LASER®

Part No.
9102/9103

Instructions

Engine Timing Adaptor Kit

for VW Group 1.2/1.4/1.6 TSi Petrol

MADE IN SHEFFIELD

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Description

The **Laser 9102** provide the Exhaust Camshaft Adaptor (1.4 TFSI COD, TSI ACT, TFSI, BlueGT TSI ACT and a new foam to allow the parts from 886 to be added to form one kit (for existing 8866 owners).

The **Laser 9103** brings together the new camshaft locking tools for VAG TSi 1.0 1.4 1.6 2.0L Petrol engines and covers the ACT (CoD) derivatives. Replaces the Laser 8866 kit. Use only with Laser 8824.

- Applications include: Audi (from 2012), Seat (from 2015), Skoda (from 2015) & Volkswagen (from 2015).
- Engine applications include: 1.0L, 1.2L, & 1.4L TSI petrol engines - for full engine code list please see applications below.
- Engine variants include: TSi ACT , EA211 3 & 4 cylinder (without ACT). TFSI COD, TSI ACT, TFSI, BlueGT TSI ACT.

Use only in accordance with Laser Tools 9103 instructions. Use with Laser Part No. 8824.

Warning: Hybrid Vehicles use a high voltage system. Please ensure the proper precautions are taken when working on hybrid vehicles to avoid the risk of shock and injury. Personnel working with hybrid and PHEV vehicles must be trained to the level required by the vehicle manufacturer.

Kit List

Item	Comp. No.	Description
N	C1062	Fixing Bolts, Adaptor Plate From 8824
O	C1063	Inlet Camshaft Adaptor (TSi ACT, EA211 3 & 4 cylinder (without ACT))
P	C1064	Exhaust Camshaft Adaptor TSi ACT, EA211 3 & 4 cylinder (without ACT)
Q	C1065	Inclinometer Reference Bar TSi ACT, EA211 3 & 4 cylinder (without ACT)
R	C1076	Exhaust Camshaft Adaptor (1.4 TFSI COD, TSI ACT, TFSI, BlueGT TSI ACT)

Applications

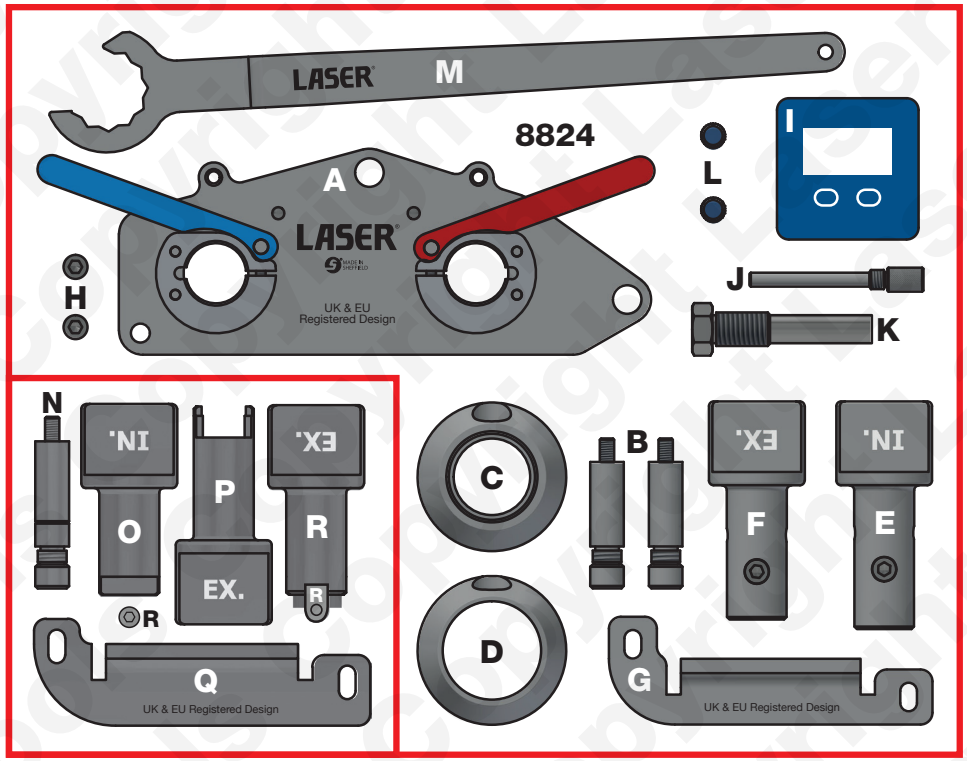
Manufacturer	Model	Year
Audi	A1	From 2012
	A3	From 2012
	Q2	From 2016
	Q3	From 2015
Seat	Alhambra	From 2015
	Arona	2017 to 2021
	Ateca	From 2016
	Ibiza	2013 to 2021
	Leon/ST	From 2012
	Mii	2012 to 2020
	Tarraco	From 2019
	Toledo	2014 to 2022
Skoda	Fabia III/Estate	2014 to 2022
	Kamiq	From 2019
	Karoq	From 2017
	Kodiaq	From 2017
	OCTAVIA III	From 2013
	Rapid/Spaceback	From 2015
	Scala	From 2019
	SUPERB III	From 2017
	Yeti/Outdoor	2014 to 2017
Volkswagen	CC	2015 to 2017
	Golf /VII/VIII/SV/ Sportsvan	From 2012
	Load Up!	2014 to 2020
	Passat	From 2014
	Polo	From 2012
	Scirocco	2014 to 2018
	Sharan	From 2015
	T-CROSS	From 2018
	Tiguan	From 2015
	T-Roc/Cabriolet	From 2017
	UP!	From 2011

Engine Codes	
1.0L	**1.2L**
CHZA	CJZA
CHZB	CJZB
CHZC	CJZC
CHZD	CJZD
CHZF	CYVA
CHZJ	CYVB
CHZK	CYVD
CHZL	
CPGA	**1.4L**
DBYA	CHPA
DKJA	CMBA
DKLA	CPTA
DKLB	CPVA
DKLC	CPVB
DKLD	CPWA
DKRA	CUKC
DKRB	CXSA
DKRC	CZCA
DKRF	CZDA
	CZDB
	CZDD
	CZEA
	DGEA
	DGEB
	DJKA
	CXTC

For torque settings please refer to OEM derived data such as the vehicles manufacturer's own data or Autodata.

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

9103 is designed to be used with components A, H, I, J, K, L and M from Laser 8824 when working on the earlier ACT and NON-ACT 3 and 4 cylinder EA211 engines. It is essential that components N, O, P or R (depending on engine variant) and Q be used in place of B, C, D, E, F and G found in 8824.



Instructions for use

NOTE: When loosening and tightening any pulley or sprocket fixing do not use the camshaft or crankshaft alignment tools to torque against. ALWAYS use the correct sprocket/pulley holding tool. Laser Tools recommends the use of 7279 Pulley Holding Tool set for VAG.

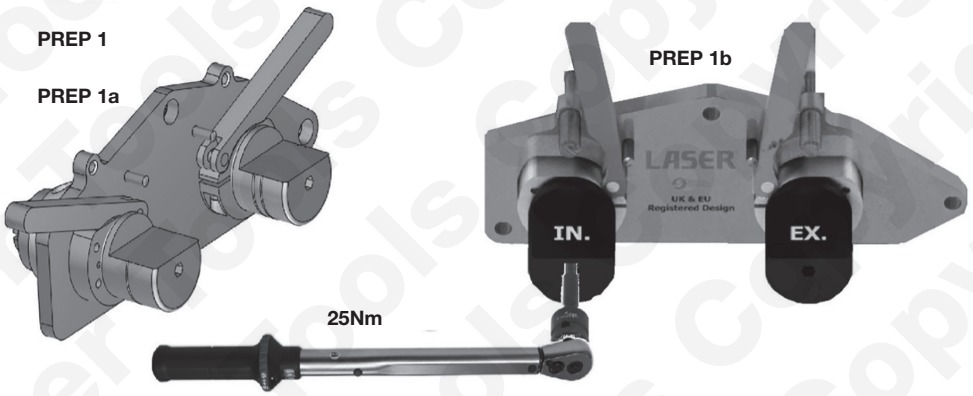
IMPORTANT: BEFORE EACH USE:

Digital Camshaft Angle Setting Kit – Preparation and Clamp adjustment.

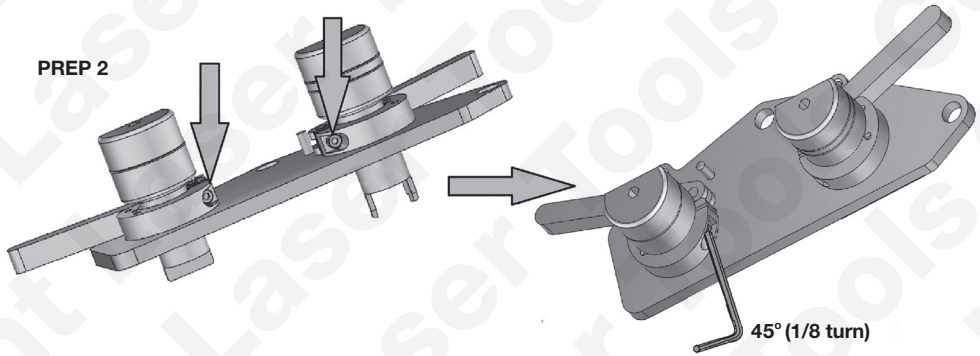
Before each use the clamping action of the adaptor locking levers (from 8824 kit) require adjustment. The following procedure should be used to set the clamping force (see image PREP 1).

Assemble the 8824 camshaft locking tools with the components that are to be used from 9103 on a bench as shown in image PREP 1a including fitting the camshaft adaptors into the assembly.

Lock the adaptor locking levers and insert the lever stop pins as shown in image PREP 1b. Using a 6mm hex key socket and torque wrench check that the adaptors do not rotate when a torque of 25Nm is applied (Image PREP 1b).



If the adaptors rotate at less than 25Nm tighten the clamping adjuster screw as shown in image PREP 2.



Adjusting the Clamping force:

Unlock the levers and turn the assembly upside down to access the adjuster screws.

NOTE: ensure the camshaft adaptors are fully inserted into the clamps.
Adjust the clamping force using a 3mm hex key as shown in image PREP 2.

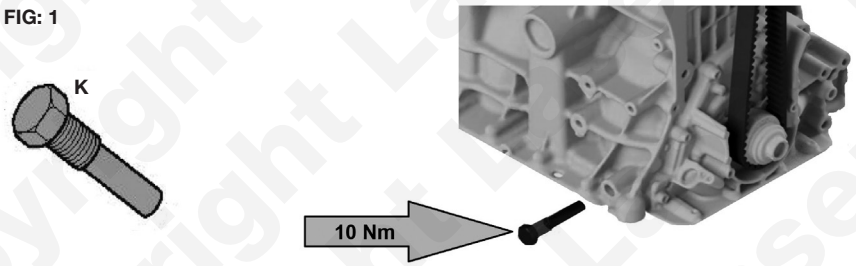
Tighten the screw by 1/8 of a turn then recheck the torque figure detailed in image PREP 1b.

Initial setting of the engine (old belt in place):

Component K (from 8824) – Crankshaft locking pin

Locate the crankshaft locking pin blanking plug on the rear of the engine block and remove it. Screw the crankshaft locking pin (K) in to the threaded hole and tighten to 10Nm. If (K) will not screw fully in remove it and turn the crankshaft through ¼ of a turn clockwise. Refit (K) and tighten to 10Nm. Now turn the crankshaft clockwise until it locks against the nose of (K). See Figure 1.

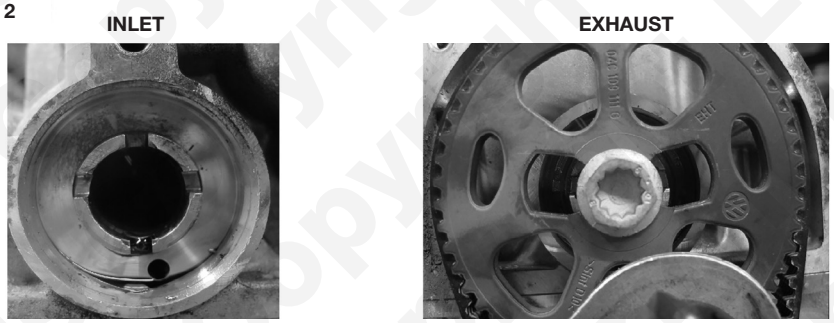
FIG: 1



Working from the transmission end of the engine check the camshafts are aligned as shown in Figure 2. If the they are 180 degrees out, remove (K) and rotate the crankshaft 360 degrees, refit (K) and ensure the camshafts align as shown in Figure 2.

NOTE: Do NOT remove the water pump drive belt pulley.

FIG: 2



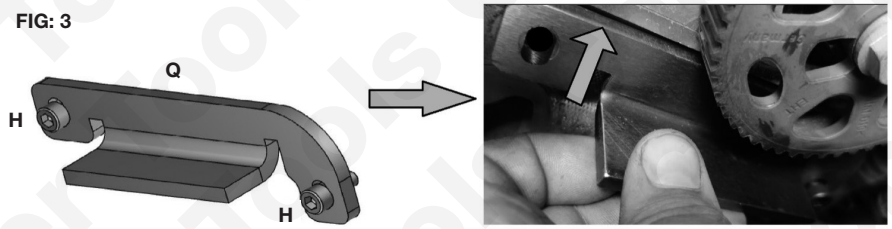
Fitting 9103 Camshaft Alignment Components

Components Q & H – Inclinometer Reference Bar:

Fit the reference bar (Q) from 9103 using fixing screws (H) from 8824 as shown in Figure 3.

IMPORTANT: Ensure this area is clean so that the bar fits flush and touching against the bottom of the cylinder head for the full length of the top of (Q) as shown.

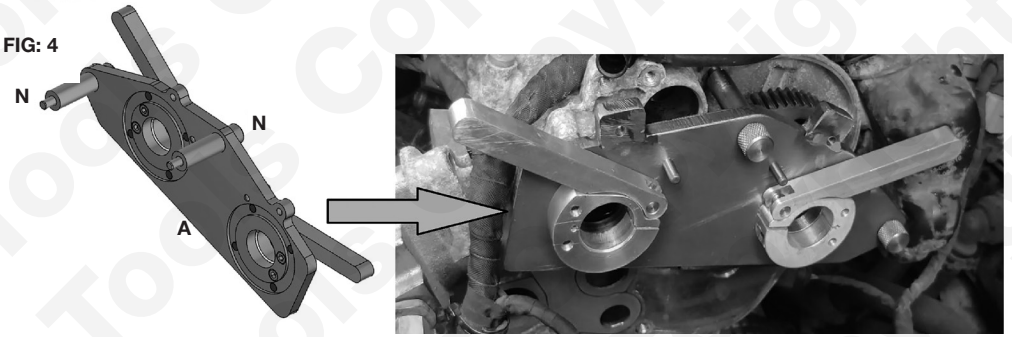
FIG: 3



Components A & N – Camshaft Locking Tool Assembly:

Assemble component (A) from 8824 and components (N) from 9103 as shown in Figure 4. Mount the assembly on to the engine as shown in Figure 4.

FIG: 4



Special Note: When working on 1.4 engines with engine codes CPTA, CZDB and CZEA the exhaust camshaft spacer adaptor (R) must be assembled in to the adaptor plate (A) first as shown in figure 5 & 5a. use Components O & R – Camshaft Adaptors.

NOTE: Do not use C & D spacers.

FIG: 5

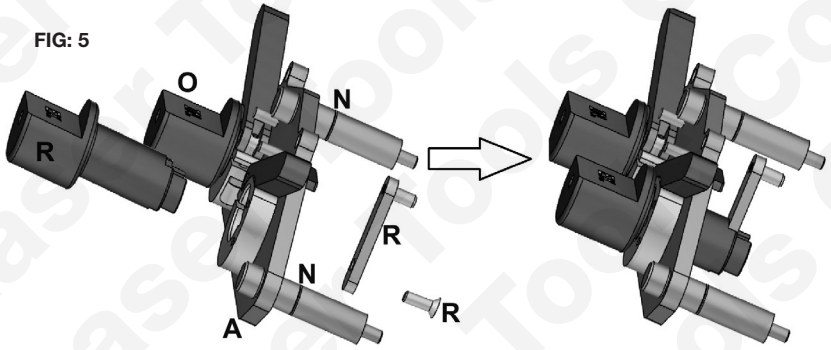
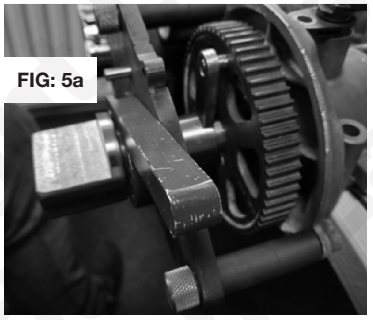


FIG: 5a



Components O & P – Camshaft Adaptors:

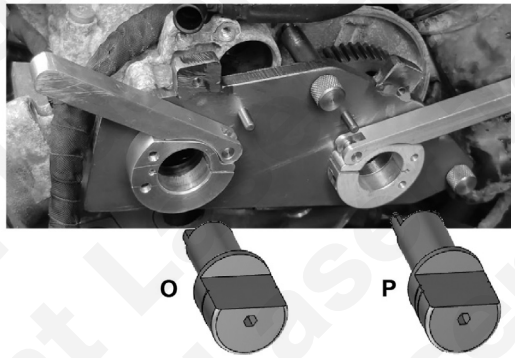
Insert the 2 camshaft adaptors **(O)** & **(P)**. see figure 5. NOTE: it is important that (O) & **(P)** are fitted to the correct camshaft as dictated by the markings. **(O)** must be fitted to the inlet camshaft and **(P)** to the exhaust camshaft. The ends of **(O)** & **(P)** must engage properly with the camshafts.

Checking Timing:

Follow the procedures described in 8824 instructions for **Checking Timing**, **Belt fitting**, **Adjustment Procedure** and **Correction Angle calculations**.

On completion use the alloy foot process to finish.

FIG: 6



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.

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