

Warranty

Our products are designed to be used correctly and with care for the purpose for which they are intended. No liability is accepted by the Tool Connection for incorrect use of any of our products, and the Tool Connection cannot be held responsible for any damage to personnel, property or equipment when using the tools. Incorrect use will also invalidate the warranty.

If applicable, the applications database and any instructional information provided has been designed to offer general guidance for a particular tool's use and while all attention is given to the accuracy of the data no project should be attempted without referring first to the manufacturer's technical documentation (workshop or instruction manual) or the use of a recognised authority such as Autodata.

It is our policy to continually improve our products and thus we reserve the right to alter specifications and components without prior notice. It is the responsibility of the user to ensure the suitability of the tools and information prior to their use.



Safety First. Be Protected.

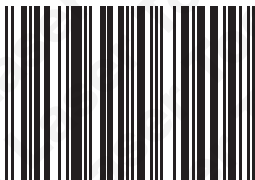
Guarantee

If this product fails through faulty materials or workmanship, contact our service department direct on: **+44 (0) 1926 818186**. Normal wear and tear are excluded as are consumable items and abuse.



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LASER[®]

6540

Crankshaft Oil Seal Tool Volkswagen Crafter

Instructions



6540 - Crankshaft Oil Seal Tool

OEM Code: T50010

This crankshaft seal installer tool is specifically designed for Volkswagen Crafter 2006-13:

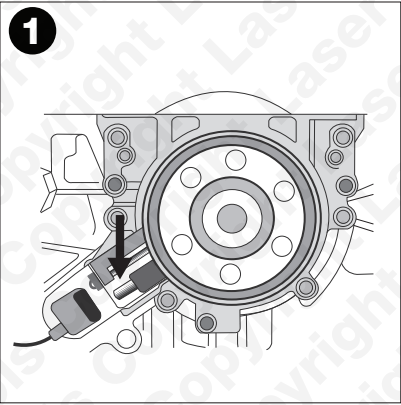
Engine	Engine Code	Engine	Engine Code
2.5 Tdi	BJJ	2.5 BLUE Tdi	CEBA
	BJK		CEBB
	BJL		CECA
	BJM		CECB

Other Tools Required:

- Torque wrench 5-60Nm
- 3 x Hexagonal bolts M6 x 35mm
- Vernier gauge (or straight edge and feeler gauges)

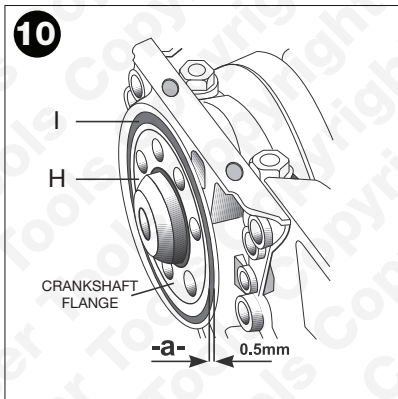
The flywheel end oil seal is integral with the oil seal housing and speed sender and is supplied with a new timing ring. If the oil seal is faulty, the whole assembly must be renewed. The **Laser 6540** is required to press the new seal housing assembly into position. Note that removing the oil seal will also remove the serrated timing ring from the end of the crankshaft and care must be taken to refit the ring in its exact position.

Step 1



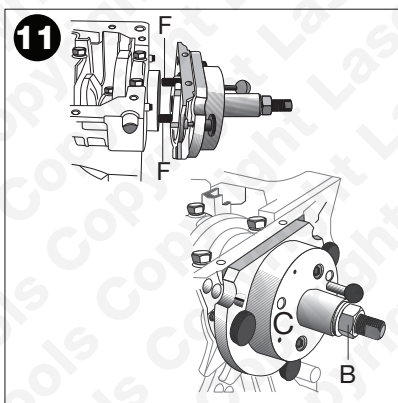
- Remove the flywheel or drive plate (as applicable).
- Set the engine to TDC.
- Remove the sump.
- Refer to Figure 1: disconnect the wiring spur from the engine speed sender on the oil seal housing (**arrow**), then unbolt and remove the sender and recover the rubber grommet.
- Unscrew the housing securing bolts and remove them. Discard the bolts as new ones must be used on reassembly.

Step 10



- The timing ring is in the correct position on the crankshaft if a gap **-a-** = 0.5 mm exists between crankshaft flange **H** and timing ring **I**.
- Set vernier gauge on crankshaft flange.
- Measure distance **-a-** between crankshaft flange and timing ring. This can also be checked with a straight edge placed across crankshaft flange and feeler gauge(s) used to measure the clearance.
- If measurement **-a-** is too small:
- Re-press the timing ring (**go to STEP 11**).
- If dimension **-a-** is correct:
- Fit the new housing securing bolts.
- Tighten these new housing securing bolts to **15 Nm** using alternate and diagonal sequence.
- Refer to **STEP 1**: Insert the crankshaft speed sender and tighten the securing bolt to 5Nm.
- Refit sump.
- Refit intermediate plate.
- Refit flywheel using new bolts.
- Tighten securing bolts to 60 Nm + one-quarter turn (90°).

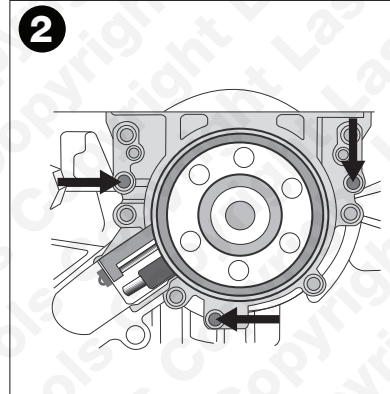
Step 11



Re-Pressing timing ring (if required):

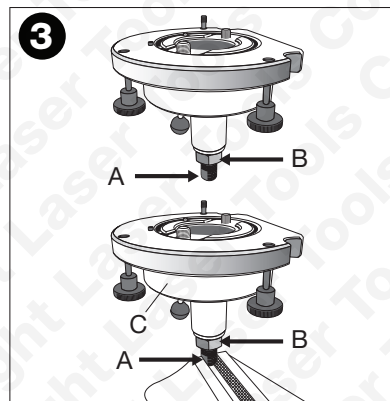
- Re-attach installer tool **6540** to crankshaft flange using the Allen-headed bolts **F**. Hand-tighten these bolts.
- Push installer tool **6540** by hand to sealing flange.
- Screw large hex nut **B** onto threaded spindle by hand until it is in contact with tool body **C**.
- Tighten large hex nut **B** to **40 Nm** using torque wrench.
- Check installation position of timing ring on crankshaft again (refer to **STEP 10**).
- If dimension **-a-** is too small again, tighten large hex nut **B** to **45 Nm** using torque wrench and check installation position of timing ring on crankshaft again.

Step 2



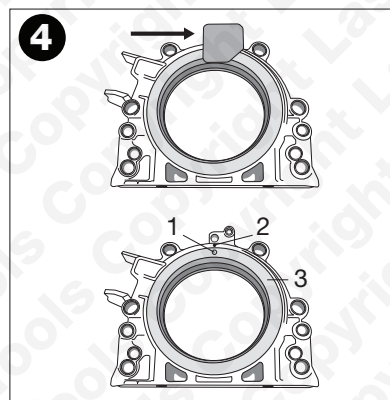
- The seal housing assembly is pressed off using three M6 bolts screwed into the threaded holes provided (**arrows**).
- Screw bolts alternately (maximum half-turn for each bolt) into seal housing, and press seal housing together with sender timing ring, off the crankshaft.

Step 3



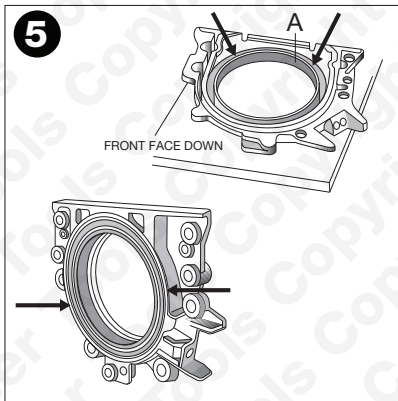
- Screw in the large hex nut **B** to just before the clamping surfaces **A** of the threaded spindle.
- Clamp installer tool **6540** to a vice (clamping surfaces **A** on threaded spindle). Press tool housing **C** down so that it lies on large hex nut **B** (**arrow**).
- Then screw large hex nut up threaded spindle until inner part of tool is level with tool housing.

Step 4



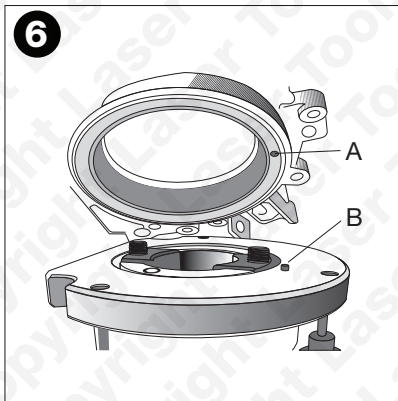
- Before fitting the new seal housing, check that the hole in the timing ring is aligned with the TDC mark on the seal housing. A plastic clip (**arrow**) holds the ring in the correct position, this must be removed. Note: the timing ring must not be taken out of the seal housing or turned.
- Locating hole **1** on timing ring **3** must align with TDC mark **2** on seal housing.

Step 5



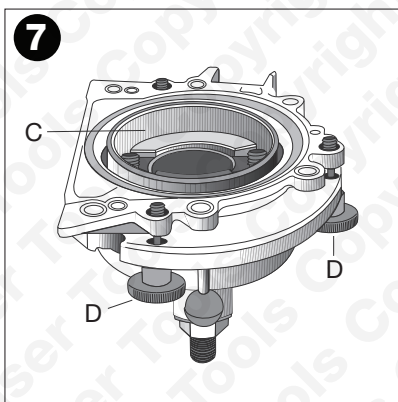
- Place seal housing with front side down on a clean, flat surface. Push sealing lip support ring **A** downwards in direction of **arrows** until it lies on flat surface.
- Upper edge of timing ring and front edge of seal housing must align (**arrows**).

Step 6



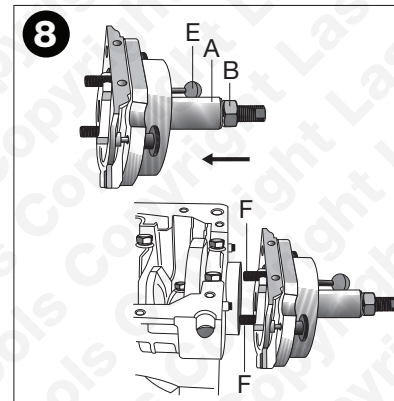
- Place seal housing with front side onto installer tool **6540** - ensure that tool locating pin **B** can be inserted into timing ring hole **A**.
- Note: Ensure seal housing lies flat on installer tool 6540.

Step 7



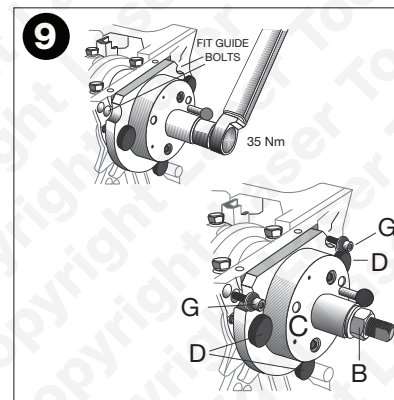
- Push seal housing and support ring for sealing lip **C** against surface of installer tool **6540** while tightening the three knurled screws **D**, so that locating pin cannot slide out of timing ring hole.
- Note: When installing seal housing, ensure that timing ring remains fixed in installer tool.

Step 8



- Crankshaft flange must be free of oil and grease.
- Check that the engine is still at TDC.
- Screw large hex nut **B** to end of threaded spindle.
- Press threaded spindle of installer tool **6540** in direction of **arrow**, until large hex nut **B** lies against installer housing **A**.
- Align **flat edge** of installer tool 6540 on **sump side** of crankcase sealing surface and fit the tool and new seal housing assembly over the crankshaft and onto the cylinder block.
- Push guide pin **E** into hole in crankshaft. This ensures that the timing ring reaches its final installation position.
- Secure tool and new seal housing assembly to crankshaft flange with the Allen-headed bolts **F** (approximately 5 full turns).

Step 9



- To guide the seal housing, screw two M6 X 35mm bolts (**G**) into cylinder block.
- Tighten large hex nut of installer tool **6540** to **35 Nm**, this will press the timing ring onto the crankshaft.
- After tightening the hex nut, there must be a small air gap between the seal housing and the cylinder block.
- Screw large hex nut **B** to end of threaded spindle.
- Remove the two guide bolts **G** from cylinder block.
- Screw the three knurled screws **D** out of housing.
- Remove sealing lip support ring, then remove installer tool **6540** (**C**).