



ENGINE TOOL KIT - TOYOTA/MITSUBISHI CT4419



INTRODUCTION

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.

PLAN LAYOUT



Layout	Description	OEM Ref	Layout	Description	OEM Ref
A	Crankshaft Pulley Holding Tool	MD 990767	Q	M10 x 1.25 Adaptor 2pc	09955-05010
B	Universal Handle	09330-0021	R	M10 x 1.5 Adaptor 2pc	09955-05020
C	Crankshaft Pulley Holding Tool	09278-54012	S	M12 x 1.25 Adaptor 2pc	09955-05030
D	Crankshaft Pulley Puller	09223-15030	T	M12 x 1.5 Adaptor 2pc	09955-05040
E	Crankshaft Pulley Puller	09213-54015	U	M8 x 75mm 2pc	09954-05070
F	Crankshaft Pulley Puller	09213-14010	V	M8 x 50mm 2pc	09954-05021
G	Camshaft Sprocket Puller	09951-05010	W	M8 x 150mm 2pc	09954-05041
H	Threaded Screws M8 x 65mm 2pc		X	M5 x 100mm 2pc	09954-05011
I	Threaded Screws M8 x 116mm 2pc		Y	M8 x 100mm 2pc	09954-05031
J	Threaded Screws M8 x 106mm 2pc		Z	M8 x 225mm 2pc	09954-05080
K	Threaded Screws M8 x 88mm 2pc		AA	Pressure bolt 100 for Item G	09953-05010
L	Threaded Screws M6 x 80mm 2pc		AB	Pressure bolt 150 for Item G	09953-05020
M	Threaded Screws M8 x 55mm 2pc		AC	Legs for Item G	09952-05010
N	M6 x 100mm 2pc	09954-05061	AD	Tensioner Wrench	MD998738
O	M6 x 30mm 2pc	09954-05051	AE	Tensioning Pulley Holding Tool	MD998767
P	Connector	09957-04010			

WARNINGS

Incorrect or out of phase engine timing can result in damage to the valves.
The CANNONTOOLS 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.