ATU (Audi Technical Update)

Summer 2018

Powertrain

Summer 2018

ATU topic

4.0 TFSI – Camshaft Diagnosis

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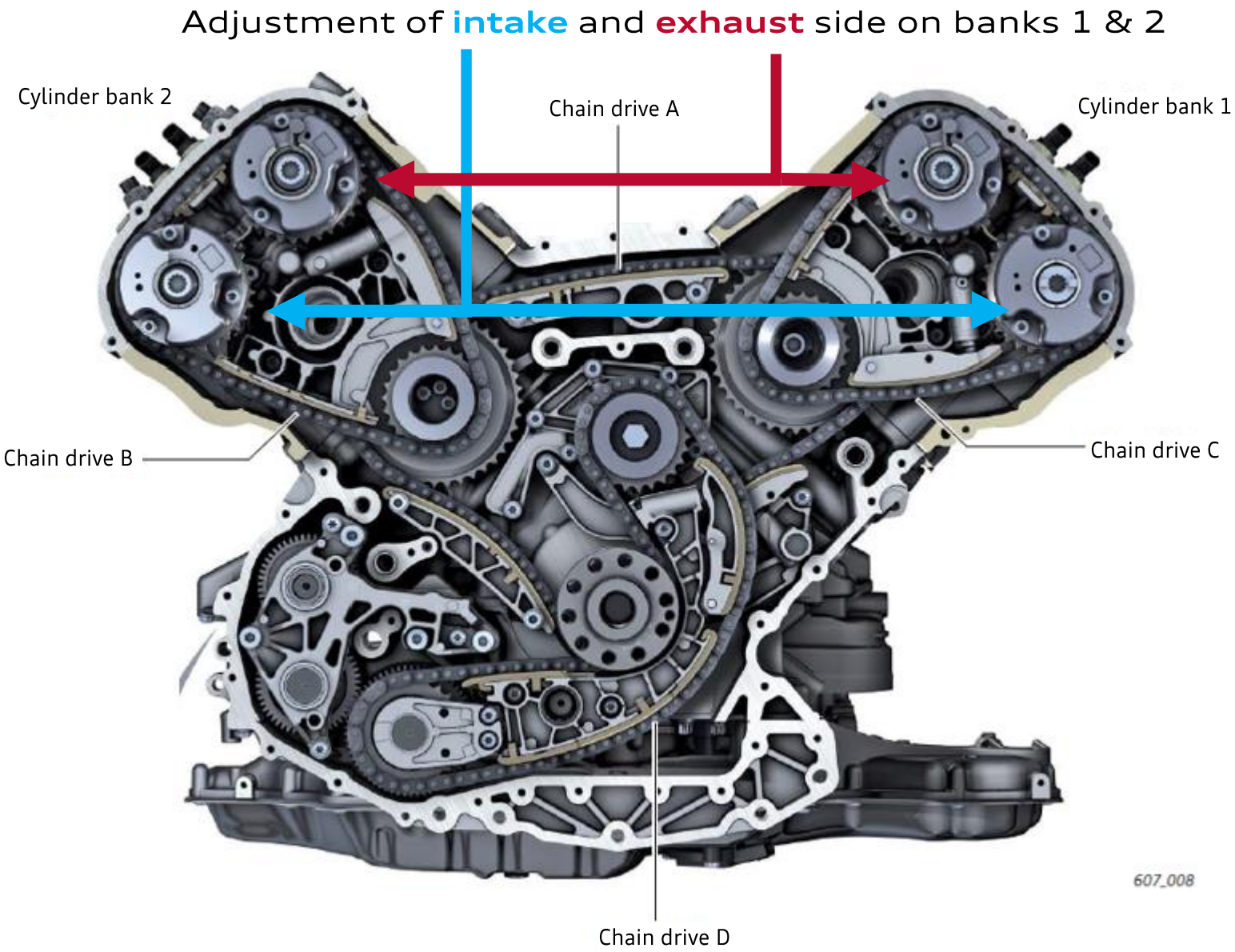
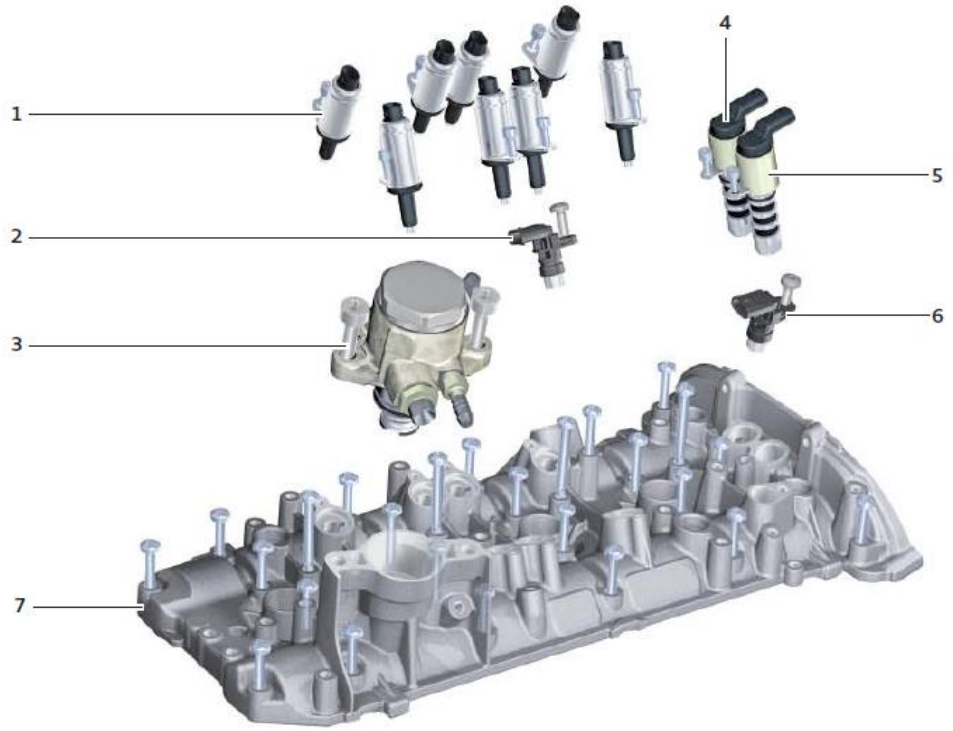
01. 4.0 TFSI Camshaft Adjuster

1.1 Overview



01. 4.0 TFSI Camshaft Adjuster

1.1 Overview



1. Actuators for COD (cylinder on demand).
2. Hall sender (G40).
3. High-pressure fuel pump.
4. Camshaft control valve 1 (N205).
5. Exhaust camshaft control valve 1 (N318).
6. Hall sender 2 (G163).
7. Cylinder head cover.

Important:

There is a distinction between problems with actuators for COD, camshaft control valves and problems with camshaft adjuster!

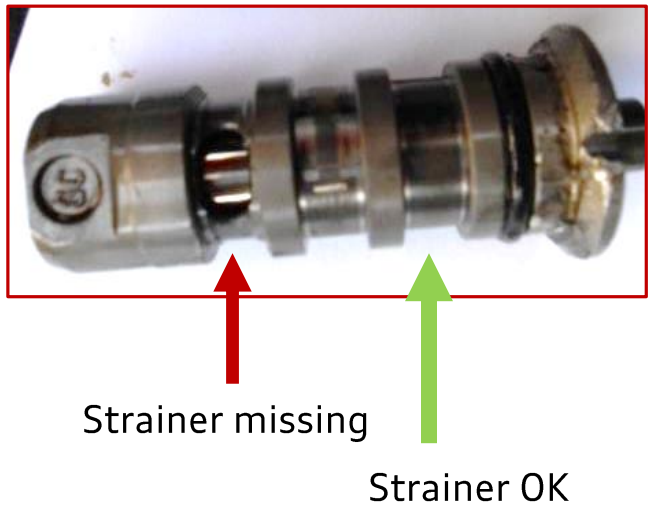
02. 4.0 TFSI Camshaft Adjuster Repairs

- Possible customer concern:
  - Exhaust emissions warning lamp or EPC warning lamp is on.

- Workshop findings:
  - There are DTCs regarding the camshaft adjuster stored in the engine control module (single DTC or combination of DTCs):
    - **DTC P0011** (Bank 1, retarded camshaft timing, spec. not achieved) intake with symptom 2795.
    - **DTC P0021** (Bank 2, retarded camshaft timing, spec. not achieved) intake with symptom 9040.
    - **DTC P052A** (Camshaft adjustment, intake, bank 1 specification not reached during cold-start) with symptom 10540.
    - **DTC P052C** (Camshaft adjustment, intake, bank 2 specification not reached during cold-start) with symptom 10541.

02. 4.0 TFSI Camshaft Adjuster Repairs

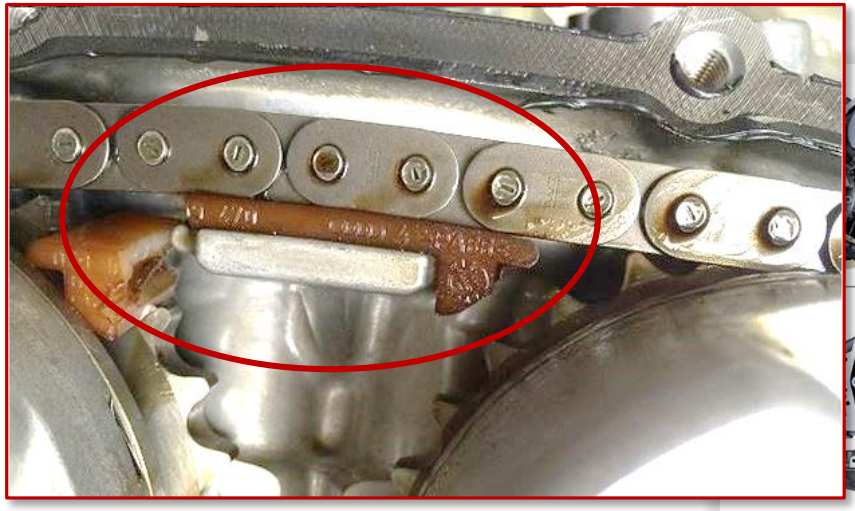
- Damage:
  - Broken filter element on camshaft control valve.

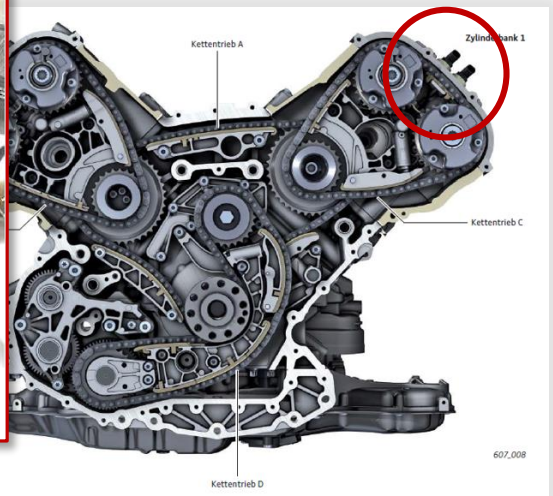


02. 4.0 TFSI Camshaft Adjuster Repairs

Recommended repair procedure:

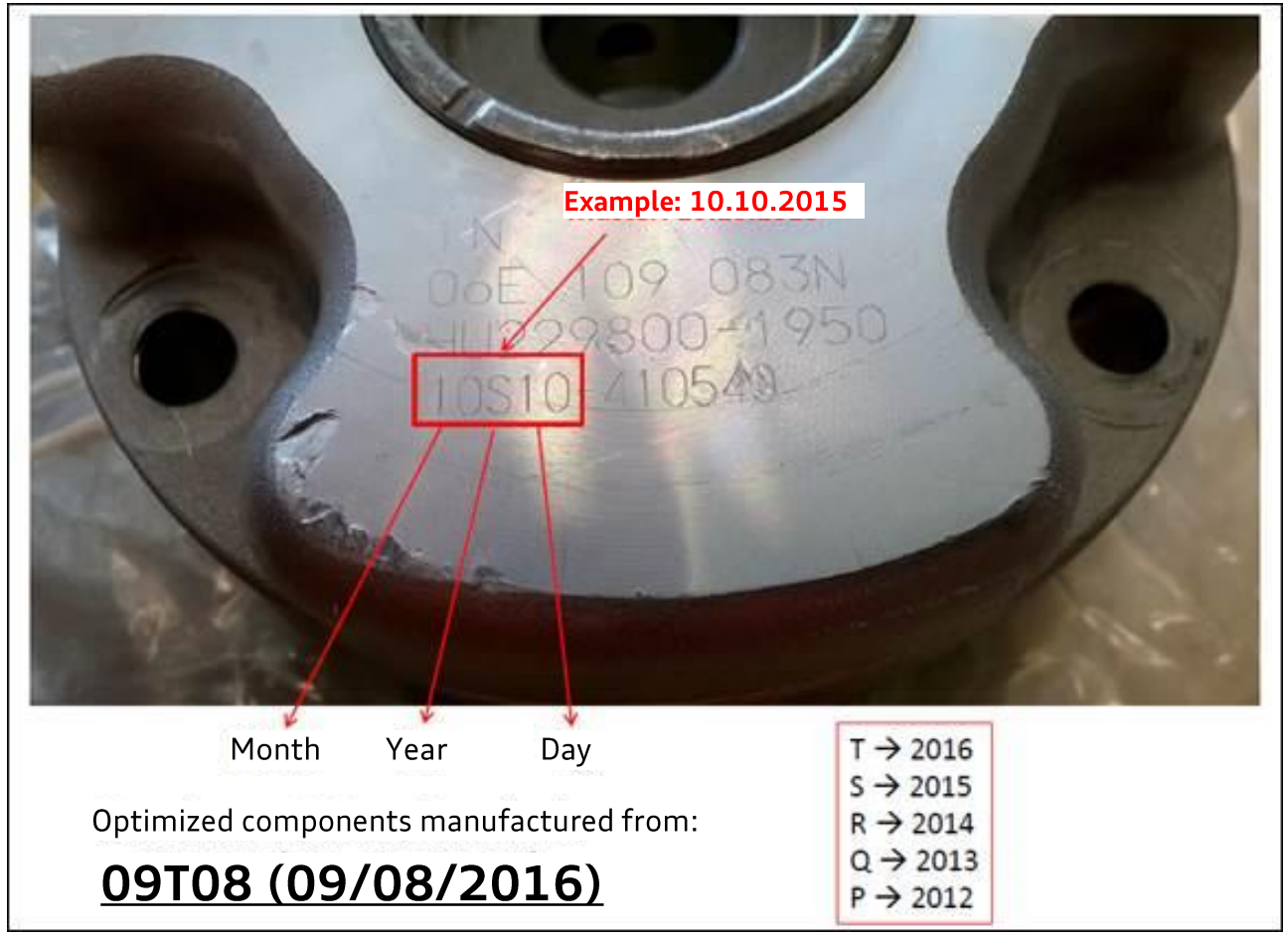
- Check control valve for damage to filter element:
  - Filter element OK → Recommendation: Clean oil passage between control valve and camshaft control valve with compressed air and replace camshaft adjuster on affected cylinder bank (as shown in DTC).
  - Filter element not OK → Replace the control valve.
  - **Important:** Identify optimized camshaft adjuster based on the production code on camshaft adjuster!
  - **Important:** The chain drive glide rail part number 079109470A should be checked when replacing the camshaft adjuster. Replace the glide rail if it is not part number 079109470A.





03. Optimized Components

› Identify optimized camshaft adjuster based on the production date of camshaft adjuster.



03. Optimized Components

Optimized inlet camshaft adjuster:

- Check control valve for damage to filter element. Dimensions of locking pin adjusted due to tolerances being too narrow, which may result in locking pin becoming stuck.
- Part number 06E109083N has not changed. Identify optimized components based on the production date (camshaft adjuster production date from 09/08/2016 onwards).
- Optimized components used in vehicle production since 09/29/2016 onwards.
- The exhaust camshaft adjuster is not affected!

Optimized control valves:

- Optimization of filter element.
- Part number of optimized components: 06E109257T.
- Optimized components used in vehicle production since July 2015 onwards.

Optimized chain drive glide rail:

- Dimensions of glide rail changed to reduce stress on the glide.
- Part number of optimized glide: 079109470A.
- Optimized glides used in vehicle production since April 2017 onwards.

03. Optimized Components

TSB 2041097/* “01 MIL on (DTC P001100 and/or P002100 – camshaft position)”

› Check control valve for deviations, especially in area of oil strainer.

TSB 2049153/* “01 MIL on, DTC P001100 and/or P002100 – camshaft position after completing TSB 2041097”

› Check control valve for deviations, especially in area of oil strainer.

› Replace relevant intake camshaft adjuster only and clean out oil passage with compressed air.

› Check production date of camshaft adjuster.

TSB 2042071/* “01 MIL on, DTC entries about AVS adjustment”

› Identify affected camshaft control valves through comparison with DTC in engine control module.

ATU topic

A3 e-tron refuelling issue

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01. Refuelling e-tron – Tank Cap Actuator Defective

1.1 Overview

Models affected:	A3 e-tron (8V).
Customer concern:	Vehicle cannot be refuelled.
Tasks performed:	Ventilation/bleeding of tank checked; borescope inspection of filler pipe performed.
Cause:	Tank flap could be opened without pressing button in driver door beforehand (locking element defective); gives impression that vehicle can be refuelled although tank has not yet been bled.
Service solution:	Press button in driver door and replace the tank cap actuator.

As always, complete diagnosis before replacing any parts.

Thank you!