

DIY: DSG (02E) Transmission - 40,000 miles maintenance service

Introduction

This document is a reconstruction of the entire service procedure that a fellow member, **WJDell**, performed on my vehicle's transmission on Feb. 22, 2007.

Credit for all the work and recommendations go to none other than this very bright and knowledgeable gentleman. I have already driven over 1,000 miles since the service was performed and the car is running great.

I strongly advise you to always seek the help of an experienced certified mechanic at your dealer's service department when you are in need of this type of service.

Should you decide to perform the procedure yourself, however, and use this document as a reference, please be advised that you are doing so at your own risk.

Should you, at any time, feel uncomfortable with any of the steps involved in the procedure, please stop immediately and consult a professional.

Part I – Getting your vehicle ready for DSG transmission service

What you will need:

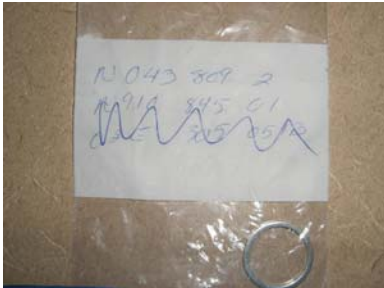
- 6 liters of Direct Shift Gearbox Oil. Part # **G 052 182 A2**.



- 1 Direct Shift Gearbox Filter. Part # **02E 305 051 B**.



- 1 Gasket. Part # **N 043 809 2**.



- 2 Seals. Part # **N 910 845 01**.



- VAS 6262 tool



The cost for all of these parts (excluding the VAS6262) is in the \$120-\$150 range. Several online vendors (ECS Tuning, WorldImpex, etc) do sell the complete kit, which does not include the VAS tool, for a price similar to the aforementioned one.

The VAS 6262 is available at specialized stores and resellers of OEM maintenance parts. This site offers it for just under \$95: <http://www.samstagsales.com/vwaudi.htm>

General recommendations:

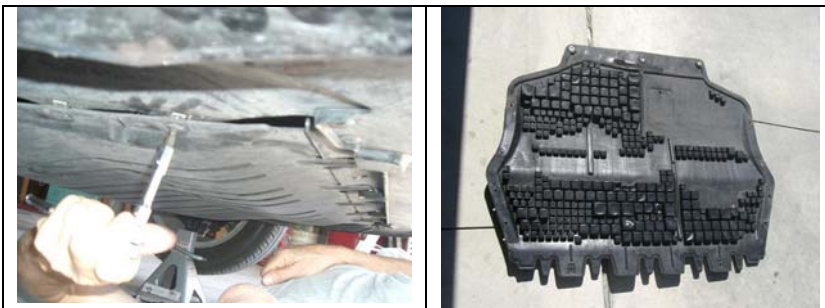
- If possible, the procedure should be performed while the engine is still hot. That will ensure the extraction of the most quantity of transmission fluid, due to its increased fluidity when heated.
- In order to make this documentation more readable, pictures were scaled to thumbnails. You can, at any given time, click the thumbnail to see the full-sized picture.

Part II – Performing the DSG Transmission Service (Mechanical procedure).

- Lift the vehicle. Pay close attention to the lifting points and make sure the car is at level when lifted. The picture below shows the recommended lift points.




- Remove the skid plate. Use a T-30 screwdriver to unscrew the back. Use a T-25 to unscrew the front.



- Remove the air filter box. Unscrew the T-30 screw located at the front bottom of the air filter box, between the box itself and the battery, then pull the box housing straight up from the bottom. There is a grommet on the right side of the box that holds it in place. Use a light amount of force and it will come loose, setting the box free and allowing for removal. The return hose will also need to be removed.



 The picture shows the filter cover being pulled out. That is because the air filter was serviced at the same time the transmission was. If you do not need to service the air filter, then **DO NOT** remove the cover. Pull the entire box out instead. A regular Phillips screwdriver is all you will need to remove the 8 screws holding the filter cover to the box.

- Disconnect the MAF sensor. Depending on the model and/or production date of your car, there should be clips on each side of the sensor, holding it to its connector. Push the clips and pull the sensor straight out. Once the MAF sensor has been disconnected, it is **highly** recommended that you tape both the sensor and its connector with electrical tape, to prevent intrusion of dirt and dust. Set the sensor and the air filter housing cover aside and away from the work area. Regular duct tape can be used to hold them in place.



① Although removing the battery and its tray is recommended, it is still possible to continue to work comfortably without performing the removal. However, should you decide not to remove the battery, you should use a 24mm short socket in 3/8" with a 3/8" swivel.



- With the air filter housing and the return hose out of the way the transmission should be fully exposed, or exposed enough to see its filter housing.
- Unscrew the filter housing cap using a 24mm impact socket, similar to the one shown in the picture on the side.



- Pull the filter housing cap out. Then, remove the old seal with a set of needle pliers and replace with a new seal (N 910 845 01). The location of the seal is outlined in the red polygon in the picture on the side.
- Removing the cap may be a little tricky. We would recommend pressing the inner cooler line inward, toward the engine block. That should yield enough clearance to allow for successful removal of the cap.



- Prior to pulling the filter housing, tilt it slightly and allow residue oil to drain back into the transmission. This is done to greatly reduce contamination of new oil once you reinstall the filter housing.

- Slide the old DSG filter out of its housing. We found that, at 40,000 miles, the DSG filter has collected enough impurity to show visibly dirty, especially when compared side by side with the new filter, as shown in the picture on the side.



- Slide the new DSG Filter in its housing, nipple (or shoulder) downward.

① It is extremely important that no dirt is allowed to come in contact with any of the parts you are handling or replacing. Keep your work area and the replacement parts clean, especially while performing this operation. If you have access to a compressor, blow around the filter prior to its removal, to clear the area from any particles that might enter during removal.

- Put the DSG Filter housing cap back on. It is easier to have someone assist you and hold the air filter housing back and out of the way. Tighten the cap bolt to 20Nm.
- You can now begin to prepare for fluid drainage. Get your pan ready because you are about to extract 5 full liters of fluid.

- Locate the inspection plug. It is located to the left of the oil plug. Unscrew it. Some fluid will start to come out at this point. Be extremely careful as the oil may still be hot and burn your fingers or your hand.

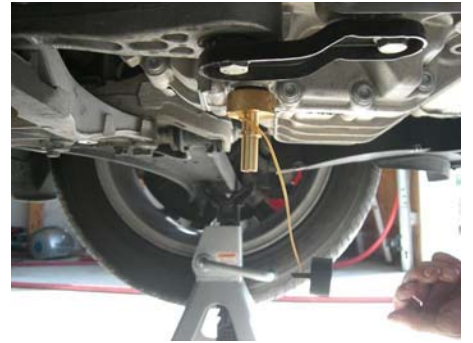


- Remove the black plastic overflow snorkel located in the combination drain fill using an 8mm hex socket head. At this point the DSG oil will start to drain copiously. Let it drain until completely empty. About 5 liters of oil should drain out of the transmission.



- Reinstall the overflow snorkel and tighten to 3Nm.

- You are now ready to start filling your DSG transmission with new oil. Have your VAS 6262 tool ready. Thread the adapter from VAS6262 hand-tight into the combination drain fill.



- Slide the hose portion of the tool through the engine compartment. Then hook the hose to the nipple.



① Shake each oil container well before opening.

- Hook up the first bottle of DSG Oil to the upper end of the VAS6262 Tool. Hold the bottle straight up and open the tool's shut-off valve. Gravity will drop the oil through the hose and up into the transmission chamber. Do not squeeze the bottle. If you do, oil will start leaking from the valve. To increase the flow, hold the bottle higher up instead.



- Make sure that the DSG Transmission is filled with 5.5 liters of oil. About 0.5l to 1.0l of oil will run off later on when we prepare to finish the job. To change bottles simply close the shut-off valve, hook new bottle, and reopen the valve.

Part III – Performing the DSG Transmission Service (Technical procedure).

- ① **DO NOT SKIP ANY OF THESE STEPS AND MAKE SURE THEY ARE PERFORMED IN THE SAME EXACT ORDER AS THEY ARE GIVEN TO YOU.**
- ① VAG-COM (used here) or VAS 5051 is **required**. It is absolutely critical that the DSG temperature is within the recommended range while performing this procedure.
- ① **DO NOT** switch engine on or off unless you are directed to do so.
- ① Make sure VAS6262 hose does not touch any metal parts in the engine compartment to avoid melting the hose due to hot surfaces.

- Hook up VAG-COM into the CAN bus located under the driver's foot well.
- **Start the engine.**
- Start the VAG-COM software. Click the "Select Control Module" button.
- In the Common tab of the Select Control Module screen, select 02 – Auto Trans
- Select Measurement Blocks. Select (or type) group **019**. Watch the ATF (Auto Trans Fluid) Temperature field.
- While you wait for the ATF temperature to rise, sit at the driver's seat. Press the brake pedal.
- While holding the brake pedal depressed, shift into **each** selector lever position and hold it for about 3 seconds. After all positions were shifted into, return the lever into **Park** position.
- When (and only then) the **ATF temperature is in the 35° to 45° Celsius (95°F - 113°F) range**, slide back under the car and disconnect the quick-release coupling of the VAS6262 adapter. At this point all the excess oil will start to drain. We estimated that about ½ to ¾ liters of excess oil should drain.

- ① Should excess drain be higher than normal (1 liter or more), shut the engine off immediately and seek the help of a professional.



- As soon as the excess oil starts to drip, meaning that it has run off, remove the VAS6262 adapter.
- Install a new metal seal in the drain bolt and install. Tighten to 45Nm.
- **Turn the engine off.**
- Reinstall skid plate.
- Perform a test drive to ensure that all is in good working order.



Congratulations! You have successfully performed the scheduled DSG transmission service.