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TOOL CONNECTION
The Complete Connection

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Guarantee

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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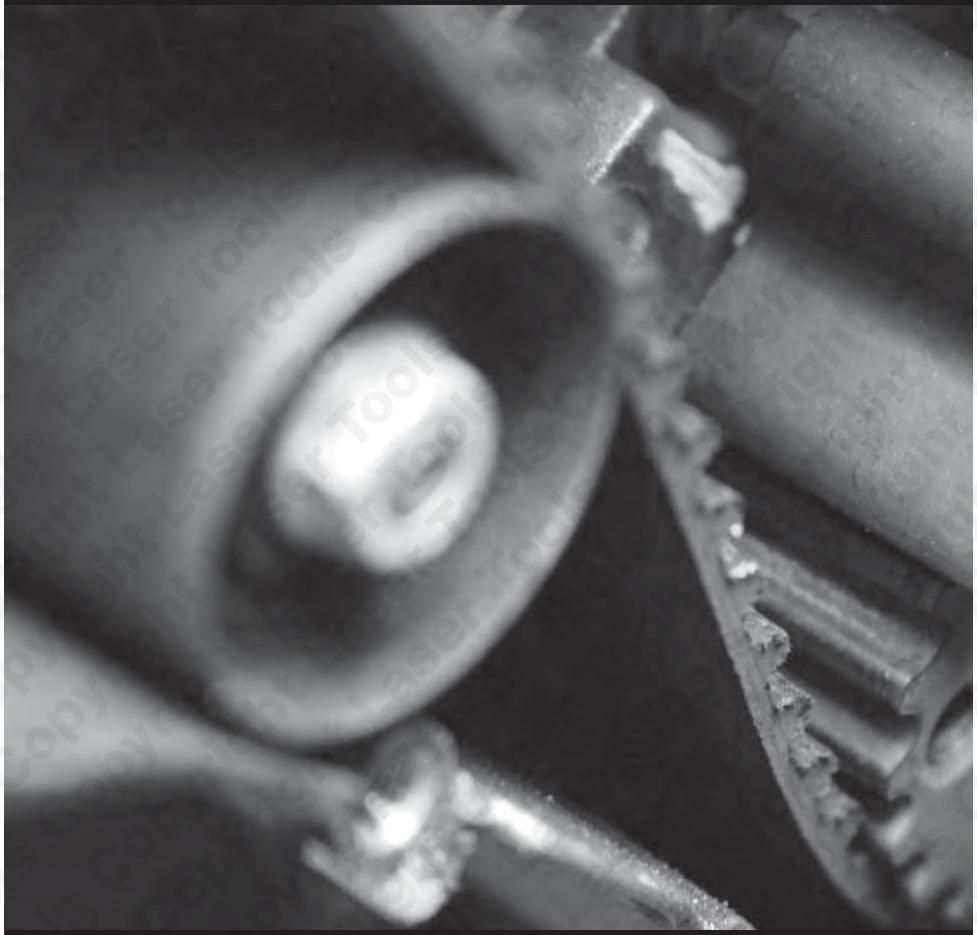
4898

LASER®

Master Engine Timing Tool Kit

Toyota | Mitsubishi



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Introduction

4898
Master Engine Timing Tool Kit
Toyota | Mitsubishi

This comprehensive tool kit includes a large number of crankshaft pulley tools for use on a wide range of Toyota vehicles.

Where possible the OEM reference has been included but the kit includes a variety of different sized struts and adaptors to cover any variation.

This master timing tool kit has been specifically compiled to give a comprehensive range of engine timing locking tools for Cam belts, chains and gears.

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 and we are able to supply this data to you in a pdf format.

This application list is enclosed in the attached CD listing which tool is required for each engine code.

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

Languages

On the enclosed CD you will also find this document in the following languages:

English

Dutch

French

German

Portuguese

Spanish

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

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 top 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

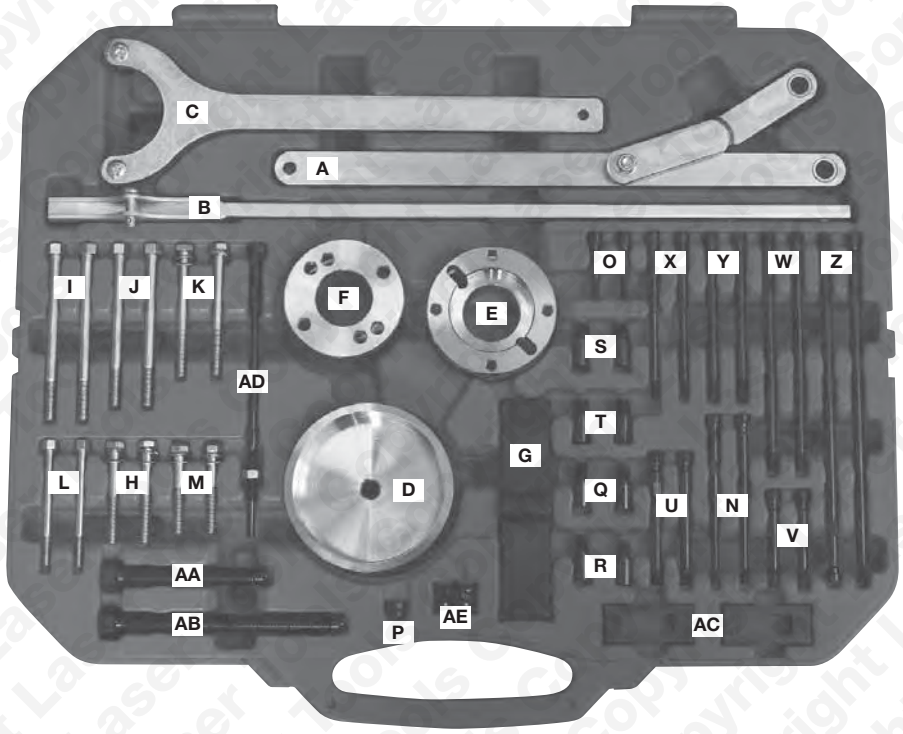
- Camshaft setting/locking tools are used to accurately align a datum slot, located in the end of the camshaft, with the top face of the camshaft housing to hold the camshaft at the (TDC) Top Dead Centre position.
- Follow the service manual instructions to remove the camshaft cover and timing chain 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



Layout	Description	OEM Ref
A	Crankshaft Pulley Holding Tool	MD 990767
B	Universal Handle	09330-0021
C	Crankshaft Pulley Holding Tool	09278-54012
D	Crankshaft Pulley Puller	09223-15030
E	Crankshaft Pulley Puller	09213-54015
F	Crankshaft Pulley Puller	09213-14010
G	Camshaft Sprocket Puller	09951-05010
H	Threaded Screws M8 x 65mm 2pc	
I	Threaded Screws M8 x 116mm 2pc	
J	Threaded Screws M8 x 106mm 2pc	
K	Threaded Screws M8 x 88mm 2pc	
L	Threaded Screws M6 x 80mm 2pc	
M	Threaded Screws M8 x 55mm 2pc	
N	M6 x 100mm 2pc	09954-05061
O	M6 x 30mm 2pc	09954-05051
P	Connector	09957-04010

Layout	Description	OEM Ref
Q	M10 x 1.25 Adaptor 2pc	09955-05010
R	M10 x 1.5 Adaptor 2pc	09955-05020
S	M12 x 1.25 Adaptor 2pc	09955-05030
T	M12 x 1.5 Adaptor 2pc	09955-05040
U	M8 x 75mm 2pc	09954-05070
V	M8 x 50mm 2pc	09954-05021
W	M8 x 150mm 2pc	09954-05041
X	M5 x 100mm 2pc	09954-05011
Y	M8 x 100mm 2pc	09954-05031
Z	M8 x 225mm 2pc	09954-05080
AA	Pressure bolt 100 for Item G	09953-05010
AB	Pressure bolt 150 for Item G	09953-05020
AC	Legs for Item G	09952-05010
AD	Tensioner Wrench	MD998738
AE	Tensioning Pulley Holding Tool	MD998767