Kamasa-TOOLS®

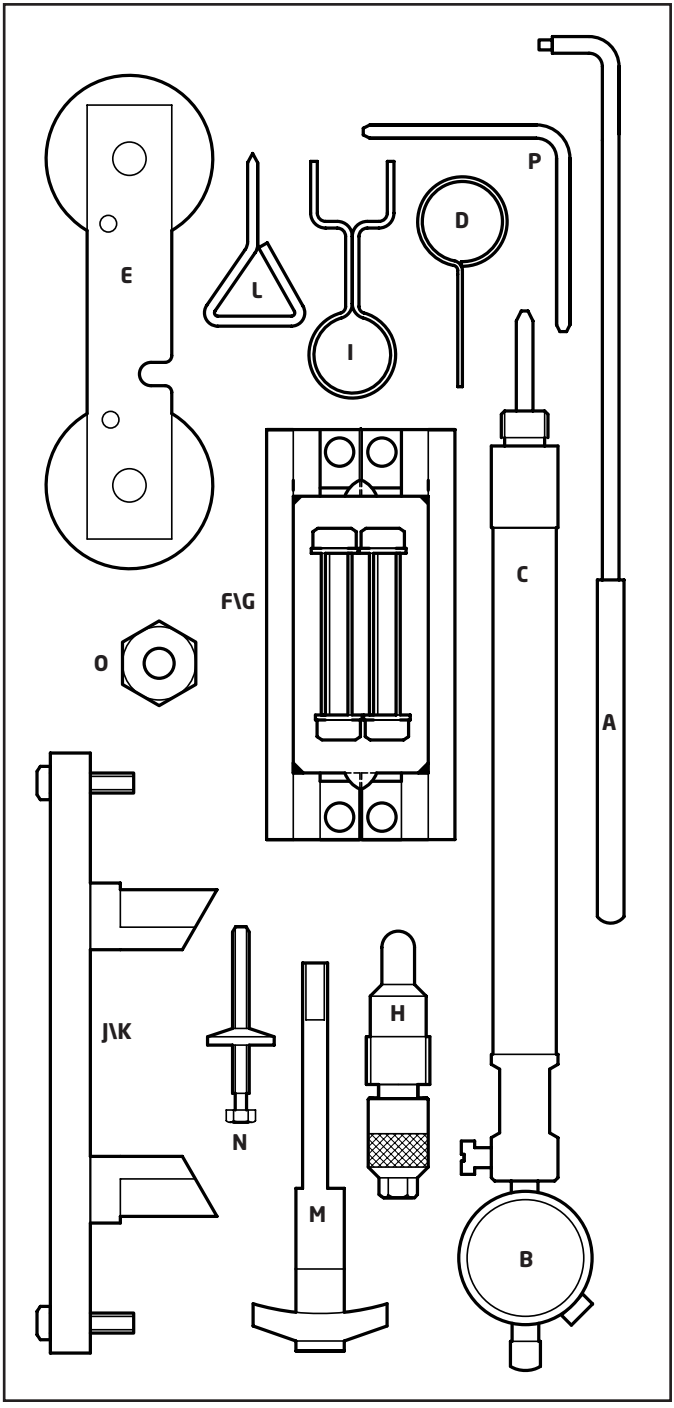
PART NO. K315

Engine Timing Tools

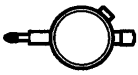
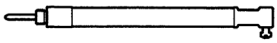
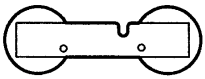
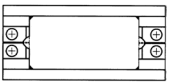
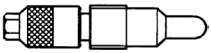
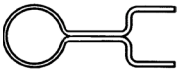
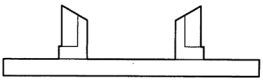
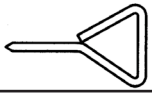
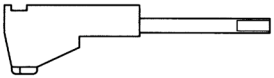
VOLKSWAGEN AUDI GROUP

1.4 | 1.6 | 2.0 | 2.4 | 3.2 FSI

Plan Layout



Component Identification

Part No	OEM Ref	Description	Identification
A 23044-03	T10020	Tension Wrench	
B 23072	VAS 6079	Dial Test Indicator	
C 23107-B	T10170	Piston Height Adaptor	
D 23161-08	T40011	Tensioner Pin	
E 23162-41	T10171	Camshaft aligning tool	
F/G 23162-61	T40070	Camshaft aligning tools (2)	
H 23162-62	T40069	Crankshaft locking tool	
I 23162-63	T40071	Timing Chain Tensioner Locking Pin	
J/K 23161-91	T10252	Camshaft aligning tool	
L 23161-94	T10115	Tensioner Pin	
M 23161-92	3366	Chain Tensioner Retainer	
N 23161-93	T10092	Chain Tensioner Retainer	
O 23161-95	T40058	Crankshaft Pulley Bolt Adaptor	
P 23161-96	T10060/A	Tensioner Pin	

Applications

Manufacturer	Model	Engine	Engine Code	Year	Components
Audi	A3	1,6 FSI	BAG	03-	BCDE
	A3	2,0 FSI	AXW, BHD, BMB	03-	AP
	A3	2,0 FSI	AWA	04-	AJKLN
	A3I	2,0 FSI	AXX, BPY, BWA	54-08	AJKLN
	A4	2,0 TFSI	BUL	04-05	AJKLN
	A6	2,0 TFSI	BPJ, BGB	05-	AJKLN
	A6	2,4, 2,4 quattro	BDW	04-	FGHMO
	A4	3,2 FSI	AUK	04-	FGHMO
	A6	3,2 FSI	AUK, BKH	04-	FGHMO
	A8	3,2 FSI		05-	FGHMO
Skoda	Octiva	1,6 FSI	BLF	04-	BCDE
Volkswagen	Polo	1,4 FSI	AXU	02-	BCDE
	Golf	1,4/1,6 FSI	BAG, BKG, BLF, BLN, BLP	03-	BCDE
	Passat	1,6 FSI	BLF	05-	BCDE
	Touran	1,6 FSI	BAG,BLP	05-	BCDE
	Golf	2,0 FSI	AXW	03-	AP
		2,0 FSI	AWA	04-	AJKLN
	Passat	2,0 TFSI	BGB, BWA, BWE, BPJ	06-	AJKLN
	Touran	2,0 FSI	AXW	03-	AP

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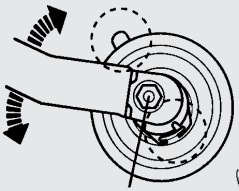
Engine Timing Tools Volkswagen Audi Group

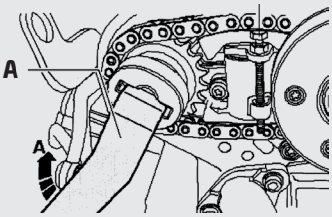
This set of tools is required for chain driven petrol engine valve timing, and service including timing belt replacement on many models as detailed

Component Application

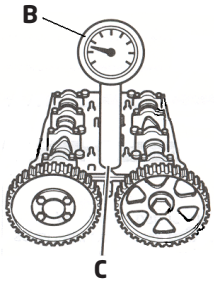
Tension Wrench
Tension Wrench This wrench is used when fitting timing belts, and is necessary for holding and positioning the belt tensioner pulley in alignment whilst the centre nut is tightened.

On 2,0 litre Engine code AWA this tool can also be used to turn the camshaft when fitting the Camshaft Alignment Tool **J/K**



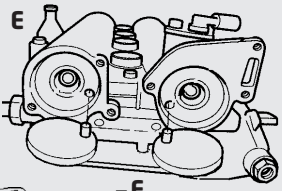


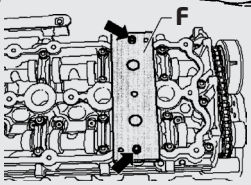
Top Dead Centre (TDC) Measurement
This set includes a precision Dial Test Indicator and Adaptor which enables the accurate measurement of the piston position. The Adaptor is fitted into the first cylinder spark plug hole. The Extension makes contact with the piston face and as the engine is slowly rotated the DTI indicates the highest point required. Many performance engines have an interference combustion area, which if the correct timing position is not acheived could result in serious damage to the valves and other parts of the engine.

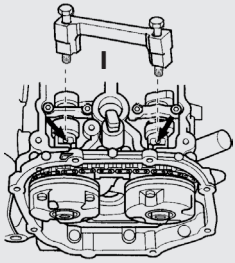


Camshaft Locking Tools
Are designed to correctly align the camshafts to achieve the correct valve timing position. It is important to fit the tool correctly, and where applicable the orientation is marked on the tool.
Tool **E** has pins which fit in to appropriate holes in the end of each camshaft. If not, turn the crankshaft one complete revolution in normal direction of rotation
Tool **F** is fitted between the slots located between each cam lobe. This tool is secured in position as arrowed, using 2 x M6 Bolts provided. The correct camshaft position can only be achieved following the removal of tension to the chain.
Tools **I** are fitted to each bank of camshafts with the threaded hole pointing upwards, as arrowed. These tools are retained using the 4 x M8 Bolts provided.

If the tools cannot be correctly fitted the valve timing is incorrect and the tension must be released and the correct alignment procedure then followed.





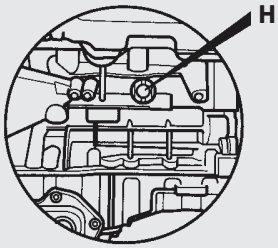


Crankshaft Locking Tool

A choice must be correctly made from two to set the crankshaft timing position during both removal and replacement of the timing belt. These tools are not interchangeable.

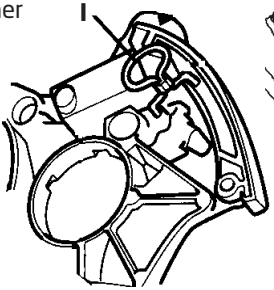
The crankshaft is first turned to TDC on Nr.1 cylinder, checking the timing marks on the camshaft sprocket hubs are aligned.

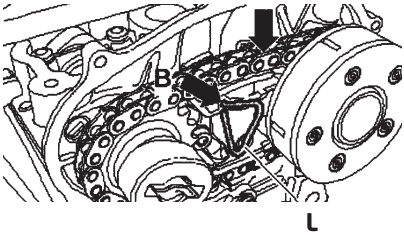
Slide the correct tool into position ensuring that the triangular mark/ arrow on the tool aligns with the timing mark on the crankshaft sprocket.



Tensioner Pin

This is used in conjuncion with the above Stud and Washer and locks the tensioner adjuster in the retracted position to permit the old timing belt to be removed and the new timing belt to be fitted.





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Further information can be found at
www.autodata.ltd.uk

Safety Precautions

- If the engine has been identified as an Interference engine, damage to the engine will occur if the timing belt has been damaged. A compresion check of all the cylinders should be taken before the cylinder head (s) are removed.
- Do not turn crankshaft or camshaft when the timing belt has been removed
- To make turning the engine easier, remove the spark plugs
- Observe all tightening torques
- Do not turn the engine using the camshaft or any other sprocket
- Disconnect the battery earth lead (Check Radio code is available)
- Do not use cleaning fluids on belts, sprockets or rollers
- Some toothed timing belts are not interchangeable. Check the replacement belt has the correct tooth profile
- Always mark the belt with the direction of running before removal
- Do not lever or force the belt onto its sprockets
- Check the ignition timing after the belt has been replaced.
- Do not use timing pins to lock the engine when slackening or tightening the crankshaft pulley bolts
- ALWAYS REFER TO A REPUTABLE MANUFACTURERS WORKSHOP MANUAL

Warning - Incorrect or out of phase engine timing can result in damage to the valves. It is always recommended to turn the engine slowly, by hand, and to re-check the camshaft and crankshaft timing positions.

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