Kamasa-TOOLS®

Engine timing tools

BMW N47 l N47S D20A Diesel 1.6 l 2.0

K 10560

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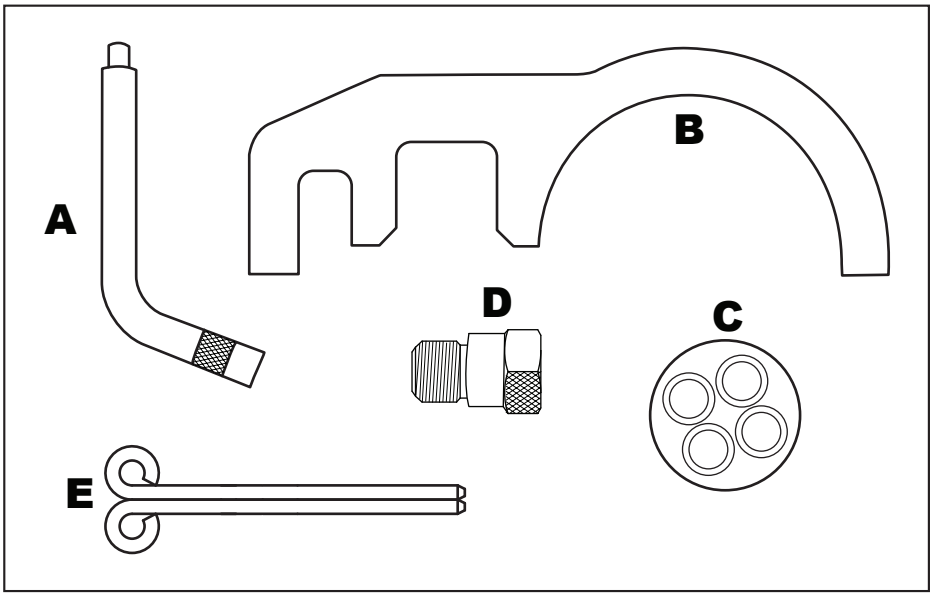
Plan Layout



Component Descriptions

Ref	OEM Ref	Description
A	11 5 320	Flywheel Plate Timing Pin
B	11 8 760	Camshaft Alignment Tool
C	11 6 480	Crankshaft Pulley Turning Tool
D	11 8 740	High Pressure Pump Sprocket Removal Tool
E	11 3 340	Tensioner Locking Pins x 2

Preparation

The valve timing on these engines preparation:

Due to the positioning of the chain drive it will be necessary to remove the engine from the vehicle for removal/refitting of the timing chain/sprocket.

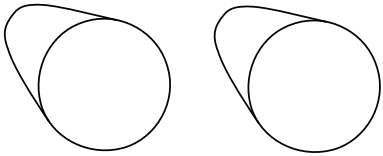
Component Application

Components A
Flywheel Plate Timing Pin

Used to lock the crankshaft in its TDC no 1 position. The pin locates through the engine block into the back of the flywheel/flywheel plate.

Turn the engine in its normal direction of rotation until the pin can be located fully. Confirm TDC no 1 cylinder by checking the position of the Cam lobes on no 1 cylinder.

A



Cylinder no1 Cam lobe positions at TDC when viewed from the front of the engine

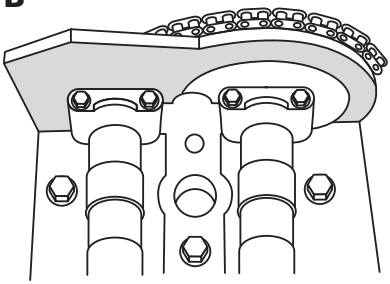
Components B
Camshaft Alignment Tool

Locates on the exhaust Cam just behind the Camshaft drive gears. Both ends of (**B**) should sit flush on the cylinder head when in place if the timing is correct.

If incorrect, check component (**A**) is in place correctly.

If (**A**) is correctly fitted then the camshaft timing must be adjusted.

B



Components C
Crankshaft Pulley Turning Tool

Designed to sit over the crankshaft fixing bolt heads and provide a suitable drive for a ratchet to be used to turn the crankshaft by hand.

Only turn the engine in its normal direction of rotation.

Note: These instructions are provided for guidance only.

Please refer to the vehicles manufacturers' instruction or a reputable data provider. We recommend the use of Autodata's Timing Chain and Belt instruction manuals.

Component D
High Pressure Diesel Fuel Pump Pulley Removal Tool

Designed to allow the HP diesel pump to be removed whilst holding the pump sprocket in place so the cam chain, valve timing etc. do not need to be disturbed to remove or replace the HP pump.

Locate and remove the plastic blanking plug that covers the HP pump sprocket holding bold.

Ensure engine is at TDC No 1.

Screw component (**D**) into the sprocket

Do not remove the sprocket central fixing bolt until (D) is in place.

Remove the HP pump mounting bolts and slacken the sprocket fixing via the centre of component (**D**).

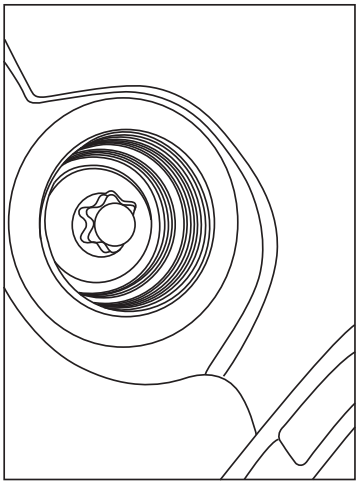
The HP pump will be pushed out of the back of the sprocket.

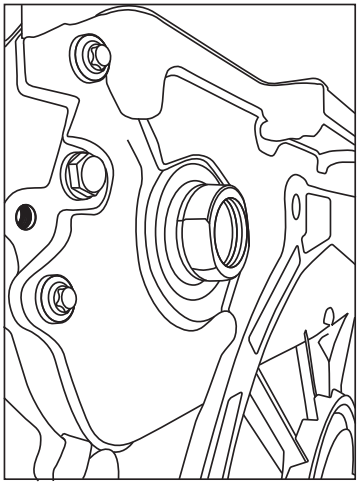
Note: Do not remove the tool or centre fixing whilst the HP pump is not in place.

Components E
Chain Tensioner Locking Pins (2)

These are used to lock the chain tensioners in their retracted position.

D





Applications

Model	Engine Code	Year
1 series (E81 I 82 I 87 I 88)	N47 D20A I N47S D20B/TO I F20	2007-2013
3 series (E90 I 91 I 92 I 93)	N47 D20A I N47S D20B/TO I F30	2007-2013
5 series (E60 I 61)	N47 D20A I N47S D20B/TO I F10 I F11	2007-2013
X3 (E83)	N47 D20A I N47S D20B/TO I F25	2007-2010
Mini	N57 I C20U1	2012-2013
Mini	N47 C16K1 I C16U1	2012-2013

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Safety Precautions

- If the engine has been identified as an Interference engine, damage to the engine will occur if the timing belt has been damaged. A compresion 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 has been removed
- To make turning the engine easier, remove the spark plugs
- 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
- Check the ignition timing after the belt has been replaced.
- 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
  Warning – Incorrect or out of phase engine timing can result in damage to the valves. It is always recommended to turn the engine slowly, by hand, and to re-check the camshaft and crankshaft timing positions

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