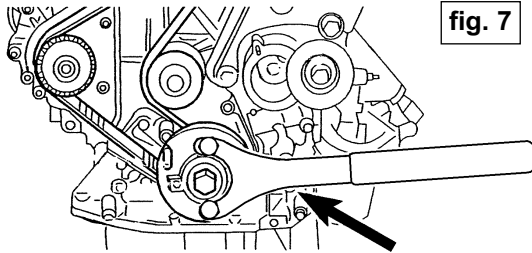


- 5.2.3. Finally, check that the hex. drive of the tensioner is positioned approx 15° **below** cylinder head gasket level.
 5.2.4. Rotate the crankshaft ten turns, by hand, and insert the VS1211/ P14 Locking Pin in the inlet camshaft sprocket. Check that the tensioner pointer remains aligned with the 'notch'.

5.3. Checking Timing Position

- 5.3.1. Insert the VS1211/P10 Pin into the exhaust sprocket and the Crankshaft Locking Pin through the pulley flange. If the crankshaft pin cannot be inserted reposition the pulley flange using associated tool VS1212 (fig. 7).
 5.3.2. Attach VS1212 to counter-hold the flange whilst releasing the centre bolt sufficiently to allow the flange to be repositioned so that the crankshaft locking pin can be inserted.
 5.3.3. Use VS1212 to hold the flange whilst tightening the centre bolt.



NOTE: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice. **IMPORTANT:** No liability is accepted for incorrect use of this equipment. **WARRANTY:** Guarantee is 12 months from purchase date, proof of which will be required for any claim. **INFORMATION:** For a copy of our latest catalogue and promotions call us on 01284 757525 and leave your full name and address, including postcode.



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VS1211

PETROL ENGINE TWIN CAM SETTING/LOCKING TOOL KIT

1. INTRODUCTION & APPLICATIONS

1.1. INTRODUCTION

VS1211 Engine Setting/Locking Kit provides the specialised tools required for timing belt replacement on the new generation of 1.8 and 2.0 PSA twin camshaft 16v. engines in Citroën and Peugeot models. The kit also covers the HPI version of the 2.0 engine.

VS1212 Holding Tool (associated tool - not included in kit) is used to counter-hold the crank pulley flange whilst the centre bolt is released sufficiently to reposition the flange to allow the crankshaft locking pin to be inserted during final timing adjustment.

1.2. APPLICATIONS

- | | |
|------------------------------------|--|
| Citroën: C5 - 1.8 16v. EW7J4 (6FZ) | Peugeot: 206/306 - 2.0 16v. EW10J4 (RFR) |
| 2.0 16v. EW10J4 (RFR) | 406 - 1.8 16v. EW7J4 (6FZ) |
| 2.0 16v. EW10J4D (RLZ) - HPI | 2.0 16v. EW10J4 (RFR) |
| | 2.0 16v. EW10J4D (RLZ) - HPI |

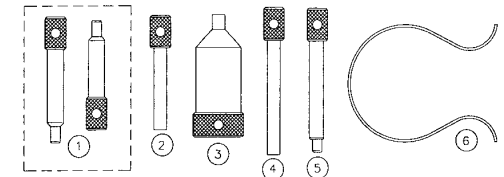
2. SAFETY INSTRUCTIONS

- ❑ **WARNING!** Ensure that Health and Safety, local authority and general workshop practice regulations are adhered to when using tools.
- ✗ **DO NOT** use tools if damaged.
- ✓ Maintain tools in good and clean condition for best and safest performance.
- ✓ Ensure that the ignition key is removed, to prevent inadvertent engine cranking.
- ✓ If the vehicle to be worked on is raised, ensure that it is adequately supported with axle stands or ramps and chocks.
- ✓ Wear approved eye protection. A full range of personal safety equipment is available from your Sealey dealer.
- ✓ Wear suitable clothing to avoid snagging. Do not wear jewellery and tie back long hair.
- ✓ Account for all tools, locking bolts, pins and parts being used and do not leave them on or near the engine.
- * **IMPORTANT:** Always refer to the vehicle manufacturer's service instructions, or a proprietary manual, to establish the current procedure and data. These instructions are provided as a guide only.

3. CONTENT & ASSOCIATED TOOLS

3.1. Content

1. VS1211/P10 Camshaft Locking Pins (Pair)
2. VS1211/P11 Crankshaft Locking Pin
3. VS1211/P12 Flywheel Locking Pin
4. VS1211/P13 Tensioner Setting Pin
5. VS1211/P14 Camshaft Locking Pin (HPI engine)
6. VS1210/04 Belt Retaining Clip
- VS1211/84 Case + Insert



3.2. Associated Tools

Use with:

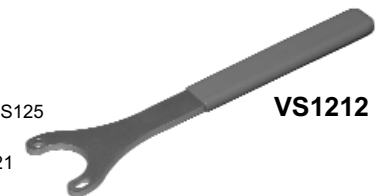
Crankshaft Pulley Flange Repositioning ToolVS1212

Master Engine Setting/Locking Tool Kit -

French Engine Applications - Citroën/Peugeot/RenaultVS125

Engine Setting/Locking Tool Kit - Citroën/Peugeot petrol & diesel
 TU/XU/TUD/XUD enginesVS121

Engine Setting/Locking Tool Kit - Citroën/Peugeot
 DW8 / DW10 / DW12 HDi Diesel Engines.....VS1210



4. INSTRUCTIONS - STANDARD ENGINES

VS1211, Twin Camshaft Setting/Locking Tool Kit - PSA "EW" 16v. engines, comprises: VS1211/P10 Camshaft Locking Pins (Pair), VS1211/P11 Crankshaft Locking Pin, VS1211/P12 Flywheel Locking Tool, VS1211/P13 Tensioner Setting Pin, VS1211/P14 Camshaft Locking Pin and VS1210/04 Timing Belt Retaining Clip.
In addition, Flange Repositioning Tool VS1212 may be required on engines with VTC (Variable Timing Camshaft) to adjust the crankshaft pulley flange to allow final timing position adjustment. This is an associated tool - not included in this kit.

Engine Variants

Within this new generation of PSA 16v. engines are some with variable timing inlet camshafts, e.g. EW10J4D (HPi) engines. The timing belt fitting and tensioning procedure for these engines differs from that for the standard camshafts which have sprockets retained by 3 bolts with slotted hole adjustment.

The following guidelines for timing belt replacement are applicable to the engines with the 'standard' camshaft/sprocket arrangement. The main differences in procedure when VTCs are involved are outlined in Section 5 'Instructions - VTC Engines'.

4.1. VS1211/P11 & VS1211/P12 Crankshaft/Flywheel Locking Pins & VS1211/P10 Camshaft Locking Pins (Pair)

4.1.1. Remove the crankshaft pulley and 'lock' the crankshaft in its timed position at the flywheel or through the crankshaft pulley flange (fig. 1), using VS1211/P12 or VS1211/P11 Locking Pin respectively.

4.1.2. Insert VS1211/P10 Camshaft Locking Pins to retain the camshafts in their timed position (fig. 2).

4.1.3. Slacken the tensioner bolt and also remove the tensioner pulley bracket from the cylinder block rib to allow greater movement of the tensioner. Move tensioner away from the timing belt and remove the belt.

Note: DO NOT re-fit the belt once it has been removed. A new timing belt must be used.

4.2. VS1210/04 Timing Belt Retaining Clip

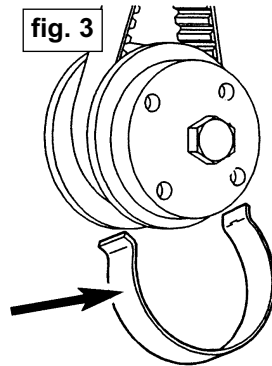
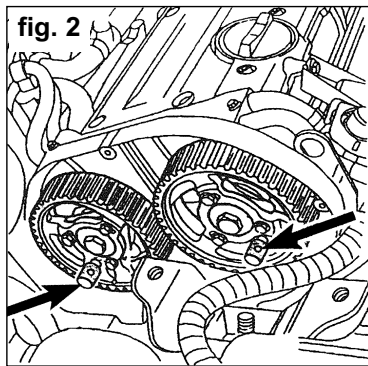
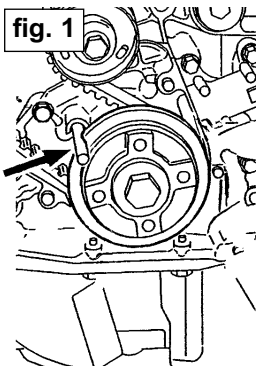
4.2.1. With the crankshaft and camshaft pins in position, fit the new belt around the crankshaft gear and secure in place with VS1210/04 Clip (fig. 3).

4.2.2. Slacken the 3 bolts of each camshaft sprocket to fingertight, and turn the sprockets **clockwise** as far as the slotted holes will allow.

4.2.3. Fit the timing belt in an **anti-clockwise** direction in the following sequence - guide roller, inlet cam sprocket, exhaust cam sprocket, water pump, tensioner.

IMPORTANT: When fitting the belt on the camshaft sprockets, these can be turned slightly anti-clockwise to accept the belt. However, this should not exceed one tooth space.

4.2.3. Re-fit the tensioner pulley bracket to the cylinder block rib.



4.3. Tensioning Procedure

The engine must be cold.

4.3.1. Release the tensioner nut and turn the tensioner **anti-clockwise** until the belt is tensioned to its maximum. The pointer should be in the position shown in fig. 4 Position 1. Tighten nut.

IMPORTANT: Check that the camshaft sprockets are not against the ends of the slotted holes.

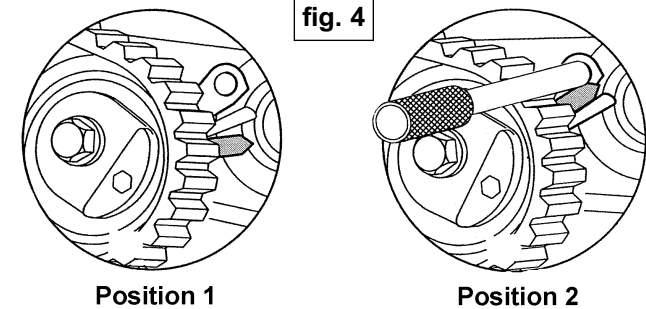
4.3.2. Tighten camshaft sprocket bolts and remove all locking tools and belt retaining clip.

4.3.3. Turn the engine over, by hand, six times, in the normal direction of rotation, returning to 'timed' position. **WARNING: DO NOT allow the crankshaft to be turned in the reverse direction.**

4.4. VS1211/P13 Tensioner Setting Pin

4.4.1. Insert VS1211/P13 Setting Pin into the tensioner pulley bracket, slacken the tensioner nut and then turn the tensioner clockwise until the pointer touches the setting pin, see fig.4 Position 2. Re-tighten the tensioner nut and remove the pin.

4.4.2. Check that engine timing is correct by inserting the crankshaft pin and then slackening the camshaft sprocket bolts to fingertight and inserting the camshaft locking pins. Ensure that the sprocket bolts are not at the ends of the slotted holes and then retighten them to the specified torque.



5. INSTRUCTIONS - VTC ENGINES

Engine Variants with VTC (Variable Timing Camshafts)

Although the general timing belt replacement and tensioning procedure is similar to the above there are a number of actions which differ on VTC engines and these should be noted.

The camshaft sprockets are **NOT** released, nor free to turn, during fitting of the new timing belt.

5.1. VS1211/P14 Inlet Camshaft Locking Pin

On HPi engines, one of the pair of locking pins from VS1211/P10 is used to lock the exhaust camshaft but special Pin VS1211/P14 is required to 'lock' the VTC inlet camshaft.

5.1.1. Should adjustment to the Inlet Camshaft Dephaser be required, this is made before fitting the timing belt by inserting VS1211/P14 Pin, with the rounded part of the pin towards the sprocket teeth (fig. 5). The three screws are slackened and the sprocket turned anti-clockwise to rest against the inserted pin. Screws are re-tightened.

IMPORTANT: This adjustment must be made prior to fitting the belt and **NOT** as a sprocket position adjustment during belt installation.

5.2. Tensioning Procedure - VTC

5.2.1. With the new belt fitted, turn the tensioner **anti-clockwise** to place the pointer in position A as shown in fig. 6. **IMPORTANT:** The pointer **MUST PASS** the tension position 'notch' by at least 10°.

5.2.2. Insert Setting Pin VS1211/P13 and turn the tensioner back **clockwise** so that the pointer just rests against the pin and aligns with the 'notch' - fig. 6, Position B. Remove the pin.

WARNING: The pointer **MUST NOT** move above the 'notch'. If it does, the procedure must be started again.

