

Camshaft Timing Control, Function

The timing control of the intake camshaft is dependent on the engine load and engine speed. The exhaust camshafts are not timed.

The electrical solenoid valves for camshaft timing control (Valves for camshaft adjustment) switch oil pressure to the camshaft adjuster (mechanical timing control device).

The mechanical camshaft adjusters then time the intake camshafts of both banks of cylinders toward "advanced", i.e. the intake valves open earlier.

Checking camshaft timing control function

- Connect vehicle diagnostic, testing and information system - VAS5051- or Scan Tool -VAG1551- and select engine electronics control unit 1 with "Address word" 01 → **Chapter** or → **Chapter**. For this purpose, engine must be running at idle speed.

Indicated on display

Rapid data transfer HELP Select function XX
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- Press keys **[0]** and **[4]** for function "Basic Setting" and confirm entry by pressing **[Q]** key.

Indicated on display

Basic setting Enter display group number XXX

- Press keys **[0]**, 9 and 4 for "display group number 94" and confirm entry with **[Q]** key.

Indicated on display

Basic setting 94 → 1 2 3 4

- Check specified value for camshaft timing control.

	Display zones			
	1	2	3	4
Display group 94: Camshaft timing control				
Display	xxx rpm	CS adj.OFF	Test OFF	Test OFF
Display	Engine speed (in steps of 40 rpm)	Camshaft timing control off/on	Test result Bank 1	Test result Bank 2
Range	min.: 550 rpm max.: 7200 rpm	CS adj.OFF CS adj.ON	Test OFF Test ON Syst. OK Syst. not OK	Test OFF Test ON Syst. OK Syst. not OK
Specified value	actual speed	CS adj.OFF	Test OFF	Test OFF
Note:			Normal position	Normal position

- Increase speed approx. 2000 rpm until "CS adj.ON" appears in display zone 2.

	Display zones			
	1	2	3	4
Display group 94: Camshaft timing control				
Display	xxx rpm	CS adj.ON	Test ON	Test ON
Display	Engine speed (in steps of 40 rpm)	Camshaft timing control off/on	Test result Bank 1	Test result Bank 2

Range	min.: 550 rpm max.: 7200 rpm	CS adj.OFF CS adj.ON	Test OFF Test ON Syst. OK Syst. not OK	Test OFF Test ON Syst. OK Syst. not OK
Specified value	actual speed	CS adj.ON	Test ON	Test ON
Note:				

- Keep speed until “Syst. OK” appears in display zones 3 and 4.

	Display zones			
	1	2	3	4
Display group 94: Camshaft timing control				
Display	xxx rpm	CS adj.OFF	Syst. OK	Syst. OK
Display	Engine speed (in steps of 40 rpm)	Camshaft timing control off/on	Test result Bank 1	Test result Bank 2
Range	min.: 550 rpm max.: 7200 rpm	CS adj.OFF CS adj.ON	Test OFF Test ON Syst. OK Syst. not OK	Test OFF Test ON Syst. OK Syst. not OK
Specified value	actual speed	CS adj.OFF	Syst. OK	Syst. OK
Note:				

If specified value in display zones 3 and 4 is not achieved:

- Check solenoid valves for camshaft timing control → [Chapter](#).