



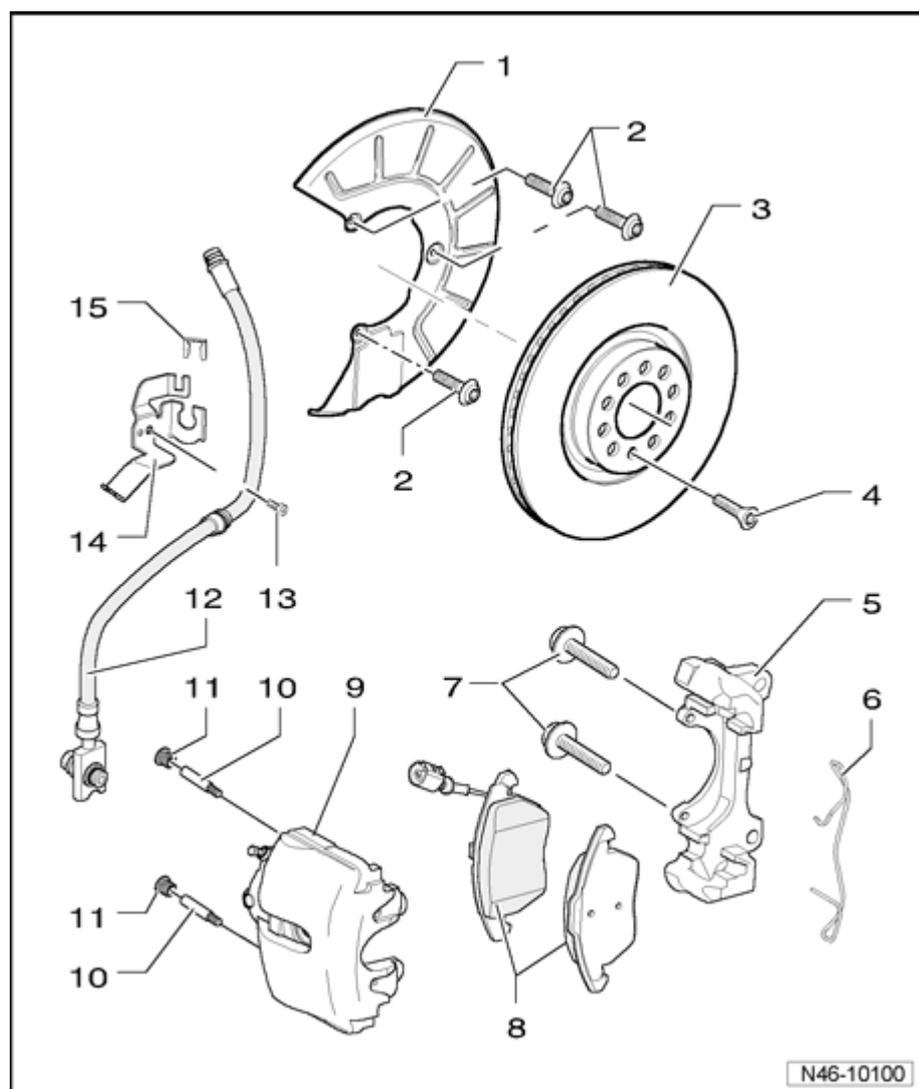
46 - 1

## Front brakes, servicing

### Front brakes (FN 3 calipers), servicing

#### Note:

- After replacing brake pads, depress brake pedal firmly several times with vehicle stationary so that the brake pads are properly seated in their normal operating position.
- Use brake filler/bleeder unit VAS 5234 .
- Before removing brake caliper or disconnecting brake hose, brake pedal actuator V.A.G 1869/2 must be inserted (this dissipates pressure).

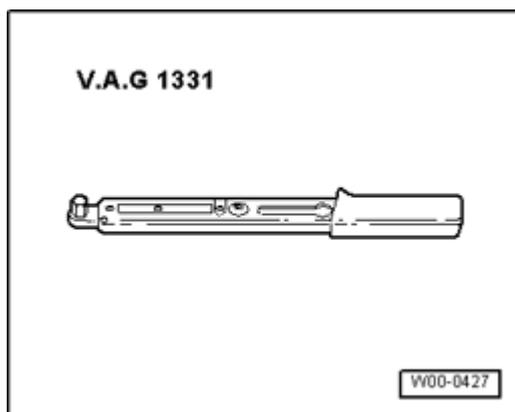


- **Cover plate**
- **Torx bolt, 12 Nm**
- **Brake disc**
  - Internally vented, dia. 312 mm
  - Thickness 25 mm
  - Wear limit: 22 mm
  - Must always be replaced together on both sides of axle
  - To remove, first remove brake caliper and carrier
  
- **Torx bolt, 4 Nm**
- **Brake carrier**
  - Bolt to wheel bearing housing
  
- **Retaining spring**
  - Insert in both holes of brake caliper
  
- **Ribbed bolt, 200 Nm**
  - Clean if re-using
  
- **Brake pads**
  - Thickness 14 mm without backing plate
  - With wear indicator (left front)
  - When wear limit is reached (Limit: approx. 4 mm without backing plate) warning lamp illuminates in instrument cluster
  - Wear limit: 2 mm without backing plate

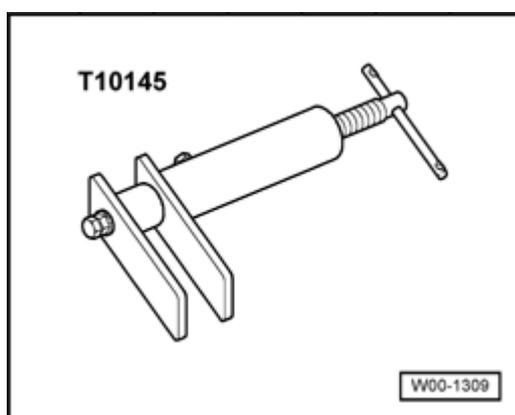
- Checking thickness
  - ⇒ ⇒ [Repair Manual, Maintenance](#)
- Must always be replaced together on both sides of axle
- Removing and installing ⇒ [46-1, Brake pads, removing and installing](#)
  
- **Brake caliper**
  - Do not disconnect brake hose when replacing brake pad
  - Removing and installing ⇒ [46-1, Brake caliper, removing and installing](#)
  - Servicing ⇒ [47-1, Front brake caliper, servicing](#)
  
- **Guide pins, 30 Nm (18 ft lb)**
- **Cap**
  - Remove
  
- **Brake hose with banjo fitting and union bolt, 35 Nm**
- **Bolt, 8 Nm**
- **Bracket**
- **Retaining clip**

### **Brake pads, removing and installing**

**Special tools, testers and auxiliary items required**



- Torque wrench V.A.G 1331

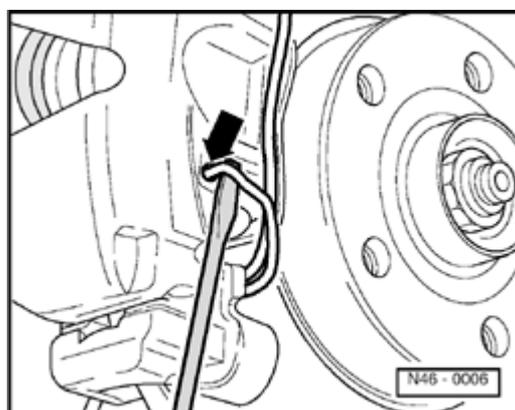


- Piston resetting tool T10145

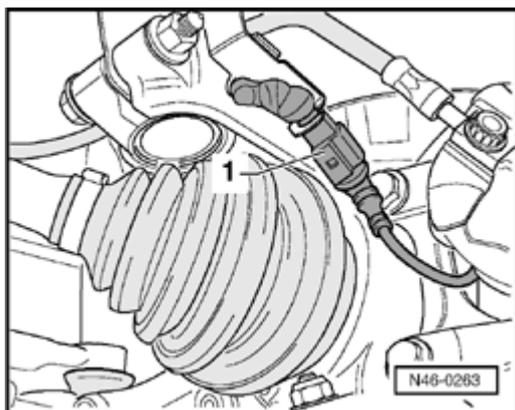
### Removing

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

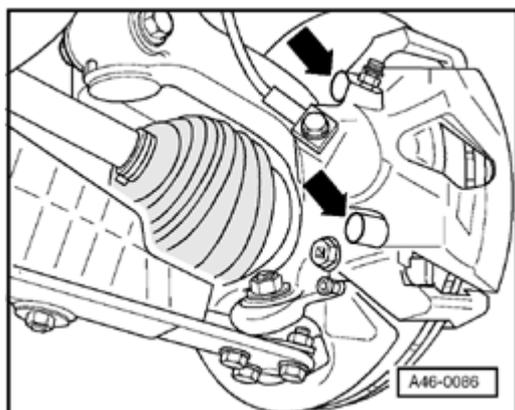
- Remove wheels.



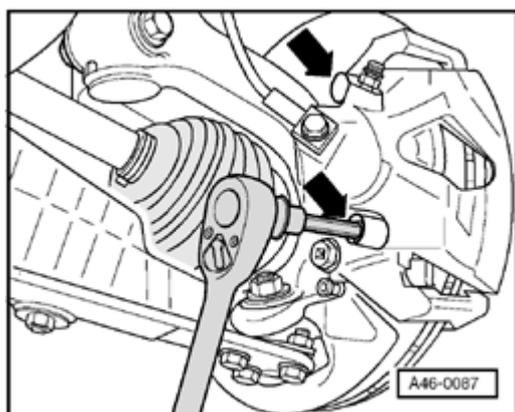
- Using screwdriver, pry off brake pad retaining spring from brake caliper - **arrow** - and remove.



- Disconnect connector - **1** - for brake pad wear indicator.



- Remove caps - **arrows** - .



- Loosen both guide pins - **arrows** - and remove from brake caliper.

- Remove brake caliper and secure with wire so that the weight of the brake caliper does not burden or damage the brake hose.

- Remove brake pad from brake caliper or from brake carrier.

### **Cleaning:**

**Warning!**

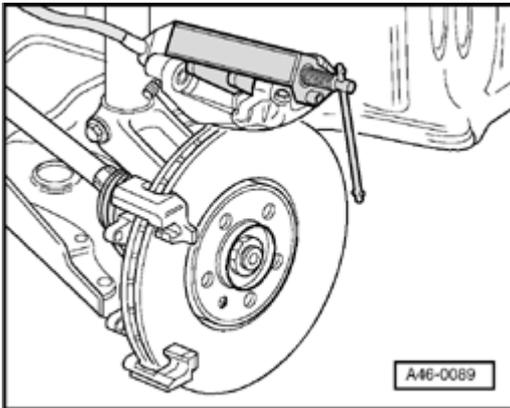
**Do not blow brake system using compressed air, the dust produced is harmful to your health!**

- Thoroughly clean contact surfaces for brake pads on brake carrier, remove corrosion.
- Clean brake caliper.

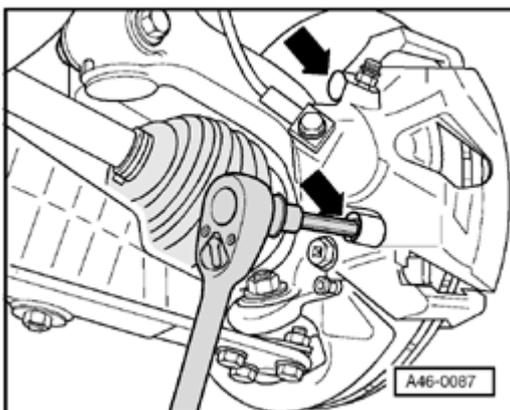
**Use only appropriate solvents for cleaning brake caliper.**

**Installing**

**Before pressing piston into cylinder using piston resetting tool, brake fluid must be extracted from brake fluid reservoir. Otherwise, especially if reservoir has been topped off, fluid will overflow and cause damage.**



- Press piston back.
- Install outer brake pad on brake carrier.
- Insert inner brake pad with retaining spring in brake caliper (piston).



- Tighten brake caliper to brake carrier using both guide pins - **arrows** - .

- Install both protective caps.
- Install retaining spring in brake caliper.
- Connect brake pad wear indicator connector.
- Install wheels.

Tightening torque specification for wheel bolts

⇒ [Repair Manual, Suspension, Wheels, Steering, Repair Group 44,](#)

**Note:**

- *After replacing brake pads, depress brake pedal firmly several times with vehicle stationary so that the brake pads are properly seated in their normal operating position.*
- *Check brake fluid level after replacing brake pads.*

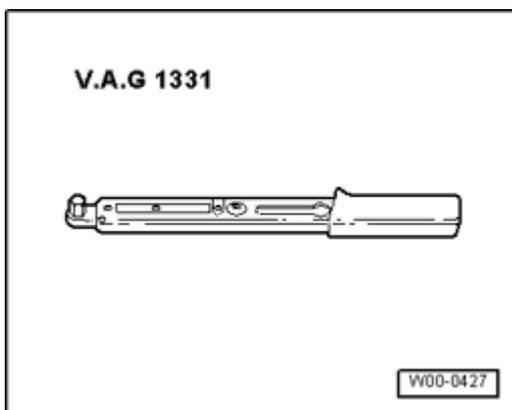
Tightening torque:

Guide pin to brake carrier

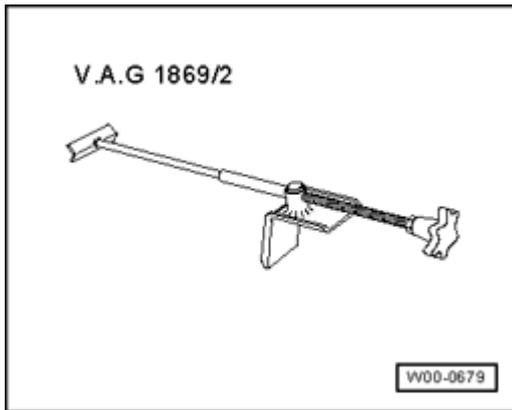
30 Nm

**Brake caliper, removing and installing**

**Special tools, testers and auxiliary items required**



- Torque wrench V.A.G 1331



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

### Removing

**Work procedure applies only for replacing or when performing subsequent service work on brake caliper.**

- Remove wheels.
- Using screwdriver, pry off brake pad retaining spring from brake caliper and remove.
- Separate connector for brake pad wear indicator.
- Connect bleeder hose of bleeder bottle to bleeder valve of brake caliper and then open bleeder valve.
- Insert brake pedal actuator V.A.G 1869/2 .
- Close bleeder valve and remove bleeder bottle.
- Remove brake hose.
- Pull both cover caps from bushings of brake caliper.
- Loosen both guide pins and remove from brake caliper.
- Remove brake caliper from brake carrier.
- Remove brake pads from brake caliper.

### Installing

- Piston is pressed back.
- Outer brake pad sits on brake carrier.
- Insert inner brake pad with retaining spring in brake caliper (piston).

- Tighten brake caliper to brake carrier using both guide pins.
- Install both protective caps.
- Connect brake hose on brake caliper.
- Remove brake pedal actuator V.A.G 1869/2 .
- Install retaining spring in brake caliper.
- Connect brake pad wear indicator connector.
- Bleed braking system ⇒ [47-4, Brake system, bleeding](#)
- Install wheels.

Torque specification for wheel bolts

⇒ *Repair Manual, Suspension, Wheels, Steering, Repair Group 44,*

**Note:**

- *Before moving vehicle, depress brake pedal several times firmly to properly seat brake pads in their normal operating position.*
- *Check brake fluid level.*

Tightening torques:

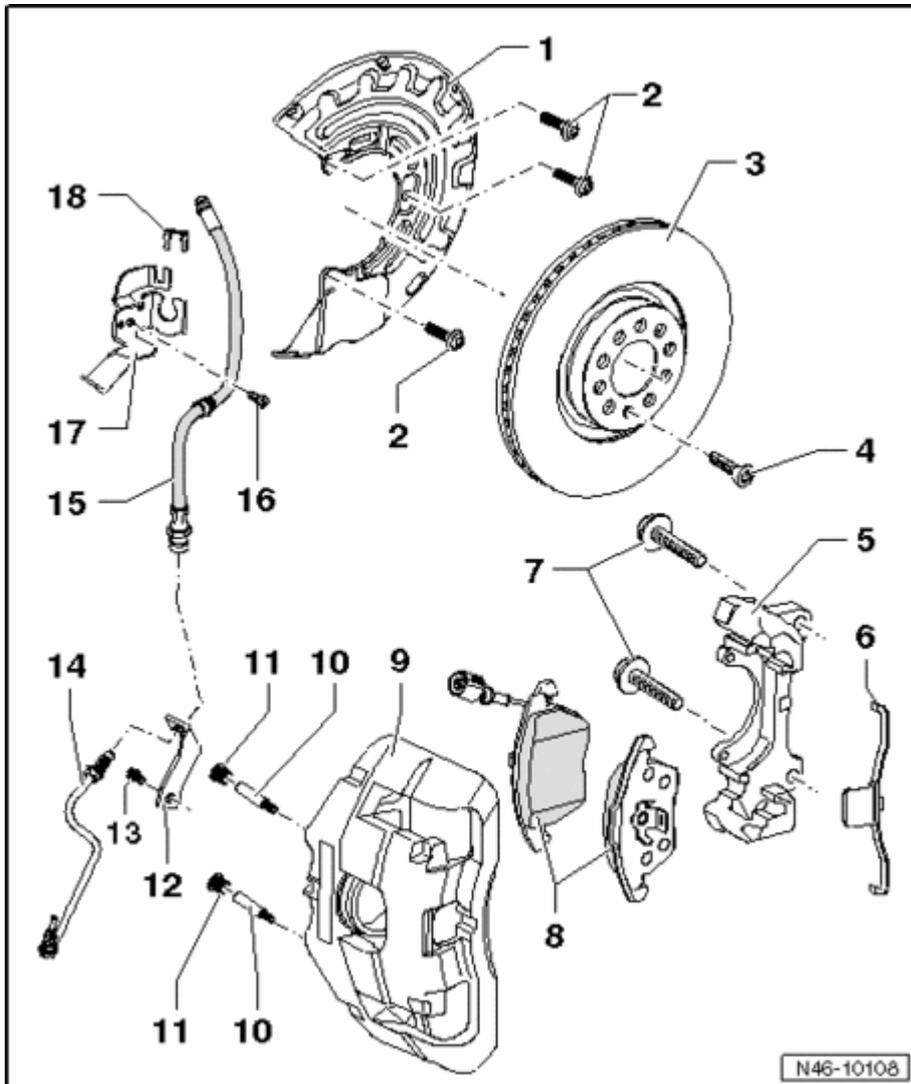
Guide pin to brake carrier	30 Nm
Brake line to brake caliper	35 Nm

**Front brakes (FNR-G brake caliper), servicing**

**Note:**

- *After replacing brake pads, depress brake pedal firmly several times with vehicle stationary so that the brake pads are properly seated in their normal operating position.*
- *Use brake filler/bleeder unit VAS 5234 to extract brake fluid from brake fluid reservoir.*

- *Before removing brake caliper or disconnecting brake hose, brake pedal actuator V.A.G 1869/2 must be inserted (this dissipates pressure).*



- **Cover plate**
- **Torx bolt, 12 Nm**
- **Brake disc**
  - Internally vented, dia. 345 mm
  - Thickness 30 mm
  - Wear limit: 27 mm
  - Must always be replaced together on both sides of axle
  - Remove brake caliper before

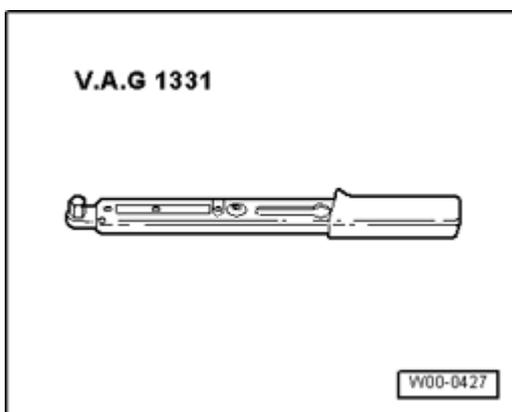
removing

- **Torx bolt, 4 Nm**
- **Brake carrier**
  - Bolt to wheel bearing housing
- **Retaining spring**
  - Insert in brake pad retaining spring and press below brake carrier.
- **Ribbed bolt, 190 Nm**
  - Clean if re-using
- **Brake pads**
  - Thickness 14 mm without backing plate
  - With wear indicator
  - When wear limit is reached (limit: approx. 4 mm), the warning lamp lights up in instrument cluster
  - Wear limit: 2 mm without backing plate
  - Checking thickness
    - ⇒ ⇒ [Repair Manual, Maintenance](#)
  - Must always be replaced together on both sides of axle
  - Removing and installing ⇒ [46-1, Brake pads, removing and installing](#)
- **Brake caliper**
  - Do not bolt to brake hose/brake line when changing brake pads

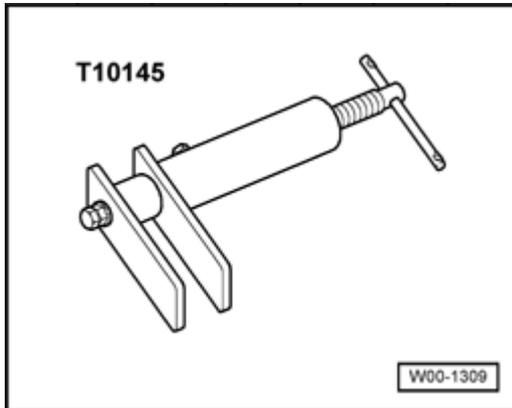
- Must not be bolted apart
  - Removing and installing ⇒ [46-1, Brake caliper, removing and installing](#)
  - Servicing ⇒ [47-1, Brake caliper FNR-G, servicing](#)
- 
- **Guide pins, 30 Nm (18 ft lb)**
  - **Cap**
    - Remove
  - **Bracket**
  - **Bolt, 15 Nm**
  - **Brake line, 14 Nm**
  - **Brake hose**
  - **Hex socket head screw, 8 Nm**
  - **Bracket**
  - **Spring clip**

### Brake pads, removing and installing

#### Special tools, testers and auxiliary items required



- Torque wrench V.A.G 1331

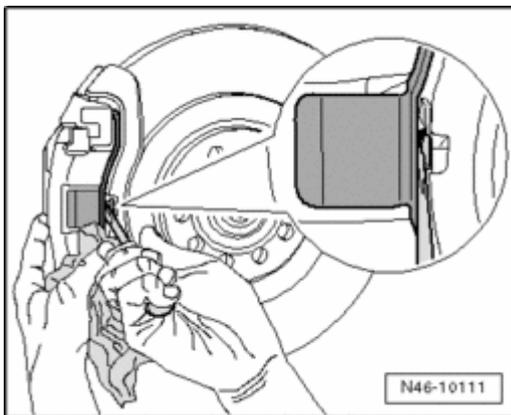


- Piston resetting tool T 10145

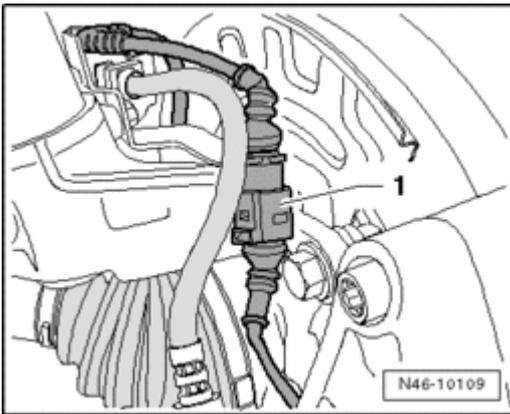
### Removing

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

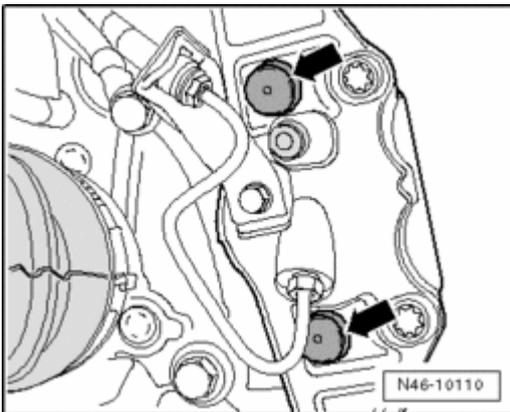
- Remove wheels.



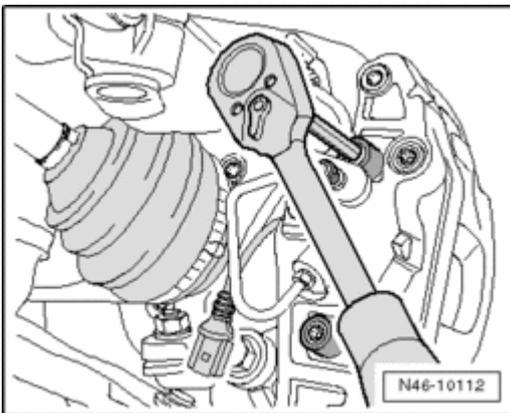
- Pry brake caliper retaining spring out of brake pad retaining spring with screwdriver. To do this, place screwdriver between both retaining springs - **close-up** - .
- Secure brake caliper retaining spring with a cloth when doing this so that it cannot jump away.



- Disconnect connector - **1** - for brake pad wear indicator.



- Remove caps - **arrows** - .



- Loosen both guide pins and remove from brake caliper.
- Remove brake caliper and secure with wire so that the weight of the brake caliper does not burden or damage the brake hose.
- Remove brake pads from brake caliper.

### **Cleaning:**

#### ***Warning!***

***Do not blow brake system using compressed air, the***

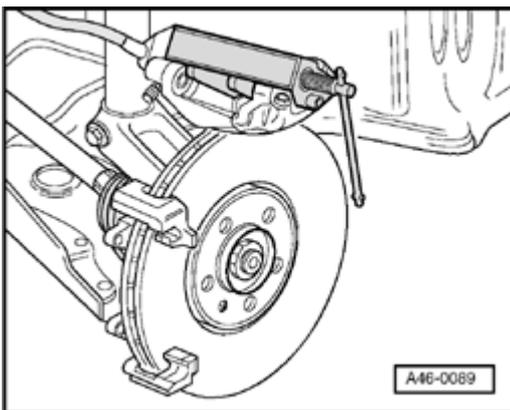
***dust produced is harmful to your health!***

- Thoroughly clean contact surfaces for brake pads at brake carrier, remove corrosion.
- Clean brake caliper.

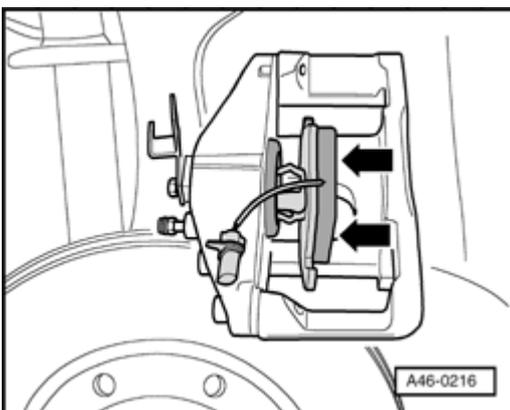
**Use only appropriate solvents for cleaning brake caliper.**

**Installing**

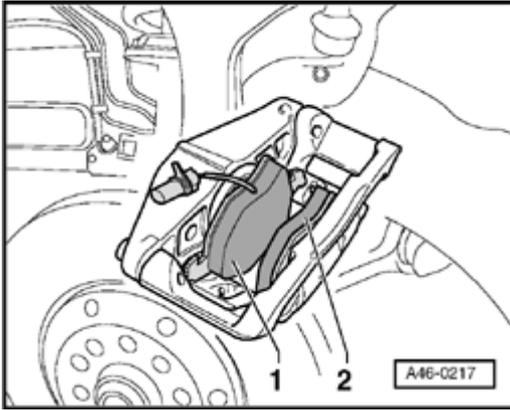
**Before pressing piston into cylinder using piston resetting tool, brake fluid must be extracted from brake fluid reservoir. Otherwise, especially if reservoir has been topped off, fluid will overflow and cause damage.**



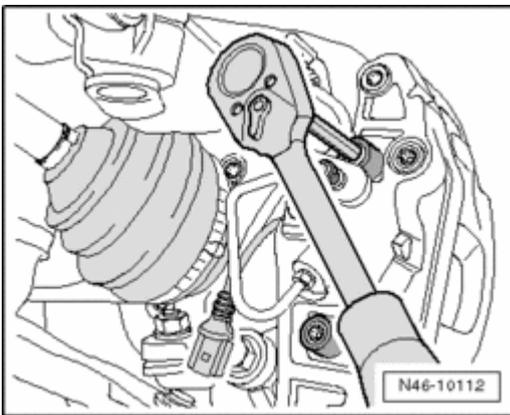
- Press piston back.



- Insert inner brake pad with retaining spring in brake caliper (piston).



- Set outer brake pad - 2 - with retaining springs into brake caliper.
- Place brake caliper with brake pads on brake carrier.



- Tighten brake caliper to brake carrier using both guide pins.
- Install both protective caps.
- Insert brake caliper retaining spring in brake pad retaining spring and press under brake carrier.
- Connect brake pad wear indicator connector.
- Install wheels.

Tightening torque specification for wheel bolts

⇒ [Repair Manual, Suspension, Wheels, Steering, Repair Group 44](#),

**Note:**

- *After replacing brake pads, depress brake pedal firmly several times with vehicle stationary so that the brake pads are properly seated in their normal*

*operating position.*

- *Check brake fluid level after replacing brake pad.*

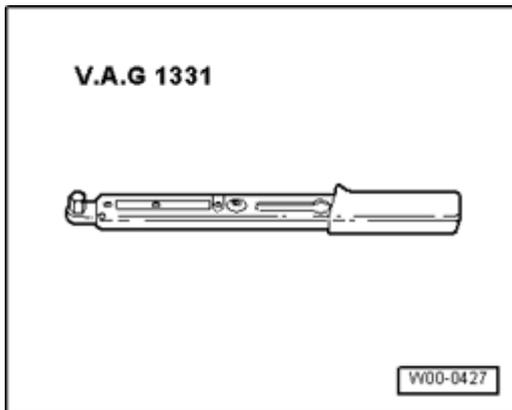
Tightening torque:

Guide pin to brake carrier

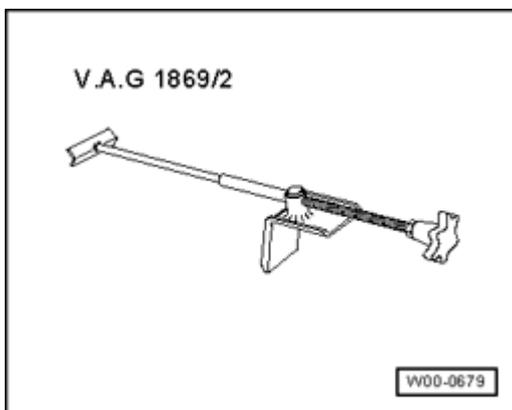
30 Nm

### **Brake caliper, removing and installing**

#### **Special tools, testers and auxiliary items required**



- Torque wrench V.A.G 1331



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

### **Removing**

**Work procedure applies only for replacing or when performing subsequent service work on brake caliper.**

- Remove wheels.
- Pry brake caliper retaining spring out of brake pad retaining spring with screwdriver. To do this, place

screwdriver between both retaining springs.

- Secure brake caliper retaining spring with a cloth so that it cannot jump away.
- Separate connector for brake pad wear indicator.
- Connect bleeder hose of bleeder bottle to bleeder valve of brake caliper and then open bleeder valve.
- Insert brake pedal actuator V.A.G 1869/2 .
- Close bleeder valve and remove bleeder bottle.
- Remove brake hose.
- Pull both cover caps from bushings of brake caliper.
- Loosen both guide pins and remove from brake caliper.
- Pull off brake caliper from brake carrier.
- Remove brake pads from brake caliper.

### **Installing**

- Piston is pressed back.
- Insert inner brake pad with retaining spring in brake caliper (piston).
- Set outer brake pad with retaining springs into brake caliper.
- Place brake caliper with brake pads on brake carrier.
- Tighten brake caliper to brake carrier using both guide pins.
- Install both protective caps.
- Connect brake hose with brake caliper line.
- Remove brake pedal actuator V.A.G 1869/2 .
- Insert brake caliper retaining spring in brake pad retaining spring and press under brake carrier.
- Connect brake pad wear indicator connector.
- Bleeding braking system
- Install wheels.

Torque specification for wheel bolts

⇒ *Repair Manual, Suspension, Wheels, Steering, Repair Group 44,*

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**Note:**

- *Before moving vehicle, depress brake pedal several times firmly to properly seat brake pads in their normal operating position.*
  
- *Check brake fluid level.*

Tightening torques:

Guide pin to brake carrier

30 Nm

Brake hose to brake line

14 Nm