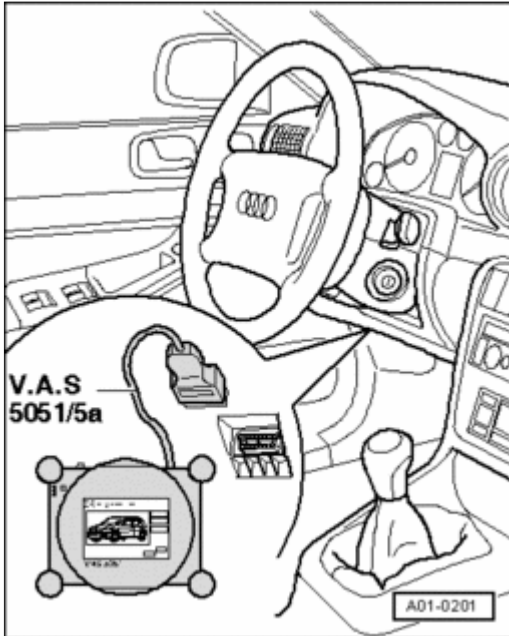


## 37 CONTROLS, HOUSING

### ELECTRICAL/ELECTRONIC COMPONENTS AND LOCATIONS

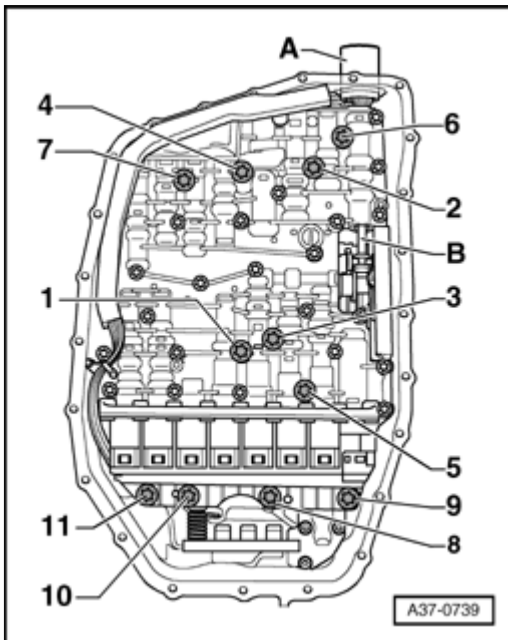


**Fig. 16: Connecting Data Link Connector (DLC)**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

Data Link Connector (DLC)

Location: below knee padding on left side of steering wheel

The following components can be tested in the "Guided Fault Finding" using vehicle diagnostic, testing and information system VAS5051.



**Fig. 17: Removing/Installing Securing Bolts For Mechatronics Unit In Sequence**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

Mechatronics unit, Transmission Control Module (TCM) -J217- , Multi-function Transmission Range (TR) switch -F125- , Sensor for transmission RPM -G182- and Sender for transmission output RPM -G195-

Location: the mechatronics unit is bolted to the underside of the transmission housing and covered by the transmission oil pan.

The mechatronics unit incorporates the hydraulic control system, the electronic control module and the sensors and actuators as a complete synchronized unit. This includes:

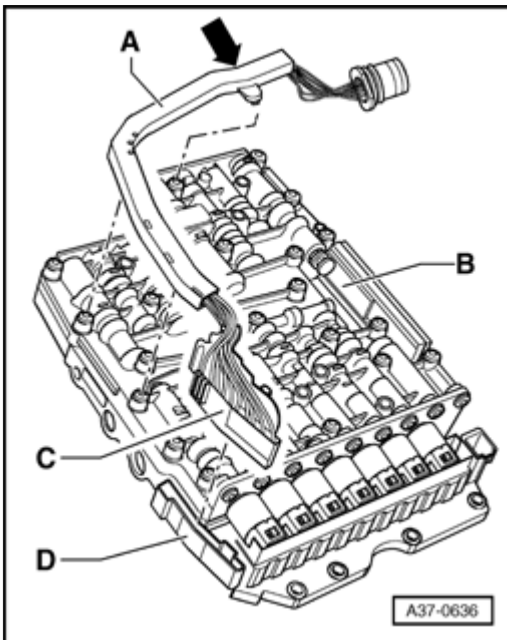
- Transmission Control Module (TCM) J217
- Multi-Function Transmission Range (TR) Switch F125
- Sensor for transmission RPM G182
- Sender for transmission output RPM G195

The "mechatronics" unit can only be replaced as a complete unit.

**NOTE:**

- All components mentioned are tested via Self-diagnosis.

- Removing and installing mechatronics unit --> Mechatronics unit , removing and installing.

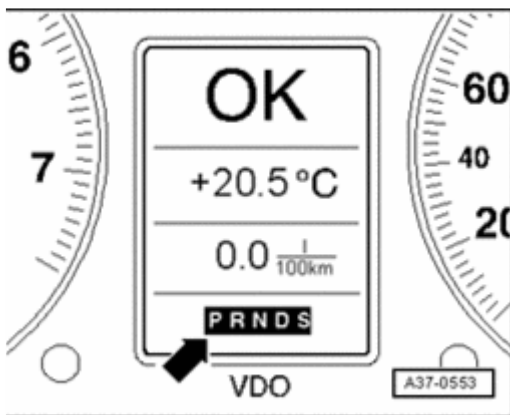


**Fig. 18: Locating Wiring Harness With Connector Is Attached To The Mechatronics Unit**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

Internal wiring harness in transmission

Location: the wiring harness - **A** - with connector - **C** - is attached to the mechatronics unit - **B** -.

- Removing and installing wiring harness --> **Wiring harness in transmission, removing and installing.**



**Fig. 19: Transmission Range (TR) Selector Lever Display -Y6-**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

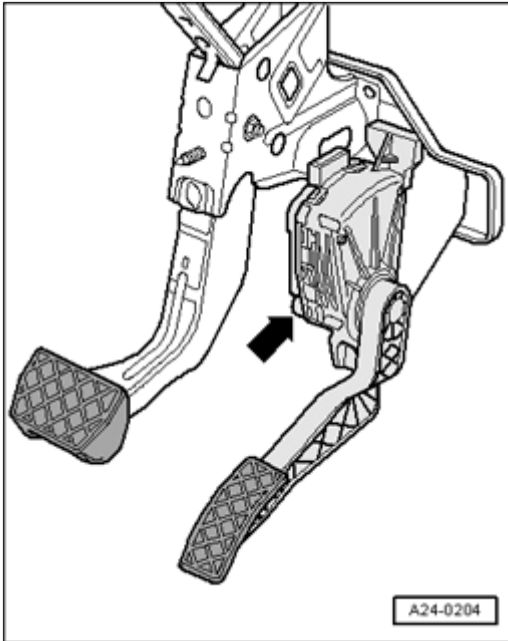
Transmission Range (TR) Display Y6

Location: integrated into instrument cluster

**NOTE:**

- The Transmission Range (TR) Display Y6 can only be replaced together

with instrument cluster.



**Fig. 20: Kick Down Switch F8**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

Kick Down Switch F8

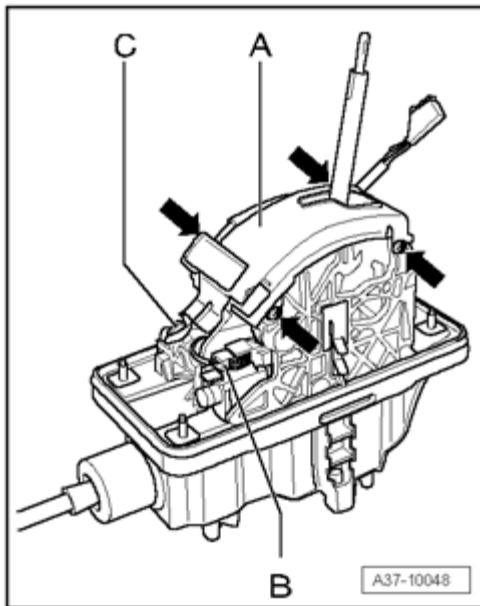
Location: The Kick Down Switch F8 is located on the pedal cluster.

**NOTE:**

- **The Kick Down Switch F8 is tested via Self-diagnosis.**

○ Removing and installing Kick Down Switch F8 -->

- **20 - FUEL SUPPLY SYSTEM** for 3.2 LITER V6 4V GENERIC SCAN TOOL, ENGINE CODE (S): BKH
- **20 - FUEL SUPPLY** for 4.2 LITER V8 4V GENERIC SCAN TOOL, ENGINE CODE(S): BVJ
- **20 FUEL SUPPLY** for 4.2 LITER V8 5V GENERIC SCAN TOOL, ENGINE CODE(S): BNK
- **20 - FUEL SUPPLY** for 5.2 LITER 10-CYL. 4V GENERIC SCAN TOOL, ENGINE CODE(S): BXA



**Fig. 21: Tiptronic Switch F189**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

Tiptronic switch F189

Location: The tiptronic switch F189 is integrated in the printed circuit of the symbol panel, which is located in the selector mechanism cover - A -.

**NOTE:**

- The tiptronic switch F189 is tested via Self-diagnosis.

- Removing and installing tiptronic switch F189 --> Selector Lever Sensor System Control Module J587 and Tiptronic Switch F189 , removing and installing

**SELECTOR MECHANISM, SERVICING**

Selector mechanism, servicing

**CAUTION:** Before working on vehicle when the engine is running, shift the selector lever into position "P" and apply the parking brake.

Ignition key removal lock, checking

- Turn ignition key to "ignition on" position.
- Press and hold brake pedal.
- When interlock button in selector lever handle is pressed, it should be possible to move selector lever out of position "P" without "catching".

- Switch off ignition.
- It should not be possible to remove the ignition key when the selector lever is in any position other than "P".
- Shift selector lever to position "P".
- Remove ignition key.
- It should only be possible to remove ignition key in selector lever position "P".
- Selector lever can then not be shifted out of "P" position with interlock button pressed and brake pedal depressed.

If the ignition key removal lock does not function as described, check Access/Start Authorization Switch E415 via "Guided Fault Finding" using vehicle diagnosis, testing and information system VAS 5051 A.

**Selector mechanism, checking**

- It should not be possible to operate the starter while the selector lever is in position "S" , "D" , "R" or in the "Tiptronic gate".
- When travelling at speeds above 5 km/h and shifting into selector lever position "N" , the solenoid for the selector lever lock must not engage and block the selector lever. The selector lever can be shifted into a driving gear.
- When travelling at speeds below 2 km/h (almost stationary) and shifting into selector lever position "N" , the solenoid for the selector lever lock should only engage after about 1 second. Selector lever cannot be shifted out of "N" position until brake pedal is depressed.

Selector lever in "P" position and ignition switched on:

- Do not depress brake pedal.
- Selector lever is locked and cannot be shifted out of "P" position. Shift Lock Solenoid N110 blocks selector lever.
- Press and hold brake pedal.
- Shift Lock Solenoid N110 releases selector lever. It is possible to shift into a driving gear. Shift selector lever slowly from "P" position through "R, N, D and S" and check whether the Transmission Range (TR) Display Y6 in the instrument cluster shows the correct selector lever position in each case.

Selector lever in "N" position and ignition switched on:

- Do not depress brake pedal.
- After a short waiting time: Selector lever is locked and cannot be shifted out of "N" position without pressing the interlock button on the selector lever handle. Shift Lock Solenoid N110 blocks selector lever.

- Depress brake pedal.
- Shift Lock Solenoid N110 releases selector lever. It is possible to shift into "D" position.

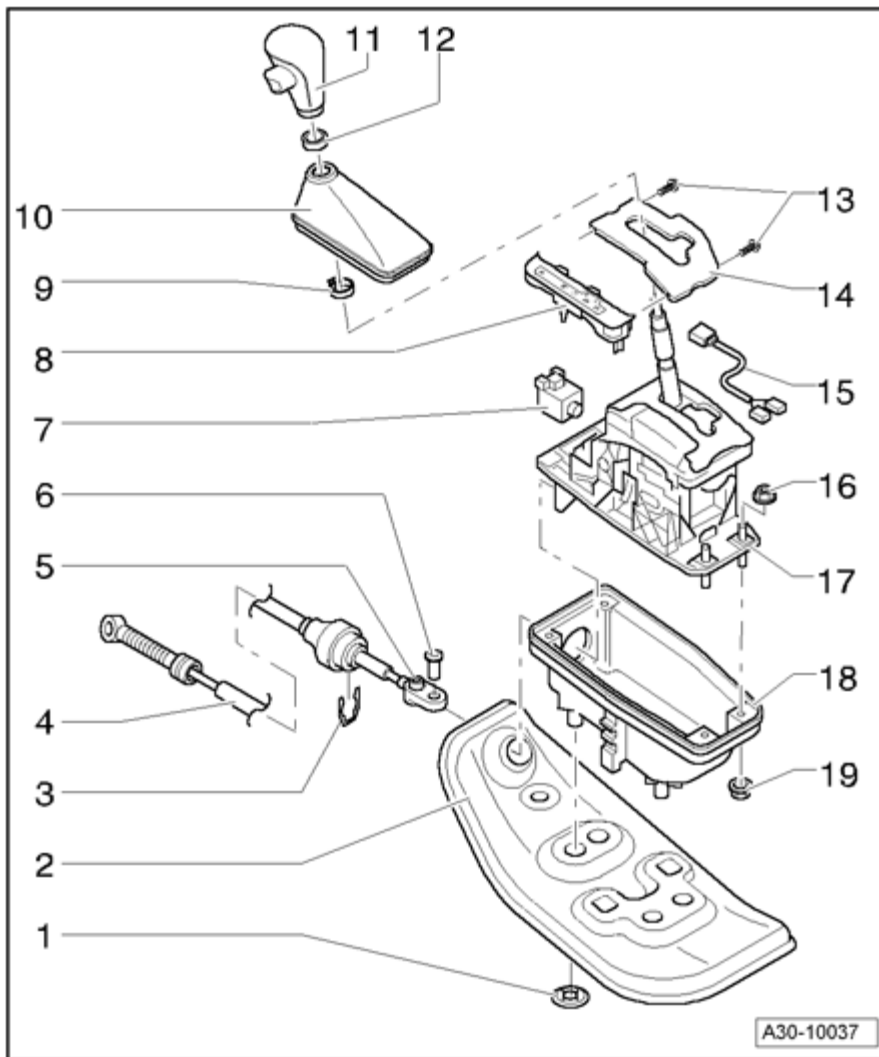
Selector lever in "D" position, ignition and lights switched on:

- Shift selector lever into "Tiptronic gate".
- The illuminated "D" symbol in the Selector Lever Transmission Range (TR) Position Display Y26 should go out and the "+" and "-" symbols should light up.
- The Transmission Range (TR) Display Y6 in the instrument cluster should change from "PRNDS" to "654321" when the selector lever is moved into the "Tiptronic gate".

If specifications are not attained:

- Adjust selector lever cable --> **Selector lever cable, adjusting.**
- Check ignition key removal lock --> **Ignition key removal lock, checking.**

**Selector mechanism components, assembly overview**



**Fig. 22: Selector Mechanism Components, Assembly Overview**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

1 - Securing clip

2 - Noise insulation

3 - Retaining clip

- Secures selector lever cable to selector housing

4 - Selector lever cable

- Do not bend or kink
- Removing and installing --> **Selector lever cable, removing and installing**
- Selector lever cable must be replaced if rubber sleeve is damaged



- Before installing, lightly lubricate ball socket with **polycarbamide grease G052142 A2** .
- When installing, make sure that rubber sleeve (on transmission end) is not twisted
- Adjusting --> **Selector lever cable, adjusting**

5 - Clamping bolt, 13 Nm

6 - Pin for selector lever cable

- To remove selector lever cable pull plastic locking spring on selector mechanism forward slightly and push up pin just far enough to release cable.

7 - Shift Lock Solenoid N110

- Removing and installing --> **Shift Lock Solenoid N110 , removing and installing**

8 - Selector Lever Transmission Range (TR) Position Display Y26

- Removing and installing --> **Selector Lever Transmission Range (TR) Position Display Y26 , removing and installing**

9 - Clamp

- To secure selector lever handle to selector lever
- Removing and installing --> **Selector lever handle, removing and installing**

10 - Selector lever boot

- Detaching from selector lever handle --> **Removing selector lever boot from selector lever handle**

11 - Selector lever handle

- Removing and installing --> **Selector lever handle, removing and installing**

12 - Trim ring

- Removing and installing --> **Removing selector lever boot from selector lever handle**

13 - 1.2 Nm

14 - Selector Lever Sensor System Control Module J587 and Tiptronic switch F189

- Removing and installing --> **Selector Lever Sensor System Control Module J587 and Tiptronic Switch F189 , removing and installing**

15 - Transmission Park Selector Switch F305

- Removing and installing --> **Transmission Park Selector Switch F305 , removing and installing**

16 - 10 Nm

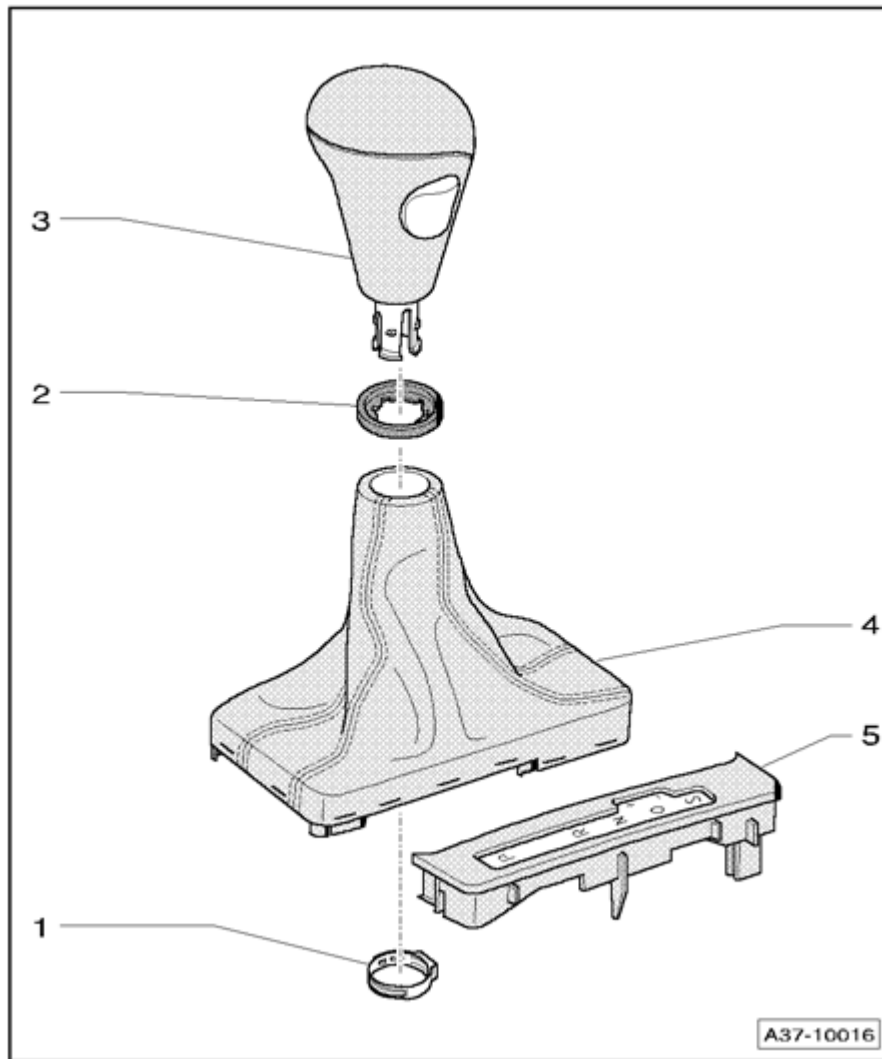
17 - Selector housing

- Can only be renewed as a complete unit
- Removing and installing --> **Selector mechanism, removing and installing**

18 - Selector mechanism cover (bottom)

19 - 10 Nm

**Selector lever handle components, Selector Lever Transmission Range (TR) Position Display Y26 , assembly overview**



**Fig. 23: Selector Lever Handle Components, Selector Lever Transmission Range Position Display Y26 ,**

**Assembly Overview****Courtesy of VOLKSWAGEN UNITED STATES, INC.****1 - Clamp**

- To secure selector lever handle to selector lever
- Removing and installing --> **Selector lever handle, removing and installing**

**2 - Trim ring**

- Removing and installing --> **Removing selector lever boot from selector lever handle**

**3 - Selector lever handle**

- Removing and installing --> **Selector lever handle, removing and installing**

**4 - Selector lever boot**

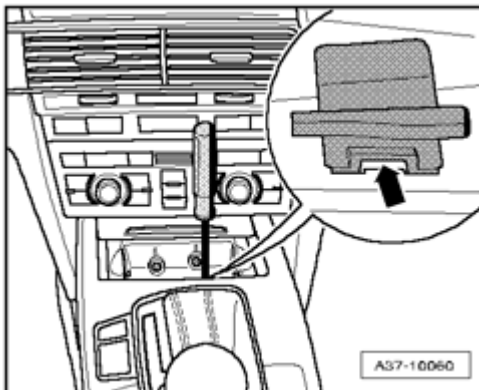
- Removing from selector lever handle --> **Removing selector lever boot from selector lever handle**

**5 - Selector Lever Transmission Range (TR) Position Display Y26**

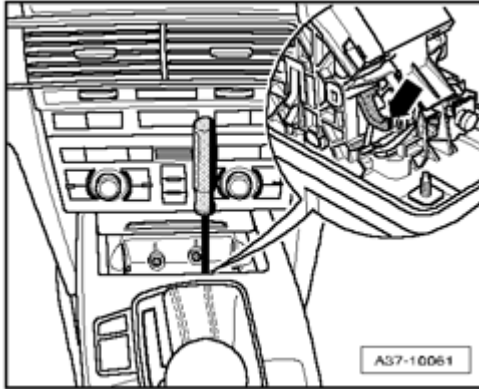
- Removing and installing --> **Selector Lever Transmission Range (TR) Position Display Y26 , removing and installing**

**Operating manual selector mechanism release****NOTE:**

- If the battery is disconnected or discharged, the selector lever cannot be shifted from position "P".
- When you operate the manual release mechanism the Shift Lock Solenoid N110 will release the lock without current supply.

**Fig. 24: Prying Off Cover Cap In Ashtray Housing Using Screwdriver****Courtesy of VOLKSWAGEN UNITED STATES, INC.**

- Remove insert for front ashtray.
- Use screwdriver to pry off cover cap in ashtray housing - **arrow** -.



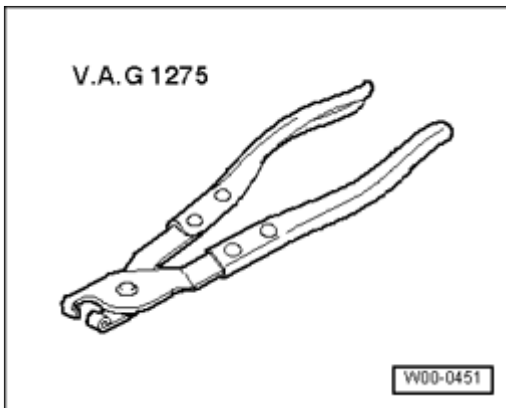
**Fig. 25: Pressing On Manual Release Lever Using A Screwdriver And Simultaneously Shift The Selector Lever Out Of Position**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Use a screwdriver or similar to press on manual release lever - **arrow** - and simultaneously shift the selector lever out of position "P".

Selector lever handle, removing and installing

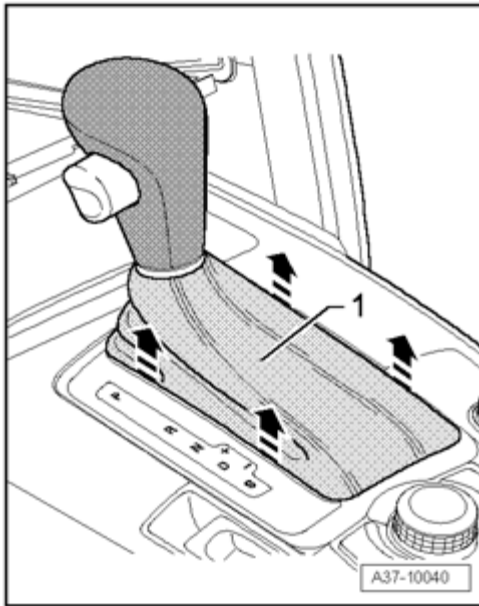
Special tools, testers and auxiliary items required



**Fig. 26: Identifying Hose Clamp Pliers V.A.G 1275**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Hose clamp pliers V.A.G 1275



**Fig. 27: Unclipping Mounting Frame For Selector Lever Boot From Center Console**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

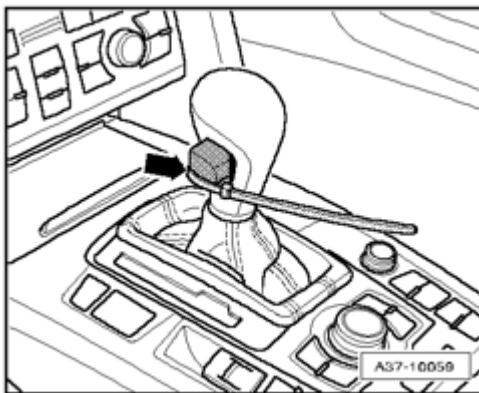
### Removing

- Shift selector lever to position "N".

### NOTE:

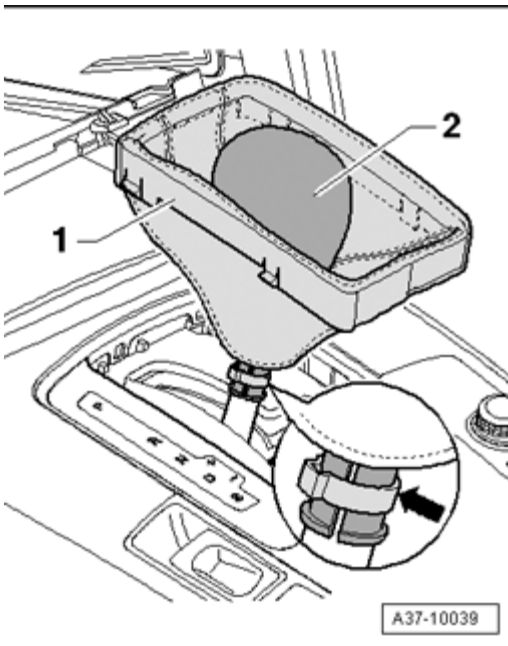
- The selector lever handle is removed together with the selector lever boot.

- Unclip retaining frame for selector lever boot - **1** - from center console and lift off - **arrows** -.



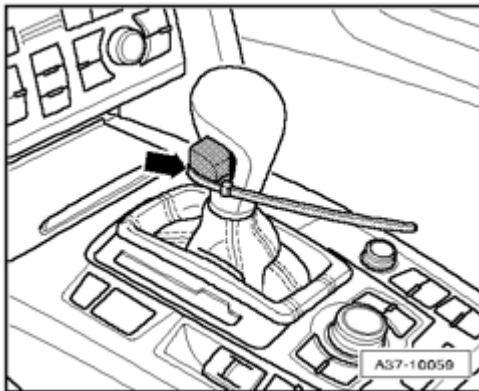
**Fig. 28: Securing The Interlock Button In Pulled-Out Position Using A Cable**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Use a cable tie to secure the interlock button in pulled-out position - **arrow** - , as shown in the illustration.



**Fig. 29: Selector Lever Boot, Selector Lever Handle And Clamp**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Turn up selector lever boot - **1** - over selector lever handle - **2** -.
- Release clamp - **arrow** - and detach selector lever handle together with selector lever boot. Avoid touching the interlock button.



**Fig. 30: Securing The Interlock Button In Pulled-Out Position Using A Cable**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

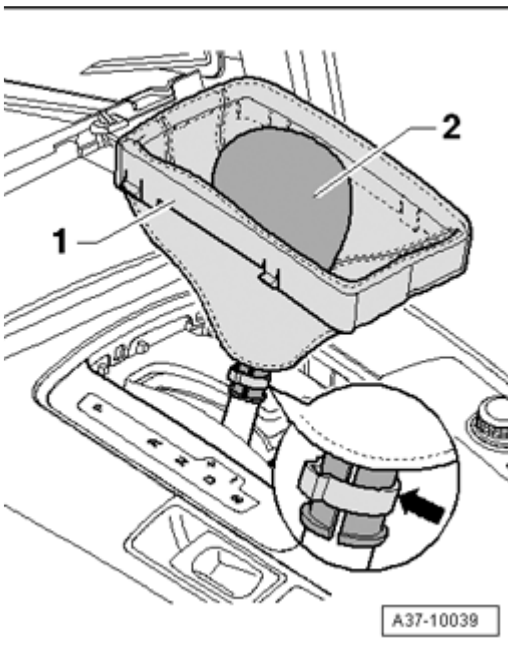
### Installing

#### NOTE:

- To install the selector lever handle the interlock button has to be pulled out to the stop and must be secured with either a cable tie - **arrow** - or with the assembly aid supplied together with the new handle.
- If, by mistake, the interlock button has not been secured, it must not be

**pulled out of the selector lever handle using mechanical tools. Apply a compressed air gun at the bottom of the handle and press the interlock button out with compressed air.**

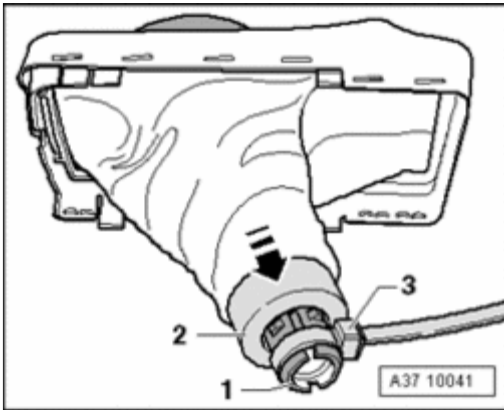
- Place selector lever handle fully on selector lever - interlock button points toward the driver.
- The handle must engage in selector lever annular groove.
- Remove cable tie or assembly aid, allowing the interlock button mechanism to engage in the vertical groove on the selector lever. If necessary, press the interlock button into the selector lever handle.



**Fig. 31: Selector Lever Boot, Selector Lever Handle And Clamp**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Secure selector lever handle - 2 - onto selector lever with clamp - **arrow** -. Use hose clamp pliers V.A.G 1275 for this purpose.
- Clip retaining frame for selector lever boot - 1 - onto center console.

**Removing selector lever boot from selector lever handle**



**Fig. 32: Removing Selector Lever Boot From Selector Lever Handle**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

### Removing

- Remove selector lever handle --> **Selector lever handle, removing and installing.**
- Tie together selector lever handle spring tips - **1** - using cable tie - **3** - as shown in illustration.
- Slide sleeve - **2** - of selector lever boot past retainer tabs on spring tips - **arrow** -.
- Remove cable tie and detach sleeve with selector lever boot from selector lever.

### Installing

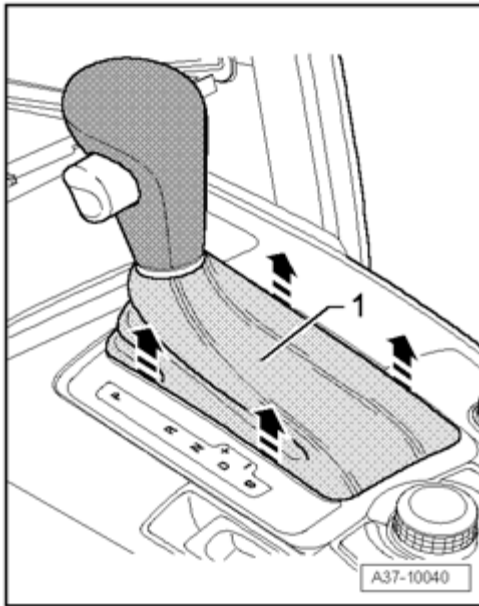
Installation is carried out in reverse sequence. Note the following:

Installation position of selector lever boot:

- The longer side of the retaining frame for the selector lever boot faces drivers side.
- Install selector lever handle --> **Selector lever handle, removing and installing.**

**Selector Lever Transmission Range (TR) Position Display Y26 , removing and installing**

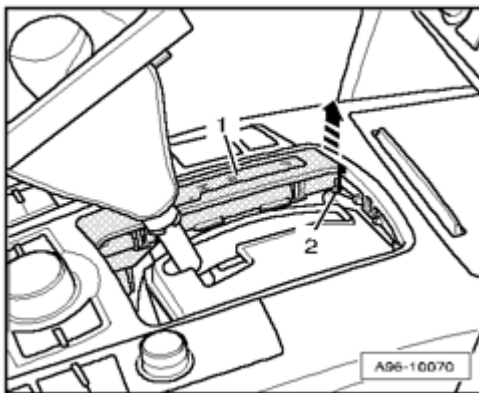




**Fig. 33: Unclipping Mounting Frame For Selector Lever Boot From Center Console**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

### Removing

- Shift selector lever to position "N".
- Unclip the retaining frame for selector lever boot - **1** - from center console and lift off - **arrows** -.
- Turn up selector lever boot.



**Fig. 34: Releasing Retaining Spring And Removing Selector Lever Transmission Range (TR) Position Display Y26 Upward**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Release retaining spring - **2** - and detach Selector Lever Transmission Range (TR) Position Display Y26 - **1** - - **arrow** -.
- Disconnect electrical connector.

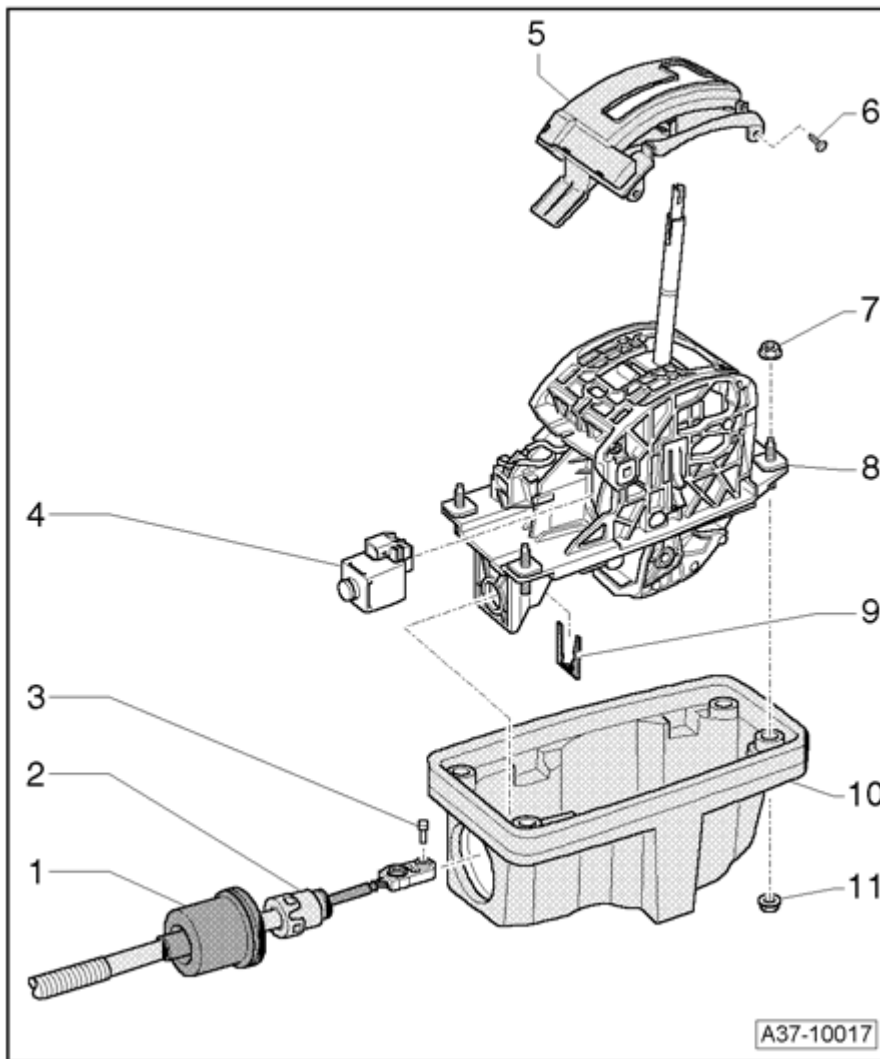
## Installing

Perform installation in reverse sequence of removal.

### Selector mechanism components, assembly overview

**NOTE:**

- Lubricate all bearings and moving surfaces with polycarbamide grease G052142 A2 .



**Fig. 35: Selector Mechanism Components, Assembly Overview**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

1 - Rubber sleeve for selector lever cable

- Check rubber sleeve for selector lever cable is correctly engaged on bottom cover of selector mechanism and make sure it seals properly.

**2 - Selector lever cable**

- Do not bend or kink
- Removing and installing --> **Selector lever cable, removing and installing**
- Selector lever cable must be replaced if rubber sleeve is damaged
- Before installing, lightly lubricate ball socket with **polycarbamide grease G052142 A2**.
- When installing, make sure that the rubber sleeve (on transmission end) is not twisted
- Adjusting --> **Selector lever cable, adjusting**

**3 - Pin for selector lever cable**

- To remove selector lever cable pull plastic locking spring on selector mechanism forwards slightly and push up pin just far enough to release cable.

**4 - Shift Lock Solenoid N110**

- Removing and installing --> **Shift Lock Solenoid N110 , removing and installing**

**5 - Selector Lever Sensor System Control Module J587 and Tiptronic switch F189**

- Removing and installing --> **Selector Lever Sensor System Control Module J587 and Tiptronic Switch F189 , removing and installing**

**6 - 1.2 Nm****7 - 10 Nm****8 - Selector housing**

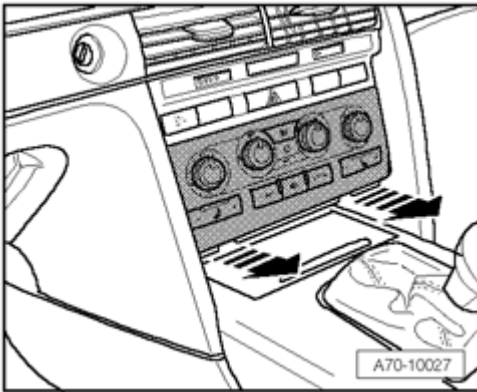
- Can only be replaced as a complete unit
- Removing and installing --> **Selector mechanism, removing and installing**

**9 - Retaining clip**

- Secures selector lever cable to selector housing

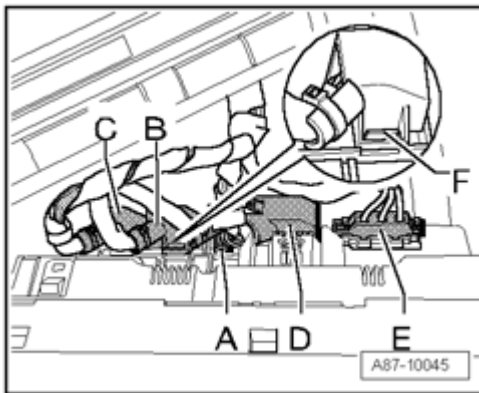
**10 - Selector mechanism cover (bottom)****11 - 10 Nm****Shift Lock Solenoid N110 , removing and installing****Removing**

- Shift selector lever to position "S".



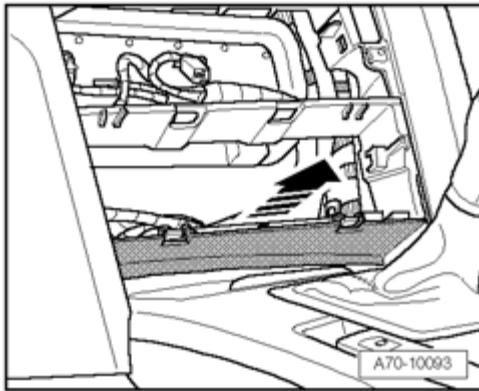
**Fig. 36: Pulling Climatronic Control Module J255 (Control Head) Out Of Mounting Frame**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Grip Climatronic Control Module J255 at recesses on bottom (operating and display unit).
- Pull out Climatronic Control Module J255 (operating and display unit) from retaining frame - **arrows** -.
- Put Climatronic Control Module J255 (operating and display unit) on a cloth and place onto center console, to avoid damaging the surface.



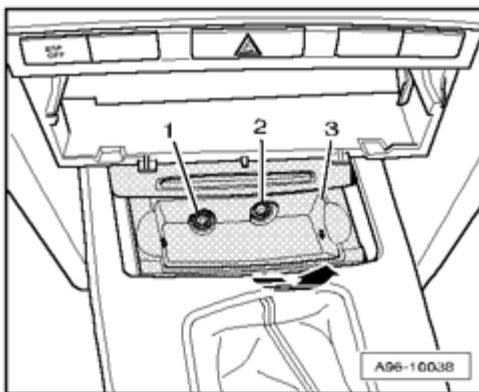
**Fig. 37: Disconnecting Electrical Harness Connectors In Sequence By Releasing Catches**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Disconnect electrical connectors in sequence - **AD** - by releasing the retainer tab - **F** -.
- Disconnect electrical connector - **E** -.



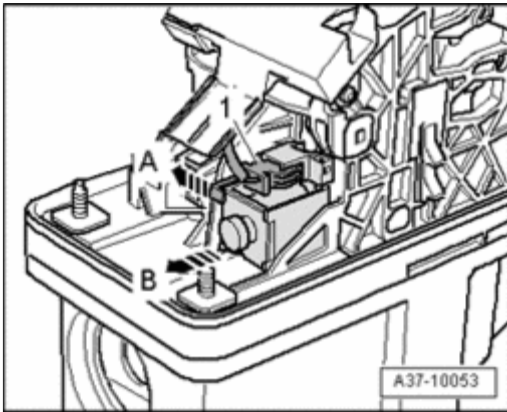
**Fig. 38: Removing Gap Cover Above Ashtray**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove trim cover above ashtray - **arrow** -.



**Fig. 39: Housing For Front Ashtray And Bolts**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Open front ashtray.
- Remove insert for front ashtray.
- Remove bolts - **1** - and - **2** -.
- Remove housing for front ashtray - **3** - - **arrow** -.
- Disconnect electrical connector if installed.



**Fig. 40: Identifying Shift Lock Solenoid N110 Electrical Connector And Releasing Retainer And Pulling Out Shift Lock Solenoid N110 From The Front**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

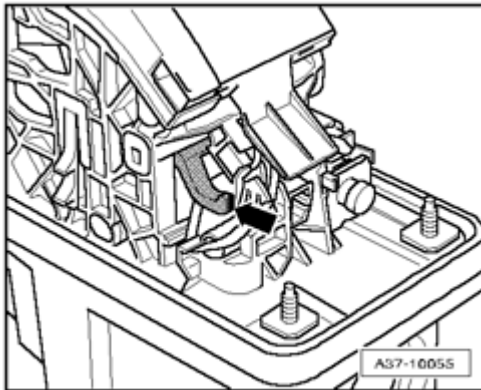
- Disconnect electrical connector - **1** - from Shift Lock Solenoid N110.
- Release retainer - **arrow A** - and pull out Shift Lock Solenoid N110 from the front - **arrow B** -.

**NOTE:**

- For illustration purposes selector mechanism shown removed.

**Installing**

- Selector lever in position "S".



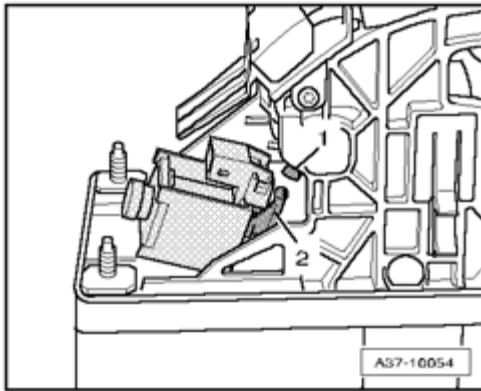
**Fig. 41: Manual Release Lever**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Move manual release lever - **arrow** - upward.

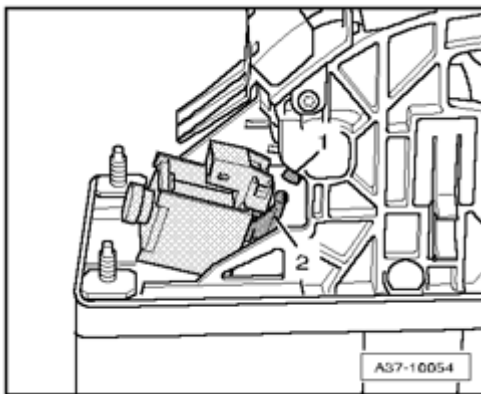
**NOTE:**

- The operating lever - **1** - for Shift Lock Solenoid N110 moves into installation position when the manual release lever is moved upward.



**Fig. 42: Placing Shift Lock Solenoid N110 Into Guide At An Angle From Above**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- At the same time place Shift Lock Solenoid N110 into guide at an angle from above.



**Fig. 43: Placing Shift Lock Solenoid N110 Into Guide At An Angle From Above**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Press Shift Lock Solenoid N110 into guide until it engages.
- At the same time the ball head - 2 - of the Shift Lock Solenoid N110 should engage in the operating rod of the selector mechanism.

Perform remaining installation operations in reverse sequence of removal.

Tightening torque

Component	Nm
Housing for front ashtray to center console frame	3

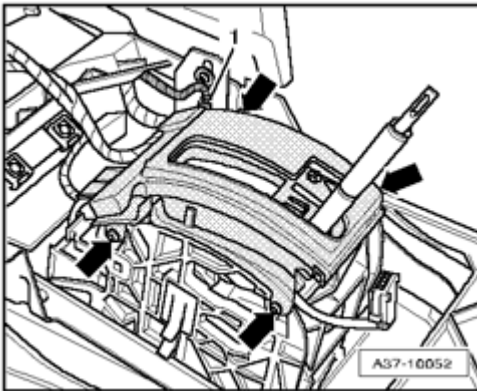
**Selector Lever Sensor System Control Module J587 and Tiptronic Switch F189 , removing and installing**

**NOTE:**

- **Selector Lever Sensor System Control Module J587 and Tiptronic Switch F189 are combined in one unit.**
- **The magnets for the Tiptronic Switch F189 are secured on the cover.**

**Removing**

- Remove selector lever handle --> **Selector lever handle, removing and installing.**
- Remove front and rear sections of center console --> **68 - INTERIOR EQUIPMENT** .



**Fig. 44: Selector Lever Sensor System Control Module J587 With Tiptronic Switch F189 And Bolts**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Disconnect electrical connector - **1** -.
- Remove bolts - **arrows** - and remove Selector Lever Sensor System Control Module J587 with Tiptronic Switch F189.

**Installing**

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

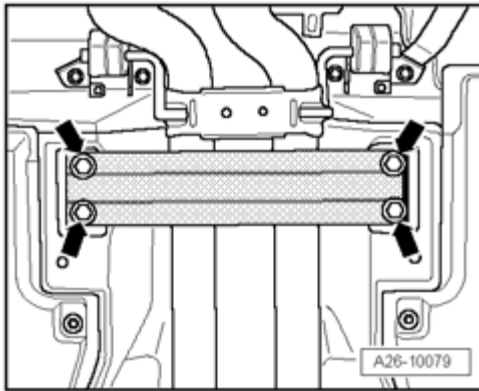
- Install front and rear sections of center console --> **68 - INTERIOR EQUIPMENT** .
- Install selector lever handle --> **Selector lever handle, removing and installing.**

**Tightening torque**

Component	Nm
Selector Lever Sensor System Control Module J587 and Tiptronic Switch F189 to selector housing	1.2

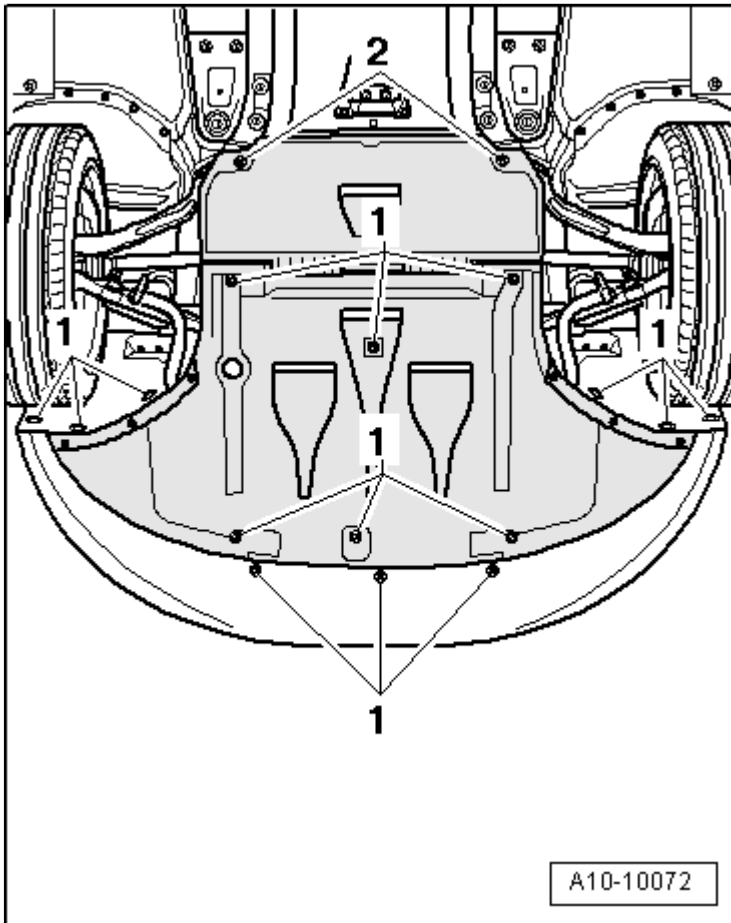
**Selector mechanism, removing and installing****Removing**





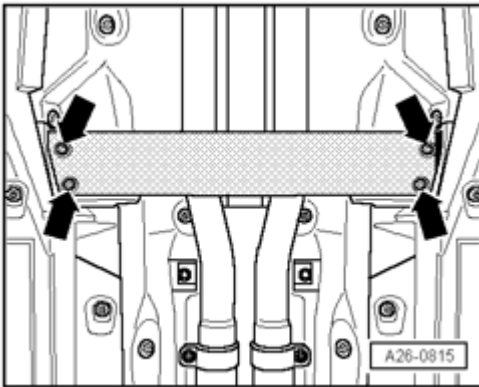
**Fig. 45: Removing Rear Cross Member**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove rear cross piece - **arrows** -.



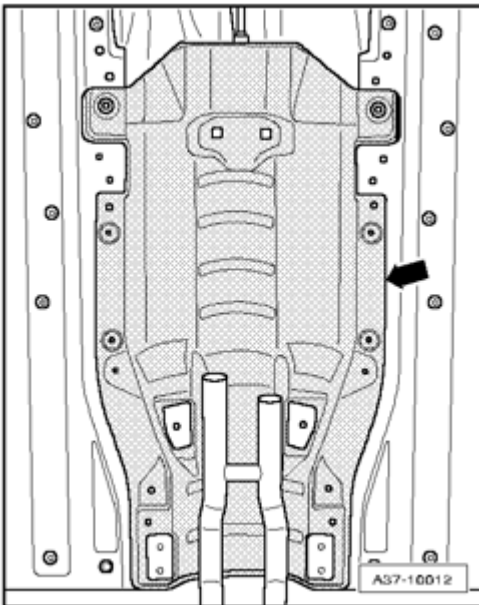
**Fig. 46: Identifying Quick-Release Fasteners & Noise Insulation**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Unfasten quick-release catches - **2** - and detach rear noise insulation.



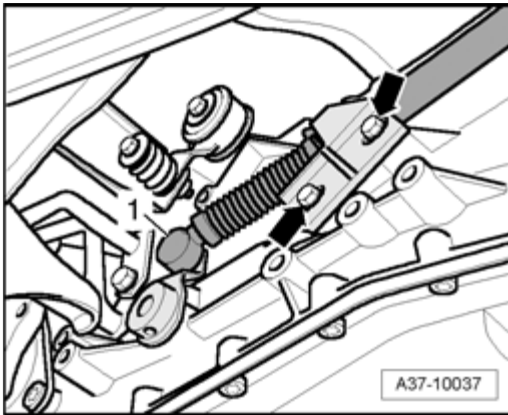
**Fig. 47: Removing Front Transverse Beam**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove front cross piece - **arrows** -.
- Remove drive shaft --> **39 FINAL DRIVE, REAR DIFFERENTIAL** .



**Fig. 48: Heat Shield**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Loosen inner side of covers on vehicle underside (left and right).
- Remove heat shield - **arrow** -.



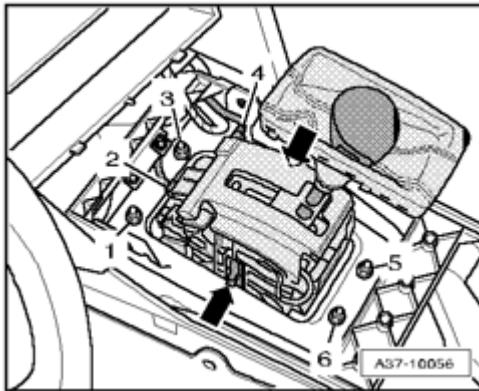
**Fig. 49: Pressing Ball Socket Of Selector Lever Cable From Selector Shaft Lever & Removing Bracket On Transmission**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Mark installation position of support bracket for selector lever cable.
- Pry ball socket - **1** - of selector lever cable off selector shaft lever.
- Remove bolts - **arrows** - of support bracket for selector lever cable.

**NOTE:**

- **Do not bend or kink the selector lever cable.**



**Fig. 50: Disconnecting Selector Mechanism Electrical Connectors And Removing Bolts**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove front and rear sections of center console --> **68 - INTERIOR EQUIPMENT** .
- Disconnect electrical connectors - **2** - and - **4** - .
- Remove bolts - **1** - , - **3** - , - **5** - and - **6** - .

**NOTE:**

- **The assistance of a second mechanic is required to detach the selector mechanism from below.**

- Press retaining clips - **arrows** - inward and lower selector mechanism.

## Installing

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

### NOTE:

- **Before installing, lightly lubricate ball socket on selector lever cable with polycarbamide grease G052142 A2 .**
  - **Do not bend or kink the selector lever cable.**
- Install support bracket for selector lever cable according to marking on the transmission.
  - Adjust selector lever cable --> **Selector lever cable, adjusting.**
  - Install exhaust system so it is free of stress -->
    - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 3.2 V6 4V ENGINE MECHANICAL, ENGINE CODE(S): BKH
    - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BAT, BNK
    - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BVJ
    - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** 5.2 LITER 10-CYL. 4V ENGINE MECHANICAL ENGINE CODE(S): BXA
  - Install rear cross piece --> **40 - FRONT SUSPENSION** .
  - Install front cross piece --> **50 - BODY - FRONT** .
  - Install rear and front sections of center console --> **68 - INTERIOR EQUIPMENT** .
  - Check selector mechanism --> **Selector mechanism, checking.**

### Tightening torque

Component	Nm
Support bracket for selector lever cable to transmission	10
Selector mechanism to body	10

### Transmission Park Selector Switch F305 , removing and installing

The Transmission Park Selector Switch F305 consists of two microswitches. The two microswitches form the signal required by the electronic ignition key removal lock to release the key only in selector position P.

The first switch is closed when the Shift Lock Solenoid N110 is not actuated in selector position "P" , (brake pedal not depressed) and the manual release of the selector lever below the ashtray is not operated.

The second switch is closed when the button on the selector lever handle is not operated in selector position "P".

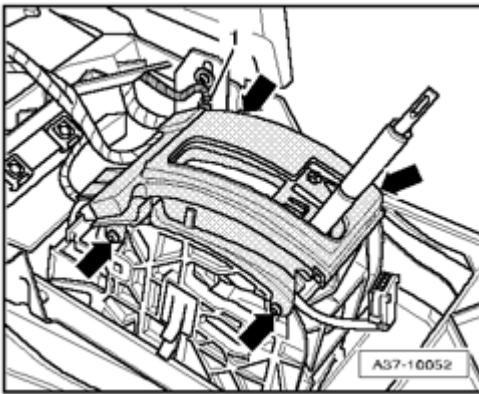
Note the following before replacing Transmission Park Selector Switch F305 :

FIXYOURCAR	
2:31:26 AM	Page 28

1. The two switches are connected in series, i.e. both switches must be closed before the ignition key can be removed. The switches can be checked with the vehicle diagnosis, testing and information system VAS 5051A in the Guided Fault Finding. After performing the vehicle system test, select the test program F305 - Gear selector position P switch (Powertrain / Automatic transmission 09L / 01 - systems capable of self-diagnosis / 02 - transmission electronics / electrical components).
2. It is possible to perform an electrical check on the switches. When performing a continuity test using a multimeter, note that the resistance is approx. 470 Ohm with both switches closed.

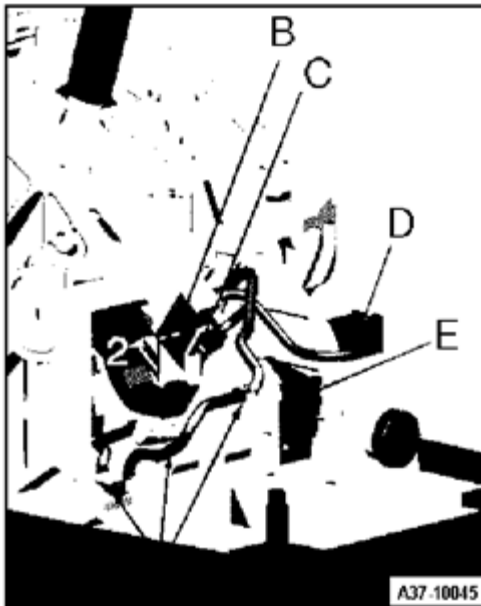
## Removing

- Remove selector mechanism --> **Selector mechanism, removing and installing**



**Fig. 51: Selector Lever Sensor System Control Module J587 With Tiptronic Switch F189 And Bolts**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

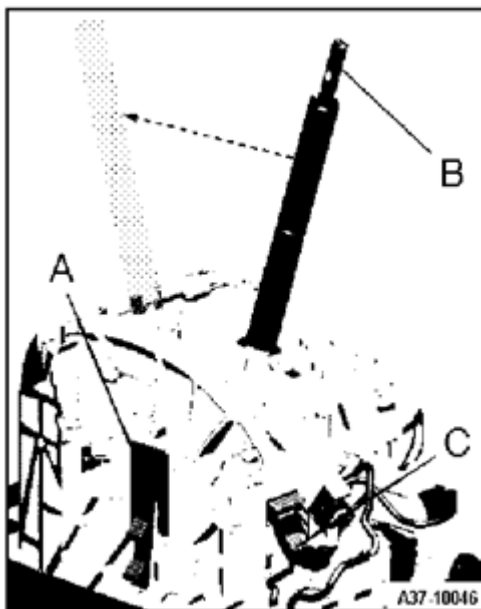
- Remove bolts - **arrows** - and remove Selector Lever Sensor System Control Module J587 with Tiptronic Switch F189.



**Fig. 52: Removing/Installing Microswitch Off**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

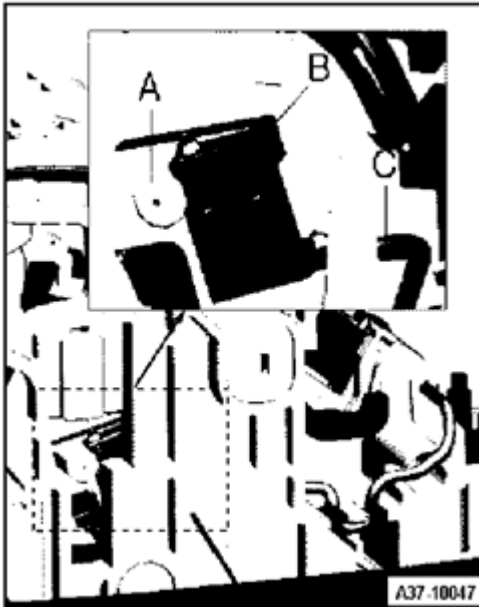
- Release connector - **D** - and detach from Shift Lock Solenoid N110.
- Release connector - **E** - and disconnect by pulling it off upward.
- Press tab - **C** - in direction of - **arrow 1** -.
- Remove microswitch - **B** - by pulling it off in direction of - **arrow 2** -.
- Disengage electrical wire at selector mechanism - **arrows A** -.



**Fig. 53: Removing/Installing Selector Rod And Shift Selector Lever**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Unclip retaining clips - **A** - on both sides of selector mechanism.
- Press parking lock button - **C** - downward and hold.
- Pull selector rod - **B** - upward and shift selector lever in direction of - **arrow** - into selector lever position "S" onto stop.

**Fig. 54: Removing/Installing Transmission Park Selector Switch F305**

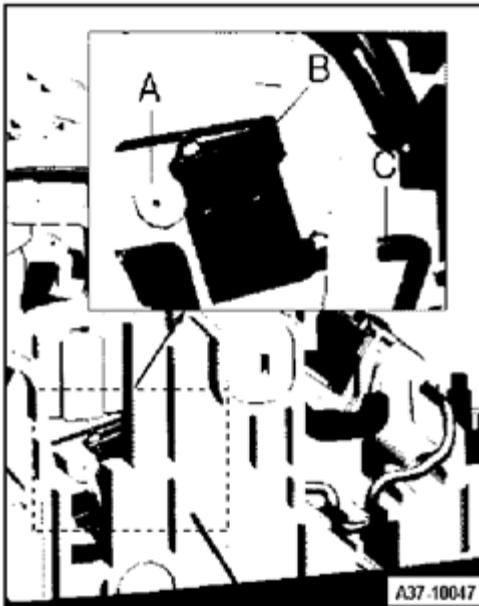
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Push locating pin - **A** - forward through rear opening for retaining clip in direction of - **arrow** - using a screwdriver

**NOTE:**

- The locating pin - **A** - can remain installed; it is sufficient to press it forward far enough for the microswitch - **B** - to be removed.

- Remove microswitch - **B** - toward front.
- Disengage electrical wire at lug - **arrows C** - and remove microswitch out of selector mechanism.



**Fig. 55: Removing/Installing Transmission Park Selector Switch F305**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

### Installing

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

- Take hold of the long electrical wire and guide microswitch into selector mechanism through opening below parking lock button.
- Install microswitch - **B** - into gearshift gate.

### NOTE:

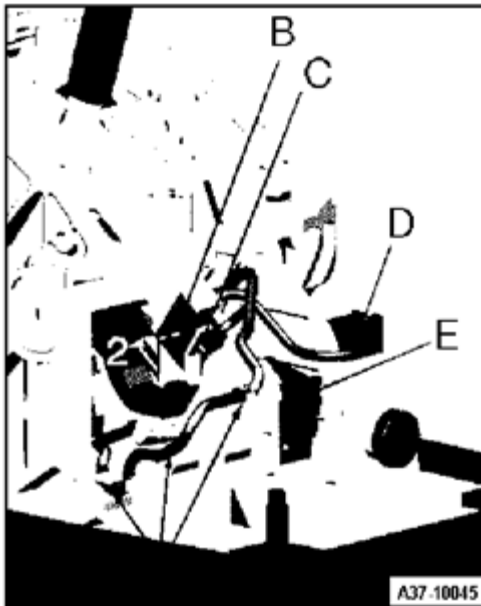
- **The microswitch must be seated flush.**

- Secure wire to lug - **arrows C** -.
- Using a screwdriver, press in locating pin - **A** - as far as stop in opposite direction of arrow.

### NOTE:

- **The locating pin - A - locates the microswitch - B - in the gearshift gate.**
- **If the microswitch is not correctly installed or not located properly, the ignition key removal lock will not function as required.**





**Fig. 56: Removing/Installing Microswitch Off**

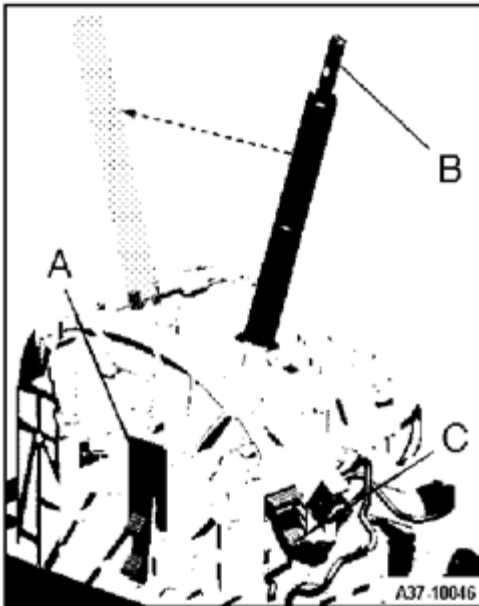
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Locate electrical wire - **arrows A** - on the selector mechanism as shown in the illustration.
- Install microswitch - **B** -.

**NOTE:**

- **If the microswitch is not correctly installed or not located properly, the ignition key removal lock will not function as required.**

- Connect connector - **D** - onto Shift Lock Solenoid N110.
- Clip in connector - **E** - from above.



**Fig. 57: Removing/Installing Selector Rod And Shift Selector Lever**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Clip in retaining clips - A - on both sides of selector mechanism.
- Install Selector Lever Sensor System Control Module J587 and Tiptronic Switch F189 --> **Selector Lever Sensor System Control Module J587 and Tiptronic Switch F189 , removing and installing**
- Install selector mechanism --> **Selector mechanism, removing and installing.**

Selector lever cable, assembly overview



- 1 - Selector shaft lever
- 2 - Retaining clip
  - Secures selector lever cable to support bracket
- 3 - Selector lever cable
  - Do not bend or kink
  - Removing and installing --> **Selector lever cable, removing and installing**
  - Selector lever cable must be replaced if rubber sleeve is damaged
  - Before installing, lightly lubricate ball socket with **polycarbamide grease G052142 A2**.

- When installing, make sure that rubber sleeve (on transmission end) is not twisted
- Adjusting --> **Selector lever cable, adjusting**

4 - Clamping bolt for selector lever cable, 13 Nm

5 - Pin for selector lever cable

- To remove selector lever cable pull plastic locking spring on selector mechanism forward slightly and push up pin just far enough to release cable.

6 - Retaining clip

- Secures selector lever cable to selector housing

7 - Rubber sleeve for selector lever cable

- Check that rubber sleeve for selector lever cable is correctly engaged on bottom cover of selector mechanism and make sure it seals properly.

8 - Bolt, 10 Nm

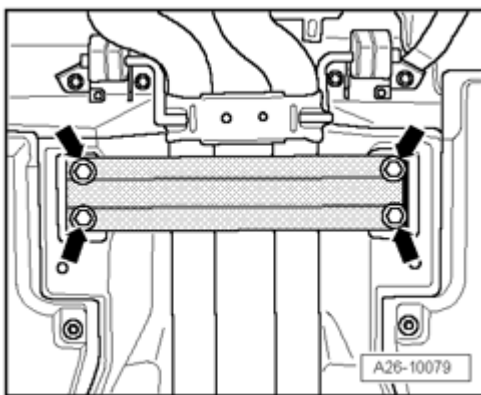
- Securing support bracket to transmission

9 - Support bracket for selector lever cable

#### **Selector lever cable, removing and installing**

##### **Removing**

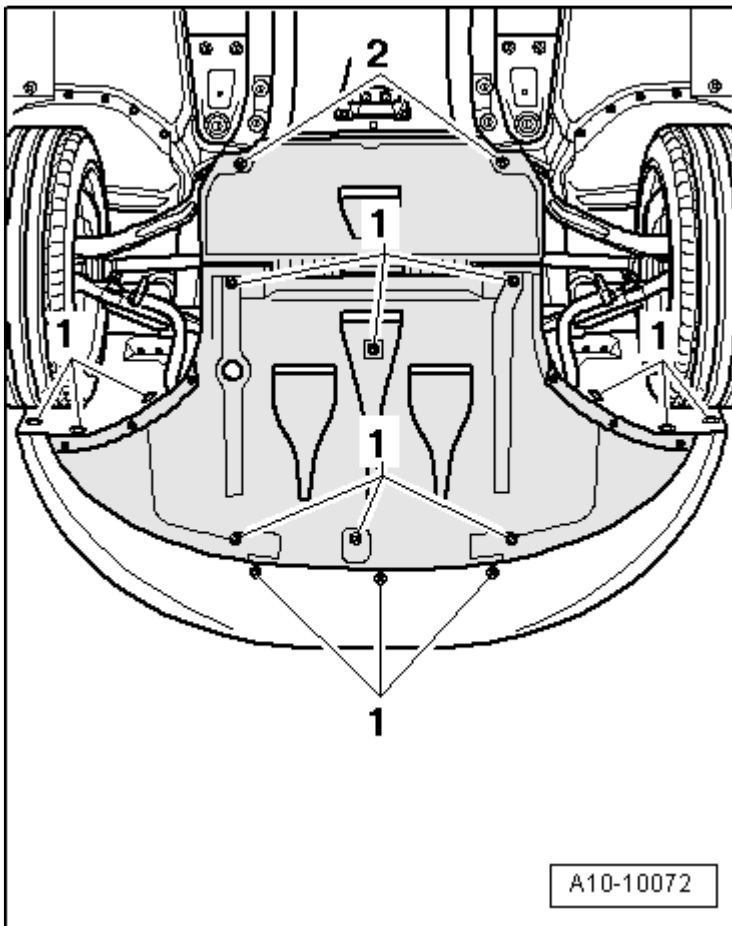
- Shift selector lever to position "S".



**Fig. 59: Removing Rear Cross Member**

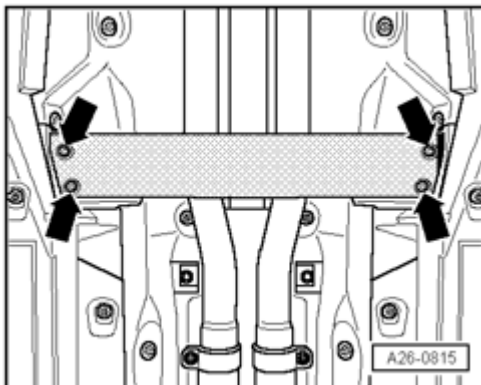
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove rear cross piece - **arrows** -.



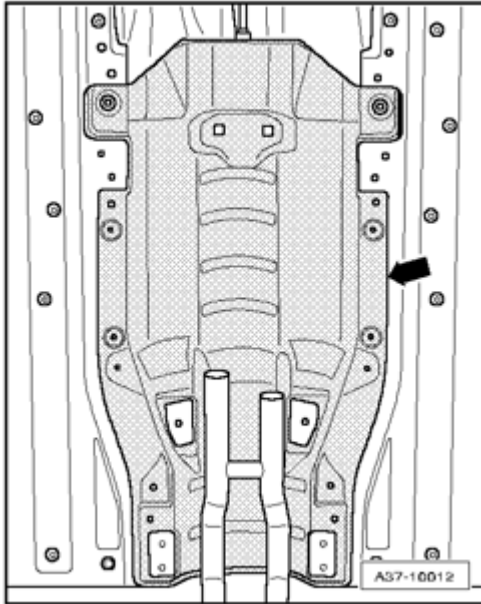
**Fig. 60: Identifying Quick-Release Fasteners & Noise Insulation**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Unfasten quick-release catches - **2** - and detach rear noise insulation.



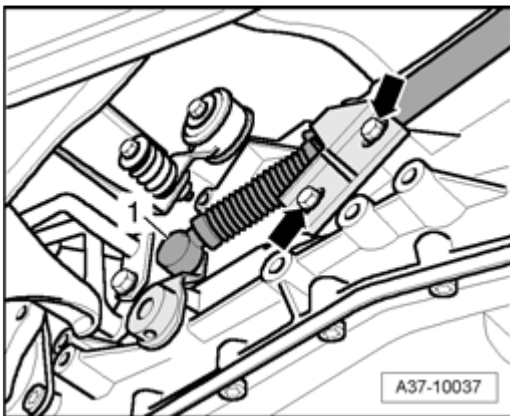
**Fig. 61: Removing Front Transverse Beam**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove front cross piece - **arrows** -.
- Remove drive shaft --> **39 FINAL DRIVE, REAR DIFFERENTIAL** .

**Fig. 62: Heat Shield**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Loosen inner side of covers on vehicle underside (left and right).
- Remove heat shield - **arrow** -.



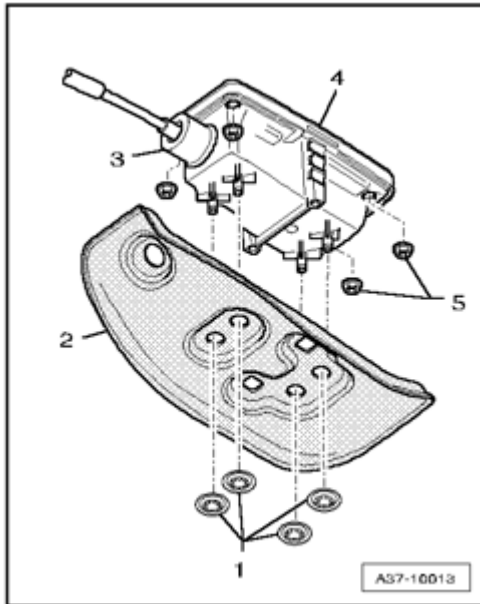
**Fig. 63: Pressing Ball Socket Of Selector Lever Cable From Selector Shaft Lever & Removing Bracket On Transmission**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Mark installation position of support bracket for selector lever cable.
- Pry ball socket - **1** - of selector lever cable off selector shaft lever.
- Remove support bracket bolts - **arrows** - for selector lever cable.

**NOTE:**

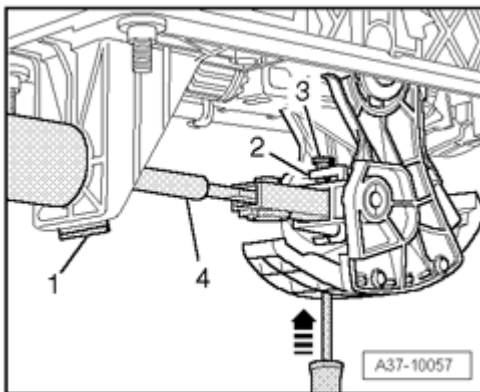
- Do not bend or kink the selector lever cable.



**Fig. 64: Identifying Lock Washers, Noise Insulation, Rubber Sleeve, Bottom Cover For Selector Mechanism And Nuts**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Pry off lock washers - **1** -.
- Push noise insulation - **2** - forwards.
- Detach rubber sleeve - **3** - from bottom cover for selector mechanism - **4** -.
- Remove nuts - **5** -.
- Fold bottom cover for selector mechanism and noise insulation to front.



**Fig. 65: Identifying Plastic Securing Spring, Pin, Screwdriver And Selector Lever Cable**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove retaining clip - **1** - for selector lever cable by pulling it off downward at the selector mechanism.
- Pull plastic securing spring - **2** - slightly forward and press pin - **3** - upward, but only as far as is necessary using a screwdriver.

**NOTE:**

- **Make sure that pin is not pressed out completely.**

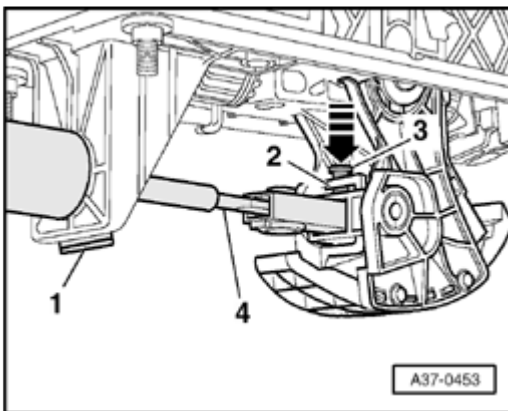
- Pull selector lever cable - **4** - out of selector mechanism.

**Installing**

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

**NOTE:**

- **Do not bend or kink the selector lever cable.**
- **Before installing, lightly lubricate ball socket on selector lever cable with polycarbamide grease G052142A2 .**



**Fig. 66: Pushing Selector Lever Cable Into Selector Mechanism**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Push selector lever cable into selector mechanism and secure cable with retaining clip - **1** -.
- Installation position: angled end of retaining clip must point toward rear.
- Insert end of selector lever cable - **4** - into joint on selector lever.
- Push pin - **3** - down - **arrow** -.
- Check plastic securing spring - **2** - has locked pin.
- Install support bracket for selector lever cable to new selector lever cable.
- Install support bracket for selector lever cable according to marking on transmission.
- Adjust selector lever cable --> **Selector lever cable, adjusting.**
- Check selector mechanism --> **Selector mechanism, checking.**
- Install drive shaft --> **39 FINAL DRIVE, REAR DIFFERENTIAL**



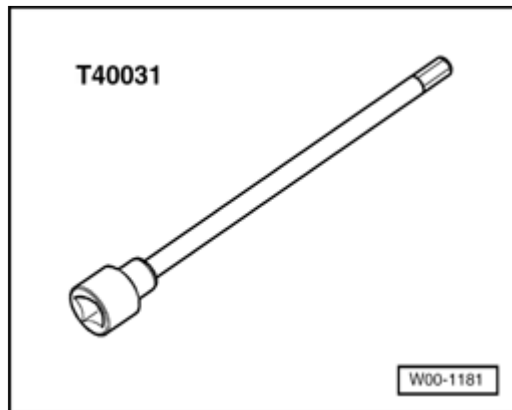
- Install exhaust system so it is free of stress -->
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 3.2 V6 4V ENGINE MECHANICAL, ENGINE CODE(S): BKH
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BAT, BNK
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BVJ
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** 5.2 LITER 10-CYL. 4V ENGINE MECHANICAL ENGINE CODE(S): BXA
- Install rear cross piece --> **40 - FRONT SUSPENSION** .
- Install front cross piece --> **50 - BODY - FRONT** .

## Tightening torques

Component	Nm
Support bracket for selector lever cable to transmission	10
Bottom cover for selector mechanism to selector mechanism	10

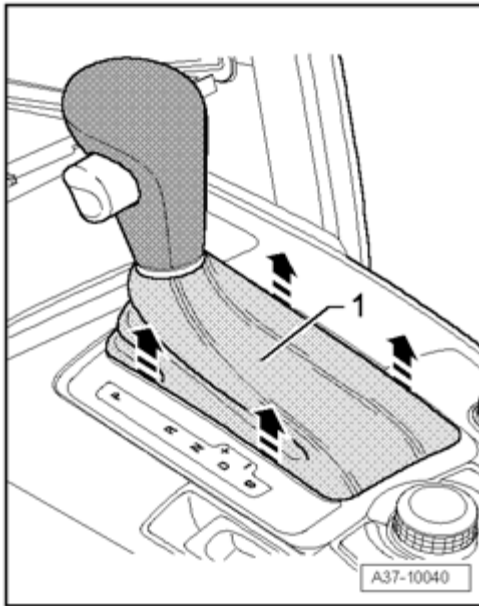
## Selector lever cable, adjusting

## Special tools, testers and auxiliary items required

**Fig. 67: Socket And Key T40031**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

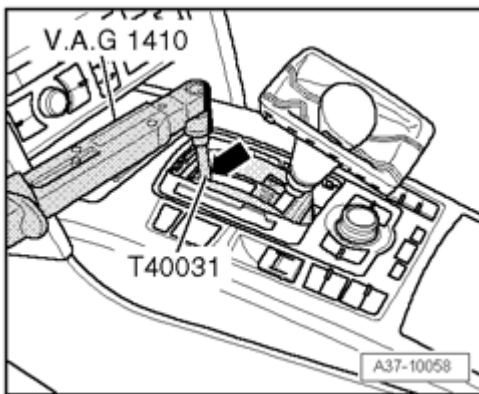
- Socket and key T40031



**Fig. 68: Unclipping Mounting Frame For Selector Lever Boot From Center Console**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

#### Procedure

- Unclip retaining frame for selector lever boot - **1** - from center console and lift off - **arrows** -.



**Fig. 69: Shifting Selector Lever To Position "S"**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Shift selector lever to position "S".

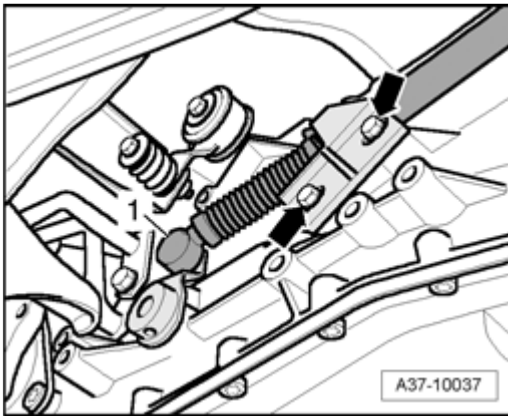
#### NOTE:

- Clamping bolt can only be accessed with selector lever in position "S".
- Loosen clamping bolt approx. 1 turn - do not remove.

- Loosen clamping bolt for selector lever cable approx. 1 turn using socket and key T40031.

- Switch on ignition.
- Symbol "S" in the "PRNDS" display should be highlighted in the Transmission Range (TR) Display Y6 on the instrument cluster

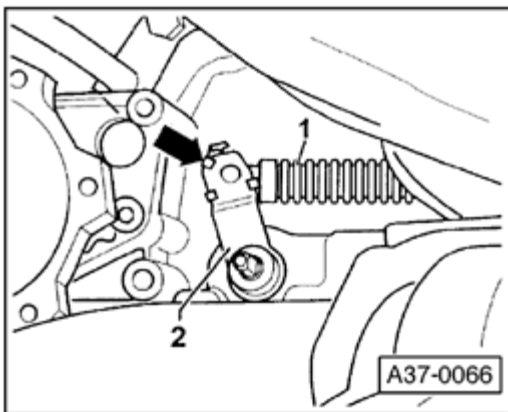
If this is not the case:



**Fig. 70: Pressing Ball Socket Of Selector Lever Cable From Selector Shaft Lever & Removing Bracket On Transmission**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

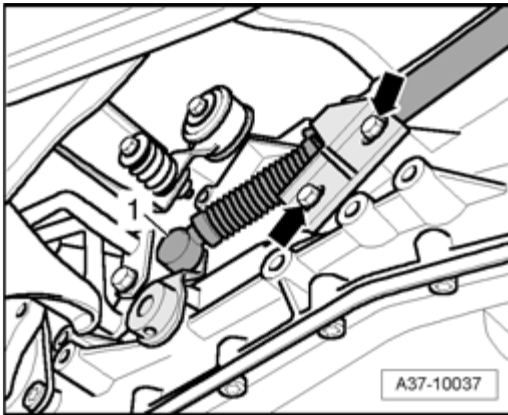
- Loosen bolts - **arrows** - on support bracket for selector lever cable.



**Fig. 71: Pushing Lever/Selector Shaft On Transmission Fully Forward Into Position "S"**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Adjust exact position "S" on transmission by slightly moving selector shaft lever - **2** -.

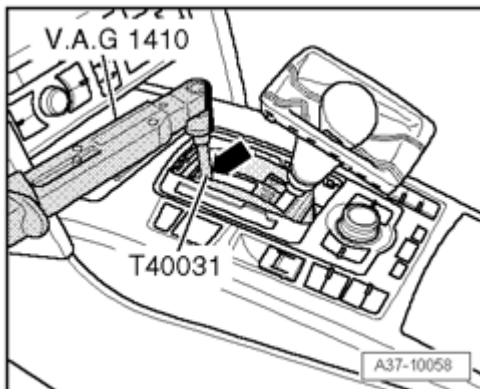


**Fig. 72: Pressing Ball Socket Of Selector Lever Cable From Selector Shaft Lever & Removing Bracket On Transmission**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Tighten bolts - **arrows** - on support bracket for selector lever cable.

If symbol "S" in "PRNDS" display is highlighted in Transmission Range (TR) Display Y6 on instrument cluster:



**Fig. 73: Shifting Selector Lever To Position "S"**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Carefully move selector lever slightly forward and backward, without shifting lever into a different selector lever position. The selector lever cable is thereby loosened.

**NOTE:**

- **When tightening the clamping bolt, the selector lever must not be pulled forward or backward, as otherwise the setting will not be accurate.**

- Tighten clamping bolt on selector lever cable - **arrow** - in this position.

Assemble in reverse sequence.

Tightening torque

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## 2008 Audi A6 Quattro

TRANSMISSION Automatic transmission 09L, all wheel drive

Component	Nm
Clamping bolt for selector lever cable	13
Support bracket for selector lever cable to transmission	10

### TRANSMISSION, REMOVING AND INSTALLING

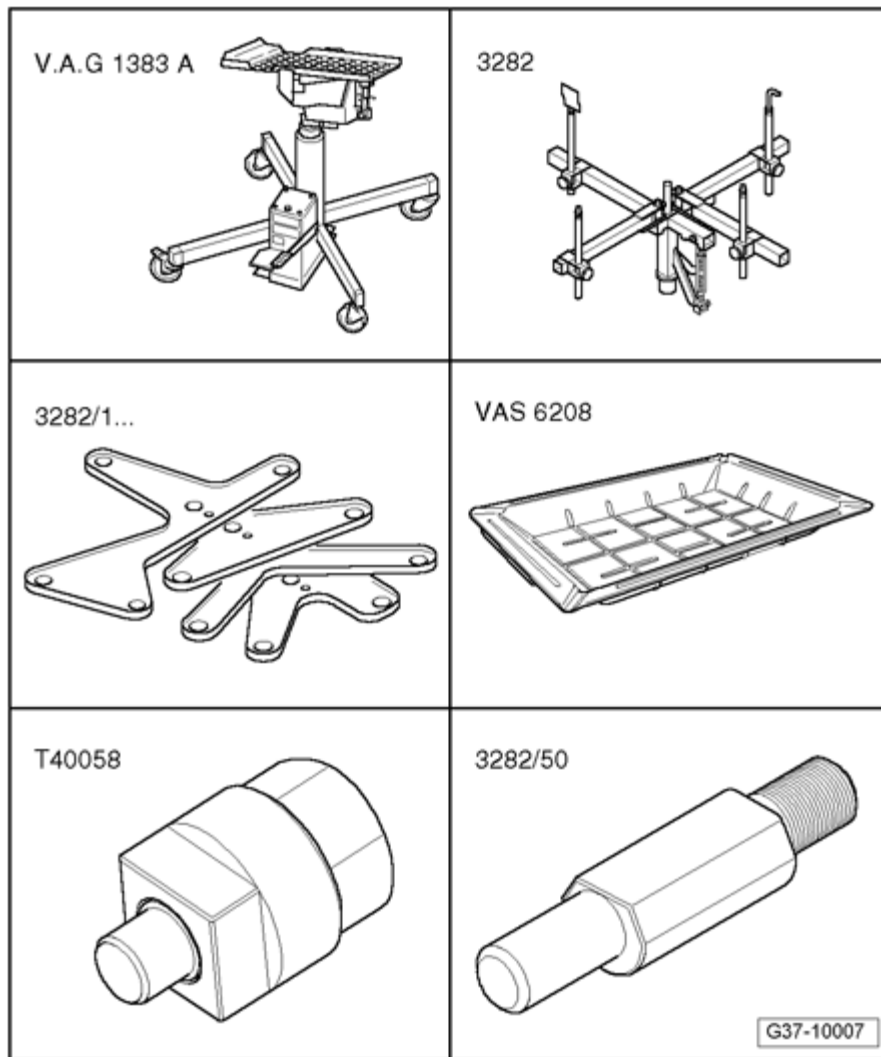
#### Transmission, removing and installing

Overview:

- Removing transmission on vehicles with 6-cyl. GDI engine --> **Transmission on vehicles with 6-cyl. GDI engine, removing**
- Removing transmission on vehicles with 8-cyl. engine --> **Transmission on vehicles with 8-cyl. engine, removing**
- Installing transmission --> **Transmission, installing**

#### Transmission on vehicles with 6-cyl. GDI engine, removing

- Observe repair instructions --> **Repair instructions**.



**Fig. 74: Identifying Special Tools - Transmission On Vehicles With 6-Cyl. GDI Engine, Removing**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

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

- Engine/transmission jack V.A.G1383 A
- Transmission support 3282
- Adjustment plate 3282/48
- Pin 3282/50
- Drip tray for workshop hoist VAS 6208
- Adapter T40058
- Bolt M10x20 (1x)

**NOTE:**

- All cable ties which are released or cut open during removal must be

installed in the same position when installing.

**CAUTION:** Prevent vehicle from tilting prior to removing the transmission. For this the luggage compartment must be empty.

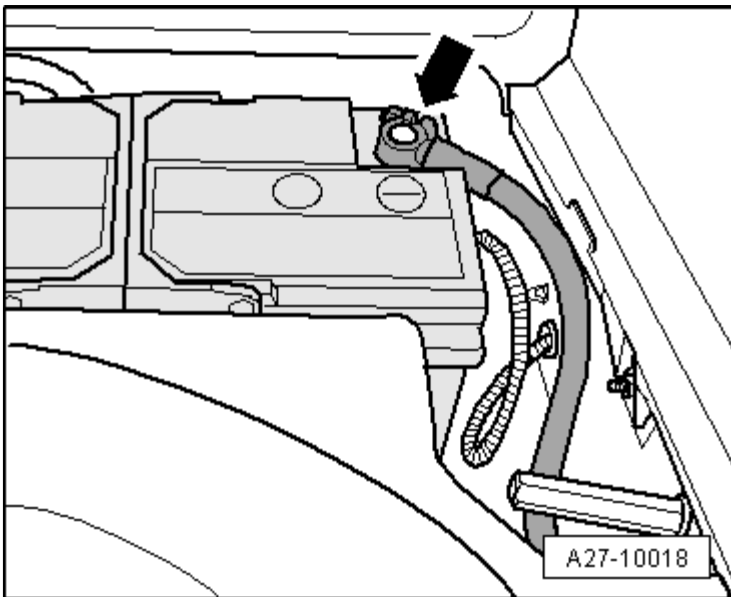
- Activate jacking mode --> **43 - SELF LEVELING SUSPENSION** .

**CAUTION:** Follow steps required when disconnecting battery --> **27 - STARTER, GENERATOR, CRUISE CONTROL** .

- Switch off ignition.

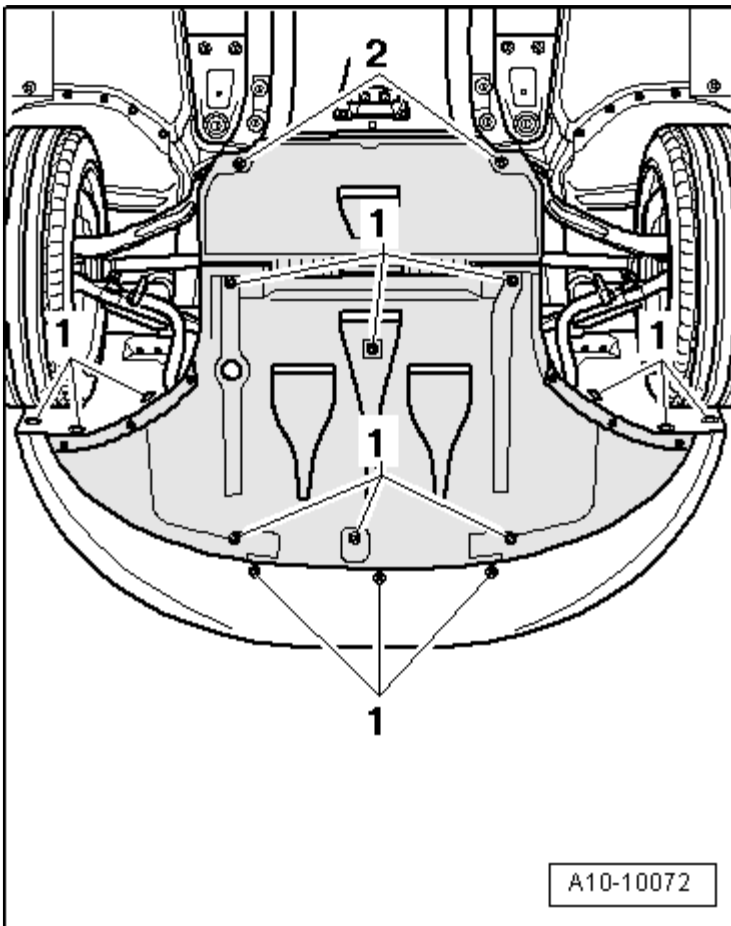
**NOTE:**

- When disconnecting the battery, the ignition key must remain in the ignition lock so that wheels can be turned after the battery has been disconnected.
- On vehicles with all wheel drive the electronic parking brake must be released prior to disconnecting the battery so that the drive shaft can be turned for removal.



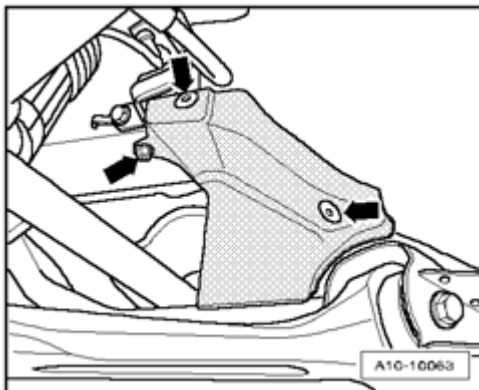
**Fig. 75: Disconnecting Ground (GND) Strap At Battery Ground (GND) Terminal**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove luggage compartment floor covering.
- Disconnect Ground (GND) wire - **arrow** - at battery.



**Fig. 76: Identifying Quick-Release Fasteners & Noise Insulation**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

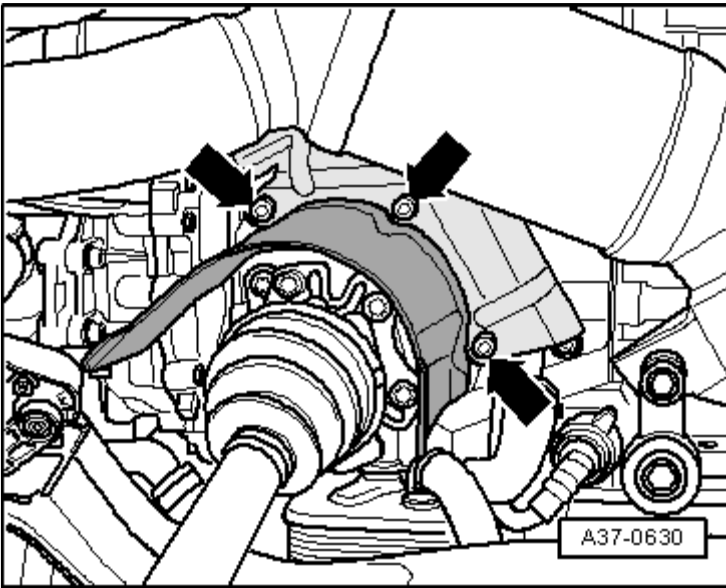
- Release quick-release fasteners - **1** - and - **2** - and detach front and rear noise insulation.



**Fig. 77: Noise Insulation In Wheel Housing (Left And Right)**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

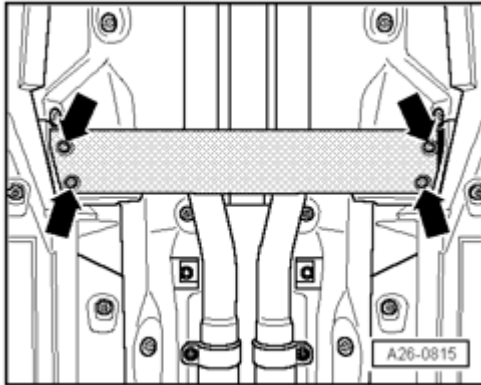
- Remove noise insulation in wheel housing (left and right) - **arrows** -.





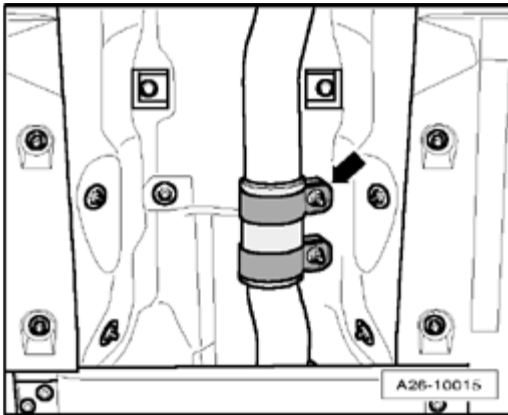
**Fig. 78: Removing Heat Shield For Left Drive Axle**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove heat shield from transmission above left drive axle - **arrows** -.
- Remove left and right drive axles from transmission flanges.



**Fig. 79: Removing Front Transverse Beam**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

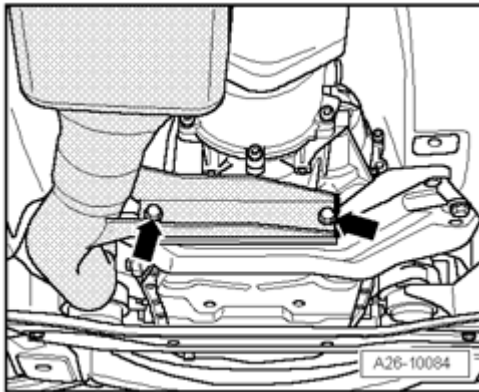
- Remove front cross piece - **arrows** -.



**Fig. 80: Loosening Clamping Sleeve**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Disconnect exhaust system at clamp - **arrow** -.



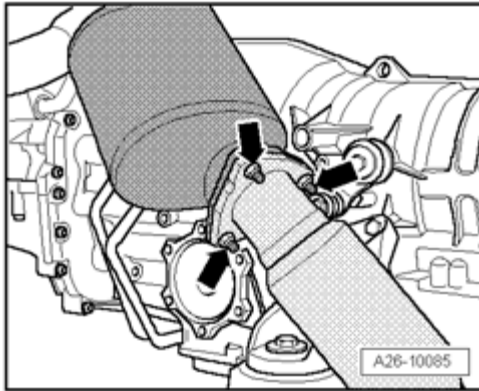
**Fig. 81: Locating Bolts At Center Bracket For Front Exhaust Pipe**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

**NOTE:**

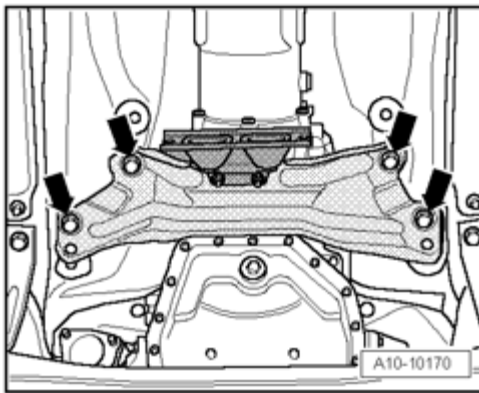
- The flexible pipe connection (de-coupling element) on the front exhaust pipe must not be bent more than 10 °- otherwise it can be damaged.

- Remove bolts - **arrows** - at center bracket for front exhaust pipe.



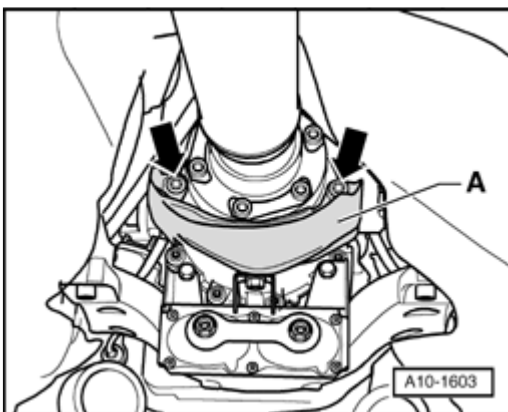
**Fig. 82: Front Exhaust Pipe With Main Catalytic Converter And Nuts**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove nuts - **arrows** - and remove front exhaust pipe with main catalytic converter.



**Fig. 83: Tunnel Cross Member And Bolts**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove bolts - **arrows** - at tunnel cross member.
- Remove tunnel cross member with front exhaust pipe center bracket.

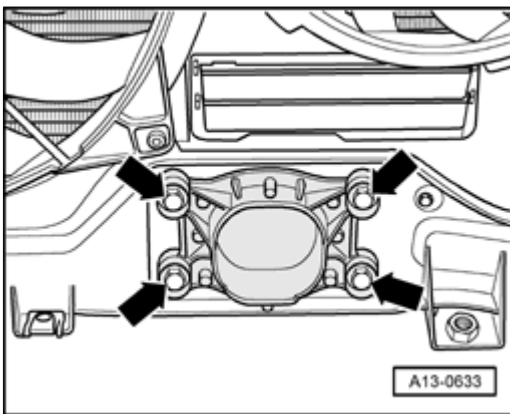


**Fig. 84: Removing/Installing Heat Shield For Driveshaft**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove heat shield - **A** - for drive shaft - **arrows** -.
- Remove bolts at transmission/drive shaft flange.
- Slide drive shaft together toward rear final drive. The constant velocity joints can be moved axially.
- Tie up drive shaft to body.

**CAUTION:** During the following work steps the lock carrier must be installed in the normal position, and not moved to the service position.

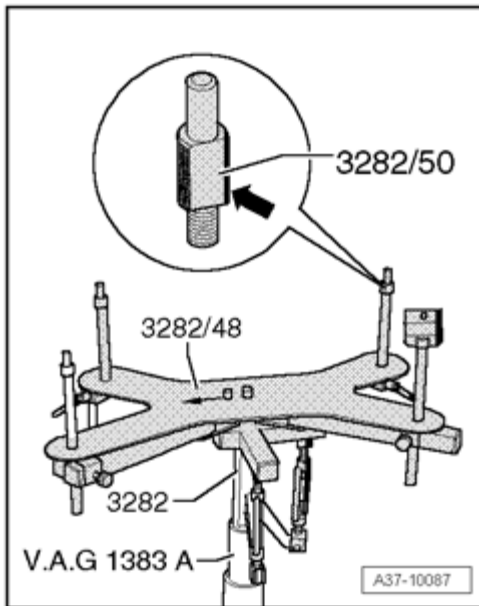
**Fig. 85: Placing Torque Support On Rubber Buffer For Torque Support And Tightening Bolts**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Loosen bolts - **arrows** - at stop for torque reaction support.
- Press stop for torque reaction support upward and tighten bolts again.

**NOTE:**

- Adjusting the stop for torque reaction support prevents the engine from tilting at the front after the transmission is removed.



**Fig. 86: Transmission Support 3282 On Engine/Transmission Jack V.A.G 1383 A**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Set up transmission support 3282 on engine/transmission jack V.A.G 1383 A.

**NOTE:**

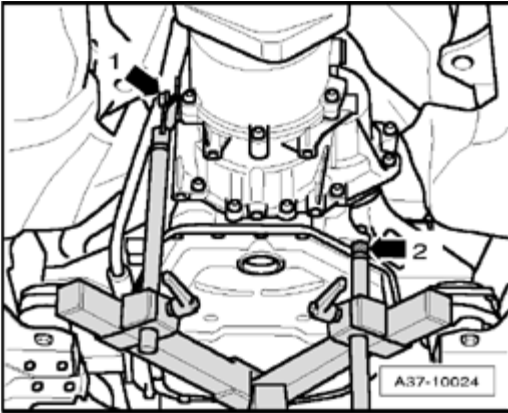
- The stud 3282/50 is flattened at the side - arrow - , the flattened side should face the oil pan when inserting stud into transmission.

- Place adjustment plate 3282/48 on transmission support 3282 as shown in illustration.
- Align transmission support arms according to holes in adjustment plate.
- Attach support elements as illustrated on adjustment plate.
- Place engine/transmission jack V.A.G 1383 A with transmission support 3282 underneath transmission.

**NOTE:**

- The arrow symbol on the adjustment plate 3282/48 points in the direction of travel.

- Align adjustment plate 3282/48 parallel with transmission.

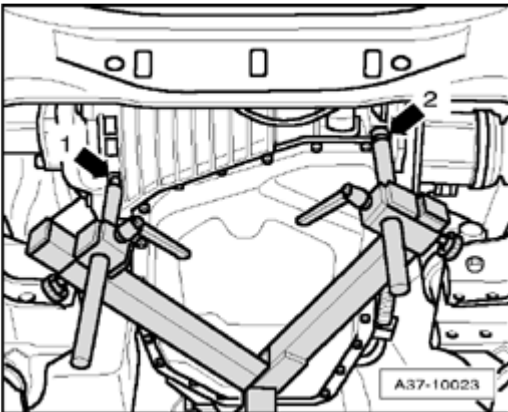


**Fig. 87: Bolting Support To Left Rear Tapped Hole On Transmission**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Bolt support to rear left tapped hole on transmission - **arrow 1** - using one bolt (M10x20).
- Insert flattened stud 3282/50 into mounting hole at right rear of transmission housing - **arrow 2** -.

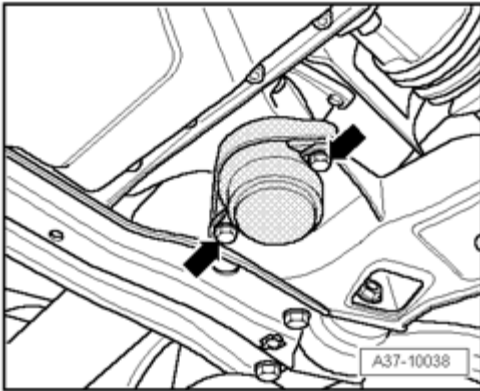
**CAUTION:**

- The flattened side of the stud 3282/50 must face towards the transmission oil pan, to prevent the oil pan from being bent or damaged.
- Replace the transmission oil pan if damaged.



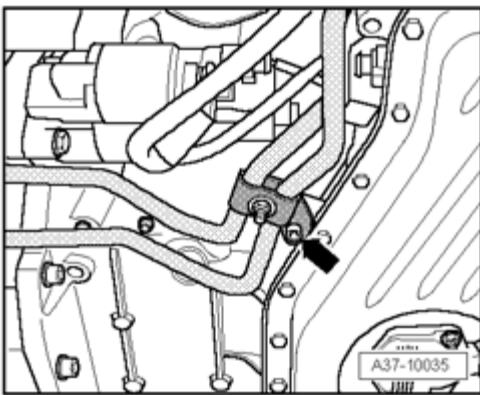
**Fig. 88: Inserting Pin Into Mounting Hole At Left Front Of Transmission Housing & Recess In Housing At Right Front Of Differential Housing**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Insert stud into mounting hole at left front of transmission housing - **arrow 2** -.
- Insert stud into recess in housing at right front of differential housing - **arrow 1** -.
- Use engine/transmission jack V.A.G 1383 A to lift transmission up slightly.



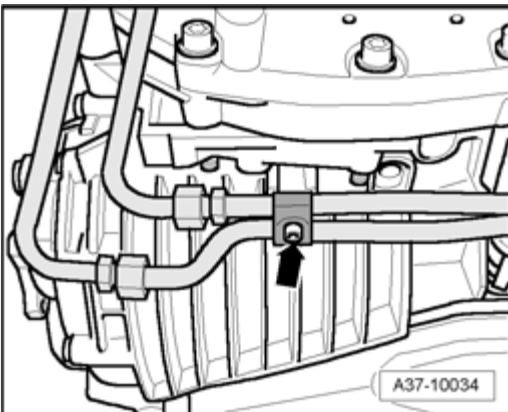
**Fig. 89: Removing Bolts For Left/Right Transmission Mount**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove bolts - **arrows** - for transmission mounting (left and right).



**Fig. 90: ATF Lines Bracket On Top Section Of Oil Pan**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

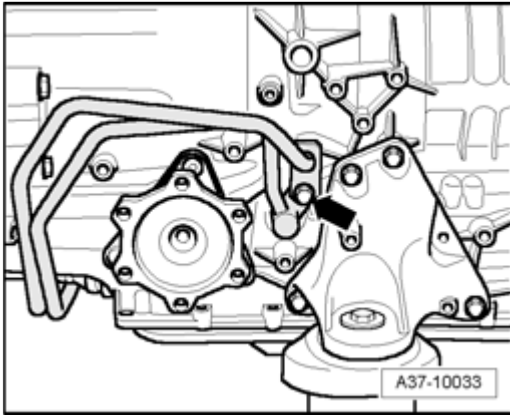
- Remove bracket - **arrow** - for ATF lines on top section of oil pan.



**Fig. 91: Removing Bracket For ATF Lines At Bottom On Transmission**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove bracket - **arrow** - for the ATF lines at the bottom section of transmission.
- Place drip tray for VAS 6100 VAS 6208 under transmission.



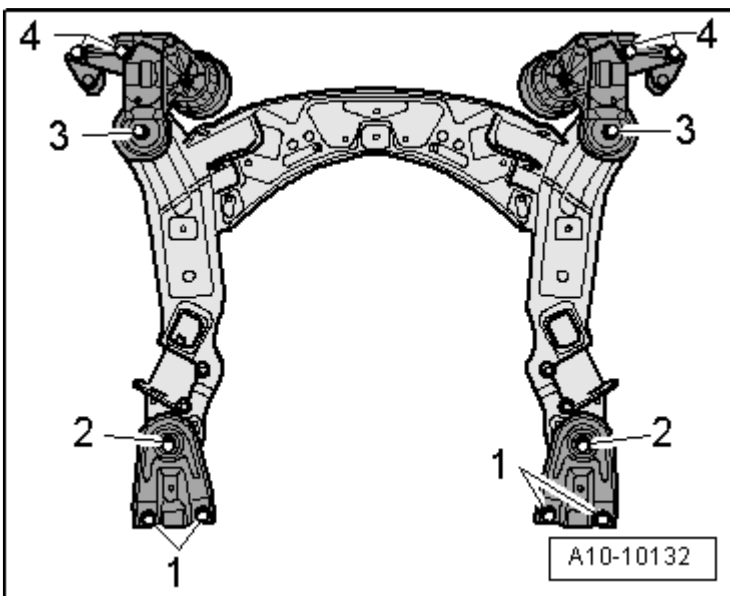
**Fig. 92: Removing Bolt & Disconnecting ATF Lines From Transmission**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove bolt - **arrow** -.

**NOTE:**

- Place a piece of cloth below connection points to catch escaping ATF.

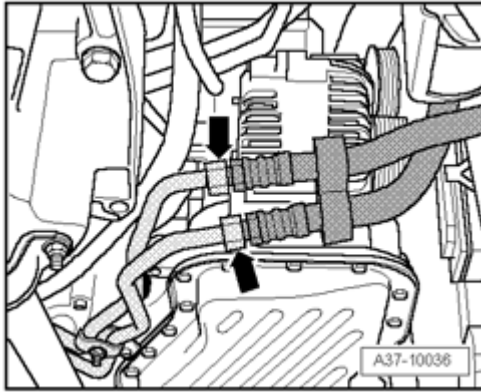
- Detach ATF lines from transmission.
- Plug lines and openings at transmission with clean plugs.



**Fig. 93: Bolts Removal Sequence**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

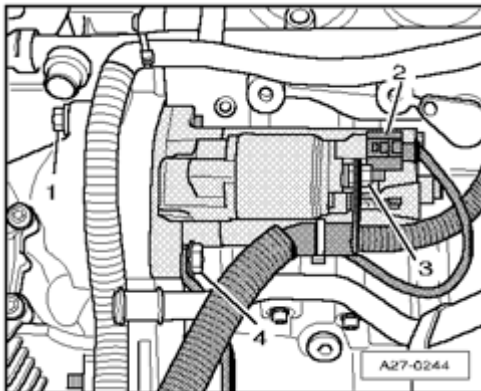


- Remove bolts - **1** - and - **2** - and lower subframe slightly at the rear.



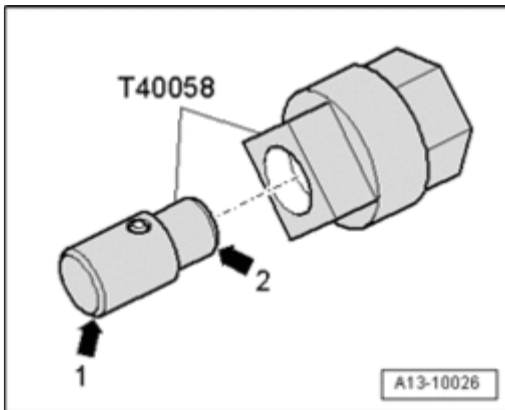
**Fig. 94: ATF Line Union Nuts And ATF Lines**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Mark position of ATF lines in relation to one another with a water-proof pen.
- Loosen both ATF line union nuts - **arrows** - and disconnect ATF lines.
- Plug open ends of lines with clean plugs.
- Remove ATF lines from between subframe and transmission.



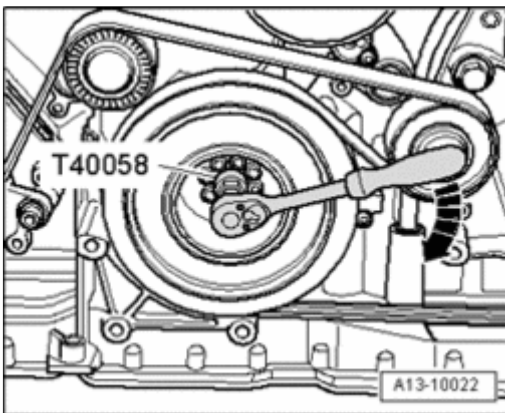
**Fig. 95: Starter Mounting Bolts And Connectors**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Disconnect wires - **2** - and - **3** - at starter.
- Remove starter --> **27 - STARTER, GENERATOR, CRUISE CONTROL**



**Fig. 96: Inserting Guide Pin Of Adapter T40058 So That Large Diameter Points To Engine**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Insert adapter T40058 guide pin so that the large diameter - **arrow 1** - faces engine. The smaller diameter - **arrow 2** - faces adapter.

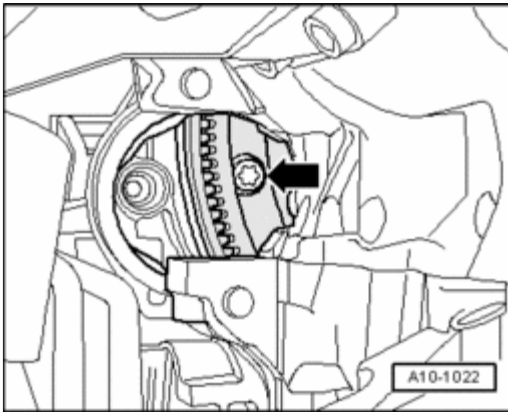


**Fig. 97: Loosening Torque Converter Bolts Using Adapter T40058**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Counter-hold crankshaft using adapter T40058 to loosen torque converter bolts.

**NOTE:**

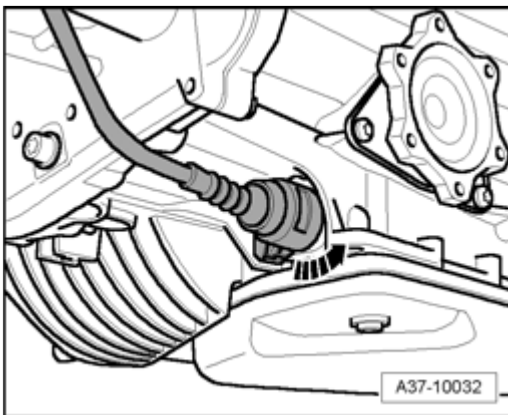
- - Arrow - can be disregarded.



**Fig. 98: Torque Converter Bolts**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

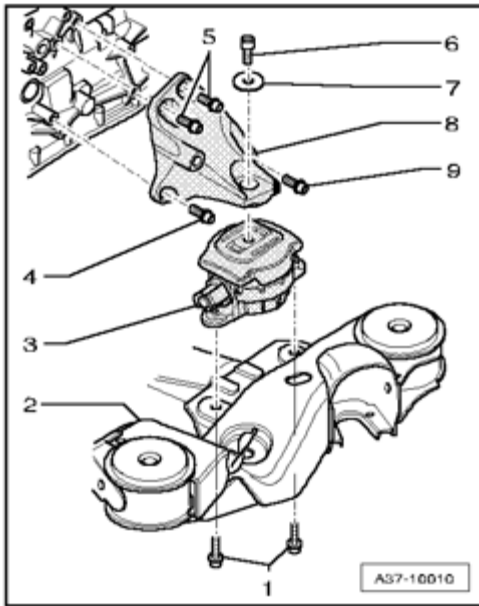
- Remove 3 Torx socket head bolts - **arrows** - of the torque converter through the opening for the removed starter (turning the crankshaft  $\frac{1}{3}$  turn each time).



**Fig. 99: Disconnecting Transmission Control Module (TCM) J217 Electrical Harness Connector**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

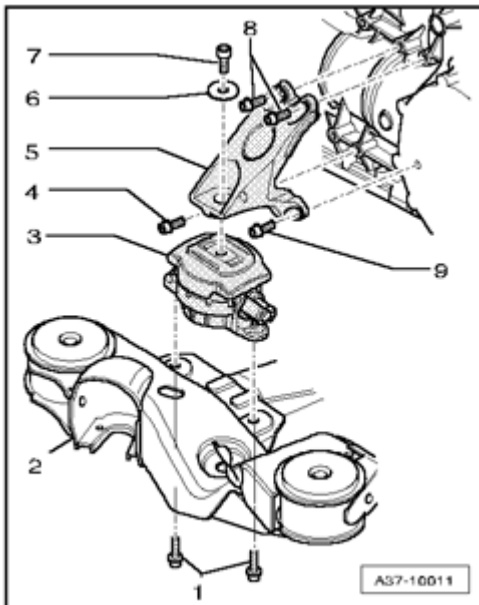
- Disconnect electrical connector at transmission by turning fastener cap counter-clockwise - **arrow** -.
- Move all electrical wiring clear of transmission housing.



**Fig. 100: Left Transmission Support, Bolts And Transmission Mounting - Vehicles With 6-Cyl. GDI Engine**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

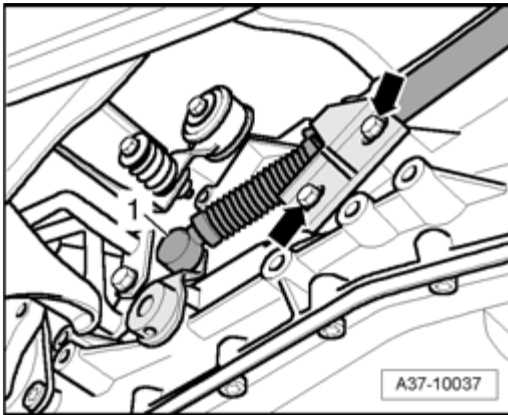
- Remove bolts - 4 - , - 5 - and - 9 - and remove left transmission support with transmission mounting.



**Fig. 101: Right Transmission Support, Bolts And Transmission Mounting**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove bolts - 4 - , - 8 - and - 9 - and remove right transmission support with transmission mounting.



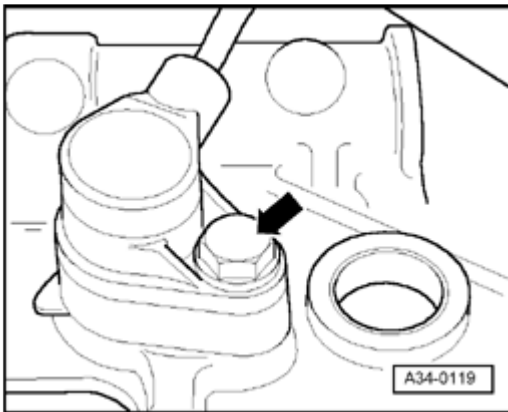
**Fig. 102: Pressing Ball Socket Of Selector Lever Cable From Selector Shaft Lever & Removing Bracket On Transmission**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

**NOTE:**

- Mark support bracket installation position for selector lever cable with a felt-tip pen.

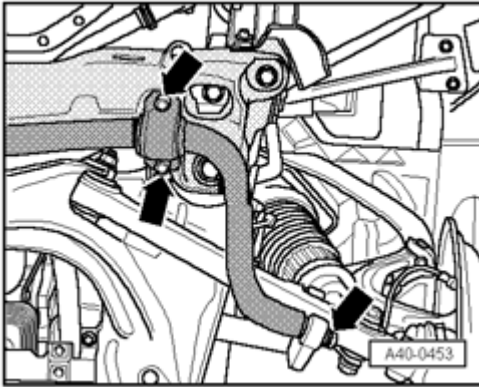
- Pry ball socket - 1 - of selector lever cable off selector shaft lever.
- Remove support bracket from transmission - **arrows** -.
- Move clear selector lever cable.
- Lower transmission slightly at rear using engine/transmission jack V.A.G 1383 A.



**Fig. 103: Location Of Engine Speed (RPM) Sensor G28 On Coupling Housing**

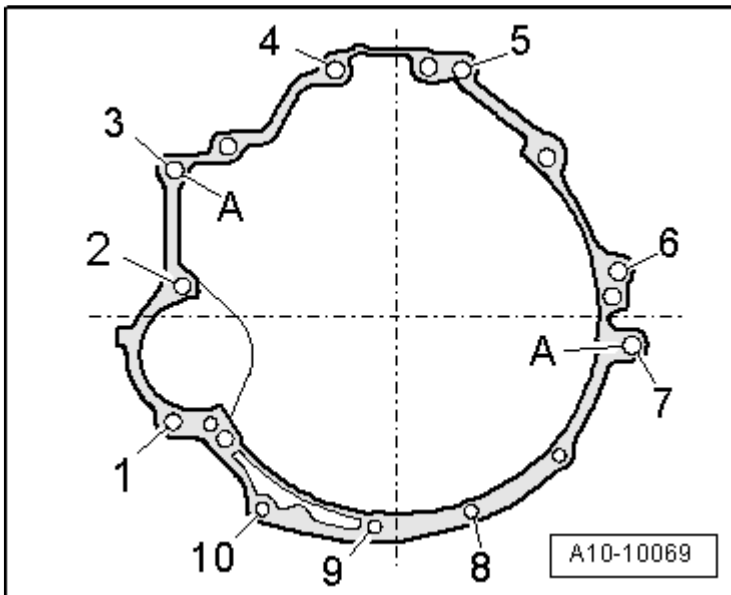
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove Engine Speed (RPM) Sensor G28 on transmission - **arrow** -.



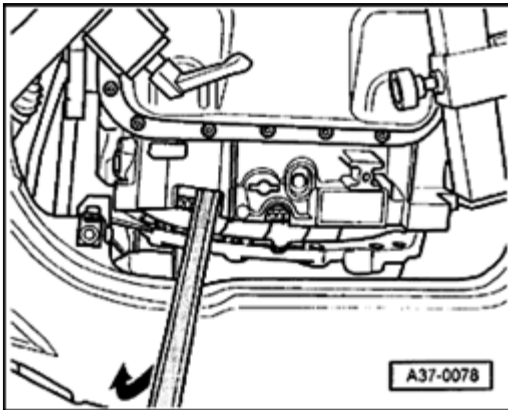
**Fig. 104: Removing Bolts Uniformly At Left/Right**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove bolts - **arrows** - on left and right evenly.
- Remove stabilizer bar.



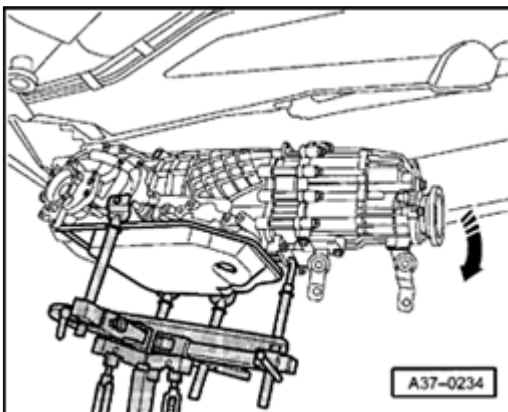
**Fig. 105: Identifying Engine/Transmission Threaded Connections**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove bolts - **3...10** - from engine/transmission flange.



**Fig. 106: Using Assembly Lever To Press Torque Converter Off Drive Plate Of Engine**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Using a tire iron or other suitable lever, pry torque converter away from engine drive plate - **arrow** -.
- Press transmission off dowel sleeves and lower it carefully.



**Fig. 107: Lowering Rear Edge Of Transmission By Adjusting Transmission Support 3282 Accordingly**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Lower rear edge of the transmission by adjusting the transmission support 3282 accordingly.
- Guide transmission out diagonally downward/to the rear.

**CAUTION:**

- When lowering transmission, make sure there is sufficient clearance to axle shafts.
- Secure the torque converter to prevent it from falling out.

Transmission on vehicles with 8-cyl. engine, removing

- Observe repair instructions --> **Repair instructions.**

**NOTE:**

- All cable ties which are released or cut open during removal must be installed in the same position when installing.

**CAUTION:** Prevent vehicle from tilting prior to removing the transmission. For this the luggage compartment must be empty.

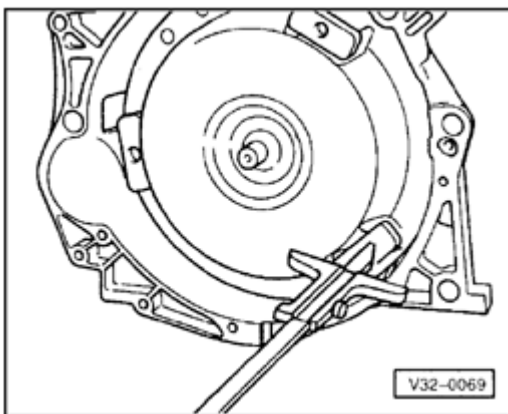
- The transmission is removed with the engine, then the two components are separated.
- Removing and installing engine -->
  - **10 - ENGINE - ASSEMBLY** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE (S): BAT, BNK
  - **10 - ENGINE - ASSEMBLY** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE (S): BVJ
  - **10 - ENGINE - ASSEMBLY** for 4.2 LITER V8 5V FUEL INJECTION AND IGNITION, ENGINE CODE(S): BAT, BNK

#### Transmission, installing

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

#### NOTE:

- Clean ATF lines and ATF cooler before installing exchange transmission --> **ATF lines and ATF cooler, cleaning.**
- Replace self-locking nuts and bolts when performing assembly work.
- Replace oil seals and gaskets, and bolts which are tightened by turning through a specified angle.
- Re-attach heat shield sleeves at the same locations when re-installing.
- Hose connections and hoses for charge air system must be free from oil and grease before installing.
- Secure all hose connections with the correct hose clips (as original equipment).
- Re-attach all cable ties at the same locations when re-installing.

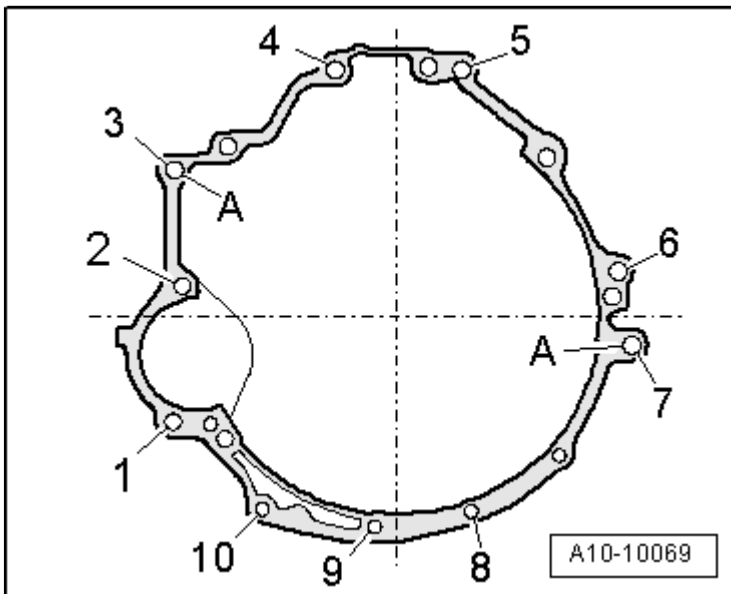


**Fig. 108: Checking Torque Converter Is Correctly Positioned**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.



- Before installing transmission, you must make sure that the torque converter is properly installed in the transmission.
- If the torque converter is correctly installed, the depth between the contact faces at the tapped holes on the torque converter and the contact surface of the torque converter bell housing is approx. 19mm.

**CAUTION:** If the torque converter is not installed correctly, the torque converter drive lugs or the ATF pump will be seriously damaged when the transmission is joined to the engine.



**Fig. 109: Identifying Engine/Transmission Threaded Connections**

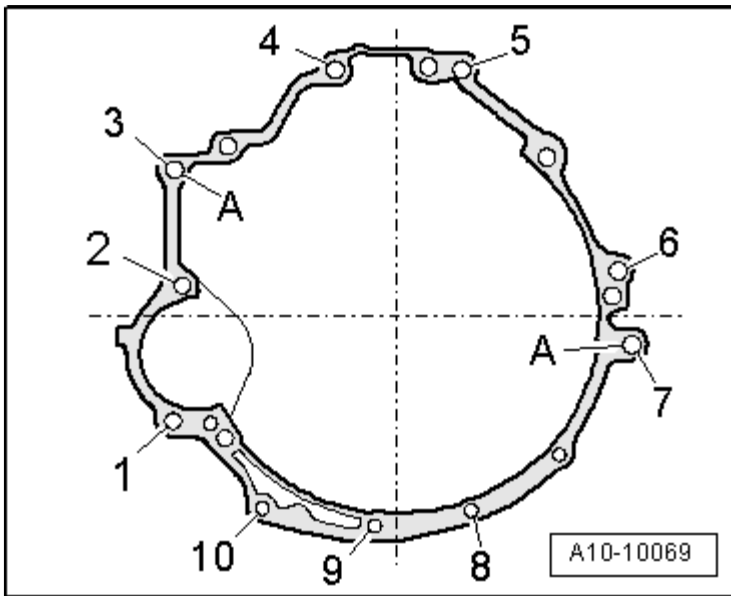
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Before installing transmission, check for correct positioning of dowel sleeves - **A** - at cylinder block. Install new dowel sleeves if necessary.
- If an intermediate plate was installed between engine and transmission, reinstall plate in same position.
- Before joining engine and transmission, turn torque converter and drive plate (on engine) until one hole and one tapped hole are in line with the opening for the removed starter.
- When pushing the engine and transmission together, ensure that no cables, lines, etc. can become trapped.

When you then install the transmission, adhere to the following instructions.

**CAUTION:**

- Before and while you are tightening the bolts on the engine/transmission flange keep checking that the torque converter can still be rotated behind the drive plate.
- If the converter cannot be turned, it must be assumed that it has not been installed correctly and the drive lugs on the converter or the ATF pump will be damaged when the bolts are fully tightened.

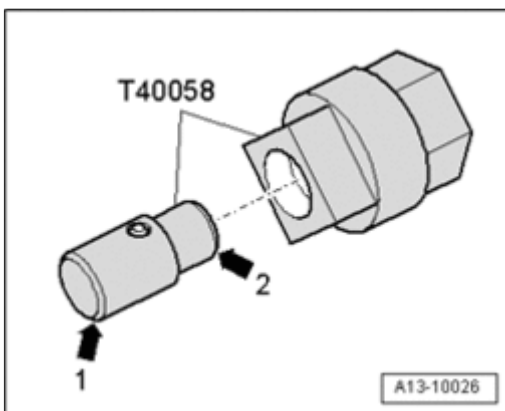


**Fig. 110: Identifying Engine/Transmission Threaded Connections**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Bolt transmission onto engine.

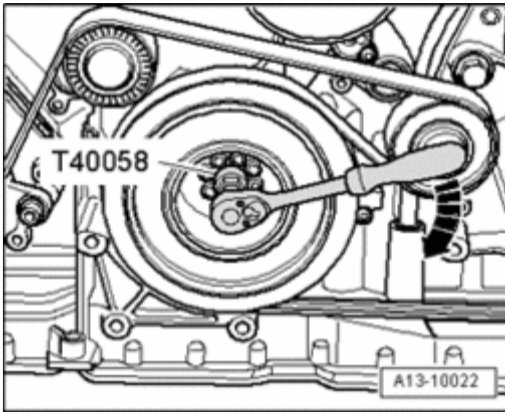
**NOTE:**

- Tightening torques only apply to lightly greased, oiled, phosphated or blackened nuts and bolts.
- Additional lubricant such as engine or gear oil may be used, but do not use graphite lubricant.
- Do not use parts which have been degreased.
- Tolerance for tightening torques  $\pm 15\%$ .



**Fig. 111: Inserting Guide Pin Of Adapter T40058 So That Large Diameter Points To Engine**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Insert adapter T40058 guide pin so that the large diameter - **arrow 1** - faces engine. The smaller diameter - **arrow 2** - faces adapter.



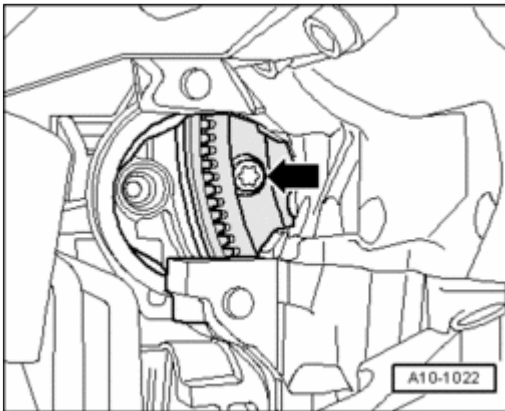
**Fig. 112: Loosening Torque Converter Bolts Using Adapter T40058**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Counter-hold crankshaft using adapter T40058 to secure torque converter bolts.

**NOTE:**

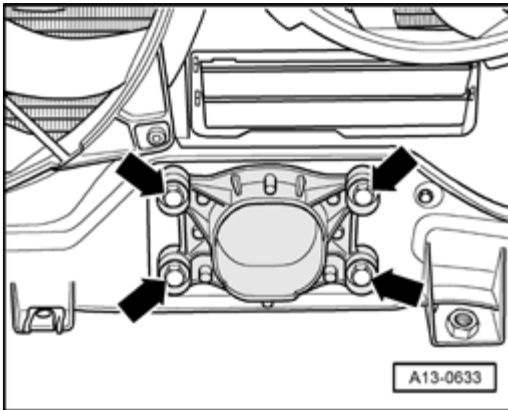
- - Arrow - can be disregarded.

- Use new ribbed bolts to secure torque converter to drive plate.



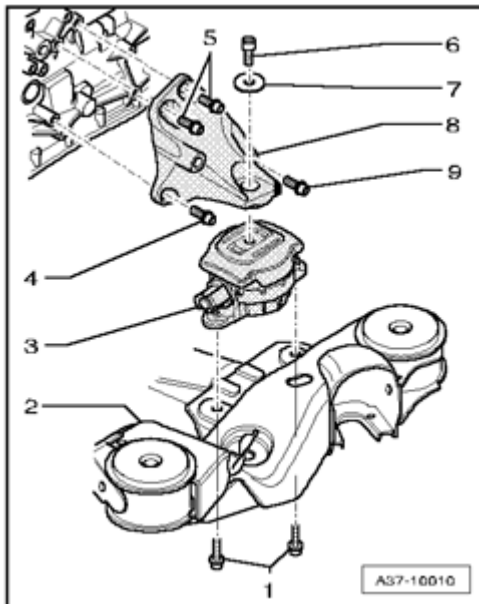
**Fig. 113: Torque Converter Bolts**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Screw in 3bolts - **arrow** - for torque converter hand-tight through opening of removed starter (turning crankshaft  $\frac{1}{3}$  turn each time).
- Tighten torque converter bolts to torque (turning crankshaft  $\frac{1}{3}$  turn each time).
- Install starter --> **27 - STARTER, GENERATOR, CRUISE CONTROL** .



**Fig. 114: Placing Torque Support On Rubber Buffer For Torque Support And Tightening Bolts**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Loosen bolts - **arrows** - for torque reaction support.
- Allow stop for torque reaction support to settle on rubber buffer for torque reaction support and re-tighten bolts.

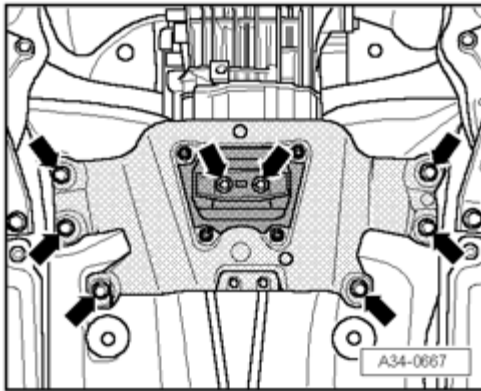


**Fig. 115: Left Transmission Support, Bolts And Transmission Mounting - Vehicles With 6-Cyl. GDI Engine**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

On vehicles with 6-cyl. GDI engine:

- Install transmission supports and transmission mountings.



**Fig. 116: Left Transmission Support, Bolts And Transmission Mounting - Vehicles With 8-Cyl. Engine**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

On vehicles with 8-cyl. engine:

- Install transmission support, transmission mounting and tunnel cross member.

**NOTE:**

- **When replacing transmission, take off transmission support from transmission to be exchanged and install to replacement transmission**

All models:

- Secure drive shaft to transmission --> **39 FINAL DRIVE, REAR DIFFERENTIAL** .
- Bolt drive axles to flange shafts --> **40 - FRONT SUSPENSION** .
- Electrical connections and routing Electrical Wiring Diagrams, Troubleshooting Component Locations
- Check selector lever cable adjustment --> **Selector lever cable, adjusting.**
- Check oil level in final drive (front) --> **Front final drive gear oil.**
- Check oil level in transfer gear --> **Transfer gear oil level.**
- Install exhaust system free of stress -->
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 3.2 V6 4V ENGINE MECHANICAL, ENGINE CODE(S): BKH
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BAT, BNK
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BVJ
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** 5.2 LITER 10-CYL. 4V ENGINE MECHANICAL ENGINE CODE(S): BXA
- Follow steps required after connecting battery --> **27 - STARTER, GENERATOR, CRUISE CONTROL** .

○ Fill cooling system -->

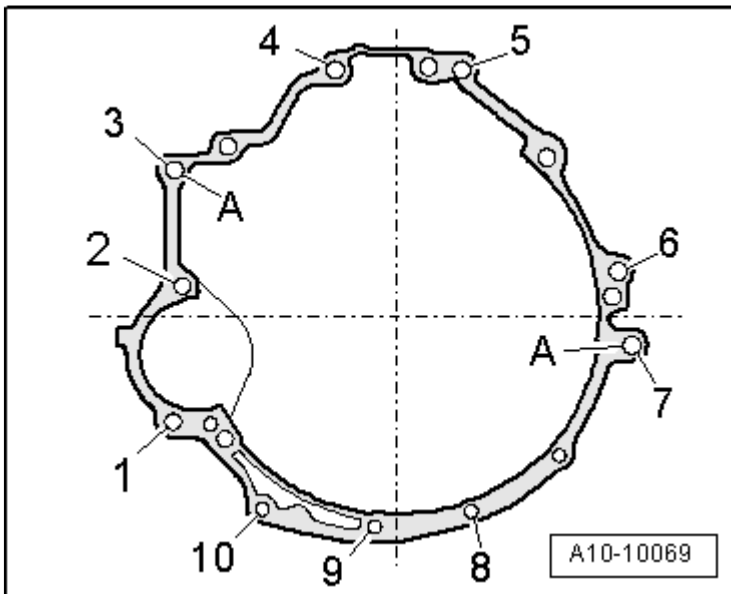
- **19 - ENGINE - COOLING SYSTEM** for 3.2 V6 4V ENGINE MECHANICAL, ENGINE CODE (S): BKH
- **19 - ENGINE - COOLING SYSTEM** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BAT, BNK
- **19 - ENGINE - COOLING SYSTEM** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BVJ
- **19 - ENGINE - COOLING SYSTEM** for 4.2 LITER V8 5V FUEL INJECTION AND IGNITION, ENGINE CODE(S): BAT, BNK
- **19 - ENGINE - COOLING SYSTEM** for 5.2 LITER 10-CYL. 4V ENGINE MECHANICAL ENGINE CODE(S): BXA

○ Check ATF level in planetary gearbox --> **ATF level, checking and correcting.**

○ Deactivate jacking mode --> **43 - SELF LEVELING SUSPENSION** .

#### Tightening torques

Component	Nm
Bracket for exhaust pipe lug.	23
Heat shields above drive axles to transmission	23
Heat shield for drive shaft to transmission cover	25
Bracket for noise insulation to subframe	10
Support bracket to transmission	10
Torque converter to drive plate; always replace bolts	85

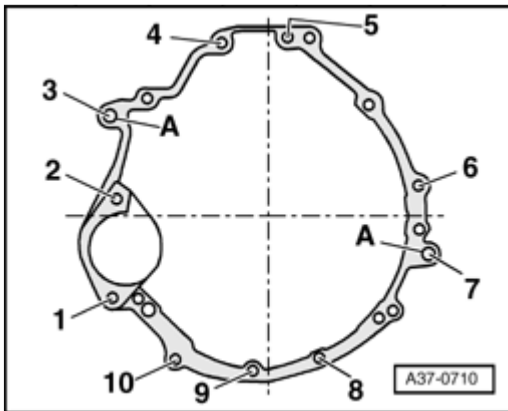


**Fig. 117: Identifying Engine/Transmission Threaded Connections**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

Securing engine/transmission assembly on vehicles with 6-cyl. GDI engine:

Item	Bolt	Nm
1	M10x80	65 * See note
2	M10x90	65 * See note
3, 4, 5	M12x95	65
6, 7	M12x115	65
8, 9, 10	M10x80	45
A	Dowel sleeves for centering	

\*Bolt strength 10.9



**Fig. 118: Identifying Engine/Transmission Threaded Connections**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

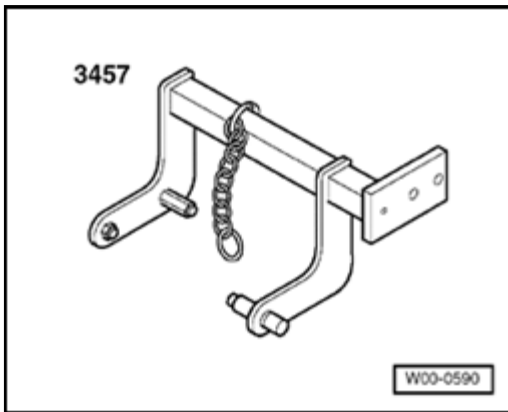
Securing engine/transmission assembly on vehicles with 8-cyl. engine:

Item	Bolt	Nm
1	M10x80	65 * See note
2	M12x90	65 * See note
3	M12x105	65
4, 5	M12x100	65
6	M12x125	65
7	M12x170	65
8, 9, 10	M10x60	45
A	Dowel sleeves for centering	

\*Bolt strength 10.9

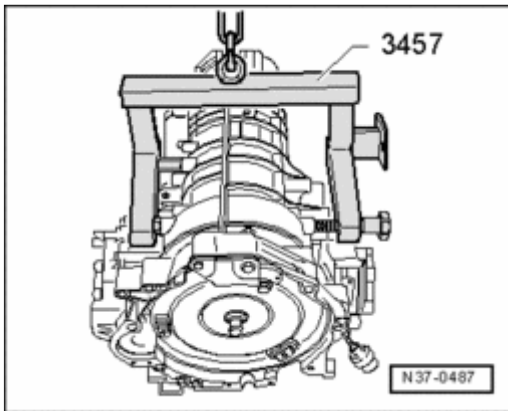
Automatic transmission, transporting

Special tools, testers and auxiliary items required



**Fig. 119: Identifying Special Tools - Automatic Transmission, Transporting**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Attachment and holding rig 3457



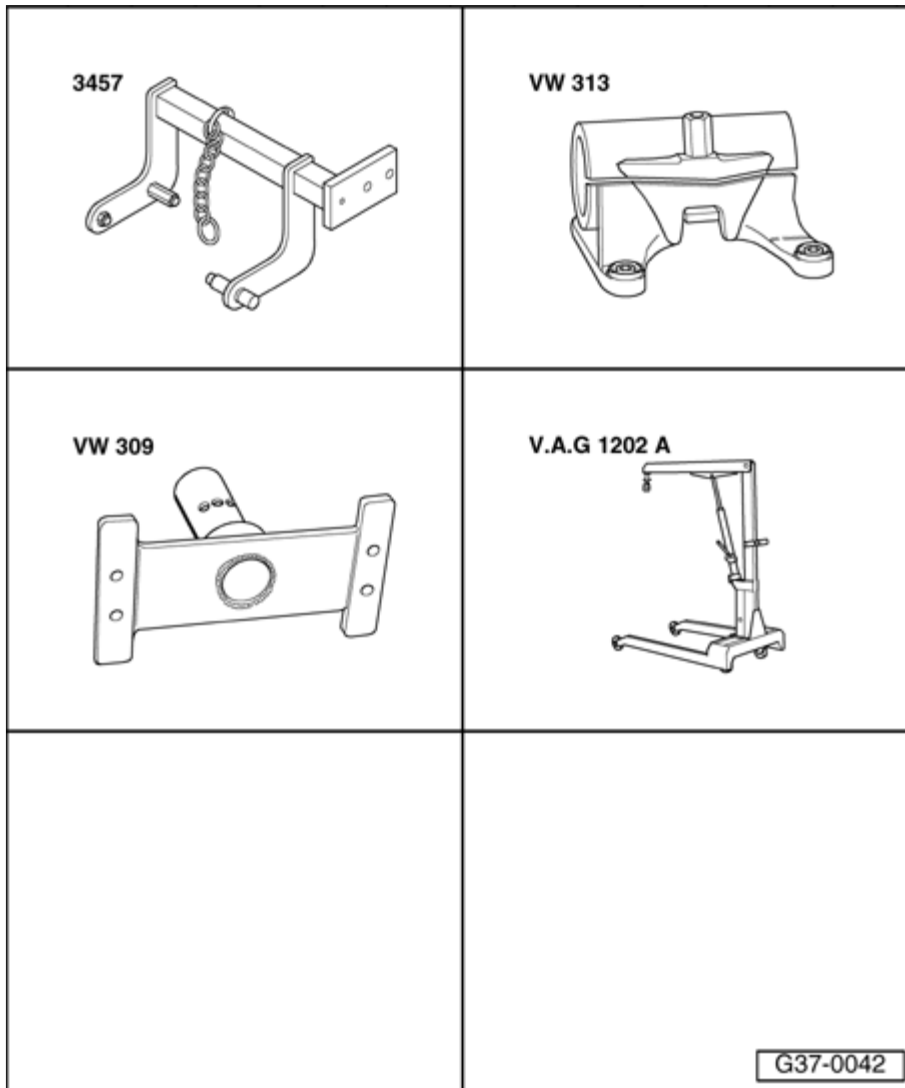
**Fig. 120: Special Tool 3457 Attachment To Transmission Housing**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

Attachment and holding rig 3457 can be used to transport the automatic gearbox and also when setting up transmission support 3282.

- Install attachment and holding rig 3457 to attachment points on transmission housing and secure in place.

#### Securing transmission to assembly stand





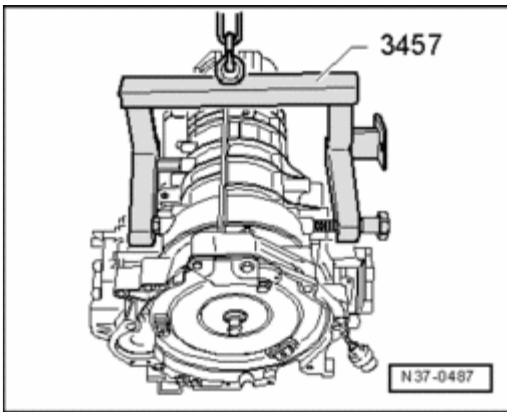
**Fig. 121: Identifying Special Tools -- Transmission, Securing To Assembly Stand**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

### Special tools, testers and auxiliary items required

- Attachment and holding rig 3457
- Support clamp VW313
- Support plate VW309
- Workshop crane V.A.G1202A

### Procedure

- Remove transmission --> **Transmission on vehicles with 6-cyl. GDI engine, removing.**



**Fig. 122: Special Tool 3457 Attachment To Transmission Housing**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Install attachment and holding rig 3457 to attachment points on transmission housing and secure in place.
- Bolt transportation tool onto support plate VW309 and install into support clamp VW313 with the aid of workshop crane.

**CAUTION:** The center of gravity of the transmission is outside the pivot center of the support clamp. A second mechanic has to hold the transmission housing when it is being turned to prevent it from swinging round.

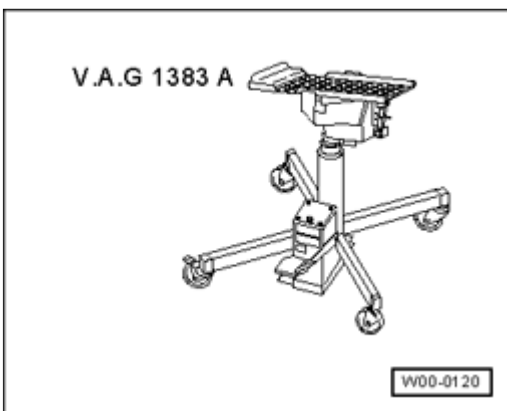
**NOTE:**

- If the filled transmission with oil pan is to be turned upside down on assembly stand, the transmission housing and final drive breathers must be sealed.

**Transmission mounting, removing and installing**

Removing and installing transmission mounting, transmission support and tunnel cross member on vehicles with 6-cyl. GDI and 8-cyl. engine

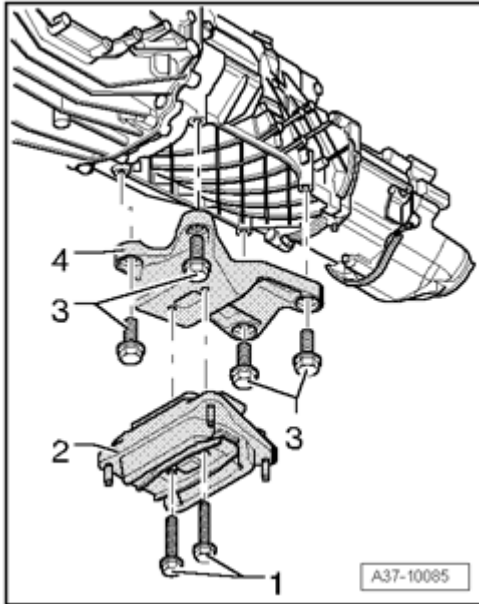
**Special tools, testers and auxiliary items required**



**Fig. 123: Identifying Engine/Transmission Jack V.A.G. 1383 A**

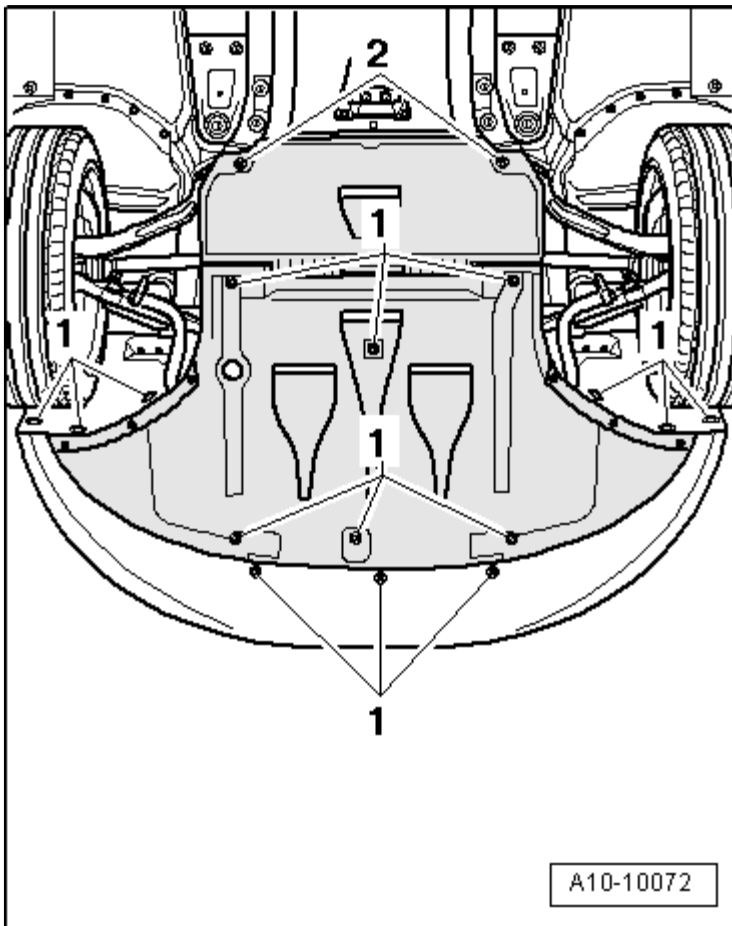
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Engine/transmission jack V.A.G 1383 A
- Block of wood



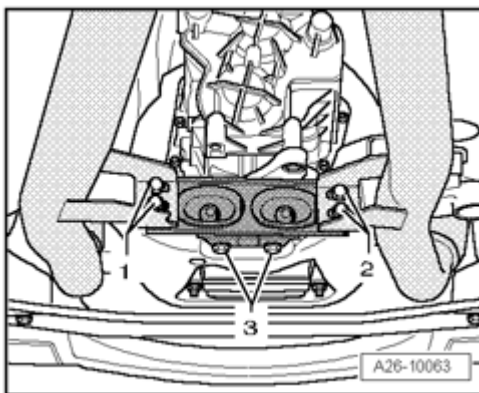
**Fig. 124: Transmission Mounting And Transmission Support**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

Removing transmission mounting - 2 - and transmission support - 4 -



**Fig. 125: Identifying Quick-Release Fasteners & Noise Insulation**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Activate jacking mode --> **43 - SELF LEVELING SUSPENSION** .
- Release quick-release fasteners - **1** - and - **2** - and detach noise insulation panels.



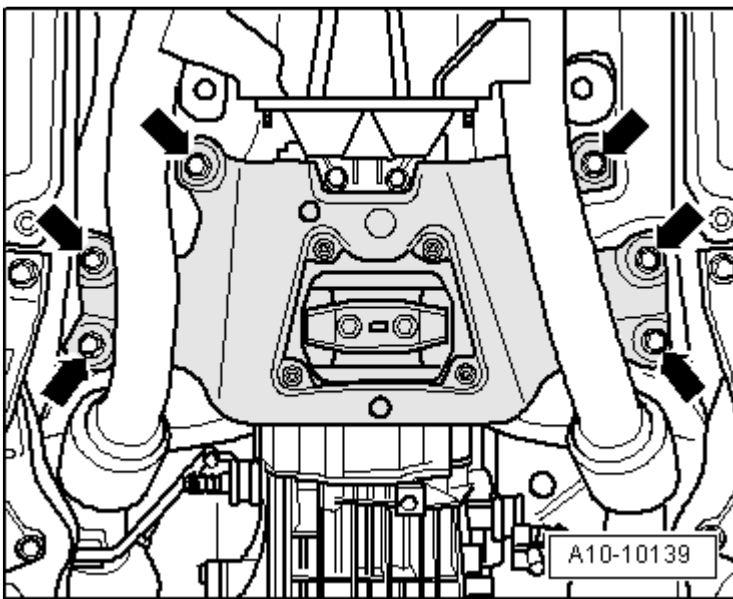
**Fig. 126: Removing/Installing Mounting Bolts For Front Exhaust Pipes**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove bolts - **13** - and remove rear bracket for front exhaust pipe.
- Apply lifting column of engine/transmission jack V.A.G 1383 A at transfer gear behind tunnel cross member (place a block of wood between lifting column and transfer gear).

**CAUTION:**

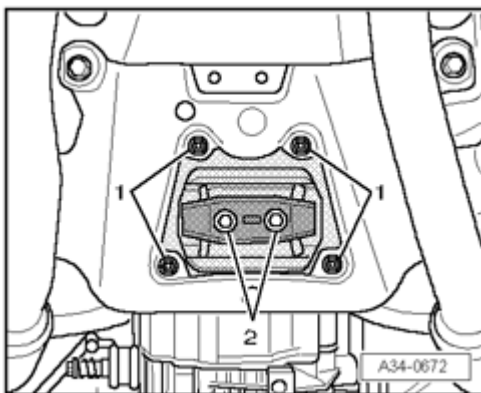
- Do not apply the lifting column with the block of wood under the transmission oil pan.
- When a load is applied to the oil pan it is damaged and has to be replaced.

- Use engine/transmission jack V.A.G 1383 A to lift transmission up slightly.



**Fig. 127: Removing Bolts On Tunnel Cross Member**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

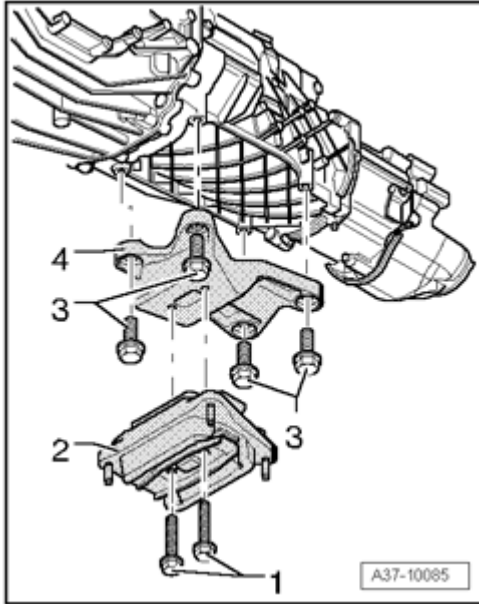
- Remove bolts - **arrows** - for tunnel cross member.



**Fig. 128: Tunnel Cross-Member And Nuts**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove bolts - 1 - and - 2 - and move tunnel cross member slightly towards rear.



**Fig. 129: Transmission Mounting And Transmission Support**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove transmission mounting - 2 - between transmission and tunnel cross member.
- Remove bolts - 3 - and detach transmission support - 4 - from transmission.

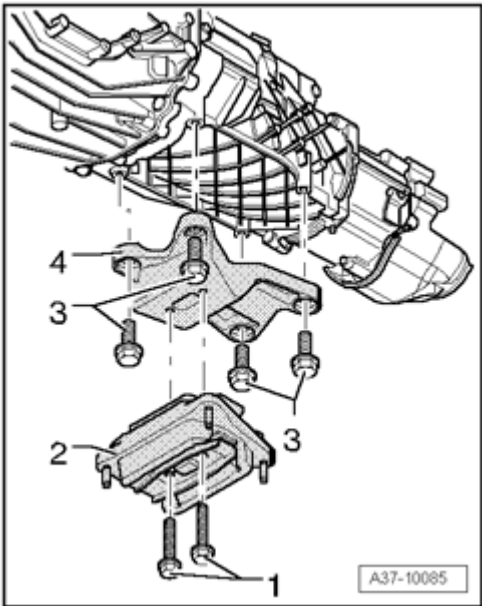
Installing transmission mounting - 2 - and transmission support - 4 -

Perform installation in reverse sequence of removal.

- Install transmission support - 4 -.
- Install transmission mounting - 2 -.
- Install tunnel cross member - 2 - *Removing tunnel cross-member* under **Removing and installing transmission mounting, transmission support and tunnel cross member on vehicles with 6-cyl. GDI and 8-cyl. engine**
- Install exhaust system free of stress -->
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 3.2 V6 4V ENGINE MECHANICAL, ENGINE CODE(S): BKH
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BAT, BNK
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BVJ
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** 5.2 LITER 10-CYL. 4V ENGINE

MECHANICAL ENGINE CODE(S): BXA

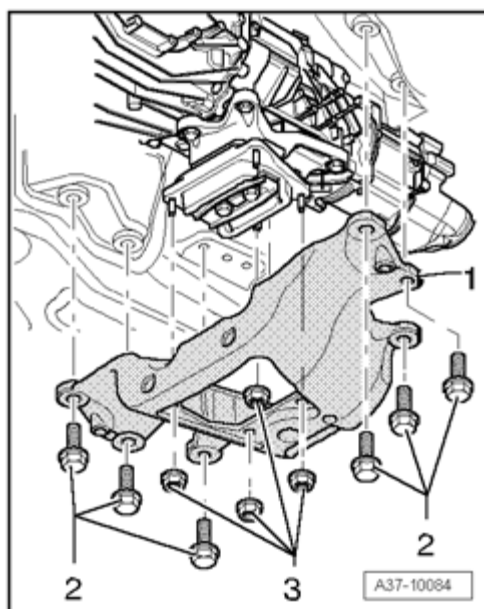
- Deactivate jacking mode --> **43 - SELF LEVELING SUSPENSION**



**Fig. 130: Transmission Mounting And Transmission Support**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

Tightening torques

Component	Nm
Transmission support to transmission - <b>3</b> -	23
Transmission mounting to transmission support - <b>1</b> -	23

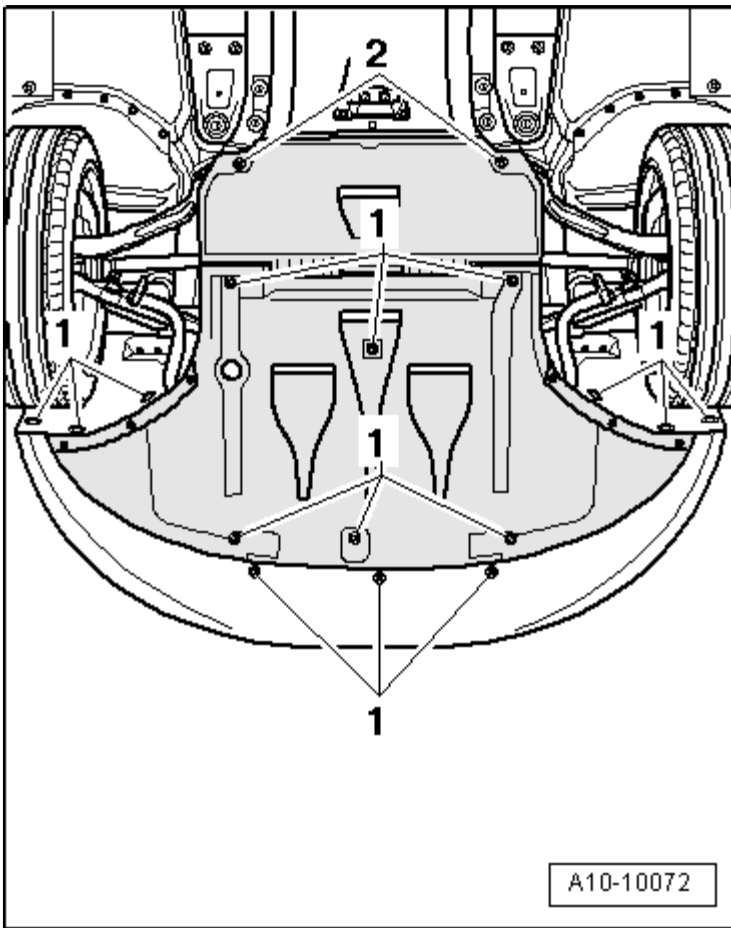


**Fig. 131: Tunnel Cross-Member**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

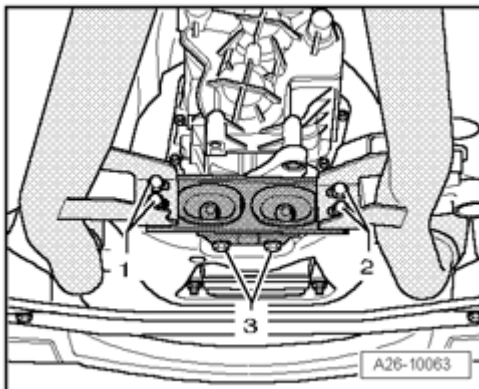
Removing tunnel cross-member - 1 -





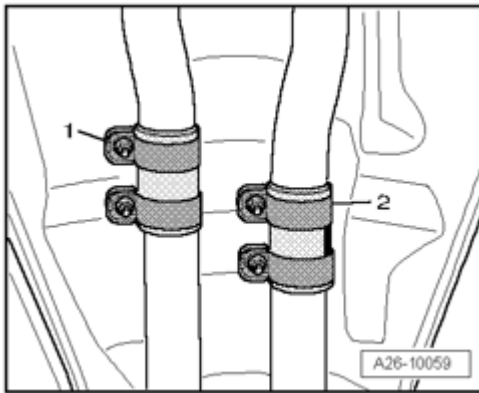
**Fig. 132: Identifying Quick-Release Fasteners & Noise Insulation**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Activate jacking mode --> Running gear, front-wheel drive and four-wheel drive **43 - SELF LEVELING SUSPENSION** .
- Release quick-release fasteners - **1** - and - **2** - and detach noise insulation panels.



**Fig. 133: Removing/Installing Mounting Bolts For Front Exhaust Pipes**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove bolts - **13** - and remove rear bracket for front exhaust pipe.



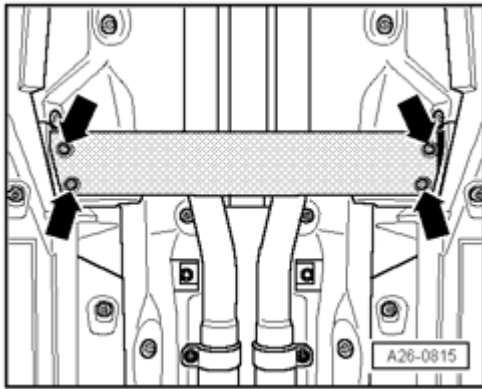
**Fig. 134: Loosening Clamping Sleeves**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Loosen clamps - **1** - and - **2** -.
- Remove front exhaust pipe with catalytic converter (left-side) -->
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 3.2 V6 4V ENGINE MECHANICAL, ENGINE CODE(S): BKH
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BAT, BNK
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BVJ
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** 5.2 LITER 10-CYL. 4V ENGINE MECHANICAL ENGINE CODE(S): BXA

**CAUTION:** To prevent damage, the flexible joints in the front exhaust pipe must not be bent more than 10 °.

- Tie up front exhaust pipe (right) to the side or support from below.



**Fig. 135: Removing Front Transverse Beam**

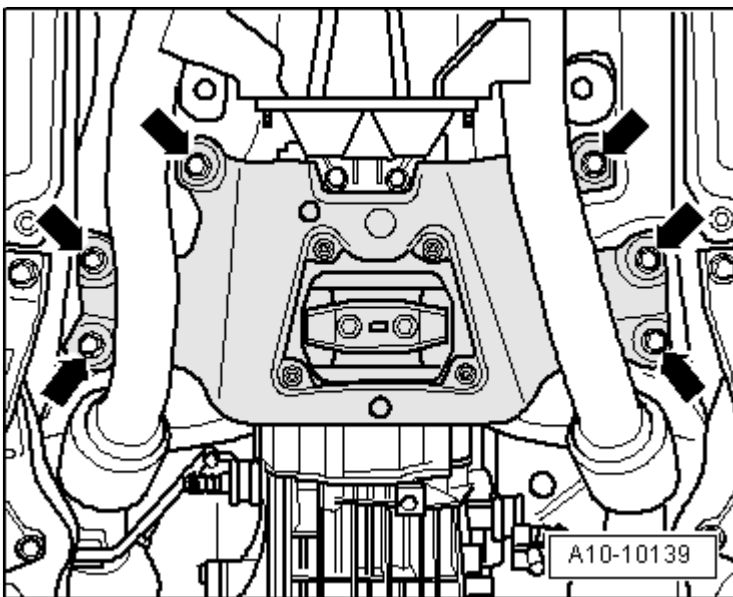
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove front cross member - **arrows** -.
- Apply lifting column of engine/transmission jack V.A.G 1383 A at transfer gear behind tunnel cross member (place a block of wood between lifting column and transfer gear).

**CAUTION:**

- Do not apply the lifting column with the block of wood under the oil pan.
- When a load is applied to the oil pan it is damaged and has to be replaced.

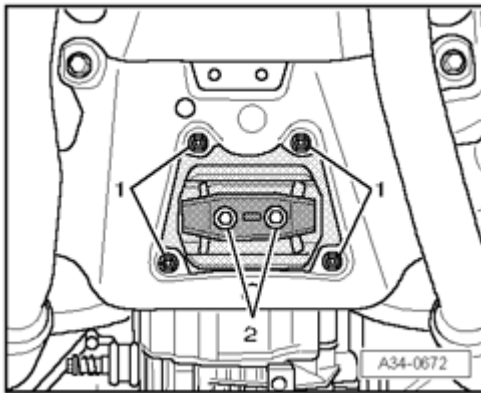
- Use engine/transmission jack V.A.G 1383 A to lift transmission up slightly.



**Fig. 136: Removing Bolts On Tunnel Cross Member**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove bolts - **arrows** - for tunnel cross member.

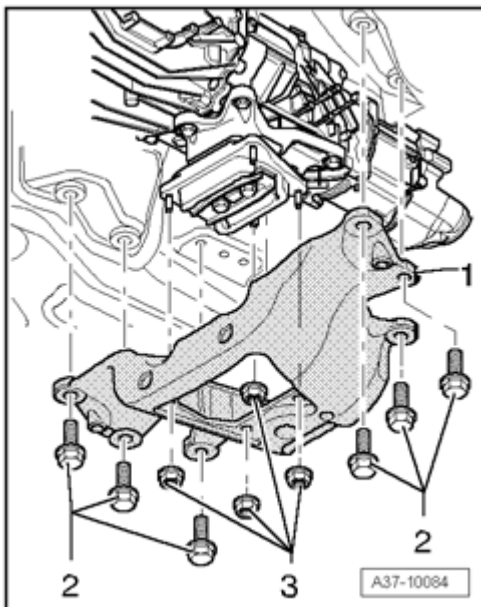


**Fig. 137: Tunnel Cross-Member And Nuts**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove nuts - **1** -.
- Remove tunnel cross member.

Installing tunnel cross-member - **1** -



**Fig. 138: Tunnel Cross-Member**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

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

Tightening torques

## 2008 Audi A6 Quattro

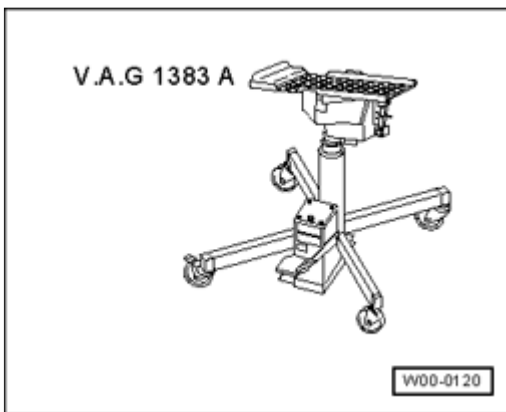
TRANSMISSION Automatic transmission 09L, all wheel drive

Component	Nm
Transmission mounting to tunnel cross member - <b>3</b> -	23
Tunnel cross member to body - <b>2</b> -	40

- Install exhaust system free of stress -->
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 3.2 V6 4V ENGINE MECHANICAL, ENGINE CODE(S): BKH
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BAT, BNK
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BVJ
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** 5.2 LITER 10-CYL. 4V ENGINE MECHANICAL ENGINE CODE(S): BXA
- Deactivate jacking mode --> **43 - SELF LEVELING SUSPENSION**

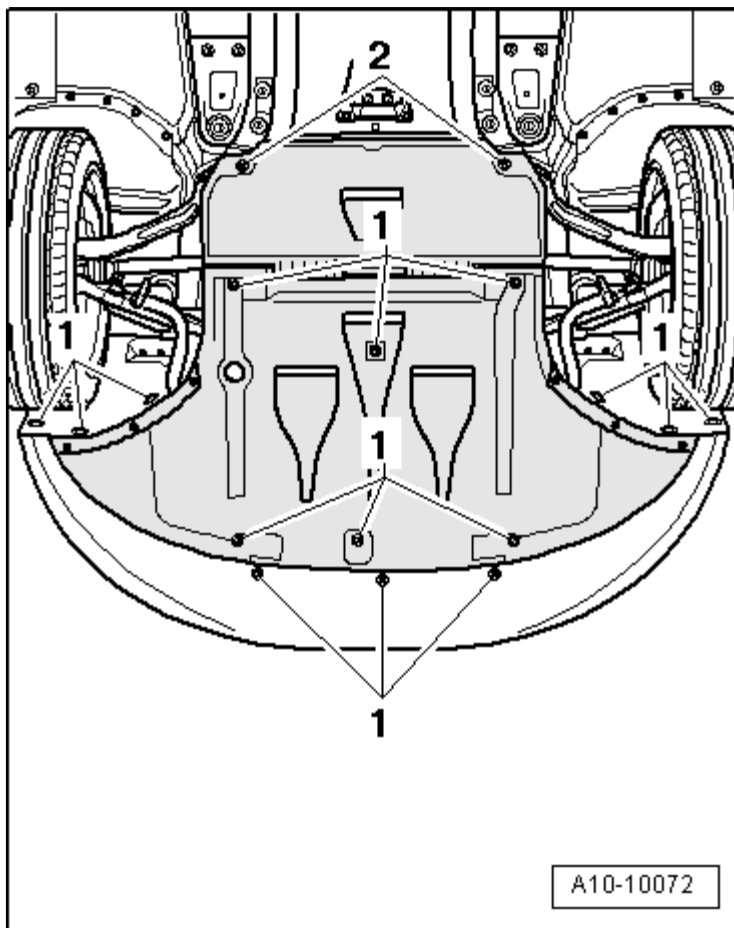
Removing and installing transmission support and transmission mounting (right and left) on vehicles with 6-cyl. GDI engine

### Special tools, testers and auxiliary items required



**Fig. 139: Identifying Engine/Transmission Jack V.A.G. 1383 A**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

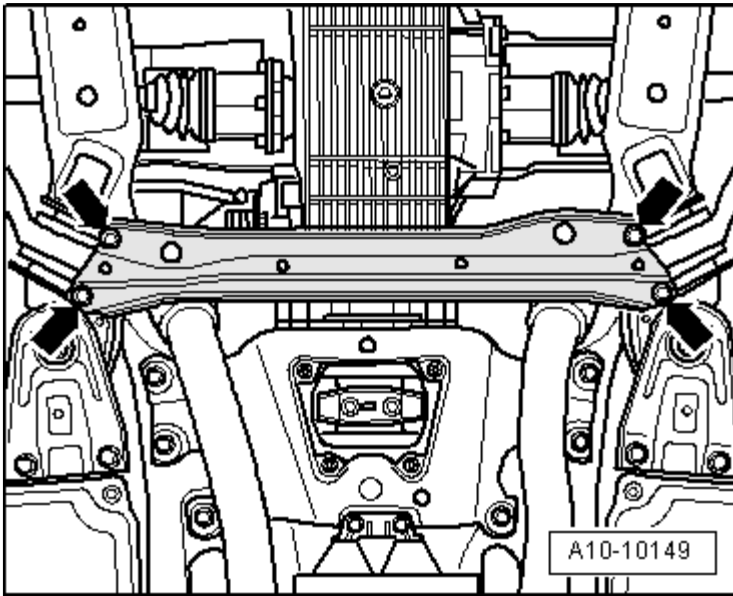
- Engine/transmission jack V.A.G 1383 A



**Fig. 140: Identifying Quick-Release Fasteners & Noise Insulation**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

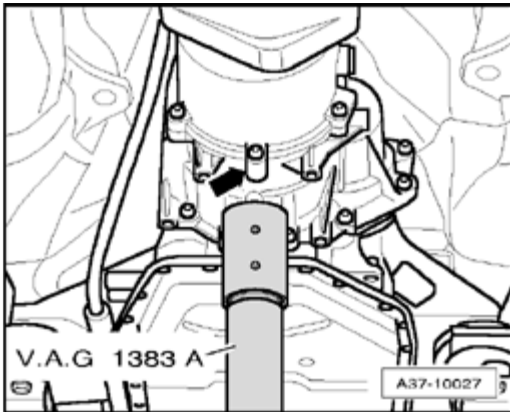
### Removing

- Activate jacking mode --> **43 - SELF LEVELING SUSPENSION** .
- Unfasten quick-release catches - **2** - and detach rear noise insulation.



**Fig. 141: Removing Subframe Transverse Beam**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove front cross piece - **arrows** -.



**Fig. 142: Placing Lifting Surface Of Engine/Transmission Jack V.A.G 1383 A Centrally On Lower Housing Base**

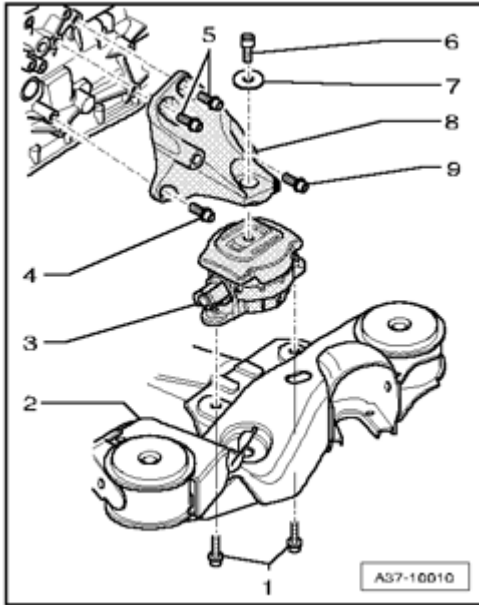
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Detach universal mounting bracket V.A.G 1359/2 from engine/transmission jack V.A.G 1383 A.
- Place telescopic column of engine/transmission jack V.A.G 1383 A centered below cast lug on transmission housing - **arrow** - and raise transmission slightly.

Transmission support and transmission mounting (left-side) on vehicles with 6-cyl. GDI engine:

- Remove front exhaust pipe with catalytic converter (left side) -->
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 3.2 V6 4V ENGINE MECHANICAL, ENGINE CODE(S): BKH

- **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BAT, BNK
- **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BVJ
- **26 - EXHAUST SYSTEM, EMISSION CONTROLS** 5.2 LITER 10-CYL. 4V ENGINE MECHANICAL ENGINE CODE(S): BXA



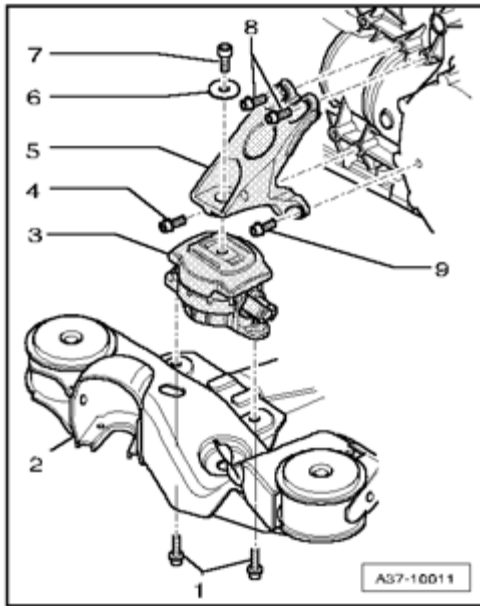
**Fig. 143: Left Transmission Support, Bolts And Transmission Mounting - Vehicles With 6-Cyl. GDI Engine**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove bolts - **1** -.
- Remove bolts - **4** - , - **5** - and - **9** - and remove left transmission support with transmission mounting.

Transmission support and transmission mounting (right-side) on vehicles with 6-cyl. GDI engine:





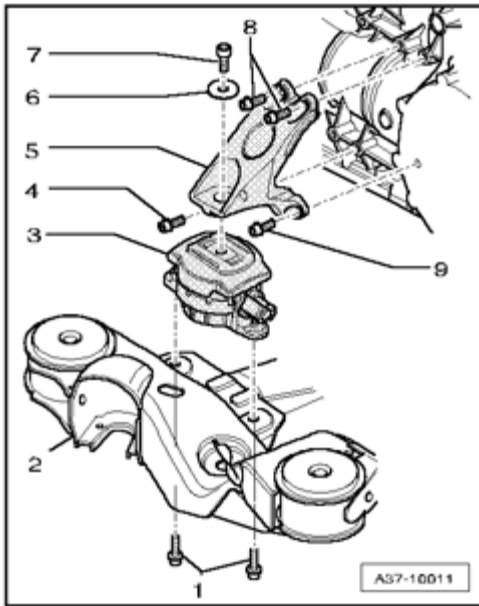
**Fig. 144: Right Transmission Support, Bolts And Transmission Mounting**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Remove bolts - 1 -.
- Remove bolts - 4 - , - 8 - and - 9 - and remove right transmission support with transmission mounting.

### Installing

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

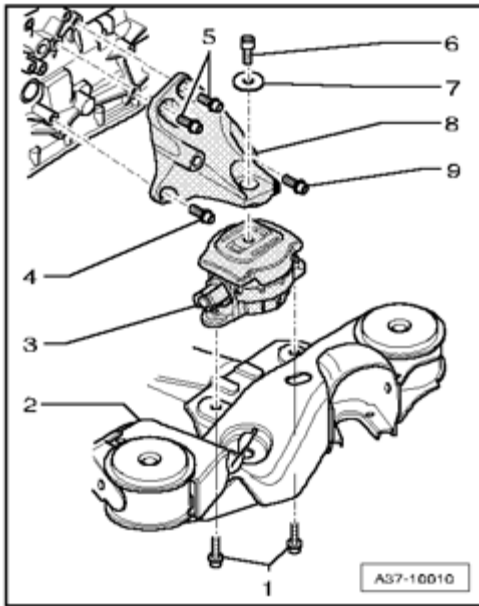
- Install exhaust system free of stress -->
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 3.2 V6 4V ENGINE MECHANICAL, ENGINE CODE(S): BKH
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BAT, BNK
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BVJ
  - **26 - EXHAUST SYSTEM, EMISSION CONTROLS** 5.2 LITER 10-CYL. 4V ENGINE MECHANICAL ENGINE CODE(S): BXA
- Deactivate jacking mode --> **43 - SELF LEVELING SUSPENSION** .



**Fig. 145: Right Transmission Support, Bolts And Transmission Mounting**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

Tightening torques of transmission mounting (right-side) on vehicles with 6-cyl. GDI engine

1. 23 Nm
2. Subframe
3. Transmission mounting (right-side)
4. 23 Nm
5. Transmission support (right-side)
6. Washer
7. 40 Nm
8. 23 Nm
9. 23 Nm



**Fig. 146: Left Transmission Support, Bolts And Transmission Mounting - Vehicles With 6-Cyl. GDI Engine**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

Tightening torques of transmission mounting (left-side) on vehicles with 6-cyl. GDI engine

1. 23 Nm
2. Subframe
3. Transmission mounting (left-side)
4. 23 Nm
5. 23 Nm
6. 40 Nm
7. Washer
8. Transmission support (left-side)
9. 23 Nm

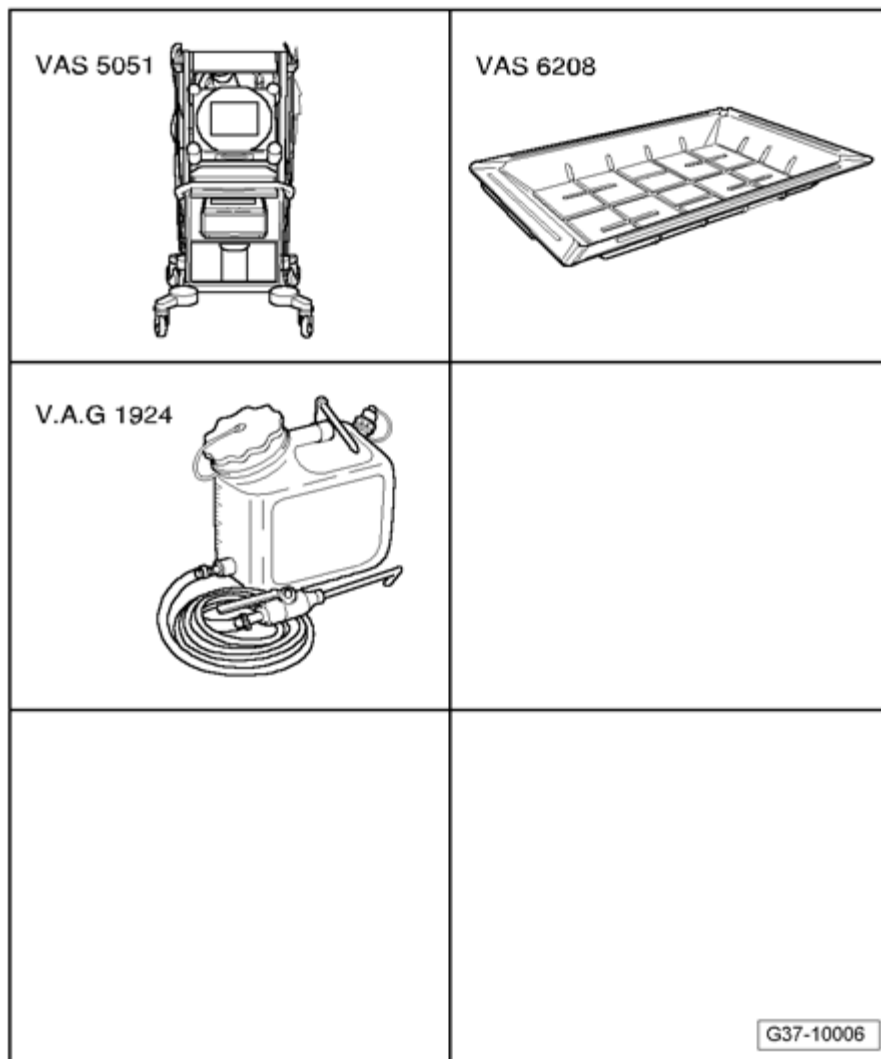
## ATF LEVEL IN PLANETARY GEARBOX

ATF level in planetary gearbox

### NOTE:

- Read the rules when working on the automatic transmission --> Read the rules.

ATF level, checking and correcting



**Fig. 147: Identifying Special Tools - ATF Level, Checking And Correcting**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

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

- Vehicle diagnostic, testing and information system VAS5051
- Drip tray for workshop hoist VAS 6208
- ATF charging device V.A.G 1924
- Safety goggles

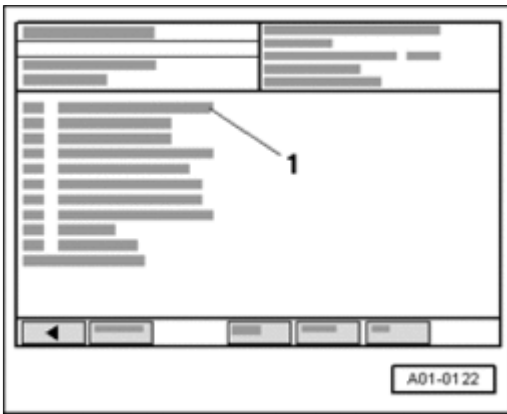
#### Test conditions

- Transmission must not be in emergency running (backup) mode.
- Vehicle must be level (horizontal).
- Selector lever in position "P" , engine idling.

- Air conditioner and heating system switched off.
- Vehicle diagnostic, testing and information system VAS5051 connected up; vehicle self-diagnosis and vehicle system "02 - Gearbox electronics" selected.
- The ATF temperature at the beginning of the test must not be higher than 30 ° C. If necessary, first allow the transmission to cool down.

**NOTE:**

- The ATF temperature is taken from the reading on the vehicle diagnostic, testing and information system VAS5051.
- The ATF level will vary according to the ATF temperature.
- If the ATF level is checked when the ATF temperature is too low, this will result in overfilling.
- If the level is checked when the ATF temperature is too high, this will result in underfilling.
- Both overfilling and underfilling have a detrimental effect on the functioning of the transmission
- Use only the correct type of ATF (available as a replacement part) for the planetary gearing in automatic transmission 09L. Other oils cause malfunctions and/or failure of the transmission.

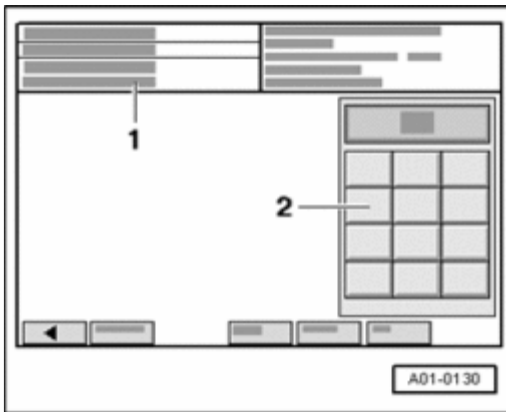


**Fig. 148: Diagnostic System VAS 5051: Display -- Basic Setting**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

ATF temperature reading

Display on VAS5051 :

- From list - **1** - select diagnostic function "08 - Read data block (measured value block)".

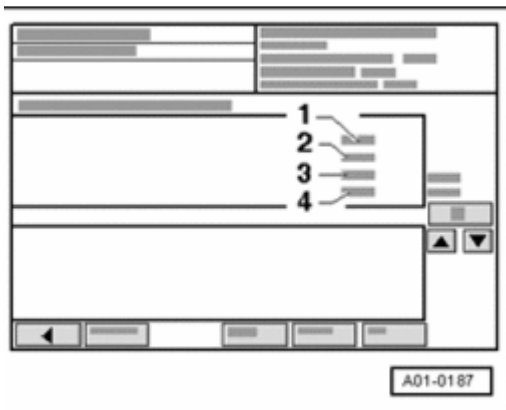


**Fig. 149: Diagnostic System VAS 5051: Display - Display Group And Key Pad**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

Display on VAS5051 :

1 - Enter display group

- Use keypad - **2** - to enter "4" for "Display group number 4" and confirm by touching Q key.



**Fig. 150: Diagnostic System VAS 5051: Display**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

Display on VAS5051 :

- Reading for ATF temperature is shown in display zone - **1** -.

Checking and correcting ATF level

**NOTE:**

- The ATF level is checked at the ATF inspection plug.
- At an ATF temperature between 35 ° and 45 ° C (50 ° C for tropical countries) a small amount of fluid should drain out of the inspection bore if the transmission is filled with the proper quantity of ATF (this is normal as the fluid expands as it heats up).

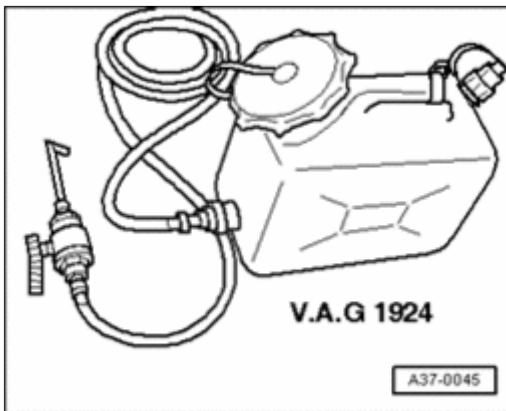
- Drive vehicle onto a four-column lifting platform or over an inspection pit in order for it to be absolutely horizontal.

**NOTE:**

- **Before raising the vehicle on a lifting platform (wheels off the ground) you must first activate the jacking mode --> 43 - SELF LEVELING SUSPENSION .**

- Fill container of ATF charging device V.A.G 1924 with ATF for automatic transmission 09L.

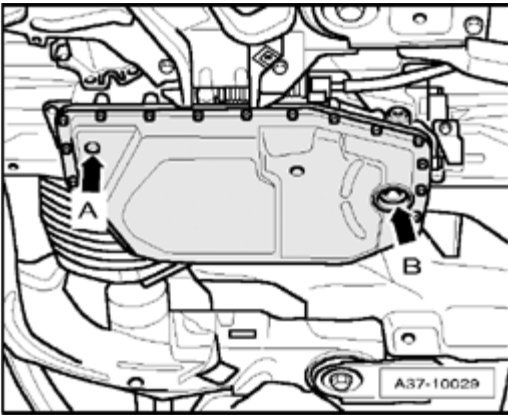
**CAUTION: The ATF charging device must be clean and the ATF must not be mixed with other types of ATF!**



**Fig. 151: Securing Container Of ATF Filler Tool VAG1924 As High Up On Vehicle As Possible**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Secure container for ATF charging device V.A.G 1924 as high as possible on vehicle.
- Start engine and let it idle.
- Place drip tray for workshop hoist VAS 6208 under transmission.

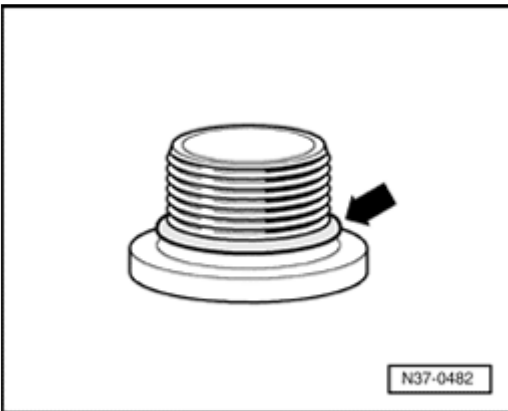
**CAUTION: Wear safety goggles.**



**Fig. 152: Identifying ATF Inspection Plug**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

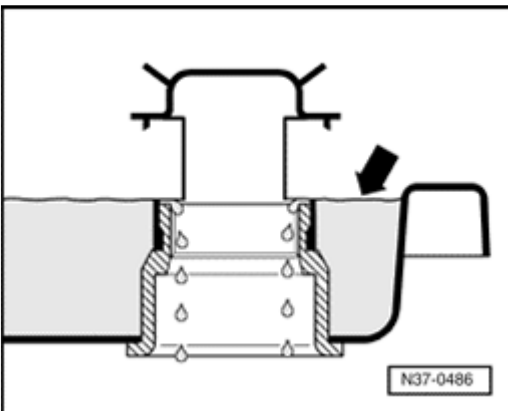
- When an ATF temperature of 35 ° C is reached, remove ATF inspection plug - **arrow B** - and drain off any surplus ATF.



**Fig. 153: Filler Plug Seal**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Replace ATF inspection plug seal - **arrow** -.



**Fig. 154: Correct ATF Level**



Courtesy of VOLKSWAGEN UNITED STATES, INC.

If ATF emerges from the inspection opening before the ATF has reached 40 ° C the ATF level is OK - **arrow** -.

**NOTE:**

- The ATF inspection plug must be screwed in again at the latest when ATF reaches a temperature of 45 ° C (countries with hot climates: 50 ° C).

If still no ATF emerges from ATF inspection opening when ATF has reached 45 ° C, top off with ATF.

- Install new seal on ATF inspection plug and tighten to 80 Nm. The ATF check is now completed.
- End function "08 - Read data block (measured value block)" by touching <-- key.
- Press "06 - End output".
- Switch off ignition and disconnect diagnostic connector.

**NOTE:**

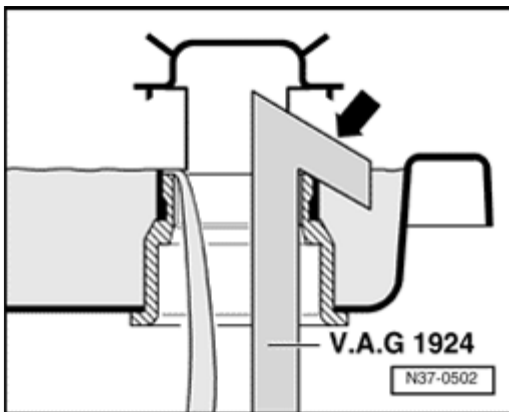
- If the vehicle has been raised on a lifting platform you must also deactivate the jacking mode --> 43 - SELF LEVELING SUSPENSION .

Filling up ATF

If still no ATF emerges from ATF inspection opening when ATF has reached 40 ° C, top off with ATF.

**NOTE:**

- The ATF inspection plug must be screwed in again at the latest when temperature reaches 45 ° C (hot climates: 50 ° C). If necessary, switch off engine, allow gearbox to cool down and repeat the test.



**Fig. 155: Fill With ATF Using V.A.G 1924**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Guide ATF charging device V.A.G 1924 filler nozzle in from below through an opening in the deflector cap - **arrow** - , taking care not to push deflector cap upward out of position.
- Fill with ATF using ATF charging device V.A.G 1924 until ATF comes out of inspection hole.

**NOTE:**

- The ATF level must not be too low or too high, otherwise this would impair the function of the transmission.

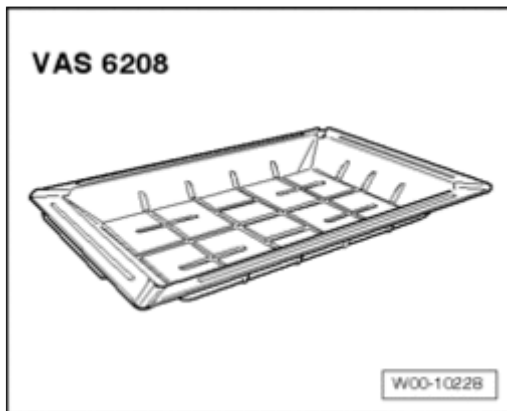
- Install new seal on ATF inspection plug and tighten to 80 Nm.
- End function "08 - Read data block (measured value block)" by touching <-- key.
- Press "06 - End output".
- Switch off ignition and disconnect diagnostic connector.

**NOTE:**

- If the vehicle has been raised on a lifting platform you must also deactivate the jacking mode --> **43 - SELF LEVELING SUSPENSION** .

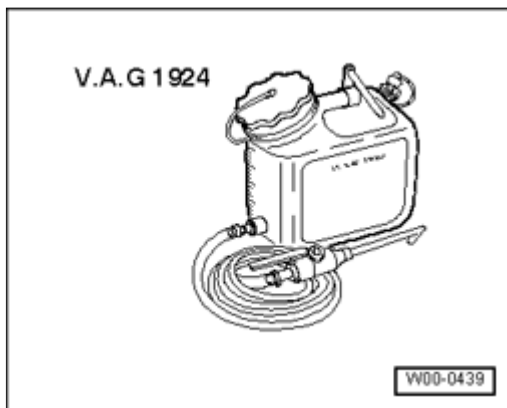
Draining ATF or filling up after performing repairs

Special tools, testers and auxiliary items required



**Fig. 156: Drip Tray For VAS 6100, VAS 6208**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Drip tray for workshop hoist VAS 6208



**Fig. 157: V.A.G 1924 Reservoir**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

- ATF charging device V.A.G 1924
- Safety goggles

**Procedure**

- Engine not running.
- Drive vehicle onto a lifting platform or over an inspection pit in order for it to be absolutely horizontal.

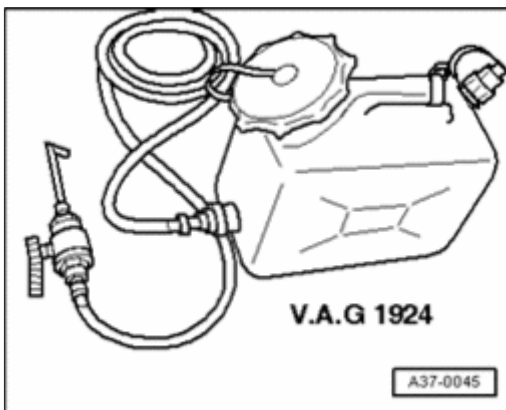
**NOTE:**

- **Before raising the vehicle on a lifting platform (wheels off the ground) you must first activate the jacking mode --> 43 - SELF LEVELING SUSPENSION .**

- Fill container of ATF charging device V.A.G 1924 with ATF for automatic transmission 09L

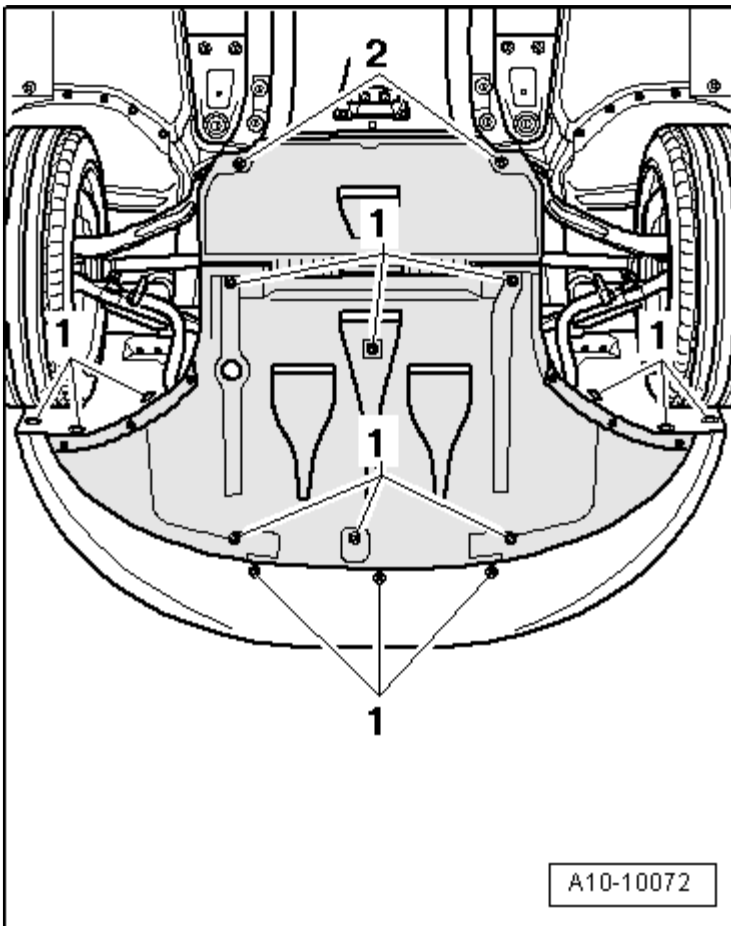
**CAUTION:**

- **The ATF charging device must be clean and the ATF must not be mixed with other types of ATF!**
- **The transmission is destroyed if ATF is mixed with other types of ATF.**

**CAUTION:**

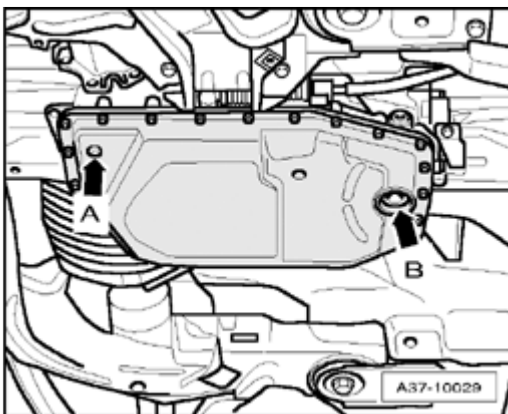
**Fig. 158: Securing Container Of ATF Filler Tool VAG1924 As High Up On Vehicle As Possible**  
**Courtesy of VOLKSWAGEN UNITED STATES, INC.**

- Secure container for ATF charging device V.A.G 1924 as high as possible on vehicle.



**Fig. 159: Identifying Quick-Release Fasteners & Noise Insulation**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Unfasten quick-release catches - 2 - and detach rear noise insulation.



**Fig. 160: Identifying ATF Inspection Plug**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

Draining ATF

- Place drip tray for workshop hoist VAS 6208 under transmission.
- Remove ATF drain plug - **arrow A** -.
- Drain ATF.

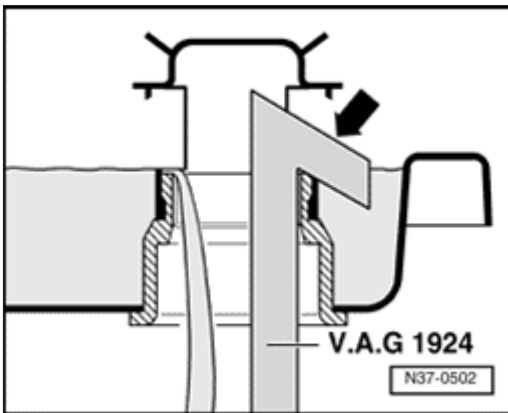
**NOTE:**

- Observe relevant disposal regulations.
- The engine must not be started and vehicle must not be towed without ATF in transmission.
- The drain plug with seal must be replaced.

- Tighten new drain plug - **arrow A** - to 12 Nm.

## Filling transmission with ATF

- Remove ATF inspection plug - **arrow B** -.

**Fig. 161: Fill With ATF Using V.A.G 1924**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Guide ATF charging device V.A.G 1924 filler nozzle in from below through an opening in deflector cap - **arrow** - , taking care not to push deflector cap upward out of position.
- Fill with ATF using ATF charging device V.A.G 1924 until ATF comes out of inspection hole.
- Shift selector lever to position "P".
- Start engine.

**CAUTION:** Allow engine to idle for approx. 20 seconds and then turn off.**NOTE:**

- This process of starting the engine for a short period of time and then turning it off is required to ensure that the ATF pump does not draw in air. This prevents the building up of foam in the ATF, which would result in an inaccurate reading of the ATF level.

- Continue filling with ATF using ATF charging device V.A.G 1924 until ATF comes out of inspection hole again.
- Start engine and allow to idle.
- With the engine idling, continue filling with ATF using ATF charging device V.A.G 1924 until ATF comes out of inspection hole again.
- Tighten ATF inspection plug.
  
- With engine idling, press brake pedal and shift selector lever through all selector lever positions leaving selector lever at least 10seconds in each position.
- Shift selector lever to position "N".
- Increase engine speed to 2000 rpm and maintain for at least 60 seconds.
- Shift selector lever to position "P".
  
- Check ATF level --> **ATF level, checking and correcting.**

**NOTE:**

- Observe all notes and test requirements for "Checking and correcting ATF level".

**ATF LINES**

## ATF lines

**NOTE:**

- General repair instructions --> **General repair instructions.**

## ATF lines and ATF cooler, assembly overview

**NOTE:**

- Read the rules when working on the automatic transmission --> **Read the rules.**
- Thoroughly clean all joints and surrounding areas before disassembling.
- Check ATF level after replacing ATF lines/hoses or ATF cooler --> **ATF level, checking and correcting.**

**CAUTION:**

- Drain cooling system completely before removing and installing ATF cooler -->
  - **19 - ENGINE - COOLING SYSTEM** for 3.2 V6 4V ENGINE MECHANICAL, ENGINE CODE(S): BKH
  - **19 - ENGINE - COOLING SYSTEM** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BAT, BNK
  - **19 - ENGINE - COOLING SYSTEM** for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BVJ
  - **19 - ENGINE - COOLING SYSTEM** for 4.2 LITER V8 5V FUEL

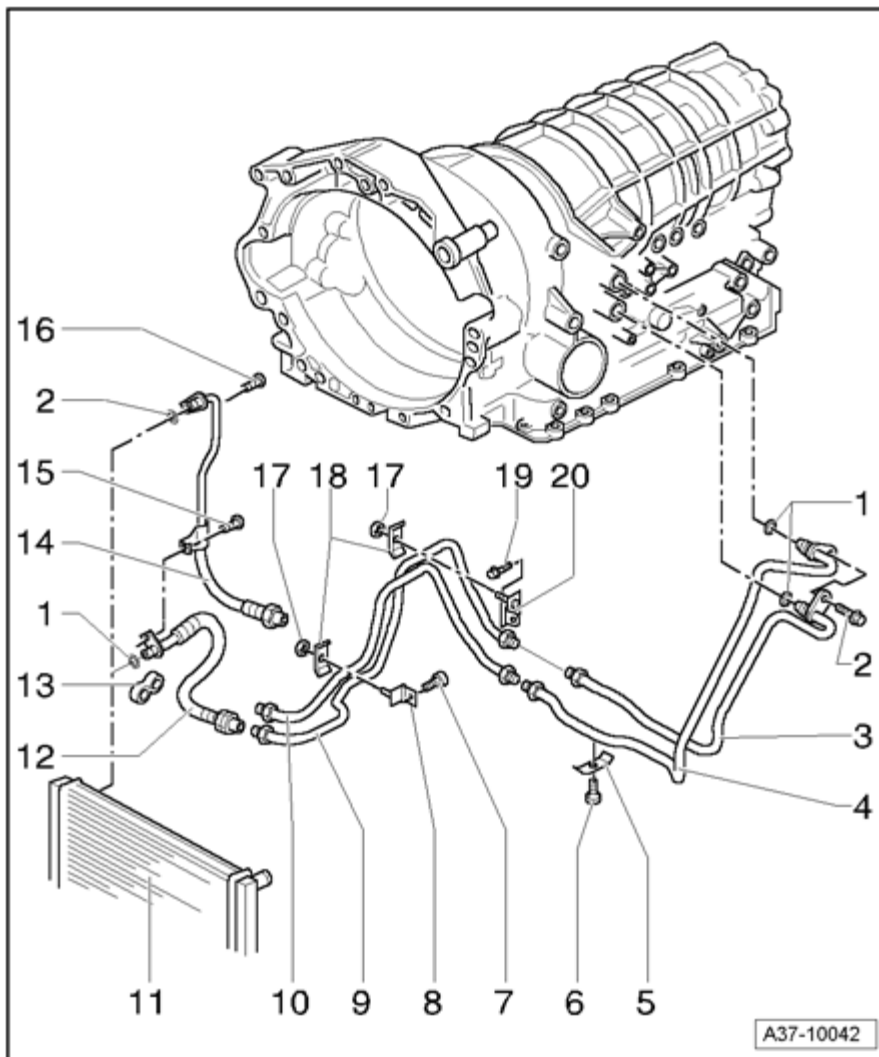
**INJECTION AND IGNITION, ENGINE CODE(S): BAT, BNK**

- **19 - ENGINE - COOLING SYSTEM for 5.2 LITER 10-CYL. 4V ENGINE MECHANICAL ENGINE CODE(S): BXA**
- .
- **Always use cooling system charge unit VAS6096 when refilling cooling system -->**
  - **19 - ENGINE - COOLING SYSTEM for 3.2 V6 4V ENGINE MECHANICAL, ENGINE CODE(S): BKH**
  - **19 - ENGINE - COOLING SYSTEM for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BAT, BNK**
  - **19 - ENGINE - COOLING SYSTEM for 4.2 LITER V8 4V ENGINE MECHANICAL, ENGINE CODE(S): BVJ**
  - **19 - ENGINE - COOLING SYSTEM for 4.2 LITER V8 5V FUEL INJECTION AND IGNITION, ENGINE CODE(S): BAT, BNK**
  - **19 - ENGINE - COOLING SYSTEM for 5.2 LITER 10-CYL. 4V ENGINE MECHANICAL ENGINE CODE(S): BXA**
- . **Otherwise there is a danger of malfunction.**

ATF lines and ATF cooler - assembly overview for vehicles with 6-cyl. GDI engine

ATF lines and ATF cooler - assembly overview for vehicles with 8-cyl. engine

ATF lines and ATF cooler for vehicles with 6-cyl. GDI engine, assembly overview



**Fig. 162: ATF Lines And ATF Cooler For Vehicles With 6-Cyl. GDI Engine, Assembly Overview**  
**Courtesy of VOLKSWAGEN UNITED STATES, INC.**

1 - O-rings

- Always replace
- Lubricate with ATF when installing

2 - Bolt, 21 Nm

- Do not tighten until lines have been fully inserted

3 - ATF line

- Note correct location
- Push ATF lines fully into transmission by hand as far as stop, then bolt on.



## 4 - ATF line

- Note correct location
- Push ATF lines fully into transmission by hand as far as stop, then bolt on.

## 5 - Bracket for ATF line

## 6 - Bolt, 5 Nm

## 7 - Bolt

- 3 Nm, all other 6-cyl. engines except for 6-cyl. 3.2 ltr. 4V engine (direct injection)
- 10 Nm, only on vehicles with 6-cyl. 3.2 ltr. 4V engine (direct injection)

## 8 - Bracket

## 9 - ATF line

- Note correct location

## 10 - ATF line

- Note correct location

## 11 - ATF cooler

- Clean ATF cooler --> **ATF lines and ATF cooler, cleaning.**

## 12 - ATF line

- Note correct location
- Push ATF lines fully into cooler by hand as far as stop, then bolt on

## 13 - Bracket

## 14 - ATF line

- Note correct location
- Push ATF lines fully into cooler by hand as far as stop, then bolt on

## 15 - Bolt, 5 Nm

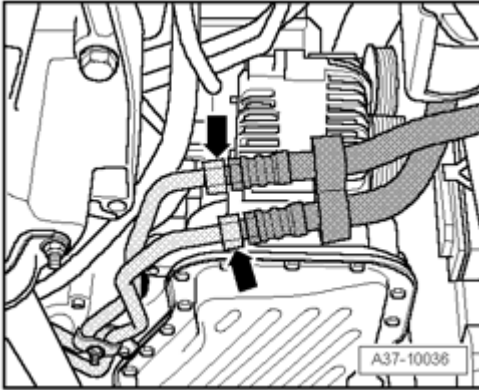
## 16 - Bolt, 5 Nm

## 17 - Nut, 5 Nm

18 - Bracket for ATF line

19 - Bolt, 5 Nm

20 - Bracket

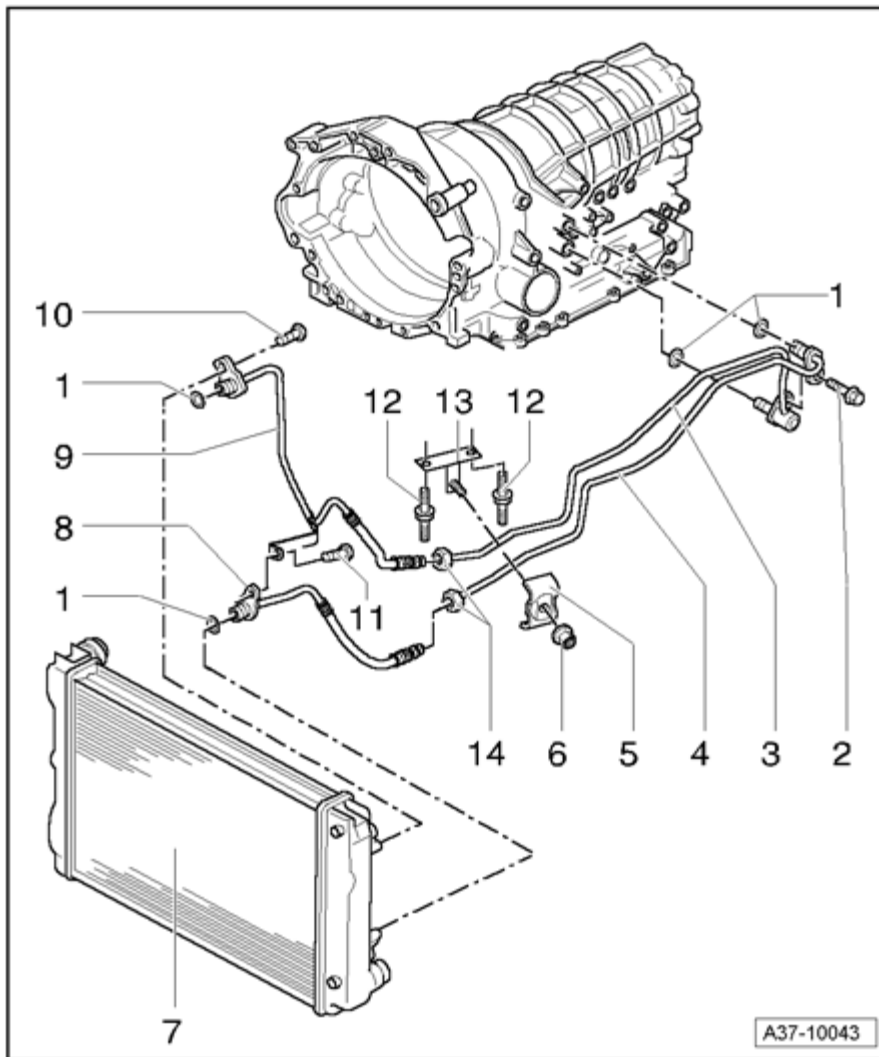


**Fig. 163: ATF Line Union Nuts And ATF Lines**  
**Courtesy of VOLKSWAGEN UNITED STATES, INC.**

Union nut - **arrows** - , 29 Nm

- For connecting ATF lines
- Note location of ATF lines

**ATF lines and ATF cooler for vehicles with 8-cyl. engine, assembly overview**



**Fig. 164: ATF Lines And ATF Cooler For Vehicles With 8-Cyl. Engine, Assembly Overview**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

1 - O-rings

- Always replace
- Lubricate with ATF when installing

2 - Bolt, 21 Nm

- Do not tighten until lines have been fully inserted

3 - ATF line

- Note correct location
- Push ATF lines fully into gearbox by hand as far as stop, then bolt on.

## 4 - ATF line

- Note correct location
- Push ATF lines fully into gearbox by hand as far as stop, then bolt on.

## 5 - Bracket for ATF line

## 6 - Nut, 5 Nm

## 7 - ATF cooler

- Clean ATF cooler --> **ATF lines and ATF cooler, cleaning.**

## 8 - ATF line

- Note correct location
- Push ATF lines fully into cooler by hand as far as stop, then bolt on

## 9 - ATF line

- Note correct location
- Push ATF lines fully into cooler by hand as far as stop, then bolt on

## 10 - Bolt, 5 Nm

- Do not tighten until lines have been fully inserted

## 11 - Bolt, 5 Nm

- Do not tighten until lines have been fully inserted

## 12 - Center hex stud, 7 Nm

## 13 - Bracket

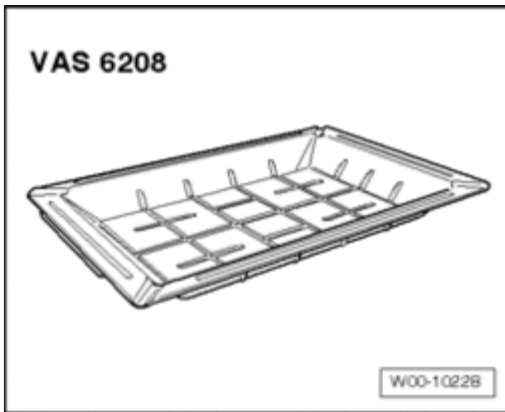
## 14 - Union nut, 29 Nm

For connecting ATF lines

Note location of ATF lines

**ATF cooling lines, removing and installing**

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



**Fig. 165: Drip Tray For VAS 6100, VAS 6208**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Drip tray for workshop hoist VAS 6208
- Drip tray
- Safety goggles

**NOTE:**

- Read the rules when working on the automatic transmission.
- Thoroughly clean all joints and surrounding areas before disassembling.

**Removing**

- Mark position of all ATF cooling lines in relation to one another with different colors to avoid confusion.
- Place drip tray for workshop hoist VAS 6208 underneath.

**CAUTION: Wear safety goggles.**

- Disconnect ATF cooling lines.
- Seal opened cooling lines with clean sealing plugs.

**Installing**

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

- Clean ATF cooling lines --> **ATF lines and ATF cooler, cleaning.**
- Lightly lubricate O-rings with ATF.
- First push ATF cooling lines fully into transmission or cooler as far as stop, then bolt on --> **ATF lines and ATF cooler, assembly overview.**
- Check ATF level --> **ATF level, checking and correcting.**

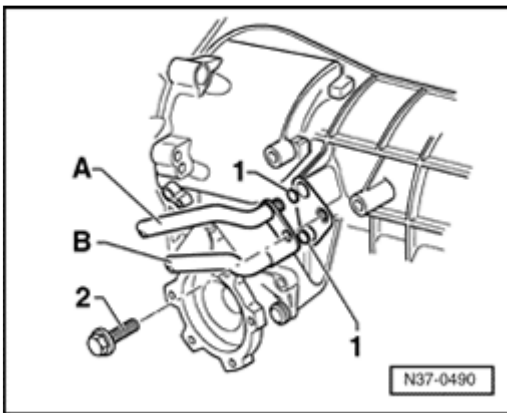
**ATF lines and ATF cooler, cleaning**

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

- Compressed air gun (commercially available)
- Hose, approx. 18mm dia.
- Drip tray

**NOTE:**

- **Always clean ATF cooling lines and ATF cooler before installing a replacement transmission.**
- **Read the rules when working on the automatic transmission.**
- **Thoroughly clean all joints and surrounding areas before disassembling.**



**Fig. 166: Location Of ATF Lines At Transmission**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

**Procedure**

- Place drip tray underneath.
- Remove bolt - **2** -.
- Connect a hose (approx. 18mmdiameter) to ATF line - **A** - and secure with a hose clip. Place the other end of the hose into drip tray.

**CAUTION: Wear safety goggles.**

- Blow through ATF line - **B** - using a compressed air line (max. 10 bar).
- Change hose from ATF line - **A** - over to ATF line - **B** - and repeat sequence.
- In addition, flush lines with ATF until they are clean if ATF is very dirty.
- The ATF used for flushing the lines must not be used again.
- Always replace O-rings - **1** -.
- First push ATF cooling lines fully into transmission or cooler as far as stop, then bolt on --> **ATF lines**

**and ATF cooler, assembly overview.**

- Check ATF level --> **ATF level, checking and correcting.**