX\)”, page 83](#)



Note

Bolt circle diameter of brake disc 1KS: 112 mm

2.1.1 Exploded view - rear brakes (1KT)



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1 - Nut

- ❑ Tightening torque ⇒
Running gear, axles,
steering; Rep. gr. 42 ;
Wheel bearing, trailing
arm; Exploded view -
wheel bearing

2 - Wheel bearing unit

- ❑ Exploded view ⇒ Run-
ning gear, axles, steer-
ing; Rep. gr. 42 ; Wheel
bearing, trailing arm;
Exploded view - wheel
bearing

3 - Bolt

- ❑ Tightening torque ⇒
Running gear, axles,
steering; Rep. gr. 42 ;
Wheel bearing, trailing
arm; Exploded view -
wheel bearing



Note

- ◆ Clean bolts before reusing.
- ◆ Renew damaged bolts.
- ◆ Always renew self-locking bolts.

4 - Stub axle

5 - Splash plate for brakes

- ❑ Removing and installing
⇒ [page 121](#)

6 - Guide pin

- ❑ Check for ease of move-
ment
- ❑ If protective caps or guide pins are damaged, renew using repair kit. Use grease sachet supplied to
lubricate guide pins.

7 - Axle beam

8 - Brake hose

- ❑ Make sure the brake hose is routed correctly. The brake hose must not be kinked, crushed or twisted or
chafe against parts of the vehicle at any point.
- ❑ Renew if damaged

9 - Retaining spring

10 - Clip

11 - Pipe/hose assembly

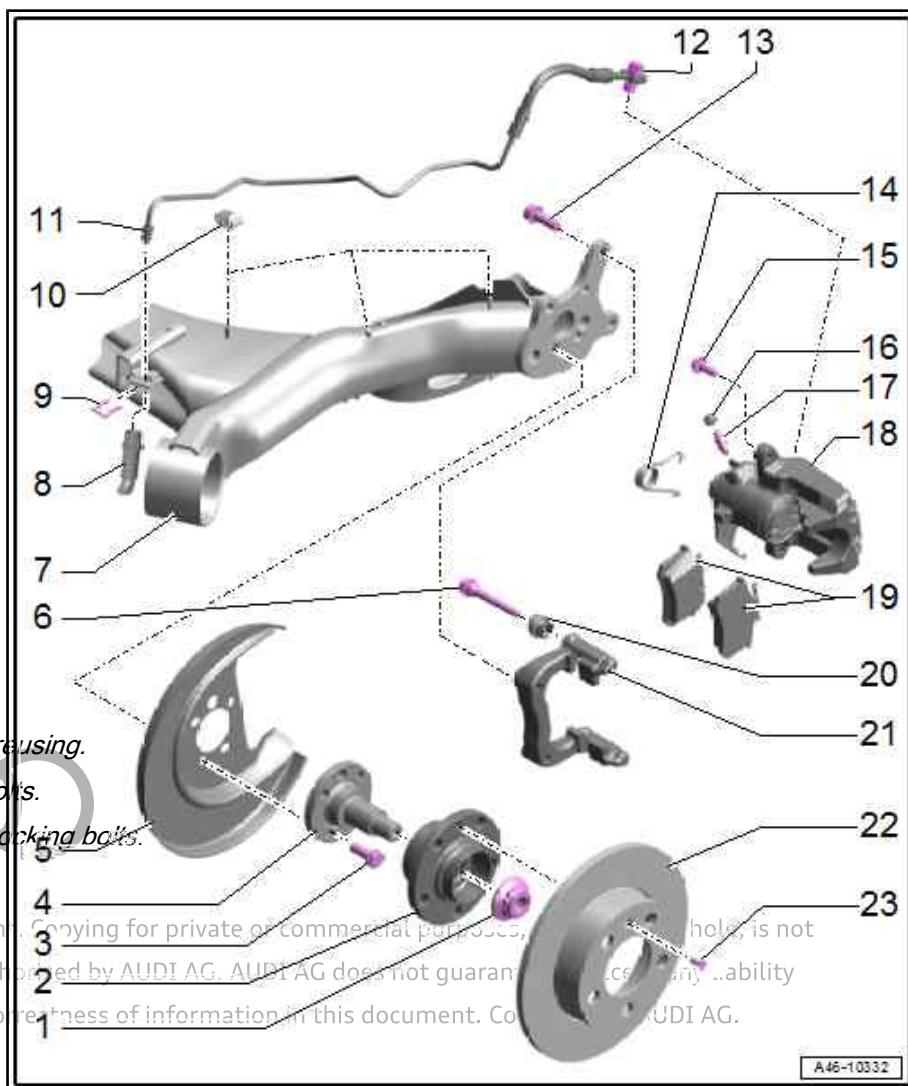
- ❑ Connection to brake hose 14 Nm

12 - Banjo bolt

- ❑ Captive version with seals
- ❑ Clean sealing surface on brake caliper to remove corrosion
- ❑ 35 Nm

13 - Bolt

- ❑ 30 Nm +30°





Note

- ◆ *Clean bolts before reusing.*
- ◆ *Renew damaged bolts.*
- ◆ *Always renew self-locking bolts.*

14 - Return spring

15 - Bolt

- ☐ Counter-hold guide pin when loosening and tightening
- ☐ 35 Nm



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- ◆ *Clean bolts and nuts before re-using.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

16 - Protective cap

17 - Bleeder screw

- ☐ 10 Nm

18 - Brake caliper

- ☐ For correct version refer to ⇒ Electronic parts catalogue "ETKA"
- ☐ Removing and installing ⇒ [page 96](#)
- ☐ Renewing ⇒ [page 101](#)
- ☐ Servicing ⇒ [page 151](#)

19 - Brake pads

- ☐ For correct version refer to ⇒ Electronic parts catalogue "ETKA"
- ☐ Checking thickness, wear limit ⇒ Maintenance ; Booklet 819
- ☐ Always renew on both sides of axle
- ☐ Removing and installing ⇒ [page 85](#)
- ☐ Springs on brake pads are only fitted on certain models

20 - Protective cap

21 - Brake carrier

- ☐ With guide pins and protective caps
- ☐ Replacement carriers are supplied assembled and with sufficient grease on guide pins
- ☐ If protective caps or guide pins are damaged, renew using repair kit. Use grease sachet supplied to lubricate guide pins.

22 - Brake disc

- ☐ For correct version refer to ⇒ Electronic parts catalogue "ETKA"
- ☐ Wear limit ⇒ [page 5](#)
- ☐ Removing and installing ⇒ [page 118](#)
- ☐ Always renew on both sides of axle
- ☐ Never remove brake disc from wheel hub by force; if necessary use rust remover, as brake disc may otherwise be damaged

23 - Bolt

- ☐ 5 Nm



Note

- ◆ *Clean bolts and nuts before re-using.*
 - ◆ *Always renew self-locking bolts/nuts.*
 - ◆ *Always renew damaged bolts/nuts.*
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Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

2.1.2 Exploded view - rear brakes (1KS)

1 - Speed sensor

- Removing and installing
⇒ [page 45](#)

2 - Bolt

- Tightening torque
⇒ [Item 4 \(page 42\)](#)



Note

- ◆ *Clean bolts and nuts before re-using.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

3 - Bolt

- Loosen and tighten with special wrench - T10035-
- 90 Nm +90°

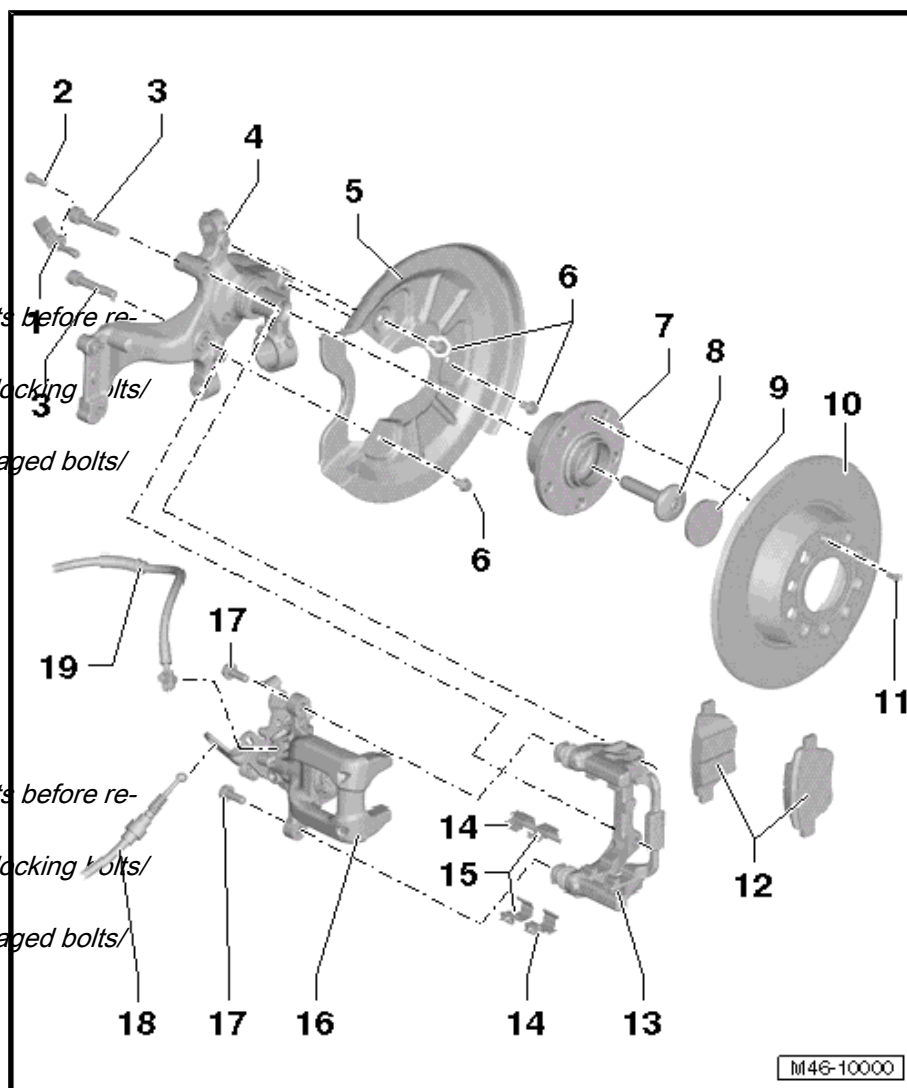


Note

- ◆ *Clean bolts and nuts before re-using.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

4 - Wheel bearing housing

- Exploded view ⇒ Running gear, axles, steering; Rep. gr. 42 ; Wheel bearing, trailing arm; Exploded view - wheel bearing





5 - Splash plate for brakes

- ☐ Removing and installing ⇒ [page 119](#)

6 - Bolt

- ☐ 4x
- ☐ 12 Nm



Note

- ◆ *Clean bolts and nuts before re-using.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

7 - Wheel bearing unit

- ☐ Exploded view ⇒ Running gear, axles, steering; Rep. gr. 42 ; Wheel bearing, trailing arm; Exploded view - wheel bearing

8 - Bolt

- ☐ Tightening torque ⇒ Running gear, axles, steering; Rep. gr. 42 ; Wheel bearing, trailing arm; Exploded view - wheel bearing



Note

- ◆ *Clean bolts and nuts before re-using.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

9 - Cap

- ☐ Exploded view ⇒ Running gear, axles, steering; Rep. gr. 42 ; Wheel bearing, trailing arm; Exploded view - wheel bearing

10 - Brake disc

- ☐ For correct version refer to ⇒ Electronic parts catalogue "ETKA"
- ☐ Wear limit ⇒ [page 5](#)
- ☐ Removing and installing ⇒ [page 118](#)
- ☐ Always renew on both sides of axle
- ☐ Never remove brake disc from wheel hub by force; if necessary use rust remover, as brake disc may otherwise be damaged



Note

*Bolt circle diameter of brake disc PR
1KS: 112 mm*

11 - Bolt

- ☐ 4 Nm



Note

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- ◆ *Clean bolts and nuts before re-using.*
- ◆ *Always renew self-locking bolts/nuts.*



- ◆ *Always renew damaged bolts/nuts.*

12 - Brake pads

- ☐ For correct version refer to ⇒ Electronic parts catalogue "ETKA"
- ☐ Checking thickness, wear limit ⇒ Maintenance ; Booklet 819
- ☐ Always renew on both sides of one axle
- ☐ Removing and installing ⇒ [page 89](#)

13 - Brake carrier

- ☐ With guide pins and protective caps
- ☐ Removing and installing ⇒ [page 116](#)
- ☐ Replacement carriers are supplied assembled and with sufficient grease on guide pins
- ☐ If protective caps or guide pins are damaged, renew using repair kit. Use grease sachet supplied to lubricate guide pins.

14 - Pad retainer

- ☐ For correct version refer to ⇒ Electronic parts catalogue "ETKA"
- ☐ Renew when changing pads
- ☐ Pad retainers are different; can only be fitted in diagonally opposite positions

15 - Pad retainer

- ☐ For correct version refer to ⇒ Electronic parts catalogue "ETKA"
- ☐ Renew when changing pads
- ☐ Pad retainers are different; can only be fitted in diagonally opposite positions

16 - Brake caliper

- ☐ Removing and installing ⇒ [page 107](#)
- ☐ Servicing ⇒ [page 151](#)
- ☐ Adjust parking brake after repairing or renewing caliper

17 - Bolts

- ☐ Self-locking
- ☐ Counter-hold guide pin when loosening and tightening
- ☐ 35 Nm



Note

- ◆ *Clean bolts and nuts before re-using.*

- ◆ *Always renew self-locking bolts/nuts.*

- ◆ *Always renew damaged bolts/nuts.*

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18 - Brake cable

- ☐ Removing and installing ⇒ [page 126](#)

19 - Brake hose

- ☐ With banjo bolt and seals
- ☐ Make sure the brake hose is routed correctly. The brake hose must not be kinked, crushed or twisted or chafe against parts of the vehicle at any point.
- ☐ Renew if damaged
- ☐ 35 Nm



Note

- ◆ Clean bolts and nuts before re-using.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.



Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.

2.1.3 Exploded view - rear brakes (1KF/1KX)

1 - Brake caliper

- ☐ Removing and installing
⇒ [page 99](#)
- ☐ Renewing ⇒ [page 111](#)
- ☐ Servicing ⇒ [page 151](#)

2 - Bleeder screw

- ☐ 10 Nm

3 - Protective cap

4 - Return spring

5 - Bolt

- ☐ Self-locking
- ☐ 35 Nm



Note

- ◆ Clean bolts and nuts before re-using.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.

6 - Banjo bolt

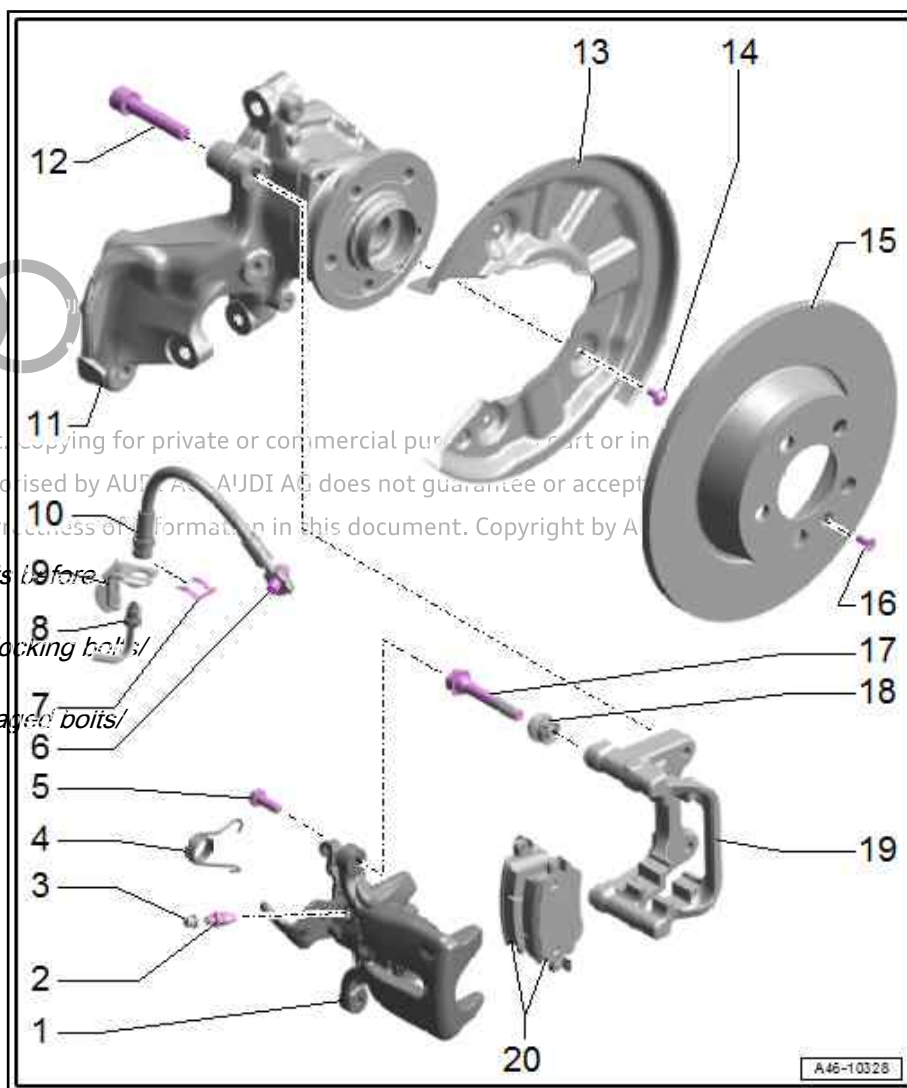
- ☐ Captive version with seals
- ☐ Clean sealing surface on brake caliper to remove corrosion
- ☐ 35 Nm

7 - Retaining spring

- ☐ Renew if damaged

8 - Brake line

- ☐ Connection to brake hose 14 Nm





9 - Bracket

- ☐ For brake line/hose

10 - Brake hose

- ☐ Make sure the brake hose is routed correctly. The brake hose must not be kinked, crushed or twisted or chafe against parts of the vehicle at any point.
- ☐ Renew if damaged
- ☐ Ensure that lugs are properly seated in grooves in bracket

11 - Wheel bearing housing

- ☐ Exploded view ⇒ Running gear, axles, steering; Rep. gr. 42 ; Wheel bearing, trailing arm; Exploded view - wheel bearing

12 - Bolt

- ☐ 90 Nm +90°



Note

- ◆ *Clean bolts and nuts before re-using.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

13 - Splash plate for brakes

- ☐ Removing and installing ⇒ [page 121](#)

14 - Bolt

- ☐ 12 Nm



Note

- ◆ *Clean bolts and nuts before re-using.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

15 - Brake disc

- ☐ For correct version refer to ⇒ Electronic parts catalogue "ETKA"
- ☐ Wear limit ⇒ [page 5](#)
- ☐ Always renew on both sides of axle
- ☐ Removing and installing ⇒ [page 118](#)

16 - Bolt

- ☐ 5 Nm



Note

- ◆ *Clean bolts and nuts before re-using.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



17 - Guide pin

- ☐ Check for ease of movement
- ☐ If protective caps or guide pins are damaged, renew using repair kit. Use grease sachet supplied to lubricate guide pins.

18 - Protective cap

19 - Brake carrier

- ☐ Replacement carriers are supplied assembled and with sufficient grease on guide pins
- ☐ Renew protective caps if they have been damaged (repair kit); use grease sachet supplied to lubricate the guide pins

20 - Brake pads

- ☐ For correct version refer to ⇒ Electronic parts catalogue "ETKA"
- ☐ Inner brake pad with retainer for pad wear indicator wire
- ☐ Checking thickness, wear limit ⇒ Maintenance ; Booklet 819
- ☐ Always renew on both sides of one axle
- ☐ Removing and installing ⇒ [page 92](#)



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

2.2 Removing and installing brake pads

⇒ ["2.2.1 Removing and installing brake pads \(1KT\)", page 85](#)

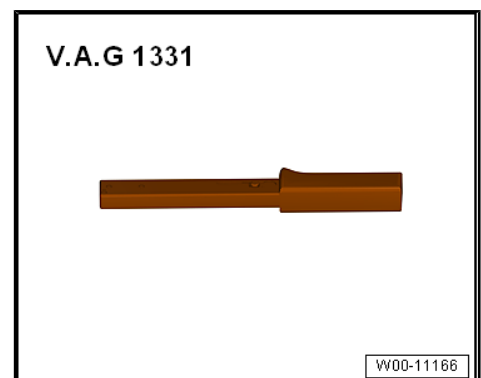
⇒ ["2.2.2 Removing and installing brake pads \(1KS\)", page 89](#)

⇒ ["2.2.3 Removing and installing brake pads \(1KF/1KX\)", page 92](#)

2.2.1 Removing and installing brake pads (1KT)

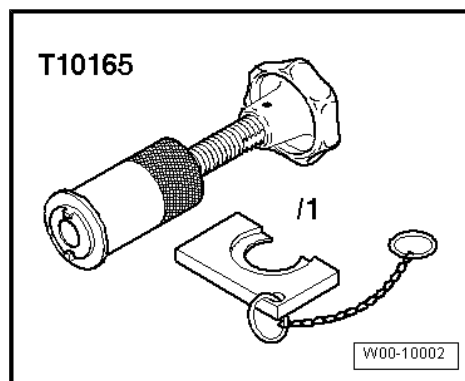
Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331-





◆ Piston compressing tool - T10165-



Removing

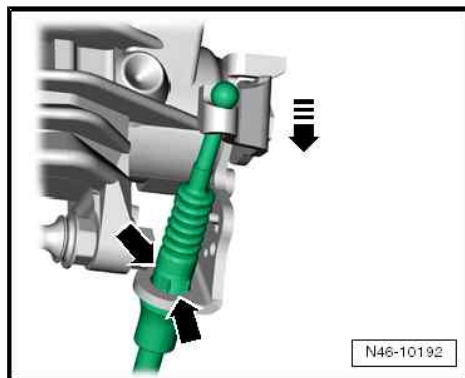
- Release parking brake.



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Mark brake pads when removing them if they are to be reinstalled. Reinstall in their original position to prevent uneven braking. Copyright by AUDI AG.

- Remove relevant rear wheel ➔ Running gear, axles, steering;
Rep. gr. 44 ; Wheels, tyres .
- Push brake lever in direction of -arrow- and unhook brake cable from brake lever.
- Compress both retaining tabs -arrows- and pull brake cable out of retainer on brake caliper.





- Counterhold guide pins -1 and 2- and remove bolts -arrows-.
- Detach brake caliper.



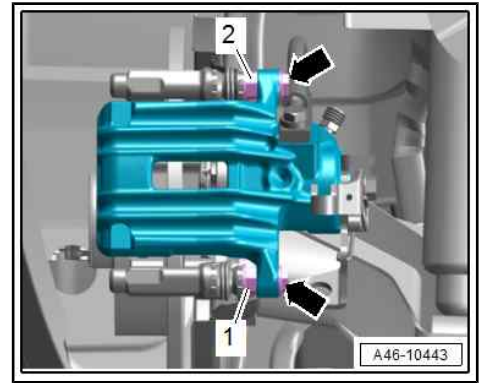
Caution

Risk of damage to brake hose or brake cable

- ◆ *Do not leave the brake caliper hanging from the brake hose or brake cable. Make sure that the brake hose and brake cable are not damaged by the weight of components.*
- ◆ *The brake hose must be renewed if it is damaged.*

Risk of damage to brake caliper pistons

- ◆ *The brakes and the parking brake must not be operated when the brake caliper has been detached.*



- Tie brake caliper to body with suitable wire.
- Remove brake pads.

Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*
- Check brake discs for wear ⇒ [page 5](#) .



Note

- ◆ *Always renew brake pads on both sides of axle.*
 - ◆ *Install all parts supplied in the repair kit when fitting new brake pads.*
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WARNING

Risk to health

- ◆ *Do not blow out the brake system with compressed air.*



Note

- ◆ *Use only methylated spirits for cleaning the brake caliper housing.*
- ◆ *Check protective caps on brake caliper pistons for damage; if necessary, install all parts supplied in repair kit*
⇒ *[“2.2 Removing and installing brake caliper piston”](#)*
[page 151](#) .
- Thoroughly clean pad contact surfaces on brake carrier and remove corrosion.



- Clean brake caliper, in particular the bonding surface on the brake pad. It must be free of adhesive and grease residues.



WARNING

Risk to health

- ◆ *Brake fluid is poisonous and must NOT be drawn off by sucking through a hose.*
- ◆ *Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.*

⇒ “3.4 Notes on brake fluid”, page 4



Caution

Risk of damage to brake caliper piston

- ◆ *Always use piston compressing tool - T10165- to screw back brake caliper piston.*

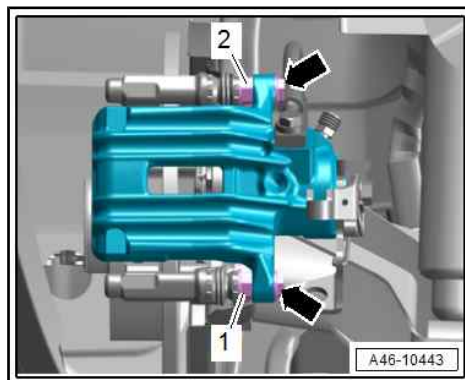
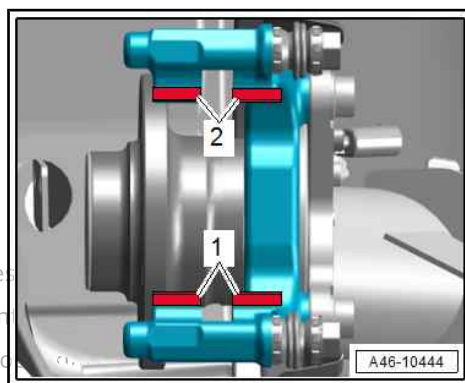
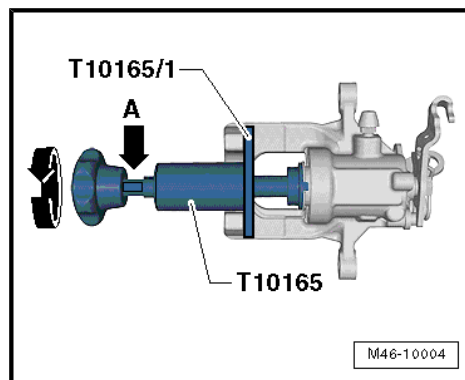
- Apply piston compressing tool - T10165- to brake caliper piston.
- Screw in brake caliper piston by turning knurled wheel clockwise, taking care not to damage protective cap.
- Use plate - T10165/1- when screwing in the piston.
- ◆ Insert piston compressing tool - T10165- so that collar is positioned against plate - T10165/1-.
- ◆ If the piston will not move easily, a 13 mm open-end spanner can be applied at the flats provided -arrow A-.
- Clean surfaces -1, 2- on brake carrier that make contact with brake pads.
- If fitted, pull protective foil off pad backplates.
- Fit brake pads in brake carrier.



Note

The springs on the brake pads are only fitted on certain models.

- Install brake caliper.
- Counterhold guide pins -1 and 2- and tighten bolts -arrows- for brake caliper.





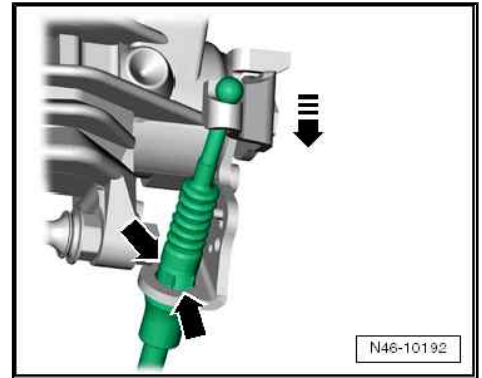
- Push brake cable through retainer on brake caliper until both retaining tabs -arrows- engage.
- Push brake lever in direction of -arrow- and attach brake cable onto brake lever.
- Fit front wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Adjust parking brake ⇒ [page 125](#) .



WARNING

Risk of accident!

- ◆ *Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.*
- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*



- Check brake fluid level and top up if necessary.

Tightening torques

- ◆ ⇒ [“2.1.1 Exploded view - rear brakes \(1KT\)”, page 77](#)

2.2.2 Removing and installing brake pads (1KS)

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331-



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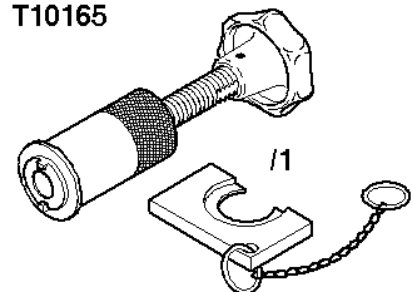
V.A.G 1331



W00-11166

- ◆ Piston compressing tool - T10165-

T10165



W00-10002

Removing

- Release parking brake.



Note

*Mark brake pads when removing them if they are to be reinstalled.
Reinstall in their original position to prevent uneven braking.*

- Remove relevant rear wheel ⇒ Running gear, axles, steering;
Rep. gr. 44 ; Wheels, tyres .
- Counterhold guide pins and unscrew bolts -arrows- for brake
caliper -1-.



Caution

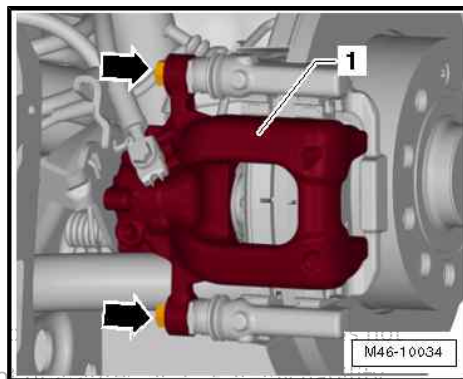
Risk of damage to brake hose or brake cable

- ◆ ***Do not leave the brake caliper hanging from the brake hose or brake cable. Make sure that the brake hose and brake cable are not damaged by the weight of components.***

- ◆ ***The brake hose must be renewed if it is damaged.***

Risk of damage to brake caliper pistons

- ◆ ***The brakes and the parking brake must not be operated when the brake caliper has been detached.***



- Tie brake caliper to body with suitable wire.



- Remove brake pads and pad retainers -arrows-.

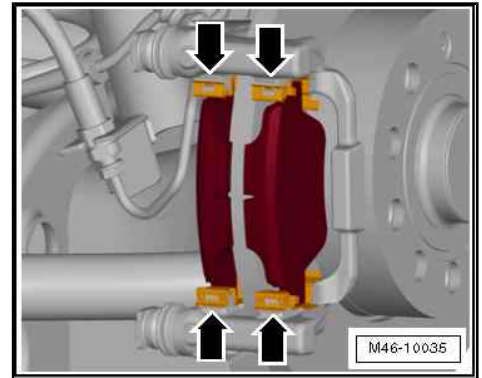
Installing

Installation is carried out in reverse order; note the following:

Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.

- Check brake discs for wear ⇒ [page 5](#) .



Note

- ◆ Always renew brake pads on both sides of axle.
- ◆ Install all parts supplied in the repair kit when fitting new brake pads.



WARNING

Risk to health

- ◆ Do not blow out the brake system with compressed air.

Note

- ◆ Use only methylated spirits for cleaning the brake caliper housing.
- ◆ Check protective caps on brake caliper pistons for damage; if necessary, install all parts supplied in repair kit ⇒ [“2.2 Removing and installing brake caliper piston”](#), [page 151](#) .
- Thoroughly clean contact surfaces for pad retainers (brake pads) on brake carrier and remove corrosion.



Caution

Escaping brake fluid can cause the vehicle to become dirty and may damage the paintwork.

- ◆ If the brake pads are worn and brake fluid has been topped up unnecessarily, brake fluid can overflow when the brake caliper pistons are pressed back into the brake cylinders.
- ◆ Before pressing the pistons back, check the brake fluid level. Brake fluid must be extracted if the fluid level is up to the “MAX” mark.
- ◆ Use brake filling and bleeding equipment - VAS 5234- to extract brake fluid from brake fluid reservoir.



Caution

Risk of damage to brake caliper piston

- ◆ **Always use piston compressing tool - T10165- to screw back brake caliper piston.**

- Screw in brake caliper piston by turning knurled wheel clockwise, taking care not to damage protective cap.
- Use plate - T10165/1- when screwing in the piston.
- ◆ Insert piston compressing tool - T10165- so that collar is positioned against plate - T10165/1- .
- ◆ If the piston will not move easily, a 13 mm open-end spanner can be applied at the flats provided -arrow A-.
- Insert pad retainers -1- and -2- into brake carrier.



Note

Pad retainers -1- and -2- are different. They can only be fitted in diagonally opposite positions.

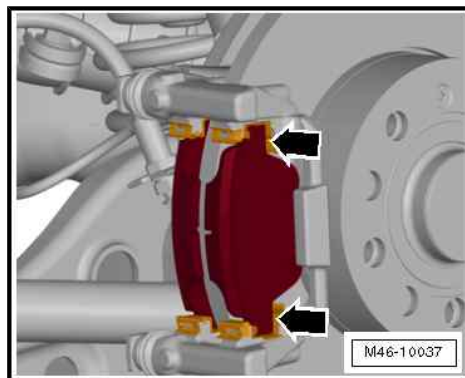
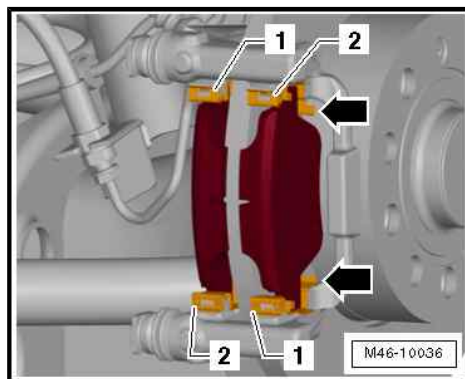
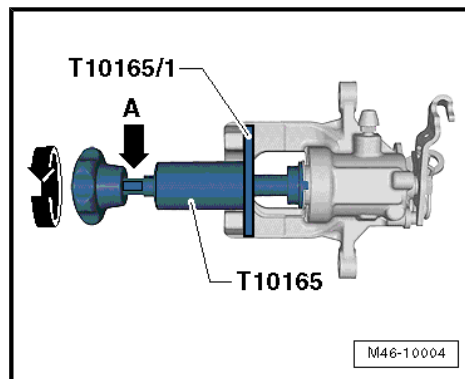
- Fit pad retainers -1- and -2- so that guide lugs -arrows- face outwards on both sides of brake carrier.
- Fit brake pads in brake carrier.
- Ensure that brake pads are seated correctly in pad retainers -arrows-.
- Secure brake caliper with self-locking bolts.
- Fit front wheel ➔ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Adjust parking brake ➔ [page 125](#) .



WARNING

Risk of accident!

- ◆ **Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.**
- ◆ **Make sure that the brakes work properly before the vehicle is driven on the road.**



- Check brake fluid level and top up if necessary.

Tightening torques

- ◆ ➔ [“2.1.2 Exploded view - rear brakes \(1KS\)”, page 80](#)

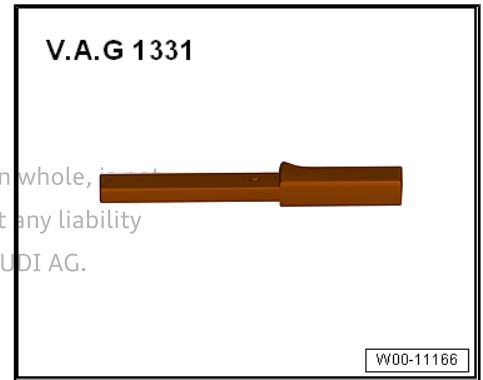
2.2.3 Removing and installing brake pads (1KF/1KX)

Special tools and workshop equipment required

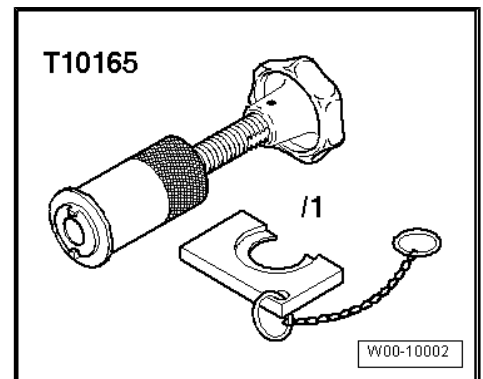


◆ Torque wrench - V.A.G 1331-

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◆ Piston compressing tool - T10165-



Removing

- Release parking brake.



Note

*Mark brake pads when removing them if they are to be reinstalled.
Reinstall in their original position to prevent uneven braking.*

- Remove relevant rear wheel ⇒ Running gear, axles, steering;
Rep. gr. 44 ; Wheels, tyres .



- Counterhold guide pins -1 and 2- and remove bolts -arrows-.
- Detach brake caliper.



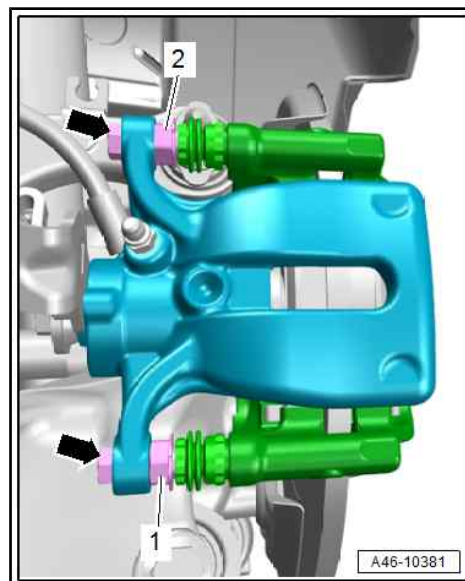
Caution

Risk of damage to brake hose or brake cable

- ◆ *Do not leave the brake caliper hanging from the brake hose or brake cable. Make sure that the brake hose and brake cable are not damaged by the weight of components.*
- ◆ *The brake hose must be renewed if it is damaged.*

Risk of damage to brake caliper pistons

- ◆ *The brakes and the parking brake must not be operated when the brake caliper has been detached.*



- Tie brake caliper to body with suitable wire.
- Detach brake pads from brake carrier towards the side.

Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ *Clean bolts and nuts before reusing.*
 - ◆ *Always renew self-locking bolts/nuts.*
 - ◆ *Always renew damaged bolts/nuts.*
- Check brake discs for wear ➤ [page 5](#) .



Note

- ◆ *Always renew brake pads on both sides of axle.*
- ◆ *Install all parts supplied in the repair kit when fitting new brake pads.*



WARNING

Risk to health

- ◆ *Do not blow out the brake system with compressed air.*



Note

- ◆ *Use only methylated spirits for cleaning the brake caliper housing.*
- ◆ *Check protective caps on brake caliper pistons for damage; if necessary, install all parts supplied in repair kit*
➤ ["2.2 Removing and installing brake caliper piston", page 151](#) .





Caution

Escaping brake fluid can cause the vehicle to become dirty and may damage the paintwork.

- ◆ *If the brake pads are worn and brake fluid has been topped up unnecessarily, brake fluid can overflow when the brake caliper pistons are pressed back into the brake cylinders.*
- ◆ *Before pressing the pistons back, check the brake fluid level. Brake fluid must be extracted if the fluid level is up to the "MAX" mark.*
- ◆ *Use brake filling and bleeding equipment - VAS 5234- to extract brake fluid from brake fluid reservoir.*

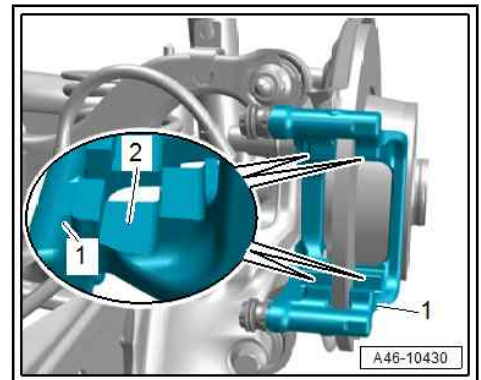
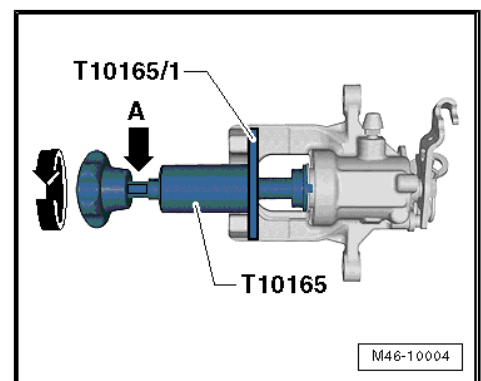


Caution

Risk of damage to brake caliper piston

- ◆ *Always use piston compressing tool - T10165- to screw back brake caliper piston.*

- Screw in brake caliper piston by turning knurled wheel clockwise, taking care not to damage protective cap.
- Use plate - T10165/1- when screwing in the piston.
- ◆ Insert piston compressing tool - T10165- so that collar is positioned against plate - T10165/1- .
- ◆ If the piston will not move easily, a 13 mm open-end spanner can be applied at the flats provided -arrow A-.
- Clean contact surfaces -2- on brake carrier -1- (to brake pads).
- Fit brake pads in brake carrier.
- Slide brake caliper over fitted brake pads.



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- Counterhold guide pins -1 and 2- and tighten bolts -arrows- for brake caliper.



Note

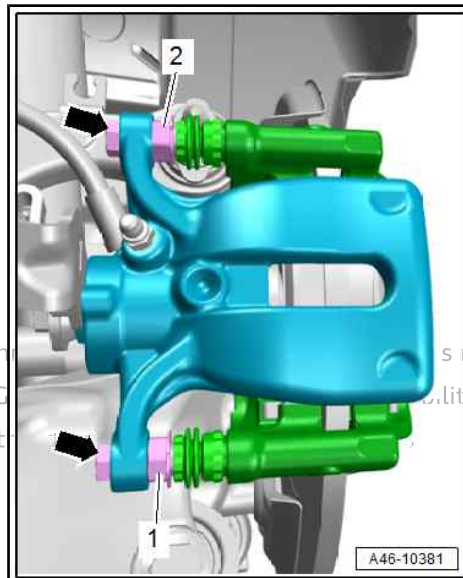
- ♦ *Make sure the brake hose is routed correctly.*
- ♦ *The brake hose must not be kinked, crushed or twisted or chafe against parts of the vehicle at any point.*
- Fit rear wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Adjust parking brake ⇒ [page 125](#)



WARNING

Risk of accident!

- ♦ *Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.*
- ♦ *Make sure that the brakes work properly before the vehicle is driven on the road.*



- Check brake fluid level and top up if necessary.

Tightening torques

- ♦ ⇒ [“2.1.3 Exploded view - rear brakes \(1KF/1KX\)”, page 83](#)

2.3 Removing and installing brake caliper

⇒ [“2.3.1 Removing and installing brake caliper”, page 96](#)

⇒ [“2.3.2 Removing and installing brake caliper \(1KF/1KX\)”, page 99](#)

2.3.1 Removing and installing brake caliper



Note

In the following procedure the brake caliper is removed together with the brake carrier and brake pads. The brake hose and brake cable remain connected.

Special tools and workshop equipment required

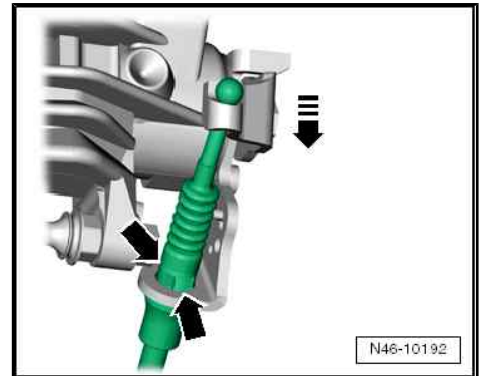
- ♦ Torque wrench - V.A.G 1332-





Removing

- Release parking brake.
- Remove relevant rear wheel ⇒ Running gear, axles, steering;
Rep. gr. 44 ; Wheels, tyres .
- Push brake lever in direction of -arrow- and unhook brake cable from brake lever.
- Compress both retaining tabs -arrows-, then pull brake cable out of retainer on brake caliper.



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- Remove bolts -arrows-.
- Detach brake caliper with brake carrier and brake pads fitted.



Note

If it is not possible to take off the caliper because of the amount of wear on the disc rotor, remove the pads ⇒ [page 85](#).



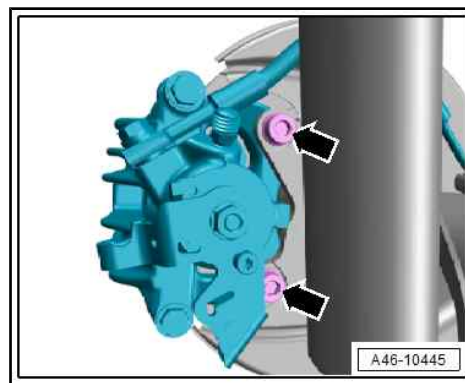
Caution

Risk of damage to brake hose

- ◆ Do not leave the brake caliper hanging from the brake hose. Take care that brake hose is not damaged by weight of brake components.
- ◆ The brake hose must be renewed if it is damaged.

Risk of damage to brake caliper pistons

- ◆ Do not apply brake when brake caliper is removed.



- Tie brake caliper to body with suitable wire.

Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.



WARNING

Risk to health

- ◆ Do not blow out the brake system with compressed air.



Note

Use only methylated spirits for cleaning the brake caliper housing.

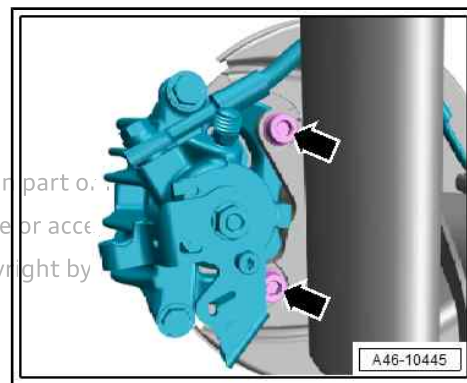
- Piston in brake caliper is pressed back.
- Install brake caliper with brake carrier and brake pads fitted.



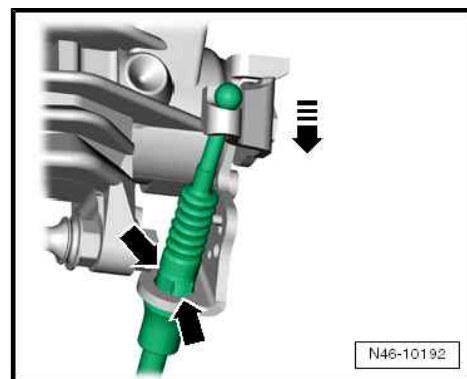
- Tighten bolts -arrows-



- ◆ *Make sure the brake hose is routed correctly.*
- ◆ *The brake hose must not be kinked, crushed or twisted or chafe against parts of the vehicle at any point.*



- Push brake cable through retainer on brake caliper until both retaining tabs -arrows- engage.
- Push brake lever in direction of -arrow- and attach brake cable onto brake lever.
- Fit rear wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .



WARNING

Risk of accident!

- ◆ *Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.*
- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*

Tightening torques

- ◆ ⇒ ["2.1.1 Exploded view - rear brakes \(1KT\)", page 77](#)

2.3.2 Removing and installing brake caliper (1KF/1KX)



In the following procedure the brake caliper is removed together with the brake carrier and brake pads. The brake hose and brake cable remain connected.

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1332-





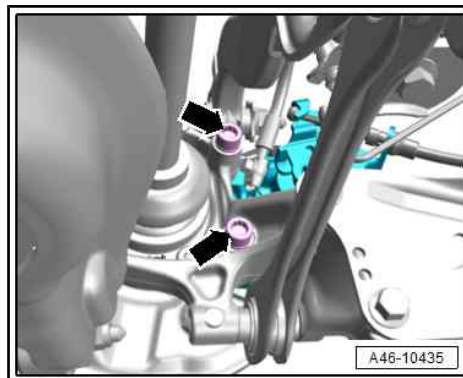
Removing

- Release parking brake.
- Remove relevant rear wheel ⇒ Running gear, axles, steering;
Rep. gr. 44 ; Wheels, tyres .
- Remove bolts -arrows- securing brake carrier.
- Pull brake caliper with brake carrier and brake pads fitted off
brake disc.



Note

If it is not possible to take off the caliper because of the amount
of wear on the disc rotor, remove the pads ⇒ [page 92](#) .



Caution

Risk of damage to brake hose

- ◆ **Do not leave the brake caliper hanging from the brake
hose. Take care that brake hose is not damaged by weight
of brake components.**
- ◆ **The brake hose must be renewed if it is damaged.**

Risk of damage to brake caliper pistons

- ◆ **Do not apply brake when brake caliper is removed.**

- Use a suitable length of wire to tie up brake caliper with brake
carrier on the body.

Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



WARNING

Risk to health

- ◆ **Do not blow out the brake system with compressed air.**



Note

Use only methylated spirits for cleaning the brake caliper housing.

- Slide brake caliper with brake carrier and brake pads fitted
carefully over brake disc.

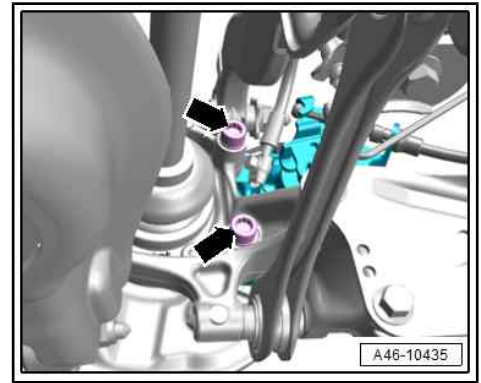


- Tighten bolts -arrows- for brake carrier.



Note

- ◆ *Make sure the brake hose is routed correctly.*
- ◆ *The brake hose must not be kinked, crushed or twisted or chafe against parts of the vehicle at any point.*
- Fit rear wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .



WARNING

Risk of accident!

- ◆ *Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.*
- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*

Tightening torques

- ◆ ⇒ [“2.1.3 Exploded view - rear brakes \(1KF/1KX\)”, page 83](#)

2.4 Renewing brake caliper

⇒ [“2.4.1 Renewing brake caliper \(1KT\)”, page 101](#)

⇒ [“2.4.3 Renewing brake caliper \(1KF/1KX\)”, page 111](#)

2.4.1 Renewing brake caliper (1KT)



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



Note

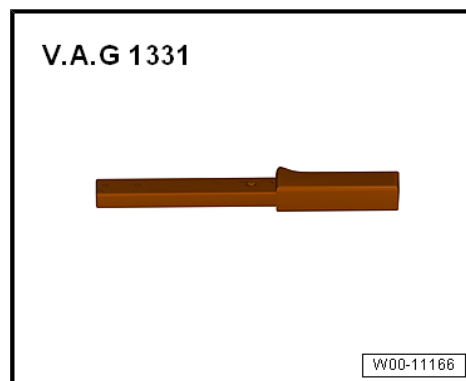
In the following procedure the brake caliper is removed and repaired or renewed. The brake hose is disconnected.

Special tools and workshop equipment required

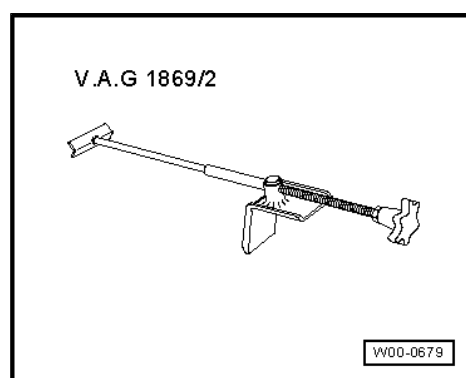
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◆ Torque wrench - V.A.G 1331-



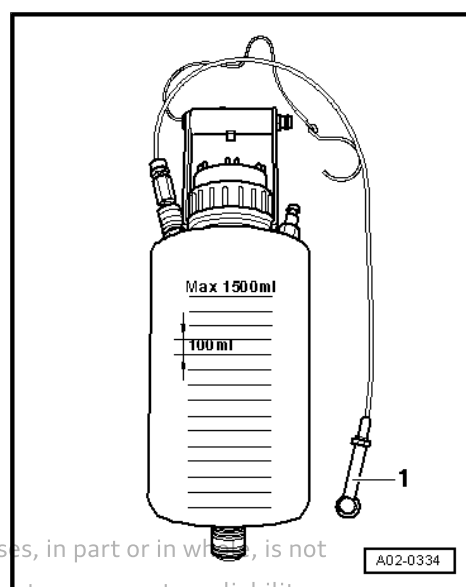
◆ Brake pedal actuator - V.A.G 1869/2-



◆ Reservoir from brake filling and bleeding equipment - VAS 5234-



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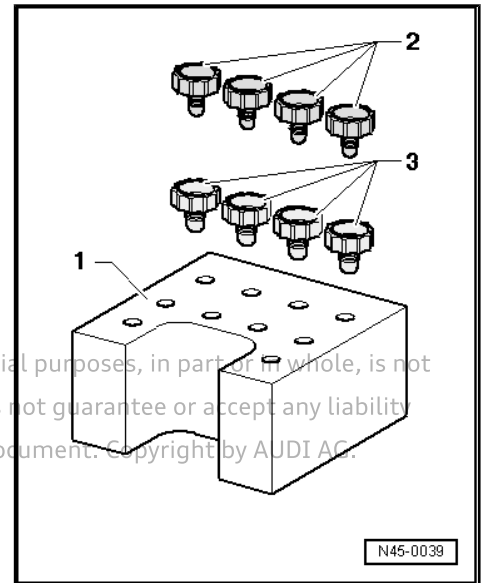




◆ Sealing plugs (repair kit - 1H0 698 311 A-)



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- 1 - Transport protection for contact pins (foam)
- 2 - M10 sealing plugs
- 3 - M12 sealing plugs



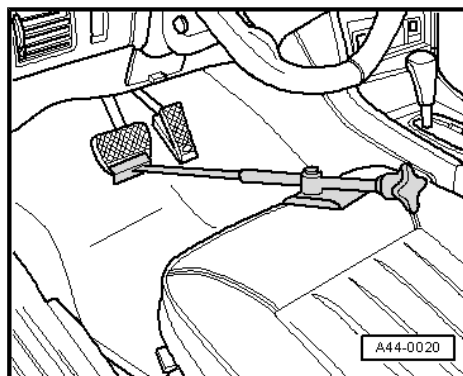
Removing

- Release parking brake.
- Remove relevant rear wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Insert brake pedal actuator - V.A.G 1869/2- between brake pedal and driver's seat. Depress brake pedal at least 60 mm.



Note

- ◆ *This closes the valves in the brake master cylinder and stops the brake fluid reservoir from running empty.*
- ◆ *Place a cloth under the connection to catch escaping brake fluid.*



WARNING

Risk of skin irritation.

- ◆ *Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.*

Accident risk: if the water content in the brake fluid is too high, this can cause vapour bubbles in the fluid.

- ◆ *Brake fluid is hygroscopic, i.e. it absorbs moisture from the surrounding air.*
- ◆ *Seal open brake hoses and brake lines using sealing plugs from repair kit - 1H0 698 311 A- .*

Risk of malfunction if brake fluid comes into contact with fluids containing mineral oils.

- ◆ *Brake fluid must NOT come into contact with fluids containing mineral oils (oil, petrol, cleaning agents). Protective gloves must be free of oil and grease.*

Risk of damage to paintwork surfaces

- ◆ *Due to its corrosive effect, brake fluid must not be allowed to come into contact with paintwork. Rinse off brake fluid spillages immediately using plenty of water.*

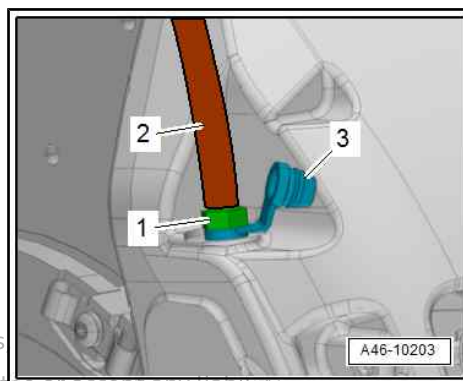
- Detach protective cap -3- from bleeder screw -1-.
- Fit bleeder hose -2- of reservoir onto bleeder screw.
- Open bleeder screw to relieve pressure in hydraulic system.
- Close bleeder screw and remove reservoir.



Note

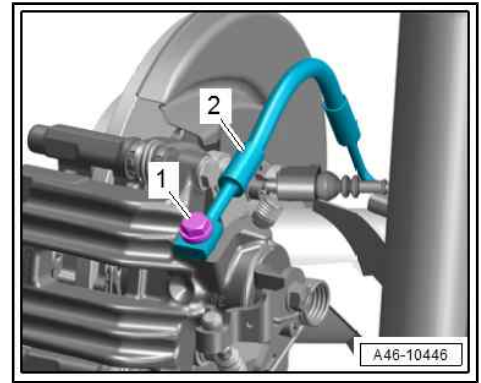
The brake pedal actuator - V.A.G 1869/2- must not be removed.

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- Unscrew banjo bolt -1- for brake hose -2- from brake caliper.
- Remove brake pads ➔ [page 85](#) .



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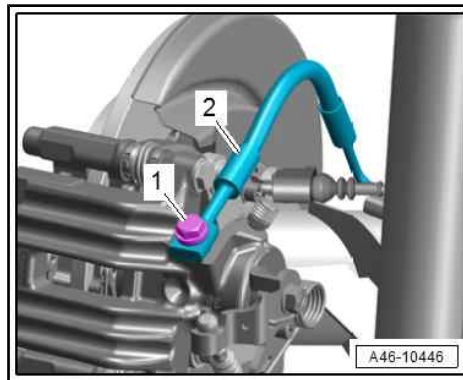
Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*
- Install brake pads ⇒ [page 85](#) .
- Tighten banjo bolt -1- for brake hose -2- on brake caliper.



Note

- ◆ *Make sure the brake hose is routed correctly.*
- ◆ *The brake hose must not be kinked, crushed or twisted or chafe against parts of the vehicle at any point.*
- Remove brake pedal actuator - V.A.G 1869/2- .
- Bleed brake system (only at wheel where caliper was detached and brake line disconnected) ⇒ [page 207](#) .



Note

Bleed brake system (only at wheel where caliper was detached and brake line disconnected). If the brake pedal still feels "soft", bleed the complete brake system ⇒ [page 207](#) .

- Fit rear wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Adjust parking brake ⇒ [page 125](#) .



WARNING



Risk of accident!

- ◆ ***Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.***
- ◆ ***Make sure that the brakes work properly before the vehicle is driven on the road.***

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Tightening torques

- ◆ ⇒ ["2.1.1 Exploded view - rear brakes \(1KT\)", page 77](#)



2.4.2 Renewing brake caliper (1KS)



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



Note

In the following procedure the brake caliper is removed and repaired or renewed. The brake hose is disconnected.

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331-

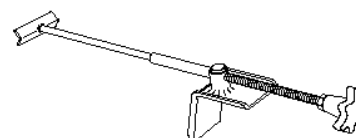
V.A.G 1331



W00-11166

- ◆ Brake pedal actuator - V.A.G 1869/2-

V.A.G 1869/2



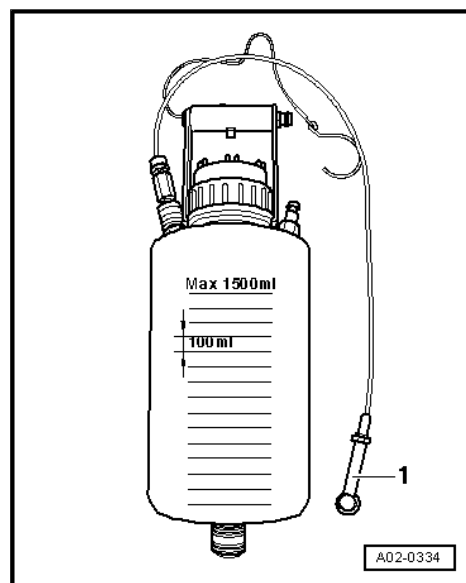
W00-0679



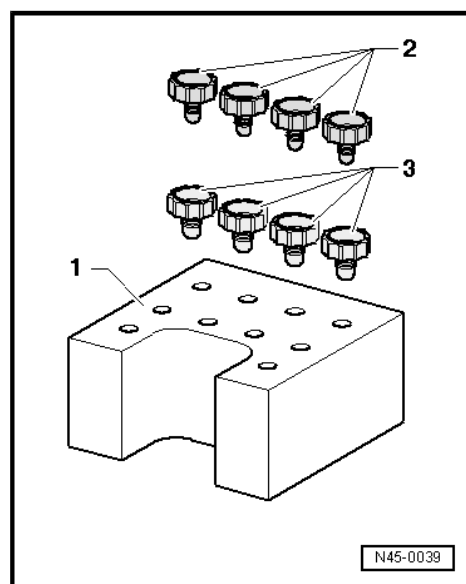
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- ◆ Reservoir from brake filling and bleeding equipment - VAS 5234-



- ◆ Sealing plugs (repair kit - 1H0 698 311 A-)



1 - Transport protection for contact pins (foam)

2 - M10 sealing plugs

3 - M12 sealing plugs

Removing

- Release parking brake.
- Remove relevant rear wheel ⇒ Running gear, axles, steering;
Rep. gr. 44 ; Wheels, tyres .



Note



Place a cloth under the connection to catch escaping brake fluid.

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WARNING

Risk of skin irritation.

- ◆ *Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.*

Accident risk: if the water content in the brake fluid is too high, this can cause vapour bubbles in the fluid.

- ◆ *Brake fluid is hygroscopic, i.e. it absorbs moisture from the surrounding air.*
- ◆ *Seal open brake hoses and brake lines using sealing plugs from repair kit - 1H0 698 311 A- .*

Risk of malfunction if brake fluid comes into contact with fluids containing mineral oils.

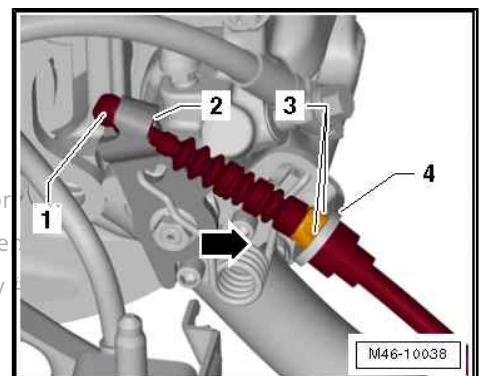
- ◆ *Brake fluid must NOT come into contact with fluids containing mineral oils (oil, petrol, cleaning agents). Protective gloves must be free of oil and grease.*

Risk of damage to paintwork surfaces

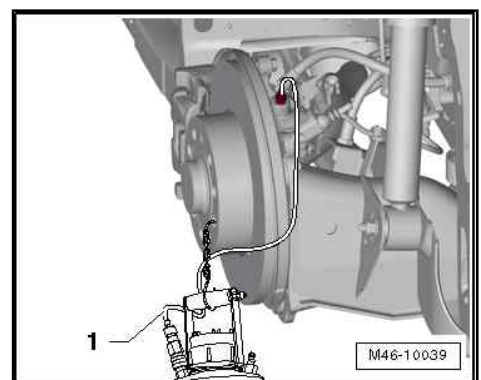
- ◆ *Due to its corrosive effect, brake fluid must not be allowed to come into contact with paintwork. Rinse off brake fluid spillages immediately using plenty of water.*

- Press lever on brake caliper -2- in direction of -arrow-.
- Disengage brake cable -1- from lever on brake caliper -2-.
- Compress retaining tabs -3-.
- Disengage brake cable -1- from retainer -4- on brake caliper.

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- Attach bleeder hose -1- from bleeder bottle to bleeder screw on brake caliper and open bleeder screw.





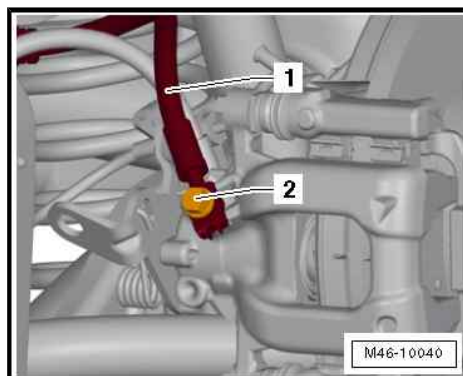
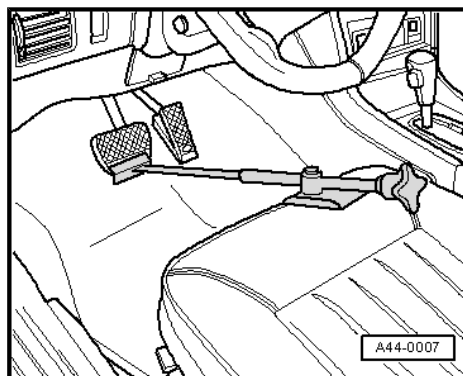
- Insert brake pedal actuator - V.A.G 1869/2- between brake pedal and driver's seat. Depress brake pedal at least 60 mm.



Note

This closes the valves in the brake master cylinder and stops the brake fluid reservoir from running empty.

- Close bleeder screw and remove bleeder bottle.
- Unscrew banjo bolt -2- for brake hose -1- from brake caliper.
- Seal open connections immediately using clean sealing plugs from repair kit - 1H0 698 311 A- .



- Counterhold guide pins and unscrew bolts -arrows- from brake caliper -1-.
- Remove brake caliper from brake carrier.

Installing

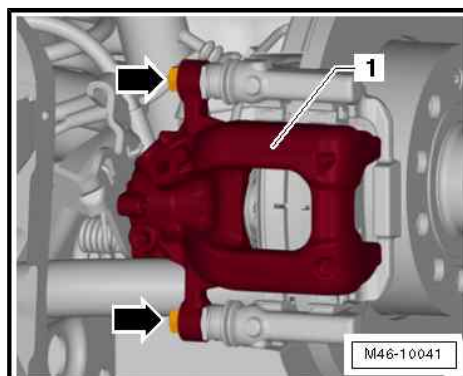
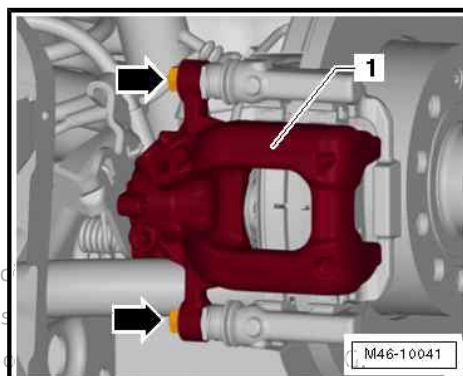
Installation is carried out in reverse sequence. Note the following:



Note

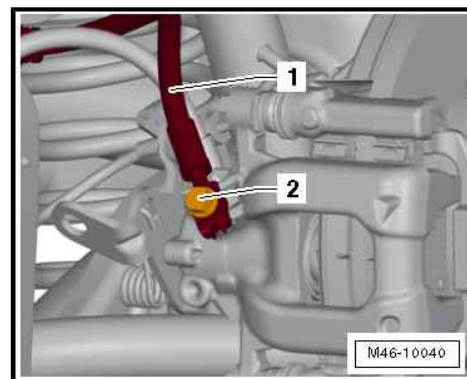
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- ♦ *Clean bolts and nuts before reusing.*
- ♦ *Always renew self-locking bolts/nuts.*
- ♦ *Always renew damaged bolts/nuts.*
- Brake caliper piston is pressed back.
- Brake pads are seated in retaining springs on brake carrier.
- Secure brake caliper -1- to brake carrier using self-locking bolts -arrows-.

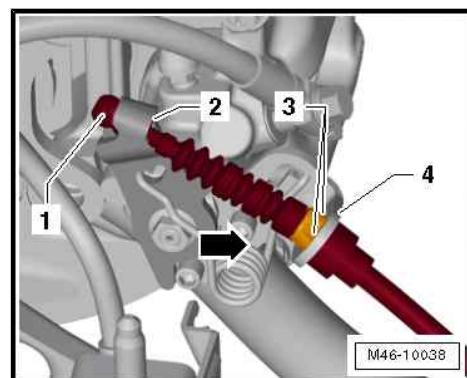




- Connect brake hose -1- to brake caliper with banjo bolt -2-.
- Remove brake pedal actuator - V.A.G 1869/2- .



- Run brake cable -1- through retainer -4- on brake caliper until retaining tabs -3- engage.
- Press lever on brake caliper -2- in direction of -arrow-.
- Engage brake cable -1- in lever on brake caliper -2-.
- Bleed brake system (only at wheel where caliper was detached and brake line disconnected).



Note

Bleed brake system (only at wheel where caliper was detached and brake line disconnected). If the brake pedal still feels "soft", bleed the complete brake system ⇒ [page 207](#) .

- Fit rear wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Adjust parking brake ⇒ [page 125](#) .



WARNING

Risk of accident!

- ◆ *Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.*
- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*

Tightening torques

- ◆ ⇒ ["2.1.2 Exploded view - rear brakes \(1KS\)", page 80](#)

2.4.3 Renewing brake caliper (1KF/1KX)



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

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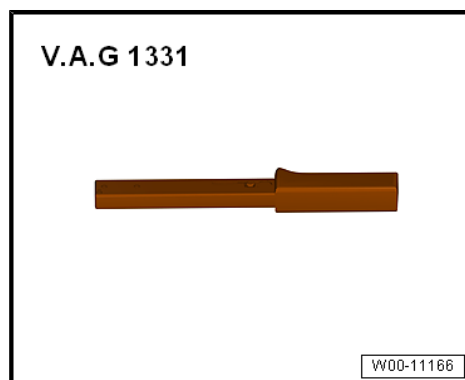


Note

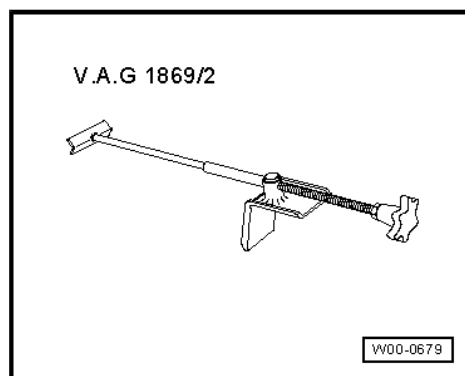
In the following procedure the brake caliper is removed and repaired or renewed without the brake carrier and brake pads. The brake hose is disconnected.

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331-



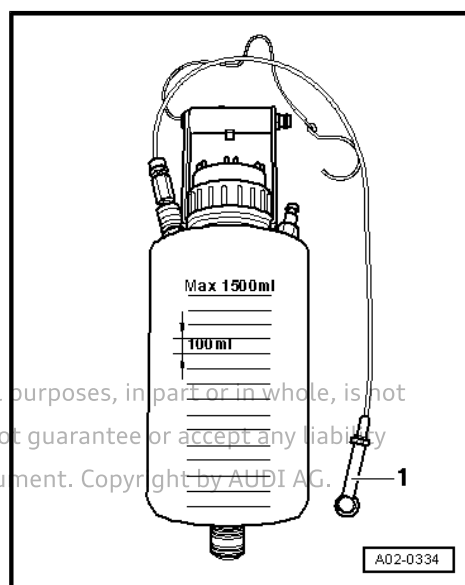
- ◆ Brake pedal actuator - V.A.G 1869/2-



- ◆ Reservoir -1- from brake filling and bleeding equipment - VAS 5234-



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Removing



Note

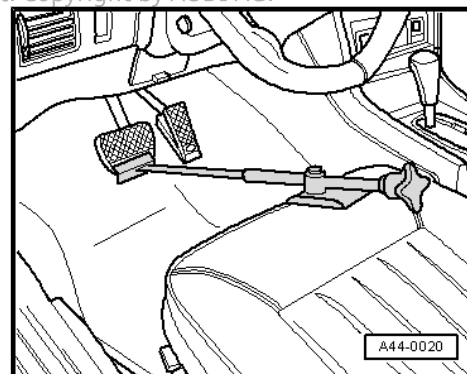
*Mark brake pads when removing them if they are to be reinstalled.
Reinstall in their original position to prevent uneven braking.*

- Release parking brake.
- Remove relevant rear wheel -> Running gear, axles, steering, Rep. gr. 44 ; Wheels, tyres.
- Insert brake pedal actuator - V.A.G 1869/2- between brake pedal and driver's seat. Depress brake pedal at least 60 mm.



Note

This closes the valves in the brake master cylinder and stops the brake fluid reservoir from running empty.

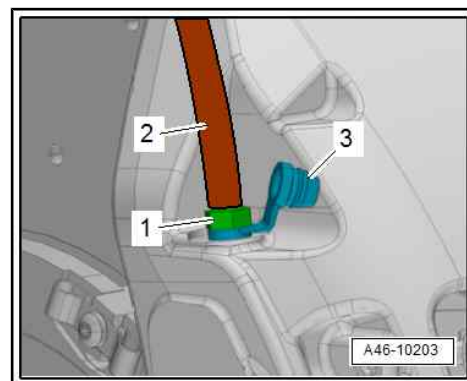


- Detach protective cap -3- from bleeder screw -1-.
- Fit bleeder hose -2- of reservoir onto bleeder screw.
- Open bleeder screw to relieve pressure in hydraulic system.
- Close bleeder screw and remove reservoir.



Note

The brake pedal actuator - V.A.G 1869/2- must not be removed.





- Press lever on brake caliper -2- in direction of -arrow-.
- Disengage brake cable -1- from lever on brake caliper -2-.
- Compress retaining tabs -3-.
- Disengage brake cable -1- from retainer -4- on brake caliper.



Note

Place a cloth under the connection to catch escaping brake fluid.



WARNING

Risk of skin irritation.

- ◆ **Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.**

Accident risk: if the water content in the brake fluid is too high, this can cause vapour bubbles in the fluid.

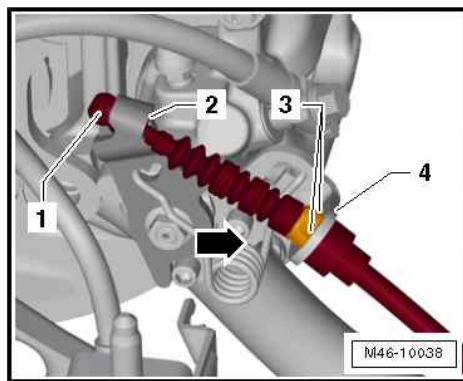
- ◆ **Brake fluid is hygroscopic, i.e. it absorbs moisture from the surrounding air.**
- ◆ **Seal open brake hoses and brake lines using sealing plugs from repair kit - 1H0 698 311 A- .**

Risk of malfunction if brake fluid comes into contact with fluids containing mineral oils.

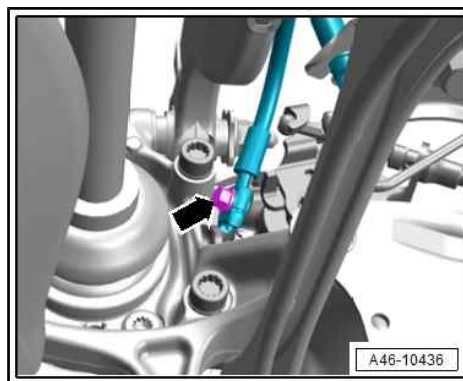
- ◆ **Brake fluid must NOT come into contact with fluids containing mineral oils (oil, petrol, cleaning agents). Protective gloves must be free of oil and grease.**

Risk of damage to paintwork surfaces

- ◆ **Due to its corrosive effect, brake fluid must not be allowed to come into contact with paintwork. Rinse off brake fluid spillages immediately using plenty of water.**



- Disconnect brake hose -arrow-.
- Seal open connections immediately using clean sealing plugs from repair kit - 1H0 698 311 A- .
- Disconnect brake line from brake hose and brake caliper.





- Counterhold guide pins -1 and 2- and remove bolts -arrows-.
- Detach brake caliper.
- Remove brake pads.

Installing

Installation is carried out in reverse order; note the following:



Note

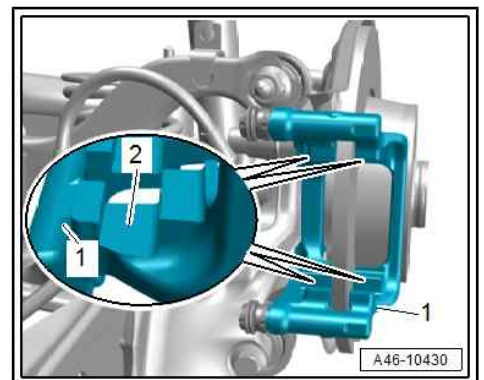
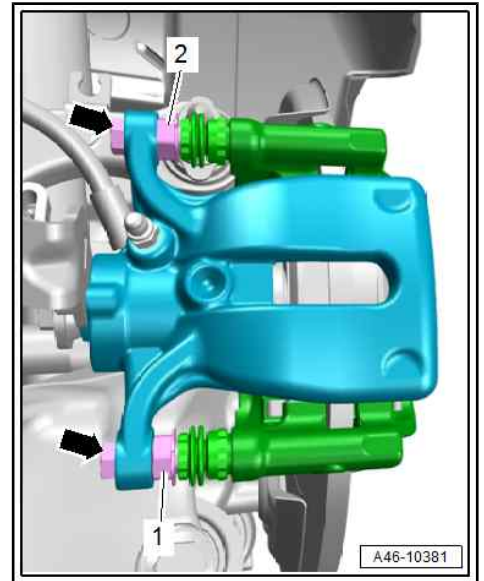
- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.



Note

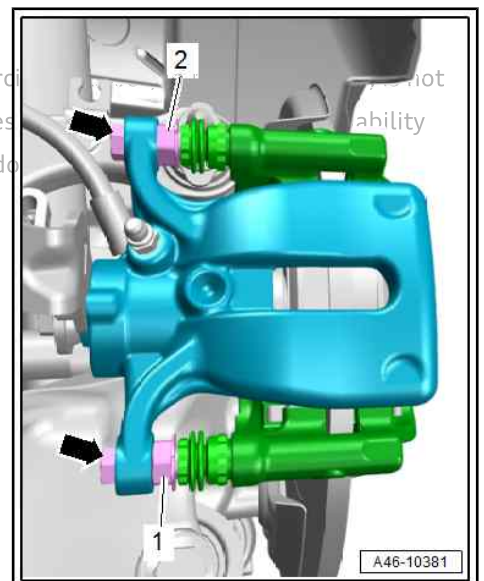
- ◆ Renew seals.
- ◆ New brake calipers are filled with brake fluid and are pre-bled.

- Clean contact surfaces -2- on brake carrier -1- (to brake pads).
- Fit brake pads in brake carrier.
- Slide brake caliper over fitted brake pads.



- Counterhold guide pins -1 and 2- and tighten bolts -arrows- for brake caliper.

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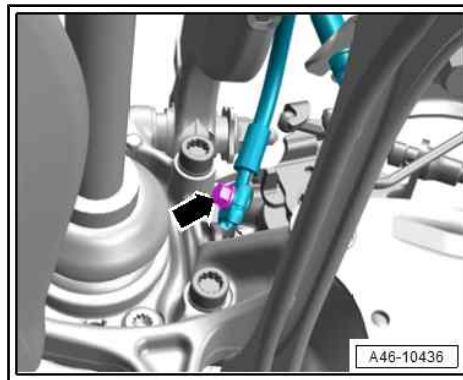


- Secure brake hose connection -arrow-.

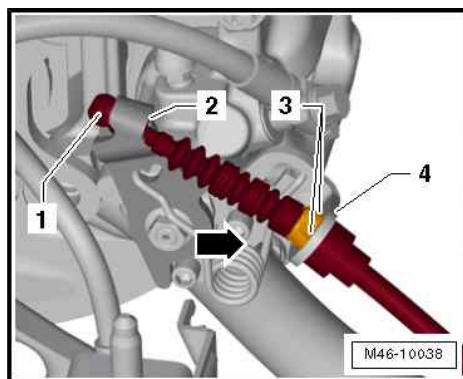


Note

- ♦ *Make sure the brake hose is routed correctly.*
- ♦ *The brake hose must not be kinked, crushed or twisted or chafe against parts of the vehicle at any point.*



- Run brake cable -1- through retainer -4- on brake caliper until retaining tabs -3- engage.
- Press lever on brake caliper -2- in direction of -arrow-.
- Engage brake cable -1- in lever on brake caliper -2-.
- Remove brake pedal actuator - V.A.G 1869/2- .
- Bleed brake system (only at wheel where caliper was detached and brake line disconnected) ➤ [page 207](#) .



Note

Bleed brake system (only at wheel where caliper was detached and brake line disconnected). If the brake pedal still feels "soft", bleed the complete brake system ➤ [page 207](#) .

- Fit rear wheels ➤ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Adjust parking brake ➤ [page 125](#) .



WARNING

Risk of accident!

- ♦ *Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.*
- ♦ *Make sure that the brakes work properly before the vehicle is driven on the road.*

Tightening torques

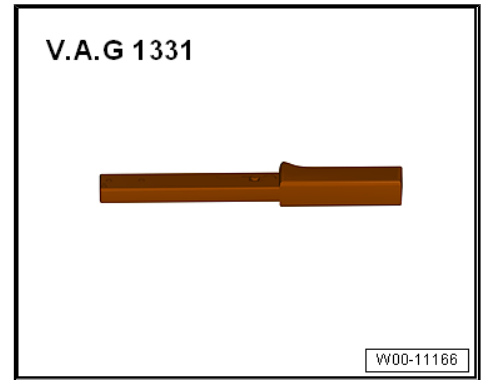
- ♦ ➤ ["2.1.3 Exploded view - rear brakes \(1KF/1KX\)" page 83](#)

2.5 Removing and installing brake carrier

Special tools and workshop equipment required



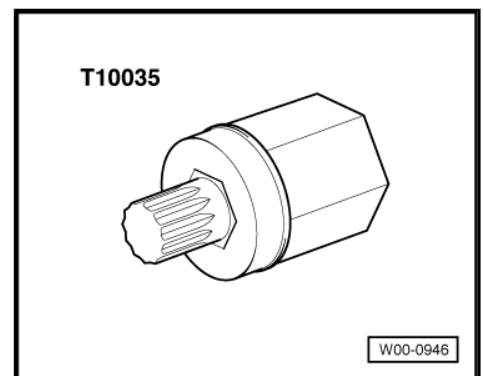
◆ Torque wrench - V.A.G 1331-



◆ Torque wrench - V.A.G 1332-



◆ Socket - T10035-





Removing

- Remove brake pads ➔ [page 89](#) .
- Unscrew bolts -arrows- securing brake carrier -1-.
- Detach brake carrier -1-.

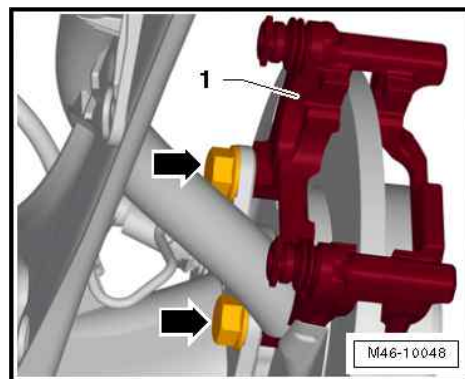
Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ *Clean bolts and nuts before reusing.*
 - ◆ *Always renew self-locking bolts/nuts.*
 - ◆ *Always renew damaged bolts/nuts.*
- Install brake pads ➔ [page 89](#) .



WARNING

Risk of accident!

- ◆ *Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.*
- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*

Tightening torques

- ◆ ➔ ["2.1 Exploded view - rear brakes", page 77](#)

2.6 Removing and installing rear brake disc (all brake versions)



Note

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Bolt circle diameter of brake disc PR 1KS: 112 mm

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Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331-

V.A.G 1331



W00-11166

Removing

Brake version 1KT:

- ➔ ["2.3.1 Removing and installing brake caliper", page 96](#)



Brake version 1KS:

- ⇒ [“2.5 Removing and installing brake carrier”, page 116](#)

Brake version 1KF/1KX:

- ⇒ [“2.3.2 Removing and installing brake caliper \(1KF/1KX\)”, page 99](#)

All brake versions (continued):

- Loosen bolt -1- and take off brake disc.

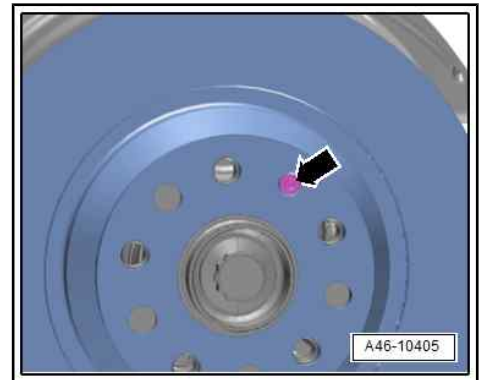
Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ *Clean bolts and nuts before reusing.*
 - ◆ *Always renew self-locking bolts/nuts.*
 - ◆ *Always renew damaged bolts/nuts.*
- Thoroughly clean contact surface of brake disc and wheel hub.



Brake version 1KT:

- ⇒ [“2.3.1 Removing and installing brake caliper”, page 96](#)

Brake version 1KS:

- ⇒ [“2.5 Removing and installing brake carrier”, page 116](#)

Brake version 1KF/1KX:

- ⇒ [“2.3 Removing and installing brake caliper”, page 96](#)

All brake versions (continued):



WARNING

Risk of accident!

- ◆ *Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.*
- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*

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- ◆ ⇒ [“2.1 Exploded view rear brakes”, page 77](#)

2.7 Removing and installing splash plate

⇒ [“2.7.1 Removing and installing splash plate \(1KT\)”, page 119](#)

⇒ [“2.7.2 Removing and installing splash plate \(1KF/1KS/1KX\)”, page 121](#)

2.7.1 Removing and installing splash plate (1KT)

Special tools and workshop equipment required



◆ Torque wrench - V.A.G 1331-



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V.A.G 1331



W00-11166

◆ Torque wrench - V.A.G 1332-

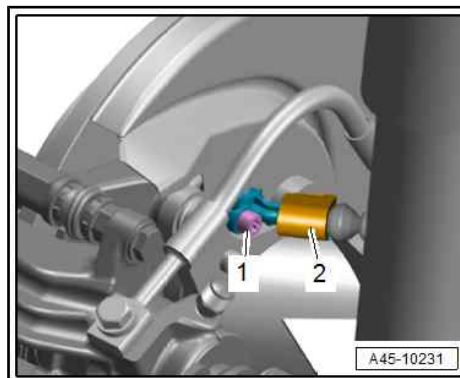
V.A.G 1332



W00-11165

Removing

- ➔ [“2.6 Removing and installing rear brake disc \(all brake versions\)”, page 118](#)
- Remove wheel bearing unit ⇒ Running gear, axles, steering; Rep. gr. 42 ; Wheel bearing, trailing arm; Removing and installing wheel bearing unit .
- Unplug electrical connector -2- from speed sensor.





- Remove bolts -arrows- and detach splash plate -1- together with stub axle -2-.

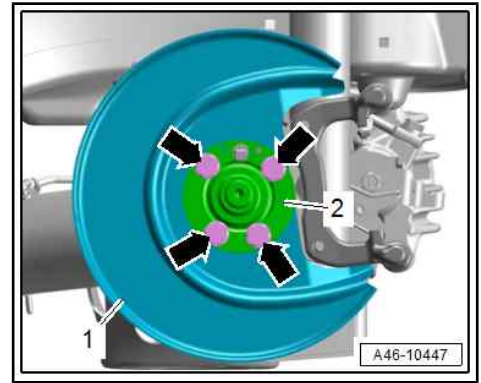
Installing

Installation is carried out in reverse sequence. Note the following:



Note

- ◆ *Clean bolts and nuts before reusing.*
 - ◆ *Always renew self-locking bolts/nuts.*
 - ◆ *Always renew damaged bolts/nuts.*
- Install wheel bearing unit ⇒ Running gear, axles, steering; Rep. gr. 42 ; Wheel bearing, trailing arm; Removing and installing wheel bearing unit .
 - Install brake disc ⇒ [page 118](#) .



WARNING

Risk of accident!

- ◆ *Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.*
- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*

Tightening torques

- ◆ ⇒ ["2.1.2 Exploded view - rear brakes \(1KS\)", page 80](#)

2.7.2 Removing and installing splash plate (1KF/1KS/1KX)

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Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331 -

V.A.G 1331



W00-11166



Removing

- Remove brake disc ➔ [page 118](#) .
- Remove bolts -arrows- and detach splash plate -1-.



Note

Illustration shows installation position on an Audi S1.

Installing

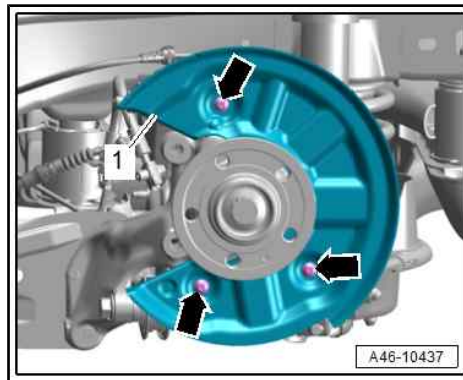
Installation is carried out in reverse order; note the following:



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

- Install brake disc ➔ [page 118](#) .



WARNING

Risk of accident!

- ◆ *Depress brake pedal firmly several times with vehicle stationary so that brake pads are properly seated in normal operating position.*
- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*

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Tightening torques

- ◆ ➔ [“2.1 Exploded view - rear brakes”, page 77](#)



3 Parking brake

⇒ ["3.1 Exploded view - parking brake", page 123](#)

⇒ ["3.2 Removing and installing parking brake lever", page 124](#)

⇒ ["3.3 Adjusting parking brake", page 125](#)

⇒ ["3.4 Removing and installing brake cable \(rear\)", page 126](#)

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3.1 Exploded view - parking brake

1 - Parking brake contact switch - F321-

- ❑ Removing and installing
⇒ [page 46](#)

2 - Parking brake lever

- ❑ Removing and installing
⇒ [page 124](#)

3 - Compensator

4 - Push-button

- ❑ Detach after removing parking brake lever trim
- ❑ Push on until it engages audibly

5 - Parking brake lever trim (front)

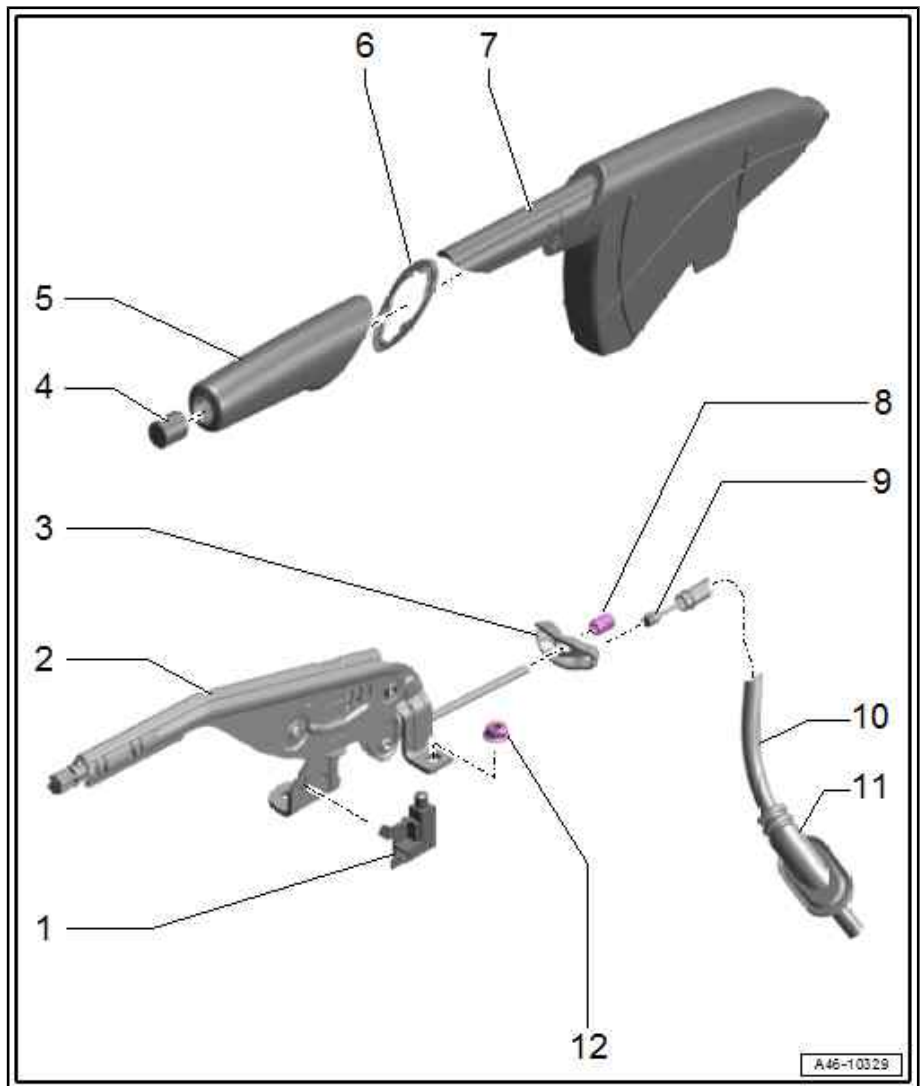
- ❑ Removing and installing
⇒ General body repairs, interior; Rep. gr. 68 ; Storage compartments/covers/trim panels; Removing and installing handbrake lever trim

6 - Trim ring

Not on all versions

7 - Parking brake lever trim (rear)

- ❑ Removing and installing
⇒ General body repairs, interior; Rep. gr. 68 ; Storage compartments/covers/trim panels; Removing and installing handbrake lever trim



8 - Adjustment nut

- ❑ Adjust parking brake ⇒ [page 125](#) .

9 - Brake cable

- ❑ Removing and installing ⇒ [page 126](#)
- ❑ Adjust parking brake ⇒ [page 125](#) .

10 - Guide tube

11 - Rubber grommet

- ❑ Renew if damaged
- ❑ Must be properly seated

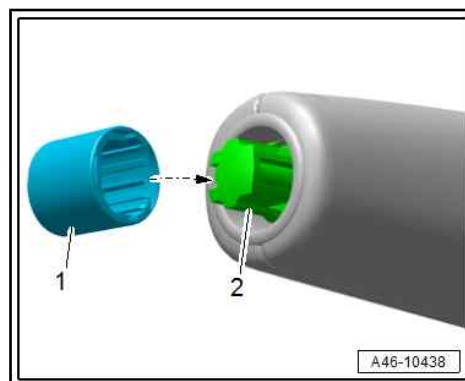


12 - Nut

- 25 Nm

Installation position of push-button

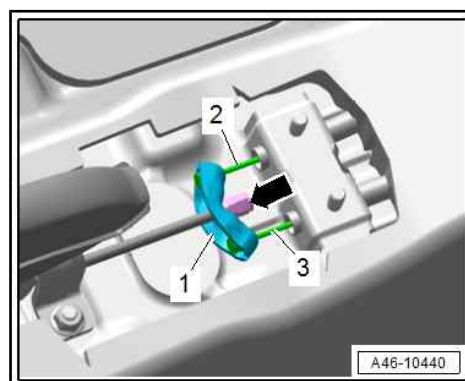
- Rib on push-button -1- must engage in groove on parking brake lever -2- -arrow-.



3.2 Removing and installing parking brake lever

Removing

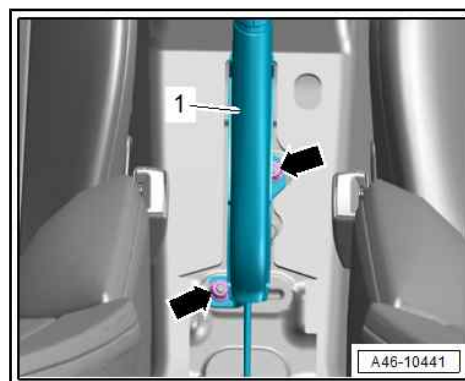
- Remove centre console ⇒ General body repairs, interior; Rep. gr. 68; Centre console; Removing and installing centre console .
- Remove parking brake contact switch ⇒ [page 46](#) .
- Release parking brake.
- Slacken off adjuster nut -arrow- until brake cables -2 and 3- can be disengaged from compensator -1-.
- Disengage brake cables from compensator.



- Remove nuts -arrows- and detach parking brake lever -1-.

Installing

- Locate parking brake lever -1- in installation position.
- Tighten nuts -arrows-.
- Remove parking brake contact switch ⇒ [page 46](#) .





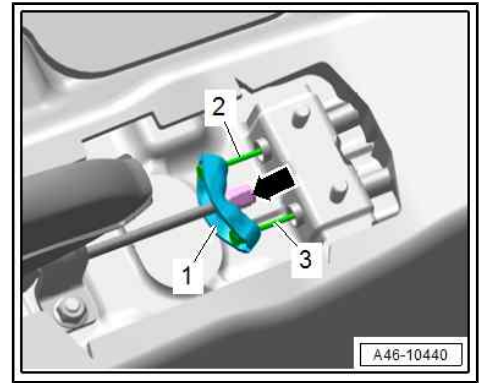
- Engage brake cables -2, 3- in compensator -1-.
- Take up slack in brake cables using adjustment nut -arrow-.
- Adjust parking brake ⇒ [page 125](#) .



WARNING

Risk of accident!

- ◆ ***Make sure that the brakes work properly before the vehicle is driven on the road.***



3.3 Adjusting parking brake



Note

Adjustment is only necessary if the brake cables, brake calipers or brake discs have been renewed.

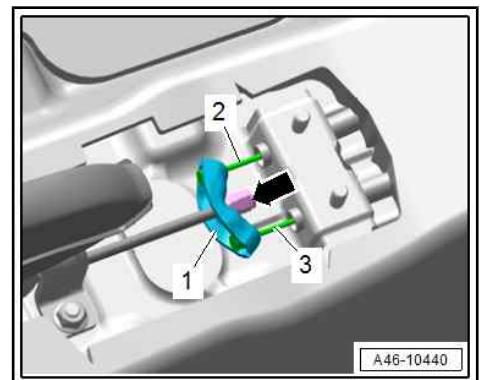
Adjusting

- Foot brake must be working properly.
- Brake system must be bled.
- Brake cables must be routed without tension and engaged on calipers.
- The parking brake should return by itself to the released position if not pulled up past the first catch.
- Both rear wheels turn freely when parking brake lever is not pulled (released position).
- Remove centre armrest ⇒ General body repairs, interior; Rep. gr. 68 ; Centre armrest (front); Removing and installing centre armrest (front) .
- Remove cup holder or ashtray ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Exploded view - centre console .
- Remove cover above compensator ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Exploded view - centre console .
- Depress brake pedal firmly at least three times.
- Pull up parking brake firmly three times and release.
- Using adjuster nut -arrow-, apply tension to brake cables -2 and 3- to lift levers off stops on both brake calipers.



Note

Disregard -item 1-.



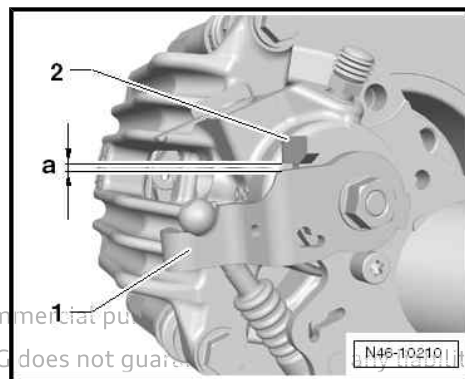


Audi A1 with front-wheel drive:

- Distance -a- between lever -1- and stop -2- must not exceed 1.5 mm.

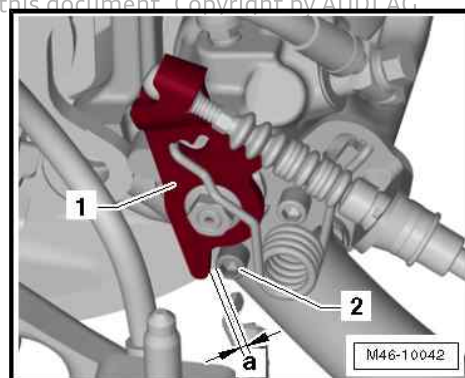


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Audi A1 quattro:

- Distance -a- between lever -1- and stop -2- must not exceed 1.5 mm.

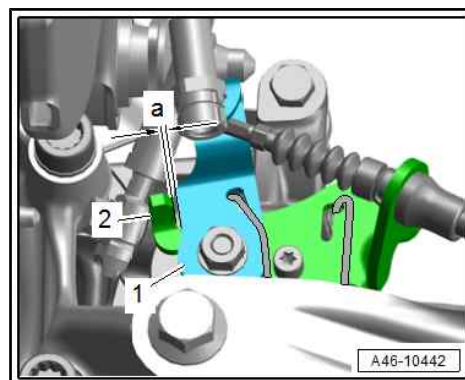


Audi S1:

- Distance -a- between lever -1- and stop -2- must not exceed 1.5 mm.

All vehicles (continued):

- Check that both rear wheels turn freely.
- Install centre armrest ⇒ General body repairs, interior; Rep. gr. 68 ; Centre armrest (front); Removing and installing centre armrest (front) .
- Install cup holder or ashtray ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Exploded view - centre console .
- Install cover above compensator ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Exploded view - centre console .



The rear brakes are self-adjusting, so it is not necessary to re-adjust the parking brake after making the initial adjustment.



Caution

Risk of accident!

- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*

3.4 Removing and installing brake cable (rear)

Removing

- Remove centre armrest ⇒ General body repairs, interior; Rep. gr. 68 ; Centre armrest (front); Removing and installing centre armrest (front) .



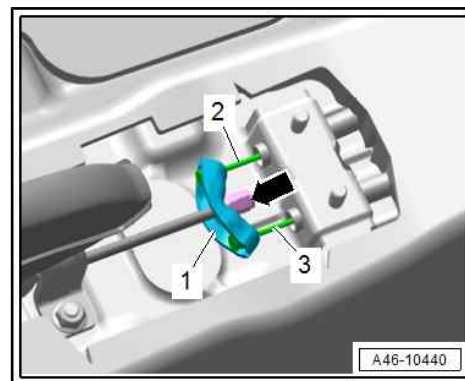
- Remove cup holder or ashtray ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Exploded view - centre console .
- Remove cover above compensator ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Exploded view - centre console .
- Release parking brake.
- Slacken off adjuster nut -arrow- until brake cables -2 and 3- can be disengaged from compensator -1-.
- Detach rear section of underbody trim on relevant side and press down slightly ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Exploded view - underbody trim .



Caution

Risk of damage to brake cable

◆ **Do not over-stretch, kink or bend brake cable.**

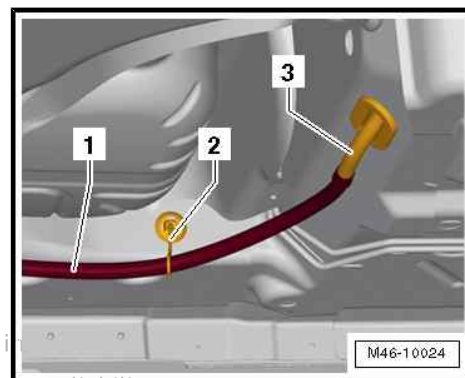


- Detach brake cable -1- from retainer -2-.



Note

Disregard -item 3-.



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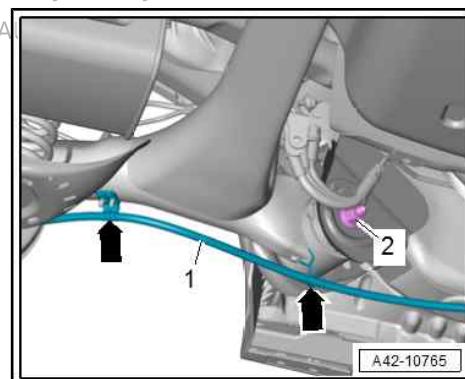
Audi A1 with front-wheel drive:

- Detach brake cable -1- -arrows-.

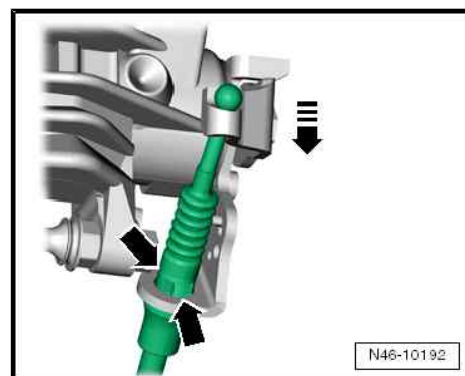


Note

Disregard -item 2-.



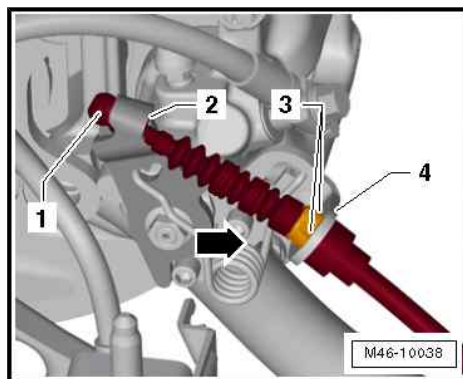
- Press down brake lever at brake caliper -arrow- and unhook brake cable.
- Compress retaining tabs -bottom arrows- and pull brake cable out of retainer on brake caliper.



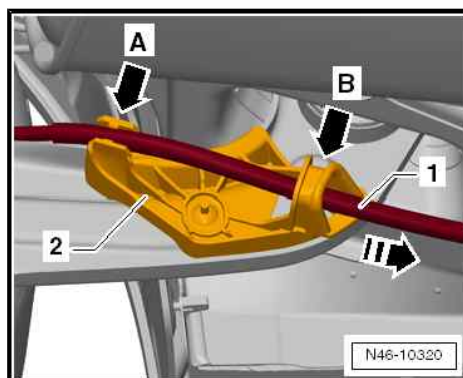


Audi A1 quattro, S1:

- Press lever on brake caliper -2- in direction of -arrow-.
- Disengage brake cable -1- from lever on brake caliper -2-.
- Compress retaining tabs -3-.
- Disengage brake cable -1- from retainer -4- on brake caliper.



- Unclip brake cable -1- from retaining tab -arrow A- on bracket -2-.
- Pull brake cable out of guide -arrow B- on bracket -2- in direction of -arrow-.



All vehicles (continued):

- Pull brake cable -1- out of guide tube -3-.



Note

Disregard -item 2-.

Installing

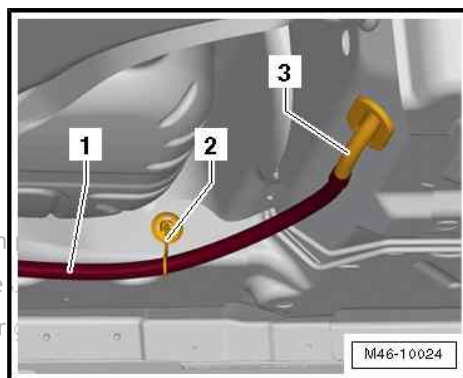
Installation is carried out in reverse order; note the following:



Caution

Risk of uneven braking

- ◆ **Always renew brake cables on both sides.**



- Carefully slide brake cable through guide tube into vehicle interior.
- Install brake cable free of tension and stress.



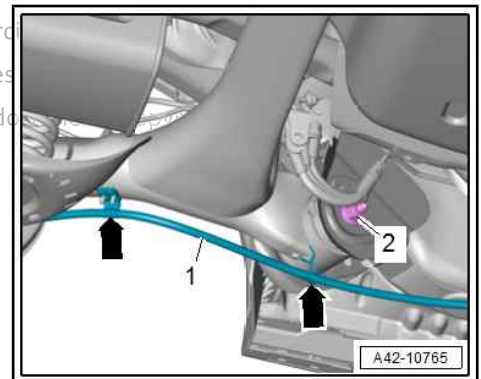
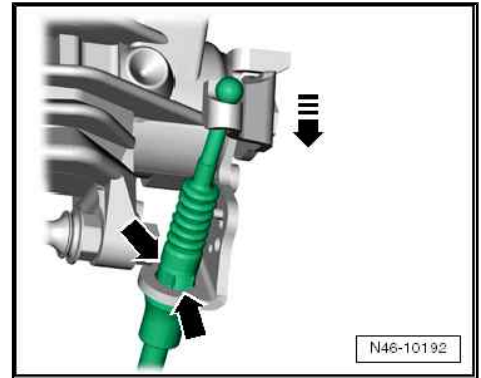
Audi A1 with front-wheel drive:

- Push brake cable through retainer on brake caliper until both retaining tabs -arrows- engage.
- Push brake lever in direction of -arrow- and attach brake cable onto brake lever.



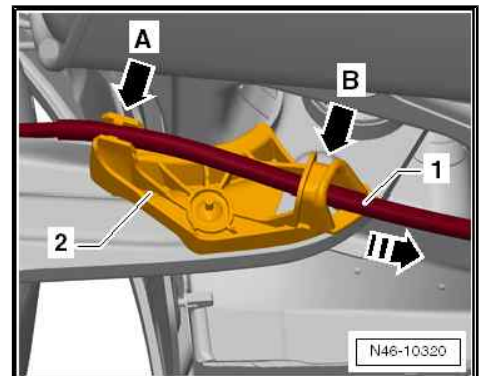
- Clip brake cable -2- into retainers -arrows-

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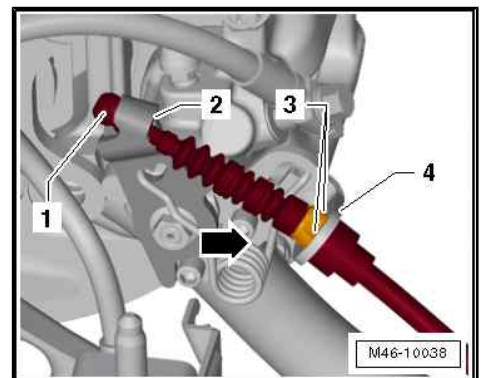


Audi A1 quattro, S1:

- Insert brake cable -1- into guide -arrow B- and clip onto retainer -arrow A-.



- Run brake cable -1- through retainer -4- on brake caliper until retaining tabs -3- engage.
- Press lever on brake caliper -2- in direction of -arrow-.
- Engage brake cable -1- in lever on brake caliper -2-.





All vehicles (continued):

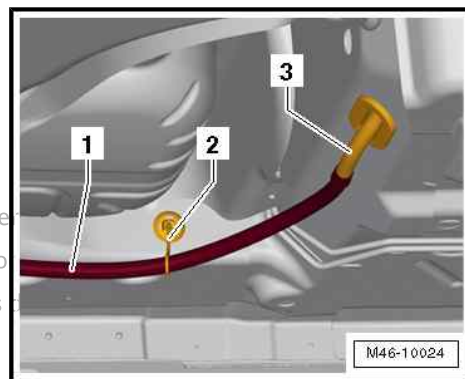
- Attach brake cable -1- at retainer -2-.



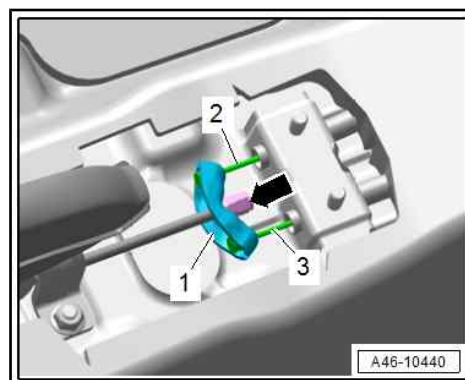
Note

Disregard -item 3- Protected by copyright. Copying for private or commercial use is not permitted unless authorised by AUDI AG. AUDI AG does not accept any liability for errors or omissions in this publication.

- Install underbody trim ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Exploded view underbody trim



- Engage brake cables -2, 3- in compensator -1-.
- Take up slack in brake cables by turning adjusting nut -arrow-.
- Before adjusting parking brake, apply and release parking brake lever fully five times so that all parts of parking brake are moved into position.
- Adjust parking brake ⇒ [page 125](#) .
- Install centre armrest ⇒ General body repairs, interior; Rep. gr. 68 ; Centre armrest (front); Removing and installing centre armrest (front) .
- Install cup holder or ashtray ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Exploded view - centre console .
- Install cover above compensator ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Exploded view - centre console .



Caution

Risk of accident!

- ◆ ***Make sure that the brakes work properly before the vehicle is driven on the road.***



4 Brake pedal

⇒ [“4.1 Exploded view - brake pedal”, page 131](#)

⇒ [“4.2 Removing and installing mounting bracket”, page 133](#)

4.1 Exploded view - brake pedal

⇒ [“4.1.1 Exploded view - brake pedal, vehicles with electrohydraulic power steering”, page 131](#)

⇒ [“4.1.2 Exploded view - brake pedal, vehicles with electromechanical power steering”, page 132](#)

4.1.1 Exploded view - brake pedal, vehicles with electrohydraulic power steering



Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.

1 - Mounting bracket

- ☐ Removing and installing
⇒ [page 133](#)

2 - Nut

- ☐ 25 Nm

3 - Bearing bush

- ☐ Note correct installation position

4 - Brake pedal

- ☐ Removing and installing
⇒ [page 136](#)

5 - Pedal rubber

6 - Bearing shell

- ☐ Fitted between brake pedal and mounting for brake servo

7 - Mounting

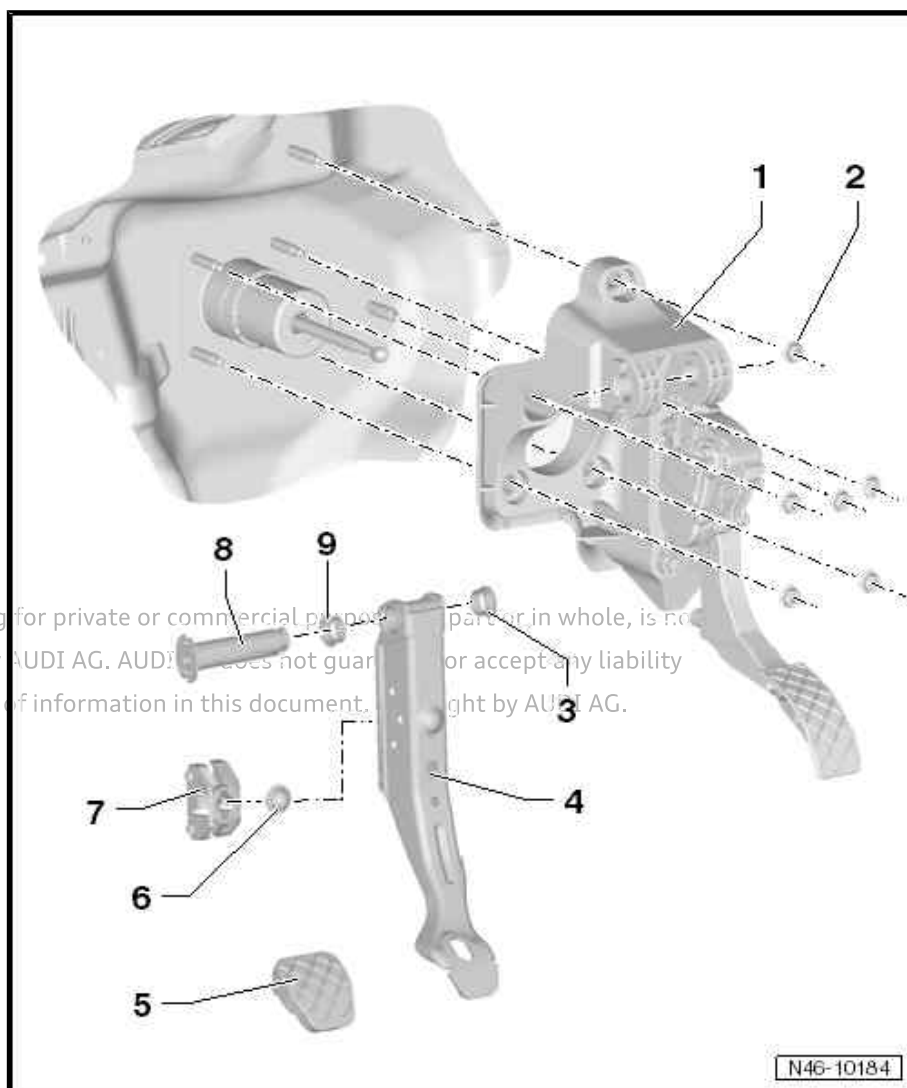
- ☐ For ball head of brake servo

8 - Pivot pin

- ☐ Cannot be removed without damage

9 - Bearing bush

- ☐ Note correct installation position





Note

- ♦ Clean bolts and nuts before reusing.
- ♦ Always renew self-locking bolts/nuts.
- ♦ Always renew damaged bolts/nuts.

4.1.2 Exploded view - brake pedal, vehicles with electromechanical power steering



Note

- ♦ Clean bolts and nuts before reusing.
- ♦ Always renew self-locking bolts/nuts.
- ♦ Always renew damaged bolts/nuts.

1 - Nut

- ☐ Renew after removing
- ☐ 25 Nm

2 - Mounting bracket

- ☐ Combined as one unit with brake pedal; parts must not be separated
- ☐ Removing and installing
⇒ [page 133](#)

3 - Bolt

- ☐ Tightening torque ⇒
Fuel supply system;
Rep. gr. 20 ; Accelerator mechanism;
Exploded view - accelerator pedal module

4 - Accelerator pedal module

- ☐ Removing and installing
⇒ Fuel supply system;
Rep. gr. 20 ; Accelerator mechanism;
Removing and installing accelerator pedal module with accelerator position sender -G79- / -G185-

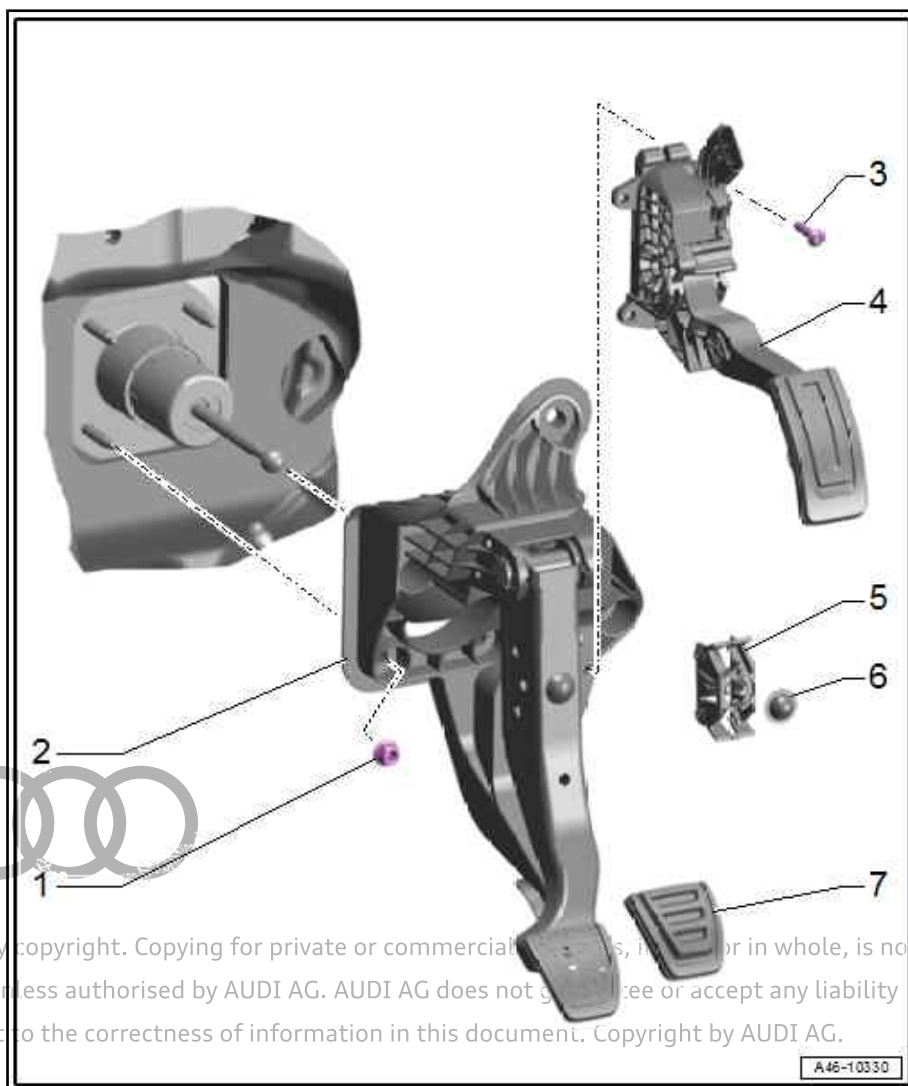
5 - Mounting bracket

- ☐ For ball head of brake servo

6 - Bearing shell

- ☐ Fitted between brake pedal and mounting for brake servo

7 - Pedal rubber





Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.

4.2 Removing and installing mounting bracket

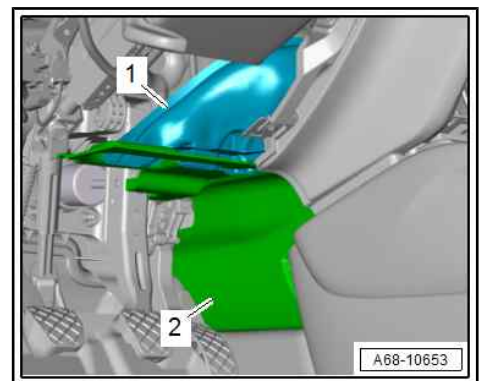


Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.

Removing

- Remove dash panel cover (driver side) ⇒ General body repairs, interior; Rep. gr. 68 ; Storage compartments/covers/trim panels; Removing and installing dash panel cover (driver side) .
- Disengage and remove cover -2- at footwell vent -1-.
- Remove footwell vent (driver side) ⇒ Heating, air conditioning; Rep. gr. 87 ; Air duct system; Removing and installing footwell vent (driver side) .
- Remove crash bar ⇒ General body repairs, interior; Rep. gr. 70 ; Central tube for dash panel; Exploded view - central tube for dash panel .
- Separate brake pedal from brake servo ⇒ [page 135](#) .



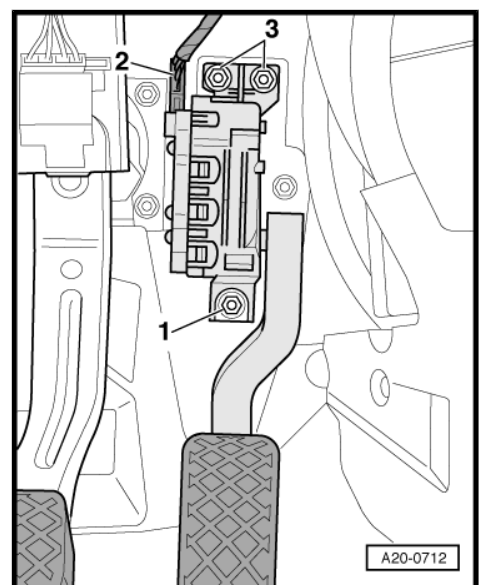
Vehicles with electrohydraulic power steering:

- Unplug electrical connector -2- for accelerator pedal module.



Note

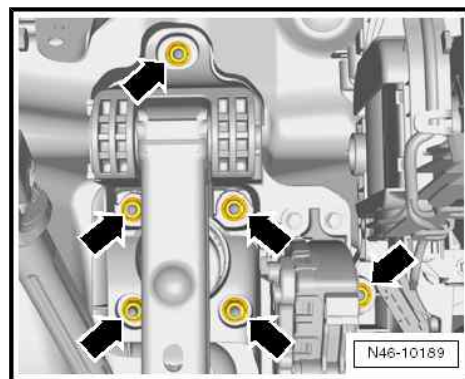
Disregard items -1 and 3-.



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- Unscrew nuts -arrows- and detach mounting bracket with brake pedal.
- If necessary, remove accelerator pedal module ⇒ Fuel supply system; Rep. gr. 20 ; Accelerator mechanism; Removing and installing accelerator pedal module with accelerator position sender -G79- / -G185- .



Vehicles with electromechanical power steering:

- Unplug electrical connector -2- for accelerator pedal module.
- Unscrew nuts -arrows- and detach mounting bracket with brake pedal -1-.
- If necessary, remove accelerator pedal module ⇒ Fuel supply system; Rep. gr. 20 ; Accelerator mechanism; Removing and installing accelerator pedal module with accelerator position sender -G79- / -G185- .



Note

The mounting bracket and brake pedal are combined as one unit and must not be separated.

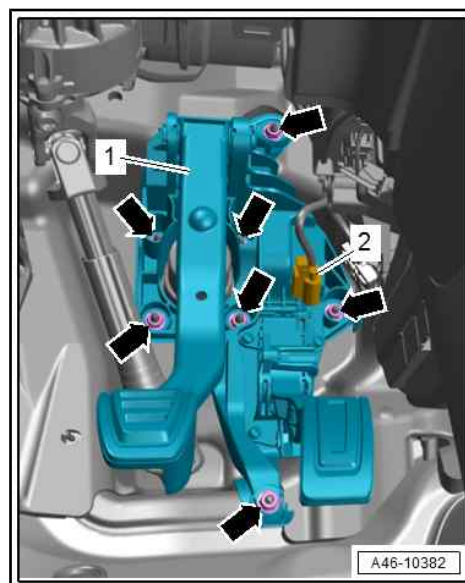
Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*
- Connect brake pedal to brake servo ⇒ [page 135](#) .
- Install crash bar ⇒ General body repairs, interior; Rep. gr. 70 ; Central tube for dash panel; Exploded view - central tube for dash panel .
- Install footwell vent ⇒ Heating, air conditioning; Rep. gr. 87 ; Air duct system; Removing and installing footwell vent (driver side)
- Remove dash panel cover (driver side) ⇒ General body repairs, interior; Rep. gr. 68 ; Storage compartments/covers; Exploded view - dash panel cover (driver side) .



Caution

Risk of accident!

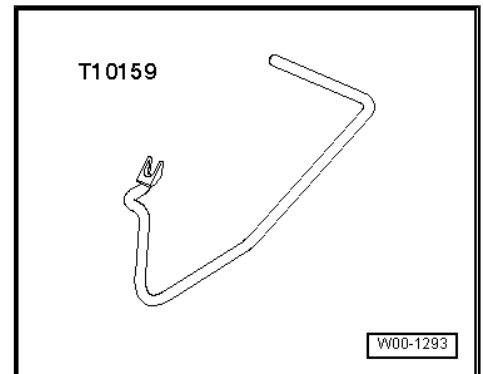
- ◆ ***Make sure that the brakes work properly before the vehicle is driven on the road.***



4.3 Separating brake pedal from brake servo

Special tools and workshop equipment required

- ◆ Release tool - T 10159-

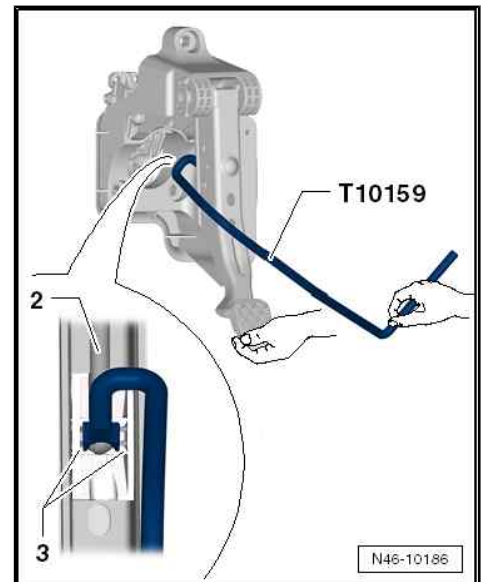


Procedure

- First press brake pedal in direction of brake servo and hold.
- 2 - Push rod
- 3 - Retaining lugs
- Insert release tool - T 10159- and pull in direction of driver's seat, while holding brake pedal firmly. (At this stage the brake pedal must not be allowed to move to the rear.) This will press the retaining lugs -3- of the mounting off the ball head of the push rod -2-.

For greater clarity, the illustration shows separation of the brake pedal from the brake servo with the pedal cluster removed.

- Pull release tool - T 10159- and brake pedal together towards driver's seat. (This will pull the brake pedal off the ball head of the push rod).



4.4 Connecting brake pedal to brake servo

Special tools and workshop equipment required

- ◆ Polycarbamide grease - G 052 142 A2-

Procedure

- Apply a thin coat of polycarbamide grease - G 052 142 A2- to ball head.
- Hold ball head of push rod in front of mounting and push brake pedal in direction of brake servo so that the ball head audibly locks into place.
- Pull brake pedal briefly to ensure parts are engaged correctly.



Caution

Risk of accident!

- ◆ ***Make sure that the brakes work properly before the vehicle is driven on the road.***





4.5 Removing and installing brake pedal



Note

- ♦ *Clean bolts and nuts before reusing.*
- ♦ *Always renew self-locking bolts/nuts.*
- ♦ *Always renew damaged bolts/nuts.*



Note

- ♦ *It is only possible to separate the brake pedal from the mounting bracket on vehicles with electrohydraulic steering.*
- ♦ *On vehicles with electromechanical power steering the mounting bracket and brake pedal are combined as one unit and must not be separated.*

Removing



Note



The pivot pin cannot be removed without damage.

- Remove mounting bracket ➔ [page 133](#).
- Turn pivot pin anti-clockwise -right arrow-.



Note

This will cause the lugs -arrows 1- on the pivot pin to break off. Renew pivot pin.

- Pull out pivot pin.
- Take brake pedal out of mounting bracket.

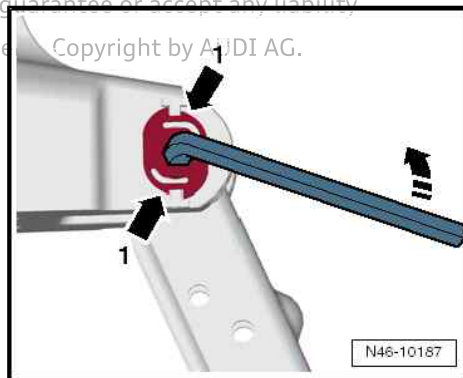
Installing

- Before installing brake pedal, fit both bearing bushes in bearing in brake pedal.



Note

- ♦ *Clean bolts and nuts before reusing.*
- ♦ *Always renew self-locking bolts/nuts.*
- ♦ *Always renew damaged bolts/nuts.*





- Fit brake pedal.



Caution

Both bearing bushes -3 and 9- must be fitted in the bearing in the brake pedal to ensure that the pedal is seated securely in the mounting bracket.

- Insert new pivot pin from left to right through mounting bracket and brake pedal.

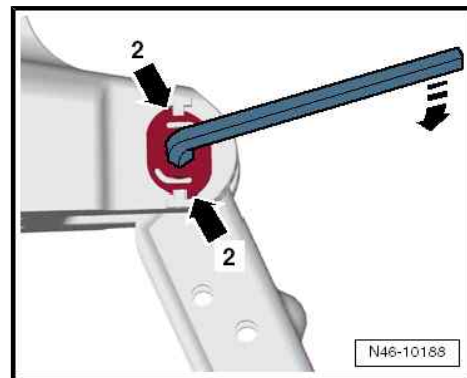
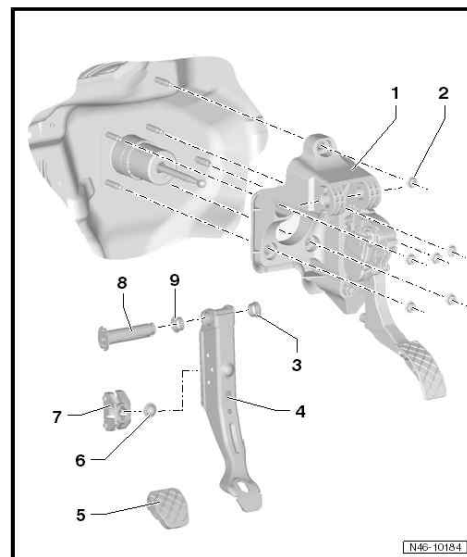
- Turn pivot pin clockwise in direction indicated by -arrow- until lugs -arrows 2- make contact with mounting bracket.
- Install mounting bracket ➔ [page 133](#) .



Caution

Risk of accident!

- ◆ ***Make sure that the brakes work properly before the vehicle is driven on the road.***



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47 – Brakes - hydraulics

1 Front brake caliper

⇒ [“1.1 Exploded view - front brake caliper”, page 138](#)

⇒ [“1.2 Removing and installing brake caliper piston”, page 140](#)

1.1 Exploded view - front brake caliper

⇒ [“1.1.1 Exploded view - front brake caliper \(1ZG\)”, page 138](#)

⇒ [“1.1.2 Exploded view - front brake caliper \(1LJ/1ZC/1ZN/1ZS\)”, page 139](#)

1.1.1 Exploded view - front brake caliper (1ZG)



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



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1 - Protective cap

2 - Bleeder screw

- ☐ 10 Nm

3 - Protective caps

- ☐ Insert into bearing bush

4 - Guide pin

- ☐ Tightening torque
⇒ [Item 11 \(page 49\)](#)

5 - Bearing bush

- ☐ Insert in brake caliper

6 - Brake caliper

7 - Protective cap

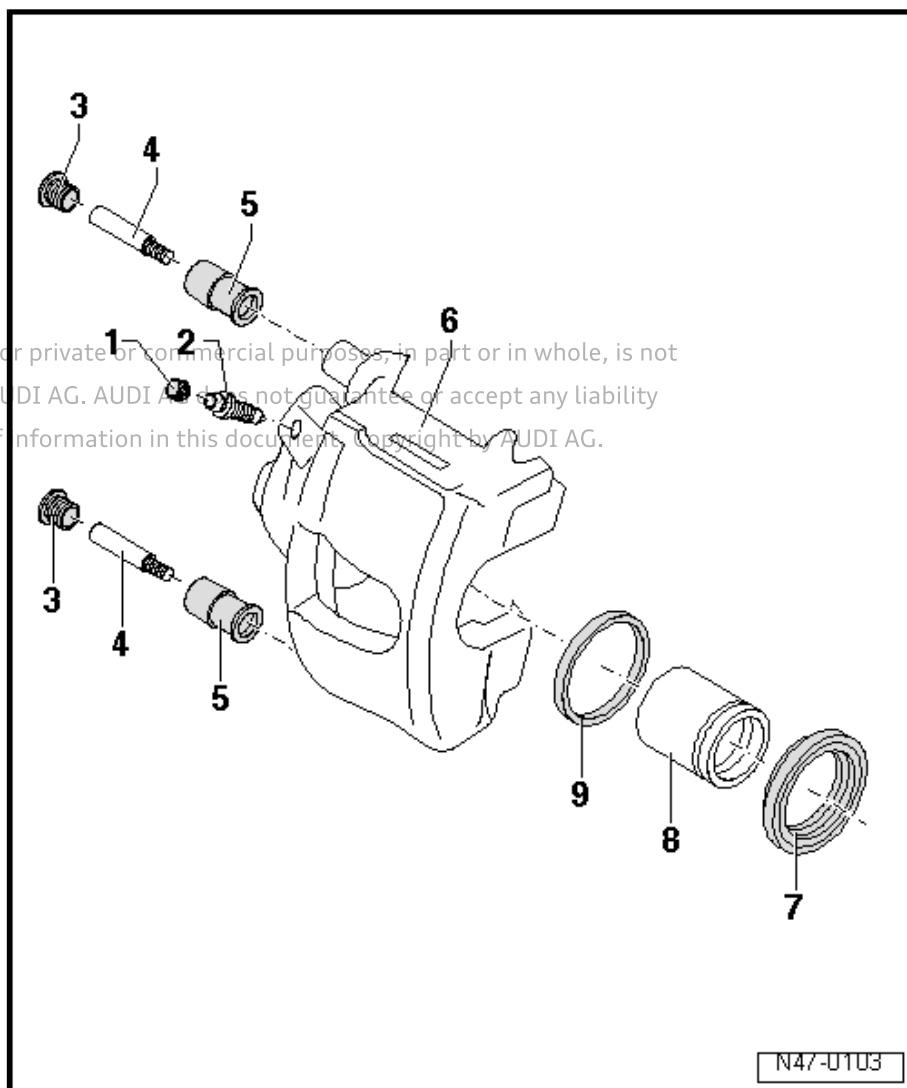
- ☐ Removing and installing
⇒ ["1.2.1 Removing and installing brake caliper piston \(1ZG\)", page 140](#)
- ☐ Push outer sealing lip onto brake caliper piston
- ☐ Do not damage when inserting brake caliper piston

8 - Brake caliper piston

- ☐ Removing and installing
⇒ [page 140](#)
- ☐ Lubricate lightly with lithium grease ⇒ Electronic parts catalogue "ETKA"

9 - Seal

- ☐ Removing and installing
⇒ ["1.2.1 Removing and installing brake caliper piston \(1ZG\)", page 140](#)
- ☐ Do not damage when inserting brake caliper piston



1.1.2 Exploded view - front brake caliper (1LJ/1ZC/1ZN/1ZS)



Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.



1 - Protective cap

2 - Bleeder screw

- 10 Nm

3 - Protective caps

- Insert into bearing bush

4 - Guide pin

- Tightening torque
⇒ [Item 4 \(page 51\)](#)

5 - Bearing bush

- Insert in brake caliper

6 - Brake caliper

7 - Brake carrier

- Bolted to brake caliper

8 - Retaining spring

- Insert with both ends in
holes in brake caliper

9 - Seal

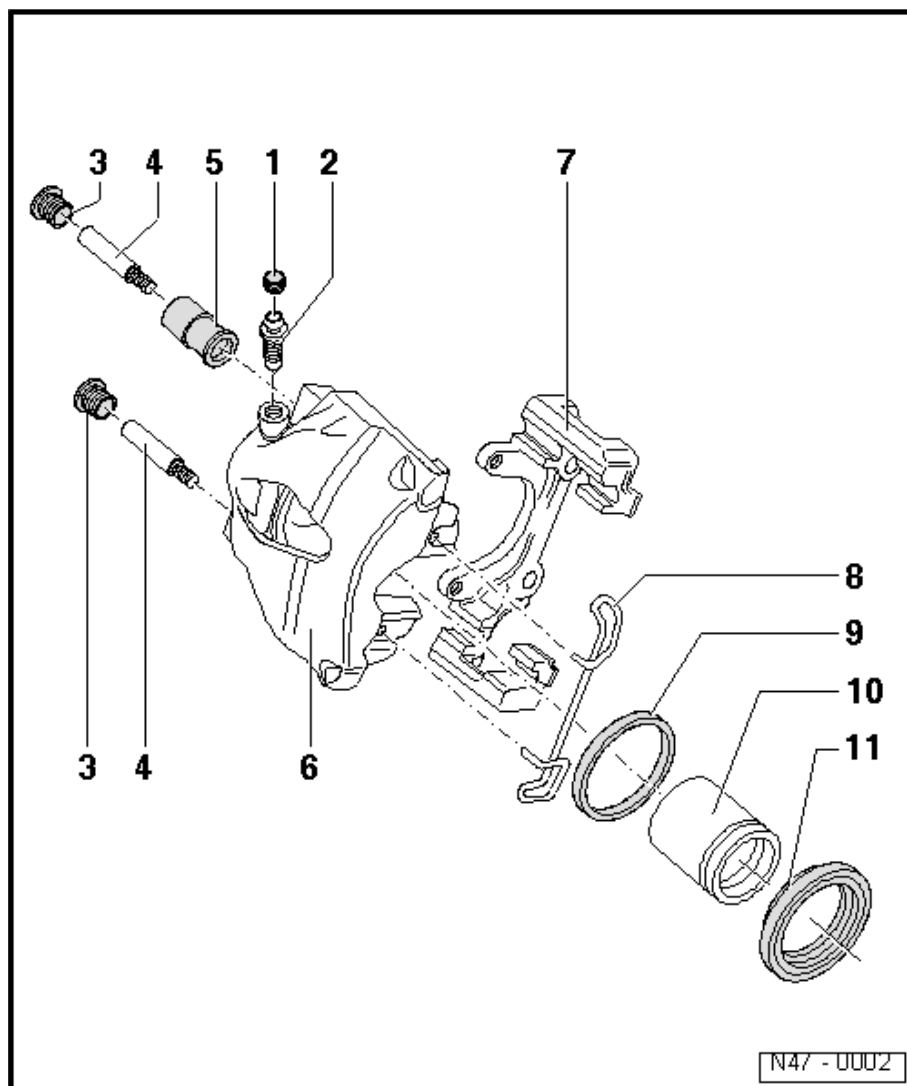
- Do not damage when in-
serting brake caliper
piston
- Removing and installing
⇒ ["1.2.2 Removing and
installing brake caliper
piston \(1LJ/1ZC/1ZN/
1ZS\)", page 143](#)

10 - Brake caliper piston

- Removing and installing
⇒ [page 143](#)
- Lubricate lightly with
lithium grease ⇒ Elec-
tronic parts catalogue
"ETKA"

11 - Protective cap

- Removing and installing
⇒ ["1.2.2 Removing and installing brake caliper piston \(1LJ/1ZC/1ZN/1ZS\)", page 143](#)
- Push outer sealing lip onto brake caliper piston
- Do not damage when inserting brake caliper piston



1.2 Removing and installing brake caliper piston

⇒ ["1.2.1 Removing and installing brake caliper piston \(1ZG\)",
page 140](#)

⇒ ["1.2.2 Removing and installing brake caliper piston \(1LJ/1ZC/
1ZN/1ZS\)", page 143](#)

1.2.1 Removing and installing brake caliper piston (1ZG)

Special tools and workshop equipment required

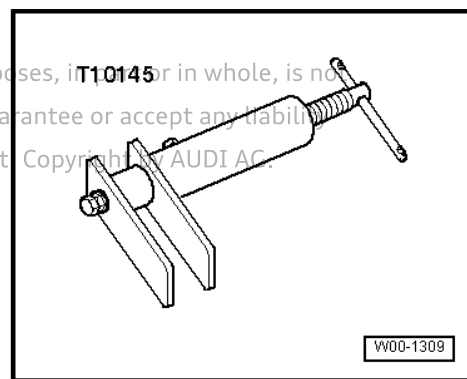
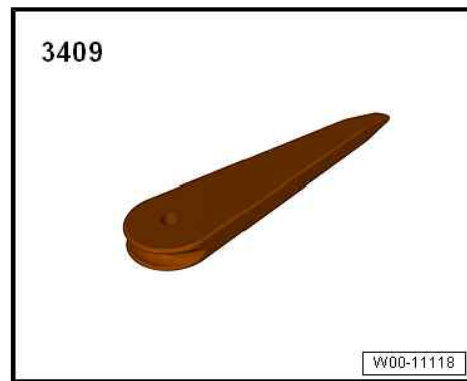


◆ Removal wedge - 3409-



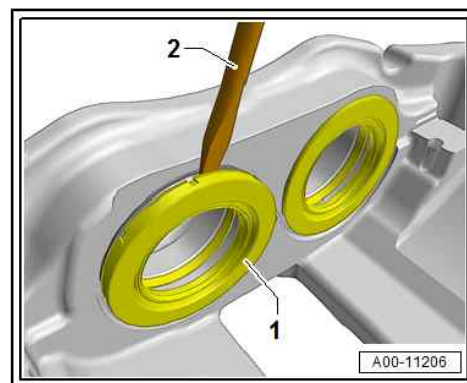
◆ Piston resetting appliance - T10145-

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◆ Removal tool - VAS 40338-

- ◆ Carefully lever protective cap -1- and seal out of brake caliper with gentle movements using removal tool - VAS 40338- -2-; take care not to damage groove for protective cap in brake caliper.



◆ Lithium grease ⇒ Electronic parts catalogue "ETKA"

Removing

- Remove brake pads ⇒ [page 53](#) .
- Remove brake caliper and disconnect from hydraulic system ⇒ [page 67](#) .
- Clamp brake caliper in jaws of vice. Use protective jaw covers.



WARNING

Risk of injury.

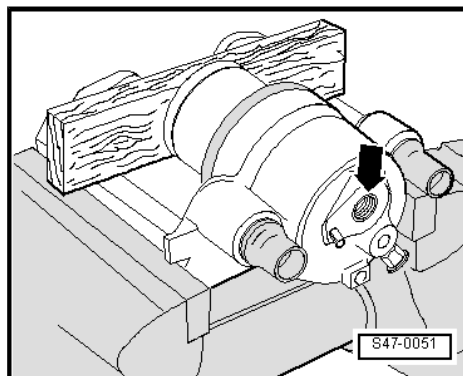
- ◆ *Put on safety goggles.*
- ◆ *When pressing out brake caliper piston, DO NOT reach into brake caliper with your fingers.*
- ◆ *Place a cloth over bore in brake caliper to catch any brake fluid spatter. Wrap another cloth tightly around nozzle of compressed-air gun applied to brake caliper.*
- ◆ *Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.*



Note

- ◆ *Take care not to damage paint coating on brake caliper.*
- ◆ *Take care not to damage cylinder surface.*
- Place a piece of wood in the caliper to prevent damage to the piston when it is forced out.
- Apply compressed air nozzle to threaded hole for brake hose -arrow- and press piston out of caliper.

Removal tool - VAS 40338-



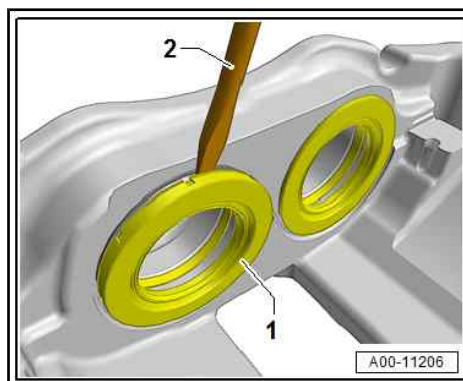
- Carefully lever protective cap -1- and seal out of brake caliper with gentle movements using removal tool - VAS 40338- -2-; take care not to damage groove for protective cap in brake caliper.

Installing



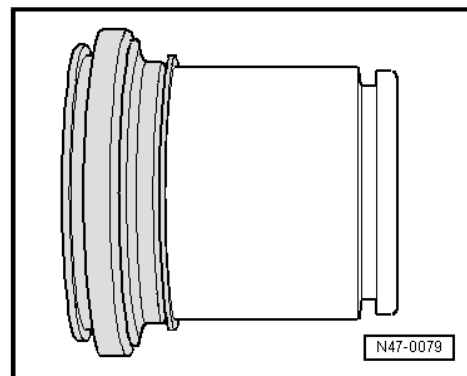
Note

- ◆ *Install all parts supplied in repair kit.*
- ◆ *Use only methylated spirits to clean the brake components.*
- ◆ *The brake caliper must be replaced if a brake caliper piston or piston bore is damaged.*
- The surfaces of the brake caliper piston and seal must be cleaned only with methylated spirits and then dried.
- Apply thin coat of lithium grease to brake caliper piston and seal ⇒ Electronic parts catalogue "ETKA" .
- Insert seal into brake caliper.





- Place outer sealing lip of protective cap on brake caliper piston.

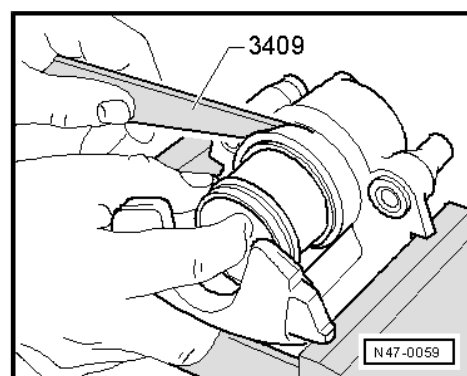


- Using removal wedge - 3409- , insert inner sealing lip into groove of cylinder.



Note

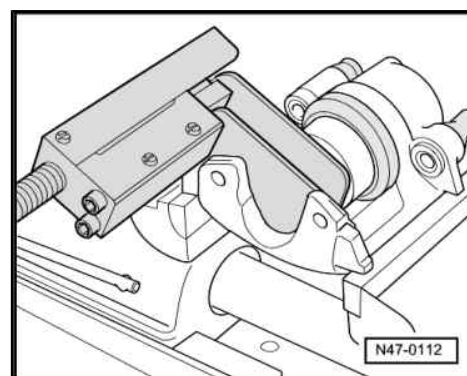
- ◆ When doing this hold piston in front of brake caliper.
- ◆ Do not damage seal when inserting piston.



Caution

Risk of damage to protective cap and seal.

- ◆ Take care to keep brake caliper piston straight.



- Press brake caliper piston lightly into cylinder by hand.
- Press piston into brake caliper using piston resetting tool - T10145- .
- The outer sealing lip of the protective cap will then lock in the groove on the piston.
- Install brake caliper ➔ [page 67](#) .
- Install brake pads ➔ [page 53](#) .

1.2.2 Removing and installing brake caliper piston (1LJ/1ZC/1ZN/1ZS)

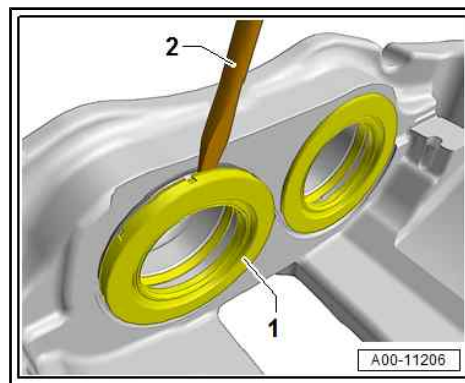
Special tools and workshop equipment required

- ◆ Removal tool - VAS 40338-

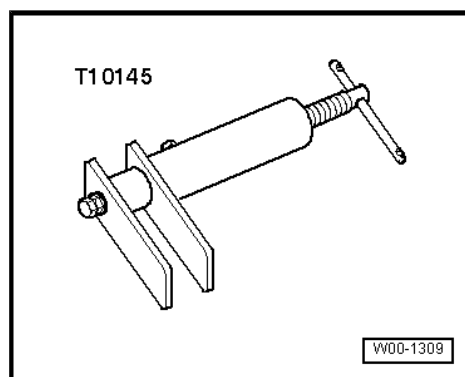
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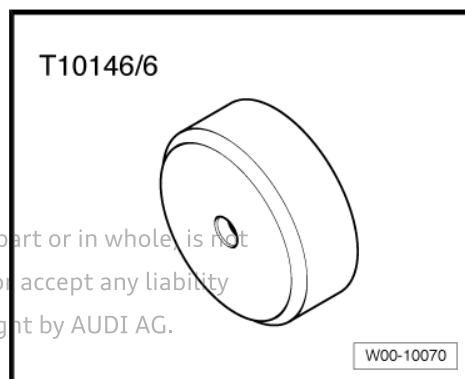
- ◆ Carefully lever protective cap -1- and seal out of brake caliper with gentle movements using removal tool - VAS 40338- -2-; take care not to damage groove for protective cap in brake caliper.



- ◆ Piston resetting appliance - T10145-



- ◆ Assembly tool for protective caps -T10146/6-



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Removing

- Remove brake pads ⇒ [page 56](#) .
- Remove brake caliper and disconnect from hydraulic system ⇒ [page 67](#) .
- Clamp brake caliper in jaws of vice. Use protective jaw covers.



WARNING

Risk of injury.

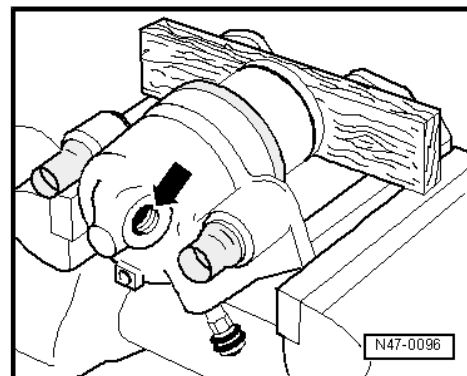
- ◆ *Put on safety goggles.*
- ◆ *When pressing out brake caliper piston, DO NOT reach into brake caliper with your fingers.*
- ◆ *Place a cloth over bore in brake caliper to catch any brake fluid spatter. Wrap another cloth tightly around nozzle of compressed-air gun applied to brake caliper.*
- ◆ *Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.*



Note

- ◆ *Take care not to damage paint coating on brake caliper.*
- ◆ *Take care not to damage cylinder surface.*
- Place a piece of wood in the caliper to prevent damage to the piston when it is forced out.
- Force piston out of brake caliper using compressed air -arrow-.

Removal tool - VAS 40338-



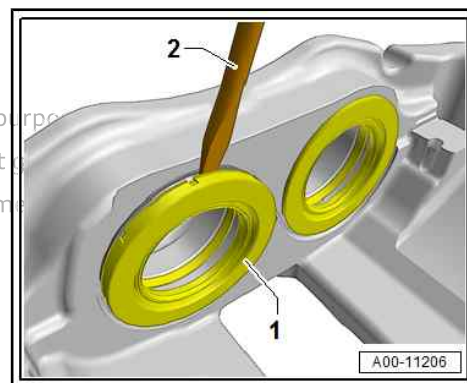
- Carefully lever protective cap -1- and seal out of brake caliper with gentle movements using removal tool - VAS 40338- -2-; take care not to damage groove for protective cap in brake caliper.

Installing



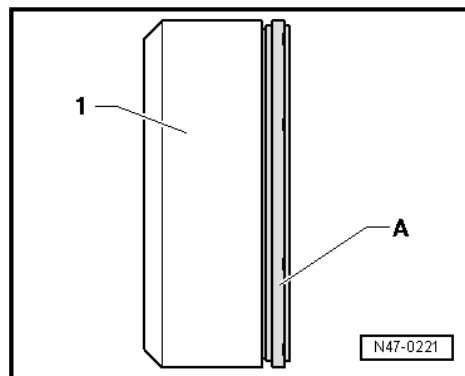
Note

- ◆ *Install all parts supplied in repair kit.*
- ◆ *Use only methylated spirits to clean the brake components.*
- ◆ *The brake caliper must be replaced if a brake caliper piston or piston bore is damaged.*
- The surfaces of the brake caliper piston and seal must be cleaned only with methylated spirits and then dried.
- Apply thin coat of lithium grease to brake caliper piston and seal ⇒ Electronic parts catalogue "ETKA" .
- Insert seal into brake caliper.

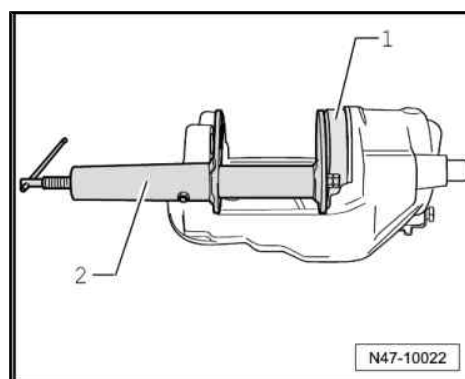




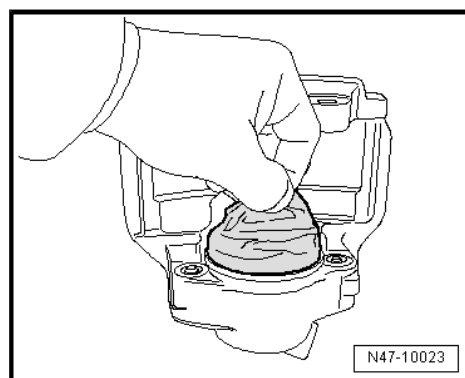
- Fit protective cap -A- in assembly tool for protective caps - T10146/6- -item 1-.



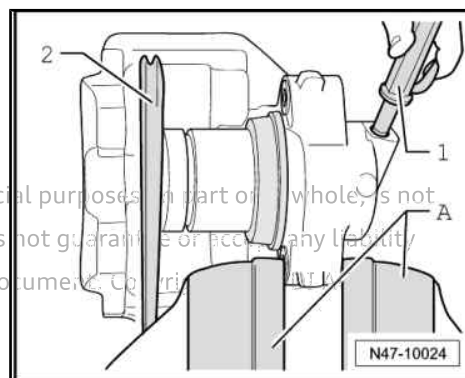
- Using assembly tool -1- and piston resetting tool - T10145- -item 2-, press protective cap onto brake caliper so it makes full contact with brake caliper all around.



- Checking correct seating of protective cap:
 - At this stage it should not be possible to remove the protective cap from the brake caliper by hand.



- Press brake caliper piston lightly onto protective cap and lock it in this position using assembly wedge -2-.
- Inflate protective cap using nozzle -1- of compressed air gun (maximum 3 bar).
- This will make the protective cap slip onto the brake caliper piston.



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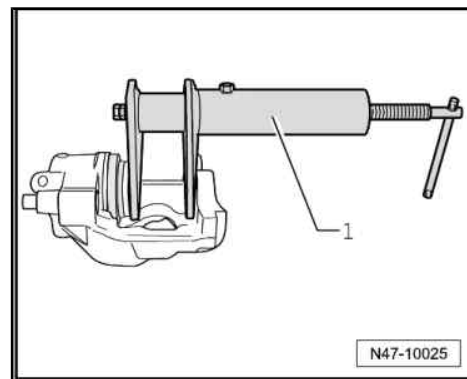


Caution

Risk of damage to protective cap and seal.

◆ *Take care to keep brake caliper piston straight.*

- Press piston into brake caliper using piston resetting tool - T10145- -item 1-.
- The outer sealing lip of the protective cap will then lock in the groove on the piston.
- Install brake caliper ⇒ [page 67](#) .
- Install brake pads ⇒ [page 56](#) .



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2 Rear brake caliper

⇒ "2.1 Exploded view - rear brake caliper", page 148

⇒ "2.2 Removing and installing brake caliper piston", page 151

⇒ "2.3 Renewing guide pin with protective cap", page 153

2.1 Exploded view - rear brake caliper

⇒ "2.1.1 Exploded view - rear brake caliper (1KT)", page 148

⇒ "2.1.2 Exploded view - rear brake caliper (1KS)", page 149

2.1.1 Exploded view - rear brake caliper (1KT)



Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.

1 - Bolt

- ☐ Tightening torque
⇒ [Item 15 \(page 79\)](#)

2 - Bleeder screw

- ☐ 10 Nm

3 - Protective cap

4 - Guide pin

- ☐ Lubricate before installing protective cap

5 - Protective cap

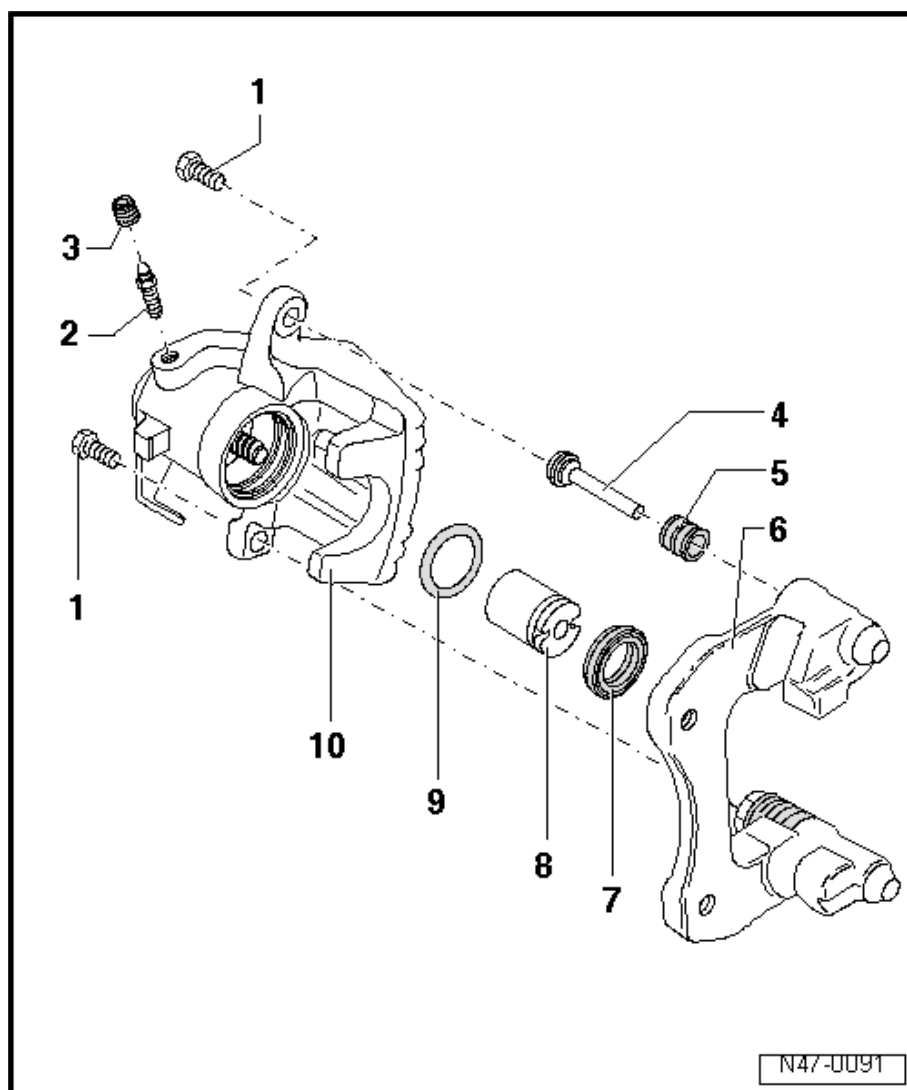
- ☐ Insert onto brake carrier and guide pin

6 - Brake carrier

- ☐ With guide pins and protective caps
- ☐ Replacement carriers are supplied assembled and with sufficient grease on guide pins
- ☐ If protective caps or guide pins are damaged, renew using repair kit. Use grease sachet supplied to lubricate guide pins.

7 - Protective cap

- ☐ Removing and installing
⇒ ["2.2 Removing and installing brake caliper piston", page 151](#)
- ☐ Push outer sealing lip onto brake caliper piston
- ☐ Do not damage when inserting brake caliper piston





8 - Brake caliper piston

- ☐ Self-adjusting
- ☐ Removing and installing ⇒ [page 151](#)
- ☐ Lubricate lightly with lithium grease ⇒ Electronic parts catalogue "ETKA"

9 - Seal

- ☐ Do not damage when inserting brake caliper piston
- ☐ Removing and installing ⇒ ["2.2 Removing and installing brake caliper piston", page 151](#)

10 - Brake caliper

- ☐ With lever for brake cable
- ☐ Renew brake caliper if leak exists at lever for brake cable
- ☐ Following repair work, pre-bleed brake caliper



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

2.1.2 Exploded view - rear brake caliper (1KS)



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



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1 - Brake caliper

- ☐ With lever for brake cable
- ☐ Renew brake caliper if leak exists at lever for brake cable
- ☐ Following repair work, pre-bleed brake caliper
⇒ [page 207](#)

2 - Bleeder screw

- ☐ 10 Nm

3 - Protective cap

4 - Bolt

- ☐ Tightening torque

⇒ [Item 17 \(page 82\)](#)

5 - Guide pin (top)

- ☐ Lubricate before installing protective cap

6 - Protective cap

- ☐ Insert onto brake carrier and guide pin

7 - Guide pin (bottom)

- ☐ With undercut
- ☐ Lubricate before installing protective cap

8 - Guide sleeve

- ☐ On guide pin (bottom)

9 - Brake carrier

- ☐ Replacement carriers are supplied assembled and with sufficient grease on guide pins
- ☐ If protective caps or guide pins are damaged, renew using repair kit. Use grease sachet supplied to lubricate the guide pins.
- ☐ For correct version refer to ⇒ Electronic parts catalogue "ETKA"

10 - Protective cap

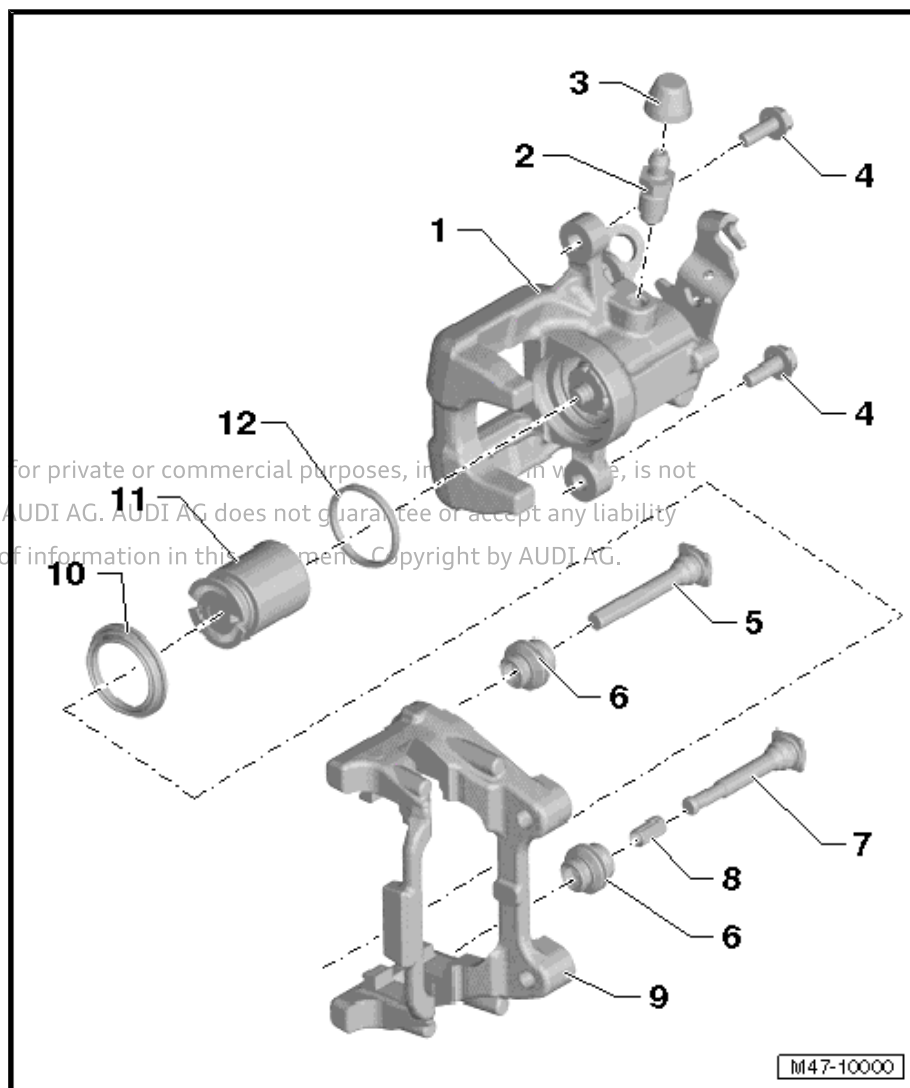
- ☐ Push outer sealing lip onto brake caliper piston
- ☐ Removing and installing ⇒ ["2.2 Removing and installing brake caliper piston", page 151](#)

11 - Brake caliper piston

- ☐ Self-adjusting
- ☐ Removing and installing ⇒ [page 151](#)
- ☐ Lubricate lightly with lithium grease ⇒ Electronic parts catalogue "ETKA"

12 - Seal

- ☐ Removing and installing ⇒ ["2.2 Removing and installing brake caliper piston", page 151](#)





Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

2.2 Removing and installing brake caliper piston

Special tools and workshop equipment required

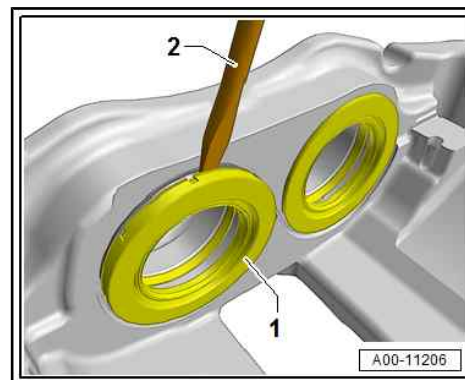
- ◆ Removal wedge - 3409-



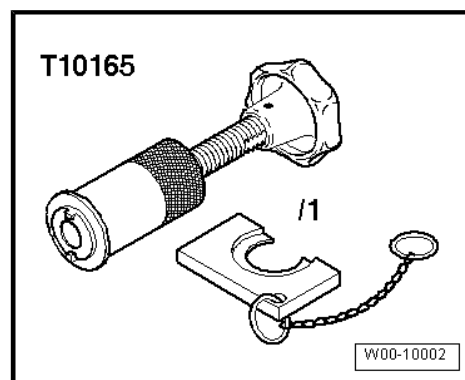
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- ◆ Removal tool - VAS 40338-
- ◆ Carefully lever protective cap -1- and seal out of brake caliper with gentle movements using removal tool - VAS 40338- -2-; take care not to damage groove for protective cap in brake caliper.



- ◆ Piston compressing tool - T10165-



Removing

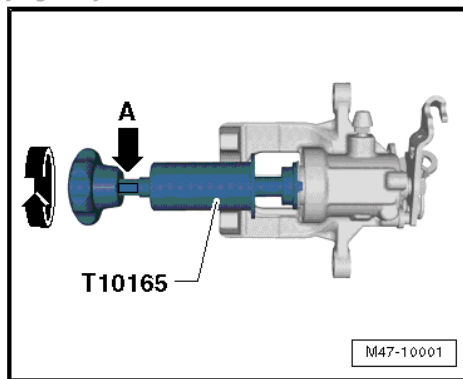
- Remove brake caliper and disconnect from hydraulic system
⇒ [page 101](#) .



Note

- ♦ *Take care not to damage paint coating on brake caliper.*
- ♦ *Take care not to damage cylinder surface.*
- Screw piston out of brake caliper by turning knurled wheel anti-clockwise.
- Insert piston compressing tool - T10165- so that collar is positioned against brake caliper piston.
- ♦ If the piston will not move easily, a 13 mm open-end spanner can be applied at the flats provided -arrow A-.

Removal tool - VAS 40338-



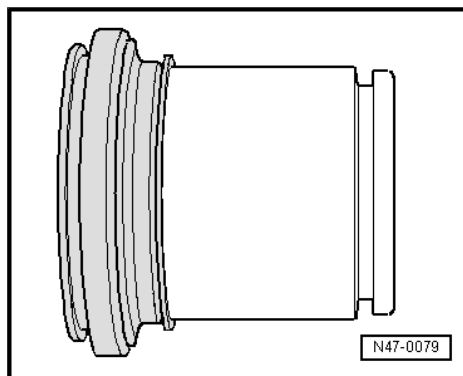
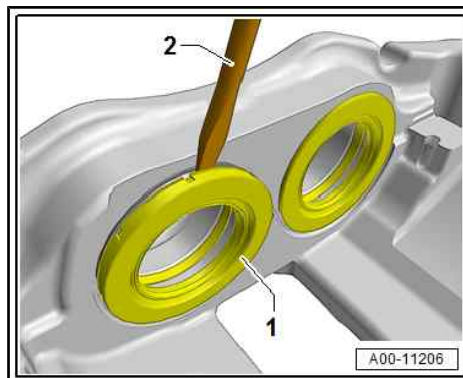
- Carefully lever protective cap -1- and seal out of brake caliper with gentle movements using removal tool - VAS 40338- -2-; take care not to damage groove for protective cap in brake caliper.

Installing



Note

- ♦ *Install all parts supplied in repair kit.*
- ♦ *Use only methylated spirits to clean the brake components.*
- ♦ *The brake caliper must be replaced if a brake caliper piston or piston bore is damaged.*
- Clean sealing surface for brake hose on caliper to remove corrosion.
- The surfaces of the brake caliper piston and seal must be cleaned only with methylated spirits and then dried.
- Apply thin coat of lithium grease to brake caliper piston and seal ⇒ Electronic parts catalogue "ETKA".
- Insert the seal into the brake caliper housing.
- Place outer sealing lip of protective cap on brake caliper piston.



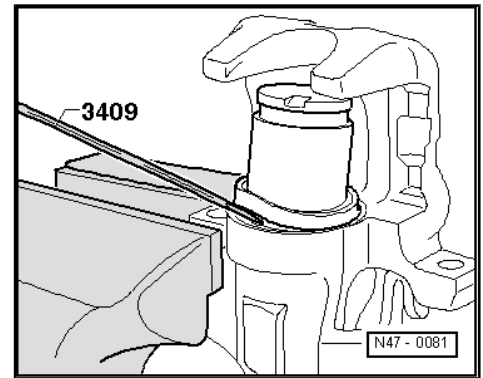


- Using removal wedge - 3409- , insert inner sealing lip into groove of cylinder.



Note

When doing this hold piston in front of caliper housing.

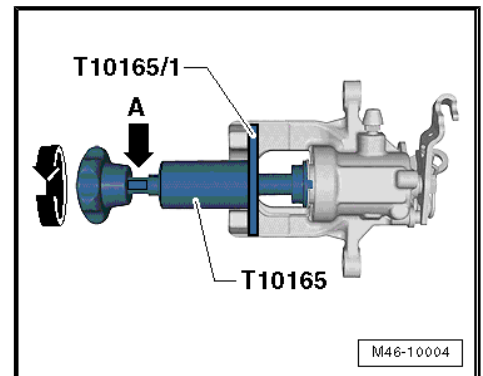


Caution

Risk of damage to brake caliper piston

- ◆ Always use piston compressing tool - T10165- to screw back brake caliper piston.

- Screw in brake caliper piston by turning knurled wheel clockwise, taking care not to damage protective cap.
- Use plate - T10165/1- when screwing in the piston.
- ◆ Insert piston compressing tool - T10165- so that collar is positioned against plate - T10165/1- .
- ◆ If the piston will not move easily, a 13 mm open-end spanner can be applied at the flats provided -arrow A-.
- Pre-bleed brake calipers (without pads) before installing in vehicle ➔ [page 207](#) .



2.3 Renewing guide pin with protective cap



Note

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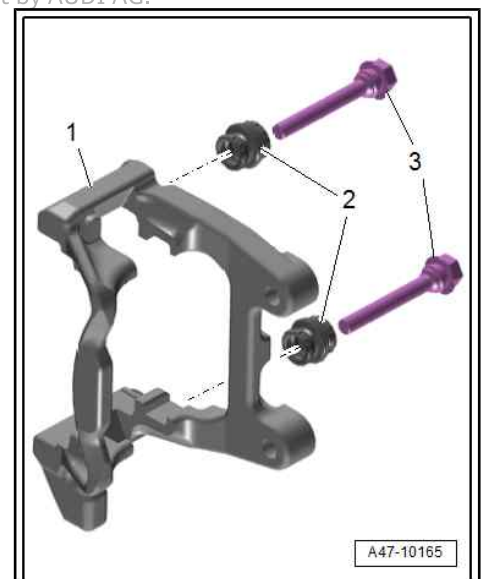
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Removing

- Remove brake caliper ➔ [page 96](#) .
- Pull protective cap -2- out of groove in brake carrier -1-.
- Pull guide pin -3- out of brake carrier.
- Pull protective cap off guide pin.

Installing

- Grease guide pin before installing.
- Slide protective cap over groove on guide pin.
- Push guide pin -3- with protective cap -1- through brake carrier -1-.
- Press protective cap over groove on brake carrier.
- Install brake caliper ➔ [page 96](#) .





3 Brake servo / brake master cylinder

⇒ [“3.1 Exploded view - brake servo / brake master cylinder”, page 154](#)

⇒ [“3.2 Removing and installing brake servo”, page 159](#)

⇒ [“3.3 Removing and installing brake master cylinder”, page 171](#)

⇒ [“3.4 Removing and installing brake fluid reservoir”, page 178](#)

3.1 Exploded view - brake servo / brake master cylinder

⇒ [“3.1.1 Exploded view - brake servo / brake master cylinder, Audi A1”, page 154](#)

⇒ [“3.1.3 Exploded view - brake servo / brake master cylinder, Audi S1”, page 158](#)

3.1.1 Exploded view - brake servo / brake master cylinder, Audi A1



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



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- 1 - ABS control unit - J104-
- 2 - ABS hydraulic unit - N55-
- 3 - Brake line
- 4 - Brake line
- 5 - Brake line
- 6 - Brake line
- 7 - Brake line
- 8 - Brake line
- 9 - Nut
- 10 - Gasket

☐ For brake servo

11 - Brake servo

- ☐ Functional check:
- Switch off engine.
- With the engine switched off, firmly depress the brake pedal several times (this reduces the vacuum present in the servo unit)
- Then hold brake pedal in applied position employing moderate force and start engine. If the servo unit is working properly, the pedal will give slightly under foot (servo assistance becomes activated).

- ☐ Cannot be repaired. Renew complete unit if defective
- ☐ Adjusting ball head ➔ [page 157](#)
- ☐ Removing and installing ➔ [page 159](#)

➔ **“3.1.2 Tightening torques for brake servo, brake master cylinder, brake lines and brake fluid reservoir”, page 157**



Note

- ◆ A heat shield is fitted on the brake servo on some models.
- ◆ Tightening torque for nuts: 20 Nm.

12 - Nut

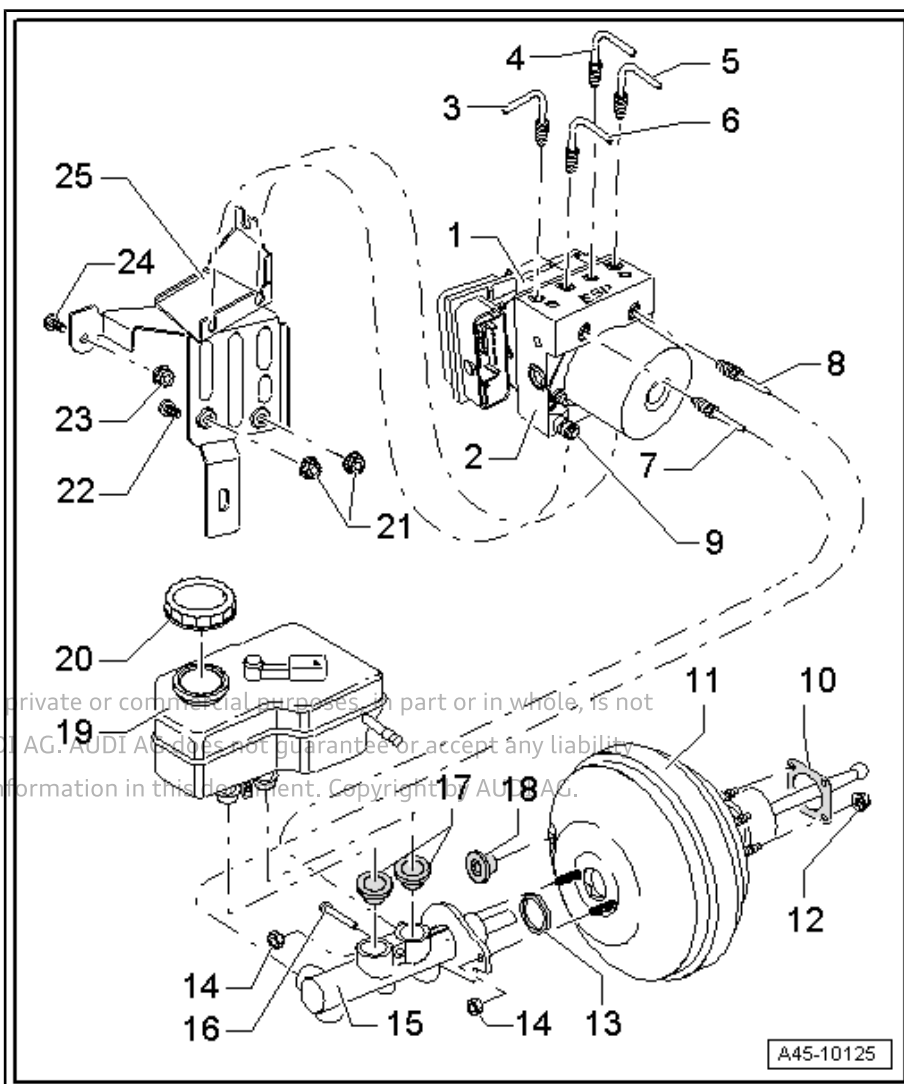
- ☐ Self-locking
- ☐ 25 Nm

13 - Seal

- ☐ Renew after removing

14 - Nut

- ☐ Self-locking
- ☐ Renew after removing





- ☐ 25 Nm

15 - Brake master cylinder

- ☐ Cannot be repaired. Renew complete unit if defective
- ☐ Removing and installing ⇒ [page 171](#)

⇒ **[“3.1.2 Tightening torques for brake servo, brake master cylinder, brake lines and brake fluid reservoir”, page 157](#)**

16 - Retaining pin for brake fluid reservoir

- ☐ Insert through brake master cylinder

17 - Sealing plug

- ☐ Moisten with brake fluid and press into brake master cylinder

18 - Grommet

- ☐ Connection for vacuum hose

19 - Brake fluid reservoir

- ☐ With additional retaining bolt on Audi A1 quattro
- ☐ Tightening torque for retaining bolt: 4 Nm
- ☐ Removing and installing ⇒ [page 178](#)

20 - Filler cap

- ☐ With brake fluid level warning contact - F34-

21 - Nut

- ☐ Self-locking
- ☐ Renew after removing
- ☐ 20 Nm

22 - Stud

- ☐ Welded to body

23 - Nut

- ☐ Self-locking
- ☐ 20 Nm

24 - Stud

- ☐ Welded to body

25 - Bracket



Note

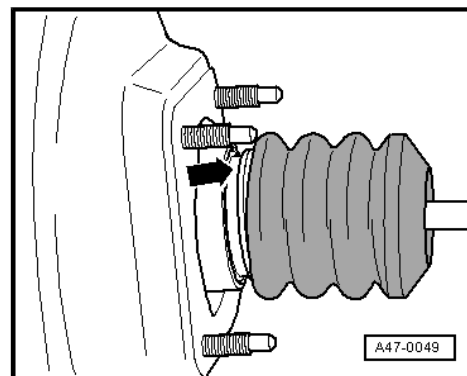
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- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



Brake servo with bellows: checking inner bellows on brake servo

- Check that boot has not slipped out of circumferential groove as shown in illustration.



Brake servo with adjustable push rod: adjusting ball head on brake servo

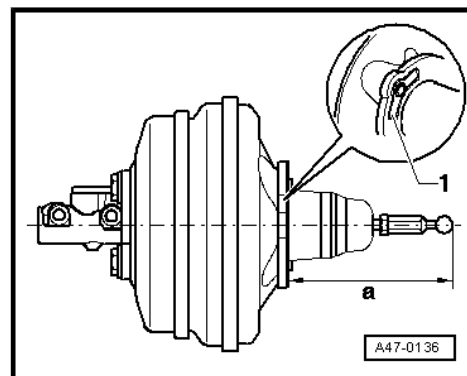
Left-hand drive vehicles:

- Dimension -a- = 193.5mm ± 0.6 mm



Note

- ◆ Surface -1- for measuring
- ◆ The push rod must be set at right angles to the surface of the brake servo when taking the measurement.
- ◆ Measure to end of ball head without gasket fitted.



3.1.2 Tightening torques for brake servo, brake master cylinder, brake lines and brake fluid reservoir

Tightening torque



Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.

Component	Tightening torque
Brake servo to pedal cluster/ bulkhead	25 Nm
Brake master cylinder to brake servo	25 Nm
Brake lines to brake master cyl- inder	14 Nm
Brake fluid reservoir to brake master cylinder	4 Nm
Air cleaner housing	⇒ Rep. gr. 24 ; Air cleaner; Ex- ploded view - air cleaner hous- ing

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3.1.3 Exploded view - brake servo / brake master cylinder, Audi S1



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

1 - Bolt

- 5 Nm

2 - Brake light switch - F-

- ❏ Removing and installing
⇒ page 43

3 - Nut

- ☐ Self-locking
- ☐ Renew after removing
- ☐ 25 Nm

4 - Brake master cylinder

- ☐ Cannot be repaired
- ☐ Renew complete unit if defective
- ☐ Removing and installing
⇒ page 175

⇒ **“3.1.2 Tightening torques for brake servo, brake master cylinder, brake lines and brake fluid reservoir”, page 157**

5 - Brake lines

6 - Sealing plug

- ☐ Moisten with brake fluid and press into brake fluid reservoir

7 - Bolt

8 - Brake fluid reservoir

- ❏ Removing and installing
⇒ page 178

9 - Seal

10 - Filler cap

- ☐ With brake fluid level warning contact - F34-

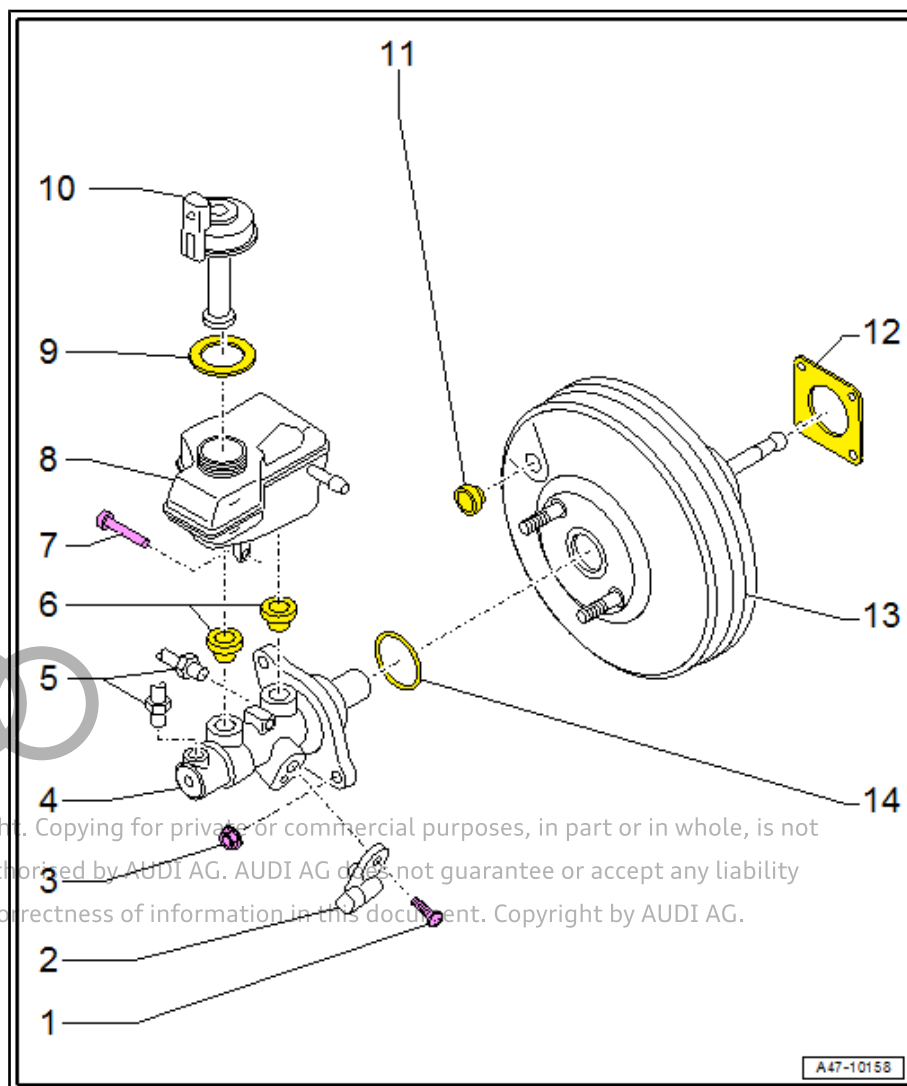
11 - Grommet

12 - Gasket

- ☐ Renew after removing
- ☐ For brake servo

13 - Brake servo

- ❑ Functional check:
 - Switch off engine.





- With the engine switched off, firmly depress the brake pedal several times (this reduces the vacuum present in the servo unit).
- Then hold brake pedal in applied position employing moderate force and start engine. If the servo unit is working properly, the pedal will give slightly under foot (servo assistance becomes activated).
- ☐ Cannot be repaired. Renew complete unit if defective
- ☐ Adjusting ball head ⇒ [page 157](#)
- ☐ Removing and installing ⇒ [page 159](#)



Note

- ◆ *A heat shield is fitted on the brake servo on some models.*
- ◆ *Tightening torque for nuts: 20 Nm.*

⇒ [“3.1.2 Tightening torques for brake servo, brake master cylinder, brake lines and brake fluid reservoir”, page 157](#)

14 - Seal

- ☐ Renew after removing

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Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

3.2 Removing and installing brake servo

⇒ [“3.2.1 Removing and installing brake servo - Audi A1 with front-wheel drive”, page 159](#)

⇒ [“3.2.2 Removing and installing brake servo - Audi A1 quattro”, page 163](#)

⇒ [“3.2.3 Removing and installing brake servo - Audi S1”, page 169](#)

3.2.1 Removing and installing brake servo - Audi A1 with front-wheel drive



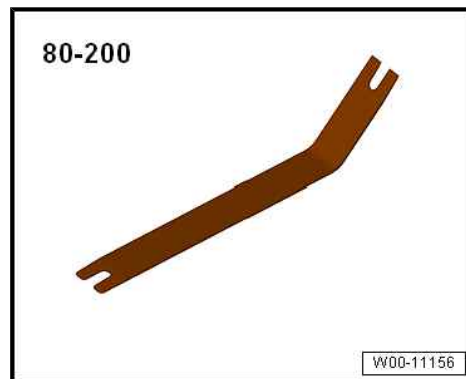
Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

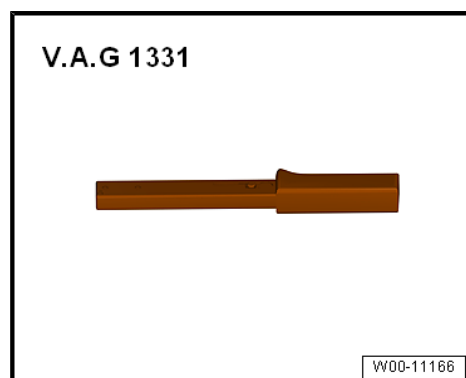
Special tools and workshop equipment required



◆ Removal lever - 80 - 200-



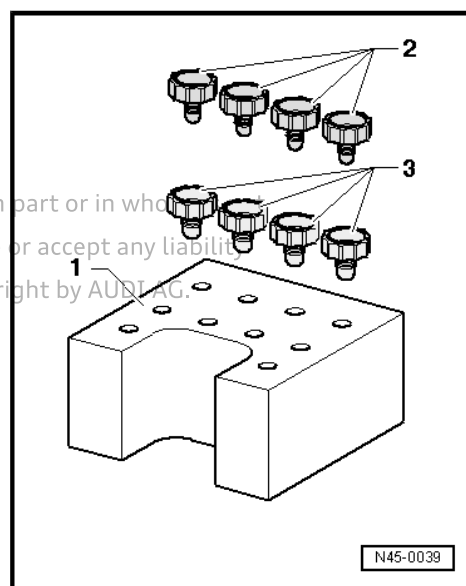
◆ Torque wrench - V.A.G 1331-



◆ Sealing plugs (repair kit - 1H0 698 311 A-)



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- 1 - Transport protection for contact pins (foam)
- 2 - M10 sealing plugs
- 3 - M12 sealing plugs

Removing

- Switch off engine.
- Press brake pedal repeatedly ("pump" the vacuum out of the brake servo) until there is no more servo assistance and the brake pedal is heavy.
- Remove brake master cylinder ⇒ [page 171](#) .



Vehicles with TDI engine:

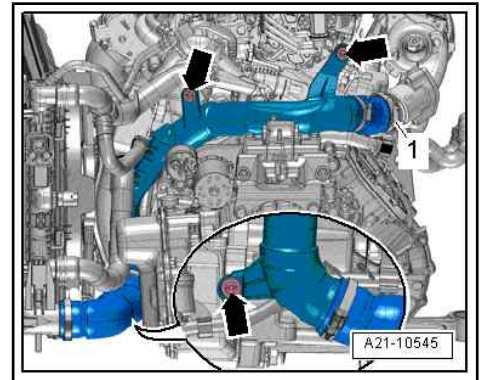
- Remove bolts -arrows-.



Note

On some versions the bolt at the top right is not fitted.

- Using removal lever - 80 - 200- , move electrical wiring and hoses clear at air intake pipe (left-side).
- Release hose clip -1- and move air intake pipe (left-side) slightly forwards.



Vehicles with dual clutch gearbox:

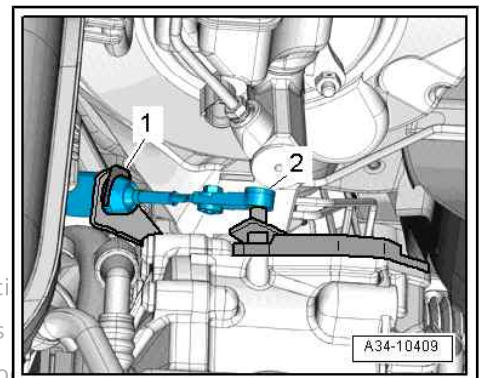
- Shift selector lever to position “P”.
- Using removal lever - 80 - 200- , pry selector lever cable -2- off gearbox selector lever.
- Detach retaining clip -1- for selector lever cable.



Caution

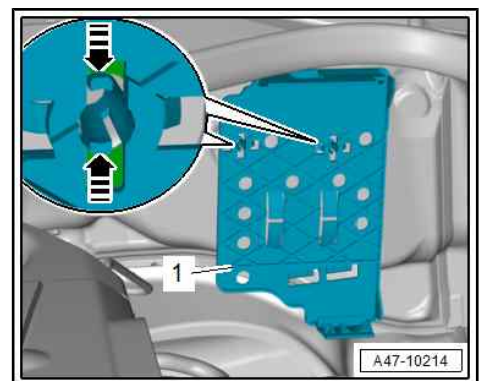
Risk of damage to selector lever cable.

- ◆ **Do not press the selector lever cable rearwards out of the cable support bracket. Do not bend or kink selector lever cable.**

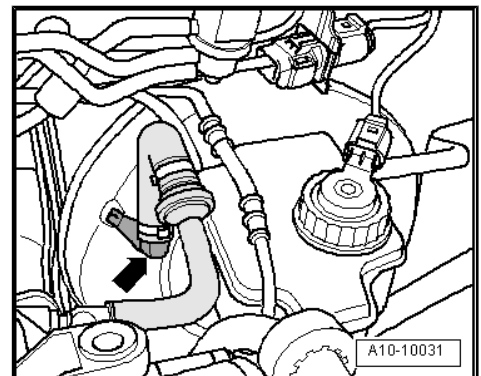


All vehicles (continued):

- Take engine control unit - J623- out of bracket ⇒ Rep. gr. 24 ; Engine control unit; Removing and installing engine control unit - J623- and tie up to one side.
- Release catches -arrows- and detach bracket for engine control unit -1-.

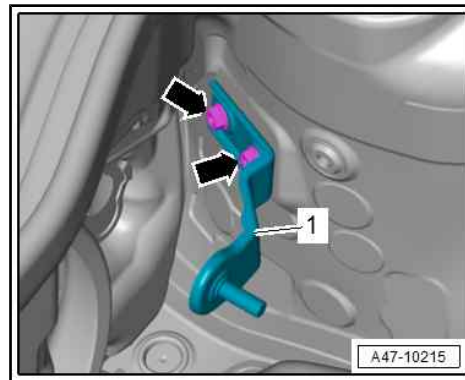


- Disconnect vacuum hose -arrow- from brake servo.
- Remove dash panel cover (driver side) ⇒ General body repairs, interior; Rep. gr. 68 ; Storage compartments/covers/trim panels; Removing and installing dash panel cover (driver side) .
- Separate brake pedal from brake servo ⇒ [page 135](#) .





- Remove nuts -arrows- and detach bracket -1-.



- Remove nuts for brake servo -arrows- on mounting bracket.
- Take off brake servo.

Installing



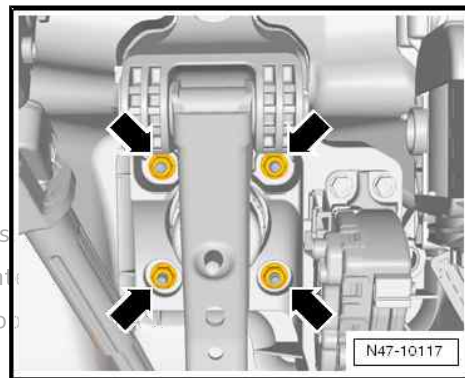
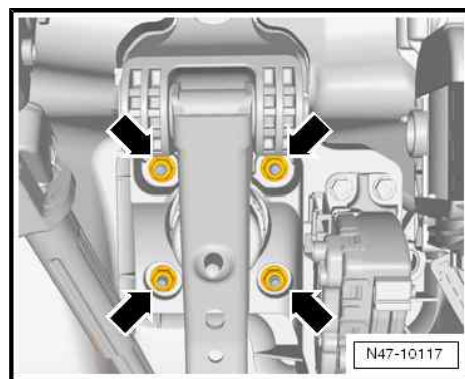
Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

- Fit brake servo in vehicle.

Make sure that gasket is seated correctly.

- Fit nuts.
- Tighten nuts for brake servo -arrows- on mounting bracket.
- Connect brake pedal to brake servo ⇒ [page 135](#) .
- Install dash panel cover (driver side) ⇒ General body repairs, interior; Rep. gr. 68 ; Storage compartments/covers/trim panels; Removing and installing dash panel cover (driver side) .
- Install air intake pipe leading from turbocharger ⇒ Rep. gr. 21 ; Charge air system; Exploded view - hose connections for charge air system .
- Clip engine control unit into retainer on plenum chamber partition panel.
- Install brake master cylinder ⇒ [page 171](#) .



Vehicles with manual gearbox:

- Bleed clutch system ⇒ Rep. gr. 30 ; Clutch mechanism; Bleeding clutch hydraulics .



Vehicles with dual clutch gearbox:

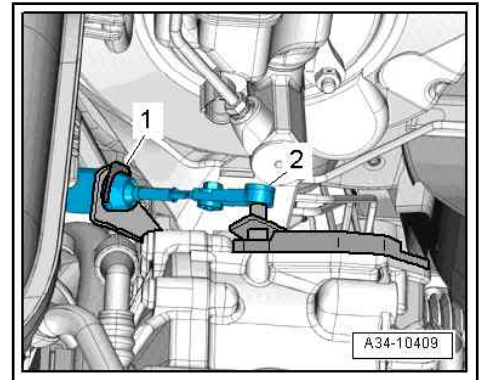


Caution

Risk of damage to selector lever cable.

- ◆ *Do not press the selector lever cable rearwards out of the cable support bracket. Do not bend or kink selector lever cable.*

- Engage selector lever cable -2- in gearbox selector lever.
- Fit retaining clip -1- for selector lever cable.



All vehicles (continued):

- Carry out ESP road test and system test.



WARNING

Risk of accident!

- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*

Tightening torque

⇒ ["3.1.2 Tightening torques for brake servo, brake master cylinder, brake lines and brake fluid reservoir", page 157](#)

3.2.2 Removing and installing brake servo - Audi A1 quattro



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331-

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V.A.G 1331



W00-11166

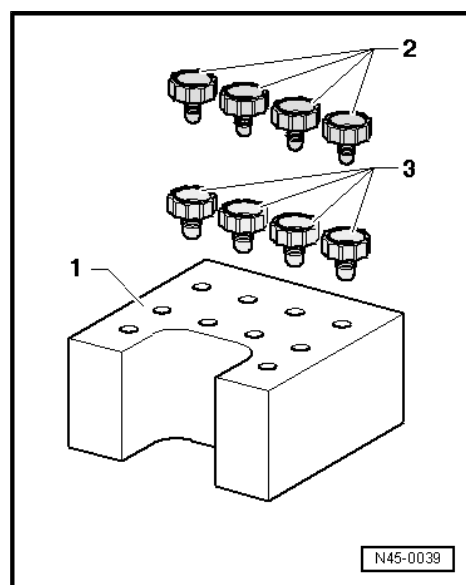


- ◆ Brake filling and bleeding equipment - VAS 5234- and adapter - VAS 5234/1A-

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- ◆ Sealing plugs (repair kit - 1H0 698 311 A-)



- 1 - Transport protection for contact pins (foam)
- 2 - M10 sealing plugs
- 3 - M12 sealing plugs

Removing

- Switch off engine.
- Press brake pedal repeatedly (“pump the brake servo dry”) until there is no more servo assistance and the brake pedal is heavy.
- Remove engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .
- Remove air cleaner housing ⇒ Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .



WARNING

Health risk!

- ◆ **Brake fluid is poisonous and must NOT be drawn off by sucking through a hose.**
- ◆ **Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.**
- ◆ **Always observe the relevant environmental regulations for disposal.**

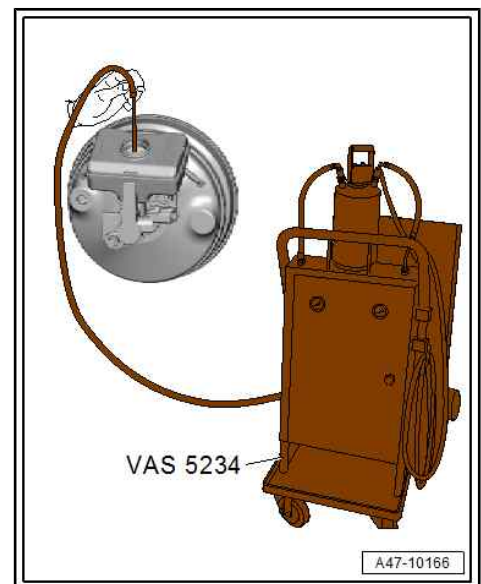
Risk of malfunction if brake fluid comes into contact with fluids containing mineral oils.

- ◆ **Brake fluid must NOT come into contact with fluids containing mineral oils (oil, petrol, cleaning agents). Protective gloves must be free of oil and grease.**

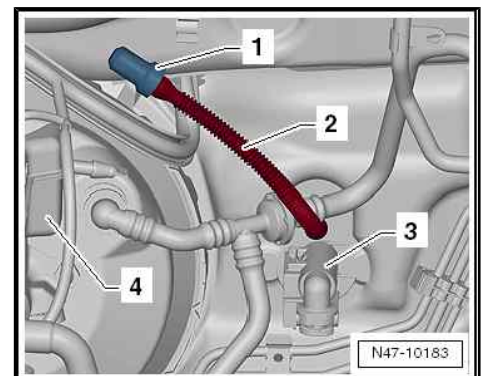
Risk of damage to paintwork surfaces

- ◆ **Due to its corrosive effect, brake fluid must not be allowed to come into contact with paintwork. Rinse off brake fluid spillages immediately using plenty of water.**

- Draw off as much brake fluid as possible from brake fluid reservoir using brake filling and bleeding equipment - VAS 5234- and adapter - VAS 5234/1A- .
- Lay out a sufficient number of lint-free cloths over the engine.

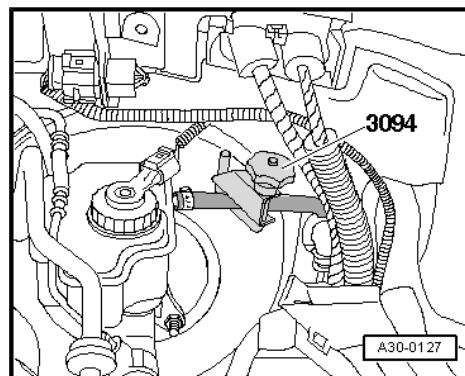


- Disconnect supply hose -2- for clutch master cylinder-3- at brake fluid reservoir -4-.

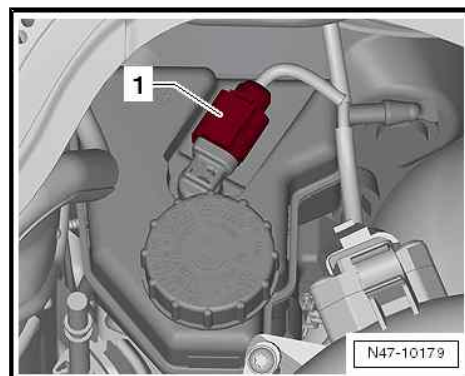




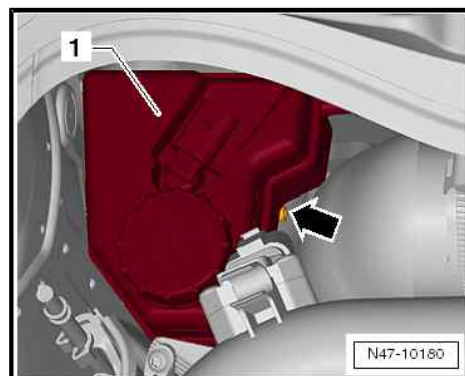
- Seal off supply hose -2- for clutch master cylinder -3- using sealing tool - T10249- or clamp off with hose clamps, up to 25 mm - 3094- .
- Tie up supply hose -2-.



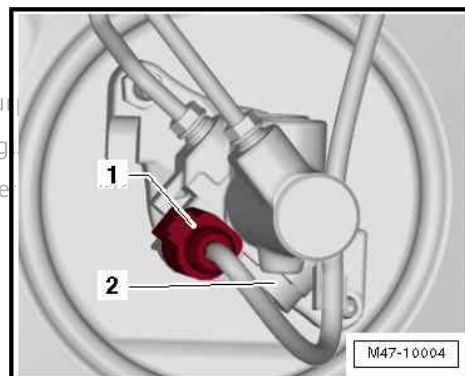
- Release and unplug connector -1- from brake fluid level warning contact - F34- .



- Remove securing bolt -arrow- from brake fluid reservoir -1-.
- Carefully pull brake fluid reservoir out of sealing plugs on brake master cylinder.



- Release and unplug connector -1- from brake light switch - F-2-.
- Unclip wiring harness at brake master cylinder.

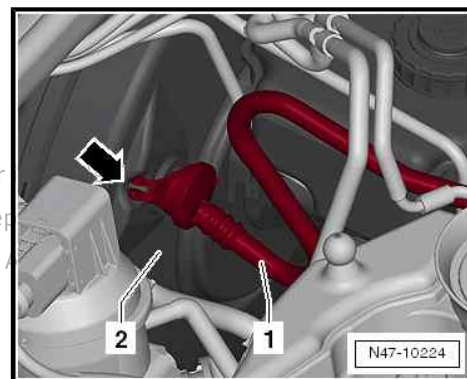


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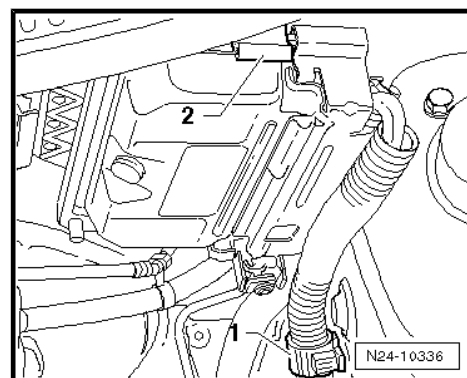


- Disconnect vacuum line -1- from brake servo -2-.

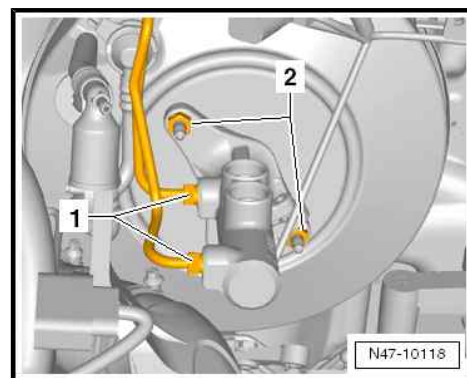
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- Open wiring duct -1- take out wiring harness.
- Unclip engine control unit and move aside ⇒ Rep. gr. 24 ; Engine control unit; Removing and installing engine control unit - J623- .
- Remove bracket (rear) for air cleaner housing and air intake hose leading to air mass meter - G70- ⇒ Rep. gr. 24 ; Air cleaner; Exploded view - air cleaner housing .



- Mark brake lines on brake master cylinder -1- and disconnect.
- Seal open connections immediately using clean sealing plugs from repair kit - 1H0 698 311 A- .
- Unscrew securing nuts -2- on brake master cylinder -1-.
- Carefully remove brake master cylinder from brake servo together with brake light switch - F- .
- Remove dash panel cover (driver side) ⇒ General body repairs, interior; Rep. gr. 68 ; Storage compartments/covers/trim panels; Removing and installing dash panel cover (driver side) .
- Separate brake pedal from brake servo ⇒ [page 135](#) .





- Remove nuts for brake servo -arrows- on mounting bracket.



Note

A heat shield is fitted on the brake servo on some models.

- Detach heat shield if fitted.
- Carefully remove brake servo from vehicle.

Installing



Note

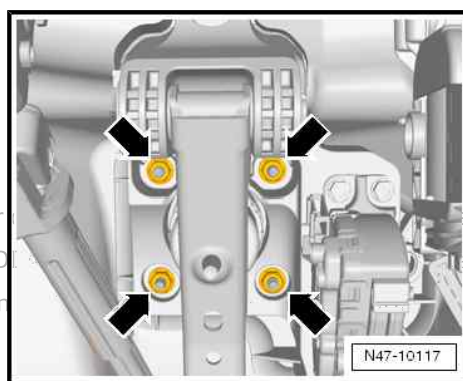
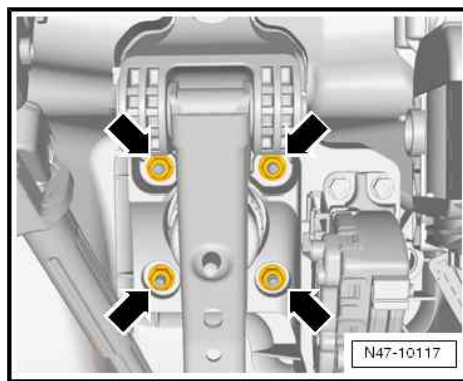
- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

- Fit brake servo in vehicle.

Make sure that gasket is seated correctly.

- Fit nuts.
- Tighten nuts for brake servo -arrows- on mounting bracket.
- Connect brake pedal to brake servo ⇒ [page 135](#).
- Install trim (bottom) on driver's side ⇒ General body repairs, interior; Rep. gr. 68 ; Storage compartments/covers; Overview of fitting locations - storage compartments/covers .

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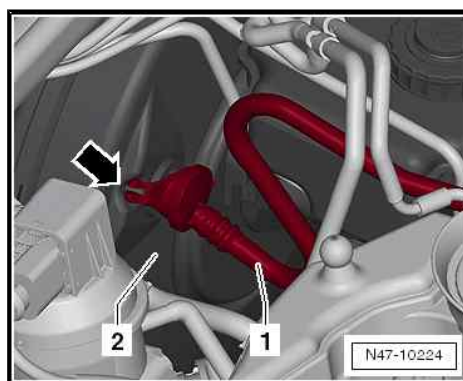
- Fit retaining tab on vacuum line -1- correctly in recess -arrow- on brake servo -2-.



Note

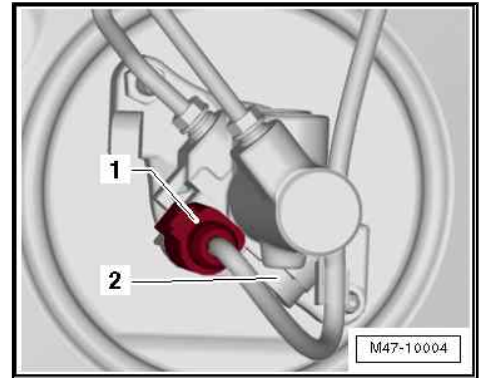
A heat shield is fitted on the brake servo on some models.

- Install heat shield if originally fitted.
- Install brake master cylinder ⇒ [page 171](#).
- Plug in electrical connector for brake fluid level warning contact - F34- .





- Attach connector -1- on brake light switch.
- Clip engine control unit into retainer on plenum chamber partition panel.
- Install air cleaner housing ⇒ Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .
- Bleed brake system ⇒ [page 207](#) .
- Bleed clutch system ⇒ Rep. gr. 30 ; Clutch mechanism; Bleeding clutch hydraulics .
- Install engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .
- Carry out ESP road test and system test.



WARNING

Risk of accident!

◆ ***Make sure that the brakes work properly before the vehicle is driven on the road.***

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Tightening torque

⇒ [“3.1.2 Tightening torques for brake servo, brake master cylinder, brake lines and brake fluid reservoir”, page 157](#)

3.2.3 Removing and installing brake servo - Audi S1



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331-

V.A.G 1331



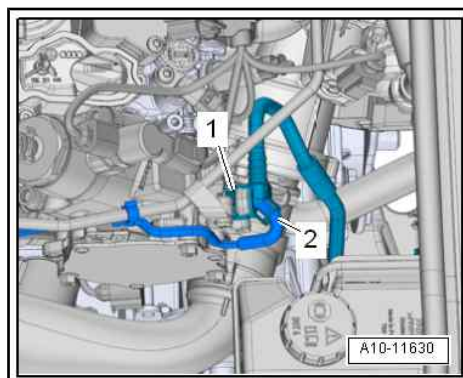
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Removing

- Switch off engine.
- Press brake pedal repeatedly (“pump the brake servo dry”) until there is no more servo assistance and the brake pedal is heavy.
- Remove brake master cylinder ⇒ [page 175](#) .



- Remove hydraulic unit ➔ [page 30](#) .
- Disconnect vacuum hose -2-.
- Press release tabs on vacuum hose -1- and disconnect hose from vacuum pump.

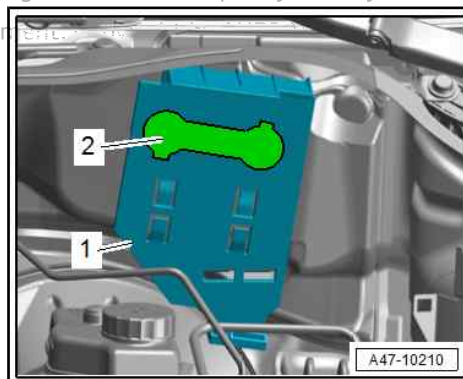
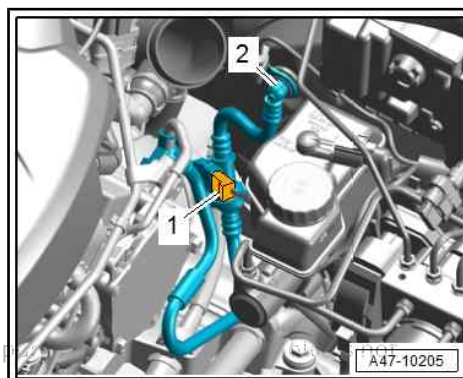


- Unplug electrical connector -1- on brake servo pressure sensor - G294- .
- Disconnect vacuum hose -2- from brake servo and remove.

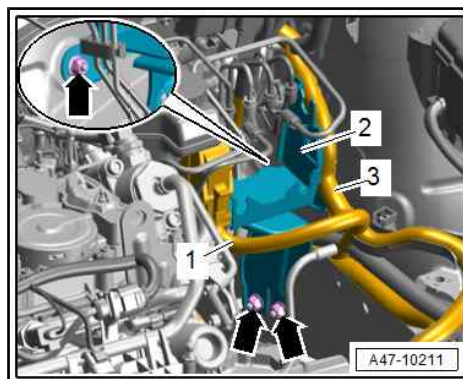


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- Pry off retaining clip -2- towards front.
- Detach bracket -1- for engine control unit.



- Move wiring harnesses -2 and 4- clear.
- Release hose -3- for clutch slave cylinder at retaining clip.
- Remove nuts -arrows- and detach bracket -1- for hydraulic unit.
- Separate brake pedal from brake servo ➔ [page 135](#) .





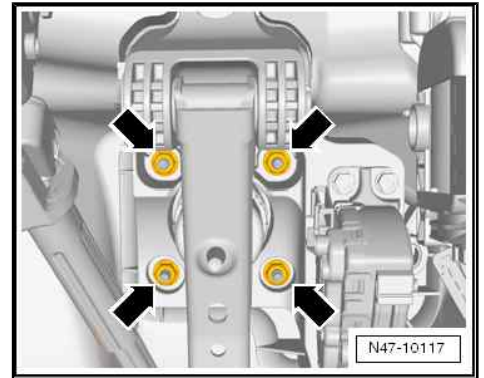
- Unscrew nuts -arrows- and detach brake servo.

Installing

Installation is carried out in reverse order; note the following:

Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



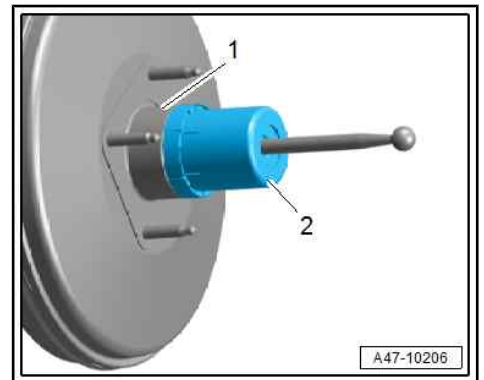
Note

Renew gasket after removing.

- Before installing brake servo, make sure that protective cap -2- is properly clipped onto brake servo.
- Carefully insert brake servo in guide and secure.
- Install brake master cylinder ➔ [page 175](#) .
- Connect brake pedal to brake servo ➔ [page 135](#) .
- Bleed clutch system ➔ Rep. gr. 30 ; Clutch mechanism; Bleeding clutch hydraulics .

Tightening torques

➔ [“3.1.2 Tightening torques for brake servo, brake master cylinder, brake lines and brake fluid reservoir”, page 157](#)



3.3 Removing and installing brake master cylinder

➔ [“3.3.1 Removing and installing brake master cylinder - Audi A1”, page 171](#)

➔ [“3.3.2 Removing and installing brake master cylinder - Audi S1”, page 175](#)

3.3.1 Removing and installing brake master cylinder - Audi A1

Note

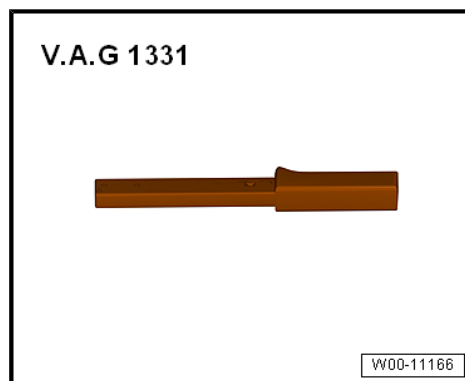
- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

Special tools and workshop equipment required

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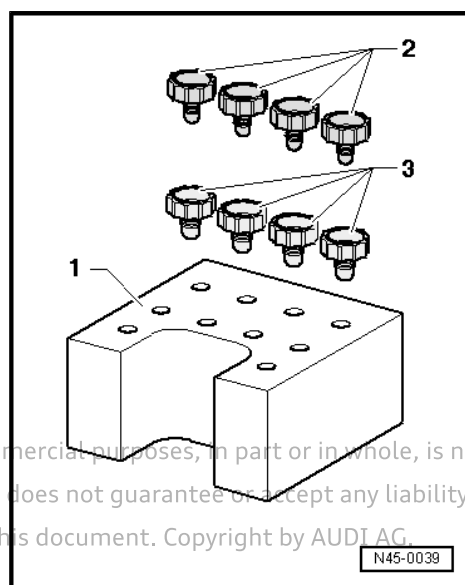
◆ Torque wrench - V.A.G 1331-



◆ Sealing plugs (repair kit - 1H0 698 311 A-)



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- 1 - Transport protection for contact pins (foam)
- 2 - M10 sealing plugs
- 3 - M12 sealing plugs



Removing



WARNING

Health risk!

- ◆ *Brake fluid is poisonous and must NOT be drawn off by sucking through a hose.*
- ◆ *Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.*
- ◆ *Always observe the relevant environmental regulations for disposal.*

Risk of malfunction if brake fluid comes into contact with fluids containing mineral oils.

- ◆ *Brake fluid must NOT come into contact with fluids containing mineral oils (oil, petrol, cleaning agents). Protective gloves must be free of oil and grease.*

Risk of damage to paintwork surfaces

- ◆ *Due to its corrosive effect, brake fluid must not be allowed to come into contact with paintwork. Rinse off brake fluid spillages immediately using plenty of water.*

– Remove brake fluid reservoir ⇒ [page 178](#) .

– Remove brake light switch ⇒ [page 43](#) .

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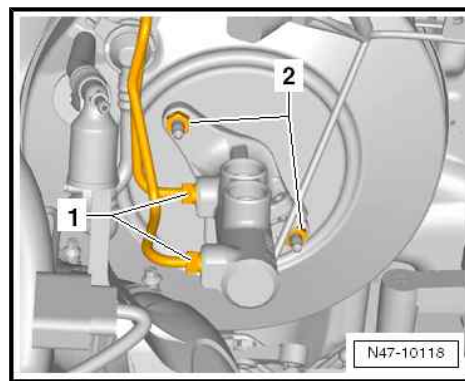
- Disconnect brake lines -1- from brake master cylinder.
- Seal open connections immediately using clean sealing plugs from repair kit - 1H0 698 311 A- .
- Unscrew securing nuts -2- for brake master cylinder.



Note

A heat shield is fitted on the brake servo on some models.

- Detach heat shield if fitted.
- Detach brake master cylinder from brake servo.



Caution

Brake fluid must not be allowed to enter the brake servo.

Installing



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



Caution

Brake fluid must not be allowed to enter the brake servo.

- Renew seal between brake master cylinder and brake servo.
- When fitting brake master cylinder, make sure that push rod is correctly positioned in brake servo.

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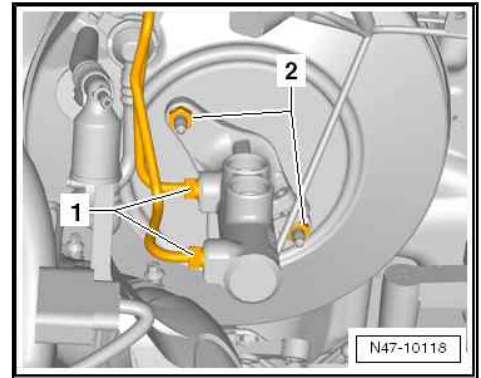
- Install and tighten new nuts -2-. Observe tightening torque.



Note

A heat shield is fitted on the brake servo on some models.

- Connect brake lines -1- to brake master cylinder.
- Install brake light switch ⇒ [page 43](#) .
- Install brake fluid reservoir ⇒ [page 178](#) .



WARNING

Risk of accident!

- ◆ ***Make sure that the brakes work properly before the vehicle is driven on the road.***

Tightening torques

⇒ **“3.1.2 Tightening torques for brake servo, brake master cylinder, brake lines and brake fluid reservoir”, page 157**

3.3.2 Removing and installing brake master cylinder - Audi S1



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

Special tools and workshop equipment required

- ◆ Brake filling and bleeding equipment - VAS 5234- and adapter - VAS 5234/1A-

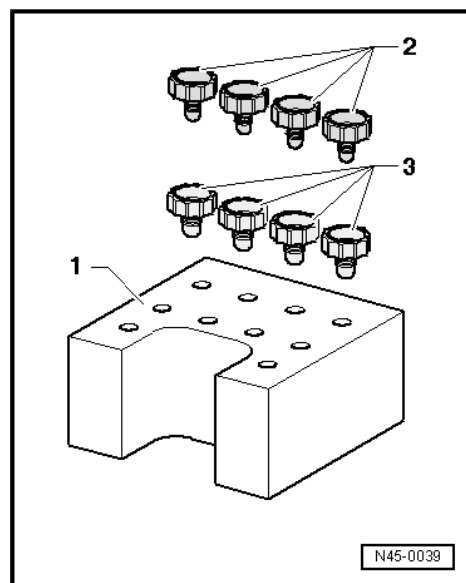


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- ◆ Sealing plugs (repair kit - 1H0 698 311 A-)



- 1 - Transport protection for contact pins (foam)
- 2 - M10 sealing plugs
- 3 - M12 sealing plugs

Removing



WARNING

Health risk!

- ◆ **Brake fluid is poisonous and must NOT be drawn off by sucking through a hose.**
- ◆ **Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.**
- ◆ **Always observe the relevant environmental regulations for disposal.**

Risk of malfunction if brake fluid comes into contact with fluids containing mineral oils.

- ◆ **Brake fluid must NOT come into contact with fluids containing mineral oils (oil, petrol, cleaning agents). Protective gloves must be free of oil and grease.**

Risk of damage to paintwork surfaces

- ◆ **Due to its corrosive effect, brake fluid must not be allowed to come into contact with paintwork. Rinse off brake fluid spillages immediately using plenty of water.**

- Remove brake fluid reservoir ➔ [page 178](#) .

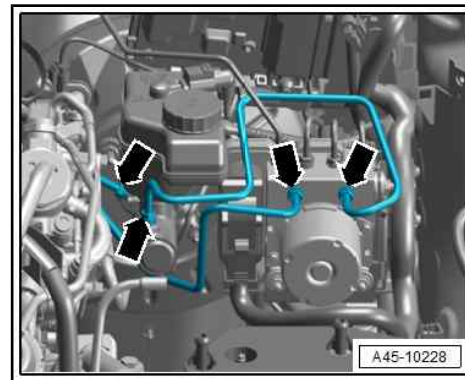


Note

To protect against escaping brake fluid, place a sufficient number of lint-free cloths in area beneath brake master cylinder.



- Unscrew union screws -arrows- and detach brake lines -1, 2-.
- Seal open connections immediately using clean sealing plugs from repair kit - 1H0 698 311 A- .



- Unplug electrical connector for brake light switch - F- and move electrical wire clear.
- Remove nuts -arrows- and detach brake master cylinder -1- from brake servo.
- If fitted, remove heat shield.
- Remove brake light switch ⇒ [page 43](#) .

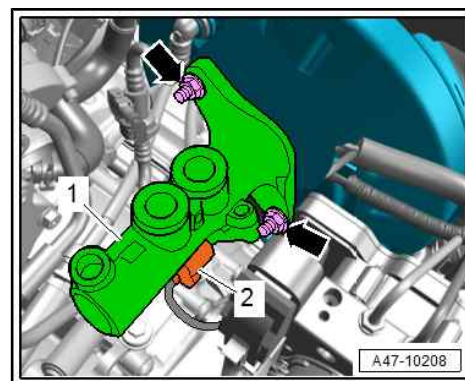
Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.



Note

Renew O-ring after removal.



Caution

Risk of damage to brake servo

- ◆ Brake fluid must not be allowed to enter the brake servo.



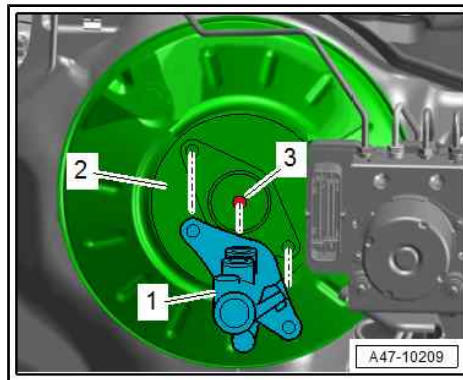
- When fitting brake master cylinder -1-, make sure that push rod -3- is correctly positioned in brake servo -2-.
- If originally fitted, install heat shield.
- If necessary, have a second mechanic depress brake pedal slightly to facilitate insertion of brake master cylinder in push rod.
- Install brake light switch ➔ [page 43](#) .
- Install brake fluid reservoir ➔ [page 178](#) .



WARNING

Risk of accident!

- ◆ ***Make sure that the brakes work properly before the vehicle is driven on the road.***



Tightening torques

➔ **"3.1.2 Tightening torques for brake servo, brake master cylinder, brake lines and brake fluid reservoir", page 157**

3.4 Removing and installing brake fluid reservoir



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

Special tools and workshop equipment required

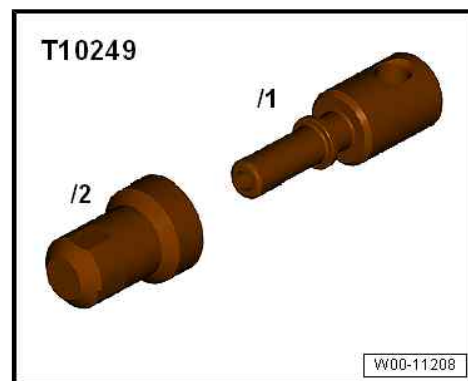
- ◆ Brake filling and bleeding equipment - VAS 5234- and adapter - VAS 5234/1A-

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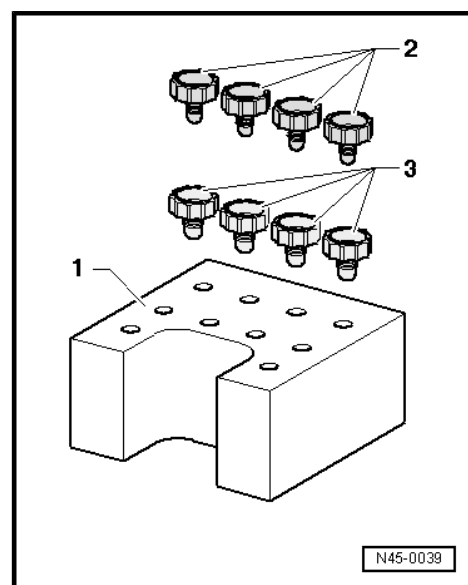




◆ Sealing tool - T10249-



◆ Sealing plugs (repair kit - 1H0 698 311 A-)



1 - Transport protection for contact pins (foam)

2 - M10 sealing plugs

3 - M12 sealing plugs

Removing

- Remove air cleaner housing ⇒ Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing or ⇒ Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .
- Audi A1 quattro: Additionally remove intake hose ⇒ Rep. gr. 24 ; Air cleaner; Exploded view - air cleaner housing .



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WARNING

Health risk!

- ◆ **Brake fluid is poisonous and must NOT be drawn off by sucking through a hose.**
- ◆ **Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.**
- ◆ **Always observe the relevant environmental regulations for disposal.**

Risk of malfunction if brake fluid comes into contact with fluids containing mineral oils.

- ◆ **Brake fluid must NOT come into contact with fluids containing mineral oils (oil, petrol, cleaning agents). Protective gloves must be free of oil and grease.**

Risk of damage to paintwork surfaces

- ◆ **Due to its corrosive effect, brake fluid must not be allowed to come into contact with paintwork. Rinse off brake fluid spillages immediately using plenty of water.**

- Draw off as much brake fluid as possible from brake fluid reservoir using brake filling and bleeding equipment - VAS 5234- and adapter - VAS 5234/1A- .



Note

To protect against escaping brake fluid, place a sufficient number of lint-free cloths in area beneath brake master cylinder.

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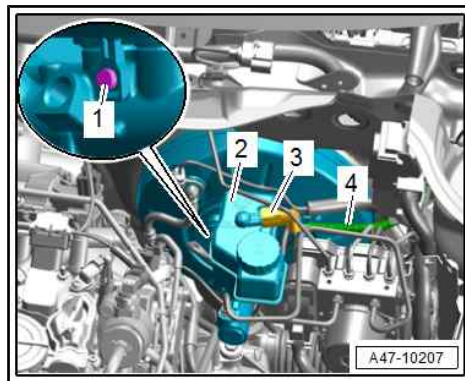
- Unplug electrical connector -3- at brake fluid level warning contact - F34- .

Vehicles with manual gearbox:

- Disconnect supply hose -4- from brake fluid reservoir -2- and plug hose with sealing tool -T10249/1- .

Brake fluid reservoir - version 1:

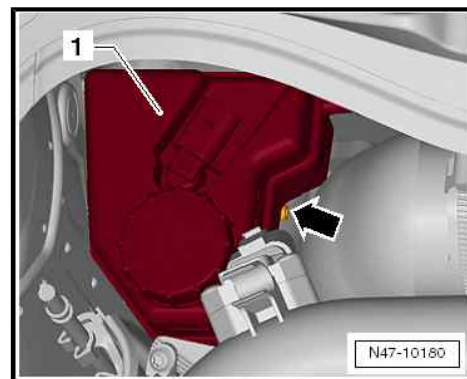
- Pull out pin -1- and carefully pull brake fluid reservoir upwards off brake master cylinder.





Brake fluid reservoir - version 2:

- Remove bolt -arrow- and carefully pull brake fluid reservoir -1- upwards off brake master cylinder.



Brake fluid reservoir - version 3:

- Unclip brake fluid reservoir at position -2- and pull off upwards.

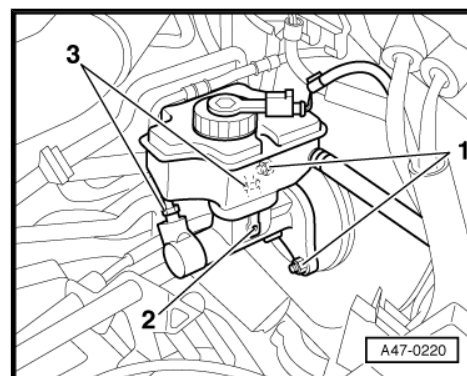


Note

Disregard items -1 and 3-.

All versions (continued):

- Seal open connections immediately using clean sealing plugs from repair kit - 1H0 698 311 A- .



Installing

Installation is carried out in reverse order; note the following:



Note

Do not remove protective cap from new brake fluid reservoir until reservoir is ready to be filled.

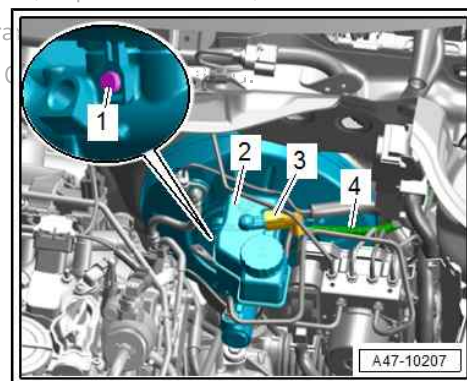
- Lubricate plugs on brake fluid reservoir with brake fluid.
- Insert brake fluid reservoir in sealing plugs in brake master cylinder.

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Brake fluid reservoir - version 1:

- Secure brake fluid reservoir -2- with pin -1-.

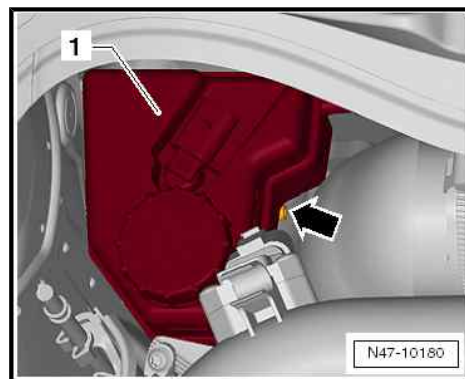
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Brake fluid reservoir - version 2:

- Secure brake fluid reservoir with bolt.



Brake fluid reservoir - version 3:

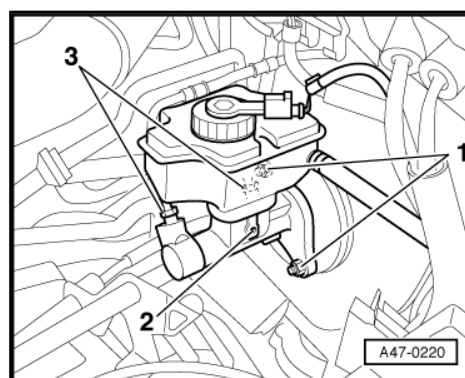
- Clip brake fluid reservoir into mountings -2- on both sides of brake master cylinder.

Vehicles with manual gearbox:

- Connect supply hose for clutch master cylinder to brake fluid reservoir.

All vehicles (continued):

- Install air cleaner housing ⇒ Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing or ⇒ Rep. gr. 24 ; Air cleaner; Exploded view - air cleaner housing .
- Bleed brake system ⇒ [page 207](#) .
- Carry out ESP road test and system test.



WARNING

Risk of accident!

- ◆ ***Make sure that the brakes work properly before the vehicle is driven on the road.***

Tightening torques

⇒ [“3.1.2 Tightening torques for brake servo, brake master cylinder, brake lines and brake fluid reservoir”, page 157](#)



4 Vacuum system

⇒ ["4.1 Exploded view - electric vacuum pump", page 183](#)

⇒ ["4.2 Exploded view - vacuum pump", page 185](#)

⇒ ["4.3 Checking non-return valve", page 187](#)

⇒ ["4.4 Removing and installing non-return valve", page 187](#)

⇒ ["4.5 Removing and installing vacuum sender G608 ", page 189](#)

⇒ ["4.6 Checking vacuum system", page 190](#)

⇒ ["4.7 Removing and installing electric vacuum pump", page 194](#)

⇒ ["4.8 Removing and installing vacuum pump", page 195](#)

4.1 Exploded view - electric vacuum pump



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



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1 - Vacuum pump for brakes - V192-

- ☐ Fitting location: engine compartment (front right)
- ☐ Removing and installing
⇒ [page 194](#)

2 - Bump stop

3 - Bump stop

4 - Clip

5 - Bracket

6 - Nut

- ☐ 9 Nm

7 - Non-return valve

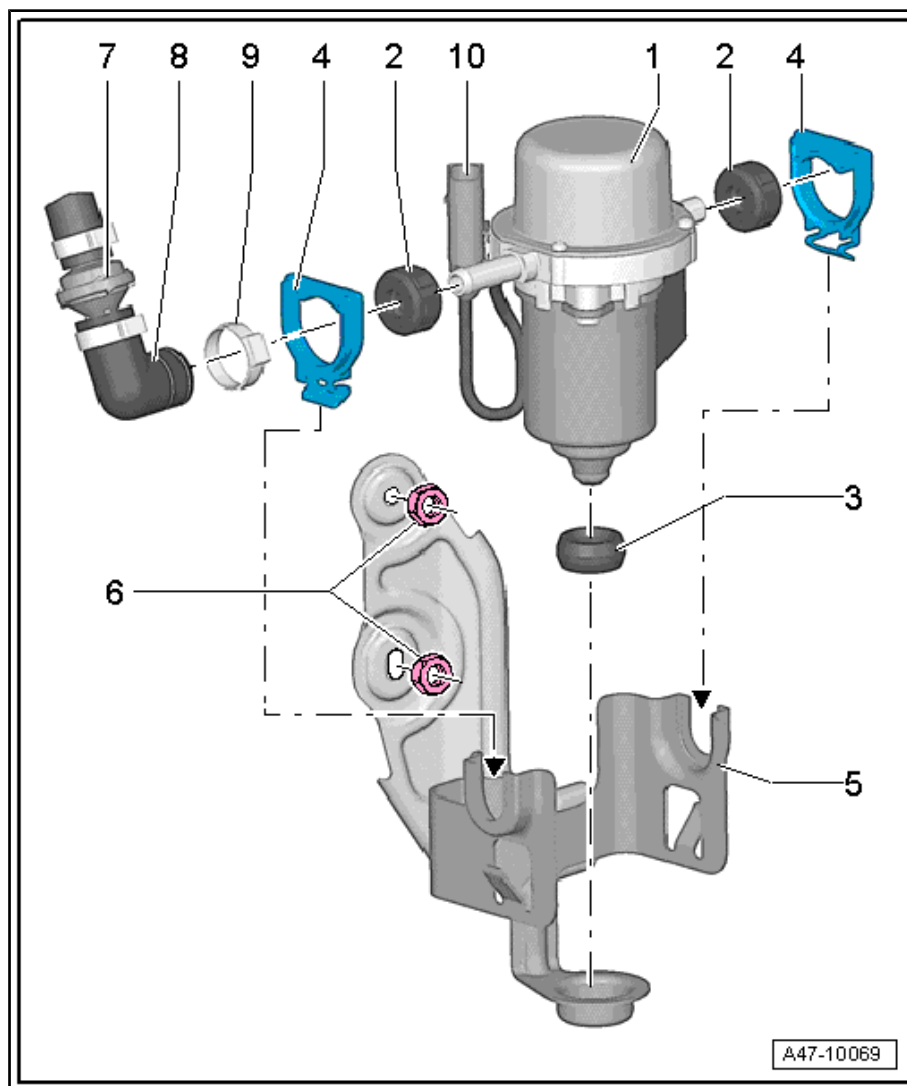
- ☐ Checking ⇒ [page 187](#)

8 - Hose clip

- ☐ Renew

9 - Connection for vacuum hose

10 - Electrical connection



Note

- ◆ Clean bolts and nuts before reusing.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew damaged bolts/nuts.



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Note

- ♦ Clean bolts and nuts before reusing.
- ♦ Always renew self-locking bolts/nuts.
- ♦ Always renew damaged bolts/nuts.

4.2.2 Exploded view - vacuum pump, vehicles with TDI engine



Note

- ♦ Clean bolts and nuts before reusing.
- ♦ Always renew self-locking bolts/nuts.
- ♦ Always renew damaged bolts/nuts.

1 - Vacuum hose

- ☐ Renew if damaged

2 - Vacuum line

- ☐ Renew if damaged

3 - Gasket

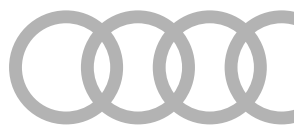
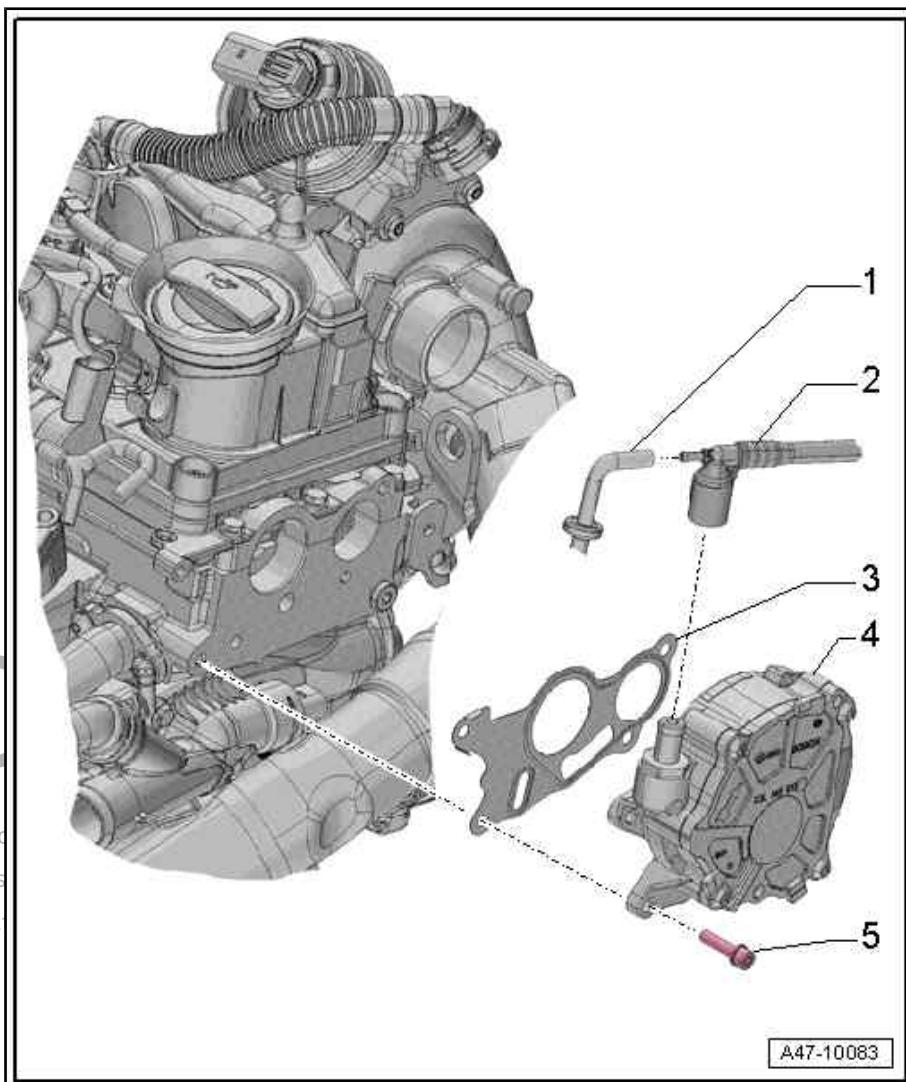
- ☐ Renew

4 - Vacuum pump

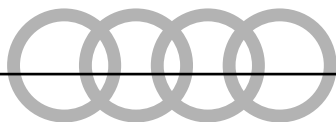
- ☐ The vacuum pump is driven mechanically
- ☐ Checking vacuum system ⇒ [page 190](#)
- ☐ Removing and installing ⇒ [page 197](#)

5 - Bolt

- ☐ 9 Nm



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- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

4.3 Checking non-return valve

Procedure

- Remove non-return valve ➔ [page 187](#) .
- The valve should allow air to pass in the direction indicated by the arrow.
- Valve must remain closed in opposite direction.
- Install non-return valve ➔ [page 187](#) .

4.4 Removing and installing non-return valve

➔ [“4.4.1 Removing and installing non-return valve - vehicles with 2.0 ltr. TFSI engine”, page 187](#)

➔ [“4.4.2 Removing and installing non-return valve - vehicles with TDI engine”, page 188](#)

4.4.1 Removing and installing non-return valve - vehicles with 2.0 ltr. TFSI engine



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

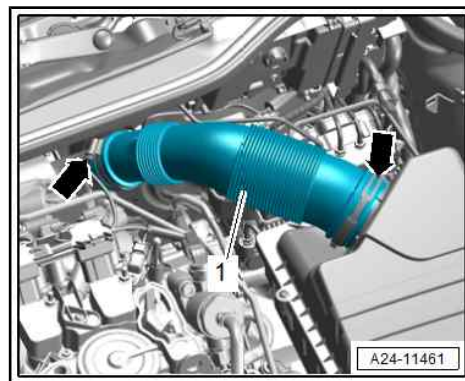


Note

The non-return valve is integrated into the vacuum hose and cannot be renewed separately.

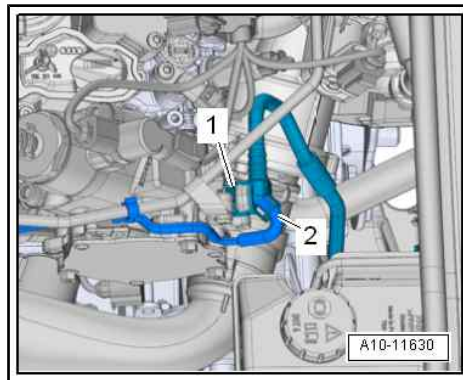
Removing

- Remove engine cover panel ➔ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .
- Release hose clips -arrows- and remove air intake pipe -1-.





- Disconnect vacuum hose -2-.
- Press release tabs on both sides of vacuum hose -1- and disconnect hose from vacuum pump.



- Unplug electrical connector -1- on brake servo pressure sensor - G294- .
- Disconnect vacuum hose -2- from brake servo and remove.



Caution

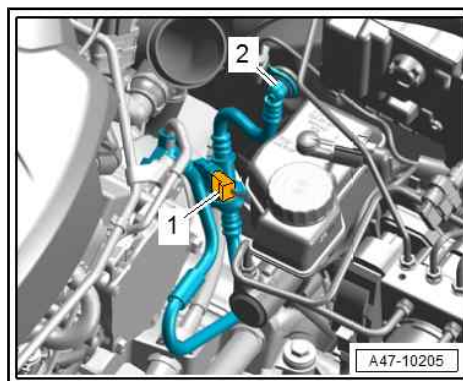
Take care not to damage the vacuum hose. The vacuum hose must be renewed if it is damaged.

- If necessary, remove brake servo pressure sensor - G294- .

Installing

Installation is carried out in reverse order; note the following:

- Locate vacuum hose with non-return valve in installation position and attach connections.



Note

For easier assembly, moisten the connections of the non-return valve and vacuum hose slightly with water; do not use oil.

- Install engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .

4.4.2 Removing and installing non-return valve - vehicles with TDI engine



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



Note

The non-return valve is integrated into the vacuum hose and cannot be renewed separately.

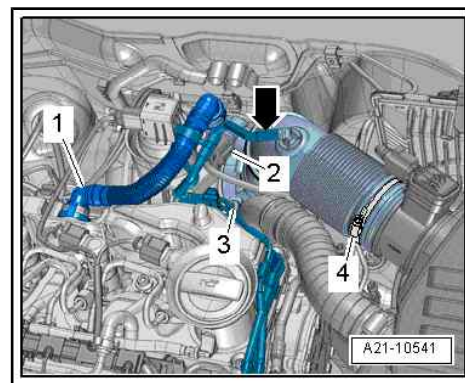
Removing

- Remove engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .

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- Version for cold climates: Unplug electrical connector -2-.
- Press release tabs and detach crankcase breather hose -1-.
- Disconnect vacuum hose -arrow-.
- Release hose clip -4- and disconnect air intake pipe from air cleaner housing.
- Unscrew bolt -3-, pivot air intake pipe towards rear and remove.

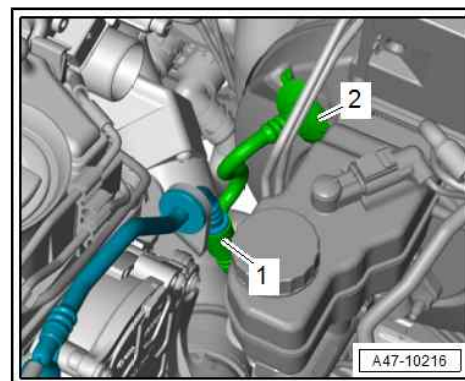


- Disconnect vacuum hose -2- from brake servo and disconnect hose at connection -1-.
- Take off vacuum hose with non-return valve.



Caution

Take care not to damage the vacuum hose. The vacuum hose must be renewed if it is damaged.



Installing

Installation is carried out in reverse order; note the following:

- Locate vacuum hose with non-return valve in installation position and attach connections.



Note

For easier assembly, moisten the connections of the non-return valve and vacuum hose slightly with water; do not use oil.

- Install air intake pipe ⇒ Rep. gr. 21 ; Charge air system; Exploded view - hose connections for charge air system .
- Install engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .

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4.5 Removing and installing vacuum sender - G608-

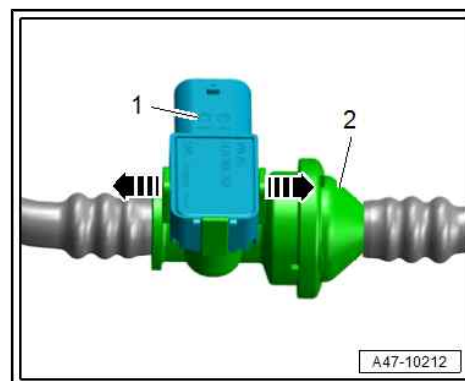
Removing

- Remove non-return valve ⇒ [page 187](#) .
- Release catches -arrows- and detach vacuum sender - G608- -item 1- from non-return valve -2-.

Installing

Installation is carried out in reverse order; note the following:

- Press in vacuum sender - G608- until it engages audibly.
- Install non-return valve ⇒ [page 187](#) .





4.6 Checking vacuum system

⇒ [“4.6.1 Test and test requirements”, page 190](#)

⇒ [“4.6.2 Connecting brake servo tester”, page 190](#)

⇒ [“4.6.3 Checking vacuum generation”, page 191](#)

⇒ [“4.6.4 Checking for leaks”, page 192](#)

⇒ [“4.6.5 Generating vacuum with hand vacuum pump”, page 193](#)

4.6.1 Test and test requirements

The following instructions are intended to help you trace the causes of faults quickly and effectively in the event of problems involving the brake servo or in the event of a »hard brake pedal«.

This check relates to the following components:

- ◆ Brake servo
- ◆ Seal between brake master cylinder and brake servo.
- ◆ Non-return valve
- ◆ Vacuum hoses with connectors
- ◆ Vacuum pump (if fitted)

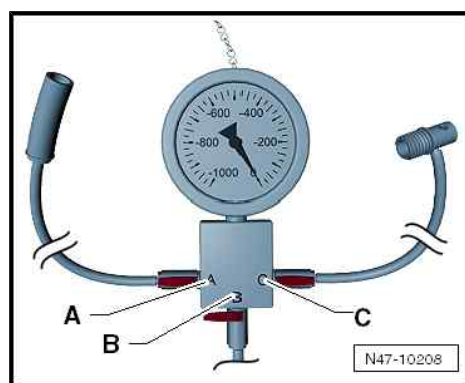
When evaluating the measured results, bear in mind that they will be influenced by your geographical location. The higher your location is above sea level, the lower the air pressure will be.

Before checking the vacuum system, it is important to observe the following test requirements:

- ◆ Visual inspection of all vacuum hoses for damage (e.g. cracks or animal bites) and to check that they are correctly and firmly attached
- ◆ Ensure cleanliness when working on the vacuum system
- ◆ Before starting work, clean the engine compartment if necessary

Special tools and workshop equipment required

- ◆ Brake servo tester - VAS 6721-



4.6.2 Connecting brake servo tester

- Pull vacuum hose out of brake servo.



Note

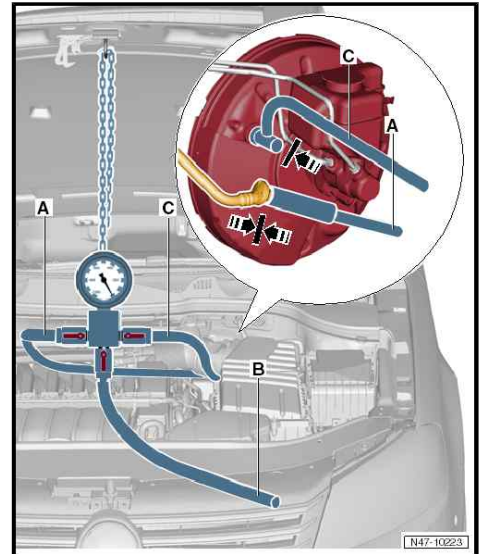
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First press the brake pedal several times in order to facilitate removal of the vacuum hose.

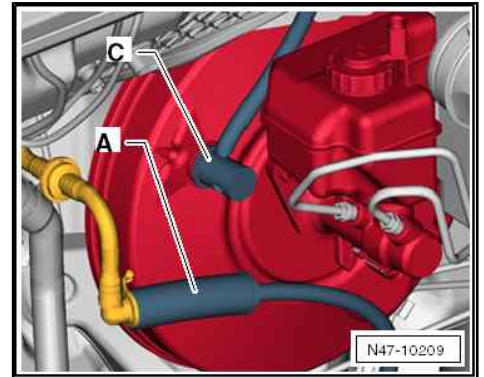


- Connect brake servo tester - VAS 6721- .

Item	Component	Explanation
A	Shut-off valve	To vacuum hose, non-return valve and (if fitted) vacuum pump
B	Shut-off valve	◆ Open to facilitate removal of brake servo tester - VAS 6721- ◆ Open to simulate a fault ◆ Connection for hand vacuum pump - VAS 6213-
C	Shut-off valve	To brake servo



- Push hose -A- of brake servo tester - VAS 6721- onto vacuum hose and press adapter -C- into brake servo.



4.6.3 Checking vacuum generation



Note

- ◆ *The mean atmospheric pressure at sea level is 1013 mbar and decreases rapidly with increasing altitude (approx. 100 mbar per 1,000 m of altitude). Fluctuations at different locations and times also influence vacuum generation.*
- ◆ *A cold engine, an active air-conditioning system as well as engine idling have an adverse influence on vacuum generation.*
- Before starting work, check all vacuum hoses for damage (e.g. cracks or animal bites) and make sure they are correctly and securely attached.
- Connect brake servo tester - VAS 6721- ➔ [page 190](#) .

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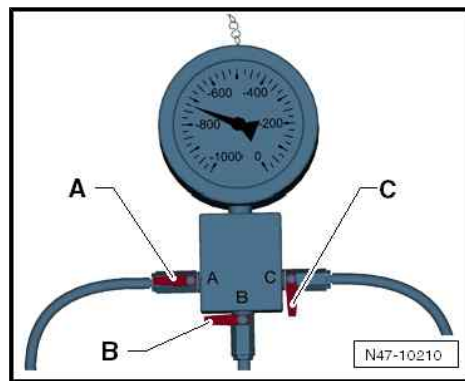
- Open shut-off valve -A-.
- Close shut-off valves -B and C-.
- Start warm engine ($>60^{\circ}\text{C}$), press accelerator briefly (engine speed greater than 2000/min).
- Read indicated value.

Under normal conditions (see notes), the generated vacuum should be between 600 and 950 mbar (depending on engine version).

If the specified value is not obtained even though the test conditions (see notes) have been met, the vacuum system must first be checked for leaks.

- For comparison purposes, generate the vacuum with the hand vacuum pump - VAS 6213- ➔ [page 193](#) .

Open shut-off valve -B- to facilitate removal of hose connections and adapter.



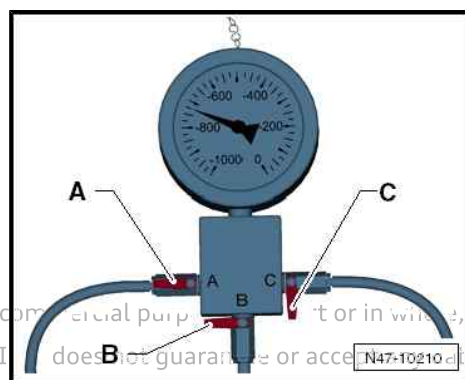
4.6.4 Checking for leaks



Note

- ♦ *The mean atmospheric pressure at sea level is 1013 mbar and decreases rapidly with increasing altitude (approx. 100 mbar per 1,000 m of altitude). Fluctuations at different locations and times also influence vacuum generation.*
- ♦ *A cold engine, an active air-conditioning system as well as engine idling have an adverse influence on vacuum generation.*
- Before starting work, check all vacuum hoses for damage (e.g. cracks or animal bites) and make sure they are correctly and securely attached.
- Connect brake servo tester - VAS 6721- ➔ [page 190](#) .
- Open shut-off valve -A-.
- Close shut-off valves -B and C-.
- Start warm engine ($>60^{\circ}\text{C}$), press accelerator briefly (engine speed greater than 2000/min).

Under normal conditions (see notes), the generated vacuum should be between 600 and 950 mbar (depending on engine version).



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- Open shut-off valve -C- to evacuate brake servo.
- Switch off engine.
- Read and make a note of measured value shown.
- A vacuum decrease of 400 mbar in 12 hours is permissible.



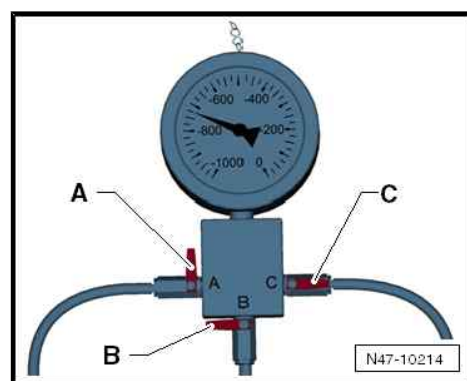
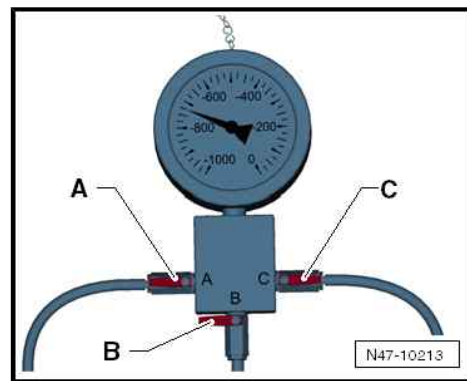
Note

If there are major leaks, the vacuum will decrease rapidly within a few seconds.

- If there is a large drop in vacuum, trace the leak as follows:

A - Vacuum check in vicinity of brake servo

- After building up vacuum, close shut-off valve -A- in order to check brake servo vacuum system.

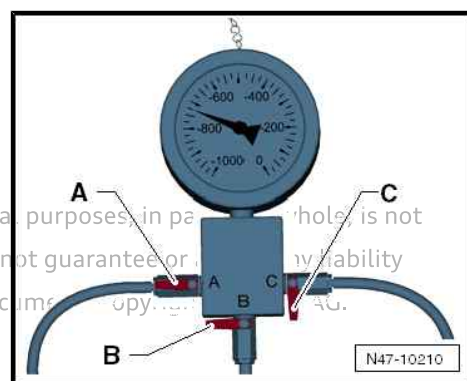


B - Vacuum check in vicinity of non-return valve, vacuum hoses with connectors and vacuum pump/intake manifold:

- After building up vacuum, close shut-off valve -C- in order to check vacuum system from brake servo tester - VAS 6721- to intake manifold or vacuum pump.

Open shut-off valve -B- to facilitate removal of hose connections and adapter.

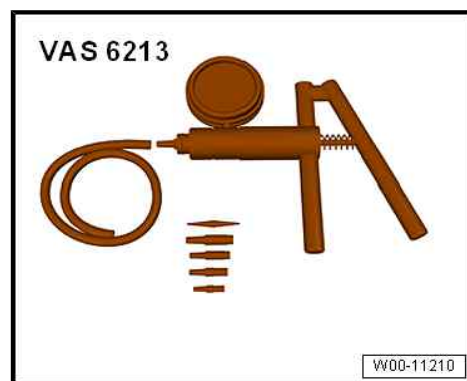
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4.6.5 Generating vacuum with hand vacuum pump

Special tools and workshop equipment required

- ◆ Hand vacuum pump - VAS 6213-





Instead of vacuum generation using the engine or vacuum pump, vacuum can also be generated by means of the hand vacuum pump - VAS 6213- in certain cases.

- To do this, connect hand vacuum pump - VAS 6213- to vacuum hose from connection -B- on brake servo tester - VAS 6721- .
- Open shut-off valve -B-.
- Generate vacuum with hand vacuum pump - VAS 6213- until brake servo tester - VAS 6721- indicates between 600 and 950 mbar.
- Then carry out the corresponding checks.

4.7 Removing and installing electric vacuum pump



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

Removing

- Use suitable pliers to release hose clip on vacuum hose.
- Detach vacuum hose from vacuum pump for brakes - V192- .



Caution

Take care not to damage the vacuum hose. The vacuum hose must be renewed if it is damaged.

- Unplug electrical connector.



Note

Unbolt the bracket to facilitate removal of the vacuum pump from the bracket.

- Unscrew nuts for bracket.
- Take bracket with vacuum pump out of vehicle.
- Unfasten both clips on vacuum pump and detach.
- Pull vacuum pump for brakes - V192- upwards out of bracket.

Installing



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*
- Insert vacuum pump in bracket.



Note

*Make sure the vacuum pump is properly positioned in the bracket.
The vacuum connection faces in the direction of travel.*

- Use the two clips to secure the vacuum pump in the bracket.
- Insert the bracket with the vacuum pump in the two pins in the vehicle.
- Secure bracket with two new self-locking nuts.
- Fit new hose clip on vacuum hose.



Caution

Take care not to damage the vacuum hose. The vacuum hose must be renewed if it is damaged.

- Use suitable pliers to fasten hose clip.
- Plug in electrical connector.

Tightening torques

- ◆ ⇒ [“4.1 Exploded view - electric vacuum pump”, page 183](#)

4.8 Removing and installing vacuum pump

⇒ [“4.8.1 Removing and installing vacuum pump - vehicles with 2.0 ltr. TFSI engine”, page 195](#)

⇒ [“4.8.2 Removing and installing vacuum pump - vehicles with TDI engine”, page 197](#)

4.8.1 Removing and installing vacuum pump

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Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

Removing

- Remove high-pressure pump ⇒ Rep. gr. 24 ; High-pressure pump; Removing and installing high-pressure pump .



Caution

Risk of damage to coolant line

- ◆ *Do not attempt to bend coolant line to a different shape.*

- Remove bolts -1-, 2 and 3- and carefully push coolant line slightly to one side.



Note

with respect to the correctness of information in this do

Disregard items marked -4- and -arrow-.

- Press release tabs on both sides and disconnect vacuum hose -2- from vacuum pump -1-.
- Remove bolts -arrows- and detach vacuum pump.

Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



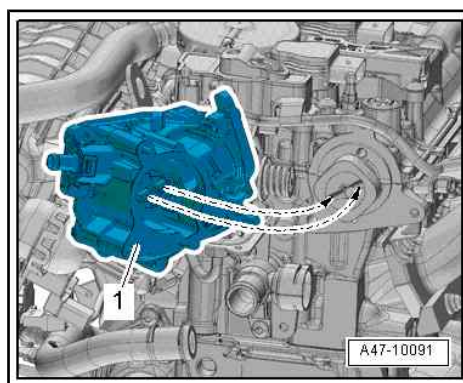
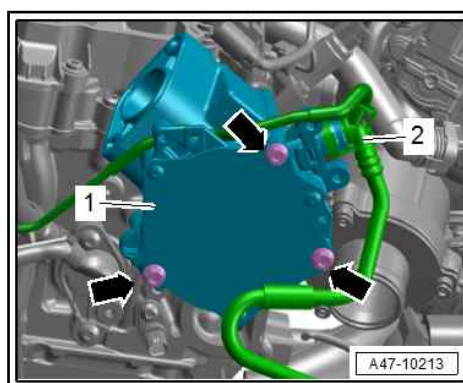
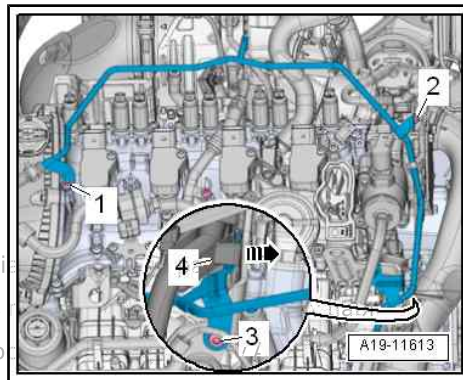
Note

Renew gasket.

- Ensure that gasket is seated correctly.
- Turn drive lugs of vacuum pump -1- so they engage in slot in camshaft when vacuum pump is installed -arrows-.

Tightening torques

- ◆ ⇒ ["4.2.1 Exploded view - vacuum pump, vehicles with 2.0 ltr. TFSI engine", page 185](#)
- ◆ ⇒ Rep. gr. 24 ; High-pressure pump; Exploded view - high-pressure pump





4.8.2 Removing and installing vacuum pump - vehicles with TDI engine



Note

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- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*

Removing

- Remove engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .
- Remove air cleaner housing ⇒ Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing .



- Detach vacuum hose -2- upwards from vacuum pump.



Caution

Take care not to damage the vacuum hose. The vacuum hose must be renewed if it is damaged.

- Remove bolts -arrows- from sealing flange of vacuum pump.
- Pull vacuum pump out of its mounting and detach.

Installing

Installation is carried out in reverse order; note the following:



Note

- ◆ *Clean bolts and nuts before reusing.*
- ◆ *Always renew self-locking bolts/nuts.*
- ◆ *Always renew damaged bolts/nuts.*



Note

Renew gasket.

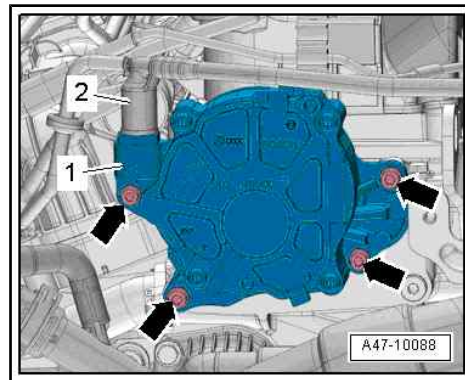
- Turn drive lugs of vacuum pump so they engage in slots in camshaft when vacuum pump is installed.
- Fit vacuum pump.
- Make sure that gasket is seated correctly.
- Install air cleaner housing ⇒ Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing .
- Install engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .



WARNING

Risk of accident!

- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*



Tightening torques

- ◆ ⇒ [“4.2.2 Exploded view - vacuum pump, vehicles with TDI engine”, page 186](#)



5 Brake lines

⇒ **"5.1 Routing of brake lines", page 199**

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⇒ **"5.2 Repairing brake lines", page 199**

5.1 Routing of brake lines

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- ◆ The brake lines and brake pipes are supplied as replacement parts ready for installation.
- ◆ Secure brake hoses and brake lines to the original mounting points when installing.



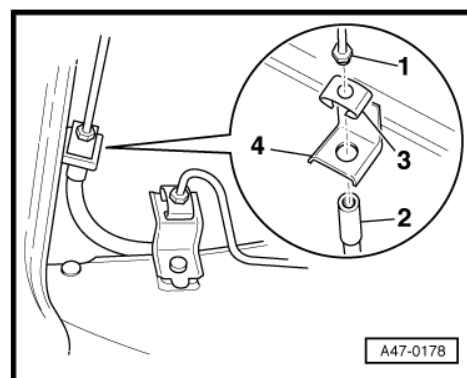
WARNING

Risk of accident!

- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*

Routing of brake lines

- 1 - Brake line
- 2 - Brake hose
- 3 - Retaining spring
- 4 - Brake hose retainer



5.2 Repairing brake lines

With the aid of the flanging tool for brake lines - VAS 6056- it is possible to make connections on the ends of the brake lines without damaging the coating. In certain cases this makes it possible to replace sections of brake lines and thus save repair costs.



Caution

Risk of damage to brake lines

- ◆ *The flaring tool set V.A.G 1356 must not be used for the black brake lines because of the coating and the diameter of these brake lines.*
- ◆ *Do not bend brake lines more than 90°; this would cause kinks or other deformations which would excessively restrict the brake lines.*

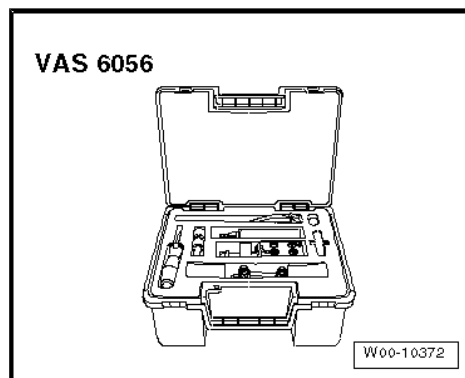


Note

- ◆ *Wherever possible, disconnect the brake lines on the under-side of the vehicle.*
- ◆ *Select the position of the connecting pieces so that they cannot chafe against any moving parts.*
- ◆ *Do not grease the spindle; clean with methylated spirits or commercially available brake cleaner only.*

Special tools and workshop equipment required

- ◆ Flanging tool for brake lines - VAS 6056-



List of individual tools



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**1 - Flanging tool -VAS 6056/1-
(including jaws -VAS 6056/6-)**

2 - Pipe cutter -VAS 6056/2-

**3 - Brake line scraper tool -VAS
6056/3-**

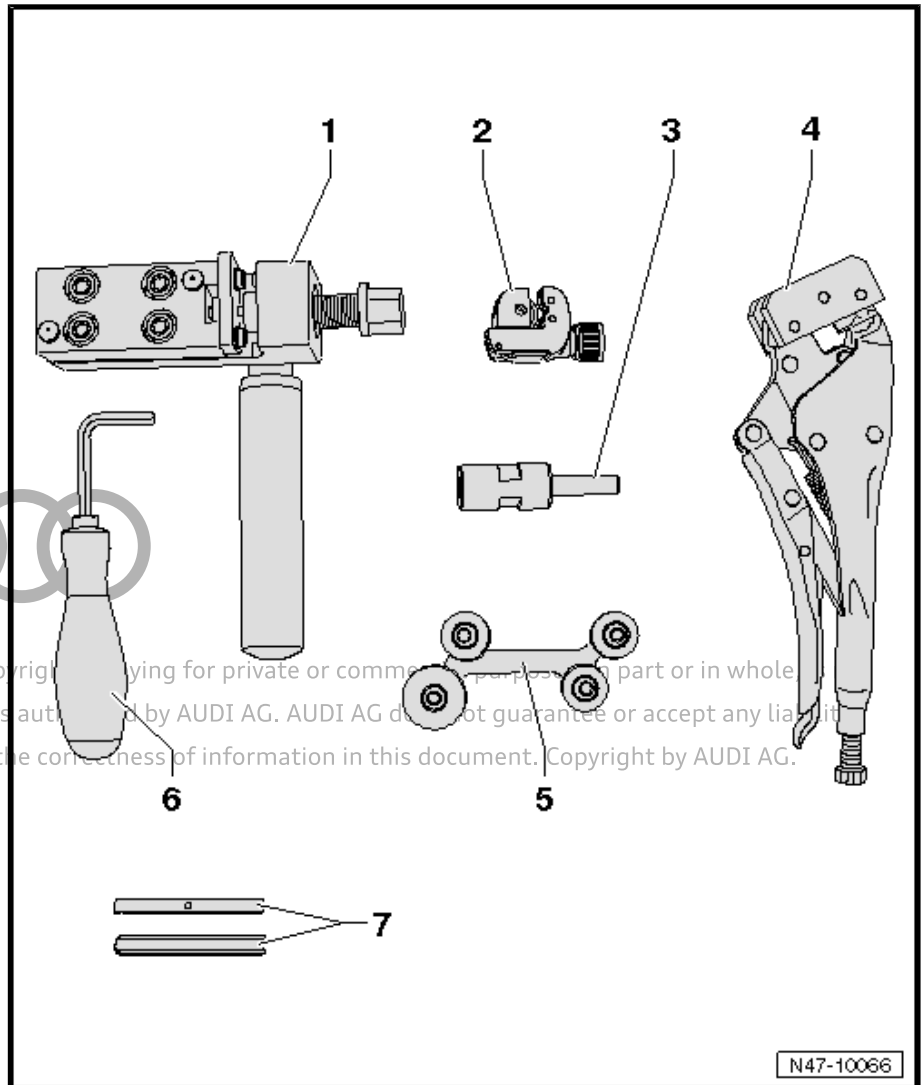
- ❑ The grub screws (in the stem and on the sides of the tool) are pre-set and must not be turned.

**4 - Set of grips with plastic jaws
-VAS 6056/4-**

**5 - Pipe bending tool -VAS
6056/5-**

6 - Allen key (6 mm)

**7 - Jaws for flanging tool -VAS
6056/6- , -VAS 6056/7-**



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N47-10066

Flanging tool (including jaws VAS 6056/6)



1 - Top section of flanging tool

- ❑ Unscrew this part to change jaws of flanging tool

2 - Mounting for handle

- ❑ Must be removed to access retaining screw for top section

3 - Retaining screw

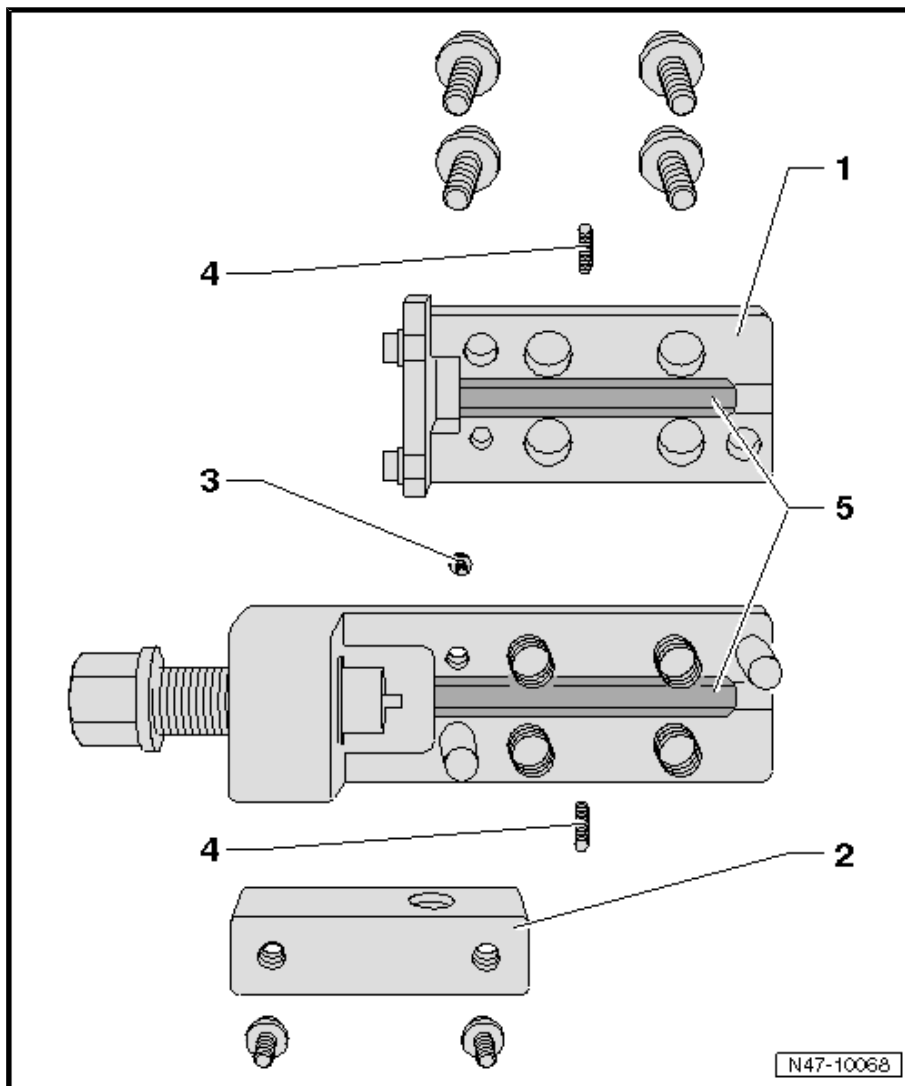
- ❑ For top section of flanging tool

4 - Grub screws for jaws

- ❑ These screws centralise and secure jaws of flanging tool
- ❑ 2 mm socket head

5 - Jaws for flanging tool

- ❑ Different versions available
- ❑ Assembly instructions ➔ [page 202](#)



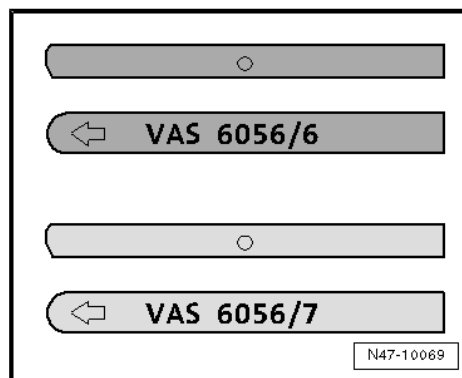
Assembly instructions for jaws of flanging tool:

- ◆ VAS 6056/6 (dark) for black brake lines
- ◆ VAS 6056/7 (light) for green brake lines



Note

The arrow on the rounded end of the jaws must face the end of the housing and the straight end of the jaws must face the spindle, otherwise the flanged connection on the brake line will not be formed correctly.

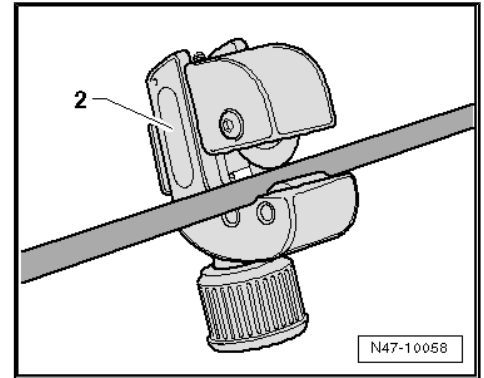


Instructions for use

- Unscrew defective brake line at brake caliper or wheel brake cylinder. Catch escaping brake fluid and dispose of fluid in the correct manner.



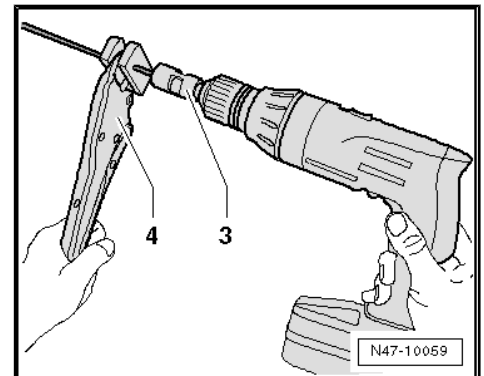
- Cut through brake line at a suitable point (straight, easily accessible section of pipe) using pipe cutter -2-.
- Remove section of pipe to be replaced.
- De-grease outside surface of brake lines.



- Clamp brake line in mole grips -4- so that approx. 50mm protrudes out of plastic jaws.
- Clamp brake line scraper tool -3- in electric drill and apply tool to brake line.
- With electric drill running at slow speed, exert light pressure and strip off coating from brake line.

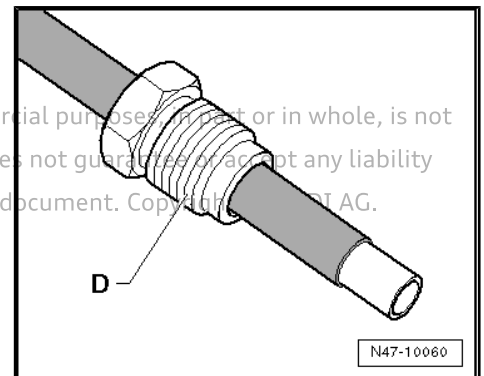
The length of the coating that is stripped off is determined by the limit stop incorporated in the brake line scraper tool.

- Pull scraper tool off brake line and clean off residue of coating.



- Remove mole grips and slide union screw -D- onto brake line.

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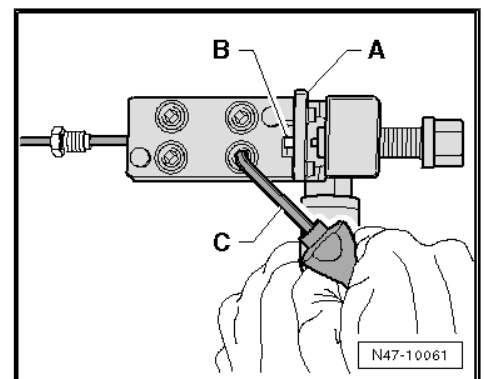
- Push brake line -B- against limit stop -A- in flanging tool.



Note

The brake line must be in contact with the limit stop when the socket head bolts are tightened, otherwise the flanged connection on the brake line will not be formed correctly.

C - Allen key

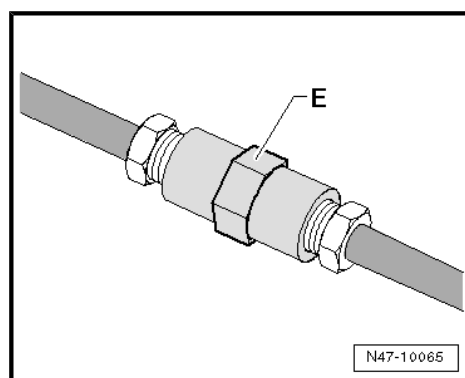
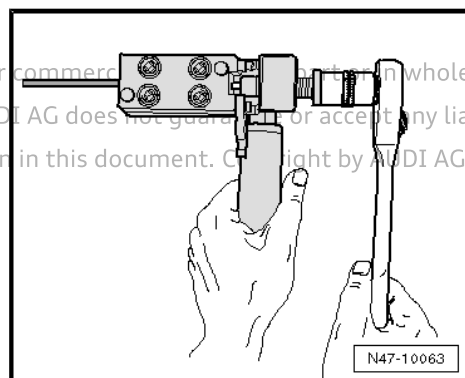
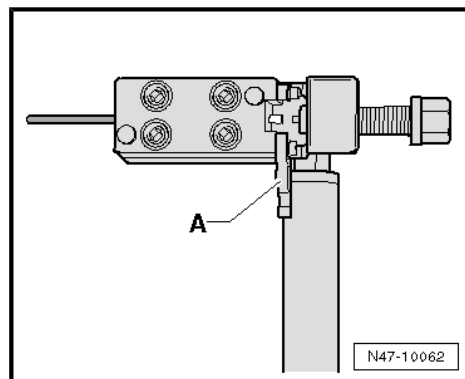




- Clamp brake line in flanging tool until brake line can no longer be moved. Then fold up limit stop -A- and fully tighten socket head bolts in diagonal sequence using Allen key.



- Screw spindle into flanging tool onto limit stop.
- Unscrew spindle.
- Slacken off socket head bolts in diagonal sequence.
- Take brake line out of flanging tool. Clean and inspect brake line with flanged connection.
- Connect brake filling and bleeding equipment - VAS 5234- and briefly flush out section of pipe remaining in vehicle.
- Attach hose of reservoir to flanged connection of brake line and operate brake filling and bleeding equipment - VAS 5234- briefly until some brake fluid has run through.
- Blow out new section of brake line with compressed air before installing.
- Join together sections of brake line with connecting piece -E-.
- Install brake line.
- Finally, bleed brake system ➤ [page 207](#) .





6 Hydraulic system

⇒ [“6.1 General notes on brake fluid”, page 205](#)

⇒ [“6.2 Pre-bleeding hydraulic system”, page 207](#)

⇒ [“6.3 Bleeding hydraulic system”, page 207](#)

⇒ [“6.4 Leak test”, page 213](#)

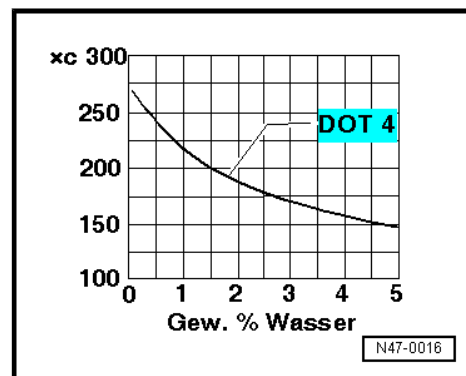
6.1 General notes on brake fluid

Brake fluid is hygroscopic, i.e. it has the tendency to absorb water and moisture from the atmosphere.

The boiling point decreases as the water content increases, which means a considerable rise in brake fluid temperature can lead to formation of vapour bubbles and brake failure.

The colour of the brake fluid becomes darker over the course of time. A dark brake fluid colour is not an indication of its condition. The change in colour is caused by chemical reactions.

Even minute quantities coming into contact with a seal or sleeve will affect the component and could impair brake operation. The consequences of a contaminated brake system only become apparent months later, and then give rise to greater expenses, particularly in vehicles equipped with ABS.





A = Sleeve (original size)

B = Sleeve (swollen due to contact with mineral oil)

Summary of the above mentioned points:

- ◆ Always keep brake fluid containers properly sealed. This is the only way of preventing contamination by oil, dirt, cleaning agents or moisture.
- ◆ Brake fluid containers should be kept completely separate from oils (including hydraulic fluid) and cleaning agents to prevent any mixture of fluids or even filling of the brake system with an incorrect fluid.



WARNING

Health risk!

- ◆ *Brake fluid is poisonous and must NOT be drawn off by sucking through a hose.*
- ◆ *Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.*
- ◆ *Always observe the relevant environmental regulations for disposal.*

Accident risk: if the water content in the brake fluid is too high, this can cause vapour bubbles in the fluid.

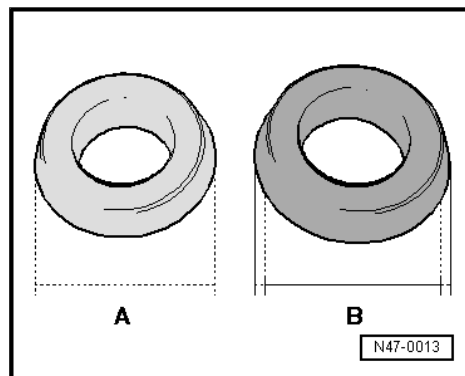
- ◆ *Brake fluid is hygroscopic, i.e. it absorbs moisture from the surrounding air.*
- ◆ *Seal open connections immediately using sealing plugs from repair kit 1H0 698 311 A.*
- ◆ *Always keep brake fluid in sealed airtight containers.*

Risk of malfunction if brake fluid comes into contact with fluids containing mineral oils.

- ◆ *Brake fluid must NOT come into contact with fluids containing mineral oils (oil, petrol, cleaning agents). Protective gloves must be free of oil and grease.*

Risk of damage to paintwork surfaces

- ◆ *Due to its corrosive effect, brake fluid must not be allowed to come into contact with paintwork. Rinse off brake fluid spillages immediately using plenty of water.*



Note

- ◆ *Use only new brake fluid.*
- ◆ *Rinse off brake fluid spillages using plenty of water.*



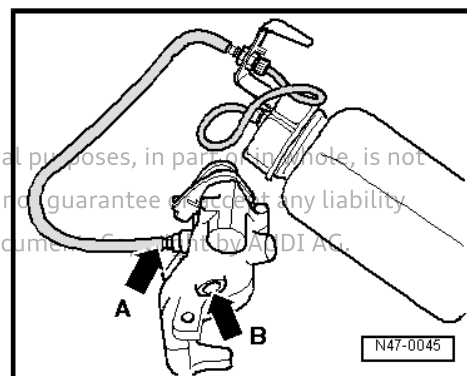
6.2 Pre-bleeding hydraulic system

Procedure

- Open bleeder screw -arrow A- and fill with brake fluid from a commercially available bleeder container until bubble-free fluid emerges from hole (brake hose connection) -arrow B-. Close bleeder screw.

Position brake caliper as illustrated for pre-bleeding

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6.3 Bleeding hydraulic system

⇒ [“6.3.1 Bleeding hydraulic system with brake filling and bleeding equipment”, page 207](#)

⇒ [“6.3.2 Bleeding hydraulic system without brake filling and bleeding equipment”, page 211](#)

6.3.1 Bleeding hydraulic system with brake filling and bleeding equipment

Special tools and workshop equipment required

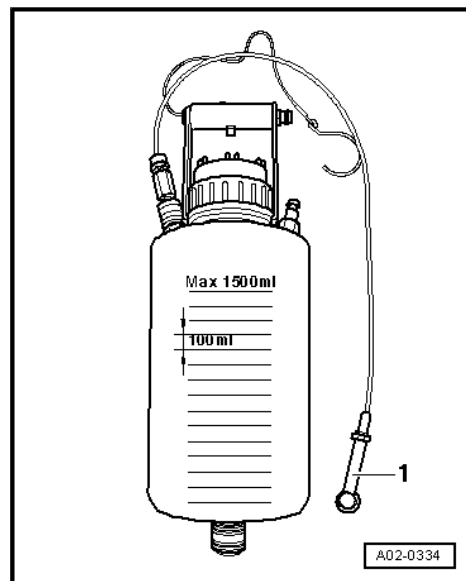
- ◆ Brake filling and bleeding equipment - VAS 5234- with adapter - VAS 5234/1A-



- ◆ or:
- ◆ Brake filling and bleeding equipment - VAS 6860-
- ◆ Observe instructions given in operating manual for - VAS 5234- or brake filling and bleeding equipment - VAS 6860- .



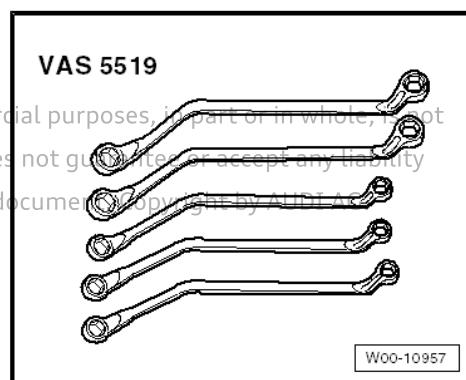
- ◆ Reservoir from brake filling and bleeding equipment - VAS 5234-



- ◆ Brake pipe bleeding wrench - VAS 5519-



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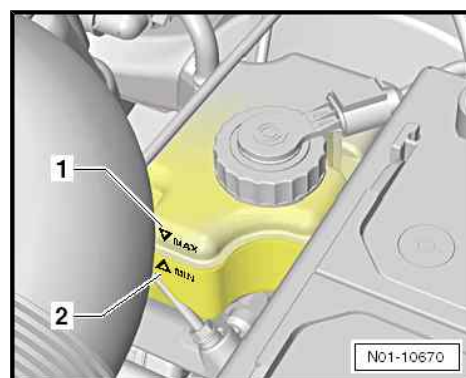


- ◆ Tool set for brake bleeding - VAS 6564-



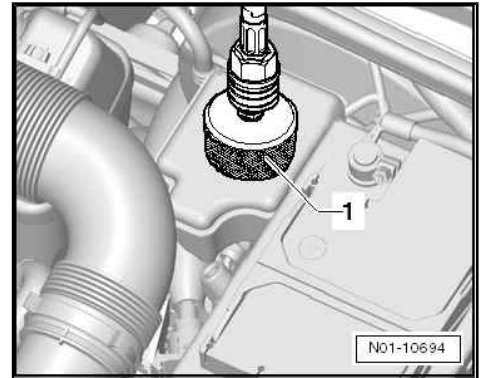
Procedure

- Fill up brake fluid reservoir to "MAX" mark -1-.
- Connect brake filling and bleeding equipment - VAS 5234- with adapter - VAS 5234/1- or brake filling and bleeding equipment - VAS 6860- .

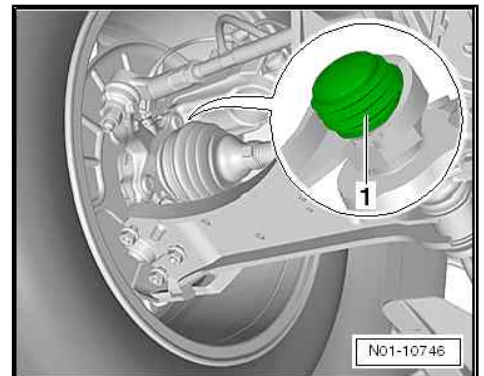




- Screw adapter -1- onto brake fluid reservoir.
- Set correct pressure on -VAS 5234- / -VAS 6860- ; observe ⇒ operating instructions for -VAS 5234- / -VAS 6860- .



- Detach protective cap -1- on bleeder screw at front left and front right brake calipers.



- Detach protective cap -1- on bleeder screw at rear left and rear right brake calipers.



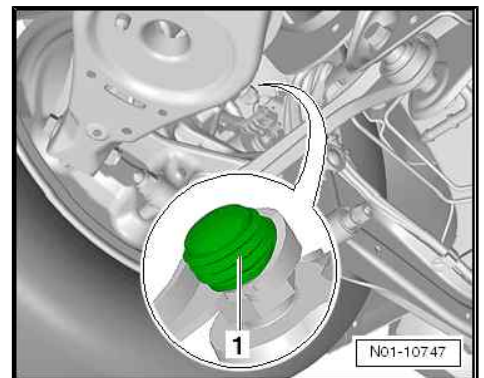
Note

Use appropriate bleeder hose. It must sit tightly on the bleeder screw so that no air can enter the brake system.

- Fit bleeder hose of reservoir onto bleeder screw.

Bleeding sequence

- 1 - Front left brake caliper
- 2 - Front right brake caliper
- 3 - Rear left brake caliper
- 4 - Rear right brake caliper



Note

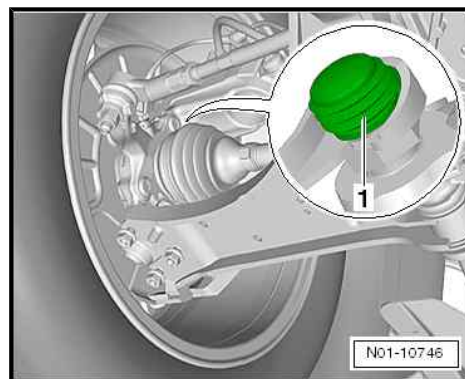
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Bleed brake caliper at each bleeder screw. If brake caliper has two bleeder screws, first bleed at outer screw.

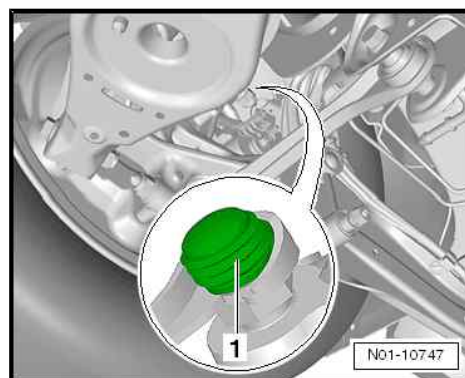
- With bleeder hose attached, leave bleeder screw open until the brake fluid which emerges is clear and free from bubbles.
- Press brake pedal 5 times to assist bleeding process.
- Tighten bleeder screw, detach bleeder hose and fit protective cap on bleeder screw.
- Repeat bleeding procedure in stated sequence at other brake calipers.



- Fit protective cap -1- at front left and right.



- Fit protective cap -1- at rear left and right.



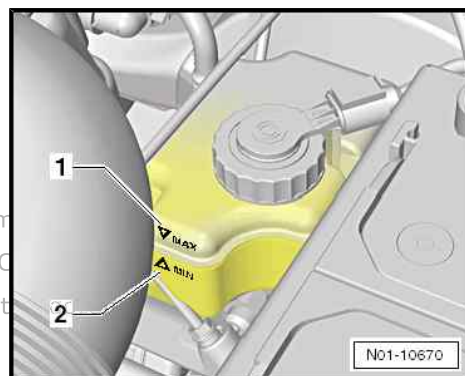
- Fill brake fluid reservoir up to max. marking (depending on degree of pad wear) and screw on filler cap.



Note

To prevent brake fluid from overflowing from the reservoir, the brake fluid level must not be above the "MAX" mark -1-.

- Start engine and check brake pedal travel and brake pedal pressure.
- In the event of excessive pedal travel, check brake system for leaks and/or repeat bleeding procedure.
- Zero compensation for brake pressure sender 1 - G201- must be performed after bleeding brake system ⇒ Vehicle diagnostic tester.



Perform road test after completion of bleeding. At least one ABS control operation must be applied at all four wheels.

Brake fluid change

⇒ Maintenance ; Booklet 819



WARNING

Risk of accident!

- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*

Tightening torques

- ◆ ⇒ ["1.1 Exploded view - front brake caliper", page 138](#)
- ◆ ⇒ ["2.1 Exploded view - rear brake caliper", page 148](#)

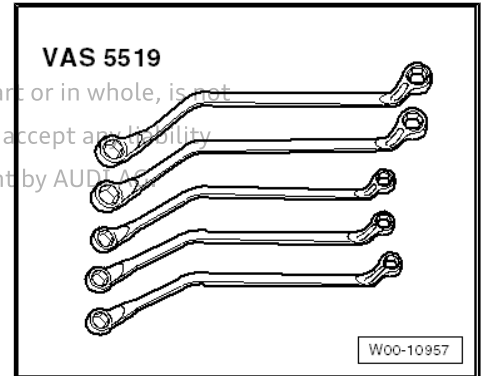


6.3.2 Bleeding hydraulic system without brake filling and bleeding equipment

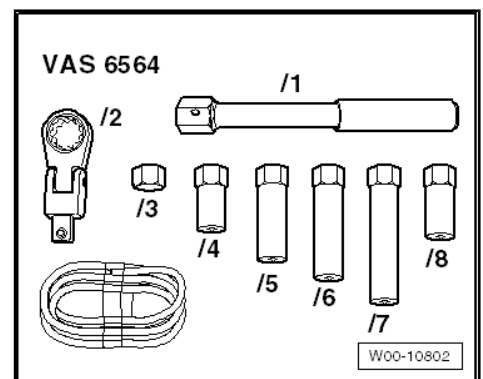
Special tools and workshop equipment required

- ◆ Reservoir
- ◆ Brake pipe bleeding wrench - VAS 5519-

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- ◆ Tool set for brake bleeding - VAS 6564-



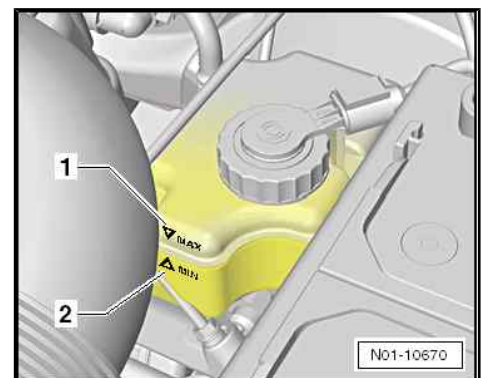
Procedure

- Fill up brake fluid reservoir to “MAX” mark -1-.

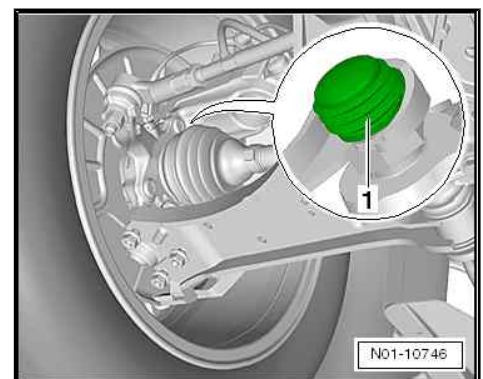


Note

Make sure brake fluid reservoir is always full.



- Detach protective cap -1- on bleeder screw at front left and front right brake calipers.





- Detach protective cap -1- on bleeder screw at rear left and rear right brake calipers.



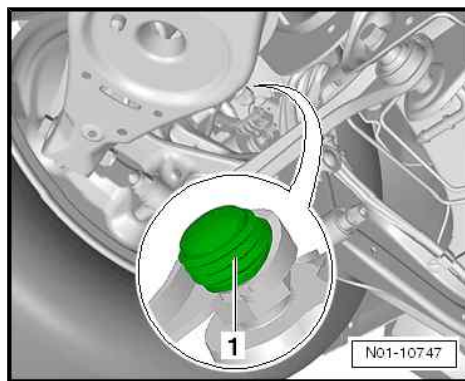
Note

Use appropriate bleeder hose. It must sit tightly on the bleeder screw so that no air can enter the brake system.

- Fit bleeder hose of reservoir onto bleeder screw.

Bleeding sequence

- 1 - Front left brake caliper
 - 2 - Front right brake caliper
 - 3 - Rear left brake caliper
 - 4 - Rear right brake caliper
- Build up pressure in brake system by pumping brake pedal.

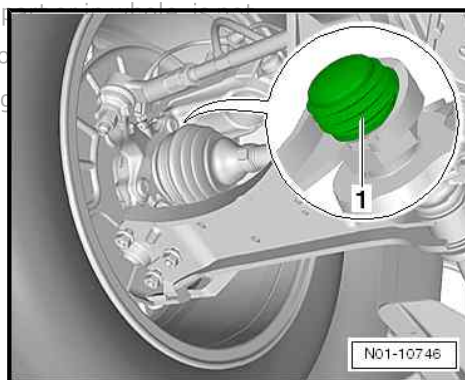


Note

Press brake pedal slowly to avoid formation of bubbles.

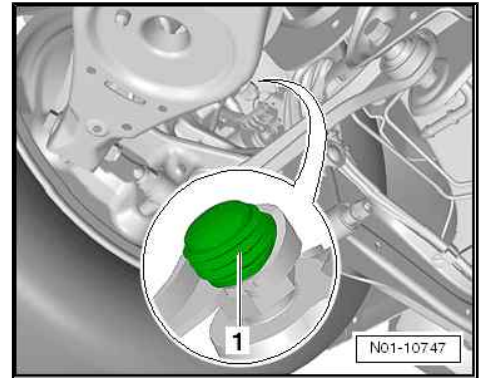
- Once pressure has built up, keep brake pedal depressed.
- Open bleeder screw with hose of reservoir attached until pressure has dissipated (pedal sags).
- Keep pedal depressed and close bleeder screw.
- Release brake pedal and wait approx. 2 seconds to allow brake fluid to flow in from brake fluid reservoir.
- Repeat procedure until emerging brake fluid is clear and free from bubbles.
- Tighten bleeder screw and disconnect bleeder hose.
- Repeat bleeding procedure in stated sequence at other brake calipers.

- Fit protective cap -1- at front left and right.
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- Fit protective cap -1- at rear left and right.
- Fill up brake fluid reservoir to “MAX” mark.



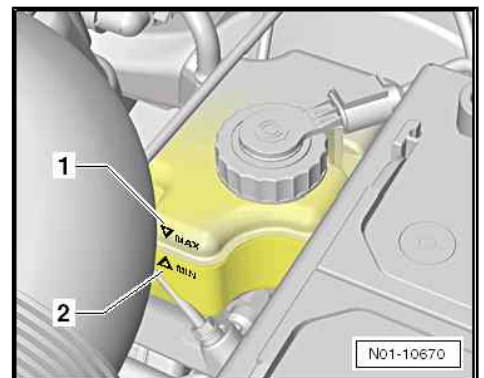
- Fill brake fluid reservoir up to max. marking (depending on degree of pad wear) and screw on filler cap.



Note

To prevent brake fluid from overflowing from the reservoir, the brake fluid level must not be above the “MAX” mark -1-.

- Start engine and check brake pedal travel and brake pedal pressure.
- In the event of excessive pedal travel, check brake system for leaks and/or repeat bleeding procedure.



Brake fluid change

⇒ Maintenance ; Booklet 819



WARNING

Risk of accident!

- ◆ *Make sure that the brakes work properly before the vehicle is driven on the road.*

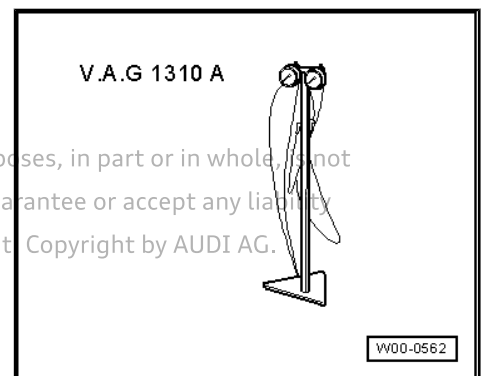
Tightening torques

- ◆ ⇒ [“1.1 Exploded view - front brake caliper”, page 138](#)
- ◆ ⇒ [“2.1 Exploded view - rear brake caliper”, page 148](#)

6.4 Leak test

Special tools and workshop equipment required

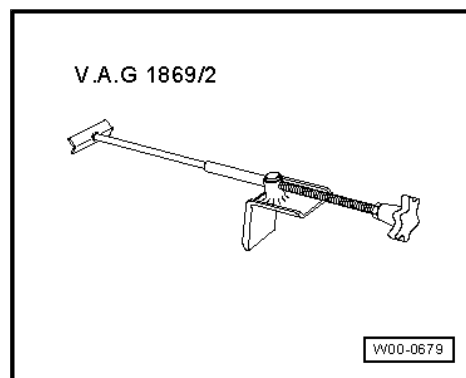
- ◆ Tester for brake pressure regulator - V.A.G 1310A-



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◆ Brake pedal actuator - V.A.G 1869/2-



High-pressure test:

- Make sure that the brake system (master cylinder, brake hoses, brake lines and brake calipers) works properly and is free of leaks.
- Unscrew bleeder screw at one of the front brake calipers. Connect tester for brake pressure regulator - V.A.G 1310A- and bleed.
- Insert brake pedal actuator - V.A.G 1869/2- between brake pedal and driver's seat. Apply pressure to brake pedal until the gauge indicates a pressure of 50 bar. The pressure must not drop by more than 4 bar during the test period of 45 seconds.

Renew brake master cylinder if drop in pressure exceeds the specification.

Low-pressure test:

- Move the brake pedal actuator back until the pressure gauge indicates a pressure of 6 bar.
- The pressure should not drop by more than 1 bar within the test period of 3 minutes.

Renew brake master cylinder if drop in pressure exceeds the specification.

