Rear main oil seal (engine speed sensor) replacement on a mk5 VW Jetta TDI 2005 2006

difficulty: 3/5

Introduction

This article shows how to replace the rear main oil seal on a VW Jetta TDI 1.9L engine. The RMS is also the ESS (engine speed sensor).

It's rated difficulty 3/5 only because you have to remove the transmission and flywheel to get to the seal. The rear main oil seal seals the transmission end of the crankshaft. If the car has very high miles on it and you're removing the flywheel I would replace the seal. If you don't have many miles and it's not leaking I would leave it alone. The cars came with a teflon seal with no metal spring. These are supposed to last longer without leaking than rubber-spring oil seals.

Teflon seals must be installed without bending the lip. The replacement seal may include a plastic guide sleeve installation tool. It only fits one way and guides the RMS onto the crankshaft by stretching the seal a little bit for installation. The new seals used on your car use a special tool to press the seal on.

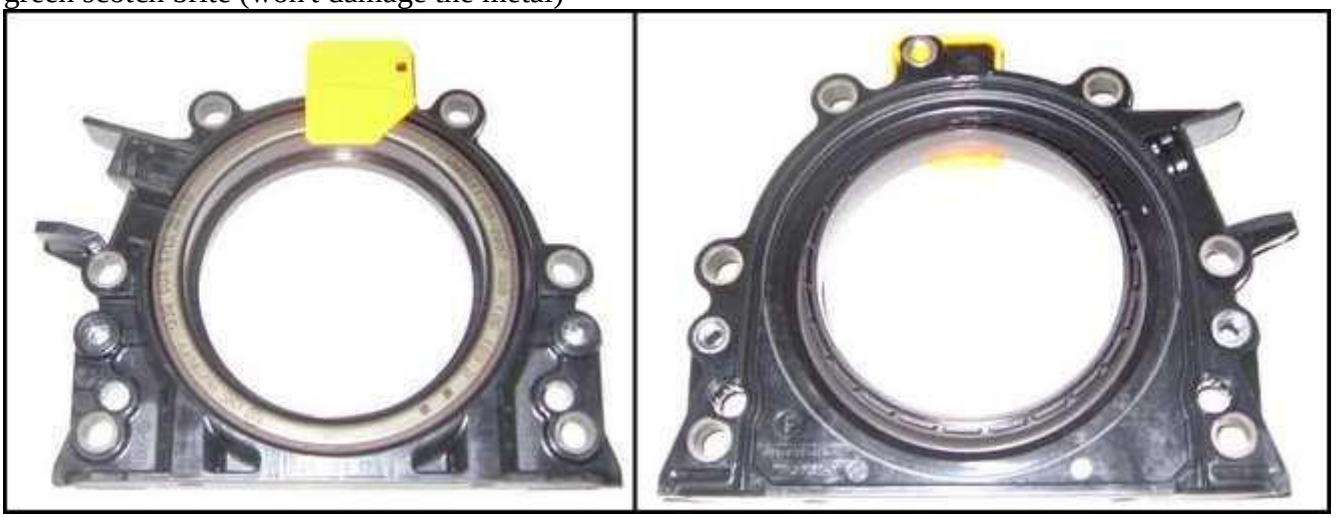
Any acid free hylomar gasket maker should be an acceptable substitute for the VW brand gasket maker.

The rear main seal is relatively expensive because part of the Hall effect engine speed sensor is on it. (yellow arrow in the pictures below). The yellow tab on the seal is to hold it in place until installation.

Rear main seal parts for 2005, 2006 VW Jetta TDI or similar

1 rear main oil seal VW# 038 103 171 s, from worldimpex
gasketmaker
10mm socket and 5mm allen head bit

green scotch brite (won't damage the metal)



VW tool #T10134 from buyequipmentsolutions (VW snap on tool site) or worldimpex (required)

Procedure to replace the engine speed sensor or rear main seal on your VW Jetta TDI

Set the engine to top dead center (TDC). The camshaft rotates once for every 2 crankshaft rotations so if you are using the timing belt side to find TDC, use the crankshaft sprocket lock.

Remove the transmission. Remove the pressure plate bolts (6x 9mm 12 point head bolts) and the flywheel bolts (6x 12mm triple square bolts). The flywheel bolt holes will only align in one orientation. This ensures that the TDC stamp mark is correct. If you are installing a new flywheel, make a mark on the engine to note where TDC is and examine them against each

other off the car. Double check the position of the TDC stamp on the new vs. old flywheel.

Pull the metal shim off. It will stick on the tab at the top and some transmission alignment dowels.

Loosen the 6x 10mm bolts on the front face of the flange. There are also 2x 5mm allen bolts on the underside. On a side note, if you're removing the oil pan you normally have to use a long ball head allen bit to loosen them due to the angle (shown below). It's more secure than

using extensions and a u-joint.

Gently pull the seal flange straight off. Don't pry close to the sealing surfaces of the crankshaft or you might scratch it.

If there's any corrosion around the flange area, gently scrub it away with green scotch brite and wipe clean. Green scotch brite is soft enough to not scratch the metal surfaces or put a scratch into the metal.

The factory service manual's method to replace the RMS flange is to remove the oil pan, install the rear main seal, and then install the oil pan with new oil pan sealant. This ensures that the flange is sealed correctly at the corner and that the bead along the bottom of the flange forms a gasket. You could also, with the oil pan on, put a dab of gasket maker at the corners and an even smear along the oil pan-flange to seal it. Since it's your car the installation method is up to you.

To remove the oil pan, loosen the bolts around the perimeter of the oil pan and thoroughly clean all oil and old gasket maker off the sealing surfaces. Don't use a paper gasket, to seal the oil pan, only use a thin 2-3mm bead of gasket maker. Any gasket maker should be inboard of any bolt holes.

Install the flange and teflon seal dry (no oil or grease). Others report that lubricating the seal lip hasn't caused leaks and it could help the teflon lip slide on, so it's up to you.

Press the flange onto the crankshaft. If there is an install guide sleeve will get pressed out as you guide the flange onto the crankshaft. This prevents folding or damage to the seal.

Set the engine to TDC. On the transmission side, the red pin on VW tool #T10134 will fit into the locating hole on the crankshaft at TDC. The black pin is for gasoline engines.

Torque for the bolts on the rear main seal flange is 11 ft-lbs.

Wait a few hours before refilling the engine with oil to let the seal seat.