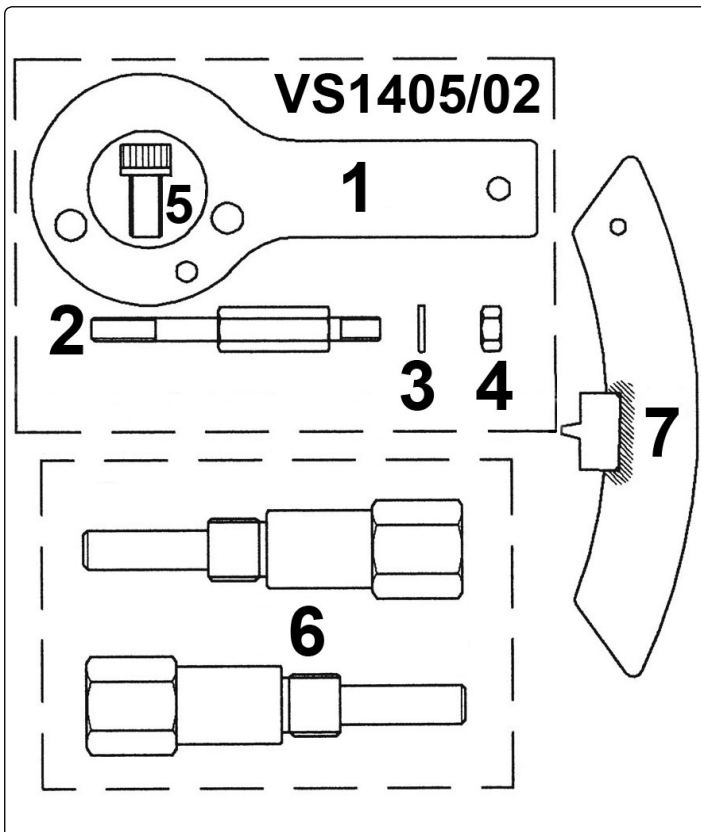


Thank you for purchasing a Sealey product. Manufactured to a high standard this product will, if used according to these instructions and properly maintained, give you years of trouble free performance.

**⚠ 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. INTRODUCTION & CONTENTS

Suitable for setting and locking Alfa Romeo, Fiat and Lancia complete range of 1.6D, 1.9D, 2.0D JTD and Multijet engines as well as 2.4D 10v and 20v JTD. Kit contains flywheel holding tool to remove/install crankshaft pulley, crankshaft locking tool and camshaft setting tools. Supplied in storage case.



Contents			OEM Number
Item	Part Number	Description	Alfa Romeo/Fiat/Lancia
---	VS1405/02	Crankshaft Locking Tool (items 1 to 5)	
1.	VS1405/01	Main Body	2.000.003.000/1.860.905.000
2.	VS1405/02	Support Spindle	2.000.003.000/1.860.905.000
3.	VS1405/03	Washer	
4.	VS1405/04	Nut	
5.	VS1405/05	Retaining Screw	2.000.003.000/1.860.905.010
6.	VS4776	Camshaft Setting Tool (*2 per kit)	1.870.896.900
7.	VS1403/03	Flywheel Holding Tool (Crank Pulley Removal)	1.860.898.000
---	VS4850/84	Case and Insert	

This table provides the Vehicle Manufacturer's Specialised Tool references and the sealey tool numbers covering the relevant service application.

\* These spares are sold as individuals and not multiples.

## 2. APPLICATIONS

### Applications:

<b>Alfa Romeo:</b>	145	(98-01)	<b>Lancia:</b>	Delta	(08-12)
	146	(98-01)		Kappa	(98-02)
	147	(01-10)		Lybra	(99-07)
	156	(97-08)		Musa	(04-12)
	159	(05-10)		Thesis	(02-07)
	166	(98-08)			
	Brera	(05-09)			
	Crosswagon	(04-08)			
	Guilietta	(10-12)			
	GT	(04-10)			
	MiTo	(08-12)			
	Spider	(06-09)			
<b>Fiat:</b>	Brava/Bravo	(98-02)			
	Bravo	(07-12)			
	Croma	(05-11)			
	Doblo/Cargo	(02-10)			
	Grande Punto	(05-10)			
	Idea	(04-12)			
	Linea	(07-11)			
	Marea/Weekend	(99-03)			
	Multipla	(99-11)			
	Palio Weekend	(02-06)			
	Punto	(99-06)			
	Punto Evo	(09-12)			
	Sedici	(06-09)			
	Stilo	(01-08)			
	Strada Pick-Up	(03-06)			

### Engine Codes:

<b>1.6D JTD/M:</b>	198A2.000, 350A2.000, 955A3.000,	198A3.000, 350A3.000, 955A4.000.	198A6.000, 940A3.000,
<b>1.9D JTD/M 8v:</b>	323.02, 182B9.000, 186A9.000, 188B2.000, 192A8.000, 192B5.000, 223B1.000, 939A1.000,	371.01, 186A6.000, 188A2.000, 192A1.000, 192A9.000, 199A5.000, 937A2.000, 939A7.000,	182B4.000, 186A8.000, 188A7.000, 192A3.000, 192B4.000, 223A7.000, 937A3.000, D19AA.
<b>1.9D JTD/M 16v:</b>	192A5.000, 937A4.000, 939A2.000,	192B1.000, 937A5.000, 939A8.000.	844A1.000, 937A6.000,
<b>2.0D JTD/M:</b>	844A2.000,	940A4.000,	940A5.000.
<b>2.4DJTD 10v:</b>	325.01, 185A6.000, 839A6.000,	342.02, 838A8.000, 841C.000.	362.02, 839A5.000,
<b>2.4DJTD 20v:</b>	841G.000, 939A3.000,	841H.000, 939A9.000.	841M.000,

## 3. SAFETY INSTRUCTIONS

- WARNING!** Ensure 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 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.

## 4. INSTRUCTIONS

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 camshaft engines 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 all variants (**VS1405/02**). On the single cam engines the camshaft is aligned to timing marks, and on the twin camshaft engines, special Setting Tools are required to position the camshaft.

In order to remove the timing belt it will be necessary to remove the crankshaft pulley.

### 4.1 Crankshaft Pulley Removal

#### **VS1403/03 Flywheel Holding Tool (Crank Pulley removal)**

On most of the **8v/10v** engines **VS1403/03** is required to 'lock' the flywheel. Remove the flywheel access cover and install **VS1403/03** Flywheel Holding Tool to 'lock' the engine to facilitate release of the crank pulley bolt and then remove the tool (**Fig.1**).

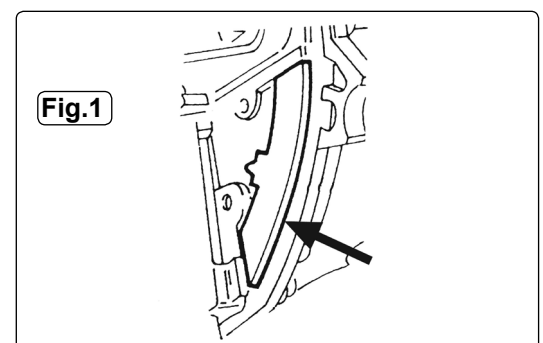
**VS1403/03** will also be required when refitting the pulley.

Remove the right-hand 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.



#### 4.2 Camshaft Timing

**8v and 10v (single camshaft)** - Ensure camshaft sprocket timing mark aligns with the mark on the camshaft housing cover (**Fig.2A**).

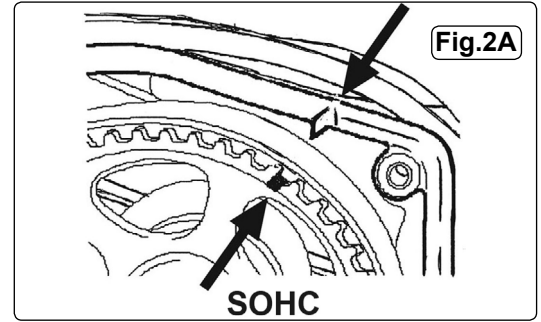
**16v and 20v (twin camshaft)** - Fit **VS4776** Camshaft Setting Tool.

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 position slot in the camshaft (**Fig.2B**).

Slowly turn the engine in its normal direction of rotation.

As the end of the spindle engages the slot in the camshaft an audible 'click' will be heard as the spring activates the spindle and pushes it into the 'timing position slot'.

**NOTE:** For timing belt replacement it is only necessary to use one of the **VS4776** Tools which should be fitted to the exhaust camshaft, (the inlet side is not accessible). When undertaking cylinder head and camshaft work, **BOTH VS4776** Tools should be used, (inlet and exhaust camshafts).



#### 4.3 Crankshaft Position

##### **VS1405/02 Crankshaft Locking Tool - All variants**

To check that the engine is at TDC, fit **VS1405/02** Locking Tool by removing the oil pump bolt and insert Support Spindle of **VS1405/02** (**Fig.3**).

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 Retaining Screw **VS1405/5** through to the crank gear.

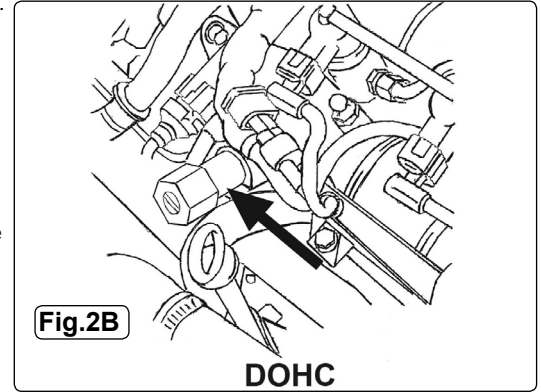
Having now checked that the engine is a TDC No.1 cylinder/ignition stroke, remove **VS1404/02** tool, support engine and release right hand engine bracket. Slacken belt tensioner and remove the old timing belt.

On **16v/20v** engines slacken the exhaust camshaft sprocket bolt whilst counter-holding the sprocket with a Sprocket Holding Tool.

**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.

When fitting a new belt, fit the new belt around the crank gear and install **VS1405/02** Crank Locking Tool, securing with Retaining Screw **VS1405/5** through to the crank gear.

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



#### 4.4 Belt Tensioning

To tension the belt, screw in a temporary bolt to provide a 'lever point' and use a screwdriver to lever the belt tensioner to the initial tensioning position (**Fig.4**).

##### 4.4.1 Initial Tensioning position

On **8v/10v** engines lever the adjuster in direction of arrow until the tensioner is at maximum ie. the pointer is positioned **ABOVE** the hole.

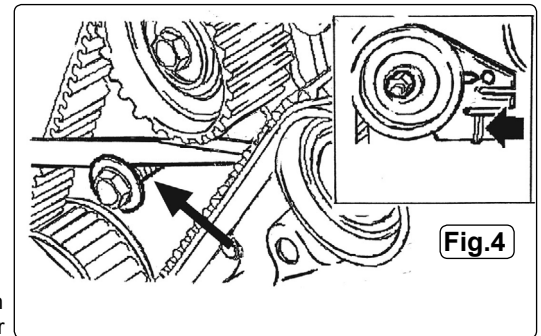
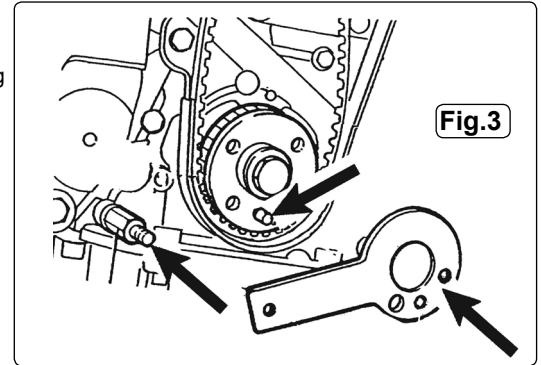
On **16v/20v** engines the tensioner pointer should be **IN LINE** with the hole. Tighten tensioner bolt.

On **16v/20v** engines, tighten the exhaust sprocket bolt, counter-holding the sprocket with a Sprocket Holding Tool.

Remove **VS1405/02** and **VS4776** Tools and turn the crankshaft two revolutions, by hand, in normal direction of rotation.

Return the engine to TDC and install **VS4776** and **VS1405/02** Tools to again check timing position is correct.

Slacken tensioner bolt and, if necessary, 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'.



##### 4.4.2 Final Tensioning position

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

**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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