

A-6201 INSERTED ROD INSTRUCTIONS

*** * * IMPORTANT ! * * ***

**READ & FOLLOW CAREFULLY BEFORE
INSTALLING BEARINGS & CONNECTING RODS**

Bearing and Crankshaft Clearance Specifications

Recommended mean or average clearance for rod bearings is .0015" +/- .0005. Since both the connecting rod and the bearings have tolerances, both of the factories that manufacture the rods and the bearings have agreed to hold an I.D. tolerance of 1.4997–1.5005". This will yield a mean I.D. tolerance of 1.5001". Below is an example of what the clearances will yield with standard grinds of the Model A Crankshaft:

Maximum Standard Crank O.D. of 1.499" will yield clearances of .0007–.0015"

Minimum Standard Crank O.D. of 1.498" will yield clearances of .0017–.0025"

A crankshaft ground to the maximum may have to be polished to obtain the desired minimum clearance of .001", but only when the I.D. dimension of the rod and bearing are at their minimum.

Oversize bearings will be sized using the same method as shown above for Standard bearings plus the oversize dimension. However, the actual crankshaft diameter can be custom ground when using oversize bearings to obtain the engine builder's desired clearance.

Below are recommended crankshaft grinds. Grinding to the mid range dimension should give you an average clearance of about .0015" plus the +/- tolerance of the crankshaft dimension.

STD size	1.498 / 1.499"
.010 undersize	1.488 / 1.489"
.020 undersize	1.478 / 1.479"
.030 undersize	1.468 / 1.469"
.040 undersize	1.458 / 1.459"

Connecting Rod and Bearing Assembly Instructions

1. Before starting assembly, carefully examine the connecting rods and bearings and note the following special features:

- a) Each connecting rod and rod cap is machined as **an individual matched set and cannot be interchanged**. Therefore, to prevent the matched sets of rods and caps from being mixed up, **always install 1 set of bearings into 1 connecting rod at a time**.
- b) The oil hole for the dipper in the connecting rod cap is positioned "off center", following Ford's design. Your bearing kit contains 4 bearings with "off center" holes for these "dipper style" rod caps only, and another 4 bearings with "centered" holes for the long section of the connecting rod. Be sure to carefully select the correct bearing for the connecting rod and rod cap based on the oil hole location.
- c) One side of each rod and cap is etched with the number "15" when machined and **must be reassembled with both of these numbers aligned**.

2. Install the bearings into the connecting rods.

Cleanliness of work area, components, and hands are an important key to this operation.

- a) Work with only one connecting rod and cap at a time. Evenly release and remove the connecting rod bolts. Keep in mind that each connecting rod and cap is an **individual matched set and cannot be interchanged**.
- b) Carefully select one bearing shell with a "centered" oil hole for the connecting rod, and one bearing with an "off-center" hole for the rod cap.
- c) Line up the tab in the correct bearing shell with the machined cut-out in the connecting rod first. At this point the oil hole in the bearing and rod should be close to aligned. On a clean, flat wood surface, push down on connecting rod firmly and evenly until the bearing is fully seated.
Repeat this same procedure with the connecting rod cap.
- d) **Recheck the oil holes** in both the connecting rod and rod cap to confirm that the bearing and connecting rod holes are aligned correctly.

- e) When reassembling the connecting rod cap to the connecting rod, make sure the "15" on the rod and the "15" on the cap are aligned on the same side.
- f) When correctly assembled, the inside machined area for the two bearing tabs will both be on the same side of the rod as the numbers "15".
- g) Holding the connecting rod and cap together, finger tighten the bolts to **prevent mixing up the matched connecting rod sets.**
- h) Repeat these steps for installing bearings in the remaining connecting rods.

3. Check all crank to rod clearances with plastigauge.

Crankshaft must not turn during steps C through E

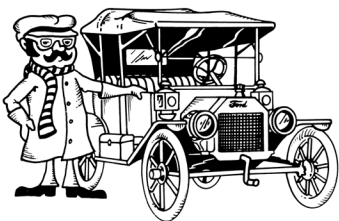
- a) Disassemble one rod and cap at a time to prevent mixing up the matched rod sets.
- b) Lay a length of plastigauge across the bearing surface on the inside of the rod cap.
- c) Carefully install the connecting rod around the crankshaft journal **with the numbers "15" on both the rod and cap aligned and facing the driver's side of the engine block.** This will ensure all the dippers are positioned in the correct direction.
- d) Use one hand to hold the rod and cap closely together. Install the self-aligning bolts and screw them in alternately finger tight, then hand tight using a 3/8" socket with a short extension until both bolts bottom.
- e) Using a 3/8" ratchet, snug the rod bolts alternately and evenly, then torque evenly to **20 ft. lbs.**
- f) Loosen the rod bolts alternately, remove the rod cap, and examine the plastigauge to confirm the clearance between each rod and crank journal.
- g) After confirming the rod-to-crank clearance, carefully remove all traces of plastigauge and reinstall the rod cap on the matching rod finger tight.
- h) Repeat these steps to check clearances on the remaining connecting rods.

4. Completing the Installation

- a) Disassemble one rod and cap at a time. Generously apply a **High Quality Engine Assembly Lube** to the mating surface of the bearings and crankshaft before final assembly of the connecting rods to the crankshaft.
- b) Install the rod and rod cap around the crankshaft journal with the numbers "15" on both the rod and cap aligned and facing the driver's side of the engine block as described in Section 3.
- c) Use one hand to hold the rod and cap closely together. Install the self-aligning bolts and screw them in alternately finger tight, then hand tight using a 3/8" socket with a short extension until both bolts bottom.
- d) Using a 3/8" ratchet, snug the rod bolts alternately and evenly.
- e) **Final Torque:** Torque the rod bolts evenly to **20 ft. lbs.**, then torque the rod bolts to a final of **35 ft. lbs.**
- f) Repeat these steps to complete the installation of the remaining connecting rods.

Note-- A high quality assembly lube may also be used on the timing gears.

Failure to follow these guidelines will result in premature bearing wear or engine failure.



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