

## CRANKSHAFT INSPECTION

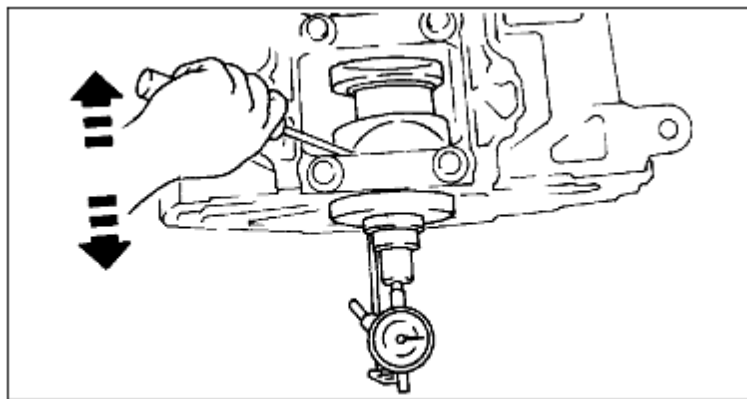
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1. Install the main bearing cap. (See [Main Bearing Caps Assembly Note.](#))

2. Measure the crankshaft end play.

- If not as specified, replace the thrust bearing or crankshaft so that the specified end play is obtained.

Standard end play:  
0.22-0.45 mm {0.0087-0.0177 in}  
Maximum end play:  
0.55 mm {0.022 in}



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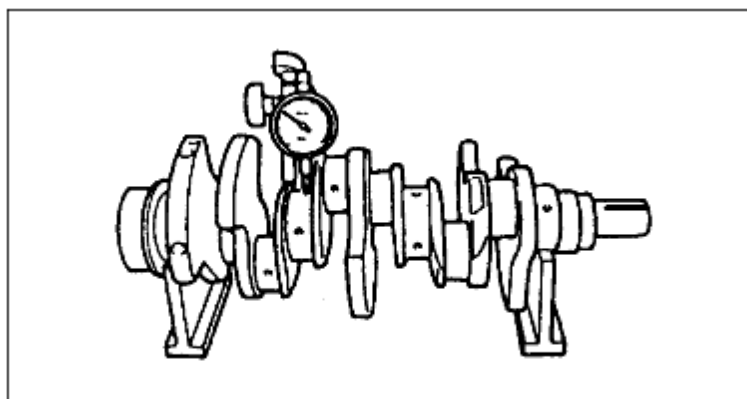
3. Remove the main bearing cap. (See [Main Bearing Cap Disassembly Note.](#))

4. Measure the crankshaft runout.

- If the crankshaft runout exceeds the maximum runout, replace the crankshaft.

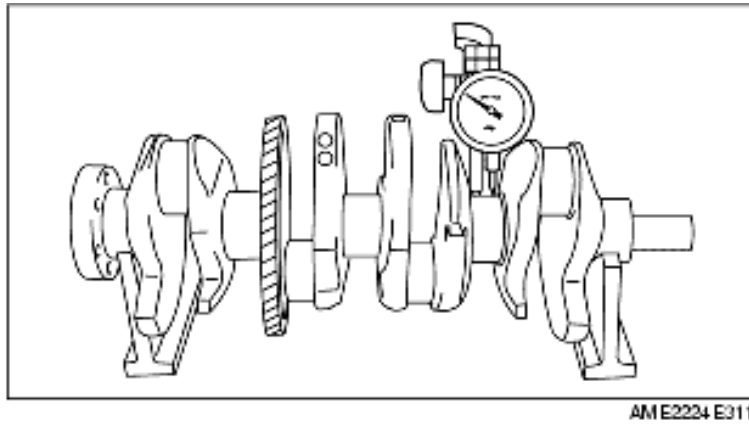
Maximum runout:  
0.05 mm {0.0019 in}

L8, LF



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L3, L3 (with variable valve timing mechanism)



5. Measure the journal diameter in X and Y directions at the two points (A and B) as indicated in the figure.

- If not as specified, replace the crankshaft or grind the journal and install the undersize bearing.

Main journal

mm {in}

Bearing size	Standard diameter
Standard	51.980-52.000 {2.0464-2.0472}
0.25 {0.01} undersize	51.730-51.750 {2.0366-2.0373}

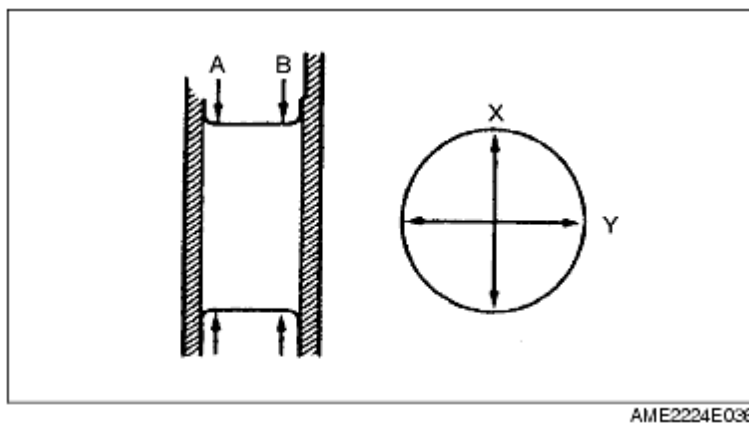
Maximum out-of-round:  
0.05 mm {0.0019 in}

Crank pin

mm {in}

Bearing size	Standard diameter
Standard	49.980-50.000 {1.9677-1.9685}
0.25 {0.01} undersize	49.730-49.750 {1.9579-1.9586}

Maximum out-of-round:  
0.05 mm {0.0019 in}



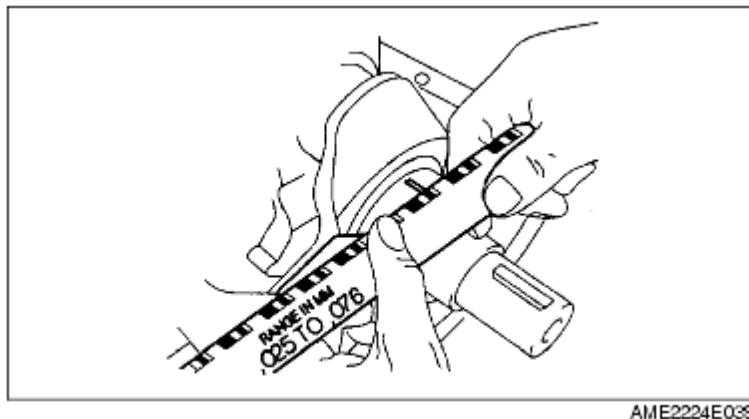
6. Install the main bearing caps and crankshaft.

7. Position a plastigage atop the journals in the axial direction.
8. Install the main bearing caps and cylinder block. (See [Main Bearing Caps Assembly Note.](#))
9. Remove the main bearing caps. (See [Main Bearing Cap Disassembly Note.](#))
10. Measure the main journal oil clearance.
  - If the clearance exceeds the maximum, replace the main bearing using the main bearing selection table or grind the main journal and install the oversize bearings so that the specified oil clearance is obtained.

Standard clearance:  
 0.019-0.035 mm {0.0007-0.0013 in}  
 Maximum clearance:  
 0.10 mm {0.0039 in}

mm {in}

Bearing size	Color	Bearing thickness
Standard	Green	2.506-2.509 {0.0987-0.0988}
0.25 {0.01} oversize		2.628-2.634 {0.1034-0.1037}
0.50 {0.02} oversize		2.753-2.759 {0.1084-0.1086}



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