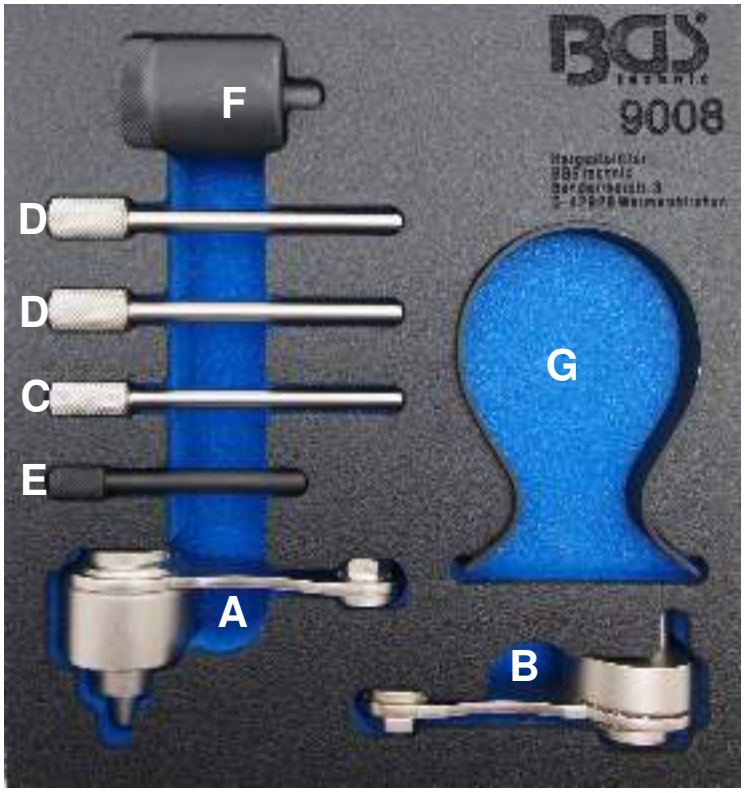
Art. 9008

Engine Timing Tool Set for Land Rover / Jaguar / Citroen / Peugeot 2.7D / 3.0D / TDV6 / SDV6 / TDVi / HDi

TOOLS

No	Description	to be used as OEM
A	Flywheel Locking Tool (Auto)	303-1117
B	Flywheel Locking Tool (Manual)	303-1116
C	Camshaft Timing Pin (Gold)	303-1132
D	Camshaft Locking Pins (Silver), 2 pcs.	303-1126 0195-H
E	Coolant Pump Locking Pin	0195-C
F	Flywheel Locking Tool	0195-K
G	Timing Belt Retaining Clip	0188-K



Instruction Manual

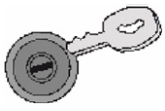
INTRODUCTION

This set of engine setting / locking tools is made for timing belt replacement on 2.7 and 3.0 V6 diesel engines fitted in Land Rover (TDV6), Jaguar, Citroen and Peugeot vehicles. The set contains camshaft locking and checking pins, flywheel locking tools, coolant pump pin and belt retaining clip.

SAFETY ADVICE

- Be careful when working on hot engines – risk of burn!
- Be careful when working on running engines. Loose clothes, tools and other things can be caught up in revolving parts which may lead to serious injuries.

- Remove the ignition key before repair so that the engine will not start unintentionally.



- ***This manual is just brief information and will not replace a workshop manual.*** Always consult specific service literature for information about torques, assemblies and disassemblies etc.

- After any successful maintenance and before starting the engine, you should rotate the engine for two turns manually to check the new control time.

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APPLICATION

Land Rover, Jaguar & PSA (Citroen/Peugeot) 2.7N6 (TDV6) Quad Camshaft Diesel engines.

Manufacturer	Model	Year	Engine
Citroen	C5 III	07-09	2.7TD V6 / TDVi (276DT) 2.7D HDi (DT17BTED4) (UHZ) 3.0D HDi (D20CTED4) (X8Z) 3.0D SD V6 / TD V6 (306DT) (AJ-V6D)
Citroen	C6	05-09	
Jaguar	S-Type	04-08	
Jaguar	XF	08-12	
Jaguar	XJ	10-12	
Jaguar	XJ6	05-10	
Land Rover	Discovery III	04-09	
Land Rover	Discovery IV	09-12	
Land Rover	Range Rover Sport	05-09	
Peugeot	407	04-09	
Peugeot	407 Coupe	06-09	
Peugeot	607	04-11	

INSTRUCTION

These engines were developed through a joint venture between Ford Motor Co (then owners of Land Rover, Jaguar) and PSA (Citroen/Peugeot). The TDV6 2.7 diesel was released in 2004 and the 3.0 V6 variant followed in 2010, all fitted in Land Rover, Jaguar and PSA models. There are four camshafts with the two exhaust camshafts driven by the timing belt and the inlet camshafts connected to the exhaust camshafts by chains. The common rail high pressure fuel pump has a separate drive belt and is driven by the camshaft.

1. Timing Belt Replacement

The belt replacement procedure is basically the same for all engine variants.

Application points to note are
(1) That in order to encompass all the engines/models listed, the set contains 3 x Flywheel Locking Tools covering - automatic and manual transmissions for Land Rover, Jaguar and the PSA transmission requirements.
(2) For checking the camshaft positions after timing belt replacement, the Land Rover / Jaguar 2.7TDV6 procedure calls for the left hand camshaft position to be checked using a (D), but for the right hand camshaft to be checked using the (C). For all other manufacturers and the 3.0D V6 engines, both camshafts are checked using the (D) from the kit. NOTE: Reference to left hand or right hand camshaft is as viewed when looking directly at the camshaft sprockets.

2. As with many of these larger engines, an amount of disassembly and removal of components, as well as the disconnection of multiplugs and hoses, is required to provide access to the timing belt. Dependent upon model and engine variant, it will probably be necessary to remove, amongst others, the air filter, intercooler housing, fan shroud and viscous fan, auxiliary belt tensioner and belt.
3. Removal of the coolant pump pulley, starter motor (access to flywheel), crankshaft pulley and timing belt covers will be required.
4. The engine must be supported if the engine mountinglbracket requires removal in order to install the new belt, and on some models the steering column lower ball joint bolt and steering rack mounting bolts will need to be removed for access to the starter motor.
5. Coolant Pump Locking Pin On PSA models insert the (E) into one of the holes in the pulley and on through to the hole in the pump body in order to fix the pump position to remove the pulley. Tum the engine over, by hand, in the direction of normal engine rotation, to TDC No.1 cylinder.
6. Remove the blanking plug from the engine block which provides access to install the appropriate Flywheel Locking Tool and check that the timing hole in the flywheel is aligned to this access hole. (Fig.1)

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Fig.1

7. Check that the timing holes for the camshaft sprockets are visible through the slotted holes in the sprockets and are aligned as follows:
   -Left hand sprocket in the 5 o'clock position.
   -Right hand sprocket in the 7 o'clock position.
   If not, then tum the crankshaft over one tum (Fig.2).

NOTE: Reference to left hand or right hand camshaft is as viewed when looking directly at the camshaft sprockets.

Fig.2

8. (Automatic LRiJaguar), (Manual LRiJaguar), and (PSA) Flywheel Locking Tools Install the appropriate Flywheel Locking Tool into the access hole and locate the 'pin' of the Locking Tool into the timing hole in the flywheel. (Fig.3)

Fig.3

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9. NOTE: The 'pin' of (B) (manual transmission) Locking Tool is offset (Fig.A), and once it has been inserted, the Locking Tool is fixed in position by securing it at the starter motor bolt position.

Fig.4

A

B

F

10. Camshaft Locking Pins - SILVER (2 per Kit) Insert a (D) through the slotted hole in each of the camshaft sprockets and into the timing hole behind them. (Fig.5)
Using a suitable Sprocket Holding Tool to counter hold the sprockets, loosen the 3 x bolts on each sprocket and unscrew the bolts 2 turns. IMPORTANT: DO NOT release the sprocket center bolt.

Fig.5

11. Remove the timing belt tensioner and the old timing belt.

12. Belt Installation Fit a new belt tensioner and bolt and tighten the bolt finger tight only.

IMPORTANT: Tum both camshaft sprockets fully clockwise to the end of the slotted holes. Fit the new timing belt in an anticlockwise direction commencing at the crankshaft gear.

13. Timing Belt Retaining Clip Fit the (G) onto the belt at the crankshaft gear to hold the belt in position whilst fitting the belt around the other sprockets. Ensure that the arrows marked on the belt face in the direction of rotation, and that the belt is taut between sprockets/gears. NOTE: The camshaft sprockets can be moved slightly to assist fitting the belt BUT MUST NOT move more than one tooth space. Remove the Belt Retaining Clip.

14. Using a hexagon key, tum the tensioner anticlockwise until the mark (casting mark) on the tensioner can be seen through the 'cut out notch' (Fig.6), and tighten the tensioner bolt:
- 2.7D=24 Nm
- 3.0D=26 Nm

Visually check that the sprocket bolts are NOT at the end of the slotted holes. (If necessary temporarily unscrew each bolt in tum to allow the position to be seen)

Fig.6

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15. Using a suitable Sprocket Holding Tool to counter hold the sprockets, tighten all 6 sprocket bolts to 23 Nm.
16. Remove the Camshaft Locking Pins and the Flywheel Holding Tool.
17. Final check on timing position Tum the engine over 4 times, by hand, in the direction of normal engine rotation, and return to the TDC No.1 cylinder position.
18. Install the Flywheel Locking Tool.
19. Camshaft Timing Checking Pin - GOLD
    Install the Camshaft Locking Pins:
    LR/Jaguar 2.7TDV6 - Insert 1 x (D) in the left hand camshaft/sprocket (Fig.7), and 1 x (C) in the right hand camshaft/sprocket. (Fig.8)

Fig.8

LR/Jaguar 3.0TDV6 and PSA 2.7/3.0D HDi Insert 1 x (D) in the left hand camshaft/sprocket (Fig.8), and the other (D) in the right hand camshaft/sprocket. (Fig.9)

Fig.9

NOTE: Reference to left hand or right hand camshaft is as viewed when looking directly at the camshaft sprockets. Check that the belt tensioner is in the correct position - the mark (casting mark) on the tensioner can be seen through the 'cut out notch'.

20. If it is not possible to insert the Camshaft Locking/Checking Pins, repeat the belt replacement procedure.

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