

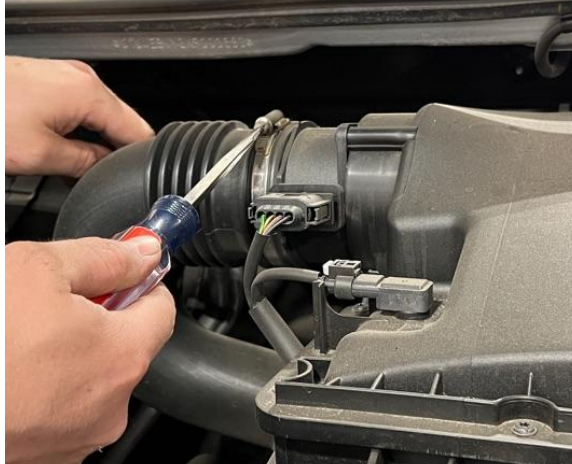
INSTALLATION INSTRUCTIONS:

1. Prior to installation

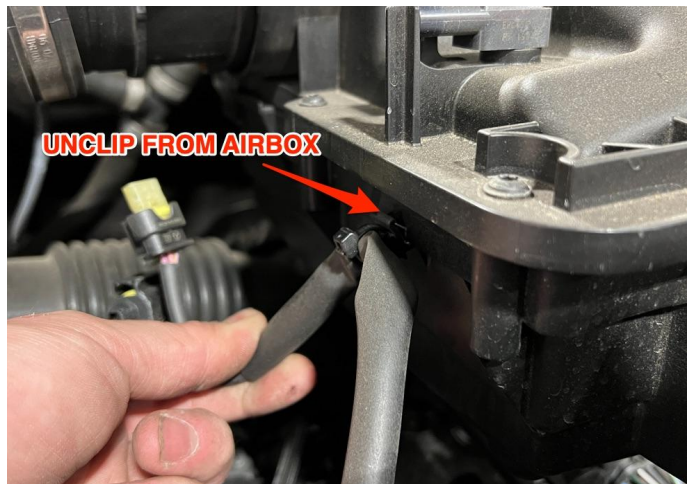
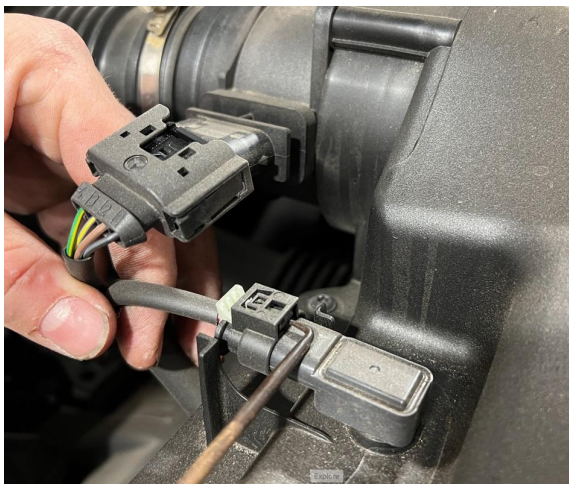
- 1.1. Disconnect the chassis battery via the quick connect as pictured below:
- 1.2. Confirm power is off using a multimeter on the airbox power post and ground stud on the driver's inner fender wing.

2. Remove airbox

- 2.1. Unscrew air hose as pictured below:



- 2.2. Disconnect electrical connectors as pictured below:



2.3. Disconnect jump start post as pictured below:



2.4. Remove the airbox by pulling up on the front to pop it out of the rubber grommets, popping the air intake hose out of the spot next to the radiator, and then pulling the airbox toward the front of the vehicle away from the firewall.

3. Remove fan, shroud, and fan belt

3.1. Move coolant overflow line out of the way as pictured below:



3.2. Remove radiator air dam as pictured below:



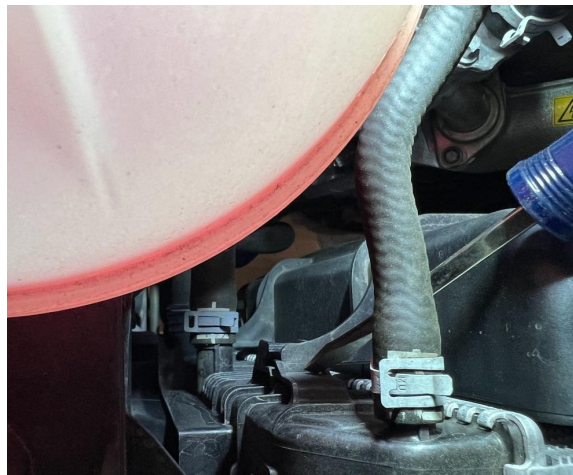
- 3.3. Unclip electrical connector from clutch. Use a heavy right angle pick to push in on the connector just below the white safety clip and pull upward while pushing in on the connector as pictured below:



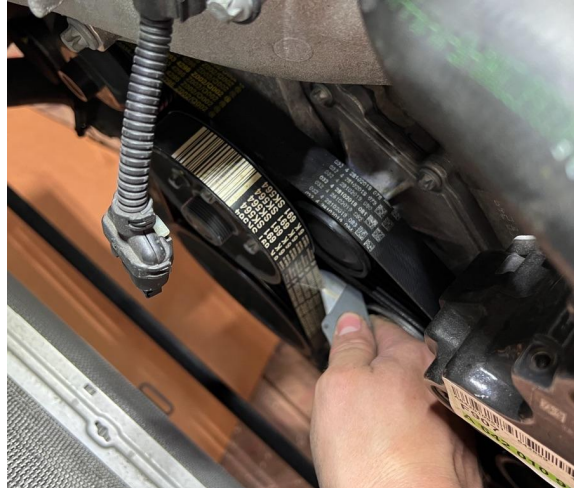
- 3.4. Use an E10 socket to remove the top of the fan clutch "leash" from the front of the engine so that the clutch can spin freely and be removed.
3.5. Use a 36mm fan clutch tool to loosen the fan clutch. Right/clockwise to loosen it! Tool pictured below:



- 3.6. Remove the fan and lay in place in the shroud.
3.7. Unclip the shroud using a flathead screwdriver on the clip at the top of each side of the shroud as pictured below:



- 3.8. Lift the fan and shroud out together. It may require some careful shuffling of the shroud left and right to clear the upper radiator hose and other heater hoses.
- 3.9. Use a knife or other cutting tool to remove the existing fan stretch belt between the crankshaft and fan idler as pictured below:



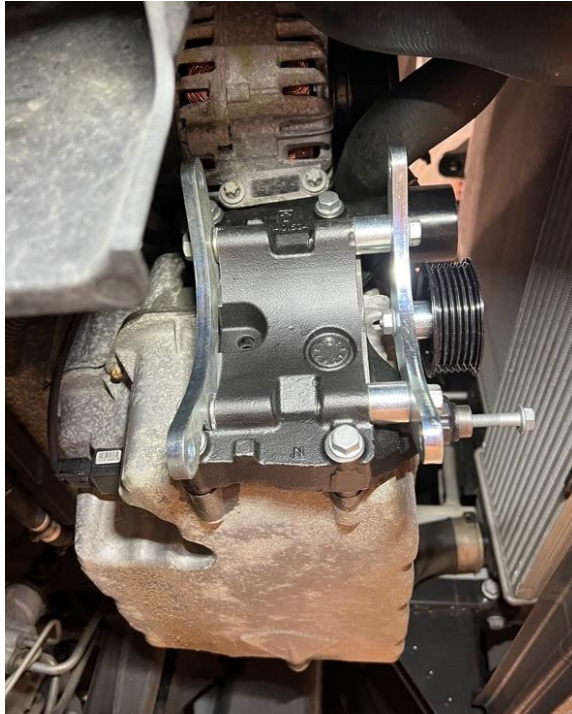
4. Assemble and install alternator mounting bracket

- 4.1. Pre-assemble alternator mounting bracket per the Techni manual. Leave lower rear bolt off so that mounting bolt can be accessed as pictured below:



- 4.2. Clean 4x M8x1.25 mounting holes in the side of the oil pan and front tensioner mounting hole on engine with a thread chase to ensure that the threads are clean.

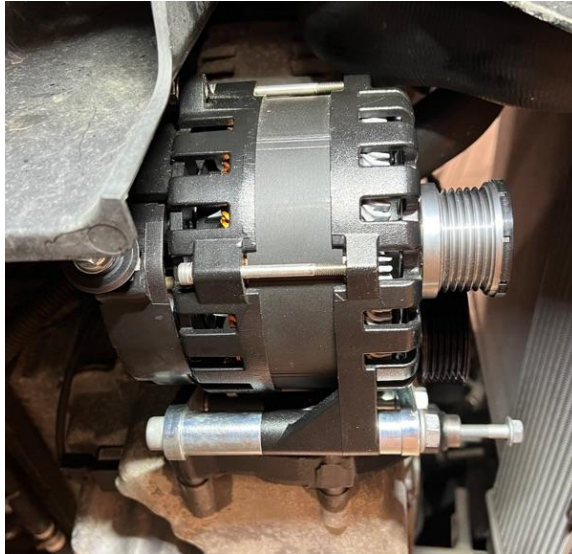
- 4.3. Mount bracket to the side of the engine and tighten the mounting bolts to the torque specified in the Techni manual as pictured below:



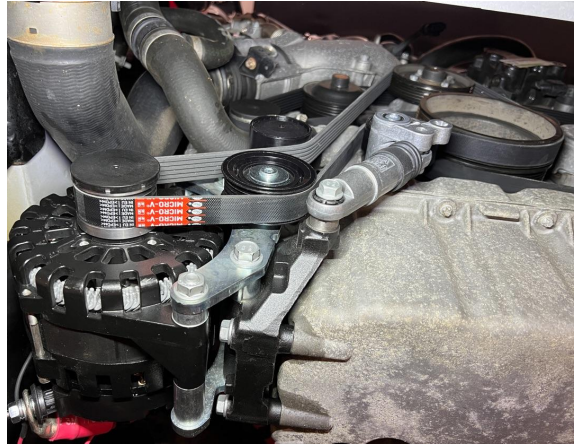
- 4.4. Bolt the tensioner to the front of the engine and bracket as shown in the Techni manual.
4.5. Install the belt and pulley caps as specified in the Techni manual.

5. Install alternator and regulator

- 5.1. Bolt alternator into mounting bracket and tighten mounting bolts to the torque specified in the Techni manual as pictured below:



5.2. Install belt and route according to Techni manual. Reference photo below:



5.3. Install regulator onto regulator bracket using supplied 10-32 screws and nuts, and then bolt the regulator/bracket assembly onto the studs on the passenger side of the HVAC air intake as pictured below:

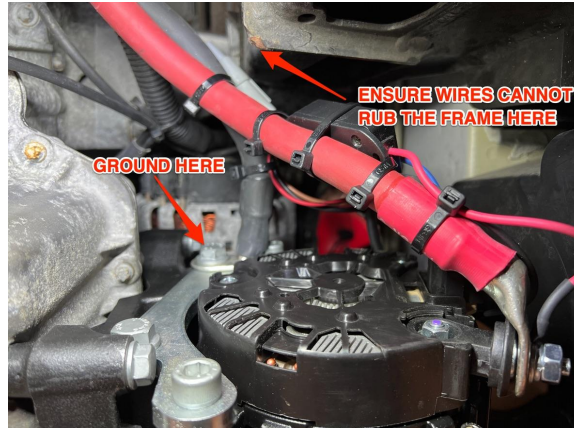


6. Run wires and install alternator protection device

6.1. Attach the temperature sensor wire from the regulator harness as well as ground wire from the Balmar APM12 (alternator surge protection device) to the small bolt on the alternator case as pictured below:



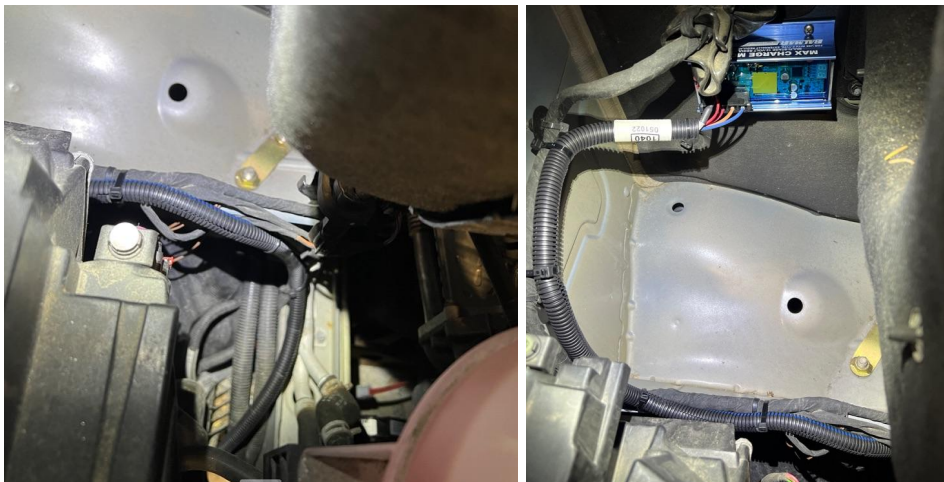
- 6.2. Run a 4/0 positive wire from the battery bank to the positive output stud of the alternator. Put the positive wire from the APM12 on top of the positive wire and then tighten the nut on the output stud to approximately 20 ftlbs. The positive wire should be fused at 300A at the battery bank.
- 6.3. Run a 4/0 ground wire from the battery bank to one of the bolts that holds the alternator mounting flanges to the cast bracket as pictured below (DO NOT USE THE ALTERNATOR MOUNTING BOLTS FOR GROUND AS THE THREAD ENGAGEMENT WITH A LUG ON THE BOLT WILL BE TOO LITTLE):



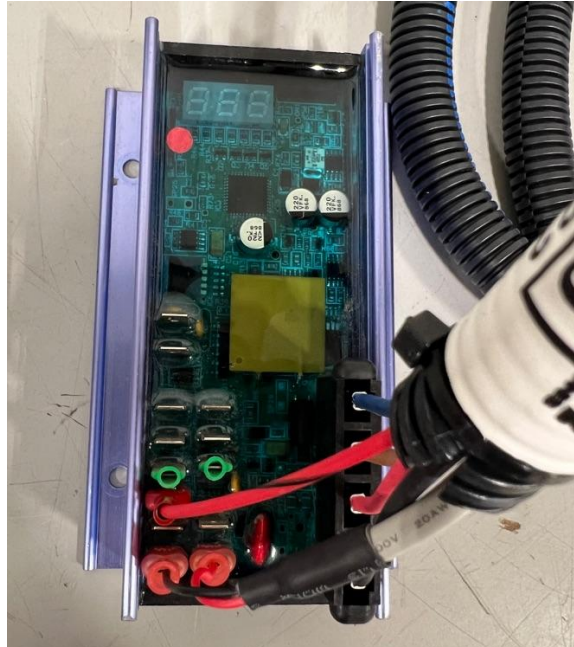
- 6.4. Zip tie the APM12 to one of the 4/0 cables as pictured below:



- 6.5. Run the regulator harness up to the regulator and secure it adequately using zip ties as pictured below:



- 6.6. Connect regulator harness to regulator. The single red wire goes to pin 9. The temperature sensor ground goes to pin 5 and the sensor positive goes to pin 6. See picture below:



- 6.7. Run the regulator sub harness along the stock Mercedes alternator wiring across the engine and back into the driver's seat base as pictured below:



- 6.8. Connect the two ring terminals to the EK1 upfitter post under the driver's seat. The brown wire goes on the small post (power with engine running). The red wire goes on the larger center post (constant power).
- 6.9. Use the supplied pigtail with butt splices to connect the red voltage sense wire and black power ground wire to the battery bank using a 5A fuse at the battery bank and 14ga wire to ensure that there is little to no voltage drop across these wires.

7. Reinstall shroud and airbox

- 7.1. The shroud and airbox can now be reinstalled.
7.2. After reinstalling the shroud and airbox, reconnect the chassis battery.

8. Test alternator function

- 8.1. With the engine off, ensure that the regulator display does not show anything
8.2. With the engine running, ensure that the regulator display shows something to validate that it is only powered when the engine is running. It should NOT be powered when the key is on with the engine off.
8.3. After 200 seconds of running, the alternator should start to produce power. Look at your battery monitor to ensure that you see approximately 170-200A of power at idle with a cold alternator and empty batteries. When revving the engine to 2-3000 RPM, that number should be in the mid 200s.

- 8.4. With the engine running and alternator producing significant power (120A+) at idle, look at the value for "BV" on the regulator as it scrolls through the various displays. It should be approximately the same as the voltage at the battery bank. If it is not, ensure that the voltage sense wire from step 6.8 is attached very close to the batteries.