



V6 PETROL ENGINE SETTING/LOCKING TOOL KIT

1. INTRODUCTION & APPLICATIONS

1.1. Introduction

VS1213 Setting/Locking Tool Kit covers engine timing/belt replacement on both Renault L7X and Citroën/Peugeot XFZ V6 engines (97-01)

The kit contains the required locking pins for camshafts and crankshaft, camshaft holding tool and tensioner tools. It also includes the special timing pin for checking the valve timing position.

1.2. Applications

Citroën: Xantia & XM - XFZ engines.

Peugeot: 406 & 605 - XFZ engines.

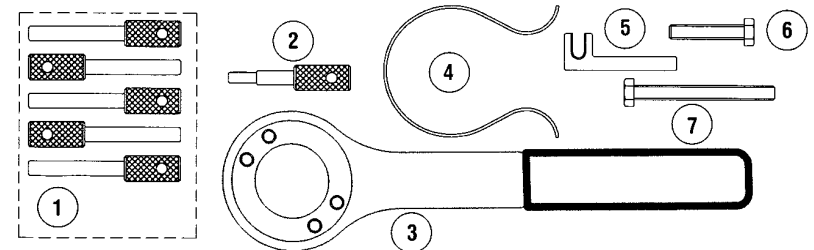
Renault: Laguna, Safrane & Espace - L7X engines.

2. SAFETY INSTRUCTIONS

- ☐ **WARNING!** Ensure that Health and Safety, local authority and general workshop practice regulations are adhered to when using tools.
- x **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. VS1213/01 | Crank & Camshaft Locking Pins (set of 5) | 5. VS1213/05 | Tensioner Tool |
| VS1213/R5 | Crank & Camshaft Locking Pin (single) | 6. VS125/M8 | Tensioner Adjusting Bolt (35mm) |
| 2. VS1213/02 | Camshaft Timing Test Pin | 7. VS1213/M8 | Tensioner Adjusting Bolt (75mm) |
| 3. VS1213/03 | Camshaft Holding Tool | - VS1213/84 | Case + Insert |
| 4. VS1213/04 | Timing Belt Retaining Clip | | |

3.2. Associated tools

- MASTER KIT- Engine Setting/Locking Tool Kit - French Engine Applications
 Citroën/Peugeot/Renault VS125
 Engine Setting/Locking Tool Kit - Citroën/Peugeot petrol & diesel - TU/XU/TUD/XUD VS121
 Engine Setting/Locking Tool Kit - PSA "EW" 16v. twin cam engines VS1211
 Engine Setting/Locking Tool Kit - PSA HDi diesels VS1210
 Engine Setting/Locking Tool Kit - Renault petrol & diesel VS122
 Engine Setting/Locking Tool Kit - Renault 1.4/1.6/1.8/2.0 16v twin cam engines VS1220

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.

4. INSTRUCTIONS

4.1. Timing belt replacement

In the case of the Renault Espace the engine and transmission must be removed from the vehicle. On Peugeot 406 models the stabiliser bar is additionally removed.

In order to replace the timing belt the engine must be raised and supported to remove the right-hand engine mounting. Remove R-H front wheel, splash guard and disconnect wiring harness, move aside control box and remove auxiliary belt/tensioner, PAS pulley and crankshaft pulley.

4.1.1. Turn the crankshaft clockwise to its timing position and insert 1 x VS1213/R5 Locking Pin through the crank pulley flange to retain the crank position, see fig. 1.

4.1.2. The remaining 4 x VS1213/R5 Locking Pins are inserted to 'lock' the camshafts, see fig. 2.

Note: Inserting these pins is made easier by slackening the sprocket bolts and slightly turning the camshaft using VS1213/03 Holding Tool.

4.1.3. Slacken the sprocket bolts, to allow the sprockets to turn freely when fitting the new timing belt.

4.1.4. Screw the VS1213/M8 (75mm) Tensioner Adjusting Bolt into the tensioner and tighten to touch the bracket at position 1 fig. 3 (without applying force to it).

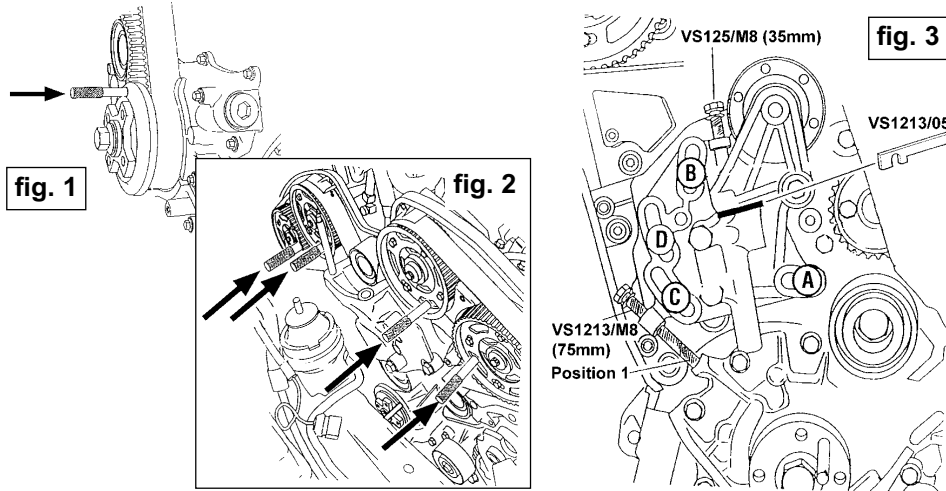
4.1.5. Release the tensioner retaining bolts A, B and C. **WARNING! DO NOT** slacken retaining bolt D.

4.1.6. VS1213/05 Tensioner Tool is inserted into the tensioner as shown in fig. 3.

Note: The VS1213/M8 Adjusting Bolt (75mm) can be released slightly to assist insertion of VS1213/05.

4.1.7. Screw VS125/M8 (35mm) Adjusting Bolt into the tensioner and fully tightened to 'clamp' VS1213/05 Tool in place.

4.1.8. Screw out the VS1213/M8 (75mm) Bolt sufficiently to release tension and remove the timing belt.
IMPORTANT: If the belt is to be re-used, ensure that the direction of rotation is marked on it before removal.



4.2. Refitting the timing belt

4.2.1. Check that all the VS1213/R5 Crank and Camshaft Locking Pins are correctly inserted.

4.2.2. Ensure that the camshaft sprockets can turn freely and then turn them fully **clockwise** on their slotted holes.

4.2.3. Tighten the camshaft sprocket bolts to 5Nm and then release back 45°.

4.2.4. Fit the timing belt to the crankshaft gear and retain in place with VS1213/04 Belt Clip - fig. 4.

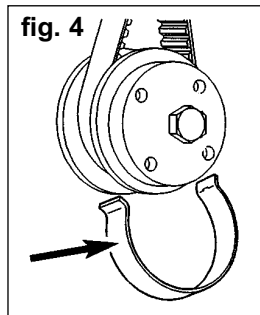
4.2.5. Then fit the belt in an **anti-clockwise** direction around the camshaft sprockets, guide rollers and tensioner. If necessary, slightly turn each camshaft sprocket to engage the nearest belt tooth.

IMPORTANT: Ensure that the camshaft sprockets are **NOT** at the ends of their slotted holes. Sprockets **SHOULD NOT** be turned more than one belt tooth space.

4.2.6. Check that the belt is taut between sprockets. Remove VS1213/04 Belt Clip and adjust Bolt VS1213/M8 (75mm) to take up any slack and to make the belt seat correctly.

4.2.7. Attach a suitable Belt Tension Tester and adjust the dynamic tensioner, via the VS1213/M8 (75mm) Bolt, until the correct belt tension is achieved.

4.2.8. Tighten the tensioner retaining bolts A, B & C (fig. 3) in that sequence.



4.3. Retensioning the timing belt

4.3.1. Counter-hold each camshaft sprocket with VS1213/03 Holding Tool (fig. 5), and tighten all the sprocket bolts.

4.3.2. Remove the Tension Tester.

4.3.3. Remove the VS1213/R5 Crank and Camshaft Locking Pins and rotate the engine, carefully by hand, in the normal direction of rotation, for at least two turns, returning the crankshaft to its timed position.

4.3.4. Insert VS1213/R5 Locking Pin through the crank pulley flange to retain the crank position, see fig. 1.

4.3.5. Release the tensioner retaining bolts A, B & C, remove VS125/M8 (35mm) Adjusting Bolt and adjust the VS1213/M8 (75mm) Bolt until the VS1213/05 Tensioner Tool slides in and out, without play. See fig. 3.

IMPORTANT: Wait 2 - 3 minutes (dependant upon ambient temperature), to allow the damper action of the automatic tensioner to settle.

4.3.6. Again check that VS1213/05 Tool slides in and out easily, adjusting Bolt VS1213/M8 (75mm) if necessary.

4.3.7. Remove VS1213/05 Tensioner Tool and tighten tensioner retaining bolts A, B & C to 25Nm.

4.3.8. Remove VS1213/M8 (75mm) Adjusting Bolt from the tensioner and the VS1213/R5 Pin from the crankshaft.

4.4. Final timing position check

4.4.1. Turn the engine over, by hand, at least two turns and return to the position where the VS1213/R5 Pin can be inserted to 'lock' the crank.

4.4.2. Fit another VS1213/R5 Locking Pin into the left-hand **exhaust** camshaft. If necessary counter-hold the sprocket with VS1213/03 Holding Tool, release sprocket bolts and adjust position.

4.4.3. Fit another VS1213/R5 Pin into the left-hand **inlet** camshaft, adjusting the position, if necessary, as with the first camshaft. Continue until all camshafts accept the VS1213/R5 Pins.

IMPORTANT: Check that all sprocket bolts are **NOT** at the ends of the slotted holes. If they are, then the belt refitting procedure must be started again.

4.4.4. Tighten all sprocket bolts and remove Locking Pins.

4.5. Checking valve timing

4.5.1. Turn the engine, by hand, at least twice, returning the crankshaft to its timing position and insert VS1213/R5 Pin through the crank pulley flange.

4.5.2. Check that VS1213/02 Timing Test Pin will pass through the camshaft sprockets/hubs and engage fully into the datum hole in the cylinder head, see fig. 6.

VS1213/02 Timing Test Pin must be able to enter the datum hole **fully and up to the sprocket face**, freely and easily, see fig. 7

If this is cannot be achieved on all camshafts, the engine timing/belt replacement procedure must be carried out.

