

## INSTRUCTIONS TO TRANSFORM A CAR WITH DSG GEARBOX TO SADEV SEQUENTIAL GEARBOX ST82-17

The following instructions have been made to make easier for the customers the transformation of a car with a DSG gearbox to a Sadev Sequential Gearbox ST82-17 on a pre-modified SEAT LCR body-shell. If the body-shell is previous to chassis number VSSMK35F4ESSP0125 and has not been modified yet, please follow first the instructions on the document **Body-shell modifications 2016**.

The most important parts, that are included on this kit and have to be assembled on the car, are the following ones:

- Sadev Sequential Gearbox ST82-17 (supports, oil radiator, actuator, starter...)
- Driveshafts
- Flywheel and Ceramic Clutch AP Racing
- Clutch pedal and new brake fluid reservoir
- Cooling and oil hoses
- Electric elements (Paddle shift wiring loom, GCU, Blip actuator, Ignition cut relay...)
- EM-BOX
- Control console housing

After that, the steps to do correctly the process are described:

### Disassembly

- 1- First of all, it is important disconnect the battery to avoid any electric problem during the disassembling.
- 2- Disassemble the front bumper. Remove the complete frontend. Remove the air filter, the brake fluid reservoir and the supports.
- 3- Remove the engine and DSG Gearbox, disassemble them and remove the old flywheel. Remove the old driveshafts and the front subframe.
- 4- Keep the wires position inside the EM-BOX. Remove the old red wires from the battery relay to the starter and the other one from the starter to the EM-BOX.
- 5- Remove the old EM-BOX, disconnecting previously the wires. Remove the fuses sheet and keep it with the top and lateral covers to mount on the new EM-BOX.

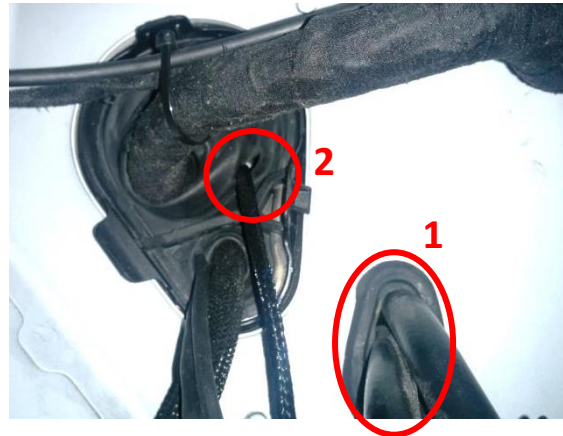


- 6- Remove the gearshift lever, the mechanism and the control console housing. The elements of the control console housing have to be disassembled from the old part and later have to be fixed on the new one.

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### Modifications

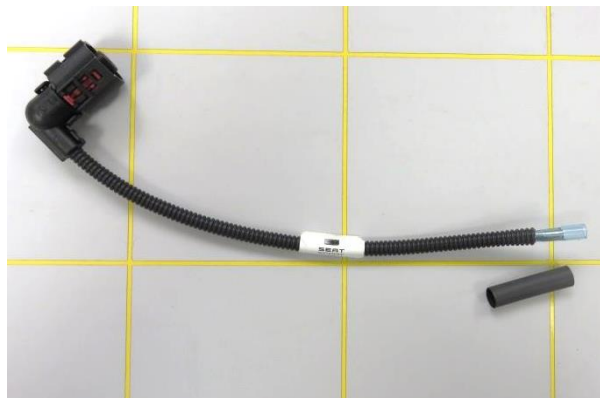
- 1- Modify the current rubber bushing, where the brake pipes pass through, between the reservoir and the master cylinders, to insert also the clutch pipe.
- 2- Make a hole on the rubber bushing, where the main wiring loom passes through to the cockpit, in order to pass the paddle shift wiring loom.



- 3- Modify the lateral timing chain cover according to the following picture with a hammer blow, bending the cover. If this modification is not made, the driveshaft or the flange shaft could touch with it.



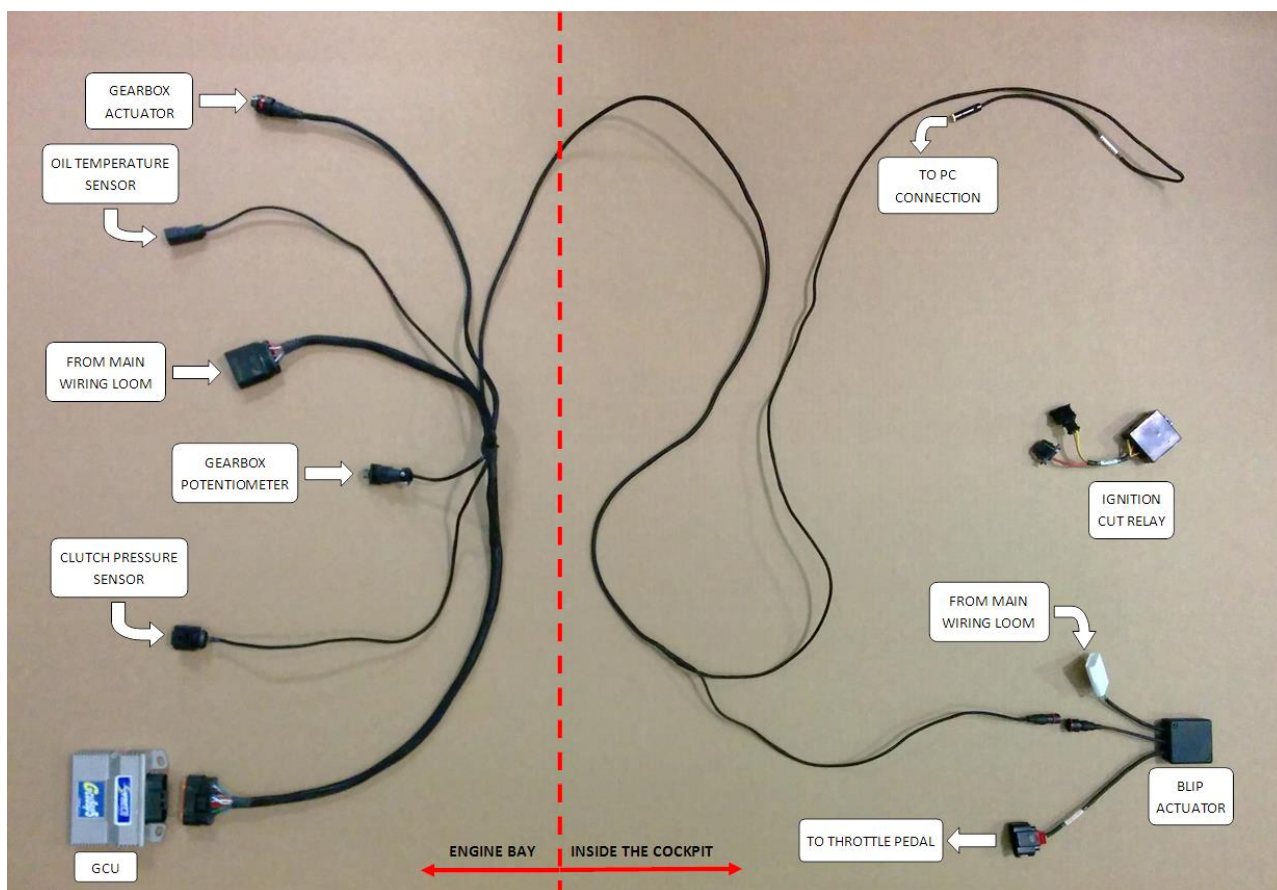
- 4- Modify the push-rod length of the clutch master cylinder, cutting 10mm to get the correct position of the clutch pedal.
- 5- Cut the starter connector from the KSK wiring loom, connect the new lengthen wire (5F6972228) and cover the electrical union with the protection.



## Assembly

- 1- Assemble the new brake fluid reservoir, supports, clutch pedal, clutch master cylinder and pipes following the **PDM 5F6698323**.
- 2- Place the paddle shift wiring loom (5F6971771A) over the left side mount of the car and pass to the cockpit through the same rubber bushing as the main wiring loom **Modification 2**. It has to be connected to the main wiring loom on the connector that is free over the left side mount.

Following, it is shown a scheme of the paddle shift wiring loom and what is connected on each connector. Once the wiring loom is placed and you are sure that the wires are going to arrive to its connectors, fix it using ty-raps. Be careful that any electric wire is not touching parts in movement (cooling fan, gearbox actuator...).



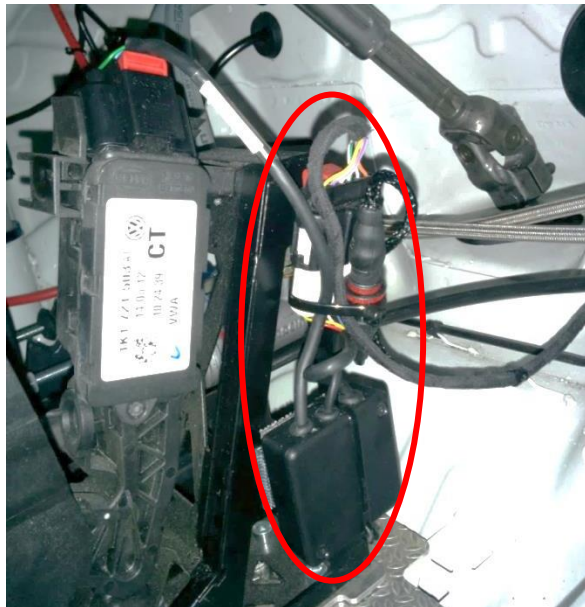
- 3- Fix the new Sadev EM-BOX (5F6907342) to the bodyshell, fix the GCU (VL1B325025) to its bracket, which is placed inside the EM-BOX and plug the connector from the paddle shift wiring loom. Assemble the fuses sheet extracted from the old part. Fix the new red wire (5F6971793) from the battery relay to the starter and the other red wire (5F6972227) from the starter to the EM-BOX. Connect the wires at the EM-BOX in the same position as previously and add the power supply wiring for the gearbox actuator (5F6971028A) in the marked position.



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- 4- Fix the blip actuator (5F6919052) to the throttle pedal support in the same position as it is shown on the picture using Velcro and a ty-rop. Unplug the connector between the main wiring loom and the throttle pedal and connect both connectors from the blip actuator to them.

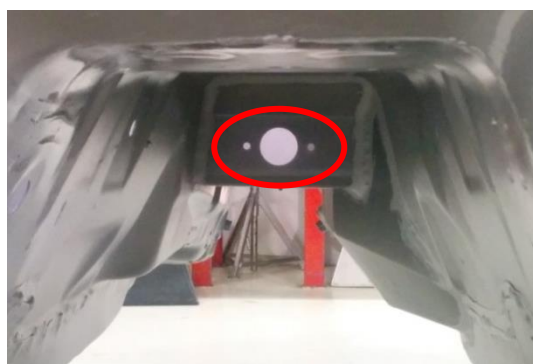


- 5- Fix the ignition cut relay (5F6905107) over the gateway and blackbox to the bodysell using Velcro. Unplug the male-female connectors on the main wiring loom, plug to ignition cut relay to the previous connectors and fix them.

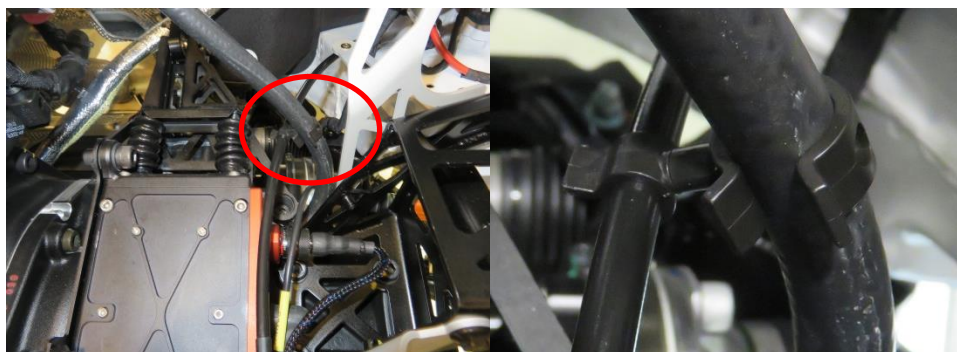
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- 6- Cover the three holes on the tunnel with the caps included on the kit (\_N\_90964901 and \_N\_90911301).

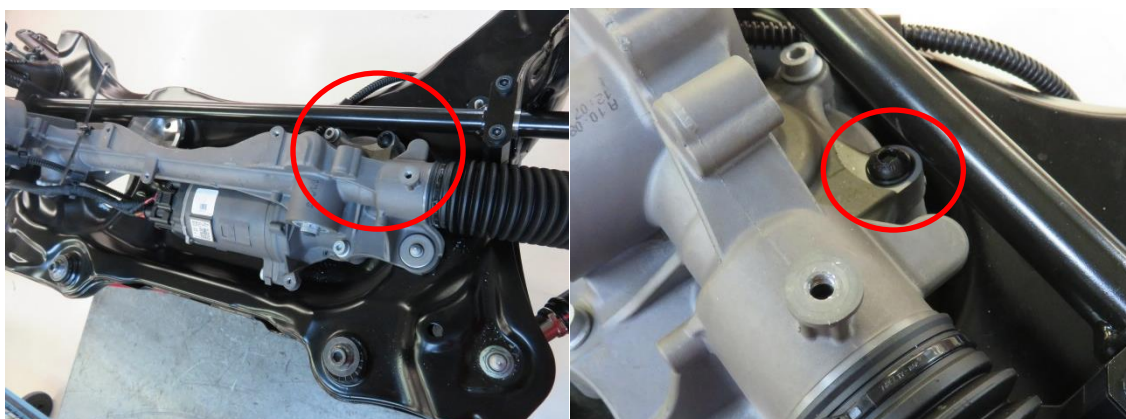


- 7- Replace the flywheel by the new one (5F6105266C) and the AP clutch (5F6141015) according to the page 1 of **PDM 5F6398020A**.
- 8- Replace the water hoses, that arrive to the water pump, by the new ones (\_5Q0122058B and \_5Q0122101CE). Page 2 of **PDM 5F6398020A**.
- 9- Assemble the engine to the gearbox according to the page 3 of **PDM 5F6398020A**.
- 10- Fix the support and the intermediate axle following the page 4 of **PDM 5F6398020A**.
- 11- Assemble the powertrain to the bodyshell and connect the clutch pipe according to the page 5 of **PDM 5F6398020A**. Fix the clutch pipe to the gearbox vent pipe using the double clip (\_8A0905787) included on the kit.



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- 12- Assemble the new air filter brackets (5F6133171C and 5F6133172C) to the gearbox support.
- 13- Assemble the elements removed from the old control console housing and assemble them on the new console (5F6857931).
- 14- Connect every wiring loom that is disconnected (blip actuator, ignition cut relay, paddle shift wiring loom, GCU, EM-BOX, starter wiring, power supply wiring and signal for the gearbox actuator, gearbox potentiometer, gearbox oil temperature sensor, clutch pressure sensor). Connect also the battery.
- 15- Fix the reaction bracket between the gearbox and the front subframe according to the page 3 of **PDM 5F6398020A**, using the old joint bushes. You have to change the reaction tie rod by the new one (5F6199853) because the length is different.
- 16- Assemble the new driveshafts (5F6407271B) following the page 6 of **PDM 5F6398020A**.
- 17- Replace the front antiroll bar spacers and fixations by the new ones included on the kit according to the page 6 of **PDM 5F6398020A**. Replace the bolt that fixes the steering rack by the new one, which is shown on the next picture, using the flat washer included on the kit. After that, you can fix the front subframe to the bodyshell.



- 18- Assemble the air filter and connect every water and air pipes. Assemble the whole frontend and the front bumper. In case of you have buy also the new aero-cooling package (Kit 1), please follow the corresponding instructions.
- 19- The ECU needs to be reprogrammed with a new engine mapping to run with the Sadev Sequential Gearbox and it cannot be made with the software DiagRA-LE. You have to send your ECU to SEAT Sport in order to modify the mapping, according to the **2016 Electronic Updates** document.
- 20- Once everything is connected, you have to change the AIM configuration to be able to read the different channels from the new gearbox. Please contact with the SEAT Sport Technical Department to get this configuration and be able to transmit it to the AIM device.

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- 21- When everything is mounted and connected, you can start the engine and check that all the systems are working properly. Please, make a checklist according to the user manual.

For technical issues you must contact with:

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