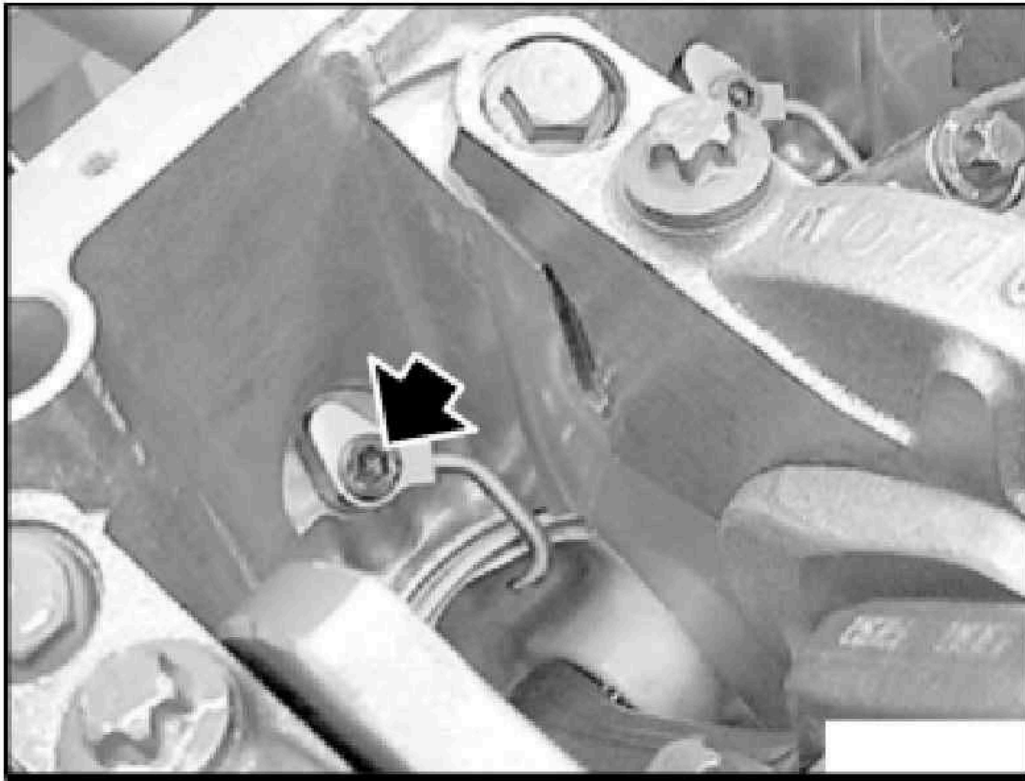


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Fig. 417: Removing Oil Carbon Residue
Courtesy of BMW OF NORTH AMERICA, INC.

CAUTION: When the pistons are removed and installed, there is the risk that the piston-cooling spray nozzles may be damaged.

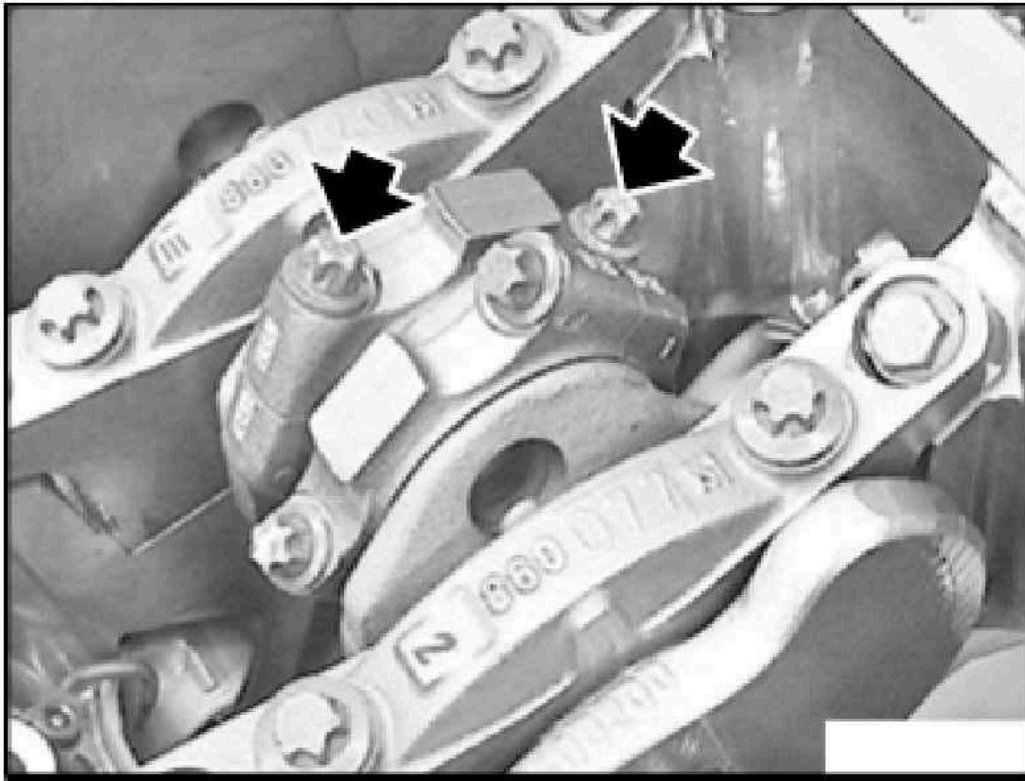
If necessary, remove piston-cooling spray nozzles.



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Fig. 418: Identifying Piston-Cooling Spray Nozzle
Courtesy of BMW OF NORTH AMERICA, INC.

Remove connecting-rod cover.

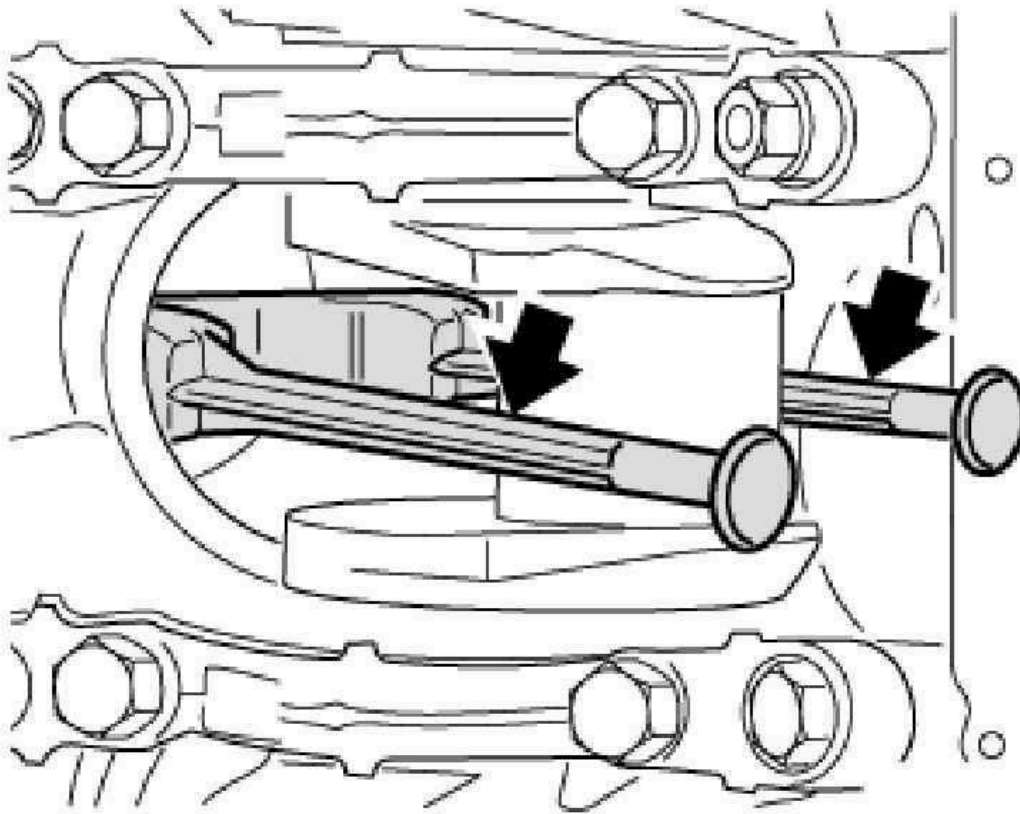


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Fig. 419: Removing Connecting-Rod Cover
Courtesy of BMW OF NORTH AMERICA, INC.

Insert special tool 11 3 480 in conrod.

Remove connecting rod with piston from cylinder-head side.

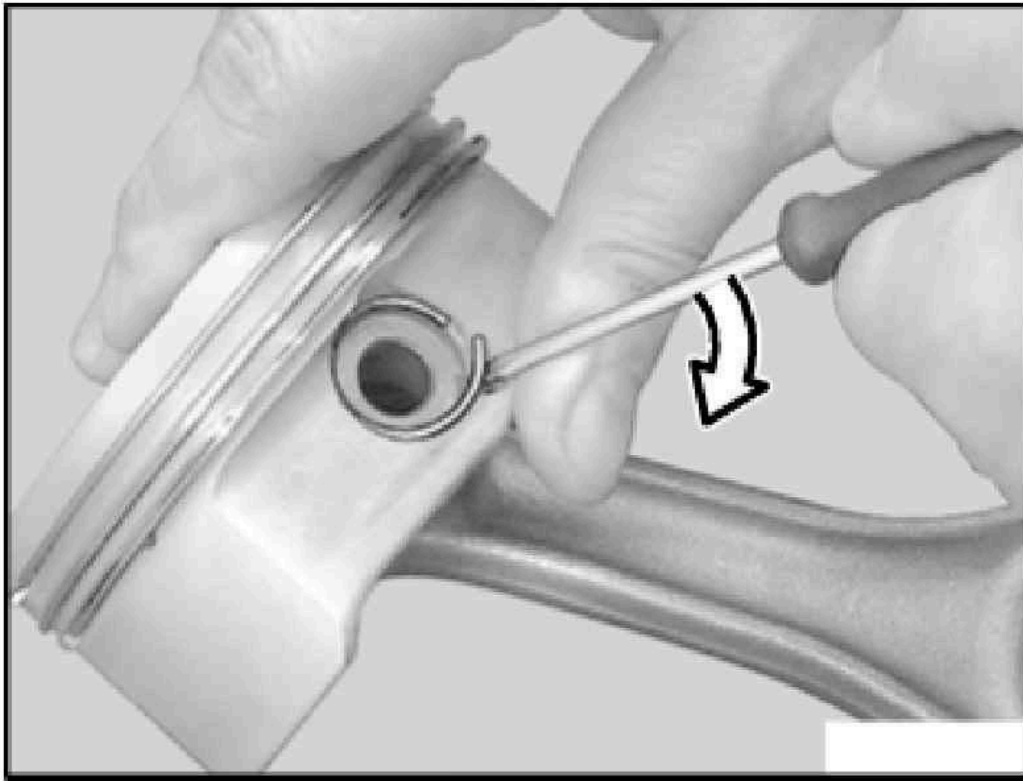


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Fig. 420: Removing Connecting Rod With Piston
Courtesy of BMW OF NORTH AMERICA, INC.

CAUTION: Piston and piston bolts are paired and must not be fitted individually.

Lift out retaining ring and press out piston pin.



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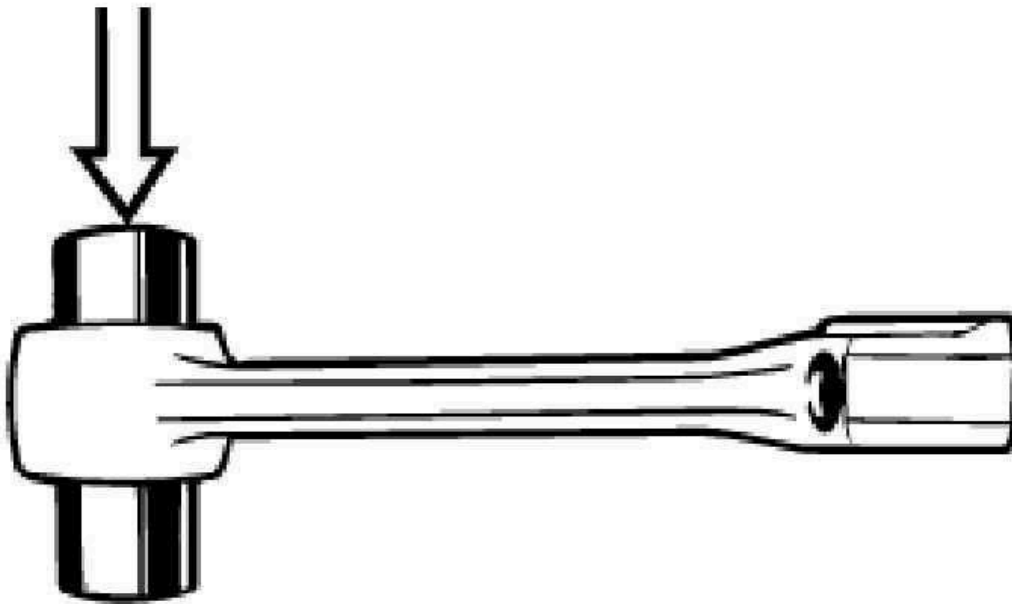
Fig. 421: Removing Retaining Ring And Piston Pin
Courtesy of BMW OF NORTH AMERICA, INC.

Installation

Installation of pistons is described separately from removal. The assembly sequence for removal and installation is different.

If necessary, replace connecting rods.

NOTE: **The conrods can also be replaced individually.
The piston pin must be able to be pressed through the liner by hand with little
force and must not display any significant play.**



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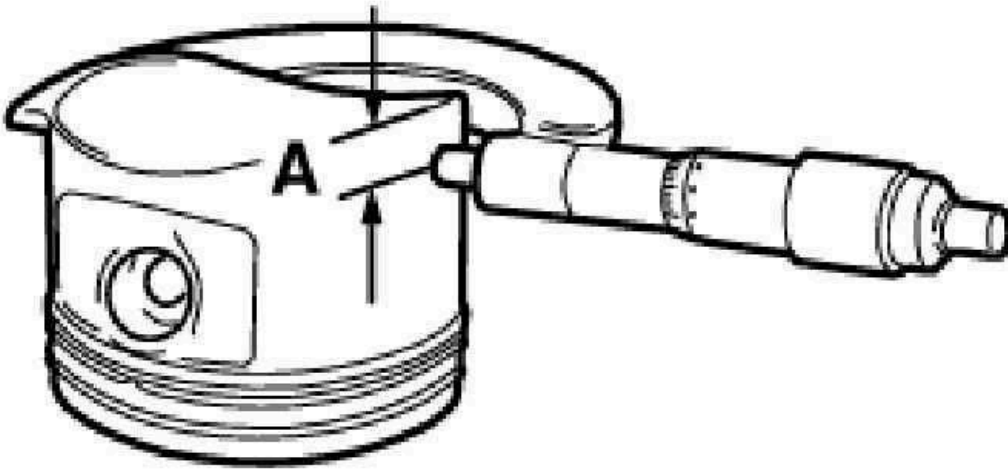
Fig. 422: Installing Piston Pin

Courtesy of BMW OF NORTH AMERICA, INC.

Prior to installation, measure piston installation clearance:

Measure piston diameter with micrometer at measuring point A from lower edge of piston and offset by 90° to piston pin axis.

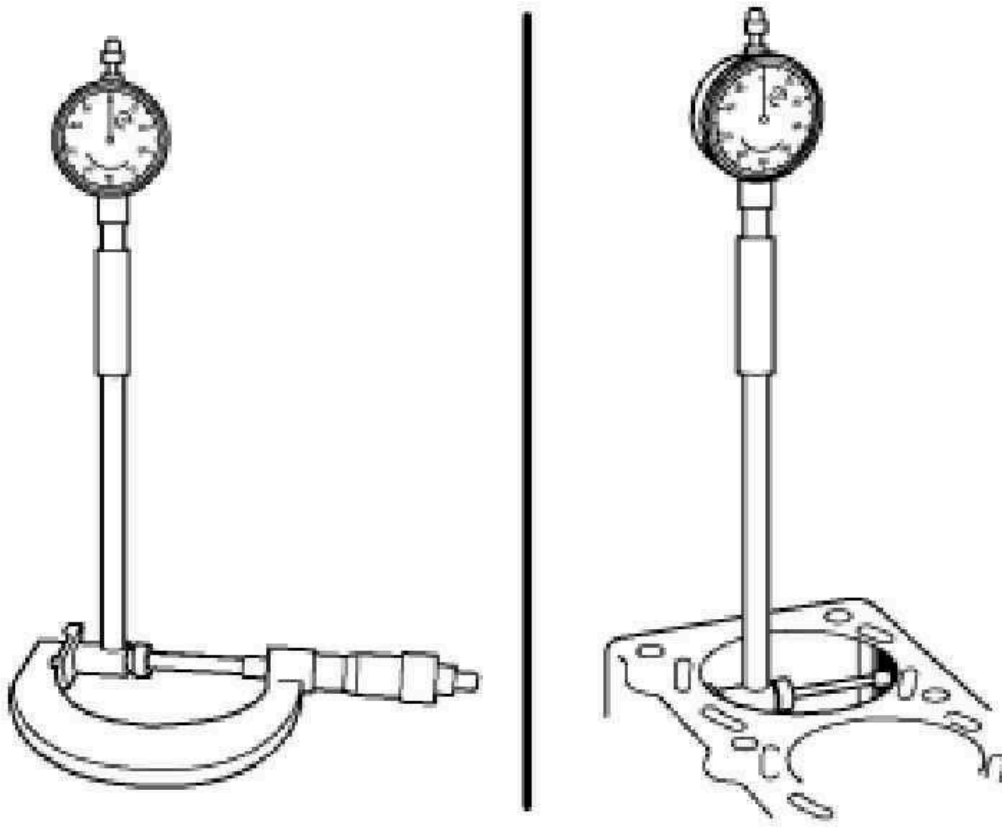
Measuring point A. Refer to **11 25 PISTONS WITH RINGS AND PINS S62** .



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Fig. 423: Measuring Piston Diameter
Courtesy of BMW OF NORTH AMERICA, INC.

Adjust micrometer to cylinder bore of engine block. Set internal caliper on micrometer to zero. Measure bottom, center and top of cylinder bore in direction of travel and direction of engine rotation.



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Fig. 424: Measuring Cylinder Bore

Courtesy of BMW OF NORTH AMERICA, INC.

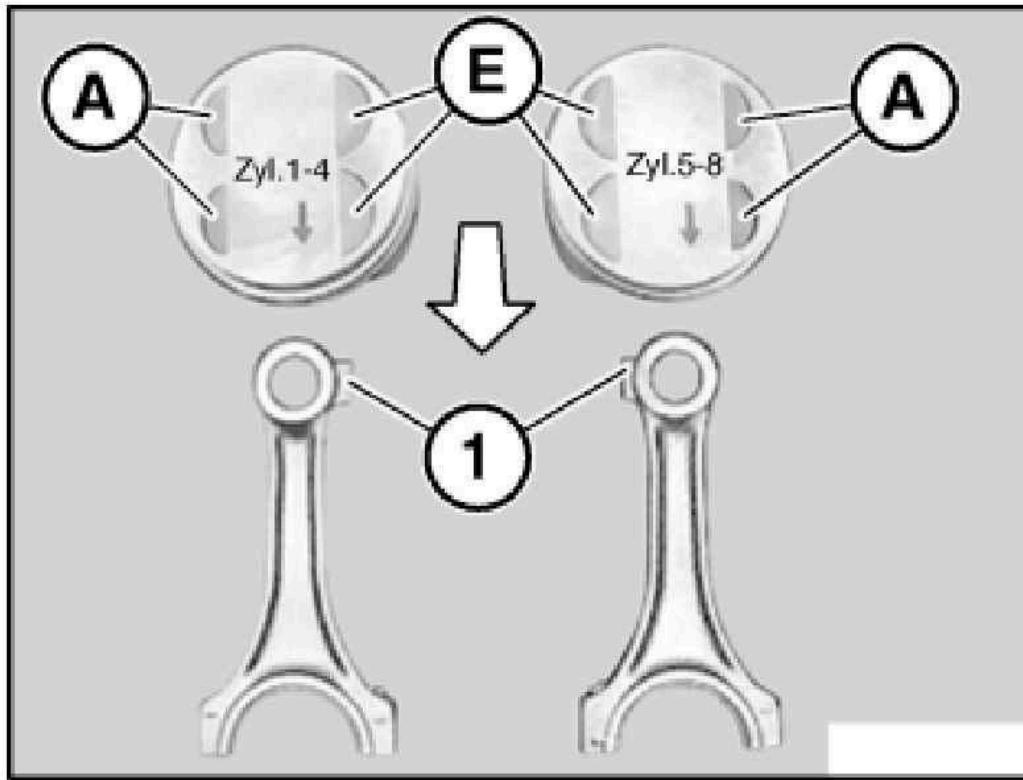
Diameter of cylinder bore. Refer to **11 11 ENGINE BLOCK, CYLINDER CRANKCASE S62** .

Piston installation clearance. Refer to **11 25 PISTONS WITH RINGS AND PINS S62** .

Total permissible wear tolerance. Refer to **11 25 PISTONS WITH RINGS AND PINS S62** .

CAUTION: The pistons of cylinder banks 1 to 4 and 5 to 8 are different.

Fit conrod with piston pin to piston so that supplementary weight (1) on conrod points to inlet side.



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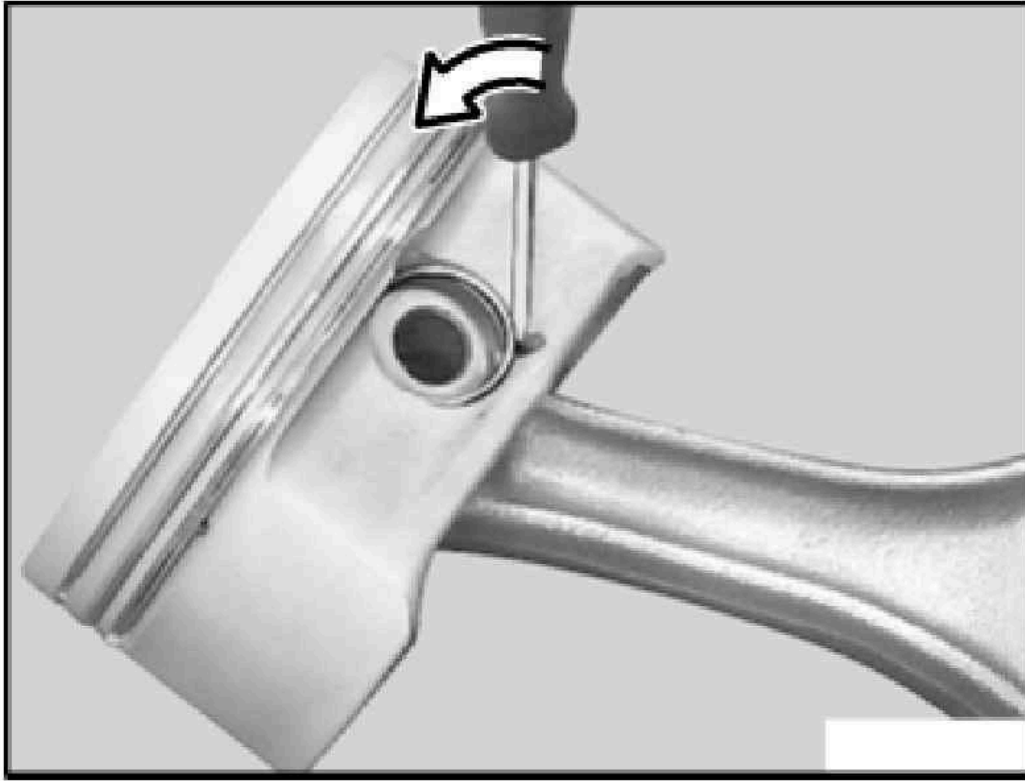
Fig. 425: Installing Conrod

Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: The direction in which the pairing numbers on the conrod point does not affect the function.

Install conrod bearing. Refer to [11 24 571 Replacing all conrod bearings \(S62\)](#) .

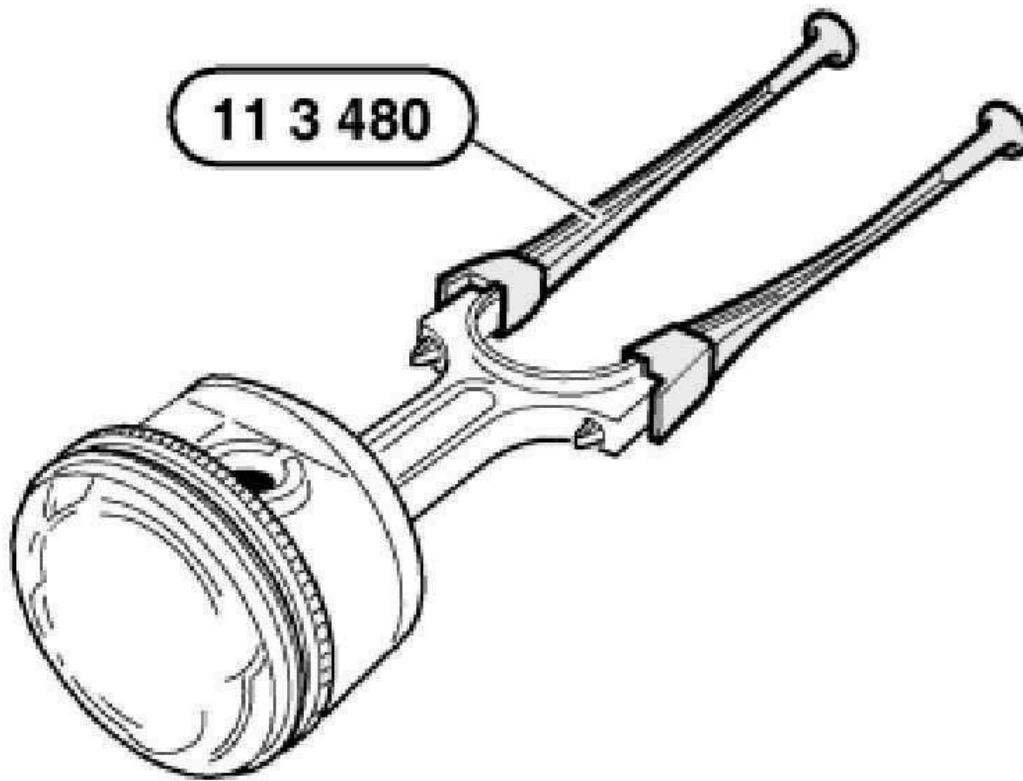
Install retaining ring.



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Fig. 426: Installing Retaining Ring
Courtesy of BMW OF NORTH AMERICA, INC.

Insert special tool 11 3 480 in conrod.



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Fig. 427: Inserting Special Tool In Conrod
Courtesy of BMW OF NORTH AMERICA, INC.

Lightly coat pistons and piston rings with oil.

Offset the contact points of the piston rings by approx. 120° to each other but do not position above the piston pin boss.

Press together piston rings using special tool 11 7 180.