

## Clutch mechanism, servicing

### **CAUTION!**

#### ***Before disconnecting the battery:***

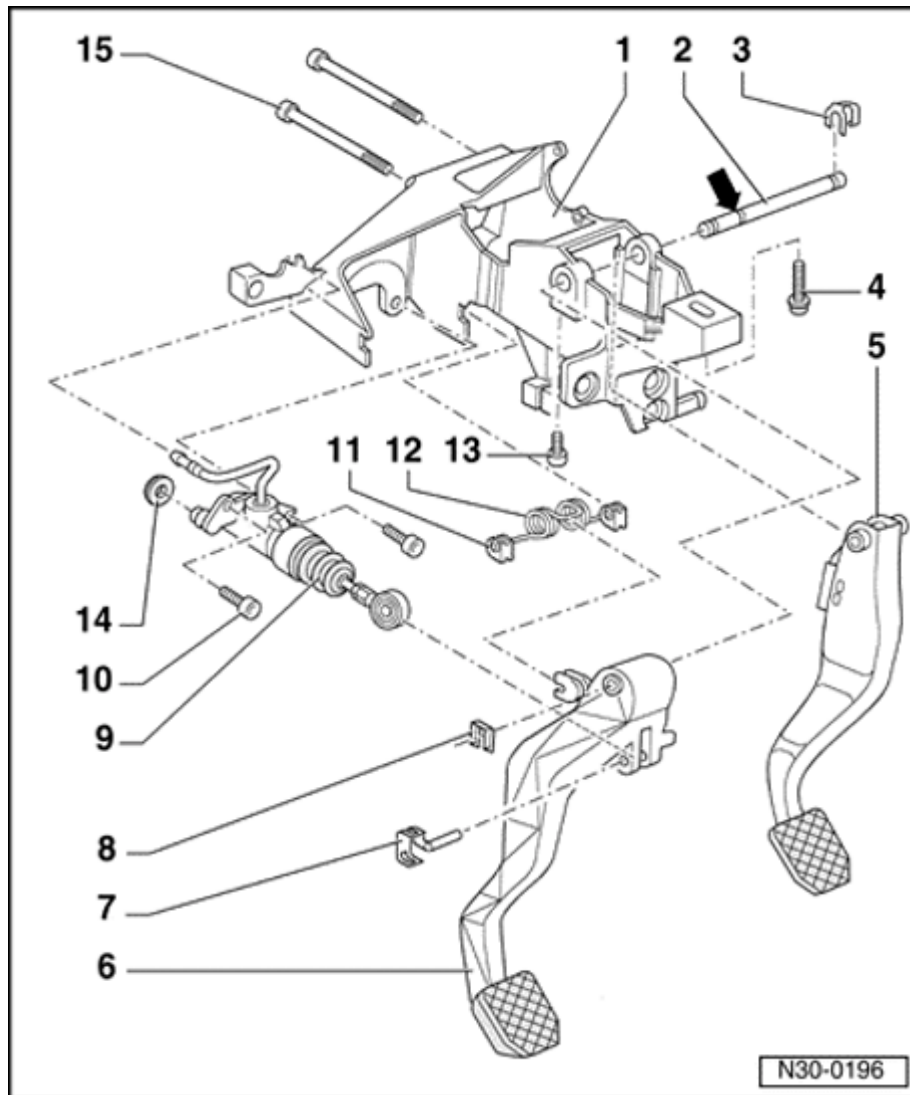
- ◆ ***Determine the correct coding for the anti-theft radio.***
- ◆ ***Switch the ignition off (also applies when connecting the battery). Failure to do so may damage the Engine Control Module (ECM).***
- ◆ ***Part numbers are listed here for reference only. Always check with your Parts department for the latest information.***

#### **Notes:**

- ◆ *Lubricate all bearings and contact surfaces with G 052 142 A 2 polycarbamide grease.*
- ◆ *Before working on the pedal cluster, remove the driver's side storage compartment*

⇒ [Repair Manual,  
Body Interior, Repair  
Group 68](#)

- ◆ *Make sure that no brake fluid escapes into the plenum chamber or onto the transmission below. If this does happen, clean the affected areas thoroughly.*



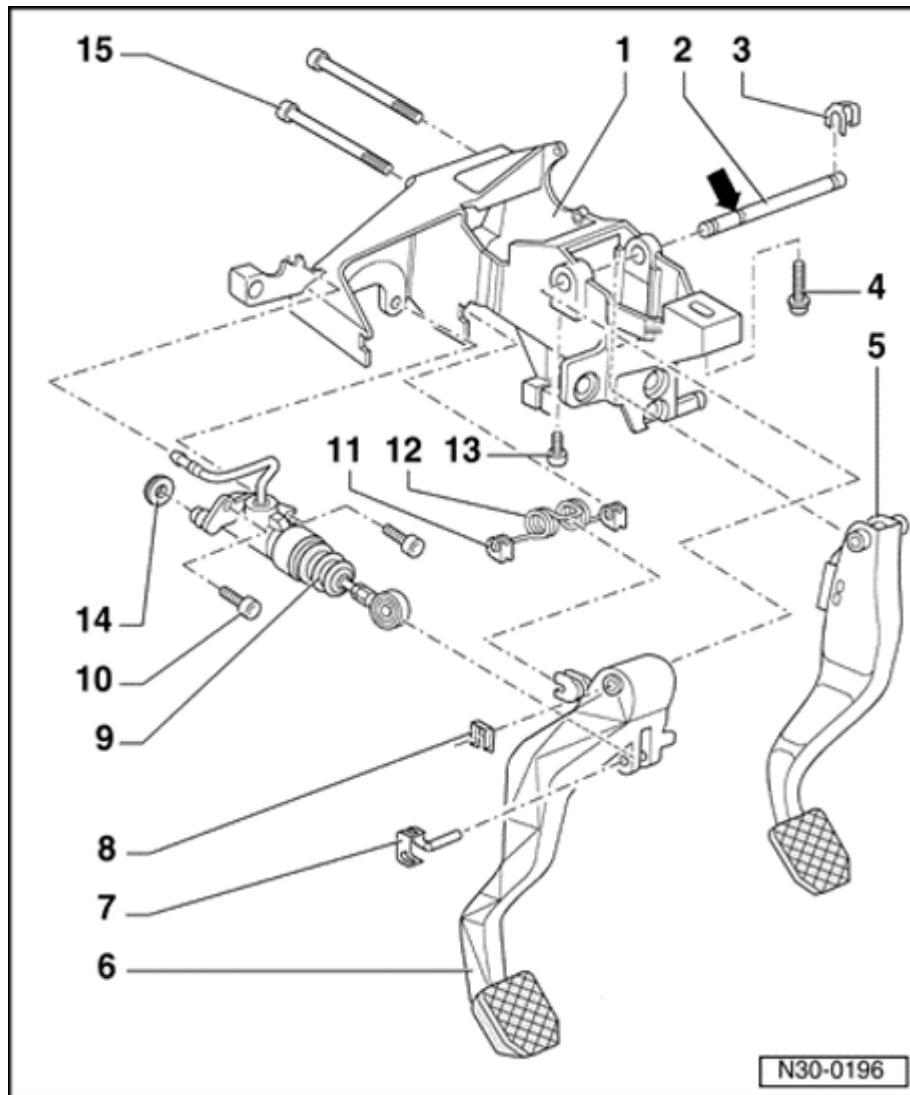
## Clutch pedal and clutch control overview

### **WARNING!**

- ◆ **Clutch pedal travel must not be restricted by extra carpets or floor mats.**
- ◆ **Do not re-use 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 recommendations in this manual-replace these fasteners with new parts where indicated, and any other time it is deemed necessary by inspection.**

### 1 - Mounting bracket

- ◆ Removing and installing ⇒ [Repair Manual, Brake System, Repair Group 46](#)

**2 - Pivot pin**

- ◆ For clutch and brake pedals
- ◆ Installation position: groove (arrow) facing clutch pedal

**3 - Locking clip****4 - Socket-head bolt**

- ◆ 25 Nm (18 ft lb)

**5 - Brake pedal****6 - Clutch pedal**

- ◆ Removing and installing ⇒ [Page 30-5](#)

**7 - 8Pin and locking plate**

- ◆ Clip onto clutch pedal

**9 - Locking clip****10 - Clutch master cylinder**

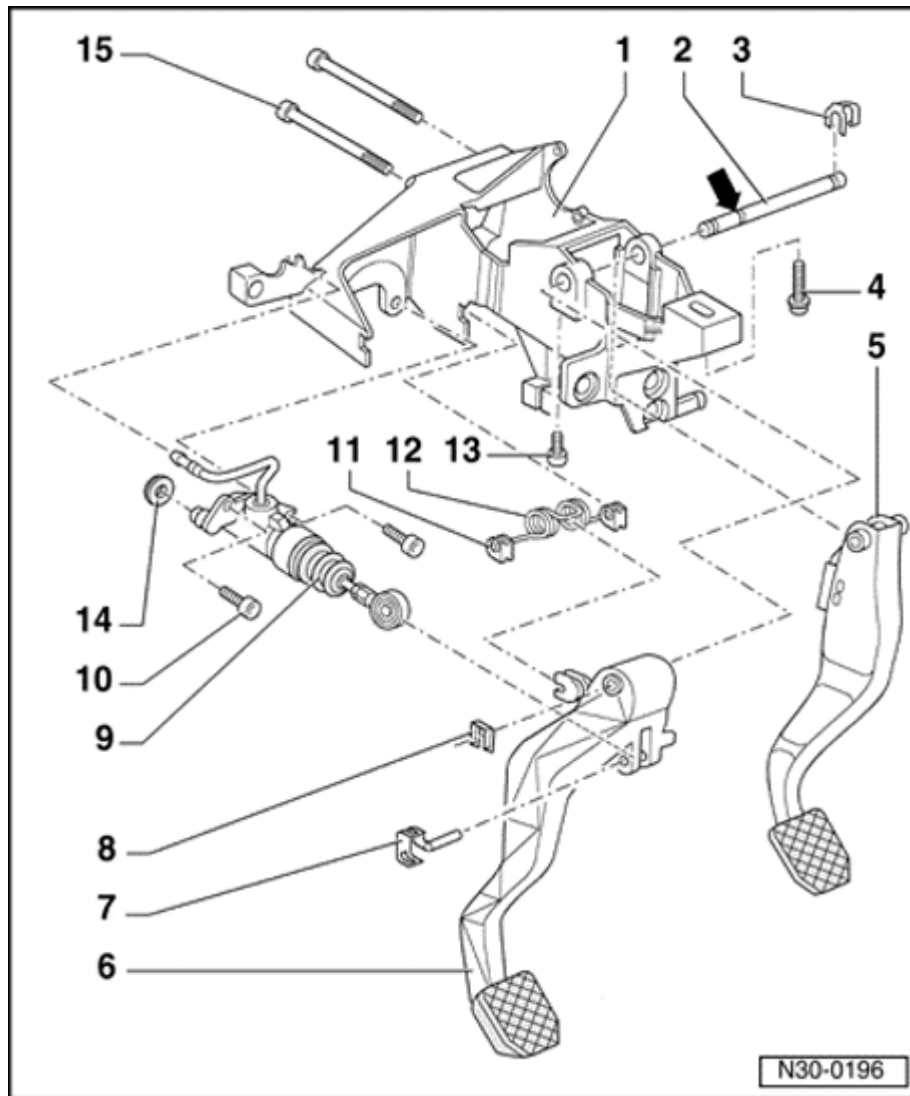
- ◆ Removing and installing ⇒ [Page 30-13](#)

**CAUTION!**

**Do not operate after the clutch pedal has been removed.**

**11 - Socket-head bolt**

- ◆ 20 Nm (15 ft lb)

**12 - Mount**

- ◆ Insert in mounting bracket with over-center spring

**13 - Over-center spring**

- ◆ Application ⇒ Parts catalog microfiche
- ◆ Remove and install together with clutch pedal ⇒ [Page 30-5](#)

**14 - Socket-head bolt**

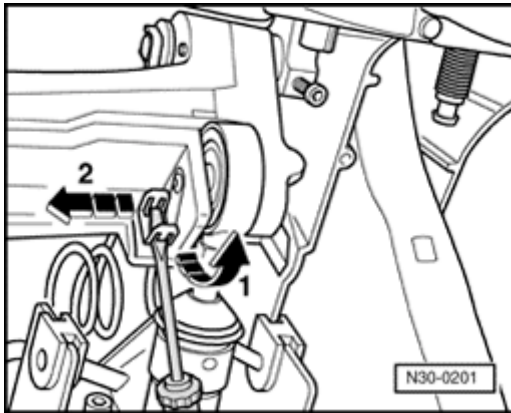
- ◆ 5 Nm (44 in. lb)
- ◆ Secures pivot pin for clutch and brake pedal.

**15 - Seal****16 - Torx<sup>®</sup> bolt**

- ◆ 25 Nm (18 ft lb)
- ◆ Also secures brake master cylinder to brake servo

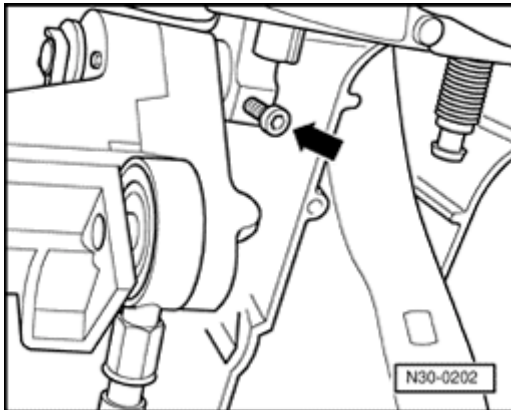
## Clutch pedal and over-center spring, removing and installing

### Removing



A

- Remove driver's side storage compartment ⇒ [Repair Manual, Body Interior, Repair Group 68](#)
- If installed, remove switch above clutch pedal.
- Unclip pin and locking plate using screwdriver (arrow -1-), remove pin and locking plate (arrow -2-), and detach clutch pedal from clutch master cylinder.
- Press locking clip for clutch pedal off pivot pin using screwdriver.

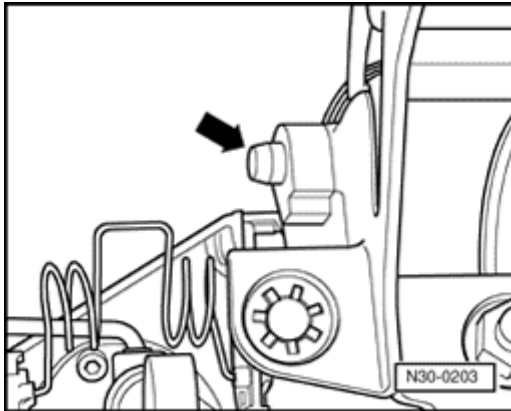


A

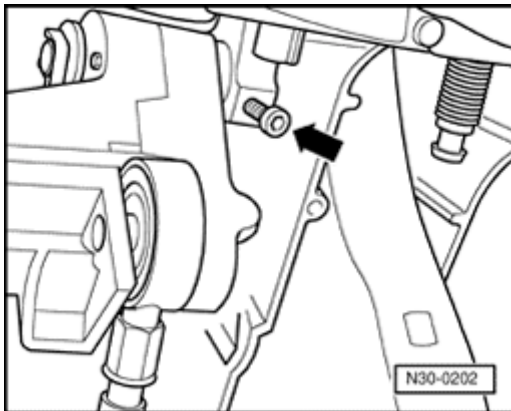
- Remove bolt (arrow).
- Press clutch and brake pedal pivot pin out toward right, until clutch pedal can be removed.
- If necessary, press locking clip for brake pedal off pivot pin using screwdriver.
- Remove clutch pedal and over-center spring.

## Installing

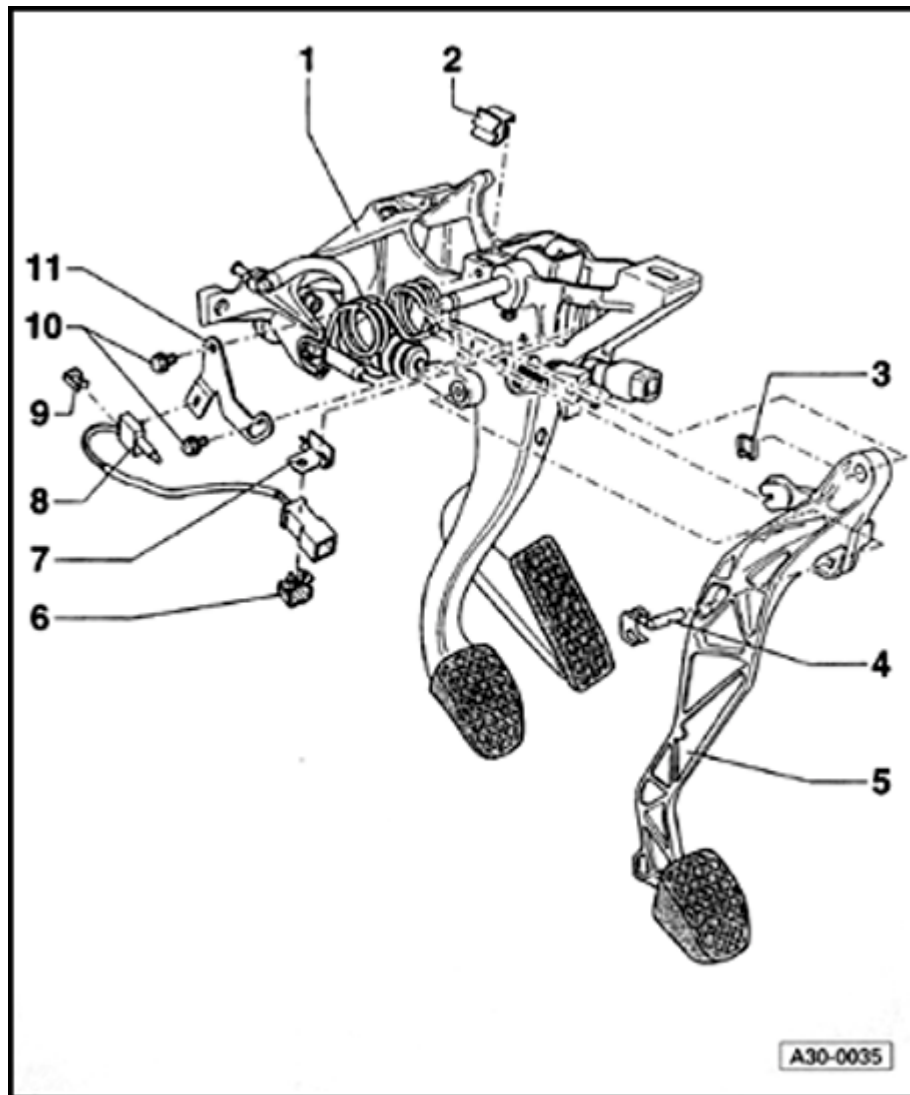
Installation is the reverse of removal, note the following:

**A**

- Align pivot pin so that it protrudes out of mounting bracket on clutch pedal side (arrow).
- Hook clutch pedal into over-center spring, then install onto pivot pin.
- Connect clutch pedal to master cylinder. Clip locking pin onto clutch pedal.

**A**

- Do not tighten bolt (arrow) until both securing clips have been installed on pivot pin.



## Clutch Pedal Position (CPP) switch -F194-, removing and installing

### Note:

The clutch pedal position switch -F194- allows the engine to be started only with the clutch pedal depressed. Introduction 05.97 ➤

#### 1 - Mounting bracket

- ◆ Before removing, remove steering column from steering gear ⇒ [Repair Manual, Suspension, Wheels, Steering, Repair Group 48](#)

#### 2 - Cable bracket

#### 3 - Locking clip

#### 4 - Pin and locking plate

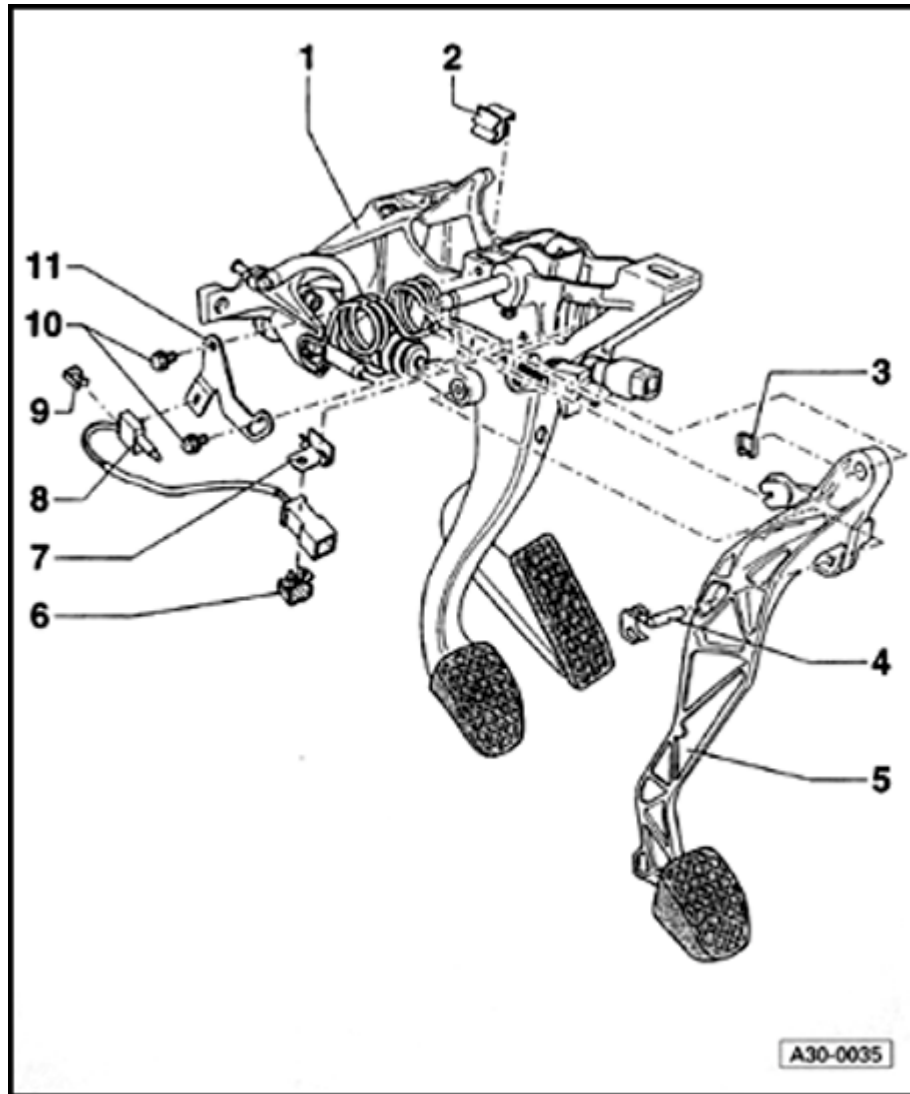
- ◆ Latched in clutch pedal

#### 5 - Clutch pedal

- ◆ Removing and installing ⇒ [Page 30-5](#)

#### 6 - Clip





**7 - Bracket for harness connector**

**8 - Clutch Pedal Position (CPP) switch -F194-**

◆ Adjusting ⇒ [Page 30-9](#)

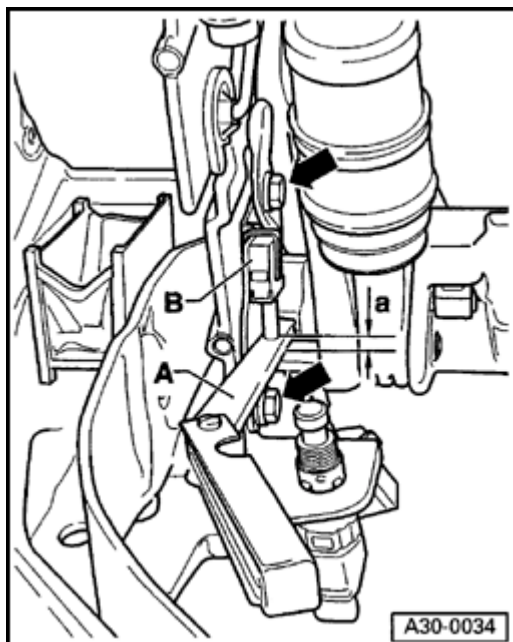
**9 - Clip**

**10 - Screw and washer assembly**

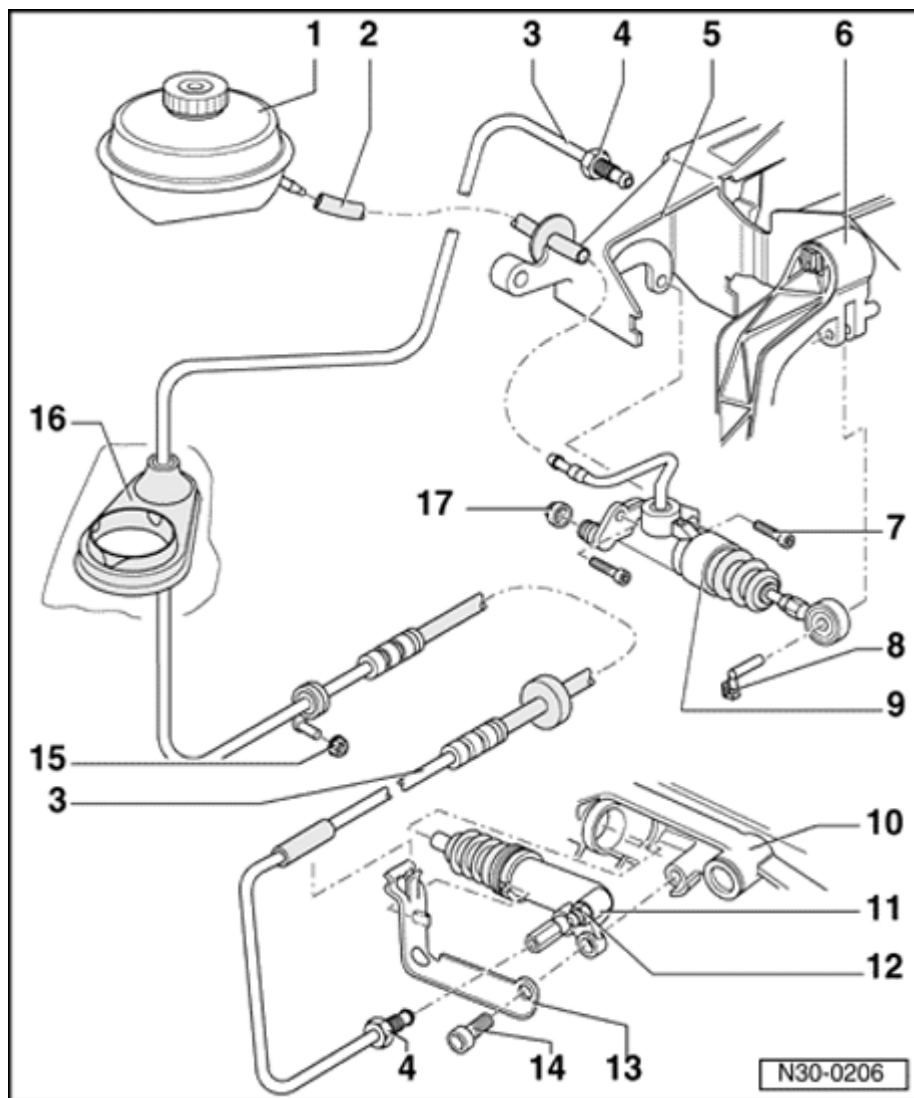
◆ 8 Nm (71 in. lb)

**11 - Mounting plate**

### Clutch Pedal Position (CPP) switch - F194-, adjusting



- A**
- Loosen two bolts slightly (arrows).
  - Have second technician fully depress clutch pedal up to stop.
  - Place feeler gauge -A- with specific dimension -a- 3.2 mm (0.126 in.) between operating surface of clutch pedal and switch cam.
- Thickness -a- of feeler gauge: 3.2 mm (0.126 in.)
- Move switch -B- toward gauge -A- until stop, and tighten two mounting bolts (arrows) to 8 Nm (71 in. lb).



## Clutch hydraulic system, servicing

**1 - Brake fluid reservoir**

**2 - Supply hose**

◆ For clutch master cylinder

**3 - Hose/line assembly**

◆ With threaded connections on clutch master cylinder and clutch slave cylinder

**4 - Line fitting**

◆ 15 Nm (11 ft lb)

**5 - Mounting bracket**

**6 - Clutch pedal**

◆ Removing and installing ⇒ [Page 30-5](#)

**7 - Socket-head bolt**

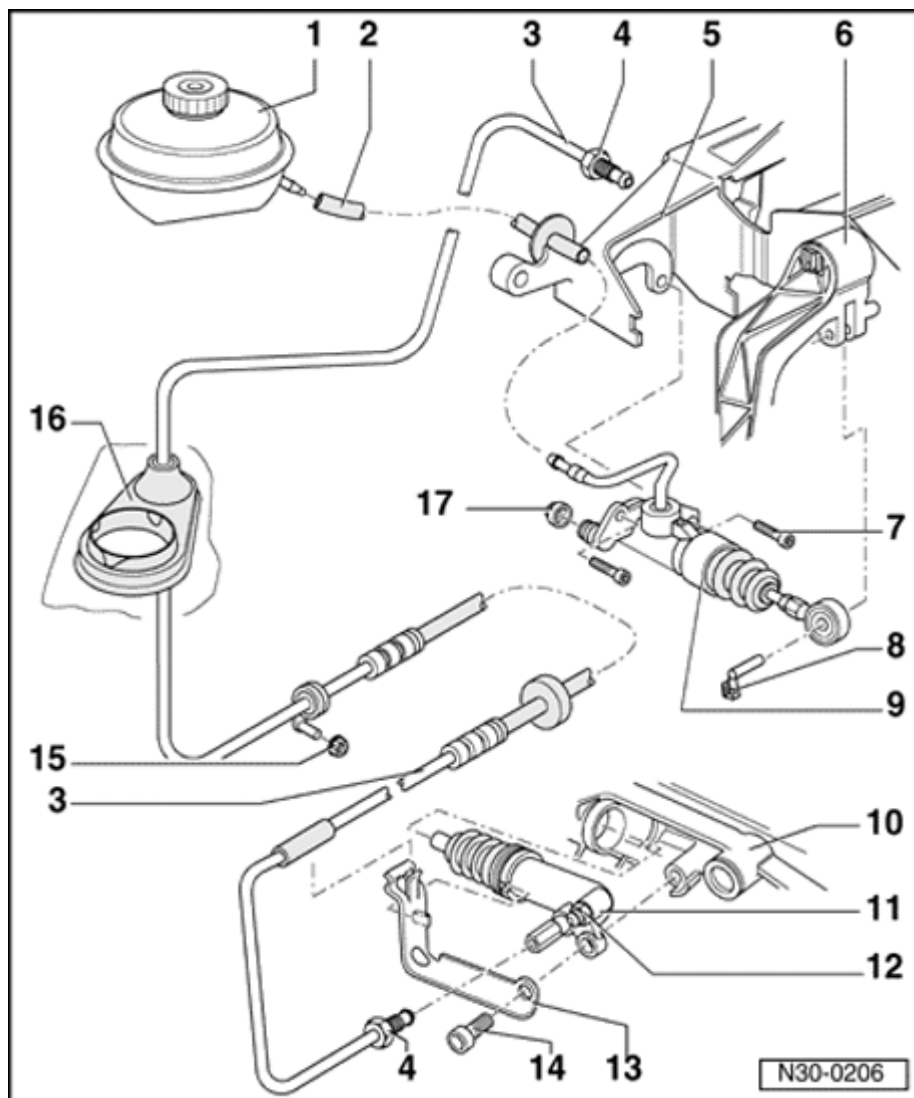
◆ 20 Nm (15 ft lb)

**8 - 9Pin and locking plate**

**10 - Clutch master cylinder**

◆ Removing and installing ⇒ [Page 30-13](#)

**11 - Transmission**



## 12 - Clutch slave cylinder

### **CAUTION!**

**Do not operate after the clutch pedal has been removed.**

**Brake fluid must not be allowed to get onto the transmission.**

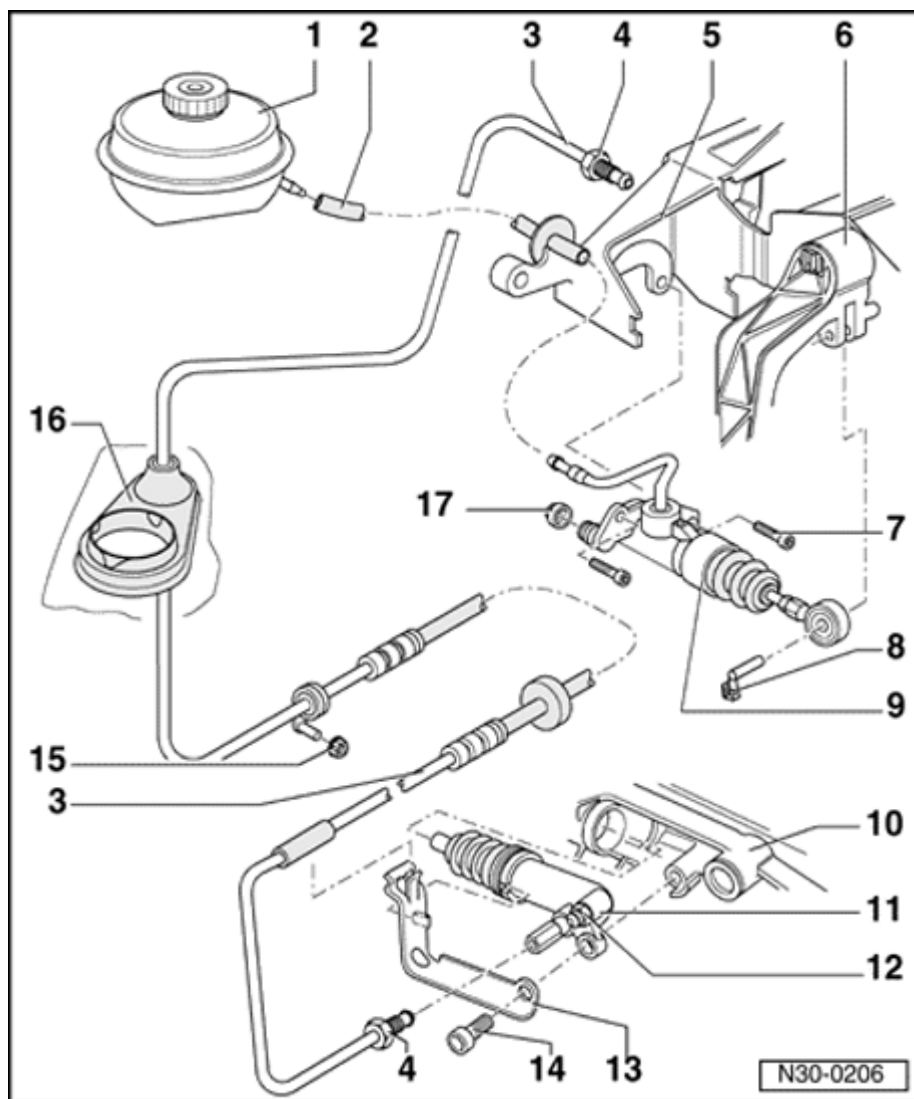
- ◆ Coat plunger of clutch slave cylinder with copper grease e.g. Z381 351 TE
- ◆ For clutch slave cylinders with plastic support ring, lightly lubricate outer surface of ring before installing
- ◆ When installing, push in until bolt can be installed

## 13 - Bleeder valve

- ◆ 4.5 Nm (40 in. lb)
- ◆ Observe all CAUTIONS, WARNINGS, Notes and procedures when bleeding ⇒ [Page 30-17](#)

### **CAUTION!**

**Fill the brake fluid reservoir up to the "max" marking with brake fluid before bleeding the hydraulic clutch system with the brake bleeder.**

**14 - Bracket**

- ◆ Mounted to transmission

**15 - Bolt**

- 8DVA 000 504 bolt:

- ◆ 25 Nm (18 ft lb)

- 8DVA 000 505 ➤ socket-head bolt:

- ◆ 20 Nm (15 ft lb)

**16 - Nut**

- ◆ 2 Nm (18 in. lb)

**17 - Seal****18 - Seal**

- ◆ Must not be removed

## Clutch master cylinder, removing and installing

### Special tools and equipment

3094 hose clamp

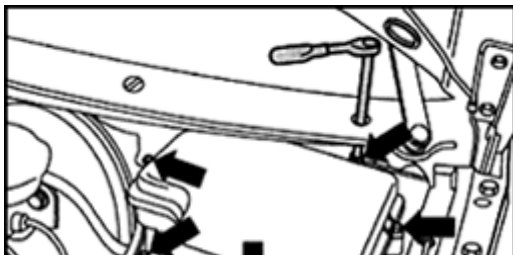
### Removing

#### **CAUTION!**

**Before working on the electrical system:**

- ◆ **Determine the correct coding for the anti-theft radio.**
- ◆ **Switch the ignition off (also applies when connecting the battery). Failure to do so may damage the Engine Control Module (ECM).**
- ◆ **Disconnect the battery Ground (GND) strap.**

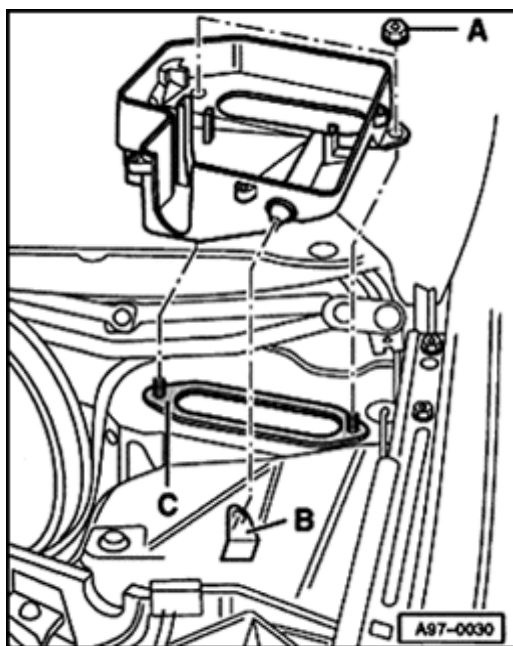
To remove E-box from plenum chamber:



A

- Remove bolts (arrows) and remove cover.
- Remove Engine Control Module (ECM); if necessary remove 8-pin relay support ⇒ [Repair Manual, Electrical Equipment, Repair Group 97](#)
- Disconnect harness connectors at connector station.

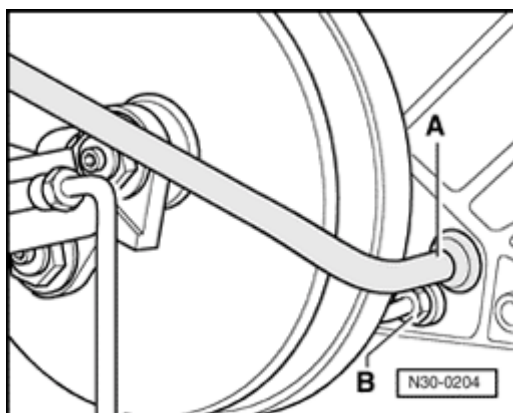
- Remove engine wiring harness together with rubber grommet from opening in E-box.



- A**
- Remove both nuts -A-
  - Lift E-box out at rear of threaded bolt and remove from mounting point - B-.

**CAUTION!**

- ◆ *When carrying out the following steps, make sure that no brake fluid escapes into the plenum chamber or onto the transmission below. If this does occur, clean thoroughly.*
- ◆ *When working in the area of the footwell, make sure to protect the carpeting from brake fluid which may run out.*



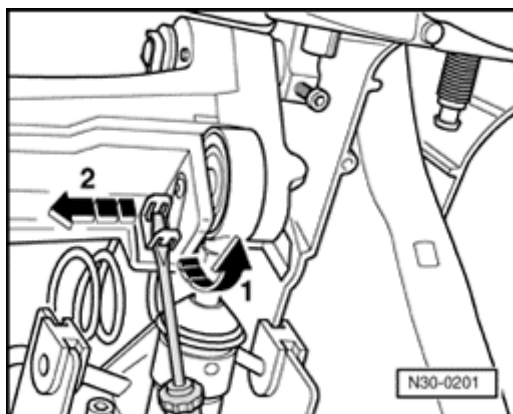
- A**
- Clamp supply hose -A- from brake fluid reservoir using 3094 hose clamp. Pull hose off clutch master cylinder and plug hose.
  - Disconnect line -B- from clutch master cylinder and seal.



- Remove driver's side storage compartment

⇒ [Repair Manual, Body Interior, Repair Group 68](#)

- Remove switch above clutch pedal if installed ⇒ [Page 30-7](#)

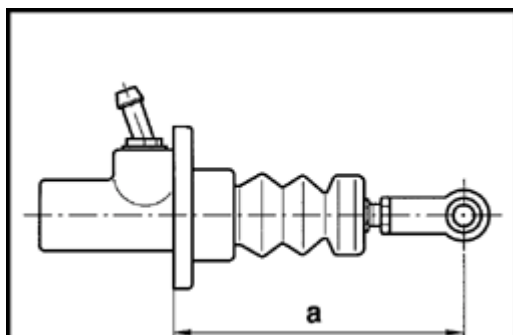


A

- Unclip pin using screwdriver (arrow -1-), pull out pin (arrow -2-), and detach clutch pedal from clutch master cylinder.
- Unbolt clutch master cylinder from passenger compartment.

### Installing

Installation is the reverse of removal, note the following:

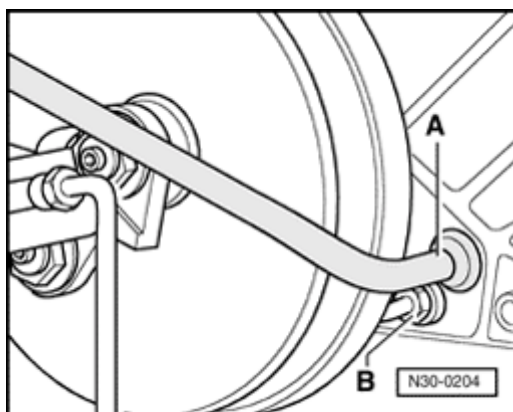


A

- When replacing clutch master cylinder, check dimension -a- on ball head and adjust if necessary.

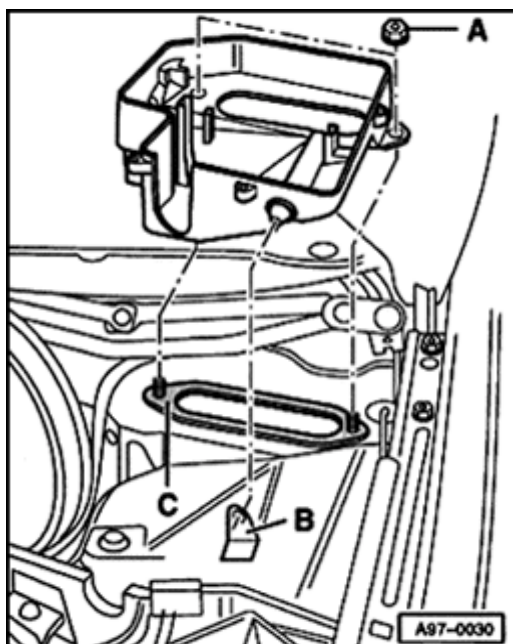
Dimension -a- =  $165 \pm 0.5$  mm ( $6.496 \pm 0.020$  in.)

- Connect clutch master cylinder to clutch pedal.  
Secure pin and locking plate on clutch pedal.



- A**
  - Tighten line fitting -B- to clutch master cylinder to 15 Nm (11 ft lb).
  - Slide hose -A- onto brake fluid reservoir up to stop.
  - Bleed hydraulic clutch system after installing clutch master cylinder ⇒ [Page 30-17](#) .

To install E-box in plenum chamber:



- A**
  - Always replace seal -C-.
  - Make sure seal is positioned properly, and does not cover opening or stepped metal edge.
  - Install E-box by hand and evenly tighten nuts -A- to 4 Nm (35 in. lb) (i.e. imprint on E-box cover).

## Clutch system, bleeding

### Special tools and equipment

- ◆ VAG1238B brake filling and bleeding appliance  
or
- ◆ VAG1869 brake filling and bleeding appliance

### **WARNING!**

***Brake fluid is poisonous.***

- ◆ ***It must NEVER be removed by siphoning with your mouth.***
- ◆ ***If brake fluid contacts skin or eyes, flush or wash adequately to prevent irritation. Get medical attention immediately if necessary.***
- ◆ ***Brake fluid must be disposed of properly.***

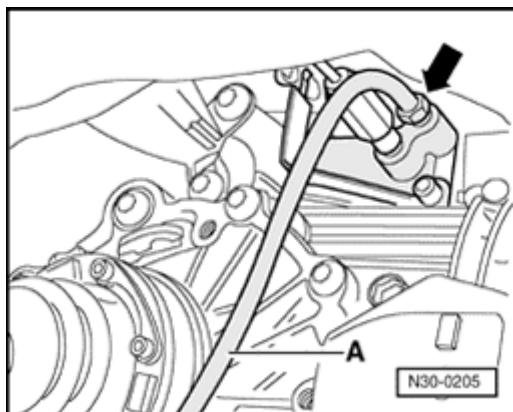
**CAUTION!**

- ◆ *Use only fresh brake fluid conforming to US standard FMVSS 116 DOT 4. Genuine VW/Audi brake fluid conforms to this specification.*
- ◆ *Brake fluid must never be brought into contact with liquids containing mineral oil (gasoline, cleaning agents). Mineral oil damages the pistons and cups in the braking system.*
- ◆ *Brake fluid must not be allowed to come into contact with paintwork because of its caustic effect.*
- ◆ *Brake fluid is hygroscopic (i.e. it absorbs moisture from the surrounding air) and should therefore always be kept in airtight containers.*
- ◆ *When carrying out the following steps, make sure that no brake fluid escapes onto the transmission.*

**Notes:**

- ◆ *The clutch system must be bled after carrying out work on the hydraulic clutch mechanism.*

- ◆ *Top-off brake fluid reservoir to "max." marking with brake fluid before bleeding clutch system.*
- Pull clutch pedal back to rest position.
- Connect VAG1238B brake filling and bleeding appliance or VAG1869 but do not switch on.
- If necessary, remove noise insulation panel under transmission.



- A**
- Connect bleeder hose -A- to clutch slave cylinder (arrow) and open bleeder valve.
  - Connect bleeder hose with pressure hose to collector bottle.
  - Switch on bleeding appliance and let approx. 100 cm<sup>3</sup> (approx. 3.4 fl. oz) brake fluid flow into suitable collection reservoir.

**CAUTION!**

***Always comply with disposal regulations.***

Work pressure 2.5 bar (36 psi)

**Note:**

*While bleeding, make sure bleeder hose remains correctly routed.*

- Close bleeder valve.  
Tightening torque: 4.5 Nm (40 in. lb).
- Depress clutch pedal several times after completion of bleeding process.
- Bleed system again if necessary.