

2022 CHEVROLET CORVETTE SERVICE MANUAL

- SEARCH

1. Engine/Propulsion

2. Engine Mechanical - 6.2L (LT2)

3. Repair Instructions

- 4.

Piston and Connecting Rod Removal and Installation

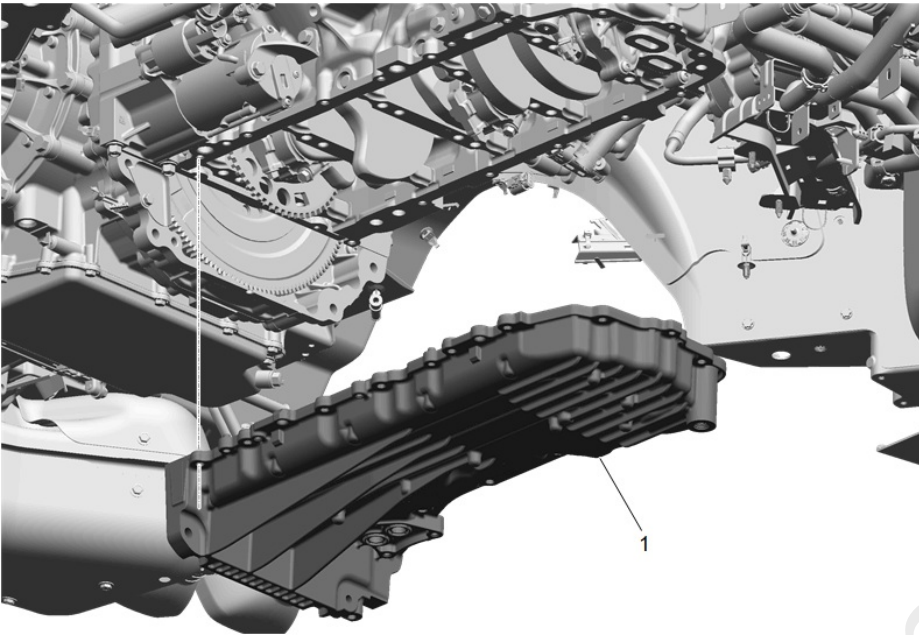
Special Tools

- EN ϕ Á“8087Å, Å Cylinder Bore Gauge
- EN ϕ Á“24270Å, Å Cylinder Bore Ridge Reamer
- EN ϕ Á“41556Å, Å Connecting Rod Guide
- EN ϕ Á“45059Å, Å Angle Meter

Equivalent regional tools: Special Tools

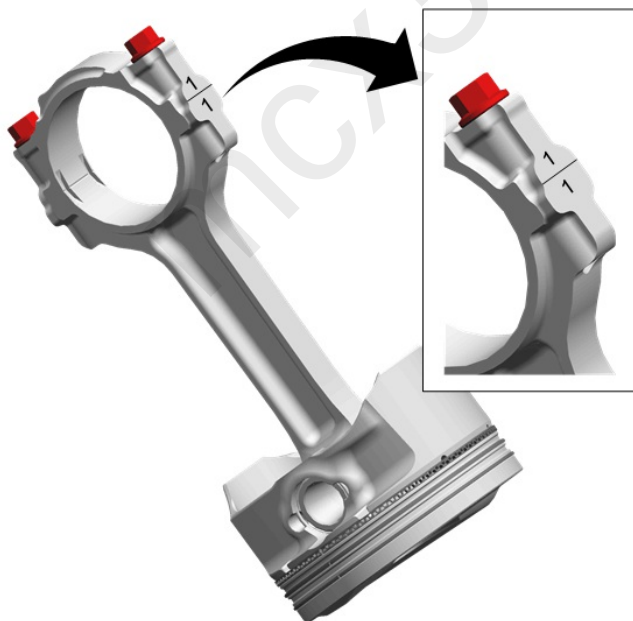
Removal Procedure

1. Remove the appropriate cylinder head.
2.
 - Cylinder Head Replacement - Left Side
 - Cylinder Head Replacement - Right Side



6.
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7. Oil Pan (1) >> Remove - Oil Pan Replacement



8.
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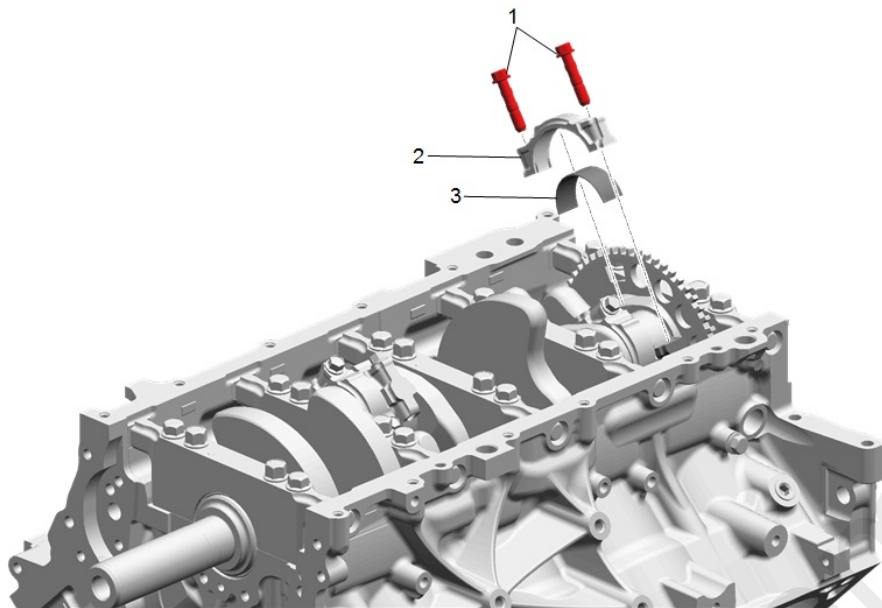
9. Using a paint stick or etching tool, place matchmarks or numbers on the connecting rods and the connecting rod caps. The connecting rods and caps **MUST** be assembled to their original position and direction.

10.

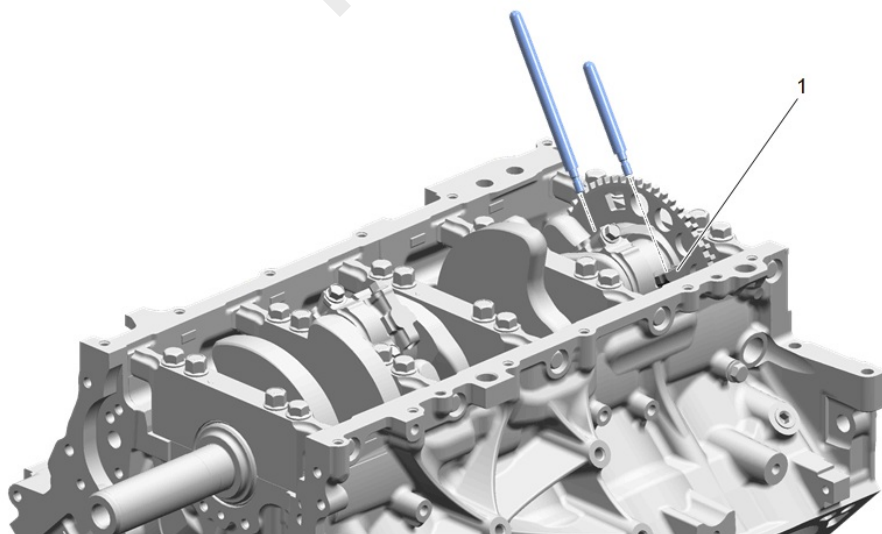
- o A stamping mark on the side of the connecting rod at the crankshaft journal may affect component geometry

- A stamping mark on the side of the connecting rod, at the crankshaft journal, may direct component geometry.

- o Mark the top of the piston to the specific cylinder bore.

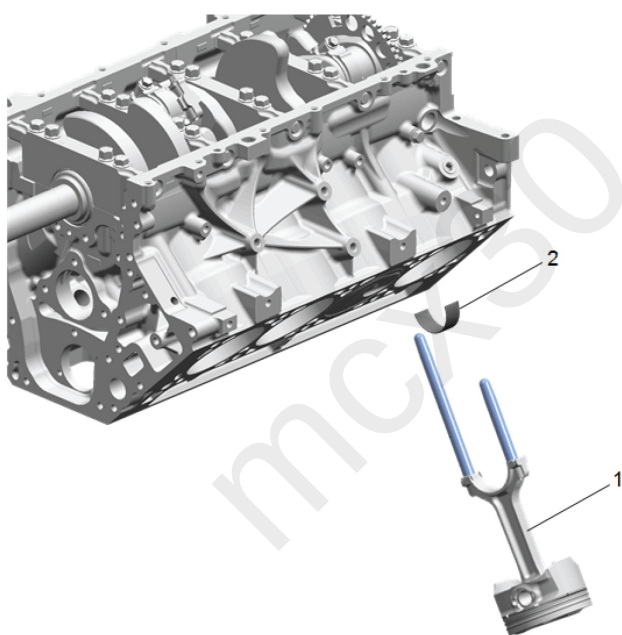


11. [Click here for full size](#)
12. Mark, sort, or organize the connecting rod bearings so they may be installed to their original position and location. The connecting rods and the bearing caps are NOT interchangeable. Separating Parts
13. Remove the connecting rod bolts (1), cap (2) and bearing (3).

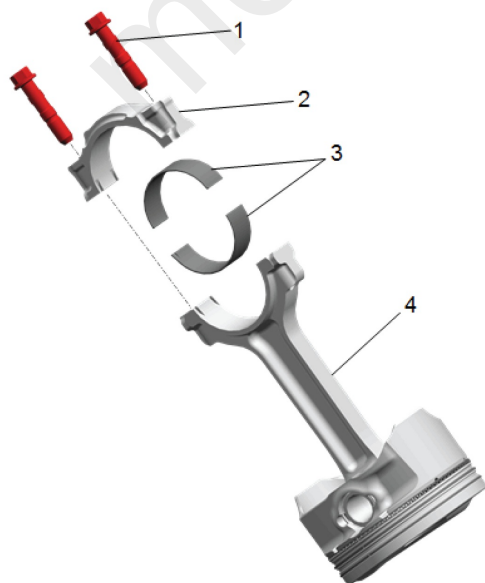


14. [Click here for full size](#)

15. Install the EN41556 Connecting Rod Guide to the connecting rod (1).

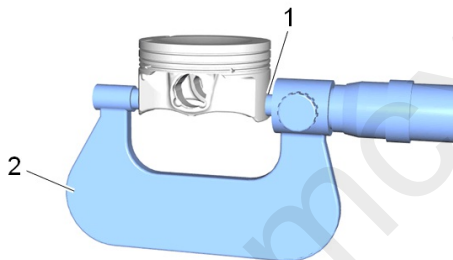


16. [Click here for full size](#)
17. Using a hammer, tap lightly on the end of the EN41556 Connecting Rod Guide to remove the piston and connecting rod assembly (1) from the cylinder bore.
18. Remove the EN41556 Connecting Rod Guide.



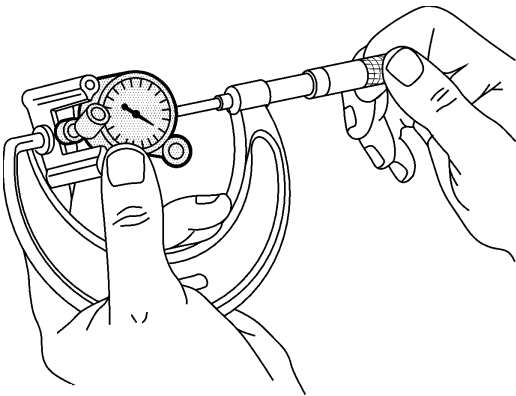
19.
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20. Upon removal of the piston and connecting rod assembly (4), assemble the connecting rod cap (2) and bolts (1) onto the matching connecting rod.

Piston Selection

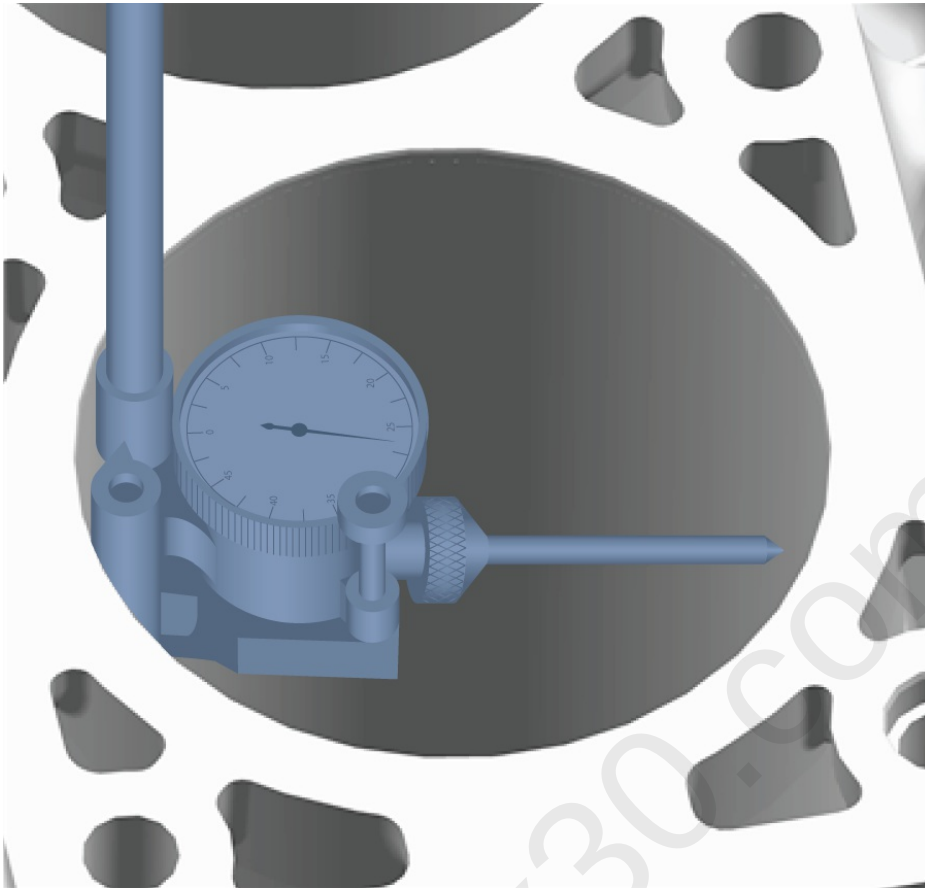


1.
Click here for full size
2. Note:

Measurements of all components should be taken with the components at normal room temperature. For proper piston fit, the engine block cylinder bores must not have excessive wear or taper. A used piston, pin, and connecting rod assembly may be installed if, after inspection is within specifications.
3. With a micrometer (2) at a right angle, measure the piston (1) outside diameter (OD). Measure the diameter 43 mm (1.69 in) from the top of the piston. Engine Mechanical Specifications
4. Record the piston OD.

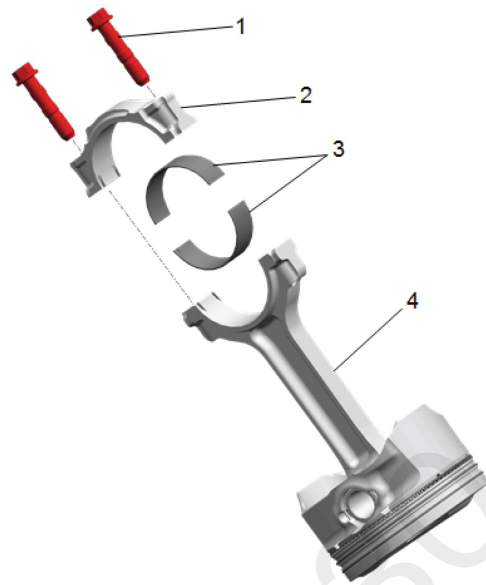


5. [Click here for full size](#)
6. Adjust the micrometer to the recorded piston OD.
7. Insert the *EN 8087* Cylinder Bore Gauge into the micrometer and zero the gauge dial.



8. [Click here for full size](#)
9. Using the EN 8087 Cylinder Bore Gauge, measure the cylinder bore inside diameter (ID). Measure at a point 64 mm (2.5 in) from the top of the cylinder.
10. Record the cylinder bore ID.
11. Subtract the piston OD from the cylinder bore ID in order to determine the piston-to-bore clearance. Engine Mechanical Specifications
12. If the proper clearance cannot be obtained, select another piston and pin assembly and measure the clearances again. If the proper fit cannot be obtained, the cylinder bore may require honing for an oversize piston.

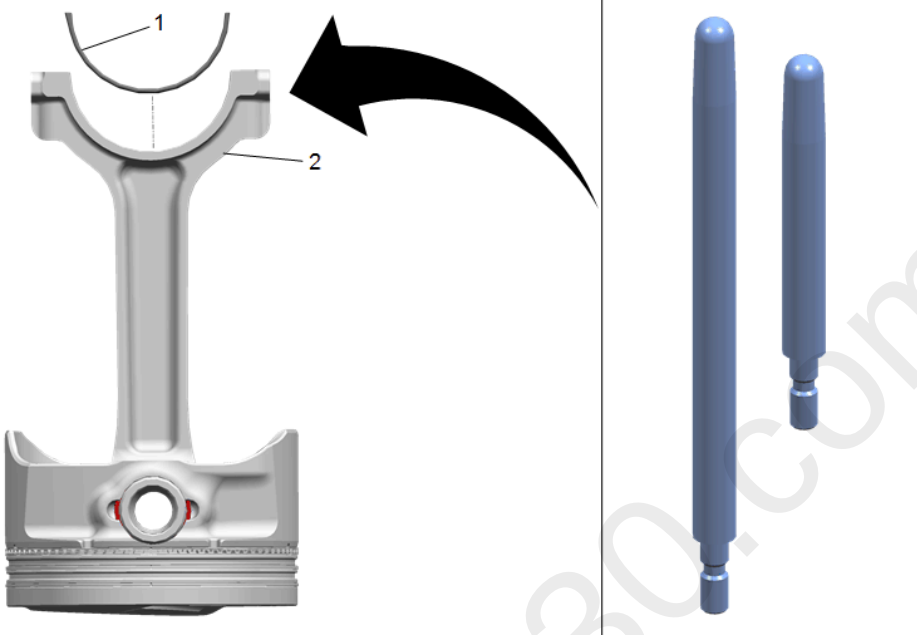
Installation Procedure



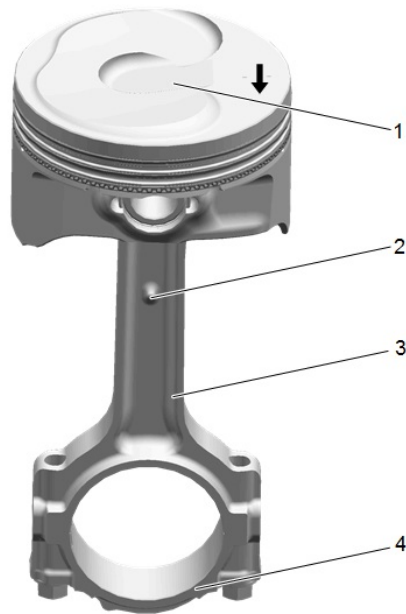
1.
Click here for full size
2. Lubricate the following components with clean engine oil:
3.
 - Piston

- Piston rings
- Cylinder bore
- Bearings and bearing surfaces

4. Install the bearings (3) to the connecting rod and cap (2).
5. Position the oil control ring end gaps a minimum of 25 mm (1.0 in) from each other.
6. Position the compression ring end gaps 180 degrees opposite each other.



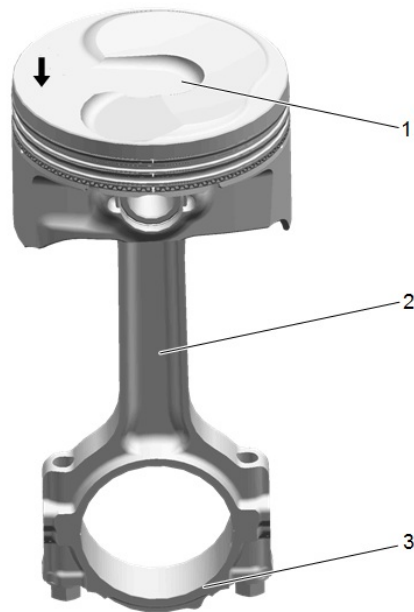
7. [Click here for full size](#)
8. Install the ENÇÁ“41556Ã,Â Connecting Rod Guide to the connecting rod.



9.
[Click here for full size](#)

10. Piston - Right Side

- 11.
- The arrow on top of the piston (1) and the dimple (2) on the rod face the same direction.
 - When installing the right side piston and rod (3) assemblies, the arrow on top of the piston and the dimple (2) on the rod face the front of the engine.
 - The raised bump (4) on bottom of rod (3) will be closest to the outside of the engine.



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

13. Piston - Left Side

- 14.
- The arrow on top of the piston (1) and the dimple on the rod face the opposite direction.
 - When installing the left side piston and rod (2) assemblies, the arrow on top of the piston faces the front of the engine and the dimple on the rod faces the rear of the engine.
 - The raised bump (3) on the bottom of rod will be closest to the outside of engine.

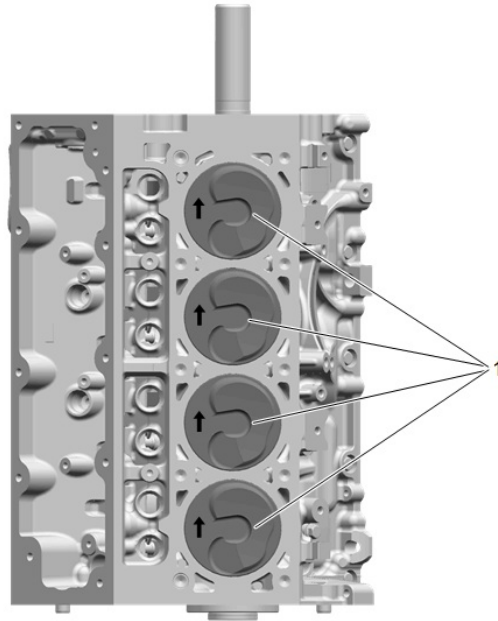
15. Note:

When installing a piston into a cylinder, use a ring compressor sleeve or equivalent for best results. The following features should be looked for when selecting a ring compressor sleeve.

- Hard anodized and Teflon coated for low friction and prolonged wear resistance.
- Smooth radius that tapers down to the specific bore size.
- Sleeve should compress the piston rings smoothly and evenly.
- Using a ring compressor sleeve greatly reduces the difficulty with installing thin high-performance oil rings.

If a ring compressor sleeve is unavailable, a universal ring compressor will work, but is more difficult to use.

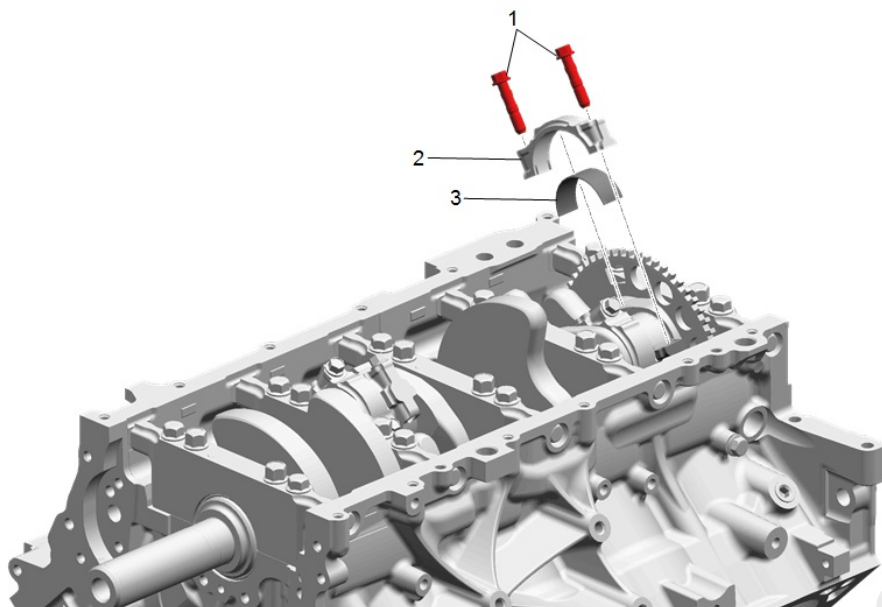
16. Compress the piston rings using a ring compressor sleeve or equivalent.



17. [Click here for full size](#)
18. Note:

The arrow on the top of the piston MUST face the front of the engine block. The deepest portion of the fuel bowls (1) must be toward the outside of the engine.

19. Install the piston, pin, and connecting rod assembly into the cylinder bore. Tap the piston into the bore with a wooden hammer handle. Guide the connecting rod to the crankshaft journal using the *J-41556* Connecting Rod Guide while gently tapping the piston into place. Hold the ring compressor sleeve or equivalent against the engine block until all rings have entered the cylinder bore.
20. Remove the *J-41556* Connecting Rod Guide from the connecting rod.



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

22. Caution:

This vehicle is equipped with torque-to-yield or single use fasteners. Install a NEW torque-to-yield or single use fastener when installing this component. Failure to replace the torque-to-yield or single use fastener could cause damage to the vehicle or component.

23. Caution:

Refer to Fastener Caution.

24. Note:

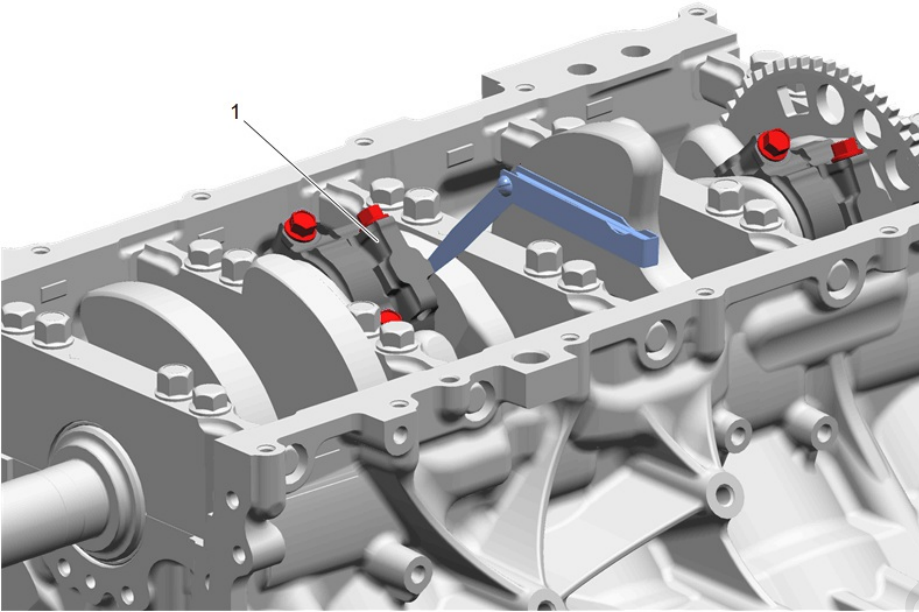
- The connecting rod and cap must be assembled with the mating surfaces properly aligned.
- If re-using connecting rods, DO NOT re-use connecting rod fasteners. During an installation procedure, the new connecting rod bolts can be re-tightened a maximum of 3 times.

25. Install the bearing (3), bearing cap (2), and bolts (1).

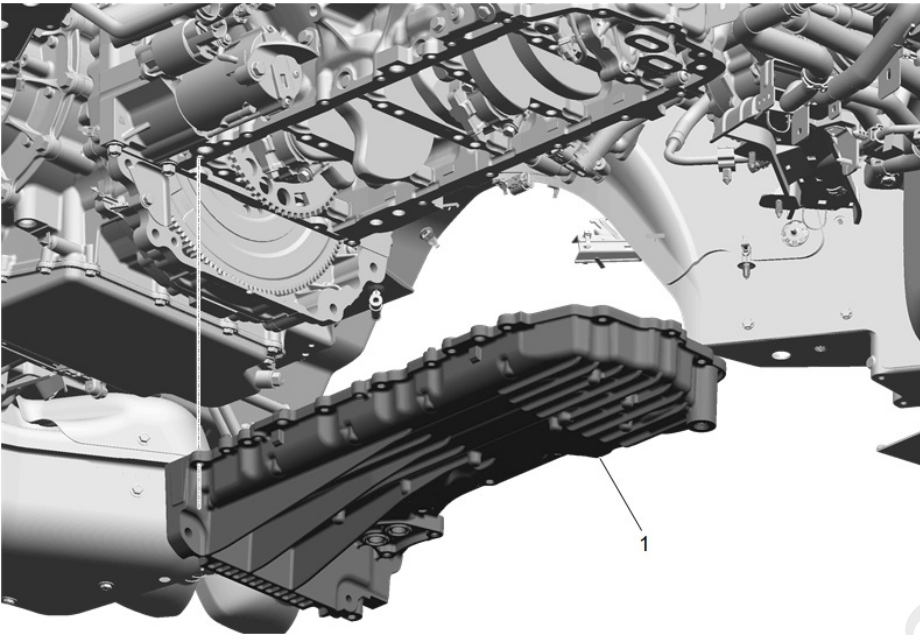
26. Tighten the connecting rod cap bolts.

27.

1. First Pass: 20 N-m (15 lb ft)
2. Final Pass: 85 degrees using the *ENAC 45059* Angle Meter



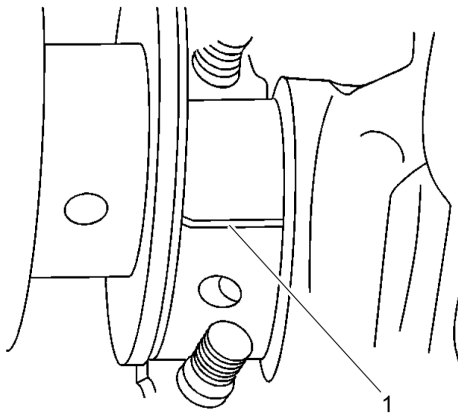
28. [Click here for full size](#)
29. Measure the connecting rods (1) for the proper side clearance. Engine Mechanical Specifications
30. Install the appropriate cylinder head.
31.
 - Cylinder Head Replacement - Left Side
 - Cylinder Head Replacement - Right Side



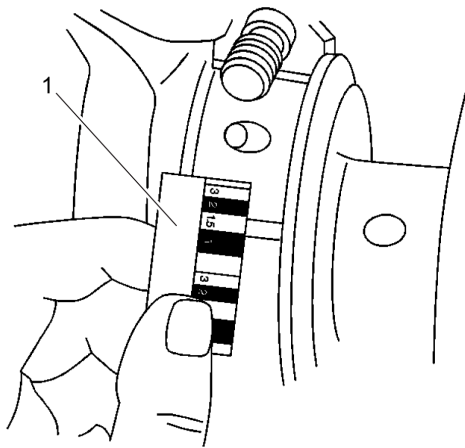
32.
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33. Oil Pan (1) >>> Install - Oil Pan Replacement

Measuring Connecting Rod Bearing Clearance “Gaging Plastic Method”



1.
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2. Note:
 - Connecting rod bearings are a precision insert type. Connecting rods are of a powdered metal design and cannot be shimmed or filed for bearing fit. If clearances are found to be excessive, a new bearing and/or connecting rod is required.
 - Do not rotate the crankshaft while gaging plastic is between the crankshaft journal and the bearing surface.
3. Remove the bearing cap, bearing half, and bolts. See steps above in removal procedure.
4. Install the gaging plastic (1) onto the connecting rod bearing journal. Install the gaging plastic the full width of the journal.
5. Install the bearing cap, bearing half, and bolts. See steps below in installation procedure.
6. Remove the bearing cap, bearing half, and bolts. See steps above in removal procedure.

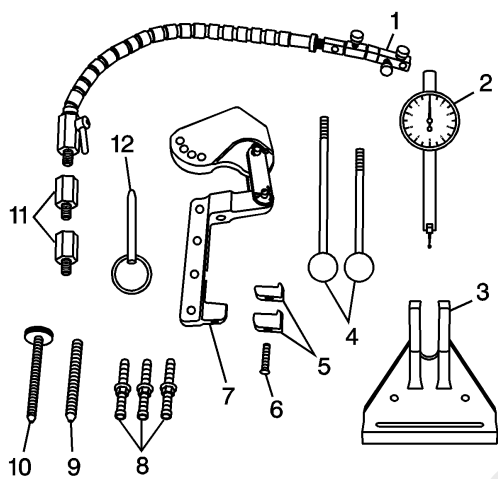


7.
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8. Using the scale (1) supplied with the plastic gaging kit, measure the gaging plastic at its widest area. Engine Mechanical Specifications

Measuring Connecting Rod Bearing Clearance “ Using EN-43690/EN-43690-100

EN-43690, a Rod Bearing Checking Tool and *EN-43690-100*, a Rod Bearing Checking Tool “ Adapter Kit have been developed as a more accurate method to measure connecting rod bearing clearances. The instructions below provide an overview of tool set-up and usage. For more detailed information, refer to the tool instruction sheets supplied by the tool manufacturer.

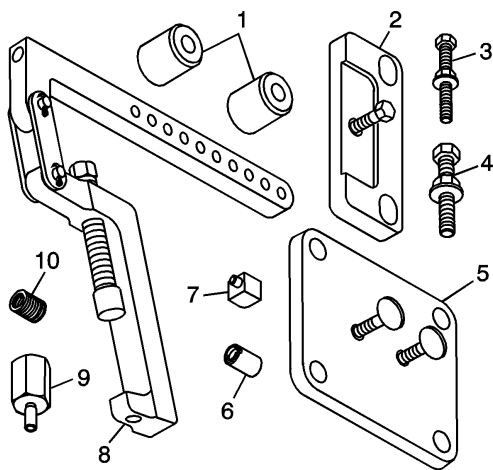


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EN-43690, Rod Bearing Checking Tool

- EN-43690-20 Swivel Base (1)
- EN-43690-19 Dial Indicator (2)
- EN-43690-2 Base (3)
- EN-43690-5, EN-43690-6 Handle (4)
- EN-43690-10, EN-43690-11 Foot (5)
- 280307 Screw (6)
- EN-43690-1 Pivot Arm Assembly (7)
- EN-43690-3, EN-43690-7, EN-43690-8 Screws (8)
- 280319 Screw (9)
- 280311 Screw (10)
- EN-43690-17, EN-43690-18 Adapter (11)
- 280310 Pin (12)

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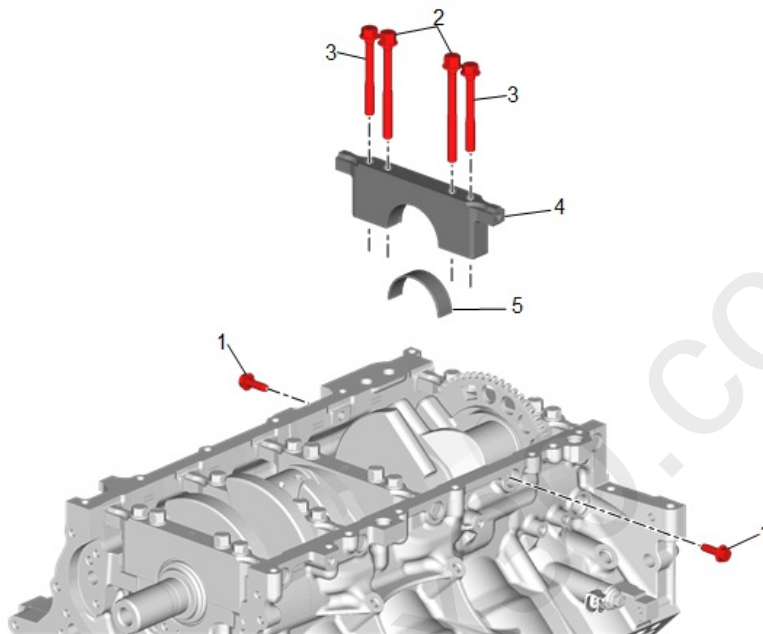


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EN-43690-100 Rod Bearing Checking Tool Adapter Kit

- EN-43690-104 Spacer (1)

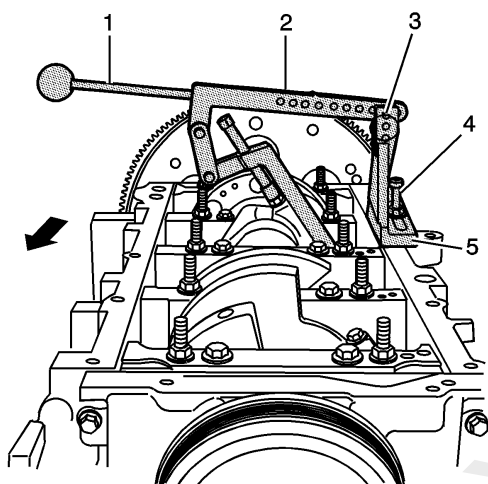
- EN-43690-105 Retainer Plate (2)
- 505478 Bolt (3)
- 511341 Bolt (4)
- EN-43690-106 Retainer Plate (5)
- EN-43690-107 Cap (6)
- EN-43690-102 Foot (7)
- EN-43690-101 Pivot Arm Assembly (8)
- EN-43690-103 Adapter (9)
- 505439 Adapter (10)



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

The crankshaft must be secure, with no movement or rotation, in order to obtain an accurate reading.

3. Rotate the crankshaft until the journal/connecting rod to be measured is in the 12 o'clock position.
4. Remove a bearing cap and bolts (1&4).
5. Remove the bearing half (5).
6. Insert a piece of paper card stock onto the crankshaft journal.
7. Install the bearing half (5) and cap and bolts (1&4). Fastener Specifications



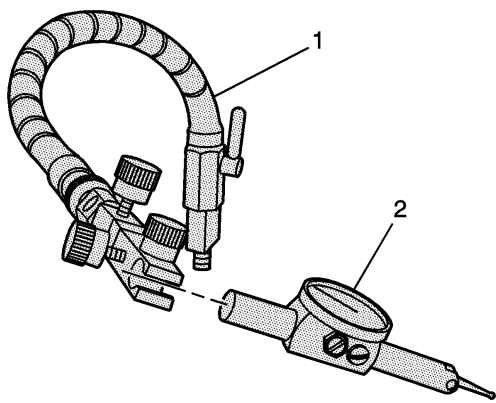
8. [Click here for full size](#)

9. Install the following:

10.

1. EN-43690-2 (3)
2. EN-43690-3 (4)
3. EN-43690-101 (2)
4. 280310 (3)
5. EN-43690-5 (1)

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11.

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12. Install the swivel base (1) and dial indicator (2).

13. Adjust per the manufacturers instructions and measure the connecting rod bearing clearance.
14. A connecting rod with a clearance in excess of 0.076 mm (0.003 in) is considered excessive. Service components, as required.

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