

Volkswagen New Beetle
2.0 Liter 4-cyl General, Engine (Engine Code AEG)
10 Engine-Assembly (Page GR-10)

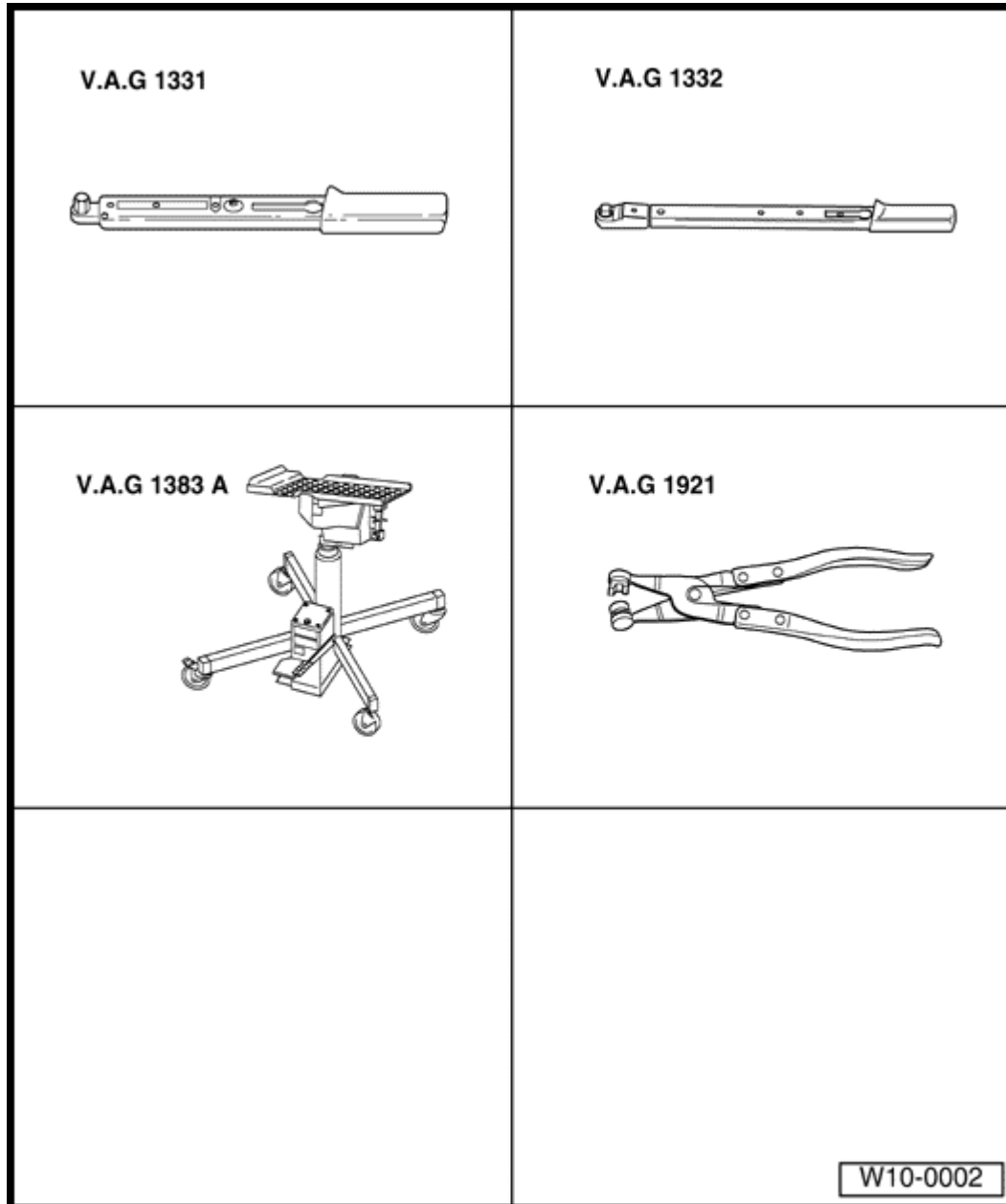
- [Engine, removing and installing](#)
- [Engine / transmission mounts](#)
- [Engine to assembly stand, attaching](#)
- [Engine/transmission, removal notes](#)
- [Installation notes](#)
- [Tightening torques](#)
- [Vehicles with A/C, additional information and removal instructions](#)

Volkswagen New Beetle
2.0 Liter 4-cyl General, Engine (Engine Code AEG)
Engine, removing and installing (Page 10-1)

Special tools, workshop equipment, test and measuring appliances and auxiliary items required

- ◆ 2024 A Engine sling
- ◆ T10012 Engine bracket
- ◆ VW 313 Support clamp
- ◆ VW 540 Engine / Transmission support
- ◆ VAG 1202 A Workshop crane
- ◆ VAG 1306 Drip tray

Volkswagen New Beetle
2.0 Liter 4-cyl General, Engine (Engine Code AEG)
Engine, removing and installing (Page 10-2)



- ◆ VAG 1331 Torque wrench 5 to 50 Nm (3.7 to 37 ft lb)
- ◆ VAG 1332 Torque wrench 40 to 200 Nm (30 to 148 ft lb)
- ◆ VAG 1383 A Engine/transmission jack
- ◆ VAG 1921 Spring clip pliers
- ◆ VAS 5085 Step ladder
- ◆ G 000 100 grease (manual transmission, only)
- ◆ Bolt M10 X 25 / 8.8
- ◆ Cable tie

Volkswagen New Beetle
2.0 Liter 4-cyl General, Engine (Engine Code AEG)
Engine, removing and installing (Page 10-3)

Engine/transmission, removal notes

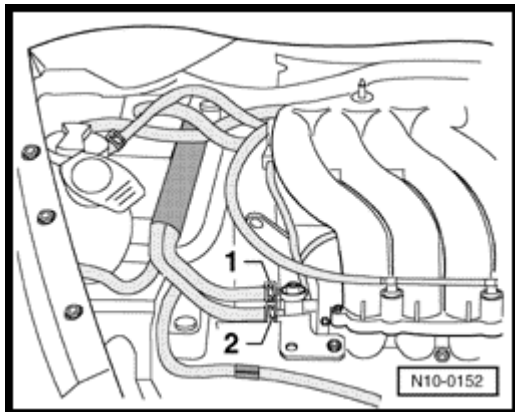
CAUTION!

Obtain radio anti - theft code from the customer BEFORE disconnecting the battery Ground strap.

Notes:

Remove the engine and transmission as an assembly in a downward direction.

- Ensure ignition is switched OFF then disconnect battery Ground strap
- Remove engine cover.
- All cable ties which are opened or cut open to remove the engine, must be replaced in the same position when re - installing the engine.
- Remove power steering reservoir from battery support but do not loosen hoses.
- Tie reservoir to lock support
- Remove battery and battery bracket



- Separate fuel supply as well as fuel return lines at connection on fuel rail.

WARNING!

Fire Hazard! Do NOT have anything in the area that can ignite fuel!

Volkswagen New Beetle

2.0 Liter 4-cyl General, Engine (Engine Code AEG)

Engine, removing and installing (Page 10-4)

WARNING!

The fuel system is under pressure, therefore place a cloth over the connection before the hoses are disconnected.

- Seal lines so fuel system is not contaminated by dirt etc.
- Remove Air Cleaner
- ⇒ Repair group 24

Vehicles with manual transmission

- Disconnect Transmission Range selector mechanism from transmission.
- ⇒ [5 - Speed manual transmission 02J; Repair group 34](#)
- Remove hydraulic clutch slave cylinder:
- ⇒ [5 - Speed manual transmission 02J; Repair group 30](#)

Vehicles with automatic transmission

- Remove Range selector lever cable from transmission:
- ⇒ [Automatic transmission 01M; Repair group 37](#)

All vehicles

- Remove sound dampener tray:
- ⇒ General body repairs; Repair group 50
- Drain coolant ⇒ [Page 19-10](#)
- Remove ribbed belt ⇒ [Page 13-8](#) .
- Remove auxiliary fan on right side of vehicle, if applicable.

Volkswagen New Beetle

2.0 Liter 4-cyl General, Engine (Engine Code AEG)

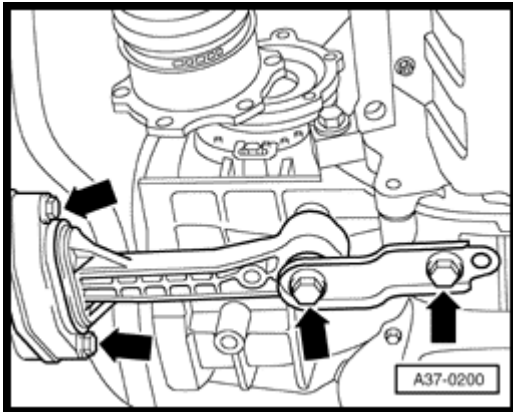
Engine, removing and installing (Page 10-5)

- Unscrew mounting clamps for power steering pressure lines
- Remove power steering pump with bracket and lay to one side; hoses remain connected.

⇒ Running gear; Repair group 48

Vehicles with A/C:

- *Observe additional information and removal instructions* ⇒ [Page 10-16](#).
- Remove inter - connecting, coolant, vacuum and intake hoses on engine.
- Disconnect Secondary Air Injection pump from bracket and remove.
- Disconnect all electric wires from transmission, Generator and starter and move to one side.
- Pull off/disconnect all other electrical connections from engine as necessary and lay to one side.



▲

- Unscrew pendulum support - arrows - .
- Remove right hand inner CV joint protective cover from engine if installed.
- Remove right - hand drive shaft and disconnect left - hand drive shaft at transmission:

⇒ Running gear; Repair group 40

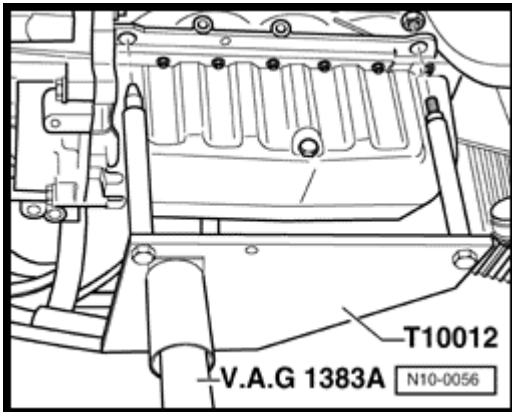
- Separate front exhaust pipe from exhaust manifold ⇒ [Page 26-2](#)

Volkswagen New Beetle

2.0 Liter 4-cyl General, Engine (Engine Code AEG)

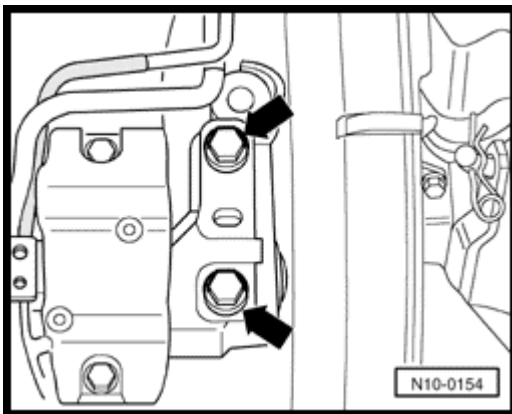
Engine, removing and installing (Page 10-6)

- Install engine bracket 3396 in VAG 1383 A engine/transmission jack.
- Remove bracket for coolant hose under engine block.
- Mount engine bracket T 100 12 using threaded hole



A

- Screw on engine bracket T 10012 using fastening nut and screw M10 X 25/ 8.8 with approx.
 - Tightening torque: 40 Nm (30 ft lb)
- Carefully lift engine and transmission using VAG 1383 A engine/transmission jack .



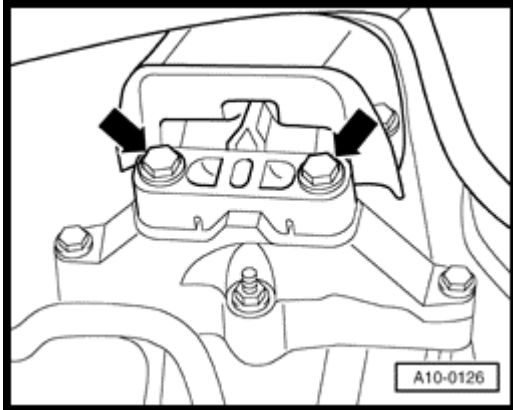
A

- Unscrew powertrain mount engine side from the top from the engine mount - arrows

Notes:

Use VAS 5085 to remove mounting bolts.

Volkswagen New Beetle
2.0 Liter 4-cyl General, Engine (Engine Code AEG)
Engine, removing and installing (Page 10-7)



A

- Unscrew engine/transmission mount (transmission side) from transmission mount - arrows - from the top.
- Carefully lower engine/transmission assembly.
- When doing this, guide the power steering pressure line past the transmission.

Notes:

Carefully guide the engine/transmission assembly while lowering to prevent possible bodywork damage.

Volkswagen New Beetle

2.0 Liter 4-cyl General, Engine (Engine Code AEG)

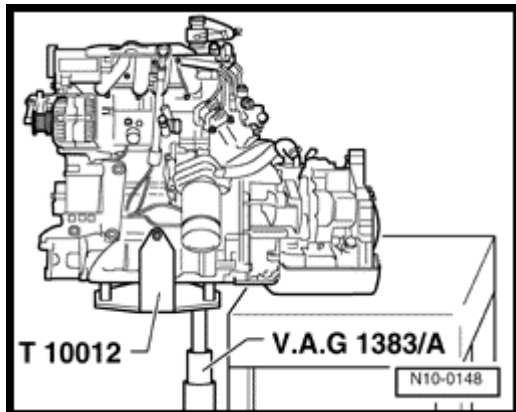
Engine, removing and installing (Page 10-8)

Engine to assembly stand, attaching

Notes:

To work on the engine, secure it to the VW 313 assembly stand support clamp using the VW 540 engine/transmission bracket.

Work sequence



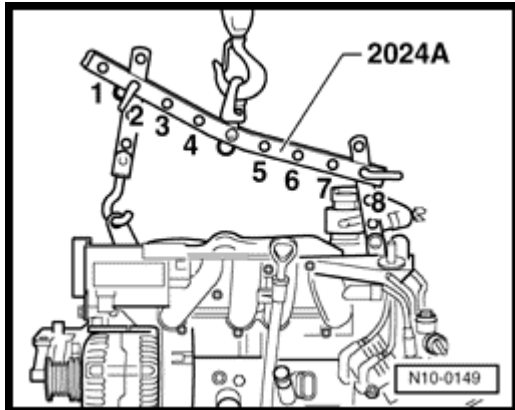
- Take engine/transmission assembly to work bench using VAG 1383A engine sling.
- Set the engine/transmission so the transmission is supported
- Remove lower engine/transmission connecting bolt.
- Press transmission off engine, when doing this, press torque converter out of drive plate.

Vehicles with automatic transmission

- Remove nut from torque converter.
- Clamp - off ATF cooler hoses with - 3094 - and detach at ATF cooler.
- Attach torque converter to prevent it from falling out.

Volkswagen New Beetle
2.0 Liter 4-cyl General, Engine (Engine Code AEG)
Engine, removing and installing (Page 10-9)

All vehicles



A

- Attach 2024A lifting tackle with 2024 A/1 extension as follows and lift out from engine/transmission jack VAG 1383/A using workshop crane:

Pulley end:

3rd hole in hook at position 2

Flywheel end:

3rd hole in hook at position 8

WARNING!

Secure all hooks and locating pins with locking pins.

Notes:

- ◆ *Ensure that positions marked 1 to 4 on the bar are towards the pulley end.*
 - ◆ *Count the holes in the hooks up from the hook.*
- Secure engine to VW 313 support clamp using VW 540 engine/transmission bracket and VW 540/1 kit.

Volkswagen New Beetle

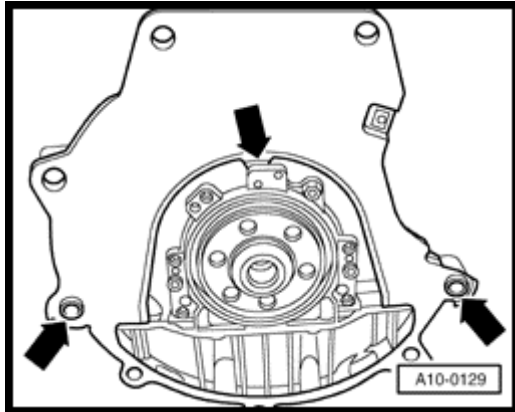
2.0 Liter 4-cyl General, Engine (Engine Code AEG)

Engine, removing and installing (Page 10-10)

Installation notes

Installation is carried out in the reverse of the removal sequence, during installation note the following:

- Check whether engine/transmission centering dowels are installed in engine block, install if necessary.



A

- Install intermediate plate onto sealing flange and slide onto dowel sleeves - arrows -

Vehicles with manual transmission

- Check clutch release bearing for wear, replace if necessary.
- Lightly grease clutch release bearing, release bearing guide sleeve and splines on input shaft with G 000 100.
- Install hydraulic clutch slave cylinder
 - ⇒ [5 - Speed manual transmission 02J; Repair group 30](#)
- Install Transmission Range selector mechanism
 - ⇒ [5 - Speed manual transmission 02J; Repair group 34](#)
- If necessary adjust shifting cables:
 - ⇒ [5 - Speed manual transmission 02J; Repair group 34](#)

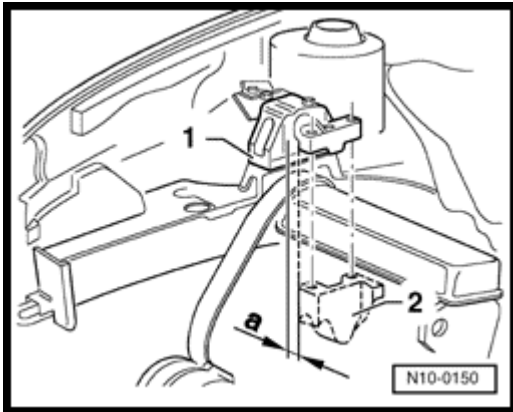
Vehicles with automatic transmission

- Replace selector cable anchorage locking washer.
- Install Transmission Range selector cable on transmission, adjust if necessary:
 - ⇒ [Automatic transmission 01M; Repair group 37](#)

Volkswagen New Beetle 2.0 Liter 4-cyl General, Engine (Engine Code AEG) Engine, removing and installing (Page 10-11)

All vehicles

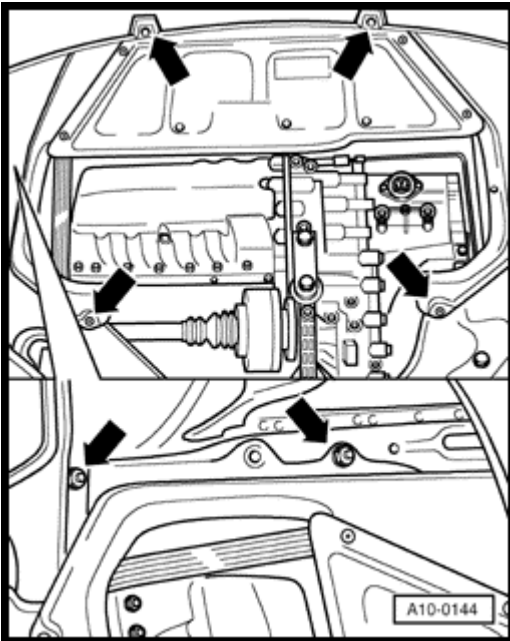
- When installing the engine/transmission assembly, ensure sufficient clearance to drive shafts.
- While installing, guide the power steering pressure line past the transmission.



A

- Align engine/transmission in transverse direction so there is a distance - a - of approx. 10 mm between engine mount - 1 - and engine support - 2 - .
- Do not stress the engine and transmission mounting points during installation (aligned parallel to each other)
 - Tightening torques ⇒ [Page 10-14](#)
- Remove left - hand drive shaft and disconnect right - hand drive shaft at transmission:
 - ⇒ Running gear; Repair group 40
- Remove front exhaust pipe ⇒ [Page 26-2](#)
- Adjusting accelerator cable ⇒ [Page 20-26](#)
- Install power steering pump
 - ⇒ Running gear; Repair group 48
- Check electrical connections and wire routing:
 - ⇒ Electrical system; Repair group 97
- Install ribbed belt ⇒ [Page 13-8](#).
- Install Secondary Air injection pump motor.

Volkswagen New Beetle
2.0 Liter 4-cyl General, Engine (Engine Code AEG)
Engine, removing and installing (Page 10-12)



A

- Install sound dampening tray
 - ⇒ General body repairs; Repair group 50
 - Fill system with engine coolant ⇒ [Page 19-10](#)
 - Make a test drive and check DTC memory
 - ⇒ Repair group 01
- If malfunctions occur
- Display Readiness code
 - ⇒ Repair group 01
 - Match engine Control Module to Throttle Control Module
 - ⇒ Repair group 24

Volkswagen New Beetle
2.0 Liter 4-cyl General, Engine (Engine Code AEG)
Engine, removing and installing (Page 10-13)

Tightening torques

Bolted joint	DIN size	Tightening torque
Bolts, nuts:	M 6	10 Nm (7 ft lb)
	M 7	15 Nm (10 ft lb)
	M 8	25 Nm (18 ft lb)
	M10	40 Nm (30 ft lb)
	M 12	60 Nm (44 ft lb)
Variations on the above:		
Engine to transmission connecting bolts	M10	45 Nm (33 ft lb)
Engine to transmission connecting bolts	M12	80 Nm (59 ft lb)
Converter to drive plate		60 Nm (44 ft lb)
Drive shaft to flange/ transmission		40 Nm (30 ft lb)

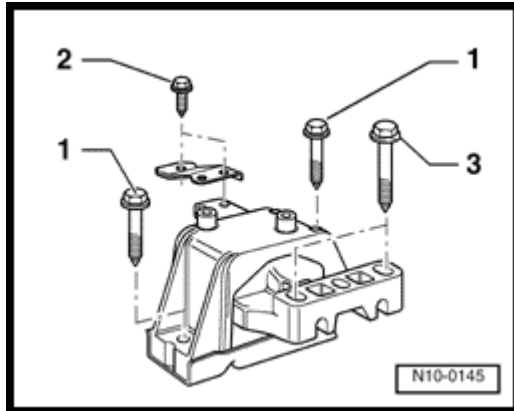
Volkswagen New Beetle

2.0 Liter 4-cyl General, Engine (Engine Code AEG)

Engine, removing and installing (Page 10-14)

Engine / transmission mounts

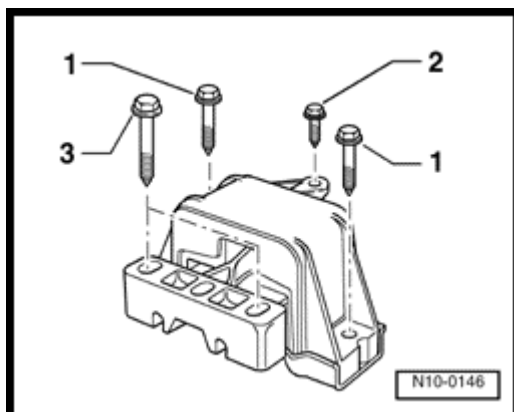
Tightening torques



Front assembly mounting

- | | |
|--------------------------------|--------------------------------------|
| 1 - Mount to body 1) | 40 Nm (30 ft lb)
+ 90° (1/4 turn) |
| 2 - Mount/bracket to body | 25 Nm (18 ft lb) |
| 3 - Mount to engine bracket 1) | 60 Nm (44 ft lb)
+ 90° (1/4 turn) |

1) Replace bolts

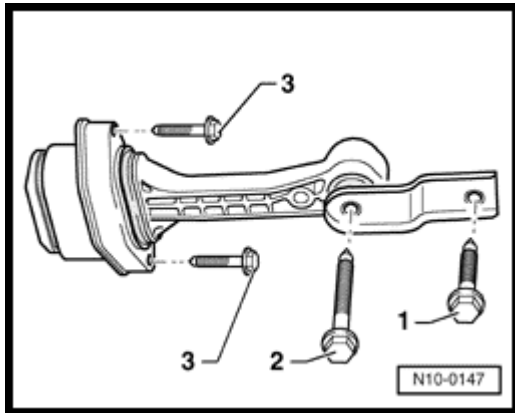


Rear right assembly mounting

- | | |
|--|--------------------------------------|
| 1 - Mount to body 1) | 40 Nm (30 ft lb)
+ 90° (1/4 turn) |
| 2 - Mount to body | 25 Nm (18 ft lb) |
| 3 - Bearing on transmission console 1) | 60 Nm (44 ft lb)
+ 90° (1/4 turn) |

1) Replace bolts

Volkswagen New Beetle
2.0 Liter 4-cyl General, Engine (Engine Code AEG)
Engine, removing and installing (Page 10-15)



Pendulum support

- | | |
|--|--------------------------------------|
| 1 - Pendulum support to transmission 1) | 40 Nm (30 ft lb)
+ 90° (1/4 turn) |
| 2 - Pendulum support to transmission 1) | 40 Nm (30 ft lb)
+ 90° (1/4 turn) |
| 3 - Pendulum support to engine/transmission 1) | 20 Nm (15 ft lb)
+ 90° (1/4 turn) |

1) Replace bolts

Volkswagen New Beetle
2.0 Liter 4-cyl General, Engine (Engine Code AEG)
Engine, removing and installing (Page 10-16)

Vehicles with A/C, additional information and removal instructions

WARNING!

Do NOT open the A/C refrigerant circuit!

Notes:

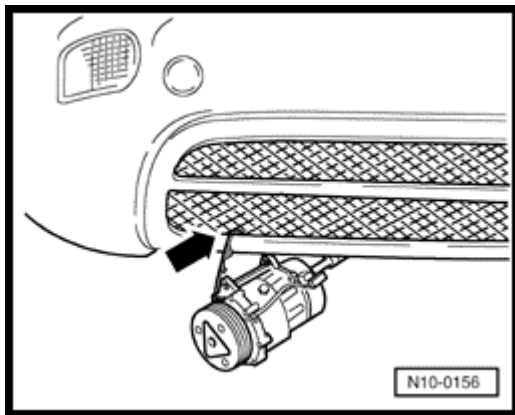
To prevent damage to condenser also to the refrigerant pipes/hoses, ensure that the pipes and hoses are not stretched, kinked or bent.

To allow removing and installing the engine without opening the refrigerant circuit:

- Remove retaining clamp(s) from refrigerant lines.

- Remove A/C compressor:

⇒ [Heating, A/C; Repair group 87](#)



- Attach A/C compressor to body so refrigerant hoses/lines are relieved.