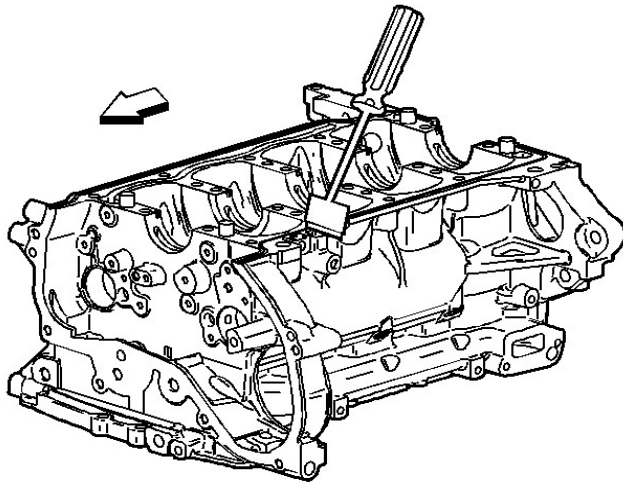


# Engine Block Cleaning and Inspection

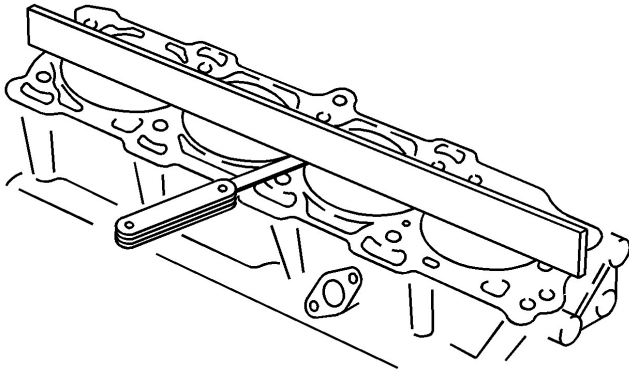
## Special Tools

- J 7872 Magnetic Base Dial Indicator
- J 8087 Cylinder Bore Gauge

For equivalent regional tools, refer to [Special Tools](#)

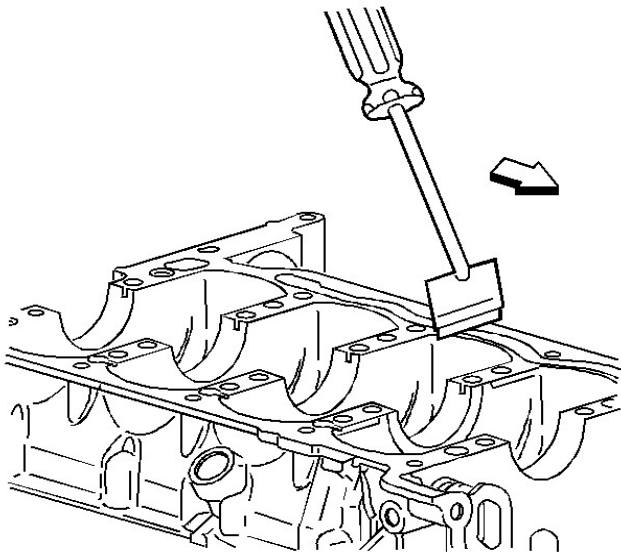


1. Ensure proper use of room temperature vulcanizing (RTV) sealant.  
[Use of Room Temperature Vulcanizing \(RTV\) and Anaerobic Sealant](#)
2. Clean the sealing material from the gasket mating surfaces.
3. Clean the engine block and lower crankcase in a cleaning tank with solvent appropriate for aluminum.
4. Flush the engine block with clean water or steam.
5. Clean the oil passages.
6. Clean the blind holes.
7. Spray the cylinder bores and the machined surfaces with engine oil.
8. Inspect the threaded holes.
9. Clean the threaded holes with a rifle brush. If necessary, drill out the holes and install thread inserts. Refer to [Thread Repair](#).

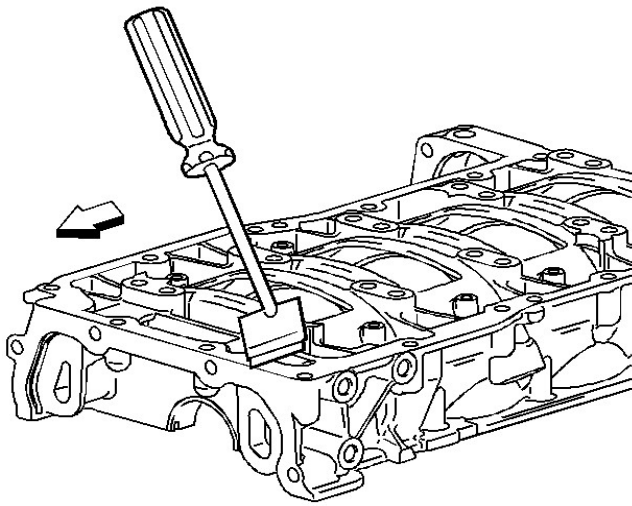


**Note:** Do not attempt to machine the lower crankcase to engine block surfaces.

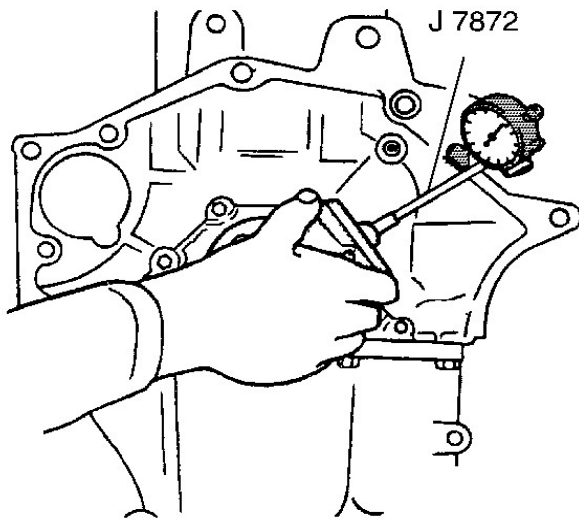
10. Use a straight edge and a feeler gauge to inspect the deck surface for flatness. Carefully machine minor irregularities. Replace the block if greater than 0.254 mm (0.010 in) must be removed.
11. Inspect the oil pan rail for nicks. Inspect the front cover attaching area for nicks. Use a flat mill file to remove any nicks.



12. Ensure proper use of room temperature vulcanizing (RTV) sealant.  
[Use of Room Temperature Vulcanizing \(RTV\) and Anaerobic Sealant](#)
13. Clean the sealing material from the gasket mating surfaces on the lower crankcase engine block side.



14. Clean the sealing material from the gasket mating surfaces on the lower crankcase oil pan side.



15. Inspect the mating surfaces of the transmission face.

**Caution:** A broken flywheel may result if the transmission case mating surface is not flat.

16. Use the following procedure in order to measure the engine block flange runout at the mounting bolt hole bosses:

16.1. Temporarily install the crankshaft and upper bearings. Measure the crankshaft flange runout using the J 7872 indicator.

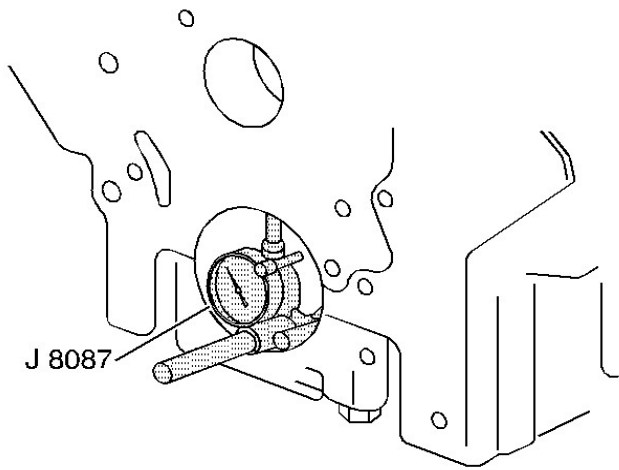
16.2. Hold the gauge plate flat against the crankshaft flange.

16.3. Place the dial indicator stem on the transmission mounting bolt hole boss. Set the indicator to 0.

16.4. Record the readings obtained from all of the bolt hole bosses. The measurements should not vary more than 0.203 mm (0.008 in).

16.5. Check the crankshaft flange runout again if the readings vary greater than 0.203 mm (0.008 in).

16.6. Remove the crankshaft and bearings.

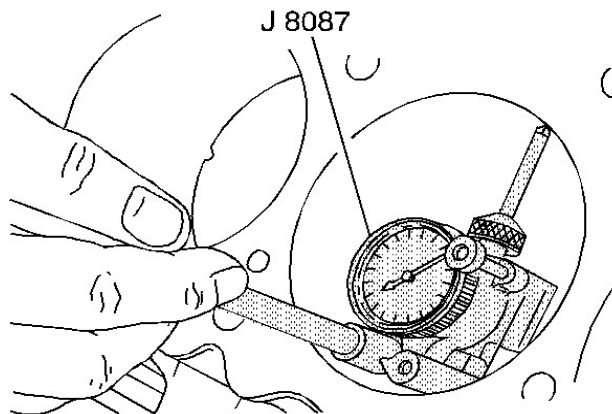


16.7. Install the bed plate and bolts. Tighten the bed plate bolts to specification.

16.8. Inspect the crankshaft main bearing bores. Use the *J 8087* gauge to measure the bearing bore concentricity and alignment. Refer to [Engine Mechanical Specifications](#).

16.9. Replace the engine block and bed plate if the crankshaft bearing bores are out of specification.

16.10. Remove the bed plate.



17. Using the *J 8087* gauge, inspect the cylinder bores for the following conditions:

- Wear
- Taper
- Runout
- Ridging

18. If the cylinder bores are out of specification, install a NEW cylinder bore sleeve. Refer to [Cylinder Sleeve Removal](#) and [Cylinder Sleeve Installation](#).