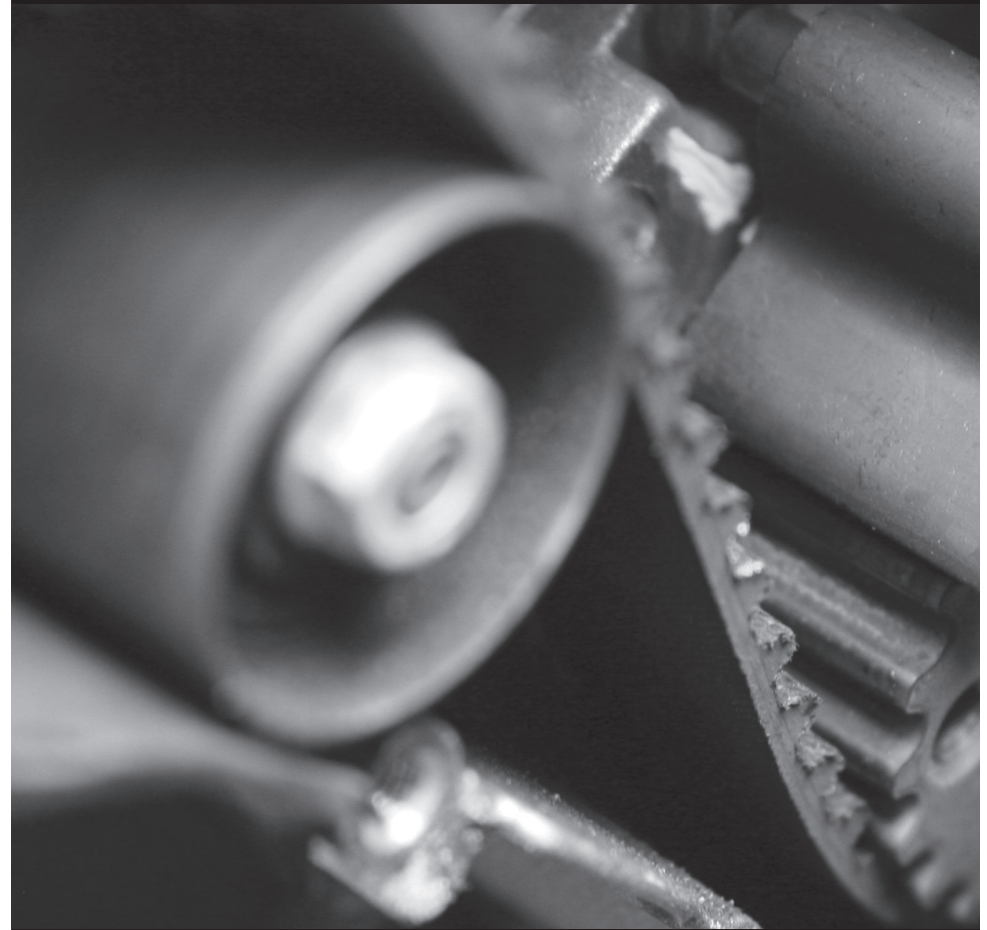


LASER[®]

Engine Timing Tool Kit 2.0 Chain dCi Engines



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Guarantee



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If this product fails through faulty materials or workmanship, contact our service department direct on: **+44 (0) 1926 818186**. Normal wear & tear are excluded as are consumable items & abuse.

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Introduction



4936 Master Engine Timing Tool Kit 2.0 Chain dCi Engines

This engine timing tool set includes important tools for chain driven DCi diesel engines.

This is a Chain driven engine and not considered a service item. The chain will only need replacement or checking if the sprockets or tensioners are dismantled. The service life of the Chain is dependent on:

- Correct tension
- Correct Sprocket alignment
- Correct lubrication

Instructions for use

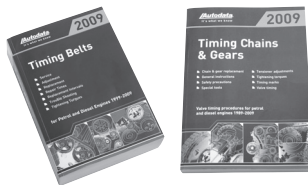
Always refer to the vehicle manufacturer's service manual or a suitable proprietary instruction book.

The Tool Connection Limited recommend and endorse the use of the Autodata Timing Belts, Chains and Gears instructions and applications books.

Both books are available through your Laser Tools distributor:

Part No. 3601 Autodata Timing Belts

Part No. 3626 Autodata Timing Chains and Gears



Or for a one off application chapter and instructions on a specific engine go to:
<http://www.autodata-online.com/uk/timingbelt.asp>

Applications

Our applications data is supplied by Autodata.

If this is a specific kit for a group of engine codes the application list has been supplied showing the main vehicles this kit is designed for and does not list every model each pin fits.

Manufacturer	Model	Engine	Engine Code	Year
Renault	Megane II	2.0 dCi	M9R 700/721/724	2006-09
	Scenic II	2.0 dCi	M9R 700/721	2006-09
	Laguna II	2.0 dCi	M9R 740/760	2005-07
	Laguna III	2.0 dCi	M9R 742/800/805	2007-09
	Espace IV	2.0 dCi	M9R 740/760/761	2006-09
	Trafic	2.0 dCi	M9R 780	2006-09
Vauxhall Opel	Vivaro	2.0 CDTi	M9R 780	2006-09
Nissan	Qashqai	2.0 dCi		
	X-Trail	2.0 dCi		
	Primastar	2.0 dCi		

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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.

- Check the diesel injection pump timing after replacing the chain
- Observe all tightening torques

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/belt has been removed (unless specifically stated)
- Do not use the timing chain/belt to lock the engine when slackening or tightening crankshaft pulley bolts
- Mark the direction of the chain/belt 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
- Remove spark or glow plugs to make the engine turn easier

General Guidance Notes for Timing Tools

Valve Timing

Valve timing is essential to the efficient performance of the Petrol or Diesel engine. The valves are opened and closed by the camshaft(s) which are driven by the cam belt, chain or gears from the crankshaft.

Crankshaft Locking Tools

Follow the manufacturer's procedures to prepare the vehicle engine leading up to turning the crankshaft to TDC on No 1 cylinder.

- The Crankshaft TDC Location Pin is designed to screw into the cylinder block and to provide a stop for the crankshaft to be positioned against to set the TDC position.
- Turn the engine in the normal direction of rotation until the timing mark on the injection pump sprocket lines up with the cast lug on the timing cover.
- Remove the plug from the cylinder block access hole and screw in the TDC location pin.
- Slowly turn the crankshaft clockwise until the web makes contact with the end of the pin. Number 1 cylinder is now set at TDC on ignition stroke.

Camshaft Setting/Locking Tools

- Camshaft setting/locking tools are used to accurately align a datum slot, located in the end of the camshaft, with the top face of the camshaft housing to hold the camshaft at the (TDC) Top Dead Centre position.

- Follow the service manual instructions to remove the camshaft cover and timing chain covers.
- Turn engine in the normal direction of rotation until the camshaft setting/locking plate can be inserted into the machined slot in the end of the camshaft.
- When fitting Camshaft setting/locking plates, feeler gauges/ shims of equal thickness can be inserted under either side of the plate until all free play has been eliminated. The camshaft is now locked in its timing position and service work can now be carried out.

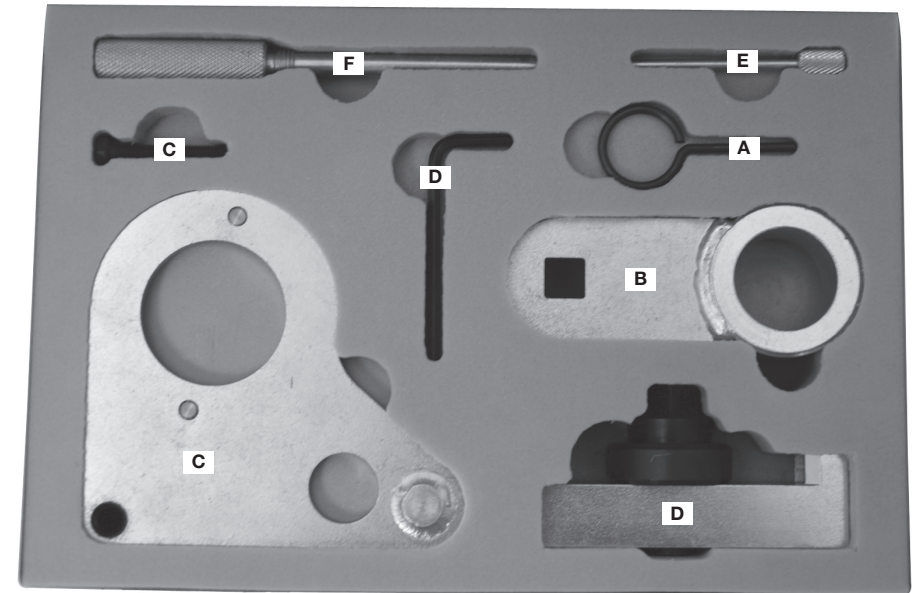
Tensioning Tools

The tension of the chain is vitally important and must be set using the tensioner. If an automatic tensioner is fitted it should not be tampered with.

Manually tensioned chains must be tensioner to the manufacturer's specification. For a manual tensioner see Laser 4212 or Laser 3899



Plan Layout



Plan Layout	Component Code	Description	Renault	Vauxhall Opel	Nissan
A	C485	Chain Tensioner Locking Pin 2.96mm			
B	C490	Crankshaft Pulley Holding Tool	EN-48334	KM 956-1	EN-48334
C	C486	Camshaft Setting Plate	MOT 1769	EN-48332	EN-48332
D	C487	Camshaft Gear Alignment Tool	MOT 1773	EN-48331	EN-48331
E	C488	Auxiliary Belt Tensioner Locking Pin			
F	C489	Crankshaft Locking Pin	MOT 1766	EN-48330	EN-48330