

# Audi

## Repair Manual Audi TT 2007 >

This document is not to be used for any other purpose or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

### Brake System

Edition 04.2009

## List of Workshop Manual Repair Groups

### Repair Group

- 00 - General, Technical Data
- 45 - Antilock Brake System
- 46 - Mechanical Components
- 47 - Hydraulic Components



Audi

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



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.

**All rights reserved.**  
No reproduction without prior agreement from publisher.

## Contents

<b>00</b>	<b>General, Technical Data</b>	<b>1</b>
1	<b>General Information</b>	1
1.1	Brake Fluid	1
1.2	Brakes, Testing	1
2	<b>Specifications</b>	2
2.1	Technical Data	2
3	<b>Diagnosis and Testing</b>	4
3.1	Brake Testing, FWD	4
3.2	Brake Testing, AWD with Haldex Clutch	4
3.3	Brake Test on a Conventional Brake Test Stand, AWD with Haldex Clutch	4
<b>45</b>	<b>Antilock Brake System</b>	<b>5</b>
1	<b>General Information</b>	5
1.1	ABS Repair Information	5
2	<b>Description and Operation</b>	7
2.1	VAS 5051, Connecting and Selection Functions	7
2.2	ABS/ESP Mark 60 Brake System Component and Installation Location Overview	9
2.3	ABS Control Module and ABS Hydraulic Unit ABS/ESP Mark 60 Assembly Overview	12
2.4	Front ABS Wheel Speed Sensor Assembly Overview	13
2.5	Rear ABS Wheel Speed Sensor Assembly Overview, FWD	14
2.6	Rear ABS Wheel Speed Sensor Assembly Overview, AWD	14
3	<b>Specifications</b>	16
3.1	Fastener Tightening Specifications	16
4	<b>Removal and Installation</b>	17
4.1	Brake Light Switch	17
4.2	ESP Sensor Unit	17
4.3	Steering Angle Sensor	18
4.4	Brake Booster Vacuum Sensor, with Optimized Hydraulic Brake Vacuum (OHV) Boosting	20
4.5	ABS Control Module and ABS Hydraulic Unit	21
4.6	ABS Control Module and ABS Hydraulic Unit, TFSI,	25
4.7	Front ABS Wheel Speed Sensor	29
4.8	Rear ABS Wheel Speed Sensor, FWD	29
4.9	Rear ABS Wheel Speed Sensor, AWD	30
5	<b>Special Tools</b>	31
<b>46</b>	<b>Mechanical Components</b>	<b>32</b>
1	<b>General Information</b>	32
1.1	Front Brakes, Servicing	32
1.2	Rear Brakes, Servicing	32
2	<b>Description and Operation</b>	33
2.1	Front Brakes Assembly Overview, 17" FNR G57	33
2.2	Front Brakes Assembly Overview, 16" FN3	35
2.3	Damper on Front Brake Caliper Assembly Overview	38
2.4	Rear Brakes Assembly Overview	38
2.5	Parking Brake Assembly Overview	41
2.6	Brake Pedal Assembly Overview	41
2.7	Front Brake Caliper Piston, Pressing Back	42
2.8	Rear Brake Caliper Piston, Pressing Back	43
3	<b>Specifications</b>	45
3.1	Fastener Tightening Specifications	45
4	<b>Diagnosis and Testing</b>	46



4.1	Parking Brake, Adjusting	46
<b>5</b>	<b>Removal and Installation</b>	<b>47</b>
5.1	Front Brake Pads, 16" FN3	47
5.2	Front Brake Pads, 17" FNR G57	51
5.3	Front Brake Caliper, 16" FN3	55
5.4	Front Brake Caliper, 17" FNR G57	58
5.5	Damper	61
5.6	Rear Brake Pads	61
5.7	Rear Brake Caliper	63
5.8	Parking Brake Handle	66
5.9	Parking Brake Switch	67
5.10	Parking Brake Cable	68
5.11	Parking Brake Cable Guide Tube	70
5.12	Parking Brake Cable, Loosening from Brake Caliper and Engaging	70
5.13	Brake Pedal	71
5.14	Brake Pedal and Brake Booster, Separating	71
<b>6</b>	<b>Special Tools</b>	<b>73</b>
<b>47</b>	<b>Hydraulic Components</b>	<b>75</b>
<b>1</b>	<b>General Information</b>	<b>75</b>
1.1	Front Brake Caliper Servicing, FN3	75
1.2	Front Brake Caliper Servicing, FNRG57	75
1.3	Rear Brake Caliper Servicing	75
1.4	Brake System Bleeding	76
1.5	Brake System, Bleeding with Brake Filler/Bleeder Unit VAS 5234 or Brake Filler/Bleeder Unit Suction Adapter V.A.G 1869/4	76
1.6	Brake System, Bleeding without Brake Filler and Bleeder Tool	77
<b>2</b>	<b>Description and Operation</b>	<b>79</b>
2.1	Front Brake Caliper Assembly Overview, FN3	79
2.2	Front Brake Caliper Assembly Overview, FNRG57	80
2.3	Rear Brake Caliper Assembly Overview	81
2.4	Brake Booster and Brake Master Cylinder Assembly Overview	82
2.5	Brake Lines and Brake Hoses	84
<b>3</b>	<b>Specifications</b>	<b>87</b>
3.1	Fastener Tightening Specifications	87
<b>4</b>	<b>Diagnosis and Testing</b>	<b>88</b>
4.1	High and Low Pressure Testing	88
<b>5</b>	<b>Removal and Installation</b>	<b>89</b>
5.1	Front Brake Caliper Piston, FN3	89
5.2	Front Brake Caliper Piston, FNRG57	91
5.3	Rear Brake Caliper Piston	93
5.4	Brake Fluid Reservoir	94
5.5	Brake Master Cylinder	96
5.6	Brake Booster	98
5.7	Noise Amplifier, TFSI	101
5.8	Vacuum Pump, TFSI	101
<b>6</b>	<b>Special Tools</b>	<b>103</b>

## 00 – General, Technical Data

### 1 General Information

⇒ [“1.1 Brake Fluid”, page 1](#)

⇒ [“1.2 Brakes, Testing”, page 1](#)

#### 1.1 Brake Fluid



##### Caution

*Brake fluid is hygroscopic, i.e. it has the capability to absorb water and moisture from the air.*

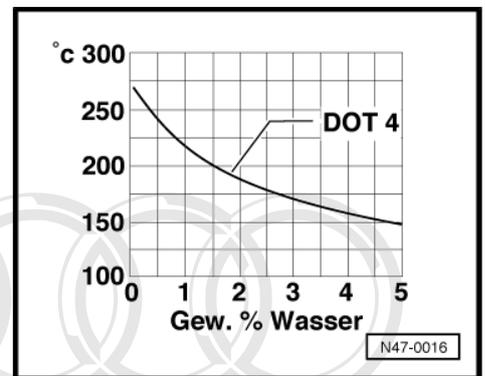
If water has been absorbed, the boiling point will drop, i.e., during high braking temperatures the brake fluid may develop steam bubbles and result in decreased brake performance.

Over time, brake fluid will darken in color. This is a normal chemical reaction and does not reflect on their quality.



##### WARNING

*The rubber components of the brake system (boots, seals) do not tolerate mineral oil, gasoline, and cleaning agents! Small amounts on the protective boot or sealing ring leads to a change in the parts and affects brake function.*



#### 1.2 Brakes, Testing

The wheels are driven by the test stand.

When checking, vehicles with manual transmission should be in idle and vehicles with automatic transmission should have N engaged.

Always observe the test stand manufacturer instructions.



##### Note

*When the ignition is switched off brake control system does not work.*

## 2 Specifications

⇒ "2.1 Technical Data", page 2

### 2.1 Technical Data

#### Allocation PR-No./Brakes

The brake system installed in a vehicle is documented on the vehicle data sticker via the relevant PR number.

The vehicle data label can be found in the spare wheel well as well as in the Maintenance booklet.

The following tables show the break down of the affected PR numbers. They are important for the brake disc/brake caliper/brake drum combinations. Refer to the Electronic Parts Catalog (ETKA).

#### Brakes

Brake System	
Dual-circuit brake system with diagonal distribution, anti-lock braking system (ABS) with electronic brake distribution (EBD). Depending on equipment and construction, also with electronic differential lock (EDL), anti-slip regulation (ASR), electronic stability program (ESP)	

#### Front Brakes

Front Wheel Brakes						
		1LJ	1LL	1LK	1LM	1LN
Brake caliper PR number						
Front brake caliper		FN3	FN3	FNR-G-57	FNR-G-57	FNR-G-57
Pistons	Diameter mm	54	54	57	57	57
Brake disc PR number		1LJ	1LJ	1LK	1LK	1LK
Front brake disc	Diameter mm	312 (16")	312 (16")	340 (17")	340 (17")	340 (17")
Brake disc thickness, ventilated	mm	25	25	30	30	30
Brake pad wear limit	mm	21	21	28	28	28
Brake pads						
Pad thickness, new (not including backing plate)	mm	14	14	14	14	14
Brake pad wear limit (not including backing plate)	mm	2	2	2	2	2

#### Rear Brakes, FWD

Rear Wheel Brakes, FWD			
		2ED	1KZ
Brake caliper PR number			
Rear brake caliper		CII 38HR	CII 38HR
Pistons	Diameter mm	38	38
Brake disc PR number		2ED,2EE	1KZ and 1KJ,
Rear brake disc	Diameter mm	286 (16")	286 (16")
Brake disc thickness, not ventilated	mm	12	12
Brake disc thickness, ventilated	mm	-----	-----

Rear Wheel Brakes, FWD			
Brake disc wear limit	mm	9	9
Brake pads			
Pad thickness, new (not including backing plate)	mm	12	12
Brake pad wear limit (not including backing plate)	mm	2	2

### Rear Brakes, AWD

Rear Wheel Brakes, AWD						
Brake caliper PR number		1KJ	2EE	2EA	2EF	2EG
Rear brake caliper		CII 41HR				
Pistons	Diame- ter mm	41	41	41	41	41
Brake disc PR number		1KJ,1KZ	2EE,2ED	2EA	2EF	2EG
Rear brake disc	Diame- ter mm	286 (16")	286 (16")	310 (17")	310 (17")	310 (17")
Brake disc thickness, not ventilated	mm	12	12	-----	-----	-----
Brake disc thickness, ventilated	mm	-----	-----	22	22	22
Brake disc, wear limit	mm	9	9	19	19	19
Brake pad wear limit (not including backing plate)	mm	2	2	2	2	2



Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



### 3 Diagnosis and Testing

⇒ ["3.1 Brake Testing, FWD", page 4](#)

⇒ ["3.2 Brake Testing, AWD with Haldex Clutch", page 4](#)

⇒ ["3.3 Brake Test on a Conventional Brake Test Stand, AWD with Haldex Clutch", page 4](#)

#### 3.1 Brake Testing, FWD

##### Brake Testing on a One-Axle Roller Test Stand

The brake test is to be performed on a one-axle roller test stand.

If the rollers have a start-up delay, the brakes may lock up (EDL regulation).

Do not exceed a test speed of 6 km/h.

Test stands approved by Audi meet these requirements.

#### 3.2 Brake Testing, AWD with Haldex Clutch

##### Brake Test on a One-Axle Roller Test Stand

During this brake test, the wheels of one axle are driven in opposite directions, to prevent delivering power to the other axle.

If the rollers have a start-up delay, the brakes may lock up (EDL regulation).

Do not exceed a test speed of 6 km/h.

Test stands approved by Audi meet these requirements.

#### 3.3 Brake Test on a Conventional Brake Test Stand, AWD with Haldex Clutch

To test brakes on a conventional brake test stand, proceed as follows:

- Drive vehicle forward until front wheels are on rollers.
- Turn off the engine and wait 3 seconds.
- Perform the braking test.
- After front brake test, let engine run approximately 5 seconds until sufficient pressure has built up in the brake booster.
- Drive vehicle forward until rear wheels are on rollers.
- Turn off the engine and wait 3 seconds.
- Perform the braking test for the rear brakes.



#### WARNING

*During the brake test, the engine must not run and the ignition must be off. Otherwise, the Haldex clutch drives the rear wheels.*

## 45 – Antilock Brake System

### 1 General Information

⇒ [“1.1 ABS Repair Information”, page 5](#)

#### 1.1 ABS Repair Information

ABS Mark 60

	<p><b>WARNING</b></p> <p><i>The anti-lock brake system is generally maintenance-free.</i></p> <p><i>Testing, assembly, and repair work may only be performed by qualified personnel.</i></p> <p><i>By not observing the points described in the repair manual, the system can be damaged and vehicle safety could be compromised.</i></p>
---	---



**Note**

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

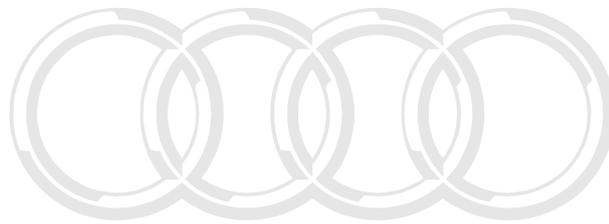
*ABS malfunctions have no effect on the brake system. However, a change in braking behavior should be checked.*

Vehicles with ABS Mark 60 do not have a mechanical brake pressure regulator. A specially coordinated software program in the control module determines brake pressure allocation at the rear axle.

- ◆ Before performing repair work on the anti-lock brake system, determine the cause of the malfunction using On-Board Diagnostics (OBD).
- ◆ The connector at the hydraulic control unit may only be disconnected if the ignition is switched off.
- ◆ When installing a new hydraulic control unit, it must be coded Vehicle diagnosis, testing and information system -VAS 5051- .
- ◆ Bleed brake system after opening. Refer to ⇒ [“1.4 Brake System Bleeding”, page 76](#) . To do this, use the Brake Charger/Bleeder Unit -V.A.G 1869- or Brake Charger/Bleeder Unit -VAS 5234- .
- ◆ Absolute cleanliness is required when working on the anti-lock brake system, it is not permitted to use any products which contain mineral oil, such as oils, greases etc.
- ◆ Thoroughly clean all unions and the adjacent areas before loosening. Do not use aggressive cleaning agents such as brake cleaner, fuel, thinners or similar chemicals.
- ◆ Place parts that have been removed on a clean surface and cover.
- ◆ Carefully cover over opened components or seal, if repairs are not carried out immediately. Use sealing plugs from repair kit. Part No., refer to the Electronic Parts Catalog (ETKA).
- ◆ When the brake system is open, do not work with compressed air and do not move the vehicle.
- ◆ Only use lint-free cloths.



- ◆ Only use genuine parts in their original packaging.
- ◆ Only unpack replacement parts immediately prior to installation.
- ◆ During the final road test, ensure that a ABS-controlled brake test is performed at least once (pulsation must be felt at the brake pedal).
- ◆ When painting, electronic control module can be exposed to a maximum temperature of. 95 °C only briefly, and to a maximum of 85 °C for longer periods (approximately 2 hours).
- ◆ Before welding operations using an electric welding device. Refer to General Notes, Body Repair; Safety Notes.



**Audi**

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



## 2 Description and Operation

⇒ [“2.1 VAS 5051, Connecting and Selection Functions”, page 7](#)

⇒ [“2.2 ABS/ESP Mark 60 Brake System Component and Installation Location Overview”, page 9](#)

⇒ [“2.3 ABS Control Module and ABS Hydraulic Unit ABS/ESP Mark 60 Assembly Overview”, page 12](#)

⇒ [“2.4 Front ABS Wheel Speed Sensor Assembly Overview”, page 13](#)

⇒ [“2.5 Rear ABS Wheel Speed Sensor Assembly Overview, FWD”, page 14](#)

⇒ [“2.6 Rear ABS Wheel Speed Sensor Assembly Overview, AWD”, page 14](#)

### 2.1 VAS 5051, Connecting and Selection Functions

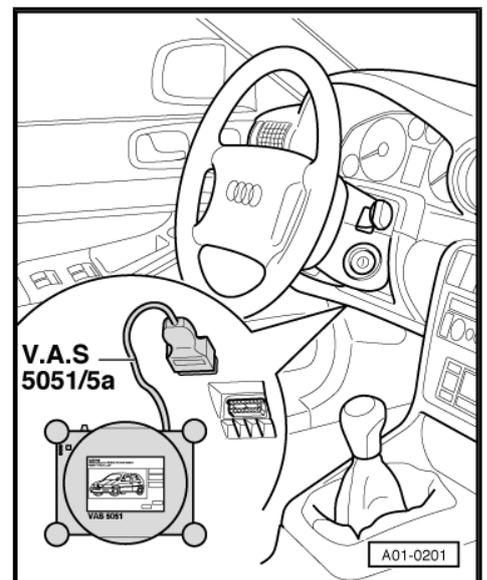
Special tools and workshop equipment required

- ◆ Vehicle diagnostic, testing and information system VAS 5051

 **WARNING**

- ◆ *During a test drive, the testing and measuring equipment must always be secured on the back seat.*
- ◆ *These devices may be operated only by a passenger during a test drive.*

- Connect diagnostic cable connector to diagnostic connection.





- Switch -VAS 5051- on -arrow-.

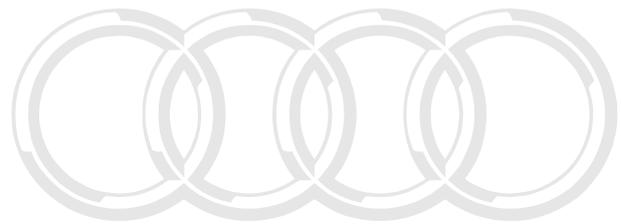
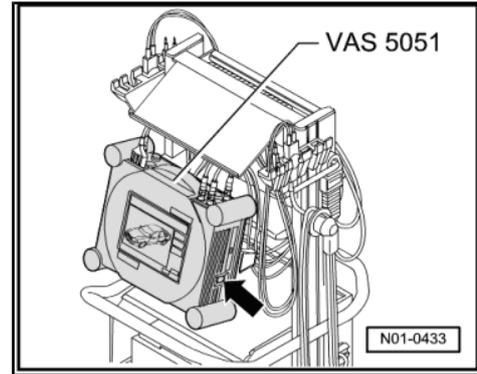
The -VAS 5051- is ready for use when a picture (photo) of a vehicle is displayed.

- Switch on ignition.
- Touch the field / the button on the screen: Guided Fault Finding.
- Select one after another:
  - ◆ Brand
  - ◆ Model
  - ◆ Model year
  - ◆ Version
  - ◆ Engine code
- Confirm entered data.

Wait until -VAS 5051- has checked all control modules in vehicle.

- Press the Go to button and select the "Function/component selection" function.

Now, follow the displays on screen to begin the desired functions.



**Audi**

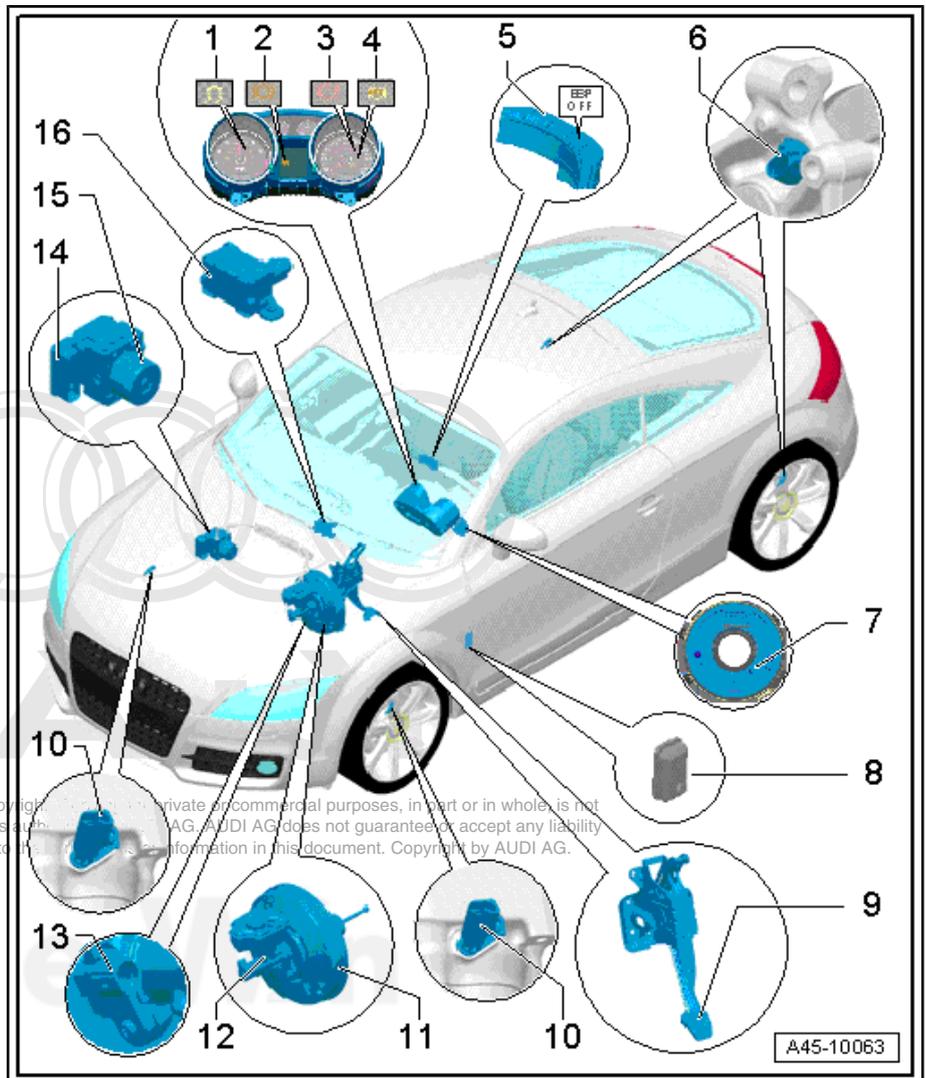
Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



## 2.2 ABS/ESP Mark 60 Brake System Component and Installation Location Overview

### 1 - ASR/ESP Control Lamp - K155-

- Component location: In tachometer.
- Blinks when driving if ESP/ASR engages regularly.
- Comes on when ignition is switched on and goes out after a short self-check.
- Comes on if there is an ESP system malfunction.
- Comes on if there is an ABS system malfunction because ESP and ABS work together.
- Comes on when ESP is switched off.
- Comes on during sensor programming if:
- ◆ The battery was disconnected and connected.
- ◆ Vehicle was started with jump start.
- ◆ The battery is too weak.
- After the sensor programming procedure, the light goes out after driving a short distance.



### 2 - Brake Pad Wear Indicator Lamp -K32-

- Component location: In center display field.
- Lights up when the brake pad wear limit is reached. Refer to ⇒ ["2.1 Technical Data", page 2](#).

### 3 - Warning Light for Brake System -K118-

- Component location: In tachometer.
- Lights up with parking brake engaged.
- Lights up if there is an ABS system malfunction.
- Blinks when brake fluid is too low.

### 4 - ABS Warning Lamp -K47-

- Component location: In tachometer.
- Lights up for several seconds when ignition is switched on and goes out after an automatic ABS system self-check if there are no malfunctions in the ABS system.
- There is an ABS malfunction if the indicator light:
- ◆ Does not light up when ignition is switched on.
- ◆ Does not go out after a few seconds.
- ◆ Lights up while driving.
- ABS malfunctions have no effect on the brake system. However, a change in braking behavior should be considered.

- If there is an ABS system malfunction, the ESP indicator light comes on as well because both systems work together.

#### 5 - ASR/ESP Button -E256-

- Component location: In the center console.

#### 6 - Right Rear ABS Wheel Speed Sensor -G44- / Left Rear ABS Wheel Speed Sensor -G46-

- 8 Nm

#### 7 - Steering Angle Sensor -G85-

- Location on steering column between steering wheel and steering column switch.
- Removing and installing, refer to ⇒ [“4.3 Steering Angle Sensor”, page 18](#) .

#### 8 - Diagnostic Connection

- Component location: Cover in driver footwell.

#### 9 - Brake Pedal

- Removing and installing, refer to ⇒ [“5.13 Brake Pedal”, page 71](#) .

#### 10 - Right Front ABS Wheel Speed Sensor -G45- / Left Front ABS Wheel Speed Sensor -G47-

- Removing and installing, refer to ⇒ [“4.7 Front ABS Wheel Speed Sensor”, page 29](#) .
- 8 Nm

#### 11 - Brake Booster

- Removing and installing, refer to ⇒ [“5.6 Brake Booster”, page 98](#) .

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability in respect to the correctness of information in this document. Copyright by AUDI AG.



**Note**

- ◆ *If the vehicle has a TFSI engine, then the noise amplifier must be removed and installed. Refer to ⇒ [“5.7 Noise Amplifier, TFSI”, page 101](#) .*
- ◆ *The noise amplifier is inside the engine compartment in front of the brake booster.*

- With integrated Brake Booster Vacuum Sensor -G483-
- Brake booster vacuum sensor installation depends on model
- Brake booster vacuum sensor, removing and installing, refer to ⇒ [“4.4 Brake Booster Vacuum Sensor, with Optimized Hydraulic Brake Vacuum \(OHBV\) Boosting”, page 20](#) .



**Note**

*Brake booster vacuum sensor is only installed on vehicles with optimized hydraulic brake vacuum boosters.*

#### 12 - Brake Master Cylinder

- With attached brake light switch.
- Removing and installing, refer to ⇒ [“5.5 Brake Master Cylinder”, page 96](#) .



**Note**

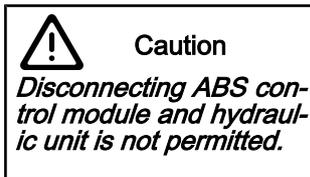
- ◆ *If the vehicle has a TFSI engine, then the noise amplifier must be removed and installed. Refer to ⇒ [“5.7 Noise Amplifier, TFSI”, page 101](#) .*
- ◆ *The noise amplifier is inside the engine compartment in front of the brake booster.*

### 13 - Brake Light Switch

- Removing and installing, refer to ⇒ [“4.1 Brake Light Switch”, page 17](#) .
- The brake light switch is not adjusted.
- Component location: At brake master cylinder.
- 5 Nm

### 14 - ABS Control Module with ESP -J104-

- Component location: In right of engine compartment on ABS hydraulic unit.
- Do not disconnect connector before successfully completing On Board Diagnostic (OBD). Switch ignition off before separating connector.
- Removing and installing, refer to ⇒ [“4.5 ABS Control Module and ABS Hydraulic Unit”, page 21](#) .
- TFSI engine, removing and installing, refer to ⇒ [“4.6 ABS Control Module and ABS Hydraulic Unit, TFSI”, page 25](#) .



### 15 - ABS Hydraulic Unit -N55-

- Component location: In tight of engine compartment, on ABS control module.
- Removing and installing, refer to ⇒ [“4.5 ABS Control Module and ABS Hydraulic Unit”, page 21](#) .
- TFSI Engine, removing and installing, refer to ⇒ [“4.6 ABS Control Module and ABS Hydraulic Unit, TFSI”, page 25](#) .
- The ABS Hydraulic Pump -V64- , the ABS Hydraulic Unit -N55- and the ABS Control Module with ESP -J104- comprise the hydraulic control unit.
- With integrated Brake Pressure Sensor 1 -G201- .
- The brake pressure sensor cannot be replaced.
- Allocation, refer to the Electronic Parts Catalog (ETKA).

### 16 - ESP Sensor Unit -G419-

- 9 Nm
- Component location: On center console in front of selector lever.
- Combined sensor for Transverse Acceleration Sensor -G200- and for Rotation Rate Sensor -G202- .
- On AWD vehicles, also Longitudinal Acceleration Sensor -G251- .
- Removing and installing, refer to ⇒ [“4.2 ESP Sensor Unit”, page 17](#) .



#### Note

*The ABS sensor ring/rotor is installed in the respective wheel bearing unit and should not be replaced.*



Audi

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

erWin

## 2.3 ABS Control Module and ABS Hydraulic Unit ABS/ESP Mark 60 Assembly Overview

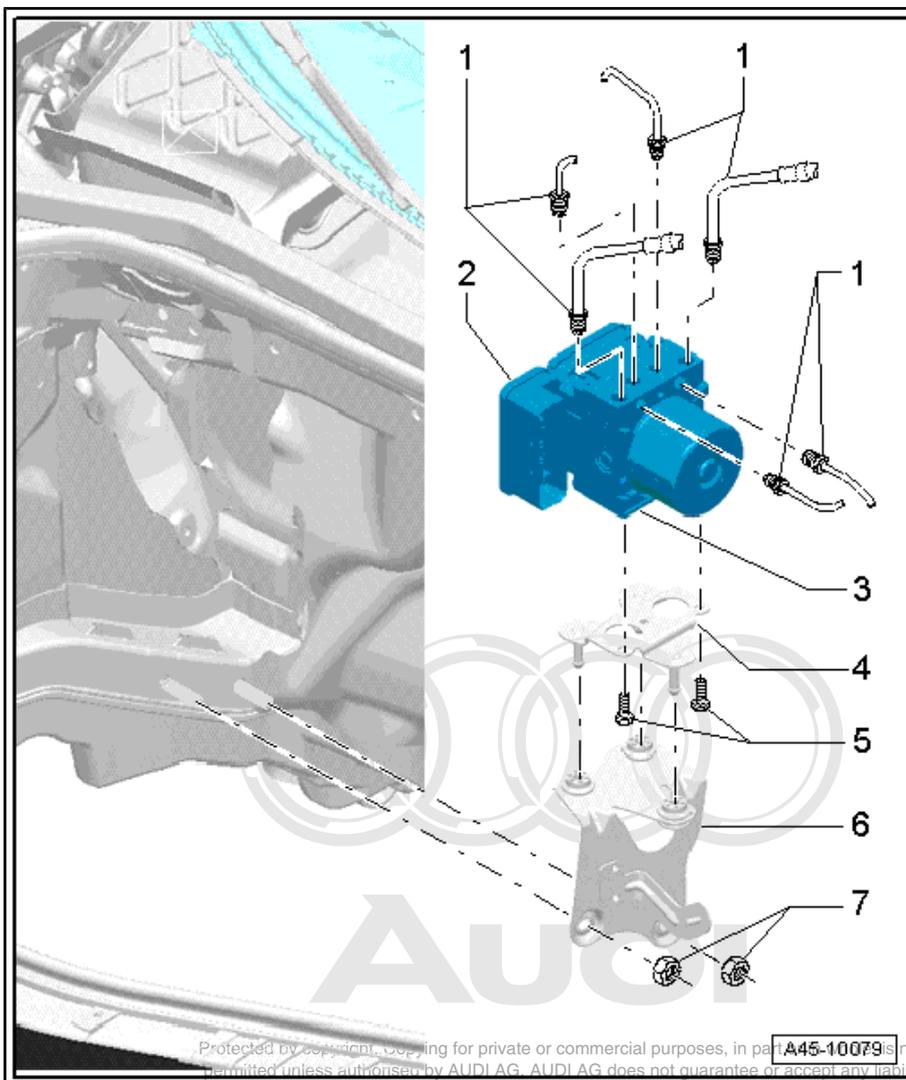
### 1 - Brake Lines

- ◆ -DK- marking, Brake master cylinder/primary piston circuit to hydraulic unit.
- ◆ -HL- marking, to left rear brake caliper.
- ◆ -VR- marking, to right front brake caliper.
- ◆ -VL- marking, to left front brake caliper.
- ◆ -HR- marking, to right rear brake caliper
- ◆ -SK- marking, brake master cylinder/secondary piston circuit to hydraulic unit.

- 14 Nm
- After securing brake lines to hydraulic unit, perform output diagnostic test mode. Use Vehicle Diagnosis, Testing and Information System -VAS 5051- for this.

### 2 - ABS Control Module with ESP -J104-

- Component location: In right of engine compartment on ABS hydraulic unit.
- Allocation, refer to the Electronic Parts Catalog (ETKA).
- Removing and installing, refer to [⇒ "4.5 ABS Control Module and ABS Hydraulic Unit", page 21](#) .
- TFSI Engine, removing and installing, refer to [⇒ "4.6 ABS Control Module and ABS Hydraulic Unit, TFSI.", page 25](#) .



Protected by copyright. Copying for private or commercial purposes, in part **A45-10079** is not permitted unless authorized by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

**⚠ Caution**

*Disconnecting ABS control module and ABS hydraulic unit is not permitted. They may only be replaced completely (control module and hydraulic unit).*

### 3 - ABS Hydraulic Unit -N55-

- Component location: In right of engine compartment, on ABS control module.
- Allocation, refer to the Electronic Parts Catalog (ETKA).
- Removing and installing, refer to [⇒ "4.5 ABS Control Module and ABS Hydraulic Unit", page 21](#) .
- TFSI Engine, removing and installing, refer to [⇒ "4.6 ABS Control Module and ABS Hydraulic Unit, TFSI.", page 25](#) .

**4 - Bracket**

- Removing and installing together with hydraulic unit and control module, refer to [⇒ "4.5 ABS Control Module and ABS Hydraulic Unit", page 21](#) .

**5 - Bolt**

- Bracket to hydraulic unit.
- 8 Nm.

**6 - Bracket**

- With rubber buffer

**7 - Nut**

**2.4 Front ABS Wheel Speed Sensor Assembly Overview**

 **Note**

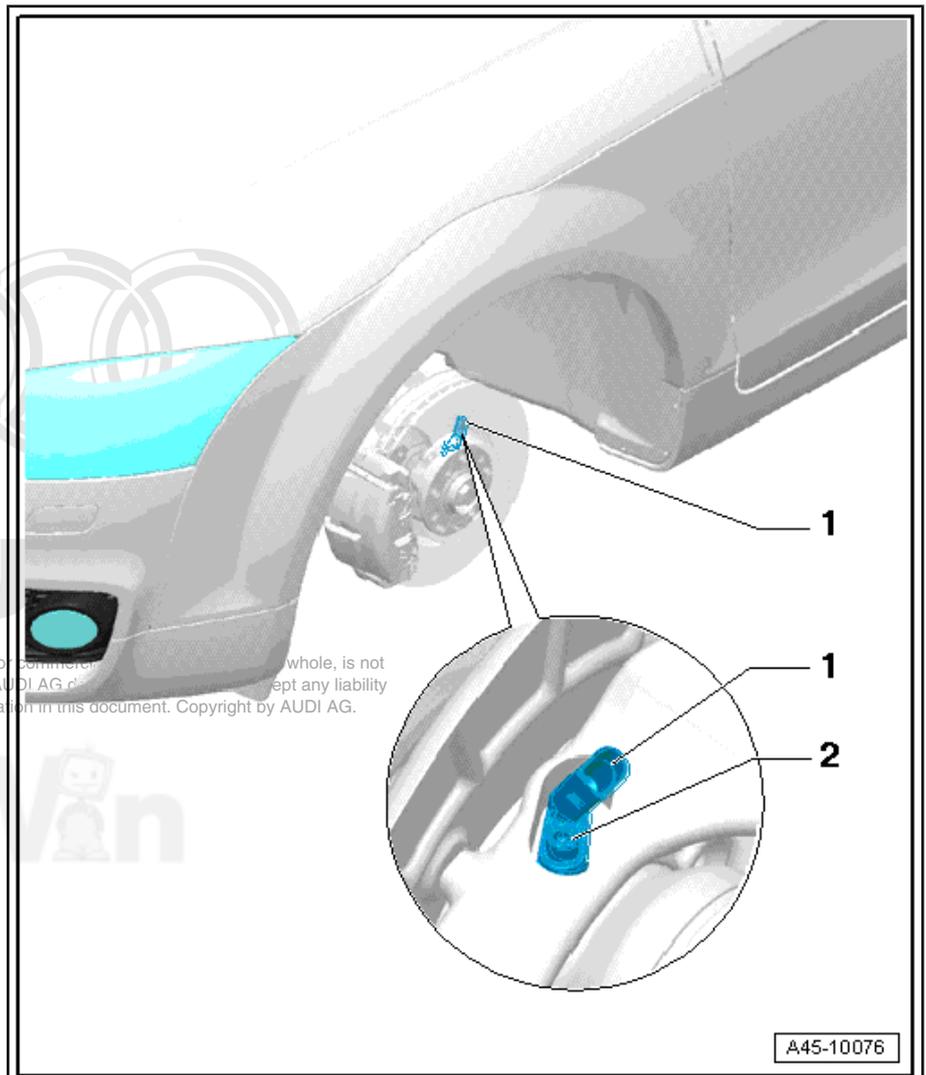
*The ABS sensor ring/rotor is installed in the respective wheel bearing unit and should not be replaced. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Description and Operation .*

**1 - Right Front ABS Wheel Speed Sensor -G45- / Left Front ABS Wheel Speed Sensor -G47-**

- Removing and installing, refer to [⇒ "4.7 Front ABS Wheel Speed Sensor", page 29](#) .

**2 - Bolt**

- 8 Nm



Protected by copyright. Copying for private or commercial use, in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

A45-10076

## 2.5 Rear ABS Wheel Speed Sensor Assembly Overview, FWD

### Note

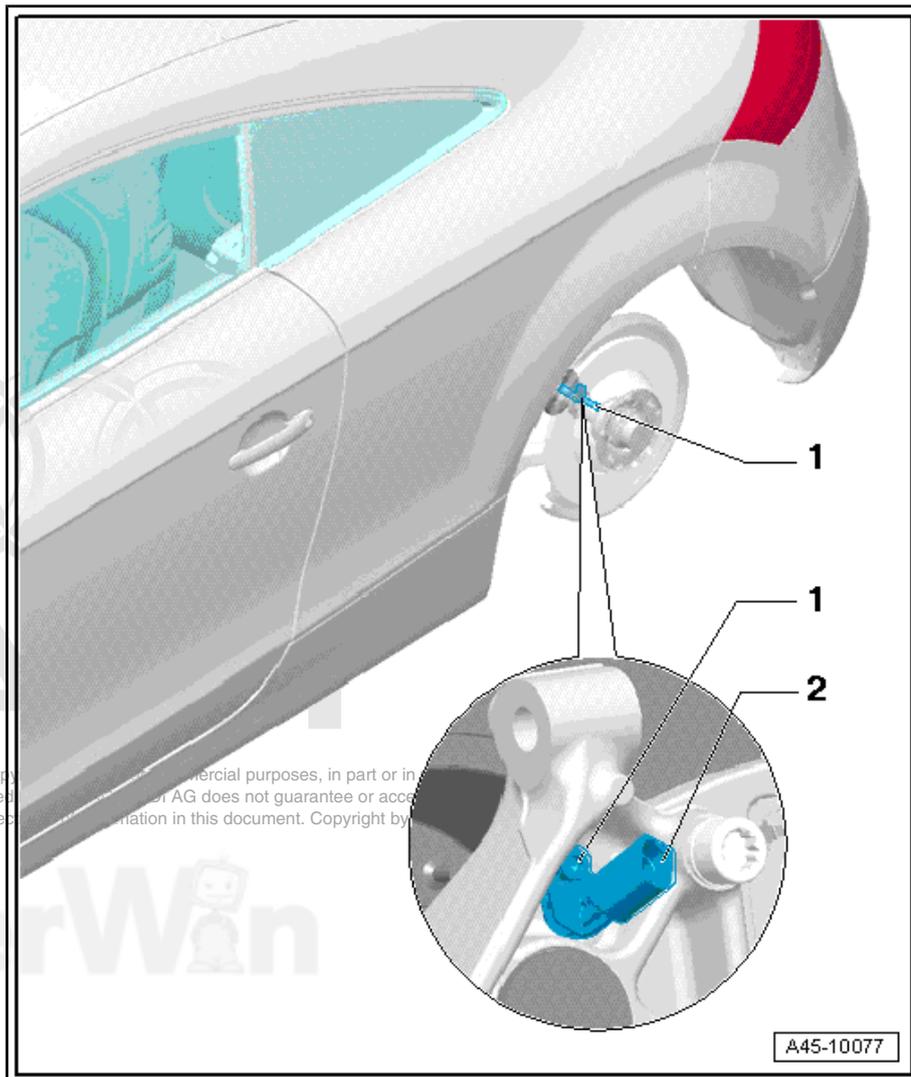
*The ABS sensor ring/rotor is installed in the respective wheel bearing unit and should not be replaced. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42 ; Description and Operation .*

#### 1 - Bolt

- 8 Nm

#### 2 - Right Rear ABS Wheel Speed Sensor -G44- / Left Rear ABS Wheel Speed Sensor -G46-

- Removing and installing, refer to ⇒ ["4.8 Rear ABS Wheel Speed Sensor, FWD"](#), page 29 .



## 2.6 Rear ABS Wheel Speed Sensor Assembly Overview, AWD

### Note

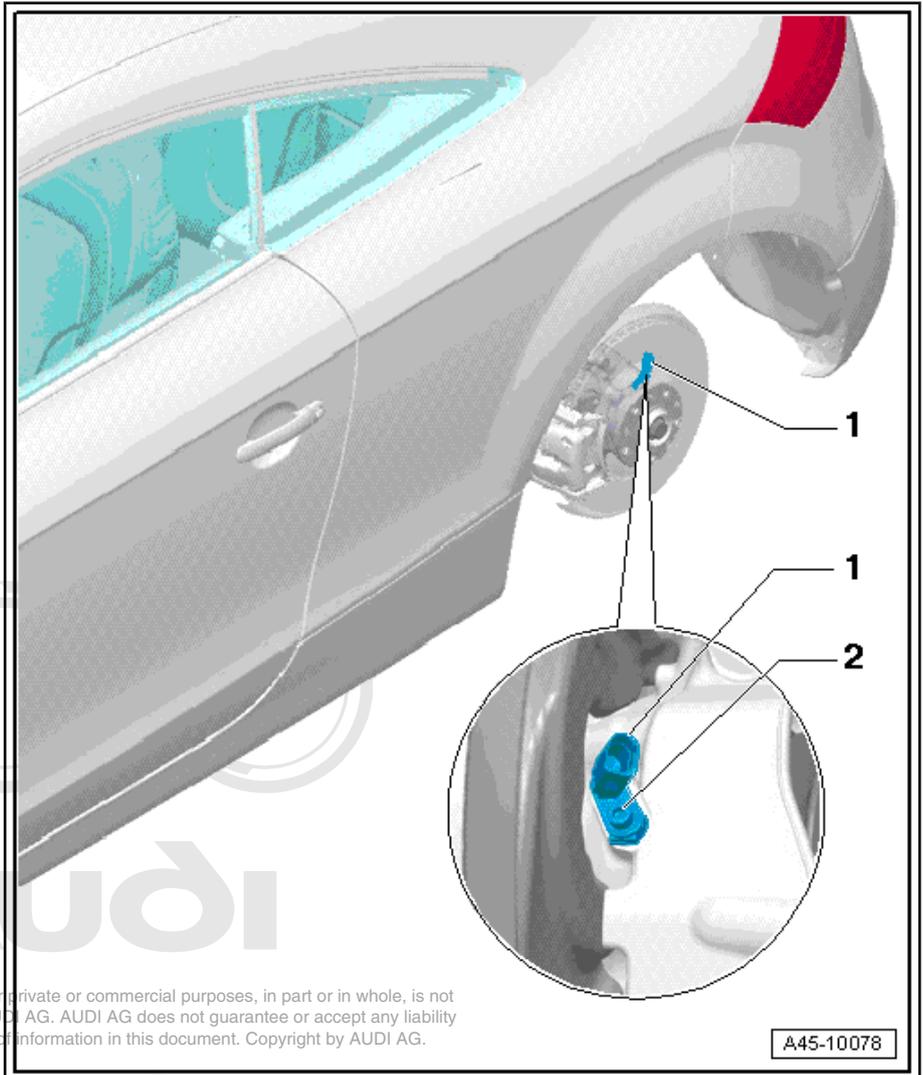
*The ABS sensor ring/rotor is installed in the respective wheel bearing unit and should not be replaced. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42 ; Description and Operation .*

**1 - Right Rear ABS Wheel Speed Sensor -G44- / Left Rear ABS Wheel Speed Sensor -G46-**

- ❑ Removing and installing, refer to [⇒ "4.9 Rear ABS Wheel Speed Sensor, AWD", page 30](#)

**2 - Bolt**

- ❑ 8 Nm



Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

A45-10078

### 3 Specifications

⇒ ["3.1 Fastener Tightening Specifications", page 16](#)

#### 3.1 Fastener Tightening Specifications

Component	Fastener Size	Nm
ABS wheel speed sensor bolt	-	8
ABS hydraulic unit to bracket bolt	-	8
Brake light switch to brake master cylinder bolt	-	5
Brake lines, ABS control module and ABS hydraulic unit	-	14
ESP sensor unit bolt	-	9



**Audi**

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



## 4 Removal and Installation

⇒ [“4.1 Brake Light Switch”, page 17](#)

⇒ [“4.2 ESP Sensor Unit”, page 17](#)

⇒ [“4.3 Steering Angle Sensor”, page 18](#)

⇒ [“4.4 Brake Booster Vacuum Sensor, with Optimized Hydraulic Brake Vacuum \(OHV\) Boosting”, page 20](#)

⇒ [“4.5 ABS Control Module and ABS Hydraulic Unit”, page 21](#)

⇒ [“4.6 ABS Control Module and ABS Hydraulic Unit, TFSI,”, page 25](#)

⇒ [“4.7 Front ABS Wheel Speed Sensor”, page 29](#)

⇒ [“4.8 Rear ABS Wheel Speed Sensor, FWD”, page 29](#)

⇒ [“4.9 Rear ABS Wheel Speed Sensor, AWD”, page 30](#)

### 4.1 Brake Light Switch

#### Removing

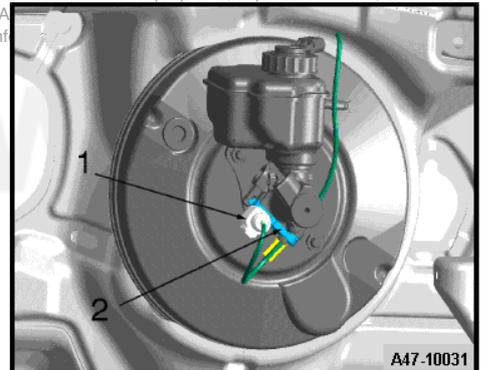


#### Note

- ◆ *The brake light switch is installed on the brake master cylinder.*
- ◆ *The brake light switch is not adjustable.*

- Disconnect electrical connector -1-.
- Remove brake light switch retaining bolt -2- from brake master cylinder.
- Remove brake light switch down from brake master cylinder and remove switch upward from retaining tab.

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG with respect to the correctness of information.



#### Installing

- Installation is performed in the reverse order of removal. Make sure that top of switch is seated correctly in retaining tab when doing so.



#### Note

*The brake light switch is not adjustable.*

### 4.2 ESP Sensor Unit



#### WARNING

*The ESP Sensor Unit -G419- is susceptible to strong vibrations and impacts. Strong vibrations and impacts can damage the ESP sensor unit. If the ESP sensor unit has fallen on the floor, correct function is no longer ensured and the unit should not be installed.*

- After the ESP sensor unit is replaced, basic setting (calibration) must be performed on:
  - ◆ Transverse Acceleration Sensor -G200-
  - ◆ Rotation Rate Sensor -G202-



- ◆ On AWD vehicles, Longitudinal Acceleration Sensor -G251-

### Removing



#### Note

*The ESP sensor unit is installed on the center console under the selector lever trim.*

- Remove center console trim. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Removal and Installation .
- Disconnect electrical connector.
- Remove bolts.
- Remove the ESP sensor unit upward.

### Installing

Installation is the reverse of removal, with special attention to the following:

**Calibrate transverse acceleration sensor and, on AWD vehicles, longitudinal acceleration sensor. For this, use the Vehicle diagnostic, testing and information system -VAS 5051- .**

- On display, select:

- ◆ Chassis

- ◆ Brake system (Repair group 01.45)

- ◆ 01- On Board Diagnostic (OBD) capable systems

- ◆ 03- Brake electronics ABS/ESP Mark 60

- Select desired function on display.

- ◆ Calibrate transverse acceleration sensor.

- ◆ Calibrate longitudinal acceleration sensor (only AWD vehicles).

- Perform ESP driving and system test.

## 4.3 Steering Angle Sensor

### Removing

- Set the wheels to the straight ahead position.

- Remove airbag unit and steering wheel. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 48 ; Removal and Installation .

**Item -1- Coil ring with slip ring**

- Clipped onto switch for turn signals, high/low beam headlamps and light signal.

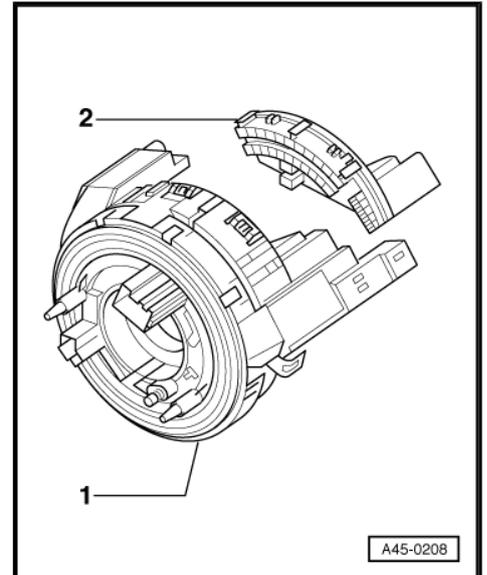
**Item -2- steering angle sensor -G85-**

- Clipped to coil ring with slip ring.



**WARNING**

*The coil ring with slip ring must not be turned when they has been removed.*



- Remove driver side compartment. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Removal and Installation .
- Remove steering column switch module. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Removal and Installation .

**Installing**

Installation is performed in the reverse order of removal.

- Install airbag unit and steering wheel. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 48 ; Removal and Installation .

**Steering Angle Sensor, Calibrating**



**Note**

*Use Vehicle Diagnosis, Testing and Information System -VAS 5051- for this.*

- On display, select:

- ◆ Chassis
- ◆ Brake system (Repair group 01;45)
- ◆ 01- On Board Diagnostic (OBD) capable systems
- ◆ 03- Brake electronics ABS/ESP Mark 60
- Select desired function on display:
- ◆ ABS/ASR/ESP Control Module, Functions
- ◆ Steering Angle Sensor calibration.
- Perform the ESP driving and system tests.

## 4.4 Brake Booster Vacuum Sensor, with Optimized Hydraulic Brake Vacuum (OHV) Boosting



### Note

- ◆ If the vehicle has a TFSI engine, then the noise amplifier must be removed and installed. Refer to ["5.7 Noise Amplifier, TFSI", page 101](#).  
⇒ ["5.7 Noise Amplifier, TFSI", page 101](#).
- ◆ The noise amplifier is inside the engine compartment in front of the brake booster.



### Note

Vehicles that draw the vacuum for the brakes from the intake manifold and vehicles with mechanical vacuum pumps do not have a Brake Booster Vacuum Sensor -G483-.

### Special tools and workshop equipment required

- ◆ Vehicle diagnostic, testing and information system -VAS 5051-



### Note

- ◆ The brake booster vacuum sensor does not require calibration after replacing.
- ◆ The electrical test is described in Guided Fault Finding.

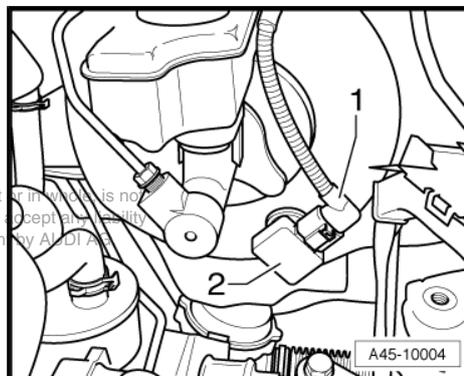
### Removing



### Note

- ◆ If the vehicle has a TFSI engine, then the noise amplifier must be removed and installed. Refer to ["5.7 Noise Amplifier, TFSI", page 101](#).  
⇒ ["5.7 Noise Amplifier, TFSI", page 101](#).
- ◆ The noise amplifier is inside the engine compartment in front of the brake booster.

- Disconnect electrical connector -1- on vacuum sensor -2-.



Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

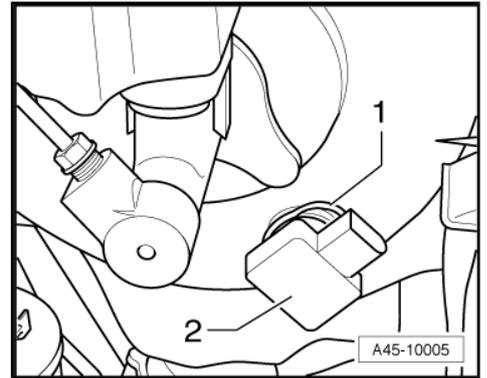
- Pull back OHBV circlip -1- and remove sensor -2- from brake booster.

### Installing



#### Note

- ◆ If the vehicle has a TFSI engine, then the noise amplifier must be removed and installed. Refer to ⇒ ["5.7 Noise Amplifier, TFSI", page 101](#) .
- ◆ The noise amplifier is inside the engine compartment in front of the brake booster.



Installation is performed in the reverse sequence.

## 4.5 ABS Control Module and ABS Hydraulic Unit



#### Caution

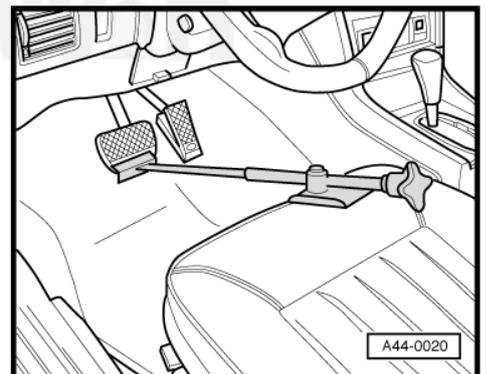
**Disconnecting ABS Control Module -J104- and ABS Hydraulic Unit -N55- is not permitted.**

### Special tools and workshop equipment required

- ◆ Brake Pedal Actuator -V.A.G 1869/2-
- ◆ Vehicle Diagnosis, Testing and Information System -VAS 5051-

### Removing

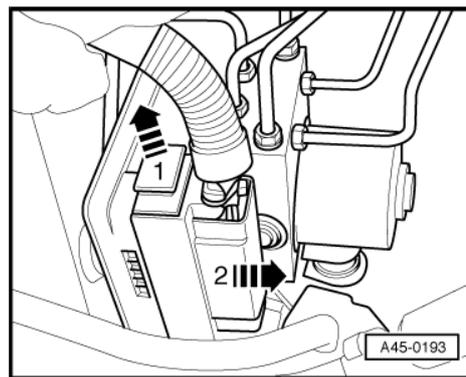
- Read the control module version and make a note of it.
- Disconnect the battery. Be sure to get the radio code beforehand. Refer to ⇒ Electrical System; Rep. Gr. 27 ; Removal and Installation .
- Insert -V.A.G 1869/2- between brake pedal and driver's seat by pressing brake pedal down at least 60 mm.
- Connect bleeder bottle hose to left front and left rear brake caliper bleeder screw.
- Open left rear and left front brake caliper bleeder screws to reduce pressure in hydraulic unit.
- Close left front and rear brake caliper bleeder screws.
- Do not remove -V.A.G 1869/2- .



- Release control module harness connector -arrow 1- and pull off -arrow 2-.

 **Note**

- ◆ *Make sure that no brake fluid enters control module connector housing. This could lead to corrosion of the contacts and thereby cause the system to fail.*
- ◆ *A contaminated housing must be carefully cleaned with compressed air.*
- To protect against escaping brake fluid, place a lint-free rag in the area under the control module and hydraulic unit.
- Mark brake lines. Refer to [⇒ "2.3 ABS Control Module and ABS Hydraulic Unit ABS/ESP Mark 60 Assembly Overview", page 12](#) .



**WARNING**

***Do not bend or kink brake lines!***

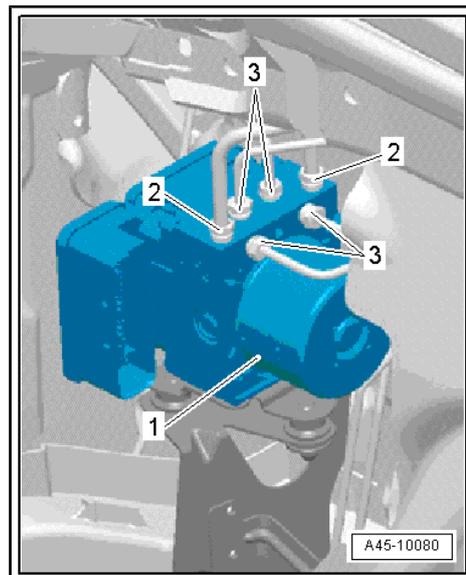
Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

- Disconnect the tie up the brake lines on the hydraulic unit -2- leading to the master brake cylinder.
- Remove the remaining brake lines -3- from hydraulic unit.

 **Note**

*Disconnecting hydraulic pump -1- from hydraulic unit is not permitted.*

- Seal brake lines and threaded holes with plugs from repair kit.



- Carefully remove the hydraulic unit -2- together with the control module and bracket -4- from the rubber buffers in the bracket -6-.
- Remove hydraulic unit from the vehicle.
- Remove the bolts -5- from the bracket -4- and remove the bracket.



**WARNING**

*Excessive shaking (e.g. dropping, impact) may destroy the control module. Control module must then no longer be used.*

- Set hydraulic unit with control module down on a clean surface.



**Note**

*After removing control module and hydraulic unit, seal threaded holes and brake lines with sealing plugs - 1H0.698.311.A.*



**WARNING**

*The hydraulic pump must not be separated from the hydraulic unit.*

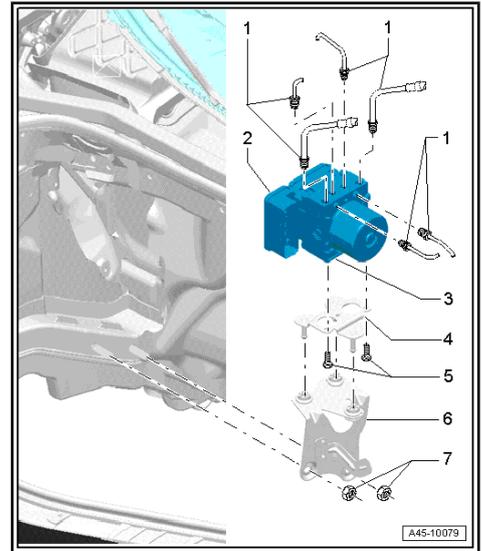
**Installing**

Installation is the reverse of removal, with special attention to the following:



**Note**

- ◆ *For customer service, hydraulic unit is filled with brake fluid.*
- ◆ *If sealing plugs are removed before corresponding brake line is installed, brake fluid leaks out. If that is the case, sufficient brake system bleeding can no longer be ensured.*



Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



- Tighten the bolts -5- on the bracket -4- to 8 Nm.
- Carefully install the hydraulic unit -2- together with the control module and bracket -4- on the rubber buffers in the bracket -6-.

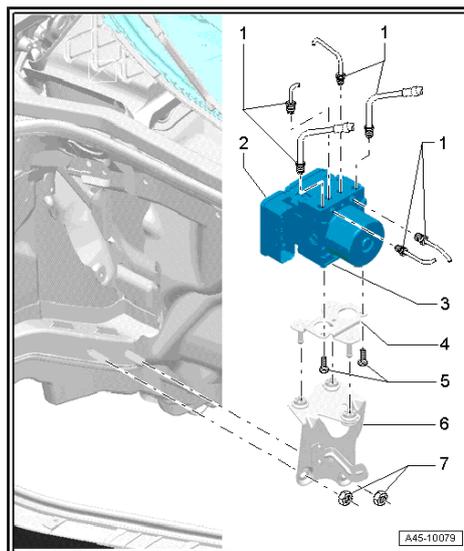
**Note**

*Be careful not to press the rubber buffers through bracket when installing the unit.*

- Connect brake lines according to marking.

**WARNING**

*If the brake line connections are interchanged, the ESP system will malfunction.*



- Tighten brake lines on hydraulic unit.
- Connect the connector to the control module.
- Bleed the brake system. Refer to [→ "1.4 Brake System Bleeding", page 76](#).
- After securing brake lines to hydraulic unit, perform output diagnostic test mode.

**Note**

*By performing the output check diagnosis, it can be determined if the line connections were interchanged.*

**Note**

- ◆ If ABS hydraulic unit was replaced, it must be coded.
- ◆ Use -VAS 5051- for this.

- On display, select:

- ◆ Chassis

- ◆ Brake system (Repair group 01:45)

- ◆ 01- On Board Diagnostic (OBD) capable systems

- ◆ 03- Brake electronics ABS/ESP Mark 60

- Select desired function on display:

- ◆ J104- ABS/ASR/ESP Control Module Mark 60

- ◆ J104- ABS/ASR/ESP Control Module, Functions

- ◆ J104- Control module, coding

**The following sensors should also be calibrated after replacing control module:**

- ◆ Steering Angle Sensor -G85-
- ◆ Sensor for transverse acceleration -G200-
- ◆ Brake Pressure Sensor 1 -G201-
- ◆ On AWD vehicles, longitudinal acceleration sensor -G251-

**Use -VAS 5051- for this.**

- On display, select:
- ◆ Chassis
- ◆ Brake System
- ◆ 01- On Board Diagnostic (OBD) capable systems
- ◆ 03- Brake electronics ABS/ESP Mark 60
- Select desired function on display:
- ◆ J104- ABS/ASR/ESP Control Module Mark 60
- ◆ J104- ABS/ASR/ESP Control Module, Functions
- Then perform the ESP driving and system tests.



**WARNING**

*Make sure the brakes are working correctly before driving the vehicle for the first time.*

## 4.6 ABS Control Module and ABS Hydraulic Unit, TFSI,



**Caution**

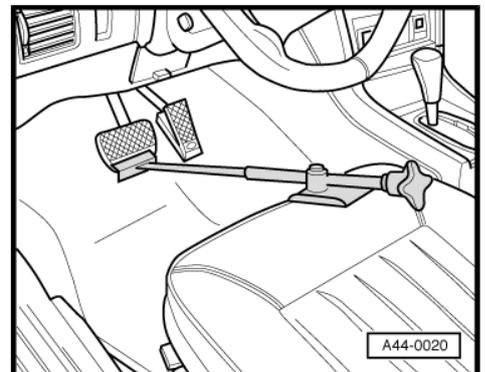
*Disconnecting ABS Control Module -J104- and ABS Hydraulic Unit -N55- is not permitted.*

### Special tools and workshop equipment required

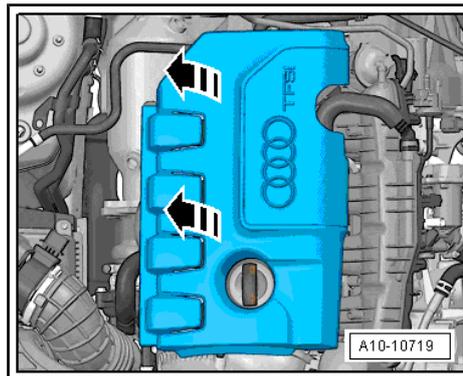
- ◆ Brake Pedal Actuator -V.A.G 1869/2-
- ◆ Vehicle Diagnosis, Testing and Information System -VAS 5051-

### Removing

- Read the control module version and make a note of it.
- Disconnect the battery. Be sure to get the radio code beforehand. Refer to ⇒ Electrical System; Rep. Gr. 27 ; Removal and Installation .
- Insert -V.A.G 1869/2- between brake pedal and driver's seat by pressing brake pedal down at least 60 mm.
- Connect bleeder bottle hose to left front and left rear brake caliper bleeder screw.
- Open left rear and left front brake caliper bleeder screws to reduce pressure in hydraulic unit.
- Close left front and rear brake caliper bleeder screws.
- Do not remove -V.A.G 1869/2- .
- Lower vehicle.



- Remove the engine cover.
- Open the clamp on the air guide hose with pliers and disconnect the hose.
- Remove the clamp from the air guide with pliers.
- Remove the air guide for the turbocharger.
- Remove the air guide from the vehicle.

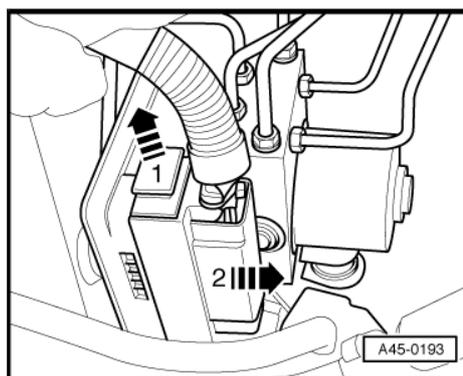


- Release control module harness connector -arrow 1- and pull off -arrow 2-.



**Note**

- ◆ *Make sure that no brake fluid enters control module connector housing. This could lead to corrosion of the contacts and thereby cause the system to fail.*
- ◆ *A contaminated housing must be carefully cleaned with compressed air.*



- To protect against escaping brake fluid, place a lint-free rag in the area under the control module and hydraulic unit.
- Mark brake lines. Refer to  
 ⇒ ["2.3 ABS Control Module and ABS Hydraulic Unit ABS/ESP Mark 60 Assembly Overview"](#), page 12 .



**WARNING**

*Do not bend or kink brake lines!*

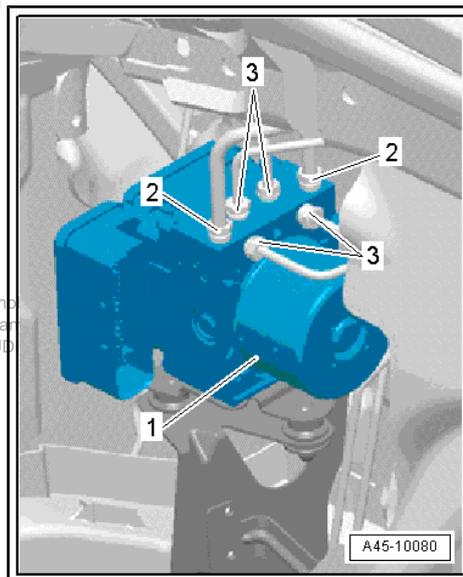
- Disconnect the tie up the brake lines on the hydraulic unit -2- leading to the master brake cylinder.
- Remove the remaining brake lines -3- from hydraulic unit.
- Seal brake lines and threaded holes with plugs from repair kit.



**Note**

*Disconnecting hydraulic pump from hydraulic unit is not permitted.*

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is prohibited without the written permission of Audi AG. Audi AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by Audi AG.



- Carefully remove the hydraulic unit -2- together with the control module and bracket -4- from the rubber buffers in the bracket -6-.
- Remove hydraulic unit from the vehicle.
- Remove the bolts -5- from the bracket -4- and remove the bracket.
- Set hydraulic unit with control module down on a clean surface.

 **WARNING**  
 Excessive shaking (e.g. dropping, impact) may destroy the control module. Control module must then no longer be used.

 **Note**

After removing control module and hydraulic unit, seal threaded holes and brake lines with sealing plugs - 1H0.698.311.A.

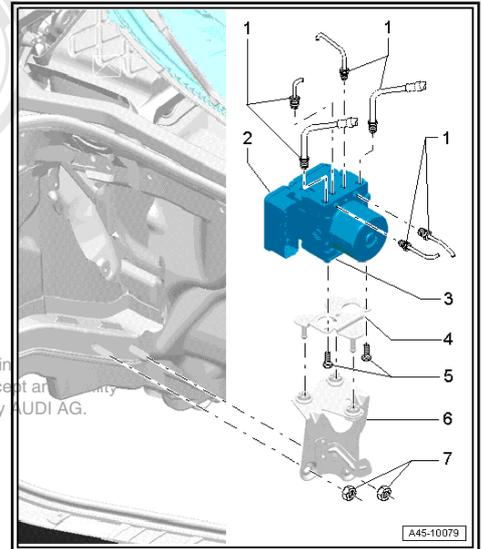
 **WARNING**  
 The hydraulic pump must not be separated from the hydraulic unit.

**Installing**

Installation is the reverse of removal, with special attention to the following:

 **Note**

- ◆ For customer service, hydraulic unit is filled with brake fluid.
- ◆ If sealing plugs are removed before corresponding brake line is installed, brake fluid leaks out. If that is the case, sufficient brake system bleeding can no longer be ensured.





- Tighten the bolts -5- on the bracket -4- to 8 Nm.
- Carefully install the hydraulic unit -2- together with the control module and bracket -4- on the rubber buffers in the bracket -6-.



**Note**

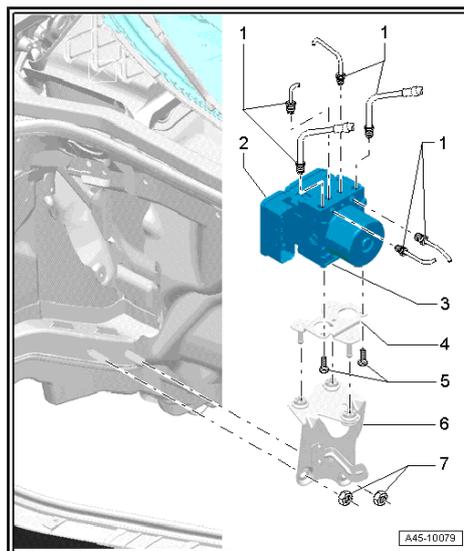
*Be careful not to press the rubber buffers through bracket when installing the unit.*

- Connect brake lines according to marking. Refer to [⇒ "2.3 ABS Control Module and ABS Hydraulic Unit ABS/ESP Mark 60 Assembly Overview", page 12](#) .



**WARNING**

*If the brake line connections are interchanged, the ESP system will malfunction.*



- Tighten brake lines on hydraulic unit.
- Connect the connector to the control module.
- Install the turbocharger air guide and close the clamps with pliers.
- Install the turbocharger air guide.
- Connect the air hose and close the clamp with pliers.
- Install the engine cover.
- Bleed the brake system. Refer to [⇒ "1.4 Brake System Bleeding", page 76](#) .
- After securing brake lines to hydraulic unit, perform output diagnostic test mode.



**Note**

- ◆ *By performing the output check diagnosis, it can be determined if the line connections were interchanged.*
- ◆ *If ABS hydraulic unit was replaced, it must be coded.*
- ◆ *Use -VAS 5051- for this.*

- On display, select:

- ◆ Chassis
- ◆ Brake system (Repair group 01;45)
- ◆ 01- On Board Diagnostic (OBD) capable systems
- ◆ 03- Brake electronics ABS/ESP Mark 60
- Select desired function on display:
- ◆ J104- ABS/ASR/ESP Control Module Mark 60
- ◆ J104- ABS/ASR/ESP Control Module, Functions
- ◆ J104- Control module, coding

**The following sensors should also be calibrated after replacing control module:**

- ◆ Steering Angle Sensor -G85-



Copyrighted by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

- ◆ Sensor for transverse acceleration -G200-
- ◆ Brake Pressure Sensor 1 -G201-
- ◆ On AWD vehicles, longitudinal acceleration sensor -G251-

 **Note**

*Use -VAS 505x- for this.*

- On display, select:
  - ◆ Chassis
  - ◆ Brake System
  - ◆ 01- On Board Diagnostic (OBD) capable systems
  - ◆ 03- Brake electronics ABS/ESP Mark 60
- Select desired function on display:
  - ◆ J104- ABS/ASR/ESP Control Module Mark 60
  - ◆ J104- ABS/ASR/ESP Control Module, Functions
- Then perform the ESP driving and system tests.



**WARNING**

*Make sure the brakes are working correctly before driving the vehicle for the first time.*

Copyright by Audi AG. Audi AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by Audi AG.

## 4.7 Front ABS Wheel Speed Sensor

### Removing

- Release connector on speed sensor and disconnect.
- Remove bolt.
- Remove speed sensor from wheel bearing housing.

### Installing

Installation is the reverse of removal, with special attention to the following:

- Before inserting speed sensor, clean hole inner surface and coat speed sensor all-round with Polycarbamide grease G 000 650.
- Turn the steering completely left and right, making sure that the speed sensor wiring has sufficient clearance.

## 4.8 Rear ABS Wheel Speed Sensor, FWD

### Removing

- Release connector on speed sensor and disconnect.
- Remove bolt.
- Remove speed sensor from stub axle.

### Installing

Installation is the reverse of removal, with special attention to the following:



- Before inserting speed sensor, clean hole inner surface and coat speed sensor all-round with Polycarbamide grease -G 000 650-

## 4.9 Rear ABS Wheel Speed Sensor, AWD

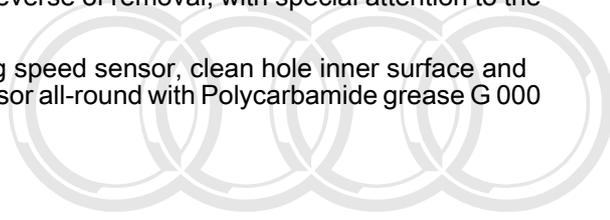
### Removing

- Release connector on speed sensor and disconnect.
- Remove bolt.
- Pull speed sensor out from stub axle.

### Installing

Installation is the reverse of removal, with special attention to the following:

- Before inserting speed sensor, clean hole inner surface and coat speed sensor all-round with Polycarbamide grease G 000 650.



**Audi**

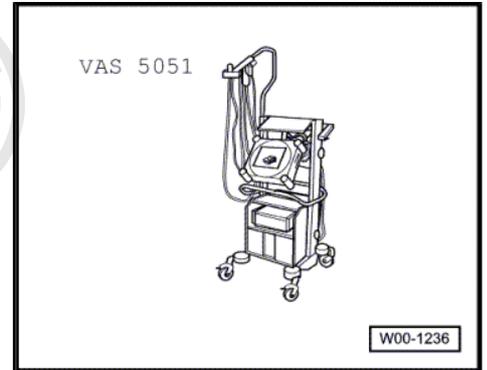
Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



## 5 Special Tools

### Special tools and workshop equipment required

- ◆ Brake Pedal Actuator -V.A.G 1869/2-
- ◆ Vehicle Diagnosis, Testing and Information System -VAS 5051-



Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

erWin

## 46 – Mechanical Components

### 1 General Information

⇒ [“1.1 Front Brakes, Servicing”, page 32](#)

⇒ [“1.2 Rear Brakes, Servicing”, page 32](#)

#### 1.1 Front Brakes, Servicing

Read and observe general information before servicing.



##### Note

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

- ◆ *Use Brake Charger/Bleeder Unit -VAS 5234- to extract brake fluid from brake fluid reservoir.*
- ◆ *Before removing a brake caliper or disconnecting a brake hose from a brake caliper, install the brake pedal loading device - V.A.G 1869/2- , to prevent the brake fluid reservoir from draining.*
- ◆ *When siphoning brake fluid, always use a bleeder bottle that is used exclusively for brake fluid.*
- ◆ *Make sure that brake fluid cannot leak out because it will damage components and the paint.*
- ◆ *Always use complete repair kit.*



##### WARNING

***Brake fluid is poisonous. NEVER siphon brake fluid with your mouth!***

#### 1.2 Rear Brakes, Servicing



##### Note

- ◆ *To siphon off brake fluid from the brake fluid reservoir, use the Brake Charger/Bleeder Unit -VAS 5234- or the Brake Charger/Bleeder Unit Adapter -V.A.G 1869/4- .*
- ◆ *Before removing a brake caliper or disconnecting a brake hose from a brake caliper, install the brake pedal loading device - V.A.G 1869/2- , to prevent the brake fluid reservoir from draining.*



##### WARNING

***After installing brake pads, depress brake pedal several times firmly to properly seat brake pads in their normal operating position.***

## 2 Description and Operation

⇒ [“2.1 Front Brakes Assembly Overview, 17" FNR G57”, page 33](#)

⇒ [“2.2 Front Brakes Assembly Overview, 16" FN3”, page 35](#)

⇒ [“2.3 Damper on Front Brake Caliper Assembly Overview”, page 38](#)

⇒ [“2.4 Rear Brakes Assembly Overview”, page 38](#)

⇒ [“2.5 Parking Brake Assembly Overview”, page 41](#)

⇒ [“2.6 Brake Pedal Assembly Overview”, page 41](#)

⇒ [“2.7 Front Brake Caliper Piston, Pressing Back”, page 42](#)

⇒ [“2.8 Rear Brake Caliper Piston, Pressing Back”, page 43](#)

### 2.1 Front Brakes Assembly Overview, 17" FNR G57

- ◆ Install complete repair set.
- ◆ After replacing brake pads, depress brake pedal several times firmly to properly seat brake pads in their normal operating position.

Read and observe general information. Refer to

⇒ [“1.1 Front Brakes, Servicing”, page 32](#) .

**1 - Brake Disc**

- Must always be replaced together on both sides of vehicle.
- Remove brake caliper before removing.
- Coat contact surfaces between brake disc and wheel hub with Polycarbamide grease -G 052 142 A2-. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44 ; General Information .
- Allocation, dimensions, wear limits, refer to ⇒ ["2.1 Technical Data", page 2](#) .
- Checking thickness, refer to Maintenance Booklet 808.

**2 - Retaining Spring**

- Ensure installation position is correct.

**3 - Brake Caliper Housing**

- Piston diameter, refer to ⇒ ["2.1 Technical Data", page 2](#) and to the Electronic Parts Catalog (ETKA).
- To replace brake pads, unfasten from brake carrier.
- Removing and installing, refer to ⇒ ["5.4 Front Brake Caliper, 17" FNR G57", page 58](#)

- Servicing, refer to ⇒ ["1.2 Front Brake Caliper Servicing, FNRG57", page 75](#) .
- Brake caliper with a balance weight, refer to ⇒ ["2.3 Damper on Front Brake Caliper Assembly Overview", page 38](#) .

**4 - Bushing**

- Insert in brake caliper housing.

**5 - Guide Pins**

- 30 Nm

**6 - Cap**

**7 - Wear Indicator Wiring Bracket**

**8 - Bolt**

- Wiring bracket to brake caliper.
- 25 Nm

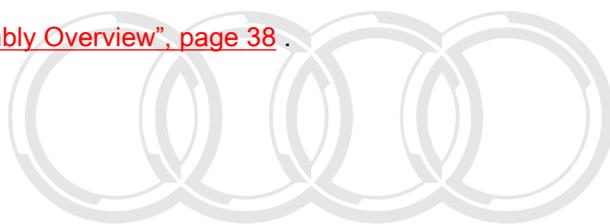
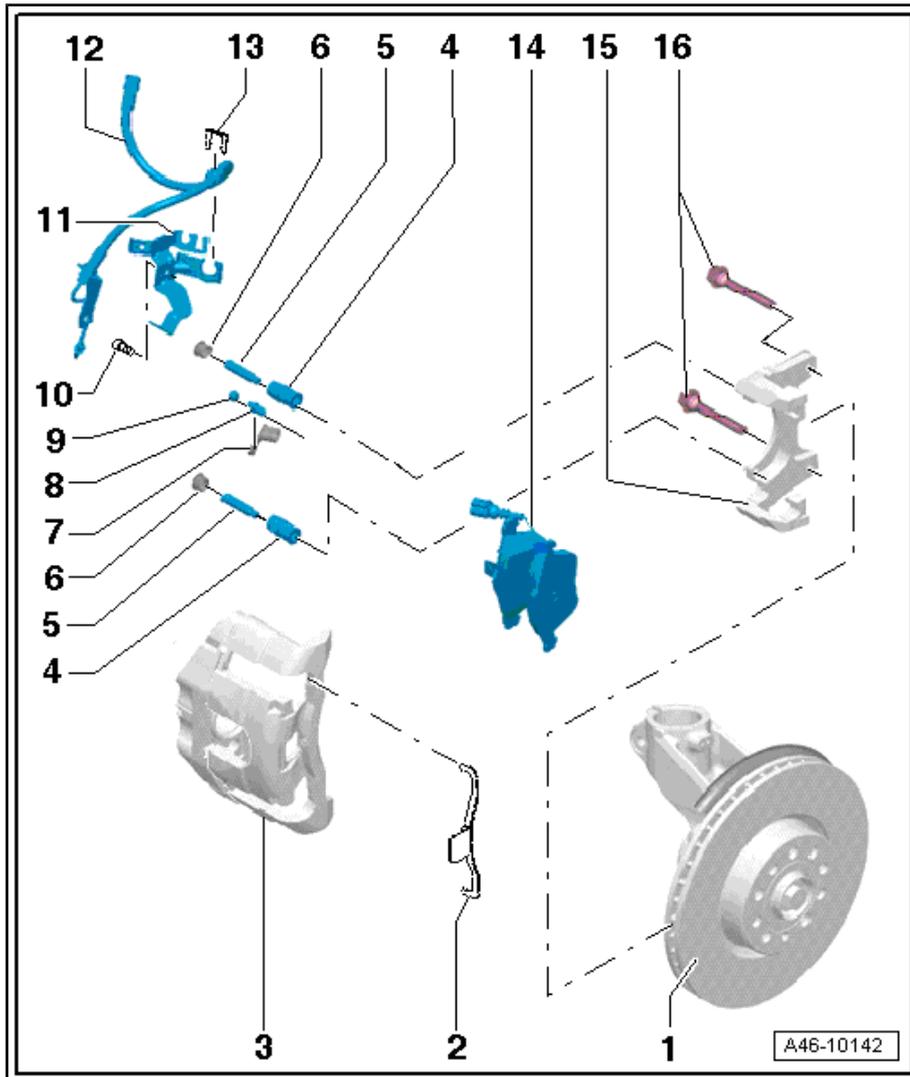
**9 - Cap**

**10 - Bolt**

- Brake line bracket to brake caliper.
- 15 Nm

**11 - Bracket for Brake Line**

- Bolt to brake caliper housing.



**Audi**

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

erWin

- Hook in brake line.

## 12 - Brake Line

- Installing brake caliper housing with ⇒ [Item 11 \(page 34\)](#) .
- Hose must be installed free of twists.
- ◆ Brake line connection to brake caliper: 14 Nm.
- ◆ Brake line connection to brake hose: 14 Nm
- ◆ When connecting brake line with brake hose, counterhold at brake hose hex head.

## 13 - Spring Clamp

- Holds brake line in bracket ⇒ [Item 11 \(page 34\)](#) .

## 14 - Brake pads

- With wear indicator (only on left side on inner pad).
- Pad thickness, wear limit, refer to ⇒ ["2.1 Technical Data", page 2](#) .
- Removing and installing, refer to ⇒ ["5.2 Front Brake Pads, 17" FNR G57", page 51](#) .



### Note

*Before installing the brake pads, clean the pad guide surface and coat it with a film of grease. Refer to the Electronic Parts Catalog (ET-KA).*

- Must always be replaced together on both sides of vehicle.
- Checking thickness, refer to Maintenance Booklet 808.



### Note

*Before installing new brake pads, thoroughly clean the brake calipers of contaminants (grease-free). When doing this, pay particular attention to the cleanliness of the brake pad contact surfaces.*

## 15 - Brake Carrier

### 16 - Bolt

- Brake carrier to wheel bearing housing.
- Always replace after removal.
- 200 Nm

## 2.2 Front Brakes Assembly Overview, 16" FN3

- ◆ Install complete repair set.
- ◆ After replacing brake pads, depress brake pedal several times firmly to properly seat brake pads in their normal operating position.

**Read and observe general information. Refer to** ["1.1 Front Brakes, Servicing", page 32](#) .  
... is not authorised for private or commercial purposes, in part or in whole, is not authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

**1 - Wheel Bearing Unit with Integrated ABS Sensor Wheel**

- Removing and installing, refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Removal and Installation .

**2 - Wheel Speed Sensor**

- Removing and installing, refer to ⇒ ["4.7 Front ABS Wheel Speed Sensor"](#), [page 29](#) .

**3 - Bolt**

- 8 Nm

**4 - Cover Plate**

**5 - Bolt**

- 10 Nm

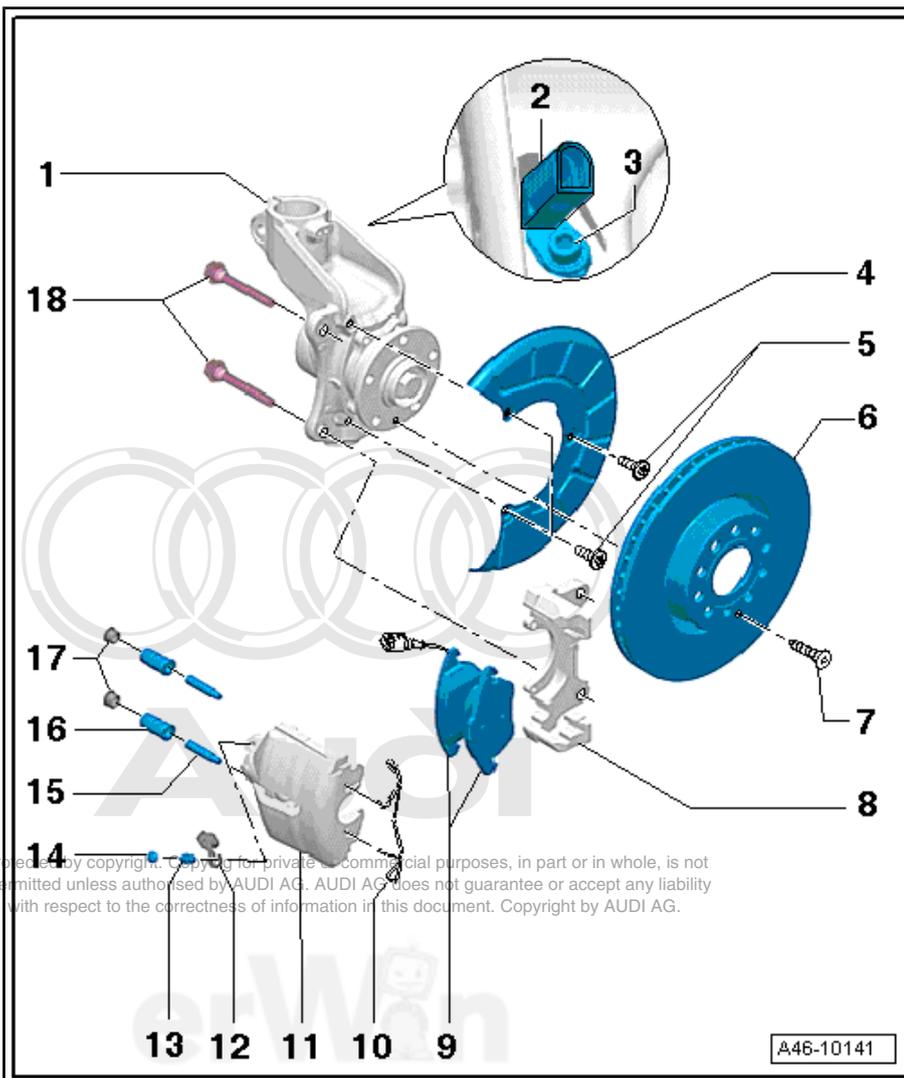
**6 - Brake Disc**

- Allocation, dimensions, wear limits, refer to ⇒ ["2.1 Technical Data"](#), [page 2](#) .

- Remove brake caliper housing, to remove.

- Do not use excessive force to separate the brake rotor from the wheel hub. If necessary, use rust penetrant, otherwise the brake rotors could be damaged.

- Must always be replaced together on both sides of vehicle.



Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

A46-10141

**7 - Bolt**

- Only loosen to remove brake disc.
- 4 Nm.

**8 - Brake Carrier**

- Bolt to wheel bearing housing.
- 200 Nm
- If the protective caps are damaged, install repair kit; use included grease packet to grease the guide pins.

**9 - Brake Pads**

- With wear indicator (only on left side on inner pad).
- Pad thickness, wear limit, refer to ⇒ ["2.1 Technical Data"](#), [page 2](#) .
- Must always be replaced together on both sides of vehicle.



**Note**

*Before installing the brake pads, clean the pad guide surface and coat it with a film of grease. Refer to the Electronic Parts Catalog (ET-KA).*

- Removing and installing, refer to ⇒ ["5.1 Front Brake Pads, 16" FN3"](#), [page 47](#) .

- Checking brake pad thickness, refer to Maintenance Booklet 808.

 **Note**

*Before installing new brake pads, thoroughly clean the brake calipers of contaminants (grease-free). When doing this, pay particular attention to the cleanliness of the brake pad contact surfaces.*

**10 - Retaining Spring**

- Insert in both holes of brake caliper housing.

**11 - Brake Caliper Housing**

- Piston diameter, refer to ⇒ [“2.1 Technical Data”, page 2](#) .
- To replace brake pads, unfasten from brake carrier.
- Removing and installing, refer to ⇒ [“5.3 Front Brake Caliper, 16" FN3”, page 55](#) .
- Servicing, refer to ⇒ [“2.1 Front Brake Caliper Assembly Overview, FN3”, page 79](#) .

Brake line connection to brake caliper: 19 Nm.

Brake line connection to brake hose: 12 Nm

When connecting brake line with brake hose, counterhold at brake hose hex head.

- Brake caliper with a balance weight, refer to ⇒ [“2.3 Damper on Front Brake Caliper Assembly Overview”, page 38](#) .

**12 - Bracket**

**13 - Bolt**

- Bracket to brake caliper.

**14 - Cap**

**15 - Guide Pins**

- Brake caliper to brake carrier.
- 30 Nm

**16 - Bushing**

**17 - Cap**

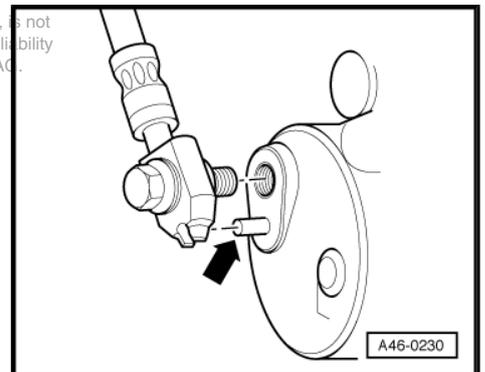
**18 - Bolt**

- Brake carrier to wheel bearing housing.
- Always replace after removal.
- 200 Nm

**Brake Hose Connection with Anti-Rotation Device**

**Brake hose to the brake caliper for 16" FN-3 brakes, tightening specification: 35 Nm.**

- Make sure that groove in brake hose banjo fitting is inserted in securing tab -arrow-.

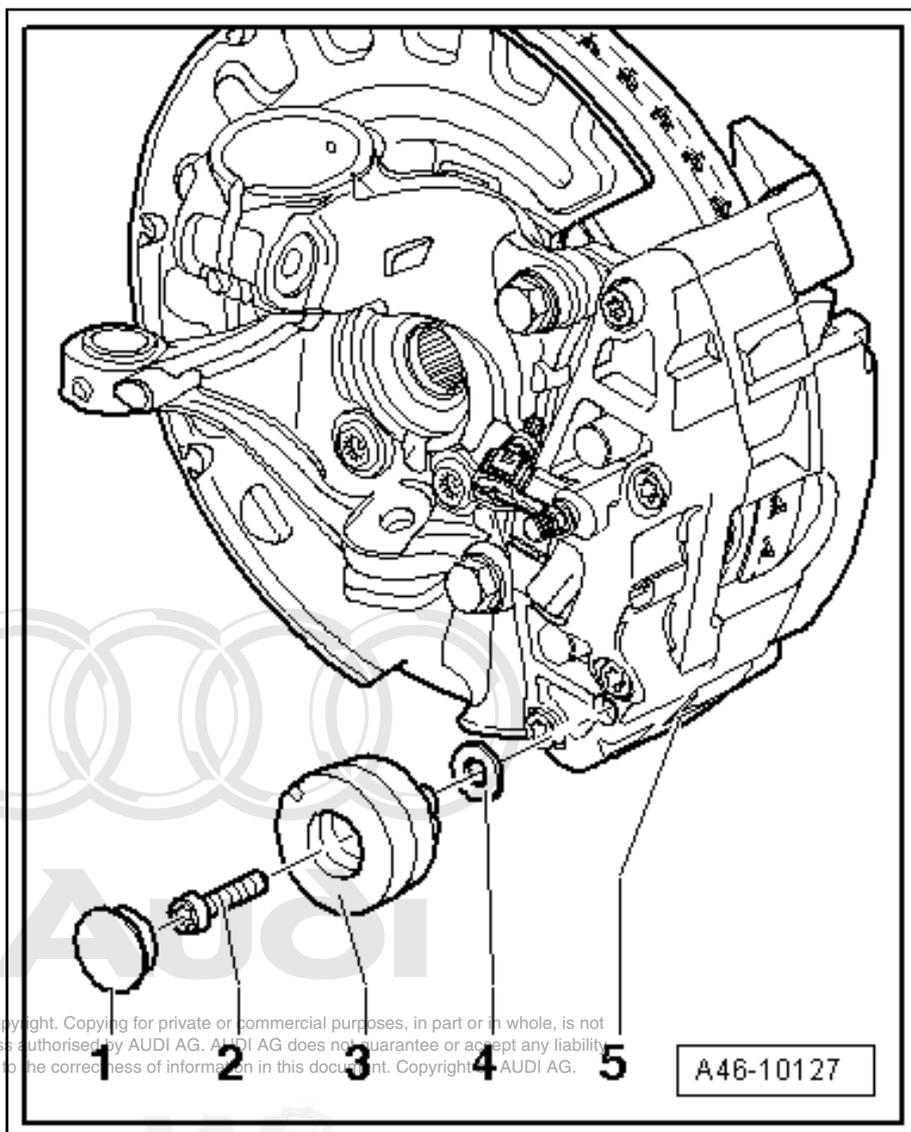


## 2.3 Damper on Front Brake Caliper Assembly Overview

### Note

*Not all models have the balance weight. This does not affect removing, installing and servicing the brake caliper.*

- 1 - Dust Cap
- 2 - Bolt
  - Always replace.
  - 10 Nm
- 3 - Damper
  - Removing and installing, refer to [⇒ "5.5 Damper", page 61](#).
- 4 - Washer
- 5 - Brake Caliper



## 2.4 Rear Brakes Assembly Overview

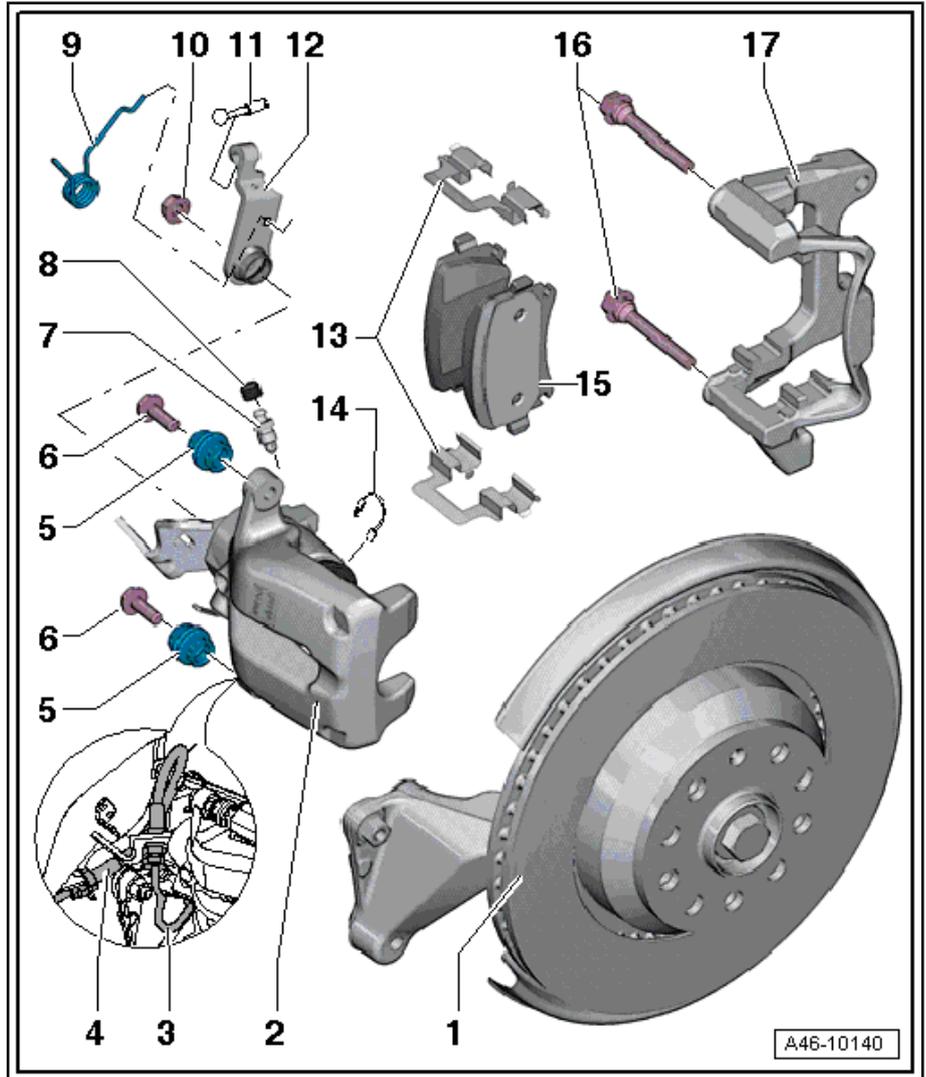
General notes, refer to [⇒ "1.2 Rear Brakes, Servicing", page 32](#).

### 1 - Brake Disc

- Allocation, dimensions, wear limits, refer to ⇒ ["2.1 Technical Data", page 2](#).
- Do not use excessive force to separate the brake rotor from the wheel hub. If necessary, use rust penetrant, otherwise the brake rotors could be damaged.
- Remove brake caliper prior to removing.
- Must always be replaced together on both sides of vehicle.

### 2 - Brake Caliper

- Do not disconnect brake hose when changing brake pads.
- Piston diameter, refer to ⇒ ["2.1 Technical Data", page 2](#).
- Removing and installing, refer to ⇒ ["5.7 Rear Brake Caliper", page 63](#).
- Servicing, refer to ⇒ ["1.3 Rear Brake Caliper Servicing", page 75](#).
- Parking brake must be adjusted after servicing or replacing, refer to ⇒ ["4.1 Parking Brake, Adjusting", page 46](#).



### 3 - Brake Line

- Do not disconnect brake hose and brake line when changing brake pads.
- Tightening specification, brake line, for all models: 14 Nm.

### 4 - Brake Hose

- Do not disconnect brake hose when changing brake pads.
- Tightening specification, brake hose, for all models: 14 Nm.

### 5 - Protective Cap

### 6 - Bolt

- Remove to change pad.
- Always replace after removal.
- Brake caliper to brake carrier.
- Self-locking.
- When loosening and tightening, counter-hold at guide pin.
- 35 Nm



Note

### 7 - Bleeder Screw

- 10 Nm

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

**8 - Cap****9 - Parking Brake Resetting Spring****10 - Nut**

- Parking brake linkage to brake caliper.
- Must not be loosened.

**11 - Parking Brake Cable**

- Removing and installing, refer to ⇒ [“5.10 Parking Brake Cable”, page 68](#) .

**12 - Parking Brake Linkage****13 - Brake Pad Securing Spring**

- Always replace when pads are replaced.

**14 - Speed Sensor Wire****15 - Brake Pads**

- Must always be replaced together on both sides of vehicle.
- Wear limit, refer to ⇒ [“2.1 Technical Data”, page 2](#) .
- Removing and installing, refer to ⇒ [“5.6 Rear Brake Pads”, page 61](#) .

Before installing the brake pads, clean the pad guide surface and coat it with a film of grease. Refer to the Electronic Parts Catalog (ETKA).

- Removing and installing, refer to ⇒ [“5.6 Rear Brake Pads”, page 61](#) .
- Checking brake pad thickness, refer to Maintenance Booklet 808.
- Version, refer to the Electronic Parts Catalog (ETKA).

**Note****16 - Bolt**

- Brake carrier to wheel bearing housing.
- Always replace after removal.
- 90 Nm + 90° turn

**Note****17 - Brake Carrier**

- Bolt to wheel bearing housing.

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

## 2.5 Parking Brake Assembly Overview

### 1 - Parking Brake Lever

- ❑ Supplied as replacement part assembled with relay rod, locking latch, push rod, push button, spring and locking segment.
- ❑ Removing and installing, refer to ⇒ ["5.8 Parking Brake Handle", page 66](#).
- ❑ Switch for indicator lamp installed under parking brake lever.

### 2 - Parking Brake Switch

- ❑ Removing and installing, refer to ⇒ ["5.9 Parking Brake Switch", page 67](#).
- ❑ For parking brake indicator light in instrument cluster.

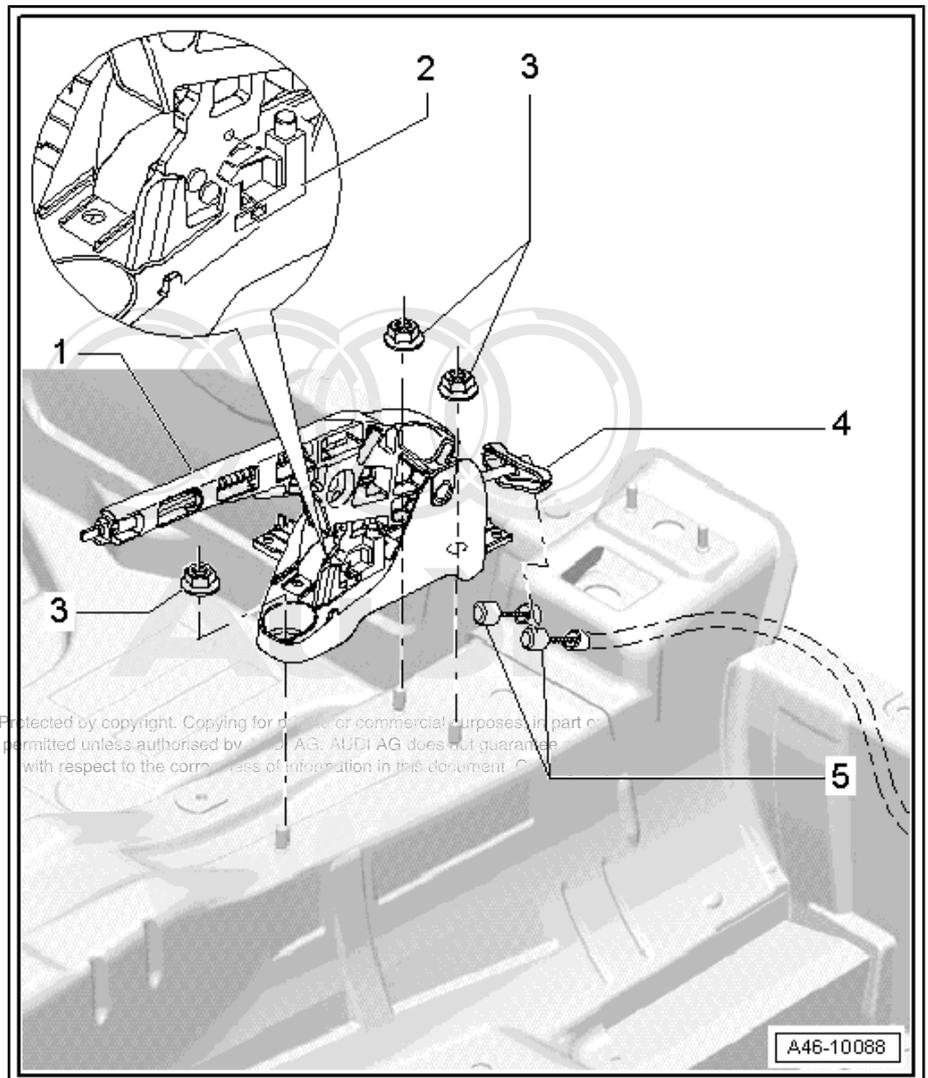
### 3 - Nut

- ❑ 15 Nm

### 4 - Compensator

- ❑ With adjusting nut for adjusting parking brake cable.

### 5 - Left and Right Parking Brake Cable



## 2.6 Brake Pedal Assembly Overview



### WARNING

*The path of the brake pedal must not be shortened via extra floor mats.*

**1 - Brake Booster**

- ❑ Removing and installing, refer to ["5.6 Brake Booster"](#), page 98 .

**2 - Brake Light Switch to Brake Master Cylinder****3 - Mounting Bracket**

- ❑ With crash bar.

**4 - Bushing**

- ❑ Lubricate mounting points with Polyurea grease -G 052 142 A2- before installing.

**5 - Nut**

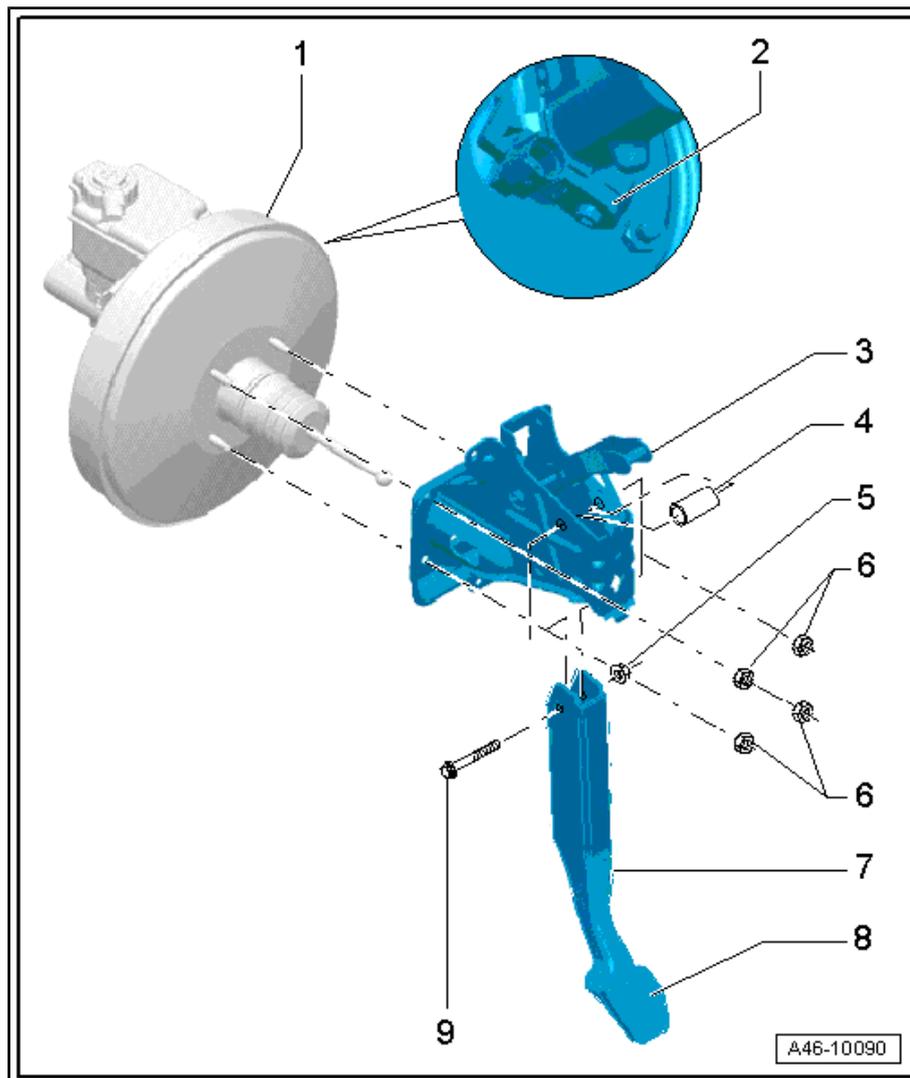
- ❑ 25 Nm

**6 - Nut**

- ❑ 25 Nm

**7 - Brake Pedal**

- ❑ Removing and installing, refer to ["5.13 Brake Pedal"](#), page 71 .
- ❑ Disconnect from brake booster. Refer to ["5.14 Brake Pedal and Brake Booster, Separating"](#), page 71 .
- ❑ Lubricate mounting points with Polyurea grease -G 052 142 A2- before installing.

**8 - Cover****9 - Bolt**

## 2.7 Front Brake Caliper Piston, Pressing Back

**Special tools and workshop equipment required**

- ◆ Piston resetting tool -T10145-

**Note**

*Press brake piston back into caliper housing using resetting tool before inserting new brake pads. Before pressing back, extract brake fluid from reservoir with bleeder bottle so escaping fluid does not damage components.*

with respect to the correctness of information in this document. Copyright by AUDI AG.

**Press the brake pistons back with the -T10145- .**

Make sure that brake fluid cannot leak out of the brake fluid reservoir because it will damage components and the paint.

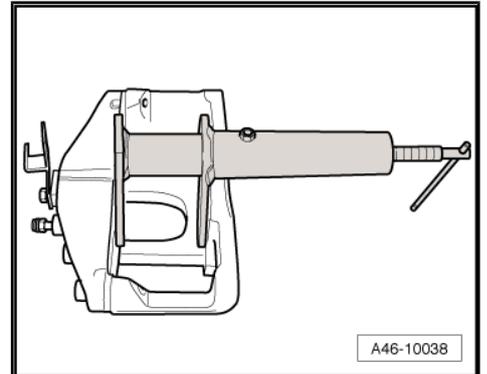
When siphoning brake fluid, always use a bleeder bottle that is used exclusively for brake fluid.



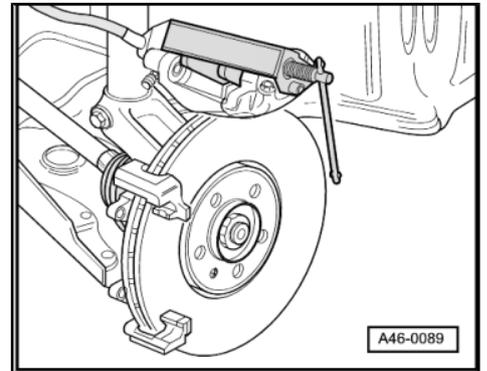
**WARNING**

*Brake fluid is poisonous. NEVER siphon brake fluid with your mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.*

Press piston back.



Press piston back.



## 2.8 Rear Brake Caliper Piston, Pressing Back

### Special tools and workshop equipment required

- ◆ Resetting and extracting tool -T10165-



**Note**

*Before pushing back the piston, siphon some of the brake fluid out of the brake fluid reservoir. To extract brake fluid from the brake fluid reservoir, use a bleeder bottle or a plastic bottle that only comes into contact with brake fluid.*



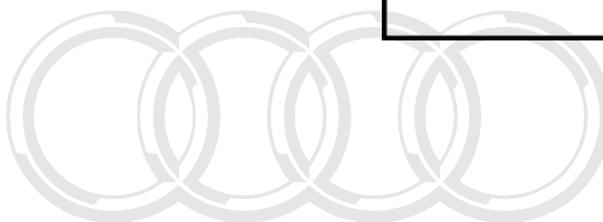
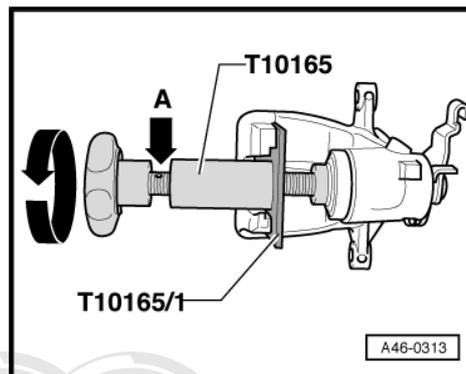
**WARNING**

*Brake fluid is poisonous. NEVER siphon brake fluid with your mouth!*

- Position -T10165- on brake caliper housing piston.
- Install pistons at knurling wheel of -T10165- by turning clockwise. Do not damage protective caps.

 **Note**

*If the piston is difficult to move, use a 13 mm open end wrench on the flats -arrow- provided for this purpose.*



**Audi**

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

erWin

### 3 Specifications

⇒ "3.1 Fastener Tightening Specifications", page 45

#### 3.1 Fastener Tightening Specifications

Component	Fastener Size	Nm
Front brake carrier to wheel bearing housing bolt <sup>1</sup>	-	200
Rear brake carrier to wheel bearing housing bolt <sup>1</sup>	-	90 + 90°
Brake disc to wheel hub bolt	-	4
Brake hose connection with anti-rotation device to caliper bolt, 16" FN3	-	35
Brake line bracket to front brake caliper bolt	-	15
Brake line connection to front brake caliper	-	-
- 17" FNR G57	-	14
- 16" FN3	-	19
Brake line connection to front brake hose	-	-
- 17" FNR G57	-	14
- 16" FN3	-	12
Brake pedal to mounting bracket nut	-	25
Brake pedal Mounting bracket nut	-	25
Cover plate to front wheel bearing housing bolt	-	10
Damper to front brake caliper bolt	-	10
Front brakes caliper guide pin <sup>1</sup>	-	30
Parking brake cable lower right clip nut	-	12
Parking brake cable left and right bolt	-	4
Parking brake lever nut	-	15
Parking brake lever trim bolt	-	0.7
Rear brake caliper bleeder screw	-	10
Rear brake caliper bolt <sup>1</sup>	-	35
Rear brake line and brake hose	-	14
Wear indicator wiring bracket to front brake caliper bolt	-	25
Wheel speed sensor bolt	-	8

- <sup>1</sup> Always replace after removal.

## 4 Diagnosis and Testing

⇒ "4.1 Parking Brake, Adjusting", page 46

### 4.1 Parking Brake, Adjusting



#### Note

*A new adjustment is necessary only after replacing brake cables, brake calipers or brake discs.*

- ◆ For parking brake cable zero adjustment, both rear wheels must run freely.
- ◆ The parking brake lever must go below first catch by itself in zero position.
- ◆ The adjusting nut on the compensator must be installed over the end of the relay rod.
- Release parking brake.
- Loosen cover in rear center console compartment with a hook and remove.
- The parking brake cable -5- must be routed without tension.

When adjusting parking brake, lever -1- may be raised a maximum of 2 degrees.

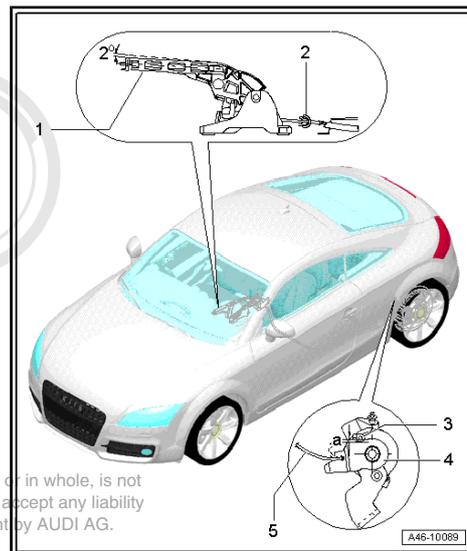
- Install adjusting nut on compensator lever -2- until lever on brake caliper -4- can be raised from stop -3-.
- With parking brake lever zero adjustment, distance -a- between lever on brake caliper -4- and stop -3- together must be at least 1 mm.
- The maximum distance on a side must not exceed 4 mm.
- Distance -a- to stop -3- on one side must be greater than 0 mm and must not exceed 4 mm.
- Apply the parking brake 3 times and then release.
- With parking brake released, check if both wheels can be turned freely. And the distance -a- at the calipers is maintained.
- A light braking effect on the rear wheels must be noticeable in the first parking brake lever detent.

Correct the adjustment, if necessary, by adjusting the adjustment nut.



#### Note

*Due to the automatic rear brake adjuster, there is no need to adjust the parking brake after making initial adjustment.*



#### WARNING

***Make sure the brakes are working correctly before driving the vehicle for the first time.***

## 5 Removal and Installation

- ⇒ [“5.1 Front Brake Pads, 16" FN3”, page 47](#)
- ⇒ [“5.2 Front Brake Pads, 17" FNR G57”, page 51](#)
- ⇒ [“5.3 Front Brake Caliper, 16" FN3”, page 55](#)
- ⇒ [“5.4 Front Brake Caliper, 17" FNR G57”, page 58](#)
- ⇒ [“5.5 Damper”, page 61](#)
- ⇒ [“5.6 Rear Brake Pads”, page 61](#)
- ⇒ [“5.7 Rear Brake Caliper”, page 63](#)
- ⇒ [“5.8 Parking Brake Handle”, page 66](#)
- ⇒ [“5.9 Parking Brake Switch”, page 67](#)
- ⇒ [“5.10 Parking Brake Cable”, page 68](#)
- ⇒ [“5.11 Parking Brake Cable Guide Tube”, page 70](#)
- ⇒ [“5.12 Parking Brake Cable, Loosening from Brake Caliper and Engaging”, page 70](#)
- ⇒ [“5.13 Brake Pedal”, page 71](#)
- ⇒ [“5.14 Brake Pedal and Brake Booster, Separating”, page 71](#)

### 5.1 Front Brake Pads, 16" FN3

#### Special tools and workshop equipment required

- ◆ Torque wrench -V.A.G 1331-
- ◆ Torque wrench -V.A.G 1410-
- ◆ Torque wrench -V.A.G 1332-
- ◆ Brake pedal actuator -V.A.G 1869/2-
- ◆ Piston resetting tool -T10145-

#### Removing

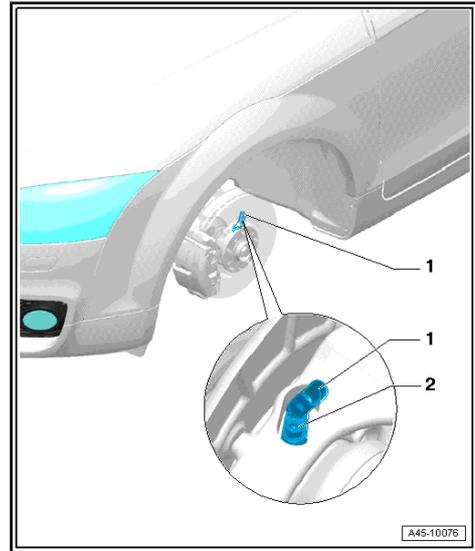
- Raise vehicle.
- Remove wheels.



#### Note

*When removing, mark brake pads that will be used again. Install in the same position, otherwise braking effect will be uneven!*

- Disconnect brake pad wear indicator connector -1- at left brake.
- Do not loosen bolt -2-.



Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



- Using screwdriver, pry off brake pad retaining spring from brake caliper housing -arrow- and remove.
- Remove brake caliper. Refer to [⇒ "5.3 Front Brake Caliper, 16" FN3", page 55](#).
- Remove brake caliper and hang so brake line cannot be damaged by the weight of the brake caliper.

 **Note**

*Do not twist or kink brake hose line.*

- Remove brake pads from brake caliper housing or from brake carrier.
- Clean brake caliper housing, in particular the adhesion surface for the brake pads. This must be free of adhesive residue and grease.

 **Note**

*Clean brake caliper with mineral spirits exclusively.*

**Installing**

Before installing the brake pads, clean the pad guides and coat them grease. Refer to the Electronic Parts Catalog (ETKA).

 **Note**

*Push the brake pistons back using the -T10145- before installing the brake pads. Refer to [⇒ "2.7 Front Brake Caliper Piston, Pressing Back", page 42](#).*

Make sure that brake fluid cannot leak out of the brake fluid reservoir because it will damage components and the paint.

When siphoning brake fluid, always use a bleeder bottle that is used exclusively for brake fluid.

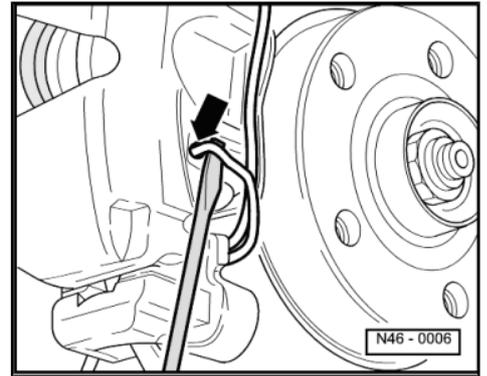


**WARNING**

***Brake fluid is poisonous. NEVER siphon brake fluid with your mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.***

Installation is the reverse of removal, with special attention to the following:

- Insert brake pads in brake carrier, observe installation position:



Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability for errors or omissions in this document. Copyright by AUDI AG.

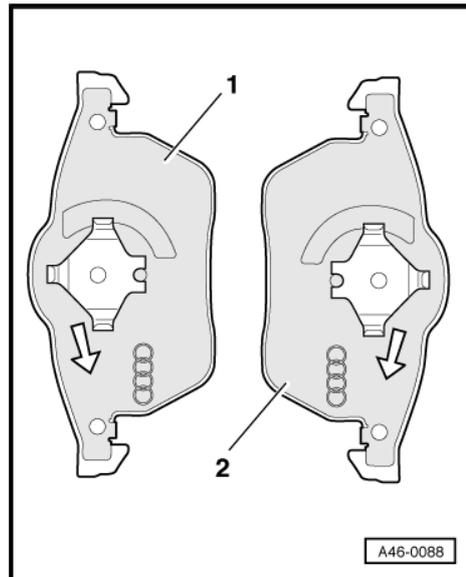
When brake pads are installed correctly, arrow on backing plate points down.

- 1 - Right brake pad, piston side
- 2 - Left brake pad, piston side



**Note**

Brake pad with wear indicator sits at front in left brake caliper on inner brake pad.

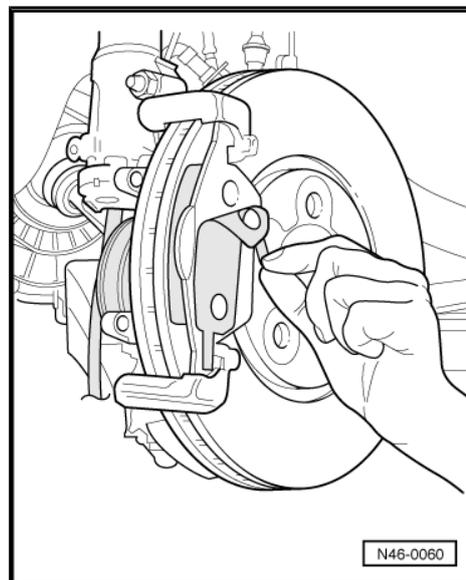


- Remove protective foil on backing plate of outer brake pad.

~~Position brake caliper on brake carrier or brake disc.~~

~~Tighten brake caliper on brake carrier with both guide bolts.~~

Note torque: 30 Nm.

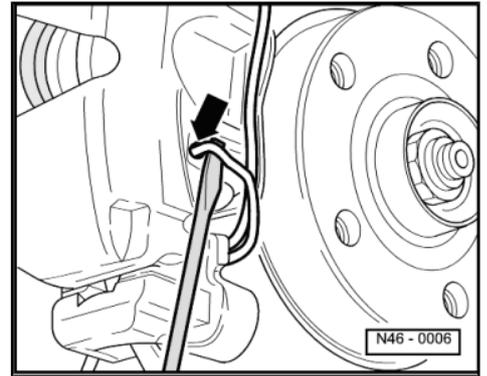


- Set retaining spring -arrow- into brake caliper housing.

 **Note**

*Make sure that brake hose is installed without being twisted or pulled.*

- Insert both cover caps on guide pins.
- Install retaining spring in brake caliper housing.
- Press in spring clip.
- Connect wear indicator connector.
- Press wear indicator connector in bracket and engage line.
- Mounting wheels, refer to ⇒ Wheel and Tire Guide; Rep. Gr. 44 ; General Information .



 **WARNING**

- ◆ *Retaining spring must be pressed under brake carrier after it is inserted in both holes. If improperly installed, the wear of the outer brake pad cannot be adjusted, thereby increasing brake pedal travel.*
- ◆ *After inserting brake pads and bleeding brake system, forcefully press brake pedal several times while vehicle is stationary so brake pads can be seated in their normal operating position.*

- Check brake fluid level, and fill if necessary.
- Mounting wheels, refer to ⇒ Wheel and Tire Guide; Rep. Gr. 44 ; General Information .

 **WARNING**

*After installing brake pads, depress brake pedal several times firmly to properly seat brake pads in their normal operating position.*

 **WARNING**

*Make sure the brakes are working correctly before driving the vehicle for the first time.*

## 5.2 Front Brake Pads, 17" FNR G57

### Special tools and workshop equipment required

- ◆ Torque wrench -V.A.G 1331-
- ◆ Torque wrench -V.A.G 1410-
- ◆ Torque wrench -V.A.G 1332-
- ◆ Brake pedal actuator -V.A.G 1869/2-
- ◆ Piston resetting tool -T10145-

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

## Removing

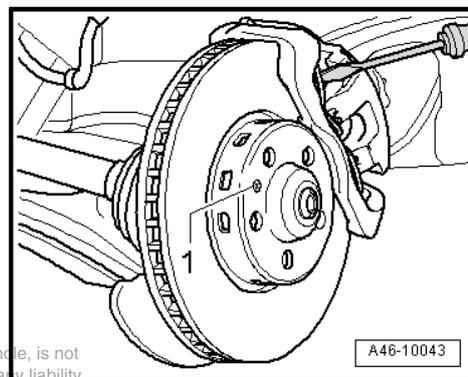


### Note

- ◆ *When removing, mark brake pads that will be used again. Install in the same position, otherwise braking effect will be uneven!*
- ◆ *Observe the direction of rotation when installing brake disc (arrow on brake disc) and installed location (left or right).*

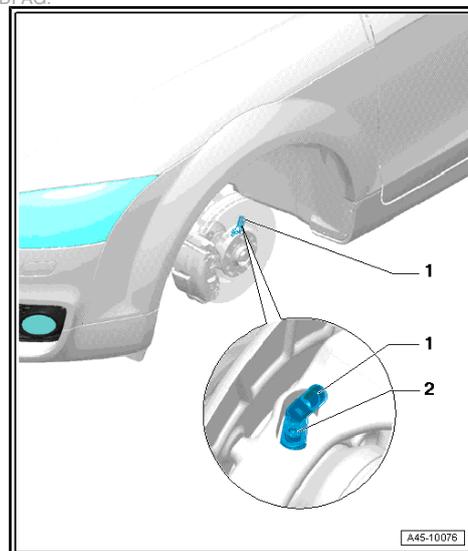
- Raise vehicle.
- Remove wheels.
- Mounting wheels, refer to ⇒ Wheel and Tire Guide; Rep. Gr. 44 ; General Information .
- Using screwdriver, pry off brake pad retaining spring from brake caliper housing and remove.

**Loosen bolt -1- (4 Nm) only to remove brake disc.**

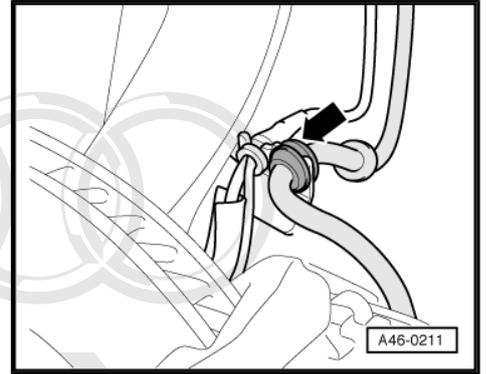


Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

- Disconnect brake pad wear indicator connector -1-.
- Do not loosen bolt -2-.
- Remove brake pad wear indicator connector from bracket and disengage cable.



- Remove spring clip -arrow- from brake line bracket.
- Unhook brake line from retainer.
- Remove bolt and remove brake line bracket.
- Remove brake caliper. Refer to [⇒ "5.4 Front Brake Caliper, 17" FNR G57", page 58](#).
- Remove brake caliper and hang so brake line cannot be damaged by the weight of the brake caliper.



 **Note**

*Do not twist or kink brake hose line.*

- Remove brake pads from brake caliper housing or from brake carrier.
- Clean brake caliper housing, in particular the adhesion surface for the brake pads. This must be free of adhesive residue and grease.

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted without the prior written consent of Audi AG. Audi AG does not guarantee or accept any liability for the accuracy or completeness of the information in this document. Copyright by Audi AG.

 **Note**

*Clean brake caliper with mineral spirits exclusively.*

**Installing**

Before installing the brake pads, clean the pad guide surface and coat it with a film of grease. Refer to the Electronic Parts Catalog (ETKA).

 **Note**

*Push the brake pistons back using the piston resetting tool - T10145- before installing the brake pads. Refer to [⇒ "2.7 Front Brake Caliper Piston, Pressing Back", page 42](#).*

Make sure that brake fluid cannot leak out of the brake fluid reservoir because it will damage components and the paint.

When siphoning brake fluid, always use a bleeder bottle that is used exclusively for brake fluid.

 **WARNING**

***Brake fluid is poisonous. NEVER siphon brake fluid with your mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.***

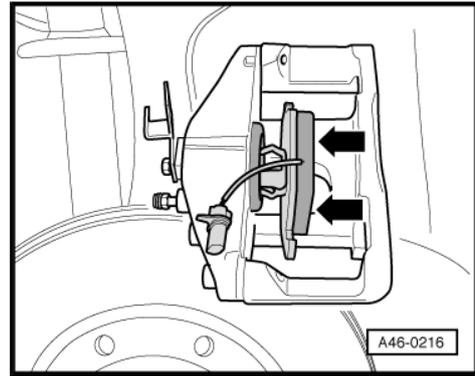
Installation is the reverse of removal, with special attention to the following:

 **Note**

*Brake pad with wear indicator sits at front in left brake caliper on inner brake pad.*



- Set the brake pad with retaining spring and wear indicator into the brake caliper housing (piston).



**Audi**

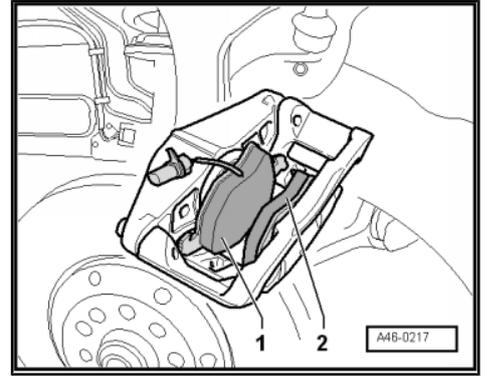
Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



- Set outer brake pad -2- onto the brake caliper.
- Wear indicator wire is on inside of left front brake pad -1-.
- Position brake caliper with brake pads inserted on brake carrier or brake disc.
- Tighten brake caliper housing to brake carrier using both guide pins. Note required torque: 30 Nm.

 **Note**

*Make sure that brake hose is installed without being twisted or pulled.*



- Install both protective caps.
- Attach brake line bracket.
- Install retaining spring in brake caliper housing.
- Engage brake line in bracket.
- Press in spring clip.
- Connect wear indicator connector.
- Press wear indicator connector in bracket and engage line.
- Mounting wheels, refer to ⇒ Wheel and Tire Guide; Rep. Gr. 44 ; General Information .

 **Note**

*After hooking into both studs, the retaining spring must be pressed under the brake carrier. If improperly installed, the wear of the outer brake pad cannot be adjusted, thereby increasing brake pedal travel.*

 **Note**

*Check brake caliper for ease of movement by moving it sideways.*

- Check brake fluid level, and fill if necessary.

 **WARNING** copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.  
***After installing brake pads, depress brake pedal several times firmly to properly seat brake pads in their normal operating position.***

 **WARNING**  
***Make sure the brakes are working correctly before driving the vehicle for the first time.***

### 5.3 Front Brake Caliper, 16" FN3

Special tools and workshop equipment required

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

◆ Piston resetting tool -T10145-

### Removing

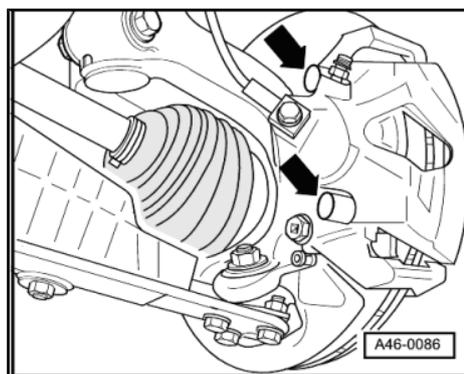
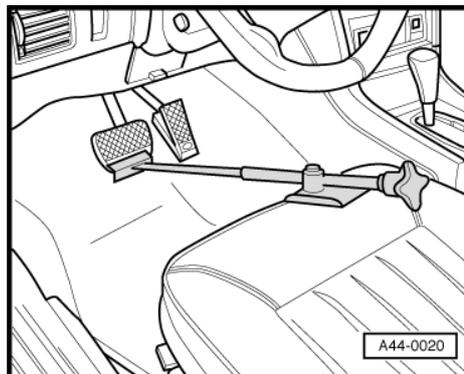
- Insert -V.A.G 1869/2- between brake pedal and driver's seat by pressing brake pedal down at least 60 mm.



### Note

*By doing this, the valves in the brake master cylinder are closed and the brake fluid reservoir does not run empty.*

- Connect the hose of a bleeder bottle to the bleeder screw of the removed brake caliper.
- Open bleeder screw.
- Do not remove -V.A.G 1869/2- .
- Close the bleed screws.
- Remove brake hose from brake caliper.
- Remove cover caps on guide pins -arrows-.



# Audi

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



- Remove guide pins -arrows-.
- Pull both guide pins out of brake caliper and bushings.
- Remove brake pads. Refer to  
 ⇒ ["5.1 Front Brake Pads, 16" FN3", page 47](#) .

### Installing

Installation is the reverse of removal, with special attention to the following:

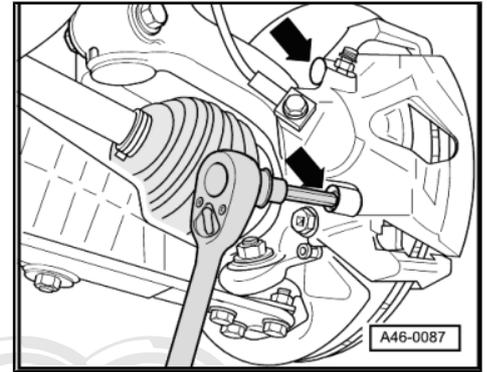
- Remove -V.A.G 1869/2- .

### Note

*Push the brake pistons back using the -T10145- before installing the brake pads. Refer to  
 ⇒ ["2.7 Front Brake Caliper Piston, Pressing Back", page 42](#) .*

Make sure that brake fluid cannot leak out of the brake fluid reservoir because it will damage components and the paint.

When siphoning brake fluid, always use a bleeder bottle that is used exclusively for brake fluid.



### WARNING

***Brake fluid is poisonous. NEVER siphon brake fluid with your mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.***

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability for errors or omissions in this document. Copyright by AUDI AG.

- Install brake pads. Refer to  
 ⇒ ["5.1 Front Brake Pads, 16" FN3", page 47](#) .
- Tighten brake caliper on brake carrier with both guide bolts.  
 Note torque: 30 Nm
- Connect the brake line in the brake caliper.

### Brake Hose Connection with Anti-Rotation Device

Brake hose in the brake caliper for 16" FN-3 brakes, tightening specification: 35 Nm.

- Make sure that groove in brake hose banjo fitting is inserted in securing tab -arrow-.
- Brake system, bleeding, refer to [⇒ "1.4 Brake System Bleeding", page 76](#) .
- Mounting wheels, refer to ⇒ Wheel and Tire Guide; Rep. Gr. 44 ; General Information .



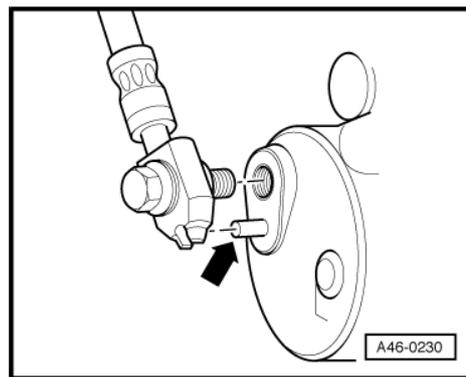
#### WARNING

*After installing brake pads, depress brake pedal several times firmly to properly seat brake pads in their normal operating position.*



#### WARNING

*Make sure the brakes are working correctly before driving the vehicle for the first time.*



## 5.4 Front Brake Caliper, 17" FNR G57

Special tools and workshop equipment required

- ◆ Brake pedal actuator -V.A.G 1869/2-
- ◆ Piston resetting tool -T10145-

### Removing

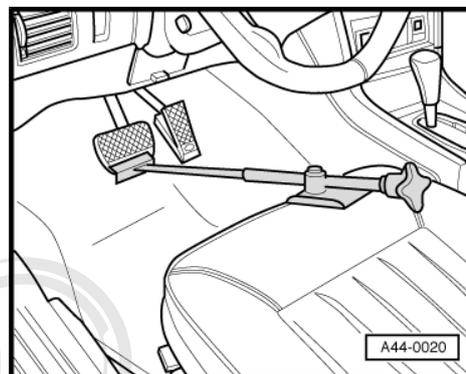
- Insert -V.A.G 1869/2- between brake pedal and driver's seat by pressing brake pedal down at least 60 mm.



#### Note

*By doing this, the valves in the brake master cylinder are closed and the brake fluid reservoir does not run empty.*

- Connect the hose of a bleeder bottle to the bleeder screw of the removed brake caliper.
- Open bleeder screw.
- Do not remove -V.A.G 1869/2- .
- Close the bleed screws.
- Remove brake hose from brake caliper.



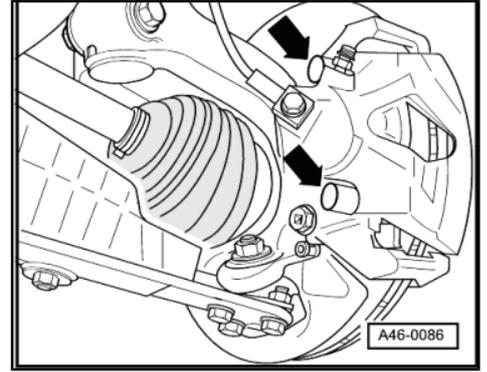
- Remove cover caps on guide pins -arrows-



Audi

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

erWin 



- Remove guide pins -arrows-.
- Pull both guide pins out of brake caliper and bushings.
- Remove brake pads  
⇒ ["5.2 Front Brake Pads, 17" FNR G57", page 51](#) .

### Installing

Installation is the reverse of removal, with special attention to the following:

- Remove -V.A.G 1869/2- .

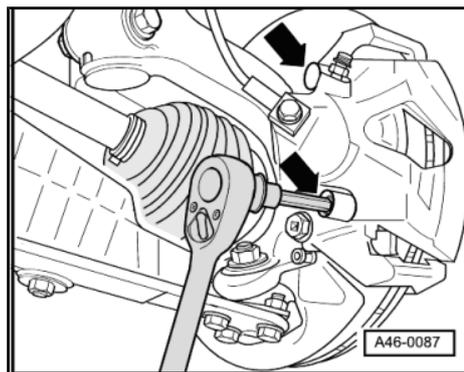


### Note

Push the brake pistons back using the -T10145- before installing the brake pads. Refer to  
⇒ ["2.7 Front Brake Caliper Piston, Pressing Back", page 42](#) .

Make sure that brake fluid cannot leak out of the brake fluid reservoir because it will damage components and the paint.

When siphoning brake fluid, always use a bleeder bottle that is used exclusively for brake fluid.



### WARNING

**Brake fluid is poisonous. NEVER siphon brake fluid with your mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.**

- Install brake pads. Refer to  
⇒ ["5.2 Front Brake Pads, 17" FNR G57", page 51](#) .
- Slide both guide pins through bushings into brake caliper.
- Tighten brake caliper housing to brake carrier using both guide pins. Note required torque: 30 Nm.
- Connect the brake line to the brake caliper.

**Brake hose in the brake caliper for 17" FNR- G57 brakes, tightening specification: 14 Nm.**

- Brake system, bleeding, refer to  
⇒ ["1.4 Brake System Bleeding", page 76](#) .



### Note

- ◆ Check brake caliper for ease of movement by moving it sideways.
- ◆ Mounting wheels, refer to ⇒ *Wheel and Tire Guide; Rep. Gr. 44 ; General Information* .
- Lower vehicle.



### WARNING

**After installing brake pads, depress brake pedal several times firmly to properly seat brake pads in their normal operating position.**

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



## WARNING

*Make sure the brakes are working correctly before driving the vehicle for the first time.*

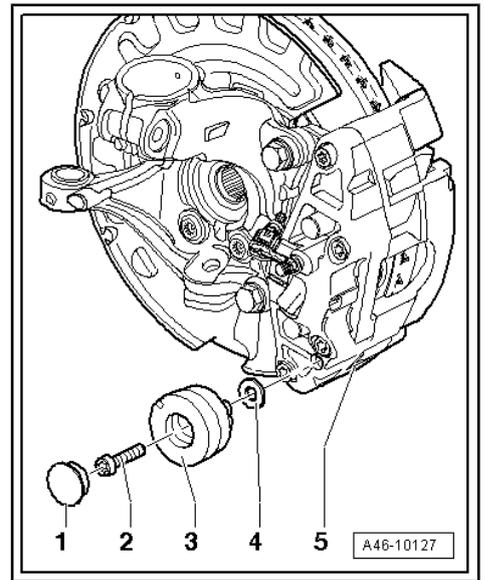
## 5.5 Damper

### Removing

- Raise vehicle.
- Remove front wheels.
- Remove the dust cap.
- Remove the screw -2-.
- Remove the balance weight -3- and washer -4- from the brake caliper.

### Installing

- Clean the brake caliper around the balance weight.
- Install the washer -4- and balance weight -3- in the brake caliper.
- Install a new screw -2- and tighten it to 10 Nm.
- Install the dust cap -1-.
- Mounting wheels, refer to ⇒ Wheel and Tire Guide; Rep. Gr. 44 ; General Information .



## 5.6 Rear Brake Pads



### Note

*When removing, mark brake pads that will be used again. Install in the same position, otherwise braking effect will be uneven!*

### Special tools and workshop equipment required

- ◆ Torque wrench -V.A.G 1331-
- ◆ Piston resetting tool -T10145-

### Removing

- Raise vehicle.
- Remove wheels.



### Note

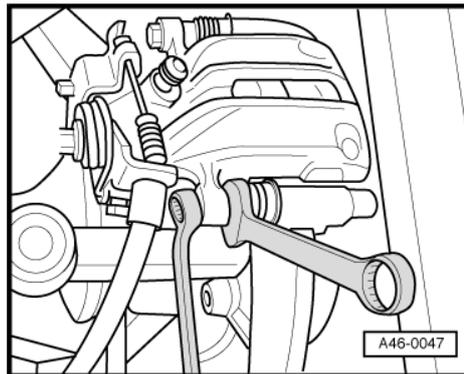
*Do not loosen parking brake cable from brake caliper.*

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

- Remove brake caliper housing while counterholding at guide pins.
- Remove brake caliper housing from brake disc.
- Hang brake caliper housing with wire so brake hose is not damaged by weight of brake caliper.

**WARNING**

*Do not kink or bend brake lines and brake hose.*

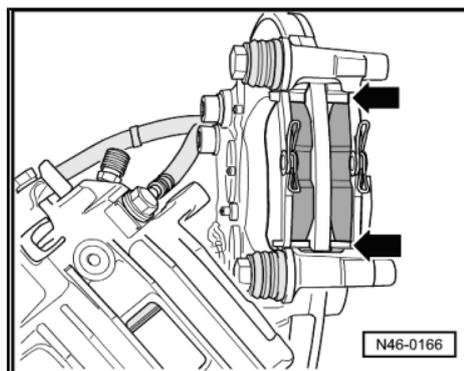


- Remove brake pads and pad retaining springs from brake carrier -arrows-.

**Note**

*When removing, mark brake pads that will be used again. Install in the same position, otherwise braking effect will be uneven!*

- Clean brake caliper housing, in particular the adhesion surface for the brake pads. This must be free of adhesive residue and grease.

**Note**

*Clean brake caliper with mineral spirits exclusively.*

**Installing**

Before installing the brake pads, clean the pad guide surface and coat it with a film of grease. Refer to the Electronic Parts Catalog (ETKA).

**Note**

*Push the brake pistons back using the -T10145- before installing the brake pads. Refer to [⇒ "2.7 Front Brake Caliper Piston, Pressing Back", page 42](#)*

Make sure that brake fluid cannot leak out of the brake fluid reservoir because it will damage components and the paint.

When siphoning brake fluid, always use a bleeder bottle that is used exclusively for brake fluid.

**WARNING**

*Brake fluid is poisonous. NEVER siphon brake fluid with your mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.*

Installation is the reverse of removal, with special attention to the following:

- Insert brake pad retaining springs -arrows- and brake pads into brake carrier.
- Remove protective foil on backing plate of brake pad.

 **Note**

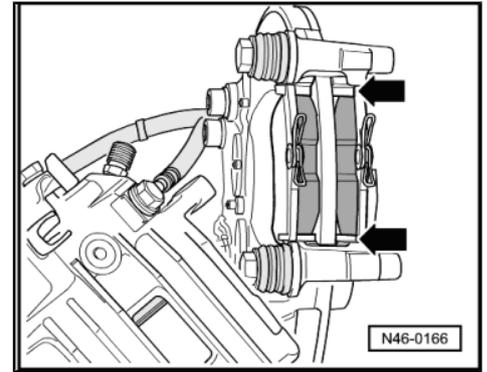
*Position brake caliper on brake carrier or brake disc.*

- Secure brake caliper housing using new self-locking bolts. Observe torque: 35 Nm.

 **Note**

*The repair kit includes four self-locking hex bolts which must be installed in all cases.*

- Mounting wheels, refer to ⇒ Wheel and Tire Guide; Rep. Gr. 44 ; General Information .
- Check brake fluid level, and fill if necessary.



**WARNING**

***After installing brake pads, depress brake pedal several times firmly to properly seat brake pads in their normal operating position.***



**WARNING**

***Make sure the brakes are working correctly before driving the vehicle for the first time.***

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability for the correctness of information in this document. Copyright by AUDI AG.

## 5.7 Rear Brake Caliper

### Special tools and workshop equipment required

- ◆ Torque wrench -V.A.G 1331-
- ◆ Brake pedal actuator -V.A.G 1869/2-
- ◆ Piston resetting tool -T10145-

### Removing

- Raise vehicle.
- Remove wheels.

 **Note**

*Only loosen parking brake cable for complete removal of brake caliper. Refer to ⇒ ["5.12 Parking Brake Cable, Loosening from Brake Caliper and Engaging"](#), page 70 .*

- Remove brake pads. Refer to ⇒ ["5.6 Rear Brake Pads"](#), page 61 .

 **Note**

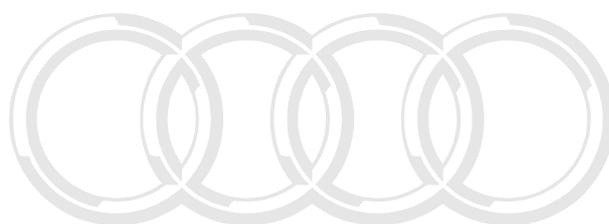
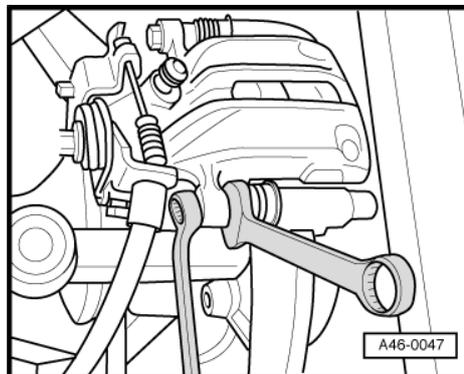
*When removing, mark brake pads that will be used again. Install in the same position, otherwise braking effect will be uneven!*

- Remove brake caliper housing while counterholding at guide pins.
- Remove brake caliper housing from brake disc.
- Hang brake caliper housing with wire so brake hose is not damaged by weight of brake caliper.



**WARNING**

*Do not kink or bend brake lines and brake hose.*



**Audi**

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

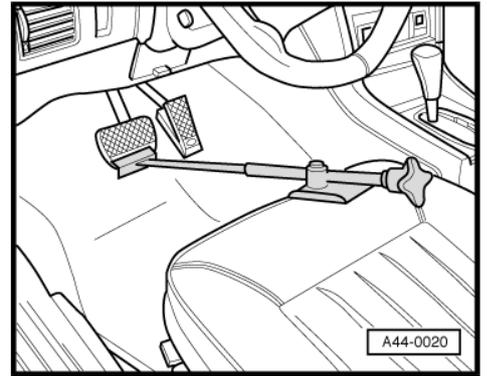


- Insert -V.A.G 1869/2- between brake pedal and driver's seat by pressing brake pedal down at least 60mm.

 **Note**

*By doing this, the valves in the brake master cylinder are closed and the brake fluid reservoir does not run empty.*

- Connect the hose of a bleeder bottle to the bleeder screw of the removed rear brake caliper, as well as the front brake caliper on the same side of the vehicle.
- Open both bleeder screws.
- Close front bleeder screw.
- Do not remove -V.A.G 1869/2- .
- Remove brake hose from brake caliper.



**Installing**

 **Note**

*Push the brake pistons back using the -T10145- before installing the brake pads. Refer to [⇒ "2.7 Front Brake Caliper Piston, Pressing Back", page 42](#) .*

Make sure that brake fluid cannot leak out of the brake fluid reservoir because it will damage components and the paint.

When siphoning brake fluid, always use a bleeder bottle that is used exclusively for brake fluid.

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability for the correctness of information in this document. Copyright by AUDI AG.

 **WARNING**

***Brake fluid is poisonous. NEVER siphon brake fluid with your mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.***

Installation is the reverse of removal, with special attention to the following:

- Install brake pads. Refer to [⇒ "5.6 Rear Brake Pads", page 61](#) .
- Secure brake caliper housing using new self-locking bolts. Observe torque: 35 Nm
- Install the brake hose in the brake caliper.

**Tightening specification, brake hose to brake caliper: 14 Nm**

 **Note**

*Make sure that brake hose is installed without being twisted or pulled.*

- After installing a serviced or new brake caliper, parking brake must be adjusted. Refer to [⇒ "4.1 Parking Brake, Adjusting", page 46](#) . After adjusting parking brake, actuate the brake pedal first.
- Bleed the brake system. Refer to [⇒ "1.4 Brake System Bleeding", page 76](#) .

**WARNING**

*After installing brake pads, depress brake pedal several times firmly to properly seat brake pads in their normal operating position.*

**WARNING**

*Make sure the brakes are working correctly before driving the vehicle for the first time.*

## 5.8 Parking Brake Handle

### Removing

- Release parking brake.
- Remove center console trim. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Removal and Installation .
- Turn adjusting nut on compensator -4- until left and right of parking brake cable -5- can be disengaged from compensator.
- Remove parking brake switch -2-. Refer to ⇒ ["5.9 Parking Brake Switch", page 67](#) .
- Remove nuts -3-.
- Remove parking brake lever from vehicle.

### Installing

- Installation is performed in reverse sequence.
- Install parking brake switch. Refer to ⇒ ["5.9 Parking Brake Switch", page 67](#) .
- Tension parking brake cable with compensator adjusting nut -4-.

**Note**

*After installing brake cable, parking brake must be adjusted. Refer to ⇒ ["4.1 Parking Brake, Adjusting", page 46](#) .*



Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



## 5.9 Parking Brake Switch

### 1 - Release Knob

### 2 - Trim, One-Piece

- ❑ Installation depends on equipment version.

### 3 - Left Trim

- ❑ Installation depends on equipment version.

### 4 - Parking Brake Switch

- ❑ For parking brake indicator light in instrument cluster.

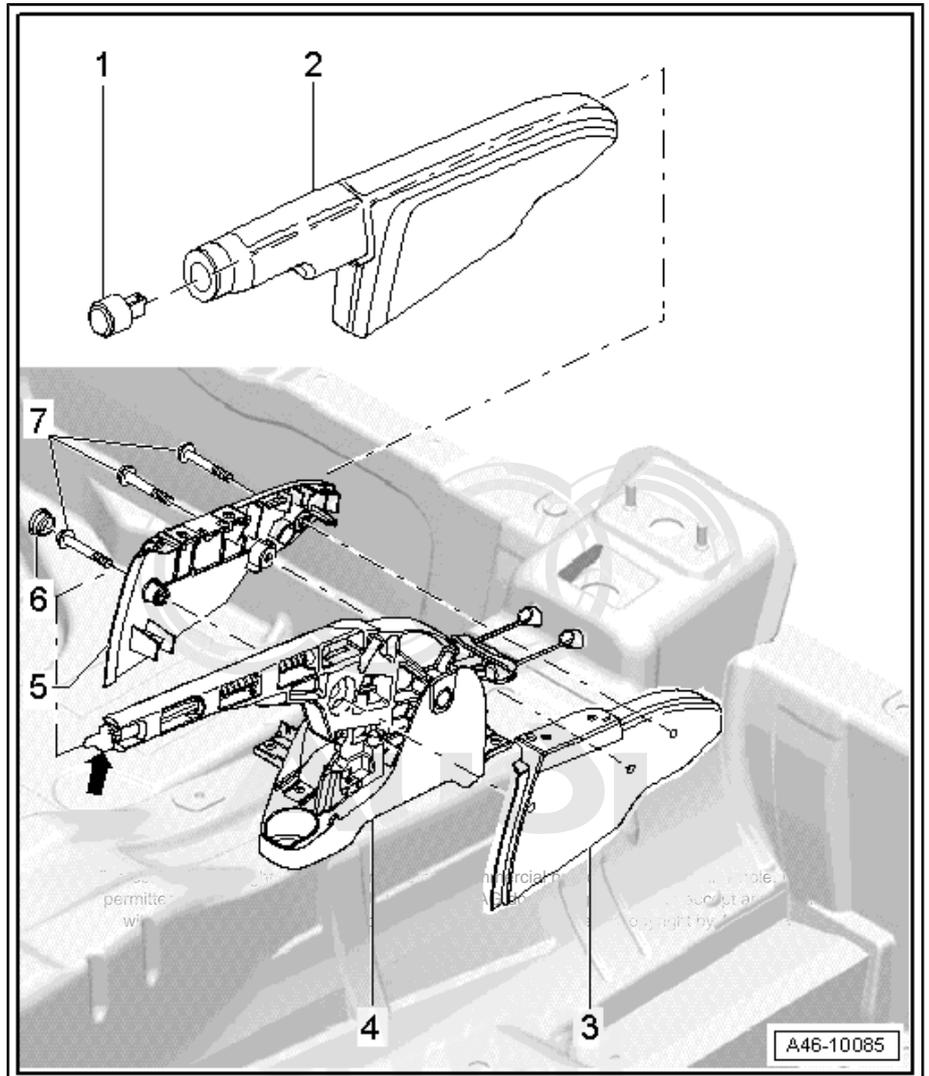
### 5 - Right Trim

- ❑ Installation depends on equipment version.

### 6 - Cap

### 7 - Bolt

- ❑ 0.7 Nm



### Removing

- Remove center console trim. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Removal and Installation .
- Remove release knob -1-.



### Note

*Note different versions of parking brake trim.*

- Release one-piece parking brake trim -2- and pull forward.
- Release handle on two-piece trim and pull forward.
- Remove two-piece parking brake trim.
- Unclip parking brake switch -4-.
- Disconnect electrical connector.

### Installing

- Installation is performed in the reverse order of removal.

 **Note**

*After installing parking brake switch, parking brake must not be adjusted.*

## 5.10 Parking Brake Cable

**1 - Lower Right Guide Tube for Right Parking Brake Cable**

**2 - Clip for Lower Right Guide Tube**

**3 - Nut for Lower Right Clip**

- Do not loosen to remove parking brake cable and guide tube.

- 12 Nm

**4 - Left and Right Bolt**

- 4 Nm

**5 - Brake Cable Bracket to Left and Right Axle Beam**

- Remove underbody protection, depending on model.

**6 - Left and Right Parking Brake Cable**

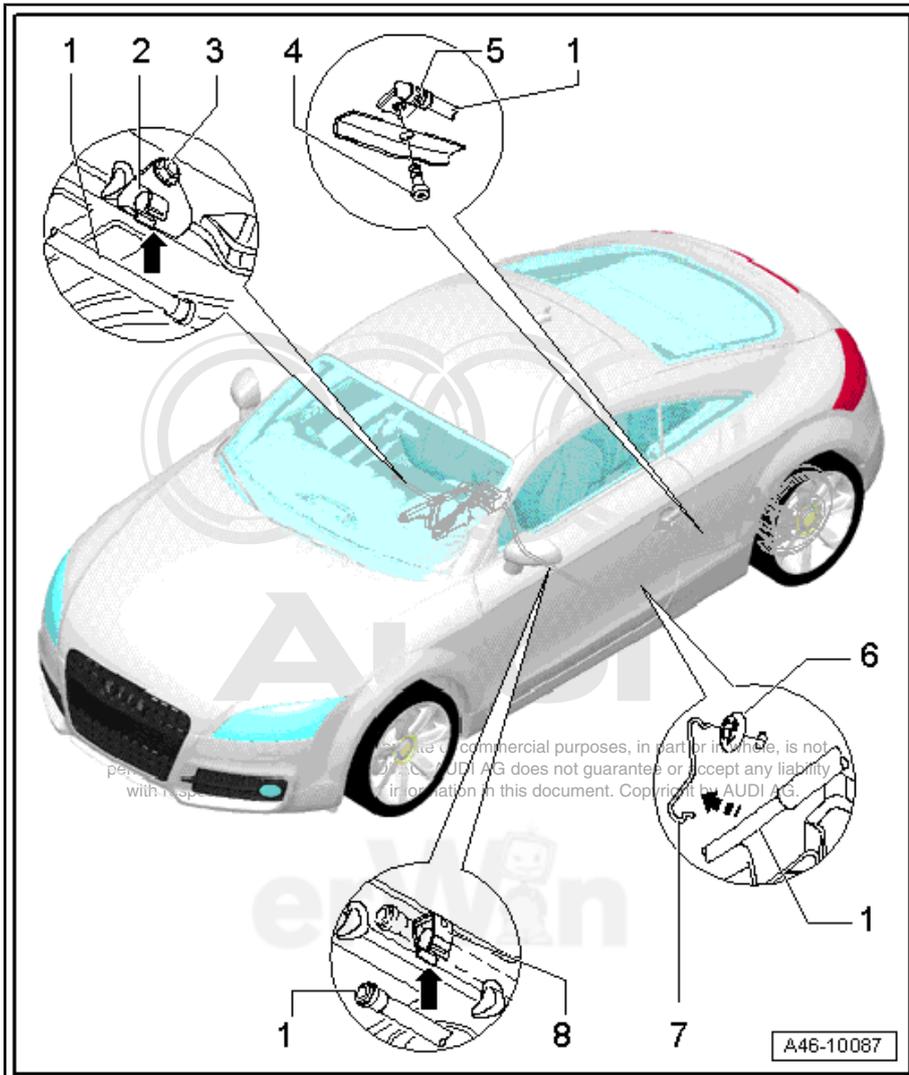
**7 - Left and Right Rubber Grommets**

**8 - Left and Right Parking Brake Cable**

**9 - Left and Right Parking Brake Cable Bracket**

**10 - Clip for Lower Left Guide Tube**

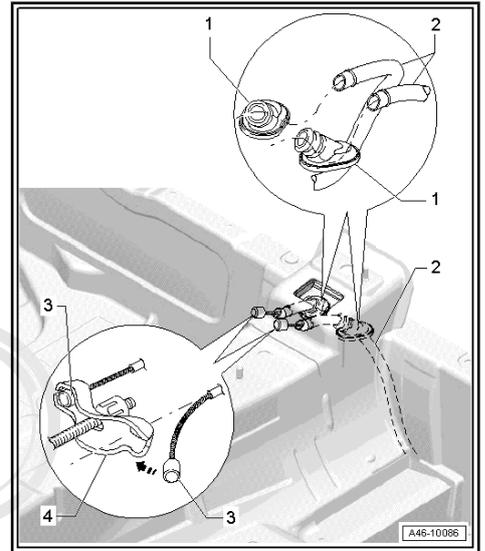
**11 - Lower Left Guide Tube**



### Removing

- Release parking brake.
- Loosen cover in rear center console compartment with a hook and remove.

- Remove the parking brake cable adjusting nut far enough so left and right parking brake cable -3- can be disengaged from compensator -4-.
- Raise vehicle.
- Loosen parking brake cable from left and right brake caliper. Refer to [⇒ "5.12 Parking Brake Cable, Loosening from Brake Caliper and Engaging", page 70](#).
- Loosen right bolt from right axle beam and remove bracket with parking brake cable.
- Disengage right parking brake cable from bracket.
- Unclip right guide tube ⇒ [Item 1 \(page 68\)](#) from bracket ⇒ [Item 2 \(page 68\)](#), do not loosen nut ⇒ [Item 3 \(page 68\)](#).
- Carefully remove right parking brake cable from right guide tube.
- Loosen left bolt from left axle beam and remove bracket with parking brake cable.
- Disengage left parking brake cable from bracket.
- Unclip left guide tube ⇒ [Item 11 \(page 68\)](#) from left bracket ⇒ [Item 10 \(page 68\)](#).
- Carefully remove left parking brake cable from left guide tube.



This publication is the property of Audi AG. It is not permitted to be reproduced, stored in a retrieval system, or transmitted in any form or by any means, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

**Installing**

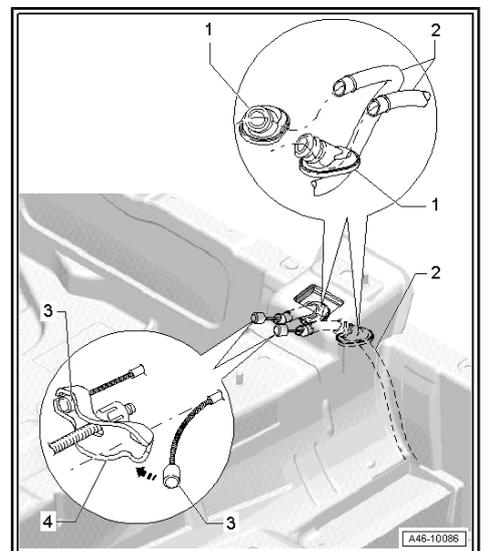
**i Note**

*The parking brake cable must not be tensioned or pulled.*

- Installation is performed in the reverse order of removal.
- Carefully place left and right parking brake cables through respective guide tube in vehicle interior.
- Engage parking brake cable in left and right brake caliper. Refer to [⇒ "5.12 Parking Brake Cable, Loosening from Brake Caliper and Engaging", page 70](#).
- Lower vehicle.
- Remove left and right parking brake cable -3- upward out of respective guide tube -2-.
- Engage left and right parking brake cable -3- in compensator -4-.
- Tension parking brake cable with compensator adjusting nut -4-.

**i Note**

*After installing brake cable, parking brake must be adjusted. Refer to [⇒ "4.1 Parking Brake, Adjusting", page 46](#).*



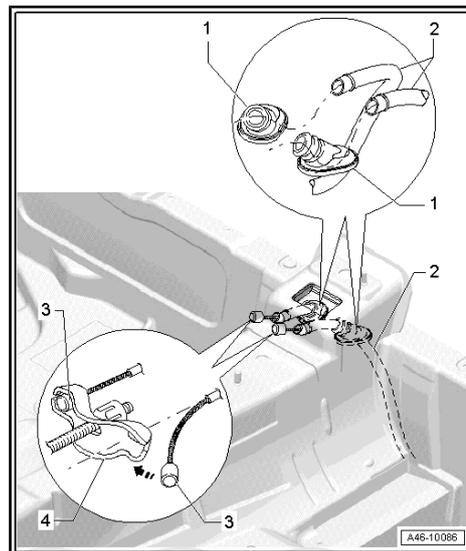
## 5.11 Parking Brake Cable Guide Tube

### Removing

- Remove parking brake cable. Refer to [⇒ "5.10 Parking Brake Cable", page 68](#).
- Unclip guide tubes from vehicle floor.
- Remove guide tubes -2- from below from vehicle shaft.
- When doing so, ensure rubber grommets -1- are not damaged.

### Installing

- Slide guide tubes -2- from below through vehicle shaft into vehicle interior.
- When doing so, ensure rubber grommets -1- are not damaged.
- Clip guide tubes into mounts on vehicle floor.



## 5.12 Parking Brake Cable, Loosening from Brake Caliper and Engaging

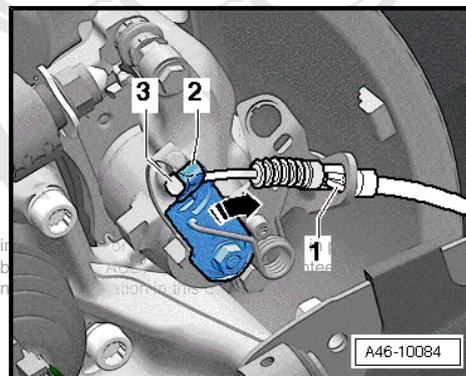
### Removing

- Press brake lever -2- in direction of arrow and unhook parking brake cable -3-.
- Press retaining tabs -1- together while removing parking brake cable from guide.

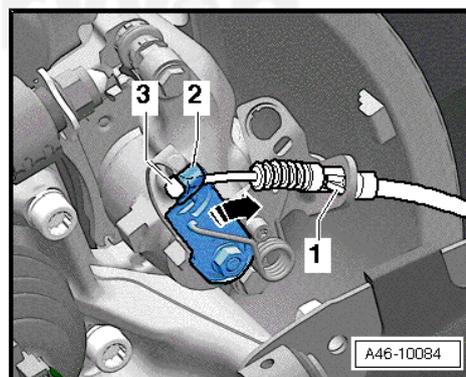
### Installing

- Insert parking brake cable through guide.

Protected by copyright. Copying  
 permitted unless authorised by  
 with respect to the correct



- Press retaining tabs -1- together and engage. Make sure that both retaining tabs are engaged.
- Press brake lever -2- in direction of arrow and engage parking brake cable -3-.



## 5.13 Brake Pedal

### Removing

- Remove the driver side storage tray. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Removal and Installation .
- Disconnect brake pedal from brake booster. Refer to ⇒ [“5.14 Brake Pedal and Brake Booster, Separating”](#), page 71 .
- Remove nut -5-
- Remove hex bolt -9- from brake pedal and bushing

### Installing

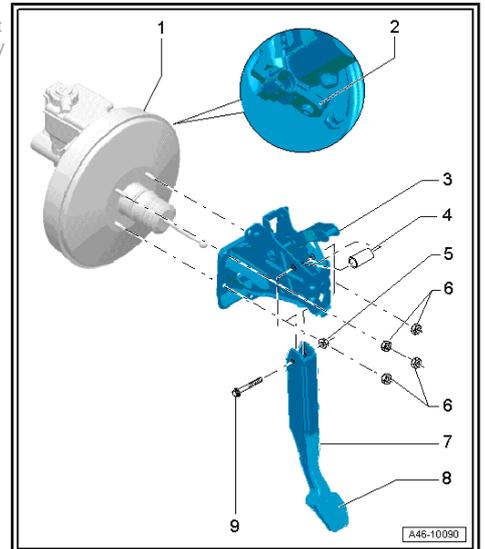
Installation is performed in the reverse order of removal.

- Slide hex bolt -9- through brake pedal and bushing.
- Use new nut -5- and tighten. Note torque: 25 Nm



#### Note

*Lubricate mounting points with Polyurea grease -G 052 142 A2- before installing.*



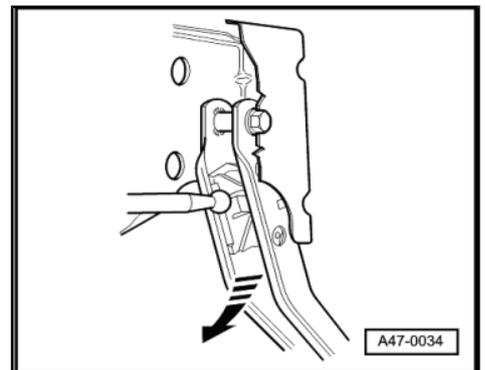
#### Clip brake pedal to brake booster push rod ball head.

- Hold ball head of push rod in front of mounting and push brake pedal in direction of brake booster, so the ball head locates audibly. Refer to ⇒ [“5.14 Brake Pedal and Brake Booster, Separating”](#), page 71 .



#### WARNING

*Make sure the brakes are working correctly before driving the vehicle for the first time.*



## 5.14 Brake Pedal and Brake Booster, Separating

### Special tools and workshop equipment required

- ◆ Release tool -T40024-

### Separating

- Remove the driver side storage tray. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Removal and Installation .

- Disconnect the brake pedal from the brake booster using - T40024- .
- Guide in the -T40024- and press together, while pulling brake pedal toward the driver seat. (The brake pedal will thereby be pulled off the ball head of the push rod.)

### Installing

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

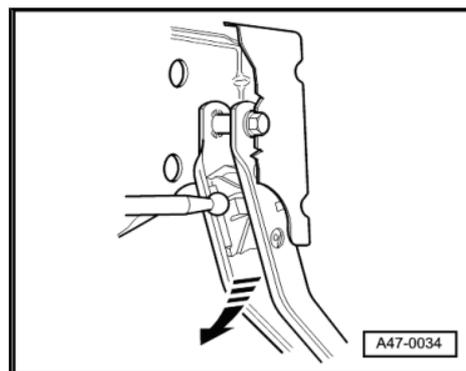
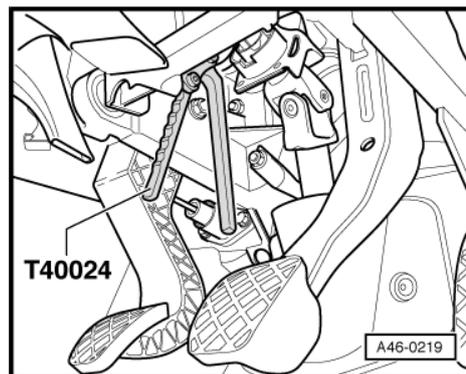
### Clip brake pedal to brake booster push rod ball head.

- Hold ball head of push rod in front of mounting and push brake pedal in direction of brake booster, so the ball head locates audibly.
- Install the driver side storage tray. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Removal and Installation



### WARNING

***Make sure the brakes are working correctly before driving the vehicle for the first time.***

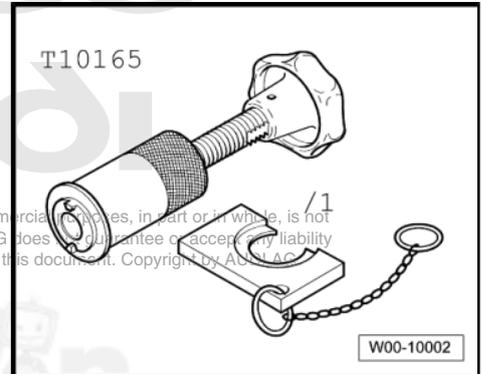


## 6 Special Tools

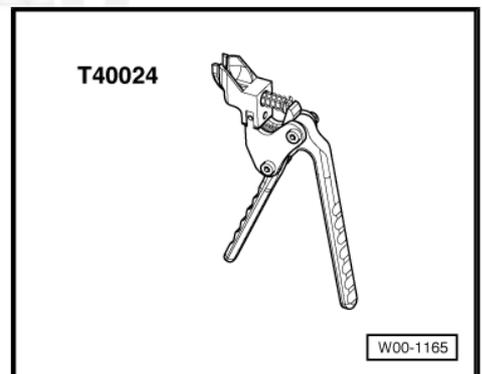
### Special tools and workshop equipment required

- ◆ Torque wrench -V.A.G 1332-
- ◆ Resetting and extracting tool -T10165-

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



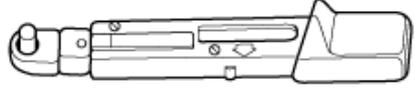
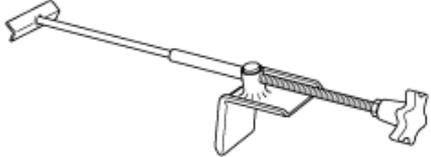
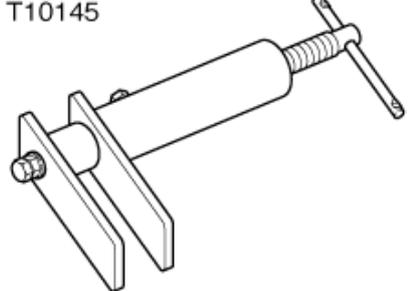
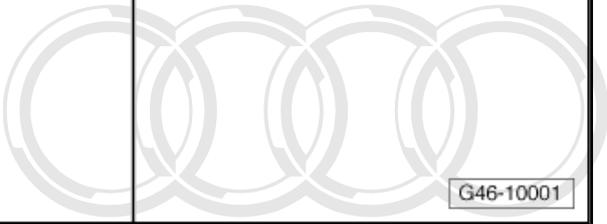
- ◆ Release tool -T40024-





**Special tools and workshop equipment required**

- ◆ Torque wrench -V.A.G 1331-
- ◆ Torque wrench -V.A.G 1410-
- ◆ Brake pedal actuator - V.A.G 1869/2-
- ◆ Piston resetting tool - T10145-

<p>V.A.G 1331</p> 	<p>V.A.G 1410</p> 
<p>V.A.G 1869/2</p> 	<p>T10145</p> 
	 <p>G46-10001</p>

**Audi**

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

erWin

## 47 – Hydraulic Components

### 1 General Information

⇒ [“1.1 Front Brake Caliper Servicing, FN3”, page 75](#)

⇒ [“1.2 Front Brake Caliper Servicing, FNRG57”, page 75](#)

⇒ [“1.3 Rear Brake Caliper Servicing”, page 75](#)

⇒ [“1.4 Brake System Bleeding”, page 76](#)

⇒ [“1.5 Brake System, Bleeding with Brake Filler/Bleeder Unit VAS 5234 or Brake Filler/Bleeder Unit Suction Adapter V.A.G 1869/4”, page 76](#)

⇒ [“1.6 Brake System, Bleeding without Brake Filler and Bleeder Tool”, page 77](#)

#### 1.1 Front Brake Caliper Servicing, FN3



##### Note

- ◆ *Install complete repair kit when servicing.*
- ◆ *New brake calipers are filled with brake fluid and are pre-bled.*
- ◆ *Apply thin coat of lithium grease -G 052 150 A2- to brake cylinders, pistons and seals.*

#### 1.2 Front Brake Caliper Servicing, FNRG57



##### Note

- ◆ *Install complete repair kit when servicing.*
- ◆ *Apply thin coat of lithium grease -G 052 150 A2- to brake cylinders, pistons and seals.*

#### 1.3 Rear Brake Caliper Servicing



##### Note

- ◆ *Install complete repair kit when servicing.*
- ◆ *Only use mineral spirits to clean brake parts.*
- ◆ *New brake calipers are filled with brake fluid and are pre-bled.*
- ◆ *Apply thin coat of lithium grease -G 052 150 A2- to brake cylinders, pistons and seals.*
- ◆ *In case of repair, brake calipers must always be pre-bled before being installed into vehicle (without brake pads). Refer to ⇒ [page 94](#) .*

## 1.4 Brake System Bleeding



### WARNING

- ◆ *Do not, under any circumstances, allow brake fluid to come into contact with any fluids containing mineral oil (oil, gasoline, cleaning solvents). Mineral oil damages the sealing plugs and boots of the brake system.*
- ◆ *Brake fluid is poisonous. NEVER siphon brake fluid with your mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.*
- ◆ *Brake fluid is hygroscopic, meaning that it absorbs moisture from the surrounding air, and must therefore be stored in air-tight containers.*
- ◆ *Observe disposal regulations.*

When filling with brake fluid using e.g. brake charger/bleeder unit -VAS 5234- or brake filler/bleeder unit suction adapter -V.A.G 1869/4-, make sure that the filling pressure does not exceed 1 bar.

Regulate brake fluid pressure on brake charger/bleeder unit to 1 bar. Refer to the -VAS 5234- or -V.A.G 1869/4- operating instructions.



### Note

- ◆ *Only use new brake fluid.*
- ◆ *Rinse off any spilled brake fluid using plenty of water.*

## 1.5 Brake System, Bleeding with Brake Filler/Bleeder Unit VAS 5234 or Brake Filler/Bleeder Unit Suction Adapter V.A.G 1869/4

### Special tools and workshop equipment required

- ◆ Brake filler/bleeder unit -VAS 5234- or
- ◆ Brake filler/bleeder unit -V.A.G 1869-
- ◆ Brake filler/bleeder unit suction adapter -V.A.G 1869/4-
- ◆ Vehicle diagnostic, test and information system -VAS 505x-

### Procedure

- Connect -VAS 5234- or -V.A.G 1869/4- .
- Remove protective cap on brake caliper bleeder screw.
- Connect bleeder bottle hose to brake caliper bleeder valve.
- Leave the bleeder screw open, with brake fluid hose connected, until brake fluid flows out clear and free of air bubbles.
- Press brake pedal 5 times to assist bleeding procedure.
- Tighten bleeder screw to 10 Nm.
- Remove bleeder hose and install protective cap on bleeder screw.
- Repeat bleeding process on remaining brake calipers.

## Bleeding Sequence

- 1 - Left front brake caliper
  - 2 - Right front brake caliper
  - 3 - Left rear brake caliper
  - 4 - Right rear brake caliper
- Fill brake fluid reservoir up to max. marking and install sealing cap.
  - Start engine to check brake pedal travel and pressure.
  - If pedal travel is too long and pressure is too weak, check brake system for possible leaks. Repeat bleeding procedure.

After bleeding brake system, perform zero adjustment on Brake Pressure Sensor 1 -G201- via the Guided Fault Finding function with the -VAS 505x- .

### Note

*A road test must be performed after bleeding. During this, at least one ABS regulation must be performed at all four wheels!*

Brake fluid, changing, refer to Maintenance Booklet 808.

 **WARNING**  
*Make sure the brakes are working correctly before driving the vehicle for the first time.*

## 1.6 Brake System, Bleeding without Brake Filler and Bleeder Tool

### Note

*A second person is needed to bleed the brake charger/bleeder unit.*

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability for errors or omissions. Copyright by AUDI AG.

 **Caution**  
*Make sure that brake fluid reservoir does not run empty.*

- Remove protective cap on brake caliper bleeder screw.
- Connect bleeder bottle hose to brake caliper bleeder valve.
- Build pressure up in brake system by pumping brake pedal.

### Note

*Slowly press brake pedal to prevent bubbles from forming.*

- As soon as pressure is built up, hold brake pedal in depressed position.
- Open the bleeder screw, with bleeder bottle hose connected, until the pressure is relieved (pedal drops).



- Hold pedal in completely depressed position and close the bleeder screw.
- Release brake pedal and wait approximately 2 seconds so that brake fluid can flow out of the brake fluid reservoir.
- Repeat the procedure until the brake fluid flows out clear and free of bubbles.
- Tighten bleeder screw to 10 Nm.
- Remove bleeder hose and install protective cap on bleeder screw.
- Repeat bleeding process on remaining brake calipers.

#### **Bleeding Sequence**

- 1 - Left front brake caliper
  - 2 - Right front brake caliper
  - 3 - Left rear brake caliper
  - 4 - Right rear brake caliper
- Fill brake fluid reservoir up to max. marking and install sealing cap.
  - Start engine to check brake pedal travel and pressure.
  - If pedal travel is too long and pressure is too weak, check brake system for possible leaks. Repeat bleeding procedure.

**Brake fluid, changing, refer to Maintenance Booklet 808.**



#### **WARNING**

*Make sure the brakes are working correctly before driving the vehicle for the first time.*

## 2 Description and Operation

⇒ [“2.1 Front Brake Caliper Assembly Overview, FN3”, page 79](#)

⇒ [“2.2 Front Brake Caliper Assembly Overview, FNRG57”, page 80](#)

⇒ [“2.3 Rear Brake Caliper Assembly Overview”, page 81](#)

⇒ [“2.4 Brake Booster and Brake Master Cylinder Assembly Overview”, page 82](#)

⇒ [“2.5 Brake Lines and Brake Hoses”, page 84](#)

### 2.1 Front Brake Caliper Assembly Overview, FN3

#### 1 - Protective Cap

- Install onto bleeder valve.

#### 2 - Bleeder Screw

- 10 Nm
- Apply a thin coat of lithium grease -G 052 150 A2- to the threads before screwing in.

#### 3 - Caps

- Insert in bushing.

#### 4 - Guide Pins

- 30 Nm

#### 5 - Bushing

- Insert in brake caliper housing.

#### 6 - Brake Caliper Housing

- Brake caliper with a balance weight, refer to ⇒ [“2.3 Damper on Front Brake Caliper Assembly Overview”, page 38](#).

#### 7 - Brake Carrier

- Bolt to brake caliper housing.

#### 8 - Retaining Spring

- Insert both ends into holes of brake caliper housing.

#### 9 - Seal

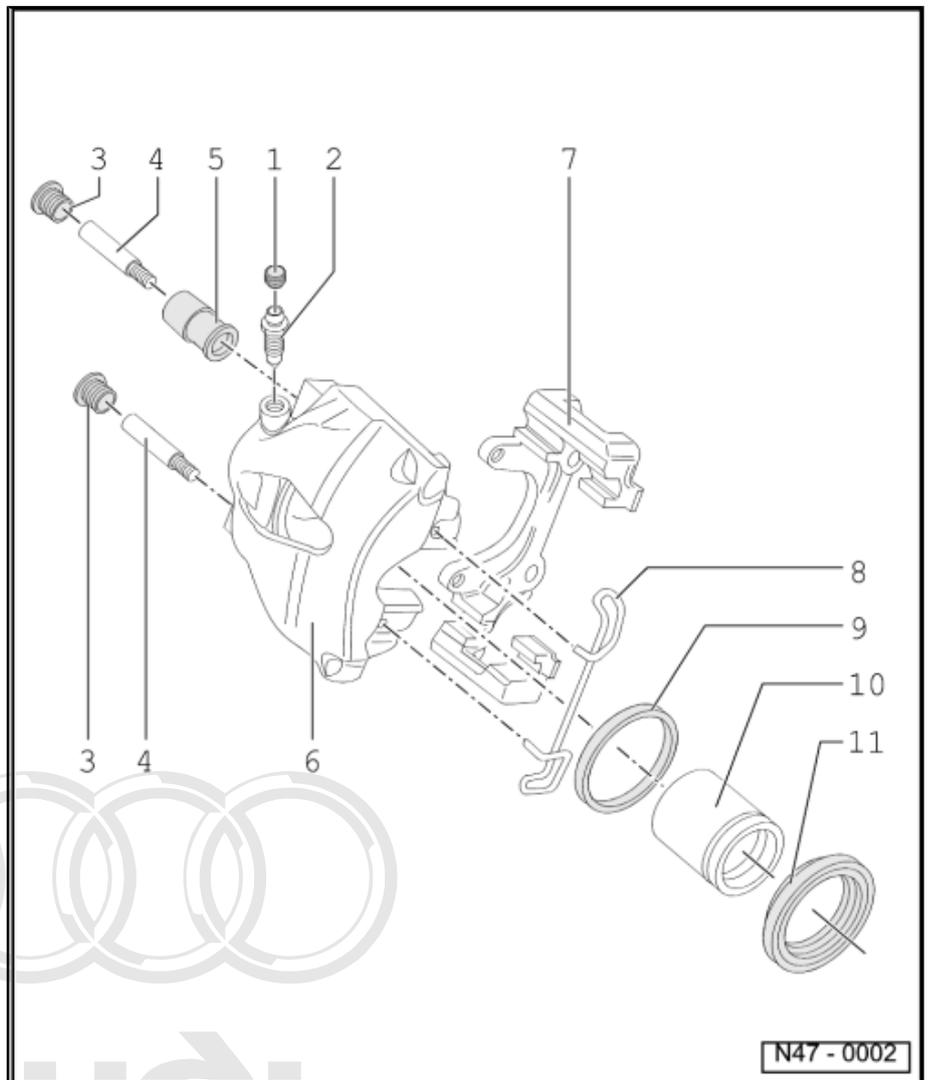
- Do not damage when installing piston.
- Removing and installing, refer to ⇒ [“5.1 Front Brake Caliper Piston, FN3”, page 89](#).

#### 10 - Pistons

- Removing and installing, refer to ⇒ [“5.1 Front Brake Caliper Piston, FN3”, page 89](#).
- Apply thin coat of lithium grease -G 052 150 A2- to piston.

#### 11 - Protective Cap

- Pull onto piston with outer sealing lip.



- Do not damage when installing piston.
- Removing and installing, refer to ⇒ ["5.1 Front Brake Caliper Piston, FN3"](#), page 89 .

## 2.2 Front Brake Caliper Assembly Overview, FNRG57

### 1 - Brake Carrier

- Bolt to brake caliper housing.

### 2 - Guide Pins

- 30 Nm

### 3 - Caps

- Insert in bushing.

### 4 - Protective Cap

- Push onto bleeder valve.

### 5 - Bleeder Valve

- Apply a thin coat of lithium grease -G 052 150 A2- to the threads before screwing in.
- 15 Nm

### 6 - Bushing

- Insert in brake caliper housing.

### 7 - Brake Caliper Housing

- Brake caliper with a balance weight, refer to ⇒ ["2.3 Damper on Front Brake Caliper Assembly Overview"](#), page 38 .

### 8 - Retaining Spring

- Observe correct installed position.
- Hook in at both brake caliper housing studs and at the outer brake pad retaining spring.

### 9 - Protective Cap

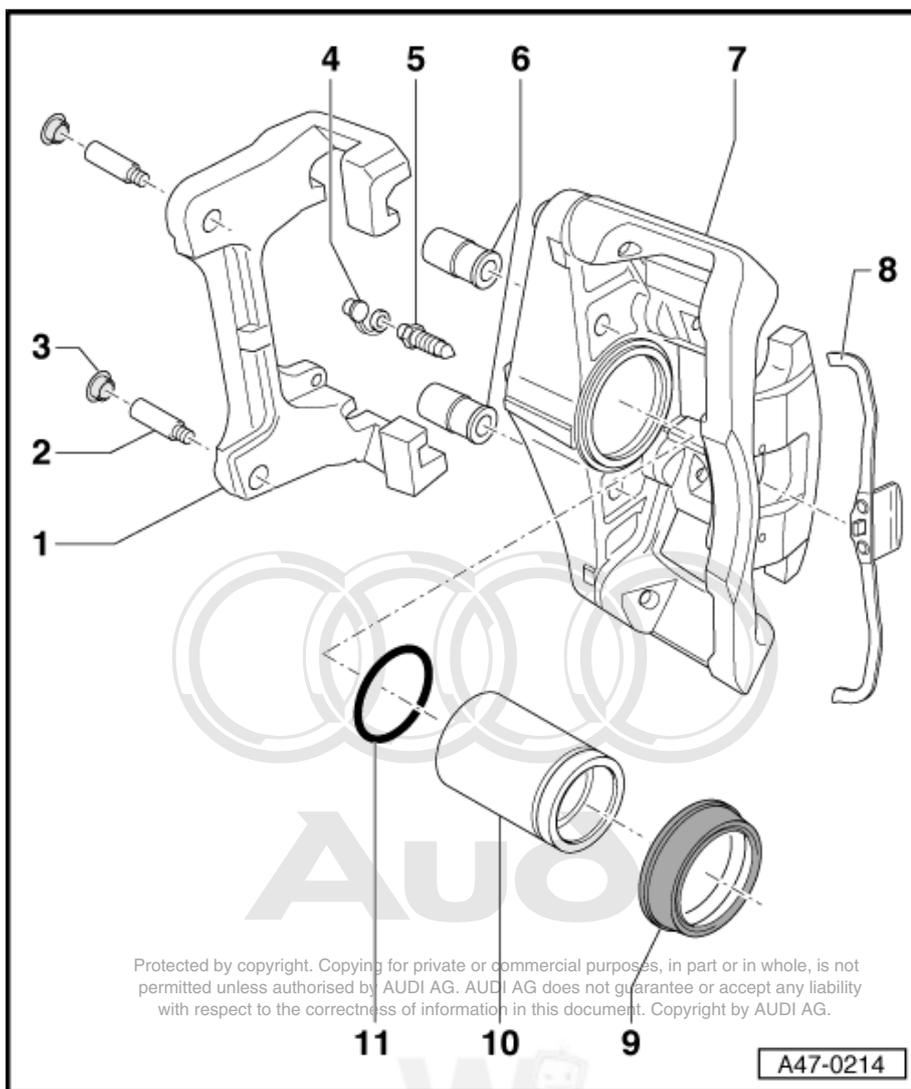
- Do not damage when installing piston.
- Coat with lithium grease -G 052 150 A2- .

### 10 - Pistons

- Apply thin coat of lithium grease -G 052 150 A2- to piston beforehand.

### 11 - Seal

- Coat with lithium grease -G 052 150 A2- .



A47-0214

## 2.3 Rear Brake Caliper Assembly Overview

### 1 - Bolt

- Self-locking
- Always replace after removal.
- When loosening and tightening, counter-hold at guide pin.
- 35 Nm

### 2 - Bleeder Screw

- Apply a thin coat of lithium grease -G 052 150 A2- to the threads before screwing in.
- 10 Nm

### 3 - Protective Cap

### 4 - Guide Pins

- Grease before pulling on protective cap.

### 5 - Protective Cap

- Pull onto brake carrier and guide pin.

### 6 - Brake Carrier with Guide Pins and Protective Cap

- Supplied as an assembled replacement part with sufficient grease on guide pins.
- If protective caps or guide pins are damaged, install repair kit. Use supplied grease packet to lubricate guide pins.

### 7 - Protective Cap

- Pull onto piston with outer sealing lip

### 8 - Piston with Automatic Adjustment

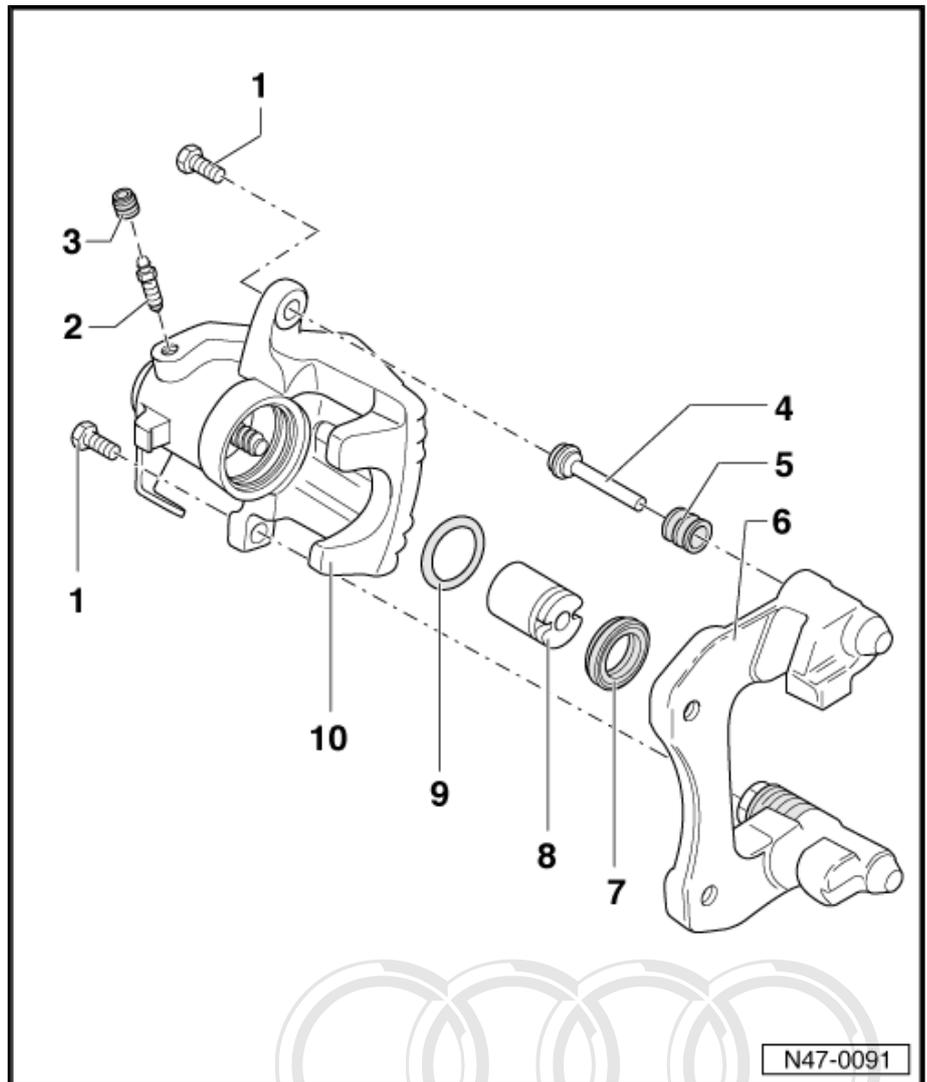
- Removing and installing, refer to [⇒ "5.3 Rear Brake Caliper Piston", page 93](#).
- Apply thin coat of lithium grease -G 052 150 A2- to piston.

### 9 - Seal

- Do not damage when installing piston.
- Removing and installing, refer to [⇒ "5.3 Rear Brake Caliper Piston", page 93](#).

### 10 - Brake Caliper Housing with Parking Brake Cable Lever

- Replace if leaking at parking brake cable lever.
- Pre-bleed caliper housing after repairing. Refer to [⇒ page 94](#).



Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted without the prior written consent of Audi AG. Audi AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

## 2.4 Brake Booster and Brake Master Cylinder Assembly Overview

### Note

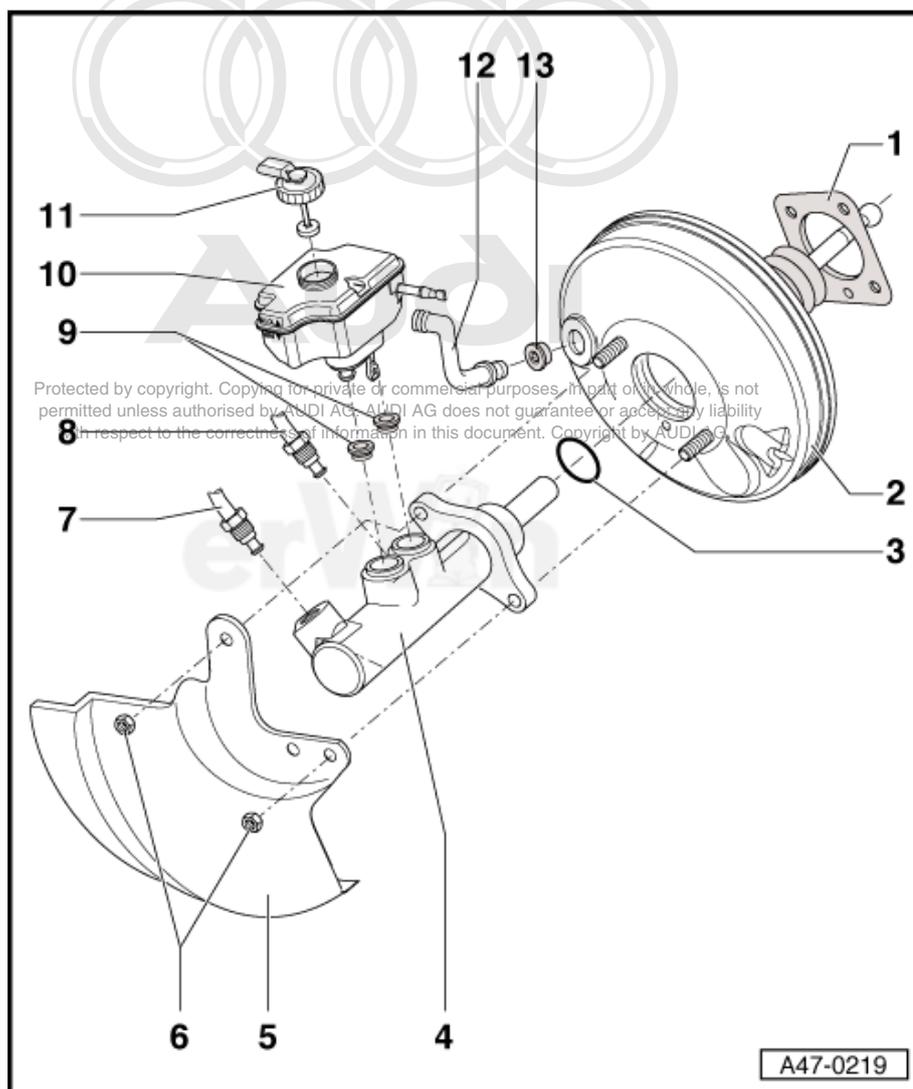
*Brake master cylinder and brake boosters can be replaced independently of one another.*

### 2 - Brake Booster

- On certain vehicles, the necessary pressure is removed at the intake manifold.
- Vehicles with OHBV have a Brake Booster Vacuum Sensor G483 installed. Refer to [⇒ "4.4 Brake Booster Vacuum Sensor, with Optimized Hydraulic Brake Vacuum \(OHV\) Boosting", page 20](#).

### Functional Check

- ◆ With engine switched off, depress brake pedal firmly several times (to deplete vacuum in tool).
- ◆ Press and hold brake pedal.
- ◆ Start engine.
- ◆ If brake booster is functioning correctly, brake pedal slackens noticeably under foot.
- Disconnect from brake pedal. Refer to [⇒ "5.14 Brake Pedal and Brake Booster, Separating", page 71](#).
- Removing and installing, refer to [⇒ "5.6 Brake Booster", page 98](#).



### Note

- ◆ *If the vehicle has a TFSI engine, then the noise amplifier must be removed and installed. Refer to [⇒ "5.7 Noise Amplifier, TFSI", page 101](#).*
- ◆ *The noise amplifier is inside the engine compartment in front of the brake booster.*

- Replace as complete unit if malfunctioning.

### 1 - Gasket

- For brake booster.

### 3 - Seal

- Replace

### 4 - Brake Master Cylinder

- With attached brake light switch ⇒ [Item 13 \(page 11\)](#) .
- Cannot be serviced.
- Replace as complete unit if malfunctioning.
- Removing and installing, refer to ⇒ ["5.5 Brake Master Cylinder", page 96](#) .



#### Note

- ◆ *If the vehicle has a TFSI engine, then the noise amplifier must be removed and installed. Refer to ⇒ ["5.7 Noise Amplifier, TFSI", page 101](#) .*
- ◆ *The noise amplifier is inside the engine compartment in front of the brake booster.*

### 5 - Heat Shield

- Allocation, refer to the Electronic Parts Catalog (ETKA).

### 6 - Nut

- Self-locking.
- Always replace after removal.
- 20 Nm

### 7 - Brake Line

- Brake master cylinder/secondary piston circuit to hydraulic unit.
- 14 Nm

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

### 8 - Brake Line

- Brake master cylinder/primary piston circuit to hydraulic control unit.
- 14 Nm

### 9 - Sealing Plugs

- Coat with brake fluid and insert into brake master cylinder.

### 10 - Brake Fluid Reservoir

- Coat with brake fluid and insert into sealing plugs in brake master cylinder.
- With floating insert with integrated brake fluid level warning switch.
- To replace the warning switch, remove brake fluid reservoir.
- Press brake fluid reservoir into sealing plugs.
- Removing and installing, refer to ⇒ ["5.4 Brake Fluid Reservoir", page 94](#) .

### 11 - Cap

- With integrated floater and brake fluid level warning switch.

### 12 - Vacuum Tube

- With check valve.

### 13 - Sealing Plugs

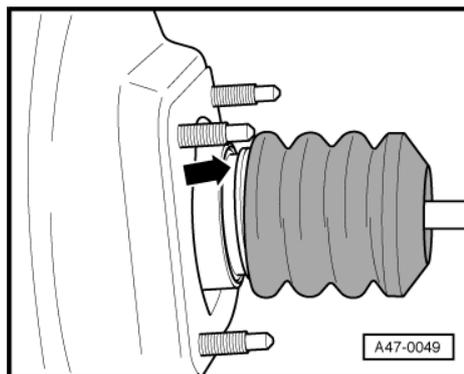
### Check Inner Boot at Brake Booster

- Remove driver side compartment. Refer to => Body Interior; Rep. Gr. 68 ; Removal and Installation .
- Make sure that boot did not slip out of the circumferential groove, as shown here.



#### WARNING

*Make sure the brakes are working correctly before driving the vehicle for the first time.*

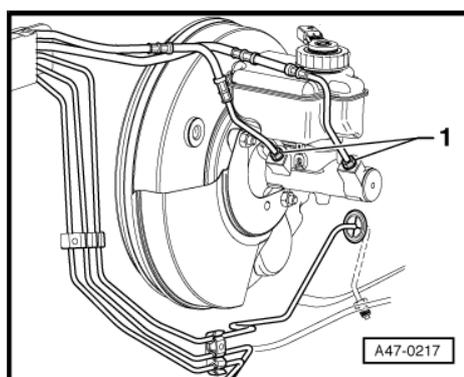


## 2.5 Brake Lines and Brake Hoses

The following will show the various installed locations and torque specifications of the brake lines and brake hoses.

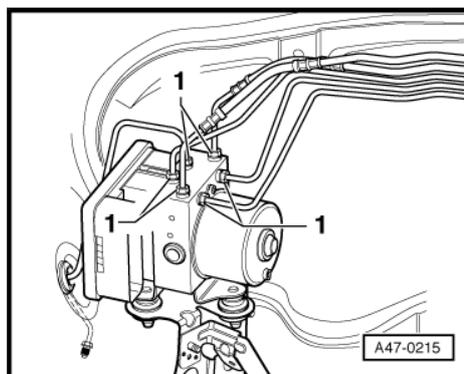
### Brake Lines in Area of Brake Master Cylinder/Hydraulic Unit ITT Mark 60/ ITT Mark 70

- 1 - Brake line to brake master cylinder: 14 Nm



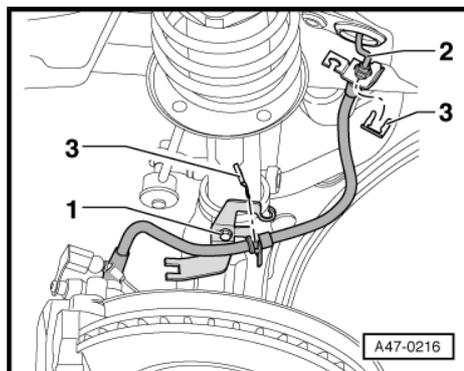
### Brake Lines in Brake Master Cylinder/Hydraulic Unit Mark 60 Area

- 1 - Brake line to hydraulic unit: 14 Nm



### Brake Lines/Brake Hoses in Area of Front Wheel (FWD)

- 1 - Hex bolt: 8 Nm
- 2 - Brake line: 14 Nm
- 3 - Securing clip



**Brake Hose Connection with Anti-Rotation Device**

- Make sure that groove in brake hose banjo fitting is inserted in securing tab -arrow-.

**Tightening specifications, brake line to front brake caliper:**

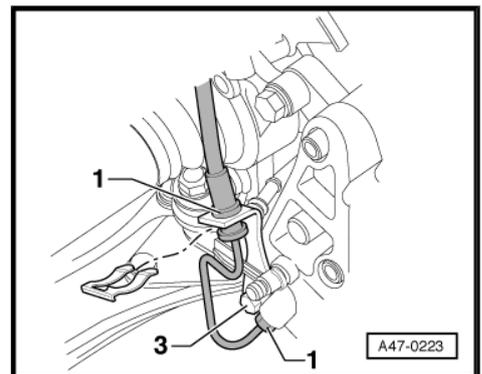
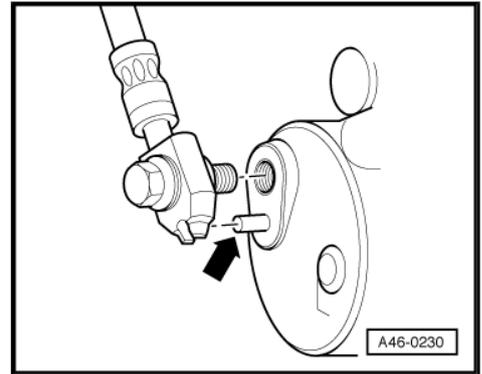
- ◆ Brake "16" FN-3" 35 Nm.
- ◆ Brake "17" FNR-G57" 14 Nm.

**Tightening specification, brake line to rear brake caliper:**

- ◆ All models: 14 Nm

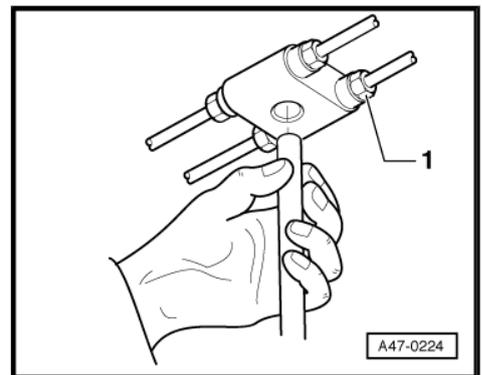
**Brake Line Connections**

Bolt -1- 15 Nm.



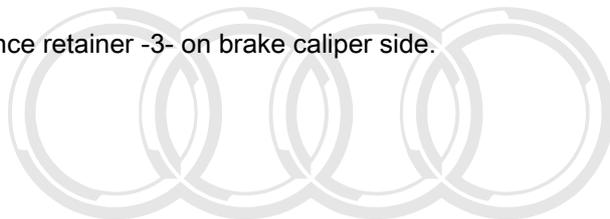
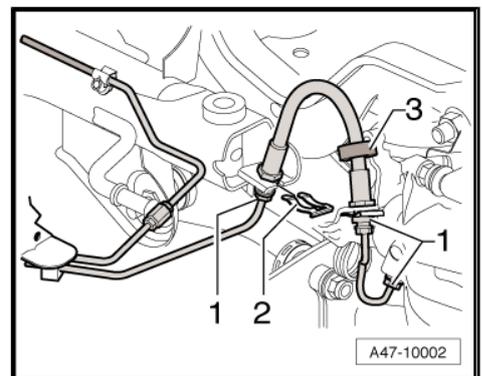
**Brake Line Connection at Underbody**

1 - Brake line: 14 Nm



**Brake Line/Brake Hoses in Area of Rear Axle (FWD)**

- 1 - Brake line: 14 Nm
- 2 - Securing clip
- 3 - Install clearance retainer -3- on brake caliper side.



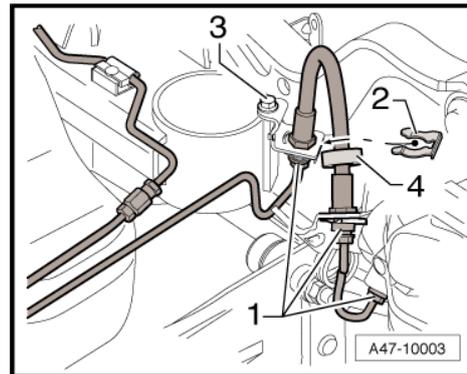
**Audi**

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



### Brake Line/Brake Hoses Near the Rear Axle

- 1 - Brake line: 14 Nm
- 2 - Securing clip
- 4 - Install clearance retainer -4- on brake caliper side.



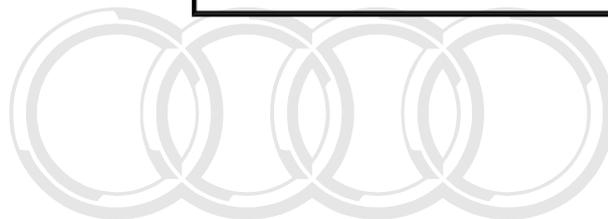
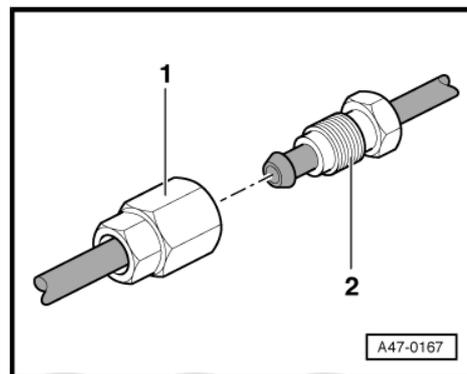
### Line Connection of Brake Line

- When fastening union bolt -2-, counter-hold union nut -1-.
- ◆ Tightening specification: 14 Nm



#### WARNING

*Make sure the brakes are working correctly before driving the vehicle for the first time.*



# Audi

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

# erWin

### 3 Specifications

⇒ **“3.1 Fastener Tightening Specifications”, page 87**

#### 3.1 Fastener Tightening Specifications

Component	Fastener Size	Nm
Brake booster nut <sup>1</sup>	-	25
Brake hose connection with anti-rotation device to front brake caliper		
- 16" FN-3	-	35
- 17" FNR-G57	-	14
Brake line		
- to brake master cylinder	-	14
- to hydraulic unit	-	14
- to front brake hose	-	14
- to rear brake Caliper	-	14
- at rear axle	-	14
- at underbody	-	14
Brake master cylinder to brake booster Nut <sup>1</sup>	-	20
Front brake caliper bleeder screw, FN3	-	10
Front brake caliper bleeder valve, FNRG57	-	15
Front brake caliper guide pin	-	30
Rear brake caliper bleeder screw	-	10
Rear brake caliper to guide pin bolt <sup>1</sup>	-	35

- <sup>1</sup> Always replace after removal.

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

## 4 Diagnosis and Testing

⇒ "4.1 High and Low Pressure Testing", page 88

### 4.1 High and Low Pressure Testing

#### Special tools and workshop equipment required

- ◆ Brake pressure gauge 0-250 bar -V.A.G 1310A-
- ◆ Brake pedal actuator -V.A.G 1869/2-

#### High Pressure Testing



#### Note

*Brake system (brake master cylinder, brake hoses, brake lines and brake calipers) tested for function and leaks.*

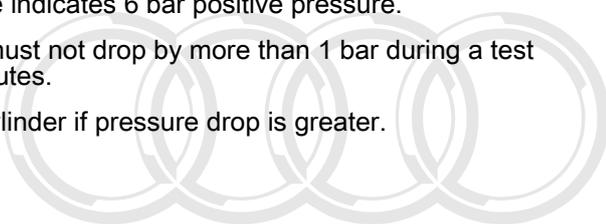
- Remove bleeder screw at one of the front brake calipers. Connect -V.A.G 1310 A- and bleed.
- Install -V.A.G 1869/2- between brake pedal and driver seat. Apply pressure to brake pedal until the gauge indicates a pressure of 50 bar. The pressure must not drop by more than 4 bar during the test period of 45 seconds.

Replace master cylinder if pressure drops greatly.

#### Low Pressure Testing

- Set the brake pedal loading device back far enough that the pressure gauge indicates 6 bar positive pressure.
- The pressure must not drop by more than 1 bar during a test period of 3 minutes.

Replace master cylinder if pressure drop is greater.

# Audi

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

# erWin

## 5 Removal and Installation

- ⇒ [“5.1 Front Brake Caliper Piston, FN3”, page 89](#)
- ⇒ [“5.2 Front Brake Caliper Piston, FNRG57”, page 91](#)
- ⇒ [“5.3 Rear Brake Caliper Piston”, page 93](#)
- ⇒ [“5.4 Brake Fluid Reservoir”, page 94](#)
- ⇒ [“5.5 Brake Master Cylinder”, page 96](#)
- ⇒ [“5.6 Brake Booster”, page 98](#)
- ⇒ [“5.7 Noise Amplifier, TFSI”, page 101](#)
- ⇒ [“5.8 Vacuum Pump, TFSI”, page 101](#)

### 5.1 Front Brake Caliper Piston, FN3

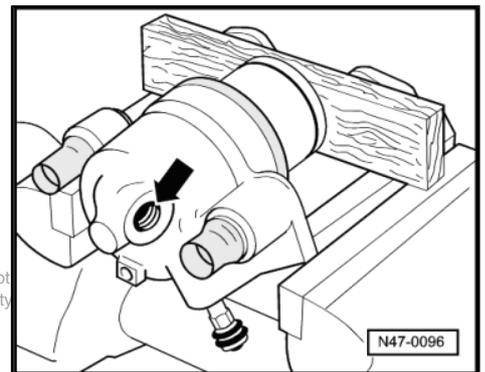
#### Special tools and workshop equipment required

- ◆ Disassembly wedge -3409-
- ◆ Piston resetting tool -T10145-
- ◆ Assembly device for protective cap -T10146/6-

#### Removing

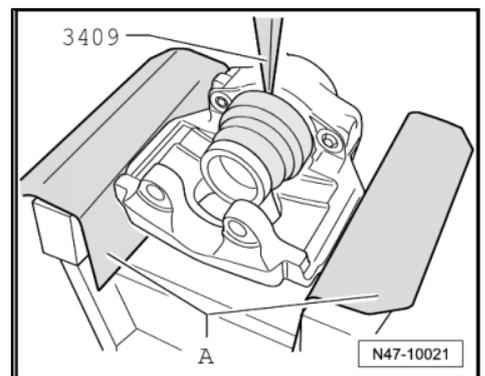
- Force piston from brake caliper using compressed air.

Place a wooden board into the recess of the caliper housing so it is not damaged.



Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

- Pry off protective cap from brake caliper using -3409- .

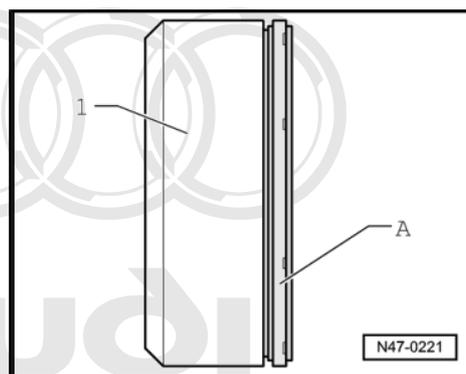
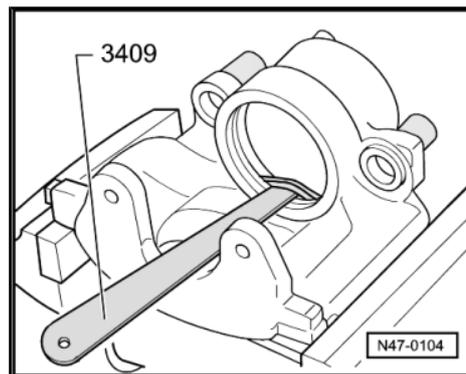


- Remove seal using -3409- .

When removing, make sure that surface of cylinder is not damaged.

### Installing

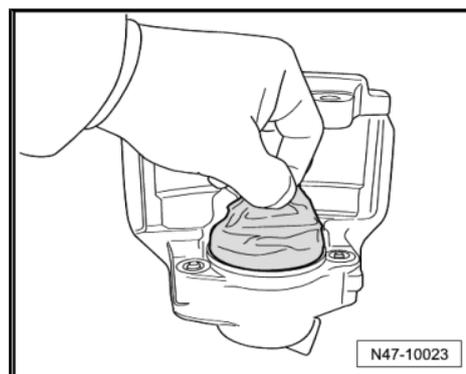
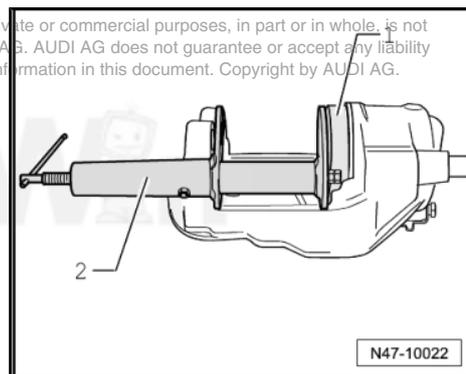
- The surface of the piston and seal must only be cleaned with mineral spirits and then dried.
- Thinly coat piston and seal with lithium grease -G 052 150 A2- before inserting.
- Install sealing ring in brake caliper.
- Insert the protective cap -A- into the -T10146/6- -1-.



- Press the protective cap with the assembly tool -1- and the piston resetting tool -2- into the brake caliper so that it contacts the brake caliper all around.

### Check Seating of Protective Caps

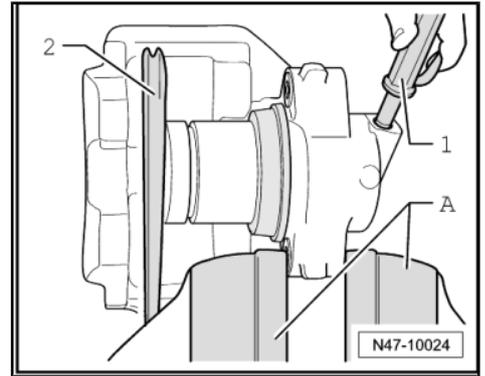
- Protective cap must no longer be able to be pulled from brake caliper by hand.
- Press the piston lightly against the protective cap and lock it into position, e.g. with the trim removal wedge -2-.



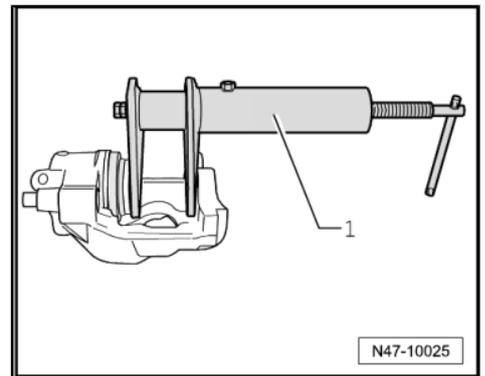
- Blow the protective cap on with pressurized air (max. 3 bar)  
 -1-. Protective cap springs onto piston.

 **Note**

*Do not angle piston, to avoid damaging the seal sleeve.*



- Press piston into brake caliper using piston resetting tool -1-.
- Outer sealing lip of protective cap will then engage in piston groove.



## 5.2 Front Brake Caliper Piston, FNRG57

### Special tools and workshop equipment required

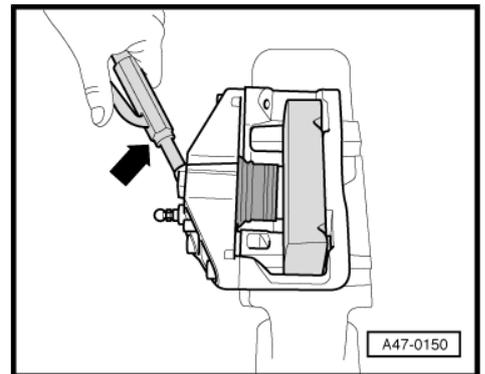
- ◆ Disassembly wedge -3409-
- ◆ Piston resetting tool -T10145-
- ◆ Assembly tool -T10146-
- ◆ Assembly device for protective cap -T10146/2-

### Removing

- Force piston from brake caliper housing using compressed air.

 **Note**

*Place a wooden board into the recess of the caliper housing so it is not damaged.*



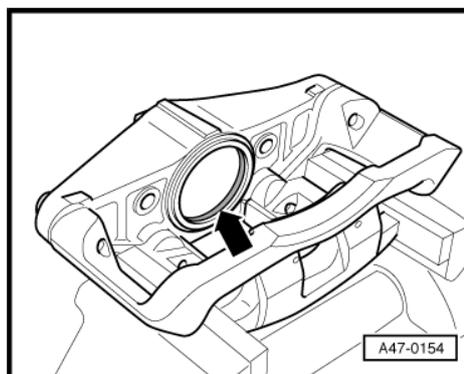
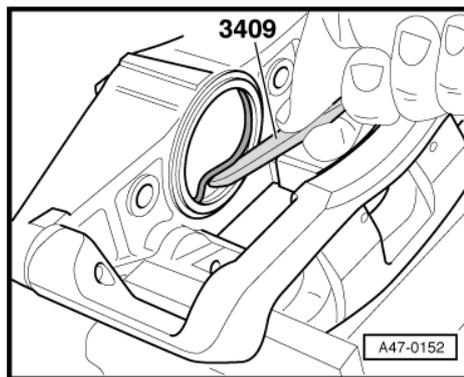
- Remove seal.
- Use the -3409- for this.

**i** Note

*When removing, make sure that surface of cylinder is not damaged.*

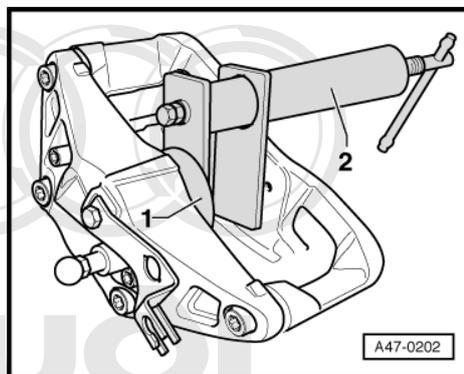
**Installing**

- The surface of the piston and seal must only be cleaned with mineral spirits and then dried.
- Thinly coat piston and seal with lithium grease -G 052 150 A2- before inserting.
- Using -3409- , insert the inner seal into the groove in the brake caliper.

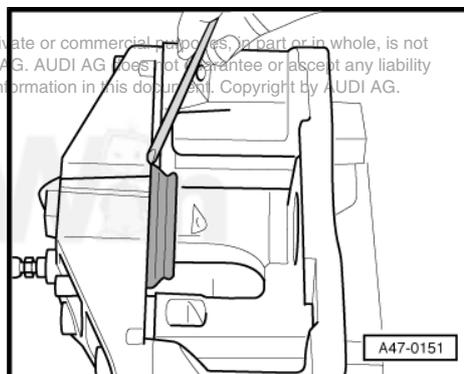


- Press in the protective cap using special tool -1- and -2-.
- -1- -T10146/2-
- -2- -T10145-

Use protective backings



- Press the protective cap onto the brake caliper housing so that it contacts the brake caliper housing all around -arrow-.
- It should no longer be possible to remove the protective cap from the brake caliper housing by hand.
- Thinly coat piston and seal with lithium grease -G 052 150 A2- before inserting.



- Lift the brake piston, as shown, with commercially available extension and ratchet adapter and lightly press against the protective cap.

Do not angle piston, to avoid damaging the seal sleeve.

- Blow the protective cap on with pressurized air (max. 3 bar). The protective cap will thereby jump over the brake piston.

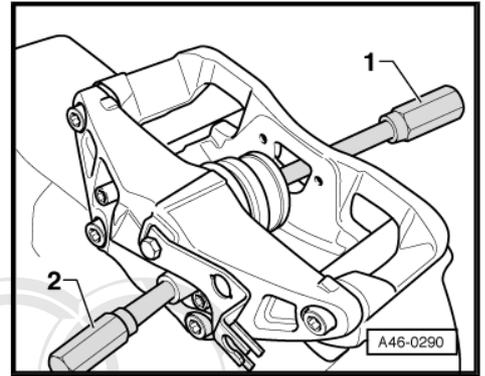
Use protective backings

- Press piston into the brake caliper housing by hand.



**Note**

*The inner sealing lip of the protective cap thereby slips into the groove on the piston.*



### 5.3 Rear Brake Caliper Piston

#### Special tools and workshop equipment required

- ◆ Resetting and extracting tool -T10165-
- ◆ Disassembly wedge -3409-

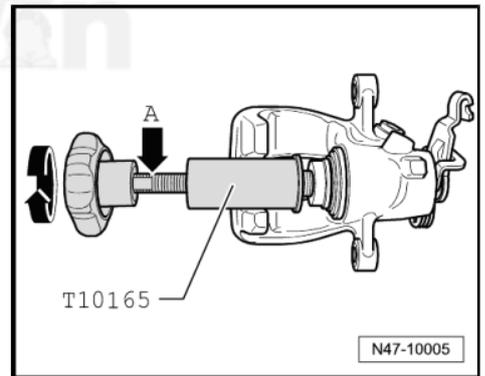
Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

#### Removing

- Remove piston from brake caliper by turning knurled wheel toward left.

Insert piston compressing and extracting tool so collar makes contact on piston.

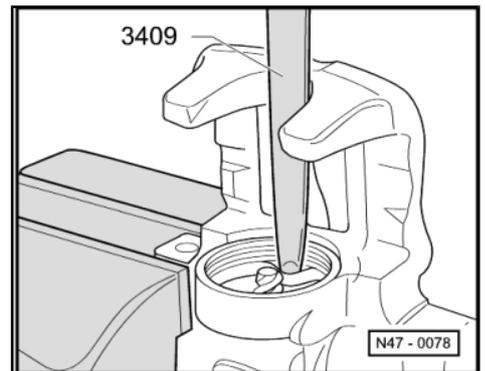
- ◆ For pistons that are difficult to move, an open-end wrench (size 13 mm) can be applied at the appropriate wrench surface -arrow A-.



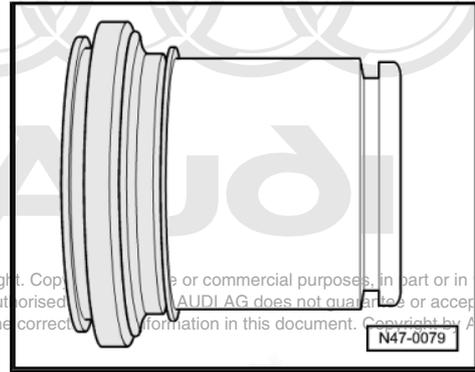
- Remove seal using -3409- .

#### Installing

- The surface of the piston and seal must only be cleaned with mineral spirits and then dried.
- Thinly coat piston and seal with lithium grease -G 052 150 A2- before inserting.
- Insert oil seal in brake caliper housing.



- Place protective cap with outer sealing lip on piston.

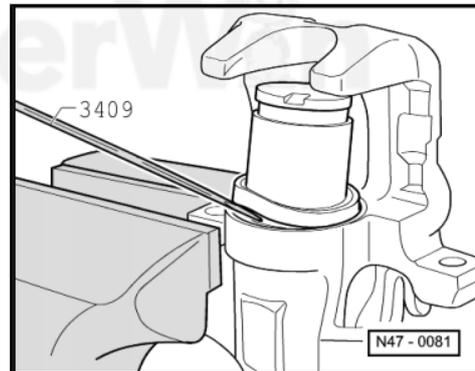


Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of the information in this document. Copyright by AUDI AG.

- Using -3409-, insert inner sealing lip into cylinder groove.

 **Note**

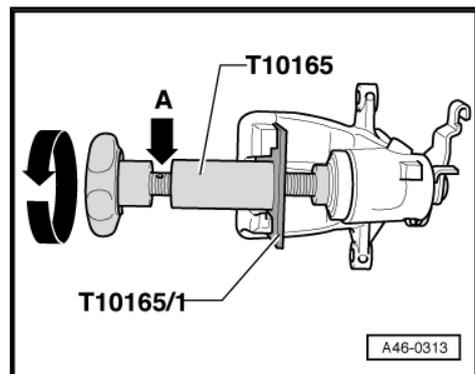
*Hold piston in front of caliper housing for this procedure.*



- Set -T10165- against piston of brake caliper housing.
- Install the piston by turning knurled wheel toward right.

 **Note**

- ◆ *By resetting the piston with a piston resetting tool, the automatic adjustment in the brake caliper is destroyed.*
- ◆ *If the piston is difficult to move, use a 13 mm open end wrench on the flats -arrow- provided for this purpose.*



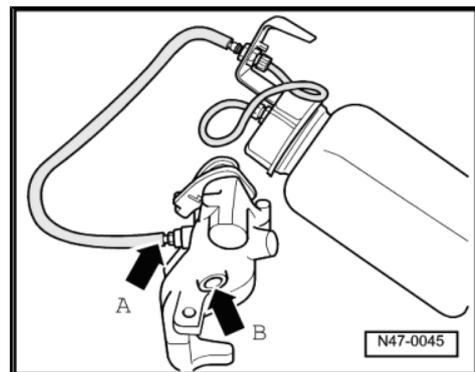
- Insert brake pads.

**Pre-Bleed Brake Caliper**

- Open bleeder screw -arrow A- and using a standard bleeder bottle, fill with brake fluid until bubble-free brake fluid flows from the threaded hole (brake hose connection) -arrow B-. Close bleeder valve.

 **Note**

*Position brake caliper as shown during pre-bleed procedure.*



**5.4 Brake Fluid Reservoir**

**Removing**

- Extract any brake fluid from the reservoir.

 **Note**

- ◆ *Make sure that brake fluid cannot leak out of the brake fluid reservoir because it will damage components and the paint.*
- ◆ *When siphoning brake fluid, always use a bleeder bottle that is used exclusively for brake fluid.*



**WARNING**

***Brake fluid is poisonous. NEVER siphon brake fluid with your mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.***

- Pull off the clutch hose and seal it off.
- Remove the bolt under the brake fluid reservoir.

 **Note**

*Depending on the model, an additional locking pin is pushed through the mount in the master brake cylinder and brake fluid reservoir.*

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability for the correctness of information in this document. Copyright by AUDI AG.

- Remove the locking pin from the master brake cylinder and the brake fluid reservoir.
- Remove the brake fluid reservoir.

**Installing**

- Coat the connections on the brake fluid reservoir with brake fluid and insert into sealing plugs in brake master cylinder.

 **Note**

*Depending on the model, an additional locking pin is pushed through the mount in the master brake cylinder and brake fluid reservoir.*

- Remove the locking pin from the master brake cylinder and the brake fluid reservoir.
- Install the bolt under the brake fluid reservoir and tighten it.
- Install the clutch hose.
- Bleed the clutch. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 68 ; General Information .
- Bleed brake system. Refer to ⇒ **“1.4 Brake System Bleeding”, page 76 .**



**WARNING**

***Make sure the brakes are working correctly before driving the vehicle for the first time.***

## 5.5 Brake Master Cylinder



### Note

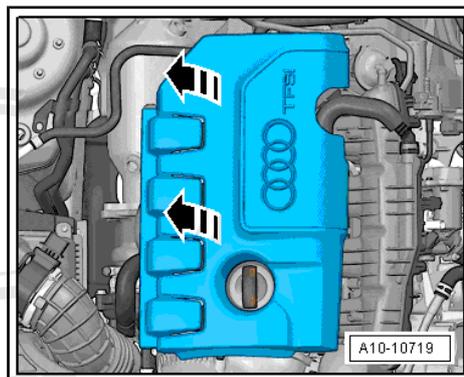
- ◆ If the vehicle has a TFSI engine, then the noise amplifier must be removed and installed. Refer to [⇒ "5.7 Noise Amplifier, TFSI", page 101](#).
- ◆ The noise amplifier is inside the engine compartment in front of the brake booster.

### Special tools and workshop equipment required

- ◆ Torque wrench -V.A.G 1331-
- ◆ Brake filler/bleeder unit -V.A.G 1869-
- ◆ Brake filler/bleeder unit suction adapter -V.A.G 1869/4-
- ◆ Brake filler/bleeder unit -VAS 5234-
- ◆ Sealing plugs repair kit, Part no. -1H0 698 311 A-
- ◆ Vehicle Diagnosis, Testing and Information System -VAS 505x-

### Removing

- Remove engine cover upward in -direction of arrow-.
- Depending on the engine installed, remove the noise amplifier. Refer to [⇒ "5.7 Noise Amplifier, TFSI", page 101](#).
- Remove brake light switch. Refer to [⇒ "4.1 Brake Light Switch", page 17](#).
- To protect against escaping brake fluid, place enough lint-free cloths in the area below the master brake cylinder.
- Extract as much brake fluid as possible from brake fluid reservoir using -VAS 5234- or -V.A.G 1869/4-.

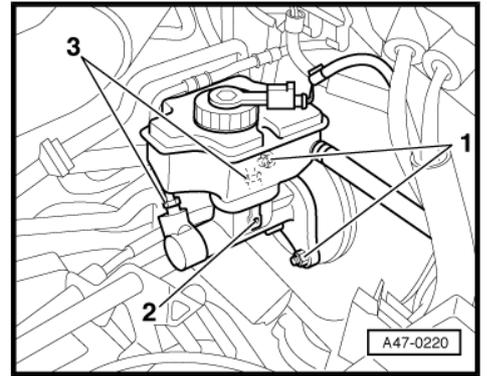


### WARNING

- ◆ **Do not, under any circumstances, allow brake fluid to come into contact with any fluids containing mineral oil (oil, gasoline, cleaning solvents). Mineral oil damages the sealing plugs and boots of the brake system.**
- ◆ **Brake fluid is poisonous. NEVER siphon brake fluid with your mouth! Also due to its corrosive effect, brake fluid must not come into contact with paintwork.**
- ◆ **Observe disposal regulations.**

- Connect connector on brake fluid level warning switch.

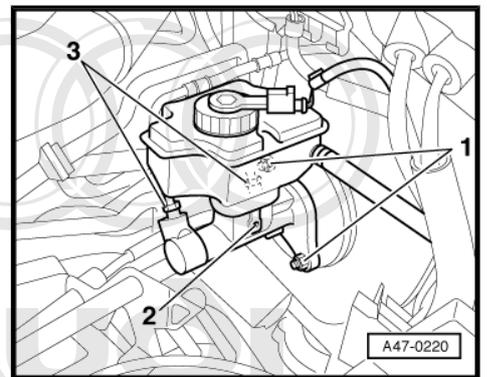
- Disconnect brake lines -3- at brake master cylinder and seal brake lines with sealing plugs from repair kit.
- Remove brake master cylinder nuts -1-.
- Remove heat shield.
- Unclip brake fluid reservoir at position -2- and pull upward and off.
- Remove brake master cylinder from brake booster.



### Installing

Installation is the reverse of removal, with special attention to the following:

- Replace sealing ring between brake master cylinder and brake booster.
- When replacing brake master cylinder, ensure pressure rod in brake booster is seated correctly.
- Use new nuts -1-. Note torque: 20 Nm
- Press brake pedal down a bit, this allows the brake master cylinder to be guided into pressure rod more easily.
- Install brake lines -3- on brake master cylinder. Note torque: 14 Nm
- Install brake light switch. Refer to [⇒ "4.1 Brake Light Switch", page 17](#) .
- Install the brake fluid reservoir. Refer to [⇒ "5.4 Brake Fluid Reservoir", page 94](#) .
- Depending on the engine installed, install the noise amplifier. Refer to [⇒ "5.7 Noise Amplifier, TFSI", page 101](#)
- Brake system bleeding, refer to [⇒ "1.4 Brake System Bleeding", page 76](#) .
- Initiate brake pressure sensor basic setting.



Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

### Note

Use the -VAS 505x- for this.

- Perform ESP driving and system test.
- VAS 505x- .**
- Under chassis
  - Brake system (Repair Group 01; 45)
  - 01- On Board Diagnostic (OBD) capable systems
  - 03- Brake electronics ABS/ESP Mark 60 si
  - J104- ABS/ASR/ESP Control Module, Functions

 **WARNING**

***Make sure the brakes are working correctly before driving the vehicle for the first time.***

## 5.6 Brake Booster

### Note

- ◆ If the vehicle has a TFSI engine, then the noise amplifier must be removed and installed. Refer to ["5.7 Noise Amplifier, TFSI", page 101](#).
- ◆ The noise amplifier is inside the engine compartment in front of the brake booster.

#### 1 - Brake Booster

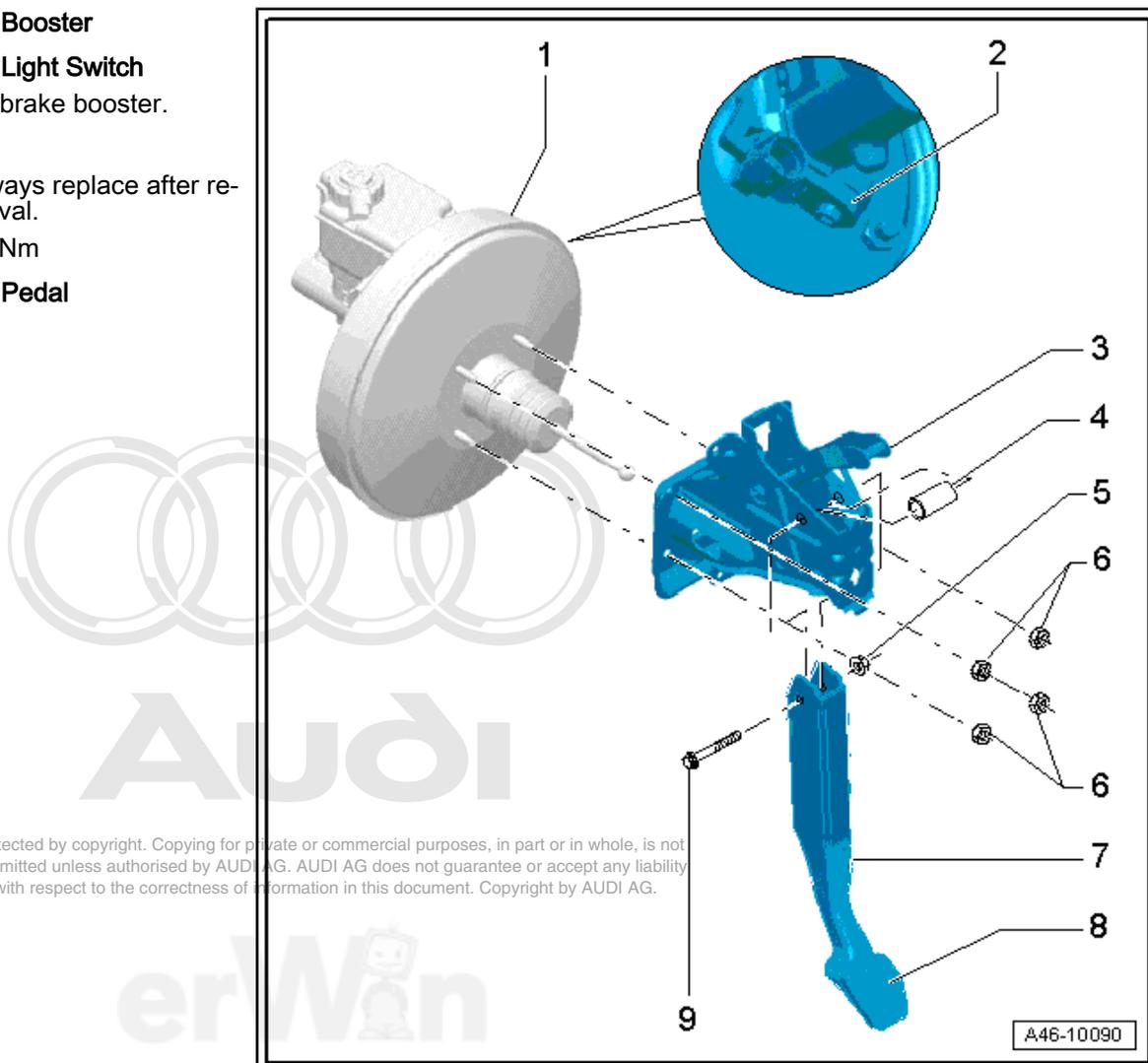
#### 2 - Brake Light Switch

- To brake booster.

#### 6 - Nut

- Always replace after removal.
- 25 Nm

#### 8 - Brake Pedal



### Special tools and workshop equipment required

- ◆ Torque wrench -V.A.G 1331-
- ◆ Brake filler/bleeder unit -V.A.G 1869-
- ◆ Brake filler/bleeder unit suction adapter -V.A.G 1869/4-
- ◆ Brake filler/bleeder unit -VAS 5234-
- ◆ Sealing plugs repair kit, Part no. -1H0 698 311 A-
- ◆ Vehicle Diagnosis, Testing and Information System -VAS 505x-

## Removing

- Remove the vacuum in the brake booster by pressing the brake pedal repeatedly.
- Depending on the engine installed, remove the noise amplifier. Refer to ⇒ [“5.7 Noise Amplifier, TFSI”, page 101](#) .
- Remove brake light switch. Refer to ⇒ [“4.1 Brake Light Switch”, page 17](#) .
- Remove brake master cylinder. Refer to ⇒ [“5.5 Brake Master Cylinder”, page 96](#) .



### Note

*Remove brake booster vacuum sensor -G483- depending on model. Refer to ⇒ [“4.4 Brake Booster Vacuum Sensor, with Optimized Hydraulic Brake Vacuum \(OHV\) Boosting”, page 20](#) .*

- Unclip and remove the vacuum line from the brake booster.
- Remove driver side compartment. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Removal and Installation .
- Disconnect brake pedal from brake booster. Refer to ⇒ [“5.14 Brake Pedal and Brake Booster, Separating”, page 71](#) .



# Audi

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



- Remove the nuts -6-.
- Remove the brake booster from the vehicle.

### Installing

Installation is the reverse of removal, with special attention to the following:

#### Note

Use new nuts.

- Observe torque: 25 Nm
- Clip brake pedal together with brake booster. Refer to [⇒ "5.14 Brake Pedal and Brake Booster, Separating", page 71](#).

#### Note

Install brake booster vacuum sensor depending on model. Refer to

[⇒ "4.4 Brake Booster Vacuum Sensor, with Optimized Hydraulic Brake Vacuum \(OHBV\) Boosting", page 20](#).

- Install brake master cylinder. Refer to [⇒ "5.5 Brake Master Cylinder", page 96](#).
- Install brake light switch. Refer to [⇒ "4.1 Brake Light Switch", page 17](#).
- Depending on the engine installed, install the noise amplifier. Refer to [⇒ "5.7 Noise Amplifier, TFSI", page 101](#).
- Install driver side compartment. Refer to [⇒ Body Interior; Rep. Gr. 68 ; Removal and Installation](#).
- Brake system bleeding, refer to [⇒ "1.4 Brake System Bleeding", page 76](#).
- Initiate brake pressure sensor basic setting.

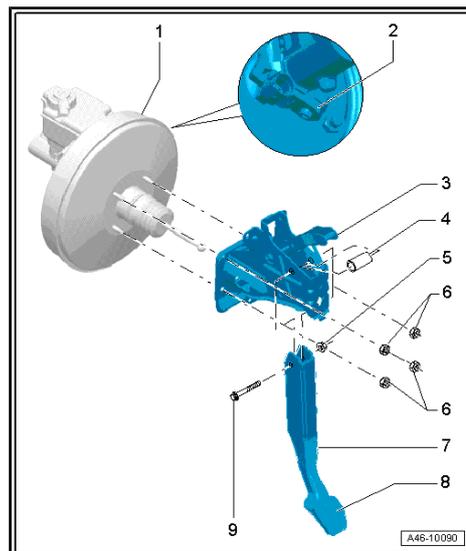
#### Note

Use -VAS 505x- for this.

- Perform ESP driving and system test.

#### -VAS 505x- .

- Under chassis
- Brake system (Repair Group 01; 45)
- 01- On Board Diagnostic (OBD) capable systems
- 03- Brake electronics ABS/ESP Mark 60si
- J104- ABS/ASR/ESP Control Module, Functions
- On vehicles with ABS/ESP, initiate brake pressure sensor basic setting.
- Perform ESP driving and system test.





#### WARNING

*Make sure the brakes are working correctly before driving the vehicle for the first time.*

## 5.7 Noise Amplifier, TFSI



#### Note

*The noise amplifier is inside the engine compartment in front of the brake booster.*

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

#### Removing

- Unclip the air guide for the air filter housing.
- Remove air duct from air filter housing.
- Remove engine cover upward in -direction of arrow-.
- Remove the upper air guide from the noise amplifier.
- Remove the noise amplifier off the 3 rubber buffers on the bracket.
- Remove the lower air guide from the noise amplifier.
- Remove the noise amplifier from the vehicle.

#### Installing

Installation is performed in the reverse order of removal.



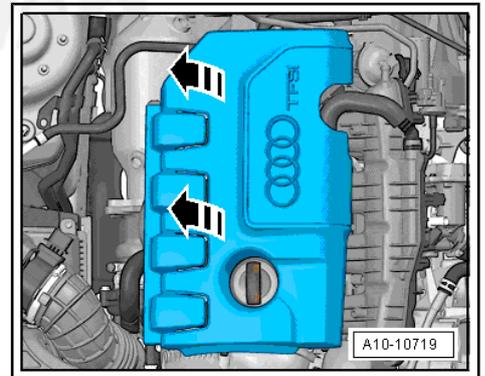
#### Note

- ◆ *Connect the lower air hose before installing the noise amplifier.*
- ◆ *Do not bend the air hose to the amplifier after installing.*



#### Note

*Make sure the noise amplifier is clipped in all three rubber buffers.*



## 5.8 Vacuum Pump, TFSI



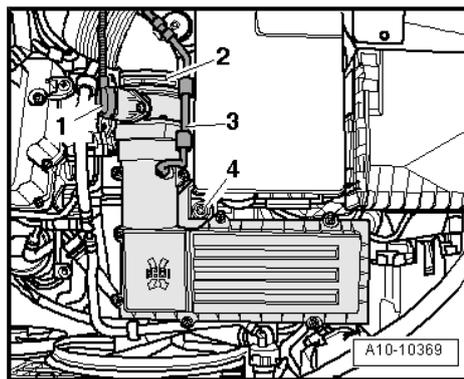
#### Note

- ◆ *The vacuum pump is mechanically driven.*
- ◆ *The vacuum pump is installed on the engine on the left side.*

#### Removing

- Remove the engine cover.

- Disconnect the connector -1- on the mass airflow sensor.
- Disconnect the ventilation hose -3-.
- Remove the cover from the air filter housing.
- Disconnect the air guide at the clamp -2-.
- Move the air guide to the side.
- Remove the vacuum hose from the vacuum pump.



**Caution**

*Be careful not to damage the vacuum hose. Replace the vacuum hose if damaged.*

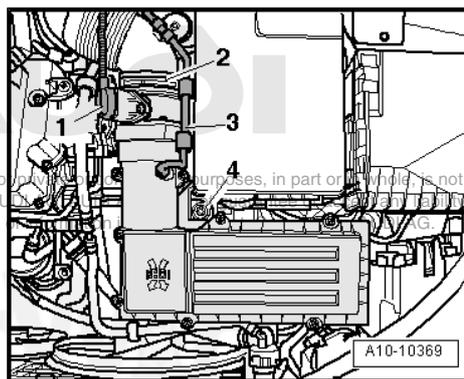
- Remove the screws on the vacuum pump sealing flange.
- Remove the vacuum pump from the vehicle.

**Installing**



**Note**

- ◆ *Replace the seal.*
- ◆ *Make sure the seal is correctly installed.*
- Position the vacuum pump tappet so it engages in the groove on the camshaft when vacuum pump is installed.
- Insert the vacuum pump.
- Install and tighten all the bolts on the vacuum pump sealing flange to 9 Nm.
- Connect the vacuum hose to the vacuum pump.
- Install the air guide.
- Secure the air guide with the clamp -2-.
- Install the cover on the air filter housing.
- Install the ventilation hose -3-.
- Connect the connector -1- to the mass airflow sensor.
- Install the engine cover.



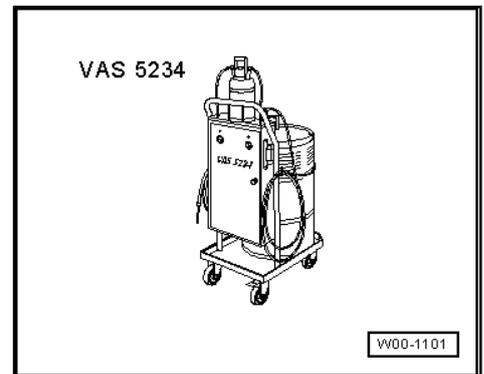
Protected by copyright. Copying for private use is permitted, in part or in full, is not permitted unless authorised by Audi AG. with respect to the correctness

Edition 9.22.11 F

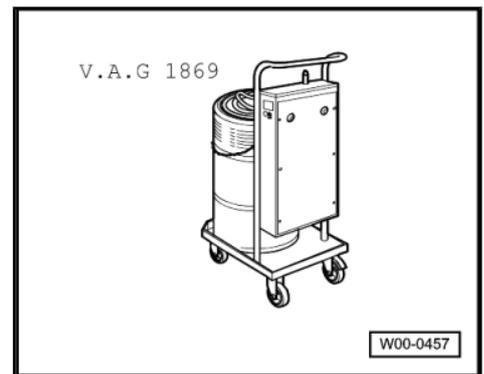
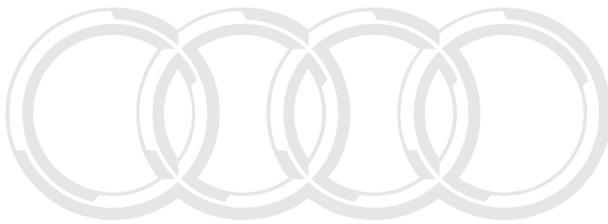
## 6 Special Tools

### Special tools and workshop equipment required

- ◆ Vehicle diagnostic, test and information system -VAS 5051-
- ◆ Brake filler/bleeder unit suction adapter -V.A.G 1869/4-
- ◆ Assembly tool -T10146-
- ◆ Torque wrench -V.A.G 1331-
- ◆ Brake filler/bleeder unit -VAS 5234- or

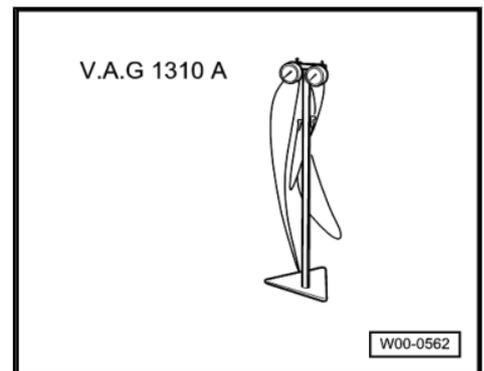


- ◆ Brake filler/bleeder unit -V.A.G 1869-



- ◆ Brake pressure gauge 0-250 bar -V.A.G 1310A-

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



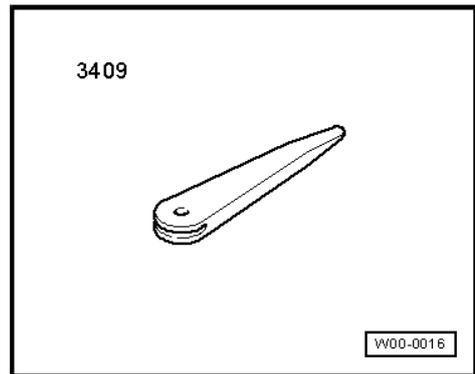
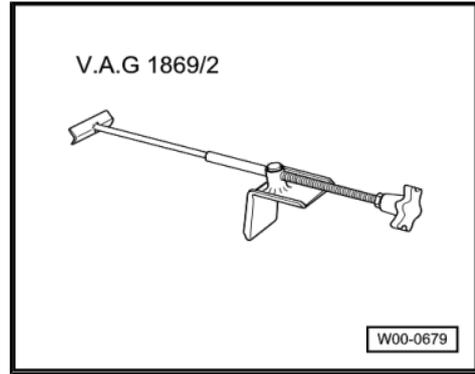
◆ Brake pedal actuator -V.A.G 1869/2-



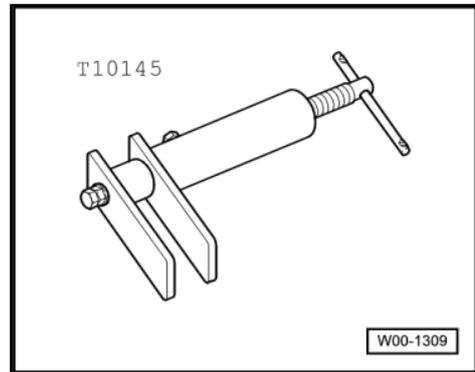
Audi

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

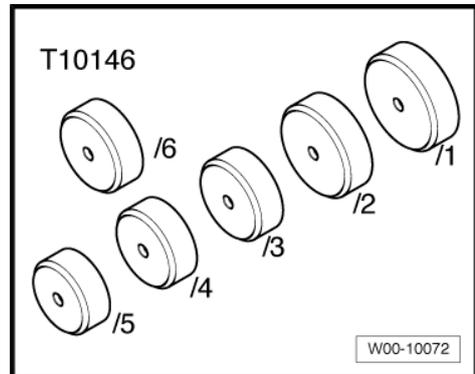
◆ Disassembly wedge -3409-



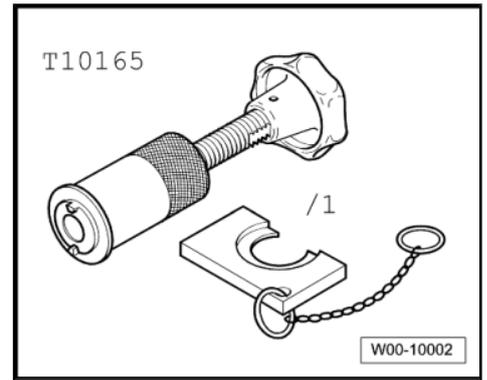
◆ Piston resetting tool -T 10145-



◆ Assembly device for protective cap -T10146/2-



◆ Resetting and extracting tool -T10165-



**Audi**

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.



# Cautions & Warnings

**Please read these WARNINGS and CAUTIONS before proceeding with maintenance and repair work. You must answer that you have read and you understand these WARNINGS and CAUTIONS before you will be allowed to view this information.**

- If you lack the skills, tools and equipment, or a suitable workshop for any procedure described in this manual, we suggest you leave such repairs to an authorized Audi retailer or other qualified shop. We especially urge you to consult an authorized Audi retailer before beginning repairs on any vehicle that may still be covered wholly or in part by any of the extensive warranties issued by Audi.
- Disconnect the battery negative terminal (ground strap) whenever you work on the fuel system or the electrical system. Do not smoke or work near heaters or other fire hazards. Keep an approved fire extinguisher handy.
- Audi is constantly improving its vehicles and sometimes these changes, both in parts and specifications, are made applicable to earlier models. Therefore, part numbers listed in this manual are for reference only. Always check with your authorized Audi retailer parts department for the latest information. This information is not permitted unless authorized by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.
- Any time the battery has been disconnected on an automatic transmission vehicle, it will be necessary to reestablish Transmission Control Module (TCM) basic settings using the VAG 1551 Scan Tool (ST).
- Never work under a lifted vehicle unless it is solidly supported on stands designed for the purpose. Do not support a vehicle on cinder blocks, hollow tiles or other props that may crumble under continuous load. Never work under a vehicle that is supported solely by a jack. Never work under the vehicle while the engine is running.
- For vehicles equipped with an anti-theft radio, be sure of the correct radio activation code before disconnecting the battery or removing the radio. If the wrong code is entered when the power is restored, the radio may lock up and become inoperable, even if the correct code is used in a later attempt.
- If you are going to work under a vehicle on the ground, make sure that the ground is level. Block the wheels to keep the vehicle from rolling. Disconnect the battery negative terminal (ground strap) to prevent others from starting the vehicle while you are under it.
- Do not attempt to work on your vehicle if you do not feel well. You increase the danger of injury to yourself and others if you are tired, upset or have taken medicine or any other substances that may impair you or keep you from being fully alert.
- Never run the engine unless the work area is well ventilated. Carbon monoxide (CO) kills.
- Always observe good workshop practices. Wear goggles when you operate machine tools or work with acid. Wear goggles, gloves and other protective clothing whenever the job requires working with harmful substances.
- Tie long hair behind your head. Do not wear a necktie, a scarf, loose clothing, or a necklace when you work near machine tools or running engines. If your hair, clothing, or jewelry were to get caught in the machinery, severe injury could result.

# Cautions & Warnings

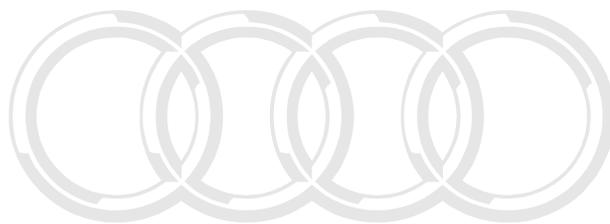
- Do not re-use any fasteners that are worn or deformed in normal use. Some fasteners are designed to be used only once and are unreliable and may fail if used a second time. This includes, but is not limited to, nuts, bolts, washers, circlips and cotter pins. Always follow the recommendations in this manual - replace these fasteners with new parts where indicated, and any other time it is deemed necessary by inspection.
- Illuminate the work area adequately but safely. Use a portable safety light for working inside or under the vehicle. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.
- Friction materials such as brake pads and clutch discs may contain asbestos fibers. Do not create dust by grinding, sanding, or by cleaning with compressed air. Avoid breathing asbestos fibers and asbestos dust. Breathing asbestos can cause serious diseases such as asbestosis or cancer, and may result in death.
- Finger rings should be removed so that they cannot cause electrical shorts, get caught in running machinery, or be crushed by heavy parts.
- Before starting a job, make certain that you have all the necessary tools and parts on hand. Read all the instructions thoroughly, do not attempt shortcuts. Use tools that are appropriate to the work and use only replacement parts meeting Audi specifications. Makeshift tools, parts and procedures will not make good repairs.
- Catch draining fuel, oil or brake fluid in suitable containers. Do not use empty food or beverage containers that might mislead someone into drinking from them. Store flammable fluids away from fire hazards. Wipe up spills at once, but do not store the oily rags, which can ignite and burn spontaneously.
- Use pneumatic and electric tools only to loosen threaded parts and fasteners. Never use these tools to tighten fasteners, especially on light alloy parts. Always use a torque wrench to tighten fasteners to the tightening torque listed.
- Keep sparks, lighted matches, and open flame away from the top of the battery. If escaping hydrogen gas is ignited, it will ignite gas trapped in the cells and cause the battery to explode.
- Be mindful of the environment and ecology. Before you drain the crankcase, find out the proper way to dispose of the oil. Do not pour oil onto the ground, down a drain, or into a stream, pond, or lake. Consult local ordinances that govern the disposal of wastes.
- The air-conditioning (A/C) system is filled with a chemical refrigerant that is hazardous. The A/C system should be serviced only by trained automotive service technicians using approved refrigerant recovery/recycling equipment, trained in related safety precautions, and familiar with regulations governing the discharging and disposal of automotive chemical refrigerants.
- Before doing any electrical welding on vehicles equipped with anti-lock brakes (ABS), disconnect the battery negative terminal (ground strap) and the ABS control module connector.
- Do not expose any part of the A/C system to high temperatures such as open flame. Excessive heat will increase system pressure and may cause the system to burst.

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

# Cautions & Warnings

- When boost-charging the battery, first remove the fuses for the Engine Control Module (ECM), the Transmission Control Module (TCM), the ABS control module, and the trip computer. In cases where one or more of these components is not separately fused, disconnect the control module connector(s).
- Some of the vehicles covered by this manual are equipped with a supplemental restraint system (SRS), that automatically deploys an airbag in the event of a frontal impact. The airbag is operated by an explosive device. Handled improperly or without adequate safeguards, it can be accidentally activated and cause serious personal injury. To guard against personal injury or airbag system failure, only trained Audi Service technicians should test, disassemble or service the airbag system.
- Do not quick-charge the battery (for boost starting) for longer than one minute, and do not exceed 16.5 volts at the battery with the boosting cables attached. Wait at least one minute before boosting the battery a second time.
- Never use a test light to conduct electrical tests of the airbag system. The system must only be tested by trained Audi Service technicians using the VAG 1551 Scan Tool (ST) or an approved equivalent. The airbag unit must never be electrically tested while it is not installed in the vehicle.
- Some aerosol tire inflators are highly flammable. Be extremely cautious when repairing a tire that may have been inflated using an aerosol tire inflator. Keep sparks, open flame or other sources of ignition away from the tire repair area. Inflate and deflate the tire at least four times before breaking the bead from the rim. Completely remove the tire from the rim before attempting any repair.
- When driving or riding in an airbag-equipped vehicle, never hold test equipment in your hands or lap while the vehicle is in motion. Objects between you and the airbag can increase the risk of injury in an accident.

**I have read and I understand these Cautions and Warnings.**



**Audi**

---

Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

**Page 3 of 3**

© 2002 Audi of America, Inc.

All rights reserved. Information contained in this document is based on the latest information available at the time of printing and is subject to the copyright and other intellectual property rights of Audi of America, Inc., its affiliated companies and its licensors. All rights are reserved to make changes at any time without notice. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, nor may these materials be modified or reposted to other sites, without the prior expressed written permission of the publisher.

Version 1.0