

BOP Engineering Viton® Rear Main Crankshaft Seal Instructions for RMS01 (3") & RMS02 (3.25") main with CRANKSHAFT REMOVED

Thank you for choosing the BOP Engineering Viton® Rear Main Seal, which is a direct replacement for the stock rope seal. The seal may and can ride on the serrated area of the stock crankshaft with no issues. Some aftermarket crank serrations may be more aggressive than the factory crank and may require polishing prior to installation. In this case, do not remove more than .005 inches from the nominal diameter during polishing. (see specs under additional installation notes) We have not found it necessary to offset the seal ends from the parting line; however it can be done if desired. If you have any questions please feel free to contact us.

For best results please follow these instructions carefully.

2. Prior to final installation of the crankshaft in the block, make sure the block and main cap seal cavities are clean and free of obstructions.
3. Place one half of the seal in the block seal cavity noting correct orientation of seal (Figure 1). With the seal fully seated in cavity, square up one end of the seal with the block/cap parting line and measure the amount of the seal that is protruding on the opposite end using a caliper or feeler gauge. The amount protruding should be $0.020 \pm 0.005"$. If it is more, remove material from the back side of the seal until the protrusion measures the correct amount. A fine grit belt sander works well for this. (see install notes) Repeat for the main cap Assy. If it is less it may be necessary to shim the seal to get the proper protrusion. This can be done with MIG wire. Please call us if you have questions about this procedure.
4. Place seal in block and cap with no sealer and bolt together without crank. Look through bore and check to see that seal ends meet properly with no gaps or distortion. Refit where necessary until ends meet properly.

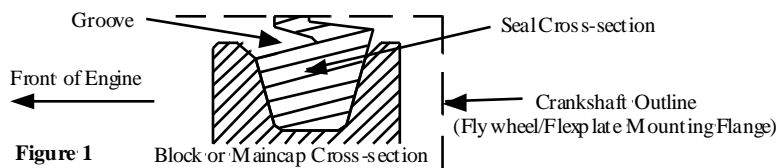
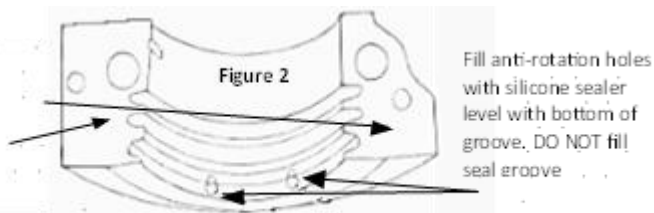


Figure 1

4. Remove seal from block and main cap. Fill the four anti-rotation holes with a silicone sealer or equivalent (Figure 2). Do not overfill!
Do not coat the back of the seal, the groove area or the seal cavities!
This will cause excessive compression and wear on the lip, causing premature failure of the seal.

Apply very thin film of silicone or anaerobic sealer between the cap & block and anti-rotation holes only. DO NOT apply to



5. Reinstall the seal halves noting correct orientation of seal (Figure 1). Position with an equal amount of protrusion on each end. Place a very thin film of high temperature silicone sealer on the ends of the seal halves and between the cap and block (Figure 2). It is not necessary to offset the parting line.
6. Lightly coat the crankshaft mating surfaces of the seals with oil or equivalent. Install crankshaft and torque all main cap bolts to manufacturer specifications.
7. Allow assembly to sit overnight to permit undisturbed curing of sealer.

BOP Engineering Viton® Rear Main Crankshaft Seal Instructions for RMS01 (3") & RMS02 (3.25") WITHOUT CRANKSHAFT REMOVED

Attention! When using the **RMS02**, the anti-rotation **MUST** be filled in **both** block and main cap with silicone to prevent oil seepage behind the seal at those locations. They **do not** need to be filled in the block when using the **RMS01**.

RMS01 without crankshaft removed

1. Remove oil pan, oil pump and windage tray per factory service manual.
2. Follow the instructions on the back of this sheet with one exception. **Fill only the two anti-rotation holes in the cap** with high temp silicone. The seal half on the block-side is simply slid into the seal groove (and checked for length) after the rope seal is completely removed and groove is thoroughly cleaned.
3. Install oil pump, windage tray, and oil pan.

RMS02 without crankshaft removed

1. Remove oil pan, oil pump and windage tray per factory service manual.
2. Follow Steps 1-4 (Skip Step 3) on the back of this sheet, filling the block-side anti-rotation holes with steps 3 through 6 below

Note: All four anti-rotation holes must be filled when using the RMS02!

3. Squeeze silicone into the block-side seal groove between the crank and block. Lubricated seal lip sparingly with oil and use seal half to push high temp silicone through the groove which will deposit silicone in the anti-rotation holes. Repeat this 4-5 times using the seal half to force the silicone through.
4. Repeat Step 3 from the other side depositing silicone into the holes
5. Repeat again from both sides with no additional silicone using the seal as a squeegee to remove remaining silicone from the groove, cleaning the seal with each pass through.
6. Rotate the crank and clean seal mating area thoroughly.
7. Slide block-side seal half into place and go to step 5 on the back of this sheet.
8. Install oil pump, windage tray, and oil pan

Additional Installation Notes: For all BOP Seal Installations

These instructions are written for part numbers RMS01 & RMS02 for Pontiac. If anti-rotation holes are not present skip steps that fill them with silicone.

For Part numbers **RMS03** and **RMS04** use as general reference only

RMS02 for Buick requires up to .125 inches to be removed from one end of each half for proper fit. Remove material until .020 protrudes when over side is flush.

Specifications:

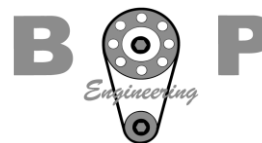
RMS01 Sealing Diameter 3.188" +/- .003" Groove Diameter 3.812" +/- .005"

RMS02 Sealing Diameter 3.437" +/- .003" Groove Diameter 4.012" +/- .005"

Call for further instruction if your groove of crankshaft does not meet specifications or if an excessive (> .050") amount of seal protrusion is present.

Concentricity: Occasionally the seal groove may not be concentric with crank sealing surface. This is evidenced by excessive protrusion or indentation of seal from block or cap. If the seal half protrusions are more than .010 different from each other call us for further instructions.

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RMS01