

ENGINE

Exhaust System - Operating Fluids

1.0 GENERAL INFORMATION

Detachable joints such as exhaust manifold bolts and exhaust system flange connections can be treated with a grease able to withstand high temperatures and corrosive conditions.

Use Copper Paste (former BMW Part No. 81 22 9 400 794).

BMW PART NUMBER SPECIFICATION

3M	Part No. 8945
CRC	Part No. 3046010

ENGINE

Exhaust System - Repair Instructions - X6 (N54)

EXHAUST SYSTEM COMPLETE

18 ... REPLACING EXHAUST FLAP ON EXHAUST SYSTEM (N54)

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

Necessary preliminary tasks:

- Carry out diagnosis of exhaust flap with DIS diagnosis system.

If replacing the exhaust flap (1), it must be cut away from the rear muffler.

IMPORTANT: Measure the length of the new exhaust flap with tailpipe and carry over to the faulty exhaust flap.

Cut away the faulty exhaust flap from the rear muffler at the dashed line with a suitable tool.

Installation:

- Modify exhaust pipe trim.

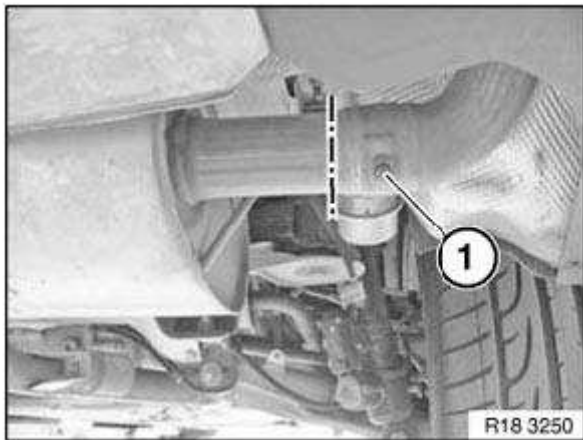


Fig. 1: Identifying Exhaust Flap

Courtesy of BMW OF NORTH AMERICA, INC.

Deburr tailpipe (1).

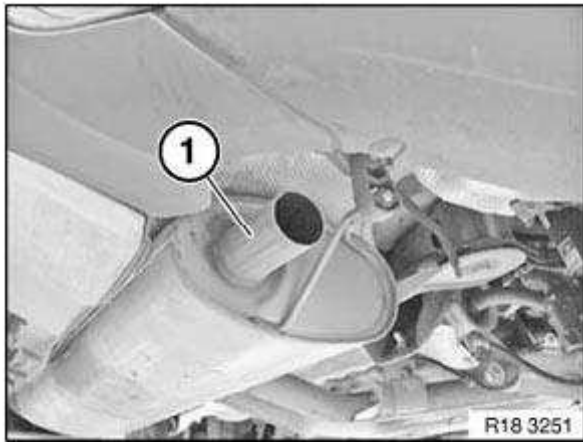


Fig. 2: Identifying Tailpipe
Courtesy of BMW OF NORTH AMERICA, INC.

Push on terminal (1)

Protrusion (2) at pipe neck 6 mm to 10 mm.

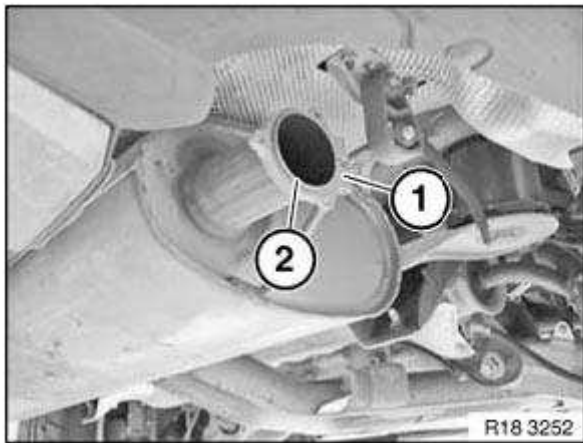


Fig. 3: Identifying Terminal And Protrusion
Courtesy of BMW OF NORTH AMERICA, INC.

Lightly tighten clamping screw (1).

Push on seal (2)

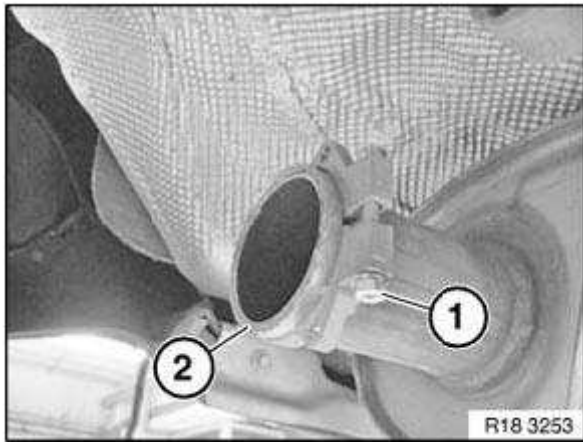


Fig. 4: Identifying Clamping Screw And Seal
 Courtesy of BMW OF NORTH AMERICA, INC.

Push on new exhaust flap (1).

Installation:

Make sure seal is correctly seated.

Install and tighten down screws (2).

Tightening torque. See **18 31 8AZ** in **18 31 EXHAUST PIPE WITH CATALYTIC CONVERTER/COMPLETE SYSTEM** .

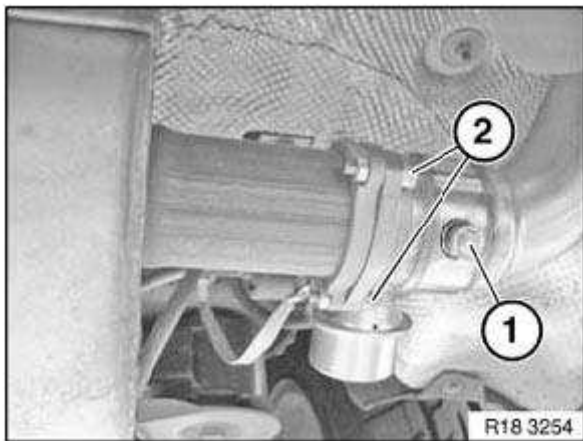


Fig. 5: Identifying Exhaust Flap And Screws
 Courtesy of BMW OF NORTH AMERICA, INC.

Insert screw (1) and tighten down.

Tightening torque. See **18 31 8AZ** in **18 31 EXHAUST PIPE WITH CATALYTIC CONVERTER/COMPLETE SYSTEM** .

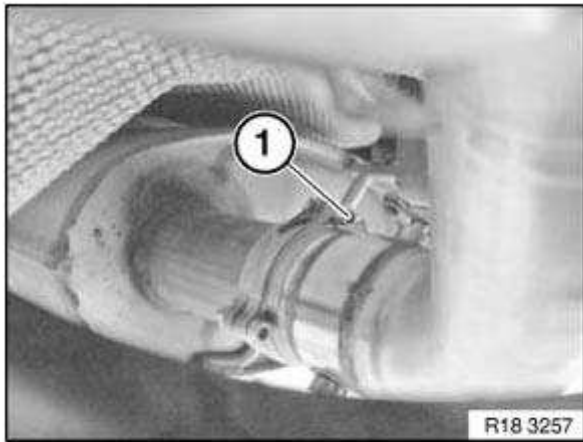


Fig. 6: Identifying Screw

Courtesy of BMW OF NORTH AMERICA, INC.

Align tailpipe (1) centrally in rear apron.

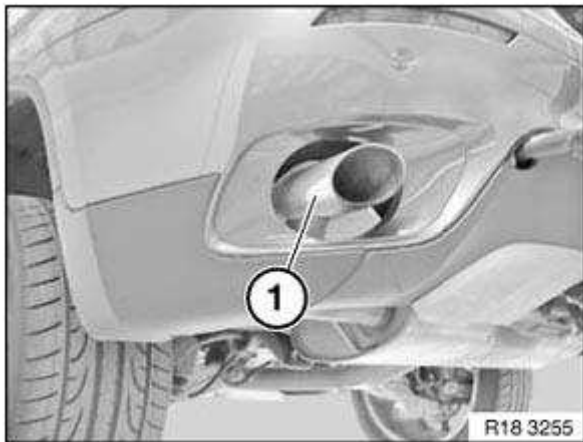


Fig. 7: Identifying Tailpipe

Courtesy of BMW OF NORTH AMERICA, INC.

Insert captive retainer (1) between rear muffler holder and clamping ring.

Tighten down screw (2) for rear muffler holder.

Tightening torque. See **18 31 6AZ** in **18 31 EXHAUST PIPE WITH CATALYTIC CONVERTER/COMPLETE SYSTEM** .

Tighten down clamping ring screw (3).

Tightening torque. See **18 31 7AZ** in **18 31 EXHAUST PIPE WITH CATALYTIC CONVERTER/COMPLETE SYSTEM** .

Connect vacuum hose (4).

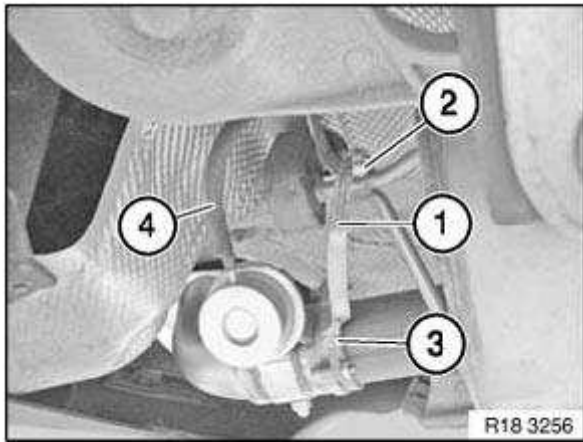


Fig. 8: Identifying Captive Retainer, Rear Muffler Holder Screw, Clamping Ring Screw And Vacuum Hose

Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Check function of exhaust flap. Check exhaust system for leaks.

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

Special tools required:

- **31 2 220** . See **FRONT AXLE - SPECIAL TOOLS** .

WARNING: Scalding hazard!

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

Risk of injury!

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

Support exhaust system with special tool **31 2 220** and a suitable lifting tool. See **Fig. 9**.

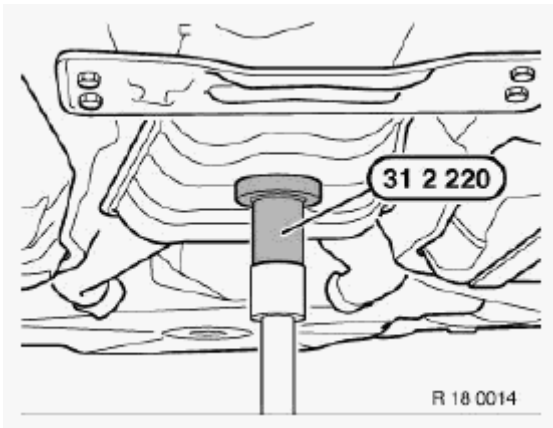


Fig. 9: Supporting Exhaust System Using Special Tool 31 2 220 And Suitable Lifting Tool
Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew nuts.

Installation:

- Replace self-locking nuts.
- Replace gasket.
- Tightening torque. See 18 31 1AZ in **18 31 EXHAUST PIPE WITH CATALYTIC CONVERTER/COMPLETE SYSTEM** .

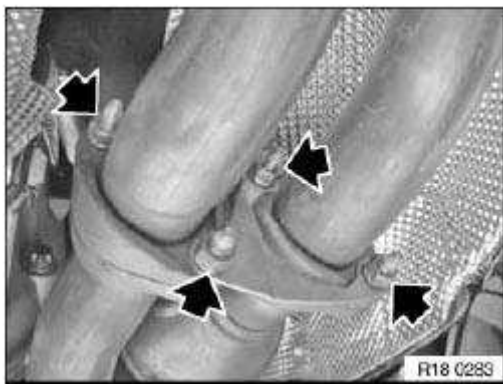


Fig. 10: Locating Exhaust Pipe Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Release bolt and remove bracket (1). Tightening torque. See 18 20 6AZ in **18 20 EXHAUST SYSTEM SUSPENSION** .

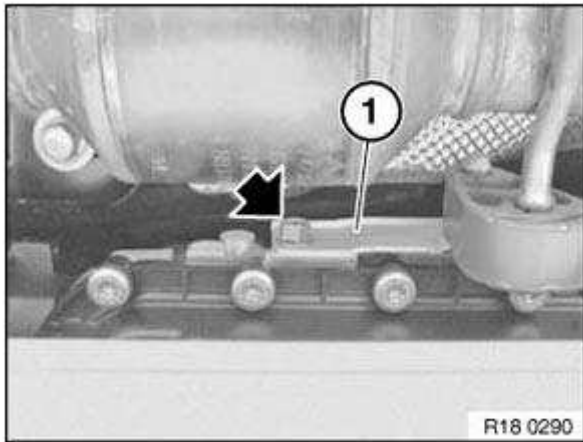


Fig. 11: Identifying Bolt And Bracket
Courtesy of BMW OF NORTH AMERICA, INC.

Release bolt and remove bracket (1). Tightening torque. See **18 20 4AZ** in **18 20 EXHAUST SYSTEM SUSPENSION** .

Texts refer to and illustrations show the right side.

Procedure on the left side is identical.

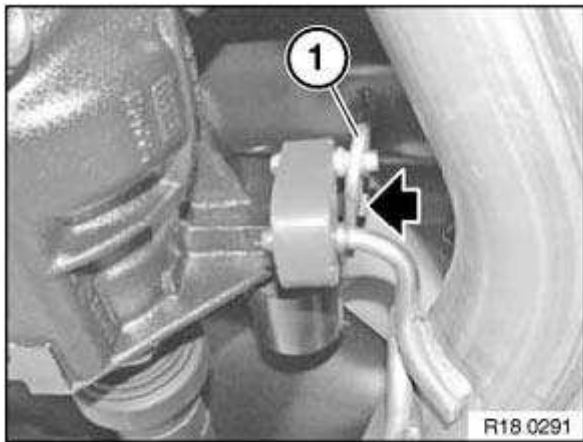


Fig. 12: Locating Bolt And Bracket
Courtesy of BMW OF NORTH AMERICA, INC.

Detach pressure hose (1).

Release screws and remove holder (2). Tightening torque. See **18 30 2AZ** in **EXHAUST SYSTEM - TIGHTENING TORQUES (N54)** .

NOTE: Texts refer to and illustrations show the right side. On left side release grounding strap and remove holder. Lower and remove exhaust system with

assistance of a second person.

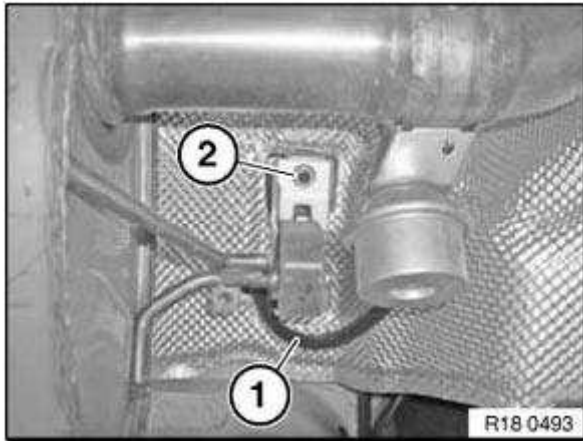


Fig. 13: Identifying Pressure Hose And Holder
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Align both tail pipes (1) of rear muffler in each case centrally to openings in rear apron.

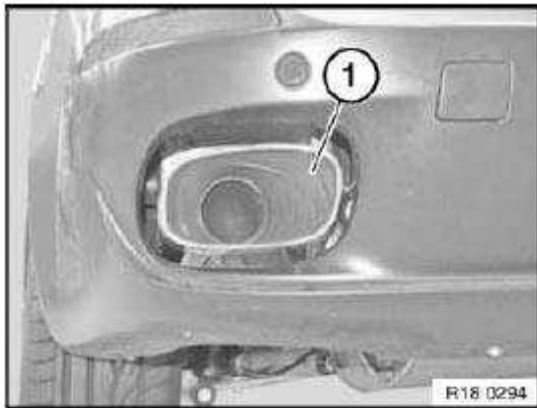


Fig. 14: Identifying Tail Pipe Of Rear Muffler
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Check rubber mount for damage, replace if necessary.

Check exhaust system for leaks.

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

Special tools required:

- **18 0 110** . See **18 0 110 GAUGE** .

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

Necessary preliminary tasks:

- **Remove underbody protection** . See **151 47 490 REMOVING AND INSTALLING/REPLACING FRONT UNDERBODY PROTECTION** and **51 47 491 REMOVING AND INSTALLING/REPLACING REAR UNDERBODY PROTECTION** .
- **Remove exhaust system** . See **18 00 020 REMOVING AND INSTALLING COMPLETE EXHAUST SYSTEM (N54)**.
- **Remove oxygen sensor** . See **EMISSION CONTROL OXYG** .
- **Remove both monitor sensors** . See **11 78 613 REPLACING BOTH LAMBDA OXYGEN MONITOR SENSORS (N54)** .
- **Remove right engine mount** . See **22 11 001 REPLACING RIGHT ENGINE MOUNT (N54)** .
- **Remove heat shield**

Unscrew nuts (1).

Tightening torque. See **18 20 2AZ** in **18 20 EXHAUST SYSTEM SUSPENSION** .

Unscrew screws (2).

Tightening torque. See **18 20 6AZ** in **18 20 EXHAUST SYSTEM SUSPENSION** .

Bracket remove.

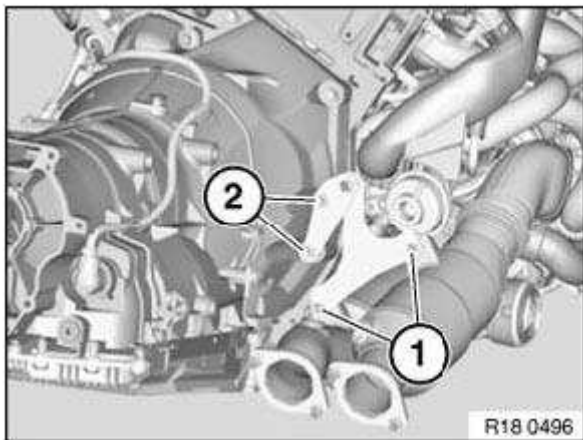


Fig. 15: Identifying Nuts And Screws

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. See **18 30 3AZ** in **EXHAUST SYSTEM - TIGHTENING TORQUES (N54)** .

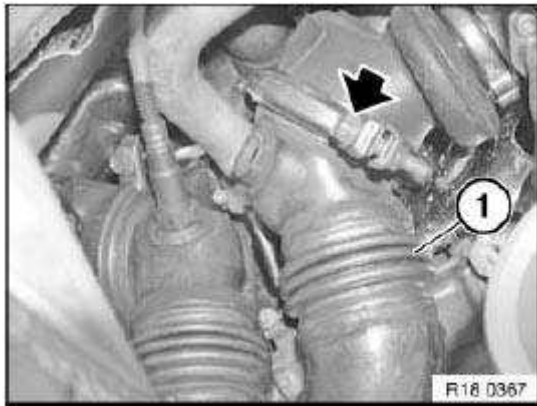


Fig. 16: Identifying Catalytic Converter And Clip
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Secure installation position of catalytic exhaust-gas converter with special tool **18 0 110** .

Add final details to vehicle.

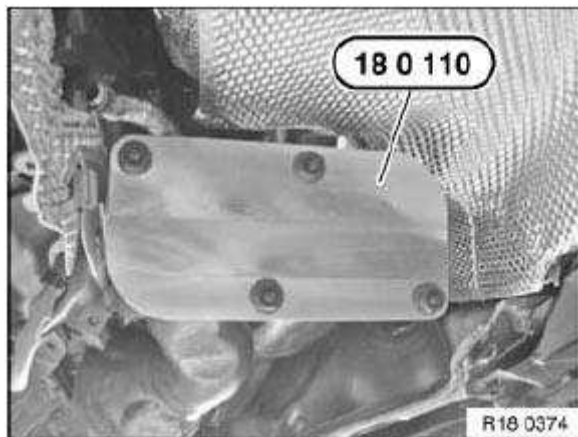


Fig. 17: Securing Installation Position Of Catalytic Exhaust-Gas Converter Using Special Tool 18 0 110
Courtesy of BMW OF NORTH AMERICA, INC.

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

Special tools required:

- 18 0 110 . See 18 0 110 GAUGE

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

Necessary preliminary tasks:

- Replacing right engine mount . See 22 11 001 REPLACING RIGHT ENGINE MOUNT (N54) .

Release oxygen sensor

Installation:

Tightening torque. See 11 78 1AZ in EMISSION CONTROL .

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. See 18 31 3AZ in 18 31 EXHAUST PIPE WITH CATALYTIC CONVERTER/COMPLETE SYSTEM .

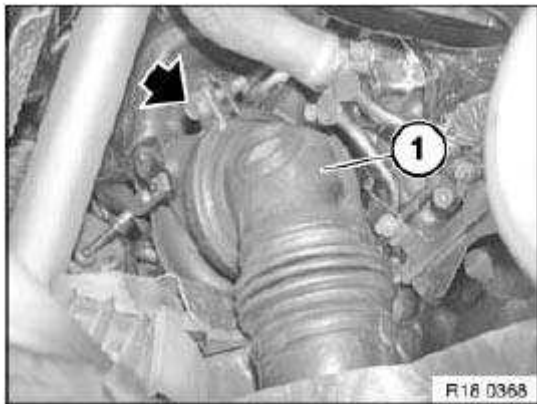


Fig. 18: Identifying Catalytic Converter And Clip
Courtesy of BMW OF NORTH AMERICA, INC.

Align exhaust pipes with special tool **18 0 110**.

Add final details to vehicle.

Check exhaust system for leaks.

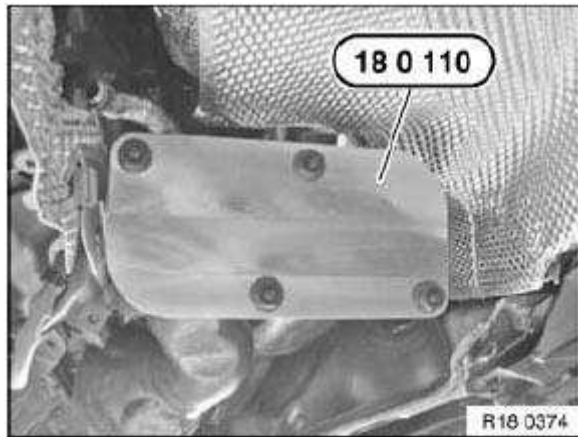


Fig. 19: Aligning Exhaust Pipes Using Special Tool 18 0 110
Courtesy of BMW OF NORTH AMERICA, INC.

18 32 081 REMOVING AND INSTALLING/REPLACING EXHAUST PIPE WITH CATALYTIC CONVERTER FOR CYLINDERS 1-3 (N54)

Special tools required:

- **00 2 210** . See **00 2 210 EXHAUST PIPE CUTTER** .

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

NOTE: Cutting line for exhaust pipe (1) is designated by a notch in the pipe.

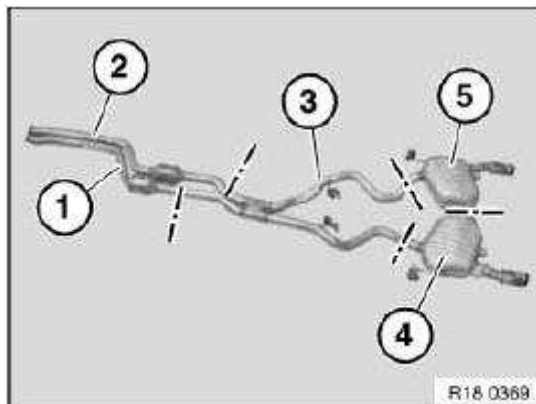


Fig. 20: Identifying Marked Point For Cutting Exhaust Pipe
Courtesy of BMW OF NORTH AMERICA, INC.

Cut exhaust pipe with special tool 00 2 210 at marked point and deburr.

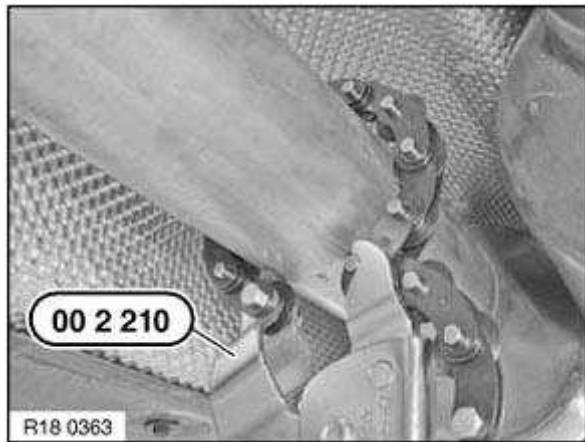


Fig. 21: Cutting Exhaust Pipe Using Special Tool 00 2 210
Courtesy of BMW OF NORTH AMERICA, INC.

Release nuts for **left** exhaust pipe.

Installation:

- Replace self-locking nuts.
- Replace seal.
- Tightening torque. See **18 00 1AZ** in **18 00 EXHAUST ASSEMBLY** .

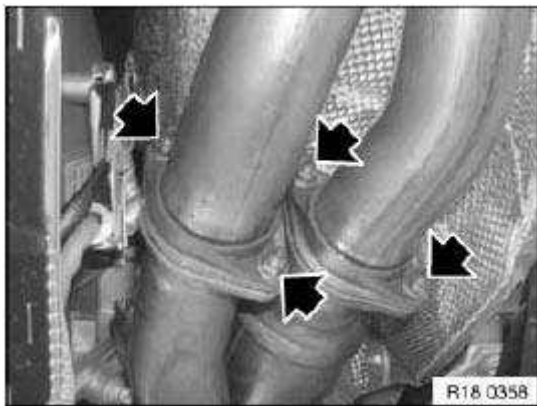


Fig. 22: Locating Exhaust Pipe Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw.

Tightening torque. See **18 20 1AZ** in **18 20 EXHAUST SYSTEM SUSPENSION** .

Remove bracket (1) and then exhaust pipe.

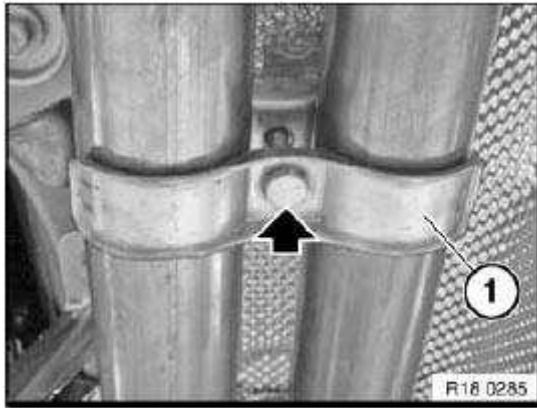


Fig. 23: Identifying Exhaust Pipe Bracket And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

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

Align clamp and tighten down.

Tightening torque. See **18 00 5AZ** in **18 00 EXHAUST ASSEMBLY** .

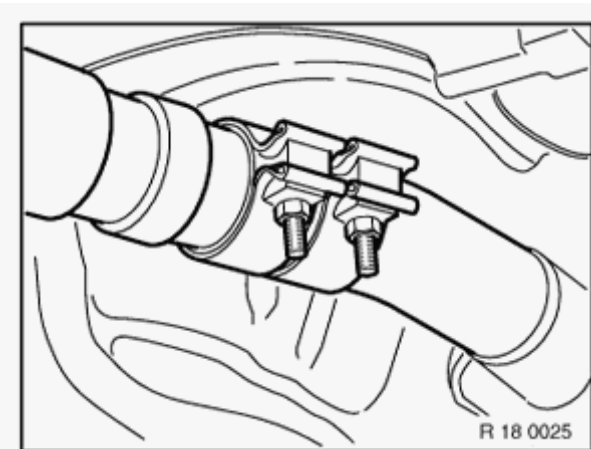


Fig. 24: Connecting Exhaust Pipe To Center Muffler Using Clamp
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Check exhaust system for leaks.

18 32 081 REMOVING AND INSTALLING/REPLACING EXHAUST PIPE WITH CATALYTIC

CONVERTER FOR CYLINDERS 4-6 (N54)

Special tools required:

- 00 2 210 . See 00 2 210 EXHAUST PIPE CUTTER .

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

NOTE: Cutting line for exhaust pipe (2) is designated by a notch in the pipe. Cut exhaust pipe (2) at marked point and deburr.

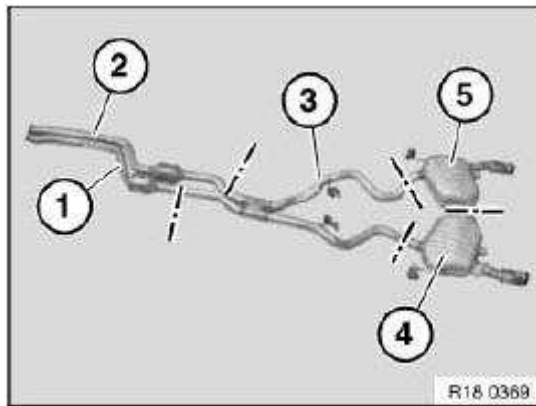


Fig. 25: Identifying Marked Point For Cutting Exhaust Pipe
Courtesy of BMW OF NORTH AMERICA, INC.

Cut exhaust pipe with special tool 00 2 210 at marked point and deburr.

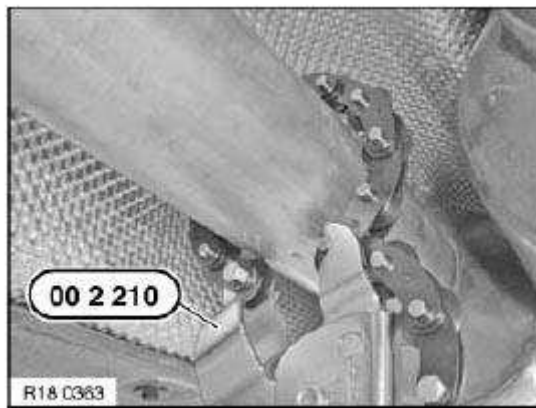


Fig. 26: Cutting Exhaust Pipe Using Special Tool 00 2 210
Courtesy of BMW OF NORTH AMERICA, INC.

Release nuts for right exhaust pipe.

Installation:

- Replace self-locking nuts.
- Replace seal.
- Tightening torque. See **18 00 1AZ** in **18 00 EXHAUST ASSEMBLY** .

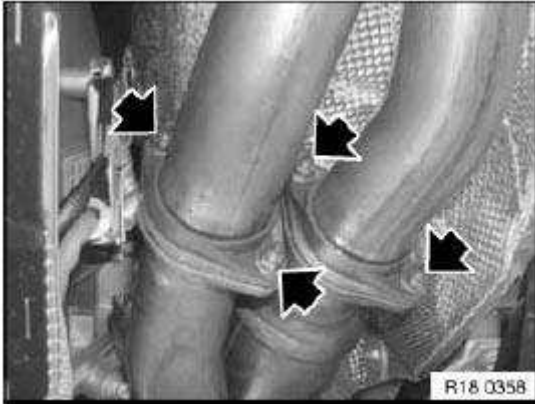


Fig. 27: Locating Exhaust Pipe Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw.

Tightening torque. See **18 20 1AZ** in **18 20 EXHAUST SYSTEM SUSPENSION** .

Remove bracket (1) and then exhaust pipe.

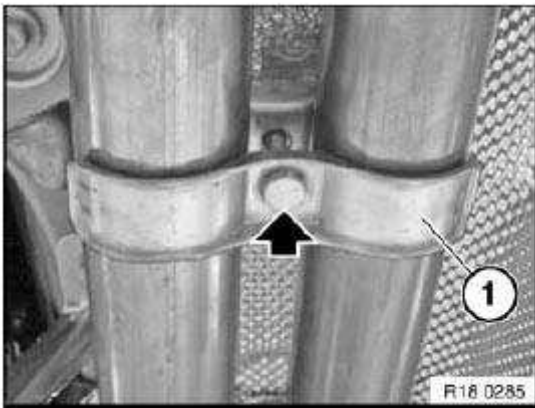


Fig. 28: Identifying Exhaust Pipe Bracket With Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

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

Align clamp and tighten down.

Tightening torque. See **18 00 5AZ** in **18 00 EXHAUST ASSEMBLY** .

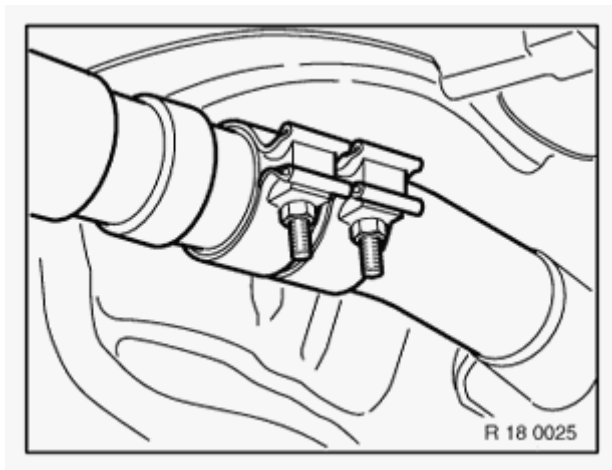


Fig. 29: Connecting Exhaust Pipe To Center Muffler Using Clamp
Courtesy of BMW OF NORTH AMERICA, INC.

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. See **18 00 1AZ** in **18 00 EXHAUST ASSEMBLY** .

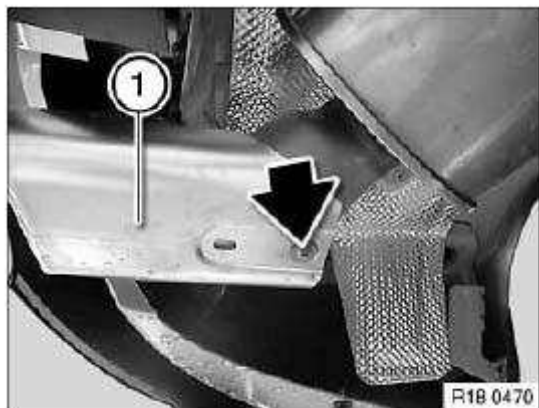


Fig. 30: Locating Screw And Trim
Courtesy of BMW OF NORTH AMERICA, INC.

18 10 070 REPLACING VIBRATION DAMPER ON EXHAUST SYSTEM AT REAR (N54)

WARNING: Danger of burning and other injuries!
Work should only be carried out on an exhaust system that has cooled down.

Release screw.

Replace vibration damper (1) and washers.

Assemble exhaust system.

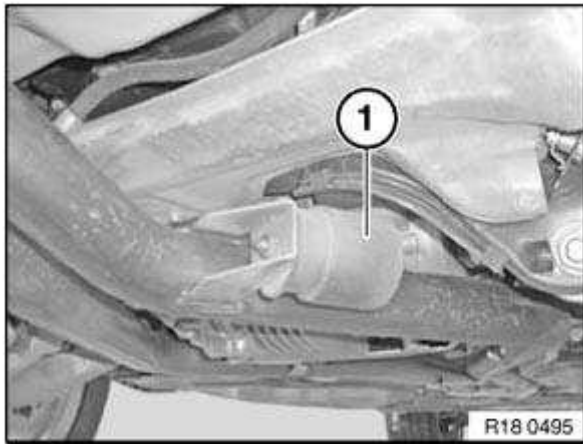


Fig. 31: Identifying Vibration Damper
Courtesy of BMW OF NORTH AMERICA, INC.

18 12 031 REPLACING REAR MUFFLER (N54)

Special tools required:

- 00 2 210 . See **00 2 210 EXHAUST PIPE CUTTER** .
- 31 2 220 . See **FRONT AXLE - SPECIAL TOOLS** .

WARNING: Scalding hazard!
These tasks should only be carried out on an exhaust system that has cooled down.

Support exhaust system with special tool 31 2 220 and universal lifter. See **Fig. 32**.

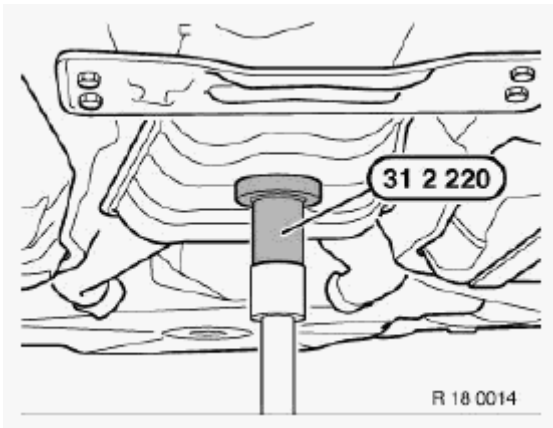


Fig. 32: Supporting Exhaust System Using Special Tool 31 2 220
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: If the cutting line is not marked by a punch mark in the pipe, determine the cutting line by means of the pipe length on the new rear muffler. Carry over cutting line to faulty rear muffler and mark.

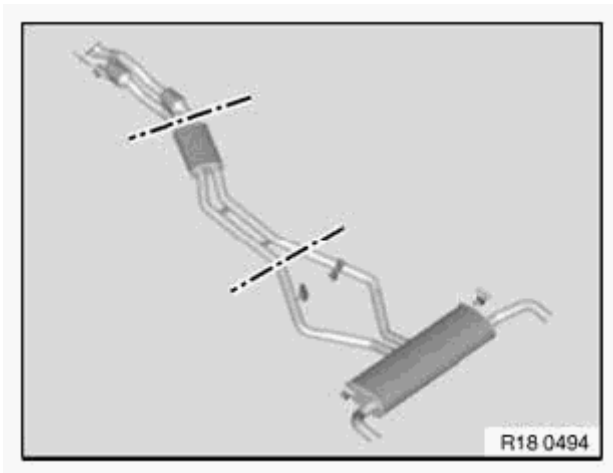


Fig. 33: Identifying Cutting Lines On Rear Muffler
 Courtesy of BMW OF NORTH AMERICA, INC.

Cut exhaust pipe at marked point with special tool 00 2 210 and deburr with a standard tool.



Fig. 34: Cutting Exhaust Pipe Using Special Tool 00 2 210
 Courtesy of BMW OF NORTH AMERICA, INC.

Secure exhaust system against falling off.

Release bolt and remove bracket (1).

Tightening torque. See **18 30 2AZ** in **EXHAUST SYSTEM - TIGHTENING TORQUES (N54)** .

NOTE: **Texts refer to and illustrations show the right side. The procedure is identical for the left side.**

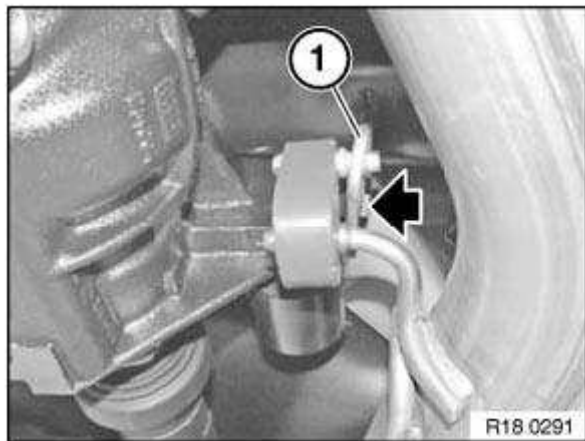


Fig. 35: Locating Bolt And Bracket
 Courtesy of BMW OF NORTH AMERICA, INC.

Detach pressure hose (1).

Release screws and remove holder (2). Tightening torque **18 20 4AZ** **18 20 EXHAUST SYSTEM SUSPENSION** .

NOTE: Texts refer to and illustrations show the right side. The procedure is identical for the left side.
Lower and remove rear muffler with assistance of a second person.

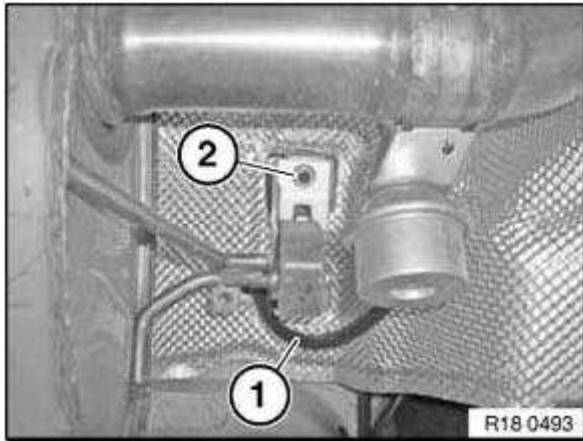


Fig. 36: Identifying Pressure Hose And Holder
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

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

Center clamps and tighten down.



Fig. 37: Connecting Center Muffler To Rear Muffler Using Clamp
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Align both tail pipes (1) of rear muffler in each case centrally to openings in rear apron.

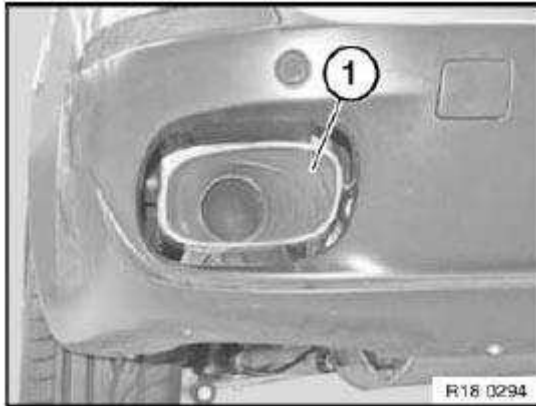


Fig. 38: Identifying Tail Pipes Of Rear Muffler
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Check rubber mount for damage, replace if necessary.
 Check exhaust system for leaks.

18 12 050 REPLACING CENTER MUFFLER (N54)

Special tools required:

- 00 2 210 . See 00 2 210 EXHAUST PIPE CUTTER .
- 31 2 220 . See FRONT AXLE - SPECIAL TOOLS .

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

NOTE: If the cutting line is not marked by a punch mark in the pipe, determine the cutting line by means of the pipe length on the new center muffler.
 Carry over cutting line to faulty center muffler and mark.

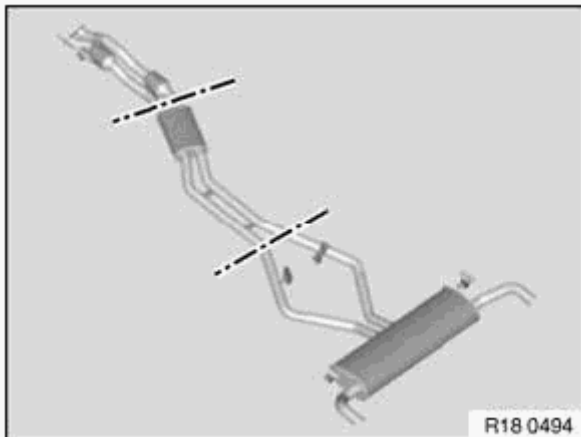


Fig. 39: Identifying Cutting Lines On Rear Muffler
Courtesy of BMW OF NORTH AMERICA, INC.

Support center muffler with special tool 31 2 220 and a suitable universal lifter. See **Fig. 40**.



Fig. 40: Supporting Exhaust System Using Special Tool 31 2 220
Courtesy of BMW OF NORTH AMERICA, INC.

Secure center muffler against falling off.

Disconnect exhaust pipes at marked points with special tool 00 2 210 and deburr with a standard tool.

Remove center muffler.

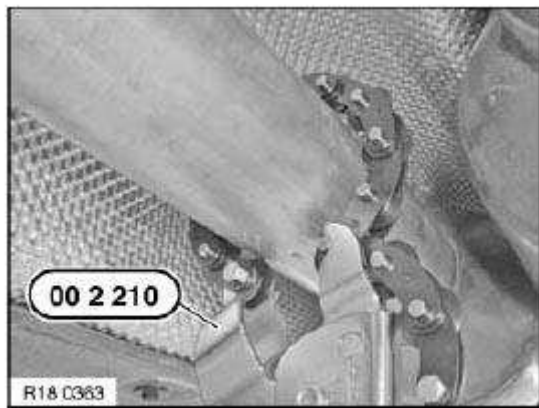


Fig. 41: Cutting Exhaust Pipe Using Special Tool 00 2 210
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Adjust center muffler to fit and connect with clamps.

Center clamp and tighten down.

The procedure is identical on both sides.



Fig. 42: Connecting Center Muffler To Rear Muffler Using Clamp
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Adjust center muffler to fit so that both tail pipes (1) of rear muffler are centrally situated in openings in rear apron.

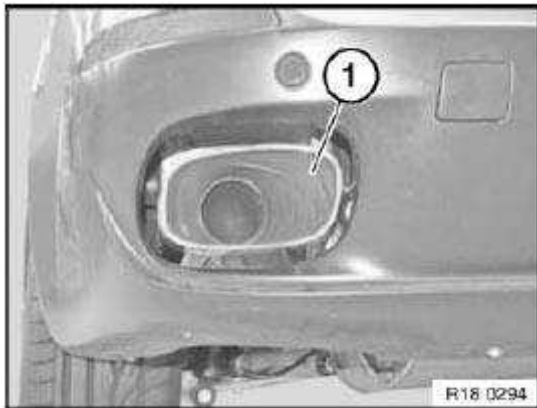


Fig. 43: Identifying Tail Pipes Of Rear Muffler
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Check exhaust system for leaks.

MUFFLERS PETROL

18 12 031 REPLACING REAR MUFFLER (N54)

Special tools required:

- 00 2 210 . See **00 2 210 EXHAUST PIPE CUTTER** .

- 31 2 220 . See FRONT AXLE - SPECIAL TOOLS .

WARNING: Scalding hazard!

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

Support exhaust system with special tool 31 2 220 and universal lifter. See Fig. 44.

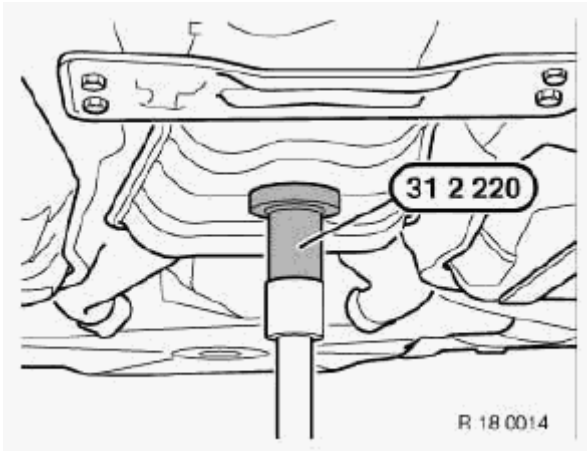


Fig. 44: Supporting Exhaust System Using Special Tool 31 2 220

Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: If the cutting line is not marked by a punch mark in the pipe, determine the cutting line by means of the pipe length on the new rear muffler. Carry over cutting line to faulty rear muffler and mark.

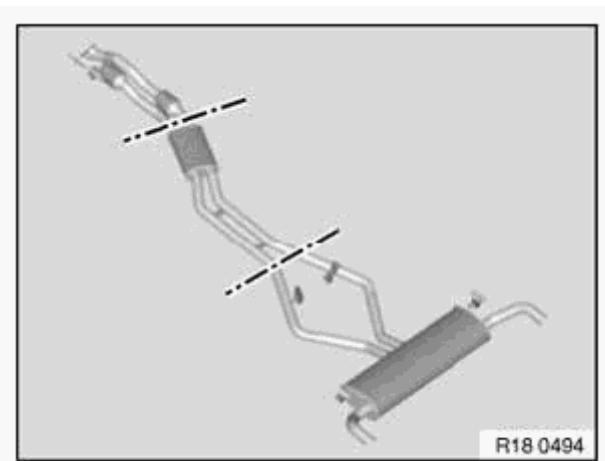


Fig. 45: Identifying Cutting Lines On Rear Muffler

Courtesy of BMW OF NORTH AMERICA, INC.

Cut exhaust pipe at marked point with special tool 00 2 210 and deburr with a standard tool.



Fig. 46: Cutting Exhaust Pipe Using Special Tool 00 2 210
 Courtesy of BMW OF NORTH AMERICA, INC.

Secure exhaust system against falling off.

Release bolt and remove bracket (1).

Tightening torque. See **18 30 2AZ** in **EXHAUST SYSTEM - TIGHTENING TORQUES (N54)** .

NOTE: **Texts refer to and illustrations show the right side. The procedure is identical for the left side.**

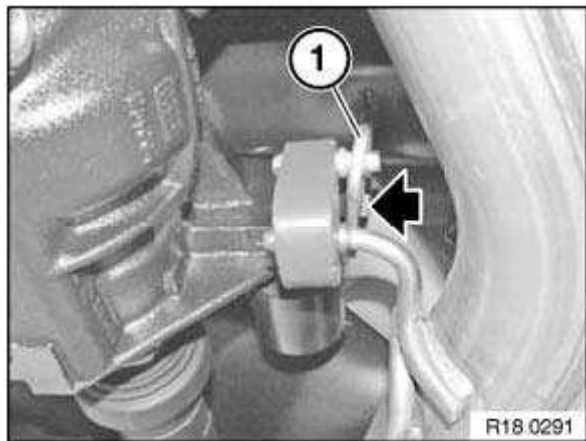


Fig. 47: Locating Bolt And Bracket
 Courtesy of BMW OF NORTH AMERICA, INC.

Detach pressure hose (1).

Release screws and remove holder (2). Tightening torque. See **18 20 4AZ** in **18 20 EXHAUST SYSTEM SUSPENSION** .

NOTE: Texts refer to and illustrations show the right side. The procedure is identical for the left side.
Lower and remove rear muffler with assistance of a second person.

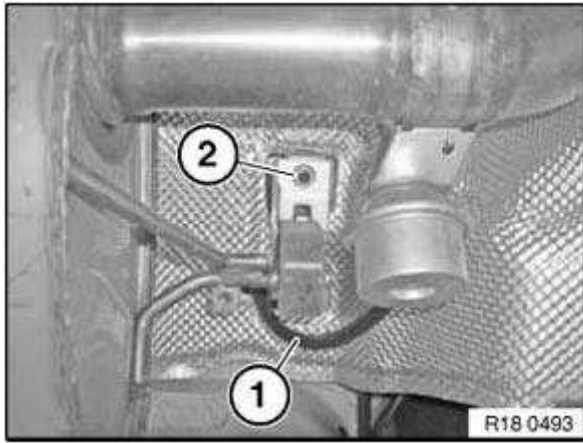


Fig. 48: Identifying Pressure Hose And Holder
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

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

Center clamps and tighten down.



Fig. 49: Connecting Center Muffler To Rear Muffler Using Clamp
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Align both tail pipes (1) of rear muffler in each case centrally to openings in rear apron.

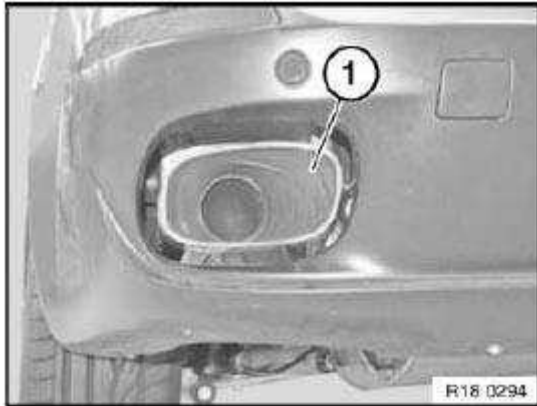


Fig. 50: Identifying Tail Pipes Of Rear Muffler
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Check rubber mount for damage, replace if necessary. Check exhaust system for leaks.

18 12 050 REPLACING CENTER MUFFLER (N54)

Special tools required:

- **00 2 210** . See **00 2 210 EXHAUST PIPE CUTTER** .
- **31 2 220** . See **FRONT AXLE - SPECIAL TOOLS** .

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

NOTE: If the cutting line is not marked by a punch mark in the pipe, determine the cutting line by means of the pipe length on the new center muffler. Carry over cutting line to faulty center muffler and mark.

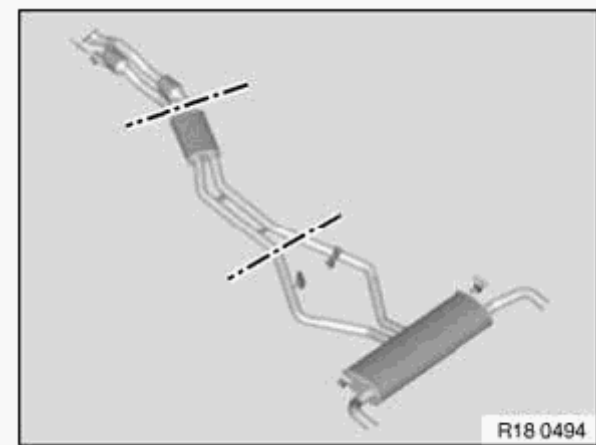


Fig. 51: Identifying Cutting Lines On Rear Muffler
Courtesy of BMW OF NORTH AMERICA, INC.

Support center muffler with special tool 31 2 220 and a suitable universal lifter. See **Fig. 52**.

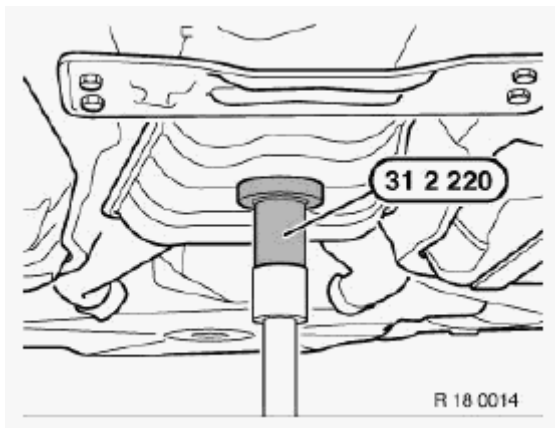


Fig. 52: Supporting Exhaust System Using Special Tool 31 2 220
Courtesy of BMW OF NORTH AMERICA, INC.

Secure center muffler against falling off.

Disconnect exhaust pipes at marked points with special tool 00 2 210 and deburr with a standard tool. See **Fig. 53**.

Remove center muffler.

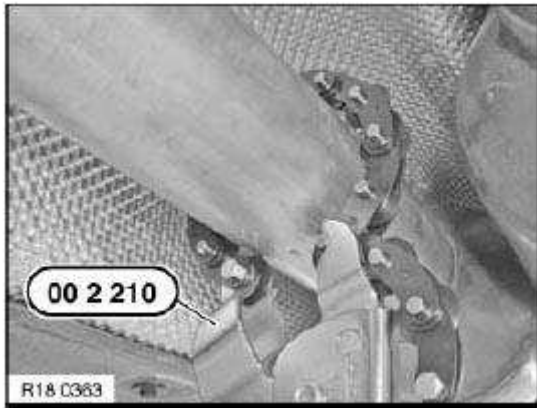


Fig. 53: Cutting Exhaust Pipe Using Special Tool 00 2 210
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Adjust center muffler to fit and connect with clamps.

Center clamp and tighten down.

The procedure is identical on both sides.



Fig. 54: Connecting Center Muffler To Rear Muffler Using Clamp
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Adjust center muffler to fit so that both tail pipes (1) of rear muffler are centrally situated in openings in rear apron.

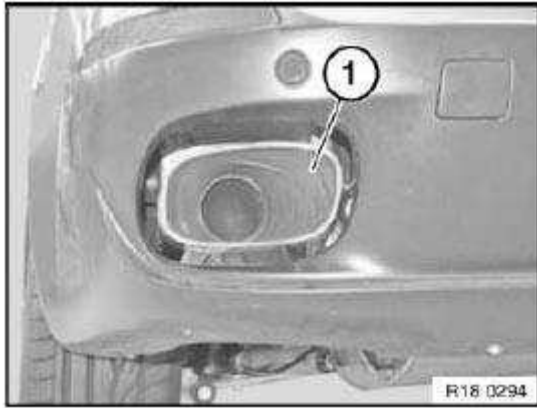


Fig. 55: Identifying Tail Pipes Of Rear Muffler
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Check exhaust system for leaks.

EXHAUST CATALYTIC CONVERTER

18 ... REPLACING EXHAUST FLAP ON EXHAUST SYSTEM (N54)

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

Necessary preliminary tasks:

- Carry out diagnosis of exhaust flap with DIS diagnosis system.

If replacing the exhaust flap (1), it must be cut away from the rear muffler.

IMPORTANT: Measure the length of the new exhaust flap with tailpipe and carry over to the faulty exhaust flap.

Cut away the faulty exhaust flap from the rear muffler at the dashed line with a suitable tool.

Installation:

- Modify exhaust pipe trim.

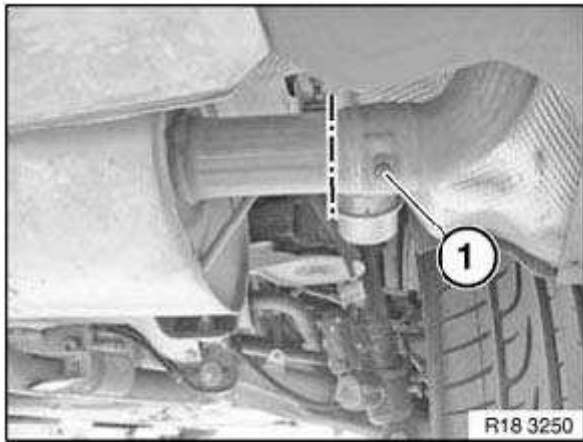


Fig. 56: Identifying Exhaust Flap
 Courtesy of BMW OF NORTH AMERICA, INC.

Deburr tailpipe (1).

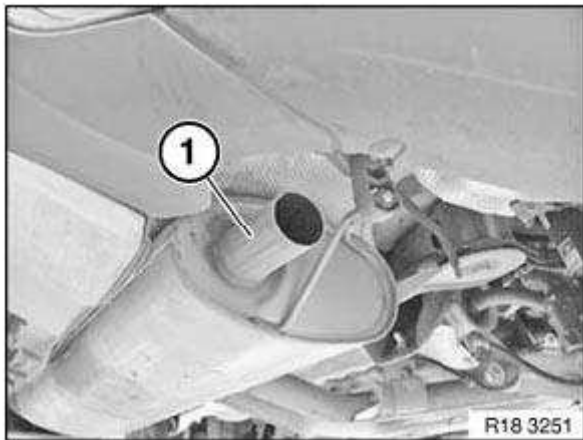


Fig. 57: Identifying Tailpipe
 Courtesy of BMW OF NORTH AMERICA, INC.

Push on terminal (1)

Protrusion (2) at pipe neck 6 mm to 10 mm.

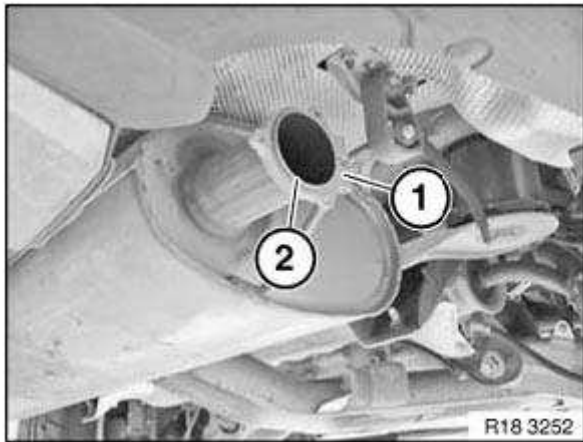


Fig. 58: Identifying Terminal And Protrusion
 Courtesy of BMW OF NORTH AMERICA, INC.

Lightly tighten clamping screw (1).

Push on seal (2)

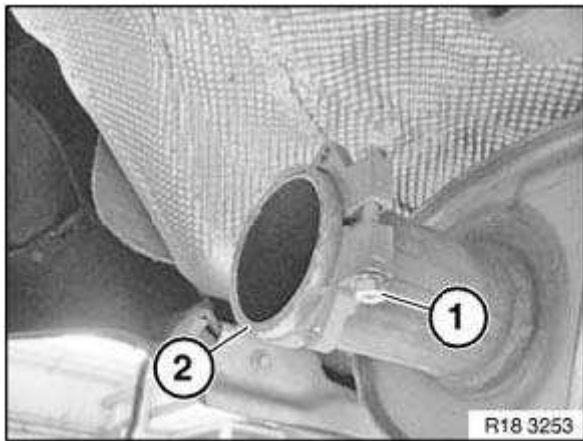


Fig. 59: Identifying Clamping Screw And Seal
 Courtesy of BMW OF NORTH AMERICA, INC.

Push on new exhaust flap (1).

Installation:

Make sure seal is correctly seated.

Install and tighten down screws (2).

Tightening torque. See **18 31 8AZ** in **18 31 EXHAUST PIPE WITH CATALYTIC CONVERTER/COMPLETE SYSTEM** .

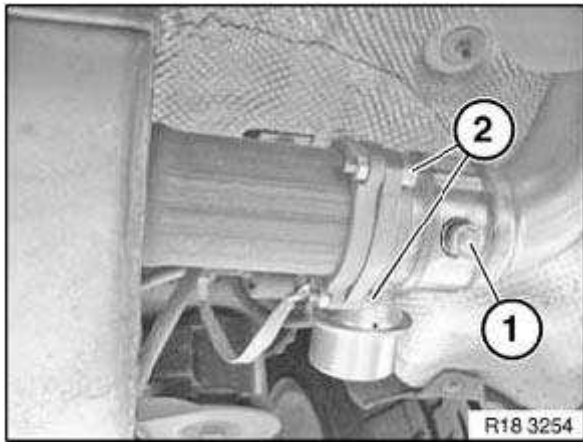


Fig. 60: Identifying Exhaust Flap And Screws
 Courtesy of BMW OF NORTH AMERICA, INC.

Insert screw (1) and tighten down.

Tightening torque. See **18 31 8AZ** in **18 31 EXHAUST PIPE WITH CATALYTIC CONVERTER/COMPLETE SYSTEM** .

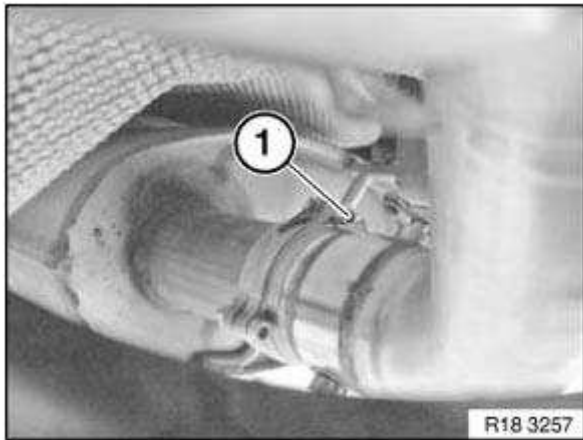


Fig. 61: Identifying Screw
 Courtesy of BMW OF NORTH AMERICA, INC.

Align tailpipe (1) centrally in rear apron.

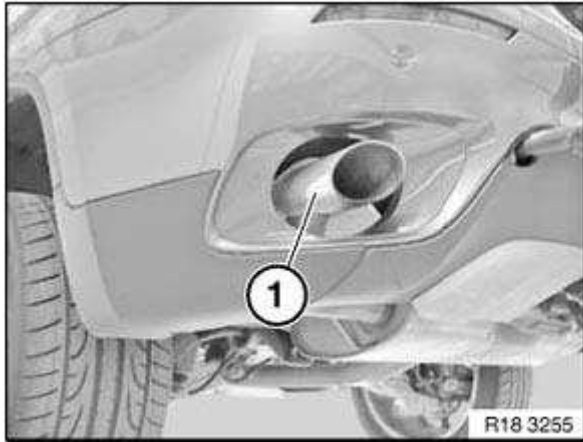


Fig. 62: Identifying Tailpipe
 Courtesy of BMW OF NORTH AMERICA, INC.

Insert captive retainer (1) between rear muffler holder and clamping ring.

Tighten down screw (2) for rear muffler holder.

Tightening torque. See **18 31 6AZ** in **18 31 EXHAUST PIPE WITH CATALYTIC CONVERTER/COMPLETE SYSTEM** .

Tighten down clamping ring screw (3).

Tightening torque. See **18 31 7AZ** in **18 31 EXHAUST PIPE WITH CATALYTIC CONVERTER/COMPLETE SYSTEM** .

Connect vacuum hose (4).

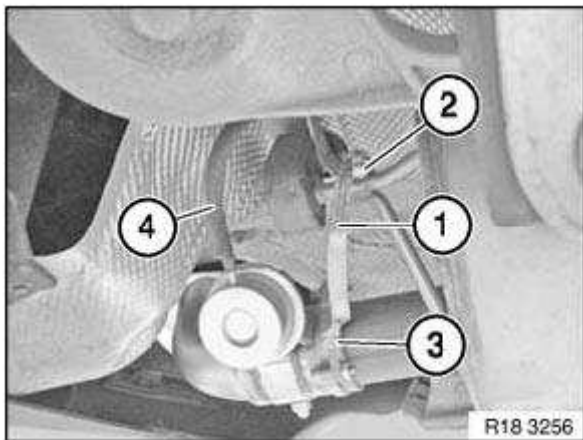


Fig. 63: Identifying Captive Retainer, Rear Muffler Holder Screw, Clamping Ring Screw And Vacuum Hose
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Check function of exhaust flap.
Check exhaust system for leaks.

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

Special tools required:

- **18 0 110** . See **18 0 110 GAUGE** .

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

Necessary preliminary tasks:

- **Remove underbody protection** . See **151 47 490 REMOVING AND INSTALLING/REPLACING FRONT UNDERBODY PROTECTION** and **51 47 491 REMOVING AND INSTALLING/REPLACING REAR UNDERBODY PROTECTION** .
- **Remove exhaust system** . See **18 00 020 REMOVING AND INSTALLING COMPLETE EXHAUST SYSTEM (N54)**.
- **Remove oxygen sensor** . See **EMISSION CONTROL OXYG** ,
- **Remove both monitor sensors** . See **11 78 613 REPLACING BOTH LAMBDA OXYGEN MONITOR SENSORS (N54)** .
- **Remove right engine mount** . See **22 11 001 REPLACING RIGHT ENGINE MOUNT (N54)** .
- **Remove heat shield**

Unscrew nuts (1).

Tightening torque. See **18 20 2AZ** in **18 20 EXHAUST SYSTEM SUSPENSION** .

Unscrew screws (2).

Tightening torque. See **18 20 6AZ** in **18 20 EXHAUST SYSTEM SUSPENSION** .

Bracket remove.

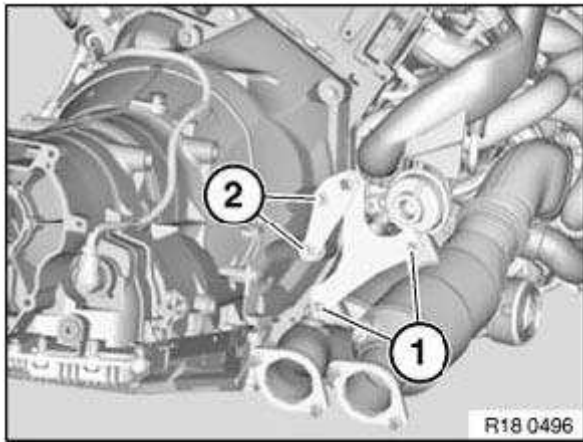


Fig. 64: Identifying Nuts And Screws
 Courtesy of BMW OF NORTH AMERICA, INC.

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. See **18 30 3AZ** in **EXHAUST SYSTEM - TIGHTENING TORQUES (N54)** .

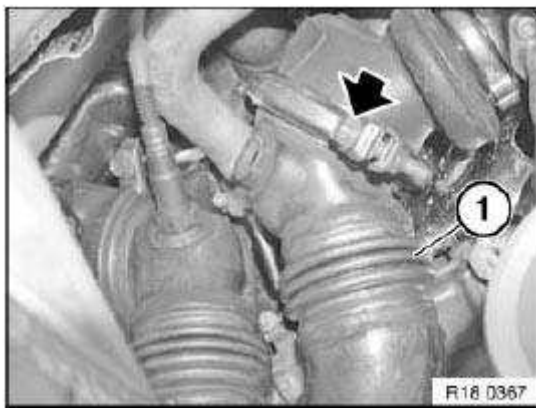


Fig. 65: Identifying Catalytic Converter And Clip
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Secure installation position of catalytic exhaust-gas converter with special tool **18 0 110** .

Add final details to vehicle.

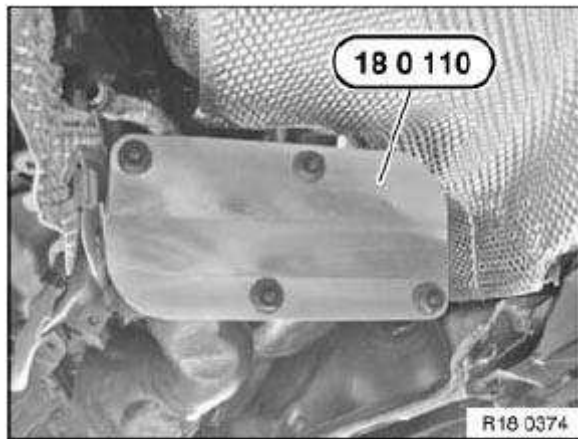


Fig. 66: Securing Installation Position Of Catalytic Exhaust-Gas Converter Using Special Tool 18 0 110
 Courtesy of BMW OF NORTH AMERICA, INC.

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

Special tools required:

- **18 0 110** . See **18 0 110 GAUGE** .

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

Necessary preliminary tasks:

- **Replacing right engine mount** . See **22 11 001 REPLACING RIGHT ENGINE MOUNT (N54)** .

Release oxygen sensor

Installation:

Tightening torque. See **11 78 1AZ** in **EMISSION CONTROL** .

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. See **18 31 3AZ** in **18 31 EXHAUST PIPE WITH CATALYTIC CONVERTER/COMPLETE SYSTEM** .

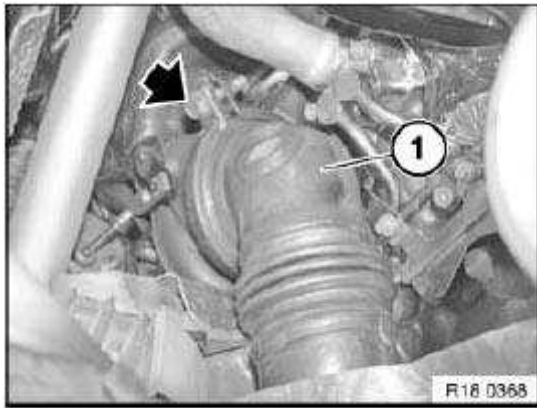


Fig. 67: Identifying Catalytic Converter And Clip
Courtesy of BMW OF NORTH AMERICA, INC.

Align exhaust pipes with special tool 18 0 110.

Add final details to vehicle.

Check exhaust system for leaks.

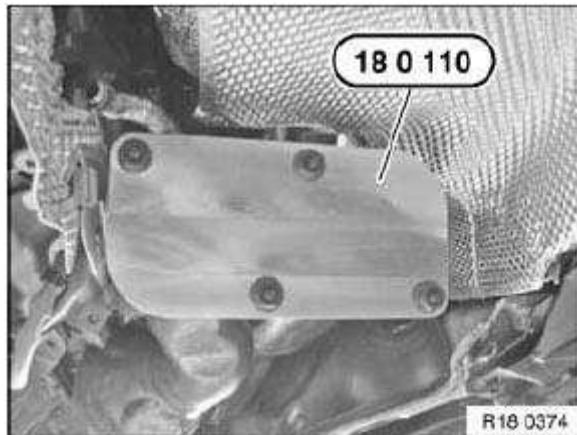


Fig. 68: Aligning Exhaust Pipes Using Special Tool 18 0 110
Courtesy of BMW OF NORTH AMERICA, INC.

18 32 081 REMOVING AND INSTALLING/REPLACING EXHAUST PIPE WITH CATALYTIC CONVERTER FOR CYLINDERS 1-3 (N54)

Special tools required:

- **00 2 210 . See 00 2 210 EXHAUST PIPE CUTTER .**

WARNING: Scalding hazard!

Only perform these tasks after exhaust system has cooled down.

NOTE: Cutting line for exhaust pipe (1) is designated by a notch in the pipe.

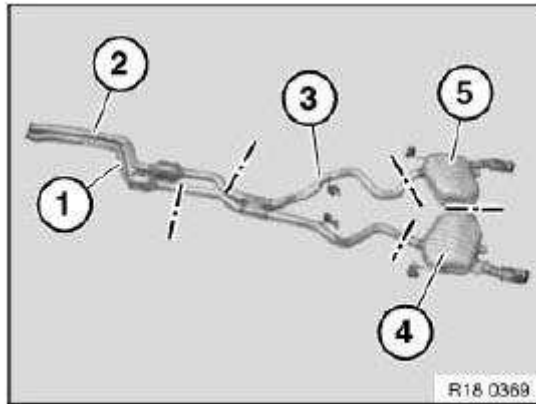


Fig. 69: Identifying Marked Point For Cutting Exhaust Pipe
Courtesy of BMW OF NORTH AMERICA, INC.

Cut exhaust pipe with special tool 00 2 210 at marked point and deburr.

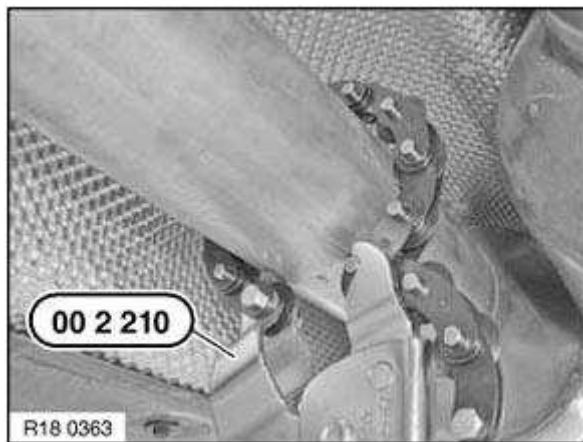


Fig. 70: Cutting Exhaust Pipe Using Special Tool 00 2 210
Courtesy of BMW OF NORTH AMERICA, INC.

Release nuts for **left** exhaust pipe.

Installation:

- Replace self-locking nuts.
- Replace seal.
- Tightening torque. See **18 00 1AZ** in **18 00 EXHAUST ASSEMBLY** .

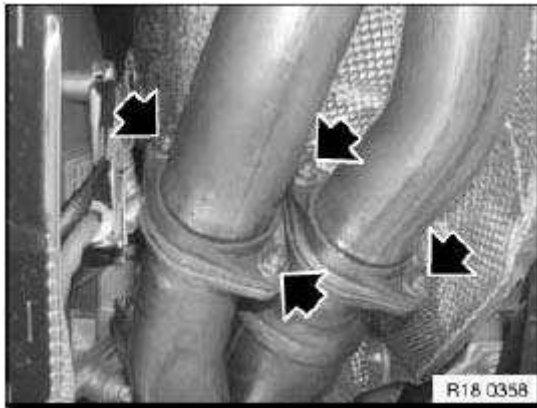


Fig. 71: Locating Exhaust Pipe Nuts
 Courtesy of BMW OF NORTH AMERICA, INC.

Release screw.

Tightening torque. See **18 20 1AZ** in **18 20 EXHAUST SYSTEM SUSPENSION** .

Remove bracket (1) and then exhaust pipe.

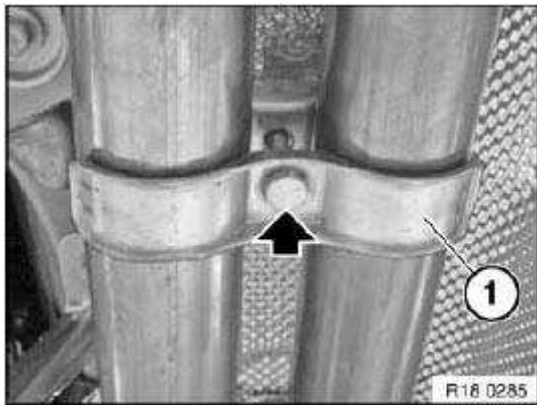


Fig. 72: Identifying Exhaust Pipe Bracket With Screw
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

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

Align clamp and tighten down.

Tightening torque. See **18 00 5AZ** in **18 00 EXHAUST ASSEMBLY** .

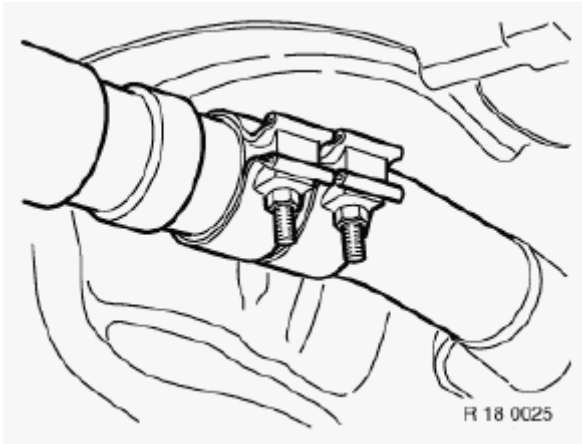


Fig. 73: Connecting Exhaust Pipe To Center Muffler Using Clamp
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Check exhaust system for leaks.

18 32 081 REMOVING AND INSTALLING/REPLACING EXHAUST PIPE WITH CATALYTIC CONVERTER FOR CYLINDERS 4-6 (N54)

Special tools required:

- 00 2 210 . See 00 2 210 EXHAUST PIPE CUTTER .

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

NOTE: Cutting line for exhaust pipe (2) is designated by a notch in the pipe.
 Cut exhaust pipe (2) at marked point and deburr.

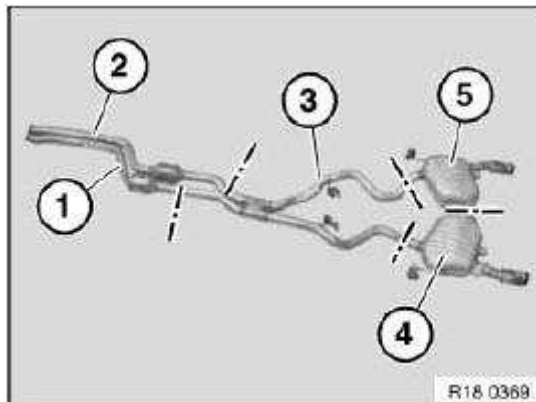


Fig. 74: Identifying Marked Point For Cutting Exhaust Pipe
 Courtesy of BMW OF NORTH AMERICA, INC.

Cut exhaust pipe with special tool 00 2 210 at marked point and deburr.

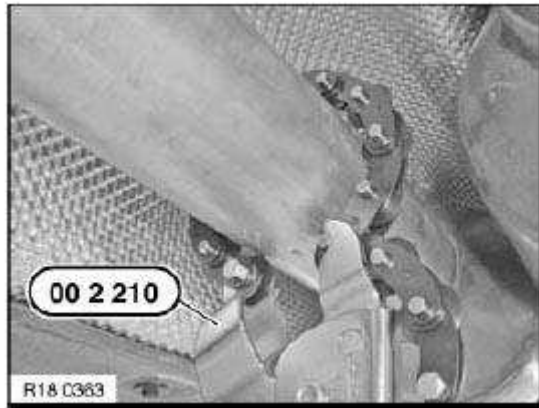


Fig. 75: Cutting Exhaust Pipe Using Special Tool 00 2 210
Courtesy of BMW OF NORTH AMERICA, INC.

Release nuts for **right** exhaust pipe.

Installation:

- Replace self-locking nuts.
- Replace seal.
- Tightening torque. See **18 00 1AZ** in **18 00 EXHAUST ASSEMBLY** .

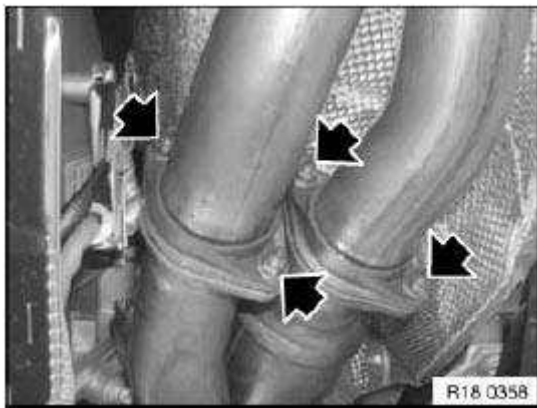


Fig. 76: Locating Exhaust Pipe Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw.

Tightening torque. See **18 20 1AZ** in **18 20 EXHAUST SYSTEM SUSPENSION** .

Remove bracket (1) and then exhaust pipe.

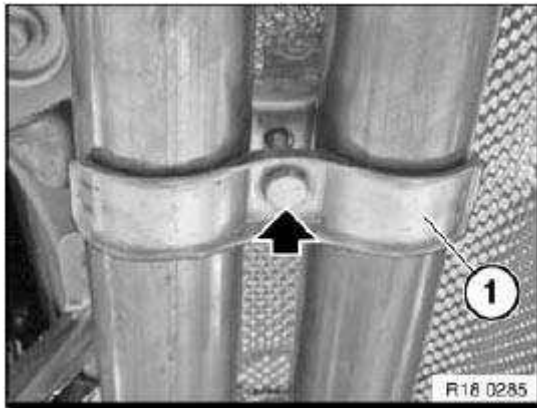


Fig. 77: Identifying Exhaust Pipe Bracket With Screw
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

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

Align clamp and tighten down.

Tightening torque. See **18 00 5AZ** in **18 00 EXHAUST ASSEMBLY** .

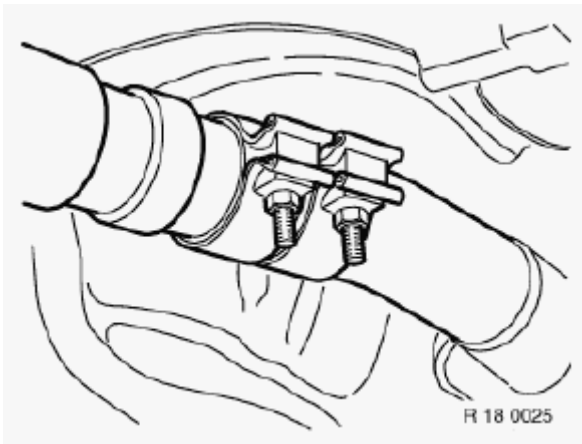


Fig. 78: Connecting Exhaust Pipe To Center Muffler Using Clamp
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Check exhaust system for leaks.

ENGINE

Exhaust System - Repair Instructions - X6 (N63)

EXHAUST SYSTEM COMPLETE

18 00 020 REMOVING AND INSTALLING COMPLETE EXHAUST SYSTEM (N63)

Special tools required:

- 31 2 220 . See FRONT AXLE - SPECIAL TOOLS .

WARNING: Scalding hazard!

Only perform this work after engine has cooled down.

Danger of injury!

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

Necessary preliminary tasks:

- Remove rear **bumper trim** . See 51 12 156 REMOVING AND INSTALLING REAR BUMPER TRIM .

Support exhaust system with special tool 31 2 220.

NOTE: Texts refer to and illustrations show the left side. The procedure is identical for the right side.

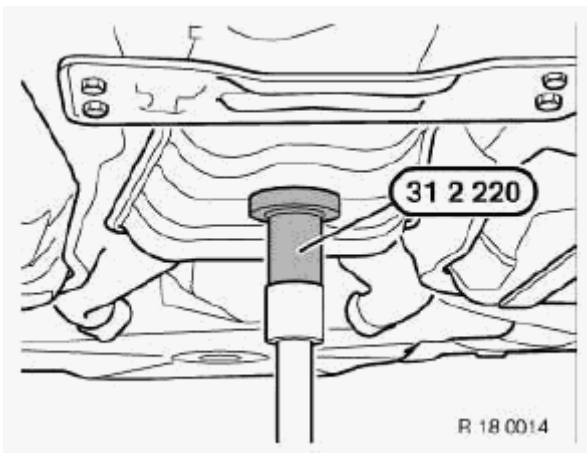


Fig. 1: Supporting Exhaust System With Special Tool
Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew nuts (1).

Replace self-locking nuts.

Tightening torque. See 18 31 1AZ in **18 31 EXHAUST SYSTEM** .

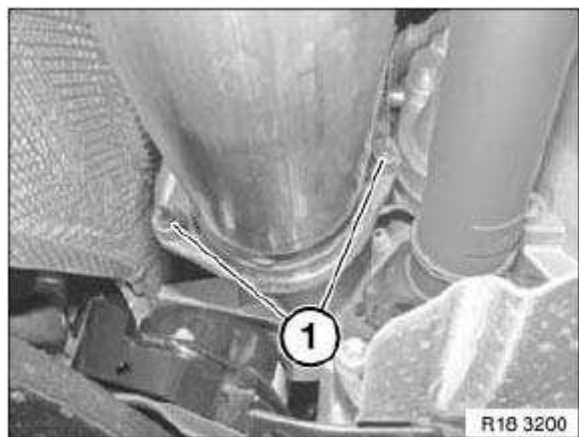


Fig. 2: Identifying Self-Locking Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1).

Tightening torque. See 18 20 1AZ in **18 20 EXHAUST SYSTEM SUSPENSION** .

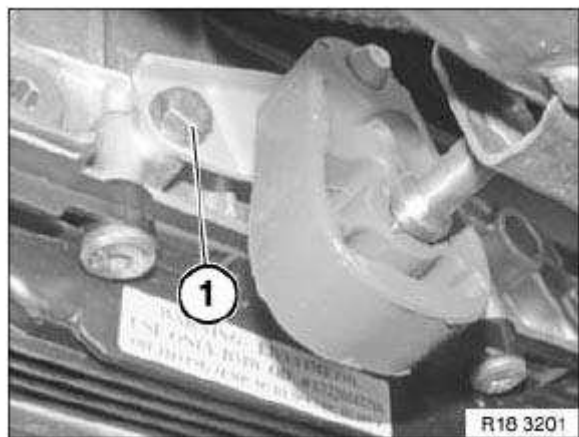


Fig. 3: Identifying Exhaust System And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1).

Tightening torque. See 18 20 2AZ in **18 20 EXHAUST SYSTEM SUSPENSION** .

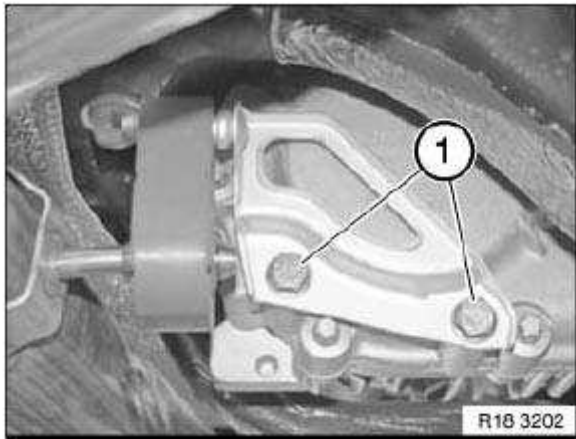


Fig. 4: Identifying Exhaust System Screws Location
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Texts refer to and illustrations show the left side. The procedure is identical for the right side.

Release screw (1).

Tightening torque. See 18 20 3AZ in **18 20 EXHAUST SYSTEM SUSPENSION** .

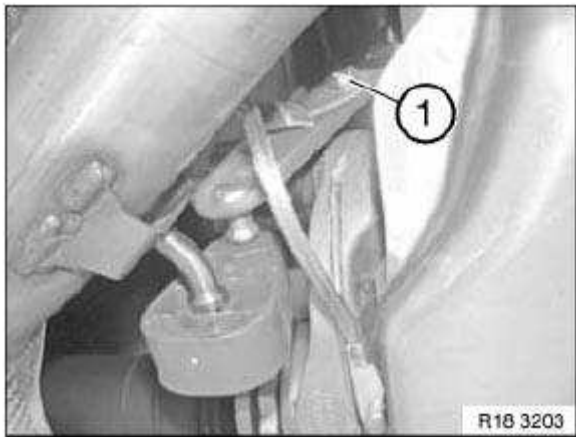


Fig. 5: Identifying Exhaust System Screw
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Texts refer to and illustrations show the left side. The procedure is identical for the right side.

Release screws (1).

Tightening torque. See 18 20 4AZ **18 20 EXHAUST SYSTEM SUSPENSION** .

Remove grounding strap.

Detach hose (2) from vacuum unit and release at tube (3).

Lower and remove exhaust system with assistance of a second person.

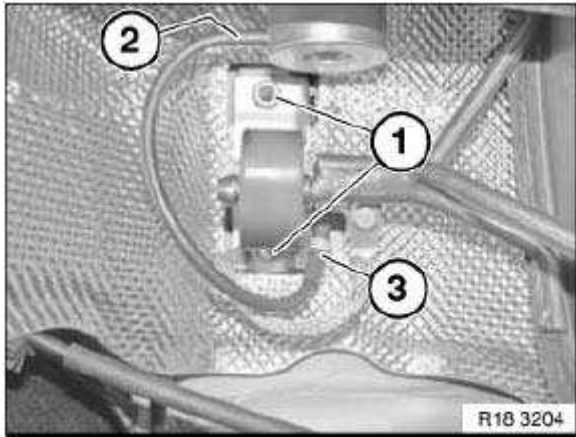


Fig. 6: Detaching Hose From Vacuum Unit
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Align both tail pipes (1) of rear muffler in each case centrally to openings in rear apron.

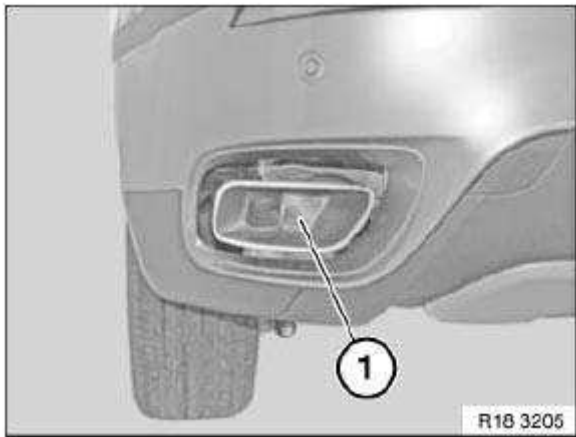


Fig. 7: Aligning Tail Pipes Of Rear Muffler
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Check rubber mount for damage.

If necessary, replace damaged rubber mounts.

Check exhaust system for leaks.

18 32 605 REMOVING AND INSTALLING/REPLACING BOTH CONNECTING PIPES ON CATALYTIC CONVERTER (N63)

WARNING: Scalding hazard!

Only perform this work after engine has cooled down.

Necessary preliminary tasks:

- Remove **exhaust system** . See **18 00 020 REMOVING AND INSTALLING COMPLETE EXHAUST SYSTEM (N63)**.

NOTE: **Texts refer to and illustrations show the left side. The procedure is identical for the right side.**

Release nuts (1).

Tightening torque. See 18 31 2AZ in **18 31 EXHAUST SYSTEM** .

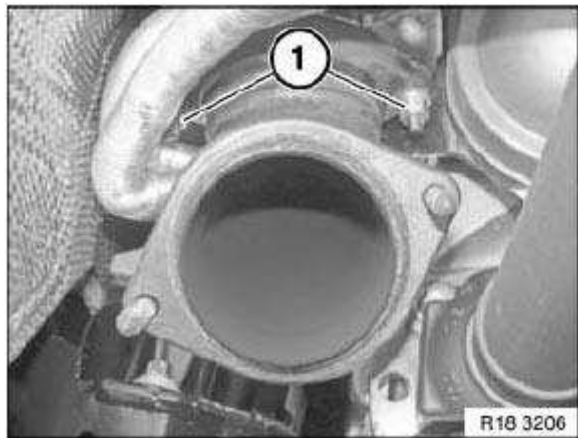


Fig. 8: Identifying Exhaust System Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: **Texts refer to and illustrations show the left side. The procedure is identical for the right side.**

Installation:

Remove seal.

Clean sealing faces.

Replace seal.

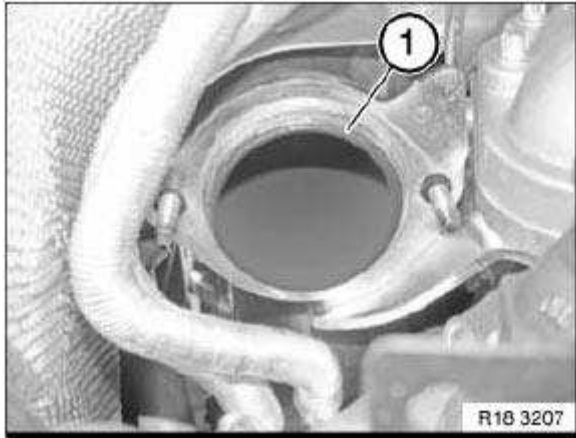


Fig. 9: Identifying Exhaust System Seal Location
Courtesy of BMW OF NORTH AMERICA, INC.

41 11 ... REMOVING AND INSTALLING LEFT AND RIGHT HOLDERS FOR CROSS-STRUT

Necessary preliminary tasks:

Remove **right intercooler** . See **17 51 001 REMOVING AND INSTALLING/REPLACING RIGHT INTERCOOLER (N63)** .

NOTE: **Shown without assemblies for purposes of clarity.**
 An angle drill is required to perform the task.

Following parts are required:

- blind rivet nuts (41 12 8 223 082)
- screws M6 x 20
- nuts M6
- plain washers

Carry over the work step shown symmetrically to the other side of the vehicle.

Drill out 3 welded spots in area (1). In so doing, drill through holder (2) and sheet directly behind.

Take off holder (2).

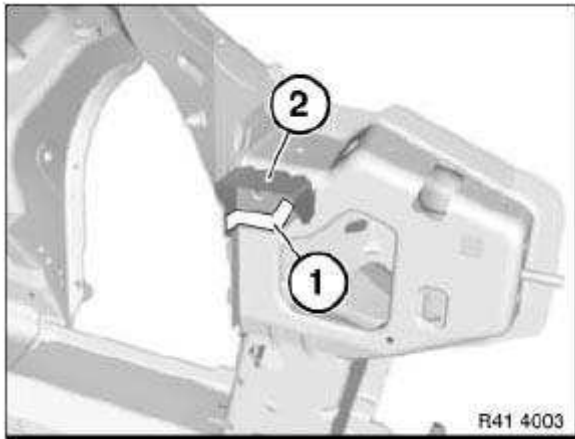


Fig. 10: Identifying Welded Spots Area Location
Courtesy of BMW OF NORTH AMERICA, INC.

Smooth moldings in area of welded spots (1).

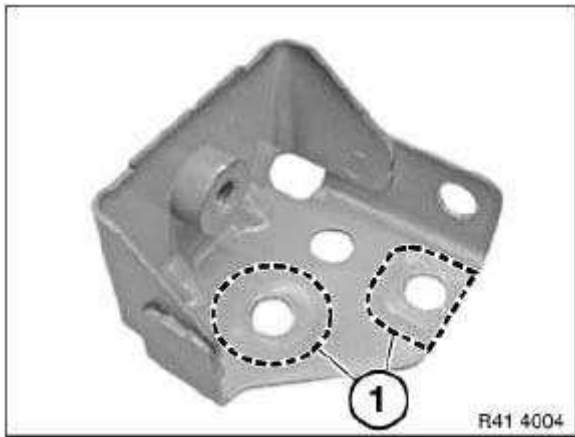


Fig. 11: Identifying Welded Spots Area
Courtesy of BMW OF NORTH AMERICA, INC.

Carry over the work step shown symmetrically to the other side of the vehicle.

Drill out 2 bores (1) on body to 9 mm dia.

Carry out corrosion protection measures on drilled holes (body and holder).

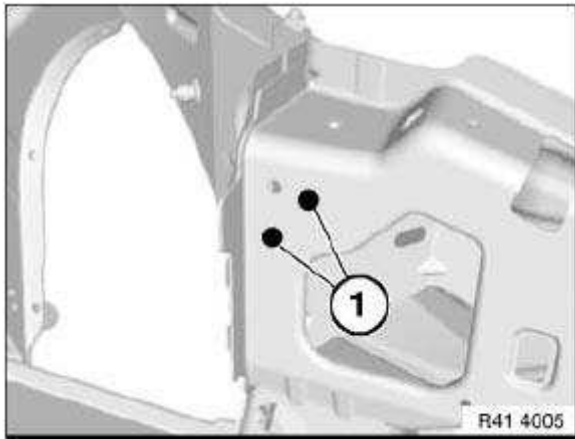


Fig. 12: Identifying Drilled Holes
Courtesy of BMW OF NORTH AMERICA, INC.

Carry over the work step shown symmetrically to the other side of the vehicle.

Set 2 blind rivet nuts (1) M6 with rivet gun.

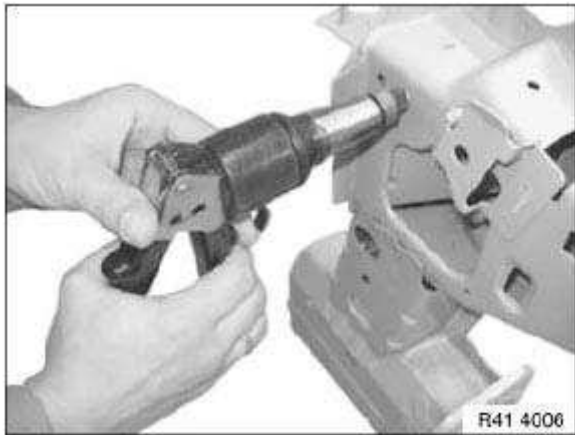


Fig. 13: Setting Blind Rivet Nuts
Courtesy of BMW OF NORTH AMERICA, INC.

Carry over the work step shown symmetrically to the other side of the vehicle.

Screw down holder in areas (1) with 2 screws and plain washers.

In area (2) screw down holder with screw, nut and plain washers.

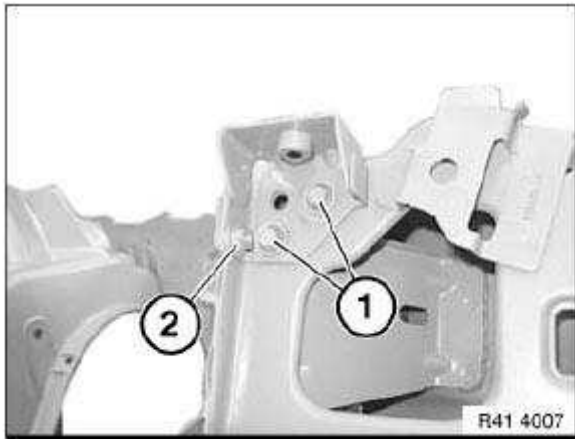


Fig. 14: Identifying Holder Nut
Courtesy of BMW OF NORTH AMERICA, INC.

MUFFLERS DIESEL

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

Release screw.

Detach trim (1).

Tightening torque. See 18 00 1AZ in **18 00 EXHAUST ASSEMBLY** .

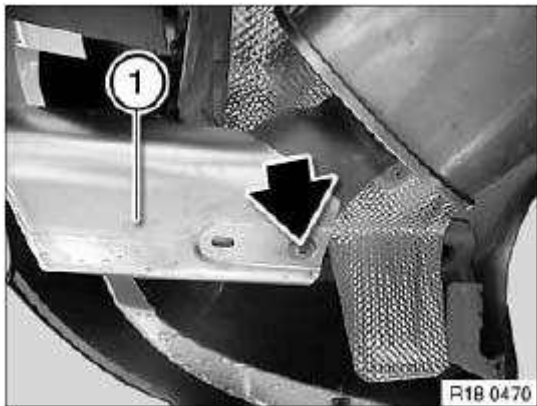


Fig. 15: Detaching Trim
Courtesy of BMW OF NORTH AMERICA, INC.

EXHAUST PIPE WITH MOUNTING

41 11 ... REMOVING AND INSTALLING LEFT AND RIGHT HOLDERS FOR CROSS-STRUT

Necessary preliminary tasks:

Remove **right intercooler** . See **17 51 001 REMOVING AND INSTALLING/REPLACING RIGHT INTERCOOLER (N63)** .

NOTE: **Shown without assemblies for purposes of clarity.
An angle drill is required to perform the task.**

Following parts are required:

- blind rivet nuts (41 12 8 223 082)
- screws M6 x 20
- nuts M6
- plain washers

Carry over the work step shown symmetrically to the other side of the vehicle.

Drill out 3 welded spots in area (1). In so doing, drill through holder (2) and sheet directly behind.

Take off holder (2).

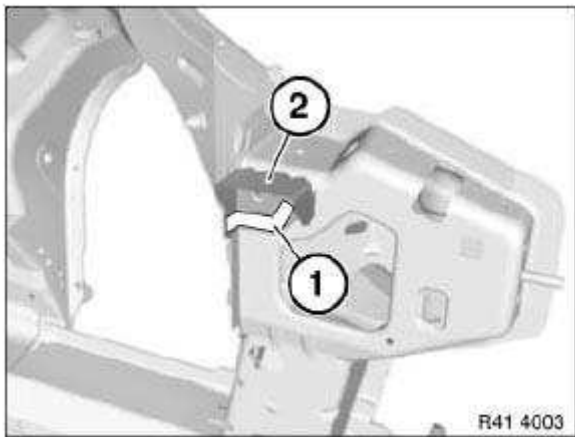


Fig. 16: Identifying Welded Spots Area
Courtesy of BMW OF NORTH AMERICA, INC.

Smooth moldings in area of welded spots (1).

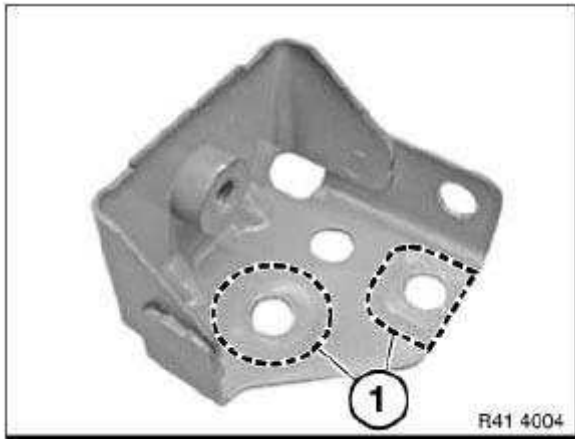


Fig. 17: Identifying Welded Spots Area
Courtesy of BMW OF NORTH AMERICA, INC.

Carry over the work step shown symmetrically to the other side of the vehicle.

Drill out 2 bores (1) on body to 9 mm dia.

Carry out corrosion protection measures on drilled holes (body and holder).

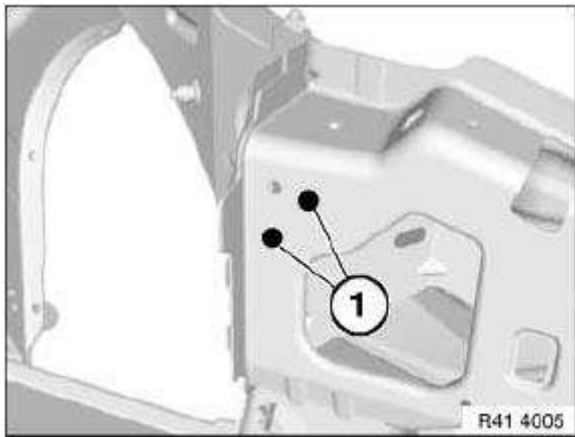


Fig. 18: Identifying Drilled Holes
Courtesy of BMW OF NORTH AMERICA, INC.

Carry over the work step shown symmetrically to the other side of the vehicle.

Set 2 blind rivet nuts (1) M6 with rivet gun.

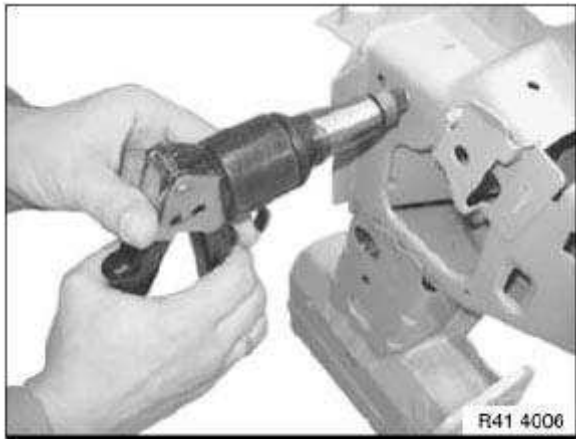


Fig. 19: Identifying Blind Rivet Nuts
 Courtesy of BMW OF NORTH AMERICA, INC.

Carry over the work step shown symmetrically to the other side of the vehicle.

Screw down holder in areas (1) with 2 screws and plain washers.

In area (2) screw down holder with screw, nut and plain washers.

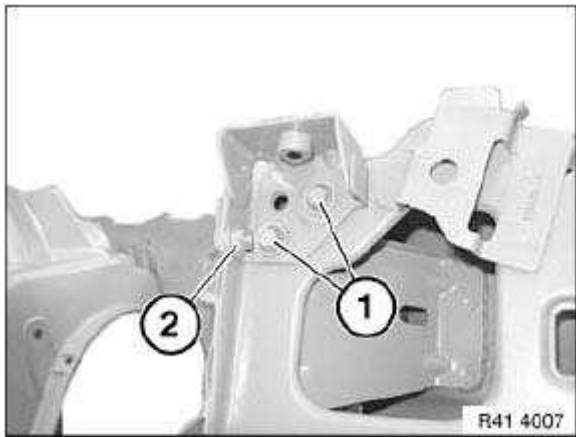


Fig. 20: Identifying Holder Nut
 Courtesy of BMW OF NORTH AMERICA, INC.

EXHAUST CATALYTIC CONVERTER

18 32 050 REMOVING AND INSTALLING/REPLACING CATALYTIC EXHAUST GAS CONVERTER, CYLINDERS 1-4 (N63)

WARNING: Scalding hazard!
 Only perform these tasks on an engine that has cooled down.

Necessary preliminary tasks:

- Remove acoustic cover by raising cover in upward direction.
- Remove **both intake filter housings** . See **13 71 030 REMOVING AND INSTALLING BOTH INTAKE FILTER HOUSINGS (N63)** .
- Remove **exhaust system** . See **18 00 020 REMOVING AND INSTALLING COMPLETE EXHAUST SYSTEM (N63)**.
- Remove **both connecting pipes** . See **18 32 605 REMOVING AND INSTALLING/REPLACING BOTH CONNECTING PIPES ON CATALYTIC CONVERTER (N63)**.
- Remove **both control sensors** . See **11 78 533 REPLACING RIGHT CONTROL SENSOR (N63)** and **11 78 530 REPLACING LEFT CONTROL SENSOR (N63)** .
- Remove **both monitor sensors** . See **11 78 540 REPLACING LEFT MONITOR SENSOR (N63)** and **11 78 543 REPLACING RIGHT MONITOR SENSOR (N63)** .

Picture shows the left side, carry out the operation for the right side in an identical way.

Release screws (1).

Remove cable holders on left and right.

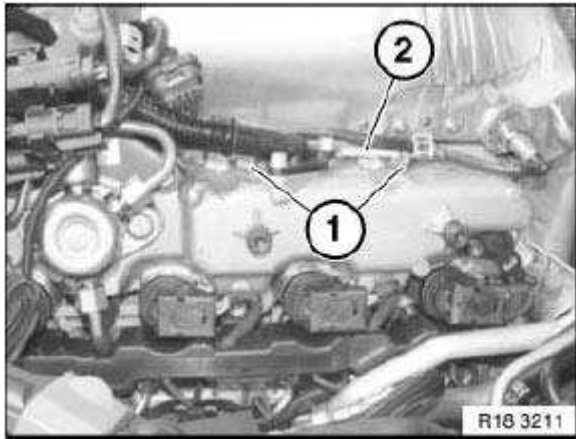


Fig. 21: Identifying Exhaust Catalytic Converter Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Remove rubber mounts (1) and release screws underneath.

Tightening torque. See 13 71 5AZ in **FUEL SUPPLY SYSTEM - TIGHTENING TORQUES (N54, N63)** .

Remove cable holder (2).

Remove heat shield (3) at top. See **11 65 180 REMOVING AND INSTALLING/REPLACING HEAT SHIELD AT TOP (N63)** .

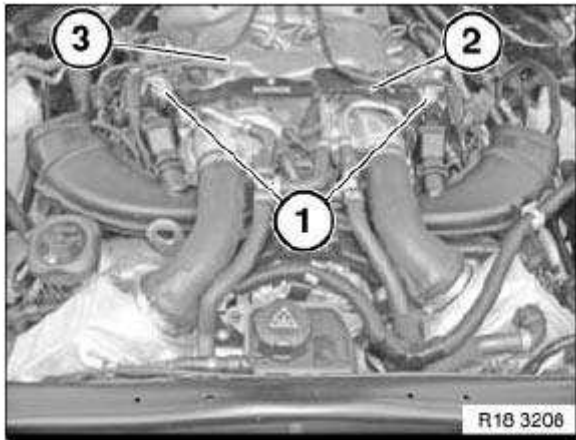


Fig. 22: Identifying Rubber Mounts, Cable Holder And Heat Shield
Courtesy of BMW OF NORTH AMERICA, INC.

Remove heat shield (1) at rear left and right.

This is described further below in the instruction.

Release screws (2) on catalytic converter.

Tightening torque. See 18 32 4AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

Release clamps (3) on catalytic converter.

Replace clamps (3).

Tightening torque. See 18 32 1AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

Installation:

Clamps must be fitted with the screws pointing inwards (shown in picture). Otherwise it will not be possible to install the heat shield at the top.

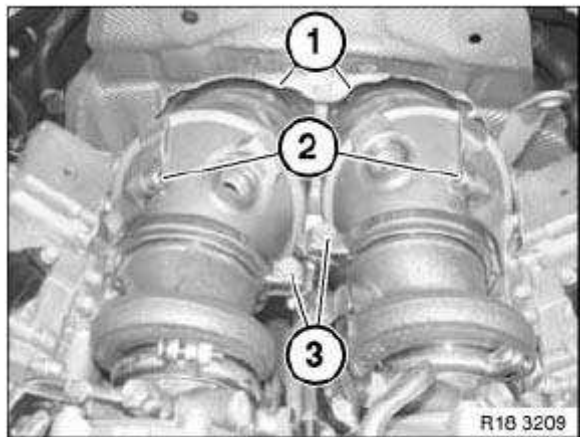


Fig. 23: Identifying Catalytic Converter And Clamps
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

The ends of the V-band clamps must rest parallel to each other.

Tightening torque. See 18 32 1AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

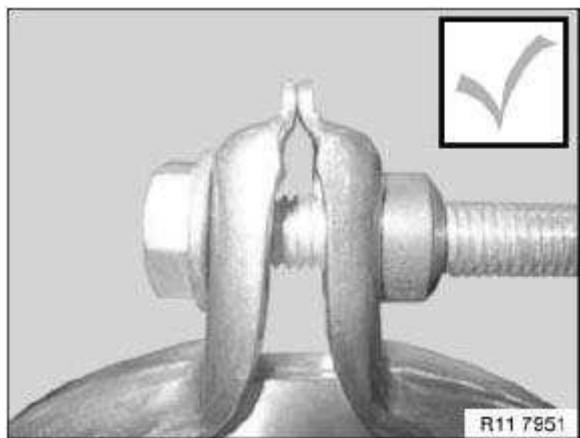


Fig. 24: Identifying V-band Clamps
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

If you can see a gap between the ends of the V-band clamps, release and then repeat the screw connection.

Tightening torque. See 18 32 1AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

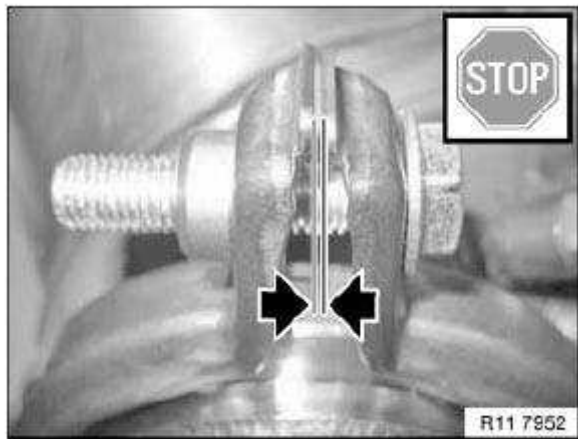


Fig. 25: Identifying Gap Between Ends Of V-band Clamps
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

If the ends of the V-band clamps are positioned under each other, release and then repeat the screw connection.

Tightening torque. See 18 32 1AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

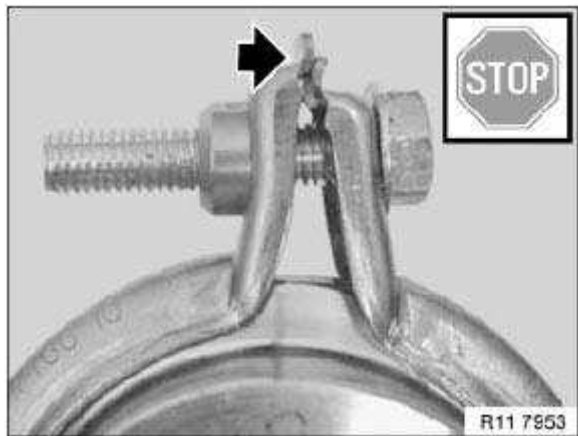


Fig. 26: Identifying V-band Clamps
 Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1) from heat shields (2) and (3).

Screw (1) is located between catalytic exhaust-gas converters.

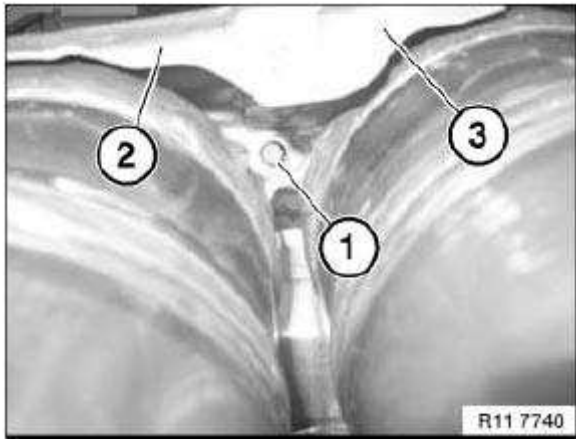


Fig. 27: Identifying Heat Shields And Screws
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows the engine removed.

Release screws (1) on left heat shield.

Unclip left heat shield and remove.

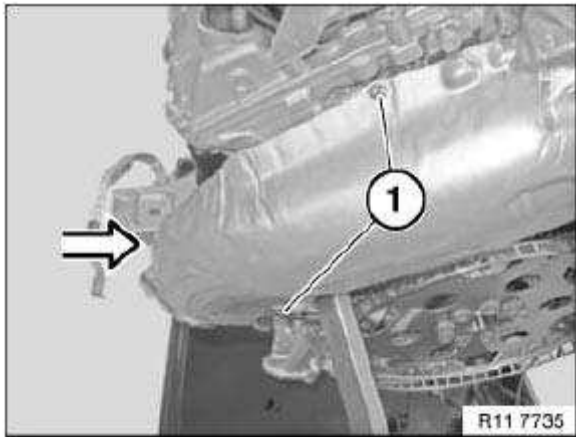


Fig. 28: Identifying Left Heat Shield And Screw
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows the engine removed.

Release screw (1) on right heat shield.

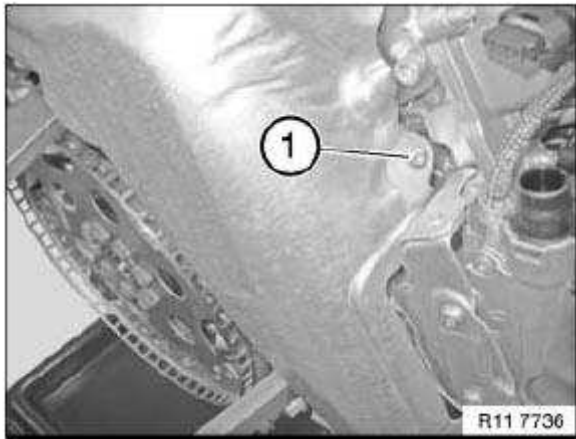


Fig. 29: Identifying Right Heat Shield And Screw
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows the engine removed.

Release screw (1) on heat shield at bottom right.

Unclip heat shield and remove.

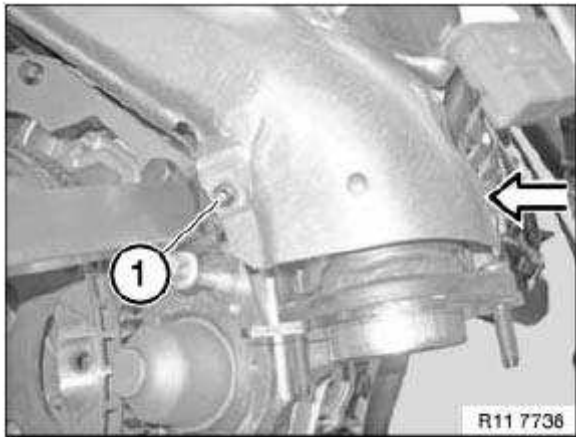


Fig. 30: Identifying Heat Shield And Screw
 Courtesy of BMW OF NORTH AMERICA, INC.

Picture shows the left side, carry out the operation for the right side in an identical way.

Release screws (1).

Detach hose (2) from cylinder head cover.

Release screws (3) on holder.

Tightening torque. See 18 32 2AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

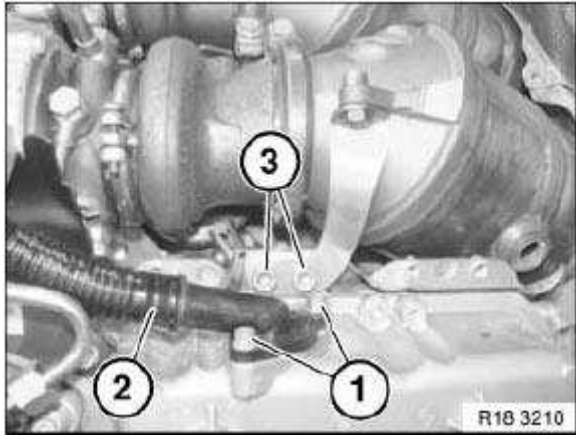


Fig. 31: Identifying Cylinder Head Cover Hose And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows the engine removed.

Release screws (1) on catalytic converter, cylinders 1-4, rear, at cylinder head.

Tightening torque. See 18 32 3AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

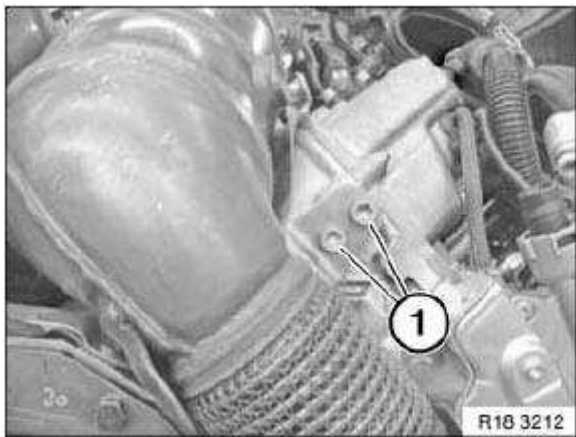


Fig. 32: Identifying Catalytic Converter And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows the engine removed.

Release screws (1) on catalytic converter, cylinders 5-8, rear, at cylinder head.

Tightening torque. See 18 32 3AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

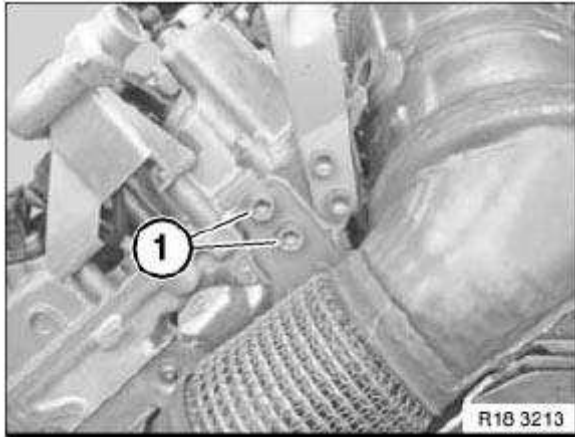


Fig. 33: Identifying Cylinder Head And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: To remove the catalytic converter for cylinders 1-4, it is necessary to remove the catalytic converter for cylinders 5-8.

1. Remove catalytic converter for cylinders 5-8 (1).
2. Remove catalytic converter for cylinders 1-4 (2).

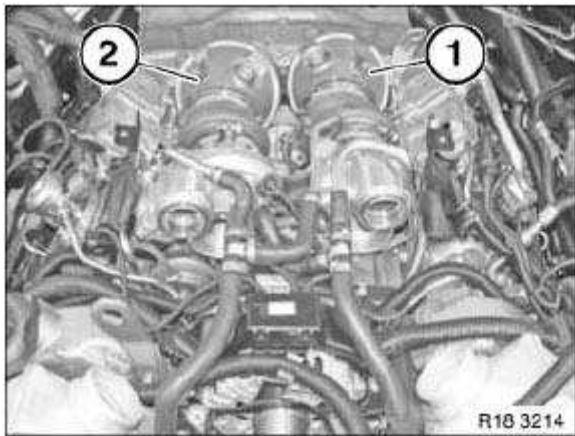


Fig. 34: Identifying Catalytic Converter
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Picture shows the engine removed.

Replace gaskets (1) on turbocharger.

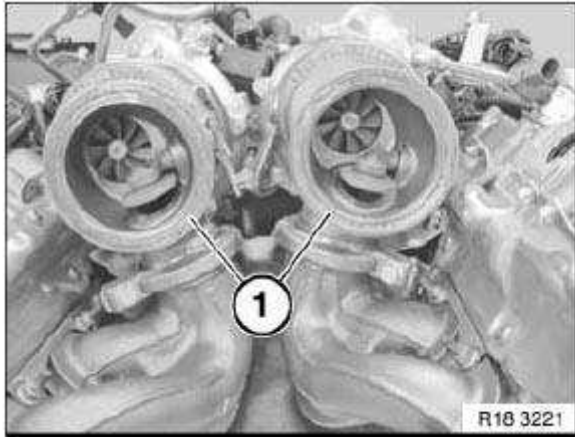


Fig. 35: Identifying Gaskets On Turbocharger
 Courtesy of BMW OF NORTH AMERICA, INC.

Assemble engine.

Check exhaust system for leaks.

18 32 050 REMOVING AND INSTALLING/REPLACING CATALYTIC EXHAUST GAS CONVERTER, CYLINDERS 5-8 (N63)

WARNING: Scalding hazard!

Only perform these tasks on an engine that has cooled down.

Necessary preliminary tasks:

- Remove acoustic cover by raising cover in upward direction.
- Remove **both intake filter housings** . See **13 71 030 REMOVING AND INSTALLING BOTH INTAKE FILTER HOUSINGS (N63)** .
- Remove **exhaust system** . See **18 00 020 REMOVING AND INSTALLING COMPLETE EXHAUST SYSTEM (N63)**.
- Remove **both connecting pipes** . See **18 32 605 REMOVING AND INSTALLING/REPLACING BOTH CONNECTING PIPES ON CATALYTIC CONVERTER (N63)**.
- Remove **both control sensors** . See **11 78 533 REPLACING RIGHT CONTROL SENSOR (N63)** and **11 78 530 REPLACING LEFT CONTROL SENSOR (N63)** .
- Remove **both monitor sensors** . See **11 78 540 REPLACING LEFT MONITOR SENSOR (N63)** and **11 78 543 REPLACING RIGHT MONITOR SENSOR (N63)** .

Picture shows the left side, carry out the operation for the right side in an identical way.

Release screws (1).

Remove cable holders on left and right.

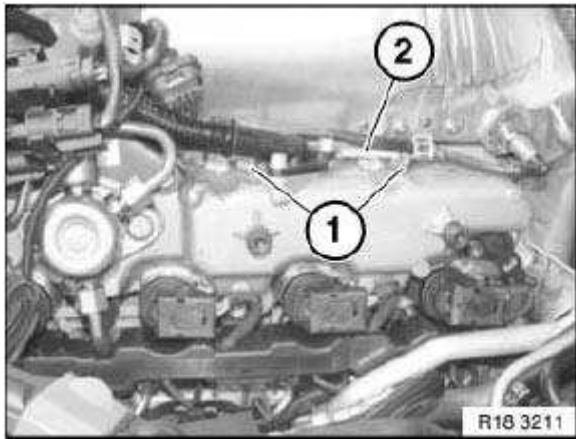


Fig. 36: Identifying Cable Holders And Screws
 Courtesy of BMW OF NORTH AMERICA, INC.

Remove rubber mounts (1) and release screws underneath.

Tightening torque. See 13 71 5AZ in **13 71 AIR INTAKE DUCT** .

Remove cable holder (2).

Remove **heat shield** (3) at top. See **11 65 180 REMOVING AND INSTALLING/REPLACING HEAT SHIELD AT TOP (N63)** .

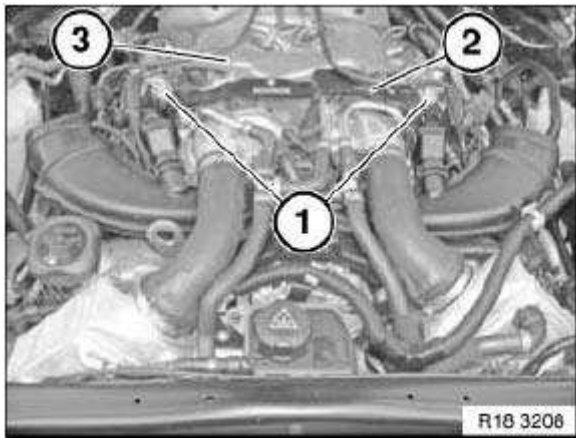


Fig. 37: Identifying Heat Shield
 Courtesy of BMW OF NORTH AMERICA, INC.

Remove heat shield (1) at rear left and right.

This is described further below in the instruction.

Release screw (2) on catalytic converter.

Tightening torque. See 18 32 4AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

Release clamp (3) on catalytic converter.

Replace clamp (3).

Tightening torque. See 18 32 1AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

Installation:

Clamp (3) must be fitted with the screw pointing inwards (shown in picture). Otherwise it will not be possible to install the heat shield at the top.

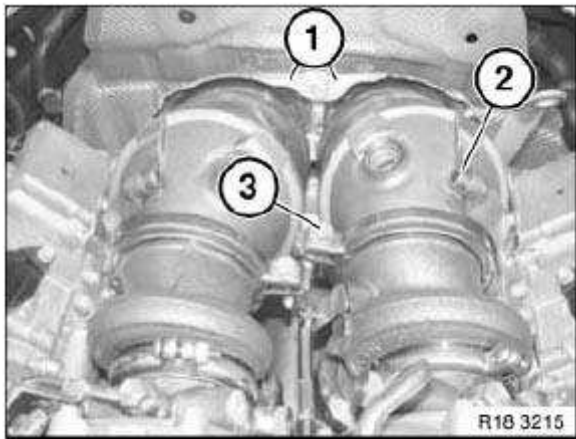


Fig. 38: Identifying Clamp And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

The ends of the V-band clamps must rest parallel to each other.

Tightening torque. See 18 32 1AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

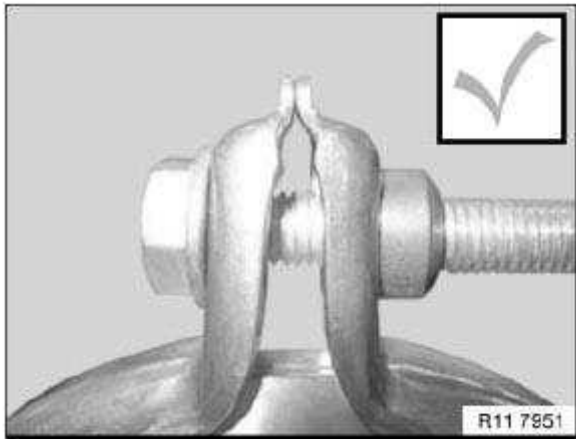


Fig. 39: Identifying V-Band Clamps
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

If you can see a gap between the ends of the V-band clamps, release and then repeat the screw connection.

Tightening torque. See 18 32 1AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

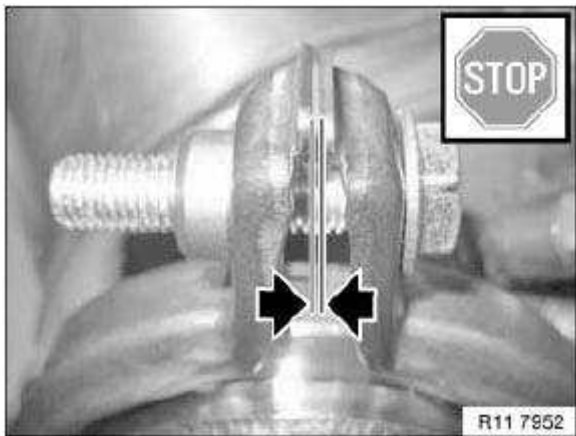


Fig. 40: Tightening V-Band Clamps
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

If the ends of the V-band clamps are positioned under each other, release and then repeat the screw connection.

Tightening torque. See 18 32 1AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

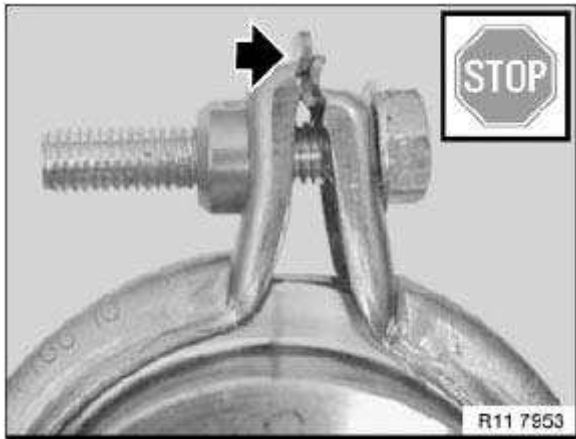


Fig. 41: Locating V-Band Clamps
 Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1) from heat shields (2) and (3).

Screw (1) is located between catalytic exhaust-gas converters.

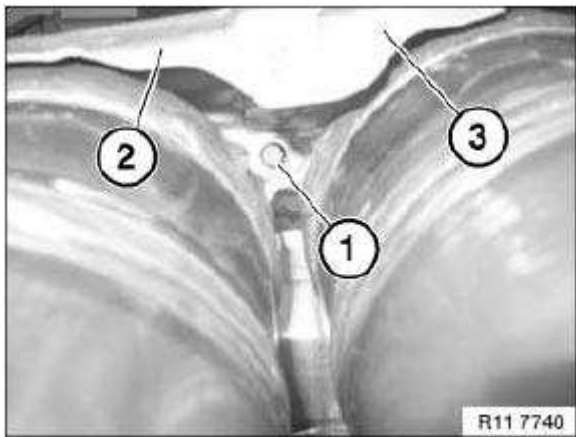


Fig. 42: Identifying Heat Shields And Screw
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows the engine removed.

Release screws (1) on left heat shield.

Unclip left heat shield and remove.

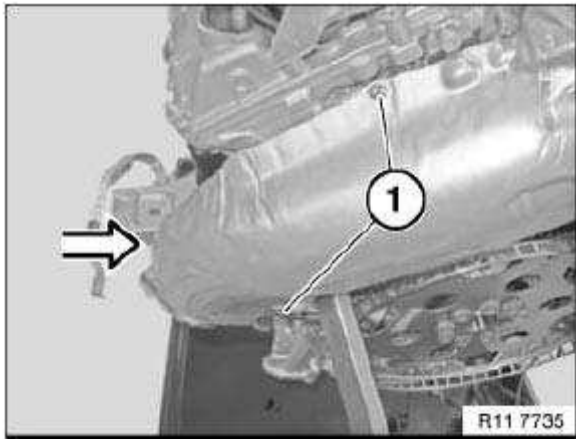


Fig. 43: Identifying Left Heat Shield And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows the engine removed.

Release screw (1) on right heat shield.

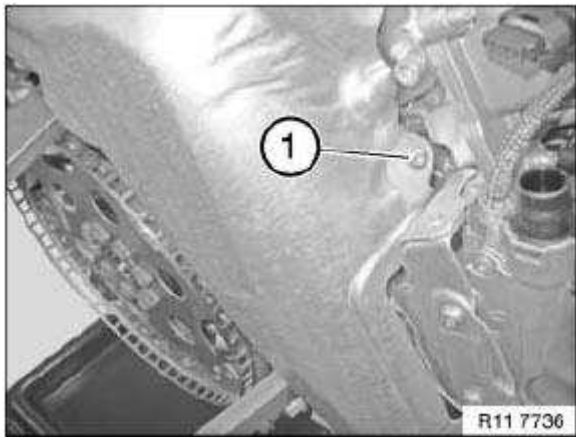


Fig. 44: Identifying Right Heat Shield And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows the engine removed.

Release screw (1) on heat shield at bottom right.

Unclip heat shield and remove.

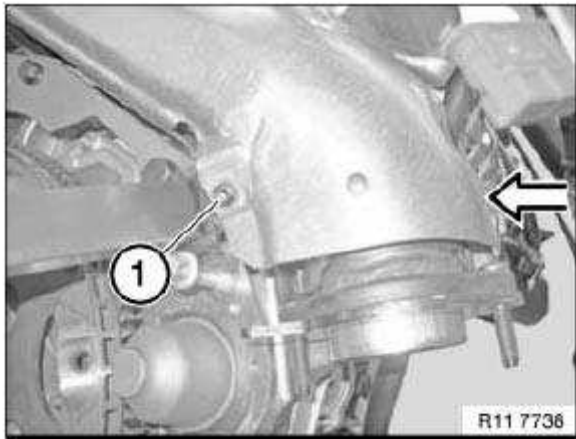


Fig. 45: Identifying Heat Shield And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1).

Detach hose (2) from cylinder head cover.

Release screws (3) on holder.

Tightening torque. See 18 32 2AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

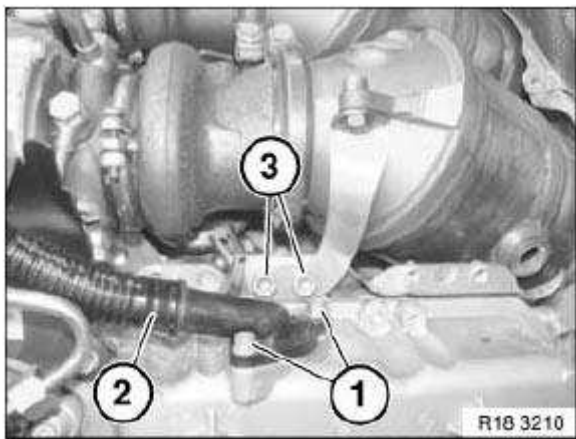


Fig. 46: Identifying Cylinder Head Cover Hose And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows the engine removed.

Release screws (1) on catalytic converter, cylinders 5-8, rear, at cylinder head.

Tightening torque. See 18 32 3AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

Remove catalytic converter for cylinders 5-8.

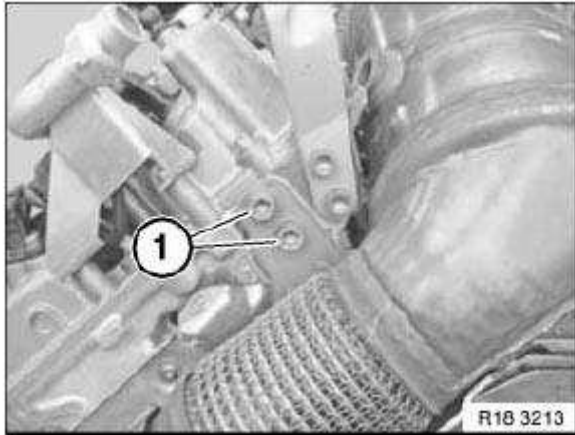


Fig. 47: Identifying Catalytic Converter And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Picture shows the engine removed.

Replace gasket (1) on left turbocharger.

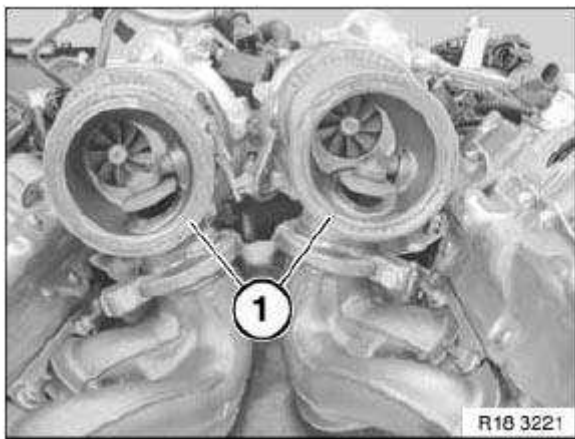


Fig. 48: Identifying Turbocharger
Courtesy of BMW OF NORTH AMERICA, INC.

Assemble engine.

Check exhaust system for leaks.

18 32 605 REMOVING AND INSTALLING/REPLACING BOTH CONNECTING PIPES ON CATALYTIC CONVERTER (N63)

WARNING: Scalding hazard!

Only perform this work after engine has cooled down.

Necessary preliminary tasks:

- Remove **exhaust system** . See **18 00 020 REMOVING AND INSTALLING COMPLETE EXHAUST SYSTEM (N63)**.

NOTE: **Texts refer to and illustrations show the left side. The procedure is identical for the right side.**

Release nuts (1).

Tightening torque. See 18 31 2AZ in **18 31 EXHAUST SYSTEM** .

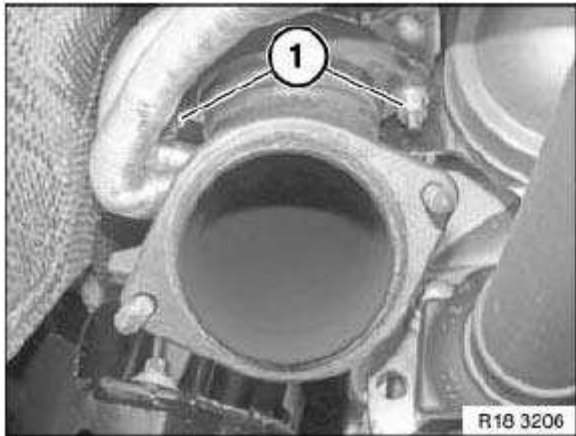


Fig. 49: Releasing Nuts

Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: **Texts refer to and illustrations show the left side. The procedure is identical for the right side.**

Installation:

Remove seal.

Clean sealing faces.

Replace seal.

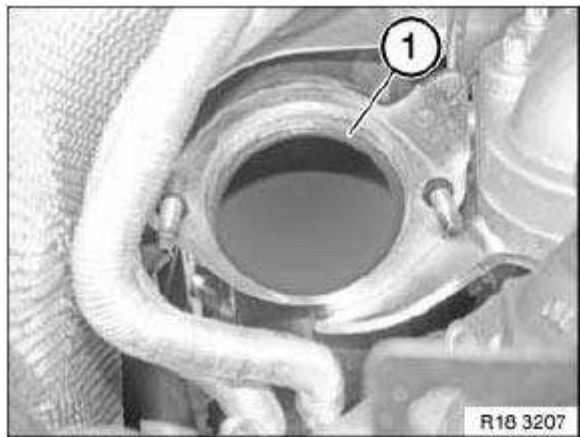


Fig. 50: Identifying Seal Location

Courtesy of BMW OF NORTH AMERICA, INC.

EXHAUST MANIFOLD WITH MOUNTING

18 32 050 REMOVING AND INSTALLING/REPLACING CATALYTIC EXHAUST GAS CONVERTER, CYLINDERS 1-4 (N63)

WARNING: Scalding hazard!

Only perform these tasks on an engine that has cooled down.

Necessary preliminary tasks:

- Remove acoustic cover by raising cover in upward direction.
- Remove **both intake filter housings** . See **13 71 030 REMOVING AND INSTALLING BOTH INTAKE FILTER HOUSINGS (N63)** .
- Remove **exhaust system** . See **18 00 020 REMOVING AND INSTALLING COMPLETE EXHAUST SYSTEM (N63)**.
- Remove **both connecting pipes** . See **18 32 605 REMOVING AND INSTALLING/REPLACING BOTH CONNECTING PIPES ON CATALYTIC CONVERTER (N63)**.
- Remove **both control sensors** . See **11 78 533 REPLACING RIGHT CONTROL SENSOR (N63)** and **11 78 530 REPLACING LEFT CONTROL SENSOR (N63)** .
- Remove **both monitor sensors** . See **11 78 540 REPLACING LEFT MONITOR SENSOR (N63)** and **11 78 543 REPLACING RIGHT MONITOR SENSOR (N63)** .

Picture shows the left side, carry out the operation for the right side in an identical way.

Release screws (1).

Remove cable holders on left and right.

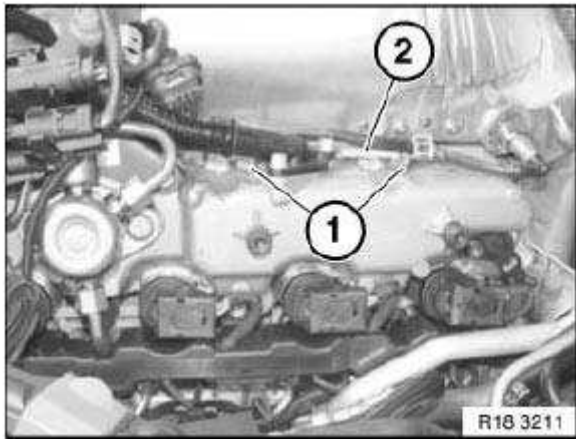


Fig. 51: Identifying Cable Holders And Screws
 Courtesy of BMW OF NORTH AMERICA, INC.

Remove rubber mounts (1) and release screws underneath.

Tightening torque. See 13 71 5AZ in **13 71 AIR INTAKE DUCT** .

Remove cable holder (2).

Remove **heat shield** (3) at top. See **11 65 180 REMOVING AND INSTALLING/REPLACING HEAT SHIELD AT TOP (N63)** .

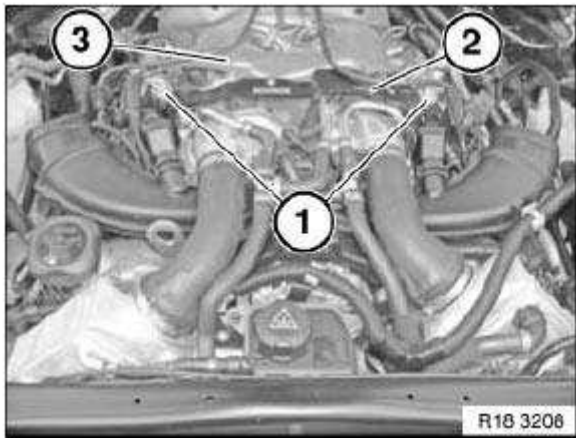


Fig. 52: Identifying Rubber Mounts And Cable Holder
 Courtesy of BMW OF NORTH AMERICA, INC.

Remove heat shield (1) at rear left and right.

This is described further below in the instruction.

Release screws (2) on catalytic converter.

Tightening torque. See 18 32 4AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

Release clamps (3) on catalytic converter.

Replace clamps (3).

Tightening torque. See 18 32 1AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

Installation:

Clamps must be fitted with the screws pointing inwards (shown in picture). Otherwise it will not be possible to install the heat shield at the top.

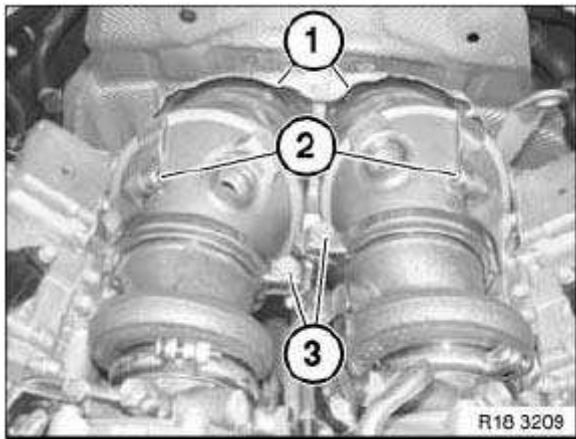


Fig. 53: Identifying Catalytic Converter Clamps And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

The ends of the V-band clamps must rest parallel to each other.

Tightening torque. See 18 32 1AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

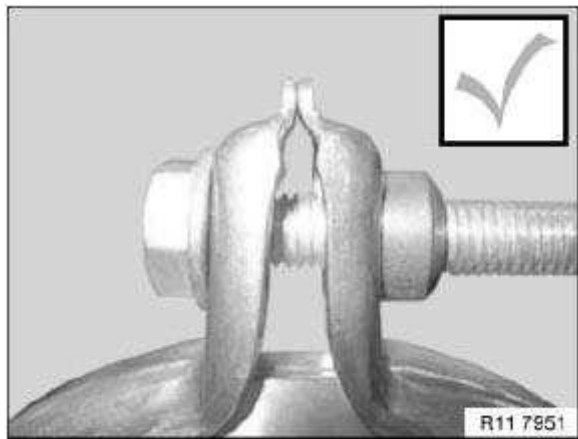


Fig. 54: Identifying V-Band Clamps
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

If you can see a gap between the ends of the V-band clamps, release and then repeat the screw connection.

Tightening torque. See 18 32 1AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

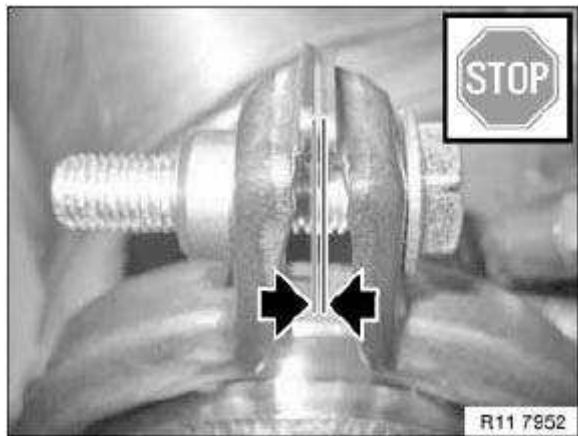


Fig. 55: Tightening V-Band Clamps
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

If the ends of the V-band clamps are positioned under each other, release and then repeat the screw connection.

Tightening torque. See 18 32 1AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

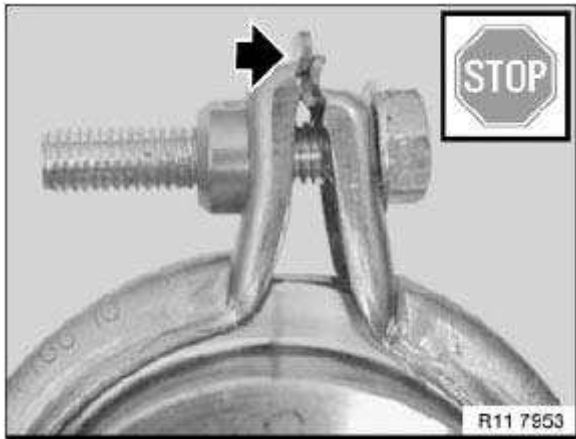


Fig. 56: Locating V-Band Clamps
 Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1) from heat shields (2) and (3).

Screw (1) is located between catalytic exhaust-gas converters.

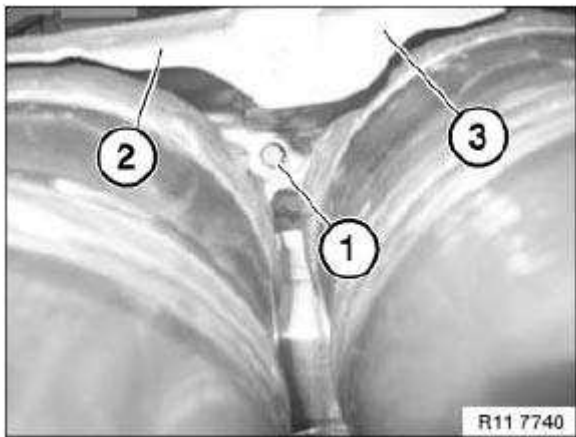


Fig. 57: Identifying Heat Shields And Screw
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows the engine removed.

Release screws (1) on left heat shield.

Unclip left heat shield and remove.

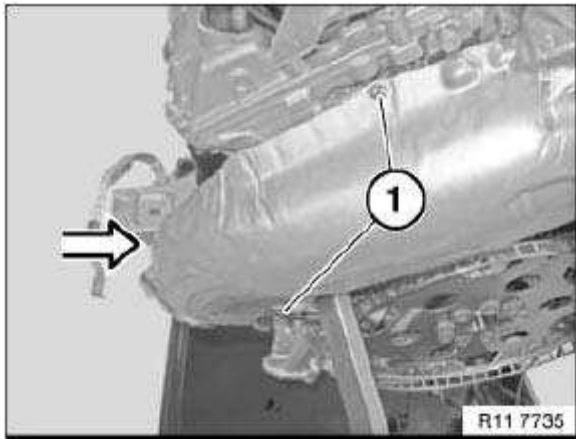


Fig. 58: Identifying Left Heat Shield And Screws
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows the engine removed.
 Release screw (1) on right heat shield.

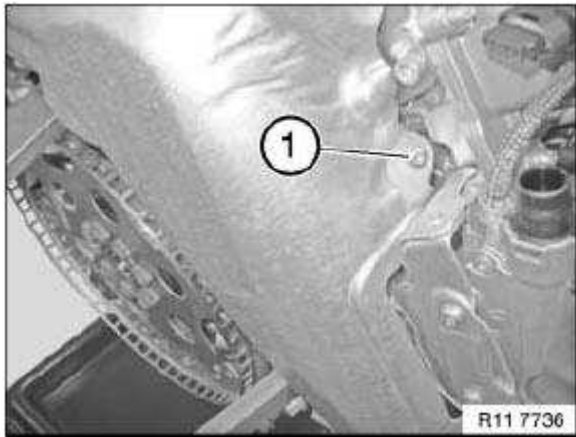


Fig. 59: Identifying Right Heat Shield And Screw
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows the engine removed.
 Release screw (1) on heat shield at bottom right.
 Unclip heat shield and remove.

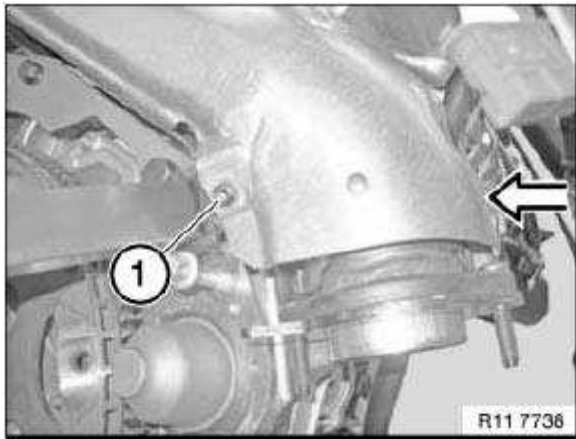


Fig. 60: Identifying Heat Shield And Screw
 Courtesy of BMW OF NORTH AMERICA, INC.

Picture shows the left side, carry out the operation for the right side in an identical way.

Release screws (1).

Detach hose (2) from cylinder head cover.

Release screws (3) on holder.

Tightening torque. See 18 32 2AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

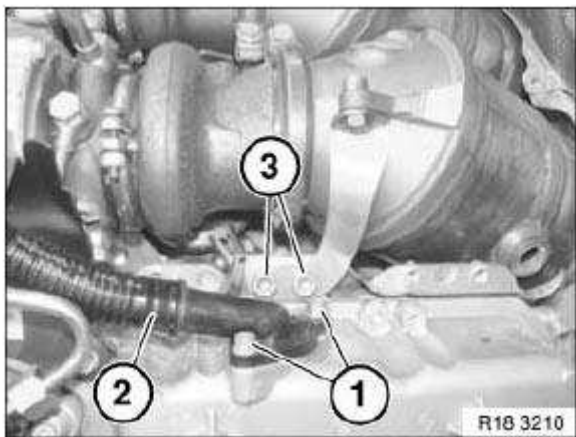


Fig. 61: Identifying Cylinder Head Cover Hose And Screws
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows the engine removed.
 Release screws (1) on catalytic converter, cylinders 1-4, rear, at cylinder head.
 Tightening torque. See 18 32 3AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

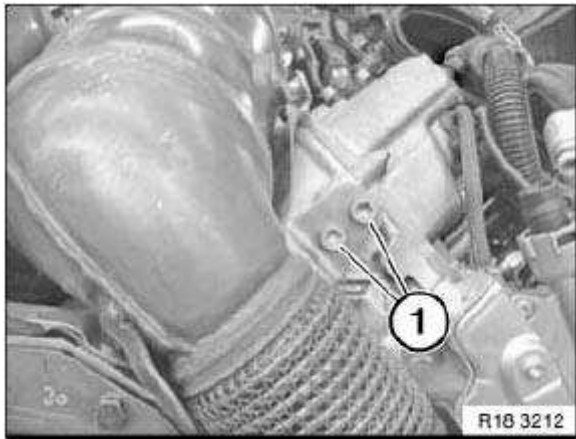


Fig. 62: Identifying Catalytic Converter And Screw
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows the engine removed.

Release screws (1) on catalytic converter, cylinders 5-8, rear, at cylinder head.

Tightening torque. See 18 32 3AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

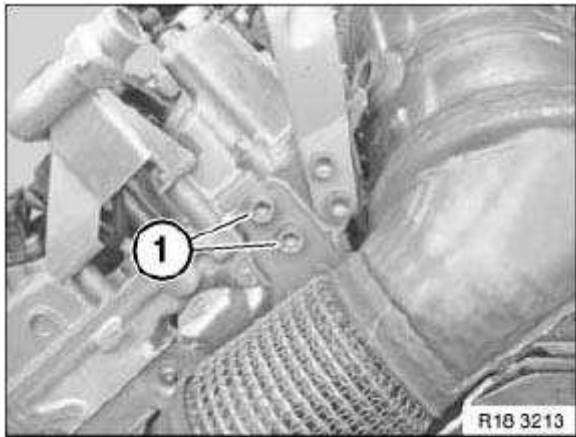


Fig. 63: Identifying Catalytic Converter And Screws
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: To remove the catalytic converter for cylinders 1-4, it is necessary to remove the catalytic converter for cylinders 5-8.

1. Remove catalytic converter for cylinders 5-8 (1).
2. Remove catalytic converter for cylinders 1-4 (2).

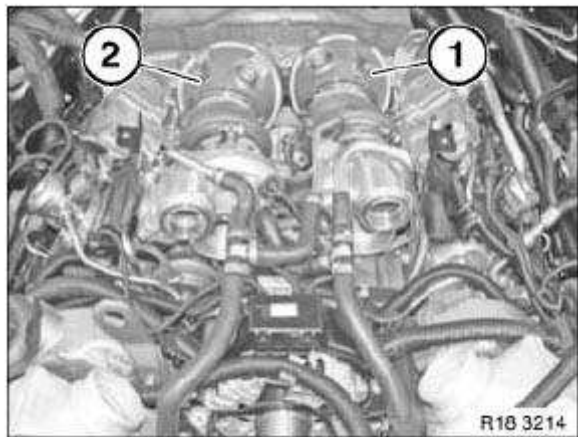


Fig. 64: Identifying Catalytic Converter
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Picture shows the engine removed.

Replace gaskets (1) on turbocharger.

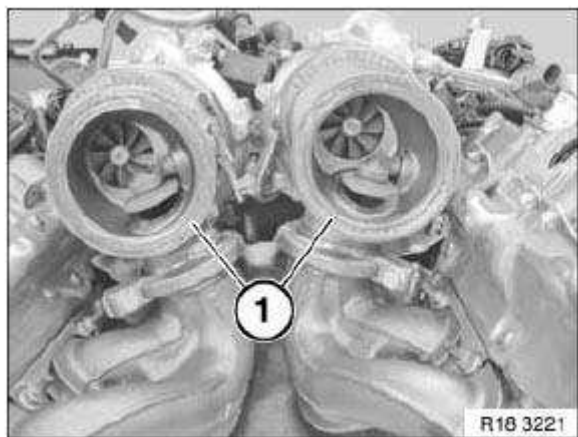


Fig. 65: Identifying Turbocharger
 Courtesy of BMW OF NORTH AMERICA, INC.

Assemble engine.

Check exhaust system for leaks.

18 32 050 REMOVING AND INSTALLING/REPLACING CATALYTIC EXHAUST GAS CONVERTER, CYLINDERS 5-8 (N63)

WARNING: Scalding hazard!
 Only perform these tasks on an engine that has cooled down.

Necessary preliminary tasks:

- Remove acoustic cover by raising cover in upward direction.
- Remove **both intake filter housings** . See **13 71 030 REMOVING AND INSTALLING BOTH INTAKE FILTER HOUSINGS (N63)** .
- Remove **exhaust system** . See **18 00 020 REMOVING AND INSTALLING COMPLETE EXHAUST SYSTEM (N63)**.
- Remove **both connecting pipes** . See **18 32 605 REMOVING AND INSTALLING/REPLACING BOTH CONNECTING PIPES ON CATALYTIC CONVERTER (N63)**.
- Remove **both control sensors** . See **11 78 533 REPLACING RIGHT CONTROL SENSOR (N63)** and **11 78 530 REPLACING LEFT CONTROL SENSOR (N63)** .
- Remove **both monitor sensors** . See **11 78 540 REPLACING LEFT MONITOR SENSOR (N63)** and **11 78 543 REPLACING RIGHT MONITOR SENSOR (N63)** .

Picture shows the left side, carry out the operation for the right side in an identical way.

Release screws (1).

Remove cable holders on left and right.

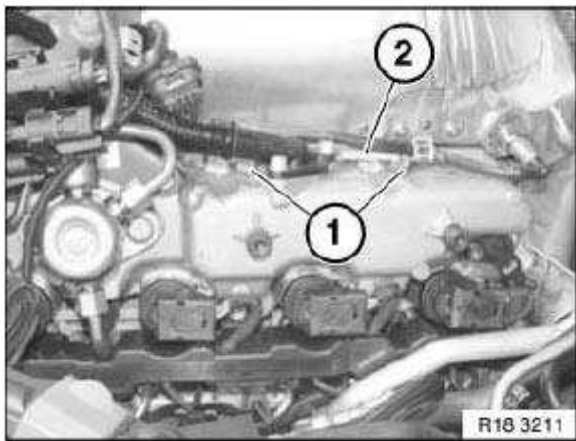


Fig. 66: Identifying Cable Holders And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Remove rubber mounts (1) and release screws underneath.

Tightening torque. See 13 71 5AZ in **13 71 AIR INTAKE DUCT** .

Remove cable holder (2).

Remove **heat shield** (3) at top. See **11 65 180 REMOVING AND INSTALLING/REPLACING HEAT SHIELD AT TOP (N63)** .

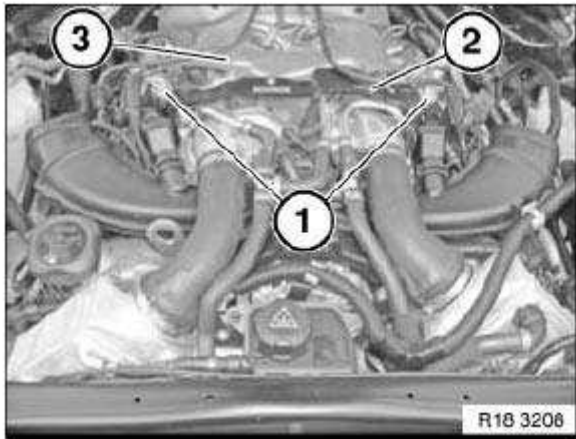


Fig. 67: Identifying Rubber Mounts And Cable Holder
Courtesy of BMW OF NORTH AMERICA, INC.

Remove heat shield (1) at rear left and right.

This is described further below in the instruction.

Release screw (2) on catalytic converter.

Tightening torque. See 18 32 4AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

Release clamp (3) on catalytic converter.

Replace clamp (3).

Tightening torque. See 18 32 1AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

Installation:

Clamp (3) must be fitted with the screw pointing inwards (shown in picture). Otherwise it will not be possible to install the heat shield at the top.

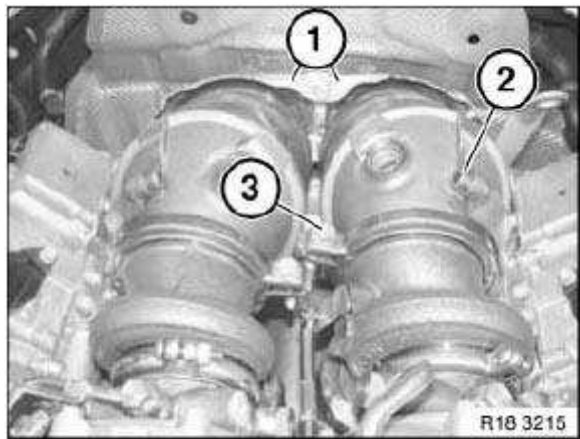


Fig. 68: Identifying Clamp And Screw
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

The ends of the V-band clamps must rest parallel to each other.

Tightening torque. See 18 32 1AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

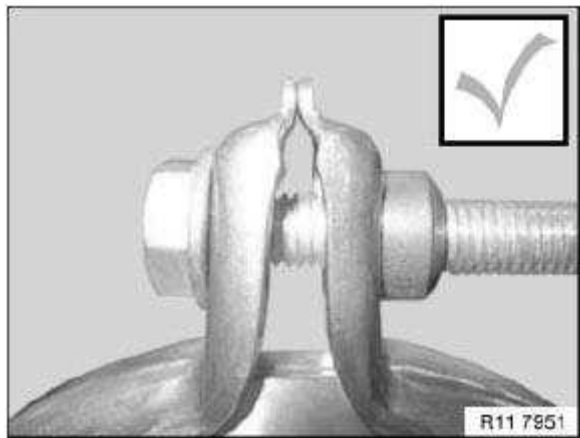


Fig. 69: Identifying V-Band Clamps
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

If you can see a gap between the ends of the V-band clamps, release and then repeat the screw connection.

Tightening torque. See 18 32 1AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

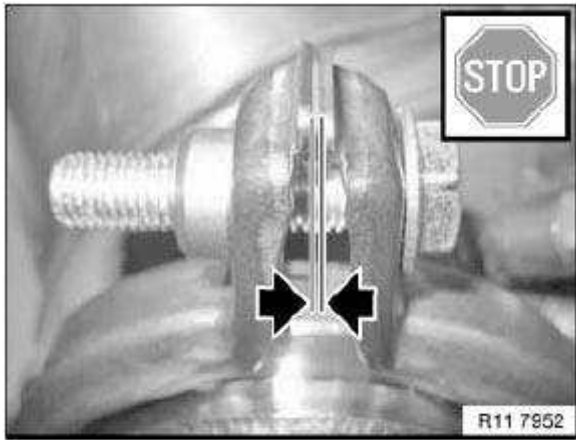


Fig. 70: Tightening V-Band Clamps
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

If the ends of the V-band clamps are positioned under each other, release and then repeat the screw connection.

Tightening torque. see 18 32 1AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

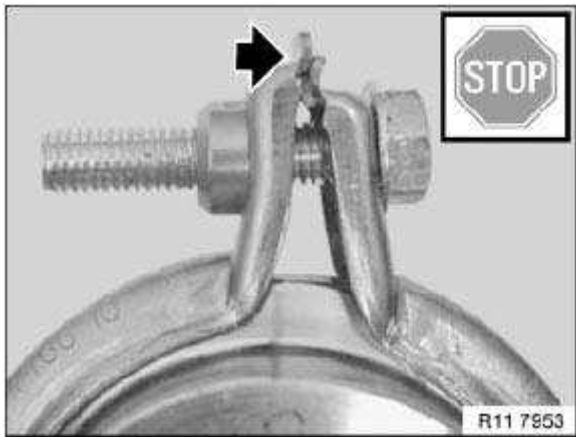


Fig. 71: Locating V-Band Clamps
 Courtesy of BMW OF NORTH AMERICA, INC.

Release screw (1) from heat shields (2) and (3).

Screw (1) is located between catalytic exhaust-gas converters.

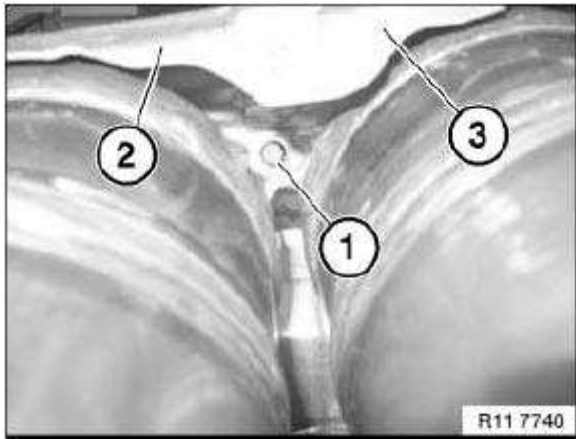


Fig. 72: Identifying Heat Shields And Screw
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows the engine removed.

Release screws (1) on left heat shield.

Unclip left heat shield and remove.

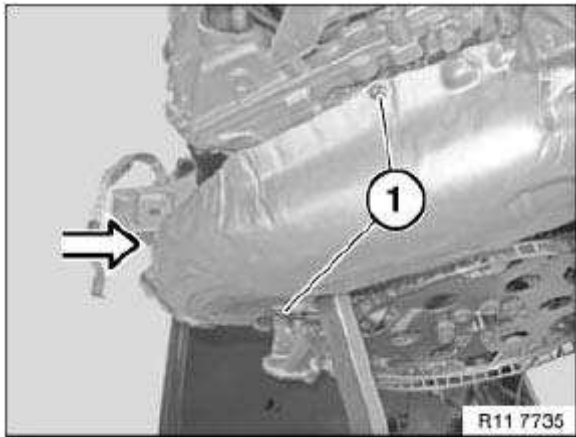


Fig. 73: Identifying Left Heat Shield And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows the engine removed.

Release screw (1) on right heat shield.

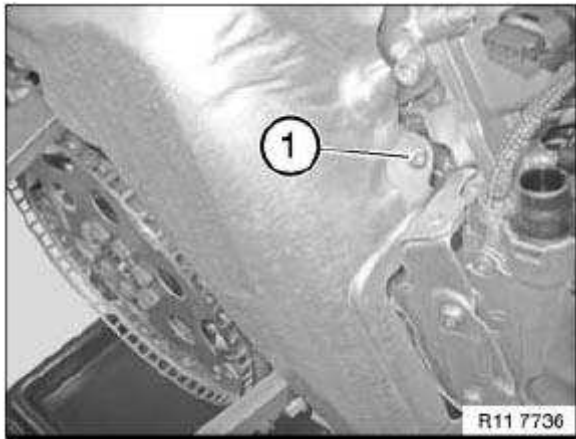


Fig. 74: Identifying Right Heat Shield And Screw
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows the engine removed.

Release screw (1) on heat shield at bottom right.

Unclip heat shield and remove.

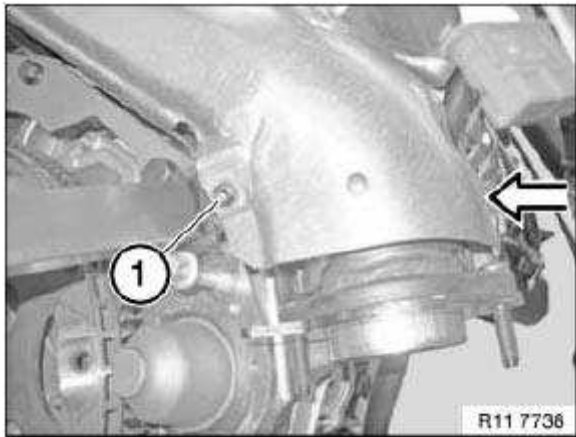


Fig. 75: Identifying Heat Shield And Screw
 Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1).

Detach hose (2) from cylinder head cover.

Release screws (3) on holder.

Tightening torque. See 18 32 2AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

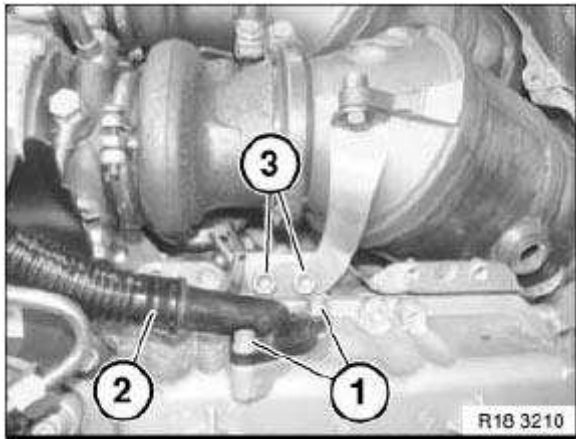


Fig. 76: Identifying Cylinder Head Cover Hose And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Picture shows the engine removed.

Release screws (1) on catalytic converter, cylinders 5-8, rear, at cylinder head.

Tightening torque. See 18 32 3AZ in **18 32 CATALYTIC EXHAUST GAS CONVERTER** .

Remove catalytic converter for cylinders 5-8.

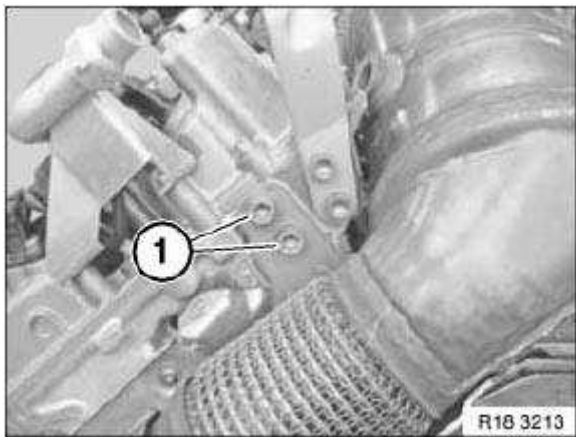


Fig. 77: Identifying Catalytic Converter And Screws
Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Picture shows the engine removed.

Replace gasket (1) on left turbocharger.

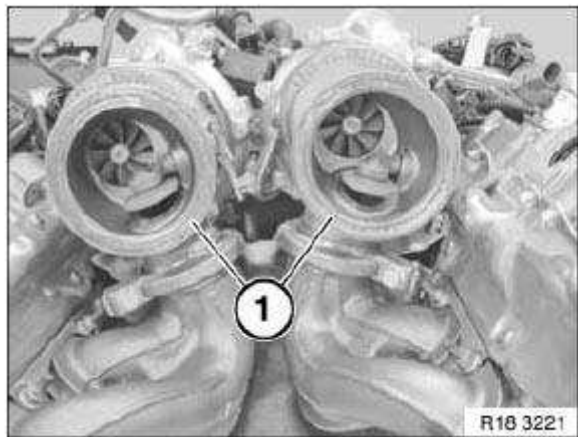


Fig. 78: Identifying Turbocharger
 Courtesy of BMW OF NORTH AMERICA, INC.

Assemble engine.

Check exhaust system for leaks.

18 40 020 REMOVING AND INSTALLING/REPLACING RIGHT EXHAUST MANIFOLD (N63)

WARNING: Scalding hazard!
 Only perform these tasks on an engine that has cooled down.

Necessary preliminary tasks:

- Remove **left turbocharger** . See **11 65 030 REMOVING AND INSTALLING/REPLACING EXHAUST TURBOCHARGER, LEFT, CYLINDERS 5-8 (N63)** .
- Remove **right turbocharger** . See **11 65 025 REMOVING AND INSTALLING/REPLACING EXHAUST TURBOCHARGER, RIGHT, CYLINDERS 1-4 (N63)** .
- Remove **alternator** . See **12 31 020 REMOVING AND INSTALLING OR REPLACING ALTERNATOR (N63)** .

Release screws (1).

Tightening torque. See 18 31 4AZ in **18 31 EXHAUST SYSTEM** .

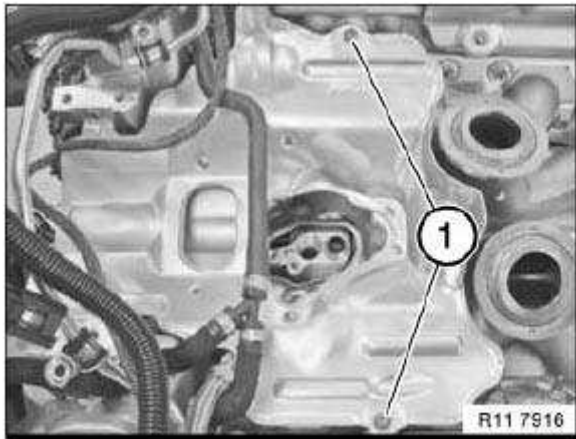


Fig. 79: Identifying Right Exhaust Manifold And Screws
 Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1).

Tightening torque. See 18 31 4AZ in **18 31 EXHAUST SYSTEM** .

Remove heat shield (2).

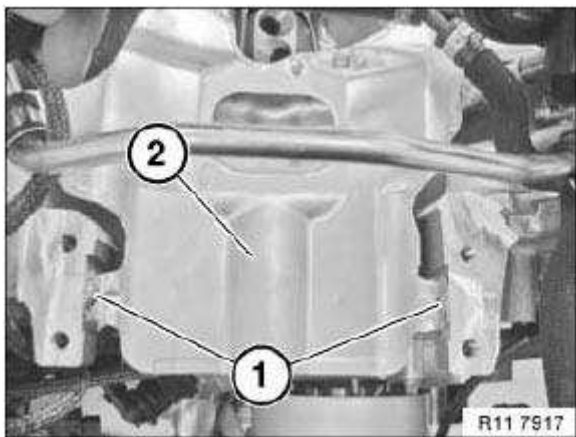


Fig. 80: Identifying Heat Shield And Screws
 Courtesy of BMW OF NORTH AMERICA, INC.

Release screws (1).

Tightening torque. See 18 31 4AZ in **18 31 EXHAUST SYSTEM** .

Remove heat shield (2) at rear right.

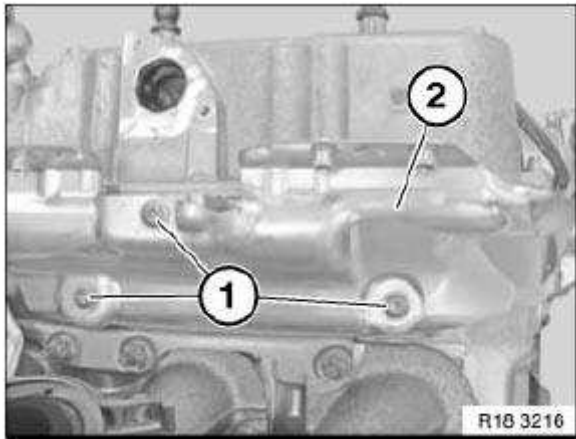


Fig. 81: Identifying Heat Shield Screws Location
 Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew nuts.

Replace nuts.

Tightening torque. See 18 31 3AZ in **18 31 EXHAUST SYSTEM** .

Remove exhaust manifold (1).

Installation:

Replace seal (2).

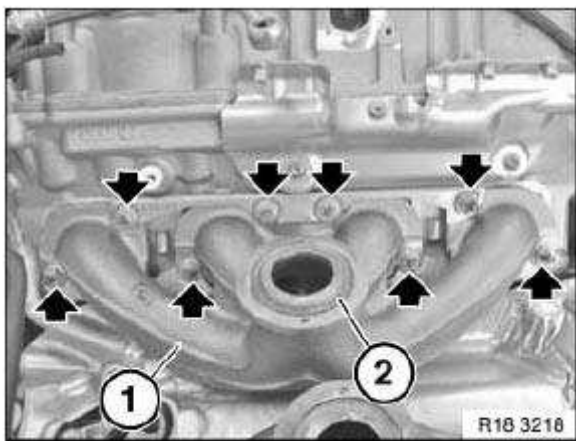


Fig. 82: Identifying Seal Location
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation:

Replace gaskets (1).

Seal beads faces the exhaust manifold.

Coat threads with copper paste.

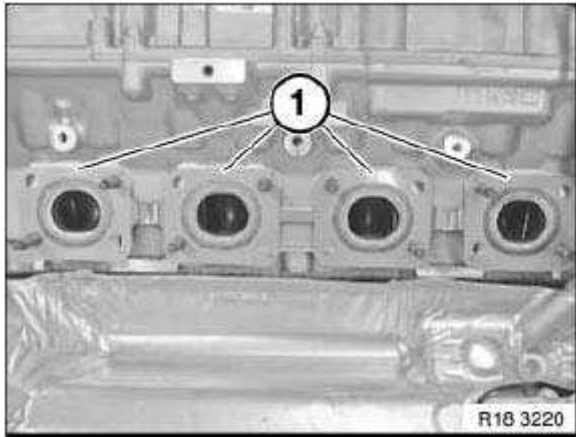


Fig. 83: Identifying Exhaust Manifold Gaskets
Courtesy of BMW OF NORTH AMERICA, INC.

Assemble engine.

Check exhaust system for leaks.

ENGINE

Exhaust System - Special Tools - X6

18 0 110 GAUGE

NOTE: For securing catalytic converter in installation position.

Engine: N54

SI number: 1 20 06 (299)

Order number: 18 0 110

Gauge

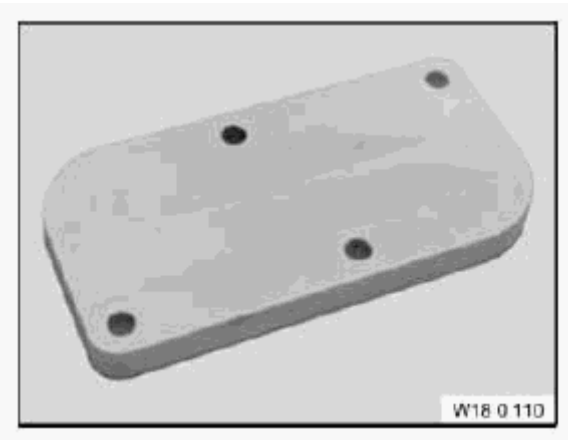


Fig. 1: Identify Special Tool (18 0 110)
Courtesy of BMW OF NORTH AMERICA, INC.