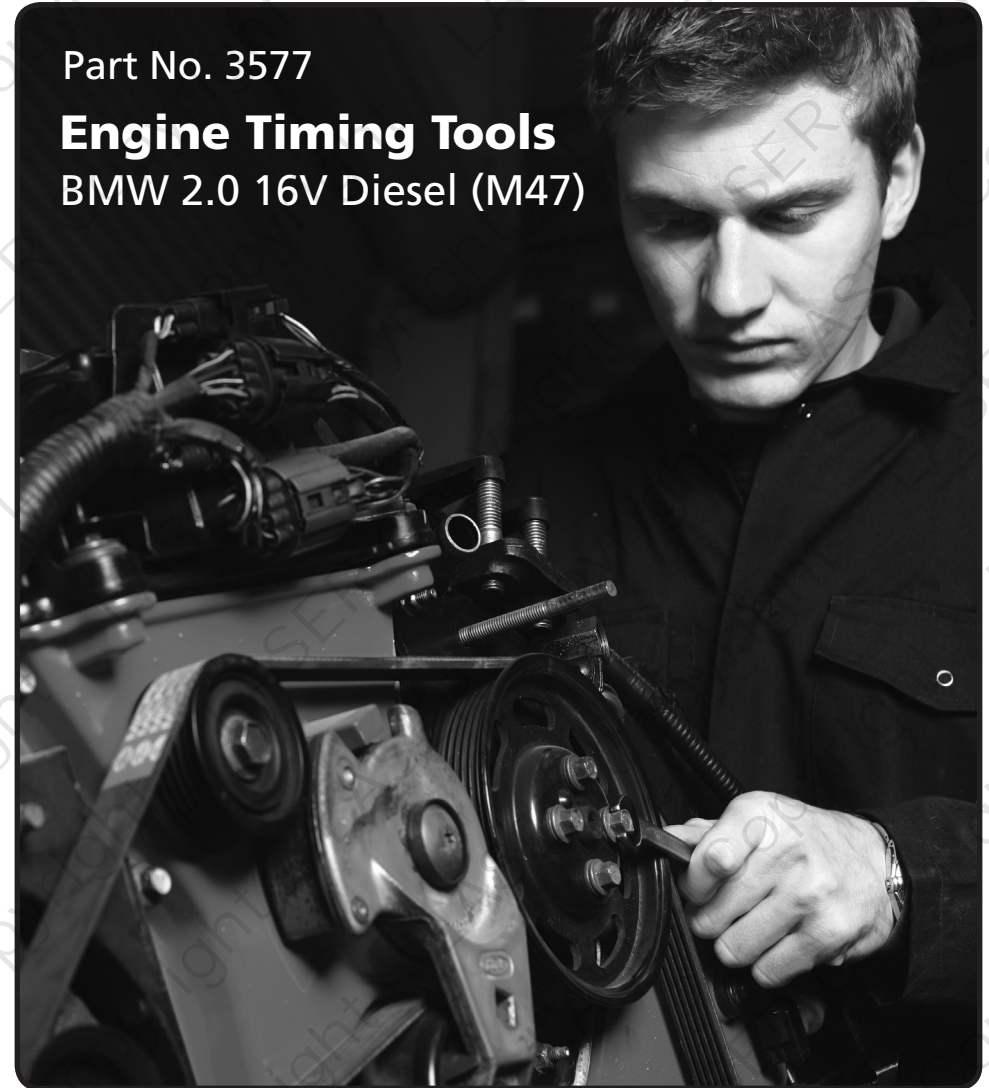


# LASER®



Part No. 3577

## Engine Timing Tools BMW 2.0 16V Diesel (M47)



When you have finished with this bottle please recycle it

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

**Guarantee**



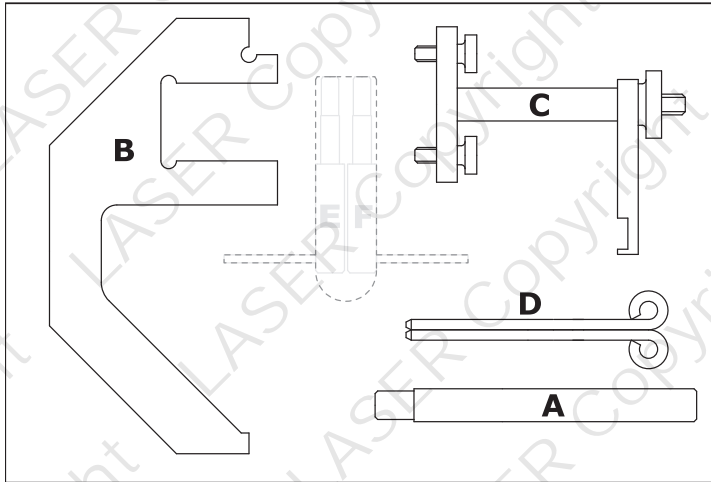
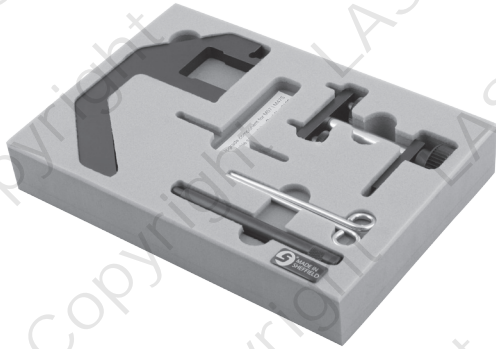
Distributed by The Tool Connection Ltd  
Kineton Road, Southam, Warwickshire CV47 0DR  
T +44 (0) 1926 815000 F +44 (0) 1926 815888  
info@toolconnection.co.uk [www.toolconnection.co.uk](http://www.toolconnection.co.uk)

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.

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

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

## Plan Layout



Ref	Code	OEM Ref	Description
A	C020	11-2-300	Crankshaft TDC Setting Pin
B	C028	11-6-320	Camshaft Setting Plate
C	C029	11-6-322	Locking Clamp
D	C030	11-3-340	4.0mm Tensioner Retaining Pin (2)
E	C526	11-5-180	Upgrade component available separately - Part No. 5166
F	C527	11-6-080	Upgrade component available separately - Part No. 5166

## 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.**

### Safety Precautions – 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 has been removed (unless specifically stated)
- Do not use the timing chain to lock the engine when slackening or tightening crankshaft pulley bolts
- Do not turn the crankshaft or camshaft when the timing belt/chain has been removed
- Mark the direction of the chain 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
- Check the diesel injection pump timing after replacing the chain
- Observe all tightening torques
- Always refer to the vehicle manufacturer's service manual or a suitable proprietary instruction book
- Incorrect or out of phase engine timing can result in damage to the valves

## 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.

We have also uploaded, where possible, translations for the instructions on to our website ([www.lasertools.co.uk/3577](http://www.lasertools.co.uk/3577)) in the following languages:

French

Spanish

German

Portuguese

Italian

Dutch

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

**ALWAYS USE A REPUTABLE WORKSHOP MANUAL**

## Instruction

This set of tools enables the correct timing to be made when servicing the BMW M47 engine as fitted in models 320d (E46), 520d (E39), Land Rover Freelander TD4, Rover 75 2.0 diesel M47R.

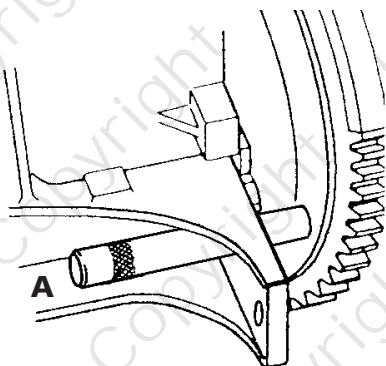
**Upgrade** component for M57 | M47S available separately - **Part No. 5166 (OEM 11 5 180/11 6 080).**

Supplied in a cardboard storage case fitted with a 'tool-control' tray. (Metal case also available separately - Part No. 4536).

### Crankshaft TDC Setting Pin

This tool fits all engines and is inserted through the flywheel casing and into the timing position hole in the flywheel after the crankshaft has been turned to TDC (Top Dead Centre) on No.1 cylinder.

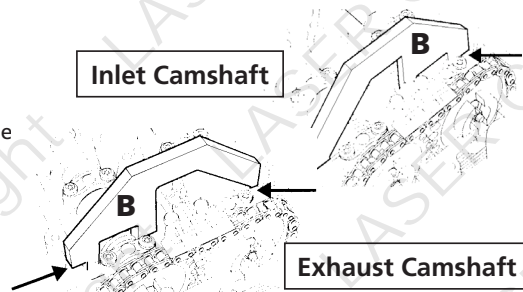
**Note.** Check for corrosion on the steel engine block, normally found on the straight 4 cylinder engine as this may prevent the Setting Pin from being fitted, clean away the corrosion.



### Camshaft Locking Tool

This tool is fitted to the inlet and exhaust camshaft in turn. The outside faces of the tool must make contact on the cylinder head, as shown by the arrows, after being fitted over the flats on the camshaft.

Adjustment to the timing is required if the correct fitting and contact cannot be achieved.



## Instruction

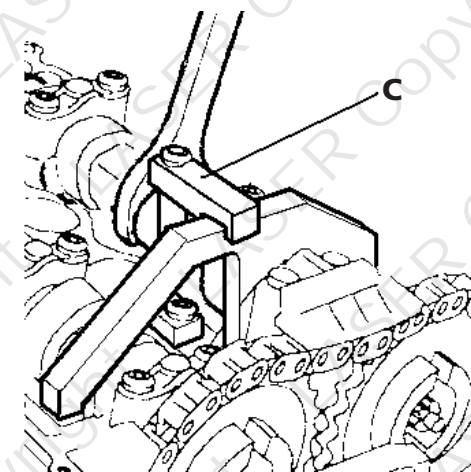
### Clamp C - Camshaft Locking Plate

These tools are used when timing adjustment is necessary. The camshafts are turned to the correct timing position after the Sprocket retaining fasteners have been loosened.

The camshaft is held using an open-ended spanner on the hexagon. The sprockets should be free to rotate but not too loose to tilt.

The camshaft Locking Plate Clamp is fitted first, using the mounting screws provided.

The Clamp Plate is then fitted over the camshaft and the camshaft position adjusted until all the contact points register. This position is then held by attaching the top latch of the clamp over the locking plate and securing. Additionally hold the camshaft position with an open-ended spanner whilst the sprocket is retightened.



### Tensioner Retaining Pins (2)

Before the removal of the camshafts, sprockets and timing chain the Tensioner is compressed by turning the exhaust camshaft slowly in an anti-clockwise direction using an open-ended spanner, it is necessary to retain the tensioner by using the Retaining Pins. Both pins are used if the Tensioner has to be removed.

It is recommended the the tensioner be retained with the Pins prior to removal, as considerable force is required to compress it.

