



BMW N52, N54, N55 Crank Seal Protection Plate Installation Instructions - [ES4350584](#)



Skill Level
1 - Easy
Basic Skills
Required



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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KIT CONTENTS



Crank Seal Protection Plate **(QTY 1)**



M8x40mm Bolts **(QTY 2)**

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](#)
- Bench Mounted Vise
- Crows Foot Wrenches
- **Hook and Pick Tool Set** [ES#2778980](#)

Required For This Install

- **1/4" Drive Ratchet** [ES#2823235](#)
- **1/4" Drive Deep and Shallow Sockets** [ES#2823235](#)
- **1/4" Drive Extensions** [ES#2823235](#)
- 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](#)
- Open/Boxed End Wrench Set [ES#2765907](#)

Available On Our Website

Specialty Tools

- **Stubby Socket Driver Set** [ES#3103367](#)

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.

REMOVING THE HARMONIC BALANCER

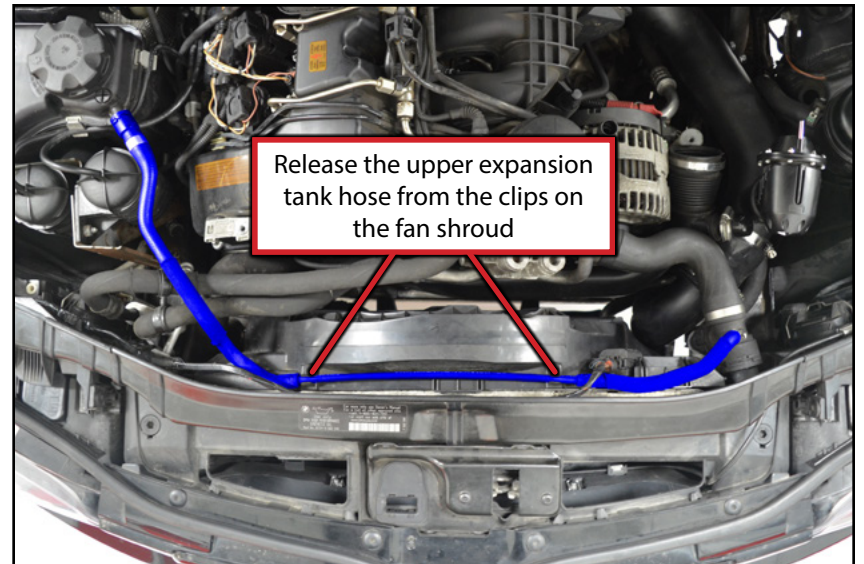
Step 1:

Remove the intake system and air scoop (highlighted in **GREEN**) from the engine bay.



Step 2:

Release the upper expansion tank hose (highlighted in **BLUE**) from the clips along the top of the fan shroud.



REMOVING THE HARMONIC BALANCER

Step 3:

Disconnect the fan shroud electrical connector (**Photo #1**), then release the wiring harness clips from the core support (**Photo #2**).

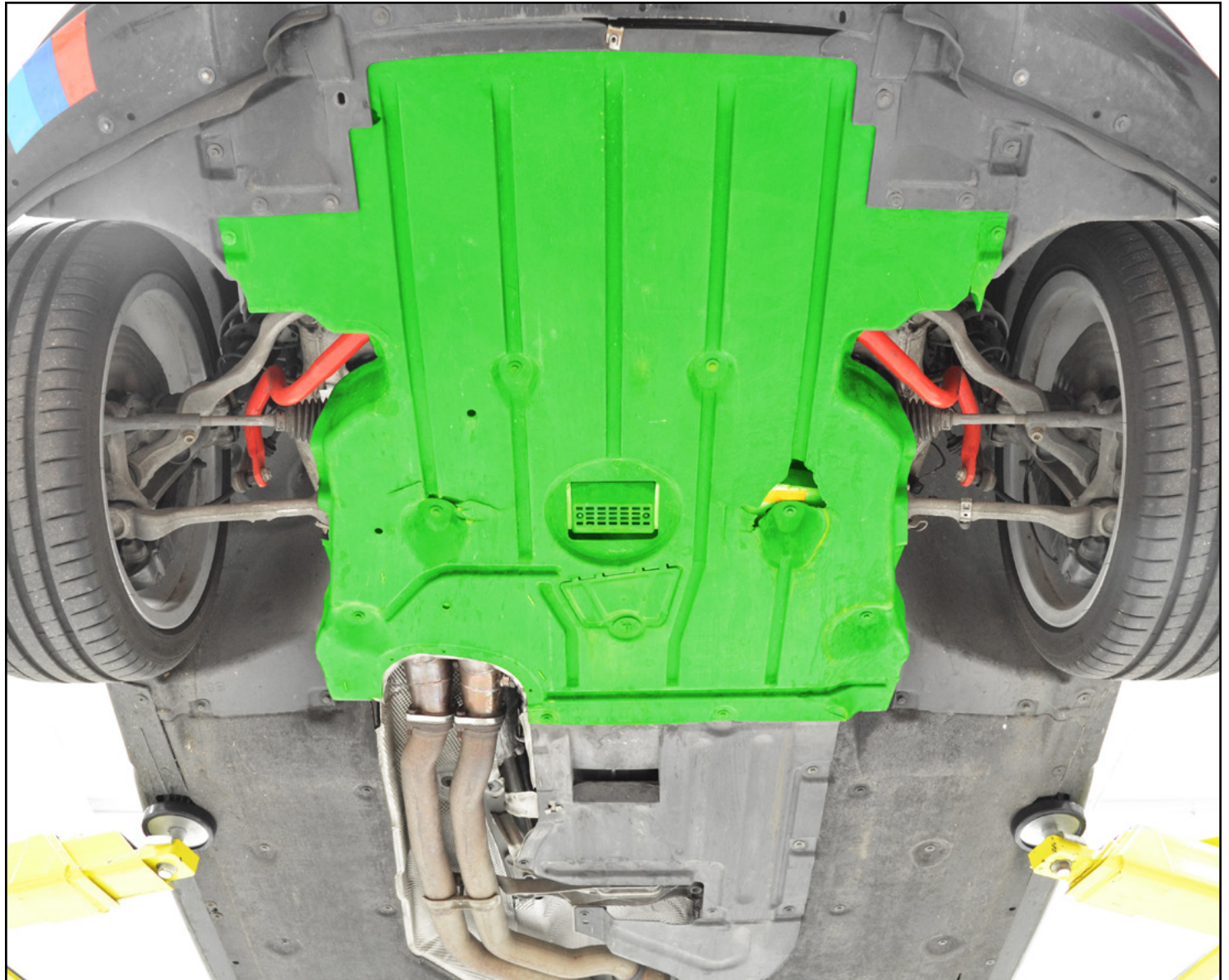
Remove the T25 Torx screw from the upper RH corner of the fan shroud (**Photo #3**).



REMOVING THE HARMONIC BALANCER

Step 4:

Remove the belly pan from the vehicle (highlighted in **GREEN**).



REMOVING THE HARMONIC BALANCER

Step 5: Flat Blade Screwdriver or Hose Pick

Disconnect the intercooler outlet coupler from the intercooler (**Photo #1**), then slide it out as shown (**Photo #2**).

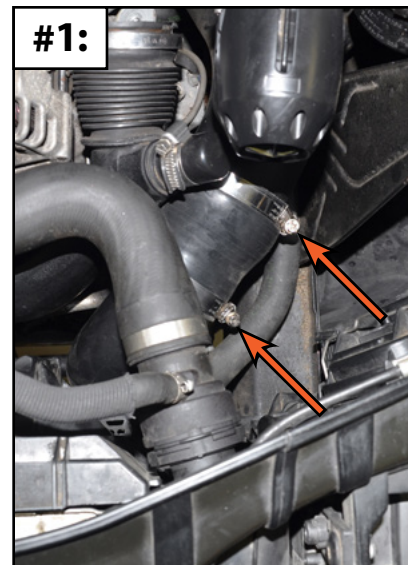


Step 6: Flat Blade Screwdriver or Hose Pick

Loosen the hose clamps on the intercooler outlet pipe (**Photo #1**), then release the clip on throttle body charge pipe. Disconnect the MAP sensor, then remove the throttle body charge pipe from the vehicle (**Photo #2**).



If necessary, you can remove the upper radiator hose in order to gain additional clearance for the next step.



REMOVING THE HARMONIC BALANCER

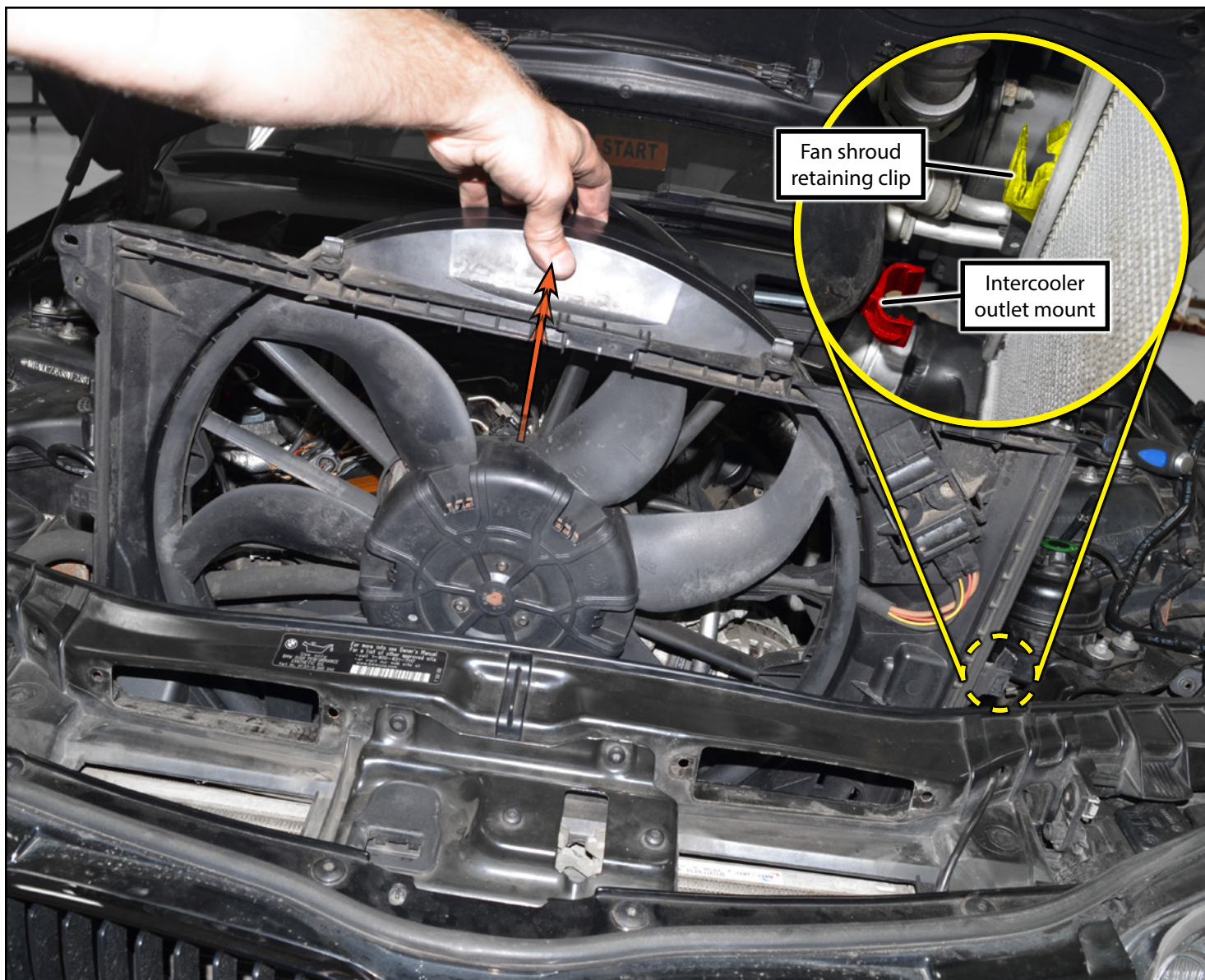
Step 7:

Now it's time to remove the fan shroud, this part takes a bit of patience.

There is a single tab on the LH (driver's) side of the fan shroud which locks into a slot on the radiator (highlighted in **YELLOW** in the inset photo). You want to **CAREFULLY** pry on the tab with a screwdriver while you start to lift the fan shroud upward. This tab can be quite brittle, so be gentle.

There is also a rubber bushing on the fan shroud which slides into the intercooler outlet mount (highlighted in **RED** in the inset photo). Be careful not to break off the mount or the bushing.

Lift the fan shroud out of the engine bay and set it aside.



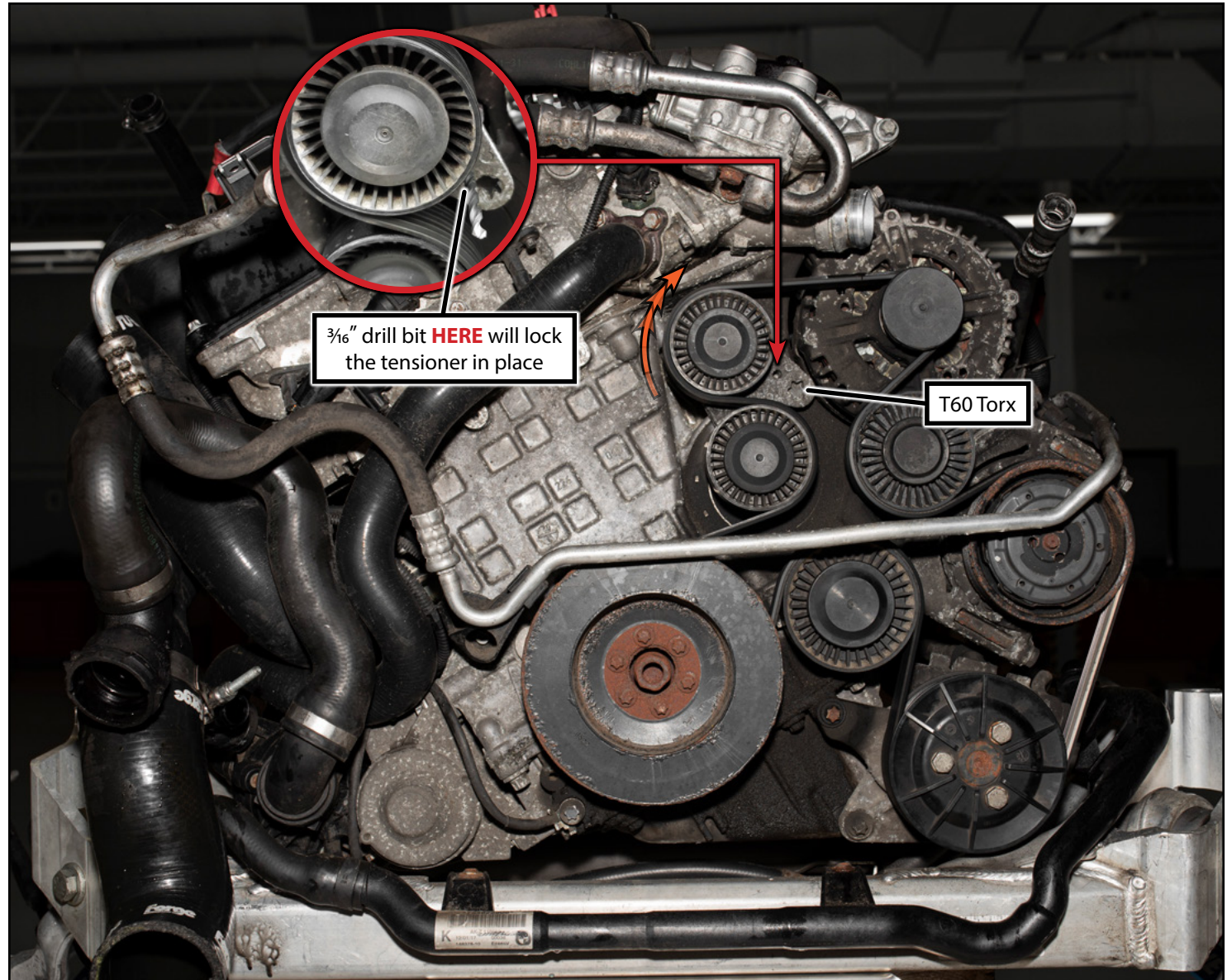
REMOVING THE HARMONIC BALANCER

Step 8:

Using a T60 Torx socket and breaker bar, rotate the tensioner clockwise.

TECH TIP:

Slide a $\frac{3}{16}$ " drill bit into the small hole on the front of the tensioner to lock it into place (**RED** inset photo). This means that you won't need to hold the tensioner while you're removing or installing the drive belt.



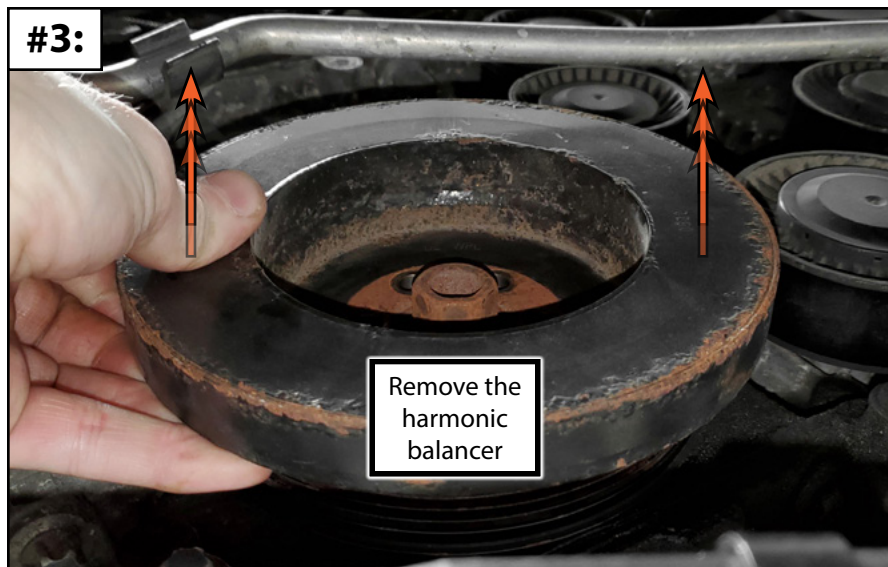
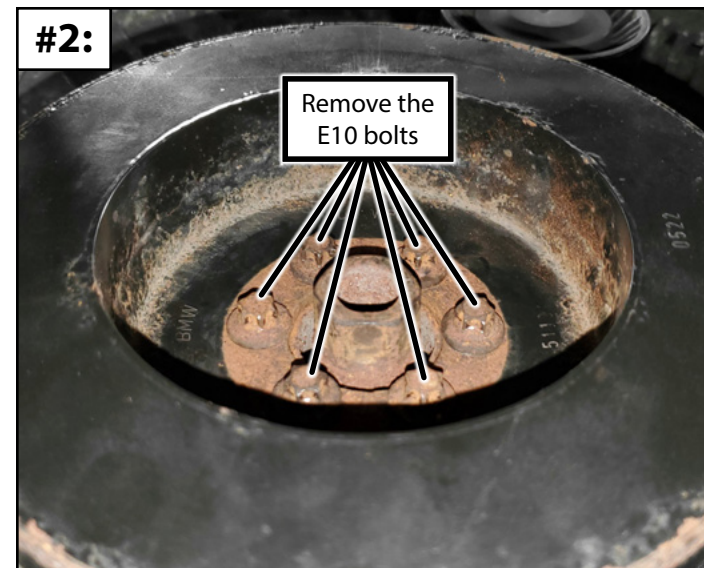
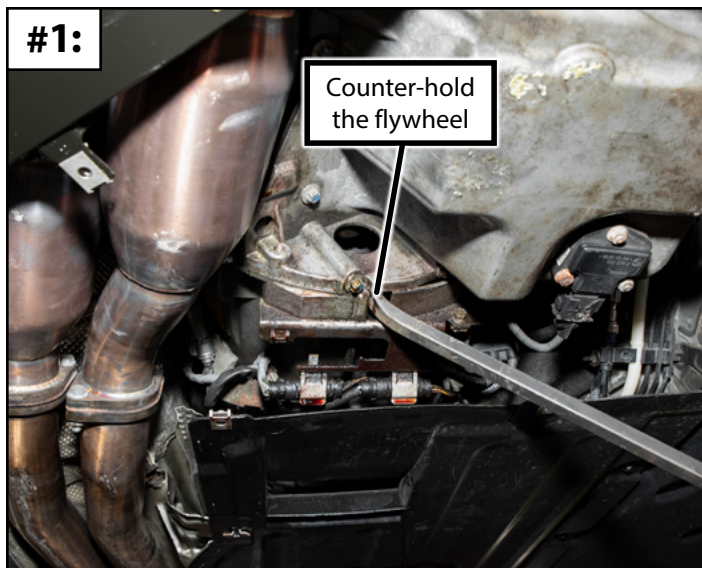
REMOVING THE HARMONIC BALANCER

Step 9:

Use a counter-hold tool or a pry bar to hold the flywheel in place (**Photo #1**).

Remove the bolts from the harmonic balancer (**Photo #2**). These bolts were E10 Torx on our N54, your application may be different.

Pull the harmonic balancer off of the hub (**Photo #3**).



INSTALLING THE CRANK SEAL PROTECTION PLATE

Step 1: E12 Torx

Remove the two bolts from the oil sump (arrows). Space is tight around these bolts, we found that the following combination of tools worked nicely:

- 1/4" ratchet
- Short 1/4" extension
- 1/4" to 3/8" adapter
- 3/8" drive E12 socket



Step 2: 6mm Hex (Allen)

Install the crank seal protection plate into position using the supplied hardware (arrows). Torque the new bolts to 20 Nm.

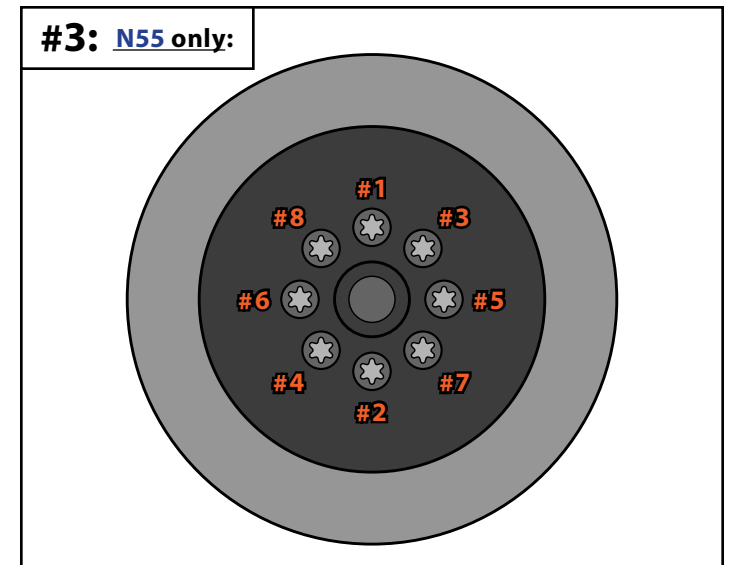
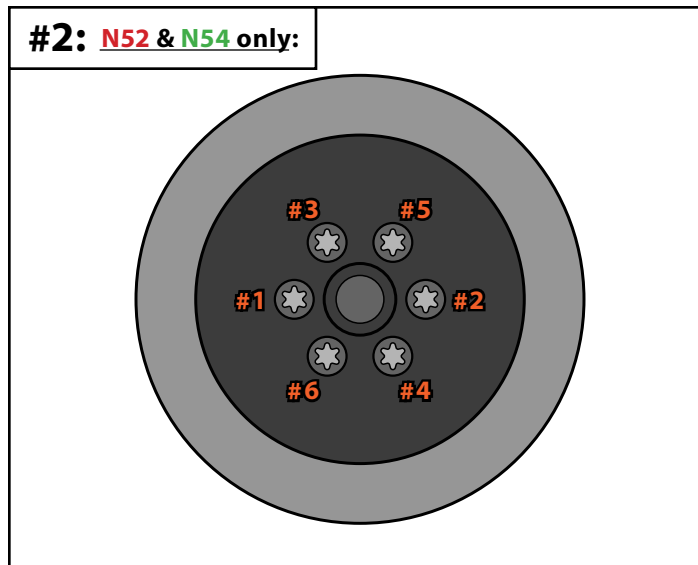
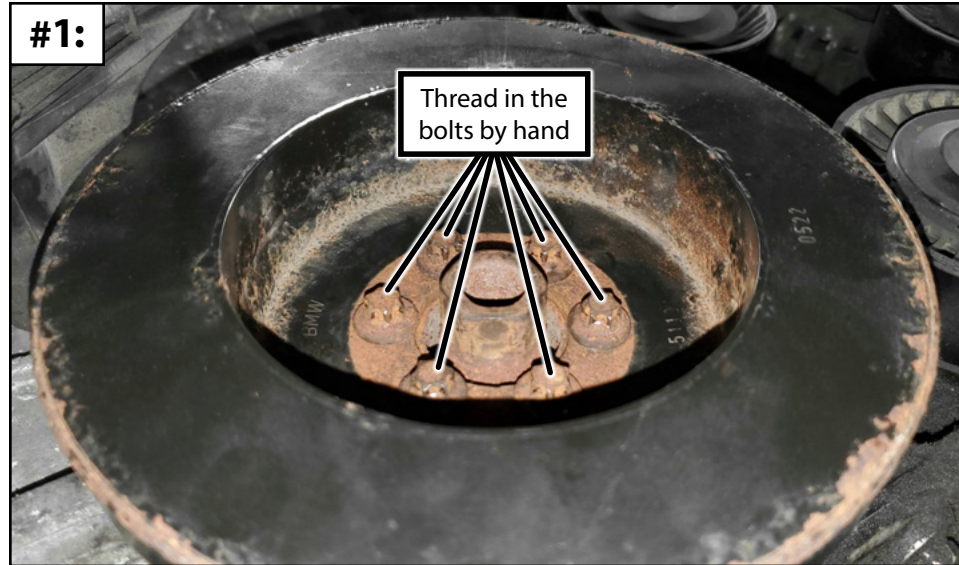


REASSEMBLY

Step 1:

Reinstall the harmonic balancer (**Photo #1**).

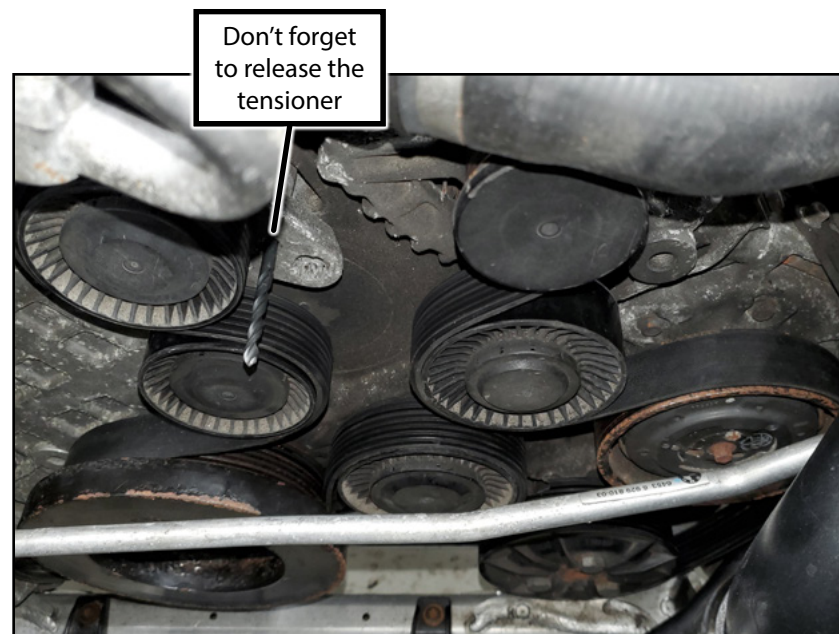
- **N52:** 25 Nm
 - Torque the bolts in the order shown in **Photo #2**.
- **N54:** 35 Nm
 - Torque the bolts in the order shown in **Photo #2**.
- **N55:** 35 Nm
 - Torque the bolts in the order shown in **Photo #3**.



REASSEMBLY

Step 2: T60 Torx

Reinstall the drive belt and release the tensioner. Reference the diagrams on pages 15-17.



Step 3:

Reinstall the fan shroud.

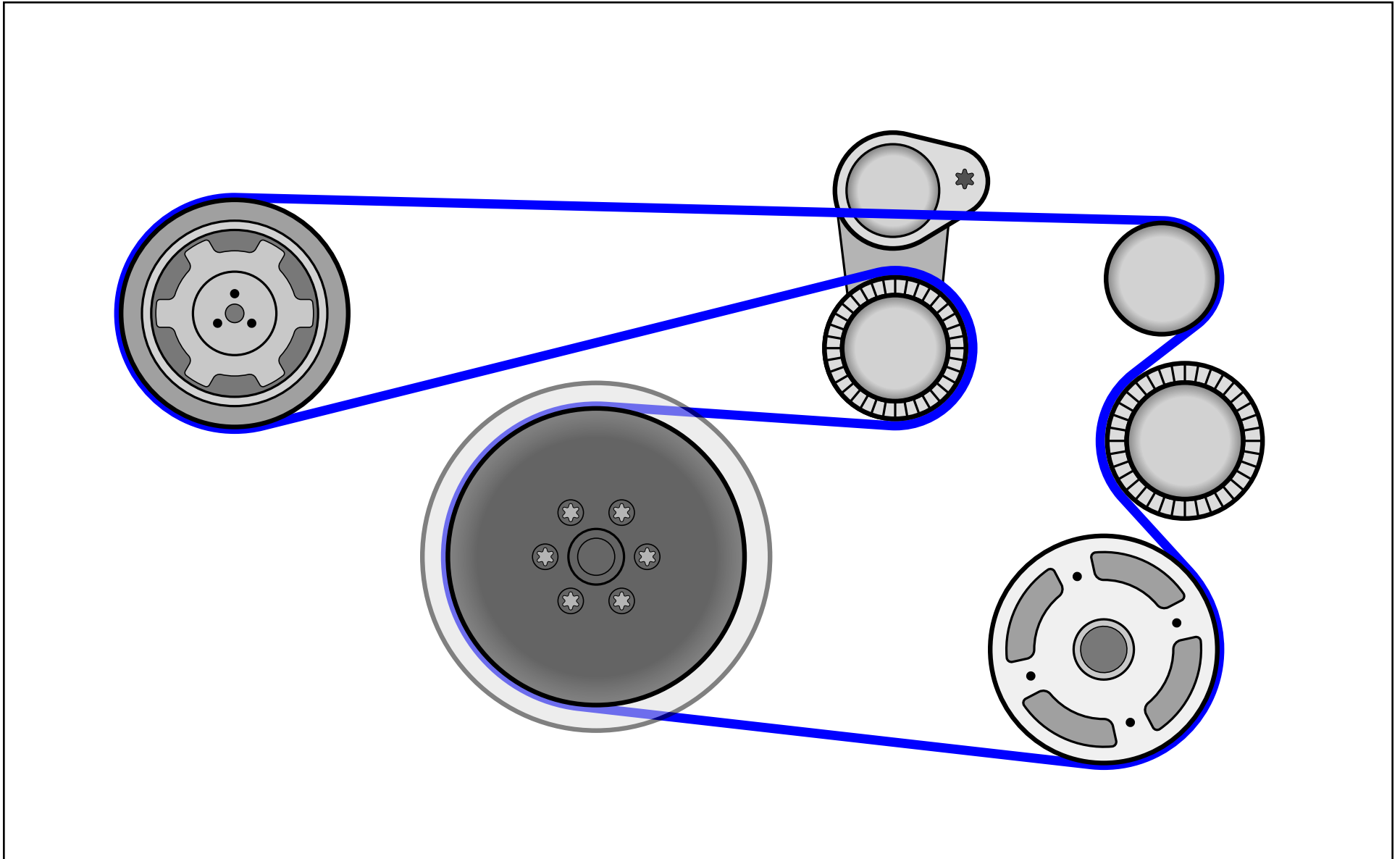
Reinstall the intercooler outlet pipe and coupler.

Reinstall the belly pan.

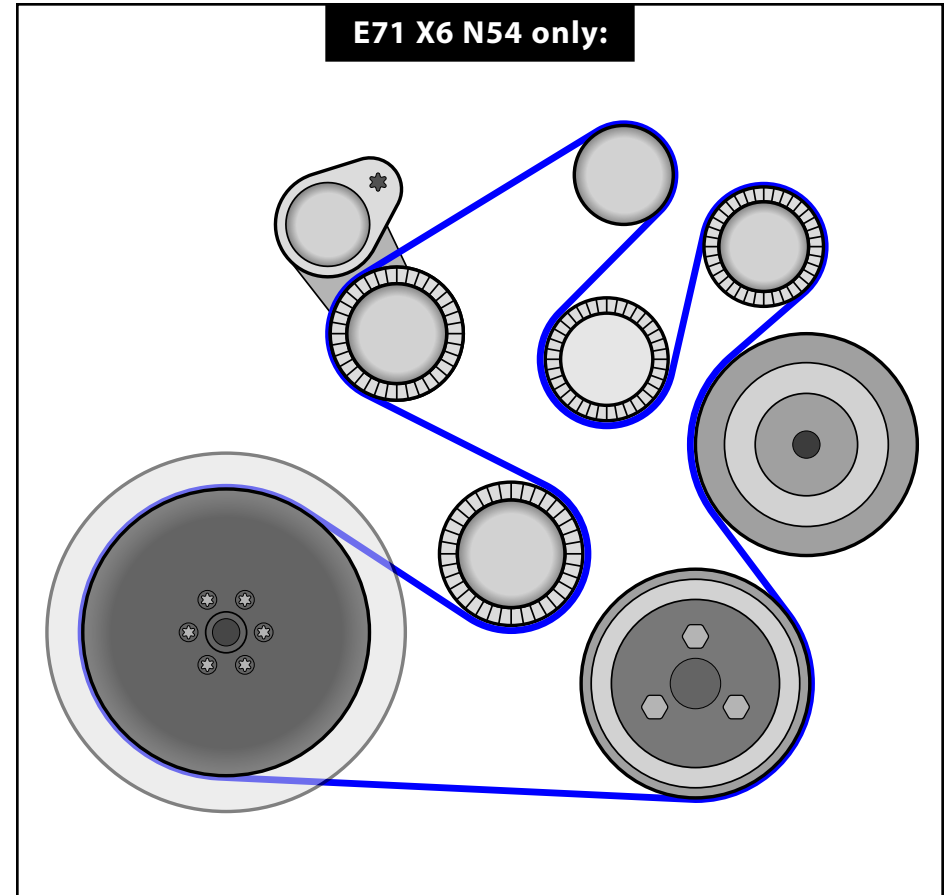
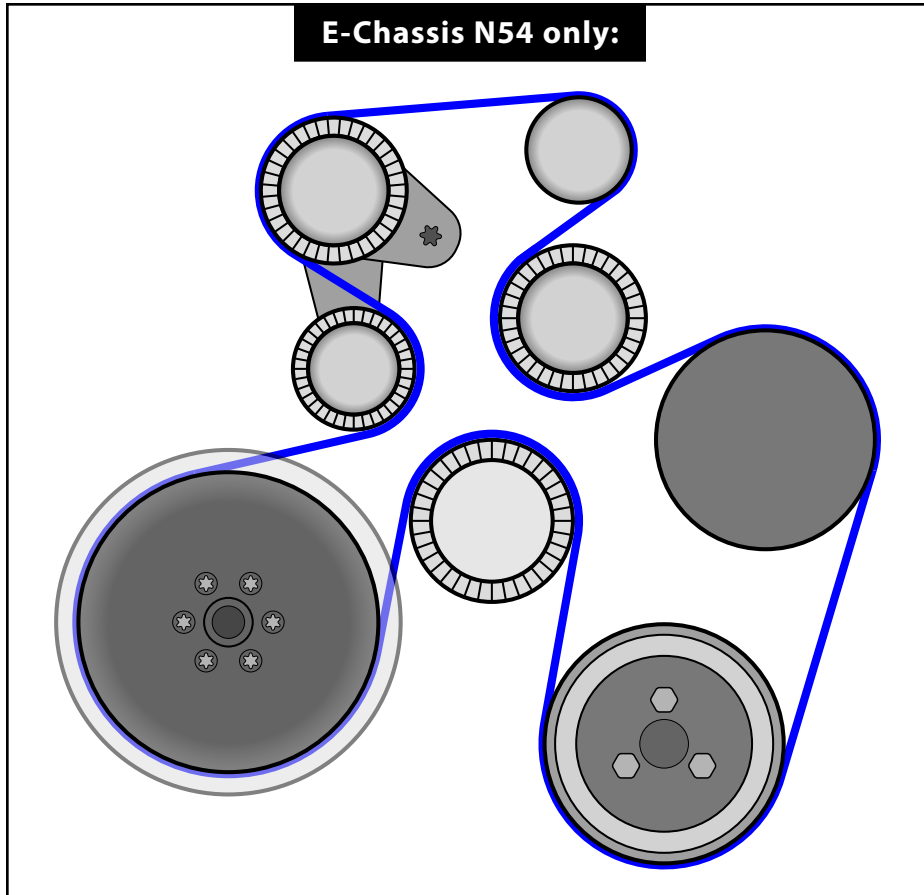
Reinstall the intake system and air box.



DRIVE BELT DIAGRAM - N52

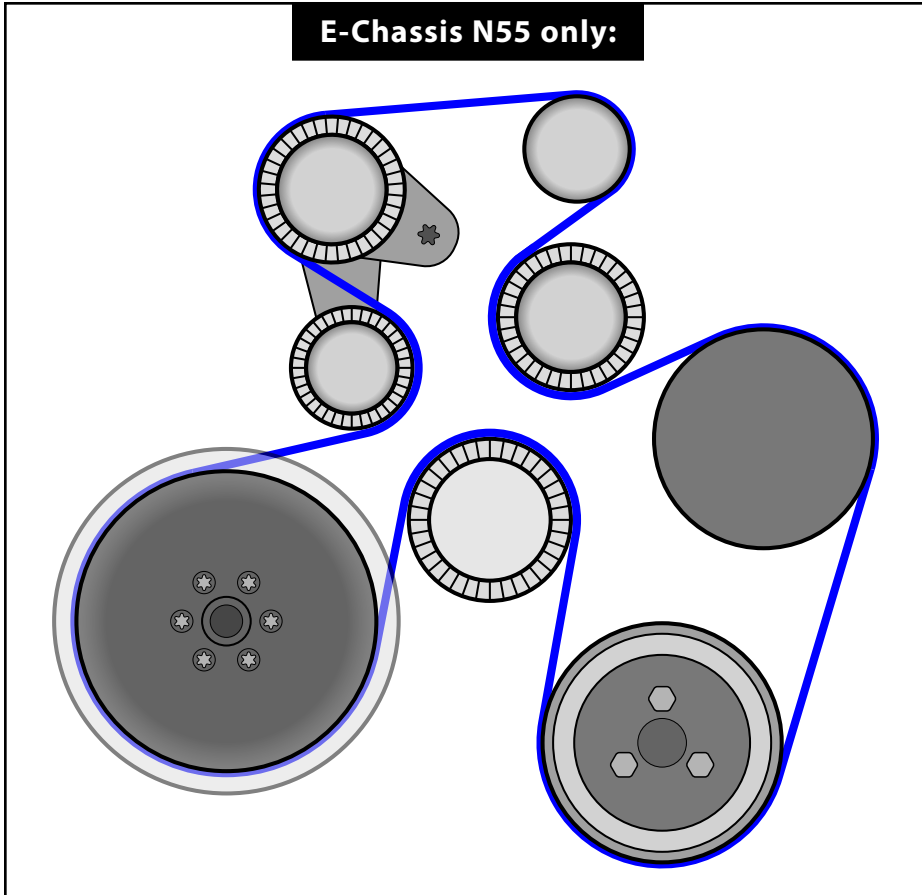


DRIVE BELT DIAGRAM - N54

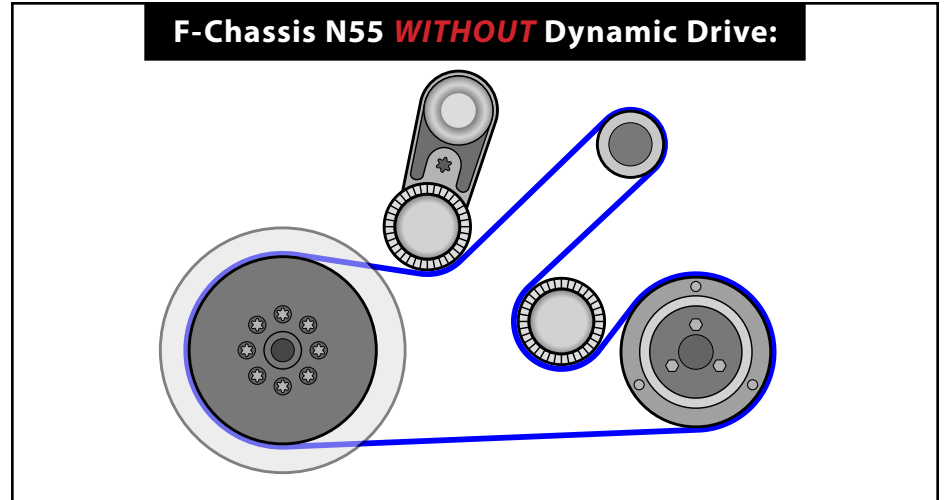


DRIVE BELT DIAGRAM - N55

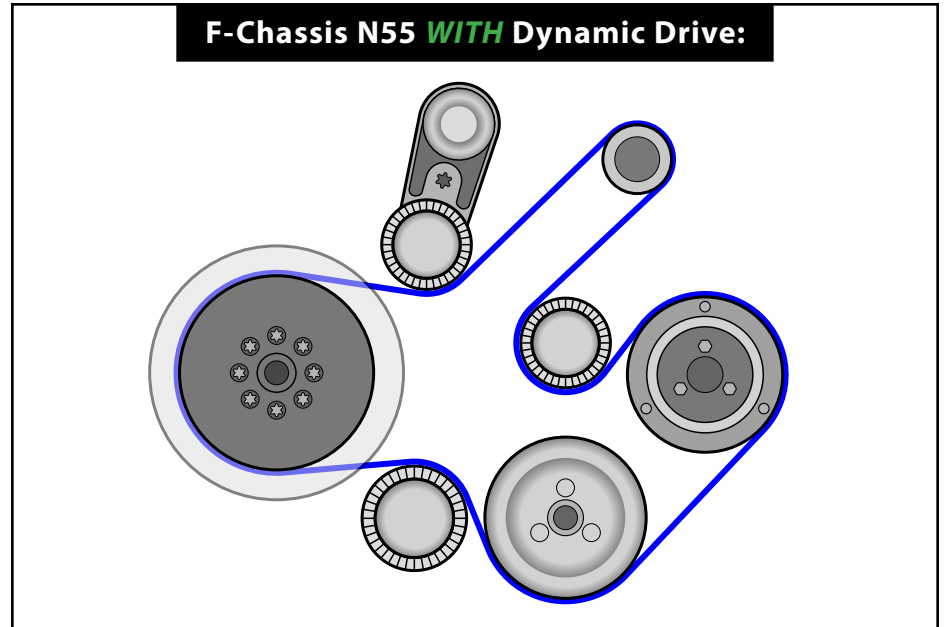
E-Chassis N55 only:



F-Chassis N55 *WITHOUT* Dynamic Drive:



F-Chassis N55 *WITH* Dynamic Drive:



Your Crank Seal Protection Plate installation is complete!



These instructions are provided as a courtesy by ECS Tuning

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