



## INSTALLATION INSTRUCTIONS

### Unlocked DQ501 TCU Swap

UH013-DR2

Unitronic recommends that you read through the entire installation instructions prior to beginning the installation to familiarize yourself with the included components, tools required, and procedures involved with the installation.

**DISCLAIMER: UNITRONIC STRONGLY RECOMMENDS PROFESSIONAL INSTALLATION OF THIS PRODUCT.**

Unitronic Installation Instructions are also available in digital format, if you prefer. Please visit the corresponding product page for a link to download the digital Installation Instructions.  
[www.getunitronic.com](http://www.getunitronic.com)

This product is covered under a limited 3-month warranty from the original date of purchase to the original purchaser. Please contact Unitronic if you have any questions or concerns.

It is recommended to confirm all parts are present prior to beginning the installation.

#### PACKING LIST:

Part Number	Description	Quantity
UH013-DR2	Unlocked DQ501 TCU	1

#### RECOMMENDED TOOL NEEDED:

- ☐ 8mm and 14mm Allen Hex Bit
- ☐ 7mm Socket
- ☐ 10mm socket
- ☐ 0-100nm Torque Wrench
- ☐ T20, T25, and T30 and T45 Torx bit
- ☐ Oil Catch Pan
- ☐ VCDS (VagCom), ODIS (Factory Tool), or Equivalent scan tool
- ☐ 8mm triple-square socket



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## **RECOMMENDED PARTS NEEDED (OPTIONAL - NOT INCLUDED BY DEFAULT)**

- ☐ 9x N 105 540 02 Mech Unit Bolts
- ☐ 1x N 106 379 01 Mech Unit drain bolt
- ☐ 1 x N 013 813 2 Mech Unit drain crush washer
- ☐ 4x N 911 397 01 - Mech Unit outer pan bolts
- ☐ 1x 0GC 927 377 Seal for Mech Unit Connector on Mech pan
- ☐ 1x 0GC 325 183 A - DQ501 DSG Filter
- ☐ 1x N 043 809 2 - Crush washer for main Drain bolt
- ☐ 1x N 910 845 01- Filter housing O-ring
- ☐ 6x G 052 182 A2 - DQ501 DSG OEM oil
- ☐ 1x 0GC 325 201 K - DQ501 DSG Pan

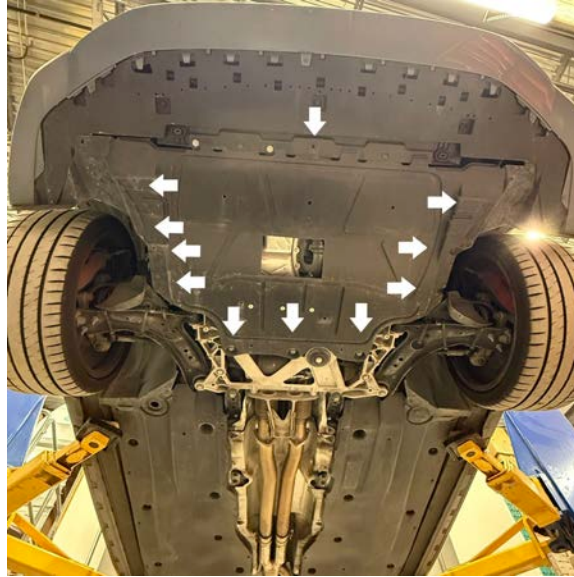
1. Safely hoist up your vehicle. If you are using jacks, secure it using jack stands to gain access to the underside of the vehicle. For this service, it is required to have the vehicle as level as possible. It is also recommended to clean your workspace in preparation for the mechatronic unit to be split from the TCM.
2. Place the vehicle into Park and engage the emergency brake
3. Disconnect the negative battery terminal using a 10mm socket or wrench
4. Under the vehicle, remove the eight (8) T25 Torx and the three (3) T45 Torx from the belly pan



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5. Using a 7mm socket, remove the charge pipe silicone completely from the vehicle.



6. Using your 10mm socket, remove the four (4) nuts that are used to fasten the charge pipe to the mechatronic pan. The clamp for the charge pipe to the throttle body can be accessed from the top with a 7mm socket. This will need to be loosened in order to remove the charge pipe from the vehicle.



7. Disconnect the TCM connector by turning the locking tab counterclockwise (to the left). Once turned, the connector must be pulled towards the front of the vehicle.

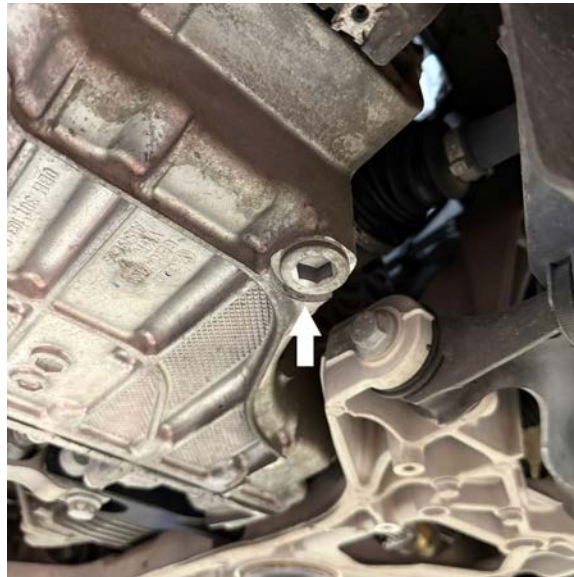


8. Remove the Mechatronic retainer clip. This may be easier from the top of the vehicle with the airbox removed.





9. Using a catch pan and a 14mm Allen hex bit, remove the main DSG drain plug on the bottom of the transmission.



10. With the 14mm drain plug removed, use an 8mm hex bit to remove the transmission fill tube inside the main drain port. The majority of the transmission fluid will drain with the fill tube removed.
11. Using an 8mm triple square bit and your catch pan, slowly remove the mechatronic drain plug on the side of the transmission. It is recommended to slowly remove the drain plug to control the flow of the fluid.



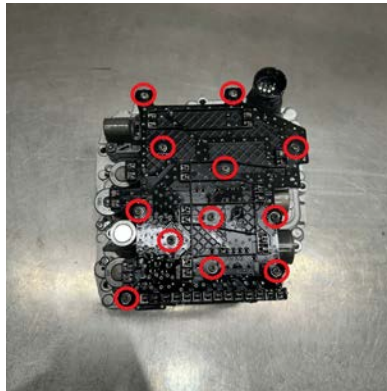
12. Using a 10mm socket, remove the four (4) fasteners that hold the Mechatronic cover to the transmission, and remove the cover completely. Be sure to have a catch pan ready. DSG oil will spill when the cover is removed.



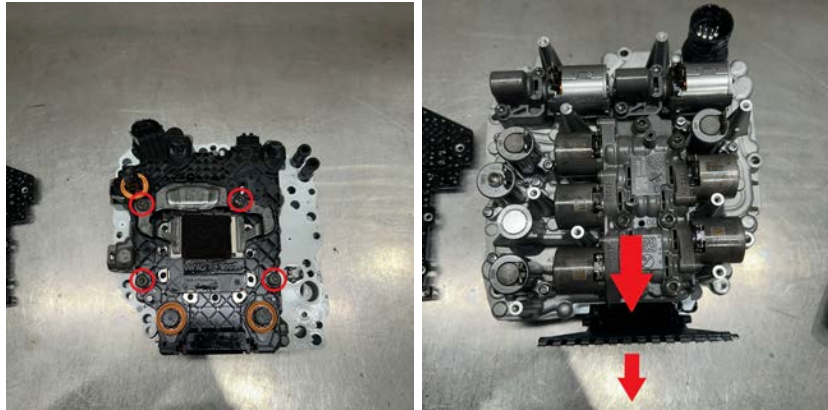
13. Using a T30 torx, remove the nine (9) fasteners that hold the mechatronic into the transmission. It is recommended to have someone hold the mechatronic in place while the last bolt is removed to ensure it does not fall out of the transmission.



14. With the mechatronic placed on a clean workspace, remove the twelve (12) T20 torx fasteners from the front side of the mechatronic unit and remove the plastic cover by pulling up on the plate. This plate is connected to the mechatronic and the TCM. Use even force when removing the plate from the mech unit.



15. Use a T30 Torx to remove the four (4) fasteners holding the TCM to the mechatronic. The connector portion can be flipped out to clear the mechatronic when being removed.



16. Carefully split the TCM from the mechatronic, taking note of the orientation of the unit. The replacement TCM will need to be placed in the same orientation.

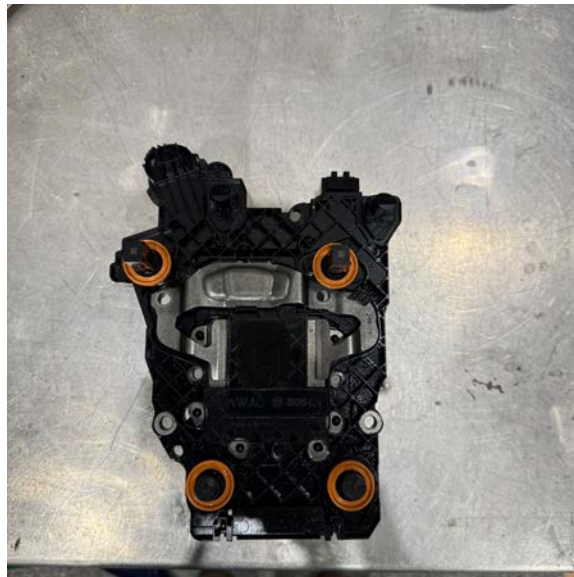


17. Some TCMs may not come with the Cutch Pressure Sensor Plate installed. This will require you to swap the CP plate from your existing TCM to the new unlocked TCM. To remove the plate, use your finger to push down on the tab in the photo and pull the plate up and to the left to release it from the tabs. **This should not require excessive force to remove or install.**



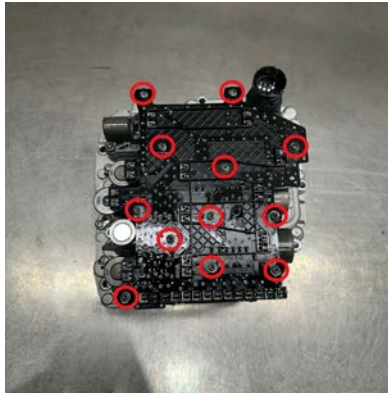


18. Place the clutch pressure sensor plate onto the replacement TCM by first sliding in the right side of the plate under the tab shown in the photo below, then push into place, ensuring that the plate clips in and is 100% seated



19. The replacement TCM may require you to transfer your (orange) seals from the original TCM. Take note of the fully seated orientation BEFORE removing them from the original TCM. Be sure to transfer these over in the correct orientation BEFORE proceeding to the next step.

20. Place the new replacement TCM on the mech unit and use the four (4) fasteners that were removed to secure the TCM to the mech. The fasteners are of different lengths, take note of the position and replace them in the same orientation.
21. Reinstall the plate using the twelve (12) fasteners that were removed in step 13. With the plate reinstalled, ensure that all the contacts are making contact with the Mech unit and TCM.



22. Place the mech unit back into the transmission, carefully aligning the unit inside the transmission.
23. Reinstall the nine (9) fasteners holding the mech unit to the transmission. These torque to 8NM + 45 degrees. Please follow the torque sequence below. It is recommended to replace the bolts on the Mech unit once removed.



24. Reinstall the transmission Pan using the four (4) fasteners. (8Nm + 60°)
25. Plug the Mechatronic connector. This plug should not be forced, if it is being forced, it is not in the correct position.
26. Reinstall the mechatronic unit drain plug and tighten to 10Nm + 45°.
27. Reinstall the electrical bracket that was removed in step 7 and the charge pipe that was removed in step 5.

28. Reinstall the transmission fill tube, this should be hand-tight (Do not over-torque the fill tube)
29. Fill the transmission with the manufacturer-specified gear oil and follow the steps below to correctly set the level.

**[THE FOLLOWING STEPS REQUIRE ROSS-TECH VCDS, OBDELEVEN OR SIMILAR DIAGNOSTIC TOOL]**

30. A Ross-Tech VCDS®, OBDeleven cable or similarly capable diagnostic scan tool is required in order to proceed with the following sequence to run the following test(s) in order to reset the clutch characteristic curve.

1. Turn Ignition ON. DO NOT START THE ENGINE.
2. Ensure the gear selector is in Park
3. Plug in the scan tool and navigate to 02-Auto Transmission. The remainder of the instructions will be done assuming you are using VCDS, but the OBDeleven procedure is very similar.
4. Navigate to Basic Settings and choose *Reset Clutch Characteristic Curve* from the drop-down menu.
5. Click "GO". The clutch characteristic curve will be instantly reset. You may not see it happen and it may immediately say "Not Running". The values should now be reset.
6. Next, select *Reset Clutch Data*
7. Next, select *Reset CAN Installation*
8. Next, select *Reset Gear Selector Data*
9. Take the vehicle for a drive starting at slow speeds, and allow the gearbox to go through all the gears. You should drive the vehicle for 20km (12.5mi).
10. Once the 20km drive is complete, go back to your diagnostic tool, 02-Auto Trans. > Basic Settings. With the engine at idle and the vehicle in Park (P), press and firmly hold the brake pedal and select *Run Basic Settings of Transmission*. Please note, you may hear some clunks and loud noises from the gearbox during this procedure as it runs basic settings and adaptations.

**Congratulations, you have successfully installed your Unlocked DQ501 TCU.**

**Remember, the TCU has already been tuned with Unitronic's TCU Performance Software.**

**ATTENTION** — The clutches will need time to fully adapt. Adaptations are continually taking place in the replacement TCU during all driving at all times, but ensure you allow for at least 100 km's of mixed driving to allow for adaptations to take place to creeping, up-shifts, and down-shifts through low, middle, and high load driving scenarios. You may notice initially that releasing your foot off the brake pedal results in slow reaction to move forward (creeping) initially, but this should improve over time. You may also notice the clutch engagement when lightly accelerating from a stop after releasing your foot off the brake pedal may be harsher than usual, but this should improve over time.



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