

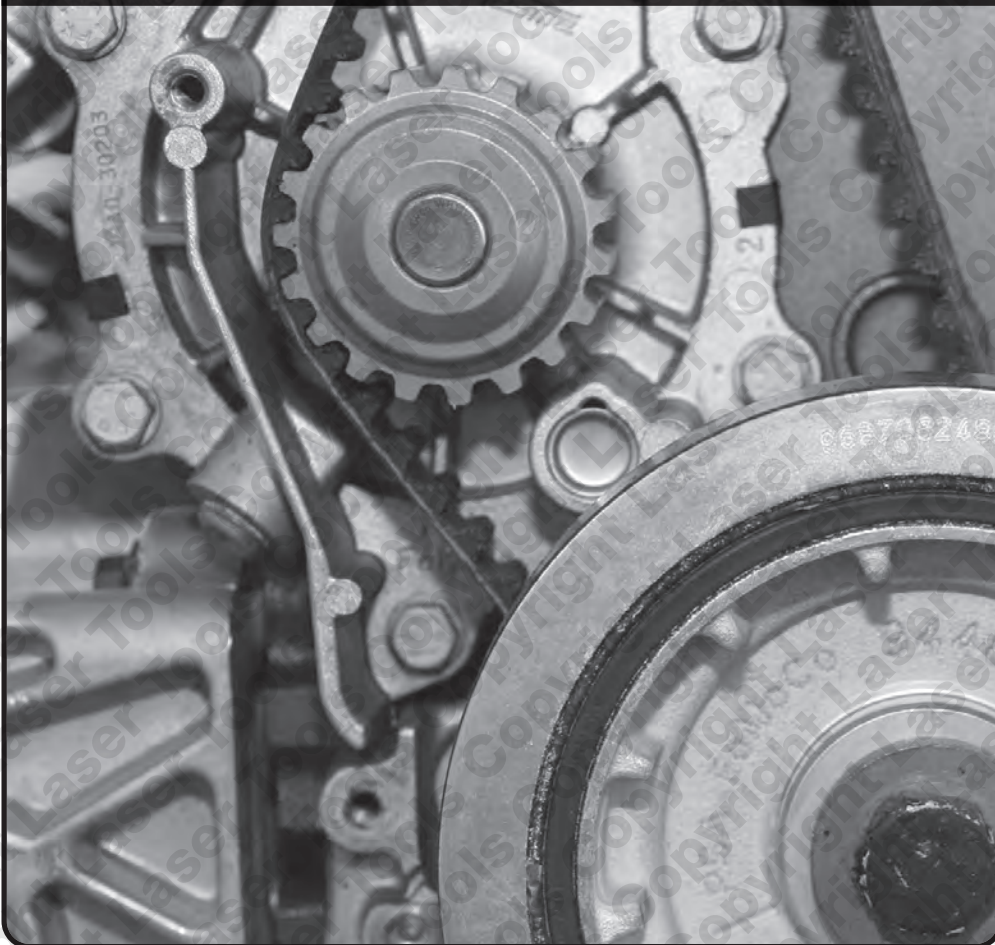
LASER[®]

Part No. 4772

Instructions

Engine Timing Tool Kit

Volkswagen | Audi 2.7 | 3.0



*Please refer to www.lasertools.co.uk/toolpoint
to check the most up to date product applications.*

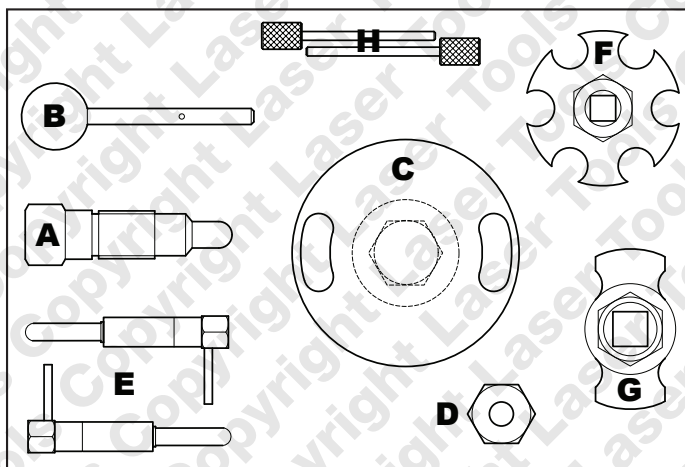
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Introduction

This kit includes special adaptors for turning and aligning the crankshaft with the cylinder head. Specifically designed for servicing V6, 4 valve, common rail diesel engines, chain driven engines fitted to:

- Audi A4 2.7 TDi with engine codes BPP (05-09)
- Audi A4 Quattro 2.0 TDi with engine code BMZ (05-06)
- Audi A8 4.0TDi (03-10) with engine code ASE)
- Q7 3.0 TDi with engine codes BUG, BUN (06-09)
- Volkswagen Touareg 3.0 V6 (08-)
- Volkswagen Phaeton 3.0 V6 Tdi (06-)

Components



Ref	Code	OEM Ref	Description
A	C043	3242 T40237	Crankshaft Locking Pin
B	C216	3359	Injection Pump/Balancer Shaft Locking Pin
C	C408	T40049	Crankshaft Turning Tool – Type 2
D	C395	T40058	Crankshaft Turning Tool – Type 1
E	C409	T40060	Camshaft Locking Pin (2)
F	C410	T40061	Camshaft Alignment/Locking Tool
G	C411	T40062	Camshaft Sprocket Holding Tool
H	C414		Tensioning Locking Pin (2) 3.3mm

General Information

This is a Chain driven engine and not considered a service item. The chain will only need replacement or checking if the sprockets or tensioners are dismantled.

The service life of the Chain is dependent on:

- **Correct tension**
- **Correct Sprocket alignment**
- **Correct lubrication**

Always refer to the vehicle manufacturer's service manual or a suitable proprietary instruction book.

The Tool Connection Limited recommend and endorse the use of the Autodata Timing Belts, Chains and Gears instructions and applications books.

Both books are available through your Laser Tools distributor:

Part No 3601

Autodata | **Timing Belts**

Part No 3626

Autodata | **Timing Chains and Gears**

Or for a one off application chapter and instructions on a specific engine go to:

<http://www.autodata-online.com/uk/timingbelt.asp>



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.

The data is the copyright of The Tool Connection and should not be reproduced.

WARNING

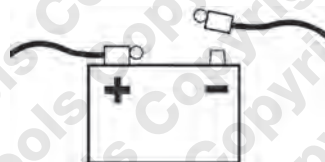
Incorrect or out of phase engine timing can result in damage to the valves.

The Tool Connection cannot be held responsible for any damage caused by using these tools in anyway.

Instructions

The following instructions are for guidance only. Please refer to OEM derived data such as the vehicle manufacturers' own data or Autodata.

The use of this engine timing tool kit is purely down to the user's discretion and The Tool Connection Ltd. cannot be held responsible for any damage caused whatsoever.



Instructions

Engine Timing Tool Set Volkswagen/Audi 2.7/3.0

Due to the positioning of the timing chains on these engines the transmission and sump must first be removed.

Crankshaft and Camshafts may only be turned when the drive chain mechanism is fully installed.

Item C or D

Crankshaft Turning Tool – Type 1 and 2

Turn the crankshaft in the engines normal direction of rotation until just before TDC on No.1 cylinder). Use two old drive plate bolts to hold the tool in place.

Item A

Crankshaft Locking Pin

Remove the blanking plug from the upper part of the sump and slowly rotate the crankshaft until tool (A) can be inserted

Remove the timing chain covers. Check that the camshaft lobes for No. 1 cylinder are at “rabbit ears” (pointing upwards.)

If not, remove the Crankshaft Locking Pin, rotate the crankshaft one turn and reinstall the Crankshaft Locking Pin.

Item E

Camshaft locking pins x 2

After removal of the left and right hand camshaft timing chain covers remove the appropriate bolts from the camshaft sprockets (one only from each sprocket) that will allow pins E to be inserted into the timing holes. (Check manufacturer specific data).

If the pins are not aligned the timing must be reset.

Item B

Injection Pump/Balancer Shaft Locking Pin

Following the manufacturers instructions fit tool B into the Balancer Shaft to lock in position.

Item H

3.3mm Tensioner locking pin

Before removing chains and resetting timing, tool H must be inserted into the cam chain tensioner with the tensioner pushed fully back.

Work on one sprocket at a time.

Item F

Camshaft Alignment/Locking Tool

Loosen the remaining camshaft sprocket bolts by one turn then fit the Camshaft alignment tool over the sprocket fastener heads and rotate the left hand camshaft using tool F until Locking Pin (E) can be fitted. Now rotate E to the set position (Side pin of E inline with the centre line of the camshaft sprocket). Torque all fixings whilst holding the camshaft sprocket with tool G.

Item G

Camshaft Sprocket Holding Tool

Both Camshaft Sprockets fixings can be tightened using this tool by applying the correct tightening torque. (See Manufacturer's recommendations)

This procedure should be repeated on the second camshaft.

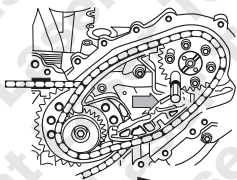
Visually check that the threaded holes are positioned centrally in the sprocket slots of both camshaft and balancer shaft.

N.B. If the chain is to be re-installed, always refit in the same direction of rotation.

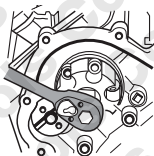
Remove all tools when the work is complete and recheck the valve timing.

Instructions

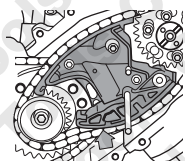
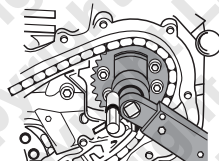
Item E



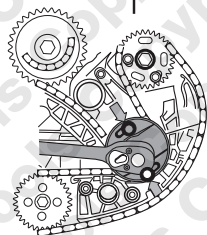
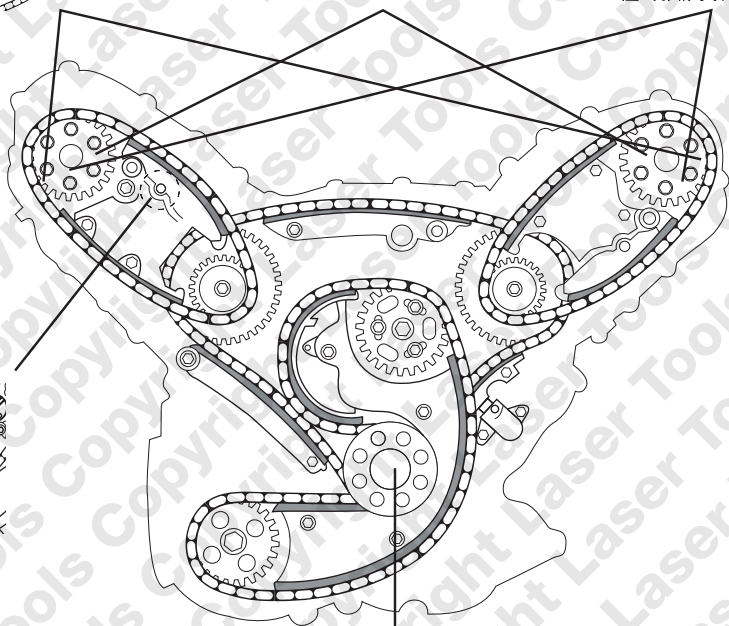
Item F



Item G



Item H



Item C

Applications

Make, Model, Year			Engine Codes	
Audi	A4/A4 Quattro	2005 - 2008	2.7 TDI BPP	4.0 TDI ASE
	A4 Cabrio/Quattro	2005 - 2009	BSG	
	A5 Coupe	2007 - 2012	3.0 TDI ASB	
	A6/A6 Quattro	2004 - 2008	BKN	
	A6 Allroad	2006 - 2008	BKS	
	A8	2003 - 2010	BMK	
	Q7	2006 - 2009	BMZ	
Volkswagen	Phaeton	2004 - 2007	BNG	
	Touareg	2005 - 2008	BUG BUN CAPA	

Always refer to the website for most up to date applications: www.lasertools.co.uk/product/4772

Safety Warnings - please read

- 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/chain has been removed.
- To make turning the engine easier, remove the spark plugs/glow plugs or injectors.
- 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.
- 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.

Our products are designed to be used correctly and with care for the purpose for which they are intended. No liability is accepted by the Tool Connection for incorrect use of any of our products, and the Tool Connection cannot be held responsible for any damage to personnel, property or equipment when using the tools. Incorrect use will also invalidate the warranty.

If applicable, the applications database and any instructional information provided has been designed to offer general guidance for a particular tool's use and while all attention is given to the accuracy of the data no project should be attempted without referring first to the manufacturer's technical documentation (workshop or instruction manual) or the use of a recognised authority such as Autodata.

It is our policy to continually improve our products and thus we reserve the right to alter specifications and components without prior notice. It is the responsibility of the user to ensure the suitability of the tools and information prior to their use.



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Guarantee



Distributed by The Tool Connection Ltd
Kineton Road, Southam, Warwickshire CV47 0DR
T +44 (0) 1926 815000 F +44 (0) 1926 815888
info@toolconnection.co.uk www.toolconnection.co.uk

If this product fails through faulty materials or workmanship, contact our service department direct on: **+44 (0) 1926 818186**. Normal wear and tear are excluded as are consumable items and abuse.

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