



Codes		CHHA	CHHB	CNTA	CNTC	CJSA	CJSB	CJSC	CJXA
Dis- place- ment	l	2.0	2.0	2.0	2.0	1.8	1.8	1.8	2.0
Power	kW at rpm	169 at 4700 to 6200	162 at 4500 to 6200	155 at 4300 to 6200	162 at 4500 to 6200	132 at 5100 to 6200	132 at 4500 to 6200	132 at 4200 to 6200	206 at 5600 to 6500
Torque	Nm at rpm	350 at 1500 to 4600	350 at 1500 to 4400	350 at 1600 to 4200	350 at 1500 to 4400	250 at 1250 to 5000	280 at 1350 to 4500	320 at 1450 to 3500	350 at 1700 to 5600
Bore	Diame- ter, mm	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5
Stroke	mm	92.8	92.8	92.8	92.8	84.2	84.2	84.2	92.8
Compression ratio		9.6:1	9.6:1	9.6:1	9.6:1	9.6:1	9.6:1	9.6:1	9.3:1
RON		95	95	95	95	95	95	95	98
Injection system		Direct injection and in- take manifold injection	Direct injection and in- take manifold injection	Direct injection	Direct injection	Direct injection and in- take manifold injection	Direct injection and in- take manifold injection	Direct injection and in- take manifold injection	Direct injection and in- take manifold injection
Firing order		1-3-4-2	1-3-4-2	1-3-4-2	1-3-4-2	1-3-4-2	1-3-4-2	1-3-4-2	1-3-4-2
Charging		Turbo- charger	Turbo- charger	Turbo- charger	Turbo- charger	Turbo- charger	Turbo- charger	Turbo- charger	Turbo- charger
Camshaft timing ad- justment		yes	yes	yes	yes	yes	yes	yes	yes
Valve lift switching		yes	yes	yes	yes	yes	yes	yes	yes
Secondary air injec- tion		No	No	yes	yes	No	No	No	No
Valves per cylinder		4	4	4	4	4	4	4	4
Oil pressure control		yes	yes	yes	yes	yes	yes	yes	yes

Codes		CJXE	DEDA	CXDA	CXDB	DLBA	DHGA	DJHC	DLRB
Manu- factured from	Golf	01.2016 ▶	---	12.2015 ▶	12.2015 ▶	03.2017 ▶	03.2017 ▶	---	---
	Passat	---	---	12.2015 ▶	---	---	---	---	---
	Sharan	---	05.2015 ▶	---	---	---	---	---	---
	Arteon	---	---	---	---	---	---	03.2017 ▶	04.2018 ▶
Exhaust emission standard		EU 6	EU 6	EU 6	EU 6	EU 6	EU 6	EU 6	LEV 3
Dis- place- ment	l	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Power	kW at rpm	195 at 5350 to 6600	162 at 4500 to 6200	162 at 4300 to 6200	169 at 4700 to 6200	180 at 5000 to 6200	180 at 5000 to 6200	206 at 5700 to 6500	200 at 5500 to 6500
Torque	Nm at rpm	350 at 1700 to 5800	350 at 1500 to 4400	350 at 1600 to 4200	350 at 1500 to 4600	370 at 1600 to 4300	370 at 1600 to 4300	350 at 1800 to 5600	350 at 1950 to 5400
Bore	Diame- ter, mm	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5
Stroke	mm	92.8	92.8	92.8	92.8	92.8	92.8	92.8	92.8



**1 - Connection**

**2 - O-ring**

- Renew
- Moisten with coolant

**3 - Centring pin**

**4 - Bolt**

- Specified torque and tightening sequence ⇒ [page 317](#)

**5 - Seal**

- Renew

**6 - Coolant pump**

- Removing and installing ⇒ [page 324](#)
- New coolant pump: remove protective cap

**7 - Bolt**

- Tightening sequence ⇒ [page 317](#)

**8 - Toothed belt**

- For coolant pump
- Removing and installing ⇒ [page 322](#)

**9 - Bolt**

- 9 Nm

**10 - Toothed belt guard**

**11 - Bolt**

- Left-hand thread
- If bolt has been loosened, it must be renewed
- 10 Nm +90° further

**12 - Toothed belt drive sprocket**

- Observe installation position

**13 - Oil seal for balance shaft, inlet side**

- Renewing ⇒ [page 128](#)

**14 - Balancer shaft**

**15 - Seal**

- Renew

**16 - Bolt**

- 9 Nm

**17 - Union**

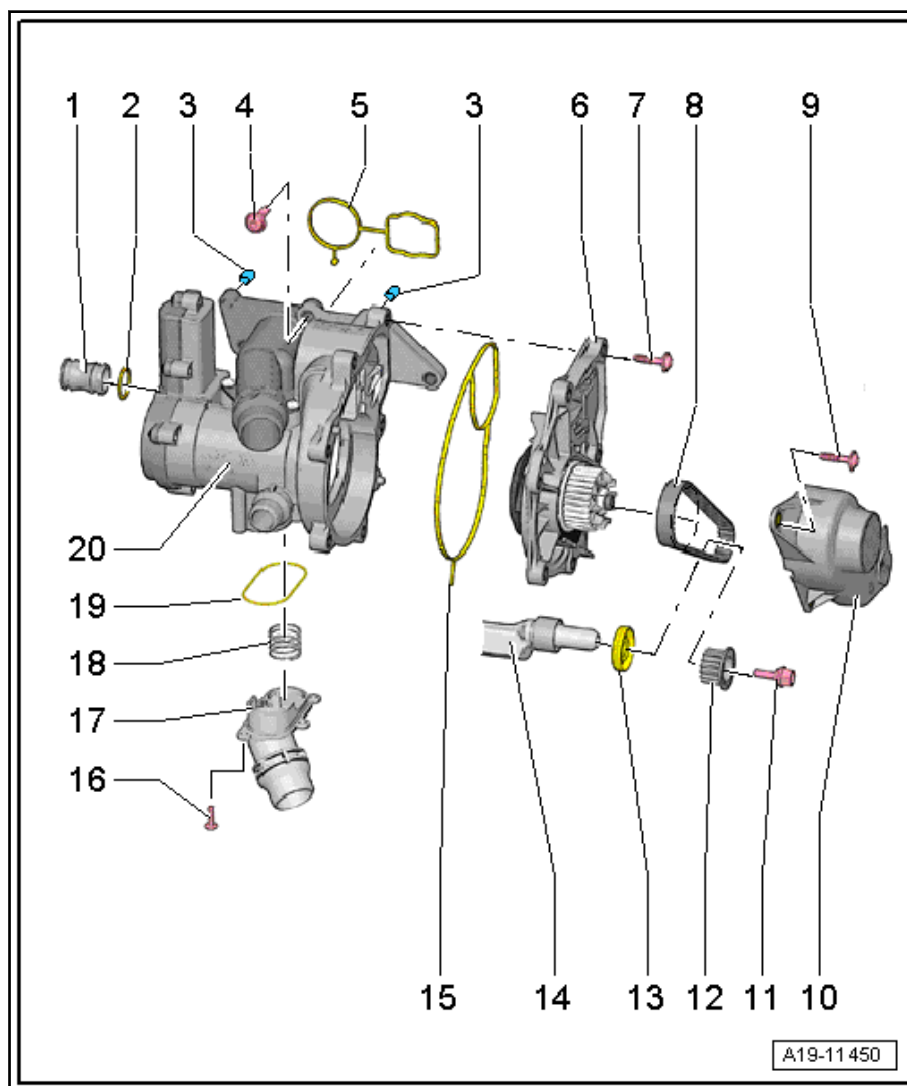
**18 - Spring**

**19 - Seal**

- Renew

**20 - Actuator for engine temperature regulation -N493-**

- Removing and installing ⇒ [page 337](#)





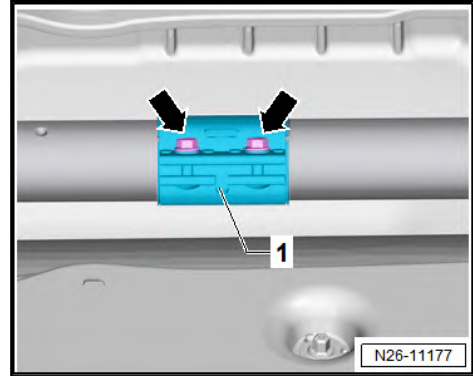
## Removing

### CAUTION

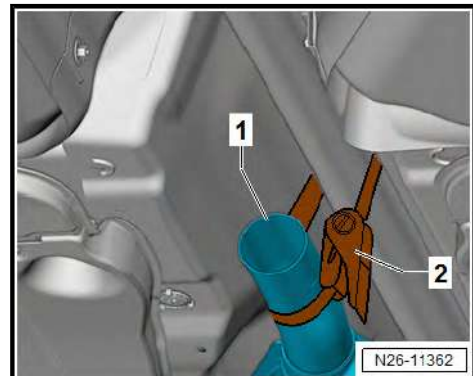
Risk of accident caused by high weight of silencers.

- Seek help from a second a mechanic for the following work.

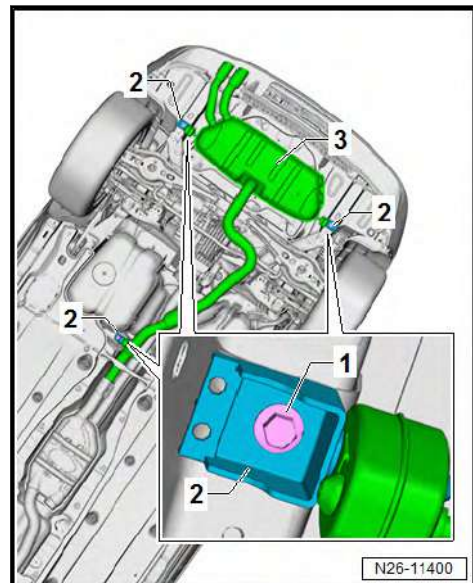
- Loosen clamp -arrows- and push to rear.



- Secure exhaust pipe -1- on propshaft with tensioning strap -2-.



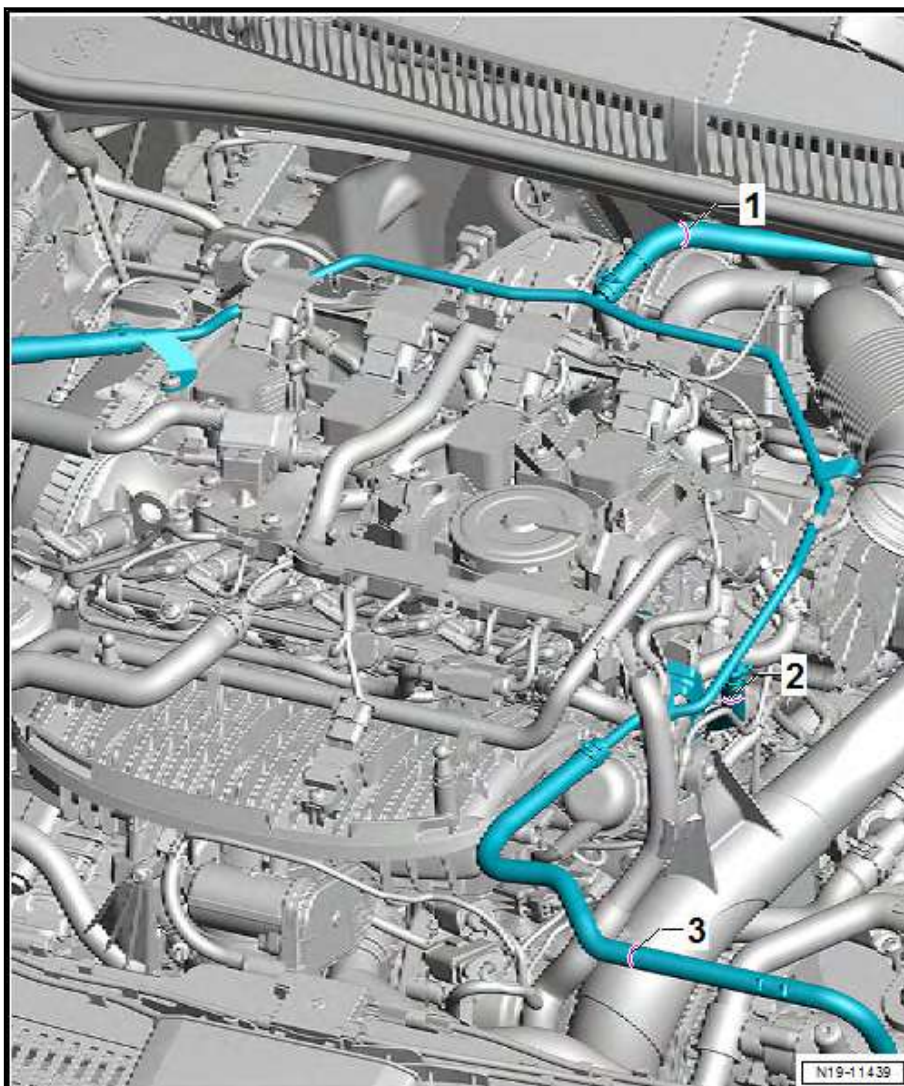
- Unscrew bolts -1- for mounting -2-.



- Remove silencer -3-.



- 1 - Breather hose of heat exchanger for heater unit
- 2 - Breather hose for cylinder head
- 3 - Breather hose of radiator for engine coolant

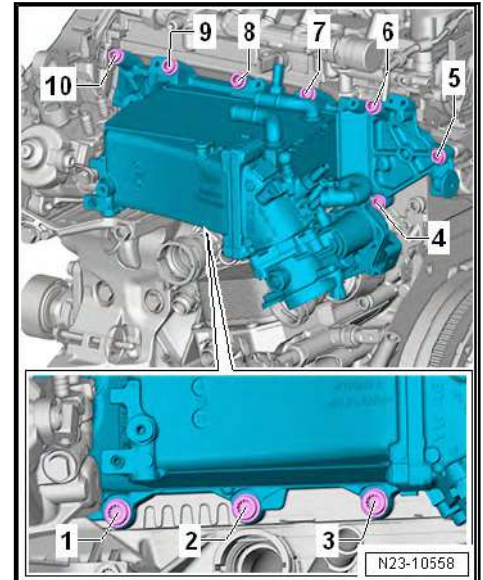




### Caution

***Do not damage sealing surface of intake manifold by guiding it against dowel pins.***

- Fit intake manifold onto dowel pins on cylinder head.
- Tighten bolts -1- to -10-.



Further installation is carried out in reverse order of removal, observing the following:



### Note

*Renew seal after each removal.*

- Install air filter housing ⇒ [page 469](#) .
- Install high-pressure lines ⇒ [page 462](#) .
- Install coolant pipes (top front) ⇒ [page 335](#) .



### Caution

***If a new intake manifold has been installed, the cooling system must be flushed and the coolant must be renewed to ensure optimum surface protection ⇒ [c1.7 ooling system](#) , [page 271](#) .***

If the existing intake manifold has been installed:

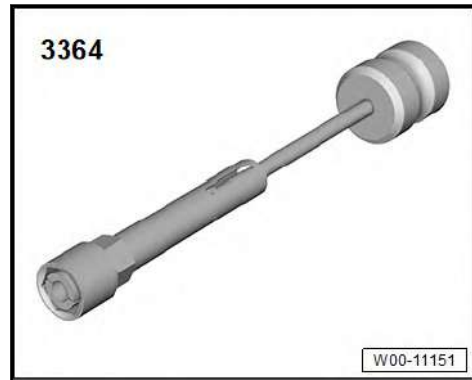
- Add coolant ⇒ [page 255](#) .

### Specified torques

- ◆ ⇒ [Fig. “Intake manifold with charge air cooler - specified torque and sequence”](#) , [page 473](#)
- ◆ ⇒ [Fig. “Installing air ducts with screw-type clips”](#) , [page 468](#)
- ◆ ⇒ [o5.1 verview – intake manifold](#)” , [page 471](#)
- ◆ ⇒ [o1.1 verview - sump/oil pump](#)” , [page 203](#)



◆ Valve stem seal puller -3364-



◆ Valve stem seal fitting tool -3365-

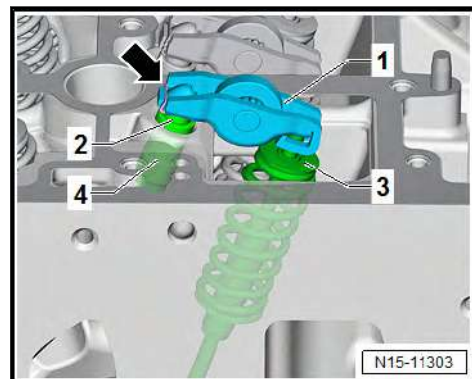


◆ Valve spring tool -3362-



**Procedure**

- Remove camshaft housing ⇒ [page 131](#) .
- Mark allocation of roller rocker fingers -1-, hydraulic compensation element -4- and valves -3- for reinstallation.





### 11 - Sealing flange with sender wheel and oil seal

- Renew sealing flange complete with oil seal, sender wheel and engine speed sender - G28- .
- Do not re-use old sealing flange!
- Removing and installing => [“2.3 Removing and installing sealing flange on gearbox side”, page 80](#)

### 12 - Bolt

- Specified torque and tightening sequence  
=> [Fig. ““Sealing flange on gearbox side - specified torque and tightening sequence””, page 77](#)

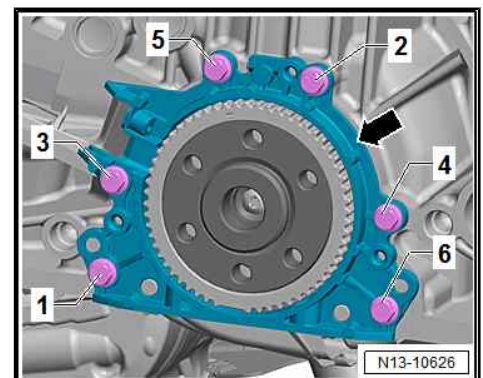
### 13 - Plug

- => [Fig. ““Plug for TDC drilling in cylinder block at rear – specified torque””, page 78](#)
- With integral seal
- Renew if damaged
- 30 Nm

### Sealing flange on gearbox side - specified torque and tightening sequence

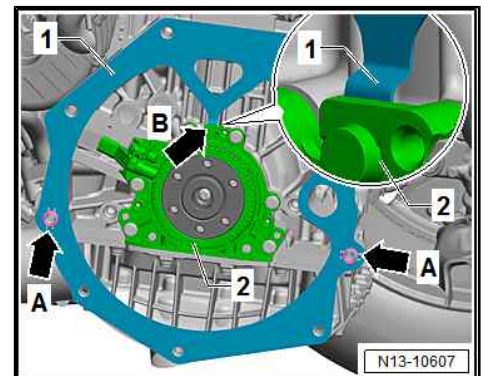
– Tighten bolts in stages as follows:

Stage	Bolts	Specified torque
1)	-1 ... 6-	Screw in by hand as far as stop
2)	-1 ... 6-	In diagonal sequence and in stages; final torque 10 Nm



### Installing intermediate plate

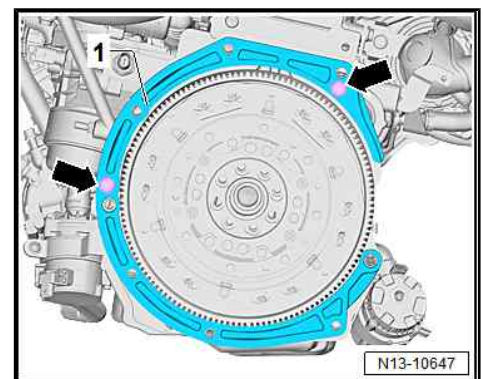
- Attach intermediate plate -1- to sealing flange -2- -arrow B-.
- Slide intermediate plate onto dowel sleeves -arrows A-.



### Adapter

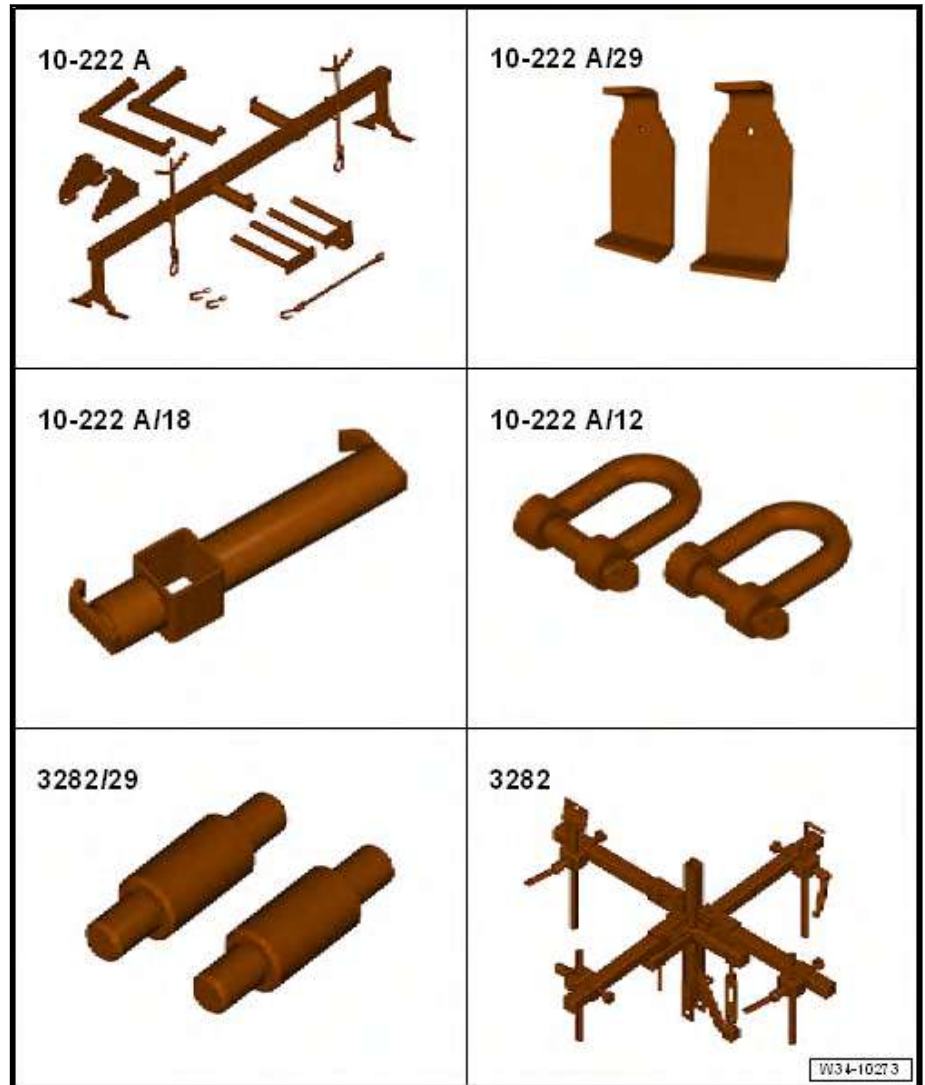
- Unscrew bolts -arrows- to remove.
- When installing, slide intermediate plate onto dowel sleeves  
=> [Fig. ““Installing intermediate plate””, page 77](#) .

Component	Specified torque
Bolts	25 Nm





**Special tools and workshop equipment required**

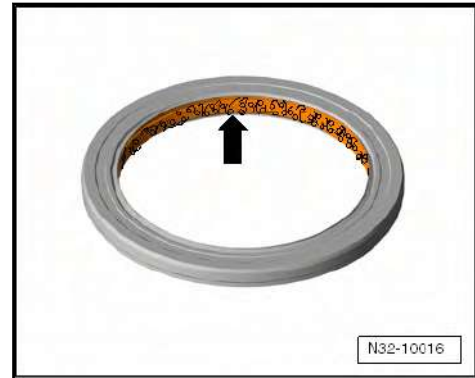


- ◆ Support -10 - 222 A-
- ◆ Adapter -10 - 222 A /29-
- ◆ Adapter -10 - 222 A /18-
- ◆ Shackle -10 - 222 A /12- qty. 2
- ◆ Pin -3282/29-
- ◆ Gearbox support -3282-



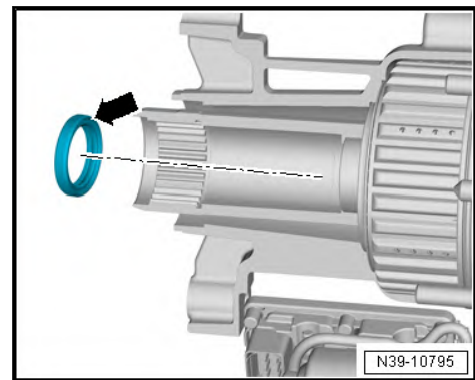


## Installing

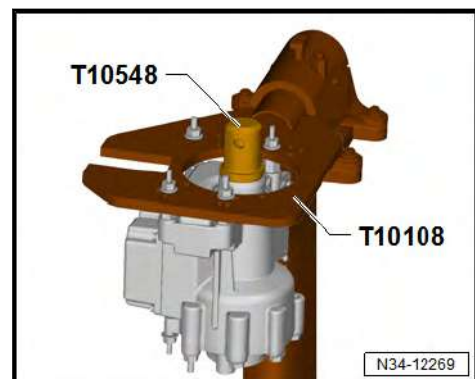


- Fill half of space between sealing lip and dust lip -arrow- with sealing grease -G 052 128 A1-.

Installation position of seal:



- Open side -arrow- faces towards inside of front differential lock (towards front differential lock).
- Drive in new seal to stop, being careful not to cant seal.



- Install flange shaft ⇒ [page 371](#) .
- Install front differential lock ⇒ [page 325](#) .
- Replenish oil for front differential lock ⇒ [page 335](#) .

## 4.6 Renewing ball bearing for flange shaft

Special tools and workshop equipment required



## 30 – Clutch

### 1 Clutch

⇒ [“1.1 Assembly overview - dual clutch”, page 11](#)

⇒ [“1.2 Removing and installing clutch end cover”, page 12](#)

⇒ [“1.3 Removing dual clutch”, page 15](#)

⇒ [“1.4 Installing dual clutch”, page 18](#)

#### 1.1 Assembly overview - dual clutch

##### Replacement parts

##### 1 - Retaining ring for dual clutch end cover

- Renew after removal

##### 2 - Retaining ring for dual clutch

- Renew after removal

##### 3 - Retaining ring for drive plate

##### 4 - Dual clutch



##### Caution

*The drive plate has to remain engaged between the teeth of the outer plate carrier.*

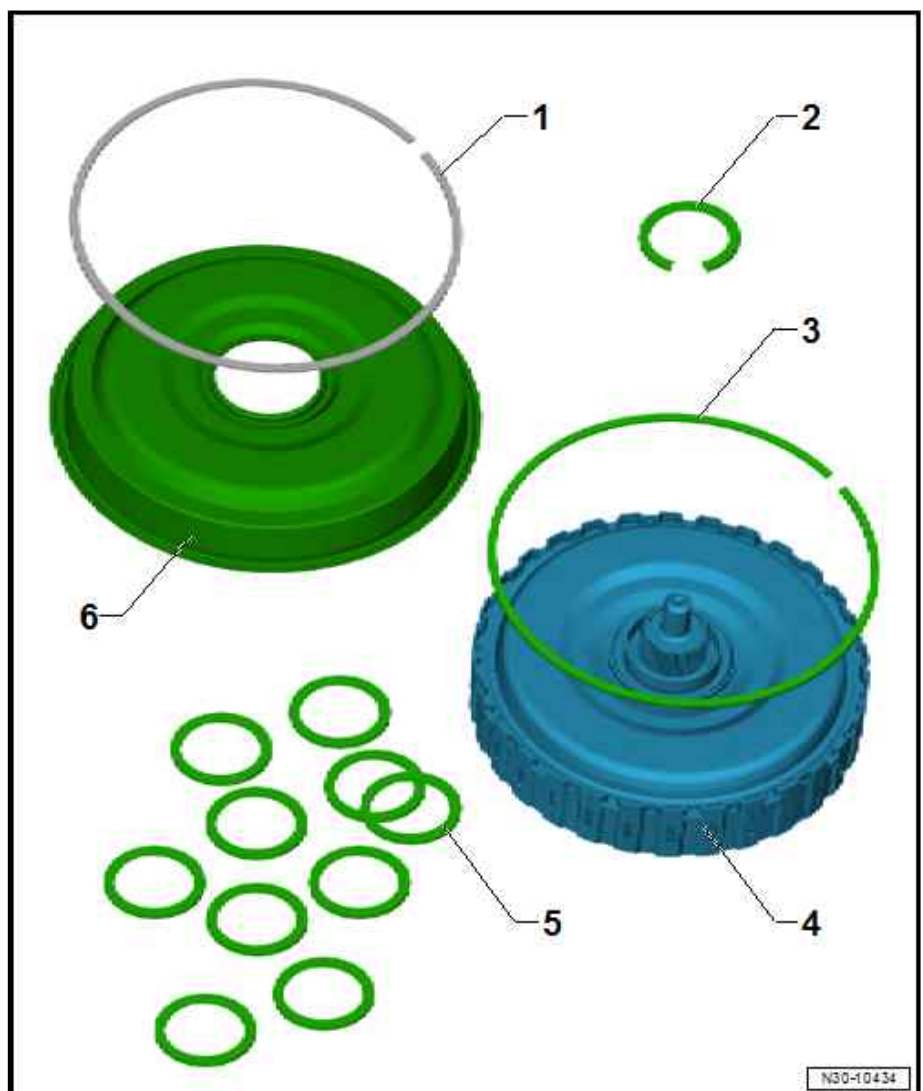
*! If the drive plate detaches, the plates in the dual clutch can shift. It may then not be possible to adjust the clutch correctly when it is installed.*

##### 5 - Shims

- 10 spacer rings which have different »thicknesses«. They are sized in 0.05 mm increments.
- Thickness of spacer ring must be determined when installing dual clutch.

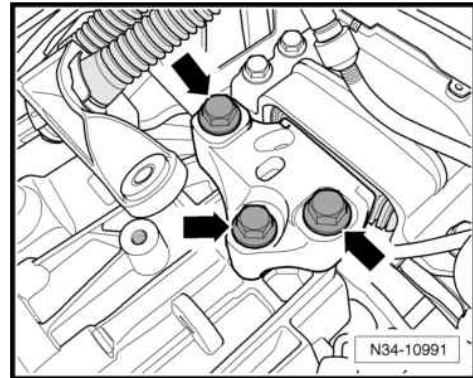
##### 6 - Dual clutch end cover

- Renew after removal





- Remove securing bolts -arrows- of assembly mounting for gearbox.

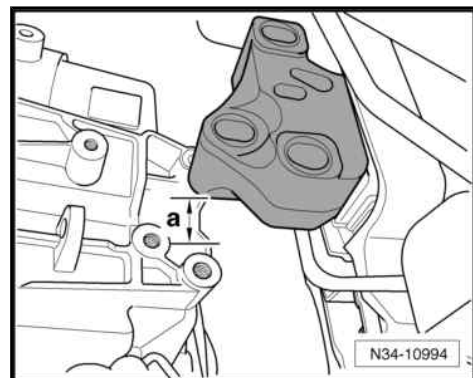


- Then use spindles of support bracket - 10 - 222 A- to lower engine/gearbox »only« on gearbox side as far as dimension -a-.

**Dimension -a- = about 110mm**

The gearbox is separated from the engine in this position.

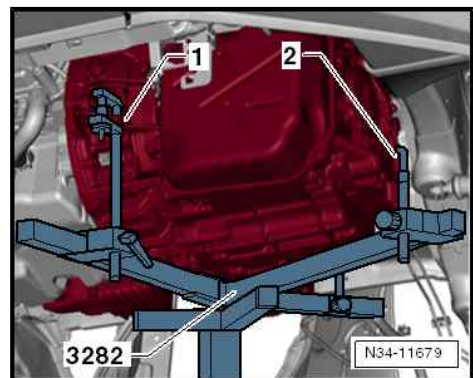
- Position engine and gearbox jack - V.A.G 1383 A- with gearbox support - 3282- under gearbox.



**Note**

*The following diagrams show the gearbox in the all-wheel drive version. The procedure for supporting the weight of the gearbox is the same as that for front-wheel drive.*

- Mount safety support -1- and hook -2- on gearbox as shown.

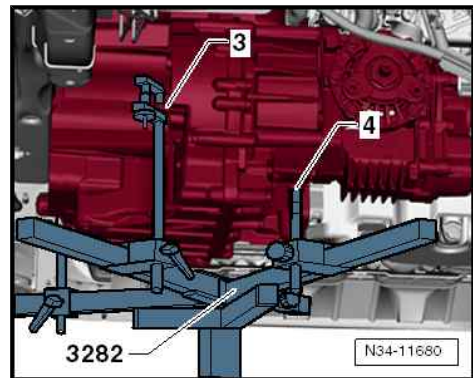


- Mount safety support -3- and pin -4- on gearbox as shown.
- Remove »last« connecting bolt between engine and gearbox.
- Push gearbox off engine and lower it carefully, ensuring »clearance« to other components.

Transporting gearbox ⇒ [page 153](#) .

Secure gearbox to assembly stand ⇒ [page 159](#) .

Install gearbox ⇒ [page 148](#) .





### 3 Anti-roll bar

⇒ "3.1 Assembly overview - anti-roll bar", page 52

⇒ "3.2 Removing and installing anti-roll bar", page 52

⇒ "3.3 Removing and installing coupling rod", page 57

#### 3.1 Assembly overview - anti-roll bar

##### 1 - Anti-roll bar

- With rubber bush.
- Removing and installing  
⇒ [page 52](#)

##### 2 - Suspension strut

##### 3 - Nut

- When tightening, counterhold on multipoint socket of joint stub.
- Renew after removal
- 65 Nm

##### 4 - Coupling rod

- Removing and installing  
⇒ [page 57](#)

##### 5 - Subframe

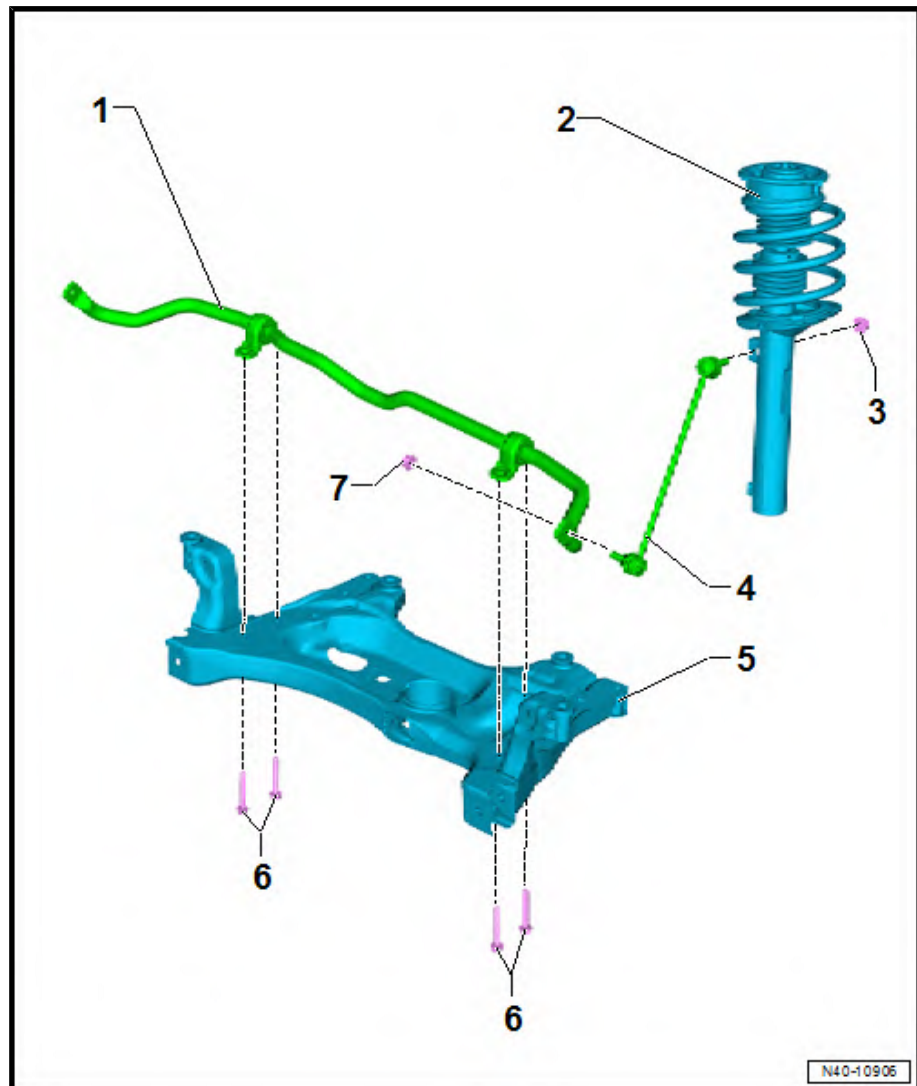
- Fixing position  
⇒ [page 44](#)
- Lowering ⇒ [page 47](#)
- Removing and installing without steering rack  
⇒ [page 24](#)
- Removing and installing with steering rack  
⇒ [page 29](#)

##### 6 - Bolt

- Renew after removal
- 20 Nm +180°

##### 7 - Nut

- When tightening, counterhold on multipoint socket of joint stub.
- Renew after removal
- 65 Nm



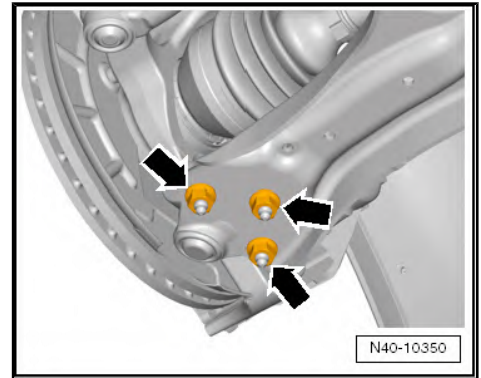
#### 3.2 Removing and installing anti-roll bar

Special tools and workshop equipment required

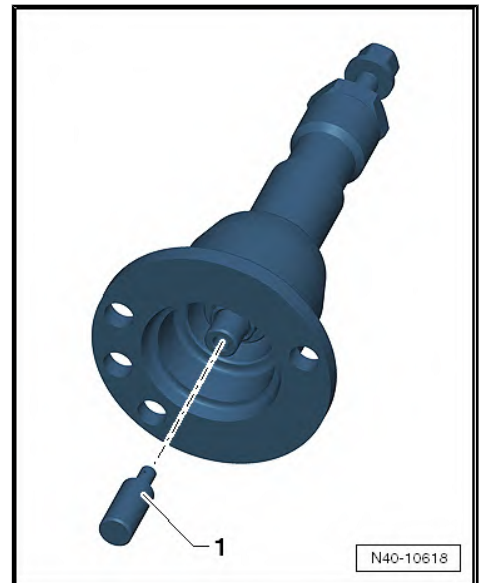


- Remove nuts -arrows-
- Pull wheel bearing housing with swivel joint out of suspension link.
- Pull drive shaft out of wheel hub and tie up to body.

If the drive shaft cannot be pulled out of the wheel bearing by hand, use ejector - T10520- .

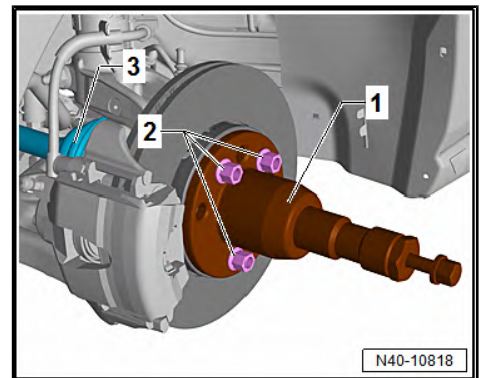


Before using press tool - T10520- ensure that thrust piece -1- is inserted.



**Using ejector - T10520- :**

- To press out drive shaft -3-, secure ejector - T10520- -1- to wheel hub using 3 wheel bolts -2-.



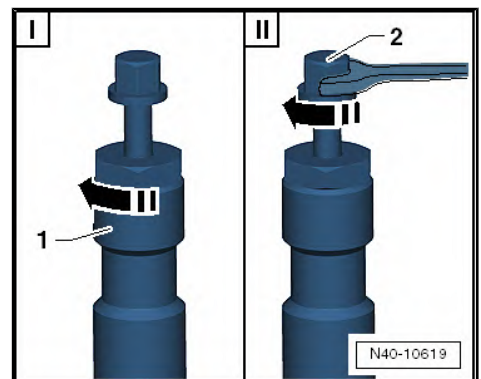
- It is essential to follow specified sequence.

I - Tighten knurled nut -1- hand-tight.

II - Turn only bolt -2- using a spanner in order to press out drive shaft with ejector - T10520- .

**Note**

*At the end of the procedure or for pressing out drive shaft further, the spindle must be moved to its original position in order to apply the hydraulic force.*





### Caution

*Wheel bearings must not be subjected to load after bolt securing drive shaft to wheel hub has been loosened.*

*If wheel bearings are loaded with weight of vehicle, bearing will be damaged. This reduces the service life of the wheel bearing.*

*It is not permissible to loosen drive shaft bolt more than 90° if vehicle is standing on its wheels.*

*Do not attempt to move the vehicle without the drive shafts fitted as this would damage the wheel bearing. If a vehicle must nevertheless be moved, comply with the following:*

- ◆ *Install an outer joint instead of the drive shaft.*
- ◆ *Tighten outer joint to 120 Nm.*

### Loosening twelve-point head bolt

- To avoid damage to wheel bearing, do not loosen twelve-point bolt using 24 mm socket - T10361A- further than 90° with vehicle still standing on its wheels.
- Raise vehicle so that wheels are off the ground.
- Have second mechanic apply brakes.
- Remove twelve-point head bolt -arrow-.

### Fitting twelve-point head bolt

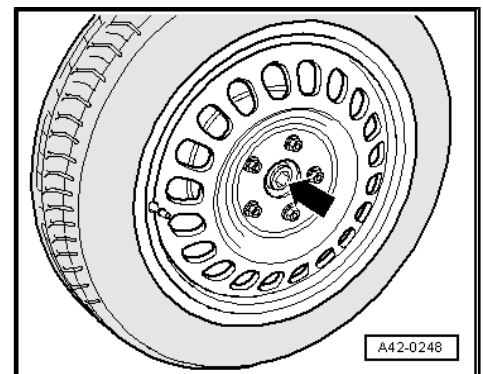
- Renew twelve-point bolt.



### Note

*It must be ensured that the wheels do not yet touch the floor when the drive shaft is being tightened. Otherwise the wheel bearing may be damaged.*

- Have second mechanic apply brakes.
- Tighten twelve-point bolt to 200 Nm.
- Lower vehicle onto its wheels.
- Turn twelve-point head bolt 180° further.



## 7.3 Removing and installing drive shaft

### Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1332-





Component / System	Fault Code	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Condition	Monitoring Time Length	MIL Illum	Component Diagnostic
Fuel System	P2187 – System Too Lean at Idle Bank 1	system too lean	case 1: adaptive value or case 2: adaptive value	>= 2.69 >= 0.24	[mg/stk] [kg/h]	general conditions: BARO > 63.00 [kPa] MAF > 60.00 [mg/stk] per cylinder engine speed > 576 [rpm] ECT > 20.3 [°C] IAT @ manifold lambda control lambda controller active diagnosis for additive adaptation diff. measured vs. set point fuel pressure combustion mode change not calibrated not active	5.0 [s] continuous	2 D C Y	<ul style="list-style-type: none"> <li>◆ Check the vacuum lines visually for leaks.</li> <li>◆ Check the intake system visually for leaks (false air).</li> <li>◆ Check the fuel pressure and delivery quantity.</li> <li>◆ Fuel Pressure Sensor - G247-</li> <li>◆ Fuel Injectors.</li> <li>◆ Oxygen Sensor 1 Before Catalytic Converter - GX10-</li> <li>◆ Fuel Delivery Unit - GX1-</li> <li>◆ Manifold Absolute Pressure Sensor - G71-</li> <li>◆ Fuel Metering Valve - N290-</li> </ul>

Table continues below.