TECH-INFO

VAICO®
engine & transmission parts by VIEROL

VARIABLE CAMSHAFT ADJUSTMENT

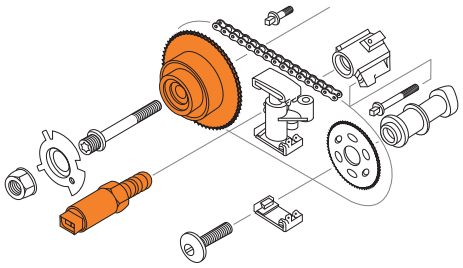
ENGINE CONTROL | 11314 | 11316

Function

The variable camshaft adjustment means that engine idling is improved and the response of the engine is optimised. Fuel consumption and emission values are also reduced. This improves power delivery and therefore also results in enhanced performance. Depending on the engine design, it is possible to implement cylinder deactivation. Better internal cooling of the engine leads to less wear and tear. Depending on the engine, the adjustment may act as a form of internal exhaust gas recirculation and significantly reduce NO_X values.

In the case of a short valve overlap in the full load range, the inlet valve closes very late. Subsequent inflow of fresh gases despite the piston moving upwards increases the boost effect of filling as well as the torque, which is particularly common indirect injection engines. In the case of a longer valve overlap in the partial load range, the inlet valve closes earlier, briefly after being below dead centre. Fresh gases remain in the combustion chamber, whilst the combustion temperature and nitrogen oxide (NO_X) falls.

Various designs are offered depending on the manufacturer. VAICO offers a comprehensive range on the market.



SYMPTOMS

- Higher fuel consumption
- Loss of performance
- Irregular engine function
- Rattling timing chain
- Engine warning light flashes, engine fail-safe

REASONS FOR FAILURE

- Dirt in the oil chambers
- Thermal issues due to the engine overheating
- Contact issues due to cable breakage or oxidation

CONSEQUENTIAL DAMAGES

- Engine runs poorly
- Increased fuel consumption
- Thermal issues
- Poor emission values
- Greater wear and tear in the engine
- The timing chain tears (engine damage) depending on the design
- Locked engine warning light for EURO 5 and higher (reduction of engine performance)

DESIGN OF THE CONTROL VALVE

1. Quality O-rings and seals prevent early oil leaks and help maintain oil pressure.
2. Improved steel component limits bond as sludge is created.
3. 100% quality assurance and end of line testing.

BMW	E90, E60, F10, E63, E65, F01, E84, F25
Operating Mode	electric-hydraulic
Info	with seal
Engine	2.5 & 3.0 (N51-54)

X-Ref 11 36 7 585 425*

V20-2650

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Audi **VW** **Škoda**	A1, A3 Passat, Polo, Golf V Octavia
Operating Mode	electric-hydraulic
Info	with seal
Engine	1.6 FSI, 1.4 TFSI

X-Ref 03C 906 455 A* **V10-3731**

Audi **VW** **Škoda**	A3, A6, TT Golf V, Golf VI Octavia
Operating Mode	electric-hydraulic
Info	with seal
Engine	2.0 TFSI

X-Ref 06F 109 257 C* **V10-3728**

Audi **VW** Touran **Škoda**	A1, A3 Golf, Passat, Polo, Tiguan, Octavia
Operating Mode	hydraulic
Fitting position	intake side
Engine	1.6 FSI, 1.4 TFSI

X-Ref 03C 109 088 E* **V10-4408**

BMW	E90, E60, F10, E63, E65, F01, E84, F25
Operating Mode	electric-hydraulic
Info	with seal
Engine	2.5 & 3.0 (N51-54)

X-Ref 11 36 7 585 425* **V20-2650**

BMW	F20/21, F30/31, R56-61
Operating Mode	electric-hydraulic
Info	with seal
Engine	1.6 (N12-14)

X-Ref 11 36 8 610 388* **V20-2761**

Mercedes-Benz	W204, C204, S204, A207, C207, R172, S212, W212,
Operating Mode	hydraulic
Fitting position	intake side
Engine	M271

X-Ref 271 050 14 00* **V30-2933**

CONTROL VALVES FOR VARIABLE CAMSHAFT ADJUSTMENT BY VAICO

More than 200 articles within the control valves for variable camshaft adjustment sector can be found at **www.autoteile.de**

- largest range on the market
- many control valves/solenoids and variable camshaft adjustments are only available at VAICO
- 100% function testing in the production process ensures optimum quality

* For detailed vehicle information, please refer to the vehicle lists under **www.autoteile.de**.

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