

Fig. 78: Coating Surface Of Sealing Compound In Both Grooves With Loctite Primer
Courtesy of BMW OF NORTH AMERICA, INC.

Assemble engine.

11 14 010 REPLACING SEALING CAP FOR VACUUM PUMP

Special tools required:

- 11 8 531
- 11 8 532
- 11 8 533
- 11 8 535
- 11 8 537

Necessary preliminary tasks:

- Remove FAN COWL .
- Remove alternator DRIVE BELT.
- Remove both drive belt TENSIONERS.

NOTE: For purposes of clarity, illustrations show alternator and servo pump.

Secure special tool 11 8 531 with special tool 11 8 535.

Twist out special tool 11 8 533 in direction of arrow until special tool 11 8 532 is released from mounting.

Secure special tool 11 8 532 against falling down.

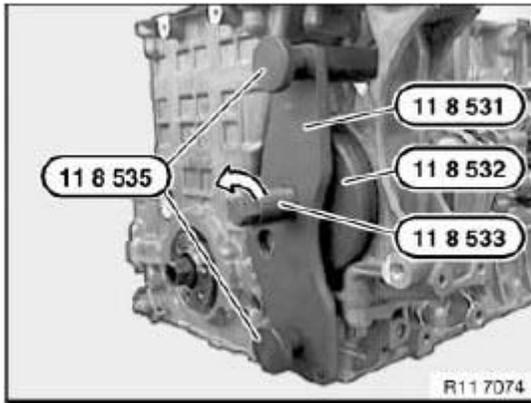


Fig. 79: Twisting Out Special Tool (11 8 533) And (11 8 532)
Courtesy of BMW OF NORTH AMERICA, INC.

Position special tool **11 8 532** by hand on sealing cover.

Screw in special tool **11 8 544**.

NOTE: The sealing cover is pressed out diagonally during this work step

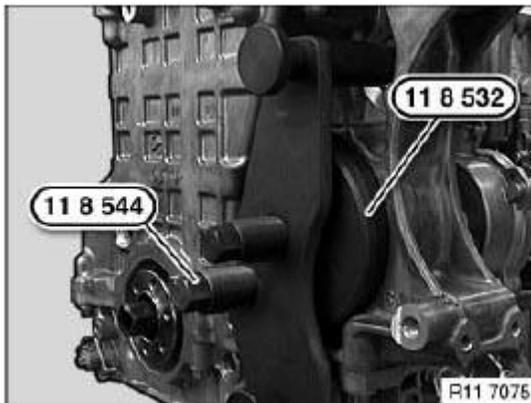


Fig. 80: Positioning Special Tool (11 8 532) On Sealing Cover
Courtesy of BMW OF NORTH AMERICA, INC.

Screw in new sealing cover (1) with special tools **11 8 532** and **11 8 533** until flush with housing.

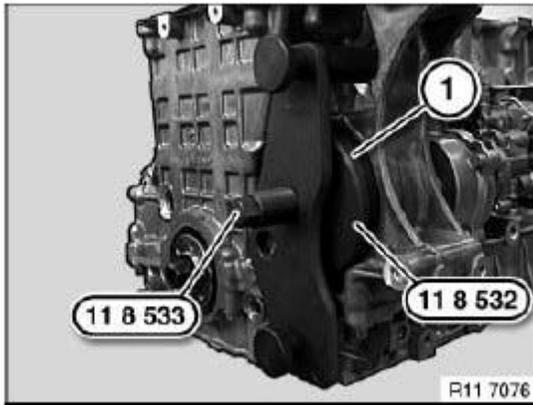


Fig. 81: Identifying Sealing Cover With Special Tools (11 8 532) And (11 8 533)
Courtesy of BMW OF NORTH AMERICA, INC.

Assemble engine.

11 14 151 REPLACING RADIAL CRANKSHAFT SEAL ON TRANSMISSION SIDE (UP TO 12/31/08)

Special tools required:

- **11 9 181**
- **11 9 182**
- **11 9 183**
- **11 9 184**
- **11 9 200**

Necessary preliminary tasks:

- Remove transmission.
- Remove **FLYWHEEL**.

NOTE: Radial seal has six removal openings for removal with special tool 11 9 200.

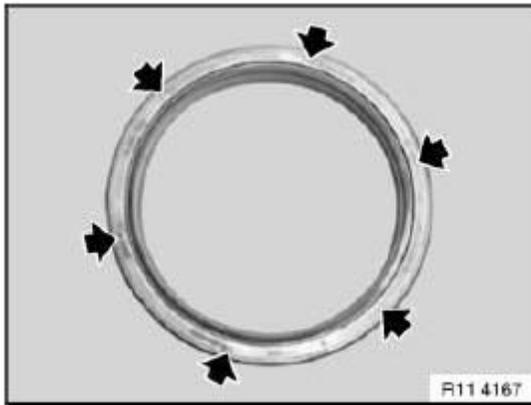


Fig. 82: Locating Radial Seal

Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: If necessary, remove rubber coating (1) on top side of radial seal and expose a removal opening (2) (see illustration).

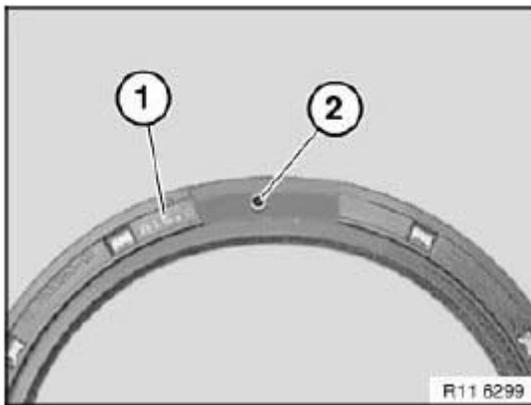


Fig. 83: Identifying Rubber Coating

Courtesy of BMW OF NORTH AMERICA, INC.

Fit special tool **11 9 200**. Insert metal screws into removal opening of radial seal and initially tighten without play (do **not** overtighten metal screws).

Screw in spindle (1) slowly and carefully and detach radial seal.

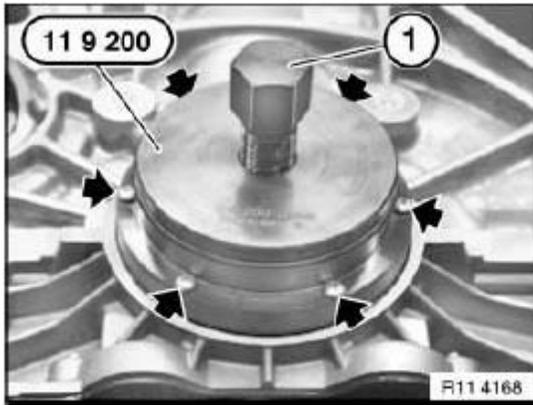


Fig. 84: Locating Metal Screws With Spindle
 Courtesy of BMW OF NORTH AMERICA, INC.

Installation note:

Clean sealing surface (1) and degrease thoroughly in area of housing partition.

Apply a light coat of oil to running surface (2) of radial shaft seal.

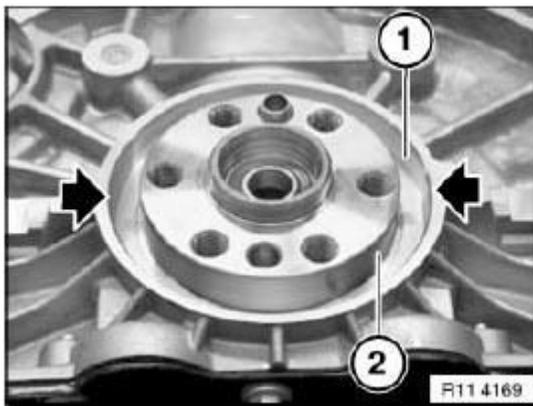


Fig. 85: Identifying Sealing Cleaning Area And Radial Shaft Seal Running Surface Area
 Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: Support sleeve (4) is supplied with radial shaft seal (1).
 When radial shaft seal (1) is installed, only support sleeve (4) may be used as a slip sleeve.
 Radial shaft seal (1) has a groove (2) on both left and right sides.

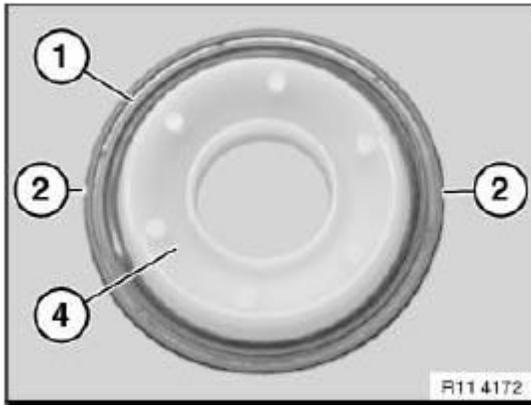


Fig. 86: Identifying Radial Shaft Seal, Groove And Sleeve
 Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: After installation, grooves (2) must be filled with sealing compound.

IMPORTANT: The seal between the engine block and radial seal is described below.
 The engine block will not be leakproof at the outside of the radial seal if you fail to comply with the individual work steps and the work sequence.

Remove screw caps (1) from injector (2).

Screw on metering needle.

Insert piston for pressing out.

Injector (2) contains the sealing compound Loctite, manufacturer's number 193140.

Bottle (3) contains the primer Loctite, manufacturer's number 171000.

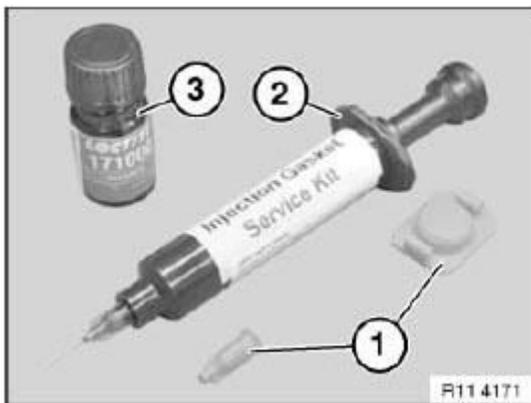


Fig. 87: Identifying Screw Caps And Injector
 Courtesy of BMW OF NORTH AMERICA, INC.