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LASER®

Part No. 5630

Engine Timing Tool Kit

PSA | Fiat DW10 and DW12

This kit introduces the tools required to set the valve timing on the extensive range of DW10 and DW12 diesel engines found in the PSA and Fiat ranges.
The DW10 engine range has a 2.0 litre capacity and was introduced in 1998; it appears in both single and twin overhead camshaft arrangements. The twin cam 16-valve systems have one camshaft driven by the cam belt and the second camshaft driven by a chain in the head.
The DW12 range is 2.2 litres capacity and was introduced in 2000. This engine had 16 valves from its introduction.
A camshaft pulley holding tool may be required when changing the chain in the cylinder head; the Laser 3661 is recommended.

Note: The information given below is for reference only. The Tool Connection recommend the use of the manufacturer's data or Autodata. 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 any way.

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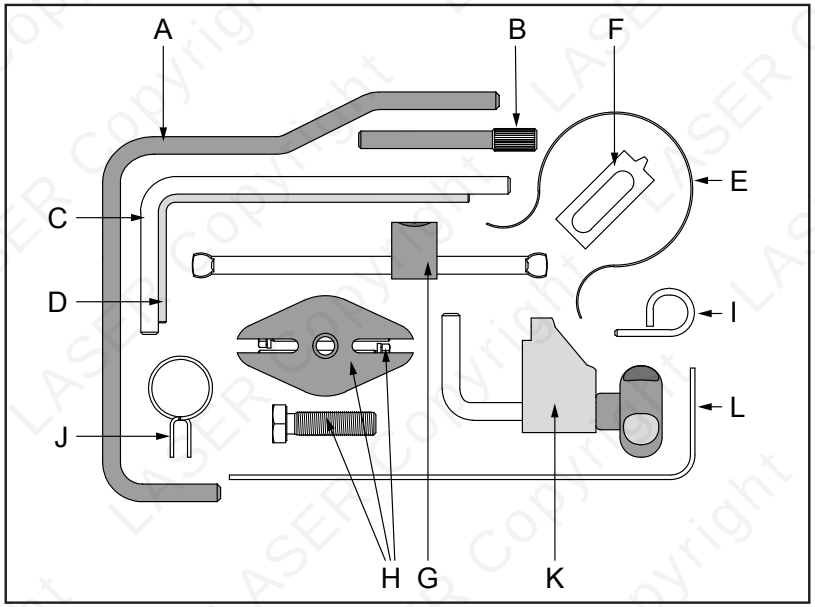
Plan Layout



Ref	Code	OEM Ref	Description
A	C066	0188Y	Crankshaft locking pin (8mm)
B	C105	0188M	Camshaft locking pin
C	C351	0188X	Flywheel locking pin
D	C568	0188Q1	Auxiliary drive belt tensioner locking pin (4mm)
E	C121	0188K	Cam belt retaining clip
F	C115	0188F	Flywheel holding tool
G	C118	0188J2	Cam belt tensioner tool
H	C125	0188P	Crankshaft pulley puller / extractor
I	C570	0153AL / 4200TA	Cam Belt Tensioner locking pin
J	C390	0188AH	Crankshaft pulley centralisation tool
K	C455	0188AD	Cam belt clamp
L	C569	0188Q2	Auxiliary belt tensioner locking and crank pinion alignment tool (See instructions)

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
- 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

Instructions

I: Cam Belt Tensioner Locking Pin

Used to lock the spring-loaded tensioners in their fully retracted position to assist in the removal and refitting of the belt.

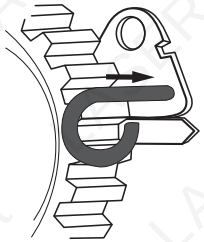


Fig. 9

J: Crankshaft Pulley Centralisation Tool

Fit component J as shown (Fig. 10) to ensure the crankshaft pulley is centralised on the shaft (aligned with the groove, insert J in position on both sides of the crankshaft key) and fit the belt starting at the camshaft pulley using component K to hold the belt in place (see Fig. 11). Fit the belt in the following order: guide roller, crankshaft, water pump, tensioner (RHR / RHA engines, etc.)

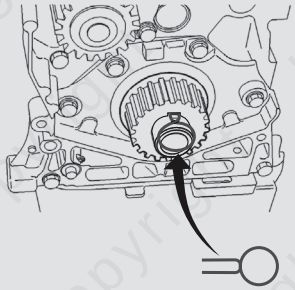


Fig. 10

K: Cam Belt Clamp

Used in conjunction with component J to hold the belt in place while fitting the new belt to the other pulleys (Fig. 11). Do not overtighten.

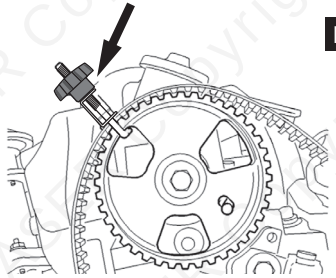


Fig. 11

L: Auxiliary belt tensioner locking and crank pinion alignment tool

Component L has two possible function depending on the engine code (refer to manufacturer's data).

Fig. 12A shows component L used to lock the spring-loaded cam belt tensioner in its fully retracted position.

Fig. 12B shows component L used to centralise the crankshaft pulley for RHY / RHZ engines; component L is pushed into the left hand side of the crankshaft pulley groove alongside the crankshaft keyway.

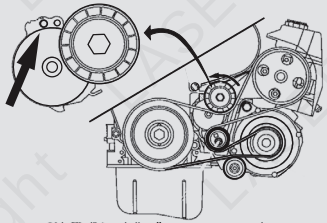


Fig. 12A

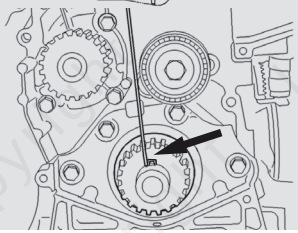


Fig. 12B

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.

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

Citroën 2.0lt	C4 04-12 I C5 99-12 I C8 02-12 I DS4 11-12 Berlingo 99-07 I Dispatch, Jumpy, Relay 99-12 Synergie, Evasion 99-07 Xantia 98-01 I Picasso 99-07, Picasso, Grand Picasso 06-11
Citroën 2.2lt	C-Crosser 07-12 I C5 00 - 09 I C6 07-11 I C8 01-10 Relay I Jumper 02-06
Peugeot 2.0lt:	Expert 99-12 I Boxer 01-06 I 206 99-06 I 306 99-02 I 307 01-09 406 99-04 I 407 04-11 I 308 07-12 I 607 00-11 I 806 99-02 I 807 05-10 508 11-12 I 3008 09-12 I 5008 09-12 I RCZ 10-12.
Peugeot 2.2lt:	406 00-06 I 407 05-11 I 508 11-12 I 607 00-09 I 807 07-10 I 4007 07-10 Boxer 02-06
Fiat 2.0lt:	Ulysse 03-11 I Scudo 04-12 I Ducato 01-06
Fiat 2.2lt:	Ulysse 02-11 I Ducato 06-12
Engine codes 2.0lt:	DW10ATED4 I DW10JATED4 I DW10BTED/L3 I DW10ATD I DW10TD I DW10ATED I DW10BTED I DW10UTD I DW10TD I DW10CTED4 RHA I RHE I RHF I RHG I RHH I RHJ I RHK I RHM I RHR I RHS I RHT I RHV RHW I RHX I RHY I RHZ
Engine codes 2.2lt:	DW12MTED4 I DW12BTED4 I DW12TED4/L4 I DW12UTED I DW12ATEDL/L4 I DW12CTED4 I 4HK I 4HL I 4HN I 4HP I 4HR I 4HS I 4HT 4HW I 4HX I 4HY I 4HZ

Note: To help with engine identification Citroën and Peugeot usually put the 3 letter engine codes shown above in the chassis number at the bottom of the windscreen.

Instructions

Preparation

- Raise the front of the vehicle to allow removal of the front wheels and access to the inner right hand wheel arch.
- Remove engine top and bottom covers
- Remove right hand inner wheel arch
- Remove auxiliary drive belts and disconnect fuel lines as required. Ensure all fuel lines are sealed off to ensure no dirt can enter the fuel system.
- Remove right hand engine mount where access demands.

Precaution: We advise removing the exhaust pipe to avoid damaging the flexible section; this cannot withstand the flexing or bending caused by the engine movement when the engine mount is removed.

Component Descriptions

A: Crankshaft Locking Pin

Used to lock the crankshaft in its timed position by locating in the flywheel through a hole in the block accessed from underneath. Never use as a stop to tighten or loosen the pulley bolt. (Fig. 1)

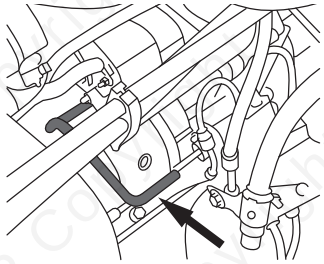


Fig. 1

B: Camshaft Locking Pin

Used to locate the camshaft pulley in its times position as shown in Fig. 2. Be aware that on some engines the pin alignment holes may be in a different position to the one shown. For example, the 5 o'clock position for the RHR (DW10BTED4) engine. If the cam pulley bolt needs to be removed, use a suitable pulley holding tool to hold the pulley and not the locking pin B.

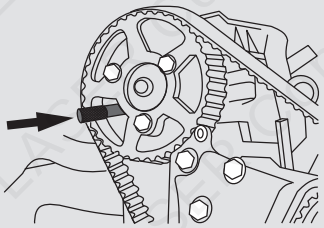


Fig. 2

C: Flywheel Locking Pin

Used to lock the crankshaft in its locked position. Insert into the flywheel via a timing hole on the front of the engine block as shown. (Fig. 3) Never use C to tighten or loosen the pulley bolt against.

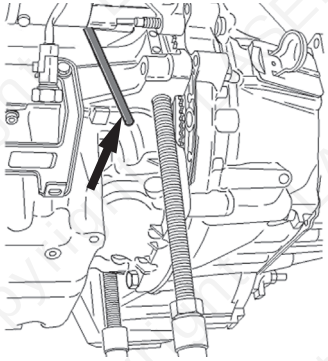


Fig. 3

Instructions

D: Auxiliary Drive Belt Tensioner Locking Pin 4mm

Used to lock the auxiliary drive belt tensioner in its retracted position as shown in Fig. 4.

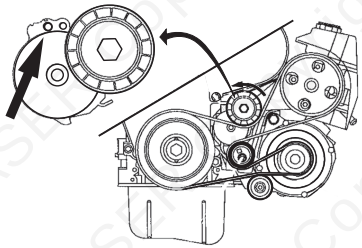


Fig. 4

E: Cam Belt Retaining Clip

Used to assist in the fitting of the new belt. When fitting a new belt, always start at the crankshaft pulley and use the Retaining clip E to hold the belt in place while placing the belt on other pulleys. (Fig. 5)

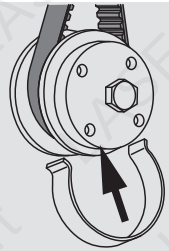


Fig. 5

F: Flywheel Holding Tool

Holds the flywheel and crankshaft assembly still while loosening or tightening the front pulley fixing bolt. Component F engages with the teeth of the flywheel from underneath the engine. Do not use any of the other locking tools for this, as engine can be damaged.

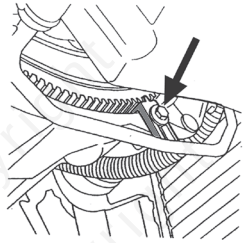


Fig. 6

G: Cam Belt tensioner Adjuster Tool

Used to tension the cam belt to the required tension. Locate component G in the square drive in the tensioner and rotate in an anticlockwise direction to increase the tension on the belt (Fig.7). Always consult the manufacturer's data for the correct tension. Use an appropriate tension meter.

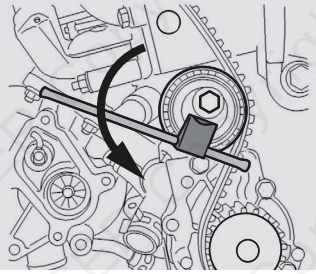


Fig. 7

H: Crankshaft Pulley Puller / Extractor

Aids the removal of the crankshaft pulley. All threads (locating set screws plus force screw) must be well lubricated to avoid thread damage during use and under tension (see Fig. 8).

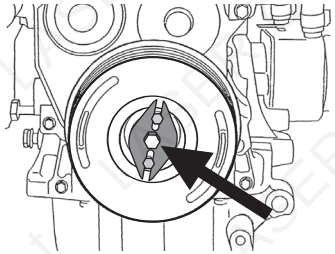


Fig. 8