

DL800 REINFORCED DIFFERENTIAL COVER AND TRANSMISSION BRACE

INSTALL INSTRUCTIONS

Audi R8 w/ DL800 Transmission 2012-Current
Lamborghini Huracán w/ DL800 transmission 2014-Current

Introduction ///

The goal of AMS Performance is to provide the highest quality, best performing products available. By utilizing research and development, and rigorous testing programs AMS Performance will never compromise the quality or performance of our products. In addition, AMS Performance will only provide the finest customer service offering only parts and advice that are in the best interests of the customer. AMS Performance was built on a foundation of integrity. This is who we are. This is what you can count on.

A vehicle modified by the use of performance parts and tuning may not meet the legal requirements for use on public roads. AMS Performance makes no claims of compliance unless otherwise stated on a per-product basis. Use or installation of performance parts and tuning may adversely affect the drivability and reliability of your vehicle, and may also affect or eliminate your insurance coverage, factory warranty and new OEM part warranty. There is no stated or implied guarantee by AMS of continued OEM vehicle warranty, insurance coverage, or emissions compliance, due to the stress placed on your vehicle by performance parts and our inability to monitor its use, tuning or modification.

These instructions are not intended to be a comprehensive guide for installation as there are many variables that may affect your particular vehicle, including but not limited to model year differences, sub-model/trim/optional equipment differences, the presence of non-OEM parts, or other modifications that may have previously been completed. A basic understanding of automotive parts and systems and novice mechanical skills should be all that is necessary for installation, but certain circumstances may necessitate professional installation.

AMS Performance is committed to providing quality support for our products. If you are in need of technical support, installation help, or a replacement component, our Customer Service Team is available directly via telephone at 847-709-0530, or digitally via the contact form linked here: amsperformance.com/support

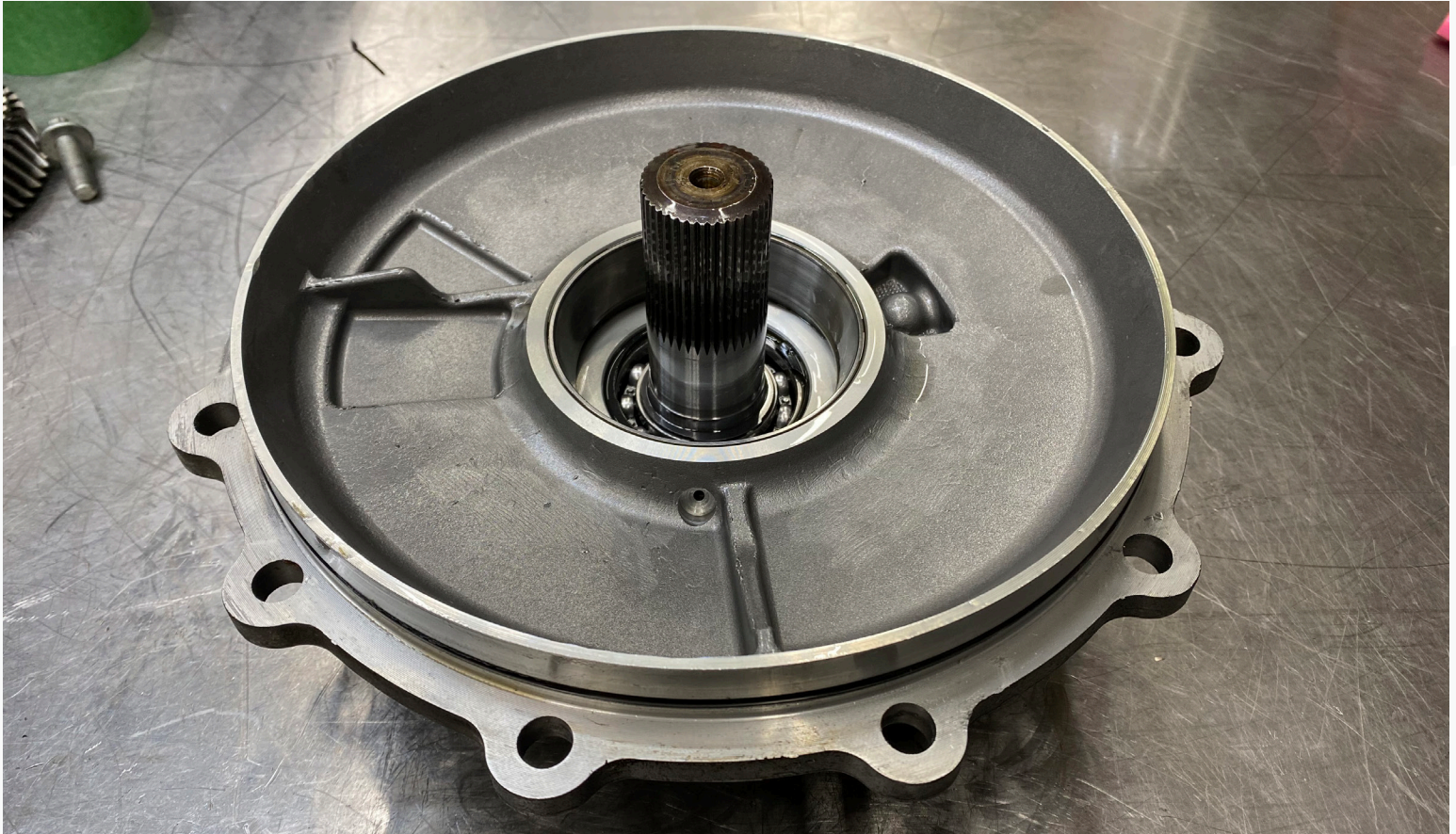
Table of contents ///

2. Disassembly of Stock
Differential Cover

4. Assembly of AMS
Differential Cover

8. Installation of Differential
Cover and Transmission
Brace components

1. Remove the differential cover from the transmission and place on the bench.



2. If you are upgrading the half shafts you do not need to remove the OEM half shafts to remove the race. If you choose to you can remove the snap ring shown in the 1st picture and press the shaft out.

Note: If you have upgraded half shafts and plan to reuse them, you will need to remove them according to their instructions.



3. Remove the bearing race from the cover using a slide hammer and bearing race attachment.



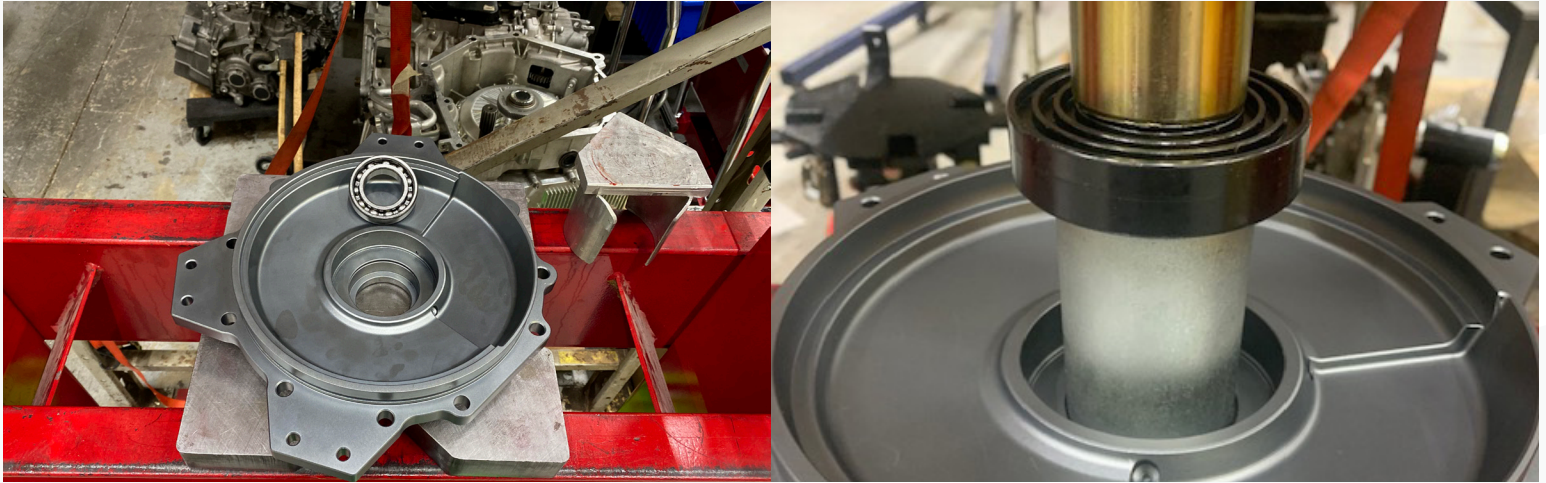
4. Remove the spacer and set it and bearing race aside for a later step.



5. Locate the bearing, snap ring, and two seals provided and place them with the bearing race and spacer.



6. Unbox the bearing, then place the new AMS diff brace cover in the press and set it up for pressing in the bearing using a properly sized tool commonly found in bushing repair tool kits.



7. Once the bearing is fully seated, install the snap ring.



8. Using the bearing race and spacer set aside from before, place the spacer in the differential cover and position the race to be pressed in.

Note: The bearing race tolerance in the cover is very specific. Due to slight variances in the bearing race it is recommended to use Loctite 648 retaining compound or equivalent when installing the bearing race.



9. Place the diff cover in the press. Using a press tool or flat bar stock, place it across the bearing and press the bearing into place.



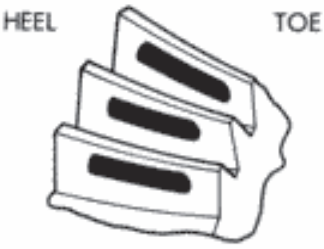









10. Flip the diff cover over and press in the appropriate seal. The small seal provided is for an OEM half shaft. The larger seal is for a Dodson half shaft. We are using a Dodson half shaft, so we be installing the larger seal.



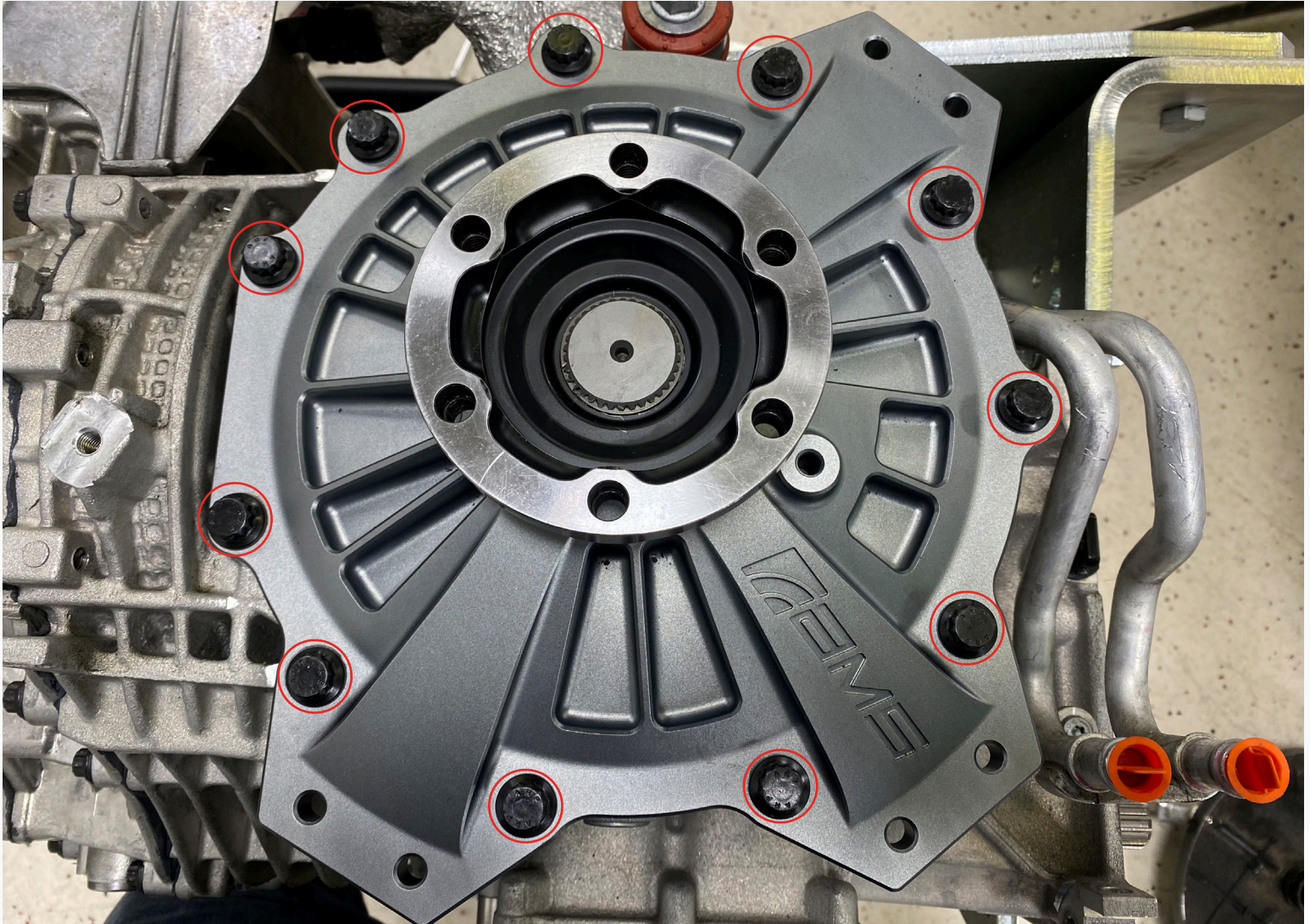
11. Install the half shaft. If installing the OEM one, press it back in and reinstall the snap ring. If installing the Dodson half shaft kit, following the Dodson installation instructions on installing the half shaft and tightening the nut.



12. Before final installing the differential cover, it is a good idea to use gear marking compound and run a pattern on the differential. Below is a chart to check against.

 <p>HEEL TOE</p>	 <p>TOE HEEL</p>	<p>DESIRABLE CONTACT PATTERN. PATTERN SHOULD BE CENTERED ON THE DRIVE SIDE OF TOOTH. PATTERN SHOULD BE CENTERED ON THE COAST SIDE OF TOOTH, BUT MAY BE SLIGHTLY TOWARD THE TOE. THERE SHOULD ALWAYS BE SOME CLEARANCE BETWEEN CONTACT PATTERN AND TOP OF THE TOOTH.</p>
		<p>RING GEAR BACKLASH CORRECT. THINNER PINION GEAR DEPTH SHIM REQUIRED.</p>
		<p>RING GEAR BACKLASH CORRECT. THICKER PINION GEAR DEPTH SHIM REQUIRED.</p>
		<p>PINION GEAR DEPTH SHIM CORRECT. DECREASE RING GEAR BACKLASH.</p>
		<p>PINION GEAR DEPTH SHIM CORRECT. INCREASE RING GEAR BACKLASH.</p>

13. Once the pattern is satisfactory, you can clean off the compound and install the O-ring on the diff cover and final install it on the transmission. **Torque the 11 bolts to 54 ft-lbs**



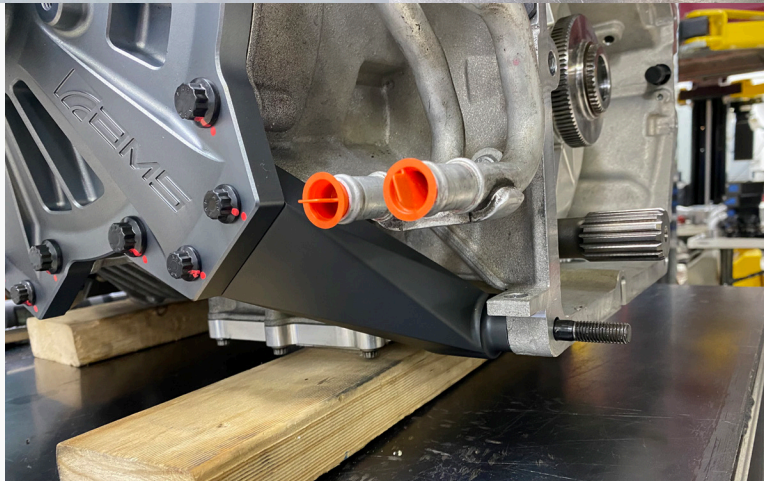
14. Locate the mid plate support bracket and 4 m8 x 30 ARP bolts. Install the bolts onto the rear cover by removing the existing hardware and replacing with the new ARP hardware. **Torque the M8 hardware to 24 ft-lbs**



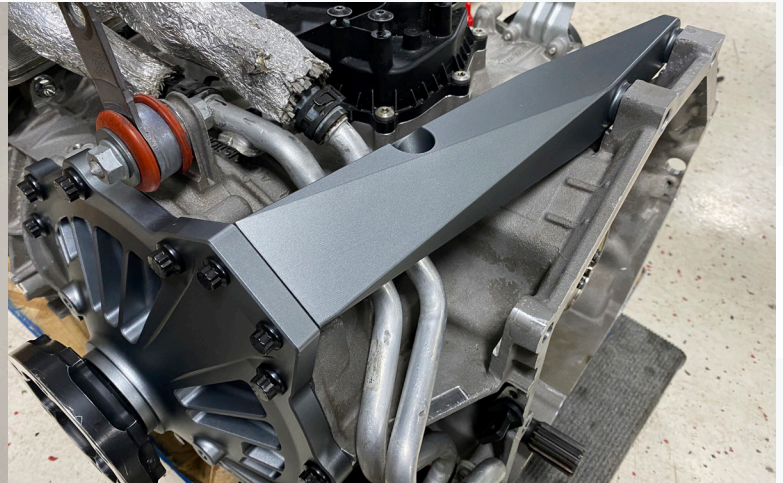
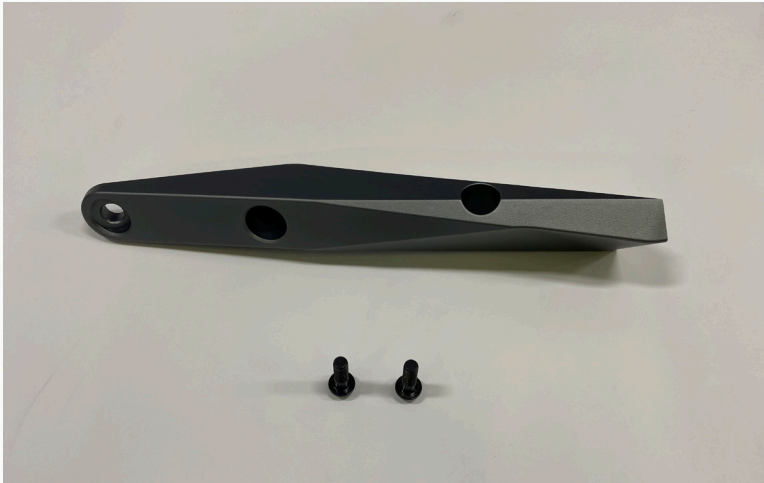
15. Locate the medium length support arm, 2 – m8 x 30mm and 2 – m8 x 25mm long bolts. Install the support arm between the diff cover and mid plate support bracket. **Torque to 24 ft-lbs.**



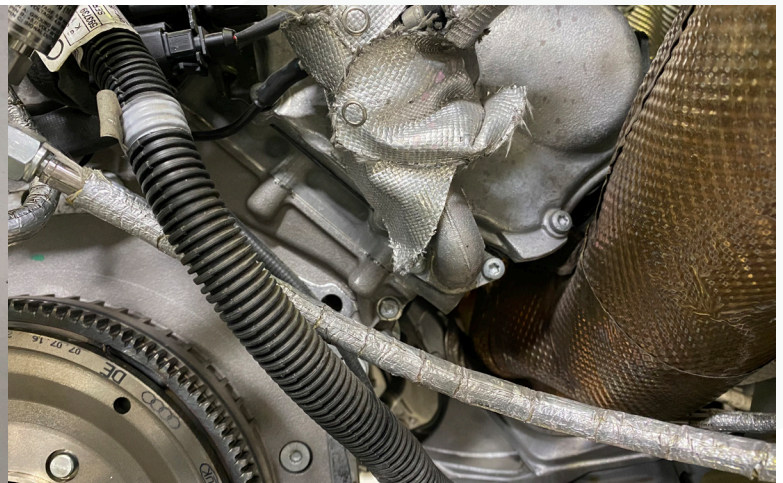
16. Locate the smallest support arm and 2 - m8 x 30mm and 1 – m10 x 70mm long bolt. The m10 bolt will need to be placed in the arm before installing the arm for the bolt to fit. Then slide the arm on the trans case and attach to the brace with the m8 bolts. **Torque the m8 bolts to 24 ft-lbs.**



17. Now install the largest support arm onto the diff cover using 2 – m8 x 30mm ARP bolts. **Torque to 24 ft lbs.**



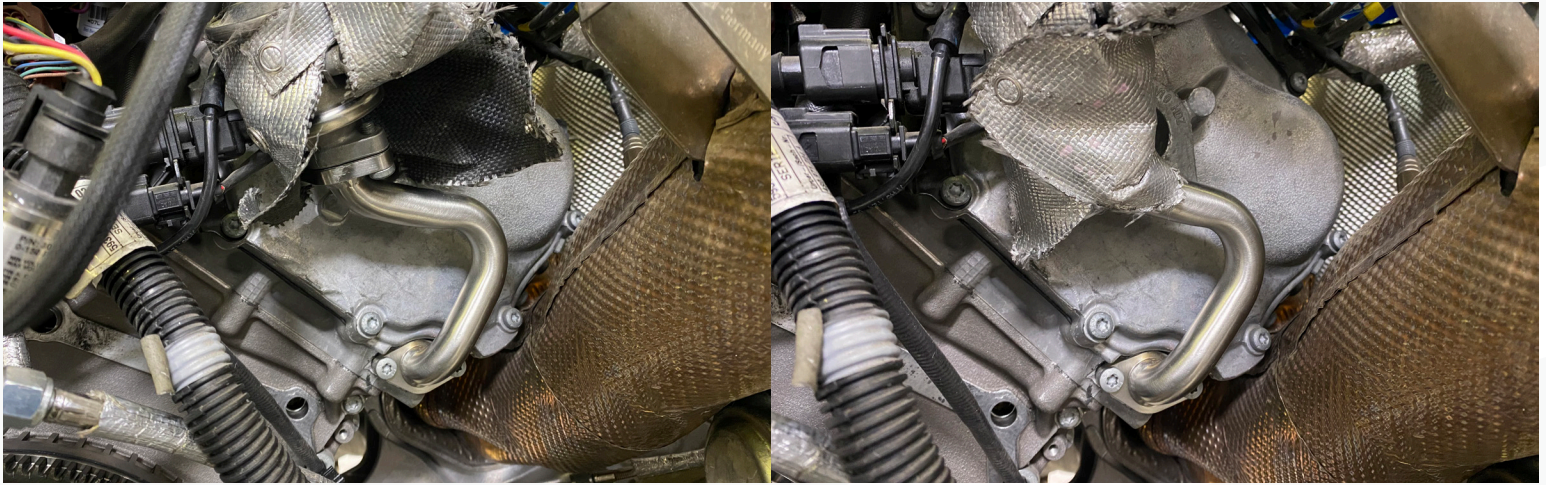
18. Locate the air valve recirculation tube. This tube is much easier to install with the transmission still out. Unbolt the tube from the engine.



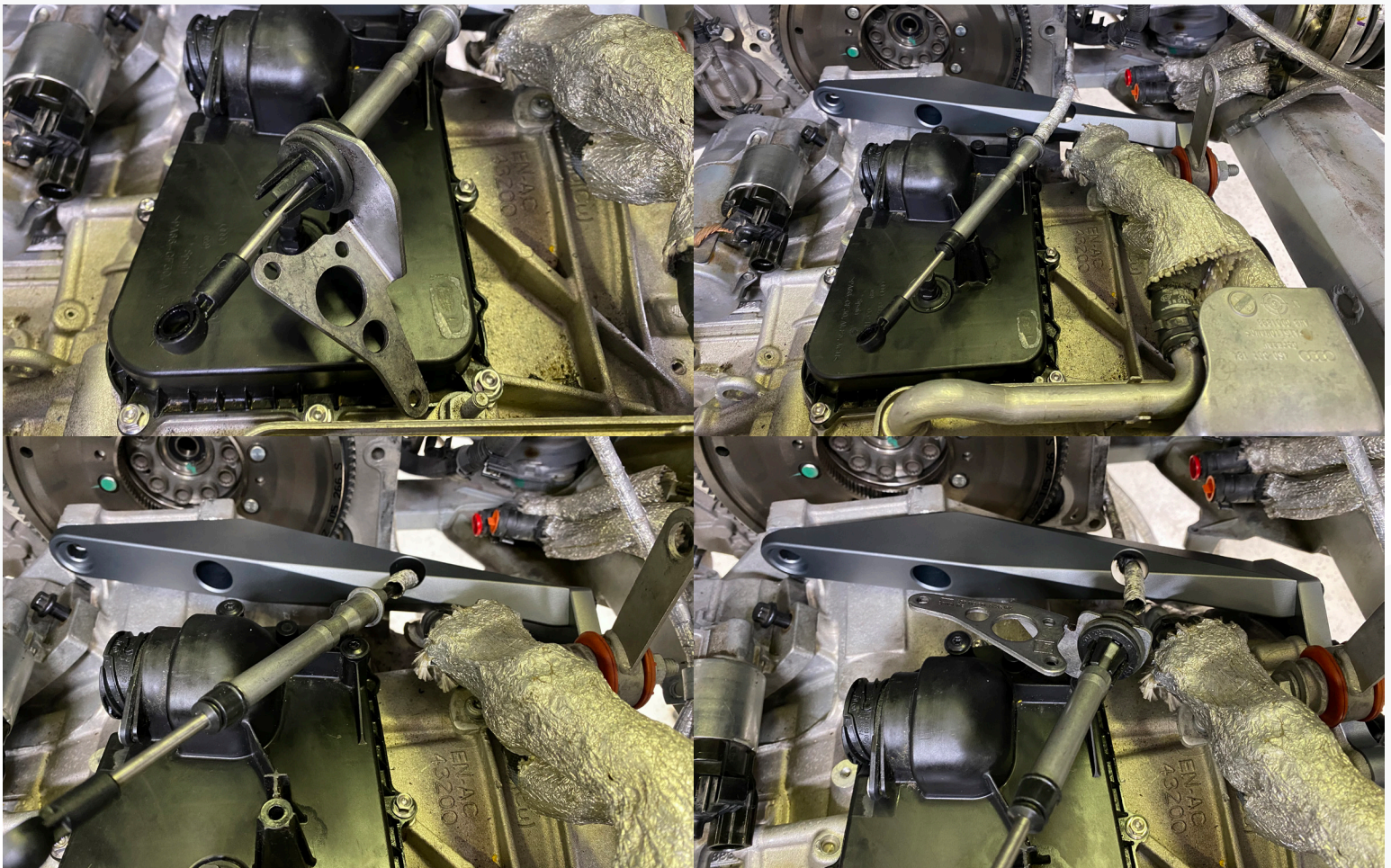
19. Unbutton the heat shield on the passenger side air valve to gain access to the fasteners. Remove the cast section of the tube and reinstall the provided relocation tube reusing the gaskets and hardware.



20. Reinstall the air valve pipe to the engine and resecure the heat shield.



20. Reinstall the air valve pipe to the engine and resecure the heat shield.



22. Reinstall the transmission. The torque specification for the hardware that mounts to the transmission to the engine is: M12: 30NM +45° , M10: 15NM + 45°

23. Thank you for purchasing the AMS DL800 Reinforced Differential cover & transmission brace. Enjoy!