

**PETROL ENGINE TWIN CAM CAMSHAFT SETTING TOOL**

**1. INTRODUCTION & APPLICATIONS**

**1.1. INTRODUCTION**

VS1246 Camshaft Setting Tool is required for the range of VW 1.4 and 1.6 twin camshaft engines introduced in 1997. Depending upon the engine variant, either the complete bridge and pins or only the pins are used.

**1.2. APPLICATIONS - 1.4 / 1.6 16v. Twin Cams**

Audi: A2

Seat: Arosa, Ibiza, Cordoba, Toledo & Leon

Skoda: Fabia

Volkswagen: Lupo, Polo/Classic, Golf, Bora & Caddy

Engine Types: AFK, AHW, AJV, AKQ, APE, AQQ, AUA, AUB, AXP, ARC, ATN, AUS, AVY, AZD.

**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 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. CONTENTS & ASSOCIATED TOOLS**

**3.1. Contents**

- 1. VS1246/01 Locking Pin (2 required)
- 2. VS1246/02 Bridge Piece
- 3. VS1246/03 Ball (2 required)
- VS1246/84 Case + Insert

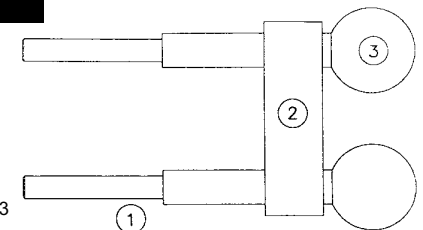
**3.2. Associated Tools**

**Use with:**

Crank Pulley Holding Tools ....VS12470, VS12471 or VS12473  
 (see Instruction Sheet covering these Holding Tools for Application Data on which model/engine is covered by which tool).

**Associated Tools:**

- Petrol (not twin cam) & Diesel Engine Setting/Locking Tool Kit.....VS124
- V6 2.5TDi Diesel Engine Setting/Locking Tool Kit .....VS1240
- Pumpe Düse Diesel Engine Setting/Locking Tool Kit.....VS1245



## 4. INSTRUCTIONS

### 4.1. General guidelines

The engines have a main drive belt (crankshaft to inlet camshaft) and a separate exhaust camshaft drive belt (from inlet camshaft to exhaust camshaft). Both belts have their own tensioner.

Depending upon the engine, VS1246 Camshaft Setting Tool is used either as an assembly of the two pins and bridge piece or as the two pins only (without the bridge).

**Note:** Timing belt replacement on these engines requires the crankshaft pulley to be removed. Crank Pulley Holding Tools are essential to counter-hold the pulley whilst releasing/tightening the centre bolt. There are a number of pulley designs across this engine range and each requires a Holding Tool. See Instructions covering VS12470/VS12471/VS12473 for specific model/engine coverage.

1. Raise and support the front of the vehicle. Remove belt covers and air cleaner. On Audi A2 models, remove the bonnet.
2. Turn the crankshaft to TDC aligning the notch on the crank pulley with the edge of the "O" mark on the casing.

### 4.2. VS1246 Camshaft Setting Tool

1. Check that the camshaft sprocket setting holes are in the correct position to accept the pins, as shown in fig. 1. Except ARC and AVY engines - use the VS1246 Tool as an assembly of the two pins with the bridge piece. For ARC/AVY engines - use the two pins separately (without bridge).
2. Ensure that VS1246 Setting Tool is installed correctly - insert the pins fully into the sprocket locking holes and then slide the bridge piece down to rest on the sprocket. When correctly installed the two balls on the ends of the pins should be parallel - fig. 2.

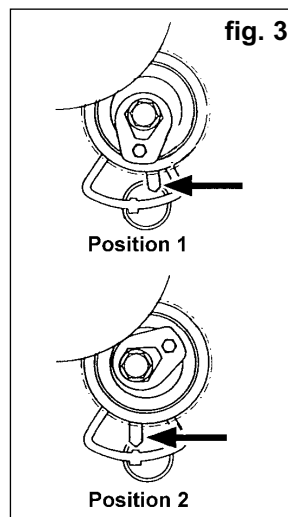
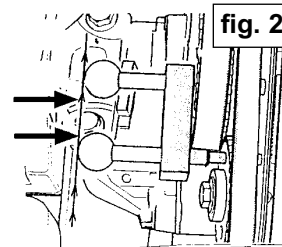
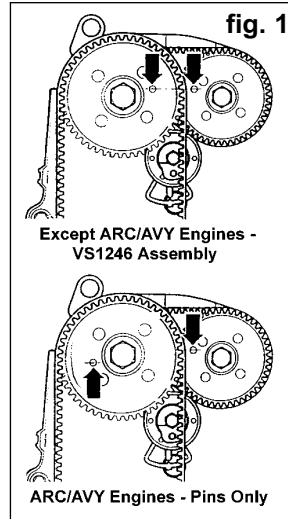
### 4.3. Crankshaft pulley removal

Use Associated Tool VS12470, VS12471 or VS12473 according to engine type. On some models the engines must be supported and the R-H engine mounting removed in order to lower the engine to access the crank pulley.

1. Timing belt replacement requires the crank pulley to be removed and it is necessary to counter-hold the pulley whilst the centre bolt is released or tightened.
2. Once the pulley has been removed place two washers on the old centre bolt and screw it back in to secure the crank gear and for use when turning the engine over by hand.  
**IMPORTANT!** When finally installing the crank pulley a new bolt **MUST** be used.
3. Turn the main drive belt tensioner anti-clockwise to release tension and remove the old belt.
4. Loosen the exhaust cam belt tensioner by turning it clockwise to remove belt.
5. Remove tensioner roller.

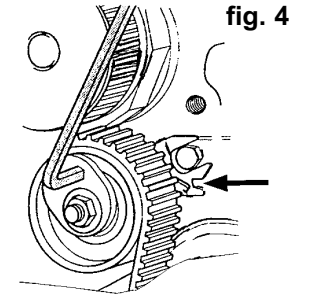
### 4.5. Fitting exhaust cam drive belt

1. Check that the VS1246 Setting Tool is correctly fitted and that the crankshaft is at TDC position - crank gear tooth with ground end should align with the mark on the sealing flange.
2. Fit the new exhaust cam drive belt in an anti-clockwise direction, starting at the top of the exhaust sprocket.  
**IMPORTANT!** Ensure that the new belt is taut on the non-tensioned side. Install the tensioner roller.
3. Turn the tensioner clockwise until the indicator is in Position 1, fig.3. Install the tensioner pulley so that the lug in the base plate is engaged in the recess in the cylinder head.
4. Turn the tensioner anti-clockwise so that the indicator aligns with the lug of the base plate - Position 2, fig. 3.



### 4.6. Fitting main drive belt

1. Fit the new main drive belt in an anti-clockwise direction starting at the water pump, then tensioner roller, crankshaft, idler roller and inlet camshaft sprocket.
2. Turn the tensioner clockwise until the indicator aligns with the groove in the base plate, fig. 4.
3. Carefully rotate the engine, by hand, twice, and return to TDC, checking that the timing marks align correctly. Check camshaft timing position by inserting VS1246 Setting Tool.
4. Check that both the main drive belt and exhaust cam belt tensioner indicators are in the correct position and apply firm thumb pressure to both belts to ensure that the indicators move.



**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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