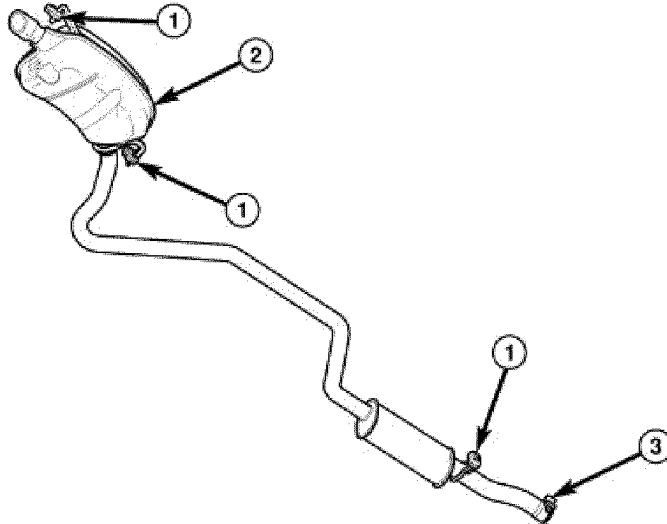


2009 ENGINE

Exhaust System - Journey

DESCRIPTION

DESCRIPTION



B1ee63a5

Fig. 1: Muffler/Exhaust Pipe Assembly - Single Tail Pipe
Courtesy of CHRYSLER LLC

- | |
|-----------------------------------|
| 1 - INSULATOR |
| 2 - MUFFLER/EXHAUST PIPE ASSEMBLY |
| 3 - BAND CLAMP |

The exhaust system on the 2.4L and 2.7L engine models consists of a front mounted catalytic converter, single outlet resonator/muffler assembly, band clamp, and support isolators. The upstream oxygen sensor is located in the exhaust manifold. The downstream oxygen sensor is located in the catalytic converter.

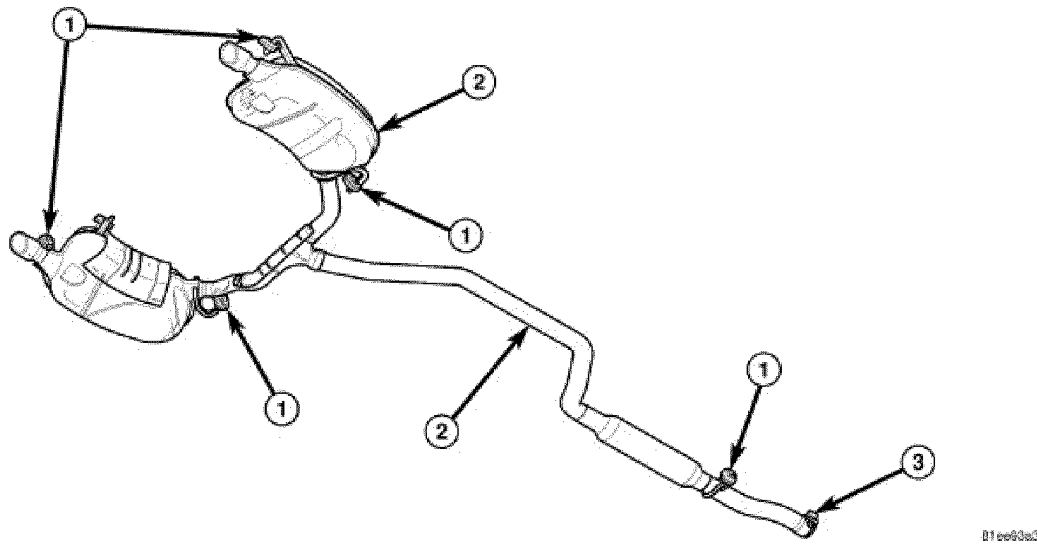


Fig. 2: Muffler/Exhaust Pipe Assembly - Dual Tail Pipe
Courtesy of CHRYSLER LLC

- | |
|-----------------------------------|
| 1 - INSULATOR |
| 2 - MUFFLER/EXHAUST PIPE ASSEMBLY |
| 3 - BAND CLAMP |

The exhaust system on the 3.5L engine models consists of a front mounted catalytic converter, dual outlet resonator/muffler assembly, band clamp, and support isolators. The upstream oxygen sensor is located in the exhaust manifold. The downstream oxygen sensor is located in the catalytic converter.

DIAGNOSIS AND TESTING

EXCESSIVE EXHAUST SYSTEM NOISE

CONDITION	POSSIBLE CAUSES	CORRECTION
EXCESSIVE EXHAUST NOISE (UNDER HOOD)	1. Exhaust manifold cracked or broken. 2. Manifold to cylinder head leak. 3. EGR Valve to manifold gasket leakage. 4. EGR Valve to EGR tube gasket leakage. 5. EGR tube to manifold tube leakage. 6. Exhaust flex-joint to manifold leak. 7. Exhaust flex-joint.	1. Replace manifold. 2. Tighten manifold and/or replace gasket. 3. Tighten fasteners or replace gasket. 4. Tighten fasteners or replace gasket. 5. Tighten tube nut. 6. Tighten joint fasteners and/or replace gasket. 7. Replace catalytic converter assembly.

	8. Pipe and shell noise from front exhaust pipe.	8. Characteristic of single wall pipe.
EXCESSIVE EXHAUST NOISE	1. Leak at exhaust pipe joints. 2. Burned or rusted out muffler assembly or exhaust pipe. 3. Burned or rusted out resonator. 4. Restriction in exhaust system. 5. Converter material in muffler.	1. Tighten clamps at leaking joints. 2. Replace muffler resonator tailpipe assembly or exhaust pipe with catalytic converter assembly. 3. Replace muffler resonator tailpipe assembly. 4. Perform Exhaust System Restriction Check. Replace component as necessary. 5. Replace muffler and converter assemblies. Check fuel injection and ignition systems for proper operation.

RESTRICTION CHECK

Exhaust system restriction can be checked by measuring back pressure using the scan tool and PEP module pressure tester.

WARNING: The normal operating temperature of the exhaust system is very high. Therefore, never work around or attempt to service any part of the exhaust system until it is cooled. Special care should be taken when working near the catalytic converter. The temperature of the converter rises to a high level after a short period of engine operation time.

1. Disconnect and remove the upstream (before catalytic converter) oxygen sensor. Refer to **Fuel System/Fuel Injection/SENSOR, Oxygen - Removal**
2. Install the Exhaust Back Pressure Fitting Adaptor CH8519.
3. Connect the Low Pressure Sensor (15 psi) CH7063 to the back pressure fitting.
4. Following the PEP module instruction service information , connect all required cables to the scan tool and PEP module. Select the available menu options on the scan display screen for using the digital pressure gauge function.
5. Apply the park brake and start the engine.
6. With transmission in Park or Neutral, raise engine speed to 2000 RPM. Monitor the pressure readings on the scan. Back pressure should not exceed specified limit. Refer to specification in **EXHAUST BACK PRESSURE LIMITS**.

NOTE: For applications with dual catalytic converters, repeat test on opposite converter using the previous steps.

7. If pressure exceeds maximum limits, inspect exhaust system for restricted component. For further

catalytic converter inspection procedures. See **Inspection** . Replace component(s) as necessary.

EXHAUST BACK PRESSURE LIMITS

Exhaust Back Pressure Limit (Max)	
Vehicle in Park/Neutral (no load) @2000 RPM	3.45 kPa (0.5 psi)

LEAK TESTING

WARNING: The normal operating temperature of the exhaust system is very high. Therefore, never work around or attempt to service any part of the exhaust system until it is cooled. Special care should be taken when working near the catalytic converter. The temperature of the converter rises to a high level after a short period of engine operation time.

1. Raise and support vehicle.

CAUTION: The air pressure must not exceed 4 psi, otherwise engine damage can occur.

2. Connect Tool 8404-EC or 8404-ECT, Exhaust Cone to an adjustable air pressure regulator.
3. Attach shop air to the air pressure regulator.
4. Adjust the air pressure regulator to 4 psi
5. Insert Tool 8404-EC or 8404-ECT, Exhaust Cone into the vehicle tail pipe.
6. If the vehicle is equipped with dual exhaust, use Tool 8404-EC or 8404-ECT, Exhaust Cone with equipped attached plug. Plug one side of the dual exhaust pipe. Pressurize the other as described.
7. Apply a mixture of liquid dish soap and water to the following areas:
 - - All welded joints from 6 inches rearward of the downstream O2 sensor forward
 - - O2 sensor seal points
 - - O2 sensor boss welds
 - - Flange/joint connection(s)
 - - Exhaust manifold to cylinder head connection(s)
 - - EGR solenoid gasket base and tube seal points (if equipped)
8. Watch for the liquid/soapy water to bubble.
9. Use the following definitions to help determine if system or component repair/replacement is necessary:
 - **Type 1 Leak** is defined as a leak where very small foam like bubbles 1mm (.039 in.) or less appear. Any Type 1 or greater leaks found in welded joints, O2 sensor seal points or O2 sensor boss welds must be repaired or the component must be replaced.
 - **Type 2 Leak** is defined as a leak where larger bubbles 8mm (.031 in.) or greater appear. Any Type 2 or greater leaks found in flange or joint connections, exhaust manifold to cylinder head connections, or EGR gasket and tube seal points must be repaired or the components must be replaced.

2009 Dodge Journey R/T

2009 ENGINE Exhaust System - Journey

Leak Location	Repair required if results at 4 psi reveal bubble size:
Welded joints	Type 1 - 1 mm (.039 in.) or greater
O2 Sensor seal points	Type 1 - 1 mm (.039 in.) or greater
O2 Sensor boss welds	Type 1 - 1 mm (.039 in.) or greater
Flange/joint connections	Type 2 - 8 mm (.031 in.) or greater
Exhaust Manifold to cylinder head connections	Type 2 - 8 mm (.031 in.) or greater
EGR gasket and tube seal points	Type 2 - 8 mm (.031 in.) or greater

If a leak is found that matches the above definition, repair or replace the component as necessary.

Once the repair is complete, repeat the procedure to verify that all leaks have been repaired.

INSPECTION

INSPECTION

Inspect the exhaust pipes, catalytic converters, muffler, and resonators for cracked joints, broken welds and corrosion damage that would result in a leaking exhaust system. Inspect the clamps, support brackets, and insulators for cracks and corrosion damage.

ADJUSTMENTS

ADJUSTMENTS

A misaligned exhaust system is usually indicated by a vibration, rattling noise, or binding of exhaust system components. These noises are sometimes hard to distinguish from other chassis noises. Inspect exhaust system for broken or loose clamps, heat shields, isolators, and brackets. Replace or tighten as necessary. It is important that exhaust system clearances and alignment be maintained.

Perform the following procedures to align the exhaust system:

1. Loosen clamps and support brackets.
2. Align the exhaust system starting at the front, working rearward.
3. Tighten all clamps and brackets once alignment and clearances are achieved.

SPECIFICATIONS

TORQUE

DESCRIPTION	N.m	Ft. Lbs.	In. Lbs.
Fastener, Band Clamps	54	40	-
Fasteners, Body Heat Shield	5	-	44

2009 Dodge Journey R/T

2009 ENGINE Exhaust System - Journey

Fasteners, Catalytic Converter to Exhaust Manifold Flange	28	21	-
Fasteners, Cross-Under Pipe (2.0L/2.4L)	28	21	-
Fasteners, Cross-Under Pipe (2.7L)	28	21	-

SPECIAL TOOLS

EXHAUST SYSTEM

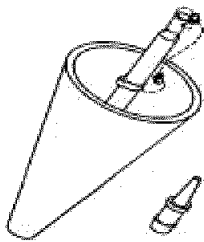


Fig. 3: Exhaust Cone Tool - 8404-ECT
Courtesy of CHRYSLER LLC

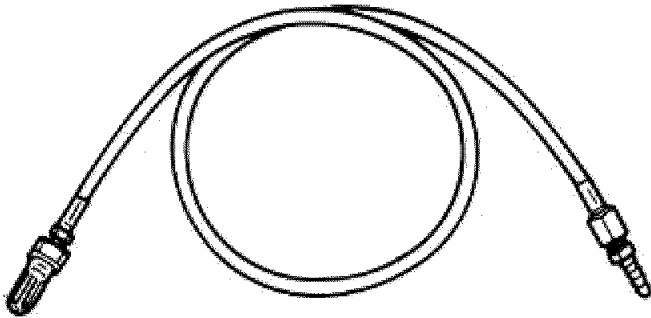


Fig. 4: Back Pressure Test Adapter - CH8519
Courtesy of CHRYSLER LLC

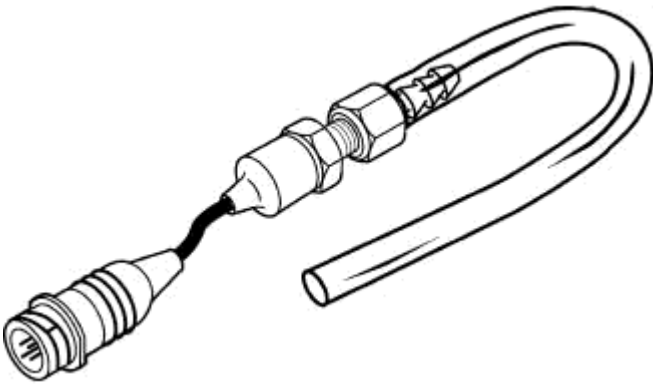


Fig. 5: Pressure Transducer CH7063
Courtesy of CHRYSLER LLC

CONVERTER, CATALYTIC

DESCRIPTION

DESCRIPTION

WARNING: The normal operating temperature of the exhaust system is very high. Therefore, never work around or attempt to service any part of the exhaust system until it is cooled. Special care should be taken when working near the catalytic converter. The temperature of the converter rises to a high level after a short period of engine operation time.

CAUTION: DO NOT remove spark plug wires from plugs or by any other means short out cylinders. Failure of the catalytic converter can occur due to a temperature increase caused by unburned fuel passing through the converter.

The stainless steel catalytic converter body is designed to last the life of the vehicle. Excessive heat can result in bulging or other distortion, but excessive heat will not be the fault of the converter. If unburned fuel enters the converter, overheating may occur. If a converter is heat-damaged, correct the cause of the damage at the same time the converter is replaced. Also, inspect all other components of the exhaust system for heat damage.

Unleaded gasoline must be used to avoid contaminating the catalyst core.

REMOVAL

2.4L

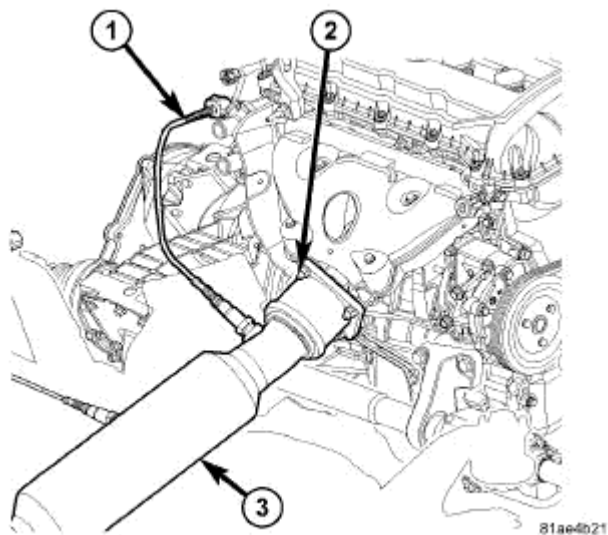


Fig. 6: Catalytic Converter - 2.4L
Courtesy of CHRYSLER LLC

1 - OXYGEN SENSOR ELECTRICAL CONNECTOR

2 - FLANGE NUTS

3 - CATALYTIC CONVERTER - 2.0/2.4L

WARNING: The normal operating temperature of the exhaust system is very high. Therefore, never work around or attempt to service any part of the exhaust system until it is cooled. Special care should be taken when working near the catalytic converter. The temperature of the converter rises to a high level after a short period of engine operating time.

NOTE: When replacement is required on any component of the exhaust system, you must use original equipment parts (or their equivalent).

1. Raise and support vehicle.
2. Apply penetrating oil to band clamp nut and bolt.
3. Disconnect oxygen sensor connector (1).
4. Remove oxygen sensor.
5. Loosen resonator and muffler assembly to catalytic converter band clamp.
6. Pull muffler and resonator assembly rearward to remove from catalytic converter.
7. Remove flange nuts (2) at exhaust manifold.
8. Remove catalytic converter from vehicle (3).
9. Remove and discard gasket.

FRONT - 2.7L

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For removal of the front catalytic converter. Refer to **Engine/Manifolds/MANIFOLD, Exhaust - Removal** .

REAR - 2.7L

For removal of the rear catalytic converter. Refer to **Engine/Manifolds/MANIFOLD, Exhaust - Removal** .

3.5L

For removal of the catalytic converter. Refer to **Engine/Manifolds/MANIFOLD, Exhaust - Removal** .

INSPECTION

INSPECTION

WARNING: The normal operating temperature of the exhaust system is very high. Therefore, never attempt to service any part of the exhaust system until it is cooled. Special care should be taken when working near the catalytic converter. The temperature of the converter rises to a high level after a short period of engine operation time.

Check catalytic converter for a flow restriction. See **Diagnosis and Testing** Exhaust System Restriction Check for procedure.

Visually inspect the catalytic converter element by using a borescope or equivalent. Remove oxygen sensor(s) and insert borescope. If borescope is not available, remove converter and inspect element using a flashlight. Inspect element for cracked or melted substrate.

NOTE: Before replacing a catalytic converter, determine the root cause of failure. Most catalytic converter failures are caused by air, fuel or ignition problems. (Refer to appropriate Diagnostic Service Information) for test procedures.

INSTALLATION

2.4L

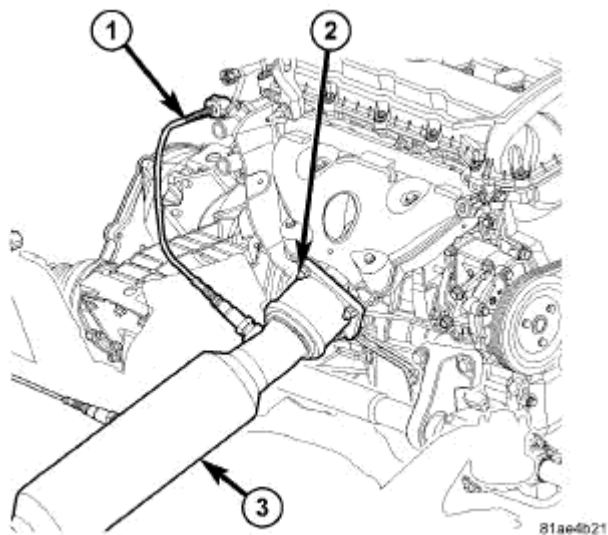


Fig. 7: Catalytic Converter - 2.4L
Courtesy of CHRYSLER LLC

1 - OXYGEN SENSOR ELECTRICAL CONNECTOR

2 - FLANGE NUTS

3 - CATALYTIC CONVERTER - 2.0/2.4L

NOTE: Always work from the front to rear of exhaust system when aligning and tightening exhaust system components.

1. Clean manifold to converter sealing surfaces.
2. Using a new gasket, position catalytic converter to exhaust manifold.
3. Install catalytic converter mounting bolts (2). Tighten to 28 N.m (250 in. lbs.).
4. Position a new band clamp onto the resonator and muffler assembly.
5. Install resonator and muffler assembly onto catalytic converter.
6. Align exhaust system to maintain position and proper clearance with underbody parts. All support isolators should have equal load on them.
7. Tighten resonator and muffler assembly band clamp to 54 N.m (40 ft. lbs.).
8. Lower vehicle.
9. Start the engine and inspect for exhaust leaks. Repair exhaust leaks as necessary.
10. Check the exhaust system for contact with the body panels. Make the necessary adjustments, if needed.

FRONT - 2.7L

For installation of the front catalytic converter. Refer to **Engine/Manifolds/MANIFOLD, Exhaust - Installation** .

REAR - 2.7L

For installation of the rear catalytic converter. Refer to **Engine/Manifolds/MANIFOLD, Exhaust - Installation** .

3.5L

For installation of the catalytic converter. Refer to **Engine/Manifolds/MANIFOLD, Exhaust - Installation** .

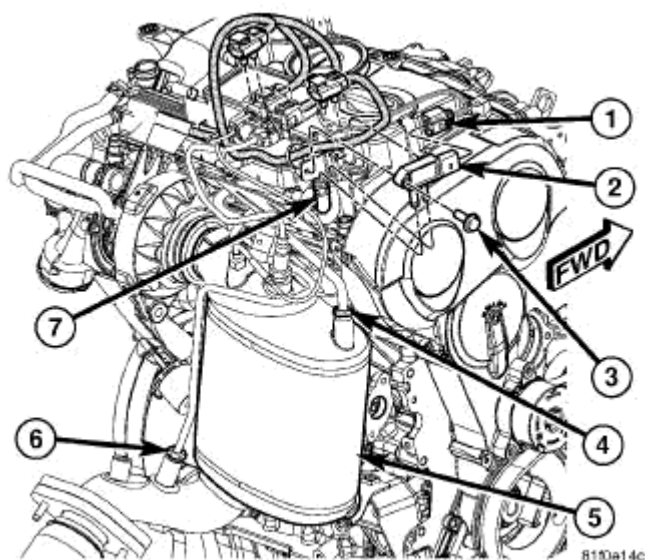
FILTER, DIESEL PARTICULATE**DESCRIPTION****DESCRIPTION**

A diesel particulate filter (DPF) is installed for exhaust gas after-treatment. The DPF filters, stores and burns particulate matter (soot) that is generated during the combustion process. The soot is oxidized to carbon dioxide CO₂ at exhaust temperatures over 600° C (1,112° F).

OPERATION**OPERATION**

The oxidation catalysts raise the exhaust gas temperatures to regenerate the DPF , which is passive regeneration. If the passive regeneration cannot keep up with the build up of soot in the DPF, the ECM will actively regenerate the DPF to burn off the soot. Residue remains inside the DPF in the form of non burnable ash. Ash comes from the oils and other materials that are trapped in the oils and are present in the soot. Ash is not eliminated by the regeneration cycle. Excessive ash accumulation requires the replacement of the DPF. The DPF uses a silicon carbide wall-flow monolith with a platinum coating to trap particulates. The monolith contains a large number of square parallel channels, which run in the axial direction and are separated by thin porous walls. The channels are alternatively open at one end, but plugged at the other. The exhaust gases flow through the walls and escape through the pores in the wall material. Particulates, however, are too large to escape and are trapped in the monolith walls. The ECM starts the regeneration of the DPF if the soot load exceeds a performance map value. The ECM determines the load condition of the DPF based upon the exhaust gas pressure upstream and downstream of the DPF. A pressure differential sensor provides the pressure input to the ECM. During the regeneration process, the ECM raises the temperature in the DPF to burn off the soot accumulated. Under normal operation, the engine does not produce enough heat to oxidize the soot inside the DPF. This process requires temperatures above 550 °C (1,022 °F). After regeneration, the ECM reads the actual pressure difference at the DPF and compares it with a reference value. From this comparison, the ECM determines the ash quantity inside the DPF.

REMOVAL**DIESEL PARTICULATE FILTER**

**Fig. 8: DPF Components**

Courtesy of CHRYSLER LLC

1 - ELECTRICAL CONNECTOR
2 - PRESSURE DIFFERENTIAL SENSOR
3 - MOUNTING BOLT
4 - UPSTREAM PRESSURE TUBE
5 - DPF
6 - DOWNSTREAM PRESSURE TUBE
7 - TUBING

1. Disconnect negative battery cable.
2. Remove the engine cover. Refer to **Engine - Removal**
3. Remove the windshield wiper arm linkage. Refer to **Electrical - Wipers/Washers/Wipers/Washers/LINKAGE, Wiper Arm - Removal**
4. Remove the eight bolts from the strut tower brace.
5. Remove the HVAC air intake box assembly.
6. Remove the differential pressure sensor tube bracket at the diesel particulate filter (DPF) (5).
7. Remove the upper DPF (5) heat shield mounting bolts.
8. Remove the right side rear engine harness bracket.
9. Disconnect the temperature sensor electrical connectors.
10. Remove the upper temperature sensor from the DPF (5).
11. Disconnect the oxygen sensor electrical connector at the DPF (5).
12. Remove the oxygen sensor from top of DPF (5).
13. Detach the lower temperature sensor wires from their retainer.

14. Remove the upper pressure differential tubing (4) from top of DPF (5).
15. Remove the DPF (5) to turbocharger clamp and gasket.

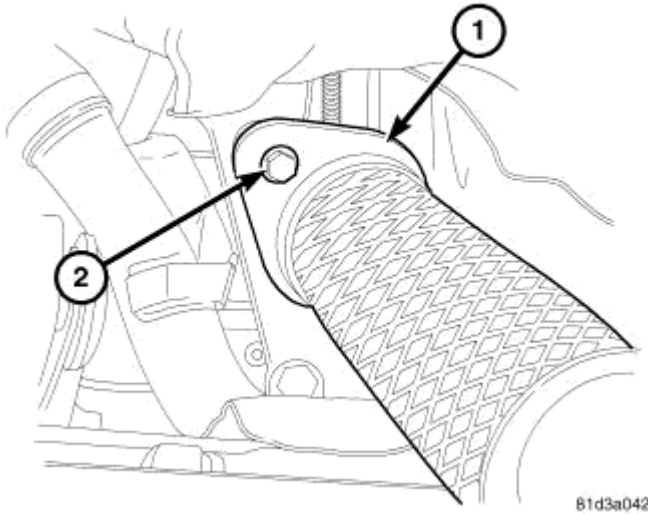


Fig. 9: Removing/Installing Diesel Particulate Filter To Exhaust Pipe Mounting Bolts
Courtesy of CHRYSLER LLC

1 - FLANGE
2 - BOLT

16. Raise and support the vehicle.
17. Remove the lower engine splash shield.
18. Remove the lower DPF (5) heat shield mounting bolts.
19. Remove the DPF heat shield.
20. Remove the exhaust pipe to DPF mounting bolts (2).
21. Remove the exhaust pipe from the muffler and tailpipe assembly.

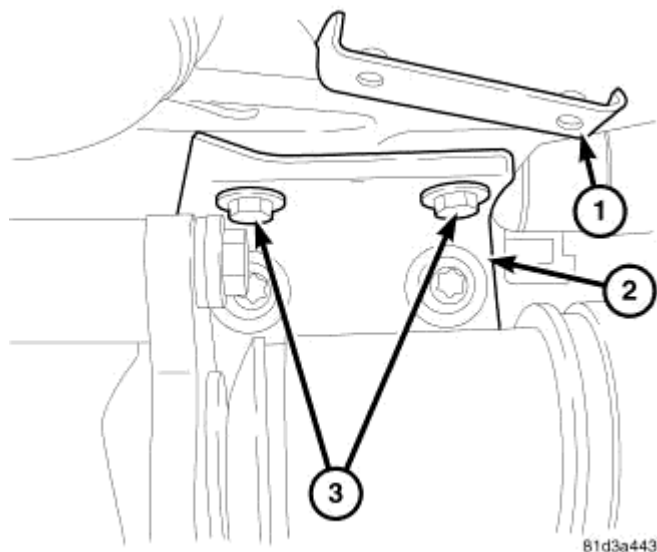


Fig. 10: Removing/Installing Diesel Particulate Filter To Axle Bracket Bolts
Courtesy of CHRYSLER LLC

1 - DPF
2 - AXLE SUPPORT BRACKET
3 - DPF TO AXLE SUPPORT BRACKET BOLTS

22. Remove the lower pressure differential tubing from the DPF.
23. Remove the exhaust manifold temperature sensor.
24. Remove the DPF (1) to axle support bracket bolts (3)
25. Lower the vehicle.

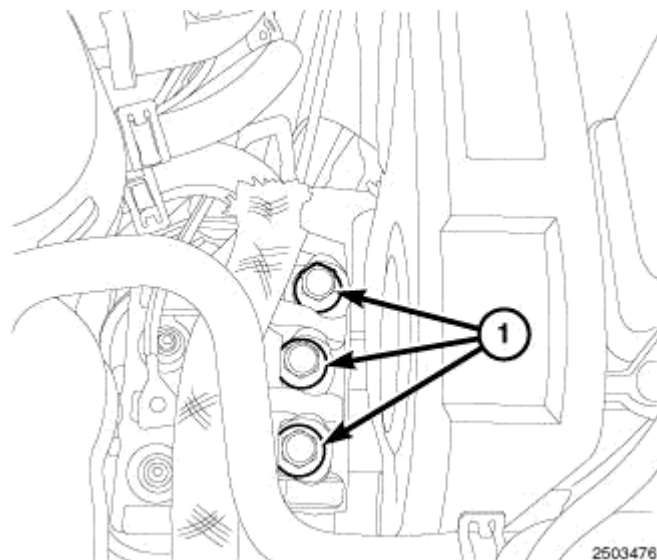


Fig. 11: Engine Support Bracket Bolts
Courtesy of CHRYSLER LLC

26. Loosen the three bolts (1) at the right engine support bracket. **Do not remove the engine support bracket bolts.**
27. Remove the DPF and DPF to turbocharger gasket from vehicle.

INSTALLATION

DIESEL PARTICULATE FILTER

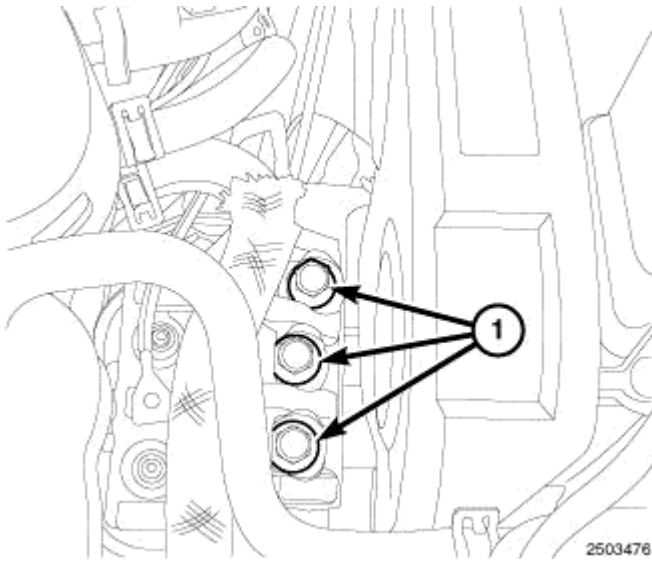


Fig. 12: Engine Support Bracket Bolts
Courtesy of CHRYSLER LLC

1. Position the DPF and turbocharger gasket into the vehicle. Do not tighten at this time
2. Tighten the three bolts (1) at the right engine support bracket. Tighten the bolts to 45 N.m (33 ft. lbs.)
3. Raise and support the vehicle.

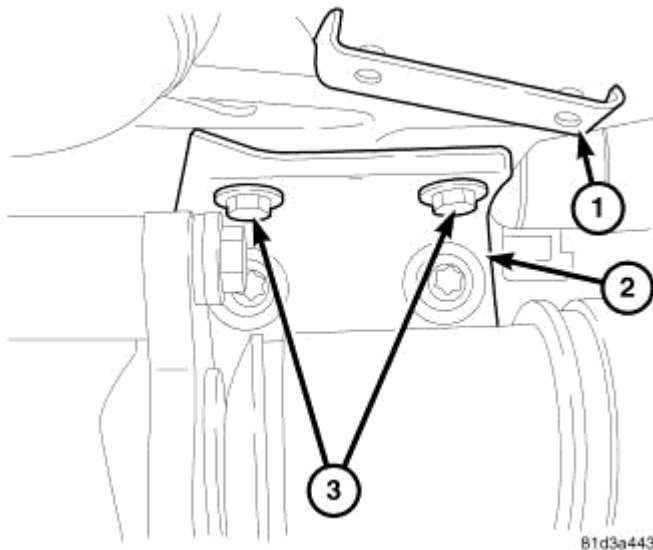


Fig. 13: Removing/Installing Diesel Particulate Filter To Axle Bracket Bolts
Courtesy of CHRYSLER LLC

1 - DPF
2 - AXLE SUPPORT BRACKET
3 - DPF TO AXLE SUPPORT BRACKET BOLTS

4. Install the DPF to the axle support bolts (3). Tighten the bolts to 25 N.m (18 ft. lbs.).
5. Install the exhaust manifold temperature sensor.
6. Install the lower pressure differential tubing into DPF. Tighten the fitting to 45 N.m (33 ft.lbs.)

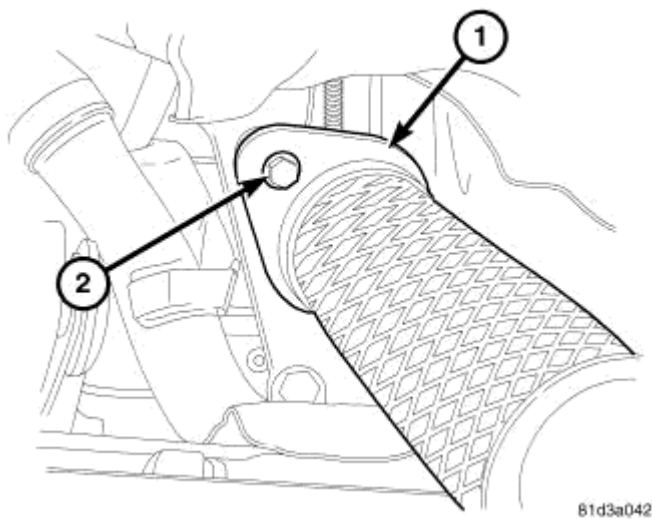


Fig. 14: Removing/Installing Diesel Particulate Filter To Exhaust Pipe Mounting Bolts
Courtesy of CHRYSLER LLC

1 - FLANGE
2 - BOLT

7. Install the exhaust pipe to the DPF. Tighten the bolts (2) to 35 N.m (25 ft. lbs.).
8. Install the exhaust pipe to the muffler and tailpipe assembly. Tighten the bolts (2) to 35 N.m (25 ft. lbs.).
9. Position the DPF heat shield and install the lower DPF heat shield mounting bolts. Tighten the bolts to 5 N.m (44 in. lbs.).
10. Install the lower engine splash shield.
11. Lower the vehicle.

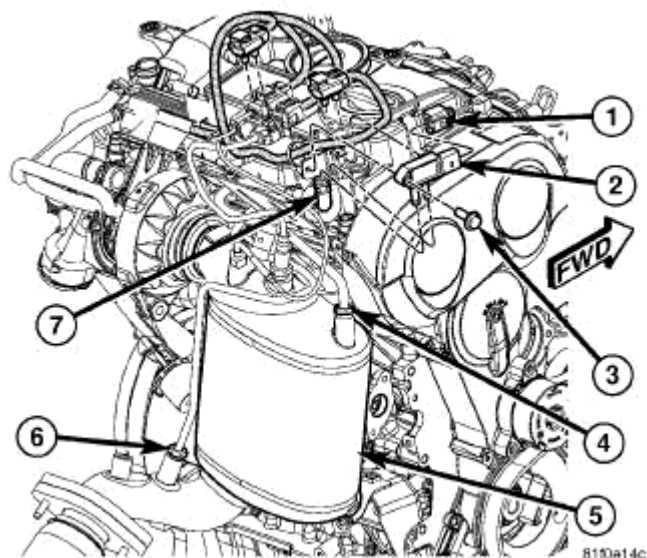


Fig. 15: DPF Components
 Courtesy of CHRYSLER LLC

1 - ELECTRICAL CONNECTOR
2 - PRESSURE DIFFERENTIAL SENSOR
3 - MOUNTING BOLT
4 - UPSTREAM PRESSURE TUBE
5 - DPF
6 - DOWNSTREAM PRESSURE TUBE
7 - TUBING

12. Install the DPF (5) , gasket and clamp to the turbocharger. Tighten the clamp nut to 35 N.m (25 ft. lbs.).
13. Install the upper pressure differential tubing (4) into the DPF (5). Tighten the tubing to 45 N.m (33 ft.lbs.).
14. Attach the lower temperature sensor wires to their retainer.
15. Install the oxygen sensor into the top of the DPF (5). Tighten to 45 N.m (33 ft. lbs.).
16. Connect the oxygen sensor electrical connector at the DPF (5).
17. Install the upper temperature sensor to the DPF (5). Tighten the sensor to 45 N.m (33 ft.lbs.).
18. Connect the temperature sensor electrical connectors.
19. Install the right side rear engine harness bracket. Tighten the bolts to 10 N.m (89 in. lbs.).
20. Install the DPF heat shield upper mounting bolts. Tighten the bolts to 5 N.m (44 in. lbs.).
21. Install the differential pressure sensor tube bracket at the diesel particulate filter (DPF) (5).
22. Install the HVAC air intake box assembly.
23. Install the eight nuts to the strut tower brace. Tighten the sensor to 55 N.m (41 ft.lbs.).
24. Install the windshield wiper arm linkage. Refer to **Electrical - Wipers/Washers/Wipers/Washers/LINKAGE, Wiper Arm - Installation**

25. Install the engine cover. Refer to **Engine - Installation**
26. Connect the negative battery cable.
27. Start vehicle and check for leaks. Repair as necessary.

MUFFLER, EXHAUST

REMOVAL

MUFFLER

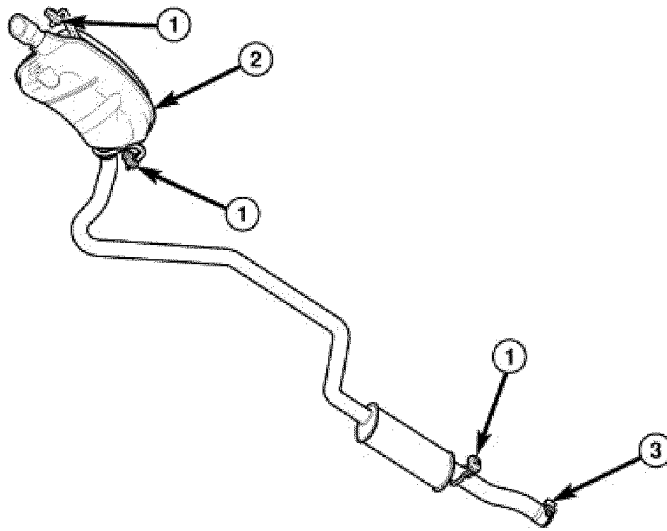


Fig. 16: Muffler/Exhaust Pipe Assembly - Single Tail Pipe

Courtesy of CHRYSLER LLC

- | |
|-----------------------------------|
| 1 - INSULATOR |
| 2 - MUFFLER/EXHAUST PIPE ASSEMBLY |
| 3 - BAND CLAMP |

NOTE: Band clamps (3) are spot welded to exhaust system. If a band clamp must be replaced, the spot weld must be ground off the exhaust pipe.

NOTE: When replacement is required on any component of the exhaust system, it is most important that original equipment parts (or their equivalent) be used.

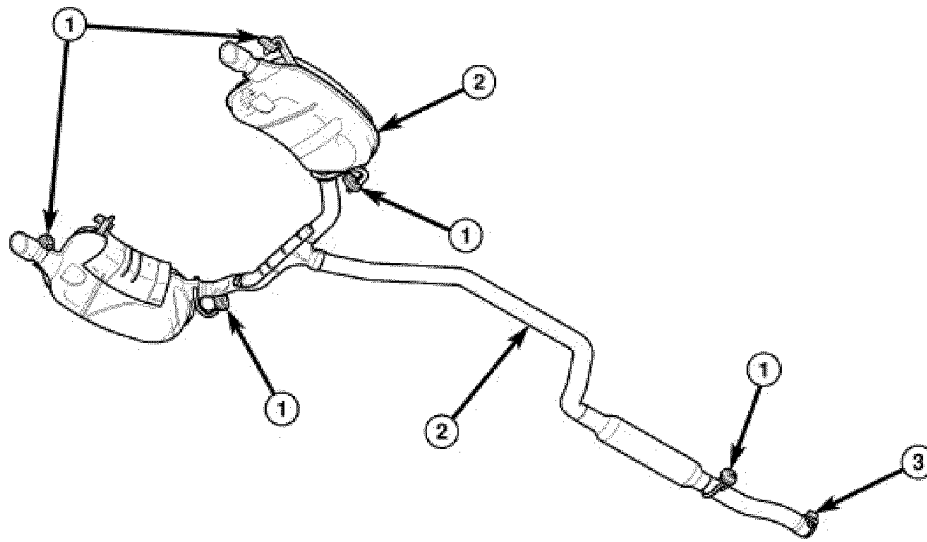


Fig. 17: Muffler/Exhaust Pipe Assembly - Dual Tail Pipe
Courtesy of CHRYSLER LLC

- | |
|-----------------------------------|
| 1 - INSULATOR |
| 2 - MUFFLER/EXHAUST PIPE ASSEMBLY |
| 3 - BAND CLAMP |

1. Raise vehicle on hoist.
2. Apply penetrating oil to band clamp (3).
3. Remove band clamp (3).
4. Remove ground strap from muffler (2).

CAUTION: Do not use any tools to remove the rubber isolators-remove by hand only. Soapy water or silicone based lubricant spray may be used to assist removal/installation of isolators. DO NOT use a petroleum based lubricant on the isolators, as damage to the rubber material can occur.

5. Remove support isolators from muffler supports.
6. Remove the one muffler/resonator assembly.

INSTALLATION

MUFFLER

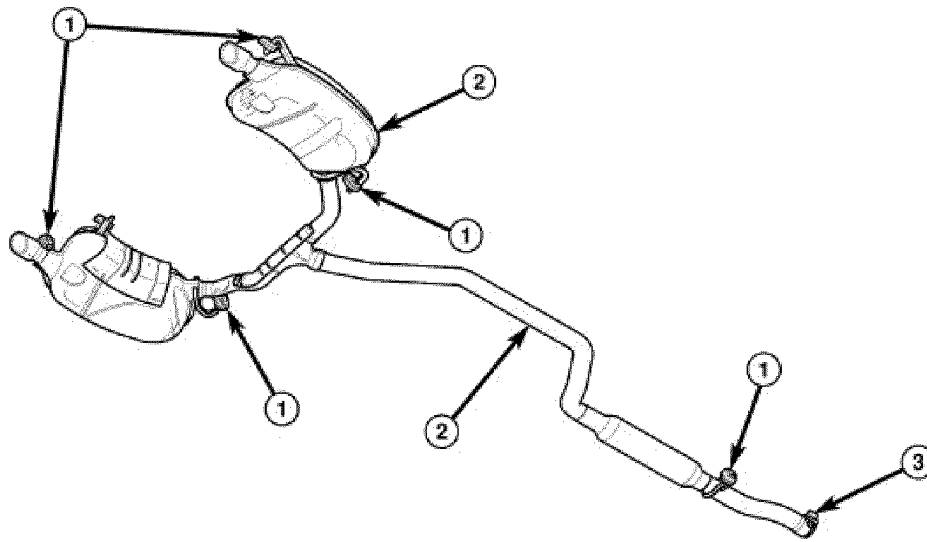


Fig. 18: Muffler/Exhaust Pipe Assembly - Dual Tail Pipe
Courtesy of CHRYSLER LLC

- | |
|-----------------------------------|
| 1 - INSULATOR |
| 2 - MUFFLER/EXHAUST PIPE ASSEMBLY |
| 3 - BAND CLAMP |

NOTE: Always work from the front to rear of exhaust system when aligning and tightening exhaust system components.

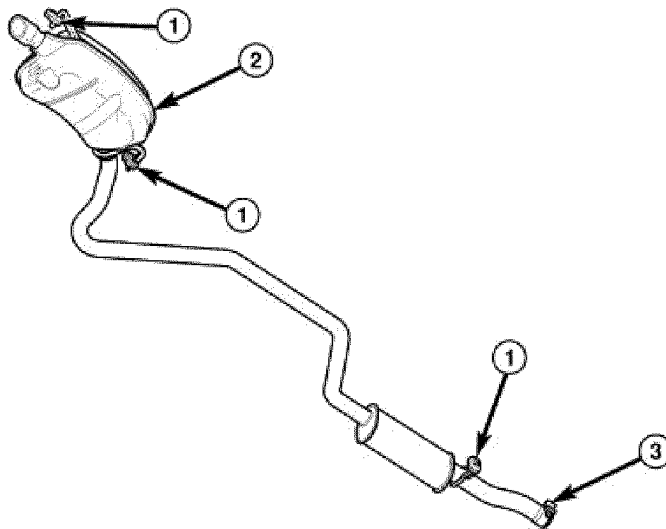


Fig. 19: Muffler/Exhaust Pipe Assembly - Single Tail Pipe
Courtesy of CHRYSLER LLC

- | |
|-----------------------------------|
| 1 - INSULATOR |
| 2 - MUFFLER/EXHAUST PIPE ASSEMBLY |

3 - BAND CLAMP

1. Position muffler/resonator assembly (2) onto exhaust pipe.
2. Install support isolators.
3. Align muffler and resonator assembly to maintain position and proper clearance with underbody parts. All support isolators should have equal load on them.
4. Install new band clamp (3). Tighten to 54 N.m (40 ft. lbs.).
5. Connect ground strap to muffler (2).
6. Lower vehicle.
7. Start the engine and inspect for exhaust leaks. Repair exhaust leaks as necessary. See **Diagnosis and Testing**
8. Check the exhaust system for contact with the body panels. Make the necessary adjustments, if needed.

PIPE, EXHAUST

REMOVAL

2.7L/3.5L

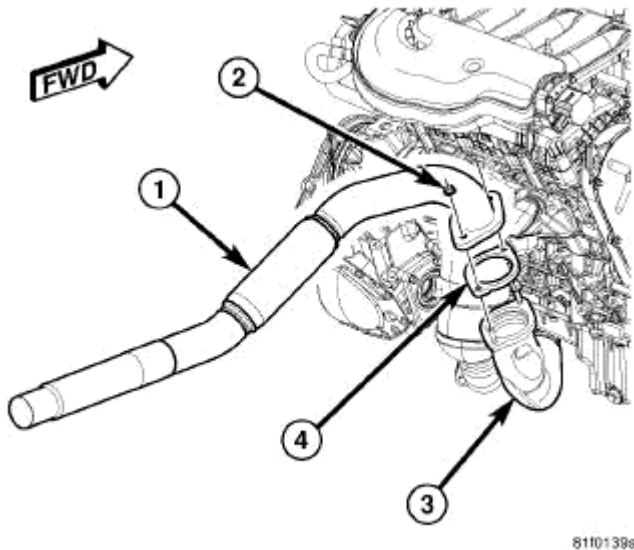


Fig. 20: Exhaust Pipe - 2.7L/3.5L

Courtesy of CHRYSLER LLC

- | |
|----------------------|
| 1 - EXHAUST PIPE |
| 2 - NUTS |
| 3 - CROSS UNDER PIPE |
| 4 - GASKET |

WARNING: The normal operating temperature of the exhaust system is very high. Never attempt to service any part of the exhaust system until it is cooled. Special care should be taken when working near the catalytic converter. The temperature of the converter rises to a high level after a short period of engine operation time.

1. Raise vehicle on hoist.
2. Apply penetrating oil to exhaust pipe band clamp, and fasteners (2).
3. Loosen band clamp for resonator/pipe assembly.
4. Remove exhaust pipe mounting nuts (2) at cross under pipe (3).
5. Remove exhaust pipe (1) and gasket from vehicle.
6. Discard band clamp.

INSTALLATION

2.7L/3.5L

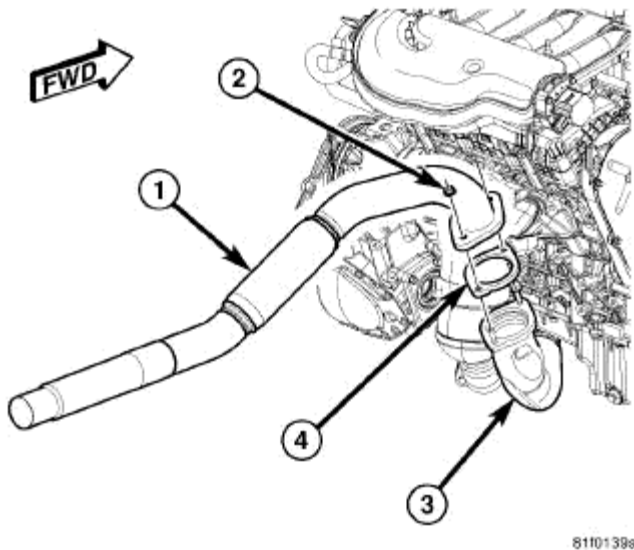


Fig. 21: Exhaust Pipe - 2.7L/3.5L
Courtesy of CHRYSLER LLC

- | |
|----------------------|
| 1 - EXHAUST PIPE |
| 2 - NUTS |
| 3 - CROSS UNDER PIPE |
| 4 - GASKET |

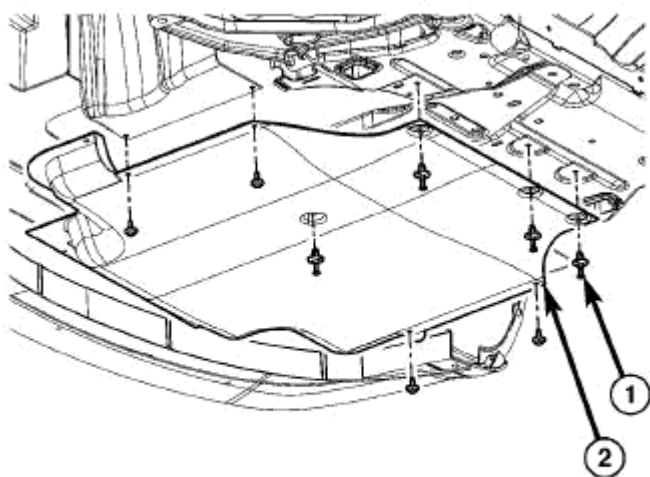
1. Position exhaust pipe (1) into muffler/resonator assembly.
2. Position exhaust pipe onto cross over pipe.

3. Install exhaust pipe (1) to cross over pipe nuts. Tighten to 28 N.m (250 in. lbs.).
4. Align exhaust pipe (1) and resonator/muffler pipe assembly to maintain position and proper clearance with underbody parts. All support isolators should have equal load on them. Tighten fasteners attaching exhaust pipe (1) to cross-under pipe (3) to 28 N.m (21 ft. lbs.).
5. Install new band clamp. Tighten band clamp to 54 N.m (40 ft. lbs.).
6. Lower vehicle.
7. Start the engine and inspect for exhaust leaks. Repair exhaust leaks as necessary. See **Diagnosis and Testing**
8. Check the exhaust system for contact with the body panels. Make the necessary adjustments, if needed.

PIPE, EXHAUST CROSS UNDER

REMOVAL

2.7L ENGINE



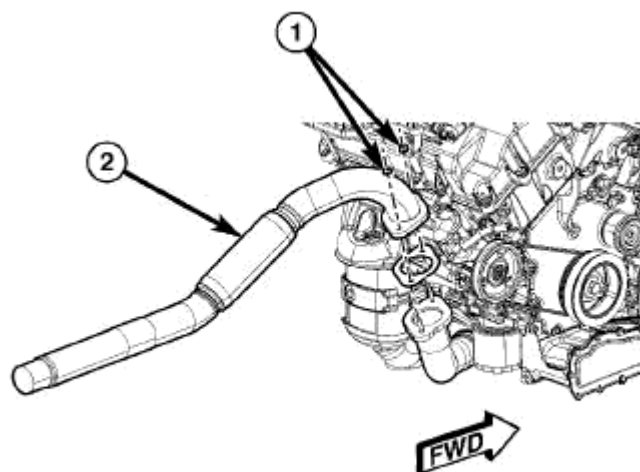
81eb3f26

Fig. 22: Belly Pan

Courtesy of CHRYSLER LLC

- | |
|----------------------------|
| 1 - BELLY PAN |
| 2 - EXHAUST EXTENSION PIPE |

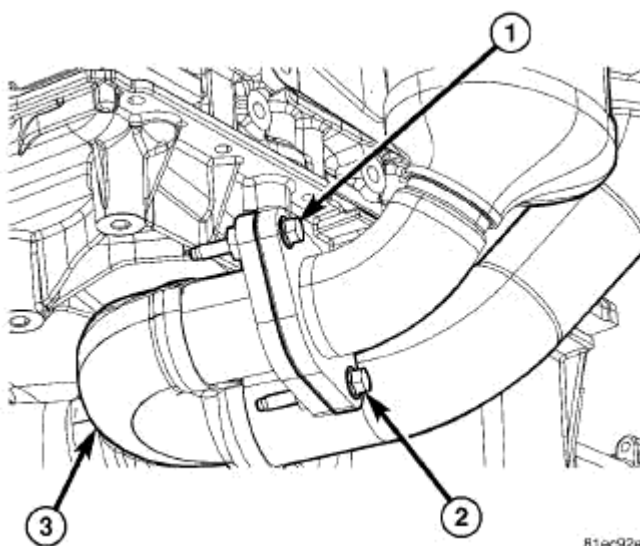
1. Remove the belly pan (2).



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Fig. 23: 2.7L Extension Pipe
Courtesy of CHRYSLER LLC

2. Remove the fasteners (1), and remove the exhaust extension pipe (2) from the cross under pipe.



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Fig. 24: Cross Under Pipe Fasteners
Courtesy of CHRYSLER LLC

3. Remove the rear maniverter-to-cross under pipe fasteners (1) and (2).

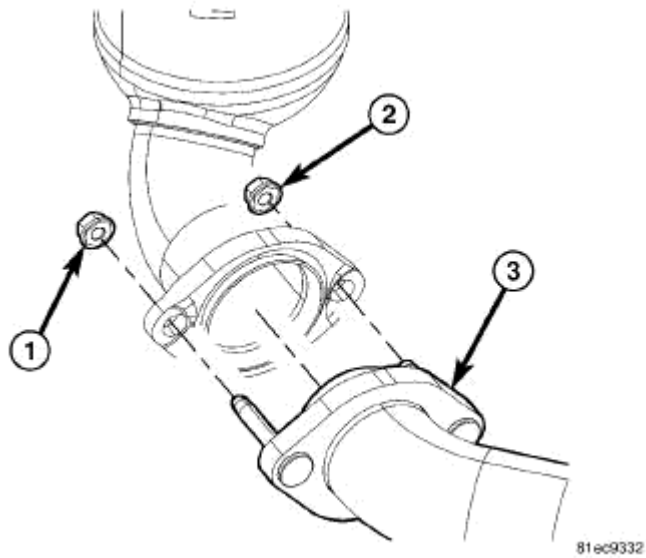


Fig. 25: Maniverter To Cross Under Fasteners
Courtesy of CHRYSLER LLC

4. Remove the front maniverter-to-cross under fasteners (1) and (2), and remove the cross under pipe (3).

3.5L ENGINE

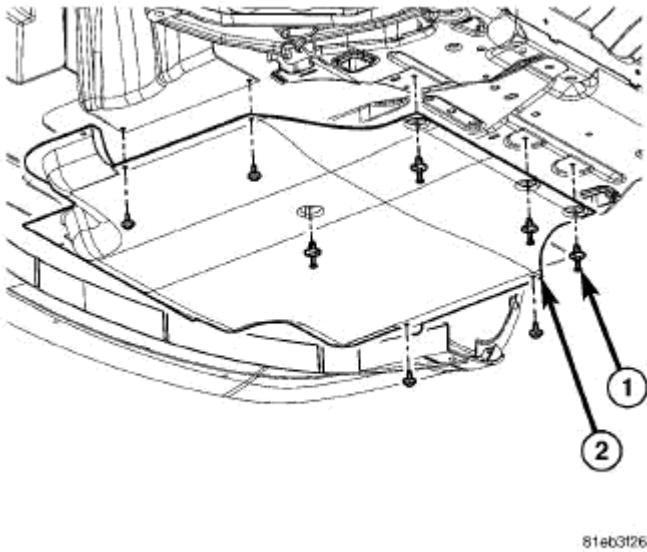


Fig. 26: Belly Pan
Courtesy of CHRYSLER LLC

1. Raise vehicle on hoist.
2. Remove the fasteners (1) and remove the belly pan (2).

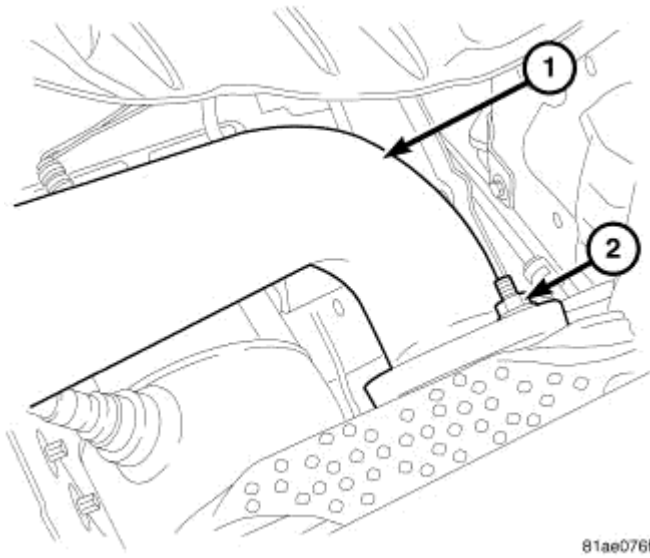


Fig. 27: Exhaust System Pipe
Courtesy of CHRYSLER LLC

1 - EXHAUST PIPE
2 - NUTS

3. Disconnect exhaust system pipe (1) from cross under pipe.

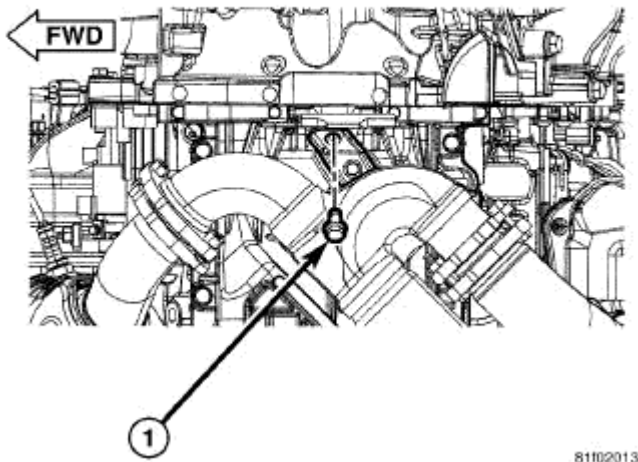


Fig. 28: Cross Under To Bracket
Courtesy of CHRYSLER LLC

4. Remove cross-under pipe bracket to cross under pipe bolt (1).

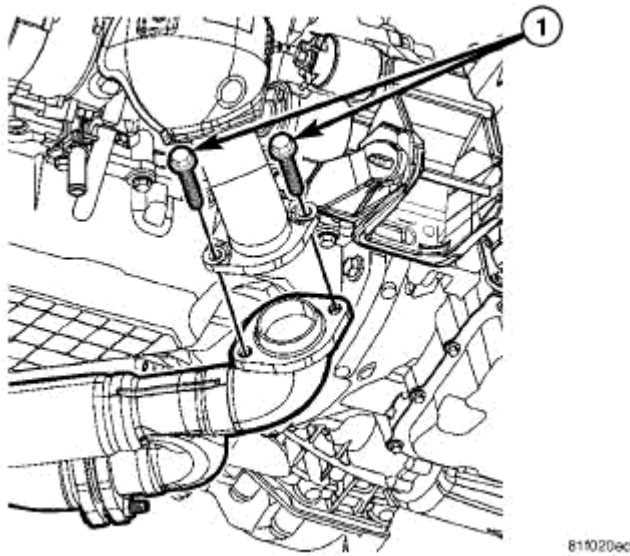


Fig. 29: Left Maniverter To Cross Under
Courtesy of CHRYSLER LLC

5. Remove cross under to front maniverter bolts and nuts (1).

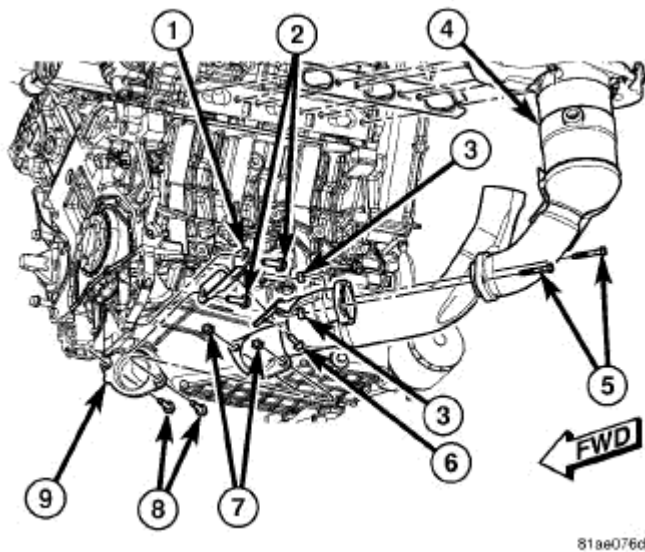
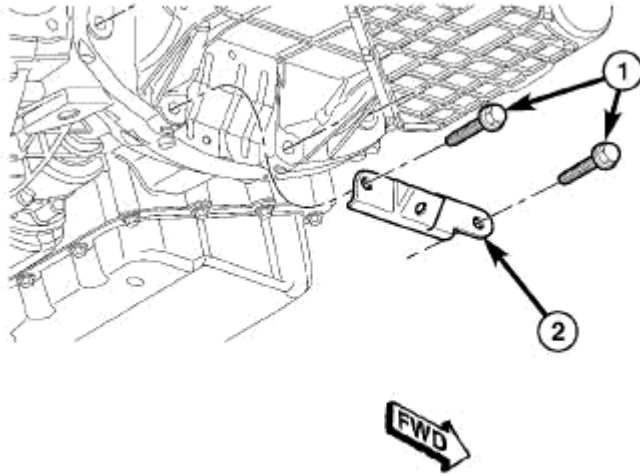


Fig. 30: Cross Under Pipe - 3.5L
Courtesy of CHRYSLER LLC

1 - BRACKET
2 - BRACKET MOUNTING BOLTS
3 - CROSS UNDER PIPE TO REAR MANIVERTER NUTS
4 - REAR MANIVERTER

5 - REAR MANIVERTER TO CROSS UNDER BOLTS
6 - CROSS UNDER PIP TO BRACKET BOLTS
7 - CROSS UNDER PIPE TO FRONT MANIVERTER NUTS
8 - CROSS UNDER PIPE TO FRONT MANIVERTER BOLTS
9 - FRONT MANIVERTER

6. Remove cross under to rear maniverter bolts (5) and nuts (3).
7. Remove cross under pipe.



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Fig. 31: Cross Under Bracket Transmission Bracket
Courtesy of CHRYSLER LLC

8. If necessary, remove cross under transmission bracket (2).

INSTALLATION

2.7L ENGINE

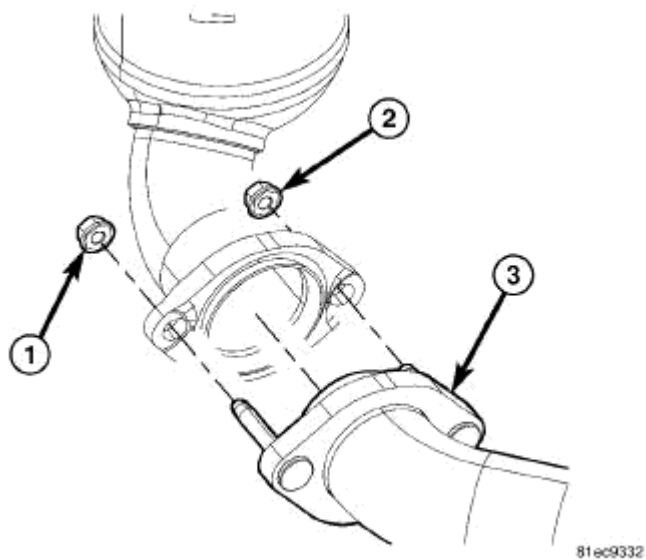


Fig. 32: Maniverter To Cross Under Fasteners
Courtesy of CHRYSLER LLC

1. Install the cross under pipe (3). and the front maniverter-to-cross under fasteners (1) and (2). Tighten to 27 Nm (20 ft. lb.).

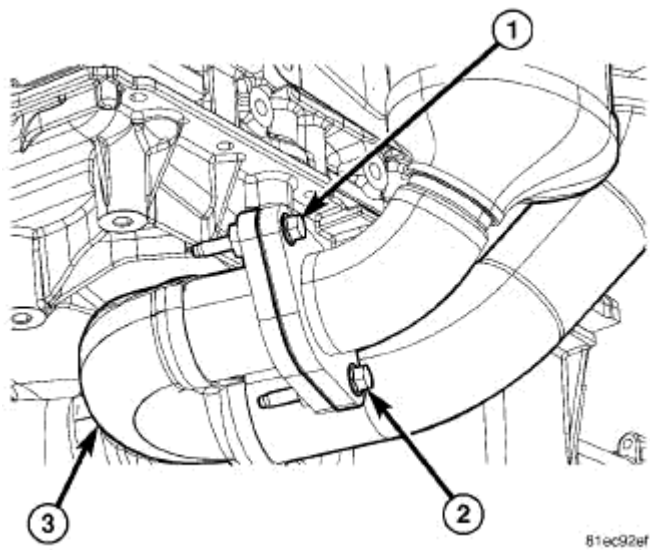
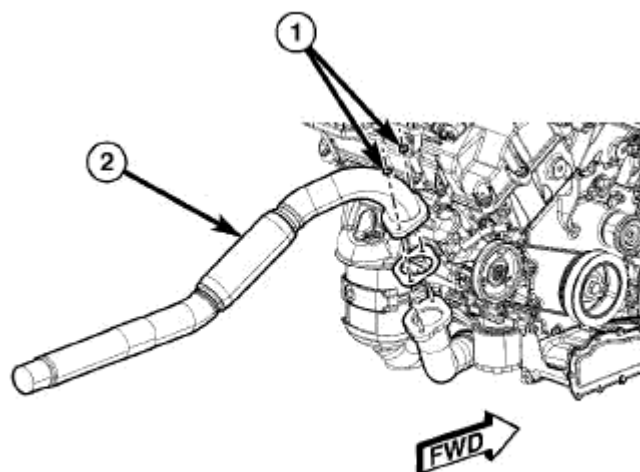


Fig. 33: Cross Under Pipe Fasteners
Courtesy of CHRYSLER LLC

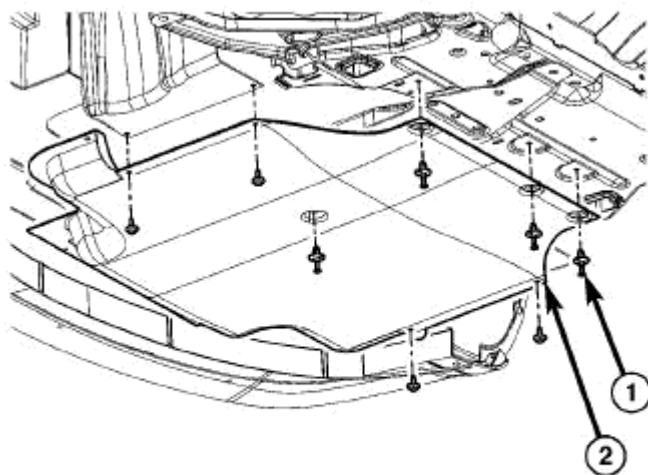
2. Install the rear maniverter-to-cross under pipe fasteners (1) and (2). Tighten to 29 Nm (21 ft. lb.).



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Fig. 34: 2.7L Extension Pipe
Courtesy of CHRYSLER LLC

3. Install the exhaust extension pipe (2) to the cross under pipe, and install the fasteners (1). Tighten to 27 Nm (20 ft. lb.)



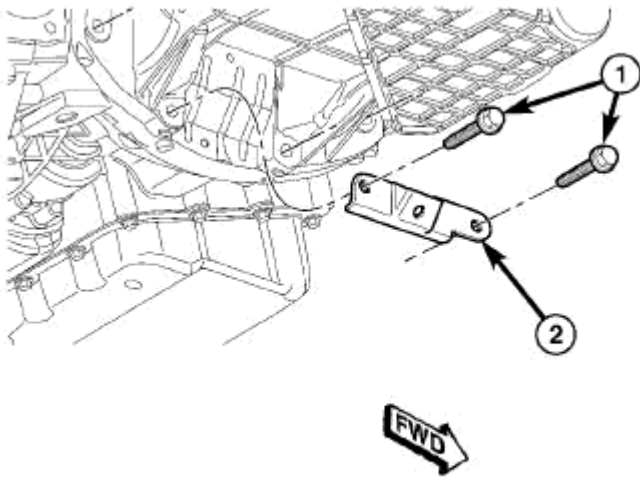
81eb3f26

Fig. 35: Exhaust Extension Pipe
Courtesy of CHRYSLER LLC

1 -FASTENERS
2 -BELLY PAN

4. Install the belly pan (2).

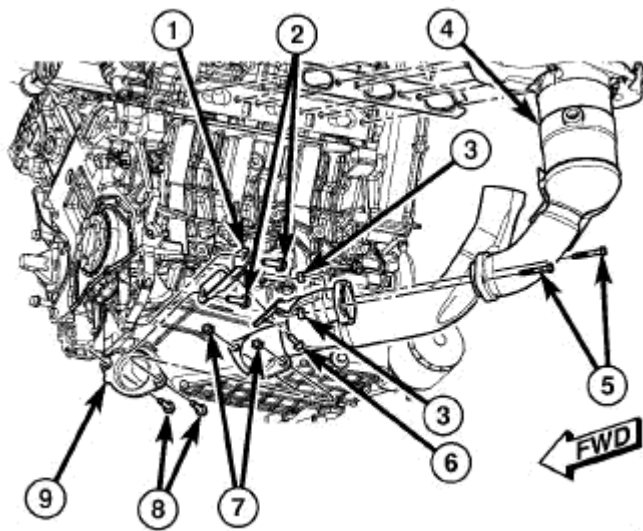
3.5L ENGINE



81101120

Fig. 36: Cross Under Bracket Transmission Bracket
Courtesy of CHRYSLER LLC

1. If removed, install bracket (2). Tighten bolts (1) to 29 N.m (21 ft. lb.).



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Fig. 37: Cross Under Pipe - 3.5L
Courtesy of CHRYSLER LLC

- | |
|---|
| 1 - BRACKET |
| 2 - BRACKET MOUNTING BOLTS |
| 3 - CROSS UNDER PIPE TO REAR MANIVERTTER NUTS |

4 - REAR MANIVERTER
5 - REAR MANIVERTER TO CROSS UNDER BOLTS
6 - CROSS UNDER PIP TO BRACKET BOLTS
7 - CROSS UNDER PIPE TO FRONT MANIVERTER NUTS
8 - CROSS UNDER PIPE TO FRONT MANIVERTER BOLTS
9 - FRONT MANIVERTER

2. Position cross under pipe.
3. Install cross under to rear maniverter bolts (5) and nuts (3). Tighten to 27 N.m (20 ft. lbs.).

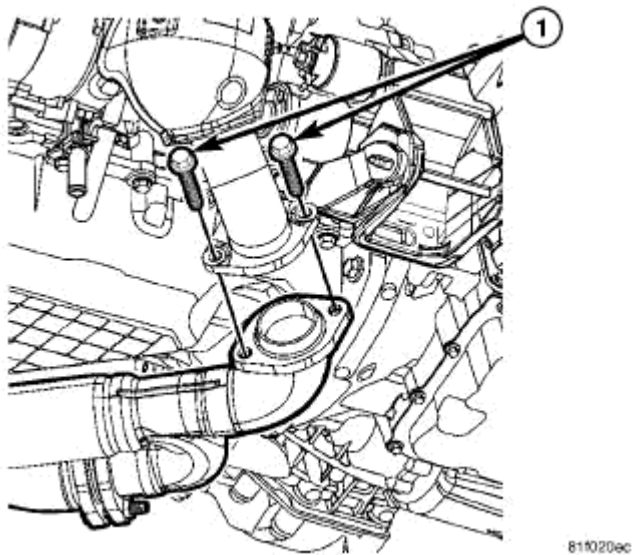


Fig. 38: Left Maniverter To Cross Under
Courtesy of CHRYSLER LLC

4. Install cross under to front maniverter bolts and nuts. Tighten to 27 N.m (20 ft. lbs.).

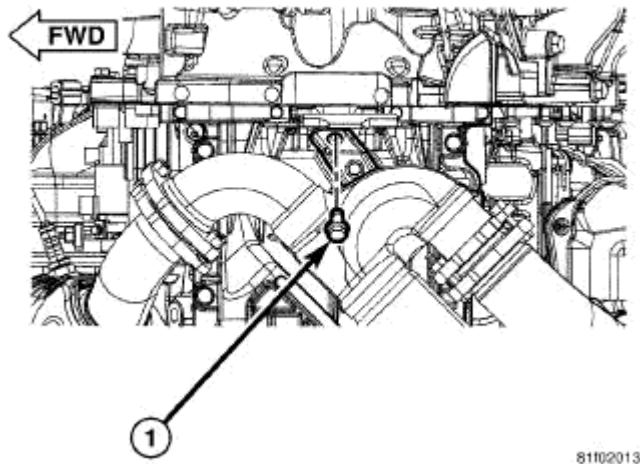


Fig. 39: Cross Under To Bracket
Courtesy of CHRYSLER LLC

5. Install cross under pipe bracket to cross under pipe bolt (1). Tighten to 27 N.m (20 ft. lbs.).

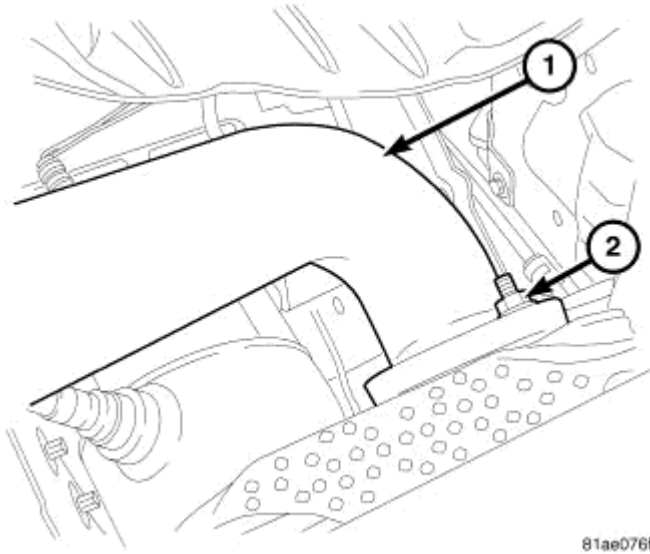
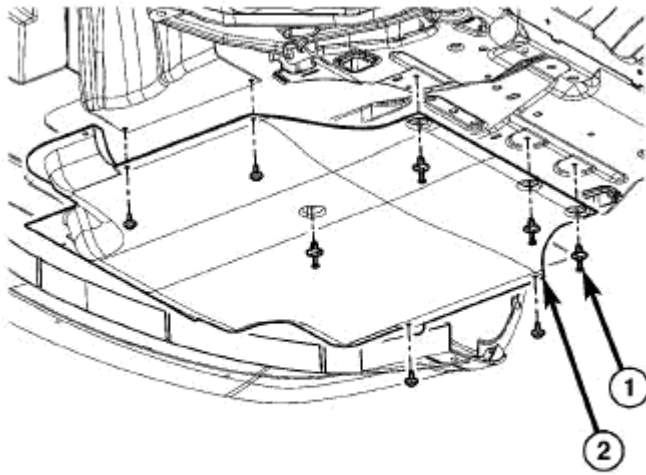


Fig. 40: Exhaust System Pipe
Courtesy of CHRYSLER LLC

1 - EXHAUST PIPE
2 - NUTS

6. Install exhaust system pipe. Tighten flange nuts to 28 N.m (21 ft. lbs.).



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Fig. 41: Belly Pan

Courtesy of CHRYSLER LLC

7. Install belly pan (2) and fasteners (1).
8. Lower vehicle.
9. Start the engine and inspect for exhaust leaks. Repair exhaust leaks as necessary. See **Diagnosis and Testing**
10. Check the exhaust system for contact with the body panels. Make the necessary adjustments, if needed.

RESONATOR, EXHAUST

REMOVAL

EXHAUST RESONATOR

For removal of the exhaust resonator. See **Removal** .

INSTALLATION

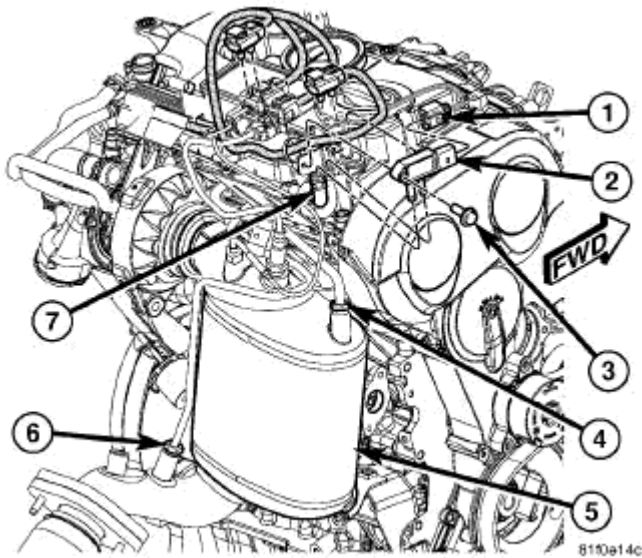
EXHAUST RESONATOR

For installation of the exhaust resonator. See **Installation** .

SENSOR, EXHAUST PRESSURE

REMOVAL

EXHAUST PRESSURE SENSOR

**Fig. 42: DPF Components**

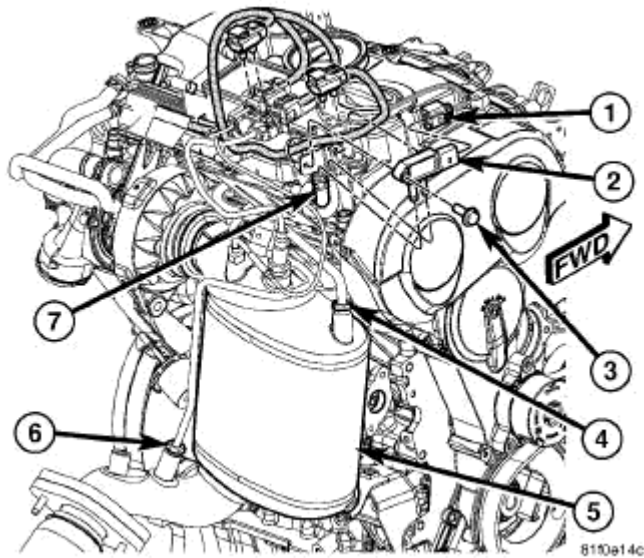
Courtesy of CHRYSLER LLC

1 - ELECTRICAL CONNECTOR
2 - PRESSURE DIFFERENTIAL SENSOR
3 - MOUNTING BOLT
4 - UPSTREAM PRESSURE TUBE
5 - DPF
6 - DOWNSTREAM PRESSURE TUBE
7 - TUBING

1. Disconnect and isolate negative battery cable.
2. Remove electrical connector at pressure differential sensor (2).
3. Remove upstream exhaust pressure tube (4) from catalytic converter
4. Remove downstream pressure tube (6) from catalytic converter.
5. Remove pressure differential sensor mounting bolt.
6. Remove pressure differential sensor (2) and tubing (7) from vehicle.
7. Remove tubing (7) from pressure differential sensor (2).

INSTALLATION

EXHAUST PRESSURE SENSOR

**Fig. 43: DPF Components**

Courtesy of CHRYSLER LLC

1 - ELECTRICAL CONNECTOR
2 - PRESSURE DIFFERENTIAL SENSOR
3 - MOUNTING BOLT
4 - UPSTREAM PRESSURE TUBE
5 - DPF
6 - DOWNSTREAM PRESSURE TUBE
7 - TUBING

1. Install tubing (7) on pressure differential sensor (2).
2. Position pressure differential sensor (2) and tubing (7).
3. Install pressure differential sensor mounting bolt (3). Tighten to 10 N.m (89 in. lbs.).
4. Install downstream pressure tube (6) into catalytic converter. Tighten the fitting to 10 N.m (89 in. lbs.).
5. Install upstream pressure tube (4) into catalytic converter. Tighten the fitting to 10 N.m (89 in. lbs.).
6. Position electrical connector (1) into bracket.
7. Connect negative battery cable.

SENSOR, EXHAUST TEMPERATURE

REMOVAL

EXHAUST TEMPERATURE SENSOR

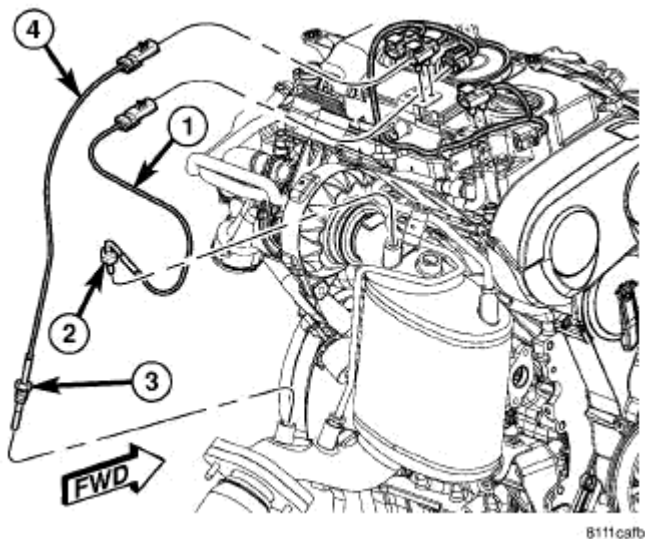


Fig. 44: Exhaust Temperature Sensor
Courtesy of CHRYSLER LLC

- | |
|---|
| 1 - DPF TEMPERATURE SENSOR ELECTRICAL CONNECTOR
2 - DPF TEMPERATURE SENSOR |
|---|

1. Remove engine cover.
2. Disconnect and isolate negative battery cable.
3. Disconnect upstream DPF temperature sensor electrical connector (1).
4. Remove upstream DPF temperature sensor (2).
5. Disconnect downstream DPF temperature sensor electrical connector (4).
6. Remove downstream DPF temperature sensor (3).

INSTALLATION

EXHAUST TEMPERATURE SENSOR

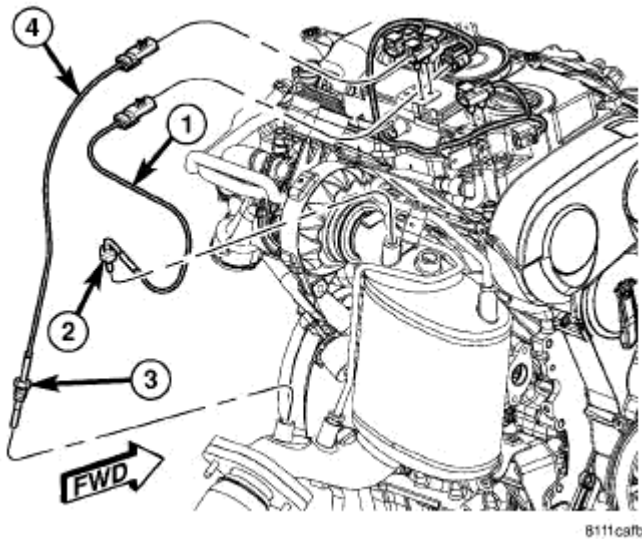


Fig. 45: Exhaust Temperature Sensor
Courtesy of CHRYSLER LLC

- | |
|---|
| 1 - DPF TEMPERATURE SENSOR ELECTRICAL CONNECTOR |
| 2 - DPF TEMPERATURE SENSOR |

1. Position DPF downstream temperature sensor (3) into DPF. Tighten to 25 N.m (18 ft. lbs.).
2. Connect downstream temperature sensor electrical connector (4).
3. Position DPF upstream temperature sensor (2) into DPF. Tighten to 25 N.m (18 ft. lbs.).
4. Connect upstream temperature sensor electrical connector (1).
5. Install engine cover.
6. Connect negative battery cable.

SHIELD, HEAT

DESCRIPTION

DESCRIPTION

The exhaust system heat shields are attached to the under body of the vehicle.

OPERATION

OPERATION

Heat shields are needed to protect both the vehicle and the environment from the high temperatures developed near the catalytic converter.

2009 Dodge Journey R/T

2009 ENGINE Exhaust System - Journey

Avoid application of rust prevention compounds or undercoating materials to exhaust system floor pan heat shields on vehicles so equipped. Light over spray near the edges is permitted. Application of coating will greatly reduce the efficiency of the heat shields resulting in excessive floor pan temperatures and objectionable fumes.