



CRANKSHAFT SERVICE INFORMATION

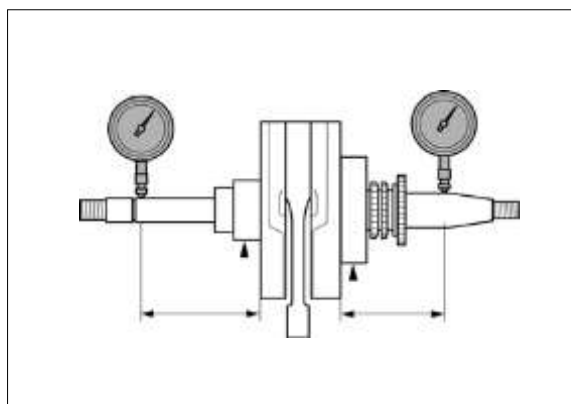
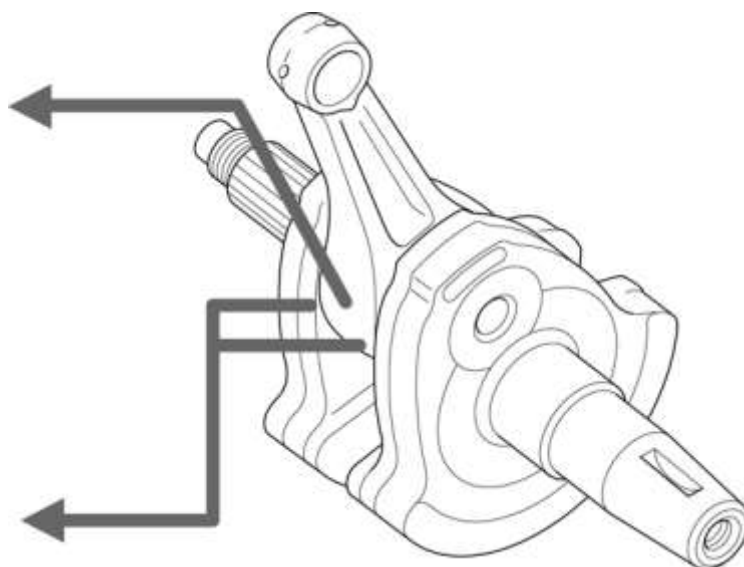
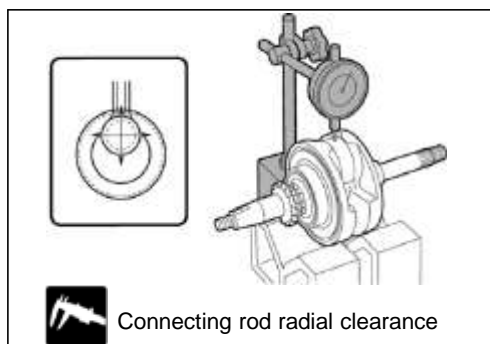
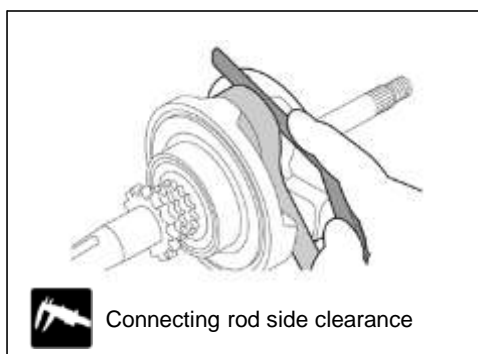
- Be careful not to damage the crankcase mating surfaces when separating and assembling the crankcase halves.
- Clean all disassembled parts with clean solvent and dry them using compressed air before inspection.
- When installing the crankshaft, be sure to use the special tools as specified in the Specific Shop Manual.

TROUBLESHOOTING

Abnormal noise

- Worn crankshaft bearing
- Worn connecting rod big end bearing
- Worn connecting rod small end

CRANKSHAFT INSPECTION



- Set the crankshaft on V-blocks.
- Crankshaft runout

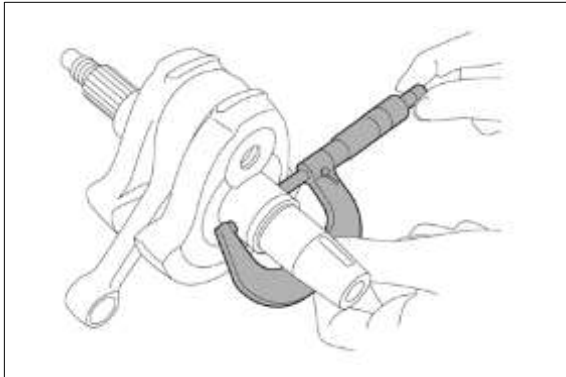
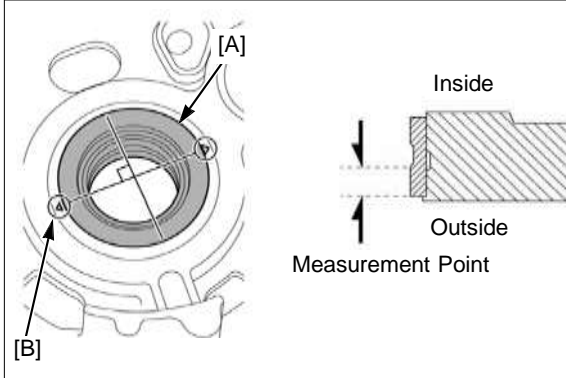


CRANKSHAFT MAIN JOURNAL BEARING

NOTICE

Do not interchange the bearing inserts. They must be installed in their original locations or the correct bearing oil clearance may not be obtained, resulting in engine damage.

MAIN JOURNAL OIL CLEARANCE

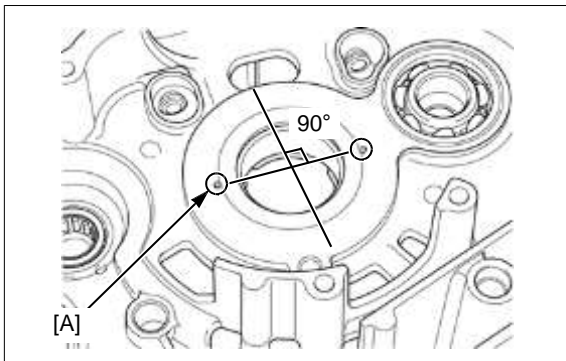


- Clean the main journal bearings.
- Main journal bearings [A] for unusual wear, damage or peeling
- Main journal bearing I.D.
 - At between the bearing groove and crankcase outside end of the bearing, and 90 degrees to the index mark [B].

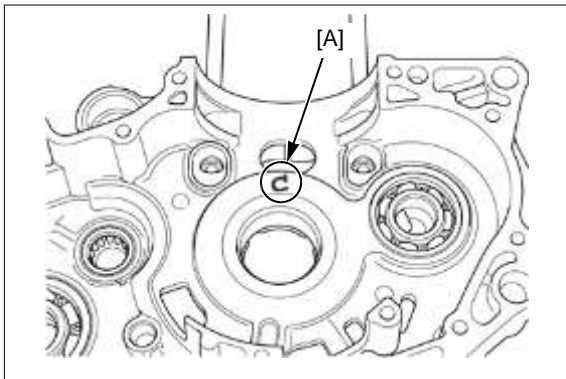


- Clean the crankshaft journals.
- Crankshaft main journal O.D.
- Calculate the oil clearance between the crankshaft main journal and main journal bearing.
 - If the clearance exceeds the service limit, select the main journal bearing.

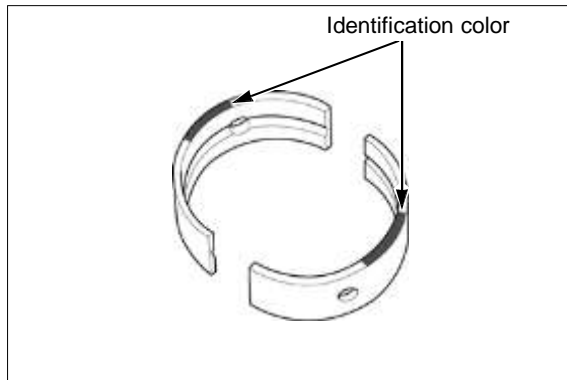
BEARING SELECTION



- Crankcase main journal bearing support I.D. at 90 degrees to the index mark [A].



- Depending upon the results of the above measurements there are four possible scenarios for main journal bearing selection:
 - Crankshaft and crankcase are replaced
 - Crankcase only is replaced
 - Crankshaft only is replaced
 - Main journal bearings only are replaced
- Refer to Specific Shop Manual for instructions and tables for main journal bearing selection.
- Record the bearing support I.D. code letter [A].



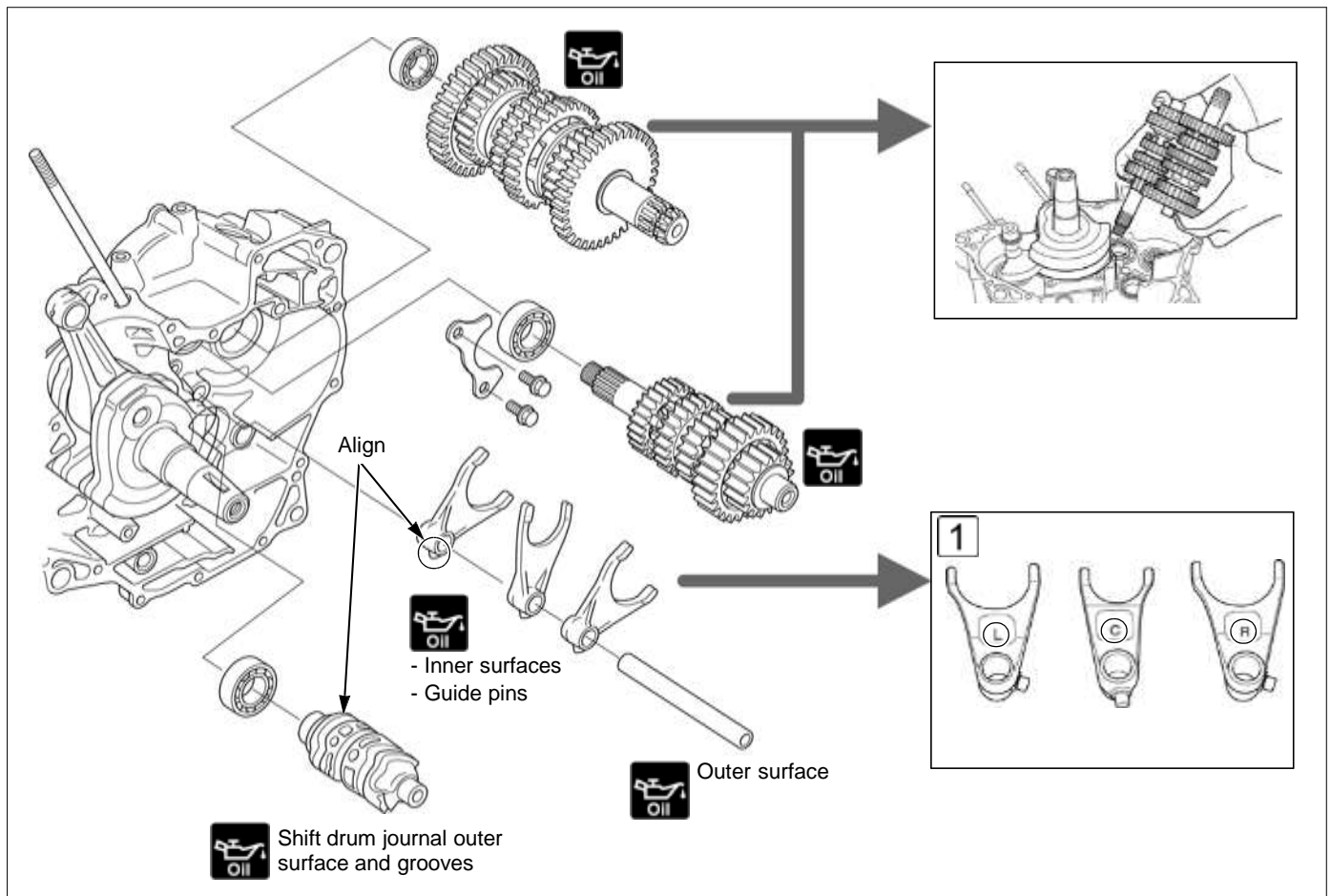
Cross-reference the crankshaft and crankcase codes to determine the replacement bearing color.

TRANSMISSION

NOTE:

- Keep track of the disassembled parts (gears, bushings, washers, and snap rings) by sliding them onto a tool or a piece of wire.
- Do not expand the snap ring more than necessary for removal. To remove a snap ring, expand the snap ring and pull it off using the gear behind it.

REMOVAL/INSTALLATION



- **1** Each shift fork has an identification marks, "R" is for the right shift fork, "L" is the left shift fork and "C" is for the center shift fork.