LASER®

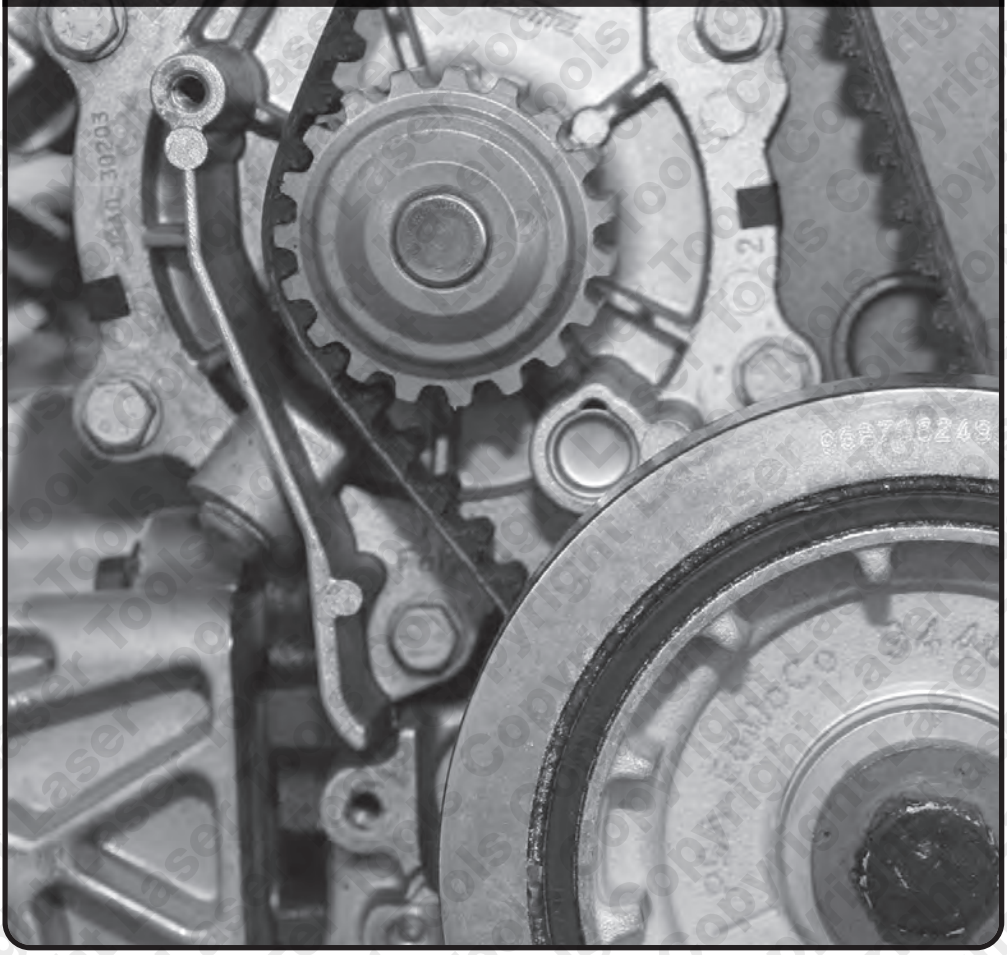
Part No. 5902

Instructions

Engine Timing Tools

Vauxhall/Opel

MADE IN SHEFFIELD



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

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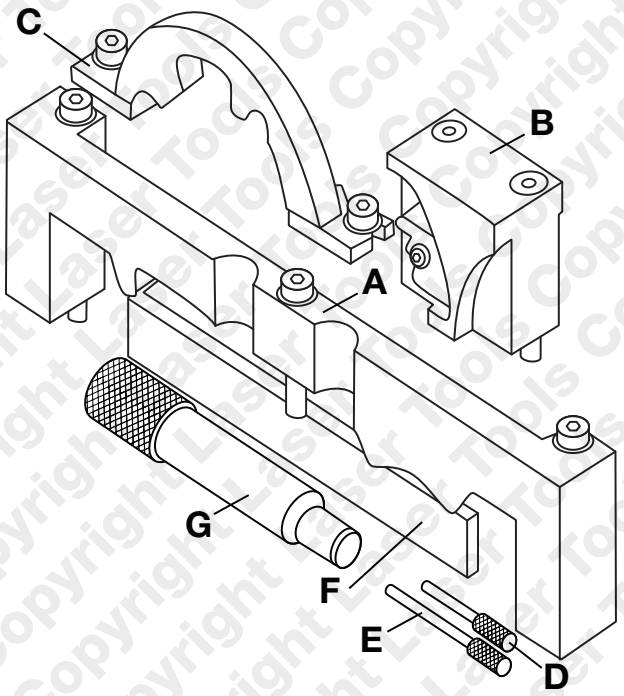
Components



Ref	Code	OEM Code	Description
A	C593	EN-49977-100	Camshaft Sensor Disc Setting Tool
B	C594	EN-49977-200	Inlet Camshaft Adjuster Tool
C	C595	EN-49978	Camshaft Sensor Locating Tool
D	C178	KM-955-1	Chain Tensioner Pin 4mm
E	C177	KM-955-2	Belt Tensioner Pin 2.5mm
F	C174	KM-953-A	Camshaft Locking Plate
G	C175	KM-952	Crankshaft Locking Pin

Applications

The application list for this product has been compiled cross referencing the OEM Tool Code with the Component Code.

In most cases the tools are specific to this type of engine and are necessary for Cam belt or chain maintenance.

If the engine has been identified as an interference engine valve to piston damage will occur if the engine is run with a broken Cam belt.

A compression check of all cylinders should be performed before removing the cylinder head.

Always consult a suitable work shop manual before attempting to change the Cam belt or Chain.

The use of these engine timing tools is purely down to the user's discretion and Tool Connection cannot be held responsible for any damage caused what so ever.

ALWAYS USE A REPUTABLE WORKSHOP MANUAL

Make, Model, Year			Engine Code	
Chevrolet	Aveo	2011 - 15	**1.2** L2Q/A12XEL LDC/A12XER LWD/A12XEL	**1.4** LDD/A14XEL LDD/A14XER LUJ/A14NET LUJ/B14NET LUU LUV
	Cruze	2012 - 15		
	Orlando	2012 - 15		
	Trax	2013 - 15		
	Volt	2012 - 14		
Opel/Vauxhall	Adam	2012 - 19	**1.0 ecoFLEX** A10XEP **1.2 ecoFLEX** LWD/A12XEL LWD/B12XEL LDC/B12XEL A12XEL A12XER **1.4 ecoFLEX 16V, Turbo** A14NEL A14XEL A14XER LDD/A14XEL LDD/A14XER LDD/B14XEJ LDD/B14XEL LDD/B14XER LUH/A14NEL	LUH/B14NEL LUJ/A14NEL LUJ/A14NET LUJ/B14NEH LUJ/B14NEJ LUJ/B14NEL LUJ/B14NET LUJ/D14NEH LUJ/D14NEJ LUJ/D14NEL LUJ/D14NET LUU/A14XFL L2Z/A14XEL
	Adam Rocks	2014 - 19		
	Ampera	2011 - 15		
	Astra-J	2009 - 18		
	Cascada	2013 - 19		
	Corsa-D	2009 - 14		
	Corsa-E	2014 - on		
	GTC	2015 - 19		
	Insignia-A	2011 - 17		
	Meriva-B	2010 - 17		
	Mokka	2012 - 16		
	Mokka X	2016 - on		
	Zafira-C Tourer	2011 - 18		

Always refer to the website for most up to date applications: **www.lasertools.co.uk/product/5902**

Engine Timing Tool – Vauxhall/Opel

Designed to lock the cam and crankshafts in position to allow the removal and replacement of the timing chain fitted to the Vauxhall/Opel twin Cam engines below.

N.B The information given below is for reference only.

The Tool Connection recommend the use of Manufacturer data or Autodata.

Preparation and precautions:

- Removal of the timing chain will require the removal of the sump.
- Ensure the engine is at TDC No 1 cylinder.
- Ensure the chain tensioner is fully retracted and held in the retracted position using a suitable pin.
- Remove the crankshaft pulley using an appropriate pulley holding tool

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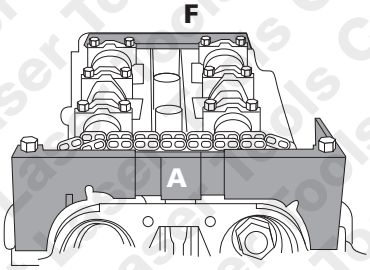
Component Descriptions:

Component A

Camshaft Sensor Disc Setting Tool (use with **B**)

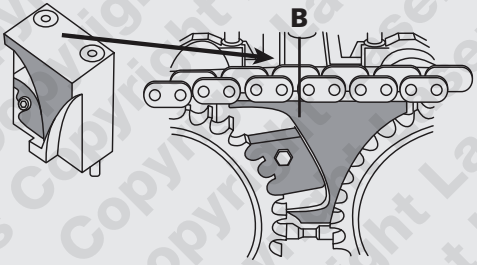
This component is used to adjust the valve timing after head rebuild.

Use on A14 NEL (LUH), A14 NET (LUJ) and A14 XER (LDD) engines.



Component B

In-let Camshaft Adjuster Tool (use with (**A**) or (**C**)



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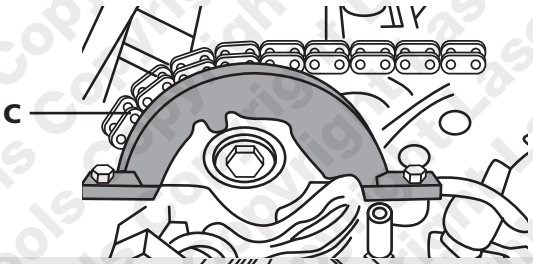
Component C

Camshaft Sensor Locking Tool (used for checking timing)

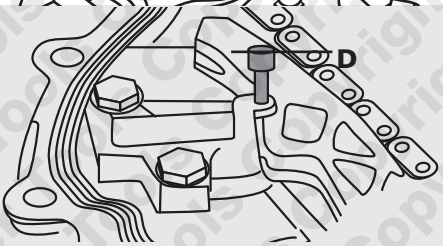
Use with component **B** on A10 XEP engines.



Component D

4mm Tensioner Pin.

Used to lock the cam chain tensioner in its retracted position.

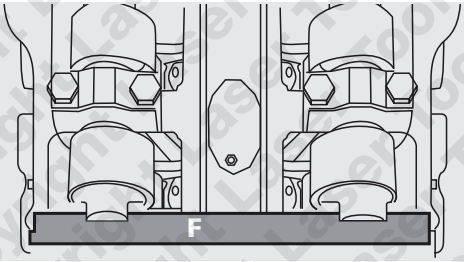


Component E

2.5mm Tensioner Pin. Used to lock the auxiliary drive belt tensioner in its retracted position.

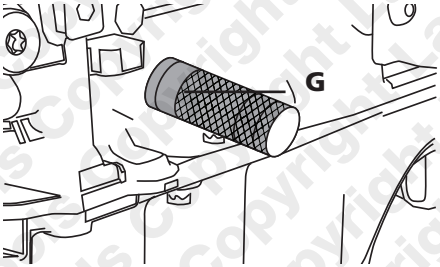
Component F

Camshaft locking plate. Locks the camshafts in their timed position to allow the cam pulley positions to be set and chain tension to be properly set.



Component G

Crankshaft setting pin. Used to set the Crankshaft at TDC No1 cyl.



Timing Chain Basic instructions

The following instructions are for guidance only, Please refer to the vehicle manufacturers instructions for the vehicle/engine being worked on.

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.

- Turn the crankshaft in its normal direction of rotation to just before TDC and remove the TDC blanking plug from the block. Insert component **G** and gently turn the crankshaft until component G fits into the crankshaft
- Insert component **F** into the slots in the back ends of the Camshafts as show.
- Push the cam chain tensioner back into its retracted position and lock with component **D**
- The chain tensioner, chain slippers, chain and sprockets can now be removed.
- Installation is the reverse of the above. Once properly assembled turn the crankshaft by hand 2 turns in the normal direction of rotation and refit component **G**.
- Check the timing by ensuring that component **F** can be fitted. If component **F** can not be re-fitted adjust the timing as follows.
- With component **G** in place and the crankshaft locked in TDC cylinder number one position retract the chain tensioner and lock with component **D**.
- Loosen off the inlet and exhaust camshaft pulley bolts being sure to hold the camshafts steady using a suitable spanner on the hexagons provided on the camshafts.
  Warning: do not use the camshaft locking or holding tools to loosen or tighten the camshaft fixing against.
- With the pulleys loose turn the camshafts so that component **F** can be installed
- With both component **G** and **F** in place remove the chain guide that sits between the 2 camshaft pulleys and remove the chain tensioner locking pin so that the tensioner takes up any slack in the chain.
- Fit component **B** and **A** as shown.
- It is important that component **A** sits on the cylinder head top face and is bolted down.
- Tighten the camshaft pulley bolts to the recommended torque ensuring the camshafts are held steady with a suitable spanner placed on the hexagons provided on the camshafts.
  Warning: do not use the camshaft locking or holding tools to loosen or tighten the camshaft fixing against.
- Remove all locking tools and rotate the crankshaft by hand 2 complete turns.
  Ensure components **G** and **F** can be fitted. To check the Camshaft sensor position use component **C** on A10 engines.

Safety Warnings - please read

- Disconnect the battery earth leads (check radio code is available)
- Remove spark or glow plugs to make the engine turn easier
- Do not use cleaning fluids on belts, sprockets or rollers
- Always make a note of the route of the auxiliary drive belt before removal
- Turn the engine in the normal direction (clockwise unless stated otherwise)
- Do not turn the camshaft, crankshaft or diesel injection pump once the timing chain/belt has been removed (unless specifically stated)
- Do not use the timing chain/belt to lock the engine when slackening or tightening crankshaft pulley bolts
- Mark the direction of the chain/belt before removing
- It is always recommended to turn the engine slowly, by hand and to re-check the camshaft and crankshaft timing positions.
- Crankshafts and Camshafts may only be turned with the chain drive mechanism fully installed.
- Do not turn crankshaft via camshaft or other gears
- Remove spark or glow plugs to make the engine turn easier
- Check the diesel injection pump timing after replacing the chain
- Observe all tightening torques

Safety First. Be Protected.

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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