

ENGINE

Exhaust System - Repair Instructions - 535xi

EXHAUST SYSTEM, COMPLETE

18 00 020 REMOVING AND INSTALLING COMPLETE EXHAUST SYSTEM (N54)

Special tools required:

- 31 2 220

WARNING: Scalding hazard!

These tasks should only be carried out on an exhaust system that has cooled down.

IMPORTANT: Removal of the exhaust system must be carried out with the assistance of a second person.

Support exhaust system with jack and special tool 31 2 220 and secure against falling out.

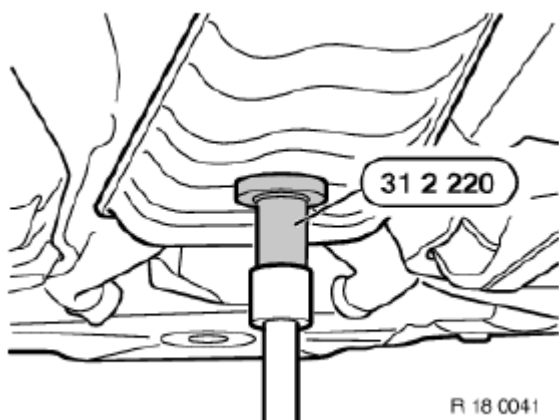


Fig. 1: Supporting Exhaust System With Special Tool
Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew nuts.

Installation:

Replace self-locking nuts.

Replace seal.

Tightening torque **18 00 1AZ**

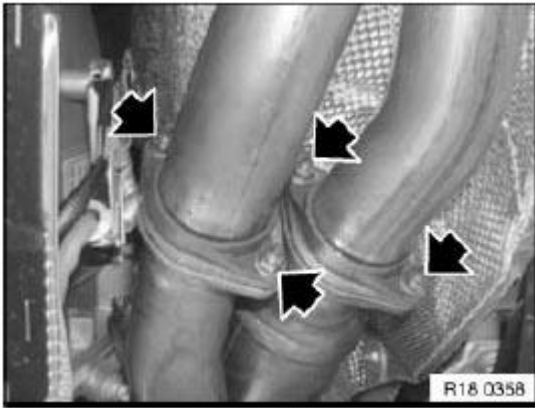


Fig. 2: Locating Self-Locking Nuts

Courtesy of BMW OF NORTH AMERICA, INC.

Release bolt and remove bracket (1).

Tightening torque **18 20 1AZ**

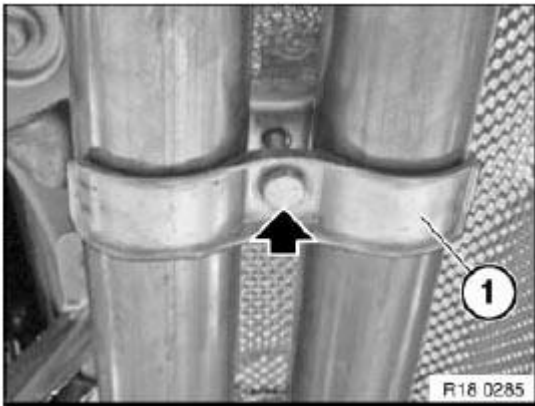


Fig. 3: Locating Bracket Bolt

Courtesy of BMW OF NORTH AMERICA, INC.

Release bolts along line and remove reinforcement plate (1).

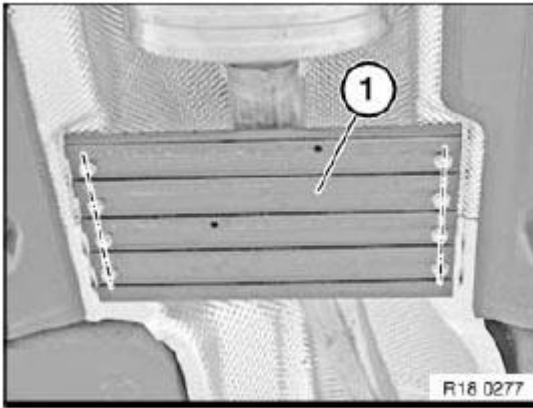


Fig. 4: Identifying Reinforcement Plate
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten nut.

Tightening torque, **18 00 4AZ**



Fig. 5: Locating Unfasten Nut
Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew nuts.

Tightening torque, **18 00 2AZ**

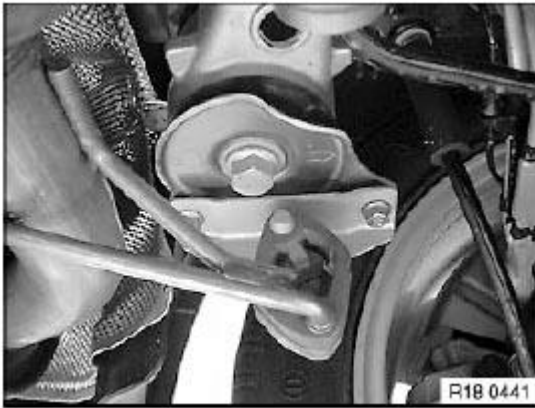


Fig. 6: Identifying Unscrew Nuts

Courtesy of BMW OF NORTH AMERICA, INC.

Disconnect pressure hose. Unscrew nuts.

Tightening torque, **18 00 6AZ**

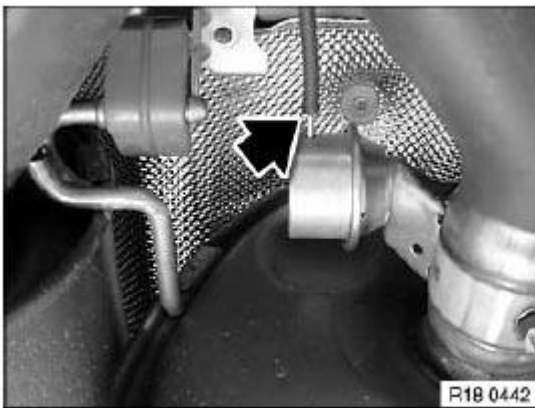


Fig. 7: Locating Pressure Hose

Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Check exhaust system for leaks.

18 12 045 REMOVING AND INSTALLING/REPLACING CENTER MUFFLER (N54)

Special tools required:

- 00 2 210

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

Necessary preliminary tasks:

- Remove exhaust system .

NOTE: The cutting lines for the center muffler are designated by a notch in the pipe.

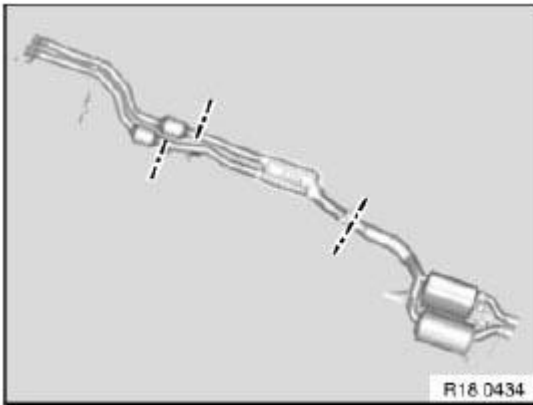


Fig. 8: Identifying Centre Muffler Lines Cutting Point
Courtesy of BMW OF NORTH AMERICA, INC.

Cut exhaust pipes with special tool 00 2 210 and with standard workshop equipment at marked points and deburr.

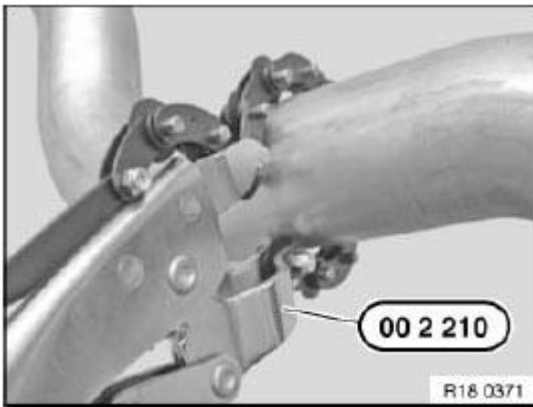


Fig. 9: Identifying Special Tool (00 2 210)
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Connect center muffler to both exhaust pipes by means of clamps and align.

Align clamps and tighten down.

Tightening torque **18 00 5AZ.**

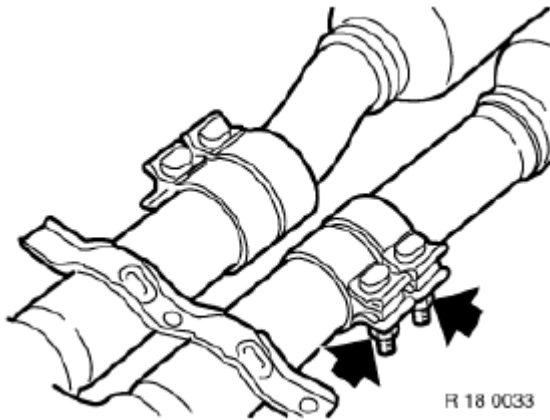


Fig. 10: Locating Exhaust Pipes Clamps Bolts
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Connect center muffler to rear muffler by means of clamp and align.

Align clamp and tighten down.

Tightening torque **18 00 5AZ.**



Fig. 11: Identifying Centre Muffler To Rear Muffler
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Check exhaust system for leaks.

18 12 030 REMOVING AND INSTALLING/REPLACING REAR MUFFLER (N54)

Special tools required:

- 00 2 210
- 31 2 220

WARNING: Scalding hazard!
Only perform these tasks after exhaust system has cooled down.

Support center muffler with special tool 31 2 220.

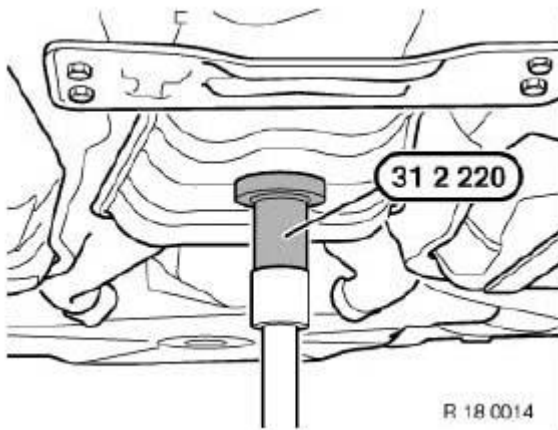


Fig. 12: Supporting Centre Muffler With Special Tool
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: The cutting line for the rear muffler is designated by a notch in the pipe.

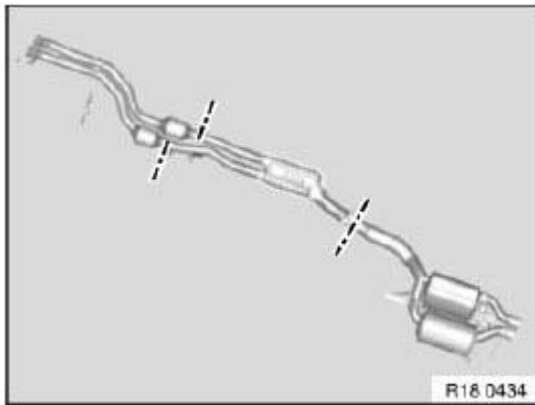


Fig. 13: Identifying Centre Muffler Lines Cutting Point
Courtesy of BMW OF NORTH AMERICA, INC.

Cut rear muffler with special tool 00 2 210 at marked point and deburr.

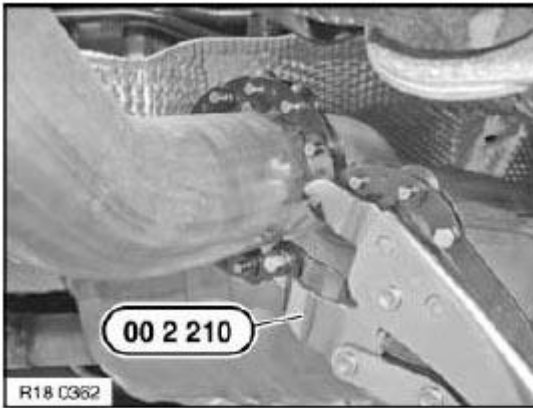


Fig. 14: Identifying Special Tool (00 2 210)
Courtesy of BMW OF NORTH AMERICA, INC.

Detach hose from vacuum unit.

Unscrew mounting bolts.

Tightening torque **18 20 4AZ.**

Lower rear muffler and remove.

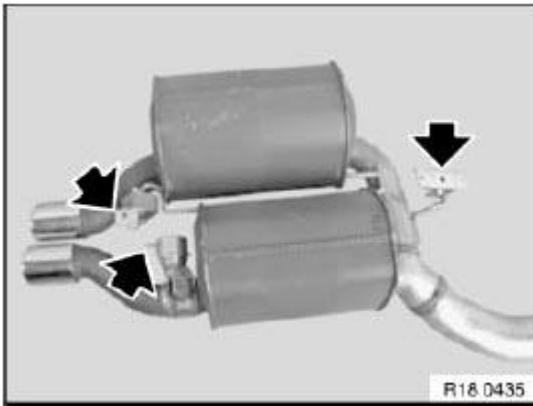


Fig. 15: Locating Lower Rear Muffler Unscrew Mounting Bolts
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Connect rear muffler to center muffler by means of clamping sleeves.

Align rear muffler to rear apron.

Align clamp and tighten down.

Tightening torque **18 00 5AZ.**



Fig. 16: Identifying Centre Muffler To Rear Muffler
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Check exhaust system for leaks.

**18 32 050 REMOVING AND INSTALLING/REPLACING CATALYTIC EXHAUST-GAS
CONVERTER FOR CYLINDERS 1-3 (N54)**

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

Necessary preliminary tasks:

- Remove exhaust system. .
- Remove underbody protection . See **51 47 490 REMOVING AND INSTALLING / REPLACING FRONT UNDERBODY PROTECTION** and **51 47 491 REMOVING AND INSTALLING/REPLACING REAR UNDERBODY PROTECTION** .
- Remove cable holder on side of transmission for control sensor/monitor sensor
- In all-wheel-drive vehicles: Remove **right bearing block** . See **31 53 040 REMOVING AND INSTALLING/REPLACING RIGHT OUTPUT SHAFT BEARING BLOCK** .

NOTE: The oxygen sensors are in danger of being damaged when the exhaust manifolds are removed and installed.

Remove **control sensor**, cylinders 1 to 3 . See **78 EMISSION CONTROL, OXYGEN SENSOR** .

Remove **monitor sensor**, cylinders 1 to 3 . See **78 EMISSION CONTROL, OXYGEN SENSOR** .

Unscrew nuts.

Tightening torque **18 20 2AZ.**

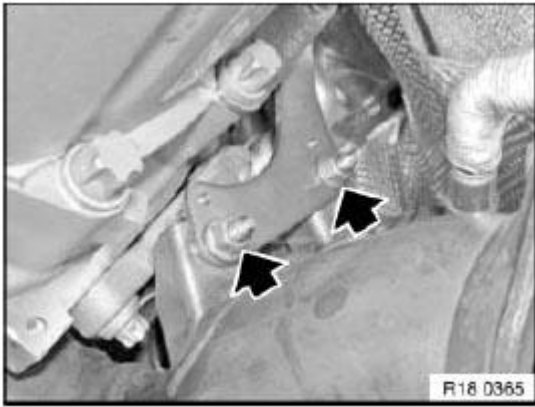


Fig. 17: Locating Exhaust Manifolds Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws.

Remove holder (1).

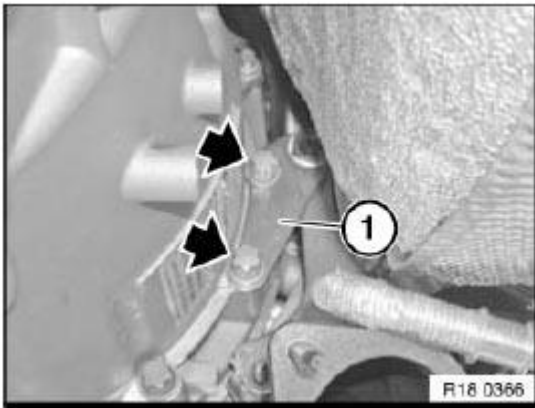


Fig. 18: Locating Holder Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten clip. In so doing, secure catalytic converter (1) against falling out.

Remove catalytic converter (1).

Installation:

Clean sealing face and replace seal.

Tightening torque **18 00 3AZ.**

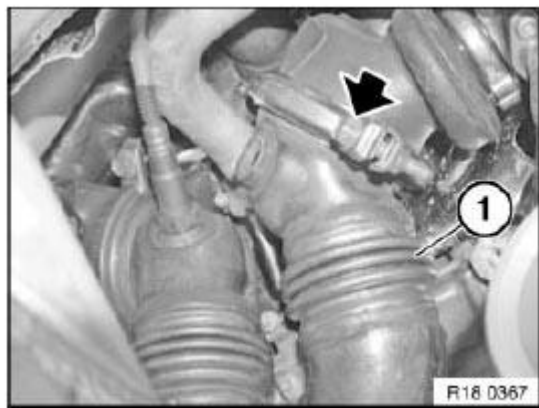


Fig. 19: Identifying Catalytic Converter

Courtesy of BMW OF NORTH AMERICA, INC.

18 32 060 REMOVING AND INSTALLING/REPLACING CATALYTIC EXHAUST-GAS CONVERTER FOR CYLINDERS 4-6 (N54)

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

Necessary preliminary tasks:

- Remove catalytic converter, cylinders 1-3

NOTE: The oxygen sensors are in danger of being damaged when the exhaust manifolds are removed and installed.

Remove **control sensor**, cylinders 4 to 6 . See 78 EMISSION CONTROL, OXYGEN SENSOR .

Remove **monitor sensor**, cylinders 4 to 6 . See 78 EMISSION CONTROL, OXYGEN SENSOR .

Unfasten clip. In so doing, secure catalytic converter (1) against falling out.

Remove catalytic converter (1).

Installation:

Clean sealing face and replace seal.

Tightening torque 18 00 3AZ

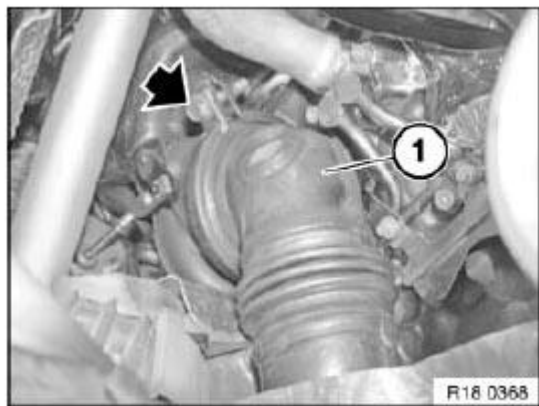


Fig. 20: Identifying Catalytic Converter

Courtesy of BMW OF NORTH AMERICA, INC.

18 32 082 REMOVING AND INSTALLING/REPLACING EXHAUST PIPE WITH CATALYTIC CONVERTER (N54)

Special tools required:

- 00 2 210

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

Necessary preliminary tasks:

- Remove exhaust system .

NOTE: The cutting lines for the exhaust pipes are designated by notches in the pipe.

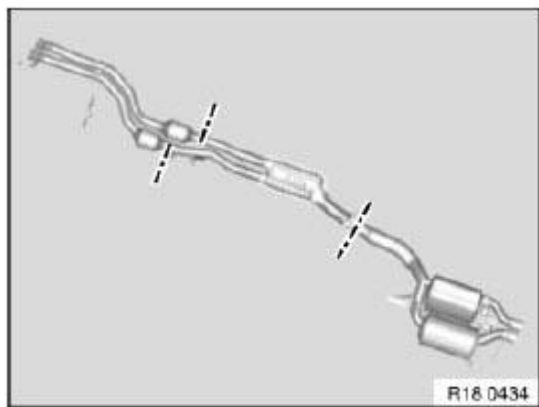


Fig. 21: Identifying Centre Muffler Lines Cutting Point

Courtesy of BMW OF NORTH AMERICA, INC.

Cut exhaust pipes at marked points with special tool 00 2 210 and deburr.

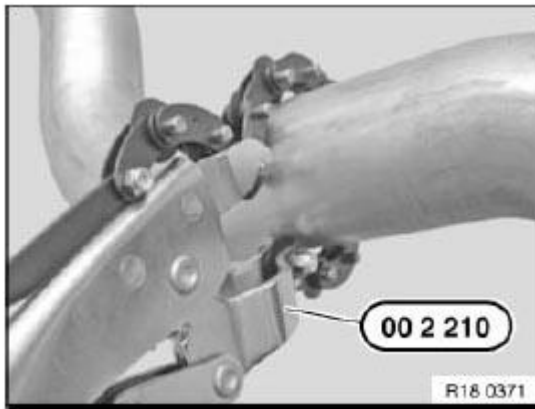


Fig. 22: Identifying Special Tool (00 2 210)
Courtesy of BMW OF NORTH AMERICA, INC.

Release nuts and replace during installation.

Installation:

Tightening torque, **18 00 1AZ.**

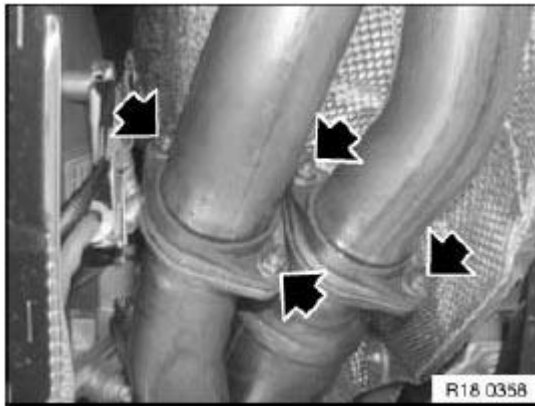


Fig. 23: Locating Self-Locking Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Connect exhaust pipe to center muffler by means of clamp and align.

Align clamp and tighten down.

Tightening torque **18 00 5AZ.**

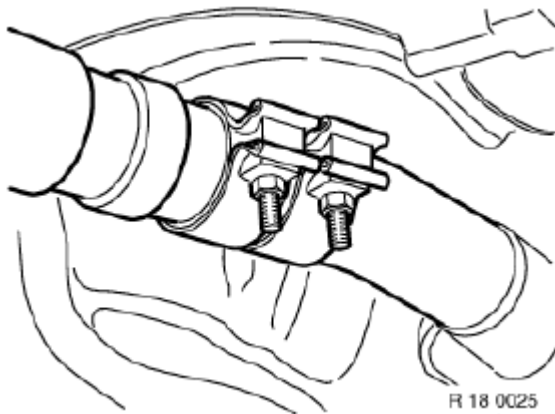


Fig. 24: Identifying Exhaust Pipe To Centre Muffler
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Check exhaust system for leaks.

MUFFLERS, DIESEL

18 10... REMOVING AND INSTALLING/REPLACING TRIM FOR EXHAUST PIPE

Release screw.

Detach trim (1).

Tightening torque **18 00 1AZ.**

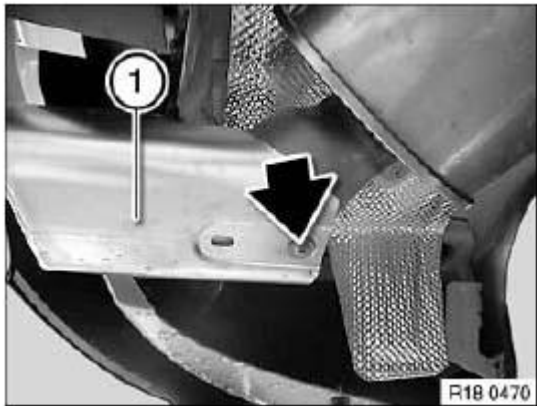


Fig. 25: Identifying Trim And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

18 12 030 REMOVING AND INSTALLING/REPLACING REAR MUFFLER (N54)

Special tools required:

- 00 2 210
- 31 2 220

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

Support center muffler with special tool 31 2 220.

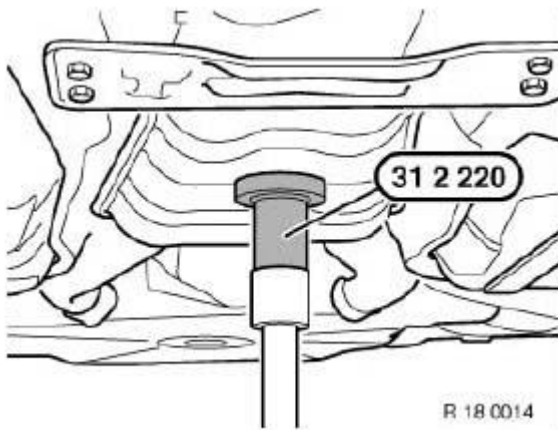


Fig. 26: Identifying Centre Muffler With Special Tool (31 2 220)
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: The cutting line for the rear muffler is designated by a notch in the pipe.

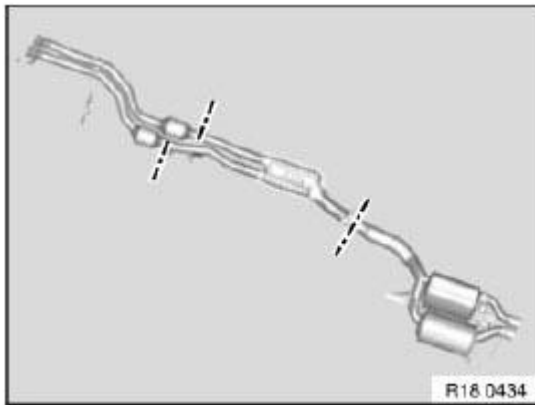


Fig. 27: Identifying Centre Muffler Lines Cutting Point
Courtesy of BMW OF NORTH AMERICA, INC.

Cut rear muffler with special tool 00 2 210 at marked point and deburr.

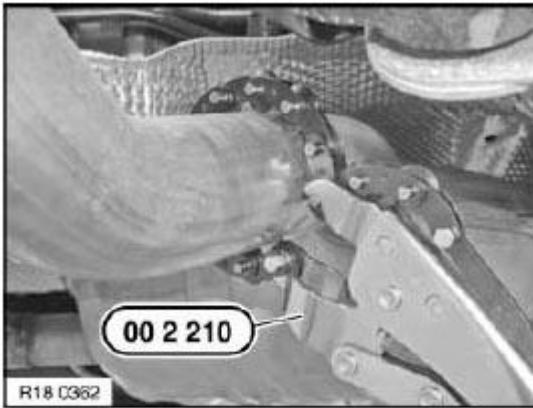


Fig. 28: Identifying Special Tool (00 2 210)
Courtesy of BMW OF NORTH AMERICA, INC.

Detach hose from vacuum unit.

Unscrew mounting bolts.

Tightening torque **18 20 4AZ.**

Lower rear muffler and remove.

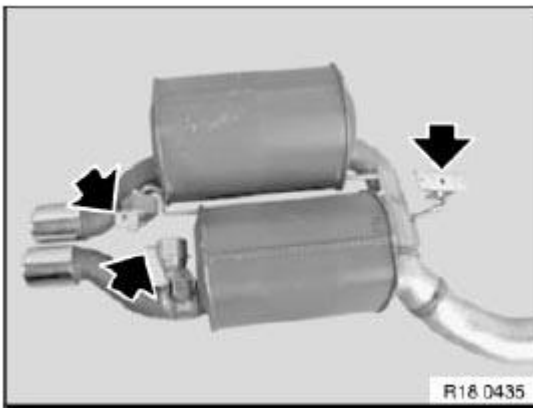


Fig. 29: Locating Lower Rear Muffler Unscrew Mounting Bolts
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Connect rear muffler to center muffler by means of clamping sleeves.

Align rear muffler to rear apron.

Align clamp and tighten down.

Tightening torque **18 00 5AZ.**



Fig. 30: Identifying Centre Muffler To Rear Muffler
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Check exhaust system for leaks.

MUFFLERS, PETROL

18 12 045 REMOVING AND INSTALLING/REPLACING CENTER MUFFLER (N54)

Special tools required:

- 00 2 210

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

Necessary preliminary tasks:

- Remove **exhaust system** .

NOTE: The cutting lines for the center muffler are designated by a notch in the pipe.

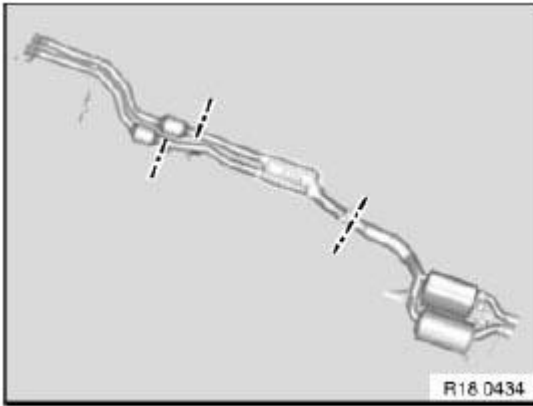


Fig. 31: Identifying Centre Muffler Lines Cutting Point
Courtesy of BMW OF NORTH AMERICA, INC.

Cut exhaust pipes with special tool 00 2 210 and with standard workshop equipment at marked points and deburr.

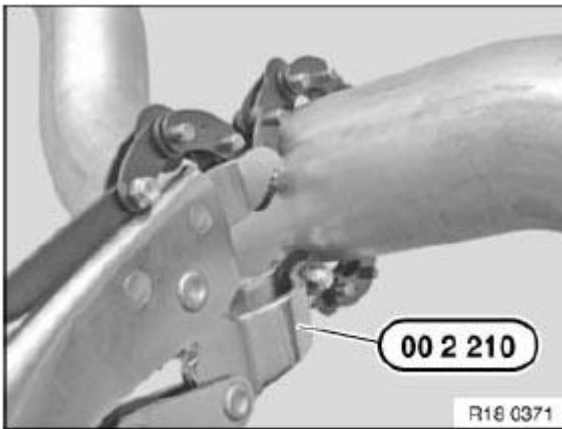


Fig. 32: Identifying Exhaust Pipes With Special Tool (00 2 210)
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Connect center muffler to both exhaust pipes by means of clamps and align.

Align clamps and tighten down.

Tightening torque **18 00 5AZ.**

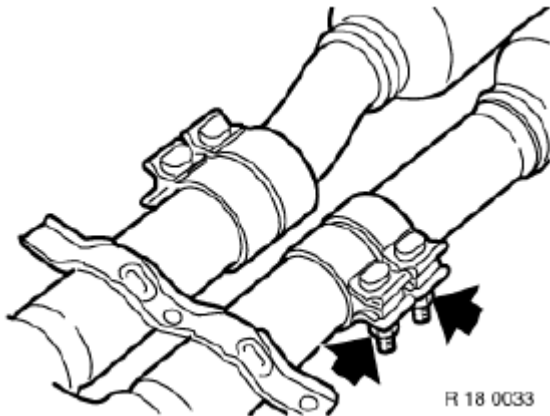


Fig. 33: Identifying Exhaust Pipes Clamps Bolts
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Connect center muffler to rear muffler by means of clamp and align.

Align clamp and tighten down.

Tightening torque **18 00 5AZ.**



Fig. 34: Identifying Centre Muffler To Rear Muffler
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Check exhaust system for leaks.

18 12 030 REMOVING AND INSTALLING/REPLACING REAR MUFFLER (N54)

Special tools required:

- 00 2 210

- 31 2 220

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

Support center muffler with special tool 31 2 220.

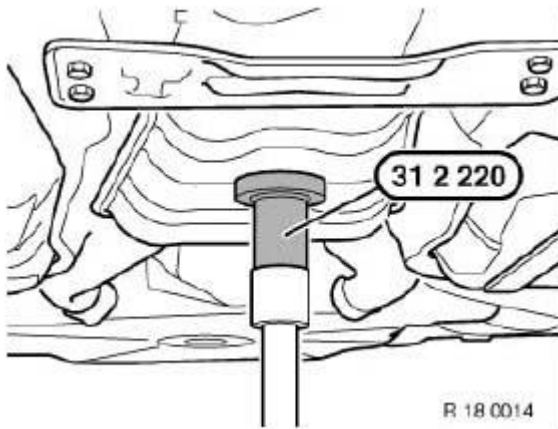


Fig. 35: Identifying Centre Muffler With Special Tool (31 2 220)

Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: The cutting line for the rear muffler is designated by a notch in the pipe.

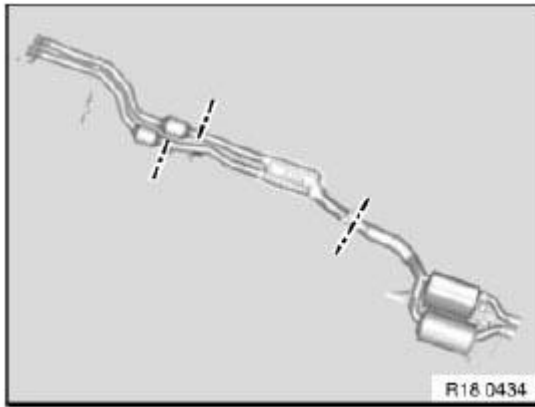


Fig. 36: Identifying Centre Muffler Lines Cutting Point

Courtesy of BMW OF NORTH AMERICA, INC.

Cut rear muffler with special tool 00 2 210 at marked point and deburr.

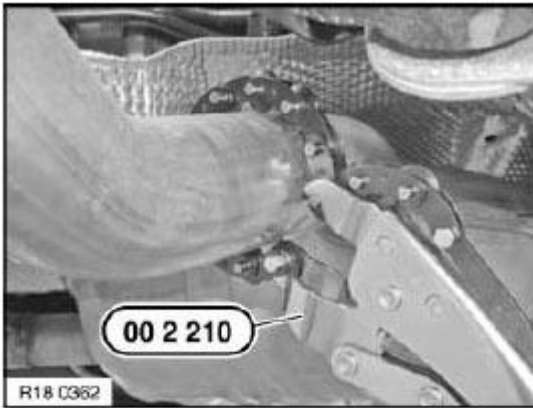


Fig. 37: Identifying Special Tool (00 2 210)
Courtesy of BMW OF NORTH AMERICA, INC.

Detach hose from vacuum unit.

Unscrew mounting bolts.

Tightening torque **18 20 4AZ.**

Lower rear muffler and remove.

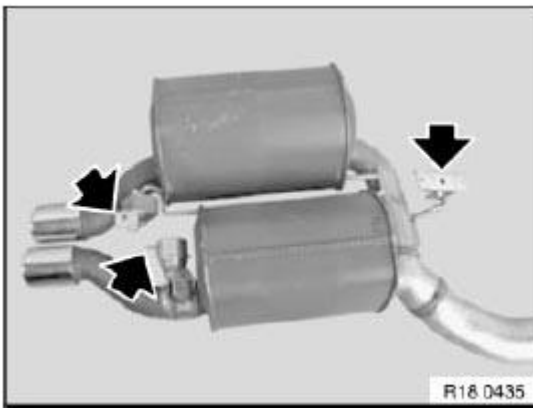


Fig. 38: Locating Lower Rear Muffler Unscrew Mounting Bolts
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Connect rear muffler to center muffler by means of clamping sleeves.

Align rear muffler to rear apron.

Align clamp and tighten down.

Tightening torque **18 00 5AZ.**



Fig. 39: Identifying Centre Muffler To Rear Muffler
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Check exhaust system for leaks.

EXHAUST PIPE WITH MOUNTING

18 32 050 REMOVING AND INSTALLING/REPLACING CATALYTIC EXHAUST-GAS CONVERTER FOR CYLINDERS 1-3 (N54)

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

Necessary preliminary tasks:

- Remove exhaust system .
- Remove underbody protection . See 51 47 490 REMOVING AND INSTALLING / REPLACING FRONT UNDERBODY PROTECTION and 51 47 491 REMOVING AND INSTALLING/REPLACING REAR UNDERBODY PROTECTION .
- Remove cable holder on side of transmission for control sensor/monitor sensor
- In all-wheel-drive vehicles: Remove **right bearing block** . See 31 53 040 REMOVING AND INSTALLING/REPLACING RIGHT OUTPUT SHAFT BEARING BLOCK .

NOTE: The oxygen sensors are in danger of being damaged when the exhaust manifolds are removed and installed.

Remove **control sensor**, cylinders 1 to 3 . See 78 EMISSION CONTROL, OXYGEN SENSOR .

Remove **monitor sensor**, cylinders 1 to 3 . See 78 EMISSION CONTROL, OXYGEN SENSOR .

Unscrew nuts.

Tightening torque **18 20 2AZ** .

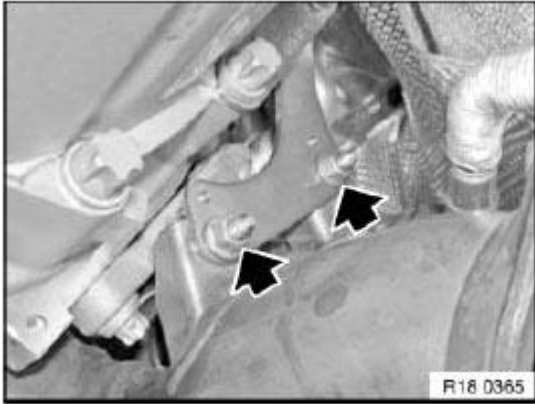


Fig. 40: Locating Exhaust Manifolds Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws.

Remove holder (1).

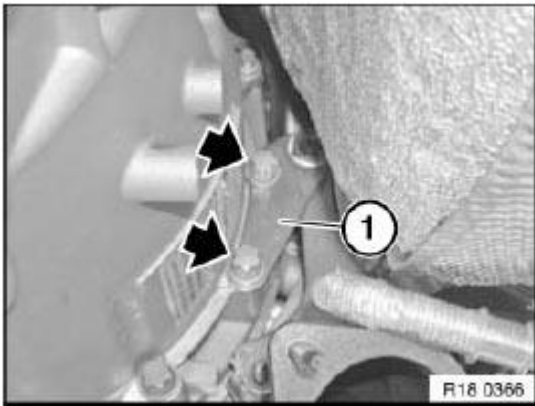


Fig. 41: Locating Holder Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten clip. In so doing, secure catalytic converter (1) against falling out.

Remove catalytic converter (1).

Installation:

Clean sealing face and replace seal.

Tightening torque **18 00 3AZ.**

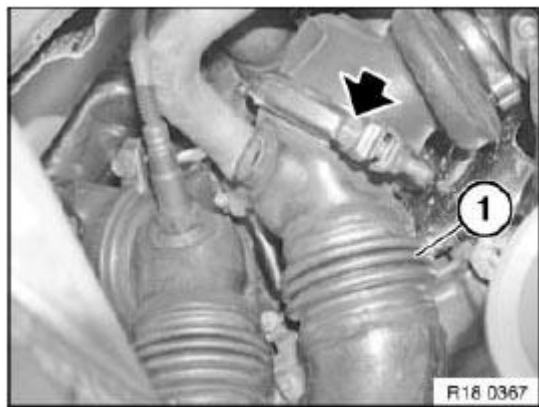


Fig. 42: Identifying Catalytic Converter
Courtesy of BMW OF NORTH AMERICA, INC.

18 32 060 REMOVING AND INSTALLING/REPLACING CATALYTIC EXHAUST-GAS CONVERTER FOR CYLINDERS 4-6 (N54)

WARNING: Scalding hazard!
Only perform these tasks after exhaust system has cooled down.

Necessary preliminary tasks:

- Remove catalytic converter, cylinders 1-3

NOTE: The oxygen sensors are in danger of being damaged when the exhaust manifolds are removed and installed.

Remove **control sensor**, cylinders 4 to 6 . See **78 EMISSION CONTROL, OXYGEN SENSOR** .

Remove **monitor sensor**, cylinders 4 to 6 . See **78 EMISSION CONTROL, OXYGEN SENSOR** .

Unfasten clip. In so doing, secure catalytic converter (1) against falling out.

Remove catalytic converter (1).

Installation:

Clean sealing face and replace seal.

Tightening torque **18 00 3AZ.**

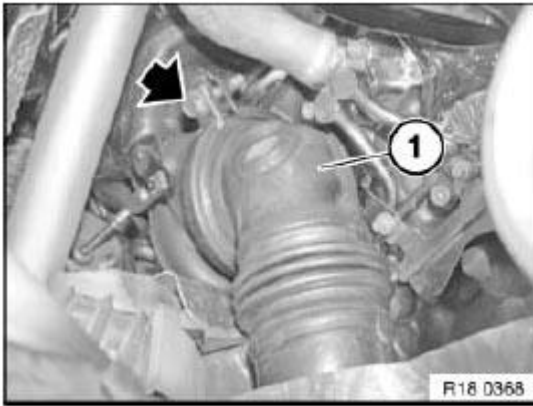


Fig. 43: Identifying Catalytic Converter
Courtesy of BMW OF NORTH AMERICA, INC.

18 32 082 REMOVING AND INSTALLING/REPLACING EXHAUST PIPE WITH CATALYTIC CONVERTER (N54)

Special tools required:

- 00 2 210

WARNING: Scalding hazard!
Only perform these tasks after exhaust system has cooled down.

Necessary preliminary tasks:

- Remove exhaust system .

NOTE: The cutting lines for the exhaust pipes are designated by notches in the pipe.

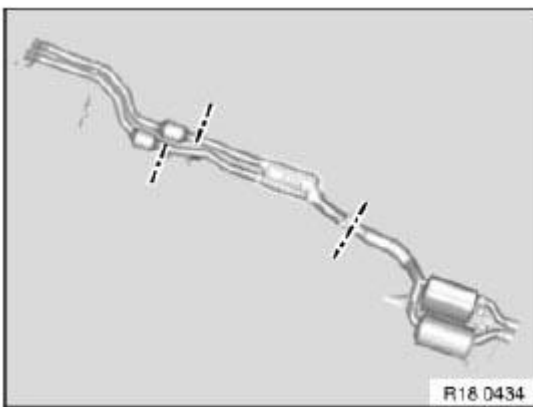


Fig. 44: Identifying Centre Muffler Lines Cutting Point
Courtesy of BMW OF NORTH AMERICA, INC.

Cut exhaust pipes at marked points with special tool 00 2 210 and deburr.

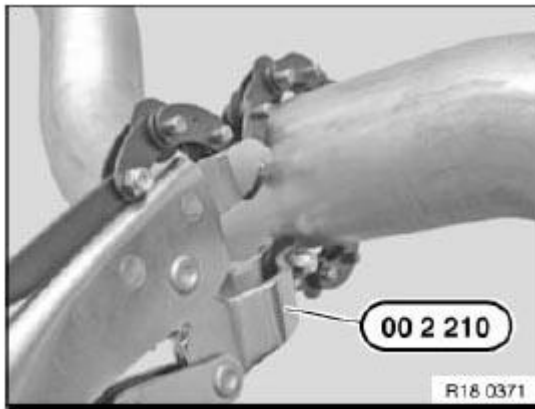


Fig. 45: Identifying Special Tool (00 2 210)
Courtesy of BMW OF NORTH AMERICA, INC.

Release nuts and replace during installation.

Installation:

Tightening torque, **18 00 1AZ.**

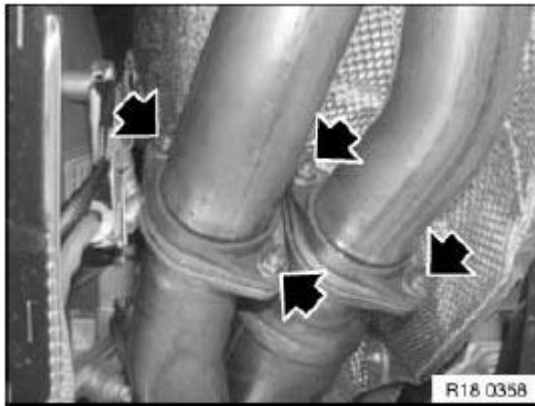


Fig. 46: Locating Self-Locking Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Connect exhaust pipe to center muffler by means of clamp and align.

Align clamp and tighten down.

Tightening torque **18 00 5AZ.**

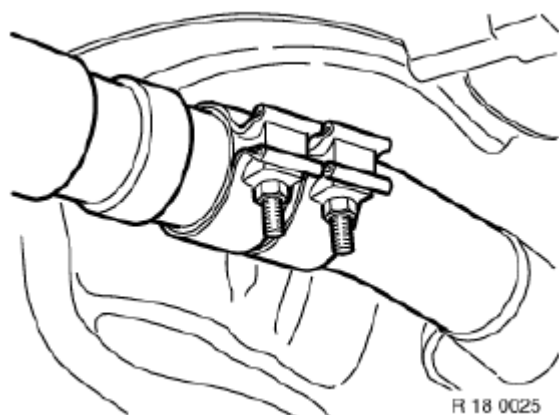


Fig. 47: Identifying Exhaust Pipe To Centre Muffler
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Check exhaust system for leaks.

EXHAUST CATALYTIC CONVERTER

18 32 050 REMOVING AND INSTALLING/REPLACING CATALYTIC EXHAUST-GAS CONVERTER FOR CYLINDERS 1-3 (N54)

WARNING: Scalding hazard!
Only perform these tasks after exhaust system has cooled down.

Necessary preliminary tasks:

- Remove exhaust system .
- Remove underbody protection . See 51 47 490 REMOVING AND INSTALLING / REPLACING FRONT UNDERBODY PROTECTION and 51 47 491 REMOVING AND INSTALLING/REPLACING REAR UNDERBODY PROTECTION .
- Remove cable holder on side of transmission for control sensor/monitor sensor
- In all-wheel-drive vehicles: Remove **right bearing block** . See 31 53 040 REMOVING AND INSTALLING/REPLACING RIGHT OUTPUT SHAFT BEARING BLOCK .

NOTE: The oxygen sensors are in danger of being damaged when the exhaust manifolds are removed and installed.

Remove **control sensor**, cylinders 1 to 3 . See 78 EMISSION CONTROL, OXYGEN SENSOR .

Remove **monitor sensor**, cylinders 1 to 3 . See 78 EMISSION CONTROL, OXYGEN SENSOR .

Unscrew nuts.

Tightening torque **18 20 2AZ.**

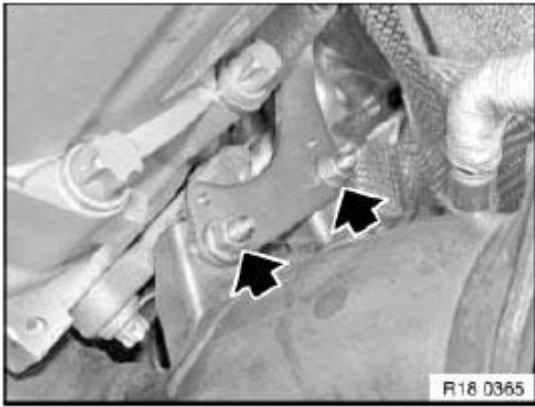


Fig. 48: Locating Exhaust Manifolds Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws.

Remove holder (1).

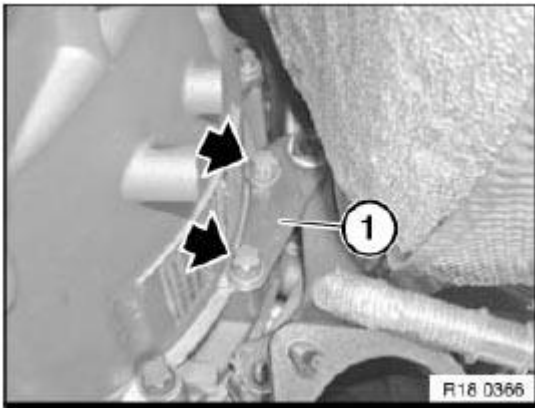


Fig. 49: Locating Holder Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten clip. In so doing, secure catalytic converter (1) against falling out.

Remove catalytic converter (1).

Installation:

Clean sealing face and replace seal.

Tightening torque **18 00 3AZ.**

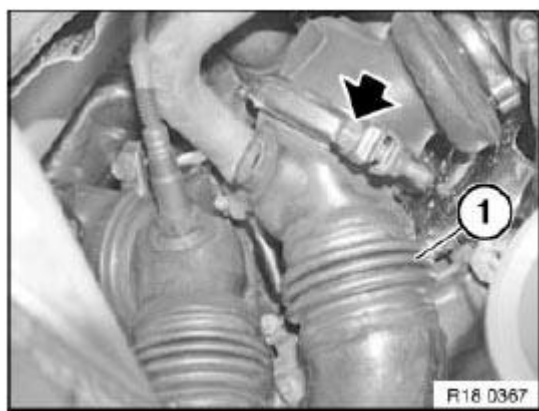


Fig. 50: Identifying Catalytic Converter

Courtesy of BMW OF NORTH AMERICA, INC.

18 32 060 REMOVING AND INSTALLING/REPLACING CATALYTIC EXHAUST-GAS CONVERTER FOR CYLINDERS 4-6 (N54)

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

Necessary preliminary tasks:

- Remove catalytic converter, cylinders 1-3

NOTE: The oxygen sensors are in danger of being damaged when the exhaust manifolds are removed and installed.

- Remove **control sensor**, cylinders 4 to 6 . See [78 EMISSION CONTROL, OXYGEN SENSOR](#) .
- Remove **monitor sensor**, cylinders 4 to 6 . See [78 EMISSION CONTROL, OXYGEN SENSOR](#) .

Unfasten clip. In so doing, secure catalytic converter (1) against falling out.

Remove catalytic converter (1).

Installation:

Clean sealing face and replace seal.

Tightening torque **18 00 3AZ**.

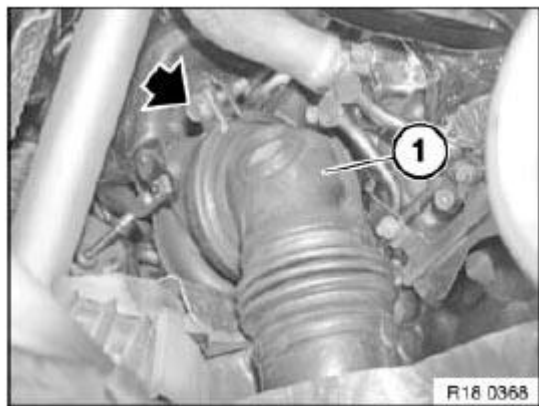


Fig. 51: Identifying Catalytic Converter

Courtesy of BMW OF NORTH AMERICA, INC.

18 32 082 REMOVING AND INSTALLING/REPLACING EXHAUST PIPE WITH CATALYTIC CONVERTER (N54)

Special tools required:

- 00 2 210

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

Necessary preliminary tasks:

- Remove exhaust system .

NOTE: The cutting lines for the exhaust pipes are designated by notches in the pipe.

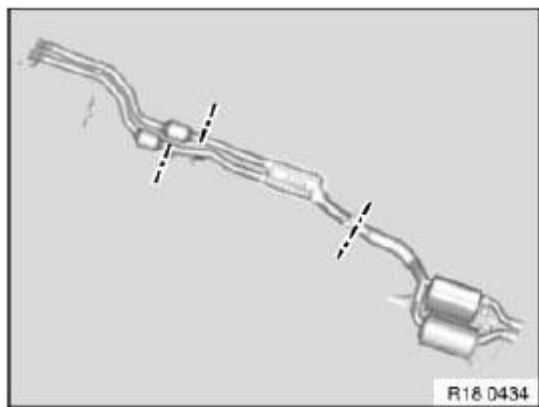


Fig. 52: Identifying Centre Muffler Lines Cutting Point

Courtesy of BMW OF NORTH AMERICA, INC.

Cut exhaust pipes at marked points with special tool 00 2 210 and deburr.

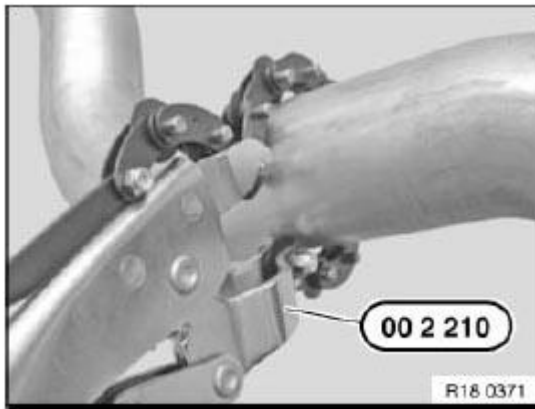


Fig. 53: Identifying Special Tool (00 2 210)
Courtesy of BMW OF NORTH AMERICA, INC.

Release nuts and replace during installation.

Installation:

Tightening torque, **18 00 1AZ.**

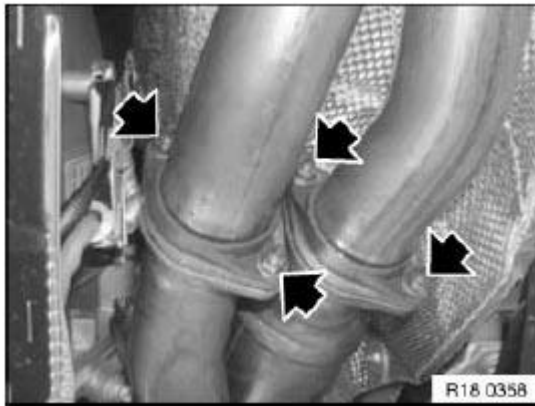


Fig. 54: Locating Self-Locking Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Connect exhaust pipe to center muffler by means of clamp and align.

Align clamp and tighten down.

Tightening torque **18 00 5AZ.**

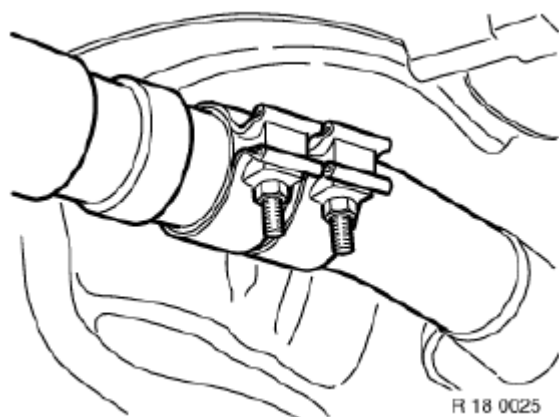


Fig. 55: Identifying Exhaust Pipe To Centre Muffler
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Check exhaust system for leaks.