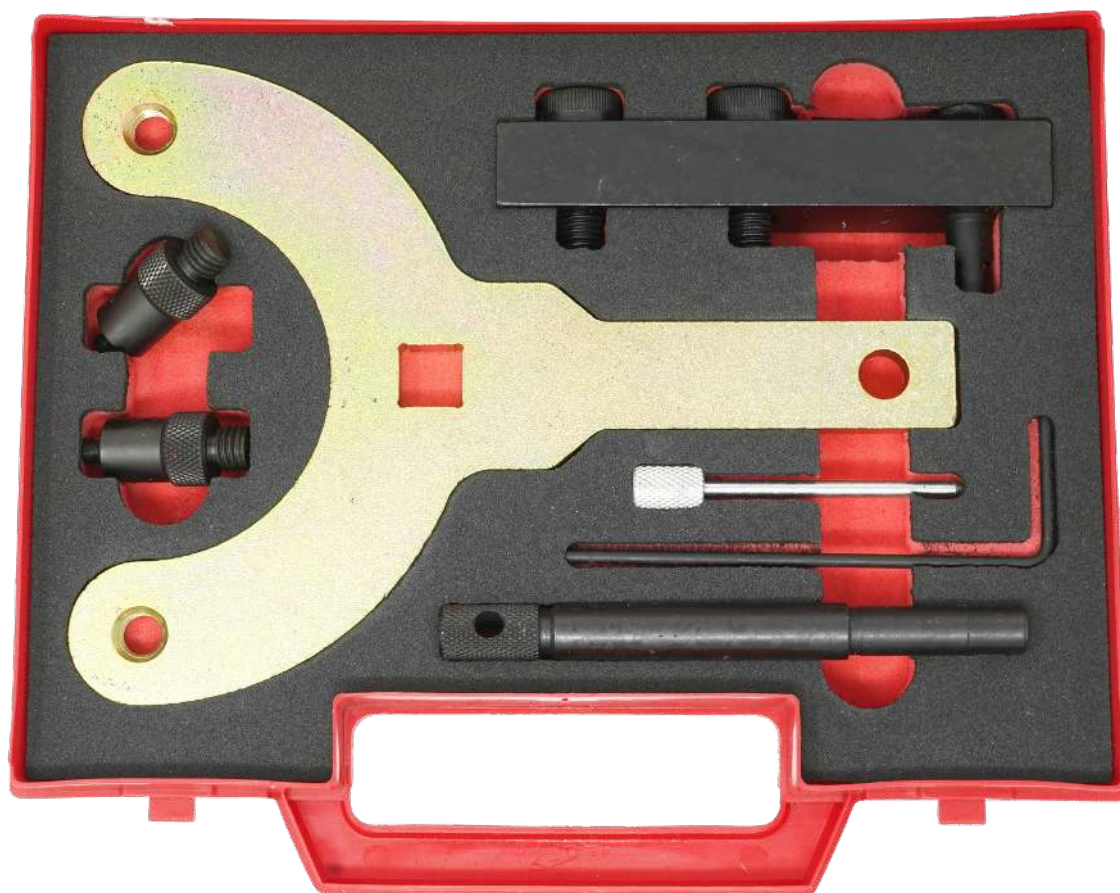




TIMING TOOL OPEL 1.6 L CDTI

Manual

94313340



PICHLER
built to succeed.

SAFETY NOTICE

To understand the functioning of the tools, it is necessary to read the manual first!

- > Read these instructions before assembling, during installation and throughout use and in the proper sequence
- > Always refer to the OEM manufacturer's instructions and service manuals for the latest data and to maintain the correct sequence
- > These work instructions and the recommended tools are meant to serve as aides only and are by no means a guarantee for certain results.
- > This tool kit is a special collection and it has been tested and used successfully on several occasions. It is of the utmost importance to maintain the correct procedure as per the instructions
- > The use of the tools should only be carried out by qualified personnel!



ATTENTION
Special caution



CORRECT



LIGHT BULB
Hint or recommendation



WRONG



SAFETY GOGGLES
Wearing safety goggles
necessary

Applications:

OPEL-VAUXHALL:

Astra-J	Mokka
Astra-K	Mokka X
GTC	Insignia-B
Meriva-B	Zafira-C
	Tourer

Engine codes:

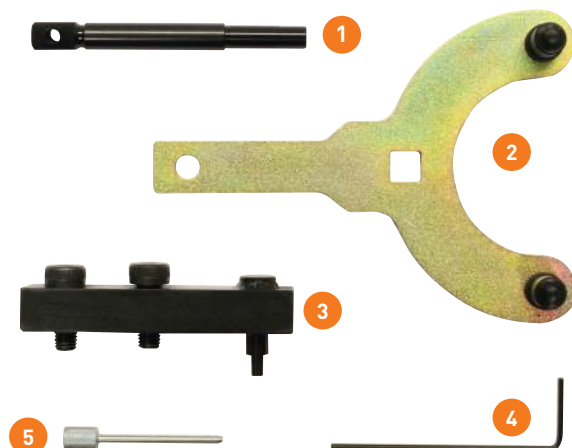
B16DTC (LVM,	B16DTL	(LVM)
LVQ) B16DTE	B16DTN	(LVL)
(LWQ) B16DTH	B16DTR	(LVK)
(LVL) B16DTJ	B16DTU (LWV)	
(LVL)		

Additional Tools Required:

60388810 Crankshaft Pulley
Hold Tool Handle



Kit Contents / Spares:



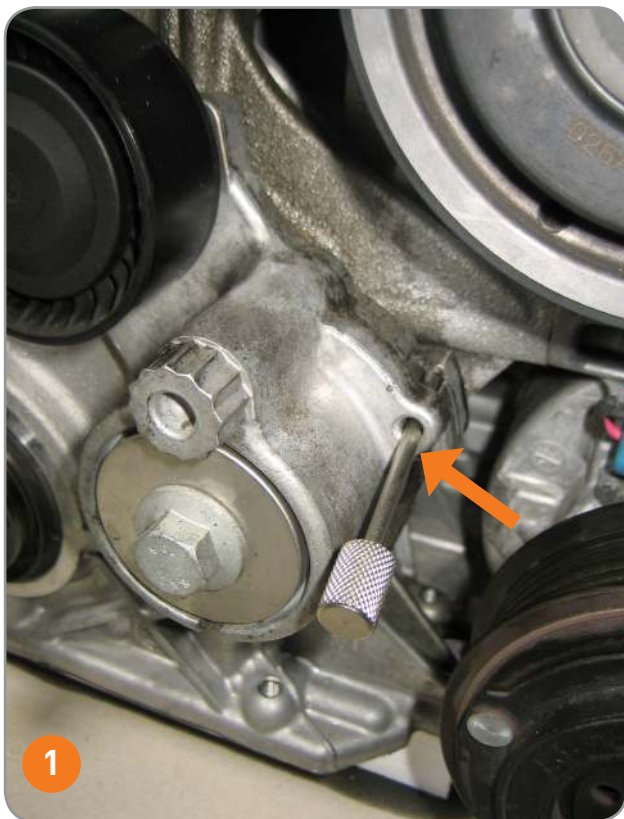
No.	Description
1	Crankshaft Locking Pin
2	Crankshaft Pulley Holding Tool
3	Crankshaft Setting Tool
4	Chain Tensioner Locking Pin
5	Aux Belt Tensioner Locking Pin

Introduction

94313340 covers engine setting / timing chain removal and installation procedures on 1.6L 'B16' four cylinder diesel engines installed in a number of Opel-Vauxhall models from 2013. The timing chain is located at the transmission end of the engine, between the engine block and gearbox. A significant amount of disassembly may be required in order to remove or install the timing chains, including separating the transmission from the engine and removal of the flywheel and oil sump.

The Timing Chain does not locate directly onto the Crankshaft, instead the Crankshaft drive gear meshes with an idler gear which includes a chain sprocket. The chain is routed via the H.P. Fuel Pump to the Inlet Camshaft. The Exhaust Camshaft is driven through interconnecting gears on the Camshafts.

The Timing Chain Tensioner is positioned between the Exhaust Camshaft and the Sprocket of the Idler Gear.



AUXILIARY BELT REMOVAL

Rotate the auxiliary belt tensioner in an anti-clockwise direction to release tension from the belt, retain the tensioner in position using Auxiliary Belt Tensioner Locking Pin. Remove the auxiliary belt from the engine.

NOTE: If the Auxiliary Belt is to be refitted, mark the direction of rotation on the belt using chalk or another suitable method before removing it from the engine. Ensure that the belt runs in the same direction at reassembly.



CAMSHAFT SETTING PIN

Remove the Engine Cover and Camshaft Cover to access the Camshafts. Rotate the Crankshaft in the normal direction of engine rotation until the alignment hole in the Camshaft Drive Gear is aligned with the hole in the Camshaft Retaining Cap.

Insert Camshaft Setting Pin through the Retaining Cap and ensure that it is fully located in the hole of the Drive Gear.

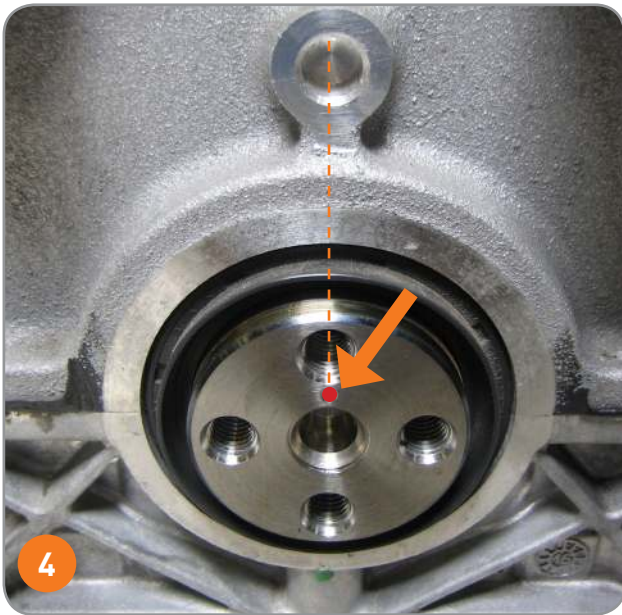


CRANKSHAFT PULLEY REMOVAL

Using Crankshaft Pulley Holding Tool in conjunction with 60388810 Handle, counter hold the Crankshaft Pulley and release the four Crankshaft Pulley Bolts.

Remove the Crankshaft Pulley Bolts and Crankshaft Pulley from the engine.

Check that the engine timing marks of the crankshaft and idler gears are aligned.



CRANKSHAFT SETTING TOOL

For Timing Check procedures where the Transmission is attached to the engine and it is not possible to see the marks on the Crankshaft Drive Gear and Idler Gear, check that the Indicator Mark at the Pulley end of the Crankshaft is at the 12 o'clock position.

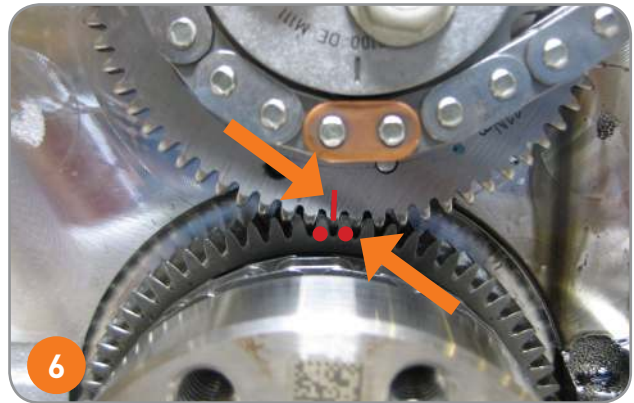
If the Crankshaft Indicator Mark is not at the 12 o'clock position remove Camshaft Setting Pin, temporarily reinstall the Crankshaft Pulley, then use Crankshaft Pulley Hold Tool to rotate the Crankshaft so that the Camshaft rotates through one full turn.

Refit Camshaft Setting Pin, remove the Crankshaft Pulley and check the position of the Crankshaft Indicator Mark.



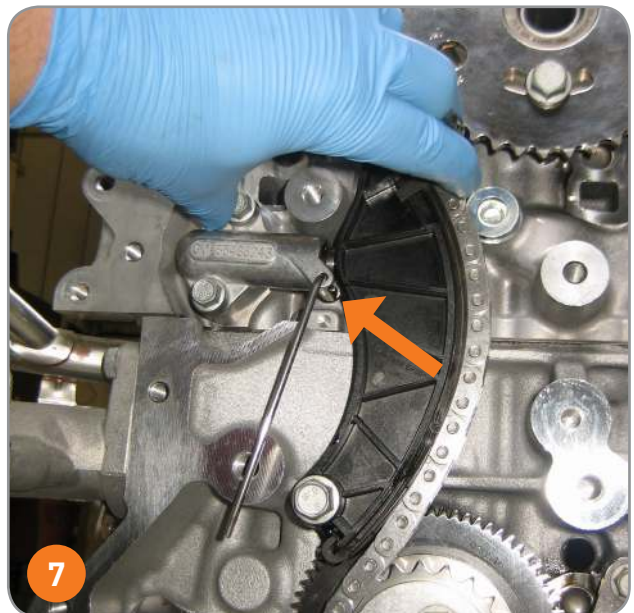
Install Crankshaft Setting Tool onto the Crankshaft, ensuring that the peg of the tool is located in the recess of the engine block. Retain in position using the bolts provided.

If Crankshaft Setting Tool and Camshaft Setting Tool cannot be installed, the engine timing will require adjustment.



For Timing Chain Removal and Installation procedures, or when the Transmission has been removed from the engine, check that the engine timing marks of the Crankshaft Drive Gear and Idler Gear are aligned.

Install Crankshaft Setting Tool onto the pulley end of the Crankshaft, ensuring that the peg of the tool is located in the recess of the engine block. Retain in position using the bolts provided.



CHAIN TENSIONER LOCKING PIN

Compress the plunger of the timing chain tensioner, retain in position using Chain Tensioner Locking Pin. Remove the timing chain tensioner rail and the chain guide rail, then remove the timing chain from the engine.

NOTES

NOTES





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