Technical Bulletin

January 2020

FITTING INSTRUCTIONS

Dual Dry Clutch

for

KIA OPTIMA 1.7CRDi

Part numbers

Tools needed

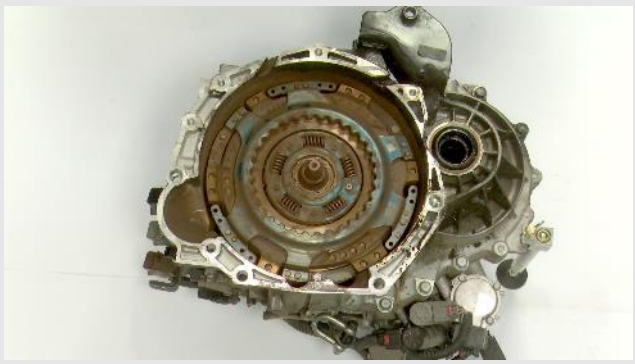
DDC INSTALLER TOOL
This is mandatory to install the new DDC -
PN: 855515

DDC REMOVER TOOL
This tool is mandatory to remove the old DDC
PN: 855516

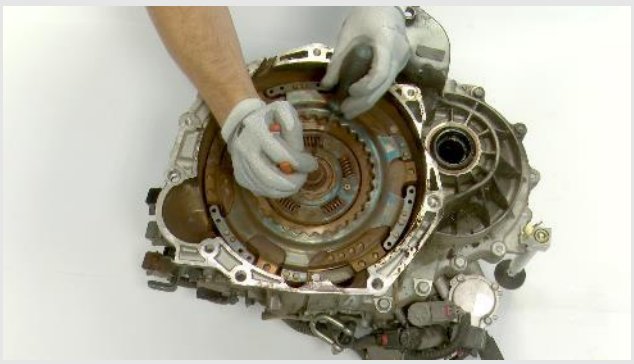
ACTUATOR ADJUSTER JIG
This tool is mandatory to reset the DDC actuator without a diagnostic tool
PN: 855518

DUAL DRY CLUTCH REMOVAL

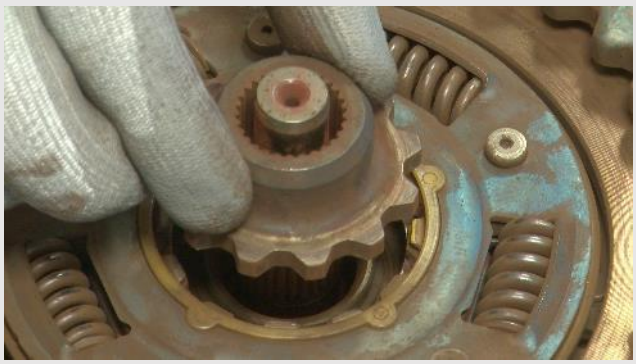
STEP 1 - **Remove the gearbox using a hydraulic lift table.**



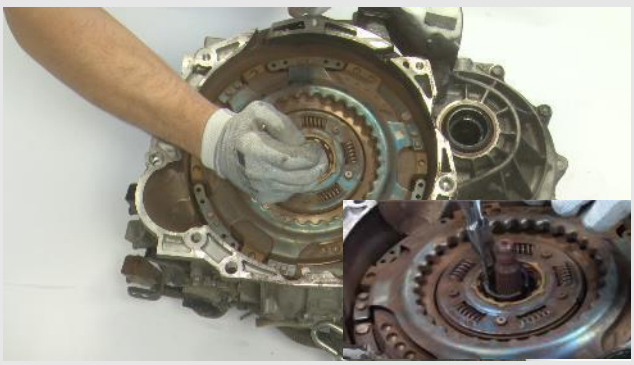
STEP 2 - **Place gearbox on a workbench in a stable horizontal position.**



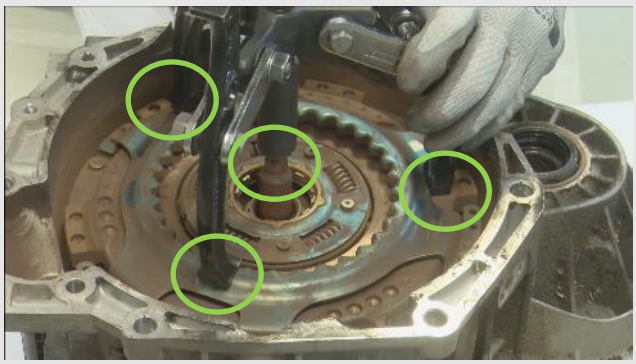
STEP 3 - **Remove the snap ring from the upper hub of DDC package with the snap ring pliers**



STEP 4 - **Remove manually the top hub of DDC package**



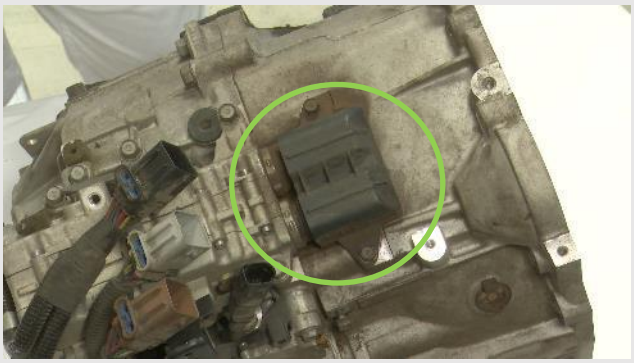
STEP 5 - **Remove the 2nd snap ring from the shaft with a screwdriver**



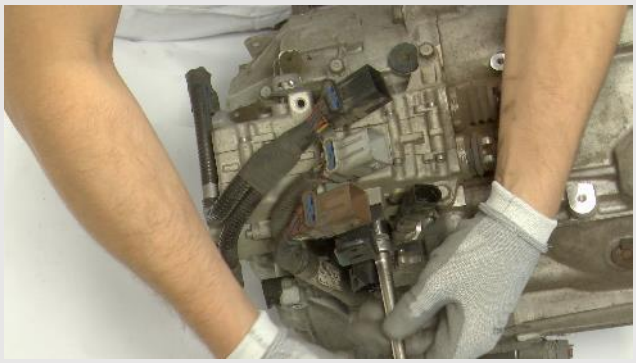
STEP 6 - **Mount DDC Remover (DDCT-02) on the DDC, the axe must be in contact with primary shaft and each leg must be placed below the cover plate**

STEP 7 - **Screw it using a wrench (19) until DDC bearing is completely removed from the primary shaft.**

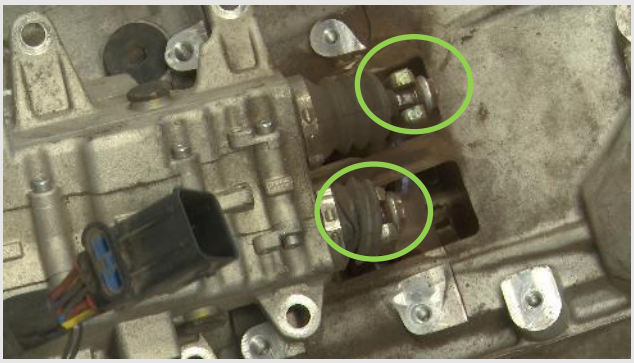
ACTUATOR REMOVAL



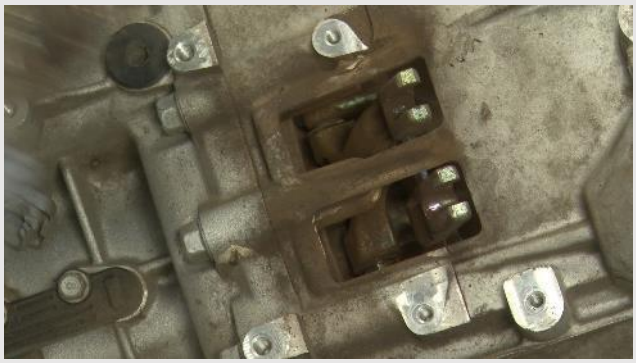
STEP 1 - **Remove the plastic fork cover fixed by two screws.** Use flat wrench 12



STEP 2 - **Remove the 5 screws that fix the actuator to the gearbox .**Use flat wrench 12

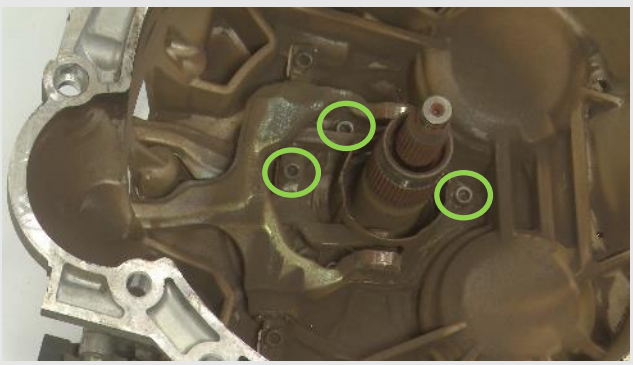


STEP 3 - **Remove manually the two forks fixed on the actuator**



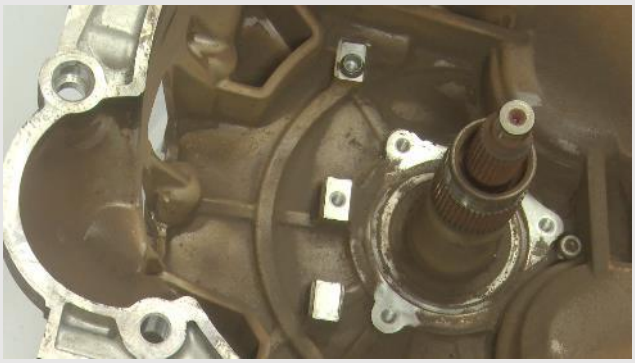
STEP 4 - **Remove manually the two forks fixed on the actuator**

DISASSEMBLY / ASSEMBLY RELEASE SYSTEM

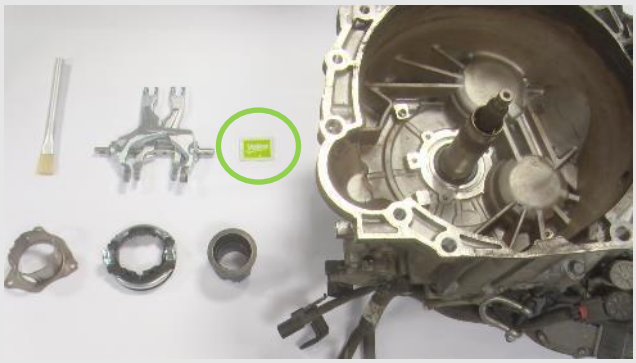


STEP 1 - **Remove the 3 screws that fix the forks to the gearbox.** Use Allen wrench 5

STEP 2 - **Remove both release bearings and 3 screws that fix the guide tube to the gearbox.** Use Allen wrench 5

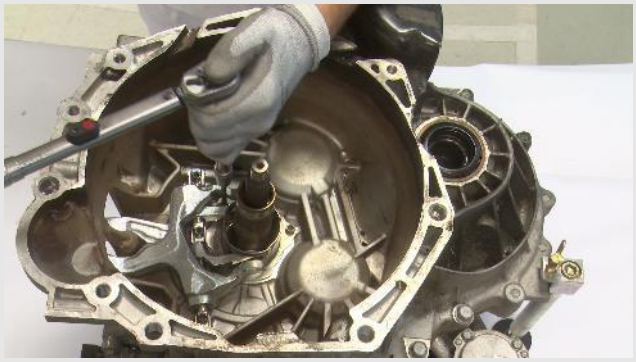


STEP 3 - **Remove guide tube and clean gearbox housing**

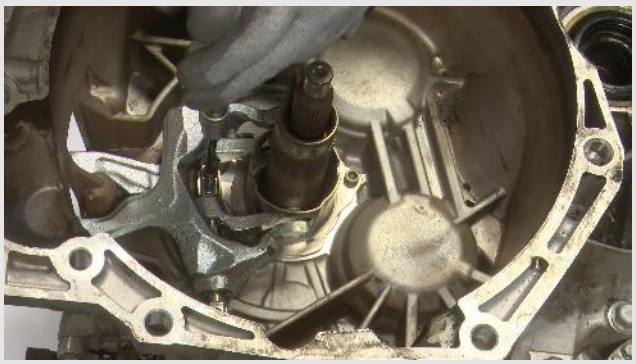


STEP 4 – **Prepare to add the quantity of grease provided by Valeo in box**

STEP 5 – **Add the quantity of grease necessary in forks, bearings and spline shaft**



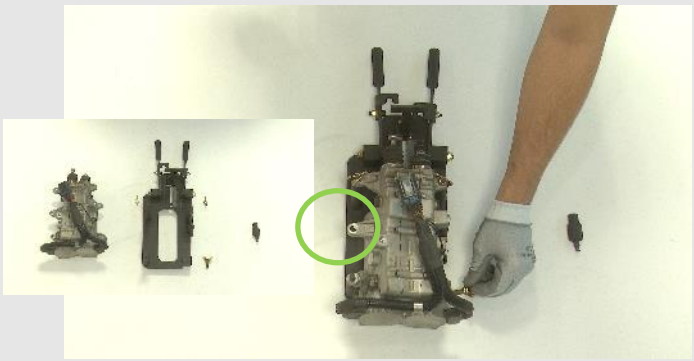
STEP 6 - **Tighten 3 screws (M6) to fix new guide tube to gearbox housing.** Use Allen wrench 5 - Tightening torque **15Nm**



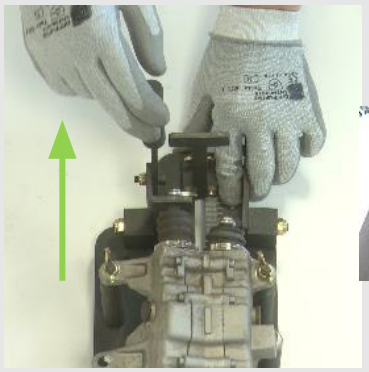
STEP 7 - **Tighten 3 screws (M6) to fix new forks to gearbox housing. Mount release bearing.** Use Allen wrench 5- Tightening torque **15Nm: only fits in one position**

STEP 8 - **Check if the release bearings can slide correctly by acting manually on the dual fork**

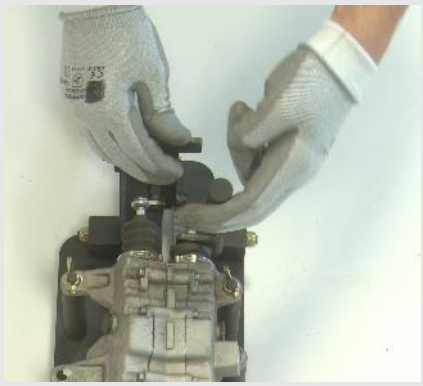
ACTUATOR SETTINGS AND FITTING



STEP 1 - **Fix the actuator on the actuator adjuster tooling (DDCT-03) and tighten 3 screws to fix it correctly**



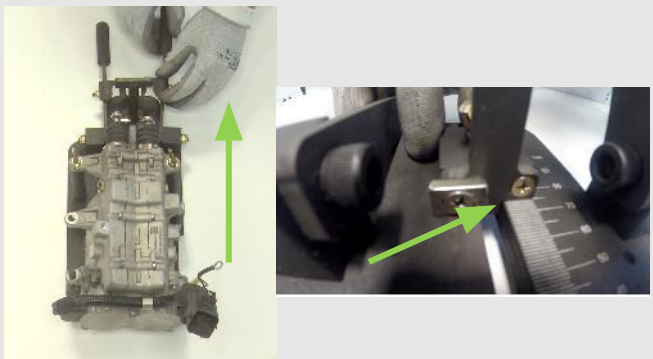
STEP 2 - **Hook the lever with the first cylinder and pull CAREFULLY it until feel the stop, push the ruler to the end and measure the distance :** 59 mm



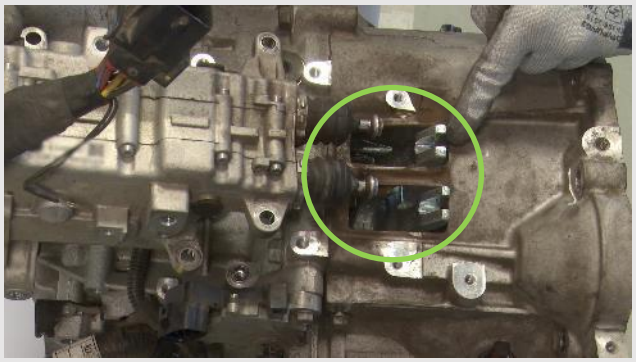
STEP 3 – **Hook the tooling with the s and pull CAREFULLY it until feel the measure the distance on the ruler:** 32

STEP 4 - **Push completely until stop end the cylinder and insert the actuator adjuster (DDCT-04) on the hole. The final length of both cylinders must be 72mm.**

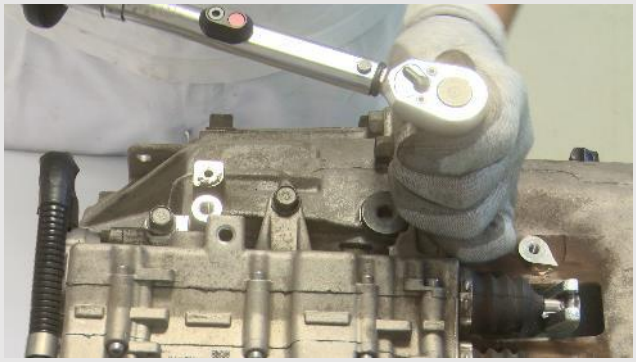
STEP 5 - **Rotate the adjuster to get the correct length. 4 revolution will be 1mm of cylinder displacement.**
Rotations:
Lever 1 : 72 mm – 59mm = 13mm * 4 = 52 tool turns
Lever 2 : 72 mm – 32mm = 40mm * 4 = 160 tool turns



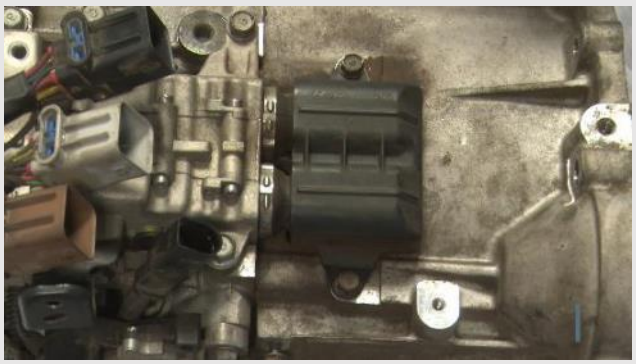
STEP 6 - **Check that the final length is correct (72 mm). Hook the lever with the first cylinder and pull CAREFULLY it until feel the stop, push the ruler to the end and measure the distance :** 72 mm
Repeat the operation for the 2nd cylinder



STEP 7 - **Mount the actuator on the gearbox and insert the cylinder on the forks manually**

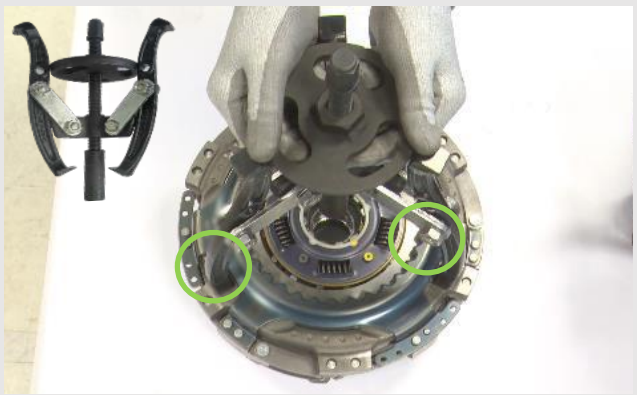


STEP 8 - **Tighten all the screws of the actuator on the gearbox .** Use flat wrench 12 **.**Tightening **torque 25Nm**

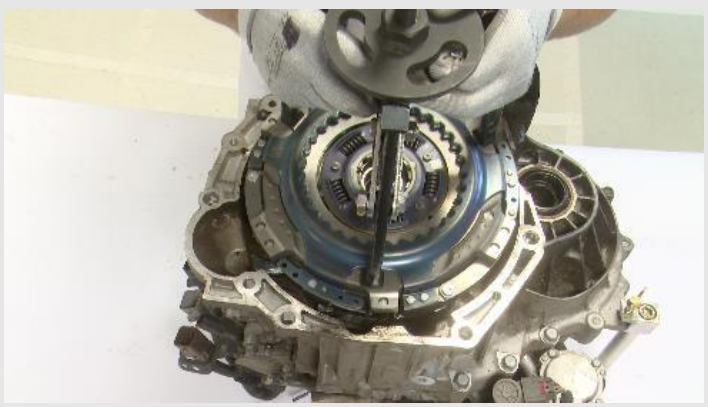


STEP 9 - **Reinstall the plastic top with 2 screws.** Use flat wrench 12. Tightening **torque 25 Nm**

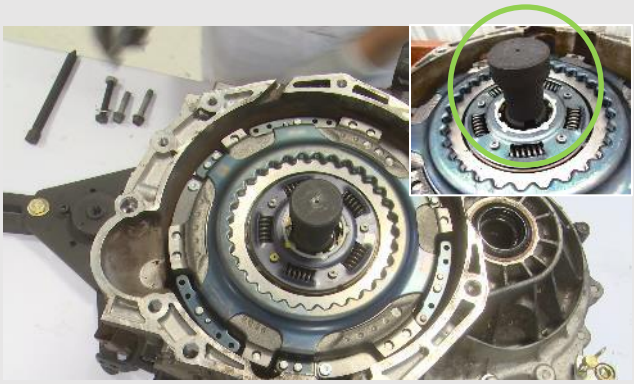
DUAL DRY CLUTCH ASSEMBLY



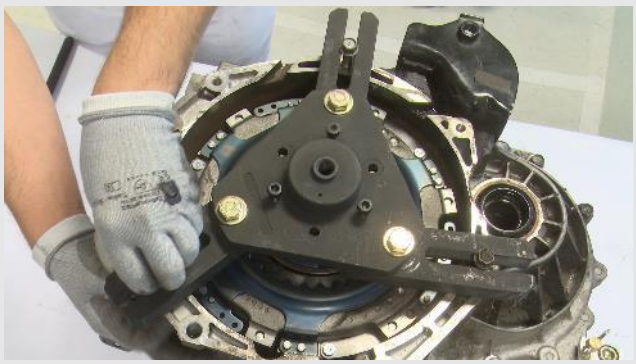
STEP 1 - **Fit the DDC tool (DDCT-02) on the new DDC package. Each leg must be placed and ensure below the cover plate**



STEP 2 - **Fit the DDC on the gearbox main shaft. Be very careful with the weight**

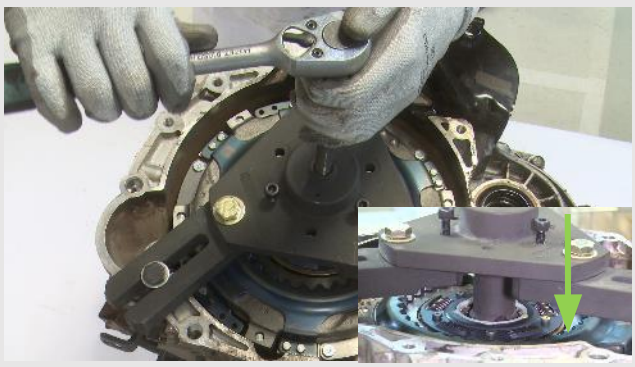


STEP 3 - **Remove the DDC tool DDCT-02 and put the cylinder of the DDC installer tool (DDCT-01) on the main shaft (to push the central bearing)**



STEP 4 - **Place the complete DDC installer (DDCT-01) on the gearbox**

STEP 5 - **Fix the DDC installer tool (DDCT-01) on the gearbox on 3 holes with original gearbox screws**



STEP 6 - **Screw it using a wrench 19" until DDC is completely assembled . When the bearing reach its position, the DDC package will have free play .**

STEP 7 - **Mount the inner snap ring a pliers**

STEP 8 - **Insert manually the hub on the DDC package**

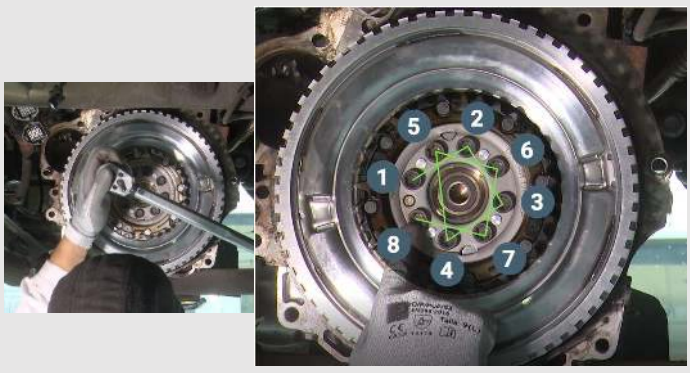
STEP 9 – **Insert the outer snap ring with a pliers**

FLYWHEEL REMOVAL AND FITTING

STEP 1 - **Remove the 8 M10 bolts to extract the flywheel. Remember block the flywheel with a specific tool**

STEP 2 - **Inspect the crankshaft seal, if any presence of leak or damage . Repair it if needed before fit the new flywheel**

STEP 3 - **Position the new flywheel tightening manually the bolts M10x1**



STEP 4 **Apply progressive torque following a star sequence.** Tightening torque 110Nm

STEP 4 - **Reassembly gearbox using the hydraulic lift table smoothly until DDC and flywheel are completely fitted**

FINAL CHECKING

- **Erase all the DTC before start the engine**
- **Check that the clutch is well disengaging and reengaging allowing a smooth shifting of each gear box ratio (including reverse)**
- **Check that there is not abnormal noise when engaging and disengaging operation**
- **Check that that there's not abnormal vibration or noises when increase engine speed in neutral up to 4000 rpm.**
- **Check that there is not abnormal clutch sliding in driving conditions.**