

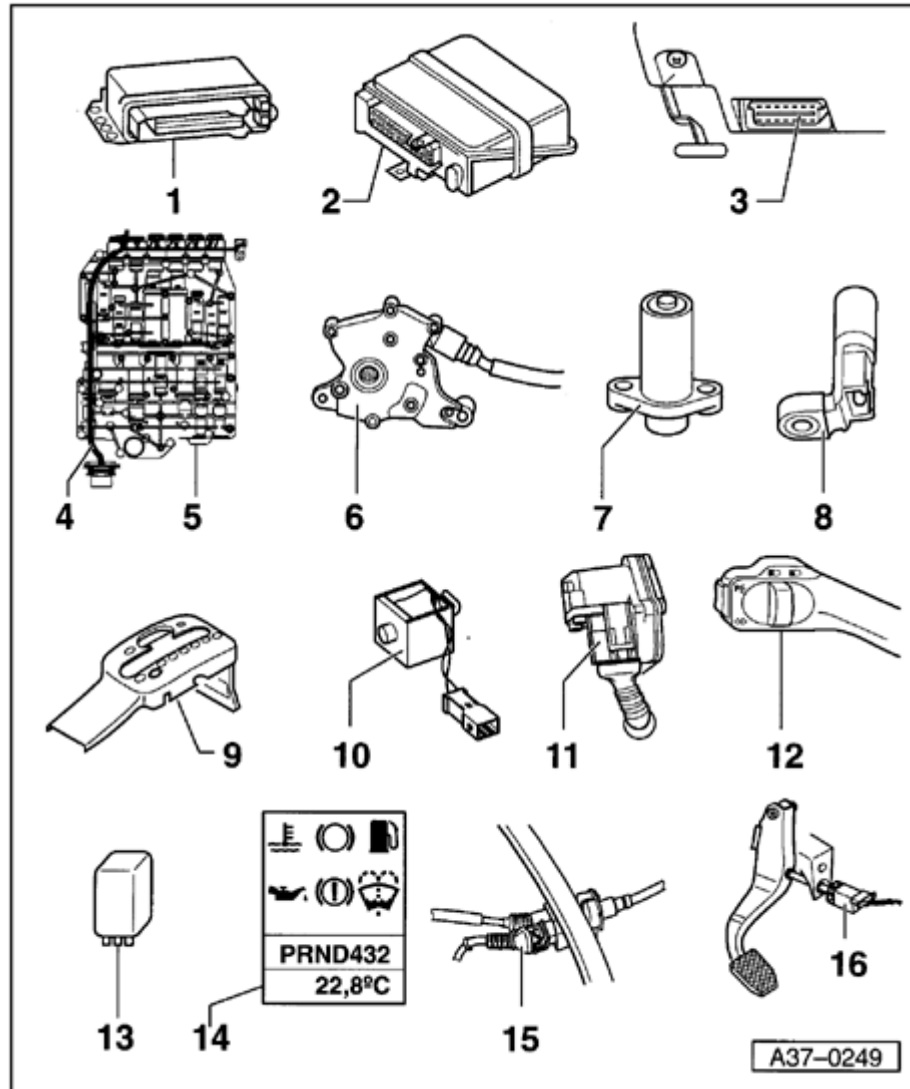
Electrical/electronic components and locations

1 - Automatic Transmission Control Module (TCM) -J217-

- ◆ Location ⇒ [Fig. 1](#) , ⇒ [Page 01-20](#)
- ◆ Removing ⇒ [Fig. 2](#) , ⇒ [Page 01-21](#)
- ◆ Installing ⇒ [Fig. 3](#) , ⇒ [Page 01-22](#)
- ◆ Control modules are checked via On Board Diagnostic (OBD) ⇒ [Page 01-34](#) Initiating On Board Diagnostic (OBD)

2 - Engine Control Module (ECM)

- ◆ Location ⇒ [Fig. 4](#) , ⇒ [Page 01-23](#)
- ◆ Control modules are checked via On Board Diagnostic (OBD) ⇒ [Page 01-34](#) Initiating On Board Diagnostic (OBD)



3 - Data Link Connector (DLC)

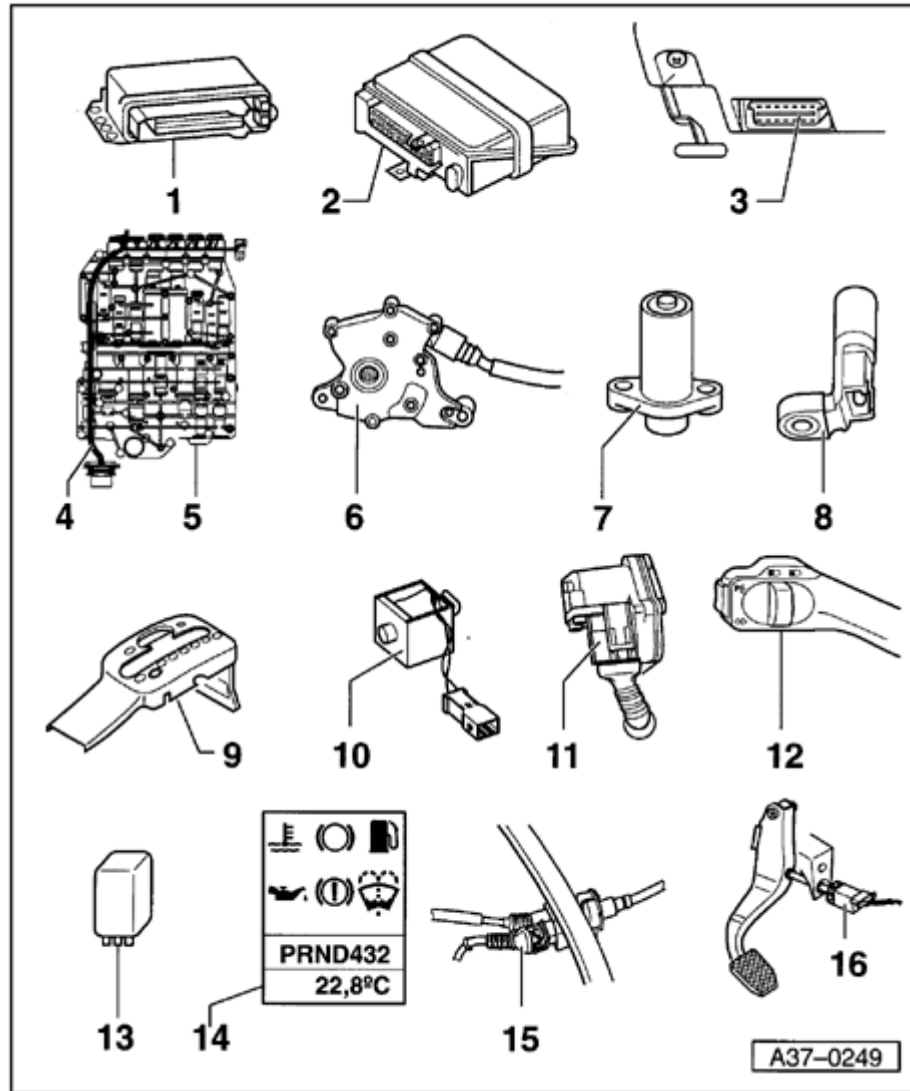
- ◆ Location ⇒ [page 01-24](#) , ⇒ [Fig. 5](#)

4 - Conductor strip with Transmission Fluid Temperature (ATF) Sensor -G93-

- ◆ Location ⇒ [page 01-26](#) , ⇒ [Fig. 7](#)
- ◆ -G93- is checked via On Board Diagnostic (OBD)

5 - Valve body

- ◆ Location ⇒ [page 01-25](#) , ⇒ [Fig. 6](#)
- ◆ The solenoid valves -N88-, -N89-, -N90-, -N91-, -N92-, -N93- and -N94- are attached to the valve body
- ◆ Components are checked via OBD

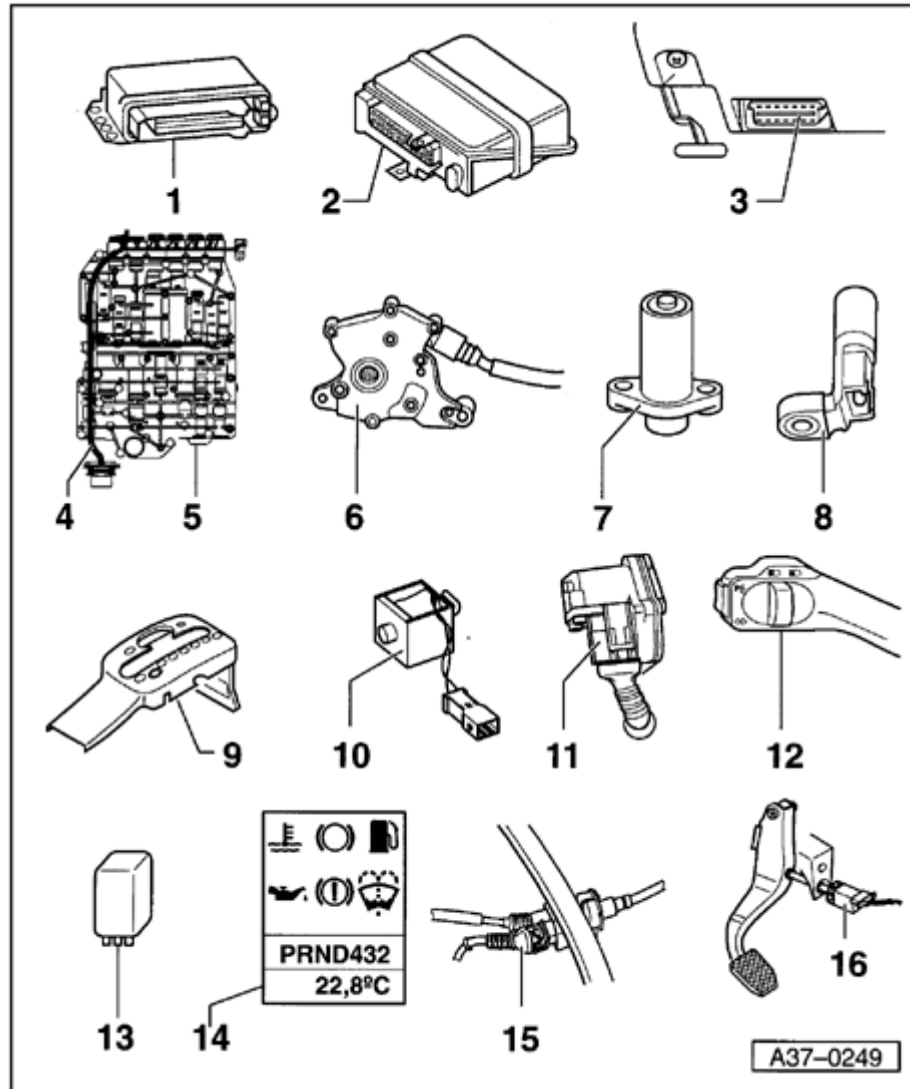


6 - Multi-function Transmission Range (TR) switch -F125-

- ◆ Location, removing and installing ⇒ [page 01-27](#) , ⇒ [Fig. 8](#)
- ◆ Checked via On Board Diagnostic (OBD)

7 - Sensor for Transmission RPM -G182-

- ◆ Location, removing and installing ⇒ [page 01-29](#) , ⇒ [Fig. 11](#)
- ◆ Checked via OBD

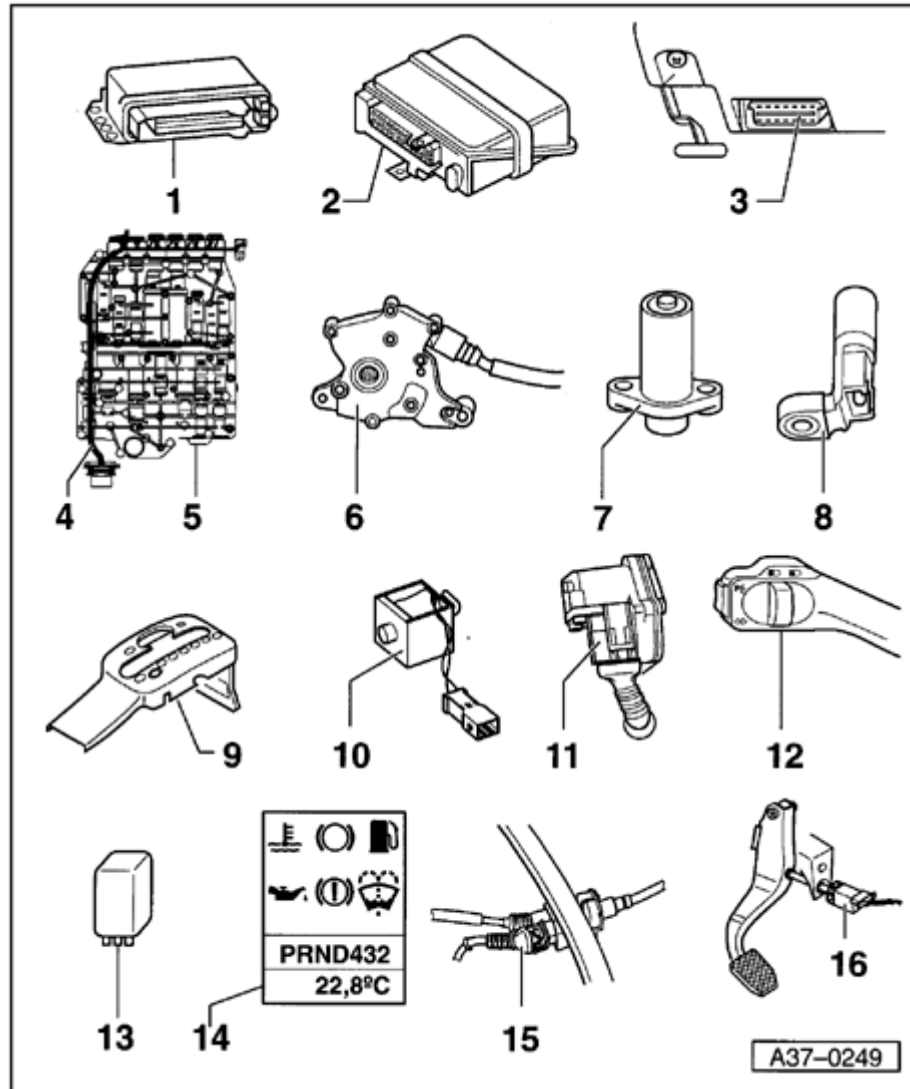


8 - Transmission Vehicle Speed Sensor (VSS) -G38- (also referred to as Sensor for Transmission Output RPM -G195-)

- ◆ Location, removing and installing ⇒ [page 01-28](#) , ⇒ [Fig. 10](#)
- ◆ Checked via On Board Diagnostic (OBD)
- ◆ Records the transmission output speed

9 - Tiptronic switch -F189-

- ◆ Location, removing and installing ⇒ [page 01-27](#) , ⇒ [Fig. 9](#)
- ◆ The switch can be checked in, read measured value block ⇒ [page 01-186](#) and in the electrical check ⇒ [page 01-273](#)

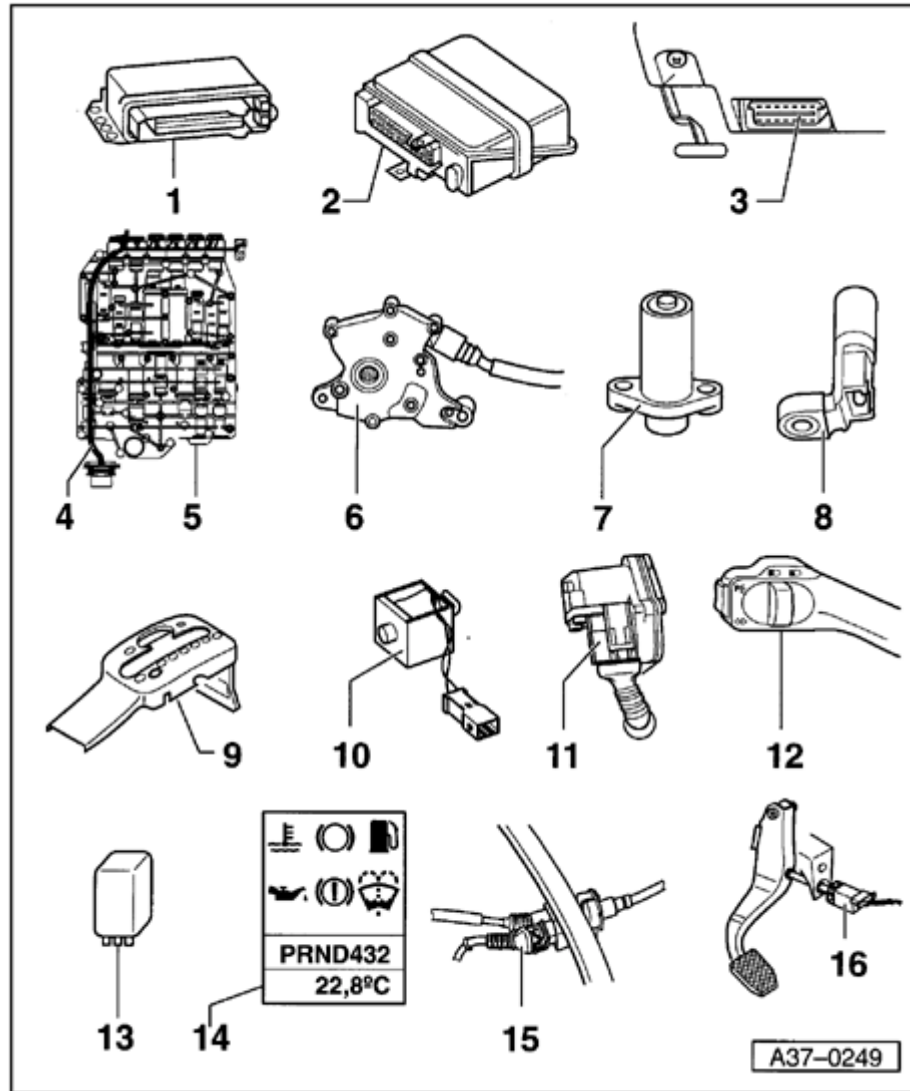


10 - Shift lock solenoid -N110-

- ◆ Location ⇒ [page 01-30](#) , ⇒ [Fig. 12](#)
- ◆ Removing and installing

⇒ [Repair Manual, 5 Spd. Automatic Transmission 01V, Repair Group 37](#)

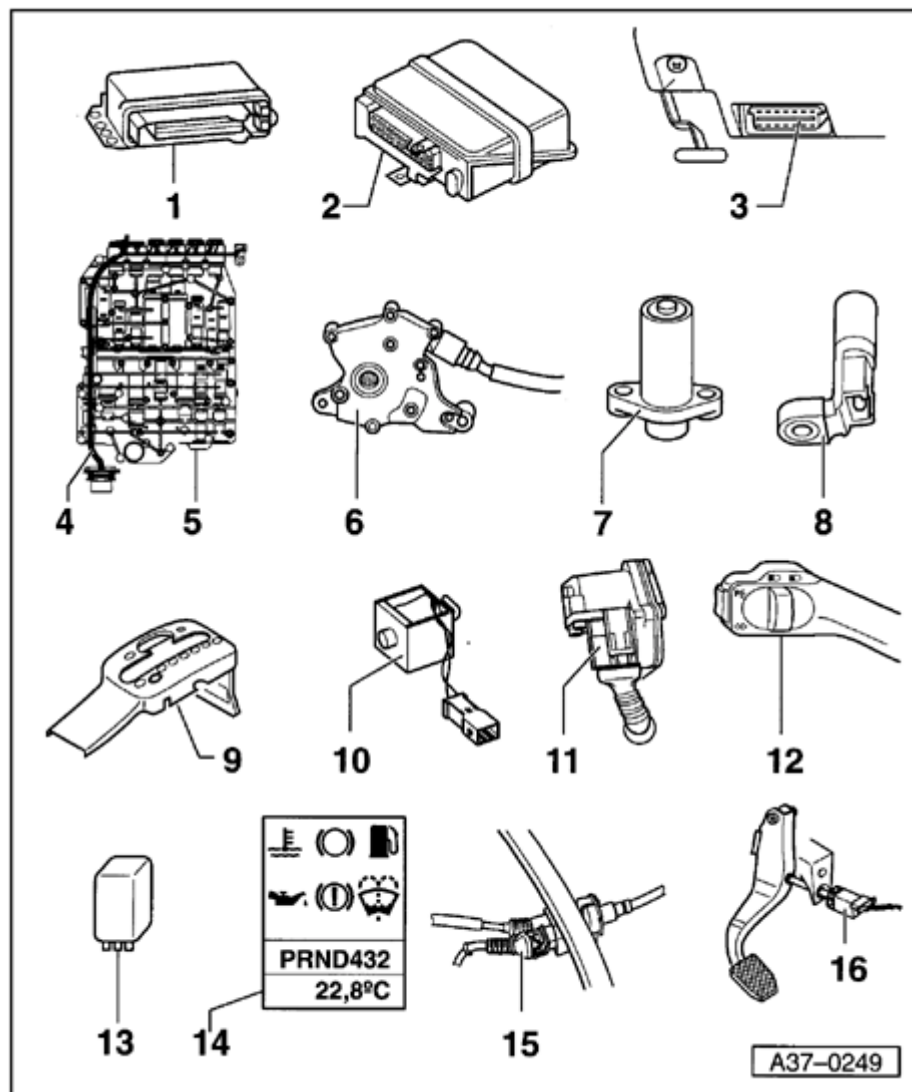
- ◆ Can be checked electrically ⇒ [page 01-273](#) and via reading measured value block ⇒ [page 01-186](#)



11 - Throttle Position (TP) sensor -G69-

- ◆ Location ⇒ [page 01-30](#) , ⇒ [Fig. 13](#)
- ◆ The TP sensor signal will be checked via On Board Diagnostic (OBD)
- ◆ The TP sensor signal is transmitted to the transmission control module via the engine control module. The signal can only be checked in measured value block ⇒ [Page 01-186](#) . If OBD indicates a malfunction in the TP sensor, perform OBD for the Engine Control Module.

⇒ *Repair Manual, Fuel Injection & Ignition, Repair Group 01*



12 - Cruise control switch -E45-

- ◆ Location: The cruise control switch is on the steering column
- ◆ Removing and installing:

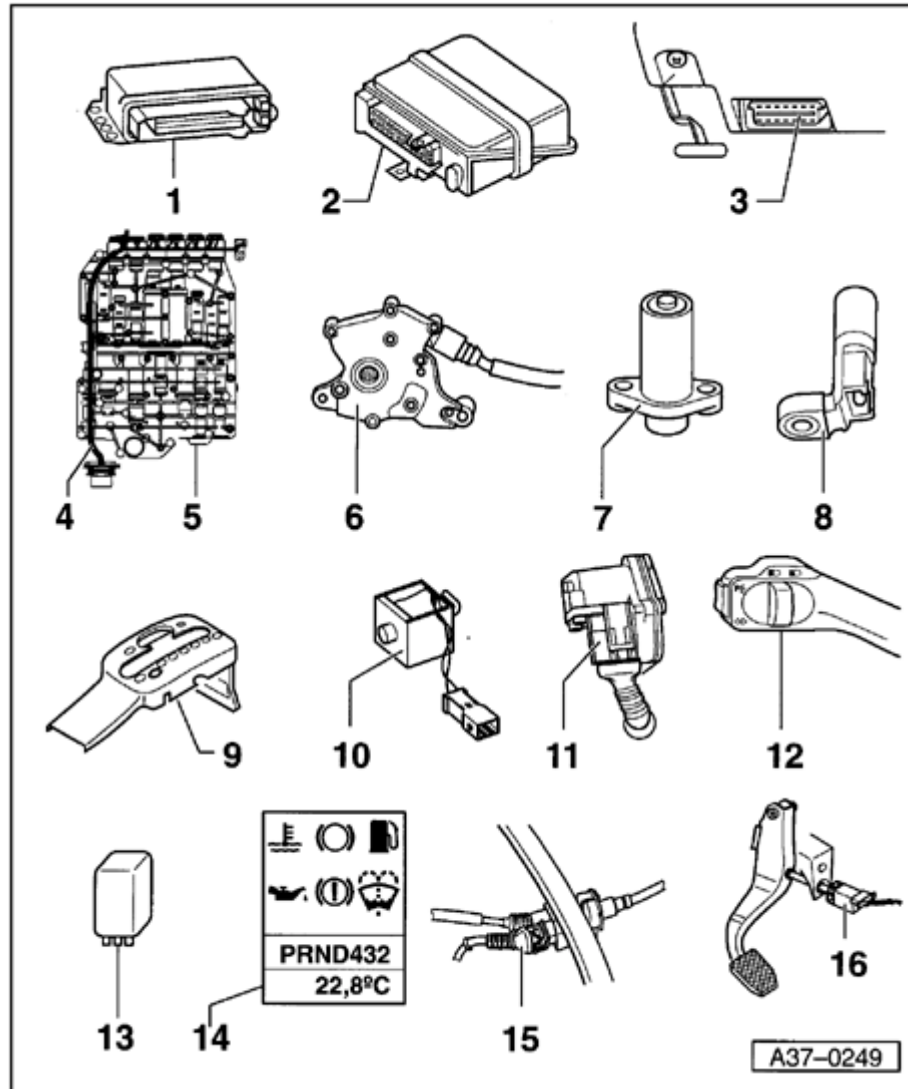
⇒ [Repair Manual, Repair Manual, Electrical Equipment, Repair Group 94](#)

- ◆ Can be checked during electrical test ⇒ [page 01-273](#)

13 - Starting interlock relay -J207-

- ◆ Location ⇒ [page 01-31](#) , ⇒ [Fig. 14](#)

⇒ [Electrical Wiring Diagrams, Troubleshooting & Component Locations](#)

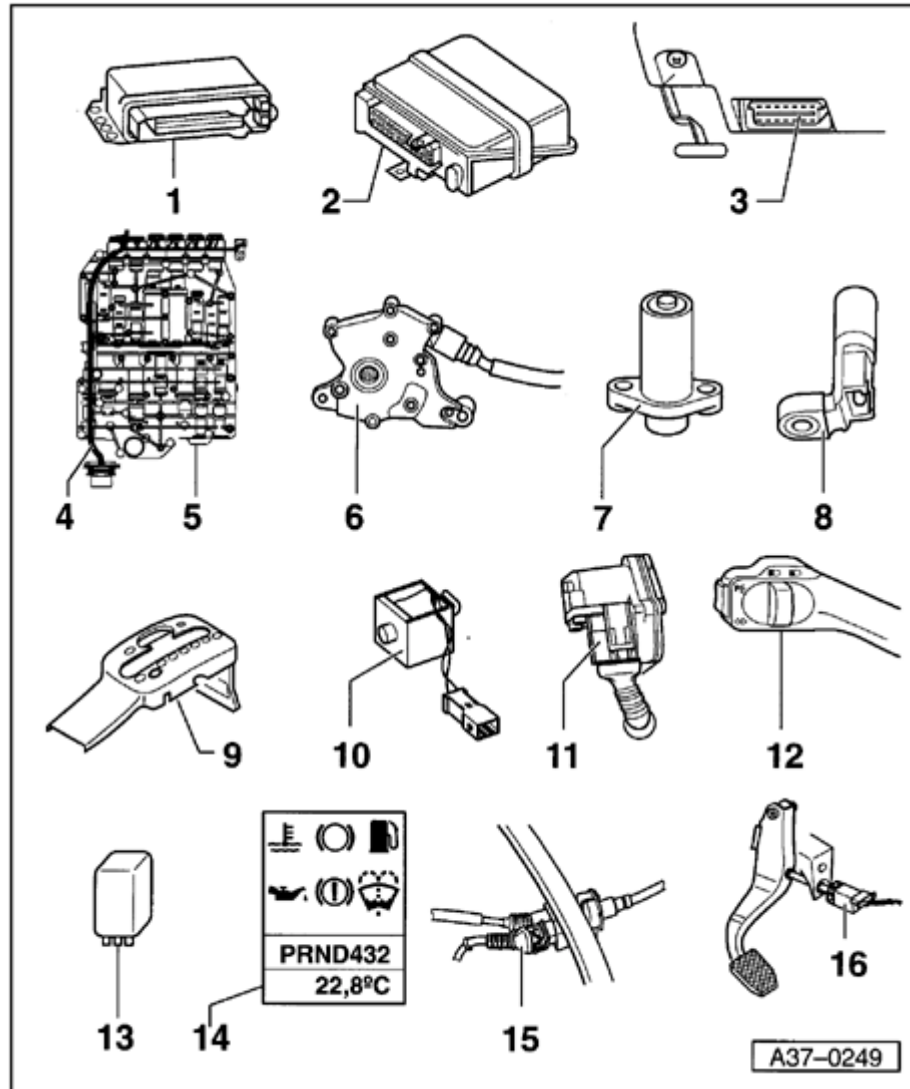


14 - Transmission Range (TR) Selector Lever Display -Y6-

- ◆ Location ⇒ [page 01-31](#) , ⇒ [Fig. 15](#)
- ◆ When the TR Selector Lever Display does not light up, it indicates that the transmission is in emergency running mode with the Transmission Control Module (TCM) inactive.
- ◆ All segments of the TR Selector Lever Display light up, it indicates that the transmission is in emergency running mode with the TCM active.

15 - Kick down switch -F8-

- ◆ Location ⇒ [page 01-32](#) , ⇒ [Fig. 16](#)
- ◆ Can be checked electrically ⇒ [page 01-273](#) and via reading measured value block ⇒ [page 01-186](#)



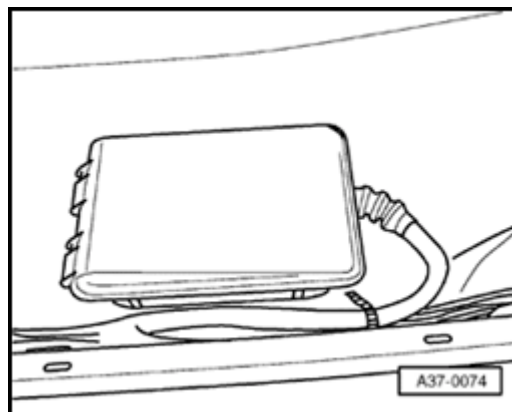
16 - Brake Light Switch -F-

- ◆ Location: ⇒ [page 01-33](#) , ⇒ [Fig. 17](#)
- ◆ Removing and installing

⇒ [Repair Manual, Brake System, Repair Group 46](#)

- ◆ Can be checked electrically ⇒ [page 01-273](#) and via reading measured value block ⇒ [page 01-186](#)

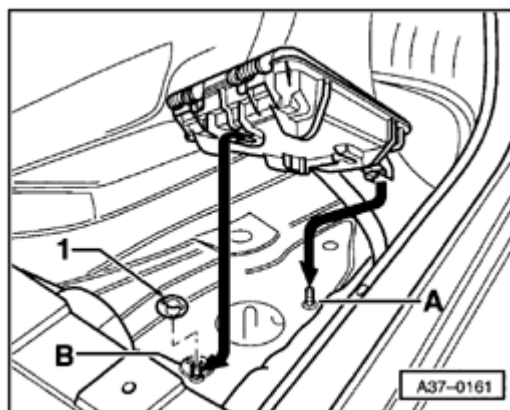
01-20



A

**Fig. 1 Location of automatic Transmission Control Module (TCM)
-J217-**

The control module is located in front of the right front seat under the carpet in the foot well.



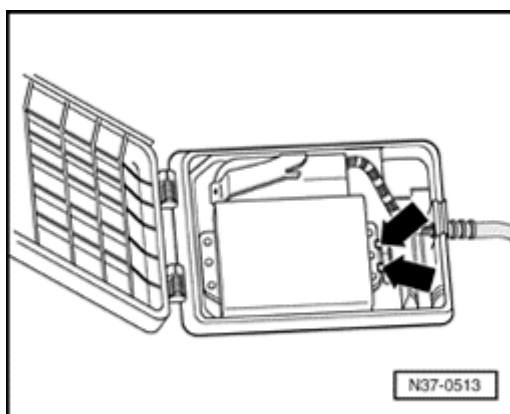
A Fig. 2 Automatic Transmission Control Module (TCM) -J217-, removing and installing

Removing

- Remove lower right A-pillar trim and right front door sill trim.

⇒ [Repair Manual, Body-Interior, Repair Group 70](#)

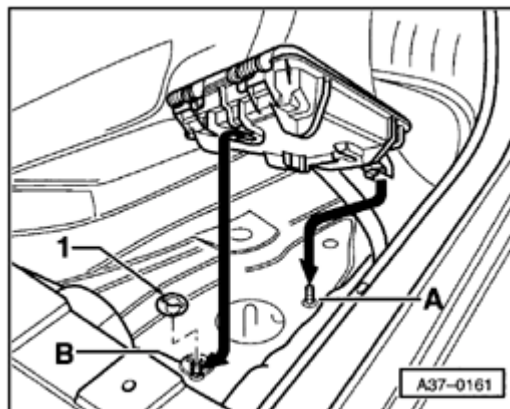
- Detach carpeting from right inside door sill, and raise carpeting approx. 20 cm.
- Unclip box at -A- by pulling it upward.
- Unclip box at -B- as shown.



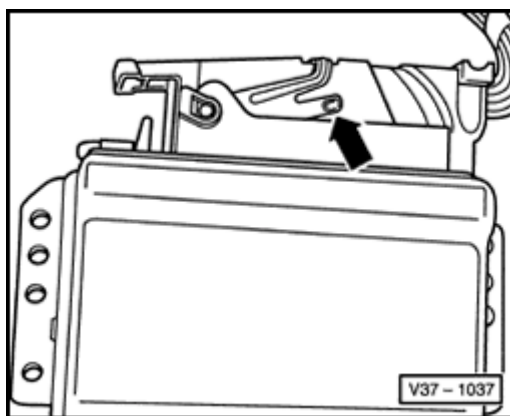
- A** - Unclip TCM from box (arrows).
- Release catch on multi-pin connector and disconnect connector from TCM ⇒ [Fig. 3](#)

Installing:

Install in reverse order of removal, with the following additional steps:

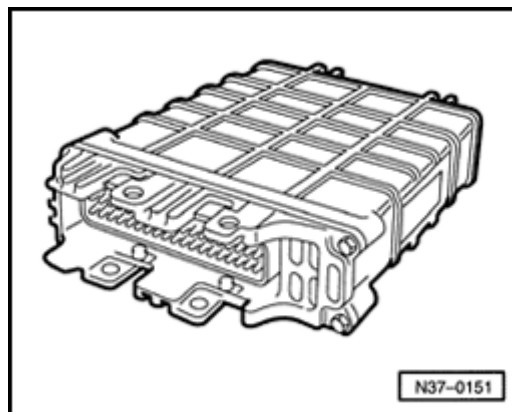


- A**
- Check that clip nut -1- is properly secured.



- A**
- Fig. 3 TCM -J217-, disconnecting**
- Switch ignition off and wait approx. 30 seconds.
 - Release connector by pressing catch in direction of arrow.

Connect in reverse order of disconnecting.



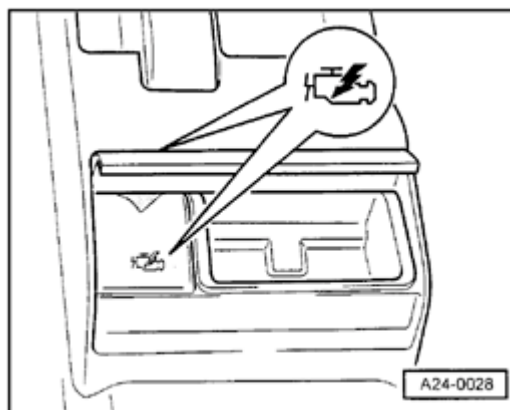
A

Fig. 4 Engine Control Module (ECM)

Location: in electronics box (E-box) in plenum chamber (left side).

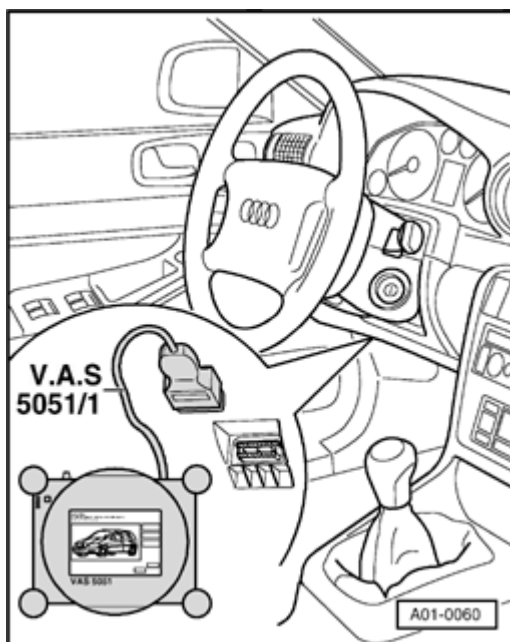
ECM, removing and installing

⇒ *Repair Manual, Fuel Injection & Ignition, Engine, Groups 01, 23 or 24*



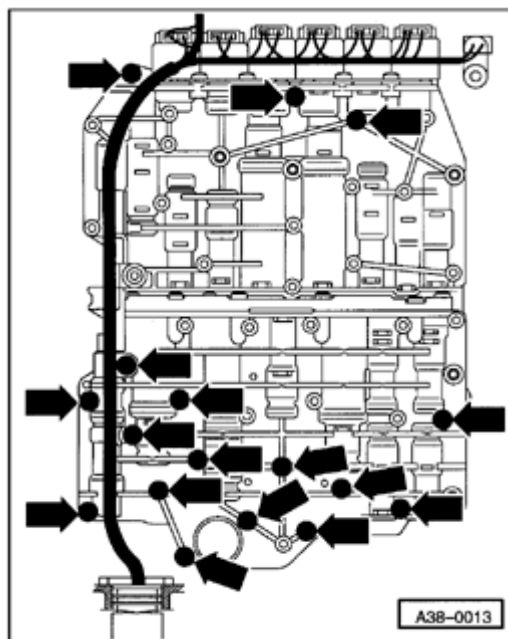
A **Fig. 5 Data Link Connector (DLC)**

Location: Up to m. y. 2000, the Data Link Connector (DLC) is located under the rear ashtray (center console).



A As of m. y. 2001, the DLC is located under the kneebars left of the steering wheel.

- Connect VAS 5051 tester with VAS5051/1 diagnostic wire, or connect V.A.G 1551 Scan Tool with VAG 1551/3 adapter.
- Enter address word "02 transmission electronics" and continue switching until "selecting function XX" appears on display ⇒ [page 01-36](#).



A

Fig. 6 Valve body

Location: The valve body is bolted to the underside of the transmission housing inside the oil pan.

The Solenoid Valves -N88-, -N89-, -N90-, -N91-, -N92-, -N93- and -N94- are attached to the valve body. The solenoid valves -N91-, -N92-, -N93- and -N94- are also referred to as pressure control valves 1 (-N215-), 2 (-N216-), 3 (-N217-) and 4 (-N218-).

Removing and installing

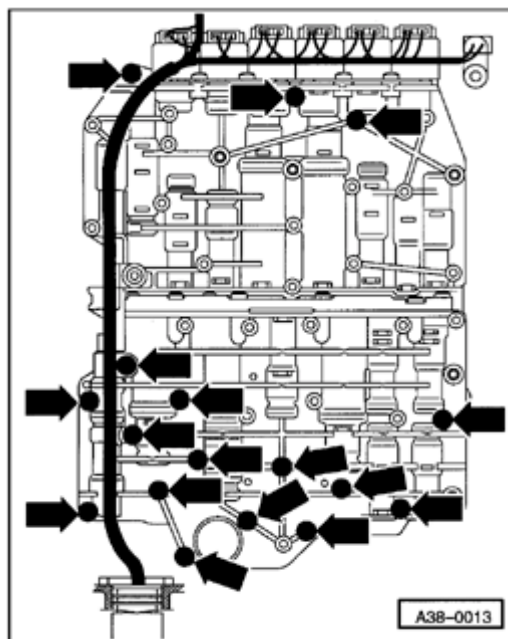
⇒ [Repair Manual, 5 Spd. Automatic Transmission 01V, Repair Group 38](#)

There are two types of transmissions:

- ◆ For transmissions with hydraulic regulation -E17-, the transmission input speed sensor (inductive sensor) is secured to the underside of the valve body.
- ◆ For transmissions with hydraulic regulation -E18/2-, the transmission input speed sensor (camshaft position sensor) is secured behind valve body at transmission housing.

Information about which transmission is installed:

⇒ [Repair Manual, 5 Spd. Automatic Transmission 01V, Repair Group 00](#)



A

Fig. 7 Wiring harness with integrated Transmission Fluid Temperature Sensor -G93-

Location: The wiring harness is secured to the valve body.

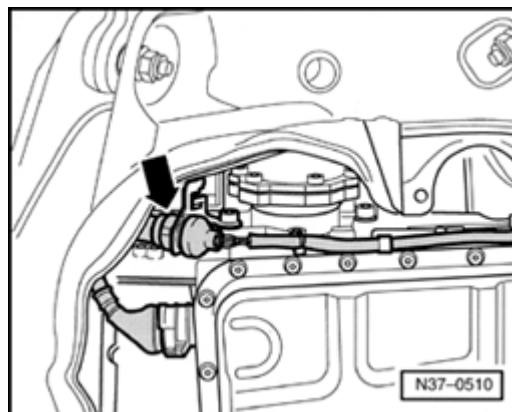
The wiring harness can be removed with the valve body removed and the transmission installed.

Wiring harness in transmission, removing and installing

⇒ [Repair Manual, 5 Spd. Automatic Transmission 01V, Repair Group 38](#)

ATF Temperature Sensor -G93-, removing and installing

⇒ [Repair Manual, 5 Spd. Automatic Transmission 01V, Repair Group 38](#)



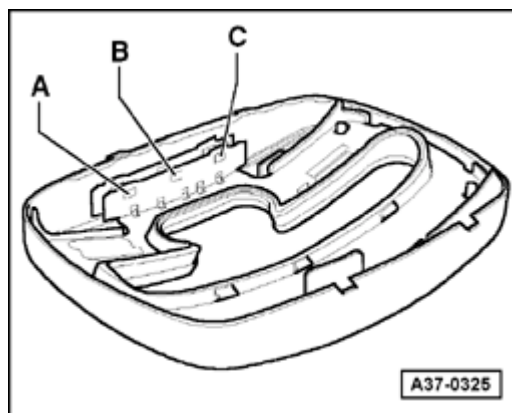
A

Fig. 8 Multi-function Transmission Range (TR) switch -F125-

Location: The multi-function switch -1- is located on left at transmission; Multi-pin connector for multi-function switch -arrow-.

Multi-function TR switch, removing and installing

⇒ [Repair Manual, 5 Spd. Automatic Transmission 01V, Repair Group 38](#)



A

Fig. 9 Tiptronic switch -F189-

Installation location: The tiptronic switch is integrated into the conductor strip of the symbol insert in the cover of the shift mechanism.

Note:

This switch is not installed on shift mechanisms without tiptronic function.

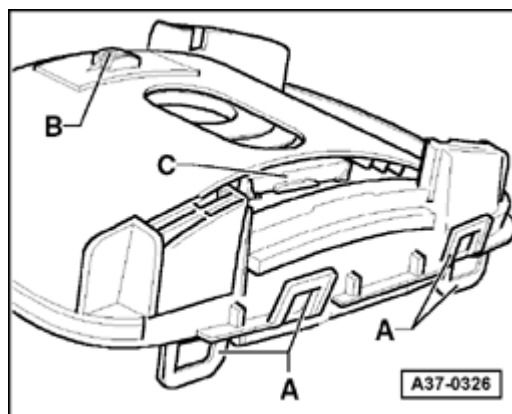
The switch consists of 3 hall-effect sensors (-A-, -B-, -C-), which are activated via a magnet on the lateral gate cover of the gate cover.

A - Sensor for down-shift

B - Sensor for Tiptronic-recognition

C - Sensor for up-shift

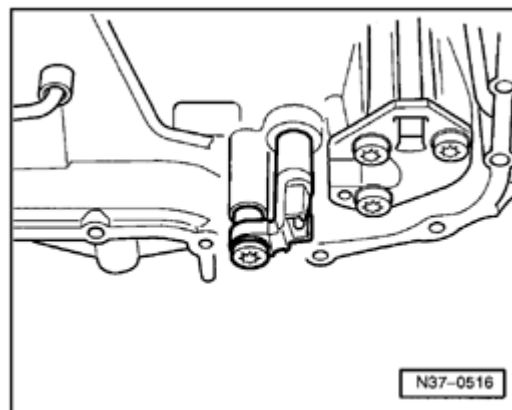
- If malfunctions occur, the switch for tiptronic must be checked for interference in Read measuring value block ⇒ [page 01-186](#) and during the electrical test ⇒ [page 01-273](#) .



- A** In case of problems, first check the magnet at the lateral gate cover -C- of the gate cover is properly attached, replace gate cover, if necessary. Only replace the symbol insert with integrated conductor strip after checking the wires. For vehicles with tiptronic-sport steering wheel, also check the buttons at steering wheel and their wire connections.

Tiptronic switch -F189-, removing and installing

⇒ [Repair Manual, 5 Spd. Automatic Transmission 01V, Repair Group 37; repairing shift mechanism](#)

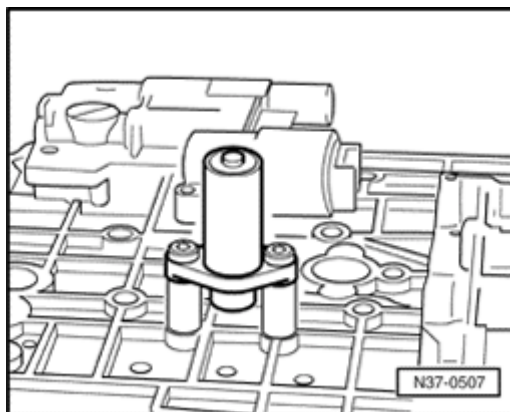


- A** **Fig. 10 Transmission Vehicle Speed (VSS) Sensor -G38-**

Location: The transmission vehicle speed sensor is located at right rear in the transmission. It is also referred to as the Sensor for Transmission Output RPM -G195-.

Transmission VSS sensor -G38-, removing and installing

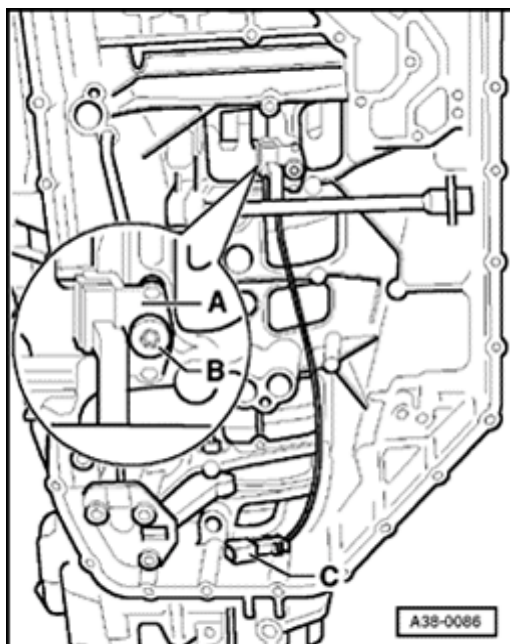
⇒ [Repair Manual, 5 Spd. Automatic Transmission 01V, Repair Group 38](#)



A Fig. 11 Sensor for Transmission RPM -G182-

Installation location:

On transmissions with hydraulic regulation -E17-, the Sensor for Transmission RPM is secured to the underside of the valve body (see illustration). For these transmissions the sensor is an inductive sensor.



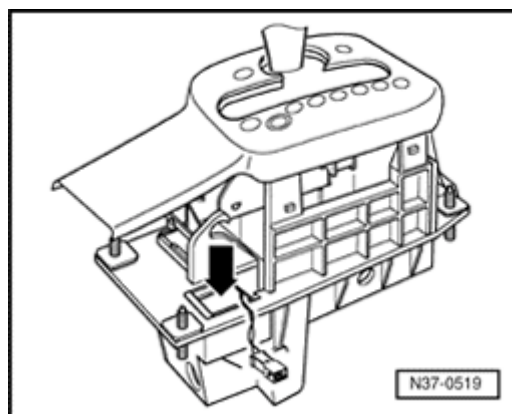
A On transmissions with hydraulic regulation -E182-, the transmission input speed sensor -A- is secured behind the valve body at the transmission housing. On these transmissions the sensor is a hall effect sensor.

Information about which transmission is installed

⇒ [Repair Manual, 5 Spd. Automatic Transmission 01V, Repair Group 00](#)

Sensor for Transmission RPM -G182-, removing and installing

⇒ [Repair Manual, 5 Spd. Automatic Transmission 01V, Repair Group 38](#)

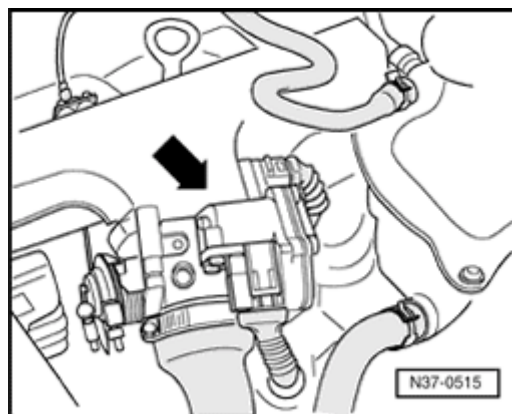


A **Fig. 12 Shift Lever Lock Solenoid -N110-**

The Shift Lever Lock Solenoid is located in the shift lever housing -arrow-

Shift Lever Lock Solenoid, removing and installing

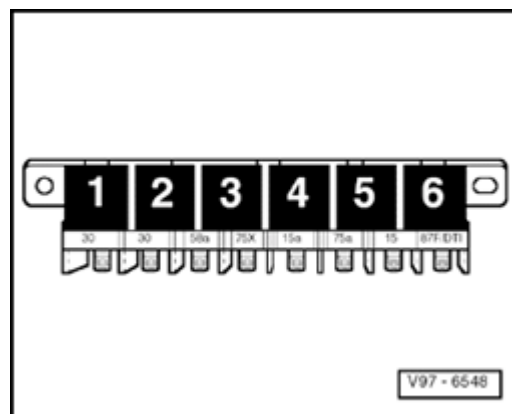
⇒ [Repair Manual, 5 Spd. Automatic Transmission 01V, Repair Group 37](#)



A **Fig. 13 Throttle Position (TP) Sensor -G69-**

Location: integrated in Throttle Valve Control Module -J338- -arrow-.

The location is described in the applicable engine repair manual under repair Group 01, 23 or 24.



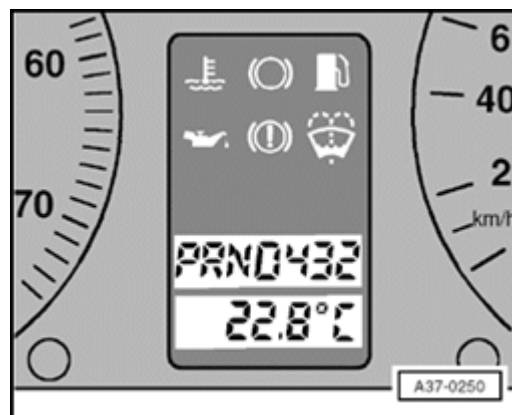
A

Fig. 14 Starting interlock relay -J207

The relay is located on the central electric.

For relay assignment

⇒ *Electrical Wiring Diagrams, Troubleshooting & Component Locations*



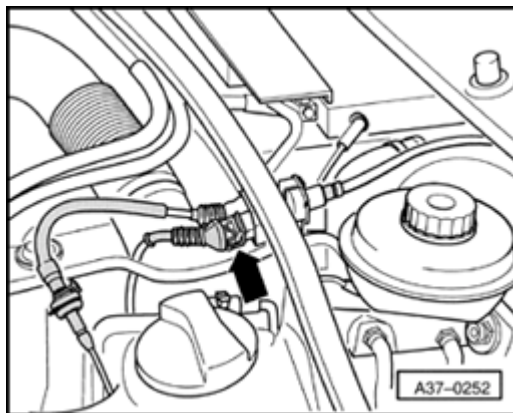
A

Fig. 15 Transmission range selector lever display -Y6-

Located in instrument cluster

Removing and installing transmission range selector lever display

⇒ [Repair Manual, Electrical Equipment, Repair Group 90](#)



A

Fig. 16 Kick-down switch -F8-**Engines without E-Gas:**

The kick-down switch is integrated in the accelerator cable in the plenum chamber, behind bulkhead -arrow-.

Engines with E-gas:

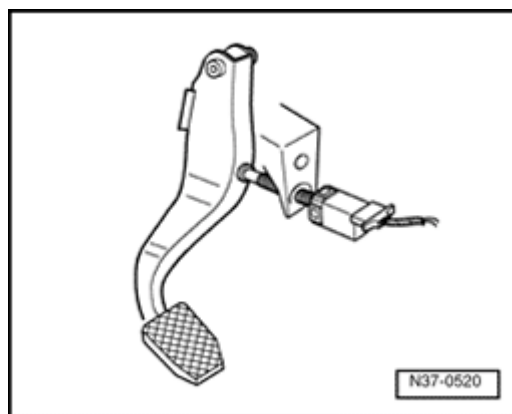
The kick-down switch is integrated in the throttle position sensor and Sensor 2 for Accelerator Position (-G79-, -G185-).

A learning procedure must be performed for the shift point of the kick down switch for engines with E-gas. If the throttle position sensor (-G79-, -G185-) is removed, exchange the engine control module or disconnect the battery. Learning procedure can be found in ⇒ Repair Manual, Fuel Injection & Ignition, Repair Group 24; Kick down shift point, checking.

Kick-down switch, removing and installing

- To remove and install the kick down switch, the accelerator cable must be removed and installed and then adjusted or the throttle position sensor (38-G79-, -G185-) must be replaced.

⇒ [Repair Manual, Fuel Supply System, Repair Group 20, accelerator pedal mechanism, repairing Front and All Wheel Drive](#)



A

Fig. 17 Brake light switch -F-

The brake light switch -arrow- is located on the pedal cluster.

Brake light switch, removing and installing

⇒ [Repair Manual, Brake System, Repair Group 46](#)

Note:

For engine with E-gas, the brake light signal is transmitted from the engine control module to the transmission control module via the CAN-Bus.