Procedure to Measure Used Crankshafts for Bend on Caterpillar 3406, 3456, C15 & C18 Engines

The AERA Technical Committee offers the following information to measure bend on Caterpillar 3406, 3456, C15 & C18 engines. It is important to note that this procedure is specific to these engines and does not apply to any other Caterpillar crankshaft.

**Special Considerations for 3406, 3456, C15, and C18 crankshafts**
A different measuring procedure for run-out must be used for the 3406, 3456, C15, and C18 crankshafts. These crankshafts will use an adjacent journal check and a stack up tolerance check. You will be taking a total indicator reading (TIR, previously referred as total indicated run-out) on main bearing journal number 4 in each check. If the TIR readings on both checks are within the specifications that are listed, the crankshaft is good for that test.

**Adjacent Journal Check**

The adjacent journal check should be performed with the V-blocks positioned on main bearing journals 3 and 5. Perform the TIR reading on main bearing journal number 4 only. The TIR on main bearing journal number 4 should not exceed .007" (.180 MM).
Stack-Up Tolerance Check

This check should be performed with the V blocks positioned on main bearing journals 1 and 7. The TIR should be measured on bearing journal number 4 only and should not exceed .021” (.540 MM).

While the values of TIR seem excessive, AERA machine shops have noted that many of the crankshafts they’ve been measuring still have standard journal dimensions and do not require grinding. That observation is evidence the values are realistic and allow the crankshaft support when it is installed and supported by its seven main bearings.