

**Volkswagen > Passat > 1998-2005**  
**Automatic Transmission - FWD**  
**37 - Transmission, Removing and Installing**

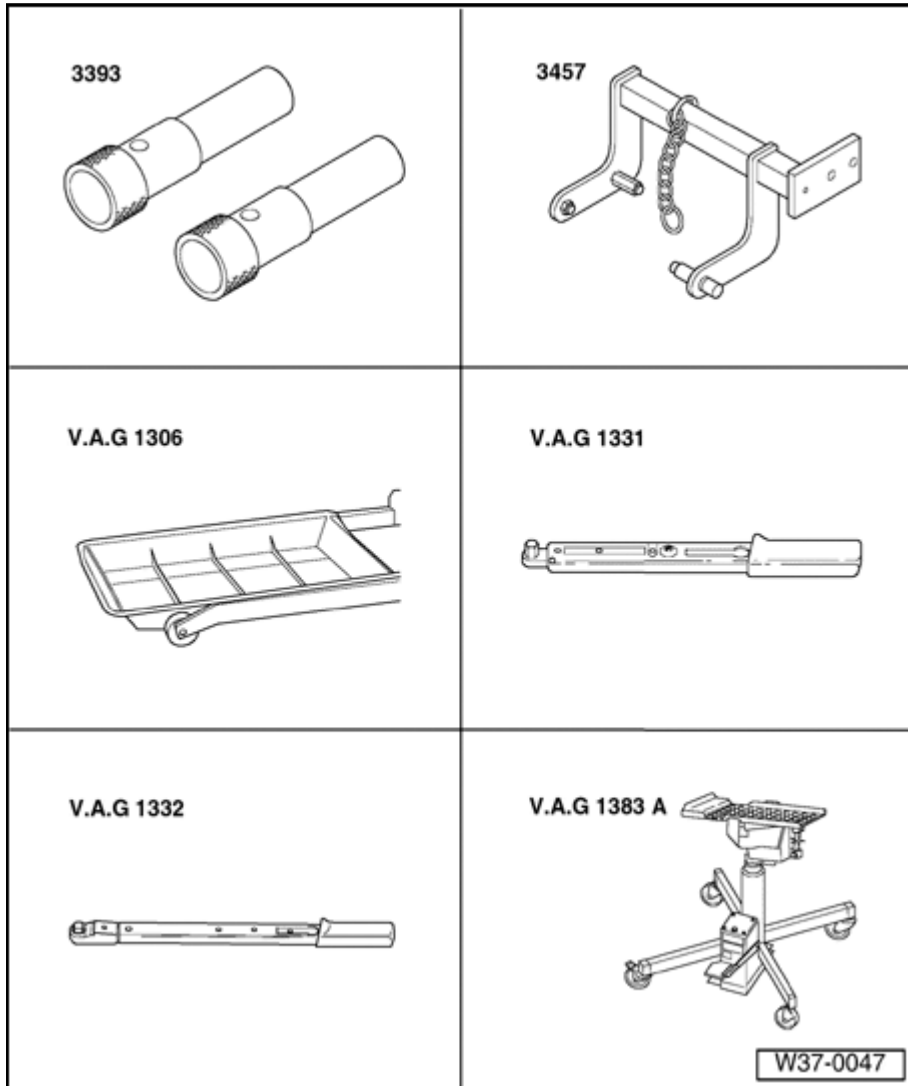
.

**Transmission, 4-Cylinder TDI, Removing and Installing**

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

- \* Engine support bridge 10-222A
- \* Engine support feet 10-222A/1
- \* Pry lever 80-200

- ◆ Lifting tackle 2024 A
- ◆ Transmission support 3282
- ◆ Adjustment plate 3282/19

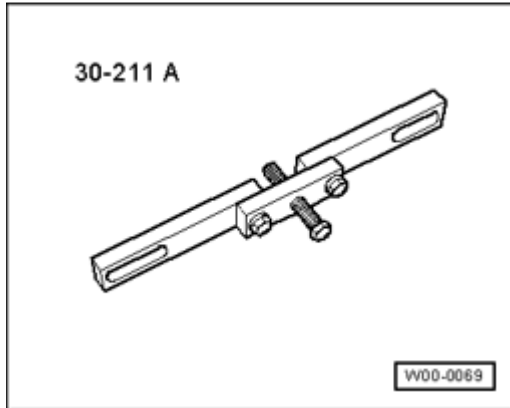


### Special tools, testers and auxiliary items required

- ◆ Testing mandrel 3393
- ◆ Attachment and holding rig 3457
- ◆ Drip tray V.A.G 1306
- ◆ Torque Wrench V.A.G 1331
- ◆ Torque Wrench V.A.G 1332

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

### Special tools, testers and auxiliary items required



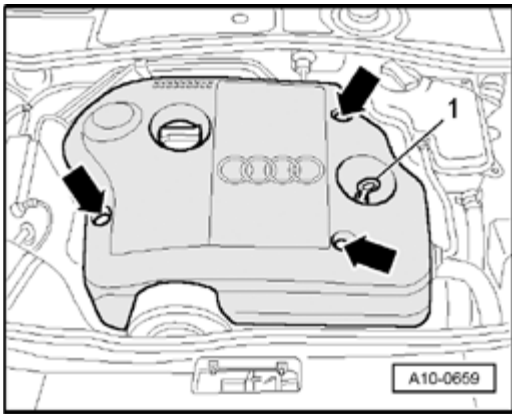
- ♦ Bracket 30-211 A



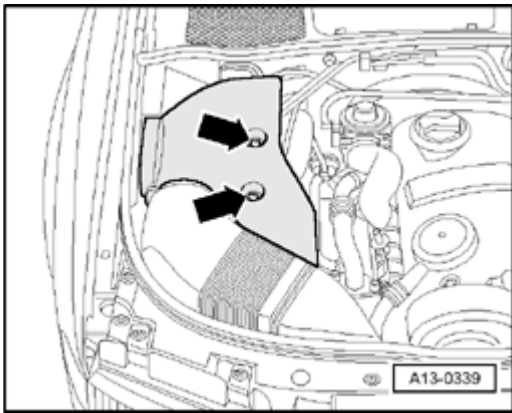
- ♦ Step ladder VAS 5085

### Removing

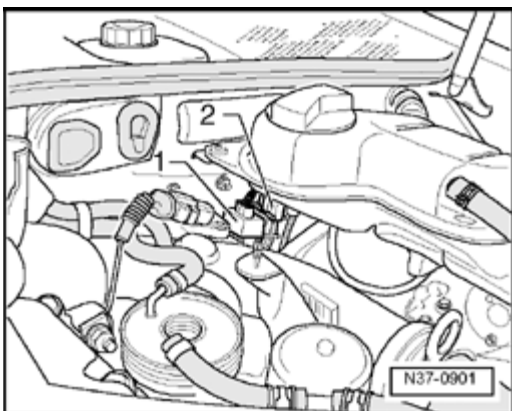
- First check whether a coded radio is installed. In this case, find out anti-theft coding.
- Disconnect battery Ground (GND) strap with ignition switched off ⇒ Electrical Equipment - Repair Group 27 .



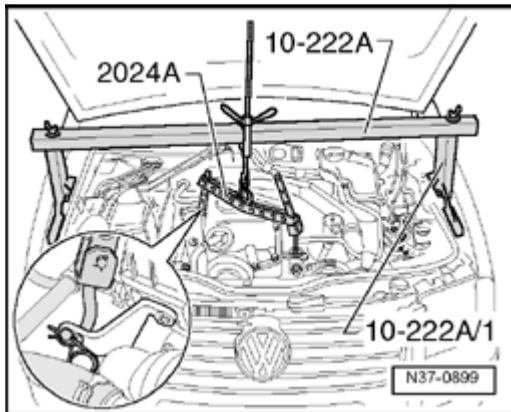
- Pull out oil dipstick - **1** - from guide tube.
- Unclip covers for nuts.
- Unscrew nuts - **arrows** - and remove engine cover.



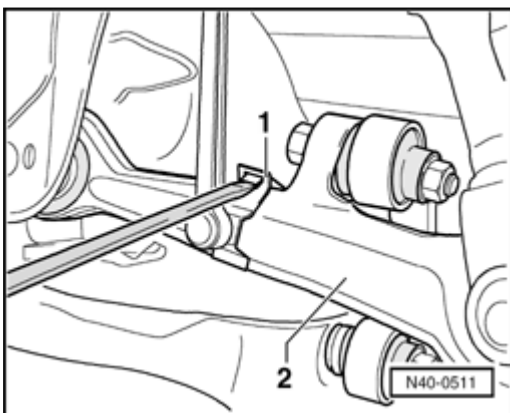
- Unclip covers for nuts.
- Unscrew nuts - **arrows** - and remove air filter cover.
- Remove intake hose from intake manifold.



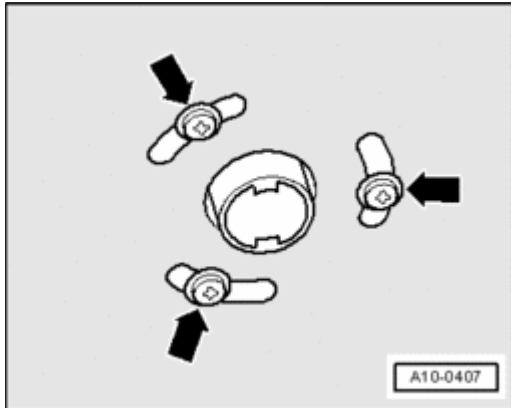
- Unclip harness connectors - 1 - and - 2 - under coolant reservoir from bracket.
- Remove intake manifold with intake manifold flap and Exhaust Gas Recirculation (EGR) valve ⇒ Engine Mechanical, Fuel Injection and Glow Plug - Repair Group 26
- Remove eyelet for Engine Sling 2024 A .
- Re-insert pin into center hole of engine sling 2024 A and secure using cotter pin.
- Attach Engine support bridge 10-222A in conjunction with brackets for engine 10-222A/1 .



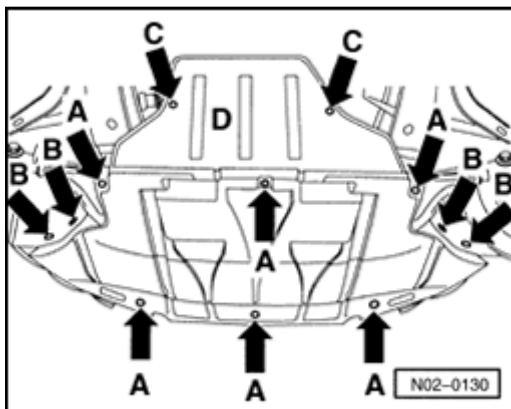
- Hook engine sling 2024 A into spindle of engine support bridge 10-222A .
- Pretension engine/transmission assembly on the spindles.
- Loosen wheel bolts.
- Raise vehicle.
- Remove front wheels.



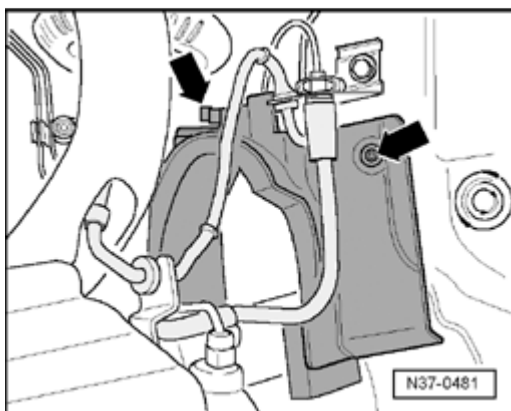
- Unclip retaining clamp for coupling rod - **1** - of Left Front Level Control System Sensor G78 from control arm - **2** - .



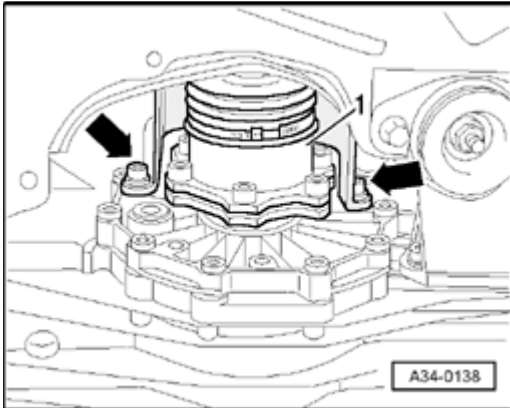
- For vehicles with auxiliary heater, remove bolts - **arrows** - from exhaust pipe at noise insulation.



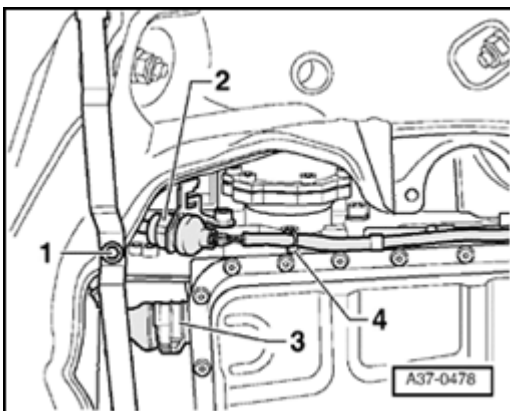
- Remove the noise insulation - **A arrows** - and - **B arrows** - .
- For vehicles with noise insulation - **D** - , remove bolts - **arrows C** - .



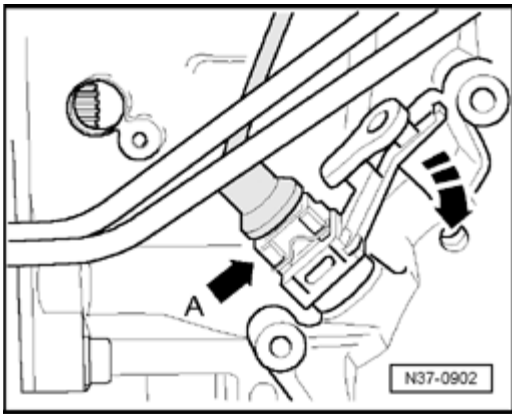
- Remove noise insulation for drive axles from wheel housing at left and right - **arrows** - .
- Remove front exhaust system with catalytic converter ⇒ Engine Mechanical, Fuel Injection and Glow Plug - Repair Group 26 .



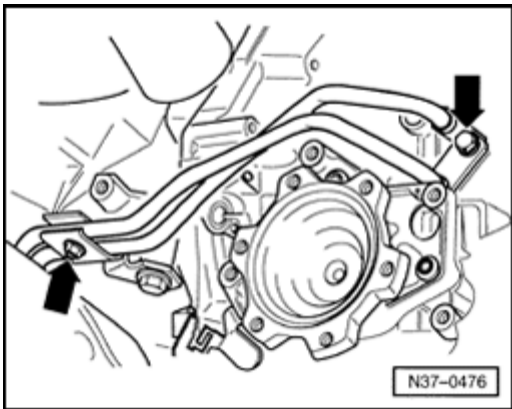
- Remove shielding plate/drive axle - **arrows** - on right side. The third bolt is not visible in the illustration.
- Unbolt left and right drive axles - **1** - from flanges and tie up.



- Remove noise insulation holder - **1** - .
- Disconnect connector - **2** - from wire for multi-function switch.
- Swing securing lever - **3** - , disconnect connector for transmission wiring harness.
- Cut cable ties - **4** - .

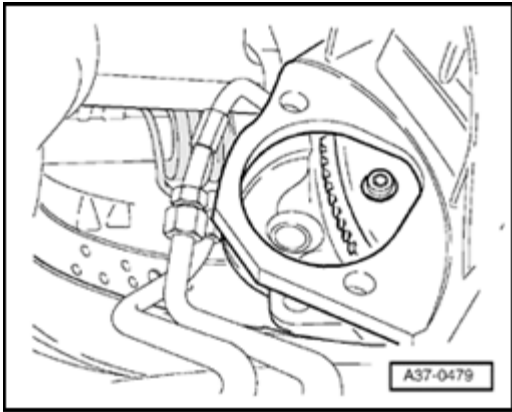


- Disconnect connector for Speedometer Vehicle Speed Sensor (VSS) G22 - **arrow A** - .
- Place drip tray V.A.G 1306 underneath.
- Always clean area of ATF line/transmission connection.

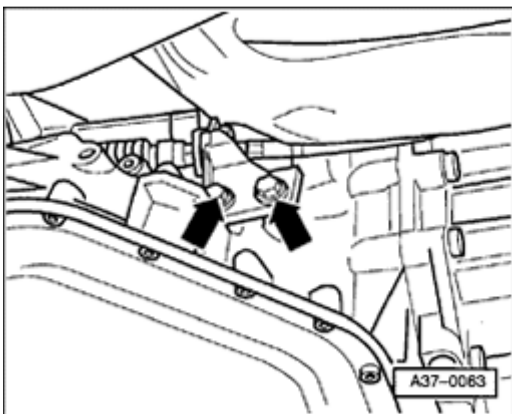


- Disconnect ATF lines from engine/transmission assembly - **arrows** - and tie up.
- Plug ATF lines and transmission with clean plugs.
- Remove starter motor ⇒ Electrical Equipment - Repair Group 27 .
- Unbolt torque converter from drive plate (3 securing bolts).

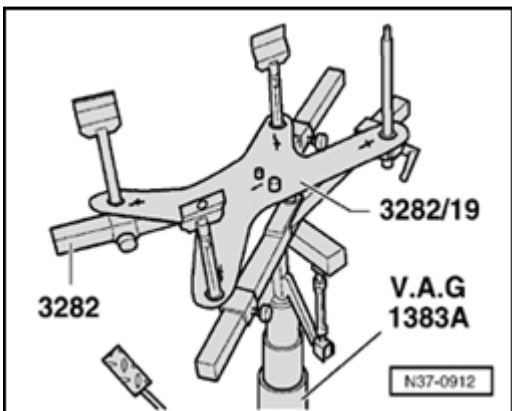




To do this, turn crankshaft accordingly 1 3 additional rotation.



- Mark position of mounting bracket for selector lever cable to transmission housing for re-installation, unbolt mounting bracket - **arrows** - .
- Remove side and lower connecting bolts for engine/transmission.

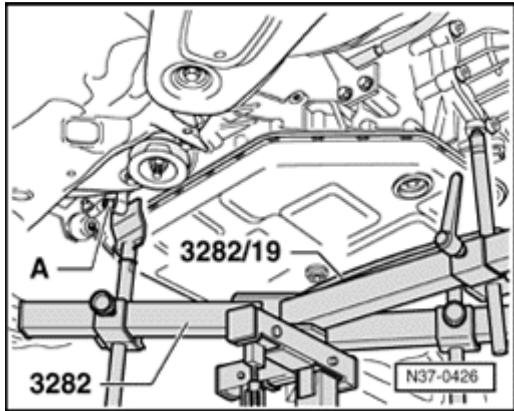


- Position transmission support 3282 .

Transmission support 3282 is attached to automatic transmission 01V using adjustment plate 3282/19 .

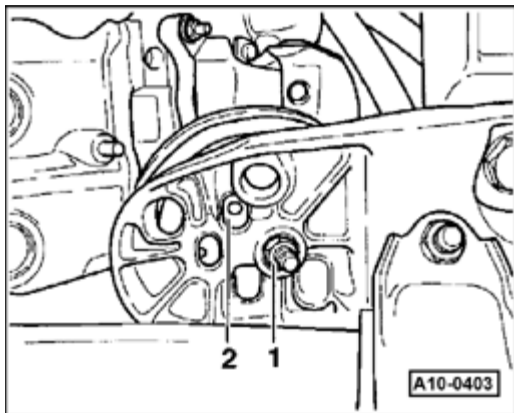
The symbols on the adjusting plate indicate the mounts required, the arrow points forward.

- Move engine-/transmission jack V.A.G 1383 A with transmission mount 3282 under the transmission, align adjustment plate parallel to transmission and support transmission.

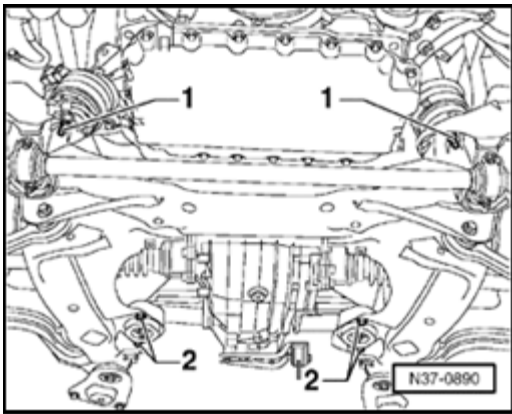


To prevent the ATF pan from being damaged when attaching the collecting device - **A** - :

- Place two washers between the collecting device mounting plate and the transmission.
- Secure the transmission with the bolt - **A** - .

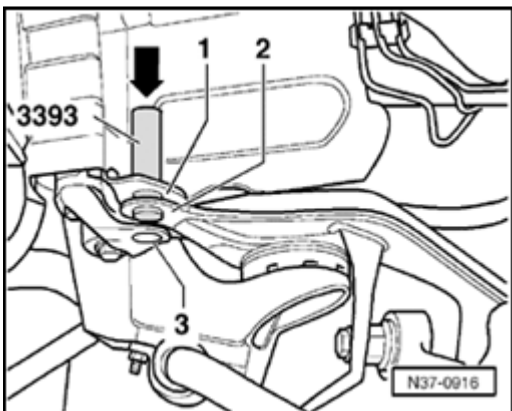


- Before remove the engine mount from the subframe, mark the locations of the bolts - **1** - and positioning sleeves - **2** - .



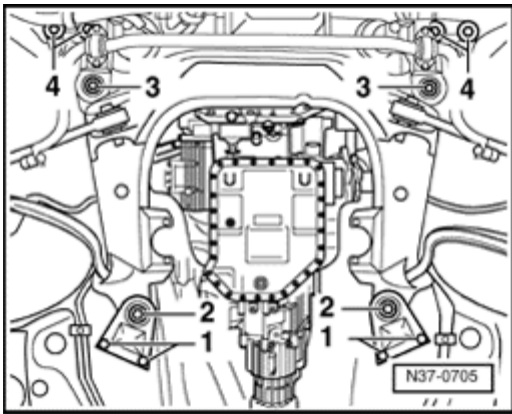
- Remove nuts - 1 - at bottom on left and right engine mounts.
- Remove bolts - 2 - transmission mount/subframe.

Before loosening subframe, check on both sides of vehicle, using Testing Mandrels 3393 , that at least holes - 1 - and - 2 - align.

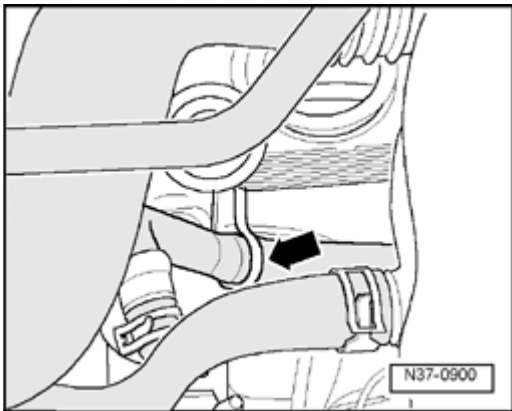


Hole - 3 - is not applicable here.

**If this is not the case, axle alignment must be carried out after tightening of subframe.**



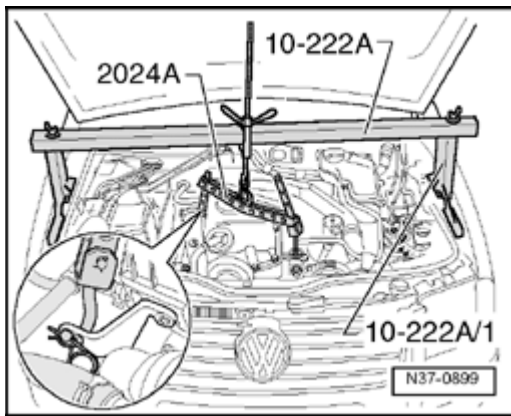
- Remove bolts - **1** - and - **2** - at rear of subframe on both sides of vehicle.
- Remove bolts - **3** - at front of subframe on both sides of vehicle.
- Remove bolts - **4** - (2 bolts at each vehicle side).



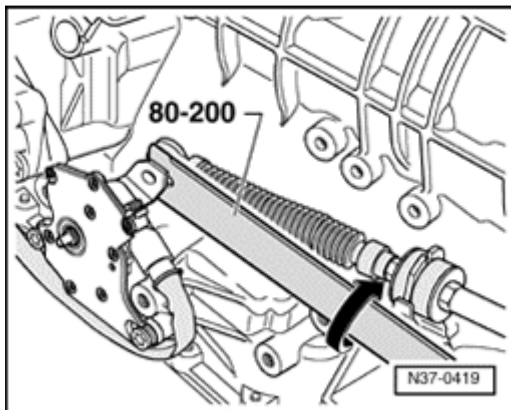
- Unhook hose for power steering from bracket - **arrow** - .

When lowering transmission, make sure that no components are damaged.

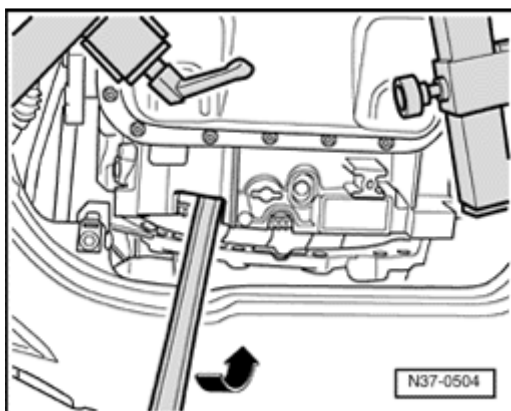
- Climb up step ladder VAS 5085 in order to lower the engine/transmission assembly via the spindles.



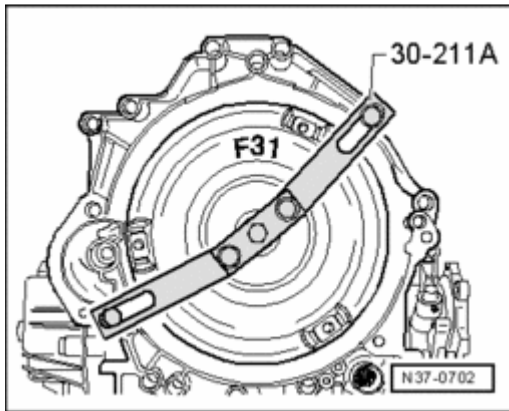
- Lower engine/transmission assembly via the spindles approximately 8 rotations.
- At the same time lower engine/transmission-assembly using engine-/transmission jack V.A.G 1383 A (second mechanic).



- Pry off selector lever cable from lever/shift rod - **arrow** - .
- Remove upper engine/transmission bolts.
- Press transmission from engine, thereby press the torque converter out of the driving plate.



- Press torque converter against the ATF pump - **arrow** - .
- Lower the transmission.



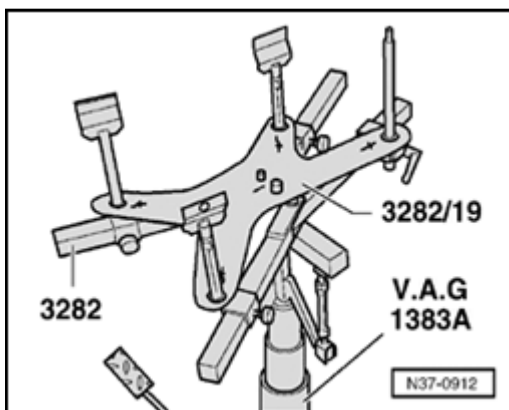
- Using bracket 30-211 A , secure converter so it does not fall out.

Use workshop crane V.A.G 1202 A and transporting device 3457 to transport the automatic transmission ⇒ [Automatic Transmission, Transporting](#) .

Secure transmission to assembly stand using transporting device 3457 and holding plate VW 309 when performing repair work ⇒ [Transmission, Securing to Assembly Stand](#) .

## Installing

- Before installing a replacement transmission, ATF cooler and ATF lines must be cleaned ⇒ [Automatic Transmission Fluid Lines and Cooler, Cleaning](#) .
- Before installing transmission, make sure that torque converter is correctly inserted in transmission ⇒ [Torque Converter, Installing](#) .
- Make sure alignment bushings as well as intermediate plate is correctly seated on engine.

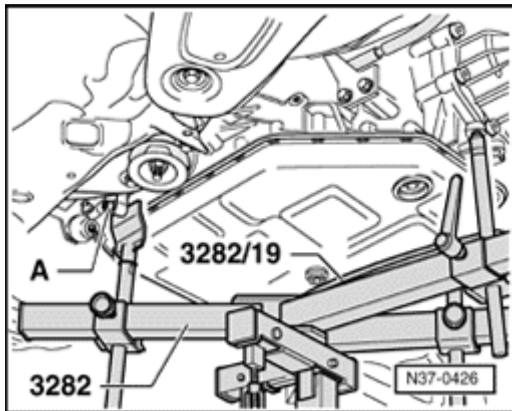


- Position transmission support 3282 .

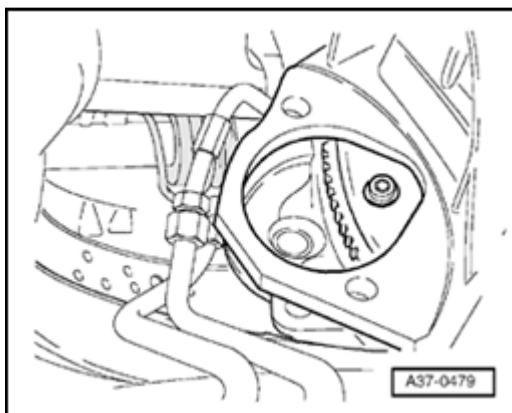
Transmission support 3282 is attached to automatic transmission 01V using adjustment plate 3282/19 .

The symbols on the adjusting plate indicate the mounts required, the arrow points forward.

- Place transmission on transmission jack.

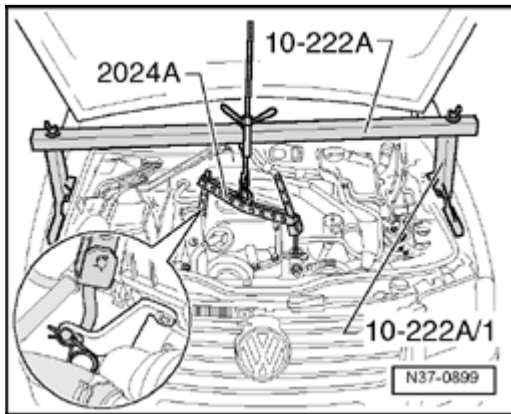


- Secure transmission on transmission support 3282 using bolt - **A** - .
- Set transmission jack under the vehicle.
- Guide transmission in between the lowered subframe and vehicle floor.
- Align transmission to engine.
- Insert and hand tighten a connecting bolt on both sides of the engine/transmission.
- Bolt torque converter and drive plate to each other.



To do this insert bolts by hand and tighten to 85 Nm.

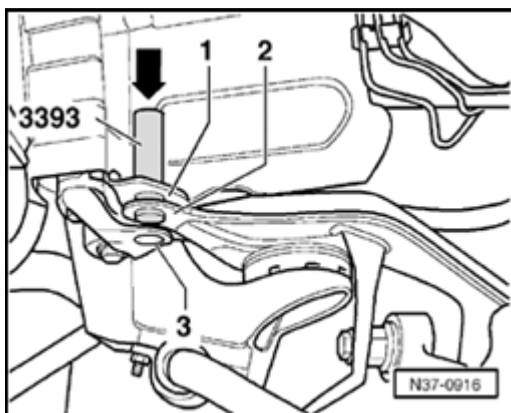
- A bracket or a Ground (GND) connection is also fastened at some connecting bolts for engine/transmission ⇒ [Tightening Specifications](#) .
- Insert the top bolts connecting the engine and transmission and tighten them to the specification ⇒ [Tightening Specifications](#) .
- Climb up step ladder VAS 5085 in order to raise the engine/transmission assembly via the spindles.



- Using the spindles, raise the engine/transmission assembly approximately 8 rotations.
- At the same time raise engine/transmission-assembly using engine-/transmission jack V.A.G 1383 A (second mechanic).

### 1. Subframe installation with axle alignment

### 2. Subframe installation without axle alignment



**1. If the holes - 1 - and - 2 - did not align before loosening the subframe ⇒ [Before loosening subframe, check on both sides of vehicle, using Testing Mandrels 3393, that at least holes 1 and 2 align.](#), an axle alignment must be performed.**

- First install subframe using the old bolts. These must be replaced with new bolts after



the axle alignment.

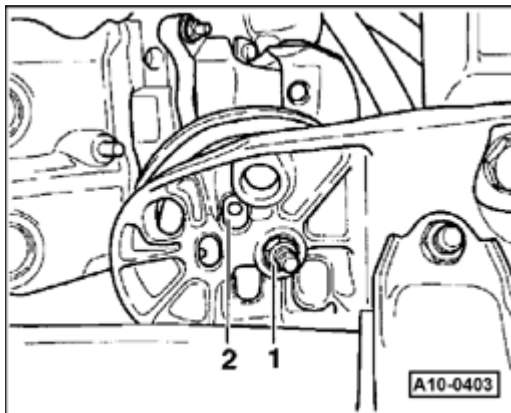
- When doing this, tighten the old bolts to the specification without any additional turning  
⇒ Suspension, Wheels, Steering - Repair Group 40 .

### CAUTION!

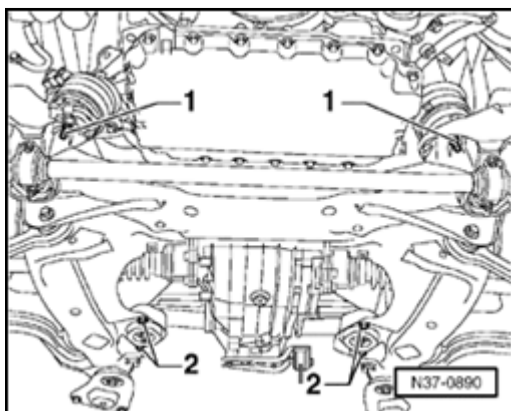
**Vehicle must not be driven in this condition.**

**2. If the holes - 1 - and - 2 - were aligned before loosening the subframe ⇒ Before loosening subframe, check on both sides of vehicle, using Testing Mandrels 3393, that at least holes 1 and 2 align., an axle alignment is not necessary.**

- Install the subframe with new bolts and follow the tightening sequence ⇒ Suspension, Wheels, Steering - Repair Group 40 .

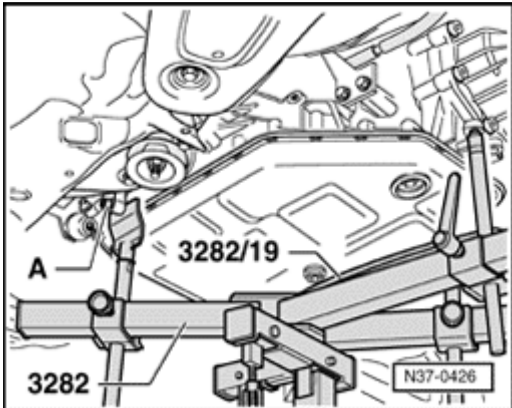


- Bolt engine mount to subframe according to markings applied earlier for bolts - 1 - and alignment bushings - 2 - .

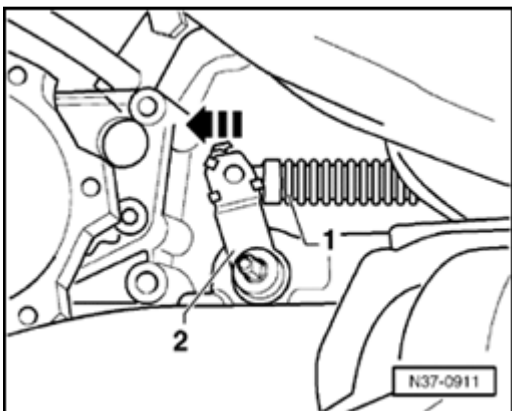


- Thread on lower nuts - 1 - to engine mounts on left and right sides ⇒ Suspension, Wheels, Steering - Repair Group 40 .

- Thread in new bolts - **2** - transmission mount/subframe ⇒ [Transmission Mounts and Transmission Support, Removing and Installing](#) .



- After subframe is bolted to chassis and engine/transmission assembly is bolted to subframe, remove bolt - **A** - .
- Remove engine-/transmission jack V.A.G 1383 A .
- Apply corrosion protection to contact surface between bolt - **A** - and oil pan.
- Install the lower bolts connecting the engine and transmission and tighten them to the specification ⇒ [Tightening Specifications](#) .
- Install retaining clamp for coupling rod of Left Front Level Control System Sensor G78 at left front control arm ⇒ Suspension, Wheels, Steering - Repair Group 40 .
- Do not bend or kink selector lever cable, lightly grease coupling ring and ball socket with polycarbamide grease G 052 142 A2 before installing.

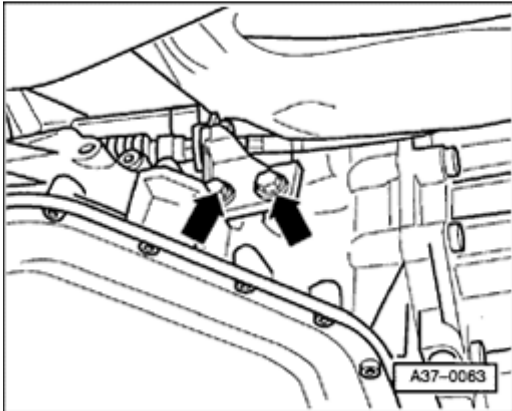


- Shift lever/shift rod - **2** - on transmission in - **direction of arrow** - in "2" and carefully press ball head of selector lever cable - **1** - on shift rod lever using pliers.

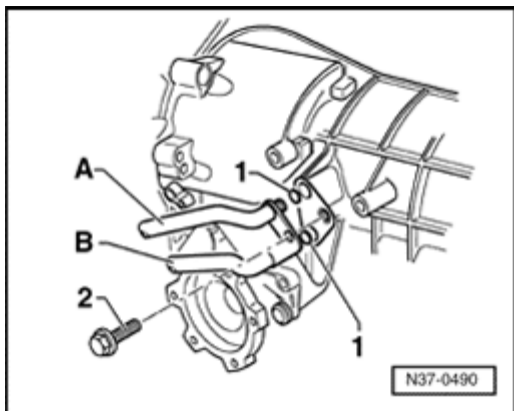
Do not deform shift rod lever - **2** - when pressing on or else shifting cannot be precisely

adjusted any more.

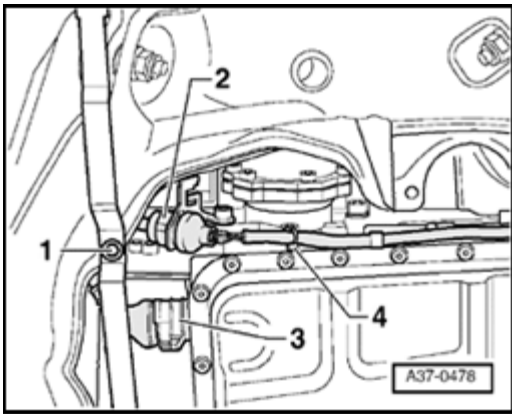
- Press selector lever cable - **1** - completely toward front - **arrow** - in order to shift the lever/shift rod - **2** - to "2" .



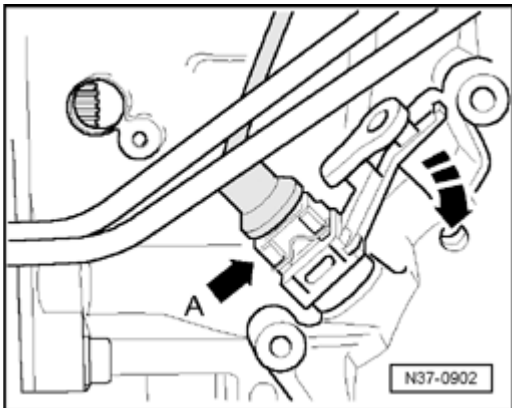
- Bolt support bracket for selector lever cable firmly to transmission according to marking - **arrows** - .
- Install starter motor ⇒ Electrical Equipment - Repair Group 27 .



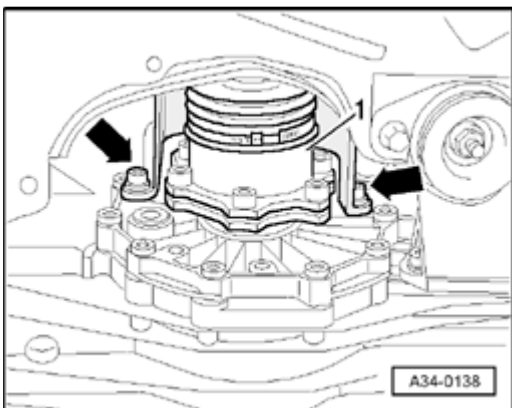
- Always replace O-rings - **1** - .
- Coat new O-rings with ATF and insert.
- Make sure that O-rings are seated properly so that they do not slip out of their seating when connecting ATF lines.
- Push ATF lines into transmission by hand up to the limit stop.
- Only tighten bolt - **2** - when ATF lines are completely connected .



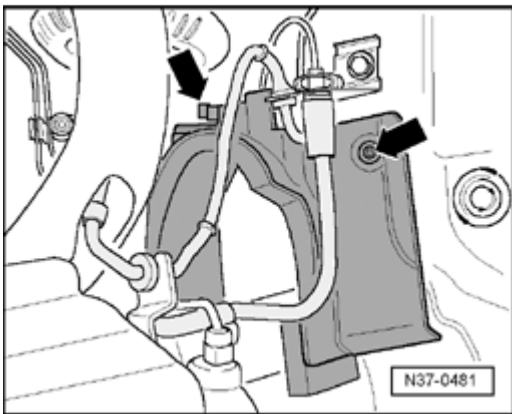
- Connect connector of multi-function Transmission Range (TR) switch - **2** - .
- Connect connector for transmission wiring harness and secure using securing lever - **3** - .
- Install noise insulation holder - **1** - ⇒ Body Exterior - Repair Group 50 .
- Replace cable ties - **4** - .



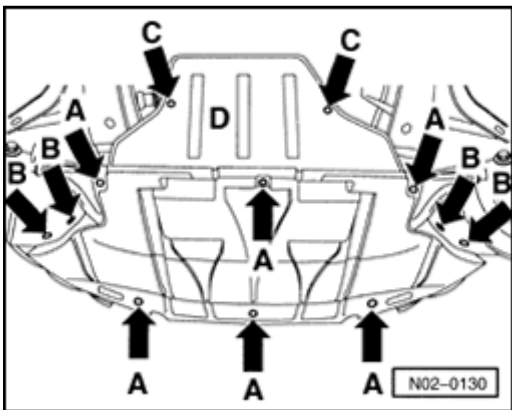
- Connect connector for Speedometer Vehicle Speed Sensor (VSS) G22 - **arrow A** - .



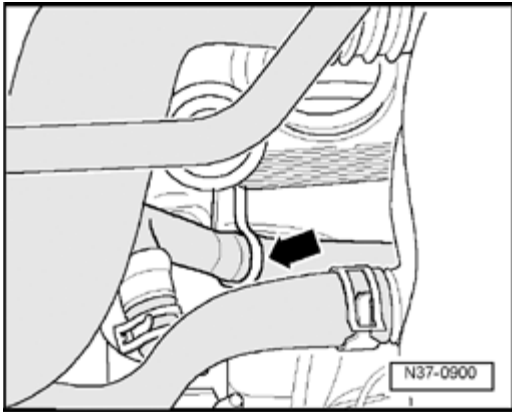
- Install drive axles - **1** - to flange shafts ⇒ Suspension, Wheels, Steering - Repair Group 40 .
- Install shielding plate/drive axle - **arrows** - on right side. The third bolt is not visible in the illustration. ⇒ Suspension, Wheels, Steering - Repair Group 40 .
- Install front exhaust pipe with catalytic converter ⇒ Engine Mechanical, Fuel Injection and Glow Plug - Repair Group 26 .



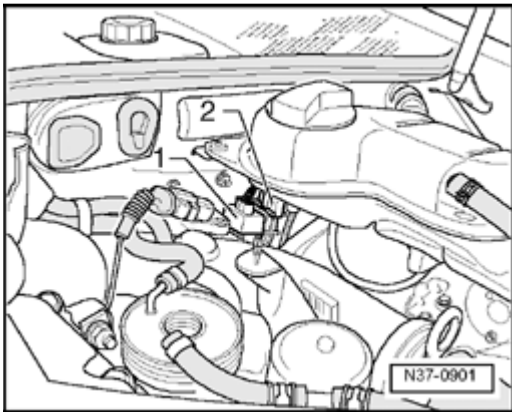
- Install noise insulation for drive axles from wheel housing at left and right.



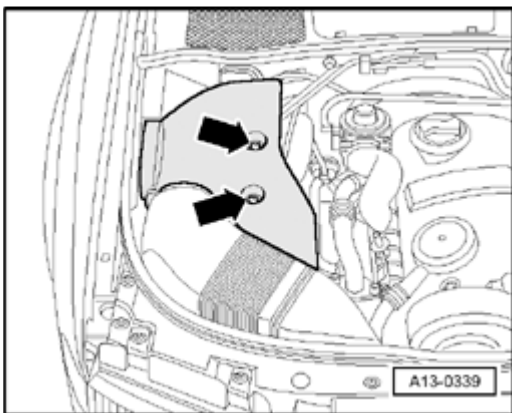
- Install noise insulation.
- In vehicles with auxiliary heater, bolt exhaust pipe firmly to noise insulation.
- Install front wheels ⇒ Suspension, Wheels, Steering - Repair Group 44 .
- Remove engine sling 10-222A .



- Engage hose for power steering into bracket - **arrow** - .
- Install intake manifold with intake manifold flap and Exhaust Gas Recirculation (EGR) valve ⇒ Engine Mechanical, Fuel Injection and Glow Plug - Repair Group 26 .

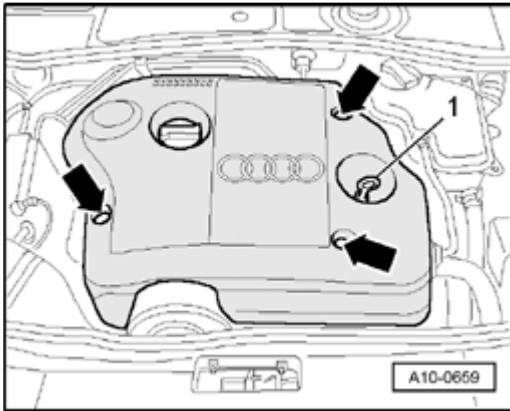


- Insert harness connectors - **1** - and - **2** - into brackets under coolant reservoir.
- Attach intake air duct to intake manifold.



- Attach air filter cover and tighten nuts - **arrows** - ⇒ Engine Mechanical, Fuel Injection and Glow Plug - Repair Group 23 .

- Clip in covers for nuts.



- Attach engine cover and tighten nuts ⇒ Engine Mechanical, Fuel Injection and Glow Plug - Repair Group 10 .

- Clip in covers for nuts.

- Insert oil dipstick - 1 - into guide tube.

- Connect the battery ground strap ⇒ Electrical Equipment - Repair Group 27 .

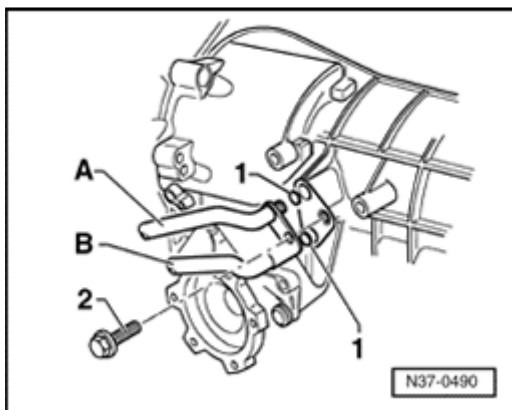
- Initialize electrical window regulators, set clock ⇒ Repair Manual, Maintenance .

- Code radio ⇒ Radio, Telephone, Navigation On Board Diagnostic - Repair Group 01 .

- Check adjustment of selector lever cable and adjust if necessary ⇒ [Selector Lever Cable, Checking and Adjusting](#) .

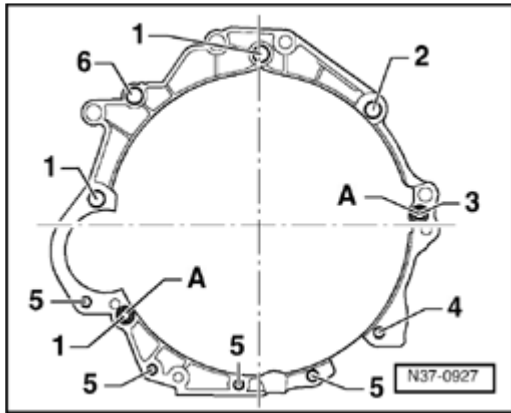
- Check gear oil in final drive with transmission installed ⇒ [Front Final Drive Gear Oil, Checking](#) .

- Then check ATF level and top off ⇒ [ATF Level, Checking and Filling](#) .



= Check ATF line connections - **A** - and - **B** - for proper seal when checking ATF level.

### Tightening Specifications



Transmission to engine

Item	Bolt	Qty.	Nm
1	M12 x 67	3	65
2	M12 x 110	1	65
3	M12 x 90	1	65
4	M12 x 60	1	45
5	M10 x 45	4	45
6	M12 x 67	1	65

\* With nut

\* With bracket for wiring harness

\* With cable bracket

Item A = bushings

Copyright © 2007 Volkswagen of America, Inc. and Bentley Publishers. All rights reserved. Last processed: