

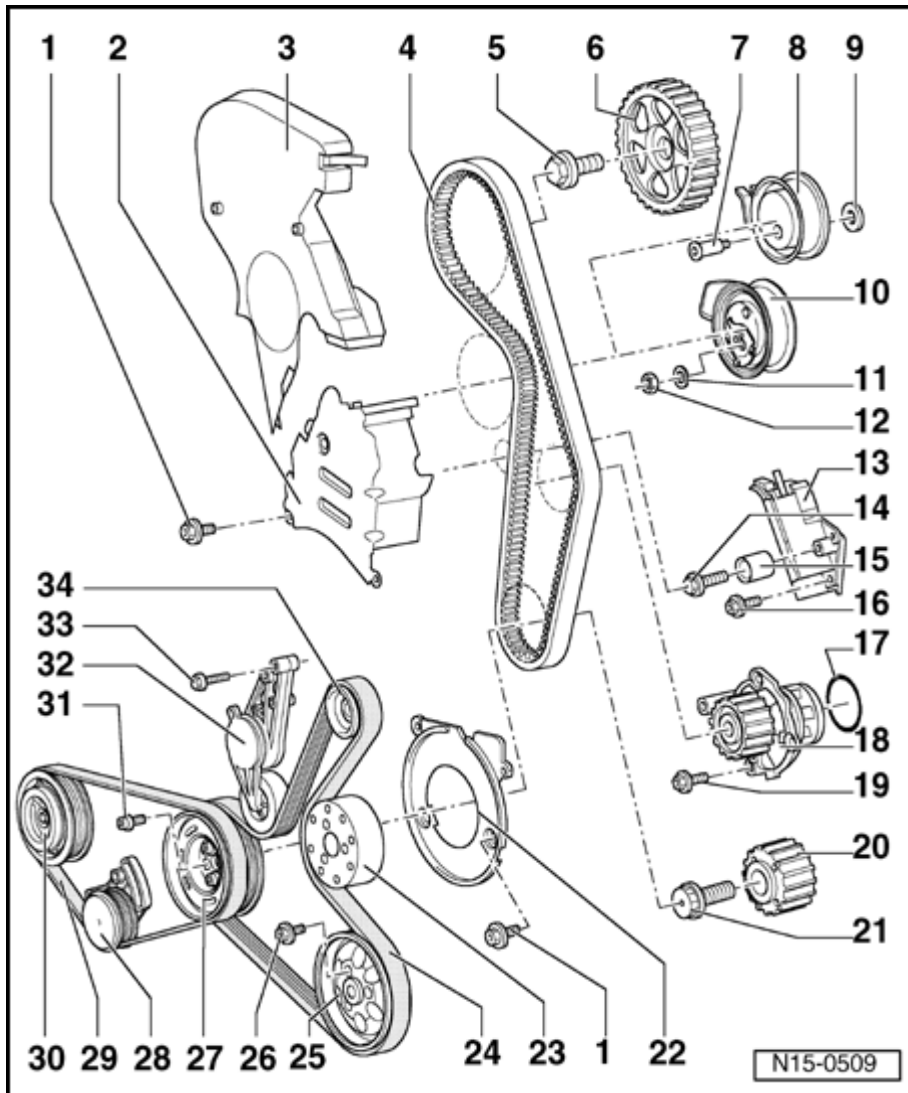
## Engine, disassembling and assembling

### **Note:**

*If large quantities of metal particles or other deposits (caused, for example, by partial seizure of the crankshaft or connecting rod bearings) are found in the engine oil, the oil passages must be cleaned thoroughly and the oil cooler replaced in order to prevent further damage from re-occurring.*

I ⇒ [Page 13-2](#)

II ⇒ [Page 13-7](#)



**Part I**

From 08.00 a new tensioning roller and toothed belt gear are being installed for toothed belt drive. Tensioning roller must be adjusted in order to tension toothed belt.

**Part I**

**1 - 10 Nm**

- ◆ Replace

**2 - Toothed belt guard, center piece**

**3 - Toothed belt guard, upper part**

**4 - Toothed belt**

- ◆ Mark direction of rotation before removing

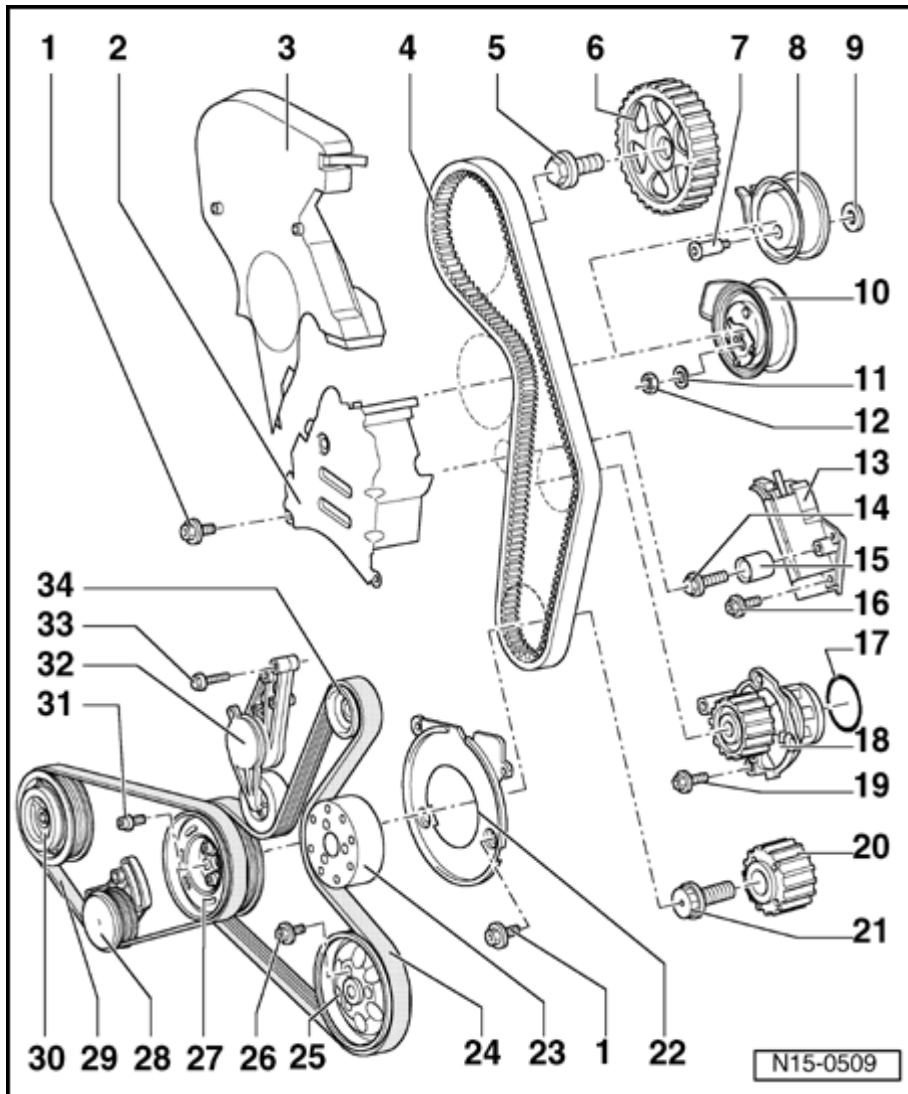
- ◆ Check for wear

- ◆ Do not kink

- ◆ Removing, installing and tensioning ⇒ [Page 15-6](#)

**5 - 65 Nm**

- ◆ Use 3036 retainer for loosening and tightening



**6 - Camshaft gear**

- ◆ Note installation position: The narrow rib of the camshaft gear points outward and the TDC mark for cyl. 1 is visible

**7 - 27 Nm**

**8 - Tensioning roller**

- ◆ Up to 07.00, not adjustable

**9 - Washer**

**10 - Tensioning roller**

- ◆ From 08.00, must be adjusted using 3387 pin wrench

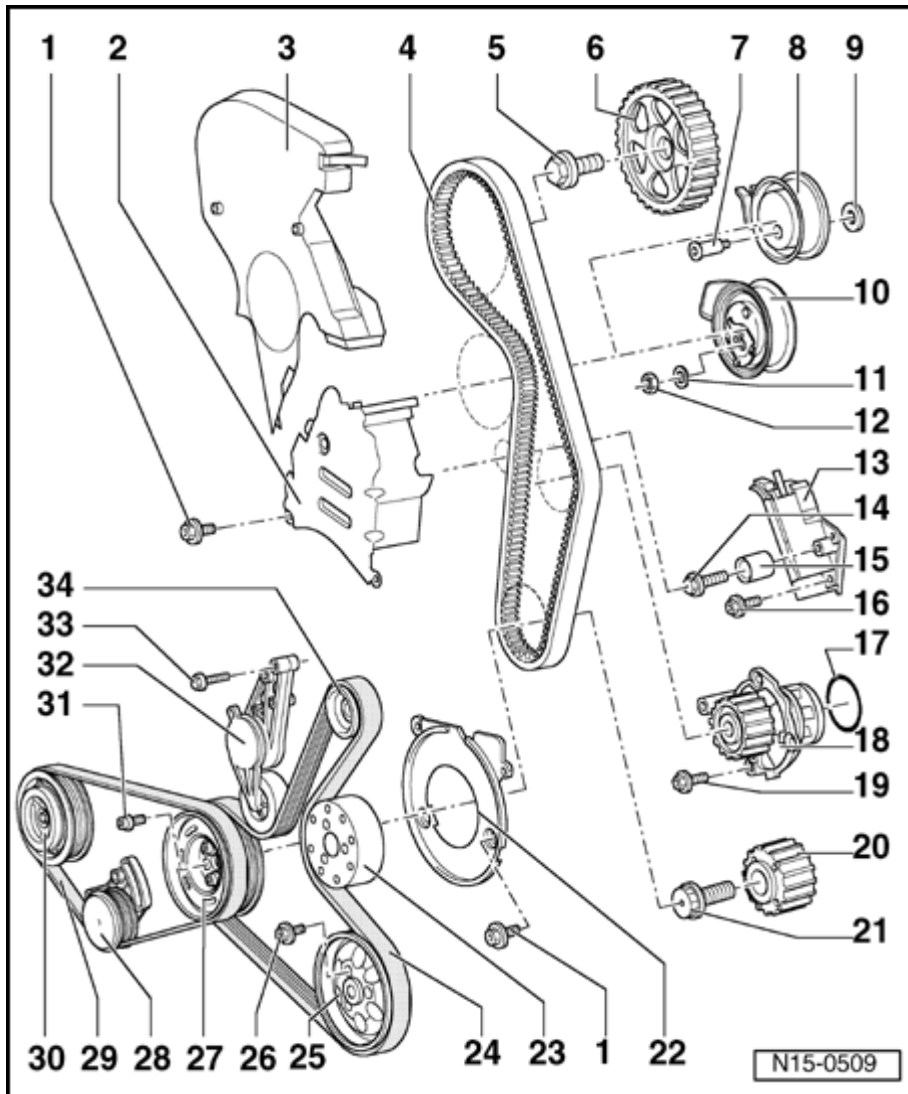
**11 - Washer**

**12 - 27 Nm**

**13 - Tensioning device for toothed belt**

- ◆ Up to 07.00 secure using T40011
- ◆ From 08.00 secure using T10008

**14 - 25 Nm**



15 - Idler roller

16 - 15 Nm

17 - O-ring

- ◆ Replace if damaged

18 - Coolant pump

- ◆ Removing and installing ⇒ [Page 19-26](#)

19 - 15 Nm

20 - Crankshaft toothed belt gear

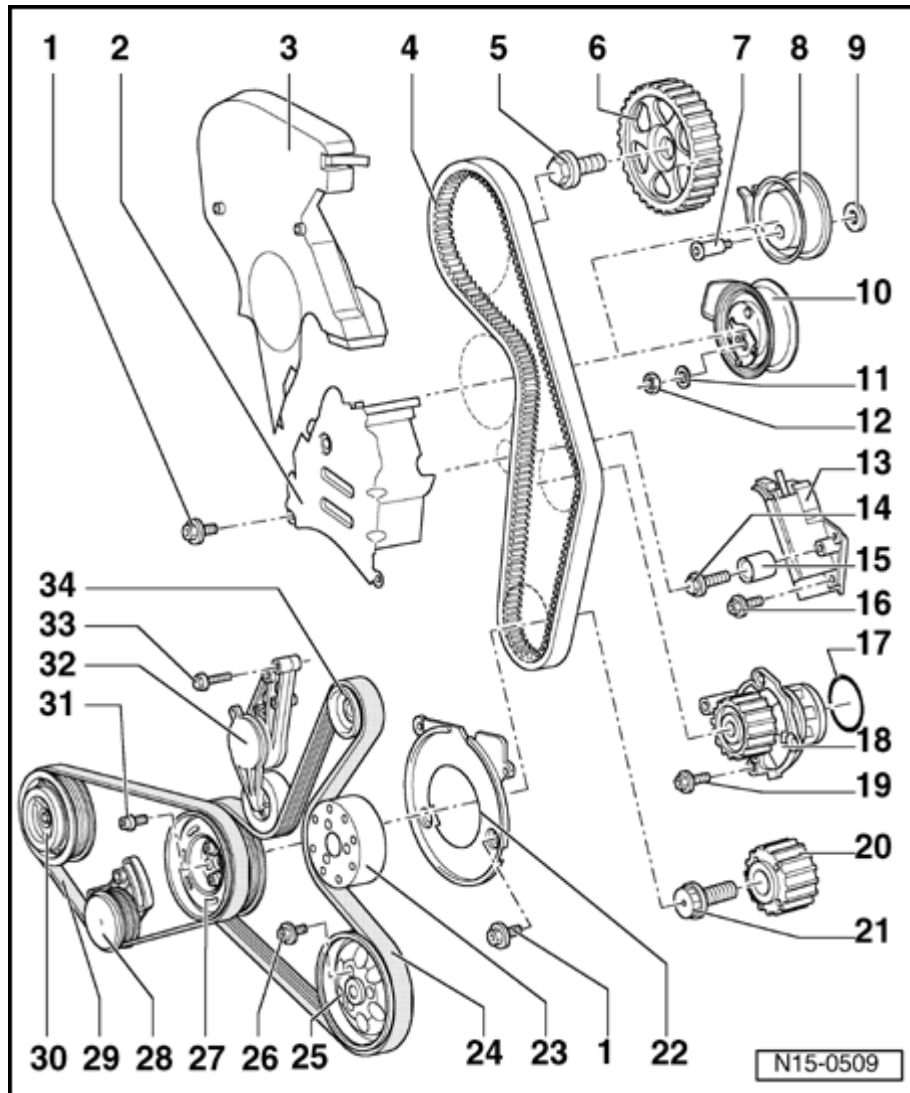
21 - 90 Nm +  $\frac{1}{4}$  turn (90 ° ) additional

- ◆ Replace
- ◆ Thread and collar must be free of oil and grease
- ◆ Use 3415 counter support to loosen and tighten

22 - Toothed belt guard, lower part

23 - Belt pulley

- ◆ for viscous-fan clutch



#### 24 - Ribbed belt

- ◆ Mark direction of rotation before removing
- ◆ Removing and installing ⇒ [Page 13-14](#)

#### 25 - Belt pulley

- ◆ for power steering vane pump

#### 26 - 25 Nm

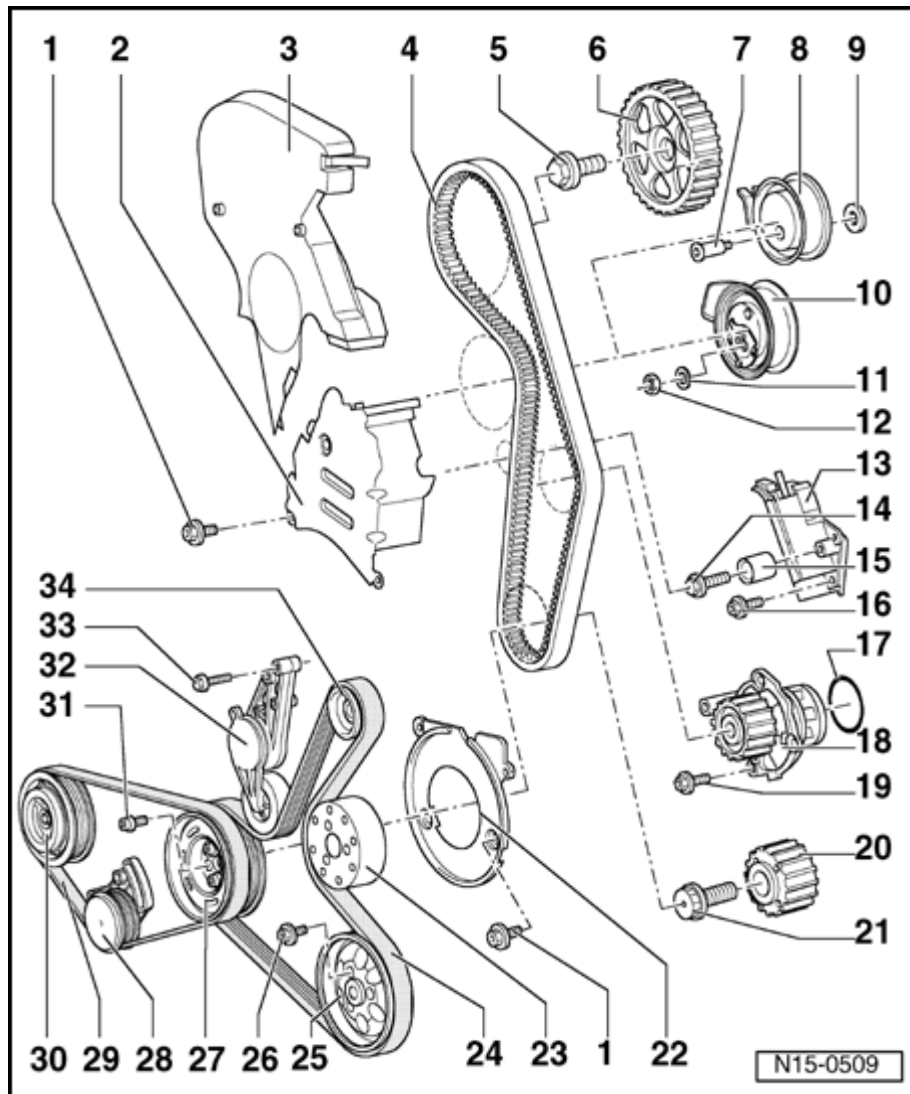
#### 27 - Belt pulley/harmonic balancer

- ◆ for 2 belt drives
- ◆ Installation is only possible in one position - hole offset-
- ◆ Note position during installation of toothed belt ⇒ [Page 15-6](#) , Toothed belt, removing, installing and tensioning

#### 28 - Ribbed belt tensioner

#### 29 - Ribbed belt

- ◆ for A/C compressor
- ◆ Mark direction of rotation before removing
- ◆ Removing and installing ⇒ [Page 13-12](#)



### 30 - Belt pulley

- ◆ For A/C compressor
- ◆ Securing A/C compressor to -bracket - cylinder block

⇒ [Repair Manual, Heating & Air Conditioning, Repair Group 87](#)

### 31 - 10 Nm + $\frac{1}{4}$ turns (90 °) additional

- ◆ Replace

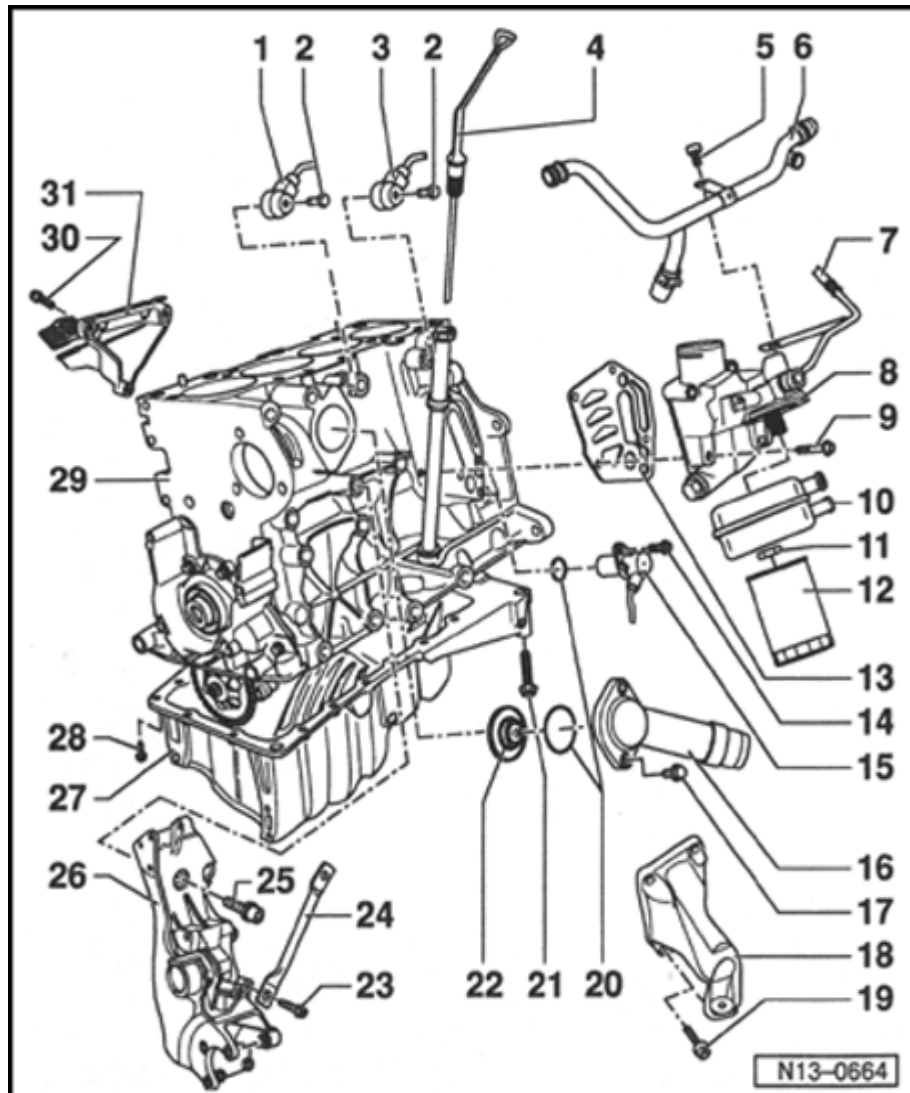
### 32 - Tensioning device for ribbed belt

- ◆ For loosening ribbed belt, turn using open-end spanner ⇒ [Page 13-14](#)

### 33 - 25 Nm

### 34 - Belt pulley

- ◆ For generator



## Part II

### 1 - Knock Sensor (KS) 1 -G61-

◆ Checking:

⇒ [Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Engine Code\(s\): ATW, AUG, AWM, Repair Group 01, DTC memory; Engine Control Module \(ECM\) DTC memory, checking and erasing](#)

### 2 - 20 Nm

◆ Tightening torque affects function of Knock Sensor (KS)

### 3 - Knock Sensor (KS) 2 -G66-

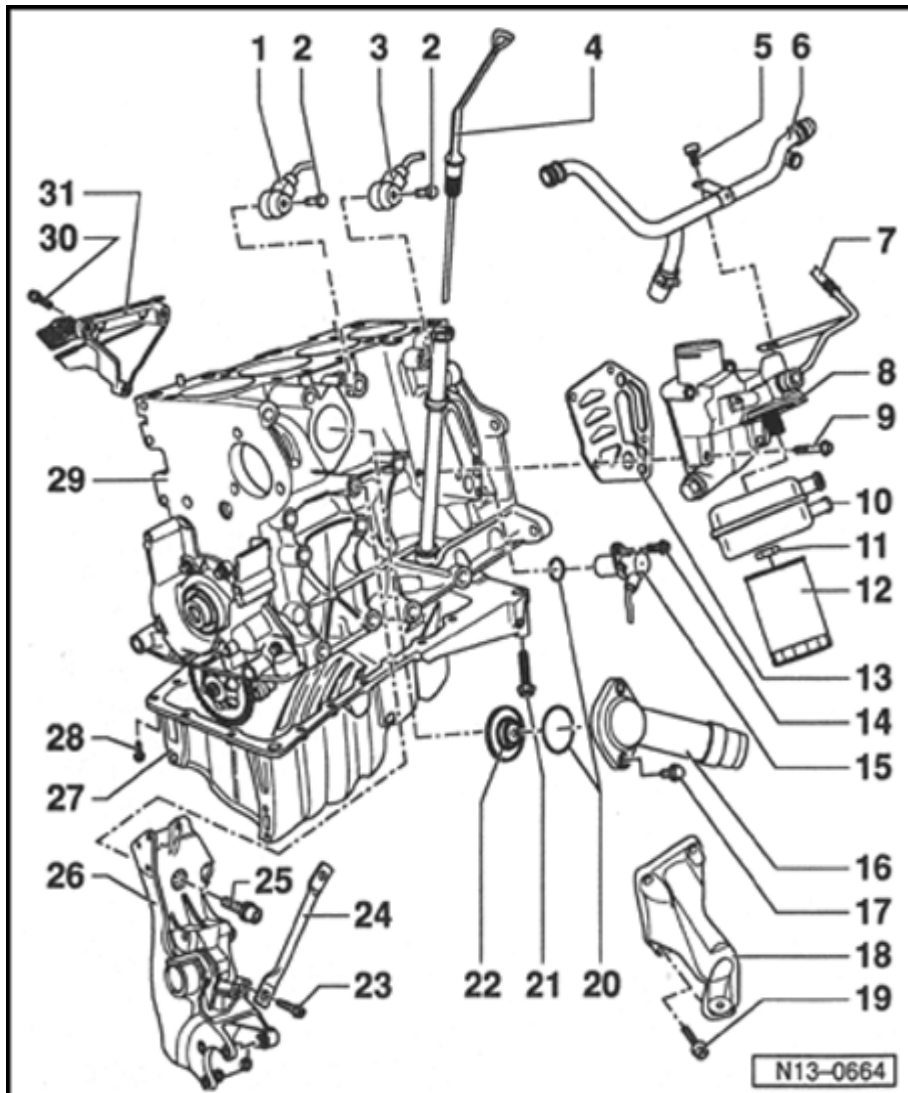
◆ Checking:

⇒ [Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Engine Code\(s\): ATW, AUG, AWM, Repair Group 01, DTC memory; Engine Control Module \(ECM\) DTC memory, checking and erasing](#)

### 4 - Dipstick

◆ Oil level must not exceed max. marking!

### 5 - 20 Nm



**6 - Lower coolant line**

**7 - Oil supply line**

◆ To turbocharger

**8 - Oil filter bracket**

◆ Disassembling and assembling ⇒ [Page 17-6](#)

**9 - 15 Nm +  $\frac{1}{4}$  turns ( $90^\circ$ ) turn**

◆ Always replace

**10 - Oil cooler**

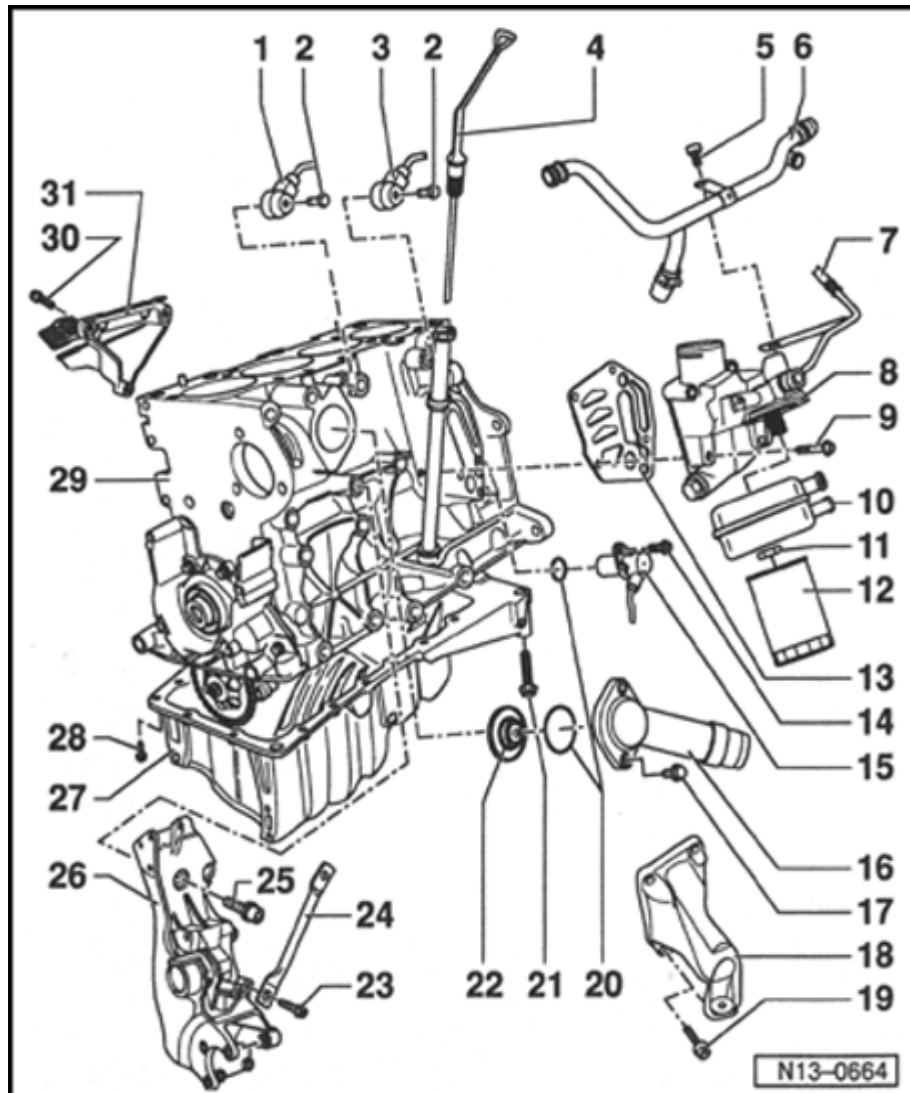
◆ Coat contact surfaces to oil filter bracket outside seal with AMV 188 100 02.

◆ ensure sufficient clearance to surrounding components

◆ Observe note ⇒ [Page 13-1](#)

**11 - 25 Nm**





### 12 - Oil filter housing

- ◆ Remove with tension strap
- ◆ Tighten by hand
- ◆ Follow installation notes found on oil filter

### 13 - Gasket

- ◆ Always replace

### 14 - 10 Nm

### 15 - Engine speed (RPM) sensor

- ◆ Checking:

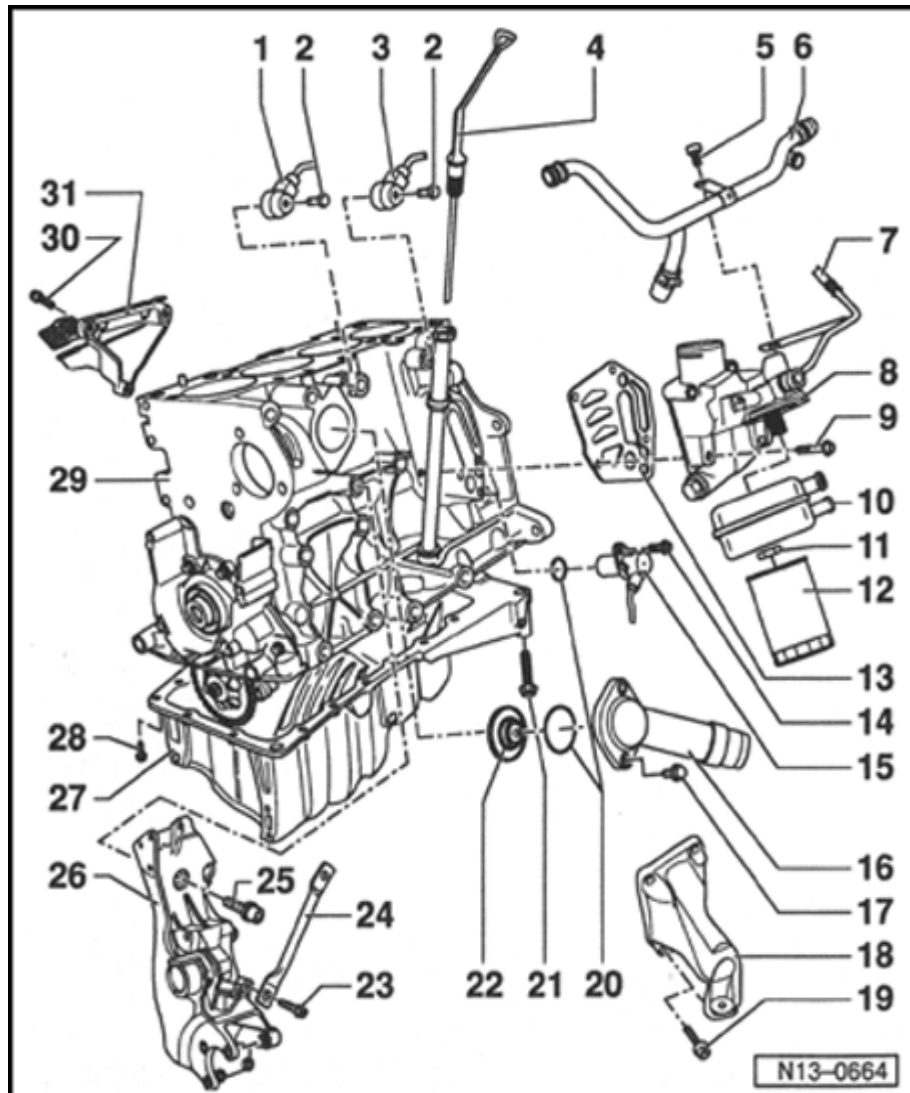
⇒ [Repair Manual, 1.8 Liter 4-Cyl. 5V Turbo Fuel Injection & Ignition, Engine Code\(s\): ATW, AUG, AWM, Repair Group 01, DTC memory; Engine Control Module \(ECM\) DTC memory, checking and erasing](#)

### 16 - Connecting piece

### 17 - 15 Nm

### 18 - Left engine mount

### 19 - 40 Nm



### 20 - O-ring

- ◆ Replace if damaged

### 21 - 45 Nm

### 22 - Coolant thermostat

- ◆ Checking: Warm thermostat in hot water bath.
- ◆ Starts opening at approx. 86 ° C
- ◆ Opens at least 7 mm

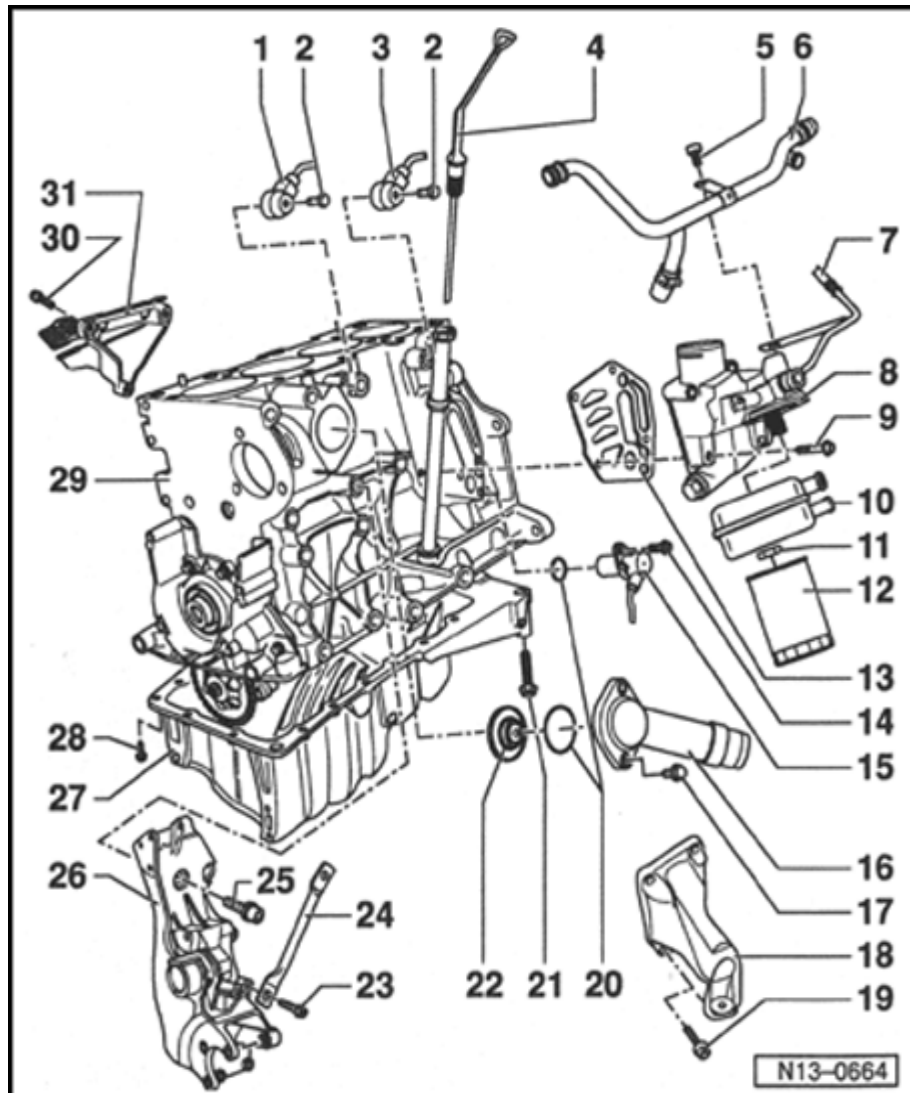
### 23 - 20 Nm

### 24 - Brace

- ◆ Between bracket and intake manifold

### 25 - 50 Nm

- ◆ Observe tightening sequence ⇒ [Page 19-14](#) , Fig. ⇒ [1](#)



### 26 - Bracket

- ◆ Removing and installing ⇒ [Page 19-12](#)
- ◆ Viscous fan bearing, removing and installing ⇒ [Page 19-31](#)

### 27 - Oil pan

- ◆ Removing and installing ⇒ [Page 17-10](#)

### 28 - 15 Nm

### 29 - Cylinder block

- ◆ Sealing flange and flywheel/drive plate, removing and installing ⇒ [Page 13-15](#)
- ◆ Crankshaft, removing and installing ⇒ [Page 13-30](#)
- ◆ Pistons and connecting rods, disassembling and assembling ⇒ [Page 13-40](#)

### 30 - 40 Nm

### 31 - Engine bracket, right



## Ribbed belt for A/C compressor, removing and installing

### Special tools and equipment

A

- ◆ VAG 1331 torque wrench (5 to 50 Nm)

### Note:

*Before removing ribbed belt, note direction of rotation with chalk or felt-tip marker. When installing the ribbed belt, make sure it is seated correctly on the pulleys.*

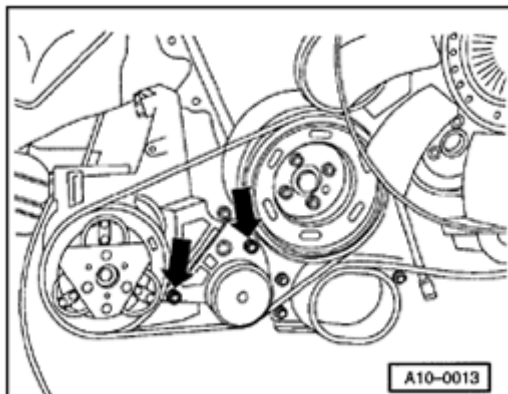
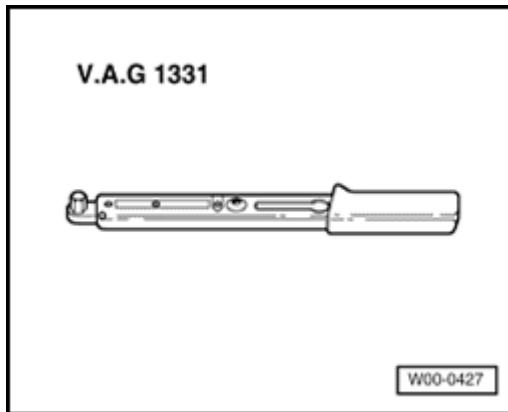
### Removing

- Bring the lock carrier into service position:

⇒ [Repair Manual, Body Exterior, Repair Group 50, Front chassis; Lock carrier service position](#)

A

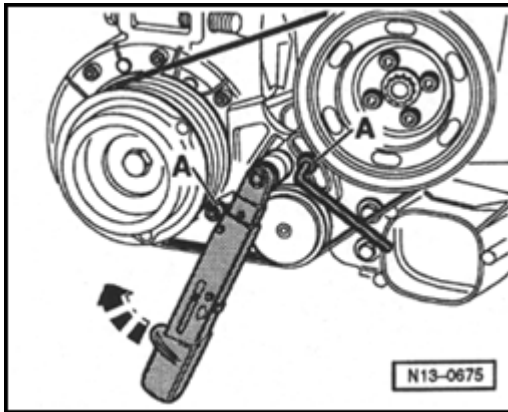
- Loosen securing bolts for ribbed belt tensioner for A/C compressor and remove ribbed belt.





## Installing

- Install ribbed belt for A/C compressor.



A

- Place the torque wrench in 7 o'clock position ( $30^\circ$  from vertical) and tighten belt tensioner to 30 Nm. Hold torque wrench securely and tighten bolts -A- to 20 Nm.

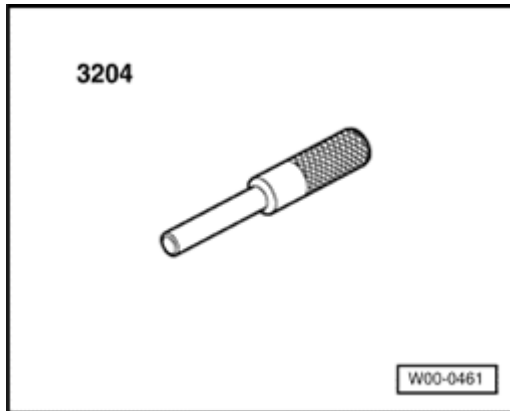


## Ribbed belt, removing and installing

### Special tools and equipment

A

- ◆ 3204 drift



### Removing ribbed belt

- For vehicles with A/C system, remove ribbed belt for A/C compressor ⇒ [Page 13-12](#) .
- Mark rotational direction of ribbed belt.

A

- Move tensioner in direction of arrow to release tension on ribbed belt.
- Secure tensioning device using 3204 drift.
- Remove or attach ribbed belt.

### Note:

*When installing ribbed belt, be sure that it is seated correctly on pulley.*

- Start engine and check path of belt.

