

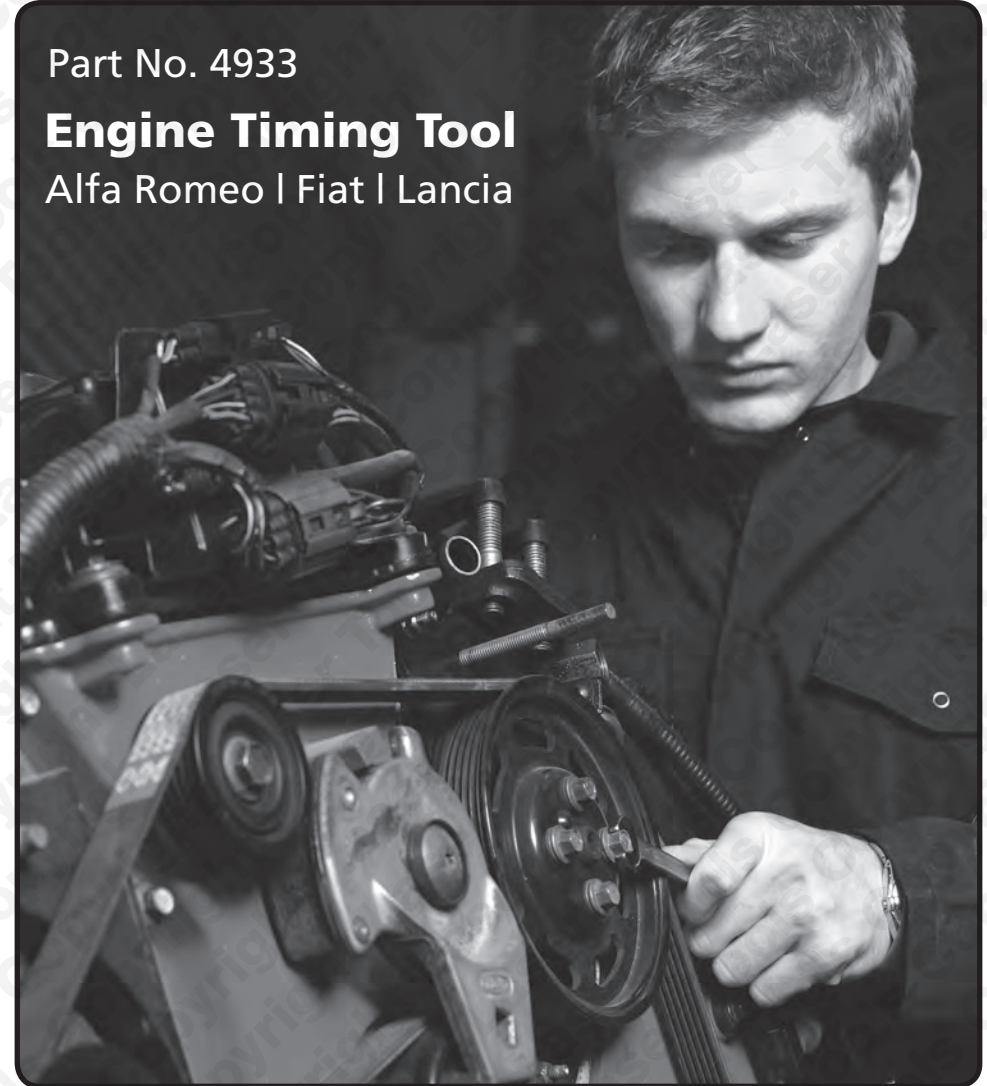
LASER®



Part No. 4933

Engine Timing Tool

Alfa Romeo | Fiat | Lancia



www.lasertools.co.uk



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Guarantee

If this product fails through faulty materials or workmanship, contact our service department direct on: **+44 (0) 1926 816186**. Normal wear and tear are excluded as are consumable items and abuse.

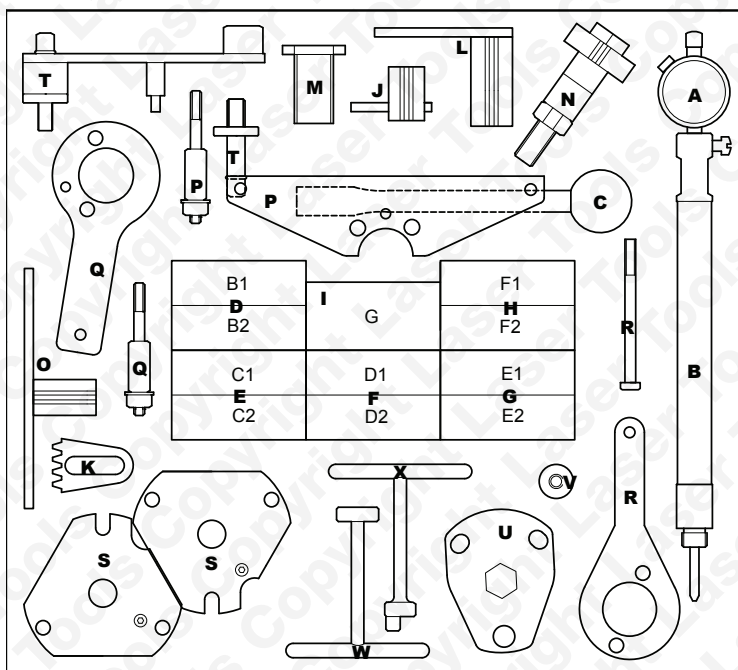
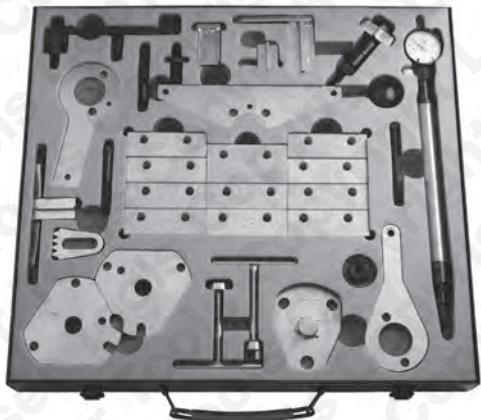
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Plan Layout

This kit of tools is required for petrol and diesel engine service including timing belt replacement on many models as detailed overleaf.

Supplied in a metal storage case with a "Tool-Control System" providing security, ease of selection and the comfort of knowing that all the tools have been returned to the box ready for the next job.



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.

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 has been removed (unless specifically stated)
- Do not use the timing chain to lock the engine when slackening or tightening crankshaft pulley bolts
- Do not turn the crankshaft or camshaft when the timing belt/chain has been removed
- Mark the direction of the chain 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
- Check the diesel injection pump timing after replacing the chain
- Observe all tightening torques
- Always refer to the vehicle manufacturer's service manual or a suitable proprietary instruction book
- 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

Applications

The application list for this product has been compiled cross referencing the OEM Tool Code with the Component Code.

In most cases the tools are specific to this type of engine and are necessary for Cam belt or chain maintenance.

If the engine has been identified as an interference engine valve to piston damage will occur if the engine is run with a broken Cam belt.

A compression check of all cylinders should be performed before removing the cylinder head.

Always consult a suitable work shop manual before attempting to change the Cam belt or Chain.

Autodata

Our applications data is supplied by Autodata and we are able to supply this data to you in a PDF format.

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.

If this is a master kit then all vehicles are included.

The data is the copyright of Tool Connection and should not be reproduced.

If the application data is extensive we have included a CD with the application list in .pdf format.

Languages

We have also included where possible translations for the instructions in the following languages:

- French
- Spanish
- German
- Portuguese
- Italian
- Dutch

The use of these engine timing tools is purely down to the user's discretion and Tool Connection cannot be held responsible for any damage caused what so ever.

ALWAYS USE A REPUTABLE WORKSHOP MANUAL

Plan Layout

Ref	Code	Oem Code	Description
A	C127		Dial Test Indicator
B	C226	1 895 443 000	Adaptor – TDC Indicator
C	C228	1 860 443 000	Tensioning Tool - Pry
D	C134	1 825 041 000	Camshaft Alignment Tool (2)
E	C135	1 825 042 000	Camshaft Alignment Tool (2)
F	C136	1 860 847 000	Camshaft Alignment Tool (2)
G	C137	1 860 875 000	Camshaft Alignment Tool (2)
H	C138	1 860 892 000	Camshaft Alignment Tool (2)
I	C139	1 860 899 000	Camshaft Alignment Tool (1)
J	C143	1 860 703 000	Flywheel Locking Tool
K	C144	1 860 161 000	Flywheel Locking Tool
L	C230	1 860 766 000	Flywheel Locking Tool
M	C146	1 860 771 000	Flywheel Locking Tool
N	C432	1 860 846 000	Flywheel Locking Tool
O	C148	1 860 898 000	Flywheel Locking Tool
P	C149	1 860 901 000	Crankshaft Timing Tool
Q	C150	1 860 905 000	Crankshaft Timing Tool
R	C151	1 860 933 000	Crankshaft Timing Tool
S	C433	1 860 874 000	Camshaft Alignment Tool (2)
T	C194	1 860 876 000	Tensioning Tool
U - V	C153 C154 C155 C156	1 860 932 000	Camshaft Alignment Tool (2)
W	C236	1 822 154 000	Balancer Shaft Belt Tensioning Tool
X	C186	1 860 845 000	Tensioning Tool

Instruction

Camshaft Locking Tools to suit other models are included in this comprehensive set – see application list for details.

Crankshaft Locking Tools are used to set the crankshaft timing position during both removal and replacement of the timing belt.

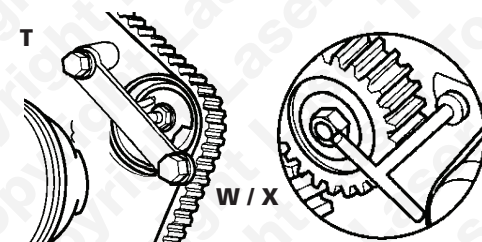
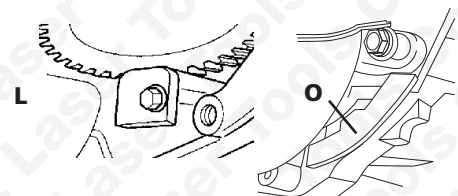
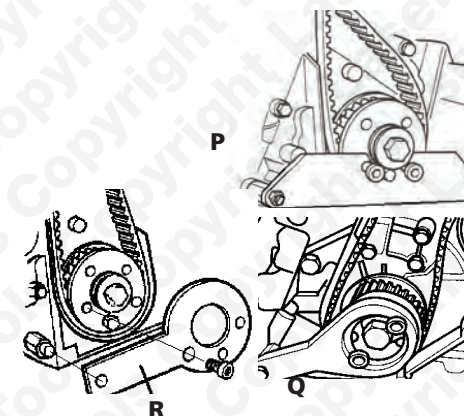
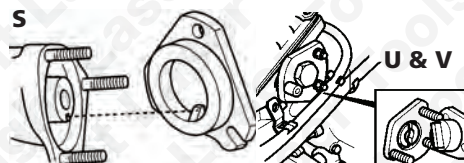
The crankshaft is first turned to TDC on Nr.1 cylinder, checking the timing marks on the camshaft sprocket hubs are aligned.

Fit the crankshaft locking tool into position ensuring that the recommended procedure is followed. It is possible for some camshafts to rotate at twice the revolution to that of the crankshaft.

Flywheel Locking Tools are required on engines where the flywheel and crankshaft must be held at the correct timing position. This tool is used when the flywheel fasteners have to be loosened. After attaching the Flywheel Locking plate, the toothed profile is adjusted and locked after being fully engaged in the flywheel ring gear.

Tensioning Tools can be required on either the main timing belt and/or the auxilliary belt.

(T) Tensioning Tool includes the facility to interchange the connecting screw from M8 to M10 as introduced on models from ('00 on).



Instruction

Top Dead Centre (TDC) Measurement

This set includes a precision Dial Test Indicator and Adaptor which enables the accurate measurement of the piston position. The Adaptor is fitted into the first cylinder spark plug hole. The Extension makes contact with the piston face and as the engine is slowly rotated the DTI indicates the highest point required.

Many performance engines have an interference combustion area, which if the correct timing position is not achieved could result in serious damage to the valves and other parts of the engine.

Camshaft alignment blocks

These tools enable the precise alignment of both inlet and exhaust camshafts, and are fitted in place of the appropriate bearing journal.

The correct position of these tools is important and the I/D Nr. is marked on the tool.

In the majority of cases the plain face of the tool faces the flywheel.

The following table lists the correct position of each tool, by detailing at which cylinder and on which camshaft the tool replaces the bearing cap.

Note. It is recommended that each bearing cap be identified before removal to ensure the correct replacement after the tools are removed.

It is recommended that these tools are not used to hold the camshaft whilst unfastening the sprocket retaining bolt.

