

Cylinder head - exploded view



Note

The diagram shows the cylinder head on cylinder bank 2 (left-side).

1 - Cylinder head gasket

- Renewing
→ Chapter
„Removing
cylinder
head (left-
side)“,
→ Chapter
„Removing
cylinder
head (right-
side)“ and
→ Chapter
„Installing
cylinder
head“

- Installation
position:
Part No.
towards
cylinder
head

- If
renewed,
change
coolant
and
engine oil

2 - Cylinder head

- Removing:
left-side
→ Chapter;
right-side
→ Chapter

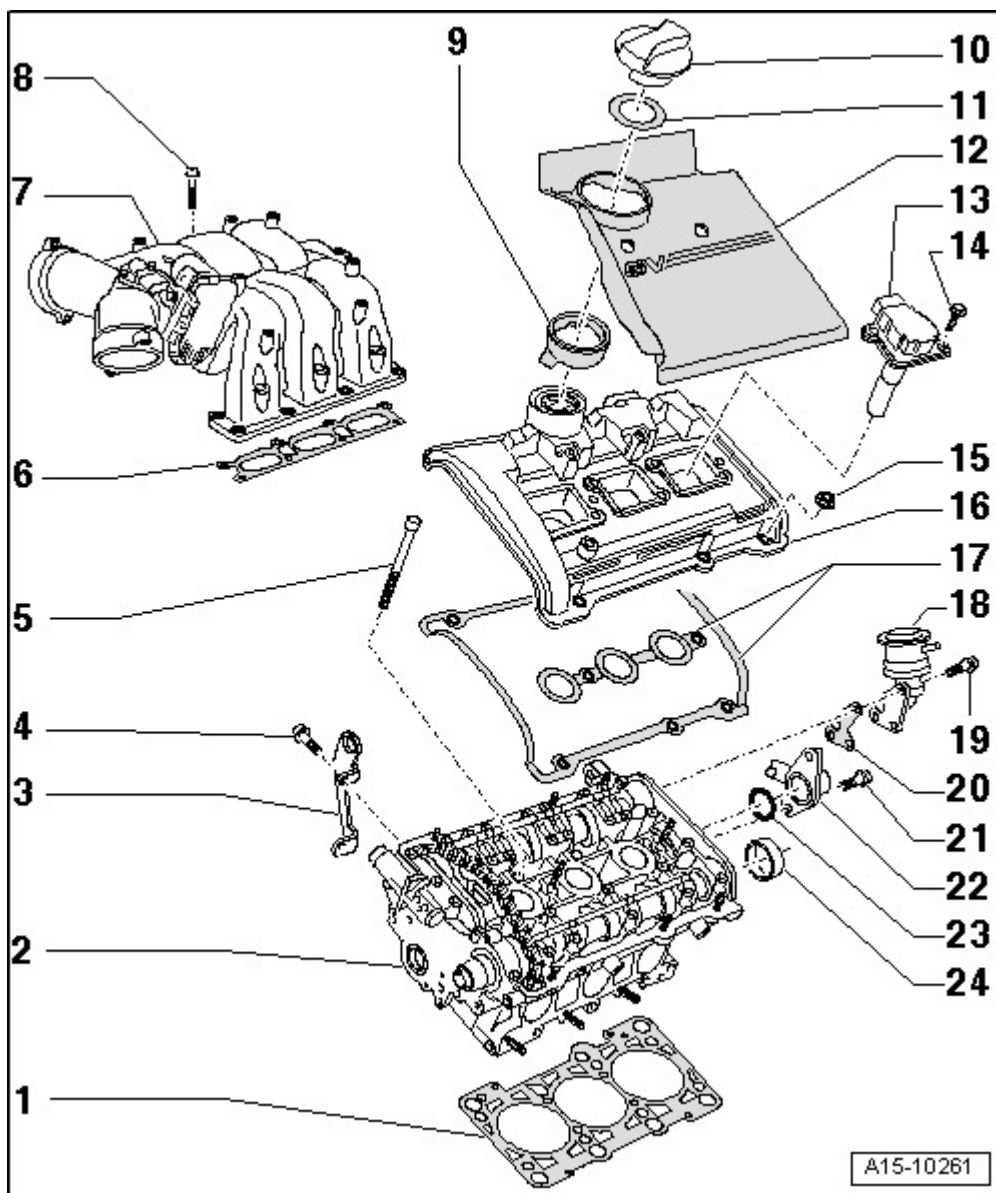
- Installing
→ Chapter
- Checking for distortion → Fig.
- Machining limit → Fig.
- Driving in sealing cap → Fig.
- If renewed, change coolant and engine oil

3 - Engine lifting eye

4 - Bolt

- 25 Nm

5 - Bolt



- ❑ Renew

- ❑ Note correct sequence when loosening → **Anchor**
- ❑ Tightening torque and sequence → **Fig.**

6 - Intake manifold gasket

- ❑ Renew

7 - Intake manifold

- ❑ Removing and installing → **Rep. Gr.24**

8 - Bolt

- ❑ Tightening torque → **Rep. Gr.24**

9 - Rubber grommet

10 - Filler cap

11 - Seal

- ❑ Renew if damaged or leaking

12 - Cover panel for cylinder head cover

13 - Ignition coil

14 - Bolt

- ❑ 10 Nm

15 - Bolt

- ❑ Tightening torque and tightening sequence: cylinder head cover (left-side) → **Fig.**, cylinder head cover (right-side) → **Fig.**

16 - Cylinder head cover

- ❑ Removing and installing: left-side → **Chapter**, right-side → **Chapter**

17 - Gaskets for cylinder head cover

- ❑ Renew if damaged or leaking
- ❑ Before fitting, apply sealant at sealing points → **Fig.**

18 - Combination valve for secondary air system

- ❑ Not fitted on all versions
- ❑ Removing and installing: left-side → **Chapter**, right-side → **Chapter**

19 - Bolt

- ❑ Secondary air combination valve to connection and connection to cylinder head
- ❑ 10 Nm

20 - Gasket

- ❑ Renew

21 - Bolt

- ❑ Tightening torque → **Item**

22 - Coolant pipe (rear)

- ❑ Removing and installing → **Chapter**

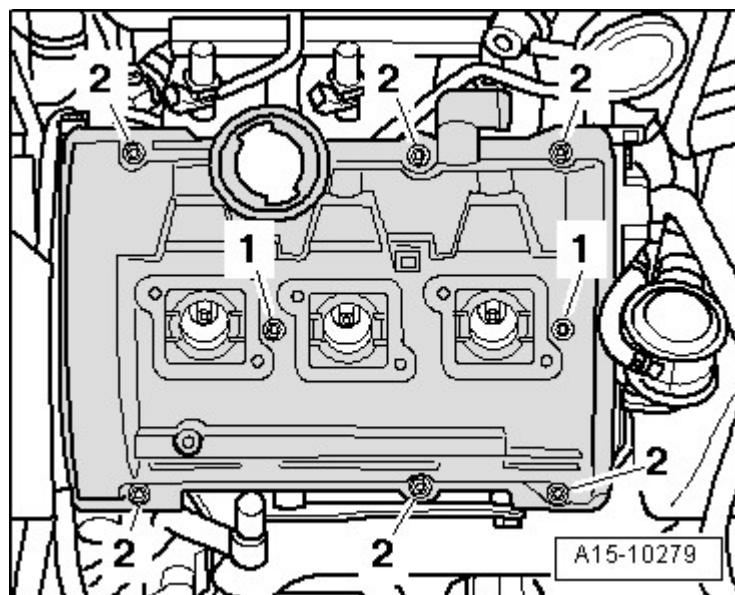
23 - O-ring

- Renew

24 - Sealing cap

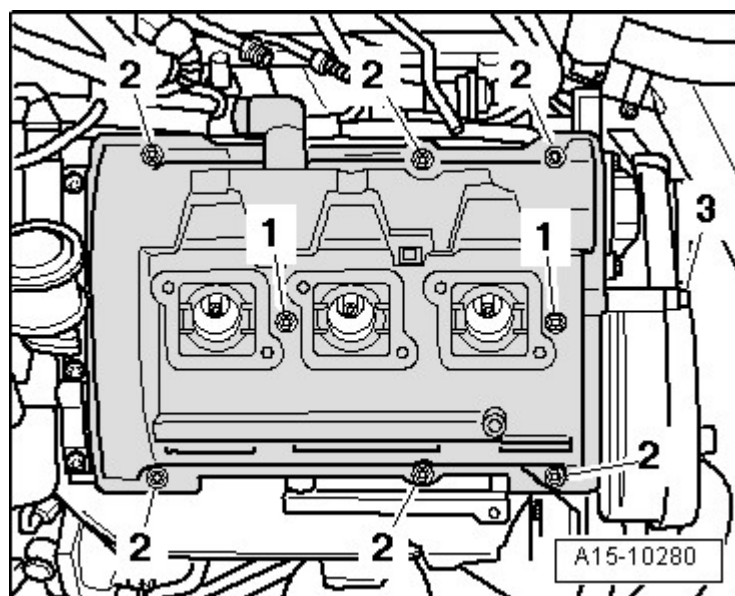
- Driving sealing cap into cylinder head → Fig.

**Cylinder head cover (left-side) -
tightening torque and sequence**



- Tighten nuts for cylinder head cover in two stages as follows:
 1. Tighten inner nuts -1- to 10 Nm.
 2. Tighten outer nuts -2- in stages and in diagonal sequence; final torque 10 Nm.

**Cylinder head cover (right-side) -
tightening torque and sequence**

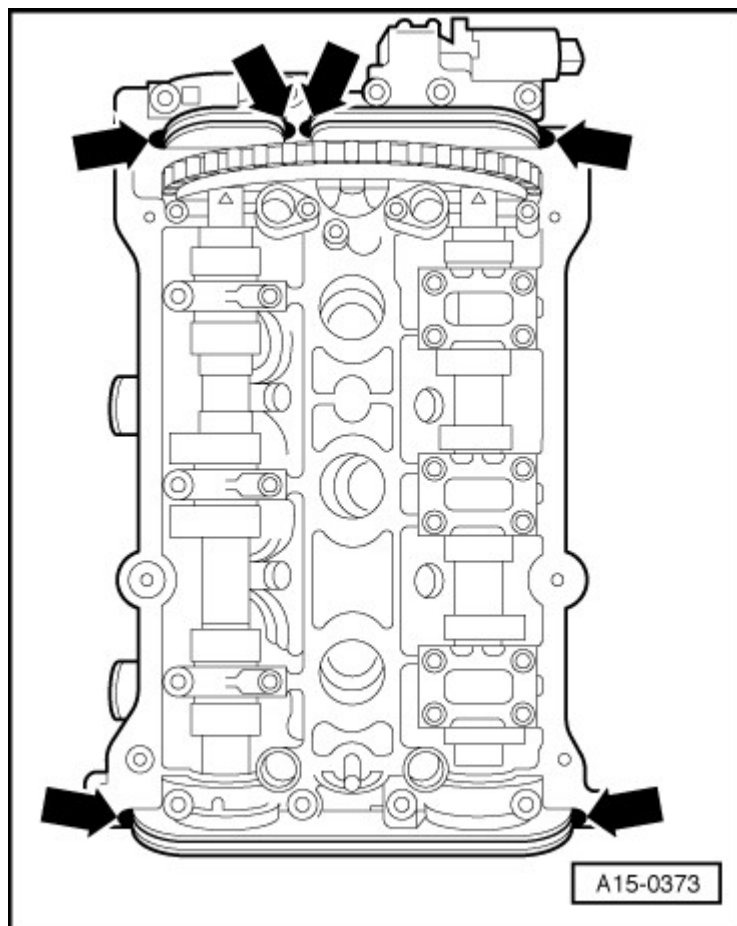


- Tighten nuts and bolt for cylinder head cover in two stages as follows:
 1. Tighten inner nuts -1- to 10 Nm.

2. Tighten outer nuts -2- in stages and in diagonal sequence; final torque 10 Nm.
- Tighten bolt -3- on toothed belt cover to 10 Nm.

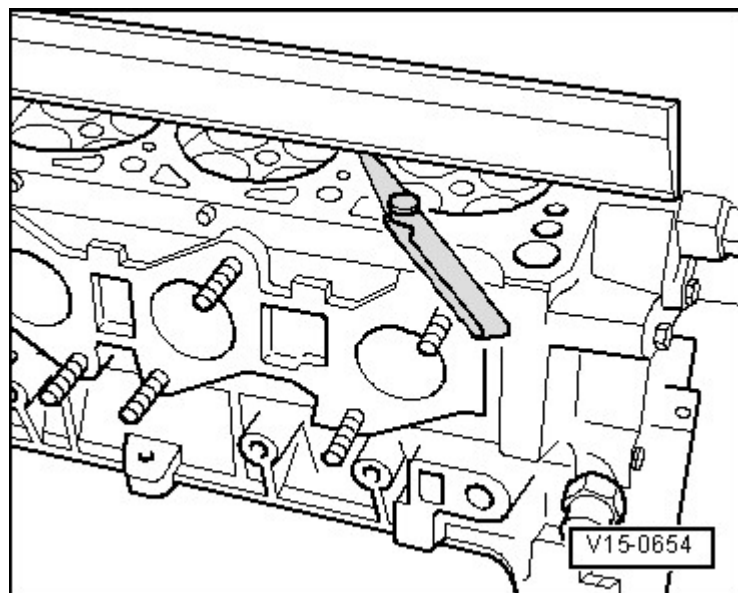
Sealing points for bearing caps on cylinder head

- Apply small quantity of sealant to sealing points -arrows- at top sealing surface of cylinder head; for sealant refer to → [Electronic parts catalogue](#).



Checking cylinder head for distortion

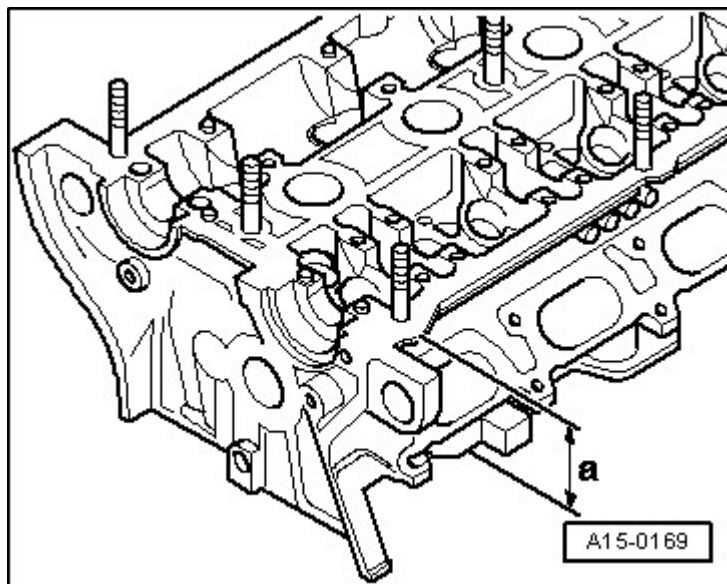
- Use straight edge and feeler gauge to measure for distortion at several points.
- Max. permissible distortion: 0.1 mm



Cylinder head machining limit

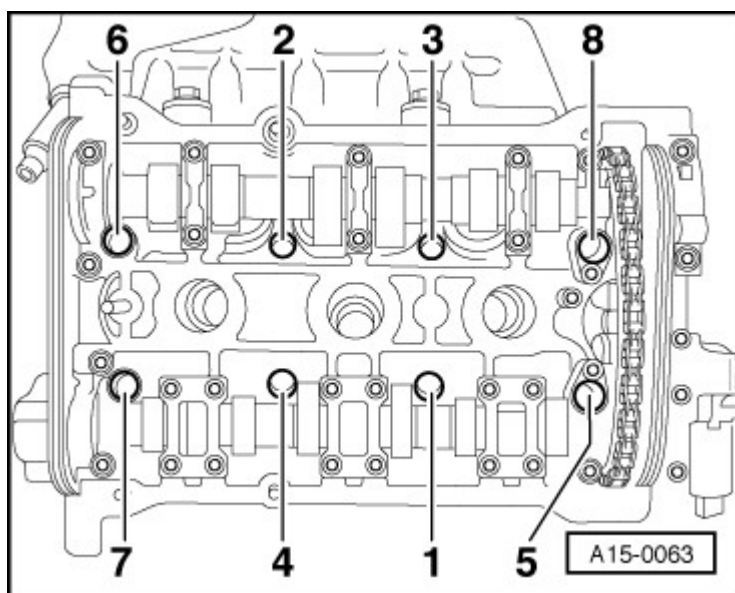
- Machining of the cylinder head (surface grinding) is only permissible down to the minimum dimension -a-.

- Minimum dimension: -a- = 139.25 mm



Cylinder head - tightening torque and sequence

- Renew bolts for cylinder head.
- Tighten bolts in the sequence -1 ... 8- in 4 stages as follows:
 1. Screw in by hand until they make contact.
 2. Tighten to 60 Nm.
 3. Turn 90° further.
 4. Turn 90° further.



Driving sealing cap into cylinder head

Replacement cylinder heads without camshafts can be used on both the left and right-side and must be fitted with a sealing cap on the appropriate front side.

- Coat rim of sealing cap with sealant; for sealant refer to → [Electronic parts catalogue](#).
- Using drift -VW 295-, knock in sealing cap until the outside rim is flush with the end of the chamfer on the cylinder head.

