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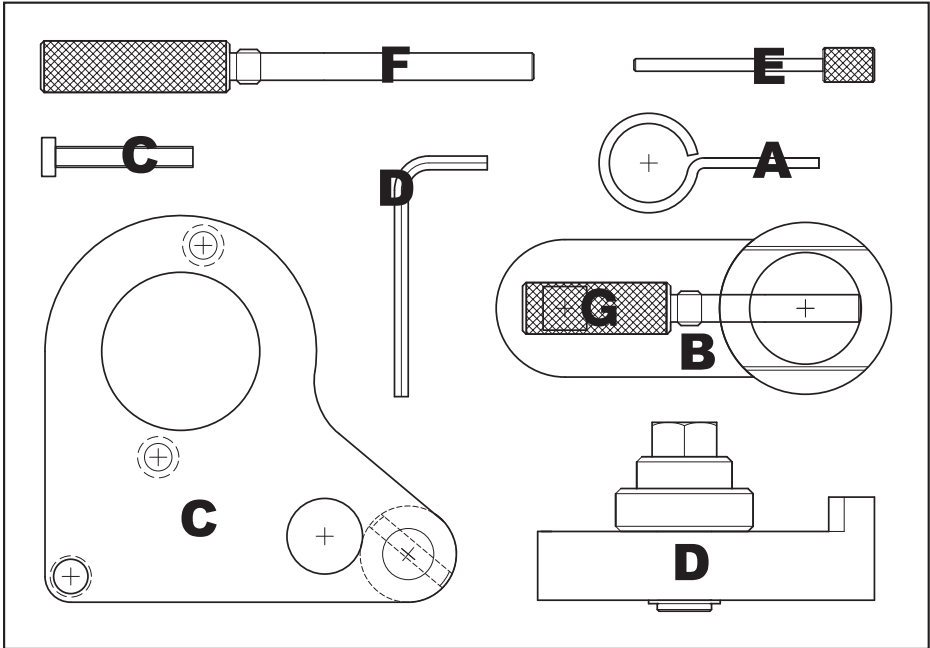
Engine
timing tools

Opel DCi
Chain Engine

K 10554

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Plan Layout



Component Identification

Ref	OEM Ref Renault	OEM Ref Opel	OEM Ref Nissan	Description
A				Chain Tensioner Locking Pin 2.96mm
B	MOT 1770	KM 956-1	EN-48334	Crankshaft Pulley Holding Tool
C	MOT 1769	EN-48332	EN-48332	Camshaft Setting Plate
D	MOT 1773	EN-48331	EN-48331	Camshaft Gear Alignment Tool c/w 4mm Hex Key
E		KM-6130		Auxiliary Belt Tensioner Locking Pin 3.6mm
F	MOT 1766	EN-48330	EN-48330	Crankshaft Locking Pin (2.0 2.2 DCi)
G	MOT 1970			Crankshaft Locking Pin (1.6 DCi)

Renault 1.6 | 2.0 | 2.3 DCi Chain Driven engines

The Renault DCi 2.0, 1.6 and 2.3 engine utilises a chain drive between the Crankshaft and Exhaust Camshaft.

The drive for the Inlet Camshaft is via gears from the Exhaust Camshaft.

These engines employ a split Inlet Camshaft Gear which has its two halves radically sprung loaded apart to help quieten the gear drive and remove any back lash.

To set the timing correctly the Inlet Camshaft Gear must first be removed from the engine and the two halves aligned using an Inlet Camshaft Alignment Tool.

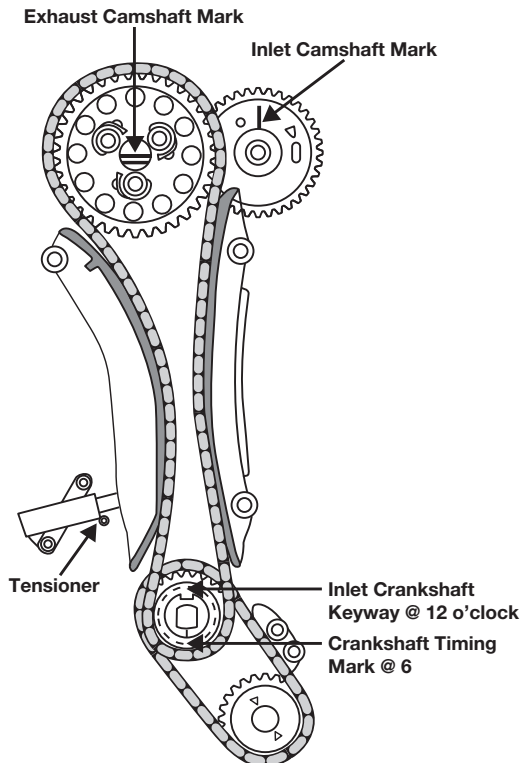
This tool kit includes a vice mounted Inlet Gear Alignment Tool for this purpose (Component D)

Two crankshaft locking pins are now included to cover for the 1.6 DCi (Comp G) and 2.0 | 2.3 DCi (Comp F)

Preparation and precautions:

- Raise the front of the vehicle and remove the front wheels and inner wheel arches as required.
- Remove the engine under shield, top cover, air intake, auxiliary drive belt(s).
- Ensure the engine is at TDC cylinder number 1.
- Ensure the chain tensioner is fully retracted and held in the retracted position using the pin provided.
- For some of the vehicles listed engine removal will be required.

Fig. 1



Component Application

Component A

Cam Chain Tensioner Locking Pin

Used to lock the tensioner in its retracted position.

Component B - Crankshaft Pulley Holding Tool

Used with a suitable 1/2 drive ratchet or bar to hold the crank pulley still whilst loosening or tightening the pulley fixing.

Component C - Camshaft Setting plate

Used to set both camshafts in position.

Plate **C** has 4 location points all of which must align with the camshaft sprockets as shown in Fig. 2

Component D - Camshaft Gear Alignment Tool

Used as shown in Fig. 3 to align the 2 halves of the inlet cam gear with the gear removed from the engine. Place the body of **D** in a vice and place the cam gear on **D** as shown. Align the 2 halves of the cam gear with a suitable lever and insert locking pin as shown using **H**

Component E

Auxiliary Belt Tensioner Locking Pin

Used to lock the auxiliary belt tensioner in its retracted position.

Component F - Crankshaft Locking Pin

For M9R 2.0 DCi engines Set the engine to TDC no. 1 as shown in Fig.1.

For 2.0 and 2.3lt DCi engines. Used to lock the crankshaft in its timed position. **F** locates through the right hand side of engine block near the oil filter housing (see Fig. 4). Do not use this pin to hold the crankshaft whilst loosening or tightening the crankshaft pulley fixing (use component **B**). Ensure the crankshaft timing marks are aligned and component **F** is fitted as shown in Fig. 4. Once fitted turn the crankshaft anti-clockwise till it locks against component **F**.

Component G - Crankshaft Locking Pin

For later M9T 2.0 and R9M 1.6 DCi engines set the engine to TDC no 1 as shown in Fig. 1

1.6 engines use coloured links on the timing chain which should be aligned as shown in Fig. 1.

Fig. 2

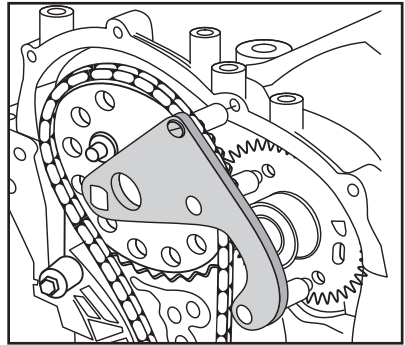


Fig. 3

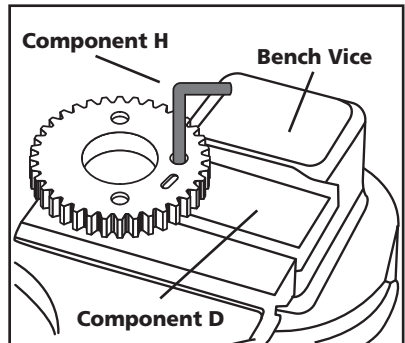
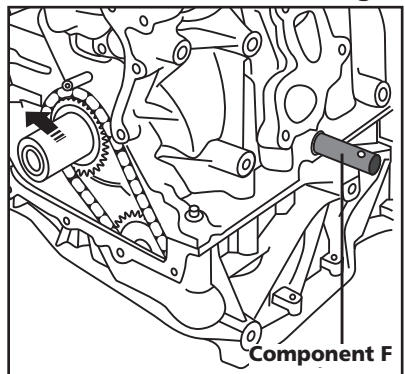


Fig. 4



Applications

Manufacturer	Model	Type	Engine Code	Year
Renault	Scenic III	1.6 DCi	R9M	2011
	Grand Scenic III	1.6 DCi	R9M	2011
	Megane III	1.6 DCi	R9M	2012
	Laguna III	2.0 DCi	M9R	2007
	Laguna III	2.0 GT DCi	M9R	2008
	Latitude	2.0 DCi	M9R	2010
	Trafic II	2.0 DCi	M9R	2008
	Vel Satis	2.0 DCi	M9R	2005
	Espace, Grand Espace IV	2.0 DCi	M9R	2006
	Koleos	2.0 DCi	M9R	2008
	Laguna II	2.0 DCi	M9R	2005
	Laguna III	2.0 DCi	M9R	2007
	Megane II	2.0 DCi	M9R	2006
	Megane II	2.0 DCi	M9R	2007
	Megane III	2.0 DCi	M9R	2009
	Megane III	2.0 DCi	M9R	2009
	Scenic, Grand Scenic II	2.0 DCi	M9R	2006
	Scenic, Grand Scenic III	2.0 DCi	M9R	2009
	Trafic II	2.0 DCi	M9R	2006
	Vel Satis	2.0 DCi	M9R	2005
Vauxhall/Opel	Master III	2.3 DCi	M9T	2010
	Megane III	1.6 DCi	R9M	2012
	Vivaro	2.0 CDTi	M9R	2006
Nissan	Vivaro	2.0 CDTi ecoFlex	M9R	2011
	Movano-B	2.3 CDTi	M9R	2010
	Qashqai Qashqai+2	1.6 DCi	M9R	2011
	Primastar	2.0 DCi	M9R	2006
	Qashqai Qashqai+2	2.0 DCi	M9R	2007
	X-Trail	2.0 DCi	M9T	2007
	NV400	2.3 CDTi	R9M	2011

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 compression 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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