

2022 CHEVROLET CORVETTE SERVICE MANUAL

- **SEARCH**

1. **Engine/Propulsion**

2. **Engine Mechanical - 6.2L (LT2)**

3. **Repair Instructions**

- 4.

Piston and Connecting Rod Overhaul

Special Tools

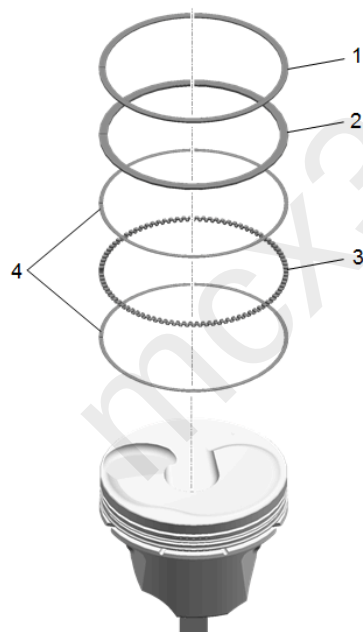
- EN-41556, Connecting Rod Guide
- EN-46745, Piston Pin Clip Remover/Installer

Equivalent regional tools: Special Tools

Removal Procedure

Piston and Connecting Rod Assembly >> Remove - Piston and Connecting Rod Removal and Installation

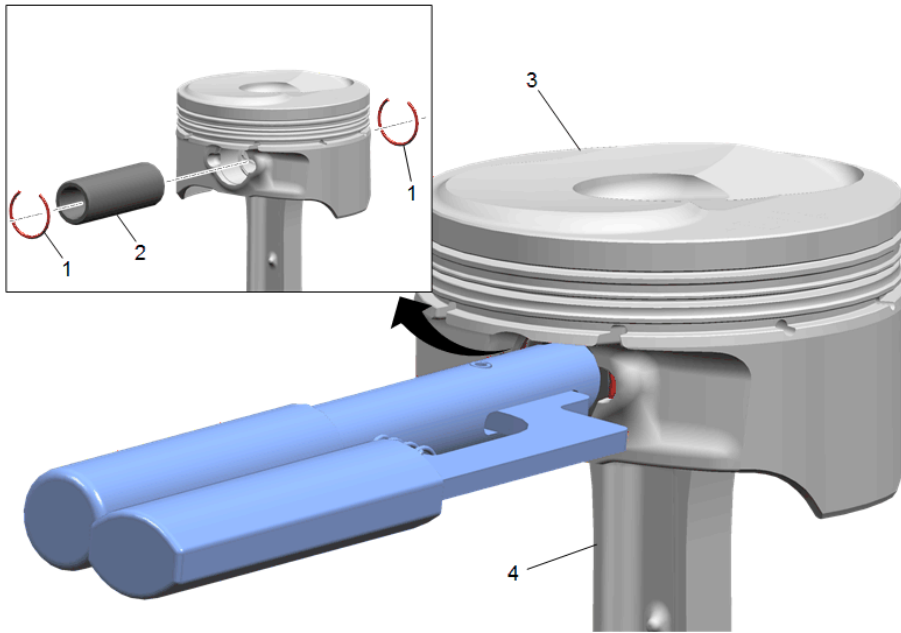
Disassemble Procedure



1. [Click here for full size](#)
2. Caution:

You must use a piston ring expander to remove and install the piston rings. Only expand the rings far enough to fit over the piston lands. If the rings are overexpanded, the top ring will shatter and the others will distort.

3. Remove the piston rings (1, 2, 3, and 4) using a piston ring expander. Place each ring in a clean shop towel for storage.

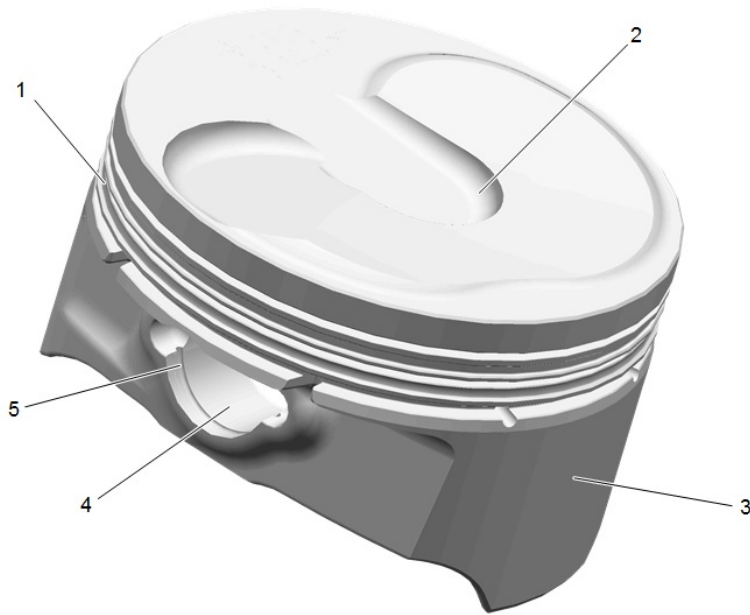


4. [Click here for full size](#)
5. Note:
 - The connecting rod is non-directional and may be assembled/reassembled to the piston in either direction.
 - DO NOT reuse the piston pin retainers.
6. Using the *EN-46745* Piston Pin Clip Remover/Installer, remove the piston pin retainers (1) by using the removal access notch in the side of the piston (3). Discard the piston pin retainers (1).
7. Slide the piston pin (2) out of the piston (3). The piston will disconnect from the connecting rod (4).

Cleaning Procedure

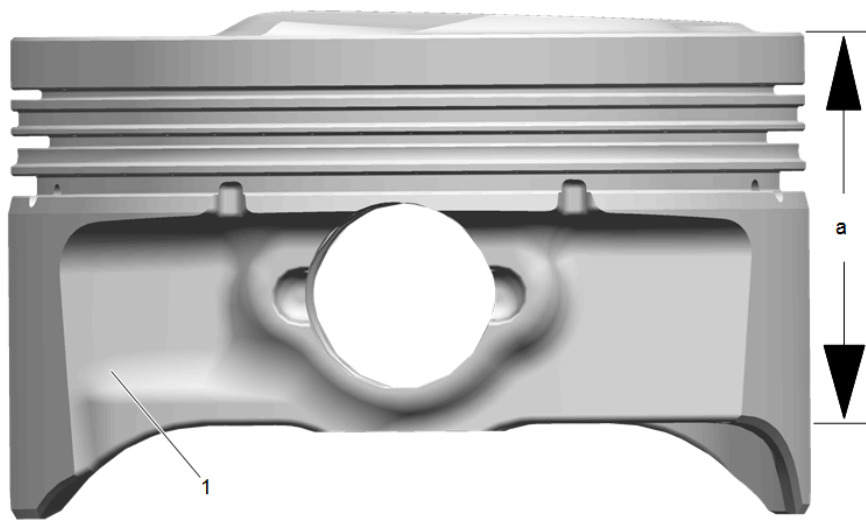
1. Note:
 - DO NOT wire brush any part of the piston.
2. Clean the piston skirts and the pins with a cleaning solvent.
3. Clean the piston ring grooves with a groove cleaner. Ensure that the oil ring holes and slots are clean.
4. Warning:
 - Refer to Safety Glasses Warning.
5. Dry the piston with compressed air.

Inspection Procedure

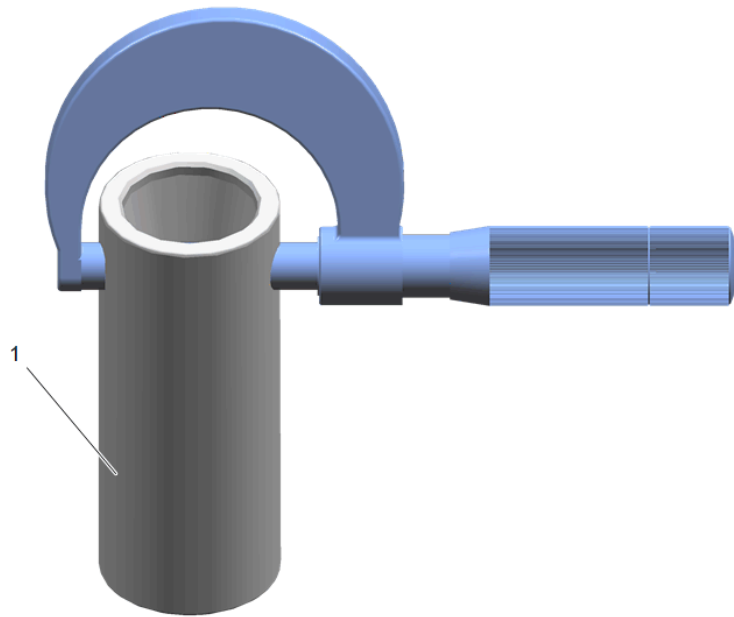


1. [Click here for full size](#)
2. Inspect the pistons for the following conditions:
3.
 - Cracked ring lands, skirts or pin bosses
 - Ring grooves for nicks, burrs that may cause binding (1)
 - Warped or worn ring lands (1)
 - Eroded areas at the top of the piston (2)
 - Scuffed or damaged skirt coating (3)
 - Worn piston pin bores or worn piston pins (4)
 - Piston pin retainer grooves for burrs (5)
4. Replace pistons that show any signs of damage or excessive wear.

Piston Measurement Procedure



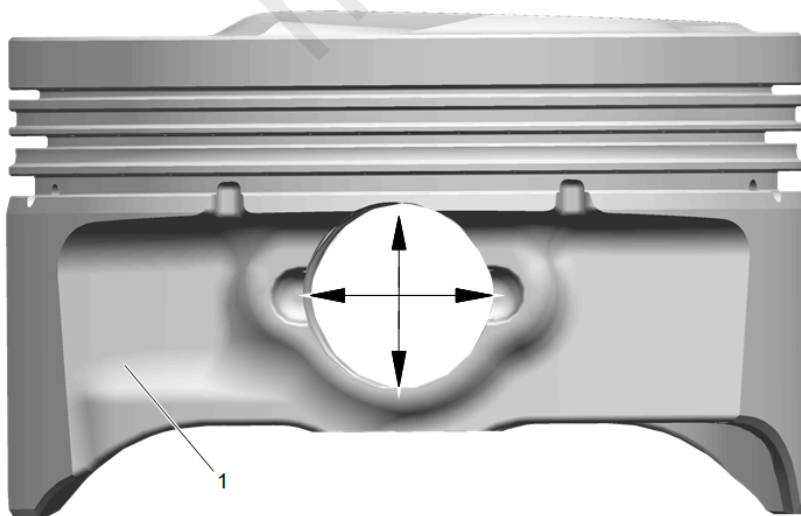
1.
Click here for full size
2. Measure piston width using the following procedure:
3.
 1. Using an outside micrometer, measure the width of the piston (1) at 40 mm (1.574 in) (a) below the crown, top, at the thrust surfaces of the piston, perpendicular to the piston pin centerline.
 2. Compare the measurement of the piston to its original cylinder by subtracting the piston width from the cylinder diameter.
 3. Check your measurements with the Engine Mechanical Specifications.
 4. If the clearance obtained through measurement is greater than the provided specifications and the cylinder bores are within specification, replace the piston.



4.
[Click here for full size](#)

5. Measure the piston pin bore to piston pin clearances using the following procedure:

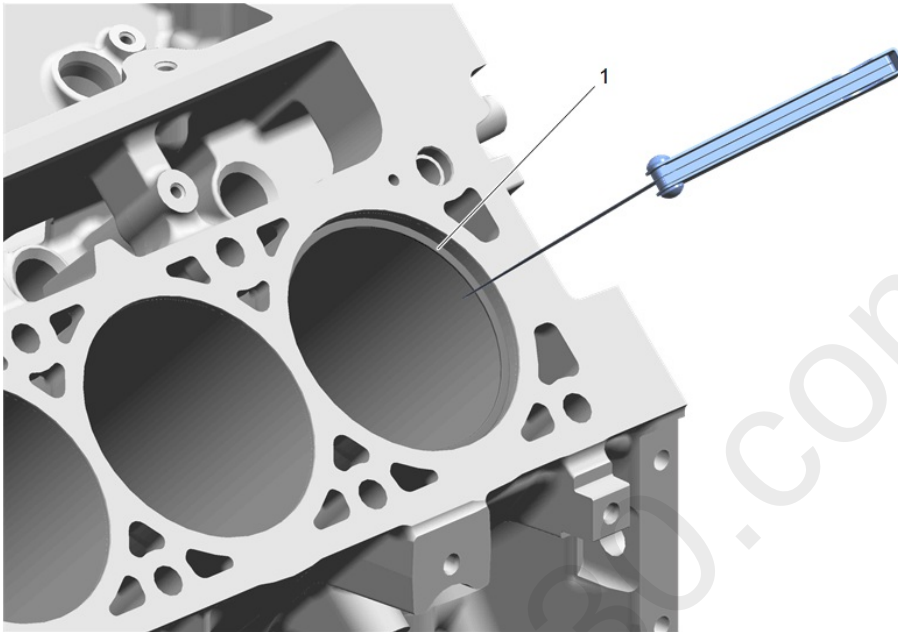
- 6.
1. Piston pin bores and pins must be free of varnish or scuffing.
 2. Use an outside micrometer to measure the piston pin (1) in the piston contact areas.



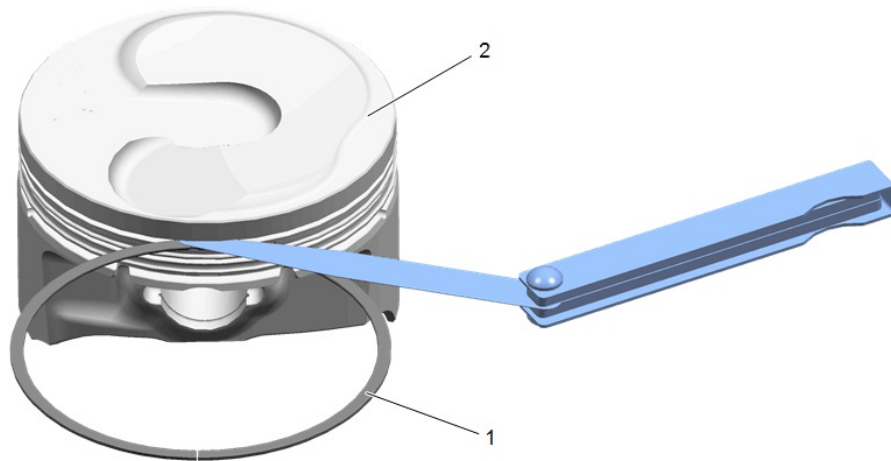
7.
[Click here for full size](#)

8. Using an inside micrometer, measure the piston pin bore of the piston (1). Compare your result with the piston pin diameter and piston pin to piston pin bore clearance listed in the Engine Mechanical Specifications.
9. If the clearance is excessive, determine which piece is out of specification and replace as necessary.
10. You must replace the piston (1) if any of its dimensions are out of specification.
11. If the new piston does not meet clearance specifications, the cylinder block may need to be oversized to 0.25 mm (0.010 in). There is only one size of oversized pistons and rings available for service.

Piston Ring Measurement Procedure



1.
Click here for full size
2. Measure the piston ring end gap using the following procedure:
3.
 1. Place the piston ring (1) in the area of the bore where the piston ring will travel approximately 25 mm (1 in) down from the deck surface. Ensure that the ring is square with the cylinder bore by positioning the ring with the piston head.
 2. Measure the end gap of the piston ring with feeler gauges. Engine Mechanical Specifications
 3. If the clearance exceeds the provided specifications, the piston rings must be replaced.
 4. Repeat the procedure for all the piston rings.

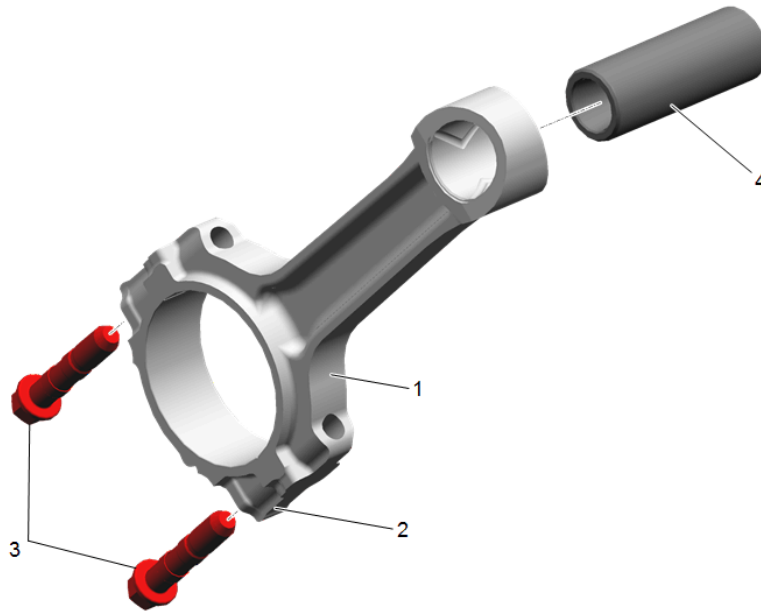


4. [Click here for full size](#)
5. Measure the piston ring side clearance using the following procedure:
6.
 1. Roll the piston ring (1) entirely around the piston ring groove. If any binding is caused by the ring groove, dress the groove with a fine file. If any binding is caused by a distorted piston ring, replace the ring.
 2. With the piston ring on the piston (2), use feeler gauges to check clearance at multiple locations.
 3. Compare the measurements with piston ring side clearance listed in the Engine Mechanical Specifications.
 4. If the clearance is greater than specifications, replace the piston rings.
7. If the new ring does not reduce the clearance to the proper specification, install a new piston.
8. If the new piston does not meet clearance specifications, the engine will need replaced.

Connecting Rod Cleaning Procedure

1. Clean the connecting rods in solvent.
2. Warning:
Refer to Safety Glasses Warning.
3. Dry the connecting rod using compressed air.
4. Remove the connecting rod cap and clean the threads.
5. Remove the connecting rod bearing and discard. Never reuse a connecting rod bearing used in a running engine.

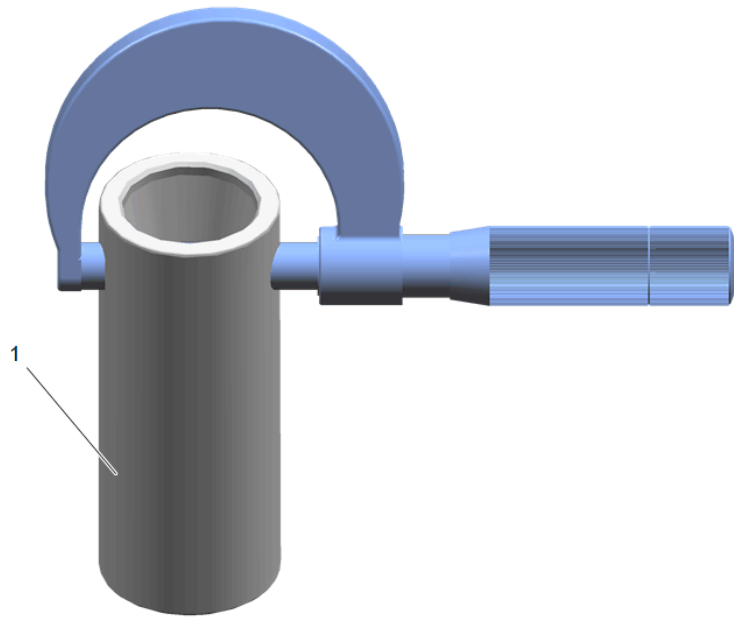
Connecting Rod Visual Inspection Procedure



1. [Click here for full size](#)
2. Inspect the piston pin bushing (4) for scoring or damage.
3. Inspect the connecting rod beam (1) for twisting or bending.
4. Inspect the rod cap (2) for any nicks or damage caused by possible interference.
5. Inspect for scratches or abrasion on the rod bearing seating surface.
6. Note:
DO NOT scrape the rod or rod cap.
7. If the connecting rod bores contain minor scratches or abrasions, clean the bores in a circular direction with a light emery paper.

Connecting Rod Measurement Procedure

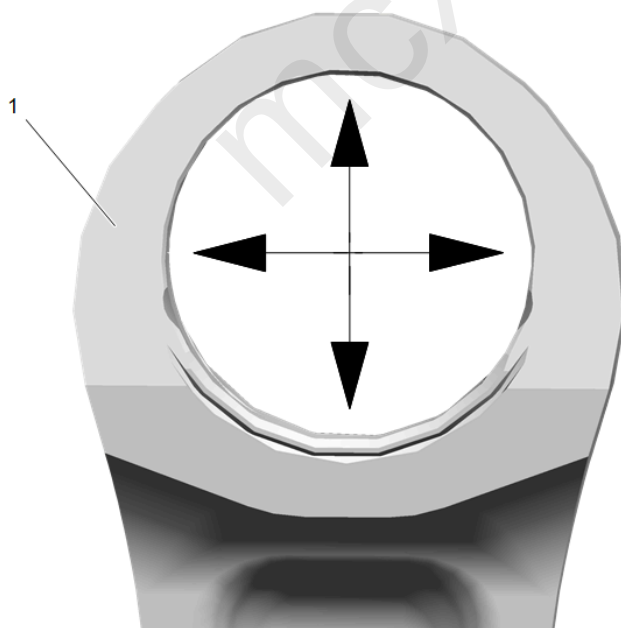
Piston Pin End



1. [Click here for full size](#)
2. Note:

Measurements of all components should be taken with the components at normal room temperature.

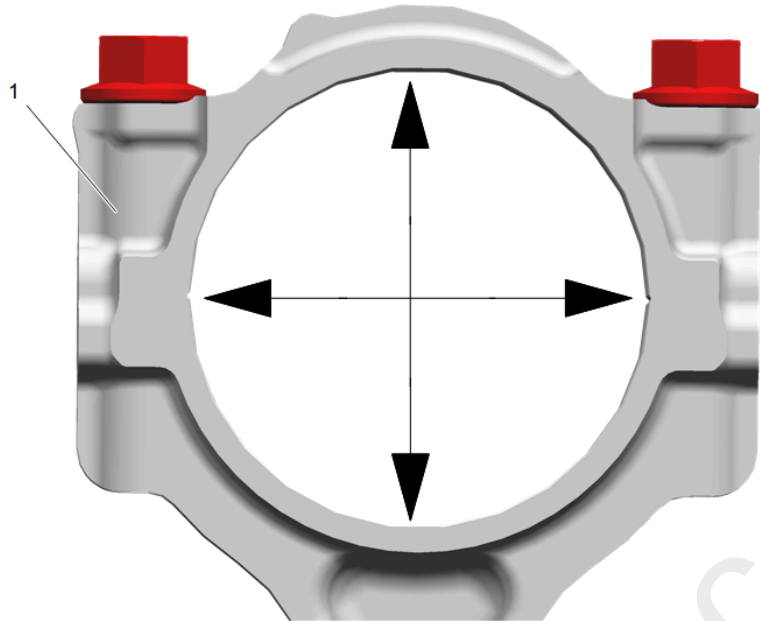
3. Using an outside micrometer, take 2 measurements of the piston pin (1) in the area of the connecting rod contact.



4. [Click here for full size](#)
5. Using an inside micrometer, measure the connecting rod (1) piston pin bore.

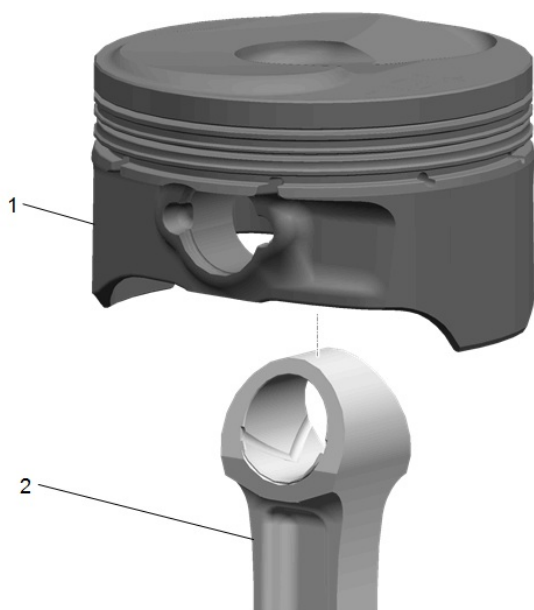
6. Subtract the piston pin diameter from the piston pin bore.
7. Compare the clearance measurements with the Engine Mechanical Specifications.
8. If the clearance is excessive, replace the piston pin. If a new pin does not resolve the clearance problem, replace the connecting rod.

Connecting Rod Crankshaft Bearing End

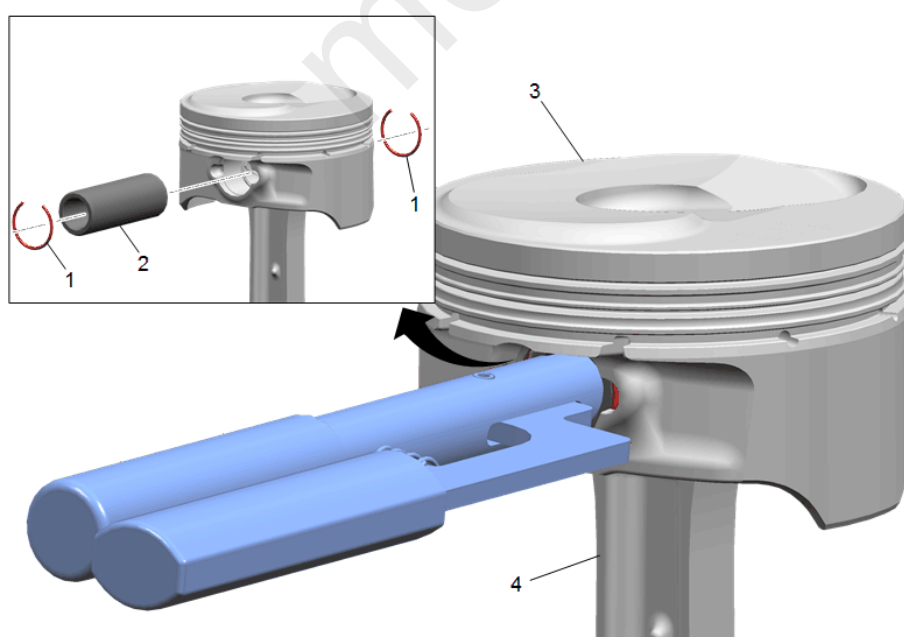


1. [Click here for full size](#)
2. Note:
Measurements of all components should be taken with the components at normal room temperature.
3. Using an inside micrometer, measure the connecting rod (1) crankshaft bearing bore.
4. Compare the bore measurements with the Engine Mechanical Specifications.
5. Replace the connecting rod if the bore is out of specifications. DO NOT recondition the connecting rod.

Assemble Procedure



1. [Click here for full size](#)
2. Note:
 - The piston is directional and must be installed in the engine block in the proper direction. The dot on the top of the piston must face the front of the engine.
 - The piston is model dependent and may not appear exactly as shown.
3. Lubricate the piston pin bores in the piston (1) and the connecting rod (2) with clean engine oil. Adhesives, Fluids, Lubricants, and Sealers

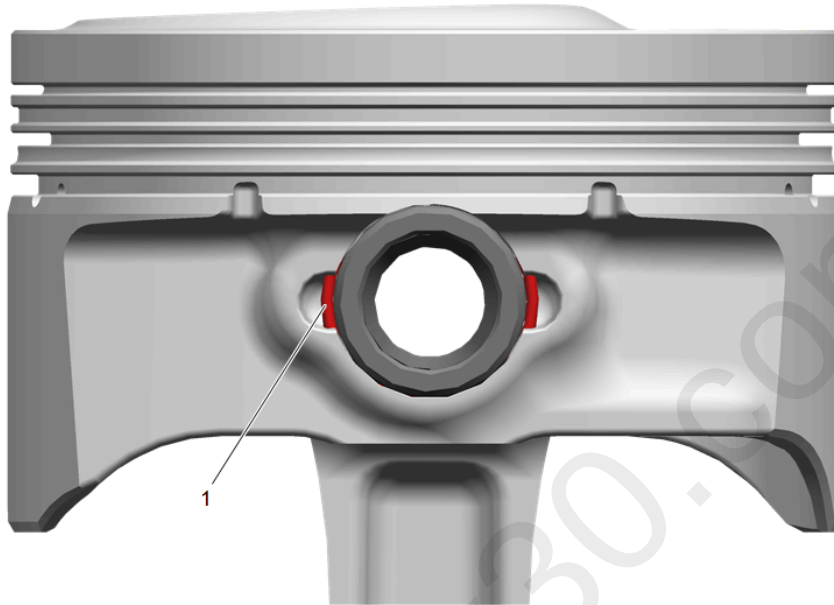


4. [Click here for full size](#)

5. Assemble the piston (3) and piston pin (2) to the connecting rod (4). Properly orient the piston when reusing a marked connecting rod.
6. Align the piston pin bore with the connecting rod pin bore.
7. Slide the piston pin (1) into the piston (3) and the connecting rod (4).
8. Note:

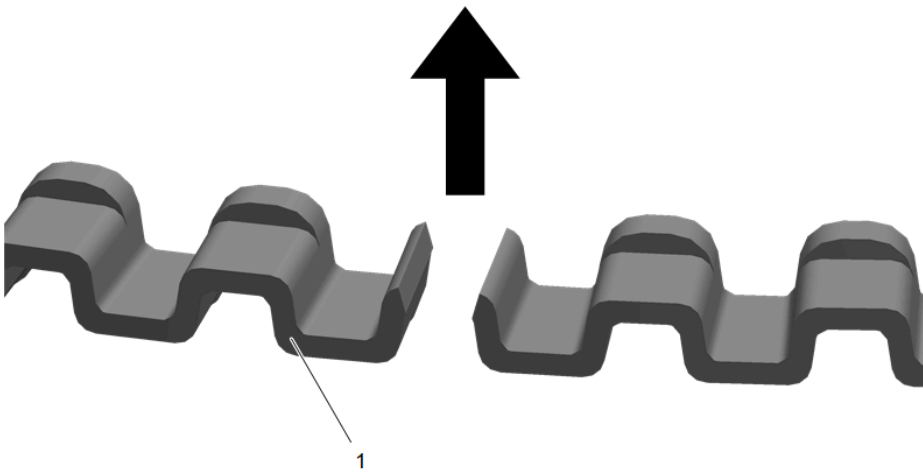
New piston pin retainers must be used. Never reuse the piston pin retainers.

9. Install NEW piston pin retainers (1) using the *EN-46745* Piston Pin Clip Remover/Installer. Align the *EN-46745* Piston Pin Clip Remover/Installer to the notch in the piston.

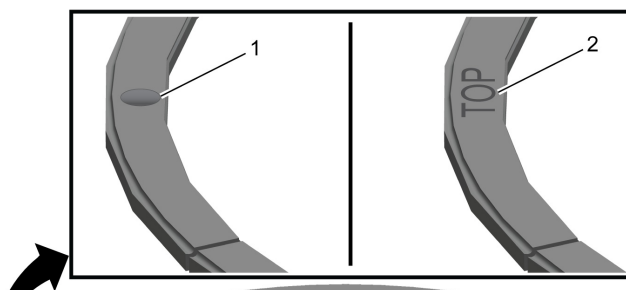


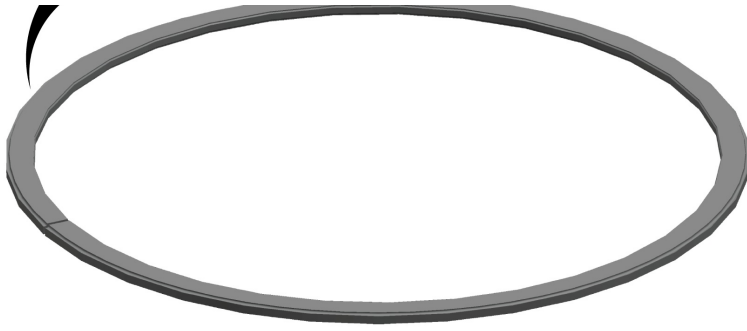
10. [Click here for full size](#)
11. Ensure that the piston pin retainers (1) are fully seated in their grooves.
12. Repeat these procedures for the remaining pistons.

Piston Ring Installation Procedure

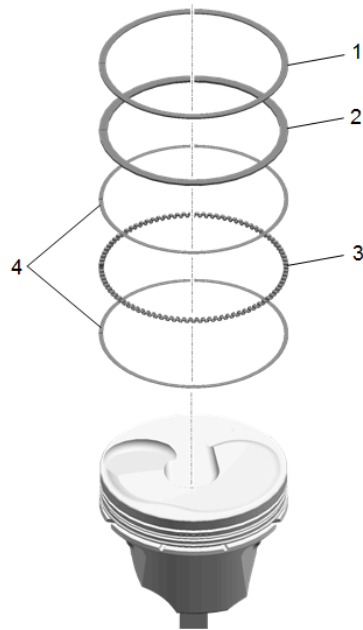


1. [Click here for full size](#)
2. Properly orient the piston oil ring rail spacer (1) expander as shown before installation. The ends of the piston oil ring rail spacer must be facing toward the top of the piston.



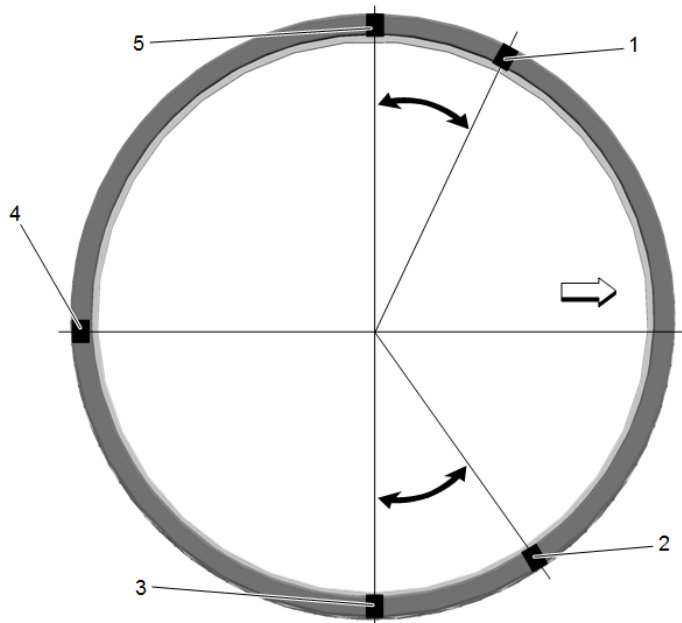


3. [Click here for full size](#)
4. The piston compression upper ring and piston compression lower rings have either a dimple (1) or the word "TOP" (2) on the top side of the ring. The rings should be installed so that either of these marks are facing the top of the piston.



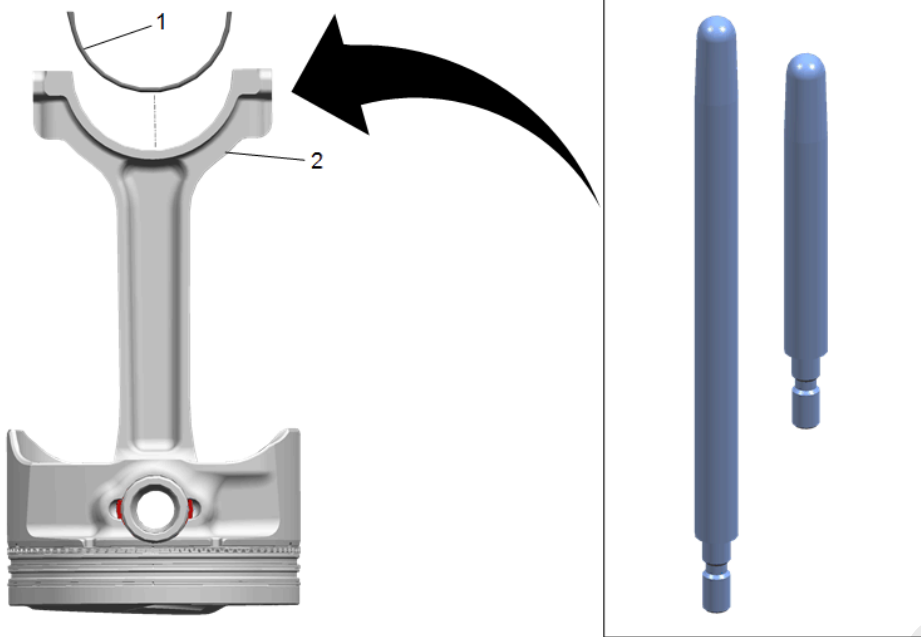
5. [Click here for full size](#)
6. Using a piston ring expander, install the piston oil ring rail assembly using the following procedure:
7.
 1. Install the piston oil ring rail (4). Expand the rings only enough to clear the piston diameter. Overexpanding the piston rings will distort or crack the rings.
 2. Install the piston oil ring rail spacer (3).
 3. Install the piston oil ring rail (4). Expand the rings only enough to clear the piston diameter. Overexpanding the piston rings will distort or crack the rings.
8. Note:

The piston compression lower ring (2) is thicker and will not fit in the piston compression upper ring (1) position.
9. Install the piston compression lower ring (2) onto the piston with the mark facing the top of the piston.
10. Install the piston compression upper ring (1) onto the piston with the mark facing the top of the piston, if required.



11. [Click here for full size](#)
12. Once the rings are installed, set the ring gaps for the oil control, second and top ring as follows. Use the piston location arrow for reference.
13.
 1. Piston Compression Lower Ring (1)30 degrees
 2. Piston Compression Upper Ring (2)30 degrees
 3. Piston Oil Ring Rail - Upper (3)
 4. Piston Oil Ring Rail Spacer (4)
 5. Piston Oil Ring Rail - Lower (5)

Connecting Rod Bearing Installation Procedure

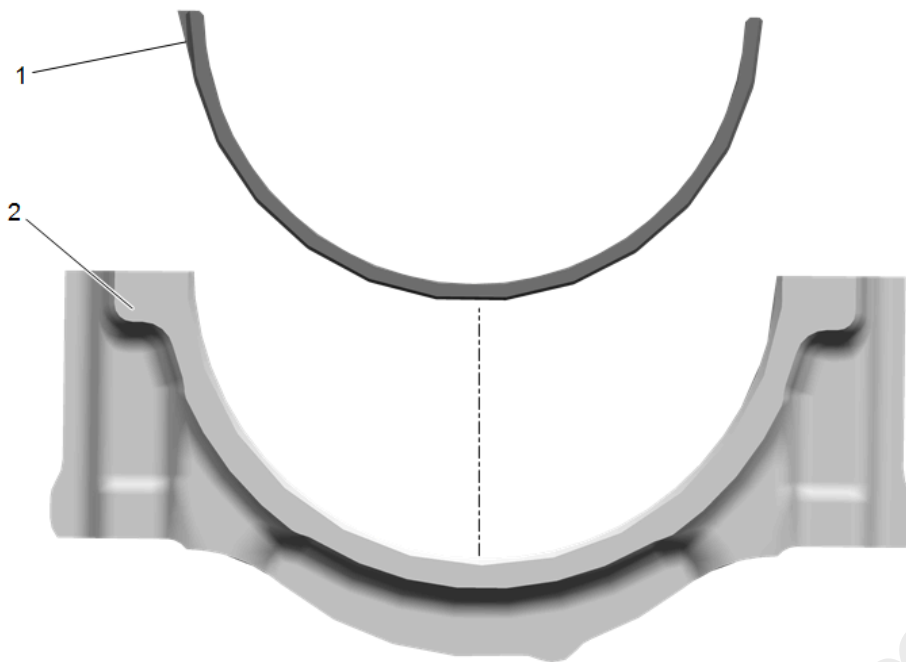


1.
[Click here for full size](#)

2. Note:

If the connecting rod bearings have been used in a running engine, you must replace them with NEW connecting rod bearings for reassembly.

3. Clean the connecting rod (2) and the connecting rod cap bearing bore with a lint-free cloth.
4. Clean all the oil from behind the connecting rod bearing halves.
5. Install NEW upper connecting rod bearing (1) into position. Roll the bearing into position so that the lock tang engages the alignment slot. The bearing must fit flush in the connecting rod.
6. Install the *EN-41556* Connecting Rod Guide into the connecting rod bolt holes.



7. [Click here for full size](#)
8. Install NEW lower connecting rod bearing (1) into position in the connecting rod cap (2). Roll the bearing into position so that the lock tang engages the alignment slot. The bearings must fit flush with the connecting rod cap.

Installation Procedure

Piston and Connecting Rod Assembly >> Install - Piston and Connecting Rod Removal and Installation