

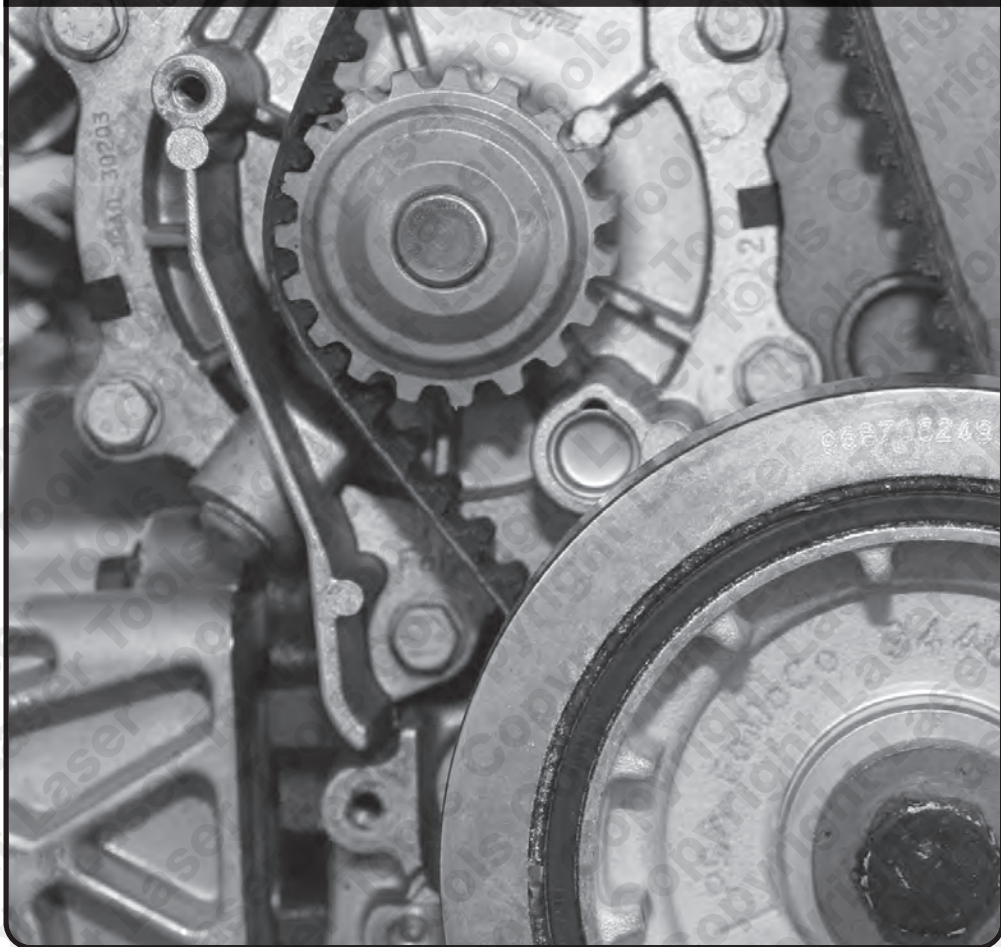
# LASER<sup>®</sup>

Part No. 5901

## Instructions

### Engine Timing Tools

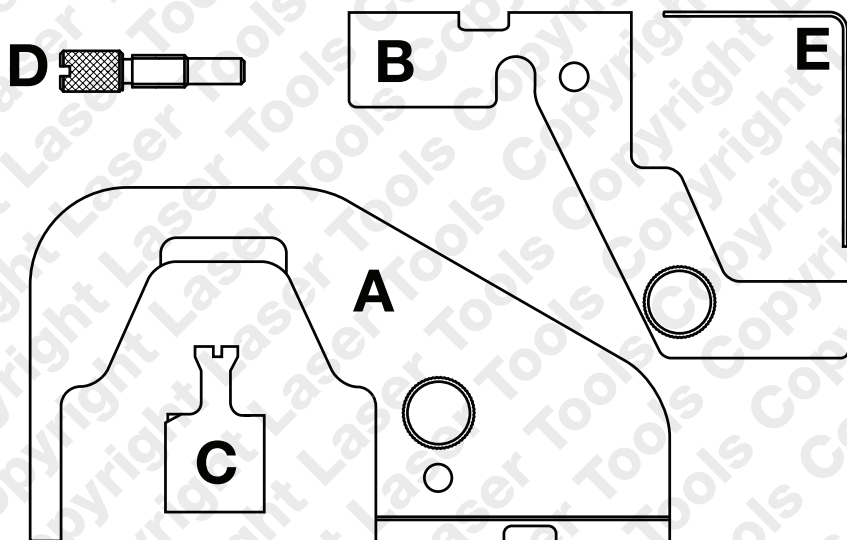
Ford 2.0 Ecoboost



*Please refer to [www.lasertools.co.uk/toolpoint](http://www.lasertools.co.uk/toolpoint)  
to check the most up to date product applications.*

**[www.lasertools.co.uk](http://www.lasertools.co.uk)**

# Components



Ref	Code	OEM Code	Description
A	C596	303-1504	Camshaft Alignment plate Up to May 2011
B	C597	303-1565	Camshaft Alignment Plate May 2011 onwards
C	C598	303-1521	Crankshaft Position Alignment Pin
D	C311	303-748	Crankshaft Timing Pin
E	C599		Tensioner Pin 2mm

## 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		
Ford	Focus	2011 - 2018	<b>2,0</b>	R9DD	<b>2,3</b> <b>EcoBoost</b> YVDA
	Galaxy	2010 - 2018	<b>EcoBoost</b>	TNBA	
	Mondeo	2010 - 2018	MGDA	TNBB	
	S-MAX	2010 - 2018	R9CB	TNCC	
			R9CD	TNCD	
			R9CF	TNCF	
			R9CH	TNWA	
			R9CI	TNWB	
			R9DA	TPBA	
			R9DB	TPWA	
			R9DC	XQDA	

Always refer to the website for most up to date applications: [www.lasertools.co.uk/product/5901](http://www.lasertools.co.uk/product/5901)

## 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.

# Engine Timing Tool – Ford 2.0 Ecoboost

Developed specifically for the chain driven 2.0lt direct Injection petrol engines fitted with variable valve timing.

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

*The Tool Connection Ltd recommends the use of Manufacturer data or Autodata.*

## Preparation and precautions:

- Raise the front of the vehicle and remove the right hand front wheel and inner wheel arch.
- Remove the engine under shield, top cover, auxiliary drive belt(s) and the crankshaft position sensor.
- Ensure the engine is at TDC No1 cyl.

## Component Descriptions

### Component A

For use with vehicles manufactured up to May 2011.

Install (A) as required after (D) has been installed.

It may be necessary to turn the camshafts a small amount Fig. 1

*NB: when tightening or loosening the cam pulleys always hold the camshafts with a suitable wrench on the hexagons on the camshafts.*

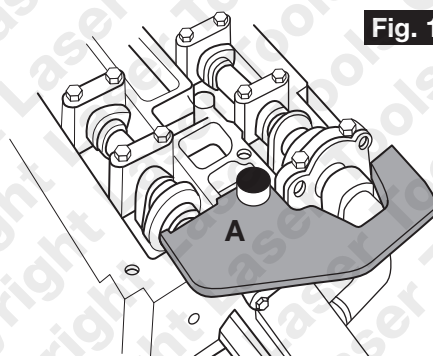


Fig. 1

### Component B

Camshaft alignment plate for vehicles manufactured after May 2011.

See Fig. 2

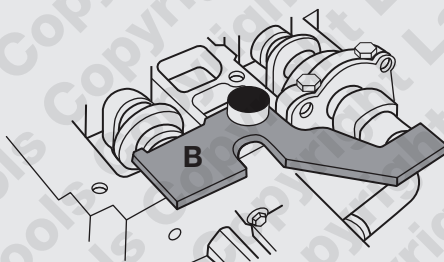


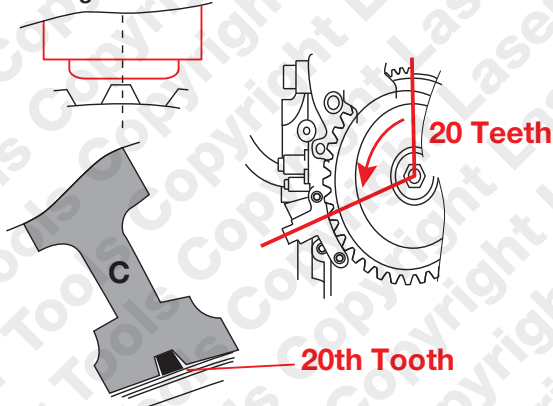
Fig. 2

## Component Descriptions

### Component C

- Crankshaft position sensor alignment tool is used to align the crankshaft position sensor when refitting the sensor and front pulley.
- The crankshaft sensor is mounted on a slotted bracket that allows the sensor position to be adjusted.
- Component **C** slides onto the sensor and on to the 20th tooth from the gap in the teeth on the front pulley. In this way it both aligns the sensor with the correct tooth and sets the required distance from the tooth. **See Fig. 3**
- Loosely mount the crankshaft sensor with the mounting bolts sitting in the centre of the mounting slots then turn the crankshaft slowly till it stops against **(D)** and fit the crankshaft pulley into place, do not tighten it up.
- Check the camshaft alignment tool slides into place and position the front pulley as shown in **Fig. 3**.
- Torque up the crankshaft bolt using a new bolt and the appropriate pulley holding tool then remove all timing tools and turn the crank 630° clockwise (1 and  $\frac{3}{4}$  turns).
- Screw in **(D)** and turn the crank until it contacts pin.
- Using **(C)** align the sensor with the 20th tooth and torque up the fixing bolts.

Sensor aligned with 20th tooth



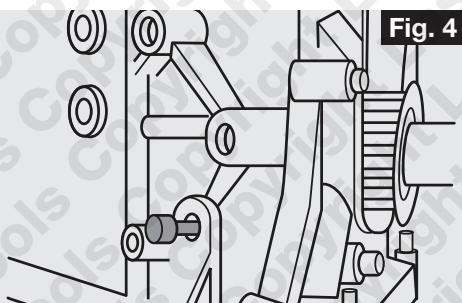


## Component Descriptions

### Component D

Crankshaft timing pin designed to screw into the engine block.

Turn the crankshaft to just before TDC, fit **(D)** as shown then turn the crankshaft until it contacts pin. Fit **(D)** before fitting **(A)** or **(B)**. See Fig. 4



### Component E

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



## 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.



5901\_INSTRUCTIONS\_V5



[www.lasertools.co.uk](http://www.lasertools.co.uk)

### Guarantee

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.



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](mailto:info@toolconnection.co.uk) [www.toolconnection.co.uk](http://www.toolconnection.co.uk)

**[www.lasertools.co.uk](http://www.lasertools.co.uk)**