

Kamasa-TOOLS®

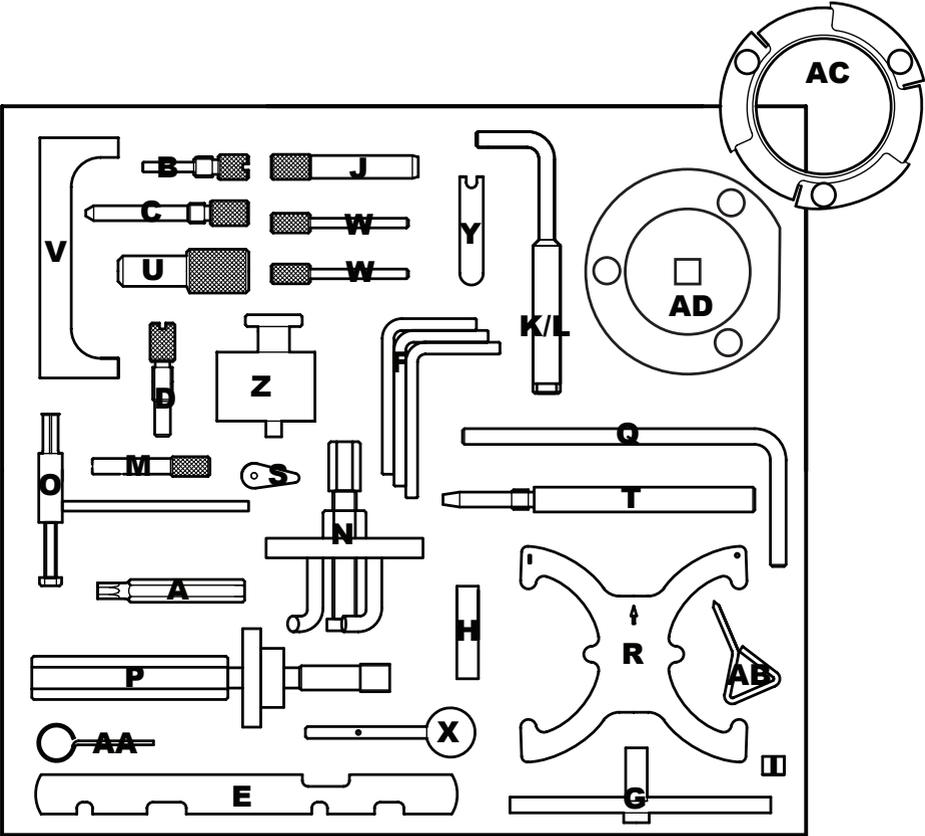
Master Engine
Timing Tool
Set

Ford

K 10551

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Pack Layout



Component identity

Part No.	OEM Ref	Description
A 23002-45D	310-083A	Torx 45 Key
B 23054-02	21-210	Timing Pin
C 23054-03	303-620/21-163	Crankshaft Timing Pin
D 23054-05	303-748	Crankshaft Locking Tool
E 23054-06	303-376B/21-162B/303-367	Alignment Plate (Updated C034)
F 23060-01	23-019	6mm Setting Pin + Washer
G 23060-10	303-393/21-168	Flywheel Locking Tool
H 23060-10C	303-393-01	Flywheel Locking tool adaptor (01)
I 23060-10B	303-393-02	Flywheel Locking tool adaptor (02)
J 23060-11	21-262/303-734	Flywheel Locking Pin
K 23060-12	21-234	Flywheel Locking Tool for engines without Common Rail
L 23060-14	21-251/303-698	Flywheel Locking Tool for engines with Common Rail
M 23060-15	303-735	Camshaft Sprocket Locking Tool (with holes)
N 23060-16	303-651	Camshaft Sprocket Puller
O 23060-17	303-0985	Tensioner Pulley Locking Pin
P 23060-18	303-652	Timing Chain Front Cover Alignment Tool
Q 23060-19	303-1059	Flywheel Timing Pin
R 23060-21	303-1097	Camshaft Sprocket Locking Tool
S 23060-F		Shims (2)
T 23060-S	303-193/21-104	TDC Setting Screw
U 23061-01	23-047	Setting Spigot
V 23062-B	21-105	Camshaft Locking Bracket
W 23069-04	21-260/303-732	Camshaft Locking Pin
X 23069-11	23-019	Injection Pump Locking Pin
Y 23069-12	310-084/23-058	Tensioner Locking Tool
Z 23161-03	23-059/310-085/	Crankshaft Setting Tool
AA 23161-06		Tensioner Pin
AB SE10517	303-1054	Tensioner Pulley Locking Pin
AC 23175-01	303-1151	Pump Alignment Tool
AD 23175-02	303-679A	Removal/Installation tool for engine front cover inspection plate

General Information

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.

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

Kamasa Sweden recommend and endorse the use of the Autodata Timing Belts, Chains and Gears instructions and applications books.

Warning

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

The Kamasa Sweden cannot be held responsible for any damage caused by using these tools in anyway.

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.

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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.
- rankshafts 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

General Guidance Notes

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

- 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.



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