

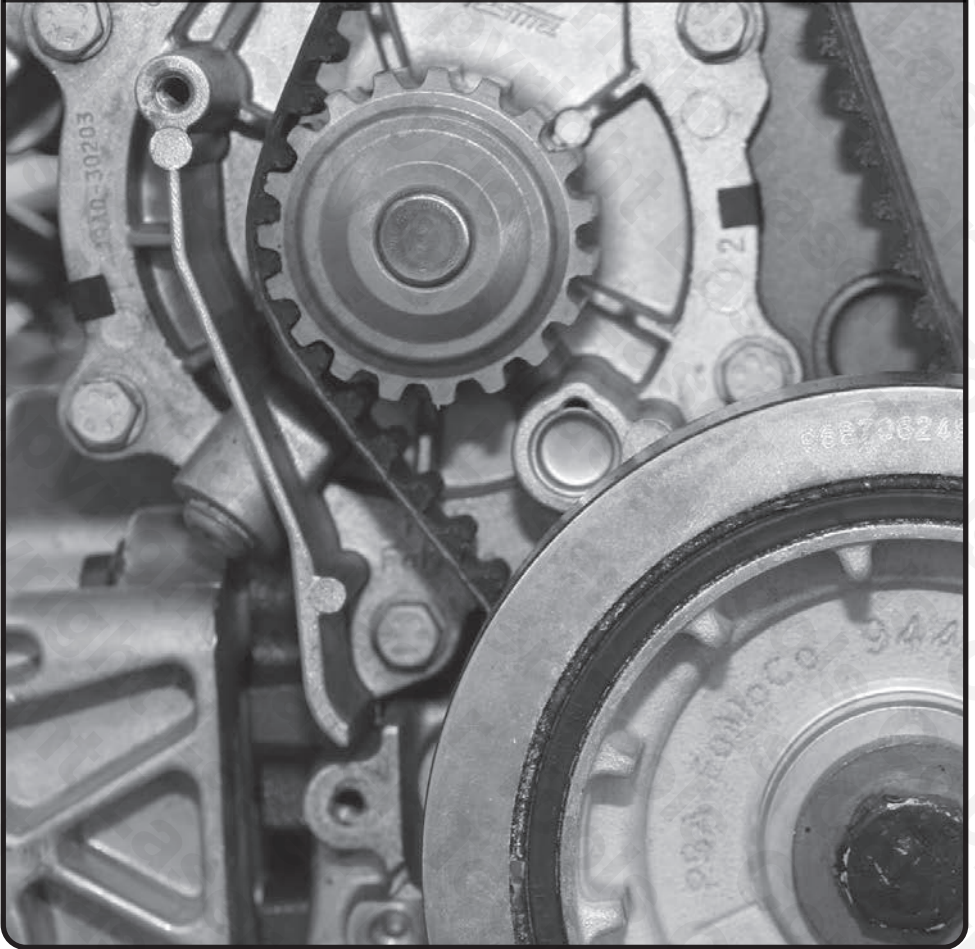
# LASER<sup>®</sup>

Part No. 4936

## Instructions

### Engine Timing Tool Kit

Renault 1.6L, 2.0L, 2.3L DCi engines



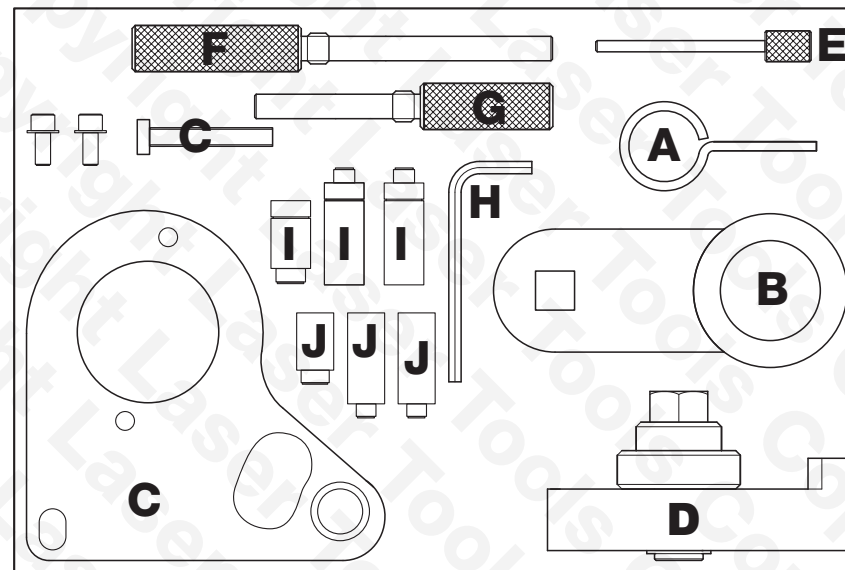
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## Introduction

Timing tool kit for Renault 1.6, 2.0, 2.3L DCI chain drive diesel engines fitted to the Megane, Vel Satis, Espace, Scenic, Trafic, Laguna, Koleos.

- Engine code M9R.
- Also fitted to the Nissan Qashqai and the Vauxhall/Opel Vivaro.
- OEM Codes: EN48334, EN48332, EN48331, EN48330.

## Components



Ref.	Comp. Codes	Description	OEM Ref.
<b>A</b>	C485	2.96mm Chain Tensioner Locking Pin	09953-05010
<b>B</b>	C490	Crankshaft Pulley Holding Tool	MOT 1770 KM 956-1 EN-48334
<b>C</b>	C486	Camshaft Alignment Tool + BOLT Use with (I) for 1.6L engines (R9M) Use with (J) for 2.0L/2.3L engines M9R/M9T	MOT 1769 (2.0/2.3) MOT 1969 (1.6L) EN48332
<b>D</b>	C487	Camshaft Gear Alignment Tool	MOT 1773
<b>E</b>	C488	Auxiliary Tensioner Tool	KM 6130
<b>F</b>	C489	Crankshaft Locking Pin 2.0L/2.3L	MOT 1766 EN48330
<b>G</b>	C602	Crankshaft Locking Pin 1.6L	MOT 1970
<b>H</b>		Hex Key (for use with D)	
<b>I</b>		For 1.6L engines (R9M)	MOT 1969
<b>J</b>		For 2.0L/2.3L engines (M9R/M9T)	MOT 1769

## Applications

Manufacturer	Model	Start Yr	End Yr
Nissan	NV400	2011	2019
	Primastar	2006	2015
	Qashqai/Qashqai+2	2007	2014
	Qashqai	2014	on
	X-Trail II	2007	on
Renault	Espace/Grand Espace IV	2006	2015
	Espace V	2015	2018
	Fluence	2013	2015
	Kadjar	2015	2018
	Koleos	2008	2019
	Laguna II, III	2005	2015
	Latitude	2010	2016
	Master III	2010	2019
	Megane II, III, IV	2006	2018
	Scenic/Grand Scenic II III, IV	2006	2018
	Talisman	2015	2018
	Trafic II, III	2006	on
	Vel Satis	2005	2010
	Vauxhall/Opel	Movano-B	2010
Vivaro-A		2006	2014
Vivaro-B		2014	2019
Mercedes-Benz	C-Class	2014	2018
	Vito	2014	on

### Engine Codes

1.6 CDTi, dCi	1.6 CDI/BlueTEC	M9R 724	M9R 784	M9R 816	M9R 846	M9T 672	M9T 710
		M9R 740	M9R 786	M9R 817	M9R 849	M9T 676	M9T 870
R9M	622.951	M9R 742	M9R 788	M9R 820	M9R 854	M9T 690	M9T 896
R9M 402	626.951	M9R 744	M9R 800	M9R 824	M9R 855	M9T 678	M9T 880
R9M 404	2.0 CDTi, ecoFlex, dCi	M9R 746	M9R 802	M9R 828	M9R 856	M9T 680	M9T 890
R9M 408		M9R 748	M9R 803	M9R 830	M9R 857	M9T 686	M9T 892
R9M 409	M9R	M9R 750	M9R 804	M9R 832	M9R 858	M9T 692	M9T 898
R9M 410	M9R 610	M9R 754	M9R 805	M9R 833	M9R 859	M9T 694	
R9M 413	M9R 613	M9R 756	M9R 806	M9R 834	M9R 864	M9T 696	
R9M 414	M9R 615	M9R 760	M9R 808	M9R 835	M9R 865	M9T 698	
R9M 415	M9R 630	M9R 761	M9R 809	M9R 836	M9R 866	M9T 700	
R9M 450	M9R 692	M9R 762	M9R 811	M9R 838	2.3 CDTi, ecoFlex, dCi, Bi-CDTi	M9T 702	
R9M 452	M9R 700	M9R 763	M9R 812	M9R 839		M9T 704	
R9M 453	M9R 721	M9R 780	M9R 814	M9R 844	M9T 706		
	M9R 722	M9R 782	M9R 815	M9R 845	M9T 670	M9T 708	

Always refer to the website for most up to date applications: [www.lasertools.co.uk/product/4936](http://www.lasertools.co.uk/product/4936)

## Instructions

The Renault DCi 1.6L, 2.0L and 2.3L 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.

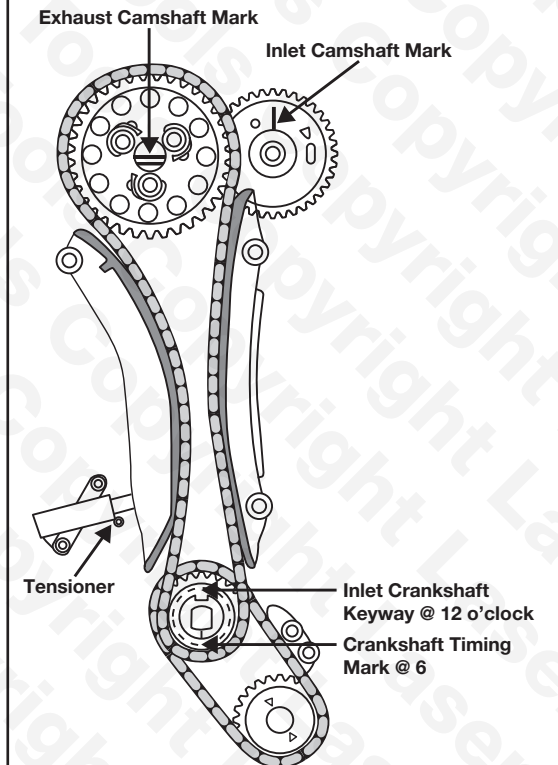
This tool kit includes a vice mounted inlet gear alignment tool for this purpose (Component D).

Two crankshaft locking pins are now included to cover the 1.6 DCi (Comp G) and 2.0, 2.3 DCi (Comp F). Component G - crankshaft locking pin has been added for later M9T 2.0 and R9M 1.6 DCi engines.

### 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**



## Instructions

### Component Descriptions

#### 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 2.3L 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 until 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.

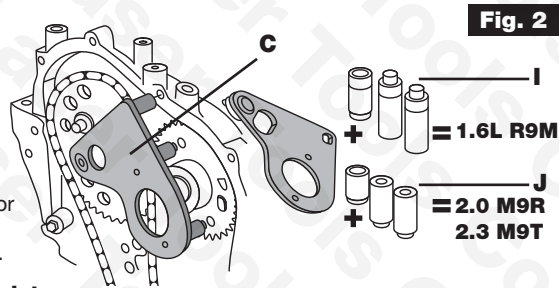


Fig. 2

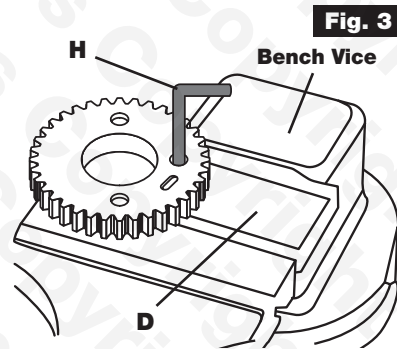


Fig. 3

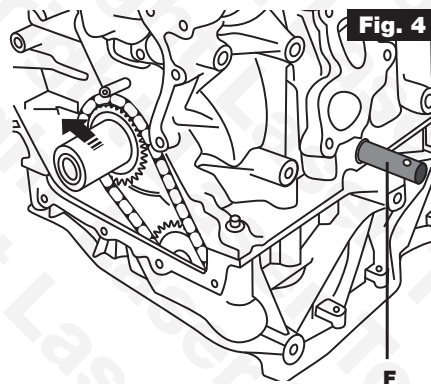


Fig. 4

## Safety Warnings - please read

- 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/chain has been removed.
- To make turning the engine easier, remove the spark plugs/glow plugs or injectors.
- 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.
- 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.

These instructions are for guidance only. Please refer to OEM derived data such as the vehicle manufacturers' own data or Autodata.

The use of this engine timing tool kit is purely down to the user's discretion and The Tool Connection Ltd. cannot be held responsible for any damage caused whatsoever.



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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.

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**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)

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