



VAG DL501 Billet DSG Oil Pipes
Installation Instructions - [Click HERE to Shop](#)



Skill Level
2 - Moderate
Some Experience
Recommended



Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

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REQUIRED TOOLS

Note: The tools required for each step will be listed by the step number throughout these instructions.

Standard Automotive Tools

- Protecta-Sockets (for lug nuts)..... [ES#2221243](#)
- **3/8" Drive Ratchet**..... [ES#2765902](#)
- 3/8" Drive Torque Wrench..... [ES#2221245](#)
- **3/8" Drive Deep and Shallow Sockets** [ES#2763772](#)
- **3/8" Drive Extensions** [ES#2804822](#)
- **Hydraulic Floor Jack** [ES#2834951](#)
- **Torx Drivers and Sockets** [ES#11417/8](#)
- 1/2" Drive Deep and Shallow Sockets..... [ES#2839106](#)
- 1/2" Drive Ratchet
- 1/2" Drive Extensions
- 1/2" Drive Torque Wrench..... [ES#2221244](#)
- 1/2" Drive Breaker Bar [ES#2776653](#)
- Crows Foot Wrenches
- Open/Boxed End Wrench Set [ES#2765907](#)
- **Hook and Pick Tool Set**..... [ES#2778980](#)

Required For This Install

Available On Our Website

- **1/4" Drive Ratchet**..... [ES#2823235](#)
- **1/4" Drive Deep and Shallow Sockets**..... [ES#2823235](#)
- **1/4" Drive Extensions**..... [ES#2823235](#)
- **1/4" Drive Torque Wrench**
- Plier and Cutter Set..... [ES#2804496](#)
- **Flat and Phillips Screwdrivers** [ES#2225921](#)
- **Jack Stands** [ES#2763355](#)
- Ball Pein Hammers
- Pry Bar Set..... [ES#1899378](#)
- Electric/Cordless Drill
- Wire Strippers/Crimpers
- Drill Bits
- Punch and Chisel Set
- **Hex Bit (Allen) Wrenches and Sockets** [ES#11420](#)
- Thread Repair Tools [ES#1306824](#)

Specialty Tools

- **Transmission Oil Filler Tool**

INSTALLATION NOTES

- **RH** refers to the *passenger side* of the vehicle.
- **LH** refers to the *driver side* of the vehicle.
- Always use the proper torque specifications.
- If applicable to this installation, torque specifications will be listed throughout the document and at the end as well.
- Please read all of these instructions and familiarize yourself with the complete process **BEFORE** you begin.

GENERAL PREPARATION AND SAFETY INFORMATION

ECS Tuning cares about your health and safety, please read the following safety information. This information pertains to automotive service in general, and while it may not pertain to every job you do, please remember and share these important safety tips.

- Park your car in a safe, well lit, level area.
- Shut the engine off and remove the key from the ignition switch.
- Make sure any remote start devices are properly disabled.
- **ALWAYS** wear safety glasses.
- Make sure the parking brake is applied until the vehicle is safely lifted and supported.
- Whether lifting a vehicle using an automotive lift or a hydraulic jack, be sure and utilize the factory specified lift points.
- Lifting a vehicle in an incorrect location can cause damage to the suspension/running gear.
- **ALWAYS** support the vehicle with jack stands.
- **ALWAYS** read and follow all safety information and warnings for the equipment you are using.



NEVER get underneath a vehicle that is supported only by a jack, and **ALWAYS** make sure that the vehicle is securely supported on jack stands.

PROJECT OVERVIEW

In order to gain access to the DSG oil pipes we must remove the mechatronic unit by doing the following:

- Remove applicable underbelly panels and braces.
- Disconnect and remove the external mechatronic unit connector.
- Drain the DSG oil, remove the DSG oil pan, and remove the internal DSG oil filter.
- Disconnect the external DSG oil filter housing from the mechatronic unit.
- Disconnect the internal mechatronic unit connector and remove the mechatronic unit.

With the mechatronic unit removed we can easily access and swap the oil pipes (arrows in **Photo #1 & #2**). Once the new pipes have been installed we will reassemble in reverse order of removal and refill the DSG oil to the proper level.

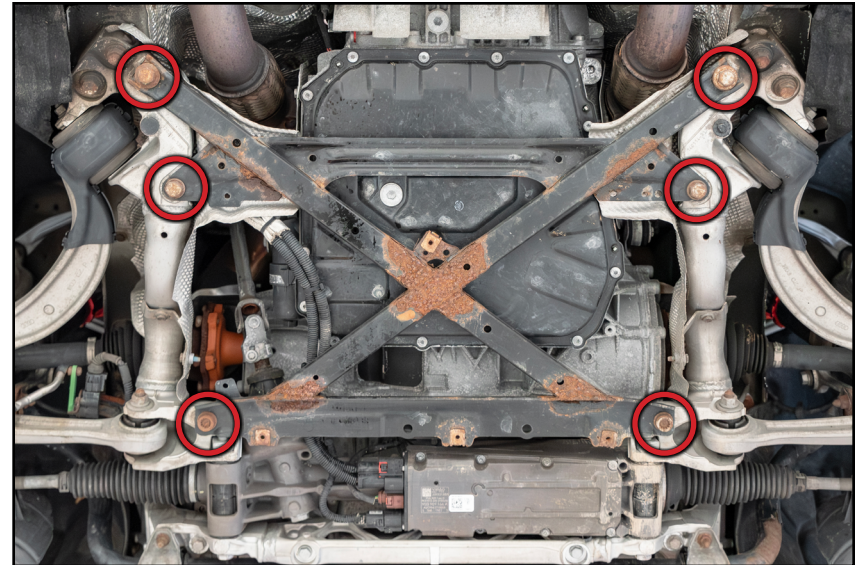
Let's get started!



REMOVING THE STOCK OIL PIPES

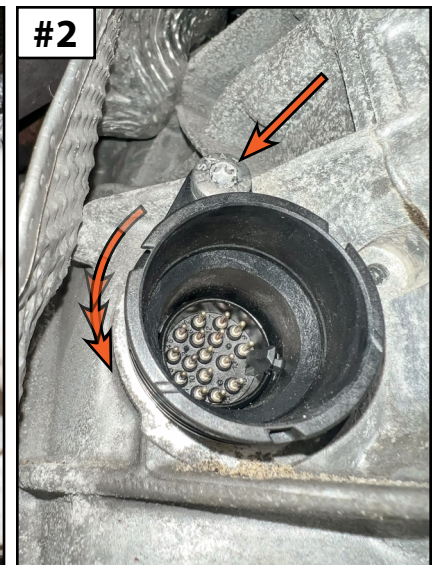
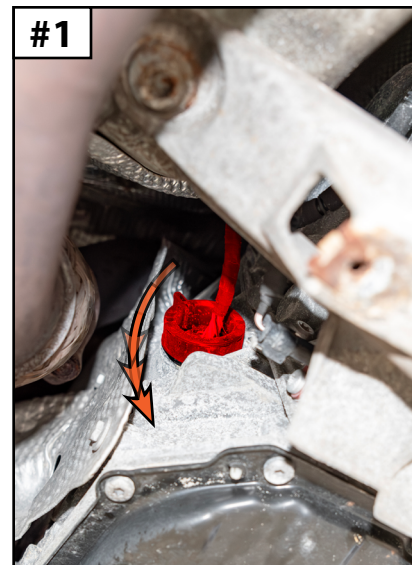
Step 1: 18mm, M14 Triple Square Socket & Ratchet

Disconnect the battery, then safely lift and support the vehicle and remove the engine and transmission underbody panels. Disconnect the power steering lines or harness from the underbody brace, then remove the bolts (circled in **RED**) and remove the brace from the underside of the vehicle.



Step 2: T30 Torx Socket & Ratchet

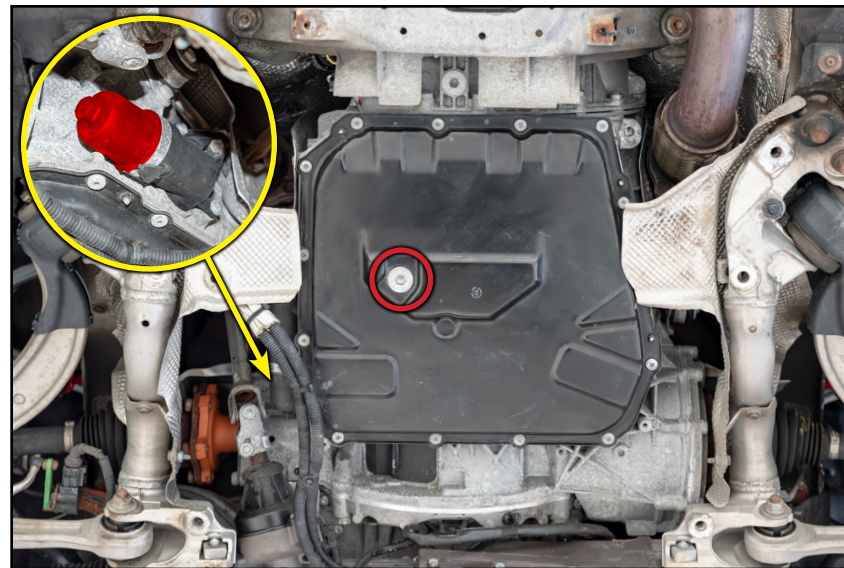
Rotate the external mechatronic unit connector (highlighted in **RED** in **Photo #1**) counter-clockwise until it is disconnected, then pull it free from the connector housing. Remove the screw (arrow in **Photo #2**), rotate the connector housing counter-clockwise to free it from the mechatronic unit, then pull it free from the transmission.



REMOVING THE STOCK OIL PIPES

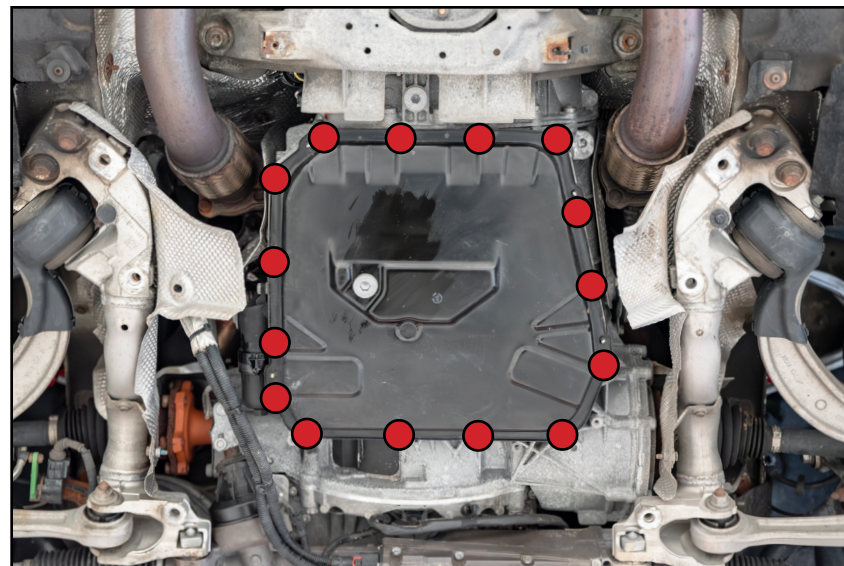
Step 3: 10mm Hex (Allen) Socket & Ratchet

Remove the drain plug (circled in **RED**) from the DSG oil pan and completely drain the DSG fluid. Remove the external oil filter housing cap (highlighted in **RED** in inset photo), drain the fluid from the oil filter housing, then reinstall the cap.



Step 4: T30 Torx Socket & Ratchet

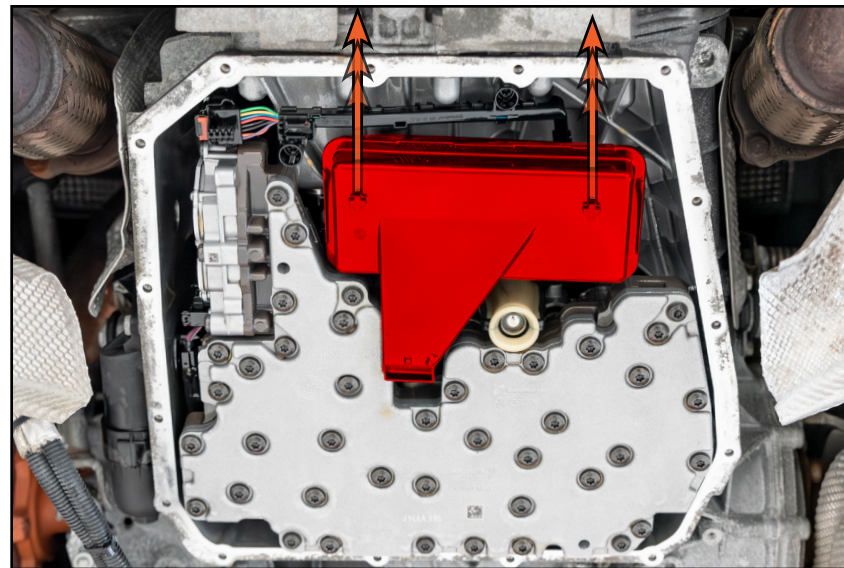
Reinstall the oil drain plug then remove the screws (**RED** circles) and carefully remove the DSG oil pan from the transmission and carefully set it aside.



REMOVING THE STOCK OIL PIPES

Step 5:

Pull the internal DSG oil filter (highlighted in **RED**) rearward to remove it from the transmission.



Step 6: Angled Pick Tool

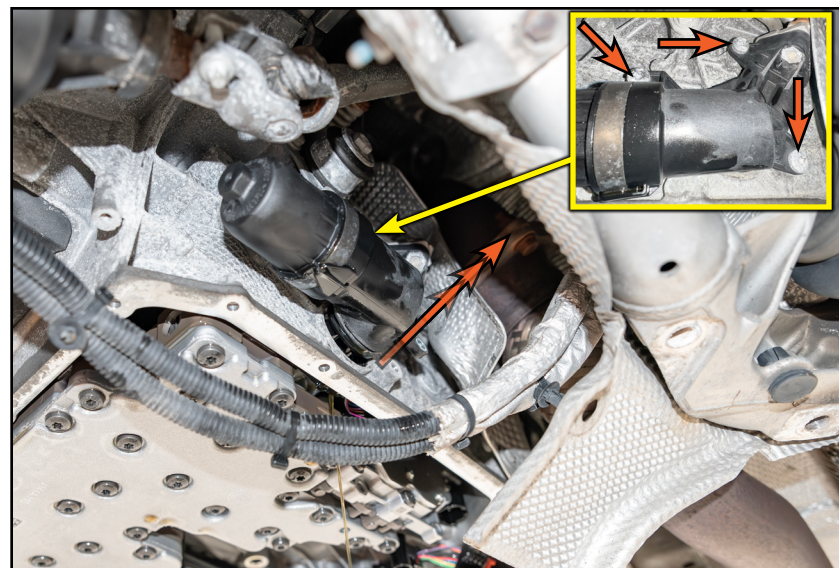
Pull downward on the locking tab (arrow) to unlock the internal mechatronic unit connector (highlighted in **RED**), then depress the retaining tab and disconnect the connector.



REMOVING THE STOCK OIL PIPES

Step 7: T30 Torx Socket & Ratchet

Remove the three screws (arrows in inset photo) and pull the external DSG oil filter housing free from the transmission.

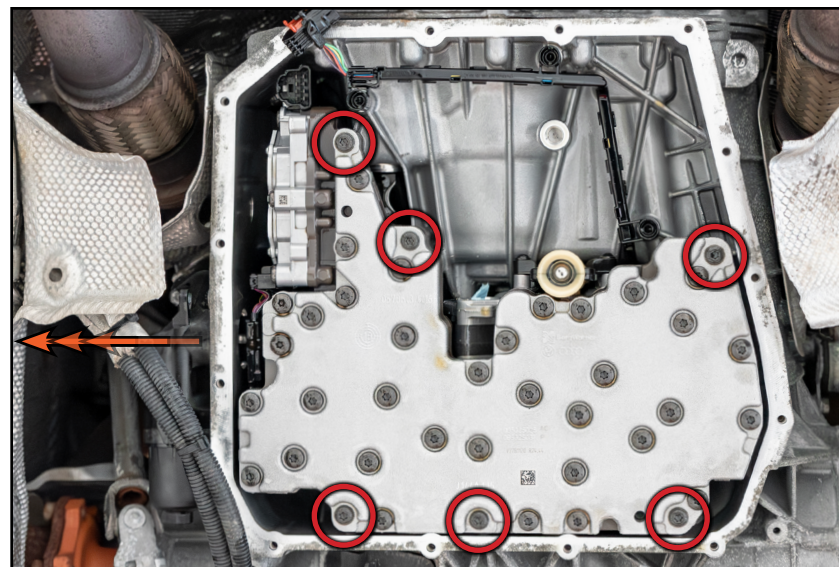


Step 8: T30 Torx Socket & Ratchet

Support the mechatronic unit from below with the help of a second technician or a transmission jack, then remove the six screws (circled in **RED**) that secure the mechatronic unit in place. Pull the external oil filter housing away from the transmission, ensuring the internal pipes clear the mechatronic unit, then carefully pull downward on the mechatronic to free it from the transmission and gently set it upright on a clean microfiber cloth.



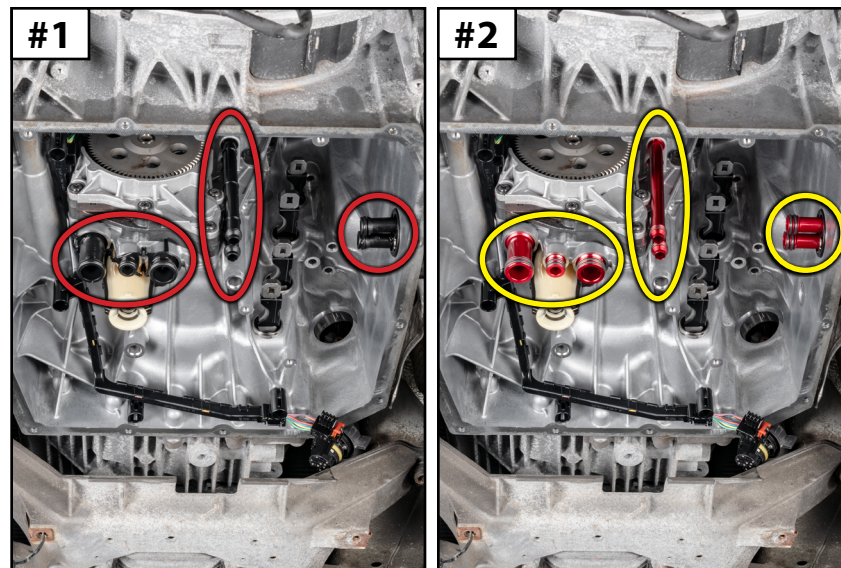
CAUTION: Removing the incorrect screws will cause damage to the mechatronic unit, the heads of the screws that secure the mechatronic unit in place are typically a different color or diameter than the rest of the screws.



INSTALLING THE NEW BILLET OIL PIPES

Step 1:

Remove the factory plastic DSG oil pipes (circled in **RED** in **photo #1**) and replace them with the new billet pipes (circled in **YELLOW** in **Photo #2**.



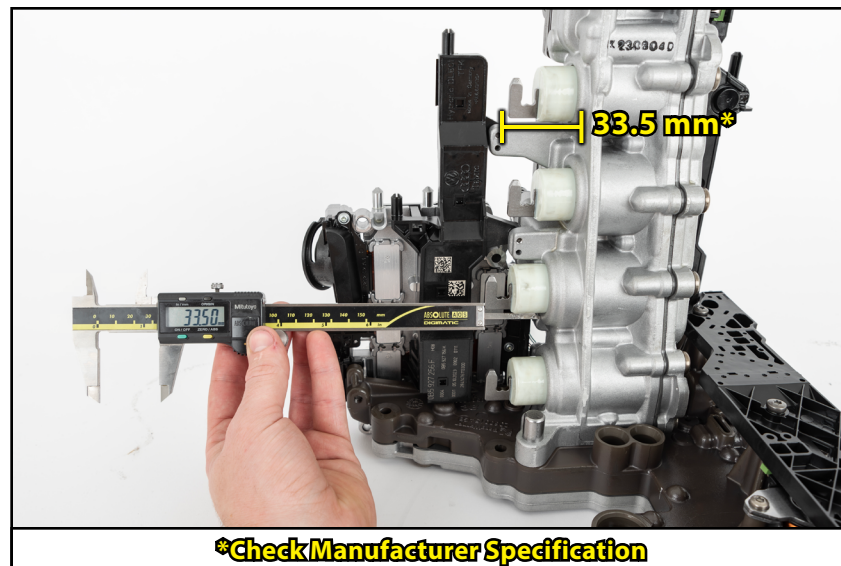
Step 2:

Inspect the gear actuators and ensure that they are all extended to the correct manufacturer specified dimension as shown, adjust each gear actuator as necessary.

This installation was completed on a DL501-equipped Porsche Macan with a specification of 33.5mm. If you are installing these pipes on an Audi, locate the ID# stamped on the bottom of the mechatronic unit and reference the specifications below:



Up to ID# L31B1137: 28mm
From ID# L31B1137: 32mm

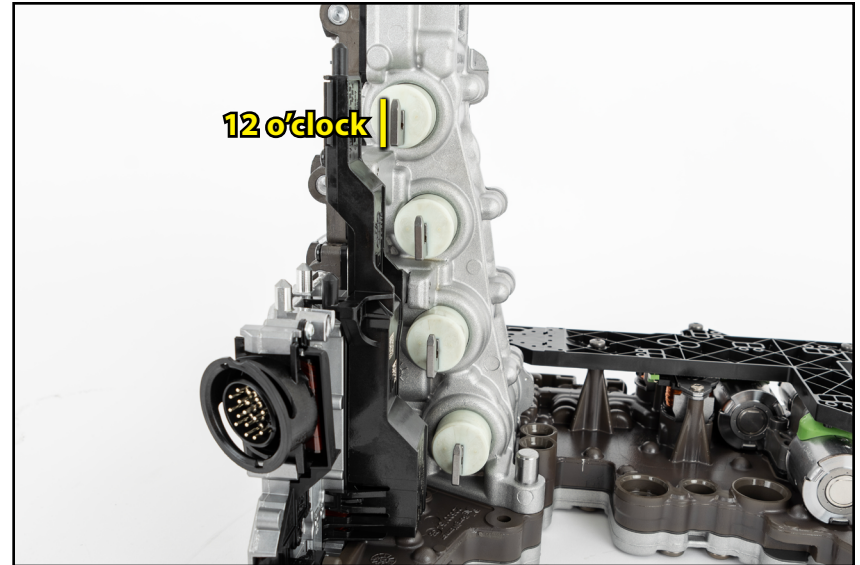


***Check Manufacturer Specification**

INSTALLING THE NEW BILLET OIL PIPES

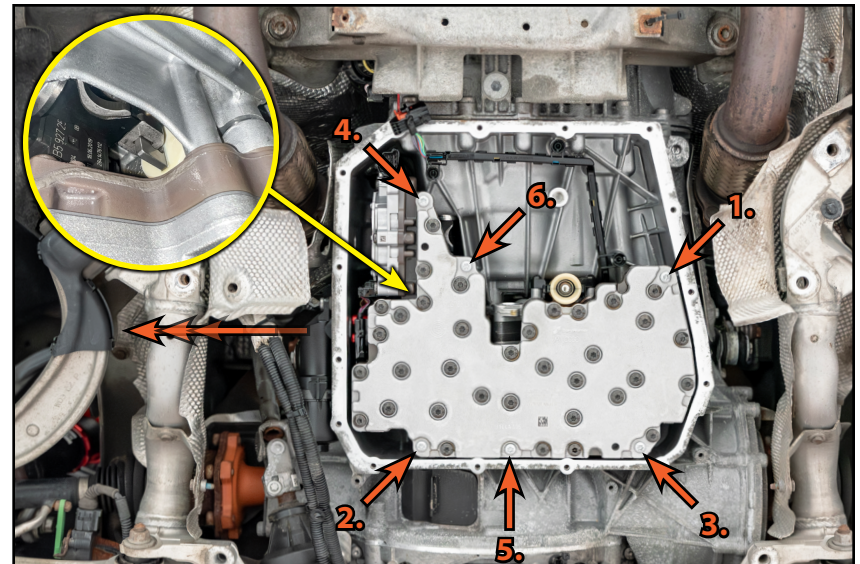
Step 3:

Inspect the metal driver on each gear actuator and ensure that they all are positioned in the 12 o'clock position as shown, adjust each gear actuator as necessary.



Step 4: T30 Torx Socket & Torque Wrench

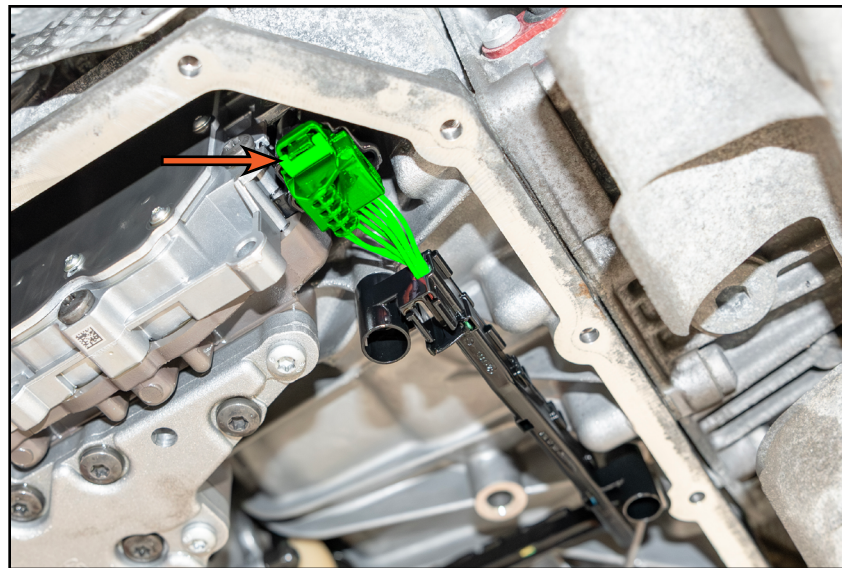
Pull the external oil filter housing away from the transmission, ensuring the internal pipes clear the mechatronic unit, then carefully lift the mechatronic unit into place, ensuring the gear actuators engage the eyelets on the shift forks (as shown in inset photo). Replace the screws (arrows) and torque them in the sequence shown in the photo on the right to 8 Nm + 90 degrees.



INSTALLING THE NEW BILLET OIL PIPES

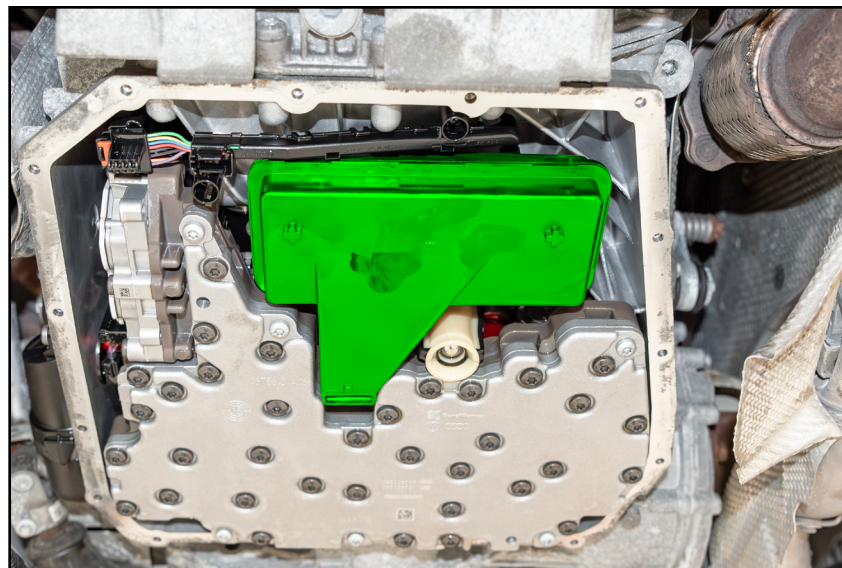
Step 5:

Reconnect the internal mechatronic unit connector (highlighted in **GREEN**) then reengage the locking tab (arrow).



Step 6:

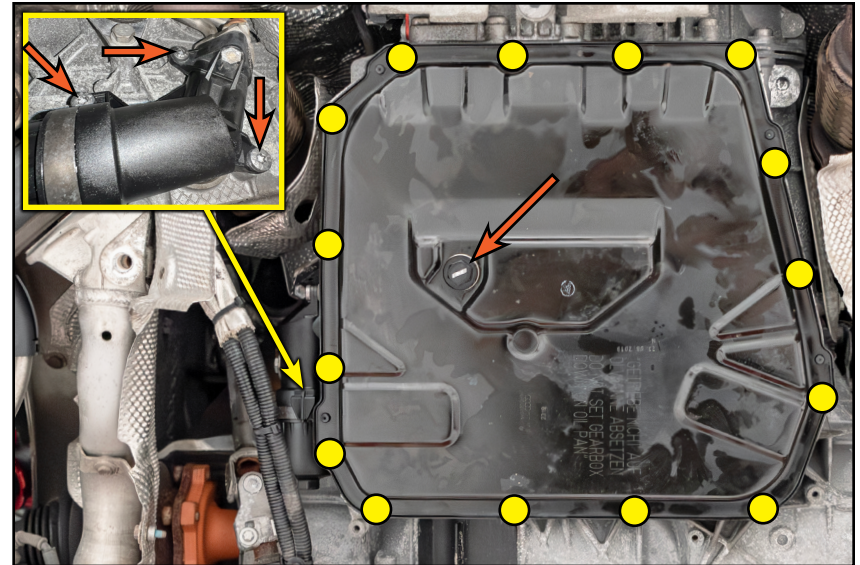
Replace the internal DSG oil filter (highlighted in **GREEN**) ensuring the filter is fully seated in the transmission.



INSTALLING THE NEW BILLET OIL PIPES

Step 7: 10mm Hex (Allen), T30 Torx Socket & Torque Wrench

Reinstall the three screws (arrows in inset photo) to secure the external oil filter housing to the transmission and torque the screws to 10 Nm (7 Ft-lbs). Replace the DSG oil pan gasket then reinstall the oil pan and torque the screws (**YELLOW** circles) in a circular pattern to 10 Nm (7 Ft-lbs). Replace the drain plug (arrow) with a new sealing washer and torque it to 45 Nm (33 Ft-lbs).



Step 8:

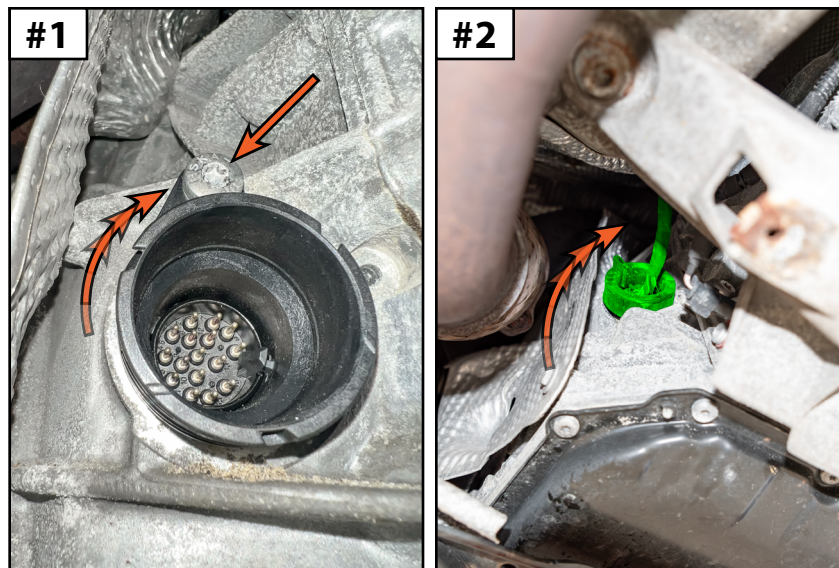
Remove the external oil filter housing cap, replace the external filter (arrow in **Photo #1**) and the O-ring (arrow in **Photo #2**), then reinstall the cap and torque it to 8 Nm (6 Ft-lbs).



INSTALLING THE NEW BILLET OIL PIPES

Step 9: T30 Torx Socket & Torque Wrench

Align the tab on the external mechatronic unit connector housing with the slot in the mechatronic unit, rotate it clockwise until it is fully seated, then reinstall the screw (arrow in **Photo #1**) and torque it to 8 Nm (6 Ft-lbs). Reinstall the external mechatronic connector (highlighted in **GREEN** in **Photo #2**) and rotate it clockwise until it is fully seated.



Step 10: 10mm Hex (Allen) Socket & Torque Wrench

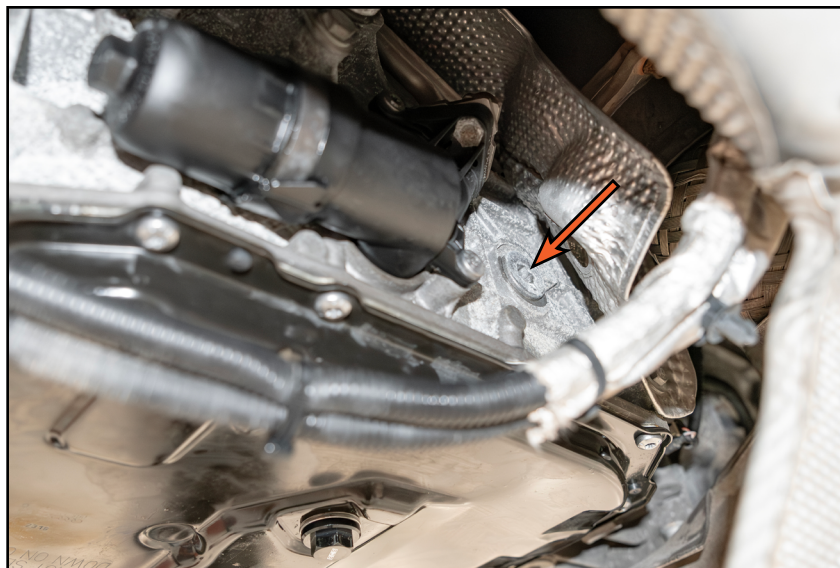
Remove the fill plug (arrow) and fill the transmission to the correct level using the proper OE procedure. Once fluid level has been filled to the proper level, reinstall the fill plug and torque it to 60 Nm (44 Ft-lbs).

Reinstall the underbody brace, torquing the bolts to:

Hex Bolts: 90 Nm (66 Ft lbs) + 135°.

Triple Square Bolts: 90 Nm (66 Ft lbs) + 90°.

Reinstall the engine and transmission underbody panels.



Congratulations, your installation is complete!

Your Billet DSG Oil Pipes installation is complete!



These instructions are provided as a courtesy by ECS Tuning

Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

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