



TDI / AEM-C Emissions Service Action

Code: 23Z8

Subject 3.0L TDI Engine Gen 2 PC – Emissions System Modification Correction (AEM-C)

Release Date August 14, 2019

Affected Vehicles U.S.A.: 2014-2016 MY Audi Q5, A6, A7 A8/A8L 3.0L TDI Generation 2 PC

Check Campaigns/Actions screen in Elsa on the day of repair to verify that a VIN qualifies for repair under this action. Elsa is the only valid campaign inquiry & verification source.

- ✓ Campaign status must show “open.”
- ✓ If Elsa shows other open action(s), inform your customer so that the work can also be completed at the same time the vehicle is in the workshop for this campaign.

AEM-C Description

Audi is releasing a software calibration update to the Approved Emissions Modification (AEM) to improve on-board diagnostics (OBD) monitoring of vehicle emissions systems and provide other improvements to the software used by the vehicle. Additionally, to reduce soot accumulation affecting the oxygen sensor, it is necessary to replace and relocate the sensor, which requires replacement of the diesel oxidation catalyst (DOC) and diesel particulate filter (DPF).

IMPORTANT!

This Emissions Service Action (AEM-C) ONLY applies to vehicles that have already received the AEM (23V4 campaign)

- This Emissions Service Action (AEM-C) **MUST** explicitly be elected by the customer and be clearly marked on the repair order **PRIOR** to commencing the update.
- This Emissions Service Action (AEM-C) **only** applies to vehicles that have received the Approved Emissions Modification (AEM – 23V4 campaign).
- Dealers **MUST** provide a copy of the attached customer letter to each customer who presents their vehicle for repair under this Emissions Service Action (AEM-C).
- If a vehicle has not received the AEM (23V4 campaign), this Emissions Service Action (AEM-C) does not apply.

Parts Information

Parts Control Type: Allocation

Parts allocation will occur once a week for the part numbers below with planned delivery on Wednesdays. Allocation requests for additional parts will not be accepted. If there is an issue with the allocation quantity, please contact your Field Representative.

Initial Allocation: Yes

Dealers will be sent an initial allocation prior to customer notification. If no initial allocation was received, please reference the Repair Projection Tool (below) to view your potential VIN population.

Criteria	Part Number	Description (per POC)	Qty. per Vehicle	Ordering Method
01,02,03	4H0-254-750-HX	PARTICULAT	1	Allocation
01,02,03	4H0-298-099	FIT. SET	1	Allocation
01,02,03	04L-906-262-B	OXYGEN SEN	1	Allocation

Repair Projection Tool (right click to open):

Code Visibility

On or about August 14, 2019, affected vehicles will be listed on the Inventory Vehicle Open Campaign Action report under My Dealership Reports (found on www.accessaudi.com & OMD Web). A list will not be posted for dealers who do not have any affected vehicles.

On or about August 14, 2019, this campaign code will show open on affected vehicles in Elsa.

On or about August 14, 2019, affected vehicles will be identified with this campaign code in the VIN Lookup tool at www.audiusa.com.

The repair information in this document is intended for use only by skilled technicians who have the proper tools, equipment and training to correctly and safely maintain your vehicle. These procedures are not intended to be attempted by "do-it-yourselfers," and you should not assume this document applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Audi dealer. ©2019 Audi of America, Inc. All Rights Reserved.


Owner Notification

Owner notification will take place on July 30, 2019. Owner letter examples are included in this bulletin for your reference.

Loaner/Rental Vehicle – REQUIRED!

Customers are eligible to receive a loaner vehicle. Please refer to Warranty Bulletin AWA 19-05 for claiming instructions.

To remain compliant with the Settlement Agreement, Service Consultants **must** complete a Loaner/Rental label and it **must** be signed by the customer. This documents each customer's decision to accept or decline the offer for a loaner or rental vehicle while the Approved Emissions Modification - Correction was being performed on their vehicle.

I hereby acknowledge that I was offered a Loaner or Rental vehicle to use while the TDI Emissions Recall is performed on my vehicle.
I elected
to: Accept Decline 

Customer Name (Print):
Customer
Signature:
Date:

Affix the completed label to the Repair Order.

Additional Information

Please alert everyone in your dealership about this action, including Sales, Service, Parts and Accounting personnel. Contact Warranty if you have any questions.

Dealers must ensure that every affected inventory vehicle has this campaign completed before delivery to consumers.

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Claim Entry Instructions

After campaign has been completed, enter claim as soon as possible to help prevent work from being duplicated elsewhere. Attach the Elsa screen print showing action open on the day of repair to the repair order.

If customer refused campaign work:

- ✓ U.S. dealers: Submit the request through Audi Warranty Online under the Campaigns/Update option.

Service Number	23Z8																								
Damage Code	0099																								
Parts Vendor Code	002																								
Claim Type	Sold vehicle: 7 10 Unsold vehicle: 7 90																								
Causal Indicator	Mark Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter* as causal part																								
Vehicle Wash/Loaner	Do not claim wash/loaner under this action. Please refer to Warranty Bulletin AWA 19-05 for loaner vehicle claiming instructions.																								
Criteria I.D.	01, or 02, or 03																								
	<p><u>A6, A7, and Q5 Models</u>: Install updated Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter and Oxygen Sensor.</p> <p>Labor operation: 2674 55 99 260 T.U.</p> <table border="1"><thead><tr><th>Quantity</th><th>Part Number</th><th>Description</th></tr></thead><tbody><tr><td>1.00</td><td>4H0254750HX</td><td>Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter*</td></tr><tr><td>1.00</td><td>4H0298099</td><td>Installation Kit for Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter</td></tr><tr><td>1.00</td><td>04L906262B</td><td>Oxygen Sensor</td></tr></tbody></table> <p>--OR--</p> <p><u>A8 Models</u>: Install updated Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter and Oxygen Sensor.</p> <p>Labor operation: 2674 56 99 320 T.U.</p> <table border="1"><thead><tr><th>Quantity</th><th>Part Number</th><th>Description</th></tr></thead><tbody><tr><td>1.00</td><td>4H0254750HX</td><td>Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter*</td></tr><tr><td>1.00</td><td>4H0298099</td><td>Installation Kit for Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter</td></tr><tr><td>1.00</td><td>04L906262B</td><td>Oxygen Sensor</td></tr></tbody></table> <p>--AND <u>ALL MODELS</u>--</p> <p>Connect battery charger.</p> <p>Labor operation: 2706 89 50 10 T.U.</p> <p>--AND <u>ALL MODELS</u>--</p> <p>Connect vehicle diagnostic tester, perform software update for engine control unit.</p> <p>Labor operation: 2360 25 99 Time stated on diagnostic protocol</p>	Quantity	Part Number	Description	1.00	4H0254750HX	Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter*	1.00	4H0298099	Installation Kit for Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter	1.00	04L906262B	Oxygen Sensor	Quantity	Part Number	Description	1.00	4H0254750HX	Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter*	1.00	4H0298099	Installation Kit for Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter	1.00	04L906262B	Oxygen Sensor
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This notice applies to your vehicle: <VIN>

**Subject: Emissions Service Action 23Z8
3.0L TDI Engine – Emissions System Modification Correction (AEM-C)
2014-2016 Model Year Audi Q5, A6, A7 and A8/A8L with 3.0L TDI Engine (Generation 2 Passenger Cars)**

Dear Audi Owner,

As part of Audi's ongoing commitment to customer satisfaction, we are informing you of our decision to conduct a service action on certain 2014-2016 model year Audi 3.0L TDI (Gen 2 PC) vehicles that received an Approved Emissions Modification, or that will eventually receive the Approved Emissions Modification, pursuant to the terms of Audi's Second Partial Consent Decree with the Environmental Protection Agency, Department of Justice, California Air Resources Board, and California Attorney General. Our records show that you are the owner of a vehicle affected by this action.

Information about this Approved Emissions Modification – Correction (AEM-C)

- To reduce soot accumulation related to the oxygen sensor, it is necessary to perform an AEM Correction and replace and relocate the oxygen sensor to a different location in the exhaust pipe. This soot accumulation may cause the sensor not to work effectively and could illuminate your "check engine" light. Fixing this issue will require installation of a new diesel particulate filter (DPF) with an improved oxygen sensor position. The DPF is in a part that also includes a diesel oxidation catalyst (DOC) that will also be replaced as a result. In addition, as part of the same service action, Audi is releasing a software update to the Approved Emissions Modification (AEM) in order to improve on-board diagnostics (OBD) monitoring of vehicle emissions systems and also improve the software used by your vehicle.
- Updates in this service action will not adversely impact your vehicle's drivability, features, fuel economy, or warranty coverage.
- Updates will take up to four (4) hours to complete, and will be performed for you free of charge.
- Audi will provide you a loaner vehicle. You may also request alternate transportation during this update.

What should you do?

If you elect to receive these updates, please contact your authorized Audi dealer as soon as possible to schedule this service. Please keep in mind that your dealer may need additional time for the preparation of the repair, as well as to accommodate their daily workshop schedule. For your convenience, you can also visit www.audiusa.com and click on the "Find a Dealer" link to locate a dealer near you and schedule this service. Before you receive these updates, you will be required to provide written authorization to the Audi dealer.

This service action is voluntary. However, if you previously received an Approved Emissions Modification and elect **not** to receive these updates to your vehicle, it may cause issues with your OBD system and require a trip to an authorized Audi dealer to address.

If you already received an AEM and elect to receive these updates, you have two options:

- **Option 1:** At your convenience, you may contact your nearest authorized Audi dealer and arrange for an appointment to receive this service action update at no cost to you with your written authorization.
- **Option 2:** When you visit your Audi service department for any reason, including the "check engine" light being illuminated due to this issue, the dealer can update your vehicle with your written authorization.

Additionally, if you chose to receive an AEM, but have not yet received it, please contact your nearest authorized Audi dealer for an appointment. The dealer will provide both the AEM and this AEM-C during the same appointment with your written authorization.

Lease vehicles and address changes

If you are the lessor and registered owner of the vehicle identified in this action, please forward this letter immediately via first-class mail to the lessee within ten (10) days of receipt. If you have changed your address or sold the vehicle, please fill out the enclosed prepaid Owner Reply card and mail it to us so we can update our records.

Can we assist you further?

If your authorized Audi dealer fails or is unable to complete this work free of charge within a reasonable time, please contact Audi Customer Experience at 1-800-253-2834 or via our "Contact Us" page at www.audiusa.com.

The repair information in this document is intended for use only by skilled technicians who have the proper tools, equipment and training to correctly and safely maintain your vehicle. These procedures are not intended to be attempted by "do-it-yourselfers," and you should not assume this document applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Audi dealer. ©2019 Audi of America, Inc. All Rights Reserved.

Checking your vehicle for open Recalls and Service Campaigns

To check your vehicle's eligibility for repair under this or any other recall/service campaign, please visit the **Recall/Service Campaign Lookup** tool at www.audiusa.com and enter your Vehicle Identification Number (VIN).

We apologize for any inconvenience this matter may cause; however we are taking this action to help ensure your vehicle continues to meet your expectations and the requirements of Audi's Consent Decree with the United States and California.

Sincerely,

Audi Customer Protection

NOTE

- These repair instructions may differ from the labor operations and labor times listed in ELSA.
- Damages resulting from improper repair or failure to follow these work instructions are the dealer's responsibility and are not eligible for reimbursement under this action.
- This procedure must be read in its entirety prior to performing the repair.
- Due to variations in vehicle equipment and options, the steps/illustrations in this work procedure may not identically match all affected vehicles.
- Diagnosis and repair of pre-existing conditions in the vehicle are not covered under this action.
- When working during extreme temperatures, it is recommended that the vehicle be allowed to acclimate inside the shop to avoid temperature-related component damage/breakage.

Repair Overview



- Replace Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter with updated version.
- Replace Oxygen Sensor.
- Update ECM software.

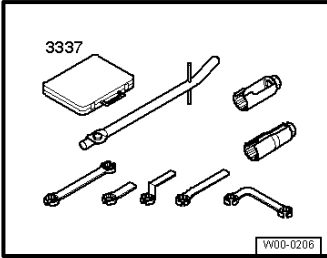
Required Parts

<u>Criteria</u>	<u>Quantity</u>	<u>Part Number</u>	<u>Part Description</u>
01 or 02 or 03	1	4H0.254.750.HX	Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter
01 or 02 or 03	1	4H0.298.099	Installation Kit for Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter (See Appendix A for kit contents)
01 or 02 or 03	1	04L.906.262.B	Oxygen Sensor

NOTE

The specified part numbers reflect the status at the start of this recall. Interim updates made in ETKA can cause a listed part number to become unavailable. In this case, the new part number specified in ETKA should be used.

Required Tools

	<p>VAS6150D - Diagnostic Tester (or equivalent)</p> <p>VAS6154 - Vehicle Communication Interface (or equivalent)</p>		<p>GRX3000VAS – Battery Tester/Charger (or equivalent)</p>
	<p>Diesel Engine Tool Set - 17mm -T10395A- (or equivalent)</p>		<p>Ring Wrench 7-Piece Set -3337- (or equivalent)</p>
	<p>Torque Wrench 1332 40-200Nm -VAG 1332 (or equivalent)</p>		<p>Torque Wrench 1331 5-50Nm -VAG 1331 (or equivalent)</p>
	<p>Wiper Arm Kit - Puller 1 -T10369/1- (or equivalent)</p>		

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Repair Instruction

Section A - Check for Previous Repair

Applicable criteria ID(s)	Campaign/Action Status
01 ← 2	Open ← 1

EXAMPLE

- Enter the VIN in Elsa and proceed to the “Campaign/Action” screen.

TIP

On the date of repair, print this screen and keep a copy with the repair order.

- Confirm the Campaign/Action is open <arrow 1>. If the status is closed, no further work is required.
- Note the Applicable Criteria ID <arrow 2> for use in determining the correct work to be done and corresponding parts associated.
- **All safety recalls must be completed prior to completing this Service Action.**

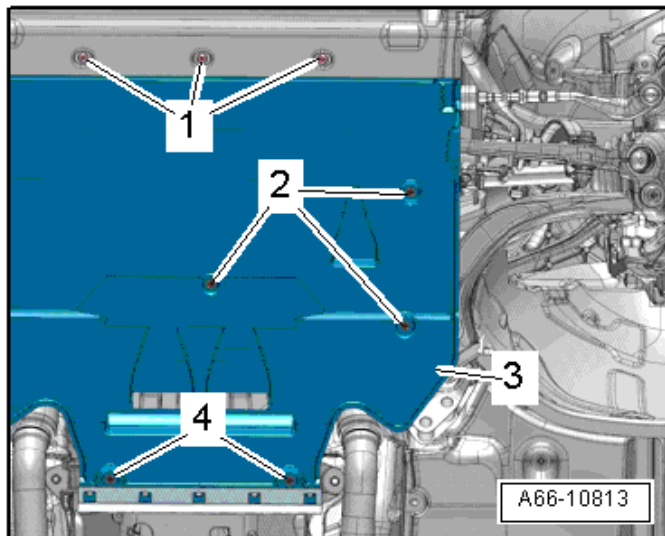
Proceed to Section B

Section B – For All Criteria (01, 02, 03): A6 and A7 Vehicles, Replace Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter

A6 and A7, Replace Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter

Remove rear noise insulation:

- Secure and raise vehicle on hoist.
- Remove the bolts <1>.
- Loosen the quick-release fasteners <2 and 4>.
- Remove the rear noise insulation <3>.



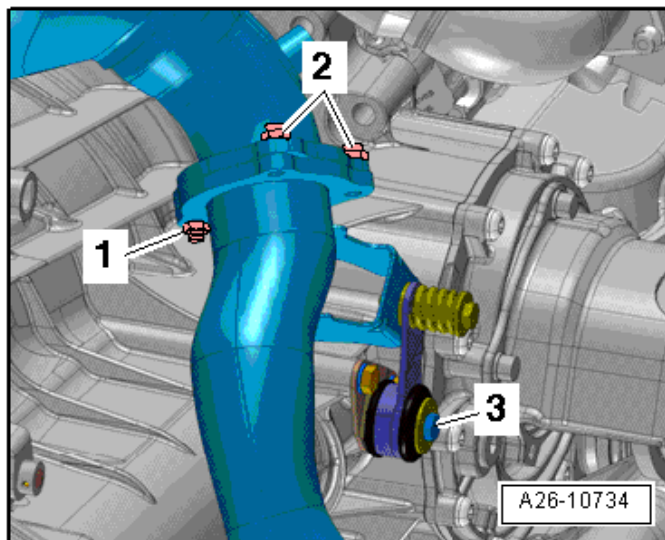
Remove lower exhaust nut:

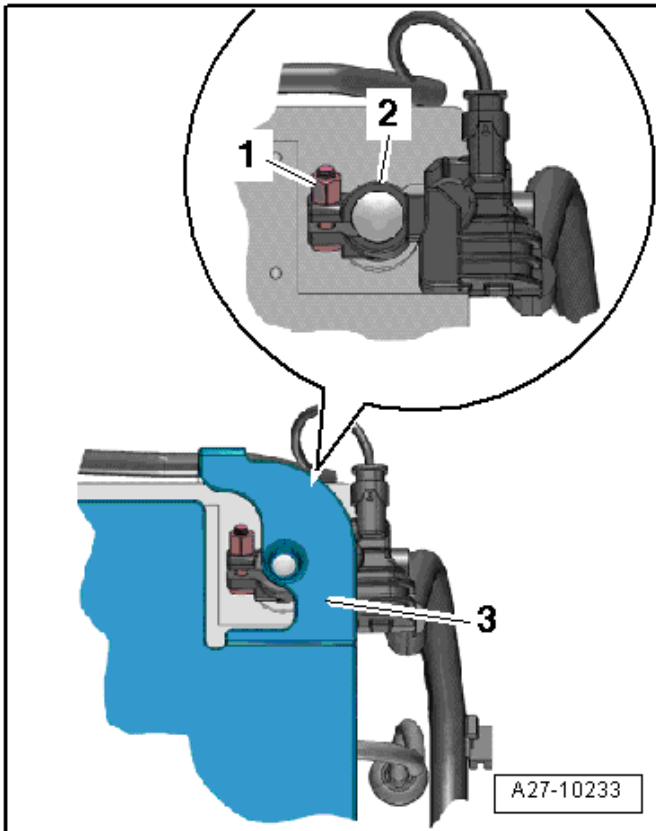
- Remove the nut <1>.

NOTE

The nuts <2> will be removed later from above. Ignore item <3>.

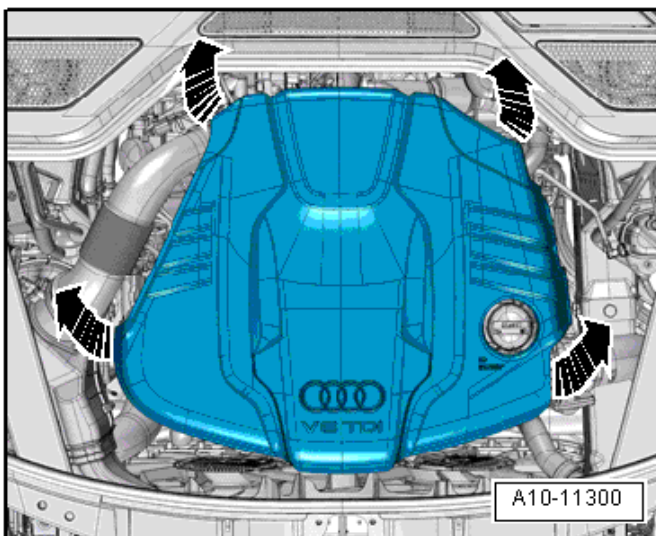
- Lower the vehicle on the hoist.





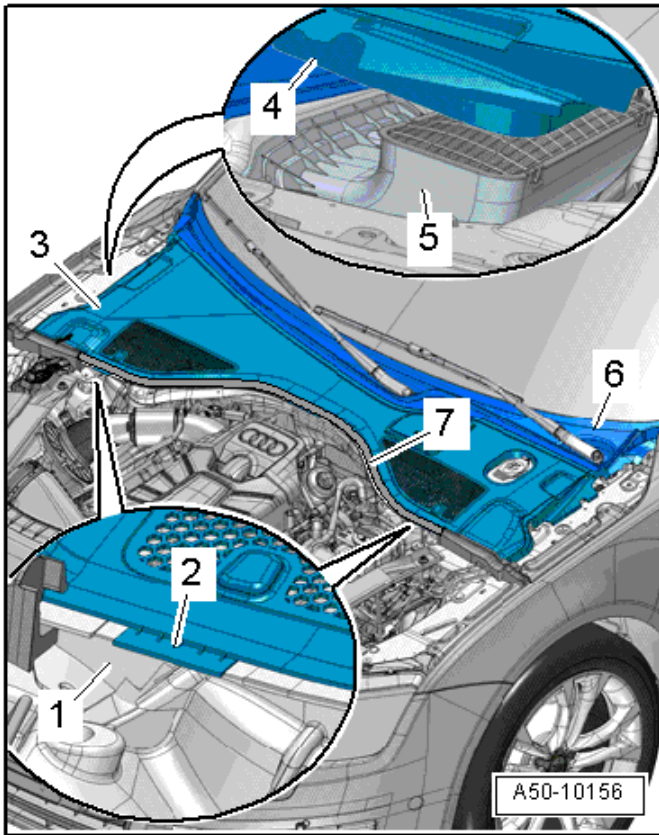
Battery Disconnect:

- Turn off the ignition.
- Lift the luggage compartment floor covering by the handle and fold it forward.
- If equipped remove the vehicle tool kit.
- Open the cover <3> over the battery negative pole.
- Loosen the nut <1> several turns and remove the battery ground cable terminal <2> from the battery terminal.



Remove engine cover:

- Carefully pull the engine cover off the retaining pins one after the other in direction of <arrows>. Do not pull sharply on the engine cover or pull it to one side.



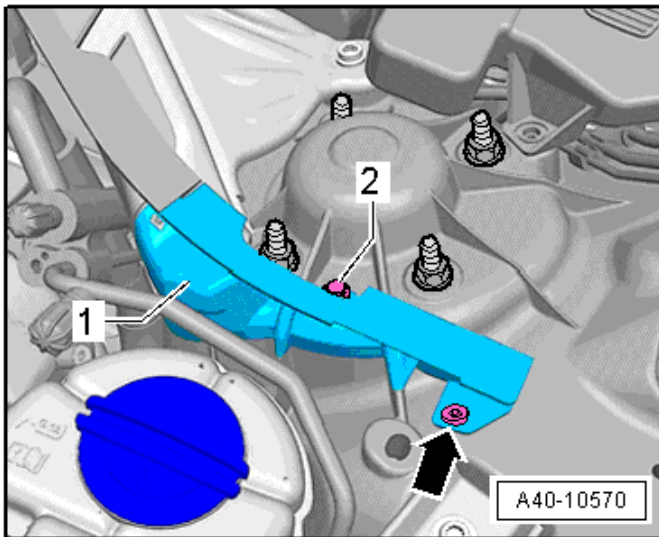
A50-10156

Remove Plenum Chamber Cover:

- Remove the seal <7>.
- Lift the plenum chamber cover <3> far enough so that the frame <4> is above the air intake shroud <5> for the fresh air blower.
- Remove the plenum chamber cover from the cowl panel <6>.

NOTE

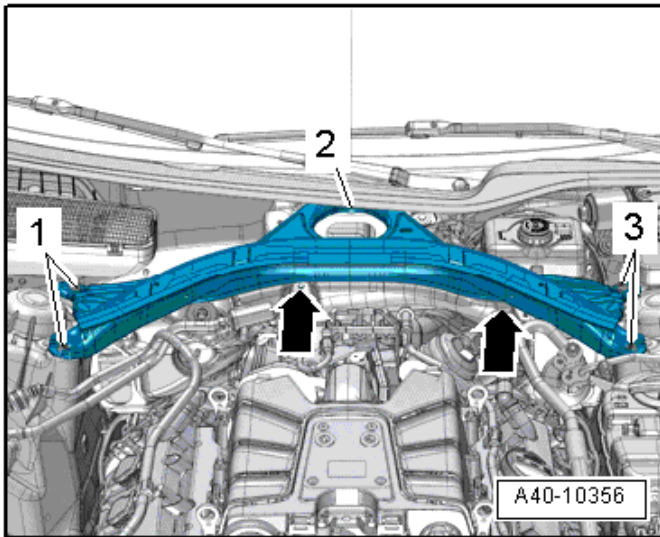
The tab <2> over the cover <1> will be damaged if the seal is not removed first. Consequential damage to the cowl cover or seal will not be covered under this action.



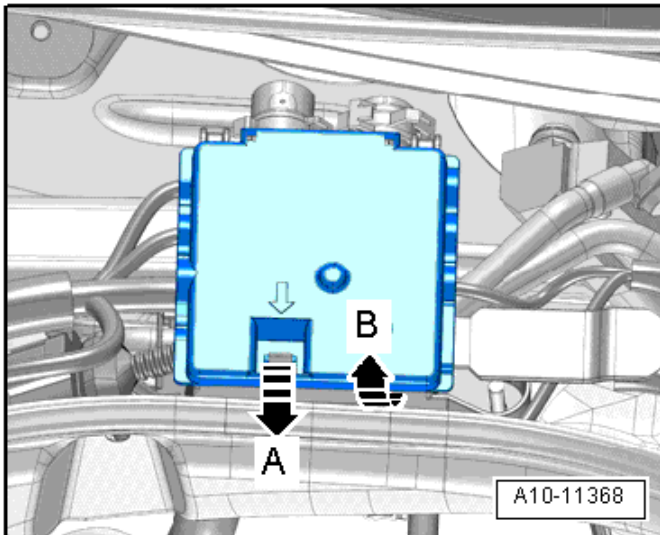
A40-10570

Remove Tower Brace:

- Remove the left and right expanding rivets <arrows> and the nuts <2> and unclip the trim cover <1>.

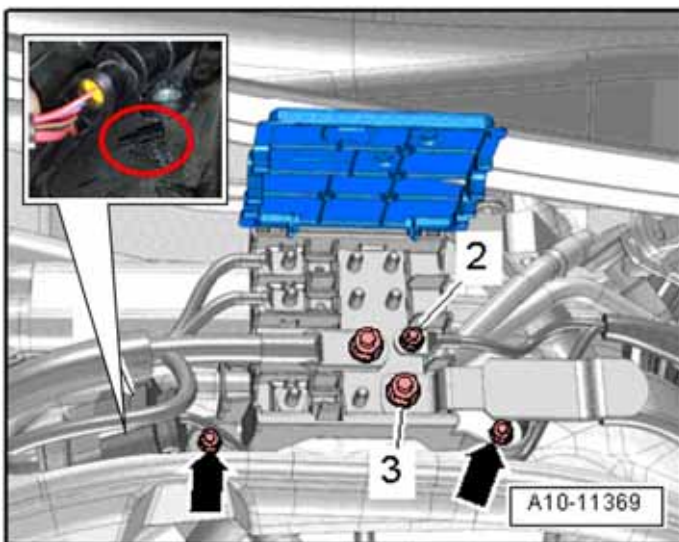


- Remove the five bolts <1, 2, and 3> and remove the two screws <arrows>.
- Remove the tower brace from the vehicle.

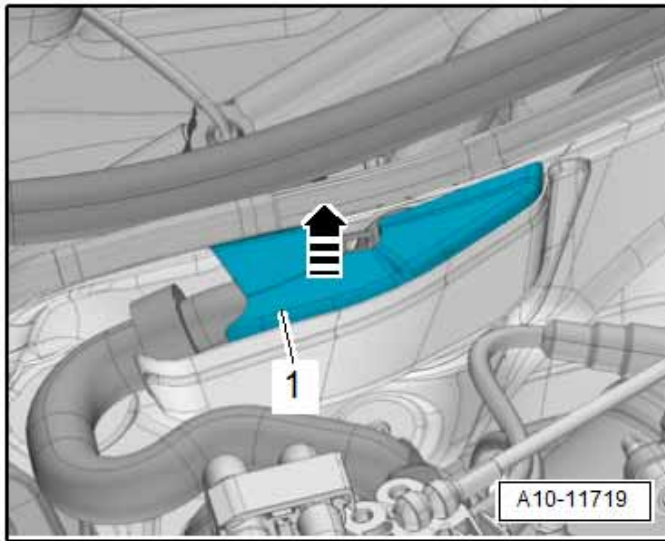


Remove Plenum Chamber Bulkhead:

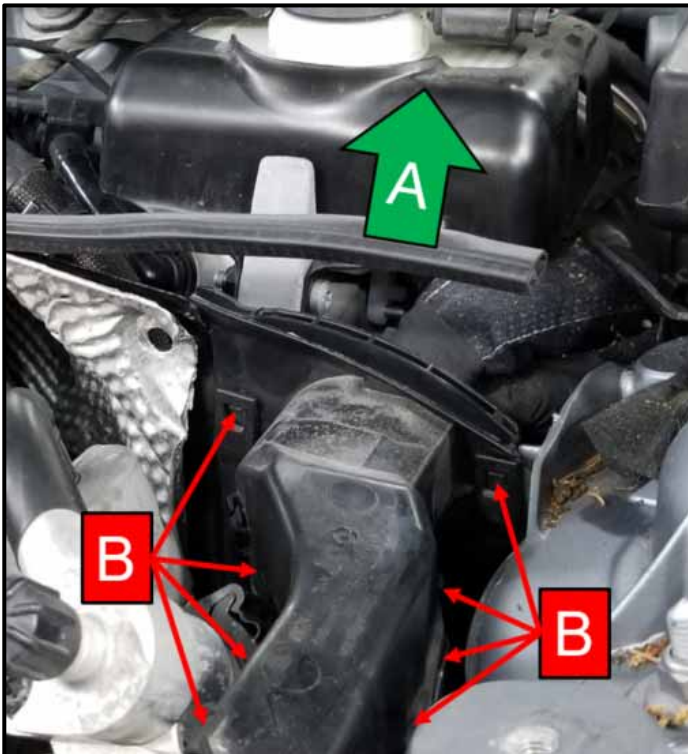
- Release the retainer <arrow A> and open the cover <arrow B> for the Terminal 30 Wire Junction 2 -TV22-.



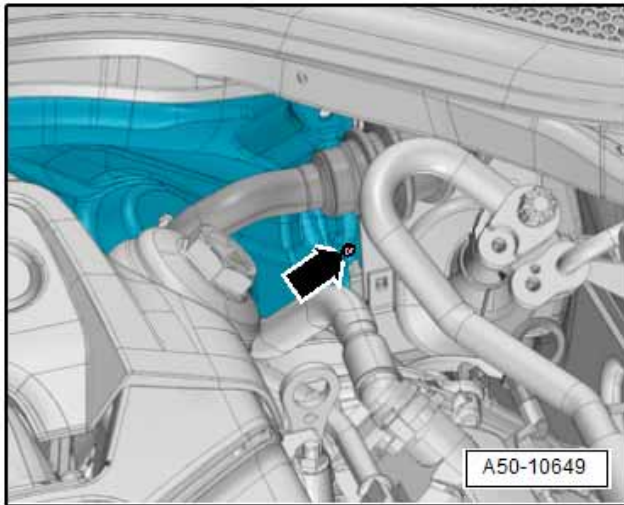
- Remove the nut <3> and free up the wire.
- Remove the connector <inset photo> from the bracket.
- Remove the nuts <arrows> and then remove Terminal 30 Wire Junction 2 -TV22- from the plenum chamber bulkhead.
- Free up the vacuum line and any remaining wiring harness connections under the Terminal 30 Wire Junction 2 -TV22-, and secure them out of the way.



- Remove the heat shield <1> upward <arrow>, if equipped.



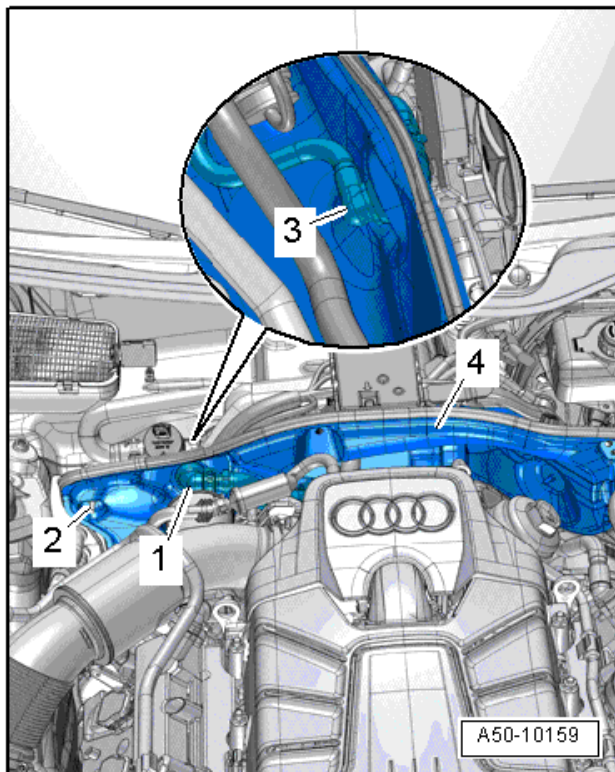
- Lift the seal in direction of <green arrow, A> enough to clear the wiring bushing.
- Release the retaining clips <red arrows, B> on both sides of the wiring harness bushing and remove it by lifting upward from the wiring harness channel.
- Free up the wiring harness from the plenum chamber bulkhead enough to allow removal of the bulkhead.



- Remove all of the bolts, nuts, or screws <arrow> securing the plenum chamber bulkhead to the chassis.

NOTE

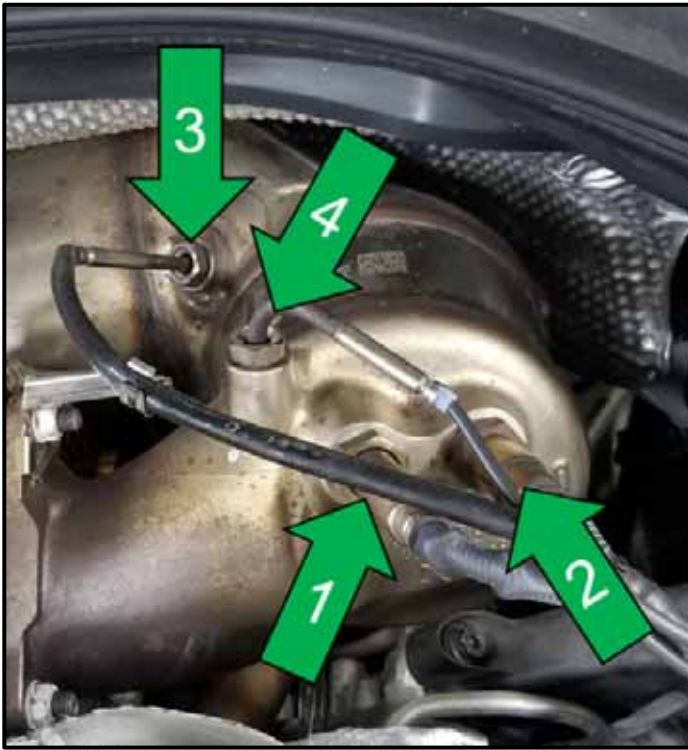
- Different numbers and types of fasteners may be installed. There may be different styles of cable brackets, clips, nuts, screws, or bolts used to secure the plenum chamber bulkhead to the chassis.
- There also may be additional fasteners hidden behind the aluminum heat shield on some vehicles <circle>.
- Once all securing fasteners are removed, the plenum chamber bulkhead will freely and easily separate from the chassis.
- If the plenum chamber bulkhead does not freely and easily separate from the chassis, search for additional fasteners behind the heat shielding.



- Step on the brake pedal four or five times to relieve the vacuum from the brake booster system.
- Remove the brake booster vacuum line <3>.
- Remove the grommet <1> from the vacuum connection.
- Remove the plenum chamber bulkhead <4> upwards from the chassis.

NOTE

Removing the brake booster vacuum line while vacuum is still present in the booster system may result in damage to the vacuum line or grommet. Consequential damage to the vacuum line or grommet will not be covered under this action.

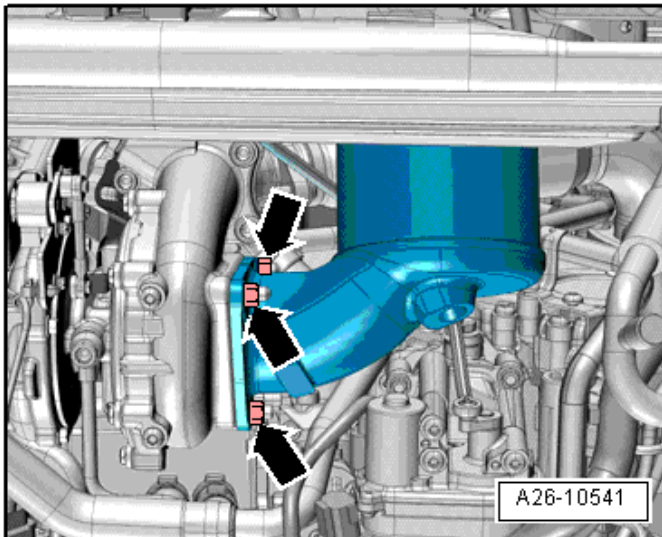


Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter sensor removal:

NOTE

The exhaust temperature sensors and NOx 1 sensor probes are very fragile. Use extreme care when removing and handling the exhaust temperature sensors and NOx 1 sensor to avoid damage to the sensor probes.

- Unscrew the exhaust temperature sensors <3 and 4>, Oxygen Sensor <2>, and NOx 1 sensor <1> and remove them from the exhaust pipe with oxidation catalyst and diesel particulate filter.
- Disconnect the connector for the oxygen sensor <2> and remove it from the bracket. Discard the oxygen sensor <2>.
- Set the exhaust temperature sensors <3 and 4> and NOx 1 sensor <1> aside in a safe place to avoid damage to the sensor probes.



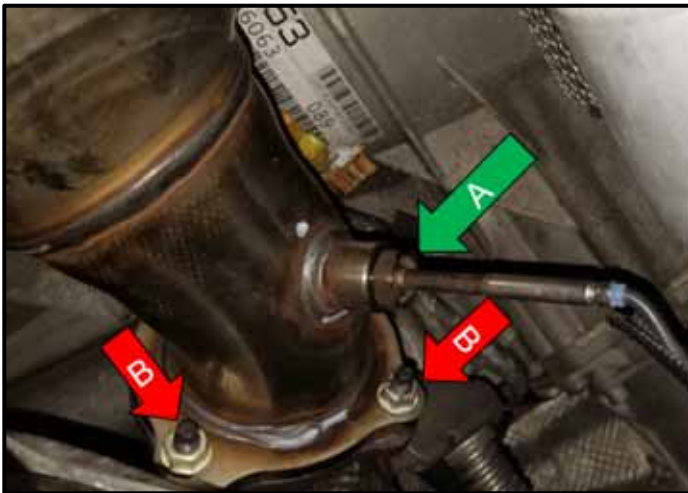
Remove Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter:

- Remove the three nuts <arrows> securing the exhaust pipe with oxidation catalyst and diesel particulate filter to the turbocharger.



Remove Differential Pressure Sensor Hose:

- Using pliers, loosen the clamp <arrow> and remove the differential pressure sensor hose from the steel differential pressure tube.

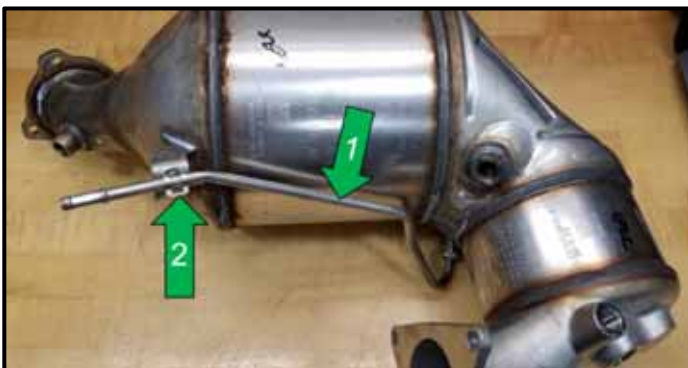


- Remove exhaust gas temperature sensor #4 <green arrow A> and set it aside in a safe place to avoid damage to the sensor probe.

NOTE

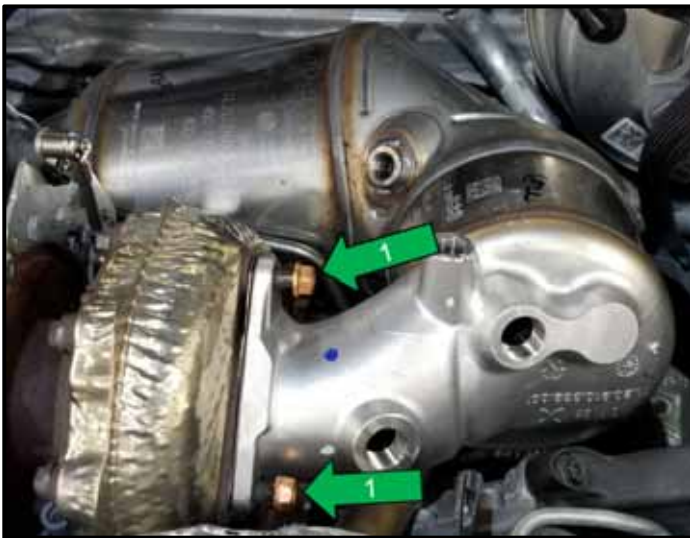
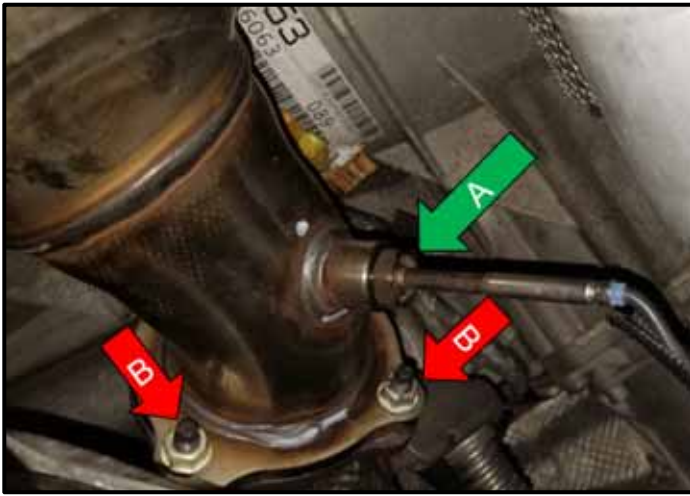
The exhaust temperature sensor probe is very fragile. Use extreme care when removing and handling the exhaust temperature sensor to avoid damage to the sensor probe.

- Remove the two nuts <red arrows B> securing the exhaust pipe with oxidation catalyst and diesel particulate filter to the exhaust downpipe.
- Remove the exhaust pipe with oxidation catalyst and diesel particulate filter from the vehicle and discard the old gaskets.



Transfer Differential Pressure Pipe:

- Loosen the nut on the differential pressure pipe <1> and remove the pipe. Remove the clip <2> from the old exhaust pipe. Disengage the clip from the bottom using a small screwdriver.
- Install the differential pressure pipe <1> onto the new exhaust pipe. Transfer the clip from old exhaust pipe onto the new exhaust pipe, and secure the pipe in the clip. Tighten the differential pressure pipe nut to 45 Nm.

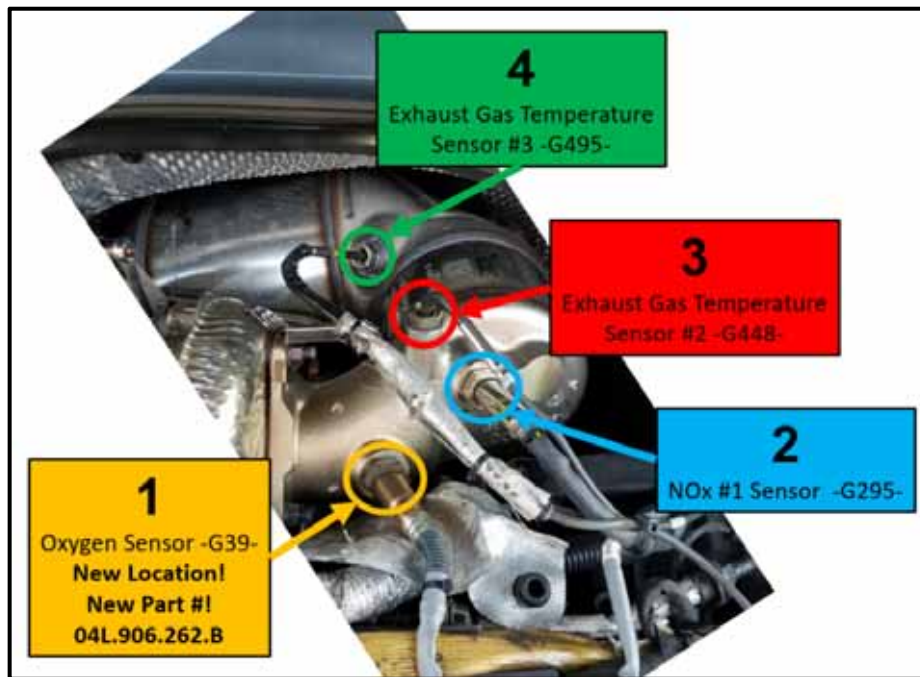


Install new Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter:

- Install the exhaust pipe gasket onto the lower exhaust studs.
- Install the turbocharger gasket onto the turbocharger studs.
- Install the new Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter into vehicle with new gaskets and nuts.
- Align the Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter onto the lower exhaust studs first, then work the flange onto the turbocharger studs.
- Install two “Silver” colored shouldered hex nuts <arrows B> onto the lower studs securing the exhaust downpipe to the exhaust pipe with oxidation catalyst with diesel particulate filter. Tighten the two “Silver” colored exhaust nuts <arrows B> to 23 Nm.
- Install and tighten exhaust temperature sensor #4 <A> to 45 Nm.
- Install the three “Copper” colored shouldered hex nuts onto studs <arrows 1> at the flange of the turbocharger. Tighten the “Copper” colored exhaust nuts to 23 Nm.

Part Number	Part Description
4H0.254.750.HX	Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter
Included in installation kit 4H0298099:	
Part Number	Part Description
8K0.253.115.J	Gasket, Exhaust Pipe
4G0.253.115.A	Gasket, Turbocharger
N 911.308.02	Shouldered Hex Nut, self-locking – Exhaust Pipe (Silver, exhaust downpipe flange)
N 911.308.01	Shouldered Hex Nut, self-locking – Turbocharger (Copper, turbocharger flange)

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Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter Sensor installation:

⚠ CRITICAL REPAIR STEP

STOP STOP!

Installing the four sensors listed below into their correct assigned locations is **CRITICAL**. Follow the numbered and color coded sequence below to correctly install the sensors into their required assigned locations.

- Install and tighten the four exhaust pipe sensors in the locations shown, in the following order:
 1. The new **Oxygen Sensor -G39- <item 1>** is installed in the bung closest to the turbocharger, as shown **<orange>**. Tighten the **Oxygen Sensor -G39-** to 52 Nm.
 - **NOTE:** The **Oxygen Sensor -G39-** will now be located **BEFORE** the **NOx #1 Sensor** in the exhaust stream. Do not plug in the Oxygen Sensor wiring harness at this time.

Part Number	Part Description
04L.906.262.B	Oxygen Sensor -G39-

2. **NOx #1 Sensor -G295- <item 2>** is installed in the next downstream bung, as shown **<blue>**. Tighten the **NOx #1 Sensor** to 52 Nm.
 - **NOTE:** **NOx #1 Sensor** will now be located **AFTER** the **Oxygen Sensor -G39-** in the exhaust stream.
3. **Exhaust Gas Temperature Sensor #2 <item 3>** is installed in the next downstream bung before the oxidation catalyst, as shown **<red>**.
 - **NOTE:** **Exhaust Gas Temperature Sensor #2** has a “Curved” sensor probe. Tighten the sensor to 45 Nm.
4. **Exhaust Gas Temperature Sensor #3 <item 4>** is installed in the next downstream bung between the oxidation catalyst and the diesel particulate filter, as shown **<green>**.
 - **NOTE:** **Exhaust Gas Temperature Sensor #3** has a “Straight” sensor probe. Tighten the sensor to 45 Nm.

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O2 sensor wiring harness routing procedure and tie strap installation



Routing and Securing the New Oxygen Sensor -G39- Wiring Harness:

CRITICAL REPAIR STEP

 **STOP!** 

Correctly routing and securing the new Oxygen Sensor -G39- wiring harness is **CRITICAL**.

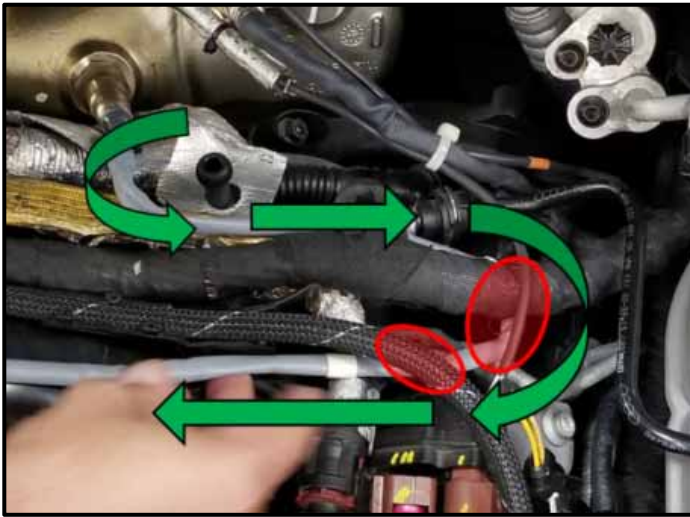
Failure to correctly route and secure the new Oxygen Sensor -G39- wiring harness as described in the steps below may result in chaffing of the wiring harness, or inadvertently securing the wiring harness to engine components that require isolation for proper operation, such as high-pressure fuel lines.

- Click on the following link or scan the QR Code to view a short video detailing the O2 sensor wiring harness routing procedure and tie strap installation.

<https://audi-external.kzoplatform.com:443/player/medium/1470436762785421044?autoplay=on>



- Start by routing the new Oxygen Sensor -G39- wiring harness under the main engine wiring harness, as shown.
 - Make sure the new Oxygen Sensor -G39- wiring harness is **NOT** routed underneath any high-pressure fuel injector lines during this procedure.



- Feed the new Oxygen Sensor -G39- wiring harness <arrows> underneath the engine wiring harness, Exhaust Gas Temperature Sensor #2 wiring harness, and low-pressure fuel return line <shaded circles> as shown.

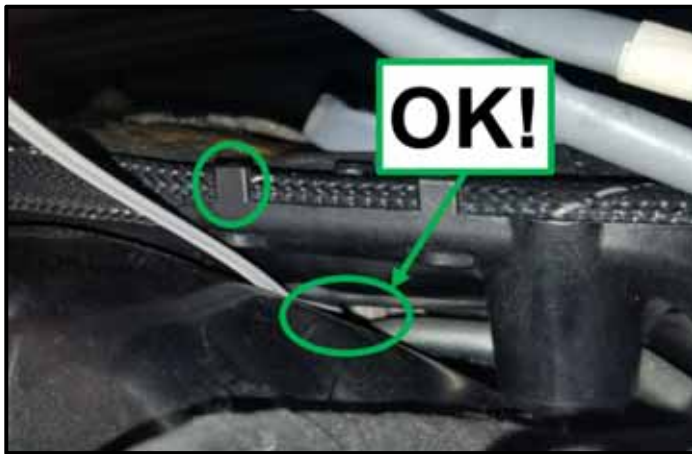


- Loosely route the new Oxygen Sensor -G39- harness into the Zig-Zag position, as shown.
- Balance the harness lengths on each loop as necessary to achieve a uniform routing.
 - The harness should be routed loosely with no kinks in the loop ends.



- Place a small upward bend <circle> on the end of the grey high-temperature tie-strap included in the 4H0.298.099 installation kit.

Included in installation kit 4H0298099:	
Part Number	Part Description
N 909.377.02	Tie Strap



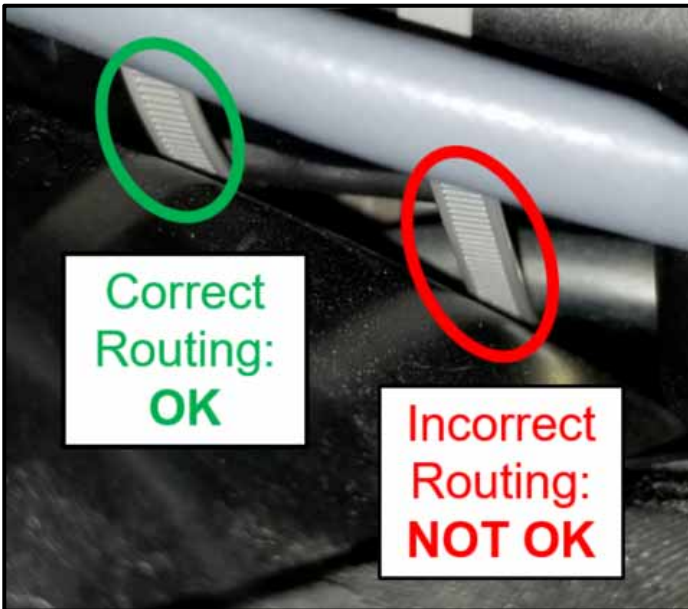
- Insert the grey high-temperature tie-strap under the furthest left guide pin on the engine wiring harness bracket <green circle, OK>.
- Visually inspect to make sure the tie-strap is installed over the high-pressure fuel line <green circle, OK>.
- **DO NOT** insert the tie-strap into its retaining clasp until proper alignment and routing has been verified.



⚠ CRITICAL REPAIR STEP	
<div style="display: flex; justify-content: space-around; align-items: center;"> STOP STOP! STOP </div>	
<p>Do NOT route the tie-strap under the high-pressure fuel line. Damage to the fuel line may occur.</p> <p>Do NOT route the tie-strap under the furthest right guide pin on the engine wiring harness bracket <red circle>.</p>	



- Before inserting the tie-strap into its retaining clasp, verify that the tie-strap has been properly routed around the upper two loops of the harness, as shown. The lower loop should **NOT** be captured by the tie-strap.
- Adjust and balance the wiring harness loops until a uniform sweeping Zig-Zag is created.
- Slide the tie strap so that it is near the furthest left guide pin <green circle>, and lightly secure the tie strap so that the harness can still be adjusted if needed.
- Once the wiring harness has been balanced and the tie-strap has been properly positioned against the furthest left guide pin <green circle>, completely tighten the tie-strap.



- Using a ruler or caliper, measure the length of tie-strap that has passed through the securing loop.
 - If the distance measured is **greater than 32mm** <green arrow>, then the tie-strap has likely been installed correctly. The tie-strap should be located near the furthest left locating pin on the engine wiring harness bracket.
 - Proceed to the next step for final visual validation.
 - If the distance measured is **less than 32mm**, then the tie-strap has likely been installed incorrectly.
 - Visually validate for correct installation of the tie strap before continuing with the work procedure. If improperly installed, remove the tie-strap and repeat this procedure.

⚠ CRITICAL REPAIR STEP

STOP STOP

Final visual validation of proper tie-strap installation is **REQUIRED**. Visually inspect the tie-strap routing to verify there is no contact with engine components that require isolation for proper operation, such as high-pressure fuel lines, coolant lines, etc.

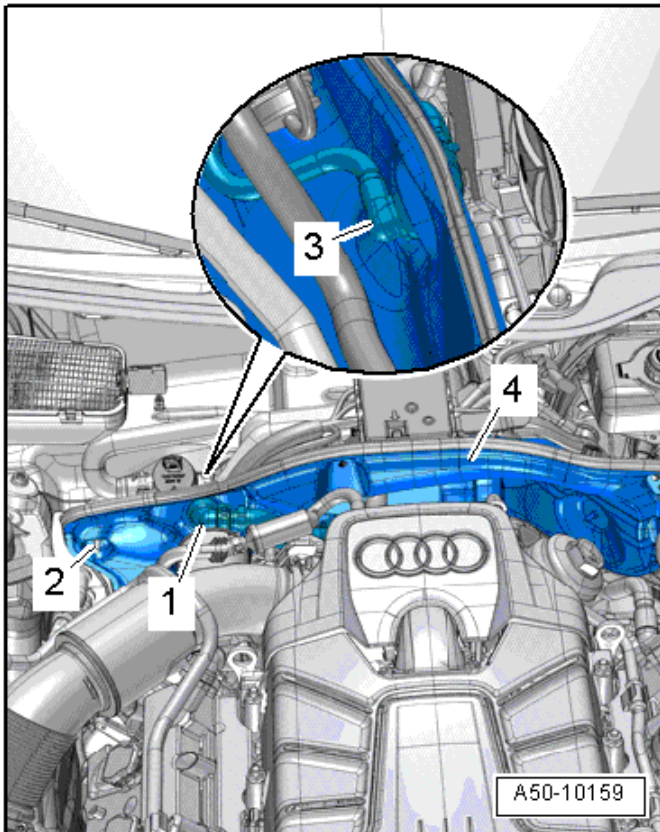


- Once proper routing and positioning has been verified, cut off the remaining portion of the tie-strap with cutters.



Install Differential Pressure Sensor hose:

- Reattach the differential pressure sensor hose to the steel differential pressure tube and secure the clamp <arrow>.

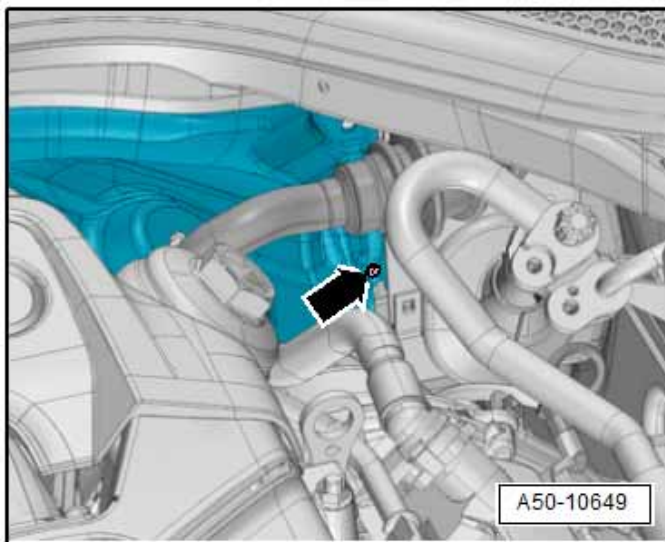


Install Plenum Chamber Bulkhead:

- Reinstall the plenum chamber bulkhead <4> ensuring the seal is correctly in place.
- Install the nut <2> and tighten to 4 Nm.
- Reinstall the vacuum hose and grommet <1> from the brake booster system onto the bulkhead.

NOTE

Different types of fasteners <2> may be installed. There can be a cable bracket, clip or bolt. There also may be additional fasteners behind the aluminum heat shield on some vehicles. Reinstall the fasteners into the positions they were removed from.

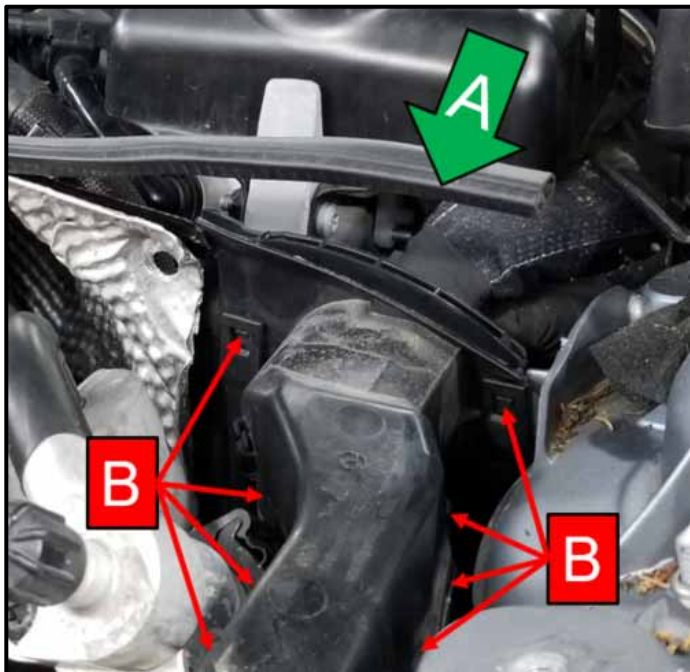


- Reinstall all removed fasteners securing the plenum chamber bulkhead <arrow> and tighten to 2 Nm.

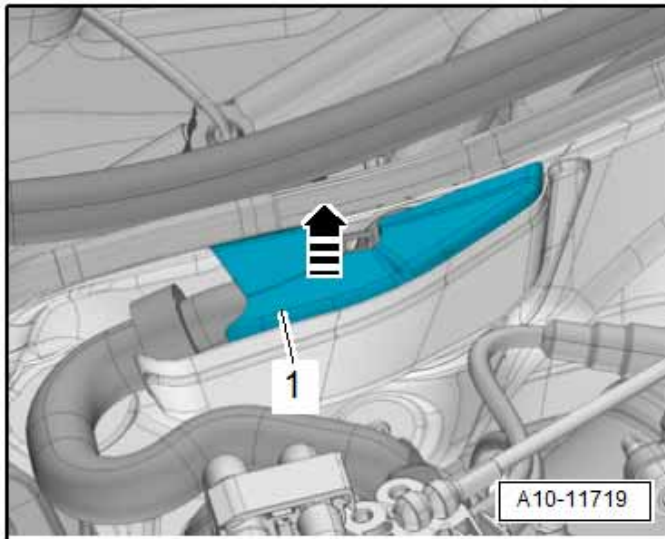
NOTE

Different types of fasteners may be installed. There can be a cable bracket, clip, nut, or bolt. There also may be additional fasteners behind the aluminum heat shield on some vehicles.

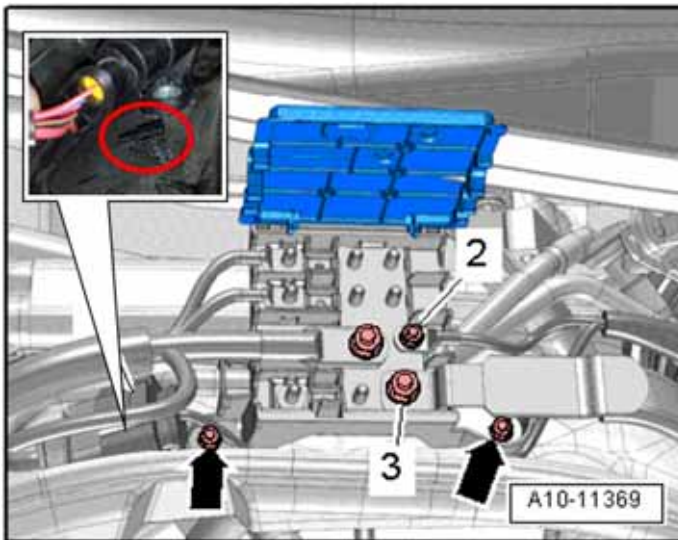
Reinstall all fasteners into the locations they were removed from.



- Insert the wiring harness into the slot on the plenum chamber bulkhead.
- Install the wiring bushing downward in the direction of <arrow A> and secure the tabs .
- Install the seal onto the wiring bushing in the direction of <arrow A>.

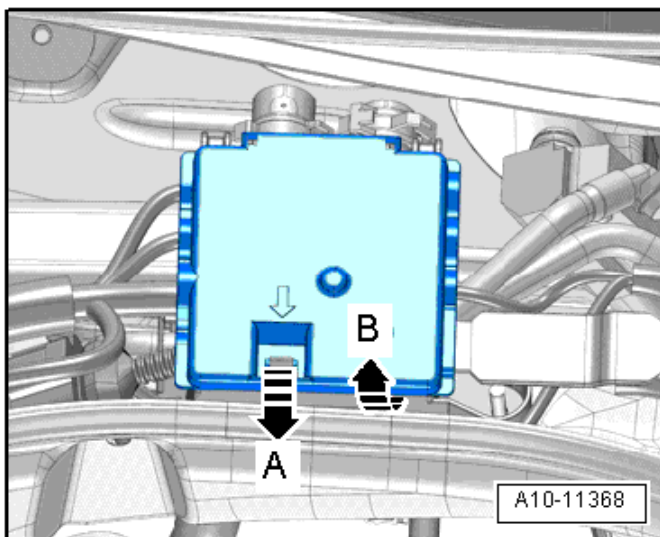


- Install the heat shield <1> downward in opposite direction of <arrow>, if equipped.

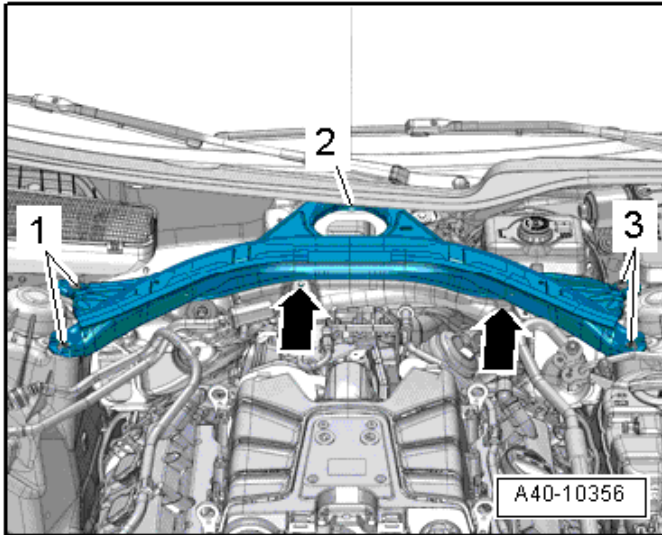


Install Terminal 30 Wire Junction 2 -TV22-:

- Secure the vacuum line and any wiring harness connections that are located under the Terminal 30 Wire Junction 2 -TV22- and fasten the clips <inset photo, circle>.
- Install the Terminal 30 Wire Junction Box. Install the nuts <arrows> and tighten to 3 Nm.
- Install the wire onto the stud. Install the nut <3> and tighten to 3 Nm.

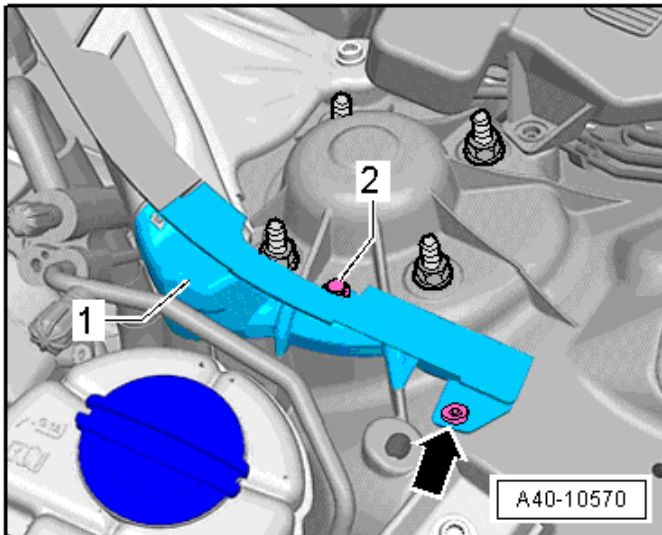


- Close the cover on the Terminal 30 Wire Junction 2 -TV22- and secure the tab <arrow A>.

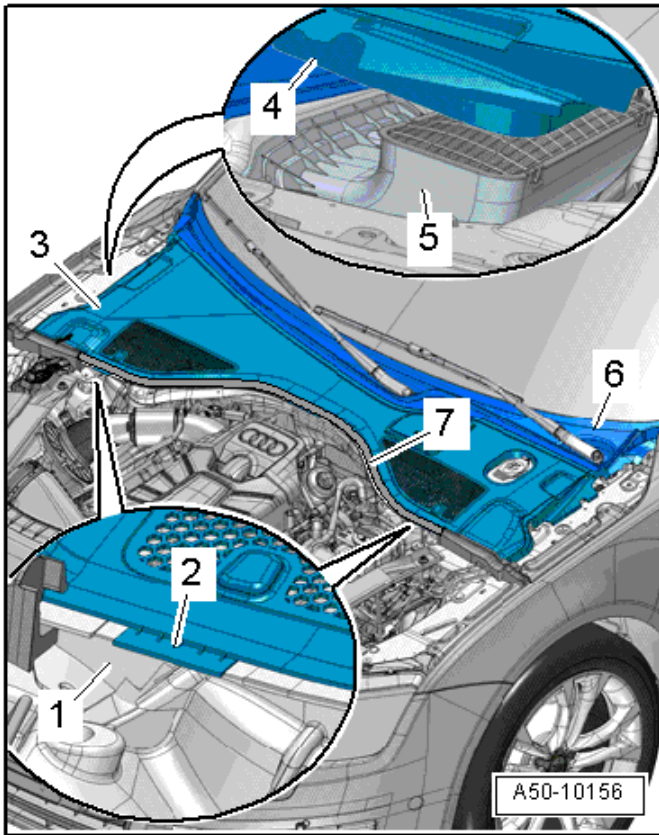


Install Tower Brace:

- Install the tower brace.
- Install the five bolts <1, 2, and 3> and tighten to 20 Nm.
- Install the screws <arrows> and tighten to 2 Nm.



- Install the left and right trim covers <1>.
- Install the left and right expanding rivets <arrows> and the nuts <2> and tighten to 2.5 Nm.



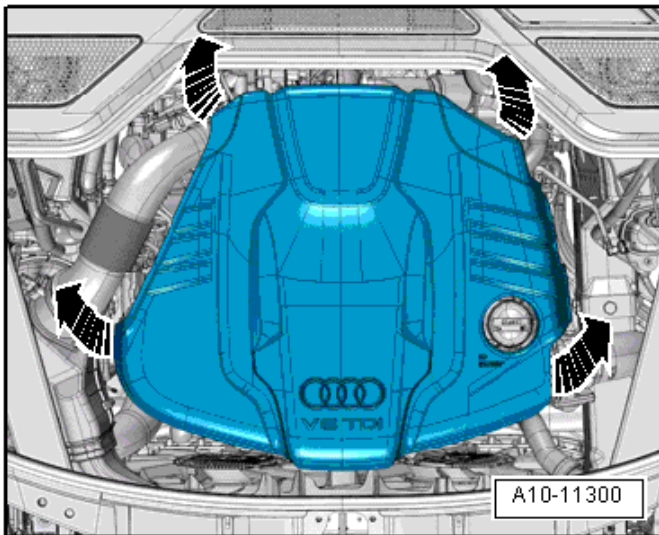
A50-10156

Install Plenum Chamber Cover:

- Install the plenum chamber cover <3> onto the cowl panel <6>.
- Install the seal <7> and ensure it is firmly in place.

NOTE

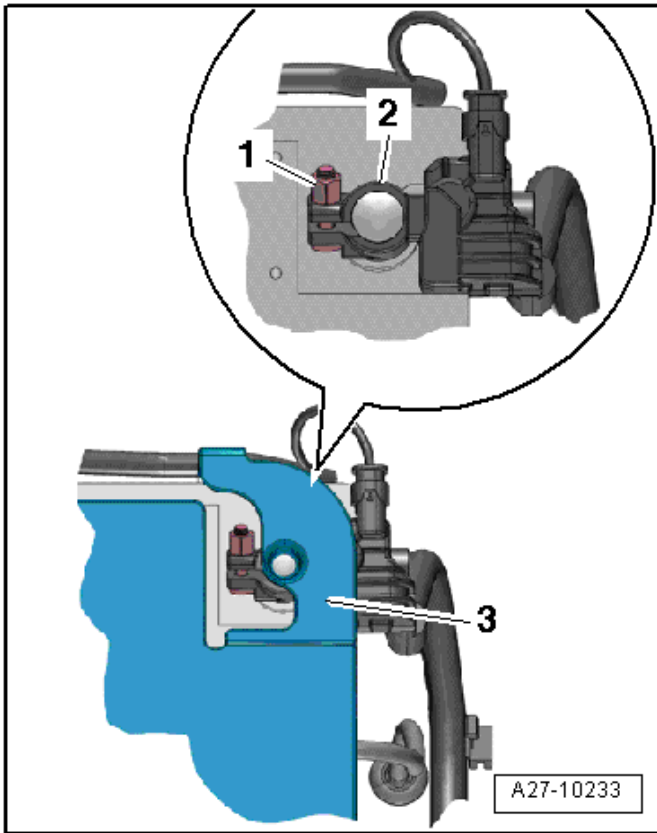
Ensure the tabs <2> are seated correctly on the cowl panel before installing the seal <7>. Consequential damage to the cowl cover or seal will not be covered under this action.



A10-11300

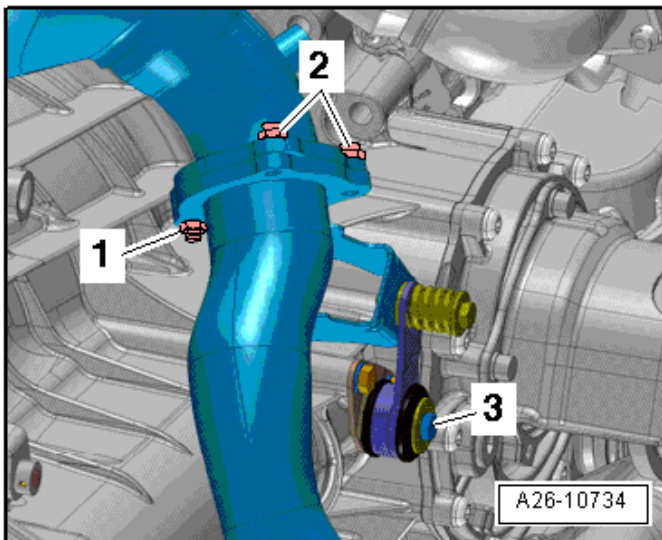
Install Engine Cover:

- Install the engine cover and carefully press down in the opposite direction of <arrows> one corner at a time to secure the engine cover into the retaining pins.



Connect Battery:

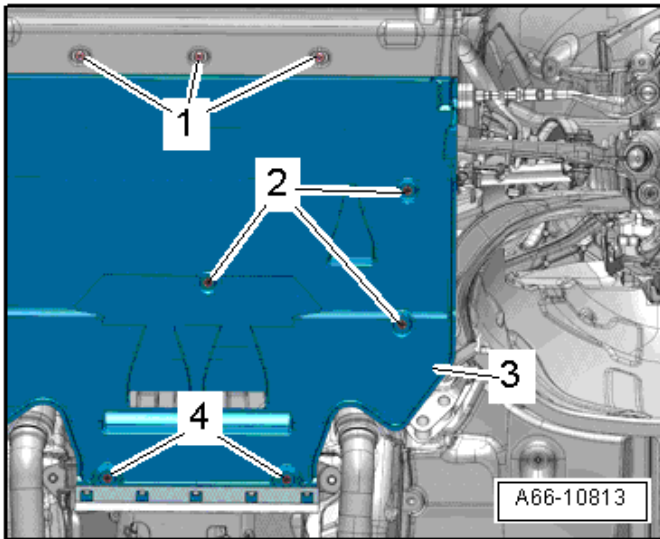
- Lift the luggage compartment floor covering by the handle and fold it forward.
- If equipped remove the vehicle tool kit.
- Open the cover <3> over the battery negative pole and install the battery ground terminal onto the negative battery post.
- Tighten the nut <1> to 5 Nm.
- Reinstall the vehicle tool kit, and fold the floor covering back into place.



Install Lower Exhaust Nut:

- Raise the vehicle on the hoist.
- Install the remaining “Silver” colored shouldered hex nut (N 911.308.02) <1> and tighten to 23 Nm.

Included in installation kit 4H0298099:	
Part Number	Part Description
N 911.308.02	Shouldered Hex Nut, self-locking – Silver, exhaust downpipe flange



Install Rear Noise Insulation:

- Install the rear noise insulation <3>.
- Install the bolts <1> and tighten to 3.5 Nm.
- Install the quick-release fasteners <2 and 4>.
- Lower vehicle on hoist.



Parts Return / Disposal:

Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter:

- The Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter must be tagged with a blue zip tie <as shown> and returned in order to be considered for core charge reimbursement.

All other parts:

- Properly store (retain), destroy or dispose of removed parts in accordance with all state and local requirements, unless otherwise indicated and/or requested through the Warranty Parts Portal (WPP).

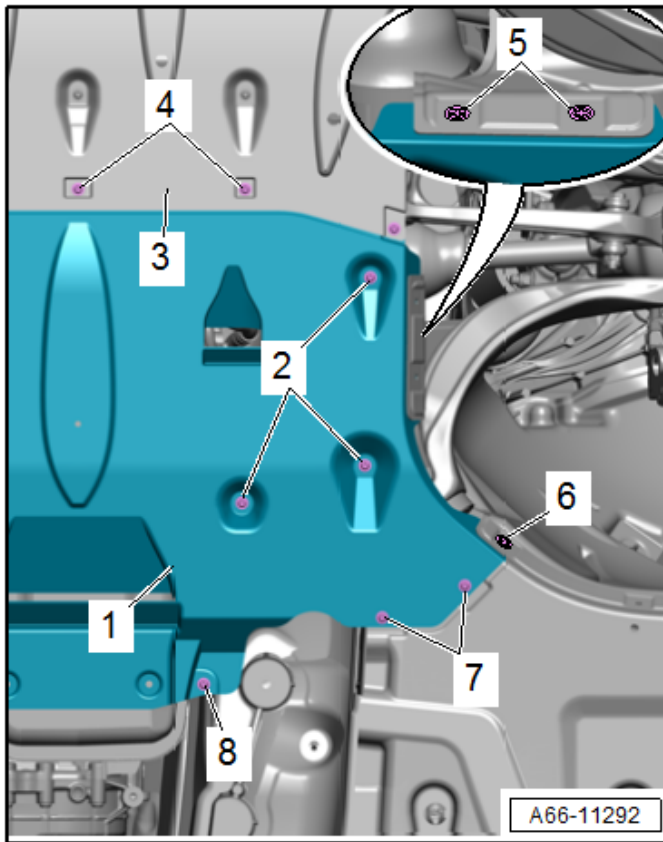
Proceed to Section E (Software Update).

Section C – For All Criteria (01, 02, 03): A8 Vehicles, Replace Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter

A8, Replace Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter

Remove Rear Noise Insulation:

- Secure and raise vehicle on hoist.
- Remove the quick releases <5 and 6> that connect the rear section of the front wheel housing and the rear noise insulation.
- Remove the quick releases <4> from the front noise insulation <3>.
- Remove the quick release bolts <2, 7 and 8>.



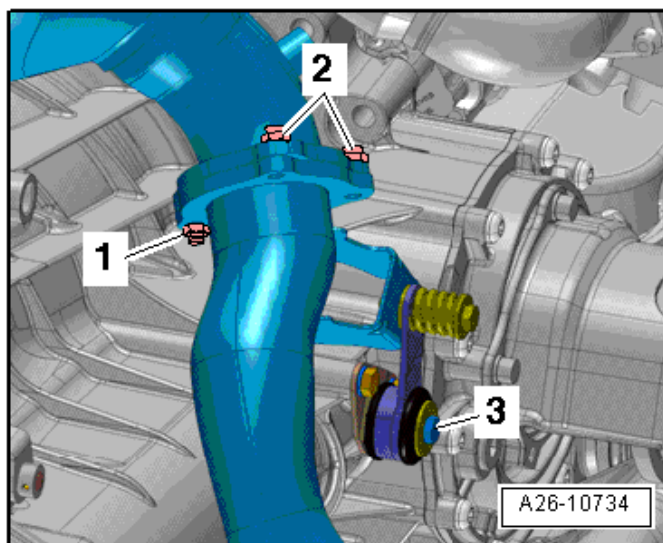
Remove Lower Exhaust Nut:

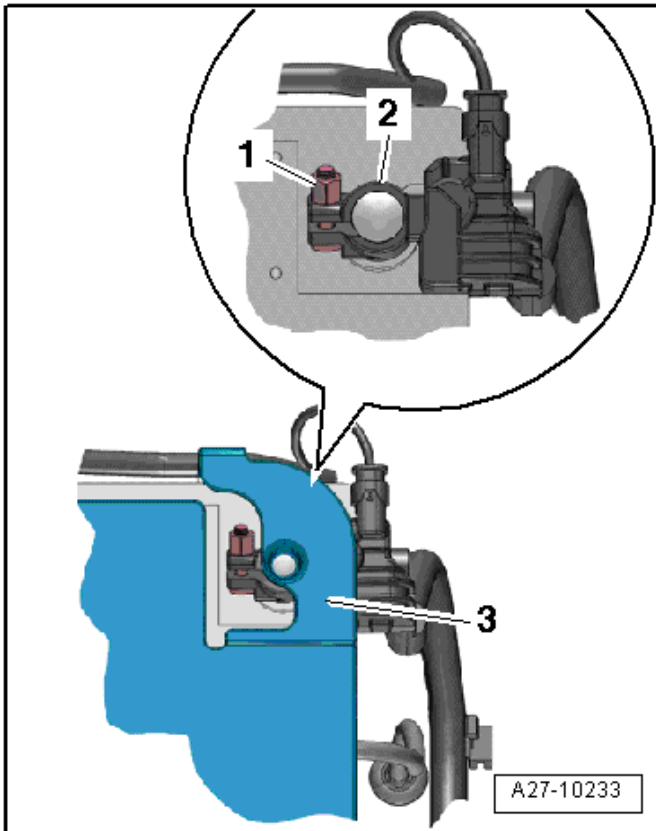
- Remove the nut <1>.

NOTE

The nuts <2> will be removed later from above. Ignore item <3>.

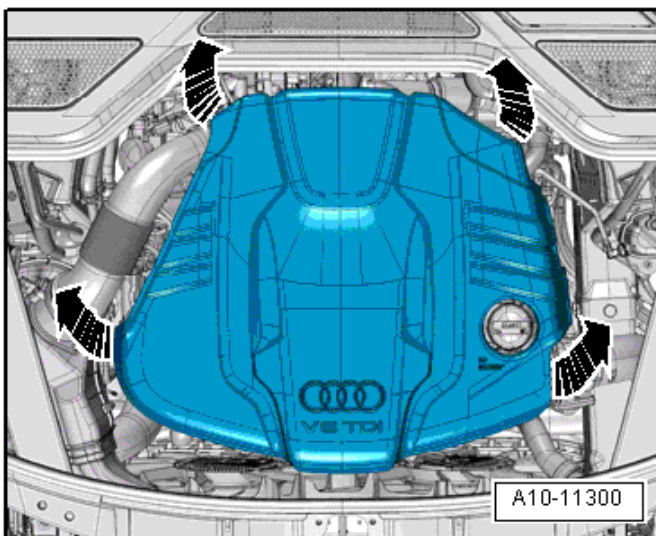
- Lower the vehicle on the hoist.





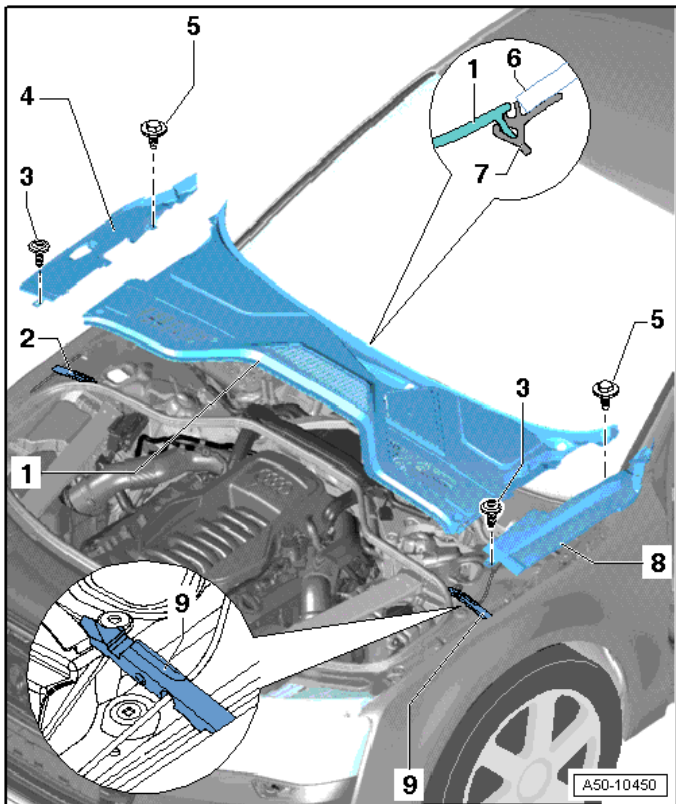
Battery Disconnect:

- Turn off the ignition.
- Lift the luggage compartment floor covering by the handle and fold it forward.
- If equipped remove the vehicle tool kit.
- Open the cover <3> over the battery negative pole.
- Loosen the nut <1> several turns and remove the battery ground cable terminal <2> from the battery terminal.



Remove Engine Cover:

- Carefully pull the engine cover off the retaining pins one after the other in direction of <arrows>. Do not pull sharply on the engine cover or pull it to one side.



Remove Plenum Chamber Cover:

- Mark the resting position of the windshield wiper arms with masking tape (or equivalent).
- Remove windshield wiper arms using Wiper Arm Kit - Puller 1 - T10369/1.
- Remove hood seal in area around the plenum chamber cover.
- Remove bolts <3 and 5> and release the corner covers <4 and 8>.

NOTE

For easier removal/installation, spray the windshield edge strip <7> with soapy solution.

- Remove plenum chamber cover panel <1> upward diagonally from edge frame beginning at window edge.

CAUTION

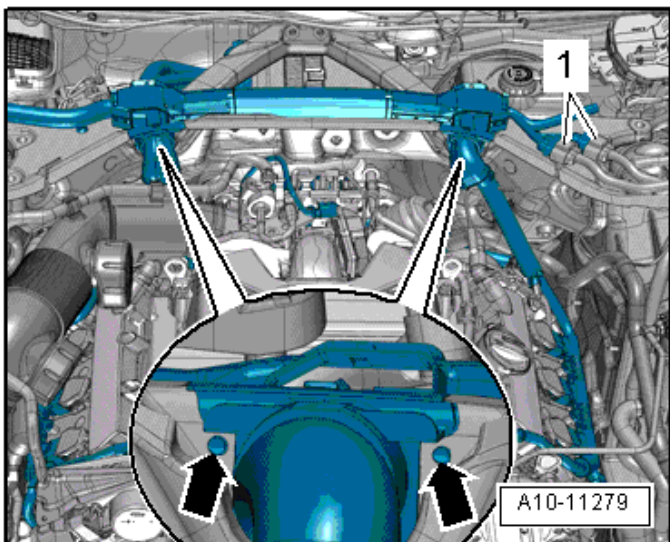
Risk of windshield glass breaking during removal/installation:

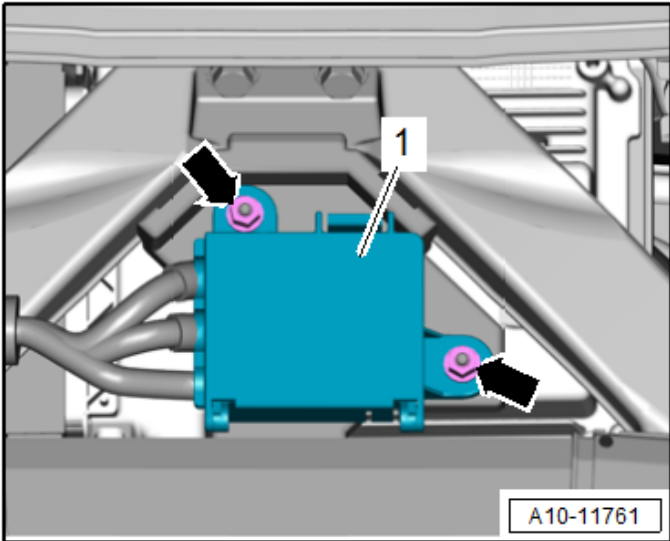
- Do not hit or use excessive force on the trim when removing or installing.
- Carefully remove or install the trim sideways, beginning in the edge frame.
- Damage to the windshield glass or plenum chamber cover will not be covered under this action.

- Unclip the plenum chamber cover <1> from the side covers starting on the left and right sides and then remove it.

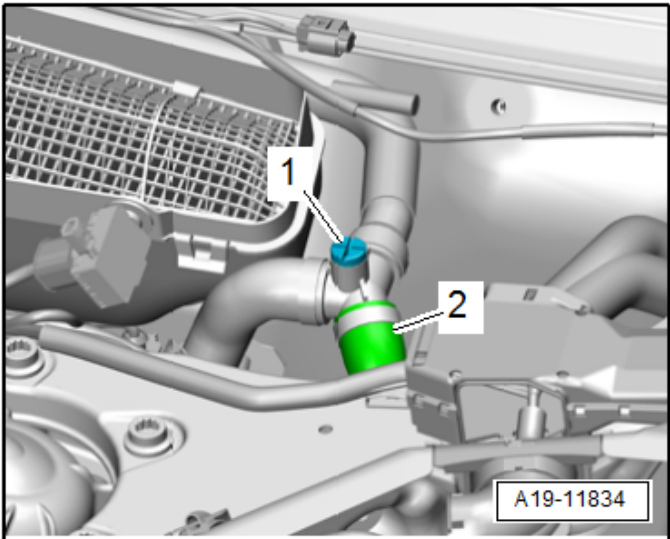
Remove Tower Brace:

- Free up the left and right wiring harnesses from the plenum chamber bulkhead by releasing the retainers <arrows> and removing the harnesses from the plenum chamber bulkhead.
- Remove the connectors <1> from the bracket and disconnect them.

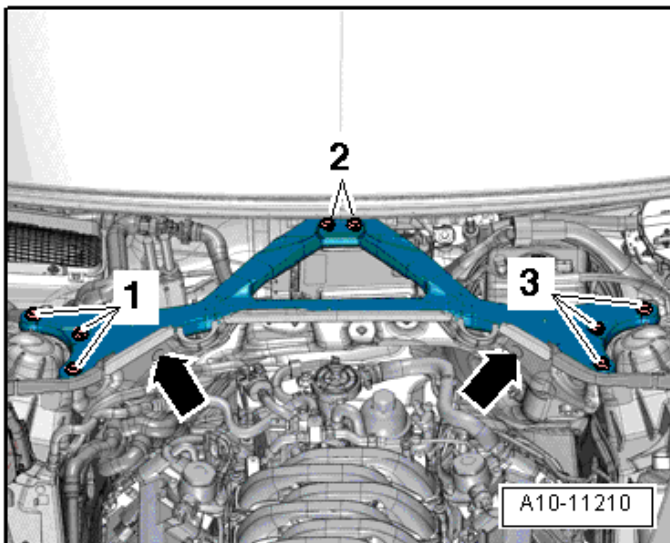




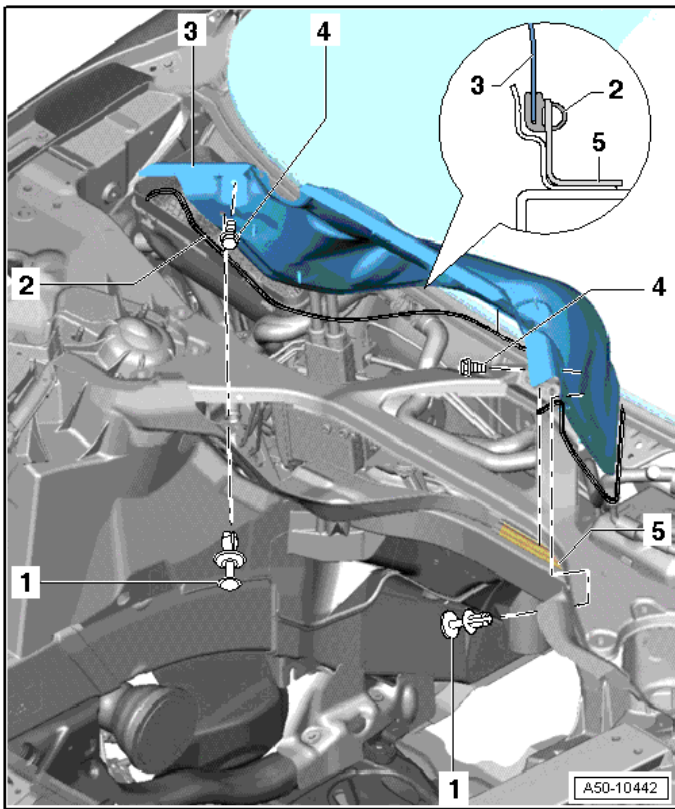
- If installed, remove the nuts <arrows> and move the E-box <1> to the side.



- Free up the coolant hose <2> at the tower brace.
- Free up the wiring harness connections on the tower brace.



- Remove the bolts <1, 2, 3, and arrows> and remove the tower brace.

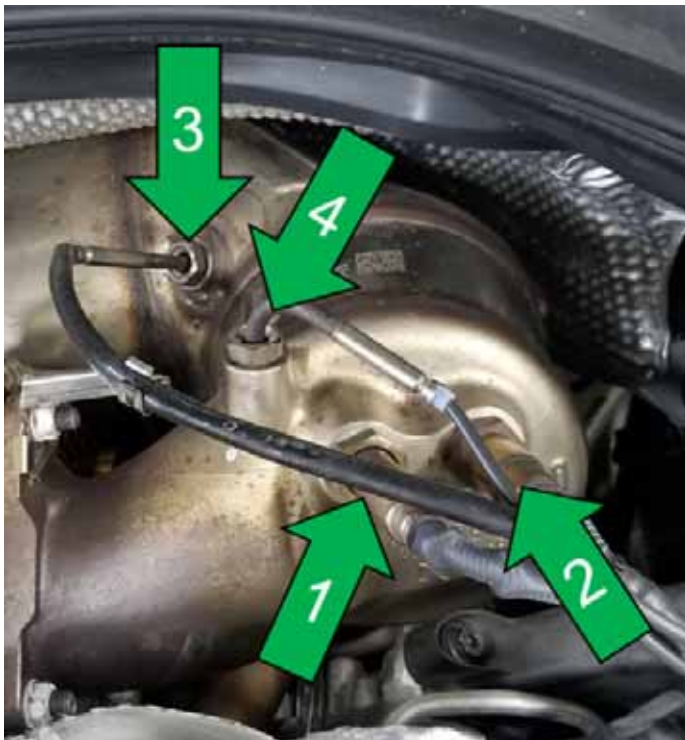


Remove Plenum Chamber Bulkhead:

- Free up any remaining wiring harness connections, vacuum lines, or other items secured to the top of the plenum chamber bulkhead.
- Step on the brake pedal four or five times to release the vacuum in the brake booster system to ease vacuum line removal.
- Remove the vacuum line from the grommet in the bulkhead.
- Remove the expanding clips <1> and bolts <4>.

NOTE

Removing the brake booster vacuum line while vacuum is still present in the booster system may result in damage to the vacuum line or grommet. Consequential damage to the vacuum line or grommet will not be covered under this action.

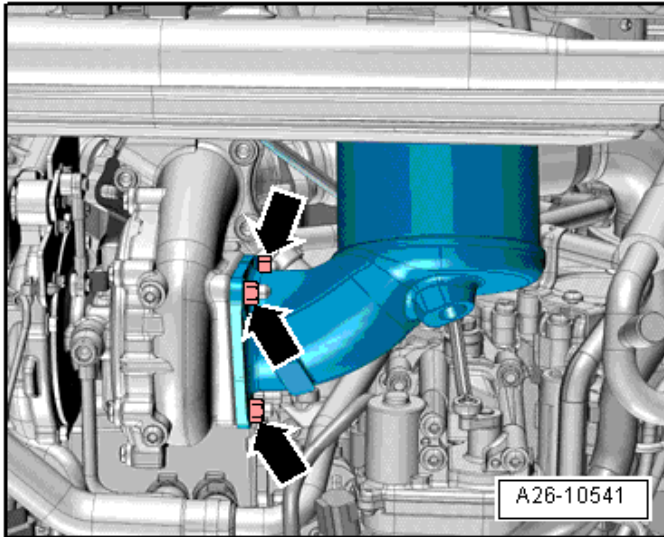


Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter sensor removal:

NOTE

The exhaust temperature sensors and NOx 1 sensor probes are very fragile. Use extreme care when removing and handling the exhaust temperature sensors and NOx 1 sensor to avoid damage to the sensor probes.

- Unscrew the exhaust temperature sensors <3 and 4>, Oxygen Sensor <2>, and NOx 1 sensor <1> and remove them from the exhaust pipe with oxidation catalyst and diesel particulate filter.
- Disconnect the connector for the oxygen sensor <2> and remove it from the bracket. Discard the oxygen sensor <2>.
- Set the exhaust temperature sensors <3 and 4> and NOx 1 sensor <1> aside in a safe place to avoid damage to the sensor probes.



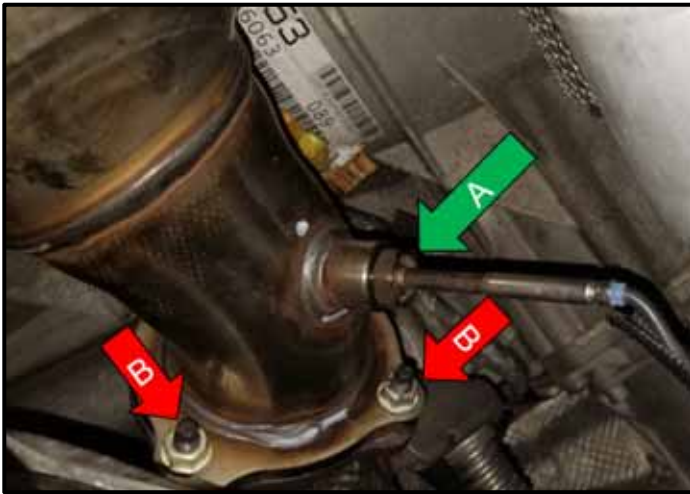
Remove Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter:

- Remove the three nuts <arrows> securing the exhaust pipe with oxidation catalyst and diesel particulate filter to the turbocharger.



Remove Differential Pressure Sensor Hose:

- Using pliers, loosen the clamp <arrow> and remove the differential pressure sensor hose from the steel differential pressure tube.

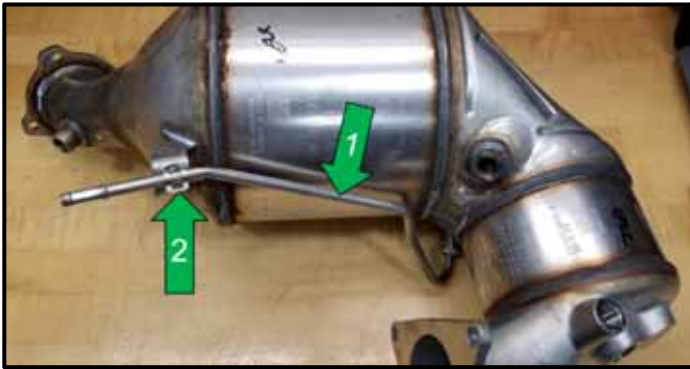


- Remove exhaust gas temperature sensor #4 <green arrow A> and set it aside in a safe place to avoid damage to the sensor probe.

NOTE

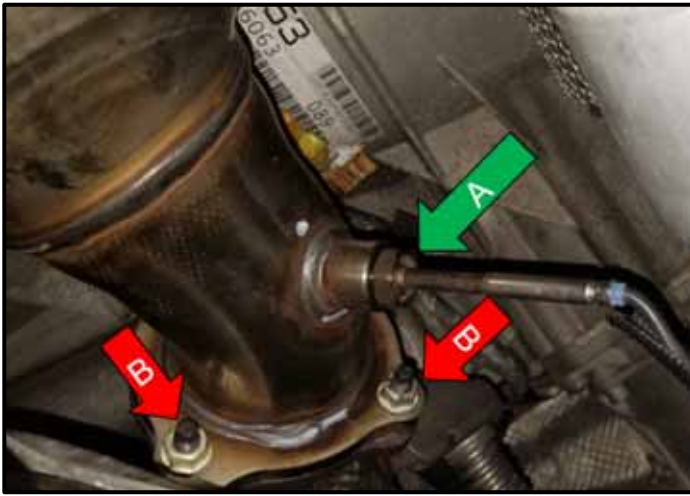
The exhaust temperature sensor probe is very fragile. Use extreme care when removing and handling the exhaust temperature sensor to avoid damage to the sensor probe.

- Remove the two nuts <red arrows B> securing the exhaust pipe with oxidation catalyst and diesel particulate filter to the exhaust downpipe.
- Remove the exhaust pipe with oxidation catalyst and diesel particulate filter from the vehicle and discard the old gaskets.



Transfer Differential Pressure Pipe:

- Loosen the nut on the differential pressure pipe <1> and remove the pipe. Remove the clip <2> from the old exhaust pipe. Disengage the clip from the bottom using a small screwdriver.
- Install the differential pressure pipe <1> onto the new exhaust pipe. Transfer the clip from old exhaust pipe onto the new exhaust pipe, and secure the pipe in the clip. Tighten the differential pressure pipe nut to 45 Nm.

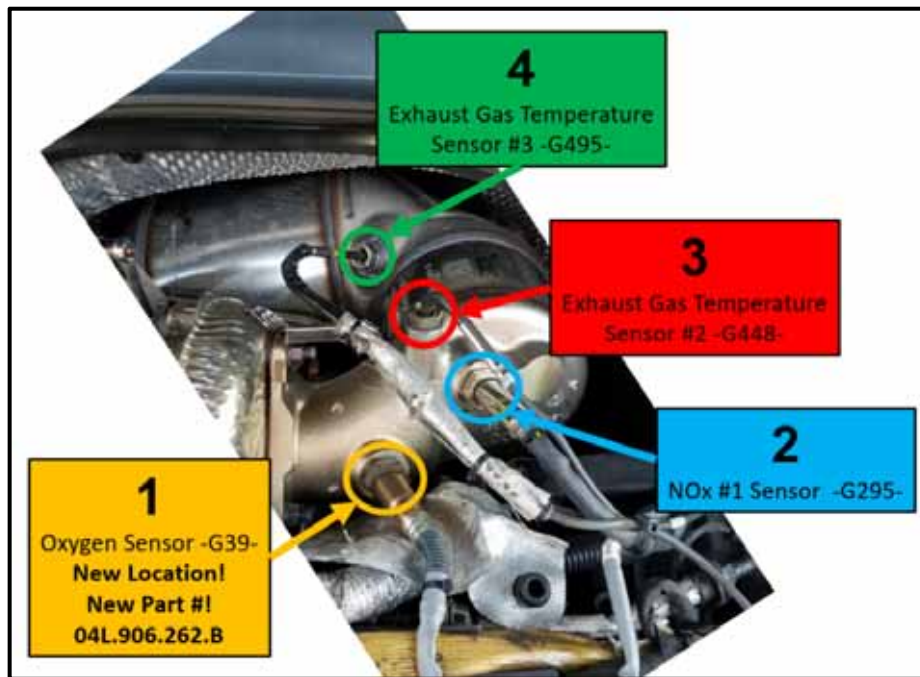


Install new Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter:

- Install the exhaust pipe gasket onto the lower exhaust studs.
- Install the turbocharger gasket onto the turbocharger studs.
- Install the new Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter into vehicle with new gaskets and nuts.
- Align the Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter onto the lower exhaust studs first, then work the flange onto the turbocharger studs.
- Install two “Silver” colored shouldered hex nuts (N 911.308.02) <arrows B> onto the lower studs securing the exhaust downpipe to the exhaust pipe with oxidation catalyst with diesel particulate filter. Tighten the two “Silver” colored exhaust nuts <arrows B> to 23 Nm.
- Install and tighten exhaust temperature sensor #4 <A> to 45 Nm.
- Install the three “Copper” colored shouldered hex nuts (N 911.308.01) onto studs <arrows 1> at the flange of the turbocharger. Tighten the “Copper” colored exhaust nuts to 23 Nm.

Part Number	Part Description
4H0.254.750.HX	Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter
Included in installation kit 4H0298099:	
Part Number	Part Description
8K0.253.115.J	Gasket, Exhaust Pipe
4G0.253.115.A	Gasket, Turbocharger
N 911.308.02	Shouldered Hex Nut, self-locking – Exhaust Pipe (Silver, exhaust downpipe flange)
N 911.308.01	Shouldered Hex Nut, self-locking – Turbocharger (Copper, turbocharger flange)

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Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter Sensor installation:

⚠ CRITICAL REPAIR STEP

STOP STOP!

Installing the four sensors listed below into their correct assigned locations is **CRITICAL**. Follow the numbered and color coded sequence below to correctly install the sensors into their required assigned locations.

- Install and tighten the four exhaust pipe sensors in the locations shown, in the following order:
 1. The new **Oxygen Sensor -G39- <item 1>** is installed in the bung closest to the turbocharger, as shown **<orange>**. Tighten the **Oxygen Sensor -G39-** to 52 Nm.
 - **NOTE:** The **Oxygen Sensor -G39-** will now be located **BEFORE** the **NOx #1 Sensor** in the exhaust stream. Do not plug in the Oxygen Sensor wiring harness at this time.

Part Number	Part Description
04L.906.262.B	Oxygen Sensor -G39-

2. **NOx #1 Sensor -G295- <item 2>** is installed in the next downstream bung, as shown **<blue>**. Tighten the **NOx #1 Sensor** to 52 Nm.
 - **NOTE:** **NOx #1 Sensor** will now be located **AFTER** the **Oxygen Sensor -G39-** in the exhaust stream.
3. **Exhaust Gas Temperature Sensor #2 <item 3>** is installed in the next downstream bung before the oxidation catalyst, as shown **<red>**.
 - **NOTE:** **Exhaust Gas Temperature Sensor #2** has a “**Curved**” sensor probe. Tighten the sensor to 45 Nm.
4. **Exhaust Gas Temperature Sensor #3 <item 4>** is installed in the next downstream bung between the oxidation catalyst and the diesel particulate filter, as shown **<green>**.
 - **NOTE:** **Exhaust Gas Temperature Sensor #3** has a “**Straight**” sensor probe. Tighten the sensor to 45 Nm.

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O2 sensor wiring harness routing procedure and tie strap installation



Routing and Securing the New Oxygen Sensor -G39- Wiring Harness:

CRITICAL REPAIR STEP

 **STOP!** 

Correctly routing and securing the new Oxygen Sensor -G39- wiring harness is **CRITICAL**.

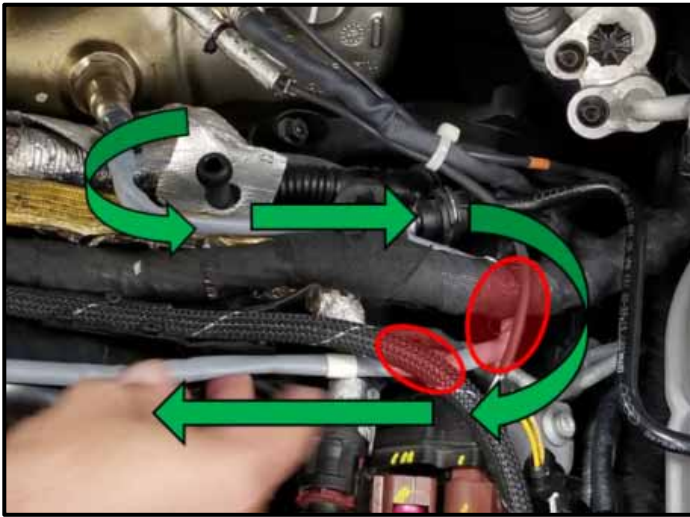
Failure to correctly route and secure the new Oxygen Sensor -G39- wiring harness as described in the steps below may result in chaffing of the wiring harness, or inadvertently securing the wiring harness to engine components that require isolation for proper operation, such as high-pressure fuel lines.

- Click on the following link or scan the QR Code to view a short video detailing the O2 sensor wiring harness routing procedure and tie strap installation.

<https://audi-external.kzoplatform.com:443/player/medium/1470436762785421044?autoplay=on>



- Start by routing the new Oxygen Sensor -G39- wiring harness under the main engine wiring harness, as shown.
 - Make sure the new Oxygen Sensor -G39- wiring harness is **NOT** routed underneath any high-pressure fuel injector lines during this procedure.



- Feed the new Oxygen Sensor -G39- wiring harness <arrows> underneath the engine wiring harness, Exhaust Gas Temperature Sensor #2 wiring harness, and low-pressure fuel return line <shaded circles> as shown.

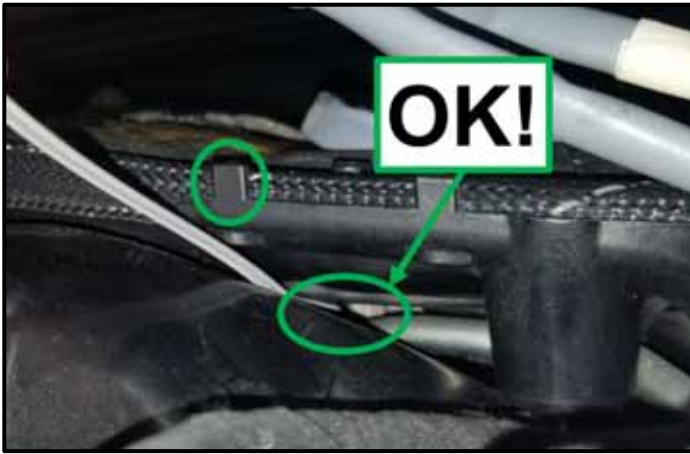


- Loosely route the new Oxygen Sensor -G39- harness into the Zig-Zag position, as shown.
- Balance the harness lengths on each loop as necessary to achieve a uniform routing.
 - The harness should be routed loosely with no kinks in the loop ends.



- Place a small upward bend <circle> on the end of the grey high-temperature tie-strap included in the 4H0.298.099 installation kit.

Included in installation kit 4H0298099:	
Part Number	Part Description
N 909.377.02	Tie Strap



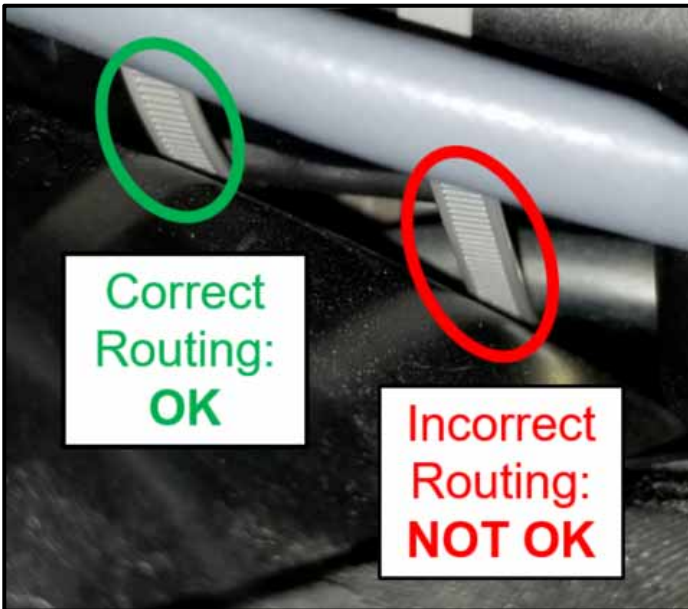
- Insert the grey high-temperature tie-strap under the furthest left guide pin on the engine wiring harness bracket <green circle, OK>.
- Visually inspect to make sure the tie-strap is installed over the high-pressure fuel line <green circle, OK>.
- **DO NOT** insert the tie-strap into its retaining clasp until proper alignment and routing has been verified.



⚠ CRITICAL REPAIR STEP	
<div style="display: flex; justify-content: space-around; align-items: center;"> STOP STOP! STOP </div>	
<p>Do NOT route the tie-strap under the high-pressure fuel line. Damage to the fuel line may occur.</p> <p>Do NOT route the tie-strap under the furthest right guide pin on the engine wiring harness bracket <red circle>.</p>	



- Before inserting the tie-strap into its retaining clasp, verify that the tie-strap has been properly routed around the upper two loops of the harness, as shown. The lower loop should **NOT** be captured by the tie-strap.
- Adjust and balance the wiring harness loops until a uniform sweeping Zig-Zag is created.
- Slide the tie strap so that it is near the furthest left guide pin <green circle>, and lightly secure the tie strap so that the harness can still be adjusted if needed.
- Once the wiring harness has been balanced and the tie-strap has been properly positioned against the furthest left guide pin <green circle>, completely tighten the tie-strap.

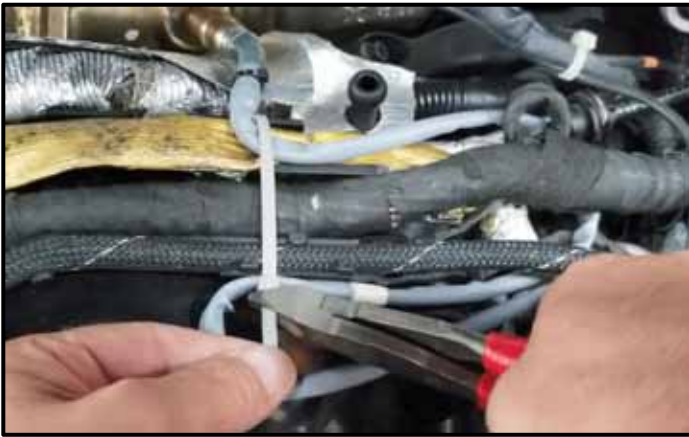


- Using a ruler or caliper, measure the length of tie-strap that has passed through the securing loop.
 - If the distance measured is **greater than 32mm** <green arrow>, then the tie-strap has likely been installed correctly. The tie-strap should be located near the furthest left locating pin on the engine wiring harness bracket.
 - Proceed to the next step for final visual validation.
 - If the distance measured is **less than 32mm**, then the tie-strap has likely been installed incorrectly.
 - Visually validate for correct installation of the tie strap before continuing with the work procedure. If improperly installed, remove the tie-strap and repeat this procedure.

⚠ CRITICAL REPAIR STEP

STOP! STOP!

Final visual validation of proper tie-strap installation is **REQUIRED**. Visually inspect the tie-strap routing to verify there is no contact with engine components that require isolation for proper operation, such as high-pressure fuel lines, coolant lines, etc.

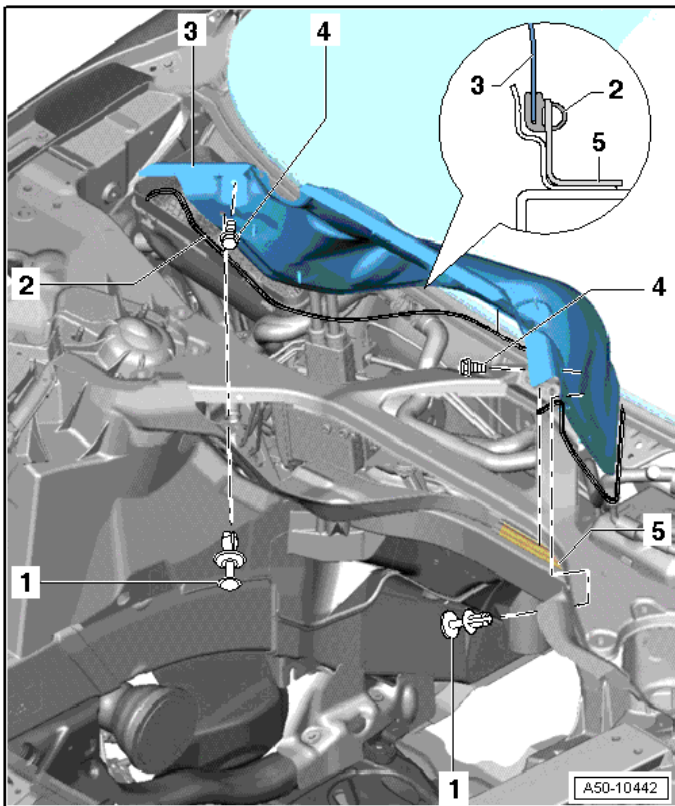


- Once proper routing and positioning has been verified, cut off the remaining portion of the tie-strap with cutters.



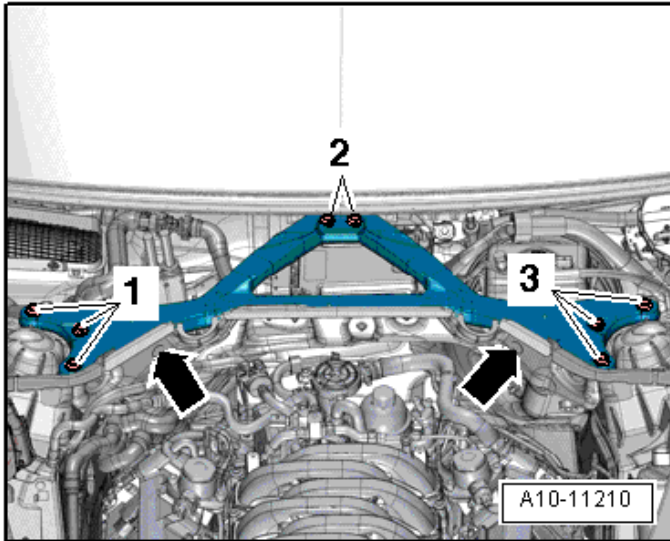
Install Differential Pressure Sensor hose:

- Reattach the differential pressure sensor hose to the steel differential pressure tube and secure the clamp <arrow>.



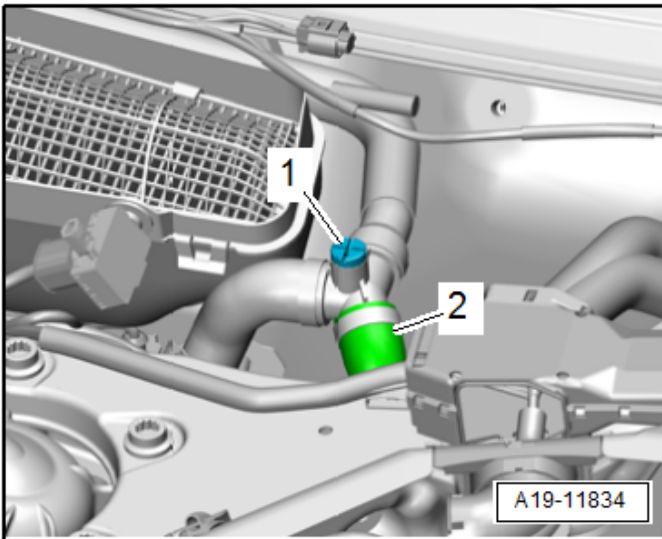
Install Plenum Chamber Bulkhead:

- Install Plenum Chamber Bulkhead <3> making sure the seal contacts the firewall correctly <inset photo>.
- Install the expanding clips <1> and bolts <4> and torque to 10 Nm.

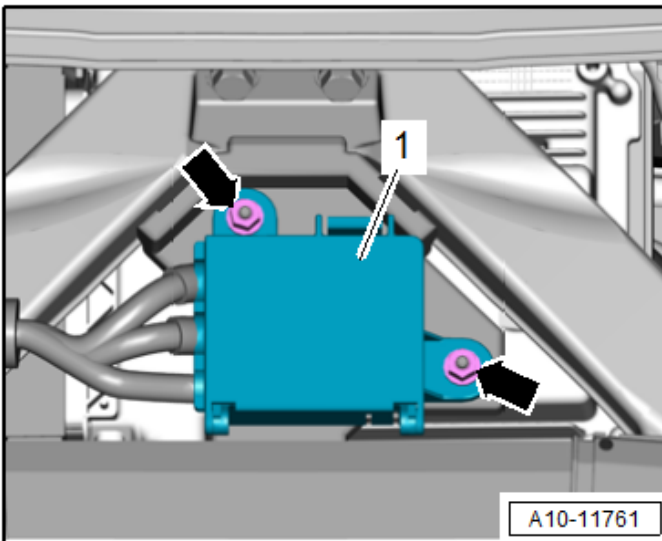


Install Tower Brace:

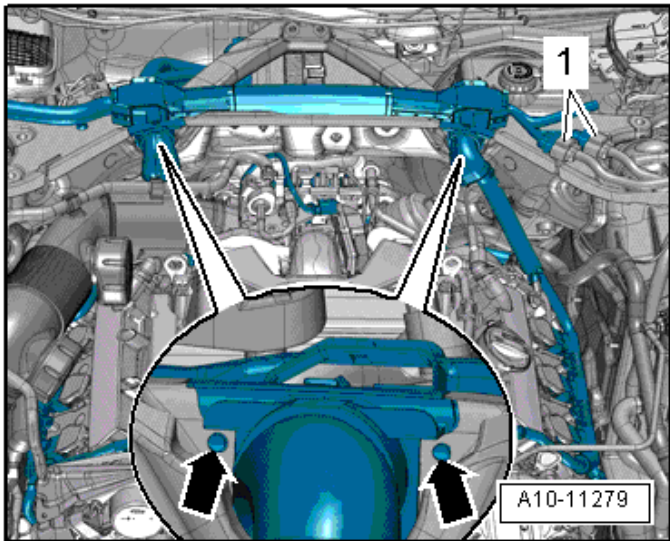
- Install Tower Brace and the bolts <1, 2, 3, and arrows>.
- Tighten the bolts as follows:
 - <1 and 3> = 50 Nm
 - <2> = 25 Nm
 - <arrows> = 10 Nm



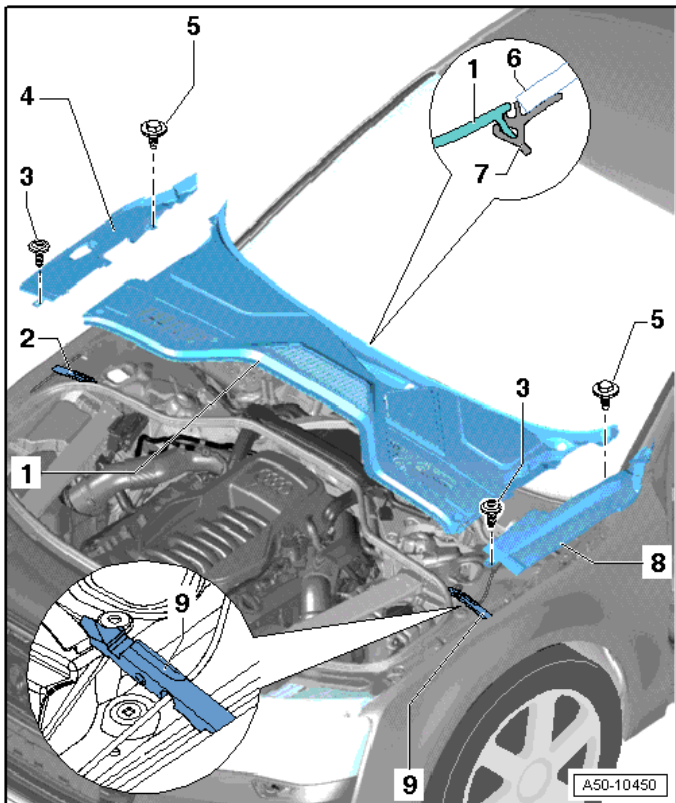
- Install the coolant hose <2> into securing tab at the tower brace.
- Connect and secure all remaining wiring harness and vacuum line connections. Secure all retaining tabs onto the tower brace and bulkhead.



- Install the E-box <1>. Install and tighten the nuts <arrows> to 3 Nm.



- Install the left and right wiring harnesses into the openings in the plenum chamber bulkhead and secure the retainers <arrows>.
- Connect the connectors <1> and secure them onto the brackets.



Install Plenum Chamber Cover:

- Install plenum chamber cover panel <1> inward diagonally from edge frame beginning at window edge.
- Install corner trim pieces <4 and 8> and install the bolts. Tighten the bolts <3> to 3 Nm. Tighten the bolts <5> to 6 Nm.

NOTE

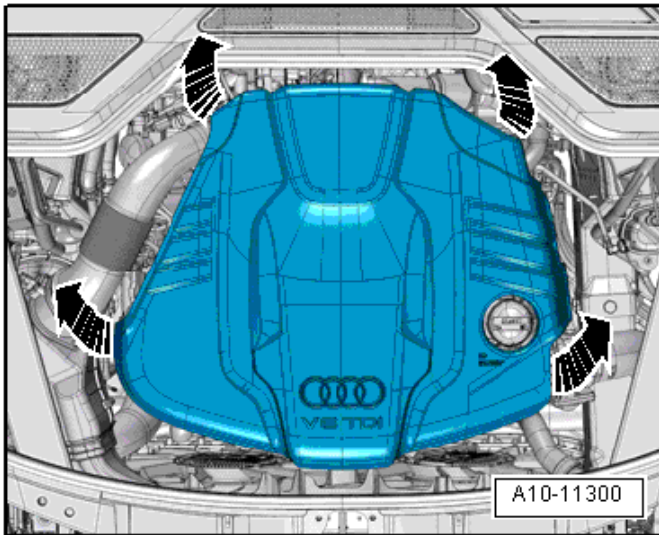
For easier removal/installation, spray windshield edge strip <inset photo, 7> with soapy solution.

CAUTION

Risk of windshield glass breaking during removal/installation:

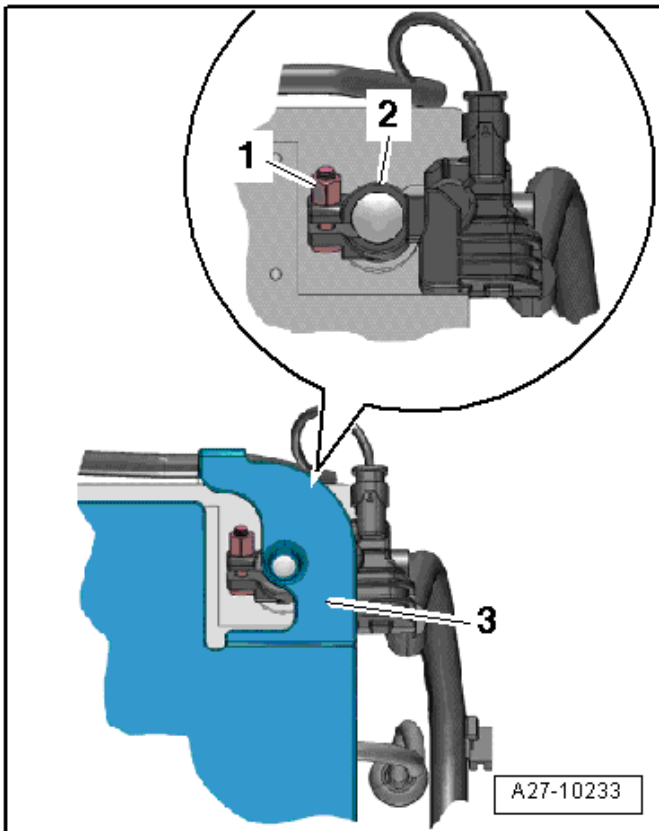
- Do not hit or use excessive force on the trim when removing or installing.
- Carefully remove or install the trim sideways, beginning in the edge frame.
- Damage to the windshield glass or plenum chamber cover will not be covered under this action.

- Seat the plenum chamber cover <1> into the lip edge on the bottom of the windshield <inset photo, 7>
- Install hood seal in area around the plenum chamber cover.
- Install windshield wiper arms using previous markings to align them. Torque the nuts to 21 Nm.



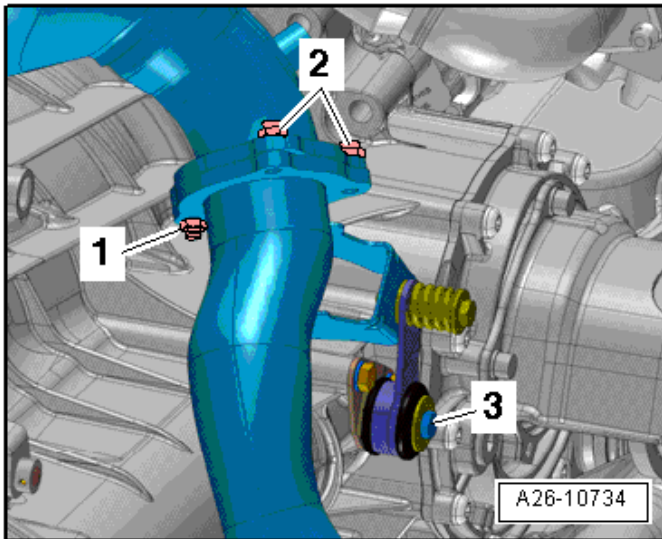
Install Engine Cover:

- Install the engine cover and carefully press down in the opposite direction of <arrows> one corner at a time to secure the engine cover into the retaining pins.



Connect Battery:

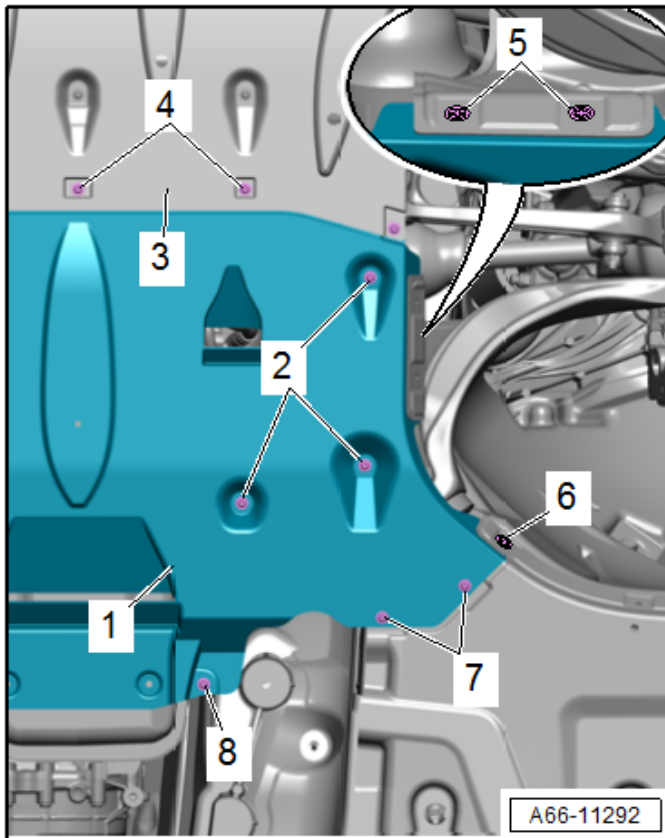
- Lift the luggage compartment floor covering by the handle and fold it forward.
- If equipped remove the vehicle tool kit.
- Open the cover <3> over the battery negative pole and install the battery ground terminal onto the negative battery post.
- Tighten the nut <1> to 5 Nm.
- Reinstall the vehicle tool kit, and fold the floor covering back into place.



Install Lower Exhaust Nut:

- Raise the vehicle on the hoist.
- Install the remaining “Silver” colored shouldered hex nut (N 911.308.02) <1> and tighten to 23 Nm.

Included in installation kit 4H0298099:	
Part Number	Part Description
N 911.308.02	Shouldered Hex Nut, self-locking – Silver, exhaust downpipe flange



Install Rear Noise Insulation:

- Install the rear noise insulation <1>.
- Install the bolts <4> and tighten to 3.5 Nm.
- Install the quick-release fasteners <2, 7, and 8>.
- Lower vehicle on hoist.



Parts Return / Disposal:

Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter:

- The Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter must be tagged with a blue zip tie <as shown> and returned in order to be considered for core charge reimbursement.

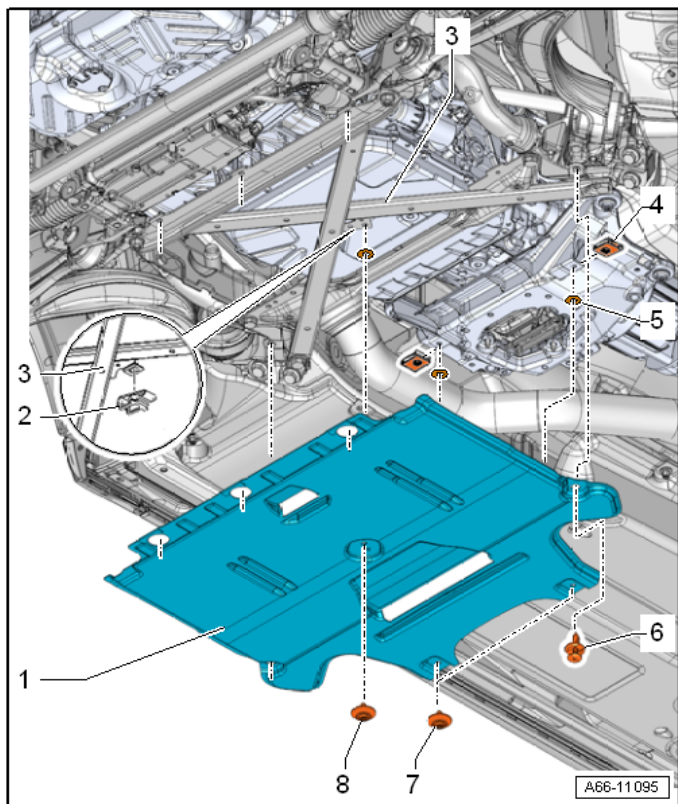
All other parts:

- Properly store (retain), destroy or dispose of removed parts in accordance with all state and local requirements, unless otherwise indicated and/or requested through the Warranty Parts Portal (WPP).

Proceed to Section E (Software Update).

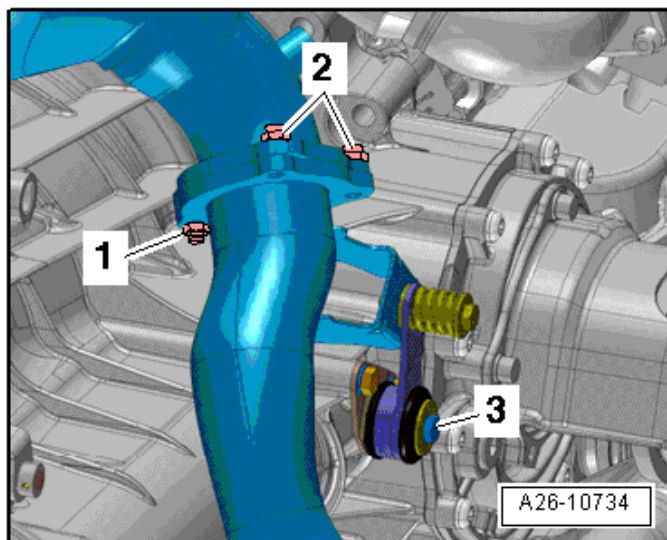
Section D – For All Criteria (01, 02, 03): Q5 vehicles, Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter

Q5, Replace Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter



Remove Rear Noise Insulation:

- Secure and raise vehicle on hoist.
- Remove the bolts <7 and 8>.
- Remove the rivets <6>.
- Remove the rear noise insulation <1>.



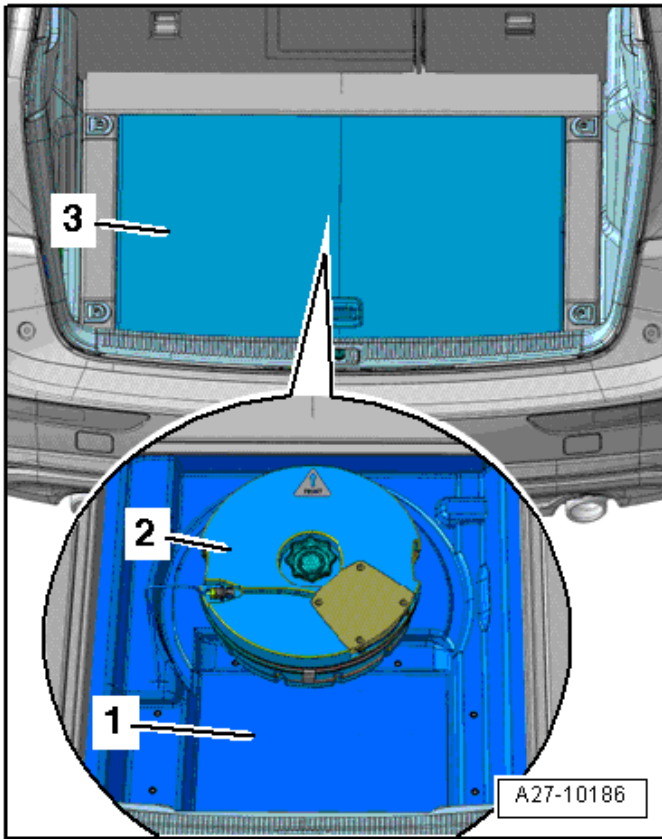
Remove Lower Exhaust Nut:

- Remove the nut <1>.

! NOTE

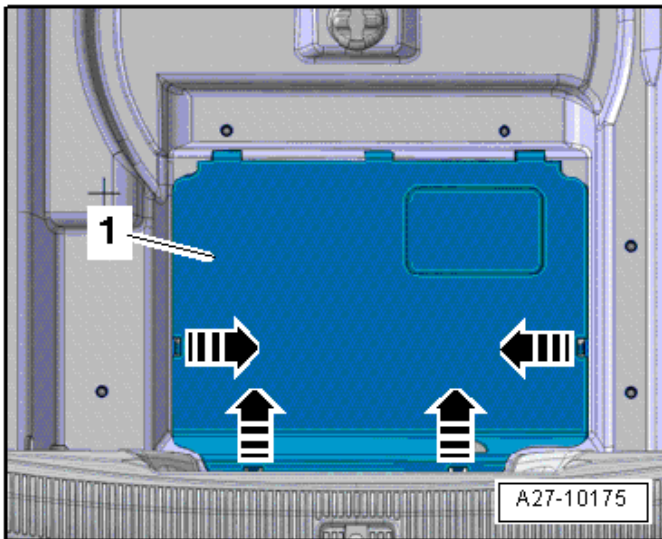
The nuts <2> will be removed later from above. Ignore item <3>.

- Lower the vehicle on the hoist.

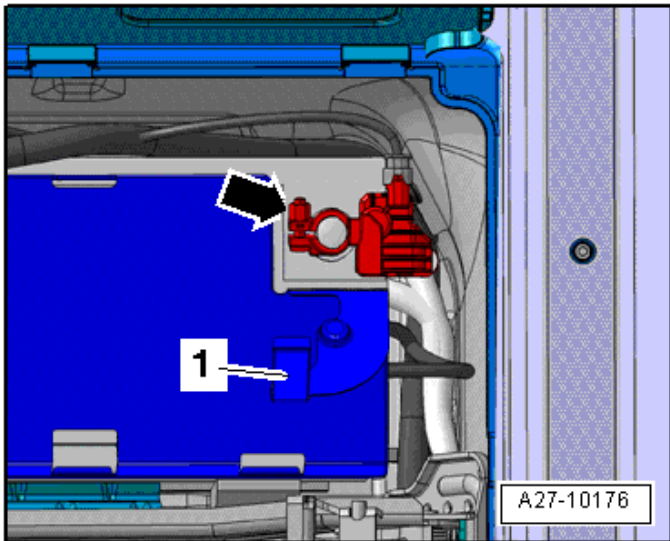


Battery Disconnect:

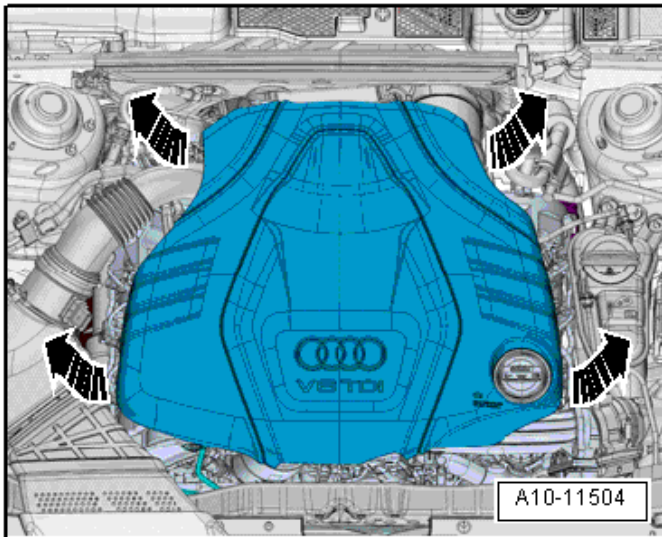
- Turn off the ignition and remove the key.
- Remove the luggage compartment floor covering <3>.
- Remove the dirt tray, if applicable.
- If equipped, remove the subwoofer <2>.
- Fold back the carpet <1> over the cover.



- Unlock the retaining tabs <arrows> and open the cover <1>.



- Open the cover <1> over the battery negative terminal.
- Loosen the nut several turns and remove the battery ground cable terminal <arrow> from the battery pole.



Remove Engine Cover:

- Carefully pull the engine cover off the retaining pins one after the other in direction of <arrows>. Do not pull sharply on the engine cover or pull it to one side.



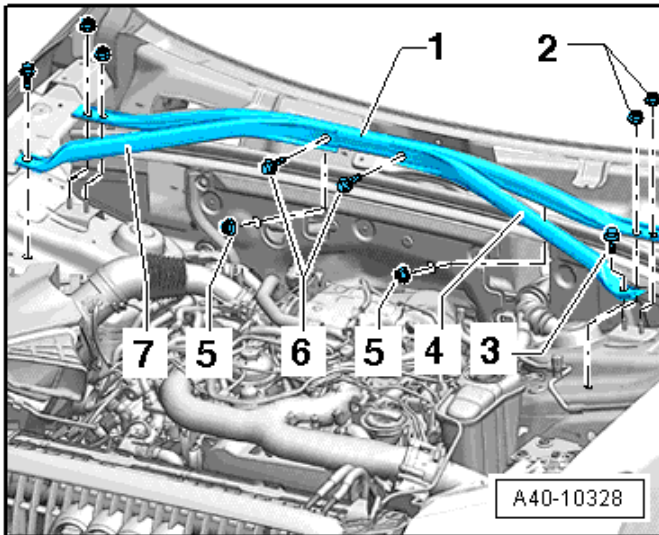
Remove NOx Sensor Module and/or Bracket:

- On the driver side strut tower, disconnect the connector for the NOx Sensor 1 Module <arrow>.

NOTE

Some bracket variation exists between vehicle models. Photo shown may not match all vehicle configurations.

- Unscrew either the two nuts securing the NOx Module to the bracket, or the two nuts securing the mounting bracket to chassis <circles> and remove the module and/or bracket and set it aside. Remove component/s as needed to provide clearance for cowl panel removal.



Remove Tower Brace:

- Remove the four nuts <2>, two bolts <3>, and the two speed-nuts <5>. Remove the tower brace <1>.

NOTE

The bolts <6> do not require removal.



Remove Plenum Chamber Bulkhead:

- Remove the upper cowl seal <circle>.



- Open the battery jump post access cover.



- Using a screwdriver or hook tool, carefully release the tabs <arrow, inset image> on the cowl cover <circles>.
- Remove the cowl cover panel from the cowl.

NOTE

The tabs <arrow, inset image> on the cowl cover will be damaged if not carefully and completely disconnected before removal of the panel. Consequential damage to the cowl cover will not be covered under this action.



- Depress the vehicle brake pedal four or five times to relieve vacuum from the brake booster system.
- Remove the brake booster vacuum line <arrow> and remove the grommet from the vacuum connection.

! NOTE

Removing the brake booster vacuum line while vacuum is still present in the booster system may result in damage to the vacuum line or grommet. Consequential damage to the vacuum line or grommet will not be covered under this action.

- Using a small screwdriver, disconnect all of the cable tie connectors <circles> from the battery cables and wiring harness on the back side of the plenum chamber.

! NOTE

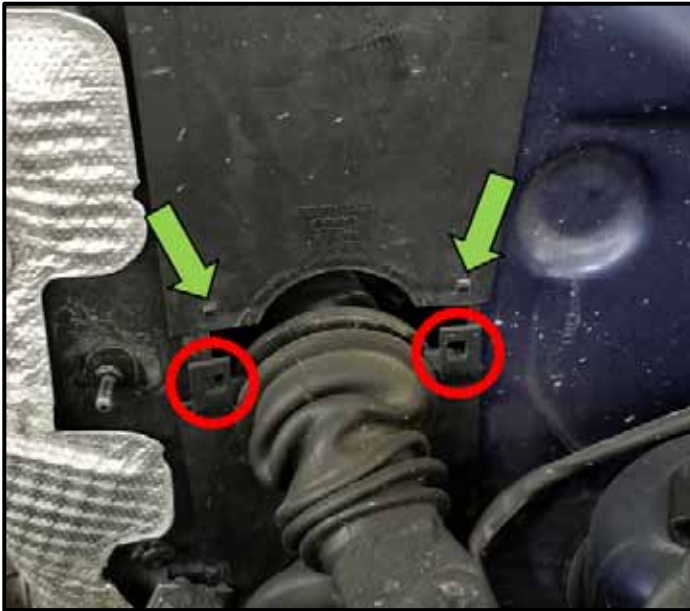
Different types and configurations of cable fasteners may be installed. There are multiple fasteners on the driver and passenger side of the bulkhead. Verify that all fasteners have been removed before removing the plenum chamber bulkhead.



- Using a small screwdriver, remove the cap <circle> from the bolt on the battery positive terminal 30 carrier.
- Remove the bolt.
- Lift the right side of the terminal block, and slide to the right to disconnect the tabs from the support bracket.



- Using pliers, squeeze the tabs on the wiring harness securing tab <circle>, and remove the tab from the support bracket.



- Release the retainers <circles> from the securing tabs <arrows> and remove the wiring bushing upward out of the plenum chamber bulkhead.



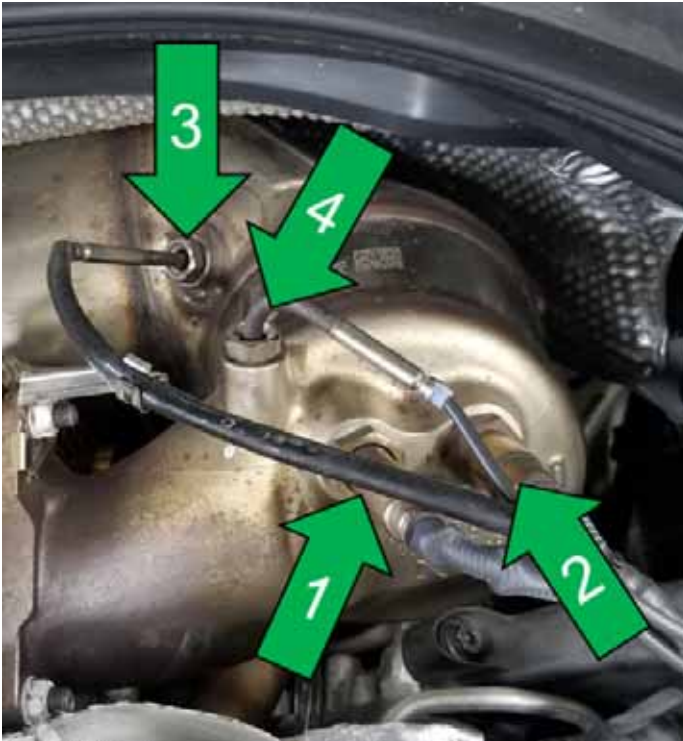
- Remove all fasteners securing the plenum chamber bulkhead cover to the firewall.

NOTE

- Different types of fasteners may be installed in different locations. There may be cable brackets, clips, nuts, or bolts. This fastener configuration may vary based on vehicle model.
- Some push-type fasteners require squeezing the tabs from the back side of the bulkhead with pliers <circle> to remove.
- Use care when working so you do not damage the fasteners during removal.



- Remove the plenum chamber bulkhead upward (bulkhead shown removed).
- Secure all disconnected wiring harness connections, hoses, and cables out of the way with a tie strap (or equivalent).

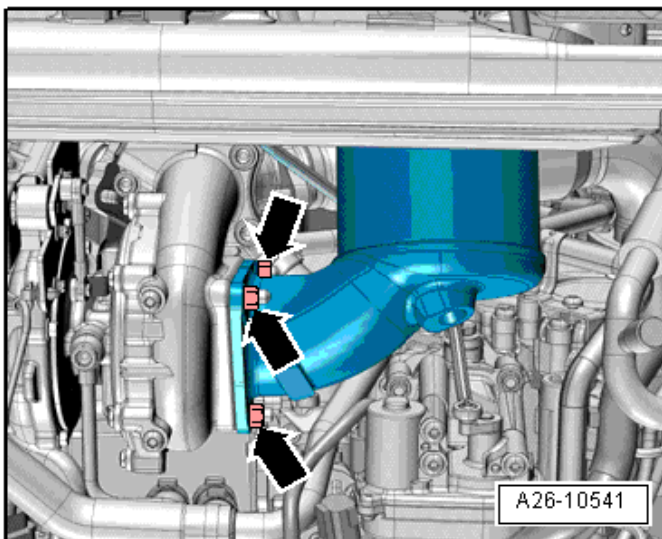


Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter sensor removal:

NOTE

The exhaust temperature sensors and NOx 1 sensor probes are very fragile. Use extreme care when removing and handling the exhaust temperature sensors and NOx 1 sensor to avoid damage to the sensor probes.

- Unscrew the exhaust temperature sensors <3 and 4>, Oxygen Sensor <2>, and NOx 1 sensor <1> and remove them from the exhaust pipe with oxidation catalyst and diesel particulate filter.
- Disconnect the connector for the oxygen sensor <2> and remove it from the bracket. Discard the oxygen sensor <2>.
- Set the exhaust temperature sensors <3 and 4> and NOx 1 sensor <1> aside in a safe place to avoid damage to the sensor probes.



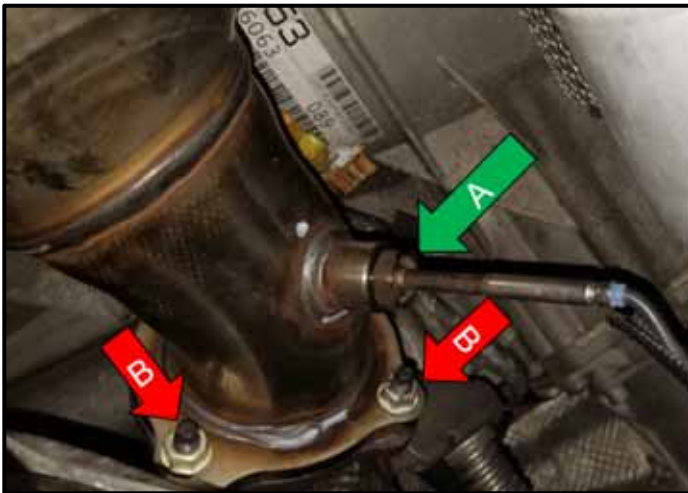
Remove Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter:

- Remove the three nuts <arrows> securing the exhaust pipe with oxidation catalyst and diesel particulate filter to the turbocharger.



Remove Differential Pressure Sensor Hose:

- Using pliers, loosen the clamp <arrow> and remove the differential pressure sensor hose from the steel differential pressure tube.

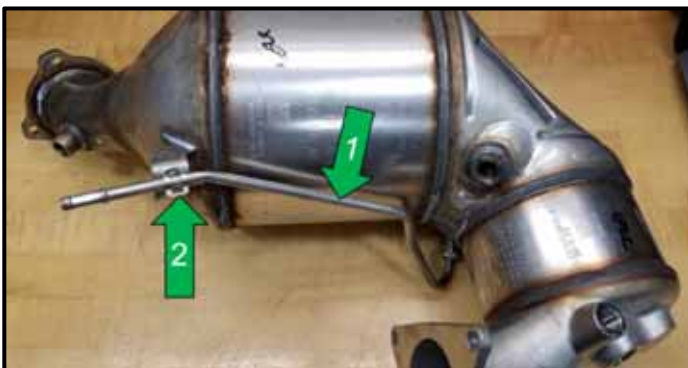


- Remove exhaust gas temperature sensor #4 <green arrow A> and set it aside in a safe place to avoid damage to the sensor probe.

NOTE

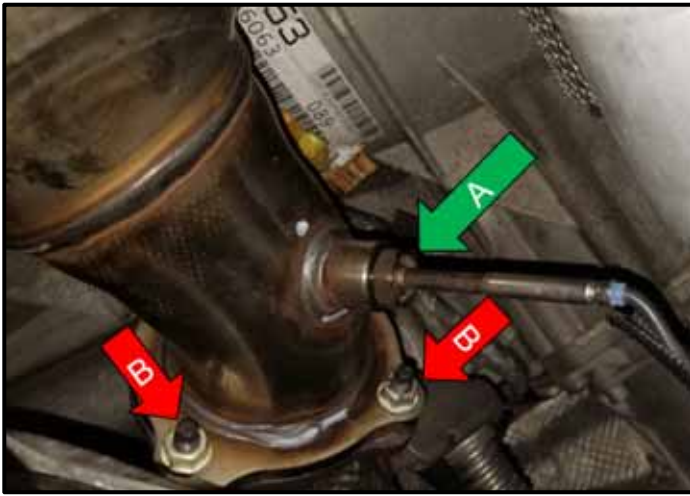
The exhaust temperature sensor probe is very fragile. Use extreme care when removing and handling the exhaust temperature sensor to avoid damage to the sensor probe.

- Remove the two nuts <red arrows B> securing the exhaust pipe with oxidation catalyst and diesel particulate filter to the exhaust downpipe.
- Remove the exhaust pipe with oxidation catalyst and diesel particulate filter from the vehicle and discard the old gaskets.



Transfer Differential Pressure Pipe:

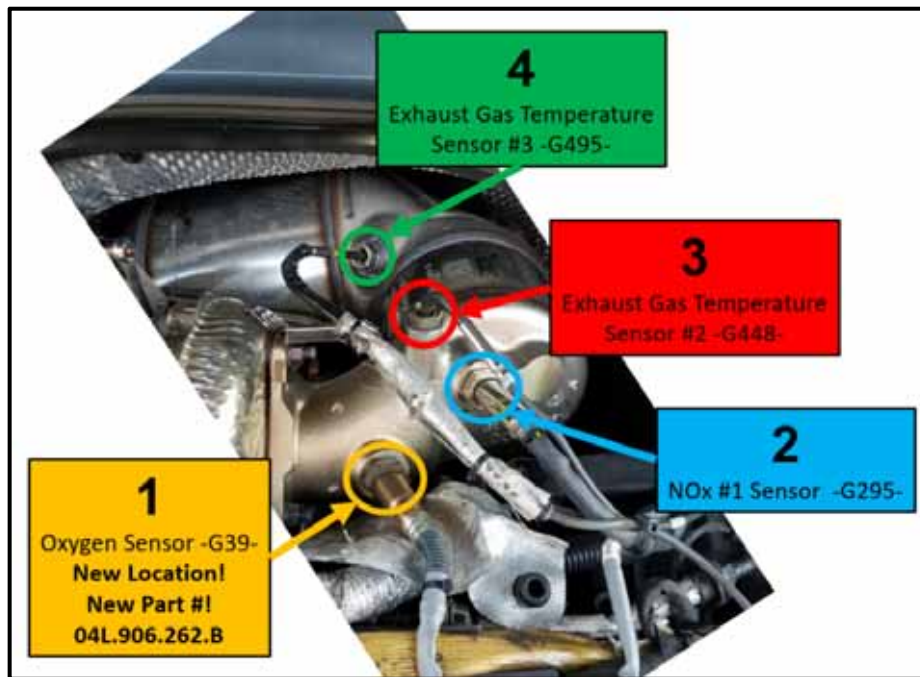
- Loosen the nut on the differential pressure pipe <1> and remove the pipe. Remove the clip <2> from the old exhaust pipe. Disengage the clip from the bottom using a small screwdriver.
- Install the differential pressure pipe <1> onto the new exhaust pipe. Transfer the clip from old exhaust pipe onto the new exhaust pipe, and secure the pipe in the clip. Tighten the differential pressure pipe nut to 45 Nm.



Install new Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter:

- Install the exhaust pipe gasket onto the lower exhaust studs.
- Install the turbocharger gasket onto the turbocharger studs.
- Install the new Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter into vehicle with new gaskets and nuts.
- Align the Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter onto the lower exhaust studs first, then work the flange onto the turbocharger studs.
- Install two “Silver” colored shouldered hex nuts (N 911.308.02) <arrows B> onto the lower studs securing the exhaust downpipe to the exhaust pipe with oxidation catalyst with diesel particulate filter. Tighten the two “Silver” colored exhaust nuts <arrows B> to 23 Nm.
- Install and tighten exhaust temperature sensor #4 <A> to 45 Nm.
- Install the three “Copper” colored shouldered hex nuts (N 911.308.01) onto studs <arrows 1> at the flange of the turbocharger. Tighten the “Copper” colored exhaust nuts to 23 Nm.

Part Number	Part Description
4H0.254.750.HX	Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter
Included in installation kit 4H0298099:	
Part Number	Part Description
8K0.253.115.J	Gasket, Exhaust Pipe
4G0.253.115.A	Gasket, Turbocharger
N 911.308.02	Shouldered Hex Nut, self-locking – Exhaust Pipe (Silver, exhaust downpipe flange)
N 911.308.01	Shouldered Hex Nut, self-locking – Turbocharger (Copper, turbocharger flange)



Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter Sensor installation:

⚠ CRITICAL REPAIR STEP

STOP STOP!

Installing the four sensors listed below into their correct assigned locations is **CRITICAL**. Follow the numbered and color coded sequence below to correctly install the sensors into their required assigned locations.

- Install and tighten the four exhaust pipe sensors in the locations shown, in the following order:
 - The new **Oxygen Sensor -G39- <item 1>** is installed in the bung closest to the turbocharger, as shown **<orange>**. Tighten the **Oxygen Sensor -G39-** to 52 Nm.
 - NOTE:** The **Oxygen Sensor -G39-** will now be located **BEFORE** the **NOx #1 Sensor** in the exhaust stream. Do not plug in the Oxygen Sensor wiring harness at this time.

Part Number	Part Description
04L.906.262.B	Oxygen Sensor -G39-

- NOx #1 Sensor -G295- <item 2>** is installed in the next downstream bung, as shown **<blue>**. Tighten the **NOx #1 Sensor** to 52 Nm.
 - NOTE:** **NOx #1 Sensor** will now be located **AFTER** the **Oxygen Sensor -G39-** in the exhaust stream.
- Exhaust Gas Temperature Sensor #2 <item 3>** is installed in the next downstream bung before the oxidation catalyst, as shown **<red>**.
 - NOTE:** **Exhaust Gas Temperature Sensor #2** has a “**Curved**” sensor probe. Tighten the sensor to 45 Nm.
- Exhaust Gas Temperature Sensor #3 <item 4>** is installed in the next downstream bung between the oxidation catalyst and the diesel particulate filter, as shown **<green>**.
 - NOTE:** **Exhaust Gas Temperature Sensor #3** has a “**Straight**” sensor probe. Tighten the sensor to 45 Nm.

The repair information in this document is intended for use only by skilled technicians who have the proper tools, equipment and training to correctly and safely maintain your vehicle. These procedures are not intended to be attempted by “do-it-yourselfers,” and you should not assume this document applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Audi dealer. ©2019 Audi of America, Inc. All Rights Reserved.



O2 sensor wiring harness routing procedure and tie strap installation



Routing and Securing the New Oxygen Sensor -G39- Wiring Harness:

⚠ CRITICAL REPAIR STEP

STOP STOP

Correctly routing and securing the new Oxygen Sensor -G39- wiring harness is **CRITICAL**.

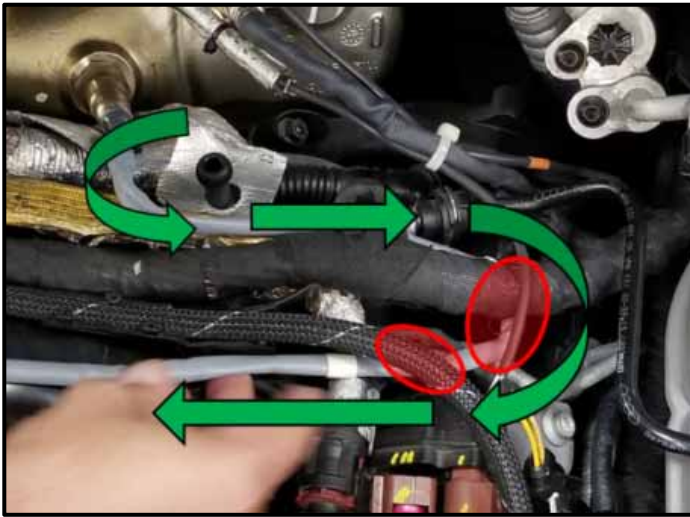
Failure to correctly route and secure the new Oxygen Sensor -G39- wiring harness as described in the steps below may result in chaffing of the wiring harness, or inadvertently securing the wiring harness to engine components that require isolation for proper operation, such as high-pressure fuel lines.

- Click on the following link or scan the QR Code to view a short video detailing the O2 sensor wiring harness routing procedure and tie strap installation.

<https://audi-external.kzoplatform.com:443/player/medium/1470436762785421044?autoplay=on>



- Start by routing the new Oxygen Sensor -G39- wiring harness under the main engine wiring harness, as shown.
 - Make sure the new Oxygen Sensor -G39- wiring harness is **NOT** routed underneath any high-pressure fuel injector lines during this procedure.



- Feed the new Oxygen Sensor -G39- wiring harness <arrows> underneath the engine wiring harness, Exhaust Gas Temperature Sensor #2 wiring harness, and low-pressure fuel return line <shaded circles> as shown.

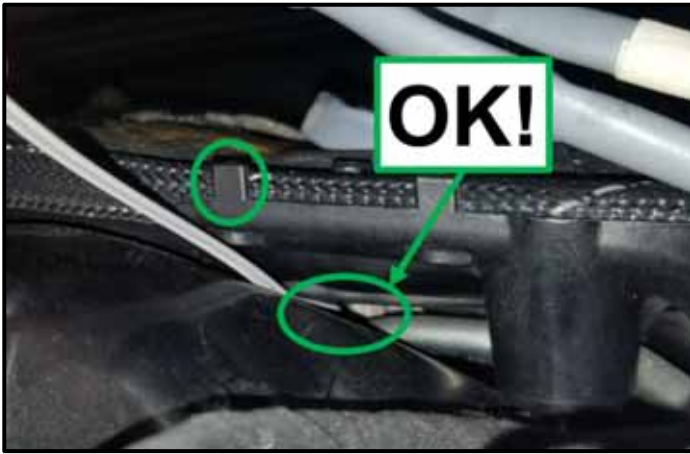


- Loosely route the new Oxygen Sensor -G39- harness into the Zig-Zag position, as shown.
- Balance the harness lengths on each loop as necessary to achieve a uniform routing.
 - The harness should be routed loosely with no kinks in the loop ends.



- Place a small upward bend <circle> on the end of the grey high-temperature tie-strap included in the 4H0.298.099 installation kit.

Included in installation kit 4H0298099:	
Part Number	Part Description
N 909.377.02	Tie Strap



- Insert the grey high-temperature tie-strap under the furthest left guide pin on the engine wiring harness bracket <green circle, OK>.
- Visually inspect to make sure the tie-strap is installed over the high-pressure fuel line <green circle, OK>.
- **DO NOT** insert the tie-strap into its retaining clasp until proper alignment and routing has been verified.



⚠ CRITICAL REPAIR STEP

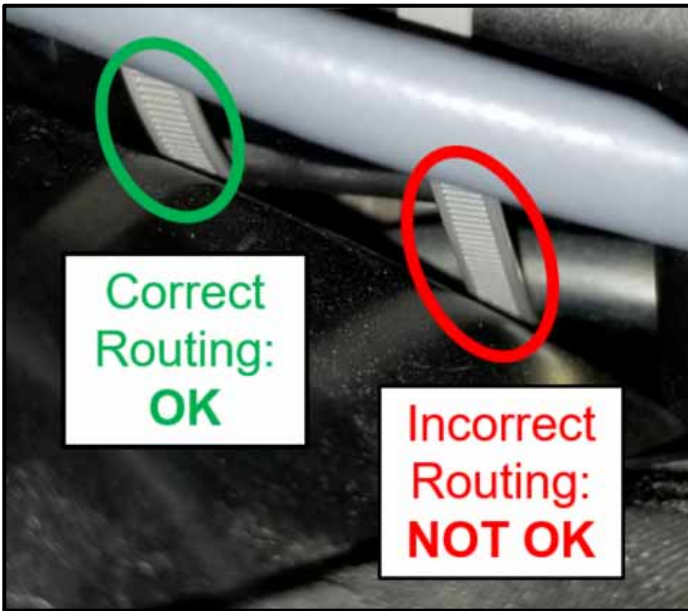
STOP STOP

Do NOT route the tie-strap under the high-pressure fuel line. Damage to the fuel line may occur.

Do NOT route the tie-strap under the furthest right guide pin on the engine wiring harness bracket <red circle>.



- Before inserting the tie-strap into its retaining clasp, verify that the tie-strap has been properly routed around the upper two loops of the harness, as shown. The lower loop should **NOT** be captured by the tie-strap.
- Adjust and balance the wiring harness loops until a uniform sweeping Zig-Zag is created.
- Slide the tie strap so that it is near the furthest left guide pin <green circle>, and lightly secure the tie strap so that the harness can still be adjusted if needed.
- Once the wiring harness has been balanced and the tie-strap has been properly positioned against the furthest left guide pin <green circle>, completely tighten the tie-strap.

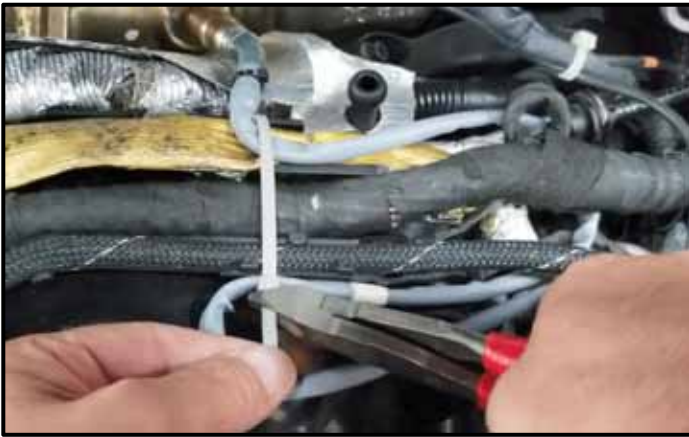


- Using a ruler or caliper, measure the length of tie-strap that has passed through the securing loop.
 - If the distance measured is **greater than 32mm** <green arrow>, then the tie-strap has likely been installed correctly. The tie-strap should be located near the furthest left locating pin on the engine wiring harness bracket.
 - Proceed to the next step for final visual validation.
 - If the distance measured is **less than 32mm**, then the tie-strap has likely been installed incorrectly.
 - Visually validate for correct installation of the tie strap before continuing with the work procedure. If improperly installed, remove the tie-strap and repeat this procedure.

⚠ CRITICAL REPAIR STEP

STOP
STOP!
STOP

Final visual validation of proper tie-strap installation is **REQUIRED**. Visually inspect the tie-strap routing to verify there is no contact with engine components that require isolation for proper operation, such as high-pressure fuel lines, coolant lines, etc.



- Once proper routing and positioning has been verified, cut off the remaining portion of the tie-strap with cutters.



Install Differential Pressure Sensor hose:

- Reattach the differential pressure sensor hose to the steel differential pressure tube and secure the clamp <arrow>.



Install Plenum Chamber Bulkhead:

- Work the plenum chamber bulkhead into position between the firewall and the exhaust pipe.



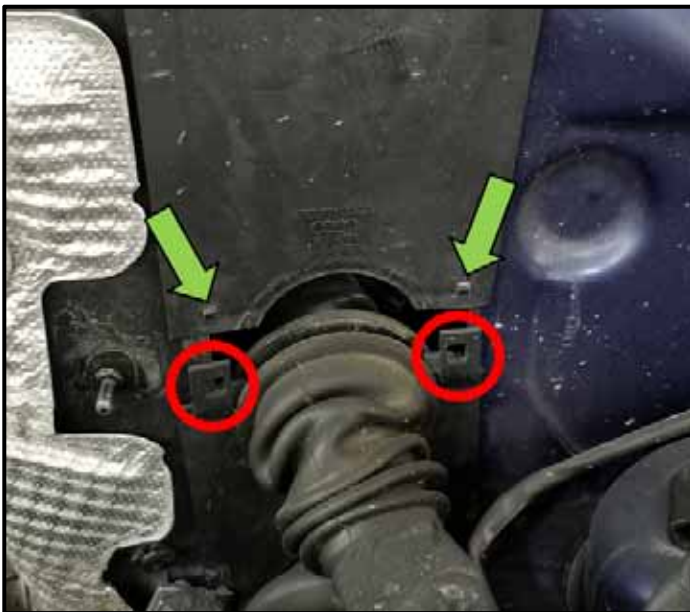
- Insert the plenum chamber bulkhead into the clip on the firewall, and verify that the heat shield has not been deformed during removal or reinstallation.
- If the heat shield has been deformed, reposition it before securing the bulkhead to the clip.



- Install all fasteners securing the plenum chamber bulkhead cover to the firewall. Torque fasteners to 2 Nm.

NOTE

- Different types of fasteners may be installed in different locations. There may be cable brackets, clips, nuts, or bolts. This fastener configuration may vary based on vehicle model.
- Use care when working so you do not damage the fasteners during installation.



- Install the wiring harness grommet into the plenum chamber bulkhead.
- Insert the wiring harness bulkhead cover between the bulkhead and firewall and secure the tabs <arrows> into the retainers <circles>.



- Insert the wiring harness securing tab <circle>, into the support bracket beneath the battery positive terminal 30 carrier -TV22-.

TIP

Use pliers to guide the securing tab up through the bracket, as there is limited clearance under the bracket to push from below.



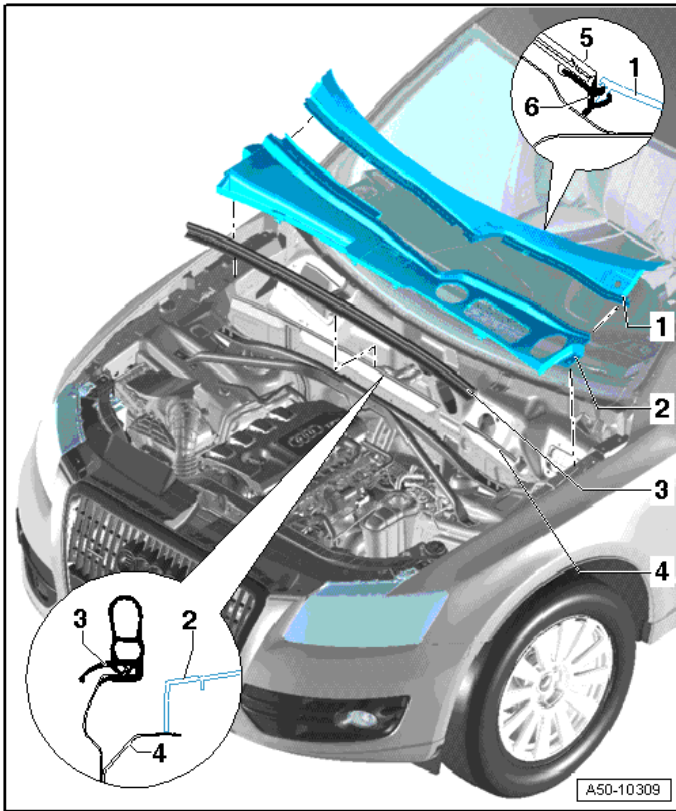
- Install the battery positive terminal 30 carrier -TV22- by inserting the terminal block into the bracket tabs, and slide to the left to secure the tabs into the support bracket.
- Install the bolt and tighten to 7.5 Nm.
- Install the cap <circle> onto the bolt on the battery positive terminal 30 carrier -TV22-.



- Install the brake booster vacuum line <arrow> into the grommet for the vacuum connection.
- Reconnect all of the cable tie connectors <circles> from the battery cables and wiring harness onto the back side of the plenum chamber bulkhead.

NOTE

Different types and configurations of cable fasteners may be installed. There are multiple fasteners on the driver and passenger side of the bulkhead. Verify that all fasteners have been reinstalled and all harnesses and cables are secure.



Install Cowl Cover Panel:

- Insert the lip on the cowl cover panel <2> into the channel on the wiper cowl cover panel <1>. Work the panel back and forth until the lip is fully seated into the channel.



- Carefully insert the tabs on the cowl cover <arrow, inset image> into the slots on the bulkhead <circles>.
- Use a screwdriver to push down carefully on the tab until it locks into the slots on the bulkhead.

NOTE

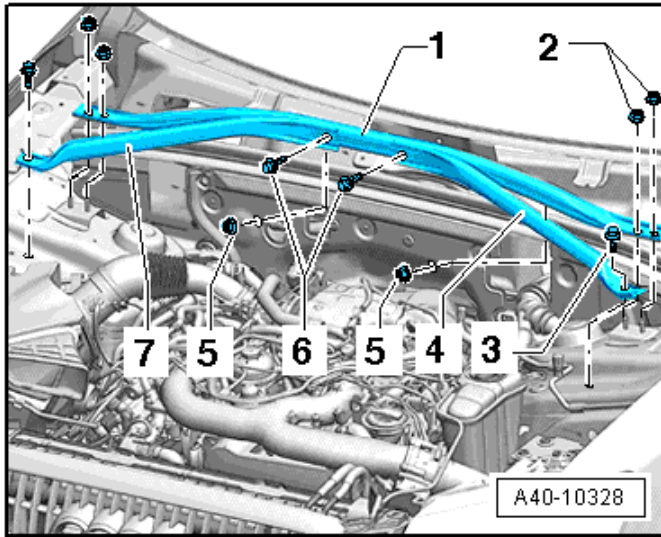
The tabs <arrow, inset image> on the cowl cover will be damaged if not carefully and completely inserted into the slots. Consequential damage to the cowl cover will not be covered under this action.



- Install the battery jump post access cover.



- Install the upper cowl seal <circle>.



Install the Tower Brace:

- Install the tower brace. Tighten the fasteners as follows:
 - Four nuts <2>, tighten to 30 Nm.
 - Two bolts <3>, tighten to 30 Nm.
 - Two speed-nuts <5>, tighten to 2.5 Nm.

NOTE

The bolts <6> did not require removal. If these fasteners were removed or loosened during this operation, secure all other fasteners first, then tighten the bolts <6> to 30 Nm after all other fasteners have been torqued to specification.



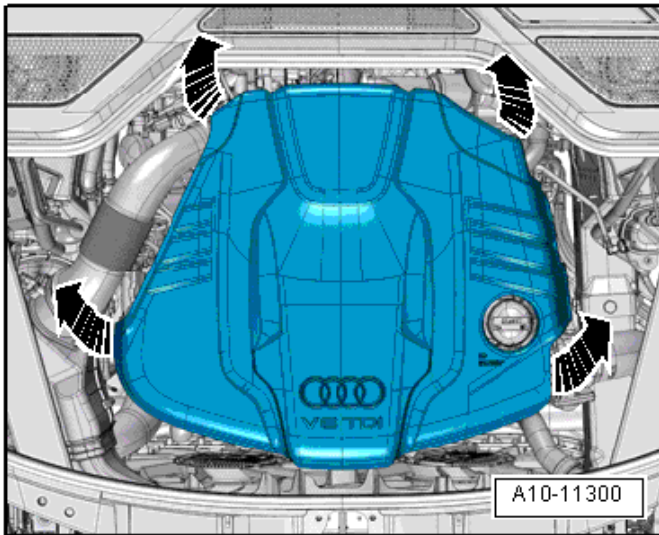
Install NOx Sensor Module and/or Bracket:

- On the driver side strut tower, install the NOx Sensor 1 Module and/or bracket.

NOTE

Some bracket variation exists between vehicle models. Photo shown may not match all vehicle configurations.

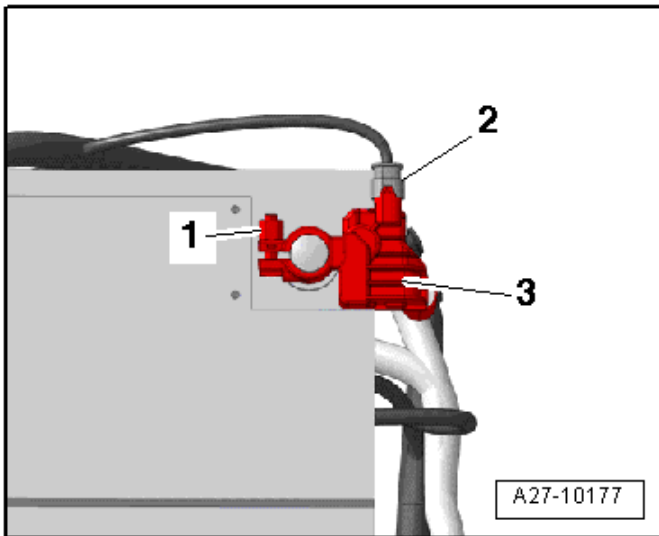
- Install either the two nuts securing the NOx Module to the bracket, and/or the two nuts securing the mounting bracket to chassis <circles>.
 - Tighten the plastic nuts to 2 Nm.
 - Tighten the steel nuts to 7.5 Nm
- Connect the electrical connector for the NOx Sensor 1 Module <arrow>.



A10-11300

Install Engine Cover:

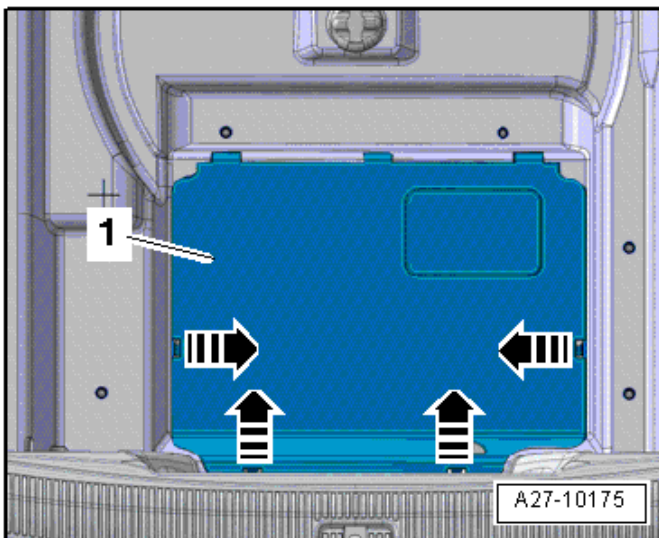
- Install the engine cover and carefully press down in the opposite direction of <arrows> one corner at a time to secure the engine cover into the retaining pins.



A27-10177

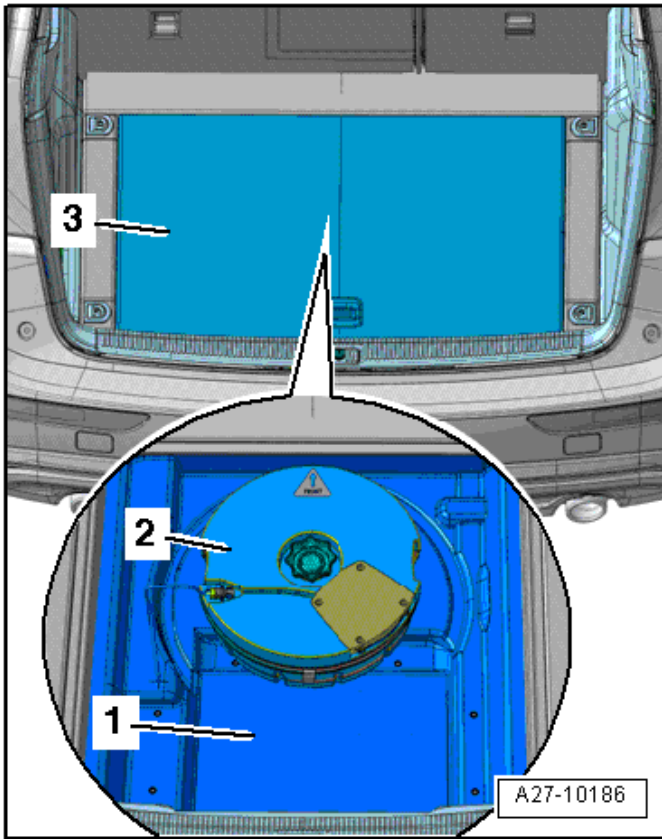
Battery Reconnection:

- Open the cover <1> over the battery negative terminal.
- Disconnect the connector <2> from the Battery Monitoring Control Module -J367- <3>.
- Install the battery negative terminal onto the battery negative post. Tighten the nut <1> to 5 Nm.

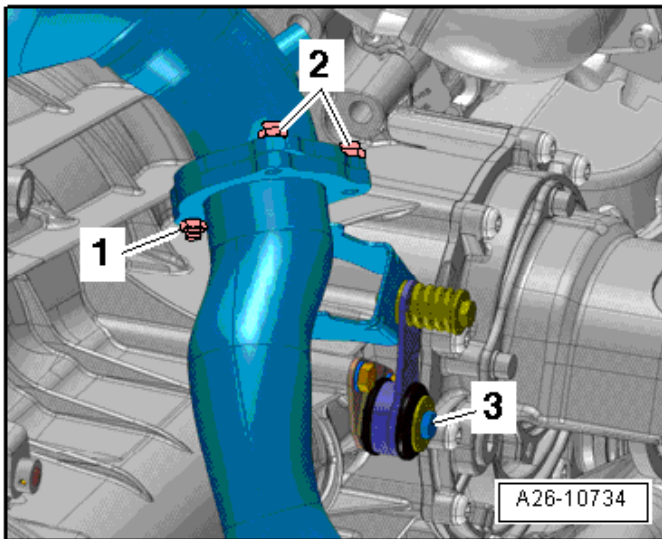


A27-10175

- Close the battery cover and secure the tabs in the opposite direction of <arrows>.



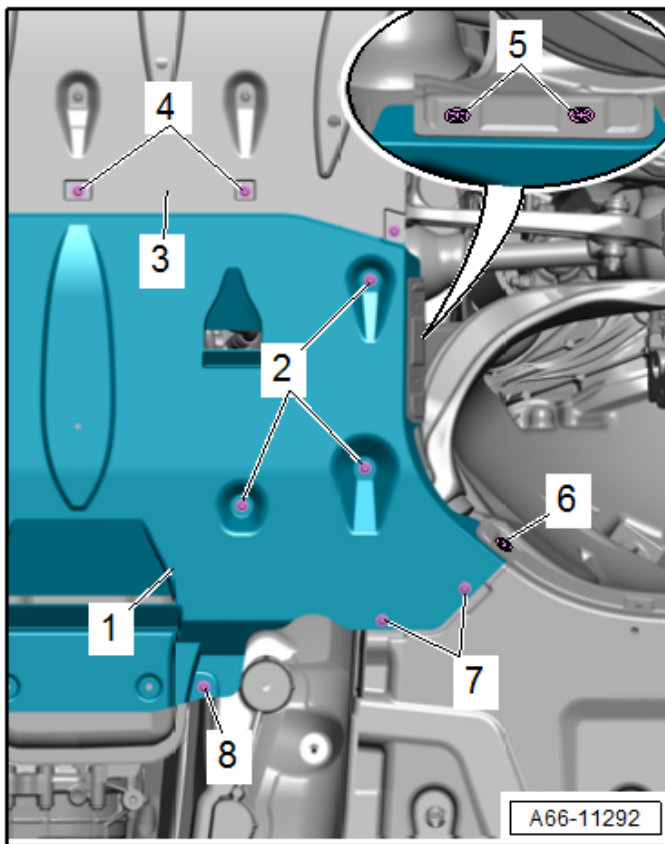
- If equipped, install and reconnect the electrical connector for the subwoofer <2>.
- Install the dirt tray, if applicable.
- Fold back the carpet <1> over the cover.
- Install the luggage compartment floor covering <3>.



Install Lower Exhaust Nut:

- Raise the vehicle on the hoist.
- Install the remaining “Silver” colored shouldered hex nut (N 911.308.02) <1> and tighten to 23 Nm.

Included in installation kit 4H0298099:	
Part Number	Part Description
N 911.308.02	Shouldered Hex Nut, self-locking – Silver, exhaust downpipe flange



Install Rear Noise Insulation:

- Install the rear noise insulation.
- Install the quick release fasteners <4> into the front noise insulation <3>.
- Install the quick release fasteners <2, 7, and 8>.
- Install the quick release fasteners <5 and 6>.
- Lower vehicle on hoist.



Parts Return / Disposal:

Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter:

- The Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter must be tagged with a blue zip tie <as shown> and returned in order to be considered for core charge reimbursement.

All other parts:

- Properly store (retain), destroy or dispose of removed parts in accordance with all state and local requirements, unless otherwise indicated and/or requested through the Warranty Parts Portal (WPP).

Proceed to Section E (Software Update).

Section E – For All Criteria (01, 02, 03): Software Update

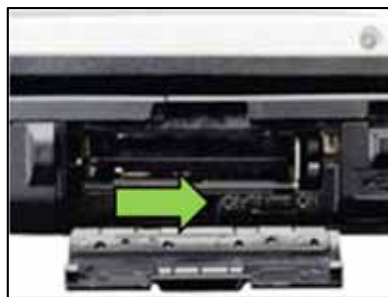
NOTE

Prior to launching the VAS Diagnostic Tester and starting an update, ensure the following conditions are met;

- ✓ **The ODIS software is completely up to date.**
 - Refer to the “Alerts” section on ServiceNet home page for the current ODIS version.
- ✓ **The battery charger is connected to the vehicle battery and remains connected for the duration of the software update.**
 - Battery voltage must remain above 12.5 volts for the duration of the software update. Failure to do so may cause the update to fail, which could result in damage to the control module. Control modules damaged by insufficient voltage will not be covered.
- ✓ **The screen saver and power saving settings are off.**
 - Failure to do so may result in the tester entering power save mode during the software update, which could result in damage to the control module.
- ✓ **The VAS Diagnostic Tester is plugged in using the supplied power adapters.**
 - Under no circumstances should the tester be used on battery power alone during the software update. Failure to do so may result in the tester powering off during the update, which could result in damage to the control module.
- ✓ **If using a Bluetooth transmitter head, it is connected to the tester with a USB cable.**
 - Performing a software update using a Bluetooth connection increases the risk of losing connection during the update, which could result in damage to the control module. It also greatly increases the time required to perform the update. Requests for additional time or parts will be denied if the GFF log shows the update was performed using Bluetooth.
- ✓ **The Bluetooth function of the scan tool is physically switched off <see pictures below>.**



VAS 6150 & VAS 6150A
(Front panel behind handle)



VAS 6150B
(Right side behind WIRELESS door)



VAS 6150C
(Left side behind SC/EX door)

⚠ WARNING

- Radiator Fan(s) may cycle ON high speed during the Update Process! There is a serious risk that personal injury may result if contact is made with spinning fan blades. Keep hands and all objects away from Radiator Fan(s) during Update Process!
- The wiper arms and/or active rear spoiler (if equipped) **WILL** operate during this Update Process. Do not place hands or equipment on any moving parts of the vehicle. There is a serious risk that personal injury or property damage may result if contact is made with the wiper arms or active rear spoiler (if equipped) during this Update.

i TIP

To Update-Programming using SVM, review and follow instructions in Technical Bulletin 2011732: *Software Version Management (SVM) Operating Instructions*.

The SVM Process must be completed in its entirety so the database receives the update confirmation response. A warranty claim may not be reimbursed if there is no confirmation response to support the claim.



- Open the hood.
- Access the battery charging posts.
- Switch the ignition on.
- Apply the parking brake.
- Switch off all consumers (headlights, heated seats, climate control, etc.).
- Connect the VAS6150X/VAS6160X Diagnostic Tester to the vehicle.
- Start the ODIS program.
- Attach the GRX3000VAS Tester/Charger (or equivalent) to the vehicle battery charging posts.

! NOTE

Vehicles with Battery Monitoring Control Module -J367- and/or an EFB Battery:

When connecting the charger to the battery, connect the positive cable to the positive terminal of the battery and connect the negative cable to the grounding lug on the chassis. **DO NOT** connect the ground cable directly to negative terminal of the battery.

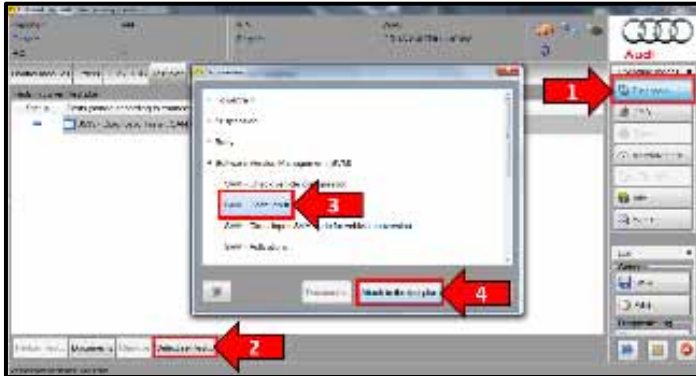
- Turn the hazards on.

! CAUTION

The procedure may cancel itself if the hazard warning lights are not switched on. The hazard warning lights prevent the system from switching to bus sleep mode during the update.



- Confirm that scan tool is communicating with the diagnostic head by USB cable.
 - If the Bluetooth or WiFi symbol is shown, then disconnect the diagnostic head from the vehicle and reconnect the USB cable to the diagnostic head and then reattach to the vehicle.



- Upon ODIS startup, select “Diagnosis” <arrow 1>.
- Select “Self Test” <arrow 2>.
- Select “Software Version Management”, then select “SVM Code input” <arrow 3>.
- Select “Attach to the test plan” <arrow 4>.



NOTE

RISK of Scan Tool Damage!

Do not leave the scan tool on the windshield or trunk deck lid during the flash process, as it is possible that the windshield wipers and active rear spoiler (if equipped) may cycle.

- From the Test plan screen, Select “SVM Code input” test plan <arrow 1>, then select “Perform test” <arrow 2>.
- Follow the on-screen prompts.

NOTE

Using Bluetooth for this action is PROHIBITED!

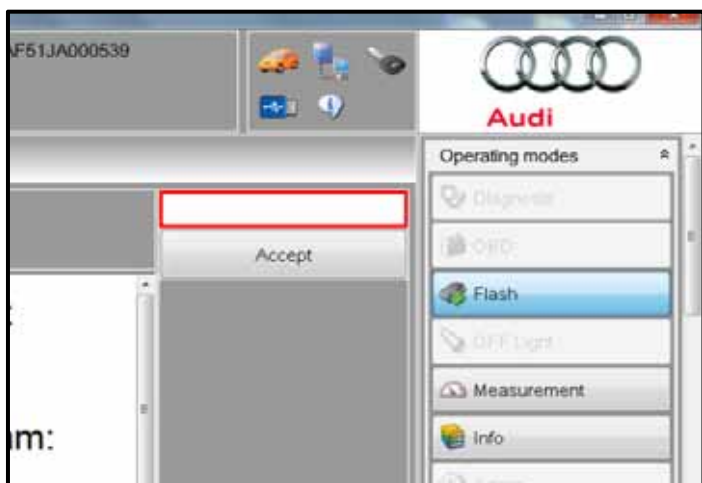
Damage caused to electronic components (e.g. ECM, TCM, etc.) during the SVM update process is not covered.

- Enter the corrective action code (SVM code) as listed below.

SVM code

23Z8A248

- Select "Accept".
- Follow the on-screen prompts.



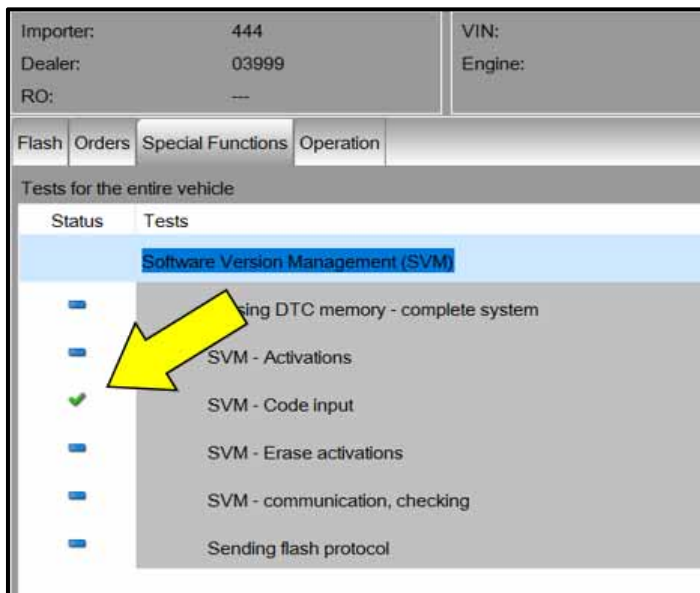
WARNING

- Radiator Fan(s) may cycle **ON** high speed during the Update Process! There is a serious risk that personal injury may result if contact is made with spinning fan blades. Keep hands and all objects away from Radiator Fan(s) during Update Process!
- The wiper arms and/or active rear spoiler (if equipped) **WILL** operate during this Update Process! Do not place hands or equipment on any moving parts of the vehicle. There is a serious risk that personal injury or property damage may result if contact is made with the wiper arms or active rear spoiler (if equipped) during this Update.

NOTE



There are additional procedures that must be completed in their entirety before exiting the GFF Update/Flash Process.



- After the GFF Update/Flash Process completes additional test plan operations will automatically begin a series of self-checks and adaptations, including:
 - Oxygen Sensor adaptation reset.
 - Diesel Particulate Filter adaptation reset.
 - Exhaust Gas Temperature Sensor rationality check.
 - Oxygen Sensor and NOx Sensor rationality checks.
- You must to follow the on-screen prompts and cycle the ignition when requested. You must also start, accelerate, and stop the engine when requested during this process.
 - Cycle the ignition on and off when indicated by the on-screen prompts. Be sure to wait for the progress bar to complete any required timing countdowns.
 - You will be required to start the engine and accelerate to 1,200 RPM's during this operation. The "Glow Plug" lamp will begin to flash and the engine throttle will be disabled. This is normal.
- When the Test Plan indicates that all additional operations have been successfully completed, continue to the next step.

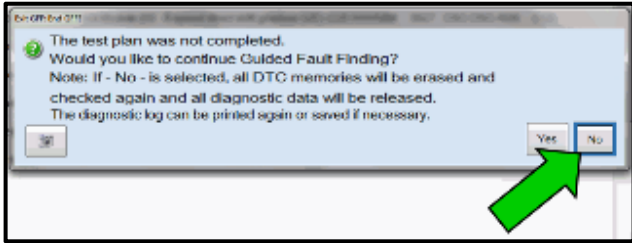
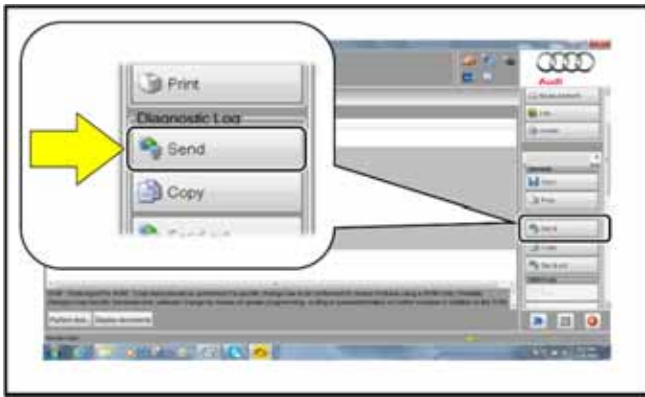
NOTE

The update may fail if the following pre-requisites are not met:

- Hazards not on during flash
- Battery voltage too low or insufficient charger used
- ODIS version too low
- Incorrect diagnostic head used

If the update fails and one of the above pre-requisites was not met:

- Additional time to complete the flash due to pre-requisites not being met will not be covered by this campaign.



- After receiving confirmation that the Flash operation and additional GFF Test Plan operations have completed successfully, select “Send” to send the diagnostic protocol online.
- Follow the on-screen prompts.

TIP
Technicians may find it helpful to also store the log on a USB stick for back-up.

TIP
When exiting GFF, it is important to select “No” <arrow>.

- Disconnect the VAS tester.
- Reset all customer convenience features (one touch window operation, radio presets, etc).
- Switch off and disconnect the battery charger.
- Reinstall the battery cover.
- Release the parking brake.
- Perform road test.

Proceed to Section F

Section F – Campaign Completion Stamp

I certify that this campaign has been performed in strict accordance with the applicable Audi repair procedure.

SAGA Code: _____

Technician: _____

Date: _____

Item#: AUD4927ENG

-OR-

Je certifie que cette campagne de rappel a été exécutée suivant les strictes directives de réparation d'Audi

Code de SAGA: _____

Technicien: _____

Date: _____

Item # AUD4927FRE

- Once the campaign has been completed, the technician should stamp the repair order.
- Stamps are available for ordering through the Compliance Label Ordering Portal.
- **Proceed to Section G (Campaign Completion Label)**

The repair information in this document is intended for use only by skilled technicians who have the proper tools, equipment and training to correctly and safely maintain your vehicle. These procedures are not intended to be attempted by "do-it-yourselfers," and you should not assume this document applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Audi dealer. ©2019 Audi of America, Inc. All Rights Reserved.

Section G – Campaign Completion Label



Install Campaign Completion Label

- Fill out and affix Campaign Completion Label, part number CAMP 010 000, next to the vehicle emission control information label.

i TIP

Ensure Campaign Completion Label does not cover any existing label(s).

Proceed to Section H (Parts Return/Disposal).

Section H - Parts Return/Disposal

Parts Return / Disposal:

The Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter:

- The Exhaust Pipe w/ Oxidation Catalyst and Diesel Particulate Filter must be tagged with a blue zip tie <as shown> and returned in order to be considered for core charge reimbursement.



All other parts:

- Properly store (retain), destroy or dispose of removed parts in accordance with all state and local requirements, unless otherwise indicated and/or requested through the Warranty Parts Portal (WPP).

All Work Complete.

Appendix A – Contents of Installation Kit, part number 4H0.298.099

Installation Kit	Part Number	Part Description	Quantity
4H0.298.099	4G0.253.115.A	Gasket, Turbocharger	1
	8W0.253.115.J	Gasket, Exhaust Downpipe	1
	N 911.308.01	Shouldered Hex Nut, self-locking – Turbocharger (Copper)	3
	N 911.308.02	Shouldered Hex Nut, self-locking – Exhaust Downpipe (Silver)	3
	N 909.377.02	Tie Strap	1

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