



INSTRUCTIONS FOR:
SETTING AND LOCKING KIT - VAG
1.8TFSI - 2.0TFSI PETROL CHAIN DRIVE

MODEL No: **VS5125**

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 & 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. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.

1. SAFETY

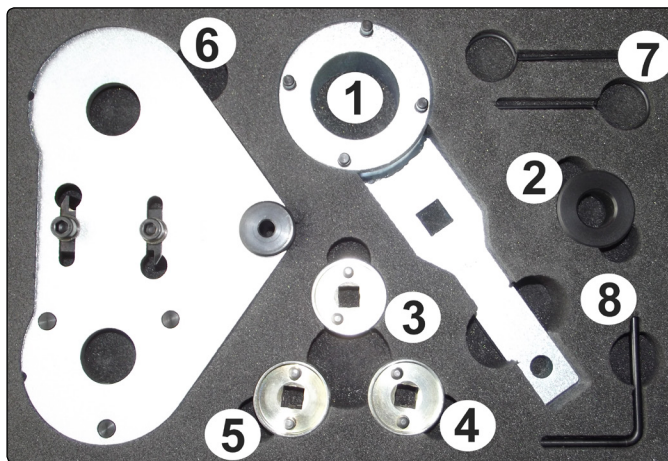


Refer to instruction manual



Wear eye protection

- WARNING!** Wear approved eye protection. Wear appropriate Personal Protective Equipment. A full range of Personal Protective Equipment is available from your Sealey dealer.
- WARNING!** Ensure that Health & Safety, Local Authority Regulations and general workshop practice Regulations are adhered to when using tools.
- DO NOT** use tools if damaged.
- Maintain tools to ensure that they are in an adequate condition for safe use and optimum performance.
- Ensure that a vehicle that has been raised by a jack is adequately supported. Use axle stands.
- Wear suitable clothing to avoid snagging. **DO NOT** wear jewellery. Tie back long hair.
- Account for all tools, parts and components being used. **DO NOT** leave these in or near the engine. Return tools to suitable storage after use.
- These Instructions are provided as a guide only.
- Always refer to the vehicle manufactures' service instructions or a proprietary manual to establish the correct procedure and data.
- WARNING!** The warnings, cautions and instructions in this manual cannot cover all possible conditions and situations. The Operator/ user must apply caution and common sense (good practical sense).
- WARNING!** Incorrect or out of phase camshaft timing can result in contact between the valve head and the piston crown. This will cause damage to the engine.



2. INTRODUCTION

Setting and locking kit that fits a wide range of VAG group 1.8 & 2.0 petrol engines. Includes essential tooling required to remove the camshaft adjuster valves and a useful crankshaft pulley holding tool. Some applications and repair operations will require additional tooling.

3. CONTENTS

Item	Part No.	Description	OE Refs.	Associated Tools	Description
1	VS5125-01	Crankshaft Pulley Holding Tool	T10355	AK9634M	Mini Dial Gauge
2	VS5125-02	Crankshaft Spacer Bush	T10368	VSE2515	Petrol TDC Position Tool
3	VS5125-03	Camshaft Control Valve Tool	T10352	VSE5852	Service Position Front End Support Guide Set
4	VS5125-04	Camshaft Control Valve Tool	T10352/1		
5	VS5125-05	Camshaft Control Valve Tool			
6	VS5125-06	Camshaft Locking Tool	T20208		
7	VS5125-07	Chain Tensioner Locking Pin	T40011		
8	VS5125-08	Auxillary Belt Tensioner Locking Pin	T40267		

4. APPLICATIONS

Models:

Audi:

A3/A3 Sportback (8PA/8P1) (07-13)
 A3/A3 Sportback (8VA/8V1) (12-14)
 A3 Saloon (8VS) (13-15)
 A3 Cabriolet (8V7) (13-15)
 A3 Cabriolet (8P7) (08-13)
 A4 (8K2/8K5) (07-15)
 A4 Quattro (8K2/8K5) (08-15)
 A4 Quattro (8KH) (09-15)
 A4 Allroad (8KH) (09-15)
 A5 Sportback (8TA) (09-17)
 A5 Coupe/Cabriolet (8F7/8T3) (07-15)
 A6 (4G2/4G5) (12-14)
 TT (8J3/8J9) (08-17)
 Q3 (8UB) (11-15)
 Q5 (8RB) (08-15)

Seat:

Leon (1P1) (09-17)
 Toledo (5P2) (09-09)
 Exeo (R32/3R5) (10-13)
 Altea (5P1/5P5/5P8) (06-15)
 Altea Freetrack (5P1/5P5/5P8) (09-15)
 Alhambra (710) (10-15)

Skoda:

Octavia II (1Z3/5) (07-13)
 Octavia III (5E3/5E5) (13-17)
 Superb II (3T4/5) (08-15)
 Yeti (5L7) (09-13)

Volkswagen:

Jetta (1K2) (05-11)
 Passat (3C2/3C5) (07-11)
 Passat (362/365) (11-17)
 Passat Alltrack (365) (12-15)
 Passat CC (357) (08-12)
 EOS (1F7/1F8) (08-15)
 Transporter T5 (7H/7J/7E/7F) (11-15)
 Amarok (2HX/S1B) (10-16)
 Beetle/Maggiolino (5C1/5C7) (13-15)
 CC (358) (12-15)
 Golf V (1K1) (09-13)
 Golf VI (AJ5) Estate (09-13)
 Golf VII (5G1) (13-16)
 Scirocco (137) (08-14)
 Golf VI (1K1) Cabriolet (12-14)
 Golf VII (517) (12-15)
 Tiguan (5N1/5N2) (07-15)
 Sharan (11-15)

Engines:

1.8 TFSI: 1.8 TSI: 2.0 TFSI:

BYT	CDAA	CAWA
BZB	CDAB	CAWB
CABA	CJSA	CBFA
CABB	CJSB	CCTA
CABD		CCZA
CDHA		CCZB
CDHB		CCZC
CJEB		CCZD
		CDNB
		CDNC
		CDND
		CESA
		CETA
		CFKA
		CFPA
		CHHA
		CHHB
		CJKA
		CJKB
		CNCB
		CNCD
		CPLA
		CPSA
		CYNB

5. INSTRUCTIONS

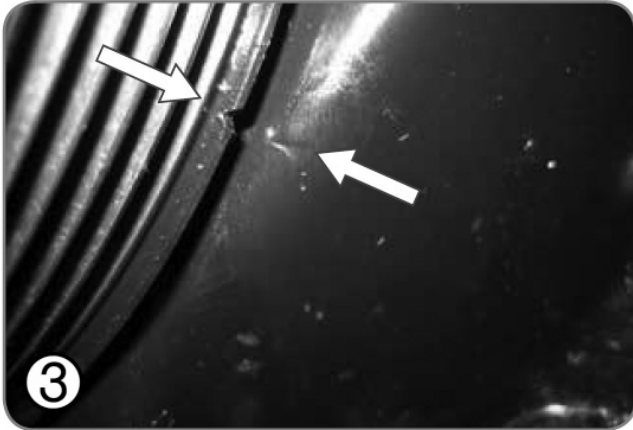
5.1. Engine Timing Check

- 5.1.1. Remove the cover and the bumper from the front of the vehicle. Fit the appropriate support guide pins, see VSE5852 Service Position Front End Support Guide Set.
- 5.1.2. Detach and move the front panel to its service position to allow access to crankshaft pulley and the timing chain covers.

- 5.1.3. Detach the oil dipstick tube and remove the inlet camshaft solenoid control valve from the upper timing chain cover.



- 5.1.4. Remove the upper timing chain cover.



5.1.5. Identify the crankshaft timing mark on the lower timing chain cover, positioned at approximately 4 o'clock relative to the crankshaft pulley. Locate the timing notch in the outer diameter of the crankshaft pulley.

NOTE: It may be difficult to see the timing mark on the lower timing chain cover if there is a build up of dirt. Care must be taken not to confuse the timing mark with other markings on the timing chain cover.

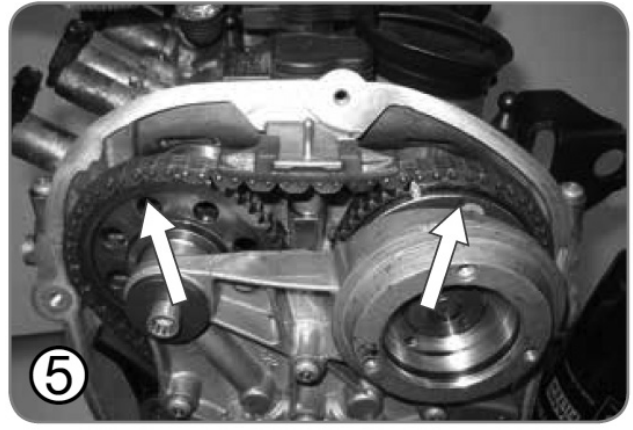


5.1.6. Using VS5125-01 Crankshaft Pulley Holding Tool, rotate the engine in the normal direction of rotation until the mark on the crankshaft pulley is aligned with the mark on the lower timing chain cover.

5.1.7. If the crankshaft is moved beyond TDC position, rotate it back to approximately 45° before TDC and repeat the crankshaft positioning procedure.

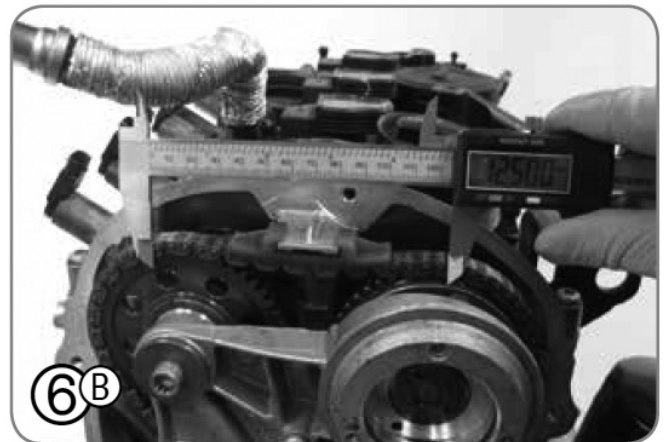


5.1.8. If it is not possible to accurately locate the crankshaft timing mark on the timing chain cover use a suitable TDC positioning tool, such as VSE2515+AK2515, in the spark plug aperture of no.1 cylinder to ensure that the crankshaft is in the correct position.



5.1.9. With the crankshaft at TDC position on No.1 cylinder the timing marks on the camshaft sprockets should be towards the top.

5.1.10. If the marks are not at the top of the sprockets, rotate the crankshaft one full turn in the normal direction of rotation, returning to piston TDC position. Check that the marks are at the top of the sprockets.



5.1.11. To check that the camshaft timing is correct, take a measurement from the timing mark of the inlet camshaft sprocket to the far side of the rib on the upper chain guide. This distance should be 61-64mm.

5.1.12. Take a second measurement from the timing mark of the inlet camshaft sprocket to the timing mark of the exhaust camshaft sprocket. This distance should be 124-126mm.

NOTE: If the engine timing is out of position by one tooth/one chain link, this is approximately equal to 6mm deviation in measurement.

5.1.13. If the crankshaft is set at TDC position and either of the camshaft position measurements are incorrect, engine timing will need to be adjusted.

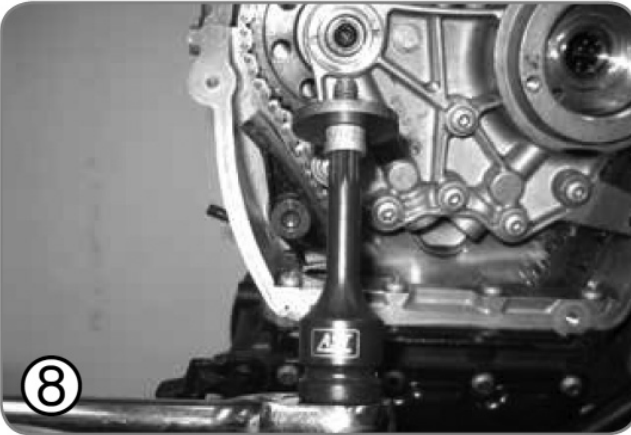
5.2. Engine Timing Adjustment

5.2.1. Engine timing adjustment requires the removal and refitting of the camshaft timing chain. Therefore, the following procedure is applicable to timing chain replacement as well as engine timing adjustment.



5.2.2. Using the appropriate tool from VS5125-03, -04 or -05, Camshaft Control Valve Tools, remove the control valve from the Inlet camshaft.

WARNING! The control valve has a LEFT HAND THREAD. Rotate the tool in a clockwise direction to remove the valve.



5.2.3. Remove the retaining bolt and washer from the exhaust camshaft.



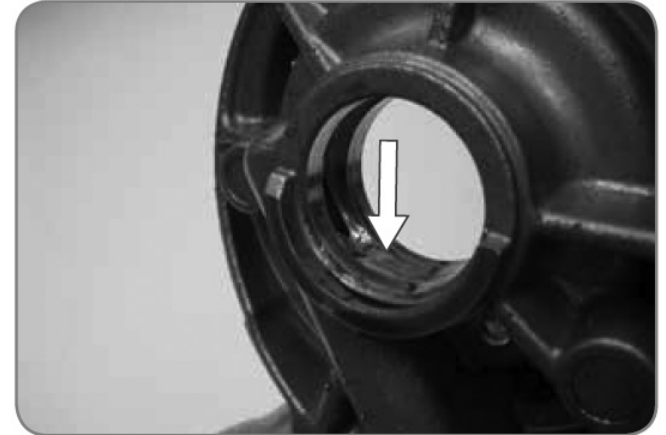
5.2.4. Remove the bearing saddle.

IMPORTANT: A gauze filter and ball bearing are located at the rear of the bearing saddle. Take care not to allow these or any other components to fall into the chain drive assembly or the engine sump when removing or fitting the bearing saddle.

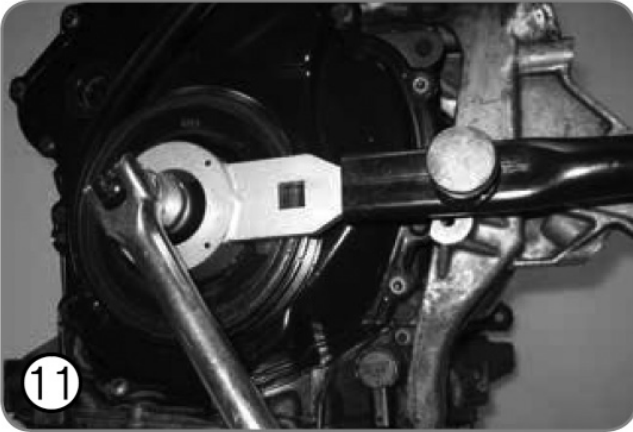


NOTE:

An inspection of the camshaft diameters and the bores of the bearing saddle can be performed at this point. A technical product information notice (TPI) was issued by VW group regarding of failure of the gauze filter & ball bearing assembly, leading to blocked oil-ways and damaged bearing saddle & camshafts.



5.2.5. Rotate the auxiliary belt tensioner in an anti-clockwise direction to release tension from the belt. Retain the tensioner in position using VS5125-08 Auxiliary Belt Tensioner Locking Pin and remove the auxiliary belt. Remove the auxiliary belt tensioner and the auxiliary belt idler pulley.



5.2.6. Using VS5125-01 as a counterhold, release the central bolt of the crankshaft pulley. **DO NOT** remove the crankshaft pulley at this stage.

▲ **IMPORTANT!** When the crankshaft pulley central bolt is removed, the crankshaft sprocket is not positively retained on the crankshaft. **DO NOT** disturb the engine timing or the chain drive when the bolt is removed.



5.2.7. Ensure that the crankshaft timing marks are aligned, or that the needle of the dial gauge (AK9634M) is in the correct position, with the engine at TDC position on No.1 cylinder. Remove the crankshaft pulley central bolt and the crankshaft pulley.



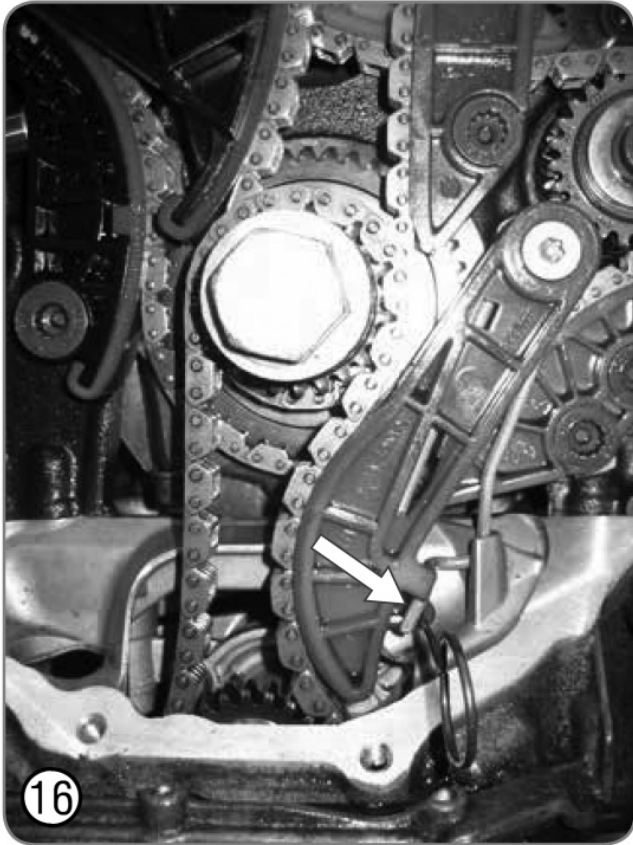
5.2.8. Fit VS5125-02 Crankshaft Spacer Bush onto the crankshaft pulley central bolt. Refit the bolt, finger tight only at this stage, to retain the crankshaft sprocket on the crankshaft. Ensure that the crankshaft remains in the correct timing position throughout.



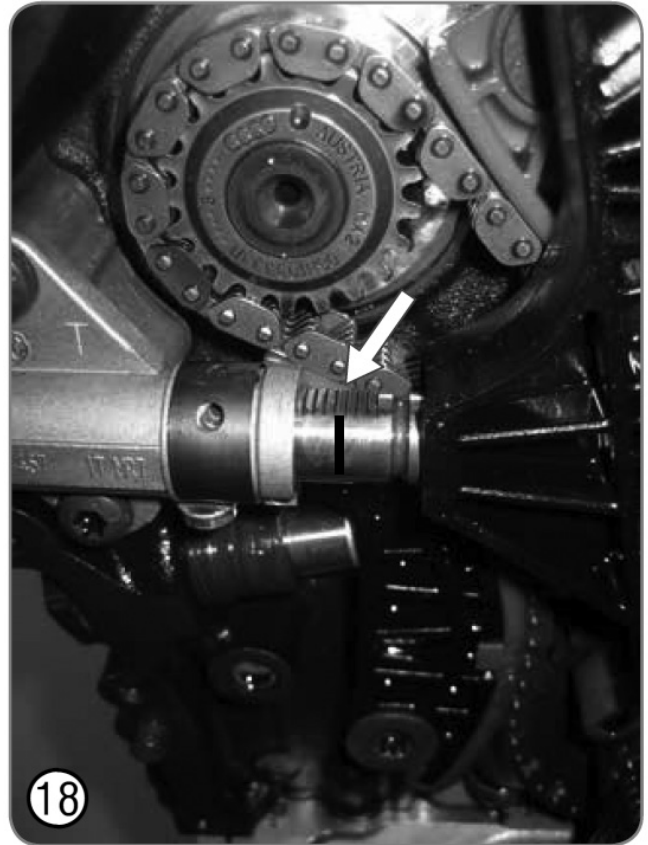
5.2.9. Detach and remove the oil dipstick guide tube.



5.2.10. Remove the bolts that retain the lower timing chain cover. Using a suitable lever, remove the lower timing chain cover starting at points 1 and 2. Take care not to damage the sealing face of the cylinder block or the timing chain cover when removing it from the engine.



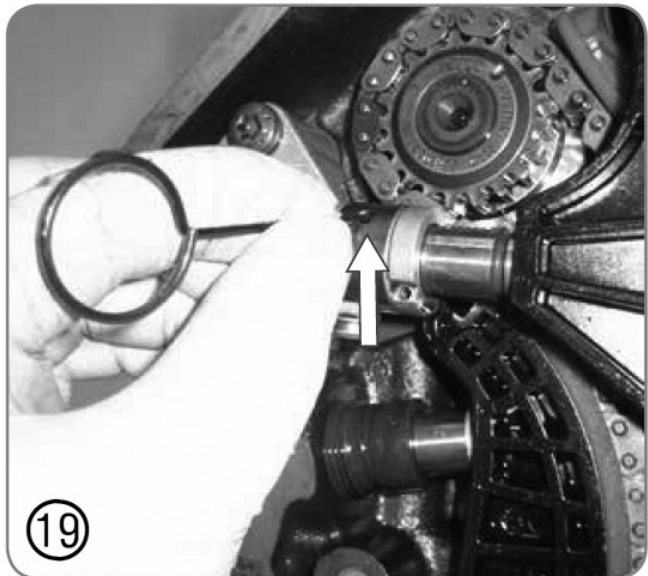
5.2.11. Compress the oil pump drive chain tensioner and retain in position using VS5125-07 Chain Tensioner Locking Pin.



5.2.13. Check for elongation of the timing chain. If the timing chain has maximum permitted elongation then it **MUST** be replaced.



5.2.12. Remove the oil pump drive chain tensioner and detach the pump drive chain from the crankshaft sprocket.



5.2.14. Lift the retaining clip and non-return block of the timing chain tensioner. Fully compress the tensioner plunger and retain in position using VS5125-07 Chain Tensioner Locking Pin.

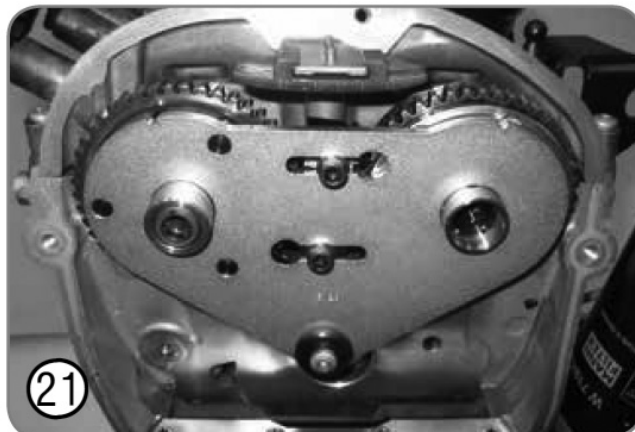
NOTE: When the timing chain tensioner is compressed and chain tension is relieved, the inlet camshaft may rotate in the direction of engine rotation due to valve spring pressure.



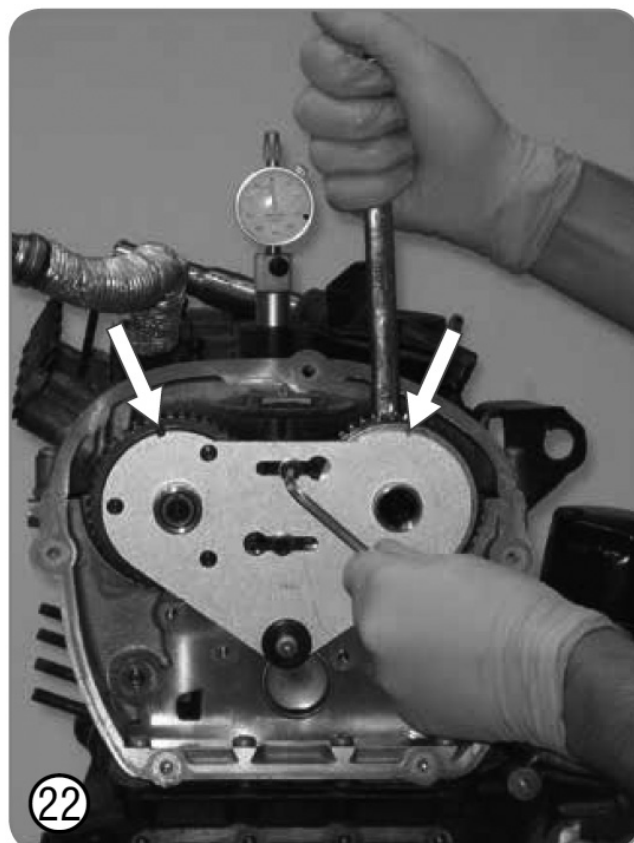
5.2.15. Remove the tensioner rail and guide rail for the timing chain.
5.2.16. Remove the timing chain.

NOTE: If the chain is to be refitted, note the direction of rotation before removal.

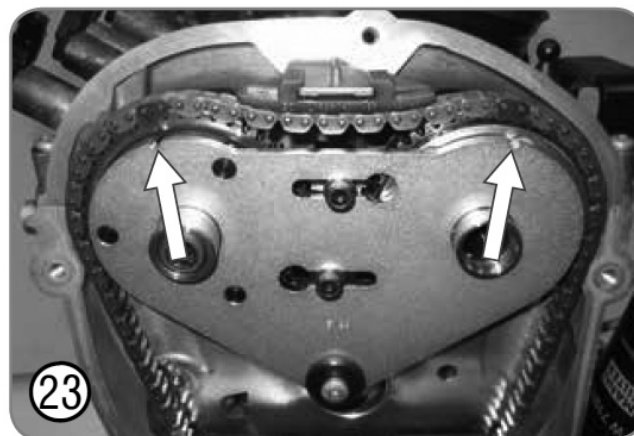
5.2.17. If the balance shaft timing chain is to be adjusted or replaced, refer to section: **5.3.** "Balance Shaft Timing Chain".



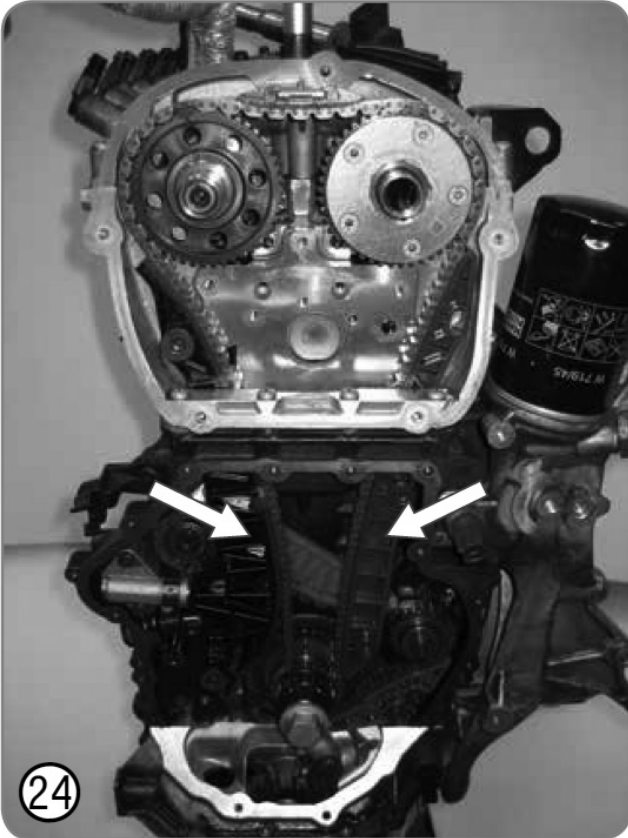
5.2.18. Fit VS5125-06 Camshaft Locking Tool on the camshafts, retain in position using one of the bolts from the bearing saddle. Ensure that the locking wedges are positioned between the sprockets and that the camshafts are free to rotate.



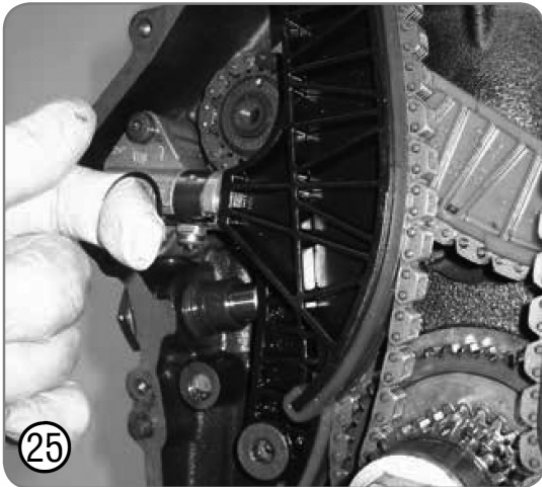
5.2.19 Using a spanner on the camshaft, rotate the inlet camshaft until the camshaft timing mark is aligned with the cut-out in VS5125-06 Camshaft Locking Tool. Lock the camshaft in position using the locking wedge of VS5126-06. Repeat this process for the exhaust camshaft.



5.2.20. With the camshafts locked in position, fit the timing chain onto the camshaft sprockets, ensuring that two of the coloured links of the chain are aligned with the timing marks of the sprockets.



5.2.21. Fit the timing chain tensioner rail and the chain guide rail, ensuring that the third coloured link is aligned with the mark on the crankshaft sprocket. Tighten the bolts of the timing chain tensioner rail and guide rail to 20Nm.



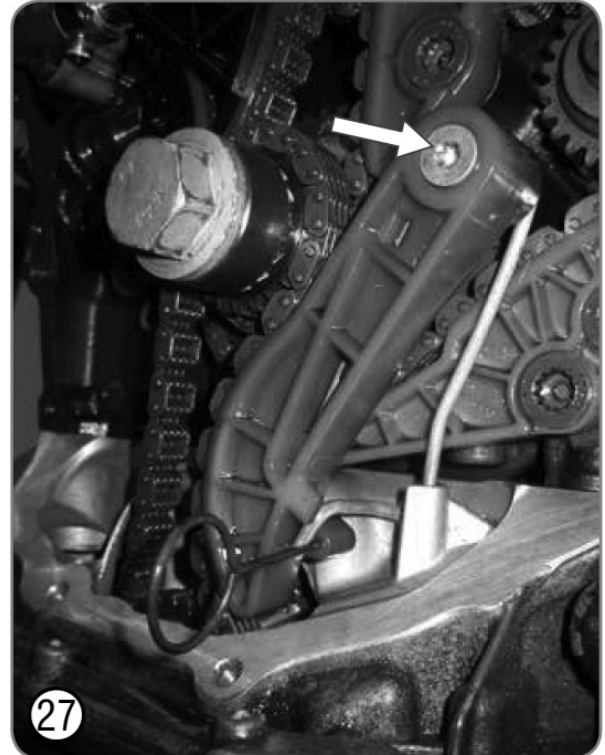
5.2.22. Remove VS5125-07 Chain Tensioner Locking Pin to apply tension to the chain. Ensure that the non-return block and retaining clip are fitted to the tensioner and operating correctly, it should not be possible to fully compress the tensioner.



5.2.23. Remove VS5125-06 Camshaft Locking Tool. Small movement of the camshafts may occur when the tool is removed. Refit the bearing saddle, finger tight only at this stage, ensuring that the retaining pin is located in the timing chain guide rail and that the gauze filter assembly is in position.

5.2.24. Refit the exhaust camshaft retaining washer, finger tight only at this stage, using a new bolt.

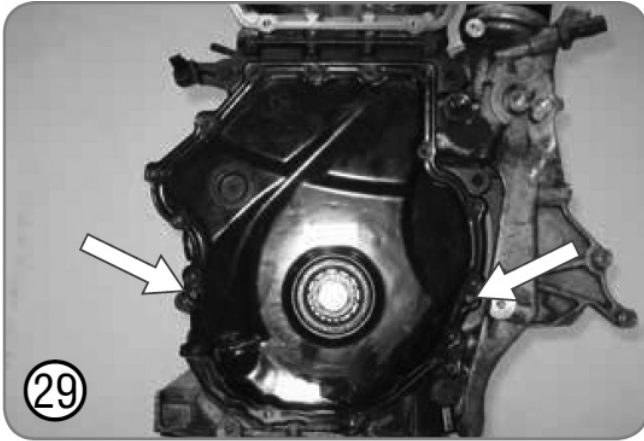
5.2.25. Check that slack within the chain has been removed and that the three coloured chain links are aligned with the timing marks of the camshaft and crankshaft sprockets.



5.2.26. Refit the oil pump drive chain and chain tensioner, ensuring that the chain is correctly located in the teeth of the crankshaft sprocket and oil pump. Tighten the oil pump chain tensioner bolt to 20Nm. Remove VS5125-07 Chain Tensioner Locking Pin to apply tension to the chain.

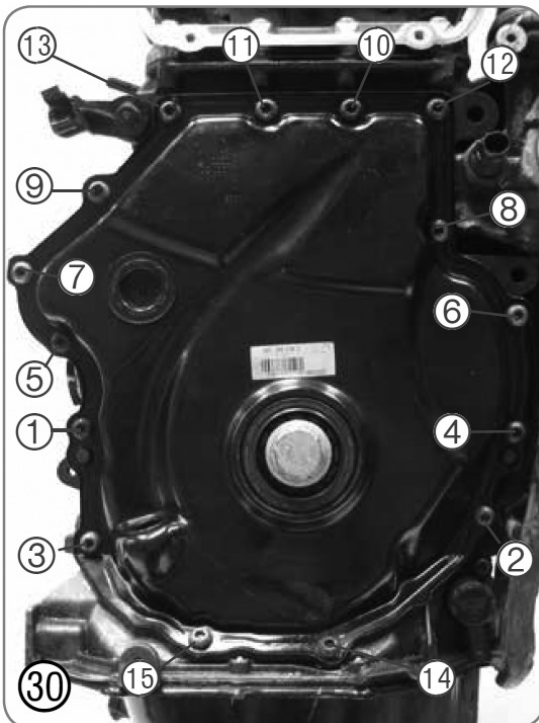


5.2.27. Ensure that the sealing surfaces of the cylinder block and the lower timing chain cover are clean and free from oil or used sealant.



5.2.28. Apply a 2-3mm bead of sealant to the sealing face of the lower timing chain cover. Fit the timing chain cover to the engine, locating on the dowel pins that protrude from the block.

▲ **IMPORTANT!** The cover must be fitted within 5 minutes of applying the sealant. **DO NOT** apply more sealant than specified, excess sealant can damage engine components.



5.2.29. Fit the chain cover retaining bolts, tightening to an initial torque of 8Nm, in the sequence shown (1 - 15). Repeat the sequence, tightening the retaining bolts a further 45° to achieve the final torque setting.

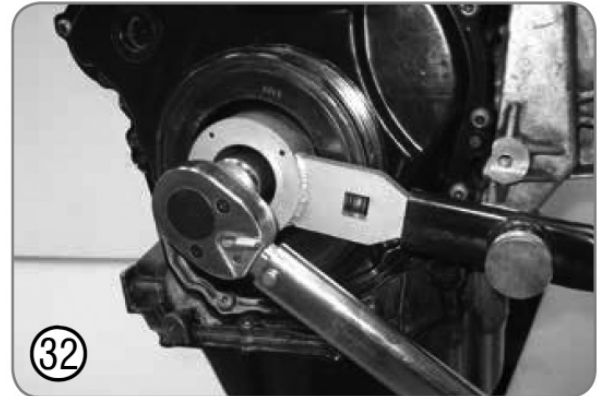


5.2.30. Remove the crankshaft pulley central bolt and VS5125-02 spacer bush.

▲ **IMPORTANT!** A new bolt must be fitted. The used crankshaft pulley bolt must be discarded.

5.2.31. Fit a new crankshaft pulley central bolt and refit the crankshaft pulley, finger tight only at this stage. Ensure that the spline of the pulley is fully located in the spline of the crankshaft.

5.2.32. Check engine timing, refer to section “**Engine Timing – Check**” 5.1.



5.2.33. Using VS5125-01 Crankshaft Pulley Holding Tool as a counterhold, tighten the crankshaft pulley central bolt to a final torque of 150Nm + 90°.

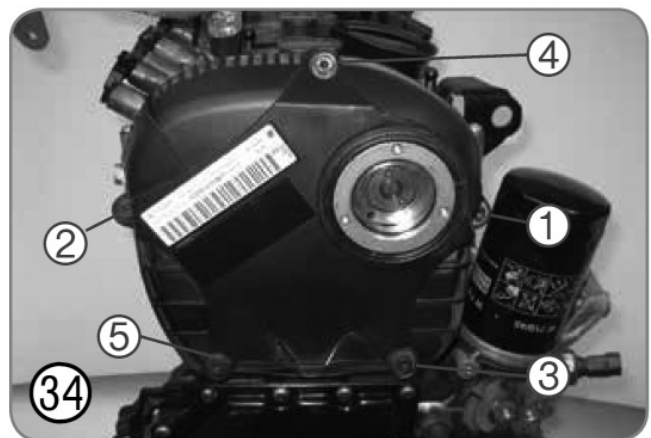


5.2.34. Tighten the bolts of the bearing housing to 9Nm.

5.2.35. Tighten the exhaust camshaft retaining bolt to 8Nm + 90° (1.8 engine), or 20Nm + 90° (2.0 engine). Tighten the inlet camshaft control valve to 35Nm.

☐ **WARNING!** The control valve has a **LEFT HAND THREAD**. Rotate the tool in an anti-clockwise direction to tighten the valve.

5.2.36. Remove VSE2515 TDC Positioning Tool, refit the spark plug and coil pack.



5.2.37. Refit the upper timing chain cover, tighten the bolts to 9Nm in the sequence shown (1-5).

5.2.38. Refit the dipstick guide tube and the solenoid control valve, tightening the bolts to 9Nm.

5.2.39. Refit the auxiliary belt drive tensioner (40Nm) and idler pulley (20Nm), then refit the auxiliary belt.

5.2.40. Remove VS5125-08 Auxiliary Belt Tensioner Locking Pin to apply tension to the belt.

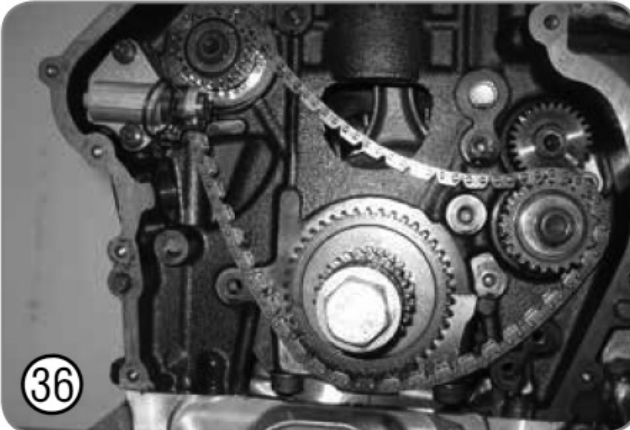
5.2.41. Reassemble engine components and vehicle front end panel.

5.3. Balance Shaft Timing Chain

- 5.3.1. In order to remove the balance shaft chain or adjust the timing of the balance shafts, the timing chain must be removed.
- 5.3.2. To remove the engine timing chain refer to section 5.2. "Engine timing – Adjustment". With the engine timing chain removed, proceed as follows.



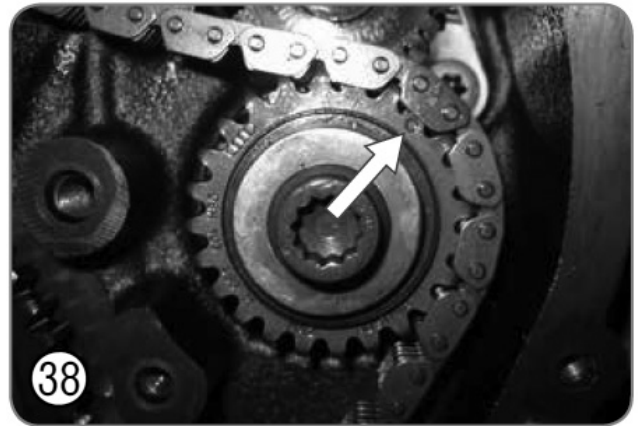
- 5.3.3. Remove the timing chain tensioner and the balance shaft chain tensioner.



- 5.3.4. Remove the balance shaft tensioner rail, followed by the upper guide rail and finally the lower guide rail.
- 5.3.5. Remove the balance shaft timing chain.



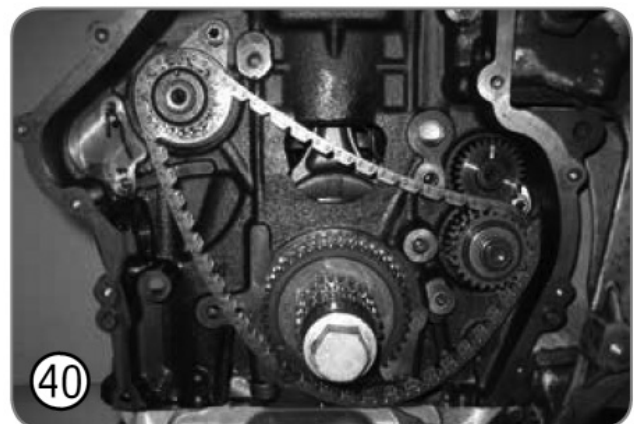
- 5.3.6. Align the timing mark (dot) of the inlet side balance shaft sprocket with the mark of the idler sprocket.



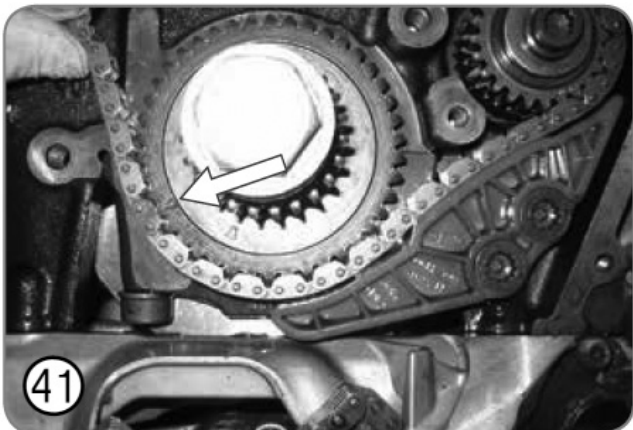
- 5.3.7. Fit the balance shaft chain on to the inlet side balance shaft idler, aligning the coloured chain link with the mark on the sprocket at the 1 o'clock position.



- 5.3.8. Fit the balance shaft chain on to the exhaust side balance shaft, aligning the mark on the shaft sprocket with the coloured link of the chain. This mark is approximately at the 12 o'clock position.



- 5.3.9. Fit the balance shaft chain onto the crankshaft sprocket.



- 5.3.10. Fit the balance shaft chain lower guide rail, ensuring that the coloured link of the balance shaft chain is aligned with the mark of the crankshaft sprocket. Fit the upper chain guide rail followed by the tensioner rail. Tighten the tensioner rail and guide rail retaining bolts to 20Nm.



- 5.3.11. Ensure that the threads of the balance shaft chain tensioner are clean and dry. Apply VW specification locking fluid to the thread balance shaft chain tensioner.
- 5.3.12. Refit the chain tensioner, tightening to 65Nm.
- 5.3.13. Refer to section 5.2. “**Engine Timing – Adjustment**” for instructions on refitting the engine timing chain.



Environmental Protection

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain off any fluids (if applicable) into approved containers and dispose of the product and the fluids according to local regulations.

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.



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