

Thank you for purchasing a Sealey product. Manufactured to a high standard this product will, if used according to these instructions and properly maintained, give you years of trouble free performance.

**⚠ IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS AND CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. PLEASE KEEP INSTRUCTIONS SAFE FOR FUTURE USE.**

**1. SAFETY INSTRUCTIONS**

**⚠ WARNING!** Ensure 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 a vehicle which has been jacked up is adequately supported with axle stands.
- ✓ 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 in or near the engine.
- ⚠ WARNING!** Incorrect or out of phase camshaft timing can result in contact between valve head and piston crown causing damage to the engine.

**IMPORTANT:** These instructions are provided as a guide only. Always refer to the vehicle manufacturer's service instructions, or a proprietary manual, to establish the current procedure and data.



**2. INTRODUCTION & APPLICATIONS**

**1.1 Introduction**

The Vauxhall/Opel 1.9CDTi diesel engines can be single cam/8 valve (Z19DT) or twin cam/16 valve (Z19DTH). Both engines are common rail, multijet diesels - BELT DRIVE.

The timing belt configuration is the same for both engines with the belt driving the camshaft, high pressure pump and coolant pump. On the twin cam Z19DTH, the belt drives the exhaust camshaft which in turn drives the inlet cam, via gears.

**1.2 Applications:**

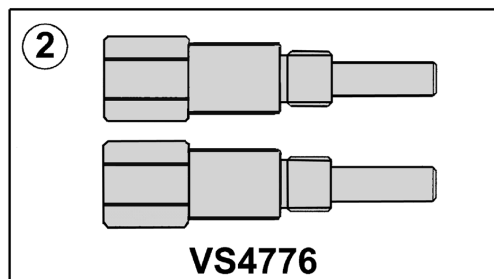
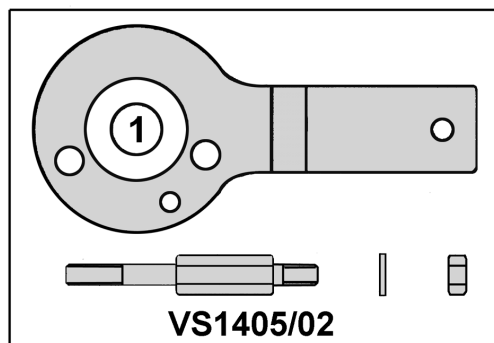
1.9CDTi OHC and DOHC Common Rail Diesel engines in:

VAUXHALL/OPEL  
 Vectra Signum  
 Z19DT (120PS) & Z19DTH (150PS) engines

**3. CONTENTS**

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| 1. | VS1405/02 | Crankshaft Locking Tool       |
| 2. | VS4776    | Camshaft Setting Tools (Pair) |
| 3. | VS3032/20 | Tensioner Locking Pin         |
|    | VS4775/84 | Case + Insert                 |

VS4775 Diesel Engine Setting/Locking Tool Kit  
 Comprises: VS4776 Camshaft Setting Tools (Pair)  
 VS1405/02 Crankshaft Locking Tool  
 VS3032/20 Tensioner Locking Pin



## 4. INSTRUCTIONS

1.9CDTi diesel engines can be single cam/8 valve (Z19DT) or twin cam/16 valve (Z19DTH). The timing belt configuration is the same for both engines with the belt driving the camshaft, high pressure pump and coolant pump. On the twin cam Z19DTH, the belt drives the exhaust camshaft which in turn drives the inlet cam, via gears.

For timing belt replacement applications the same tool is required to 'lock' crankshaft position, on both variants. On the single cam engine the camshaft is aligned to timing marks, and on the twin cam special Setting Tools are required to position the camshaft.

The timing belt tensioner position is identical on SOHC and DOHC variants.

A Tensioner Locking Pin, VS3032/20, for the auxiliary belt tensioner, is included in the kit.

Remove the R-H road wheel, inner wing splash panel, auxiliary belt, crankshaft pulley and timing belt covers.

NOTE: As it will be necessary to remove the engine mounting/brackets to remove and fit the timing belt, the engine must be supported from below.

Set the engine at TDC No.1 cylinder on ignition stroke.

NOTE: Check the engine timing is correct by fitting the appropriate timing tools.

### 4.1 Camshaft Timing (Fig. 1)

Z19DT (OHC) - Ensure camshaft sprocket timing mark aligns with the mark on the camshaft housing cover.

Z19DTH (DOHC) - Fit VS4776 Camshaft Setting Tools. Camshafts have a 'timing position slot' and are locked in timed position by VS4776 Setting Tool, which is spring loaded, screws in to the camshaft housing and locates into the timing slot.

Slowly turn the engine in its normal direction of rotation. As the ends of the spindles engage the slot in the camshafts an audible 'click' will be heard as the springs push the spindles into the 'timing slots'.

**IMPORTANT: DO NOT** use Timing Tools to hold crankshaft/camshafts in position whilst releasing or tightening the sprocket bolt. Setting Tools are for retention of timing position only.

### 4.2 VS1405/02 Crankshaft Locking Tool Z19DT & Z19DTH (Fig. 2).

To fit VS1405/02 Locking Tool remove the oil pump bolt and insert Support Spindle of VS1405/02.

Fit the main body of the tool locating it onto the support spindle and the dowel on the crank gear.

With the dowel correctly located, secure the tool with a bolt through to the crank gear.

Having now checked that the engine is at TDC No.1 cylinder/ignition stroke, remove VS1405/02 Tool, support engine and release RH engine bracket. Slacken belt tensioner and remove the old timing belt.

### 4.3 Fitting new belt.

Fit the new belt around the crank gear and install VS1405/02 Crank Locking Tool, securing with a bolt through to the crank gear.

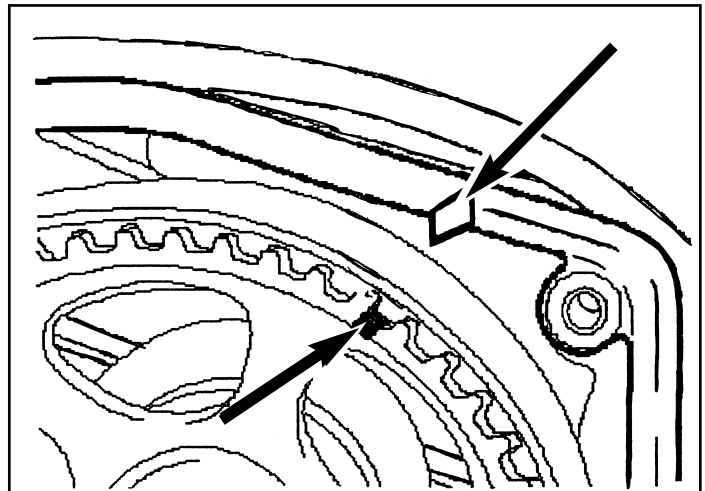
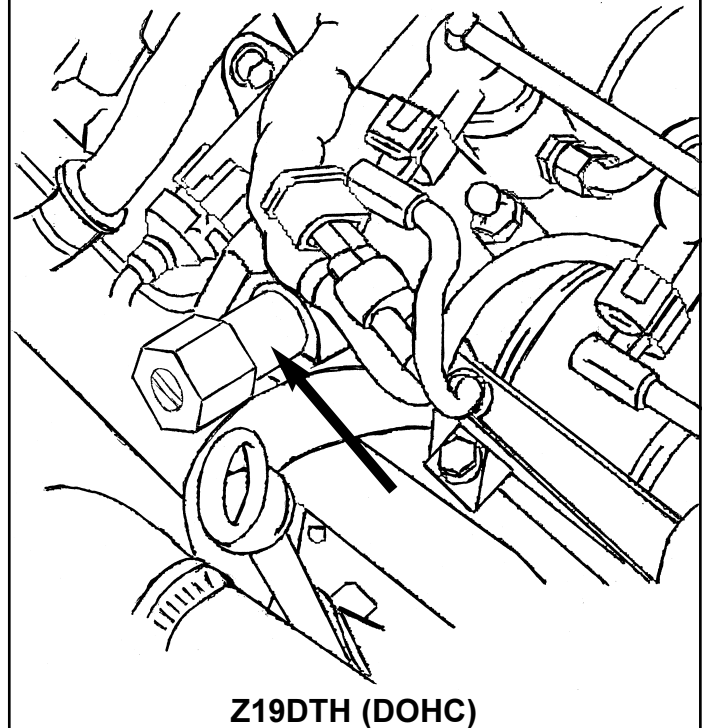


Fig. 1 Z19DT (SOHC)



Z19DTH (DOHC)

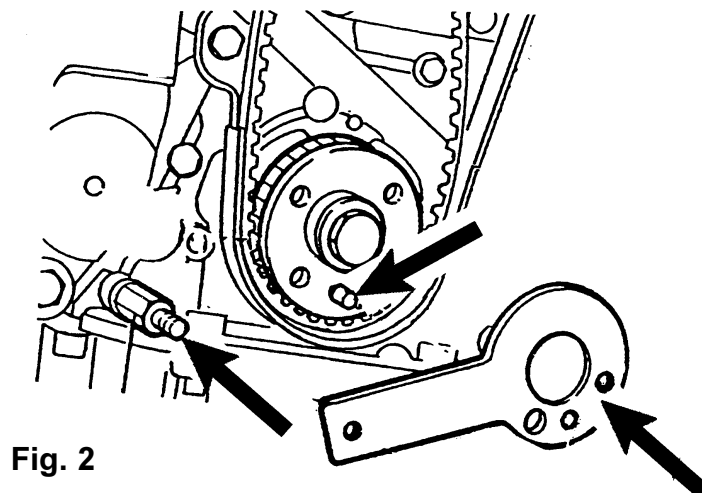


Fig. 2

Continue fitting the new belt ensuring the non-tensioned side is taut.

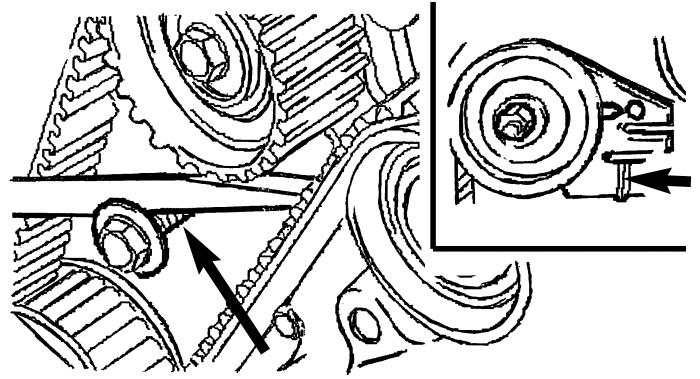
To tension the belt, screw in a temporary bolt (Fig. 3) to provide a 'lever point' and using a screwdriver, lever the adjuster in direction of arrow until the pointer of the tensioner aligns with the hole, and tighten tensioner bolt.

**4.4** Remove VS1405/02 and VS4776 Tools and turn the crankshaft two revolutions in normal direction of rotation. Return to TDC and install VS4776 and VS1405/02 Tools to again check timing position is correct.

Slacken tensioner bolt and again lever the tensioner so the pointer is in line with the hole. Tighten the tensioner bolt and remove all tools and 'temporary lever bolt'.

Turn crankshaft two revolutions and re-check tensioner pointer aligns with hole.

**Fig. 3**



**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 product.

**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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