

EXHAUST SYSTEM

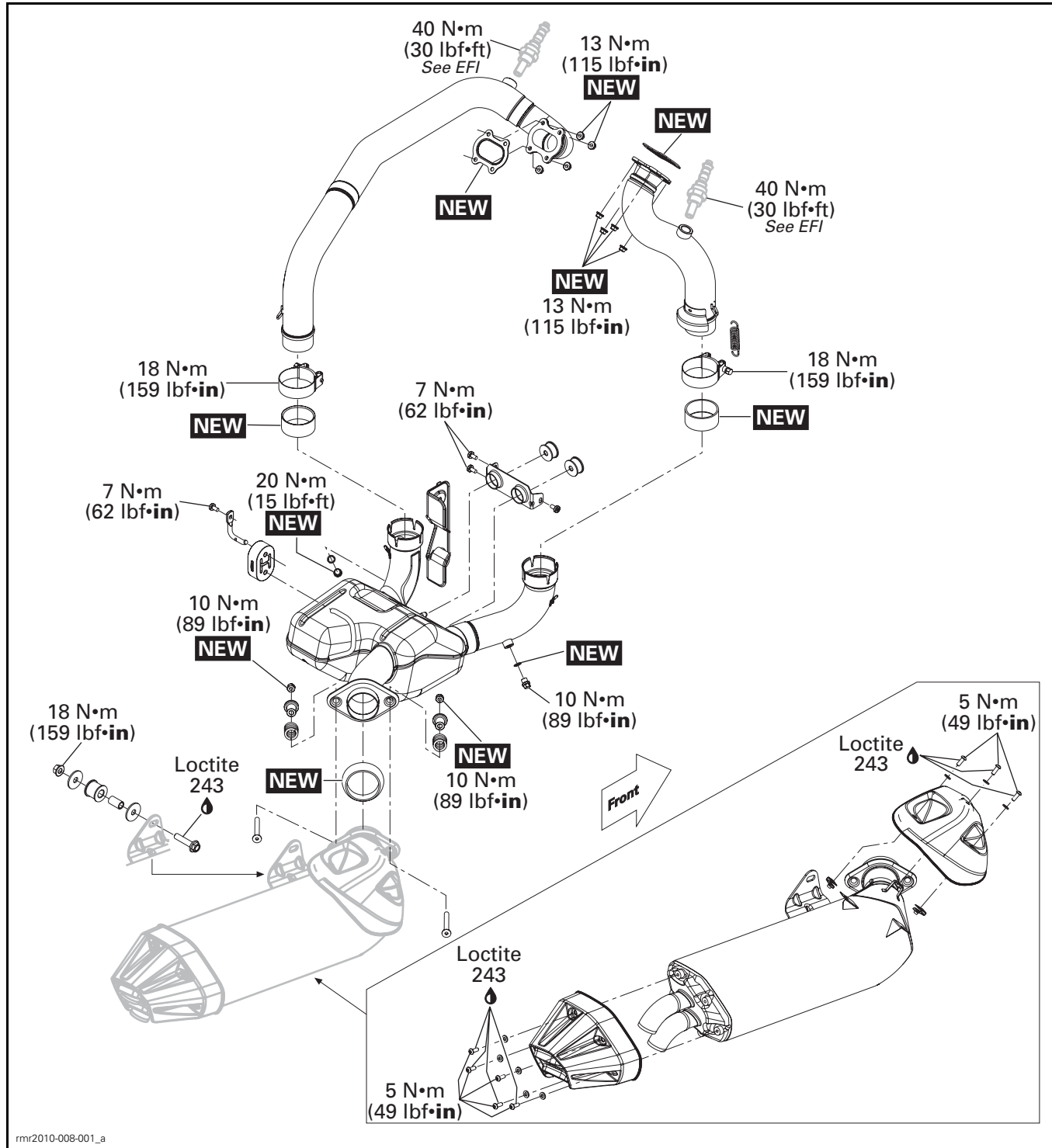
SERVICE TOOLS

| Description | Part Number | Page |
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| SPRING INSTALLER/REMOVER | 529 035 983 | 6 |

SERVICE PRODUCTS

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| LOCTITE 243 (BLUE)..... | 293 800 060 | 5 |

Subsection XX (EXHAUST SYSTEM)



GENERAL

⚠ WARNING

To avoid potential burns, never touch exhaust system components immediately after the engine has been run as these components are very hot. Let engine and exhaust system cool down before performing any servicing.

During assembly/installation, use the torque values and service products as specified in the exploded view.

Clean threads before applying a threadlocker. Refer to *SELF-LOCKING FASTENERS* and *LOCTITE APPLICATION* at the beginning of this manual for complete procedure.

⚠ WARNING

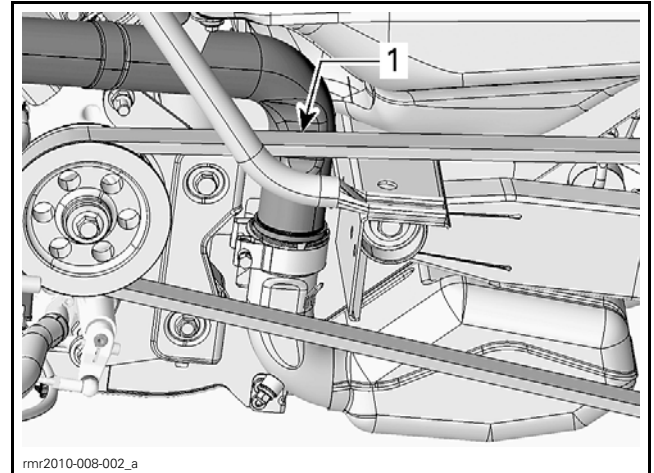
Torque wrench tightening specifications must be strictly adhered to. Locking devices (e.g.: locking tabs, elastic stop nuts, self-locking fasteners, cotter pins, etc.) must be replaced.

Hoses, cables or locking ties removed during a procedure must be reinstalled as per factory standards.

EXHAUST SYSTEM INSTALLATION SEQUENCE

NOTE: When installing exhaust system components, use new gaskets and new hardware as applicable. Apply specified torques. Refer to the exploded view.

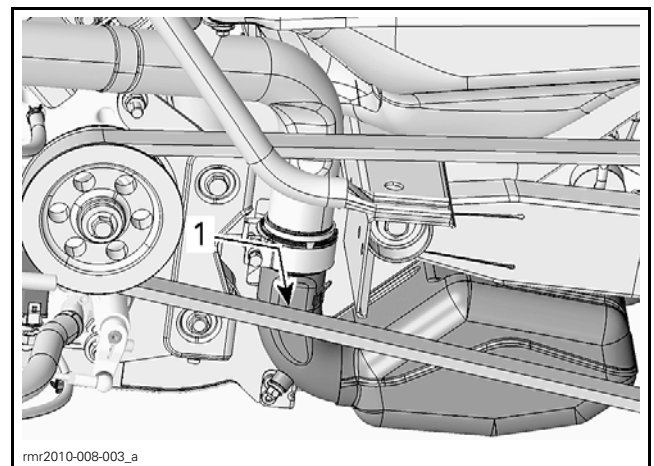
1. Install all exhaust system components loosely to ease adjustment of components.
2. Check exhaust system clearance gaps as component fasteners are torqued:
 - 2.1 Ensure clearance between the LH forward head pipe and the drive belt is at least 8 mm (5/16 in).



TYPICAL

1. Head pipe to drive belt clearance

- 2.2 Ensure clearance between the LH forward pipe on the catalytic converter and the drive belt is at least 8 mm (5/16 in).

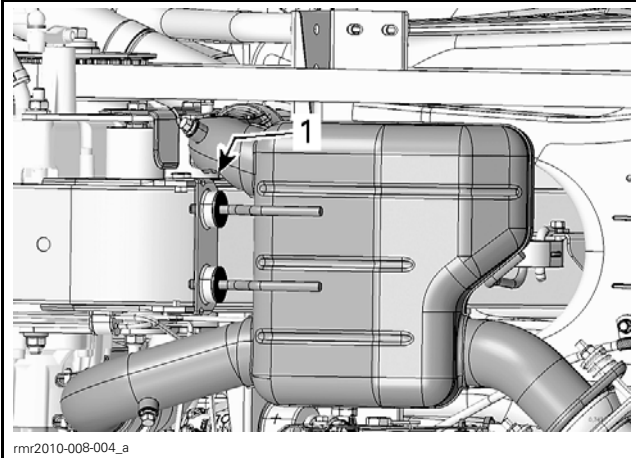


TYPICAL

1. Catalytic converter pipe to drive belt clearance

- 2.3 Ensure clearance between the LH forward pipe on the catalytic converter and the frame is at least 3 mm (1/8 in).

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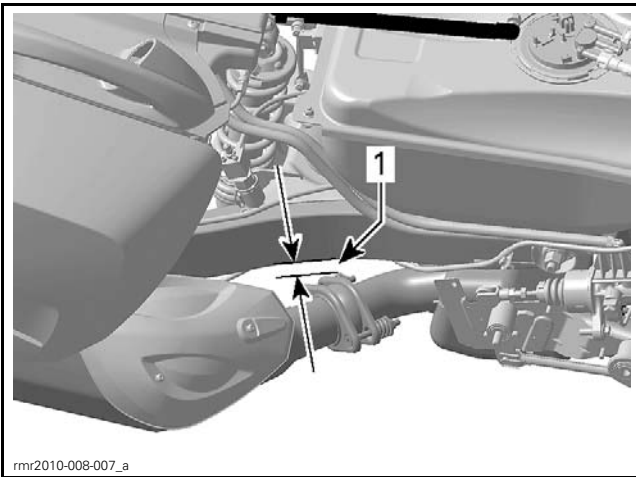


TYPICAL

1. Catalytic converter pipe to frame clearance

- 2.4 Ensure clearance between the flange on the catalytic converter exit pipe and the swing arm is at least 4 mm (5/32 ft).

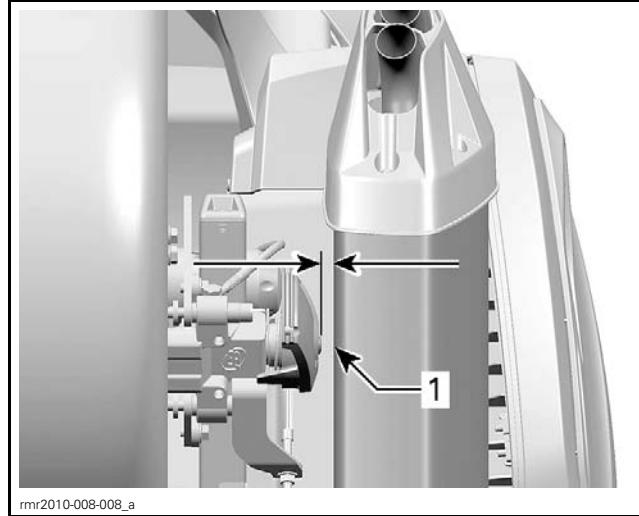
NOTE: This measurement is taken at a slight angle with the suspension fully extended.



TYPICAL

1. Converter flange to swing arm clearance

- 2.5 Ensure clearance between the park brake pulley nut/bolt on the rear wheel and the muffler is at least 10 mm (13/32 in)



TYPICAL

1. Park brake pulley nut/bolt to muffler clearance

3. Torque exhaust system components in the following order. Adjust sequence as required according to parts removal and installation to ensure proper clearances are obtained.
- Rear head pipe (RH) to cylinder head
 - Front head pipe (LH) to cylinder head
 - Catalytic converter support bracket to frame mounts
 - Rear head pipe to catalytic converter (clamp)
 - Front head pipe to catalytic converter (clamp)
 - Muffler mounting bolt.
 - Muffler to catalytic converter flange bolts
4. Recheck clearances when all components are torqued. Adjust as required.

MAINTENANCE

CATALYTIC CONVERTER FRONT GASKET REPLACEMENT

1. Open the seat and both side rear cargo compartments.
2. Remove both mirrors, refer to *BODY* subsection.
3. Remove the following body panels, refer to *BODY* subsection:
 - LH and RH middle side panels
 - LH and RH wind deflectors
 - LH and RH top side panels
 - LH and RH acoustic panels
 - LH and RH rear side panels

4. Remove spring (right head pipe to catalytic converter) and clamps retaining catalytic converter to both head pipes, refer to *CATALYTIC CONVERTER REMOVAL*.
5. Remove the screws that secure to the frame the forward support bracket for the catalytic converter.
6. With the assistance of a coworker, support the muffler and remove the muffler retaining bolt.

NOTICE Insert padding between muffler and park brake pulley on rear wheel axel to prevent contact between parts and damage to the muffler.

7. As you support the catalytic converter, unhook the upper rubber support from the catalytic converter.
8. Carefully pull the catalytic converter off both head pipes.

NOTICE Do not let the muffler contact any part of the vehicle to avoid damaging the finish on the muffler or any part it may contact. Wrap the muffler with a thick cloth or blanket to protect it during removal, installation.

9. Remove exhaust gasket from each head pipe.
10. Install a **NEW** exhaust gasket on each pipe.
11. Install the muffler and catalytic converter in the reverse order of the removal however, pay attention to the following:
 - Clean muffler retaining bolt threads and apply LOCTITE 243 (BLUE) (P/N 293 800 060), or install a new bolt.
 - Torque muffler retaining bolt and converter exhaust clamps to 18 N•m (159 lbf•in).
 - Torque the screws that secure the catalytic converter support bracket to 7 N•m (62 lbf•in).

INSPECTION

Always inspect exhaust system parts for the following defects or damages:

- Cracks
- Tearing
- Bending
- Dents
- Corrosion
- Leaks
- And any other damage or defect which could affect system performance.

Replace as required.

PROCEDURES

MUFFLER HEAT SHIELD

Heat Shield Removal

Remove the three screws mounting the heat shield to the forward end of the muffler.

Heat Shield Installation

1. Apply LOCTITE 243 (BLUE) (P/N 293 800 060) to the threads of the mounting screws.
2. Position heat shield on muffler, install and torque the three mounting screws to 5.5 N•m (49 lbf•ft).

MUFFLER

Muffler Removal

1. Position vehicle for ease of access to muffler retaining bolt and muffler flange screws under the vehicle.
2. Remove the nuts and springs that secure the muffler flange to the catalytic converter flange.

NOTE: The socket head screws may be left in the flanges at this time.

3. While supporting muffler, remove the muffler mounting hex screw from the muffler support.

NOTICE Insert padding between muffler and park brake pulley on rear wheel axel to prevent contact between parts and damage to the muffler.

4. Remove the two socket head screws from the muffler flange and carefully remove the muffler from the catalytic converter.
5. Discard old muffler gasket.

Muffler Installation

1. Install a **NEW** muffler gasket on the muffler end of the catalytic converter exhaust pipe.

NOTICE Insert padding between muffler and park brake pulley on rear wheel axel to prevent contact between parts and damage to the muffler.

2. Insert muffler pipe over catalytic converter pipe and insert the two socket head screws through the flanges.
3. Install muffler retaining bolt on muffler support and tighten nut until it bottoms out loosely.

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4. Position a wooden spacer block of 80 mm (3.15 in) in thickness between the muffler and rear swing arm, close to the muffler retaining bolt.
5. Install springs and retaining nuts on the muffler flange screws and tighten nuts slightly. Do not torque them at this time.
6. Torque the muffler retaining nut to 18 N•m (159 lbf•in).
7. After torquing the muffler retaining nut, torque the inner muffler flange nut until a torque of 11 N•m (97 lbf•in) is obtained, then torque the outer flange nut to same torque.

NOTE: Ensure clearance between the flange on the catalytic converter exit pipe and the swing arm is at least 4 mm (5/32 in) with full swing arm extension. Refer to *EXHAUST SYSTEM INSTALLATION SEQUENCE* for illustration.

NOTICE When compressing the rear suspension, ensure the muffler clears the park brake pulley on the rear caliper by at least 10 mm (.394 in). If clearance is not obtained, loosen then re-torque the flange nuts until proper clearance is obtained. Refer to *EXHAUST SYSTEM INSTALLATION SEQUENCE* for illustration.

8. Ensure the wooden spacer block between the muffler and swing arm is removed.
9. Start engine and ensure the muffler gasket ring is not leaking.

CATALYTIC CONVERTER

Catalytic Converter Removal

1. Open the seat and both rear side cargo compartments.
2. Remove both mirrors, refer to *BODY* subsection.
3. Remove the following body panels, refer to *BODY* subsection:
 - LH and RH middle side panels
 - LH and RH wind deflectors
 - LH and RH top side panels
 - LH and RH acoustic panels
 - LH and RH rear side panels
4. Remove the *MUFFLER*, see procedure in this subsection.
5. Remove the spring retaining the catalytic converter to the rear head pipe (RH side) using SPRING INSTALLER/REMOVER (P/N 529 035 983).



6. Loosen the exhaust clamps securing the catalytic converter to both head pipes sufficiently to slide the clamps down the pipes.

NOTE: Note the position of each clamp for installation.

7. Remove the screws that secure the forward support bracket for the catalytic converter to the frame.
8. As you support the catalytic converter, unhook the rubber support above the converter.
9. Carefully pull down on catalytic converter exhaust pipes to disconnect them from the head pipes.

Catalytic Converter Installation

1. Install **NEW** gaskets on the head pipes.
2. Assure both exhaust clamps are positioned loosely on catalytic converter pipes prior to insertion on front head pipes.
3. Insert the catalytic converter support bracket onto the converter support hooks. Ensure the grommets are in good condition.
4. Insert the catalytic converter pipes over the head pipes.
5. Insert the support hook above the catalytic converter into its rubber support.
6. Slide exhaust clamps over each converter to head pipe joint and tighten them just enough for them to remain in position.
7. Install the RH head pipe spring using same tool as removal.

NOTE: Make sure pipe joints are bottomed out to prevent leakage which could affect system efficiency.

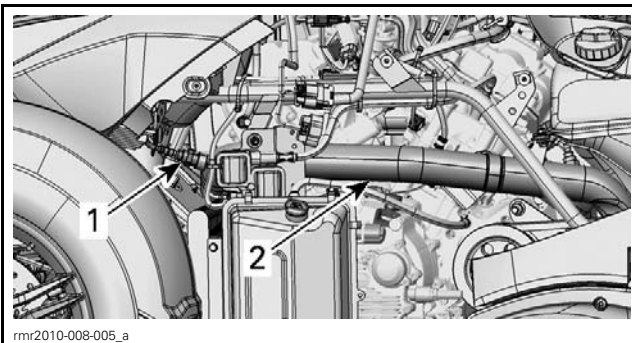
8. Install screws that secure the forward converter support bracket. Torque screws to 7 N•m (62 lbf•in).
9. Properly position exhaust clamps at converter to head pipe joints and torque them to 18 N•m (159 lbf•in).
10. Ensure proper exhaust system clearance gaps are obtained. Refer to *EXHAUST SYSTEM INSTALLATION SEQUENCE* at the beginning of this subsection.
11. Install muffler, refer to *MUFFLER INSTALLATION*.

12. Install all remaining removed parts and panels.

HEAD PIPE (FRONT CYLINDER)

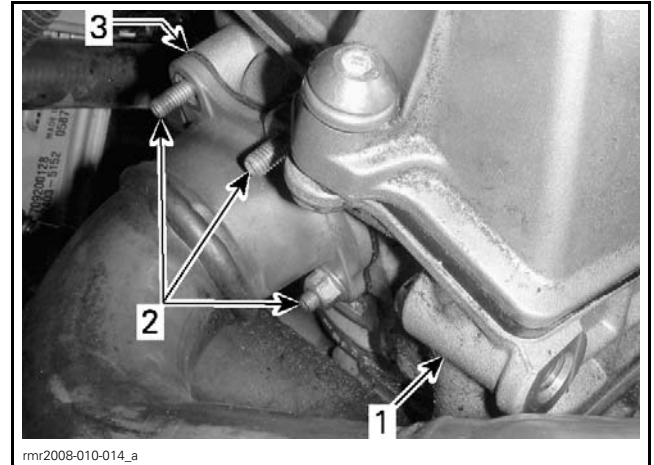
Head Pipe Removal (Front Cylinder)

1. Open the seat and both rear side cargo compartments.
2. Remove both mirrors, refer to *BODY* subsection.
3. Remove the following body panels, refer to *BODY* subsection:
 - LH and RH middle side panels
 - LH and RH wind deflectors
 - LH and RH top side panels
 - LH and RH rear side panels
 - LH middle side panel
 - LH bottom front side panel
 - Oil cooler duct.
4. Remove the muffler. Refer to *MUFFLER REMOVAL* in this subsection.
5. Remove the catalytic converter. Refer to *CATALYTIC CONVERTER REMOVAL* in this subsection.
6. Remove the oxygen sensor from the head pipe.



1. Oxygen sensor
2. Front head pipe

7. Remove and discard the four nuts retaining head pipe to front cylinder head.



TYPICAL

1. Front cylinder head
2. Nut locations (one is not visible)
3. Gasket, head pipe to cylinder head

8. Head pipe is removed by carefully moving the pipe forward off the studs, rotating it so that it can be pulled out under the rear portion of the LH lateral support.

Head Pipe Installation (Front Cylinder)

1. Install **NEW** head pipe gaskets.
2. Install head pipe loosely on cylinder head using four **NEW** retaining nuts.
3. Install oxygen sensor. Torque sensor to 40 N•m (30 lbf•ft).
4. Install remaining exhaust system components loosely.
5. Torque exhaust system fasteners and ensure proper exhaust system clearance gaps are obtained. Refer to *EXHAUST SYSTEM INSTALLATION SEQUENCE* in the beginning of this subsection.

Install all remaining removed parts and panels including oil cooler duct. Refer to *BODY* subsection.

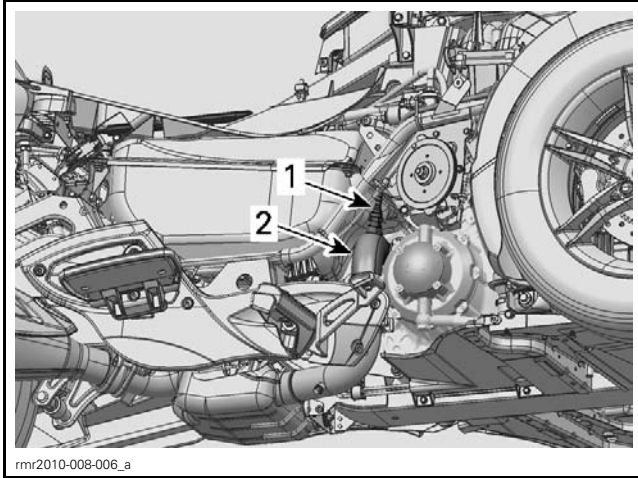
HEAD PIPE (REAR CYLINDER)

Head Pipe Removal (Rear Cylinder)

1. Open the seat and both rear side cargo compartments.
2. Remove both mirrors, refer to *BODY* subsection.
3. Remove the following body panels, refer to *BODY* subsection:
 - LH and RH middle side panels
 - LH and RH wind deflectors
 - LH and RH top side panels
 - LH and RH acoustic panels
 - LH and RH rear side panels

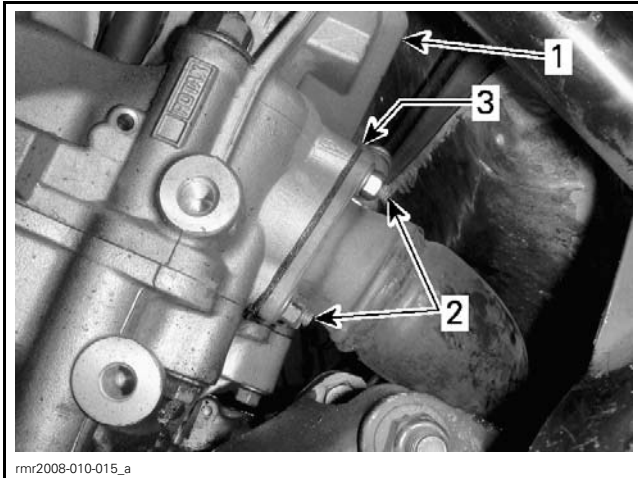
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4. Remove the muffler and catalytic converter, refer to *MUFFLER REMOVAL* and *CATALYTIC CONVERTER REMOVAL* procedures in this subsection.
5. Remove the oxygen sensor from the head pipe.



1. Oxygen sensor
2. Rear head pipe

6. Remove and discard the four nuts retaining head pipe to rear cylinder head.



TYPICAL

1. Right cylinder head
2. Nut locations (two are not visible)
3. Gasket, head pipe to cylinder head

Head Pipe Installation (Rear Cylinder)

1. Install **NEW** head pipe gaskets.
2. Install head pipe loosely on cylinder head using four **NEW** retaining nuts.
3. Install oxygen sensor. Torque sensor to 40 N•m (30 lbf•ft).
4. Install remaining exhaust system loosely.

5. Torque exhaust system fasteners and ensure proper exhaust system clearance gaps are obtained. Refer to *EXHAUST SYSTEM INSTALLATION SEQUENCE* in the beginning of this subsection.

Install all removed panels, refer to *BODY* subsection.