

***Kamasa-TOOLS***®

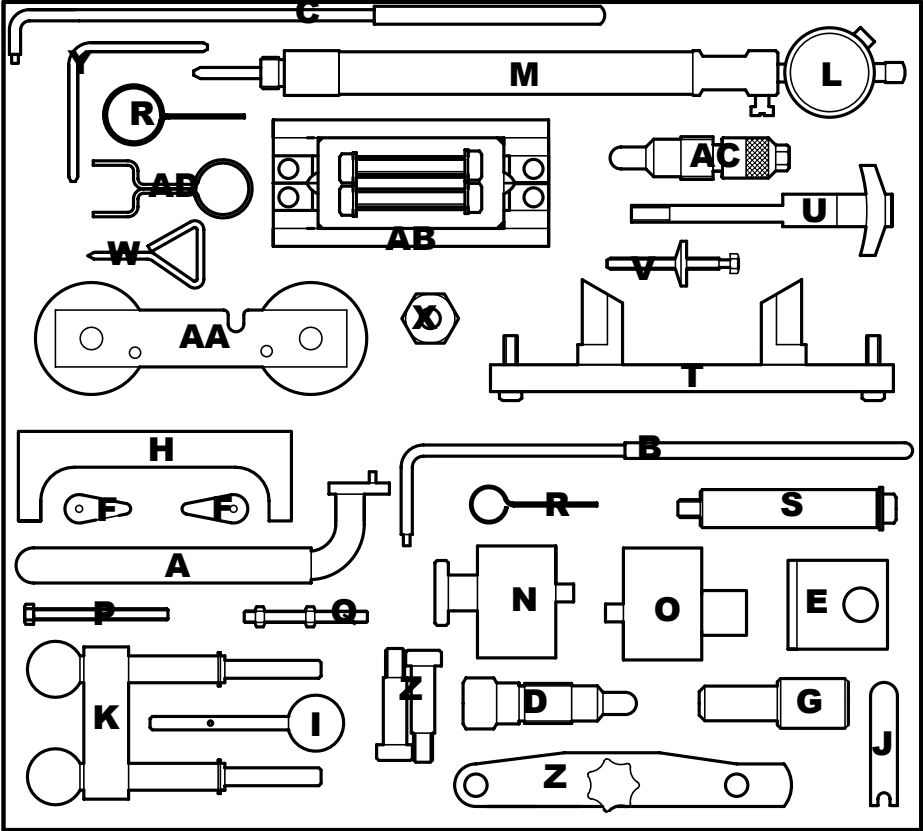
Master Engine  
Timing Tool  
Set I 2009

Volkswagen  
Audi Group

K 10550

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Pack Layout



## Component identity

Part No.	OEM Ref	Description
<b>A</b> 23044-01	Matra V159	Tensioner Wrench
<b>B</b> 23044-03	U30009/3387/T10004	Tension Lever
<b>C</b> 23044-04	T10020	Two Pin Wrench
<b>D</b> 23056-01	3242	Crankshaft TDC Locking Screw
<b>E</b> 23056-02	3458	Camshaft Alignment Plates (2)
<b>F</b> 23060-F		Shims (2)
<b>G</b> 23061-01	U20003/2064	Setting Spigot
<b>H</b> 23062-B	U40021/2065A	Camshaft Locking Bracket
<b>I</b> 23069-11	T20102/3359	Injection Pump Locking Pin
<b>J</b> 23069-12	T10008	Tensioner Locking Tool
<b>K</b> 23069-14	T10016/T10074	Camshaft Locking Tool
<b>L</b> 23072-A	VAS 6079	Dial Test Indicator 41 x 8mm
<b>M</b> 23107-B	T10170	TDC Indicator
<b>N</b> 23161-03	T10050	Crankshaft Setting Tool
<b>O</b> 23161-03C	T10100	Crankshaft Setting Tool (Non bored engine)
<b>P</b> 23161-04		M5 x 60mm Setscrew
<b>Q</b> 23161-05		M5 x 55mm Stud and Nut
<b>R</b> 23161-06	T20046	Tensioner Pin
<b>S</b> 23161-07	3369	Support Guides 17mm x 2

Part No.	OEM Ref	Description
T 23161-91	T10252	Camshaft Alignment Tool
U 23161-92	3366	Chain Tensioner/Crankshaft Pulley Holding Tool
V 23161-93	T10092	Special Bolt and Nut
W 23161-94	T10115	Tensioner Pulley Locking Pin
X 23161-95	T40058	Crankshaft Pulley Bolt Adaptor
Y 23161-96	T10060/A	Auxiliary Drive Belt Tensioner Locking Pin
Z 23161-B	T20038/3418	Setting Bracket
AA 23162-41	T10171	Camshaft Alignment Tool
AB 23162-61	T40070	Camshaft Locking Tool
AC 23162-62	T40069	Crankshaft Timing Pin
AD 23162-63	T40071T10020	Timing Chain Tensioner Locking Pin

# Engine Timing Tools

This master timing tool kit has been specifically compiled to give a comprehensive range of engine timing locking tools for Cam belts, chains and gears.

## 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 compression 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.**

## **Applications**

Our applications data is supplied by Autodata and we are able to supply this data to you in a pdf format.

This application list is enclosed in the attached CD listing which tool is required for each engine code.

If this is a specific kit for a group of engine codes the application list has been supplied showing the main vehicles this kit is designed for and does not list every model each pin fits.

If this is a master kit then all vehicles are included.

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# Special Tools

## **Crankshaft Locking Tool**

### **(X) Crankshaft Pulley Bolt Adaptor**

This tool is required to enable the crankshaft to be turned on most Audi chain driven FSi engines plus 2.7/3.0 TDi engines fitted to A4/A6 Quattro and Q7.

### **(AA) Camshaft Locking Tools**

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.

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.

### **(AB) Camshaft Alignment Tool**

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.

### **(AC) Crankshaft Locking Tool**

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 No1 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.



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