BMW N54 Downpipes w/High Flow Catalytic Converters Installation Guide

INTRODUCTION

Today we will be installing a set of our downpipes w/high flow catalytic converters into our E92 335i. These downpipes have been designed by our engineers for maximum exhaust flow, and a throatier exhaust note.

The photo on the right shows our Turner N54 downpipes next to the stock units. The new downpipes w/high flow cats are designed to be direct replacements for the stock units. Manufactured using 304 stainless steel, these downpipes will resist corrosion and look great just like they should.

Before you begin, read and familiarize yourself with these instructions and make sure you have all the required tools on hand.

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KIT CONTENTS

Front Downpipe **(Bank 1: Cylinders 1-3)**

Rear Downpipe **(Bank 2: Cylinders 4-6)**

SUGGESTED ITEMS

N54 Downpipe Installation Kit
Must be purchased separately - T#396286

Turner Motorsport Valved Exhaust System
Click HERE to shop

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

Turner Motorsport 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 STOCK DOWNPIPES

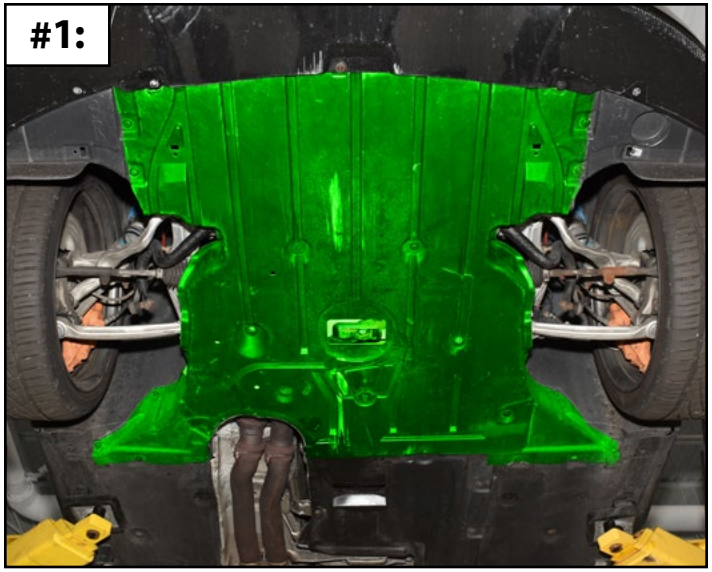
Step 1:

Safely lift and support the vehicle, then remove the insulation panels from underneath (highlighted in **GREEN** in **photo #1**).

Remove the 16mm bolts from the front chassis brace (highlighted in **GREEN** in **photo #2**).

We would strongly recommend soaking the downpipe nuts (highlighted in **GREEN** in **photo #3**) at this time, and letting them soak while continuing to the next steps. We'll come back later to remove these nuts.

#1:



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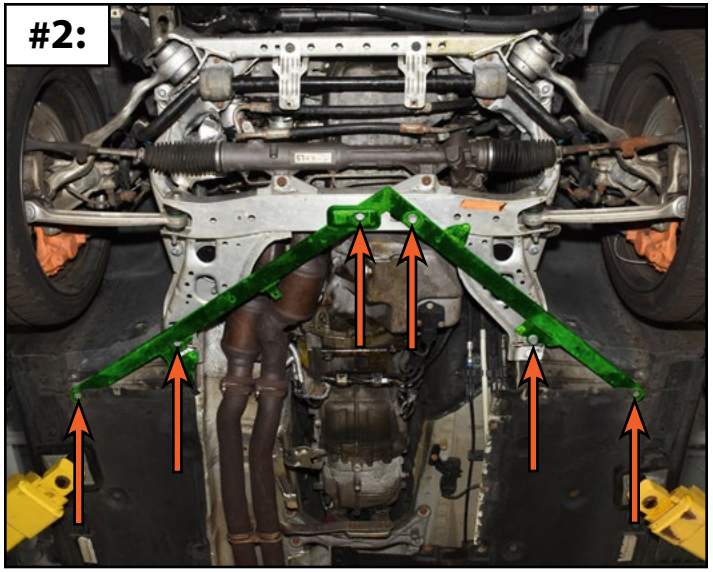

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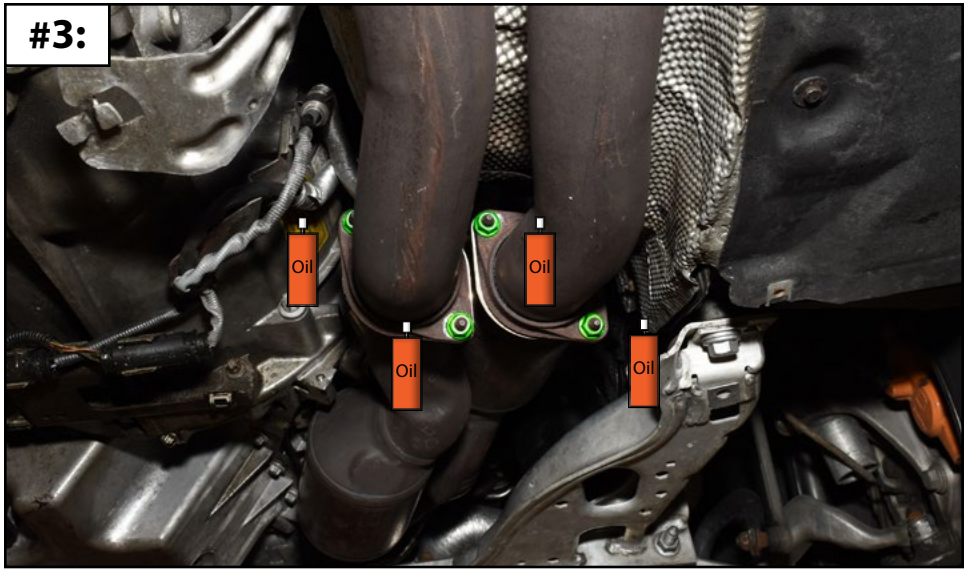


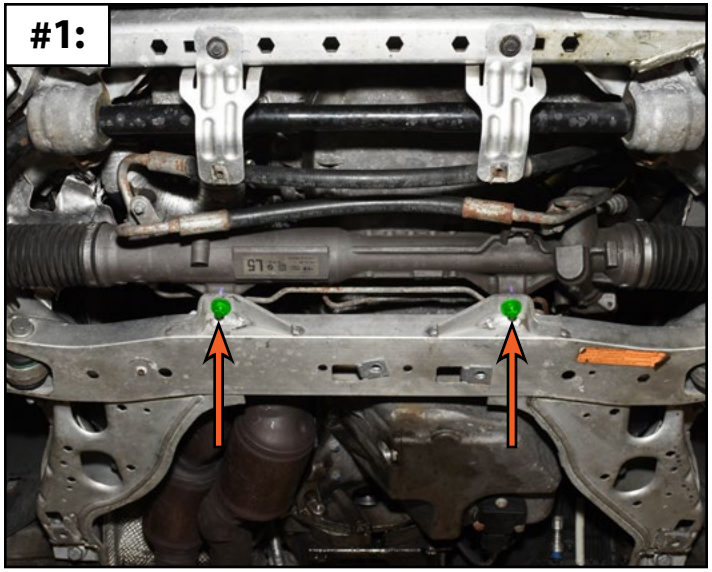
REMOVING THE STOCK DOWNPIPES

Step 2:

Remove the E12 Torx bolts which secure the steering rack to the subframe (highlighted in **GREEN** in **photo #1**). These bolts can be a bit tricky because you will need to counter-hold the 16mm nut which is on top of the steering rack.

Carefully slide the steering rack forward slightly until it slides free of the subframe (shown in **photo #2**). **BE VERY CAREFUL** during this step! We only want to move the rack out of the way for better access to the downpipes, but we don't want to damage the U-joint on the intermediate steering shaft.

#1:



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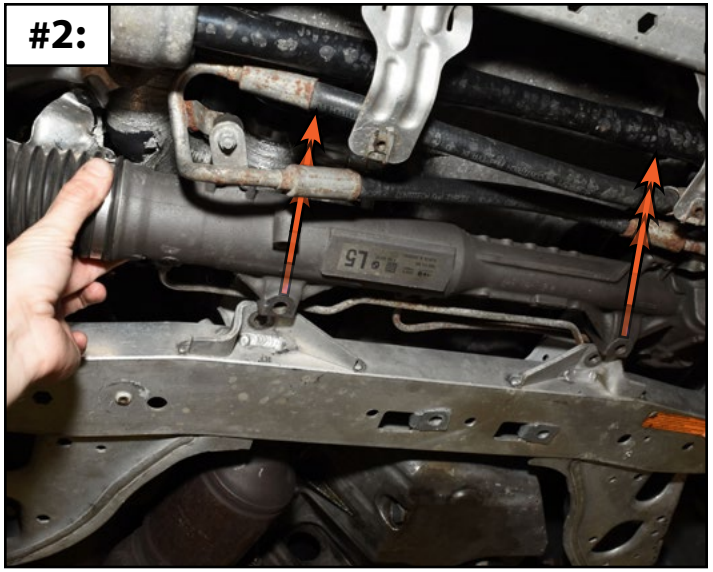


Optional:

There is a small heat shield located over the RH inner tie rod end (highlighted in **GREEN** in **photo #3**). Removing this shield will give you even more room to work, we've found it to be worth the effort.

#3:

REMOVING THE STOCK DOWNPIPES

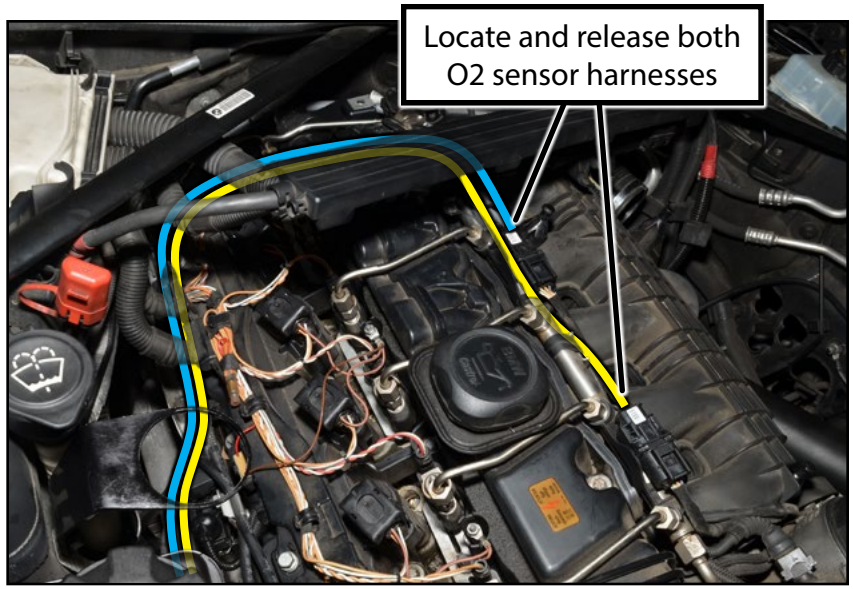
Step 3:

Remove the rain tray and the engine cover (highlighted in **GREEN** in the photo).

Step 4:

Locate the upstream oxygen sensor harnesses and connectors. Familiarize yourself with how they are routed around the back side of the engine, we will want to replicate this routing when we are reassembling later on.

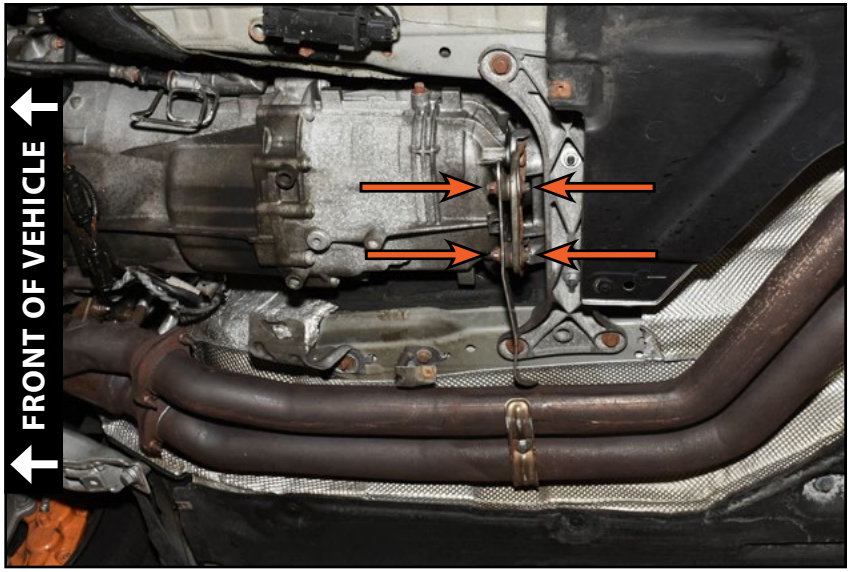
Disconnect both upstream oxygen sensor harness connectors, then release the harnesses from all of the clips which secure them to the engine.



REMOVING THE STOCK DOWNPIPES

Step 5: E10 Torx, 12mm Wrench or 12mm Socket & Ratchet

Remove the bolts & nuts (arrows) which secure the exhaust hanger to the transmission bracket.



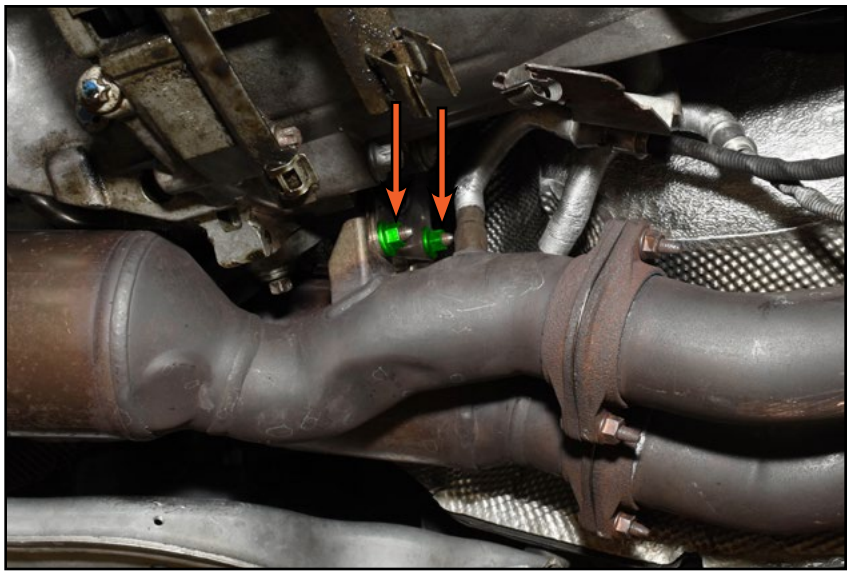
Step 6:

Disconnect both downstream oxygen sensor connectors (arrows).

REMOVING THE STOCK DOWNPIPES

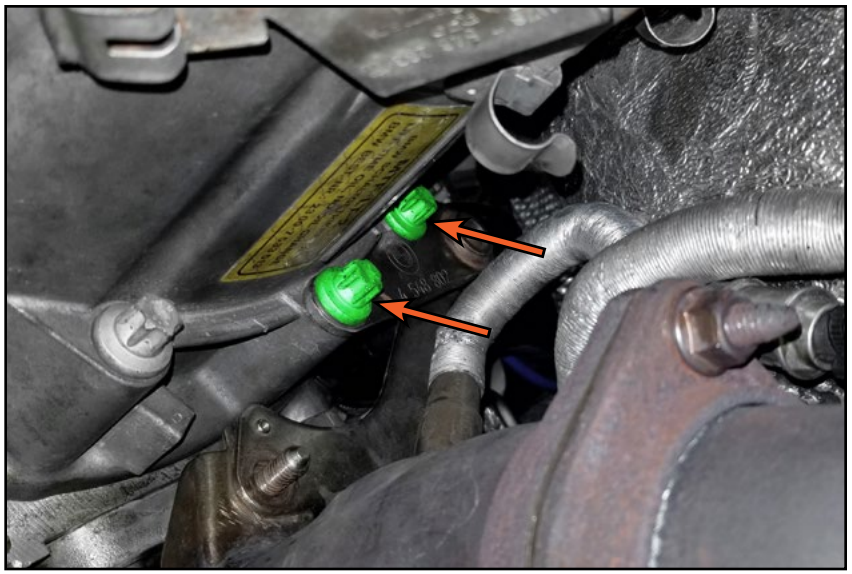
Step 7: 12mm Socket & Ratchet

Remove the nuts (highlighted in **GREEN** in the photo) which secure the downpipes to the mounting bracket on the side of the bell housing.



Step 8: E14 Torx

Remove the two bolts (highlighted in **GREEN** in the photo) which secure the mounting bracket to the bell housing, then remove that bracket from the vehicle.



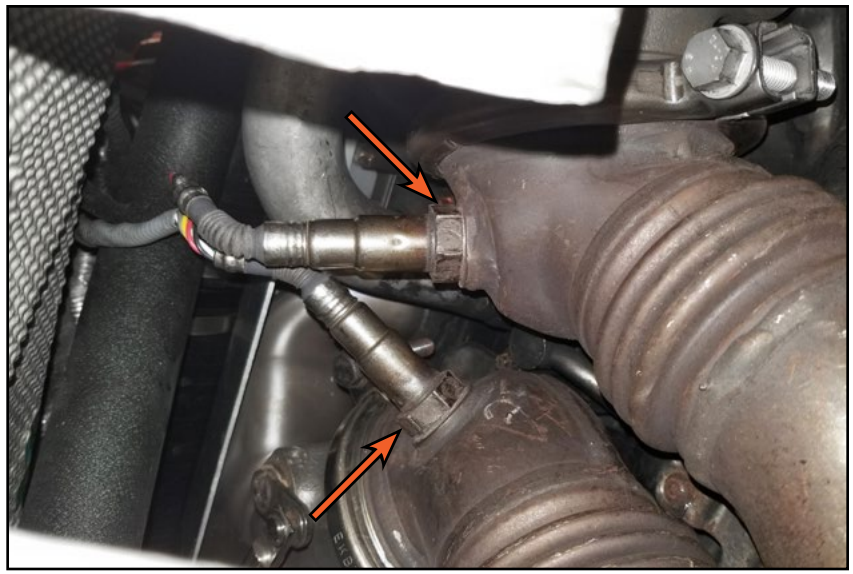
REMOVING THE STOCK DOWNPIPES

Step 9: 12mm Socket & Ratchet

Now we can go back and remove the four downpipe nuts and shift the exhaust system rearward slightly.

Step 10: Oxygen Sensor Wrench or Socket

Before we proceed, we would strongly advise you to remove the upstream oxygen sensors (arrows) from the downpipes. Removing the sensors makes it much easier to remove the downpipes, and it might save you from needing to drop the subframe for clearance.



TECH TIP

If you need to remove or lower the subframe, please click HERE to watch the ECS Tuning video on this procedure.

REMOVING THE STOCK DOWNPIPES

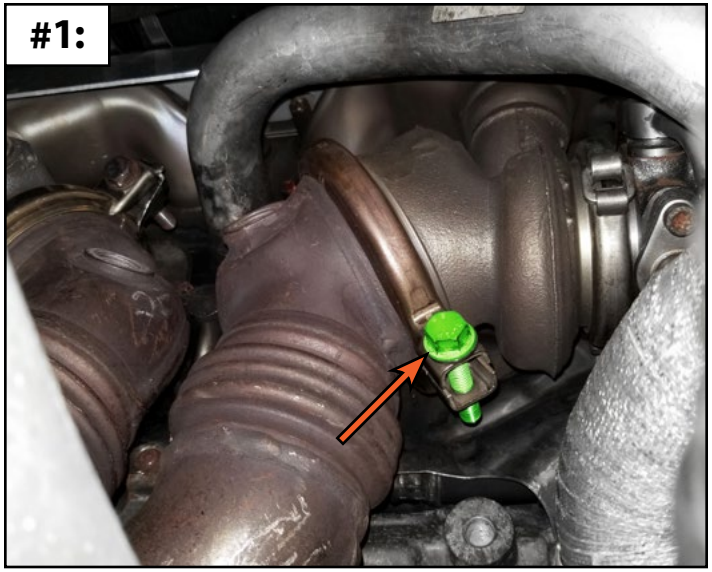
Step 11:

Locate and remove the 13mm bolt (highlighted in **GREEN** in **photo #1**) from the V-band clamp on the front downpipe.

Remove the front downpipe from the vehicle (**photo #2**). If you removed the upstream oxygen sensors earlier on this step will be much easier. You may need to twist and manipulate the downpipe around to get it to clear the subframe.

Repeat this procedure to remove the rear downpipe (**photos #3 & #4**).

#1:



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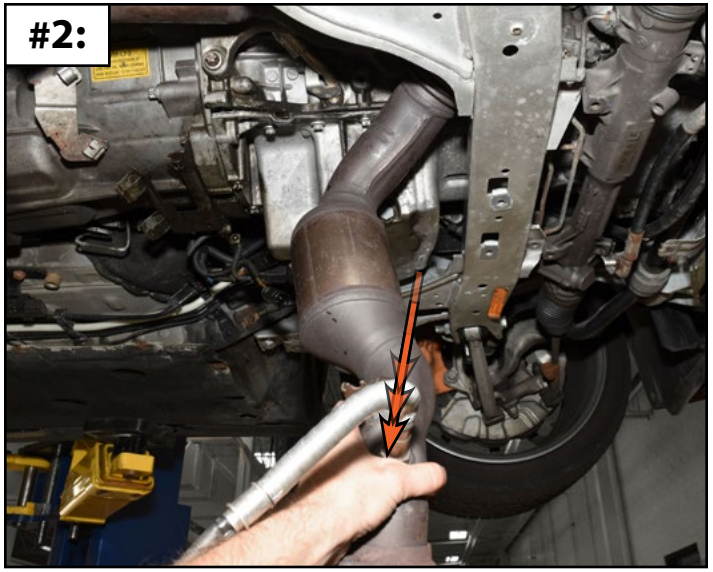

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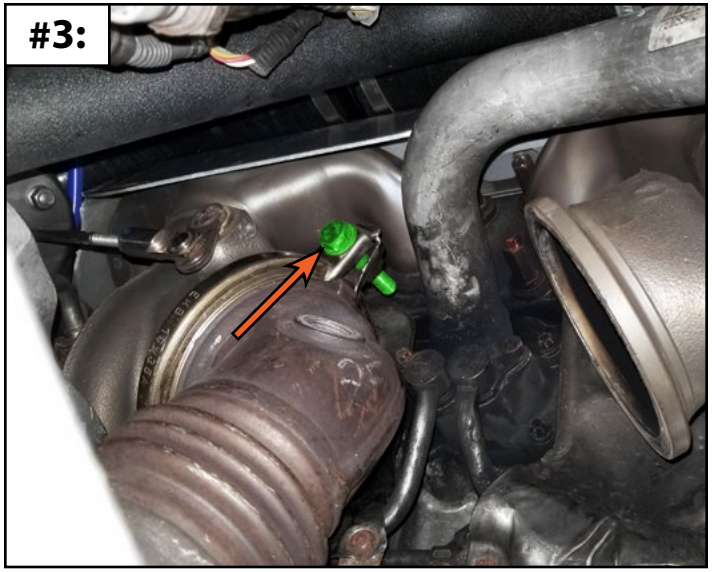

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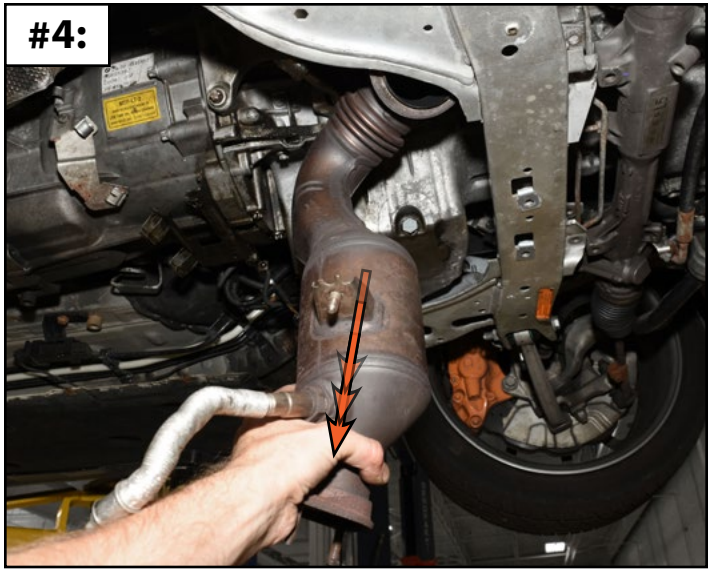


INSTALLING THE NEW DOWNPIPES

Step 1:

Transfer the downstream oxygen sensors over to the new downpipes (**photo #1**). Be careful to not mix up the sensors:

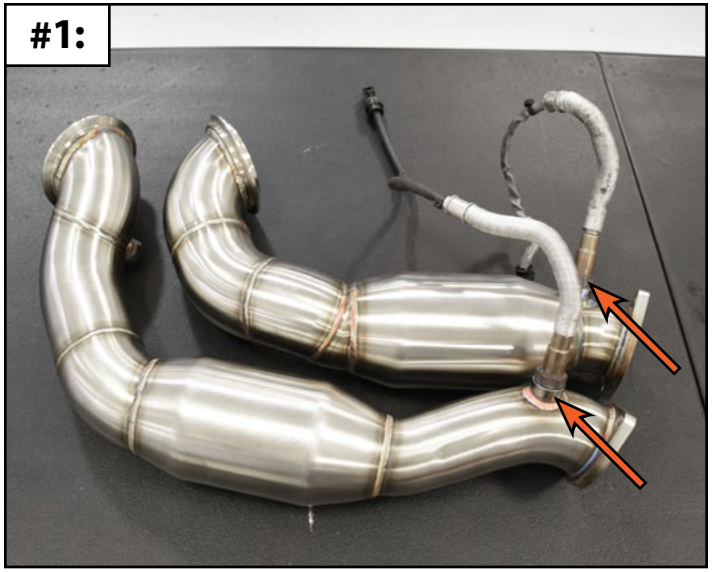
- The oxygen sensor with the **GRAY** wiring harness goes in the ***front*** downpipe (cylinders 1-3).
- The oxygen sensor with the **BLACK** wiring harness goes in the ***rear*** downpipe (cylinders 4-6).

Install the new ***rear*** downpipe into place, then install the new ***front*** downpipe into place (**photo #2**).

Loosely install both v-band clamps (arrows in **photo #3**).

Reinstall the upstream oxygen sensors into the downpipes (arrows in **photo #4**), torque them to 50 Nm (37 Ft-lbs) .

#1:



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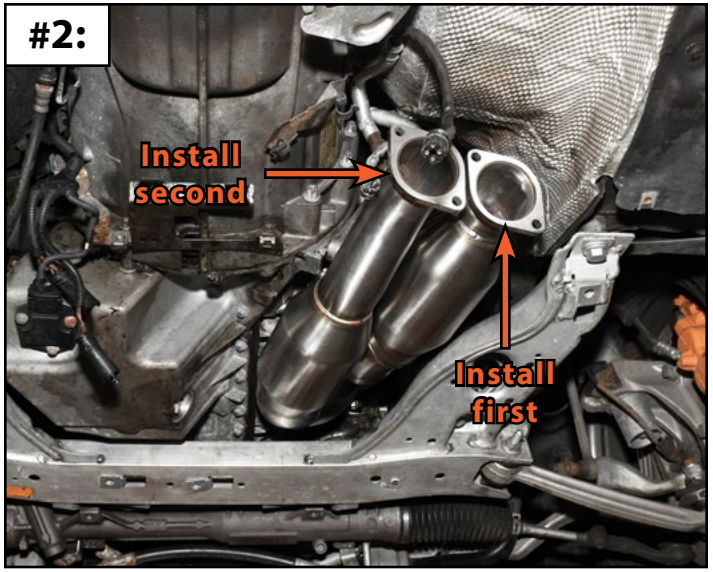

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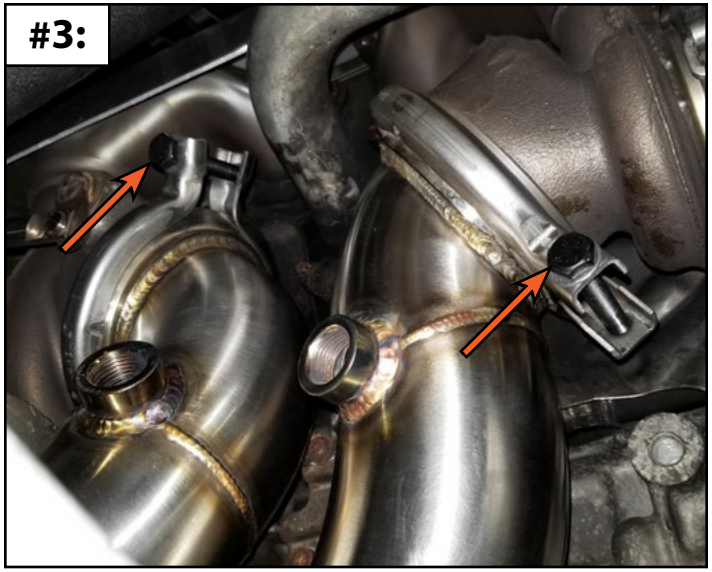

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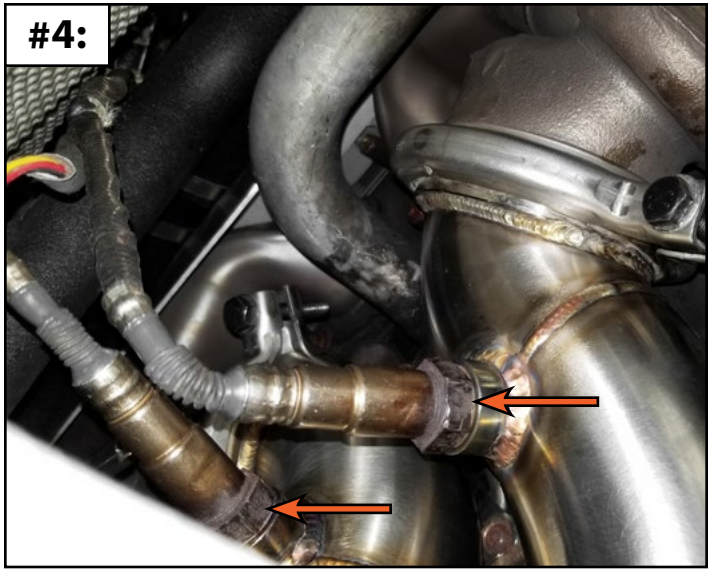
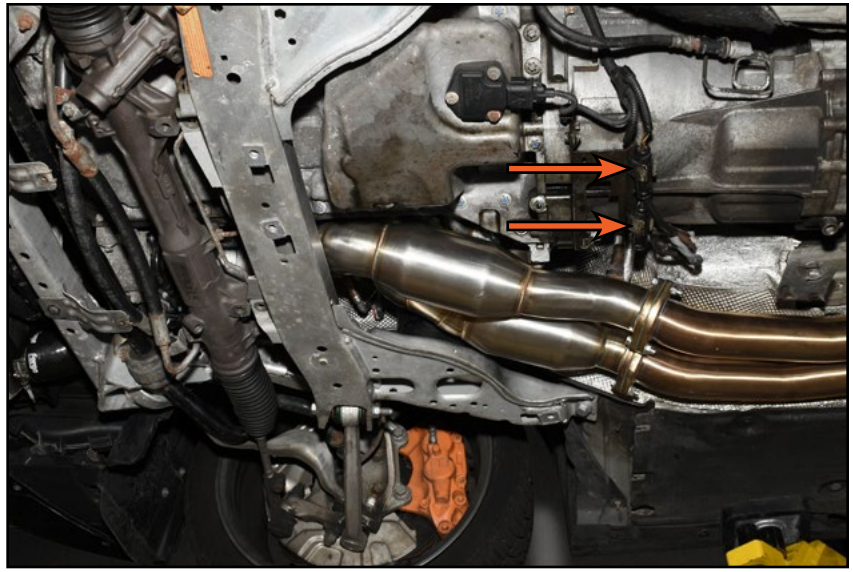


INSTALLING THE NEW DOWNPIPES

Step 2: 13mm Socket & Torque Wrench

Reconnect both downstream oxygen sensor connectors (arrows). Adjust the downpipes and the exhaust system as needed in order to align them, then use the provided gaskets and hardware to connect them together (shown in the photo).

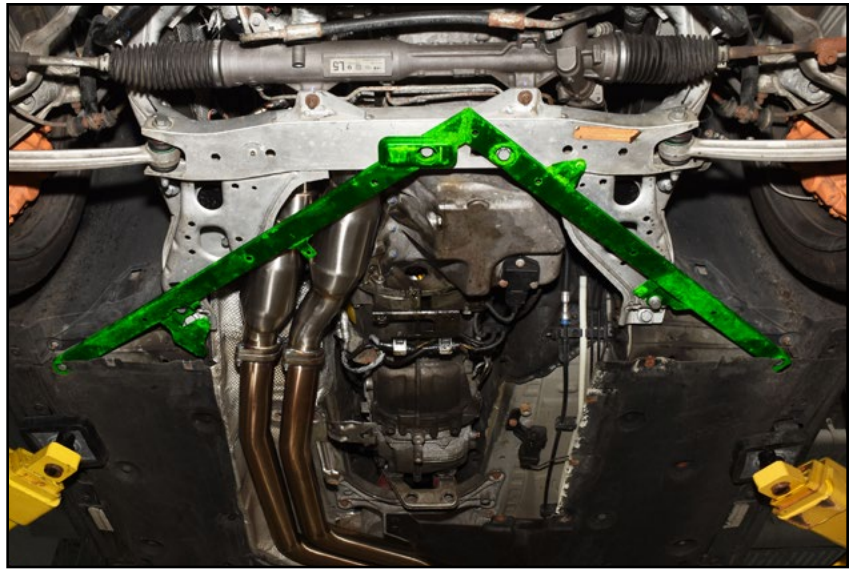
- Torque the downpipe nuts to 21 Nm (16 Ft-lbs).
- Torque the v-band clamp bolts to 13 Nm (10 Ft-lbs).



Step 3: E12 Torx, 16mm Socket & Torque Wrench

Reinstall the small heat shield above the steering rack (if you removed it earlier), the steering rack, heat shield, and cross brace (highlighted in **GREEN** in the photo).

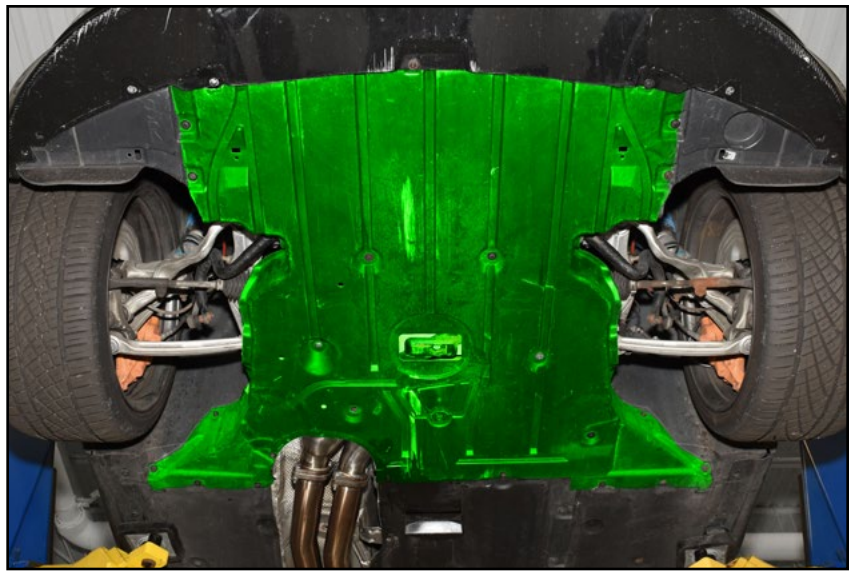
- Torque the steering rack bolts to 56 Nm (41 Ft-lbs) + 90°.
  - These nuts and bolts are Torque-To-Yield (TTY), they must always be replaced once removed.
- Torque the cross brace bolts to 56 Nm (41 Ft-lbs) + 90°.
  - These bolts are Torque-To-Yield (TTY), they must always be replaced once removed.



INSTALLING THE NEW DOWNPIPES

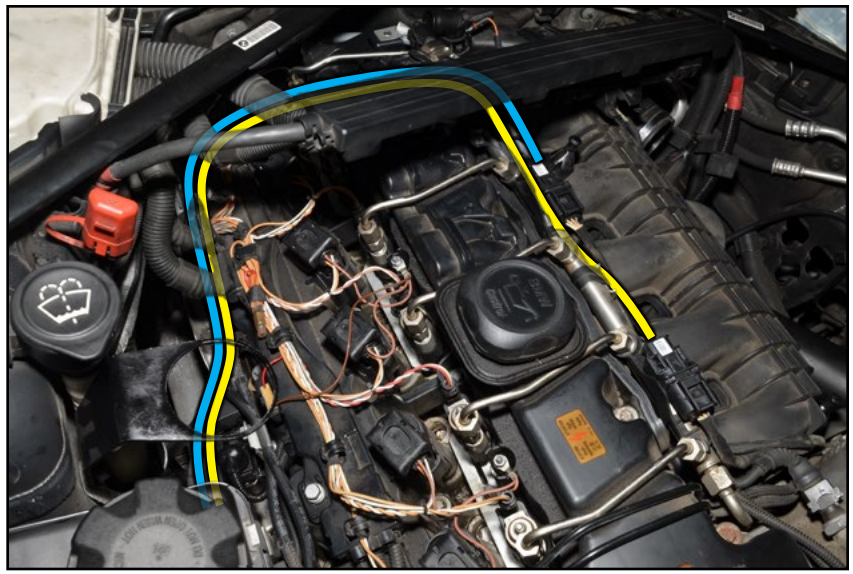
Step 4:

Reinstall the insulation panels underneath the vehicle (highlighted in **GREEN** in the photo).



Step 5:

Route the upstream oxygen sensor wiring harnesses around the back side of the engine and reconnect them to the engine wiring harness.



Your installation is complete!

Your Downpipe w/High Flow Catalytic Converter installation is complete!

These instructions are provided as a courtesy by Turner Motorsport

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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