

1957 - 1965 Corvette: Service Bulletin: Diagnosis and Fitting Main and Rod Bearings

1957 - 1965 Corvettes built with either a 283 or 327 cu. in. engine fall under this factory service bulletin. This information of fitting main and rod bearings to factory specs should be helpful to anyone performing a restoration on one of these Corvettes.

Subject: Diagnosis and Fitting Main and Rod Bearings

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TO: ALL CHEVROLET DEALERS

Diagnosing connecting rod and main bearing problems by visual observation of the bearings requires experience and familiarity with bearing wear patterns.

The information on the following pages is intended to be helpful in analyzing rod and main bearing problems.

In addition, a newly designed front main bearing for 283-327 engines is discussed, as well as methods of selectively fitting bearings.

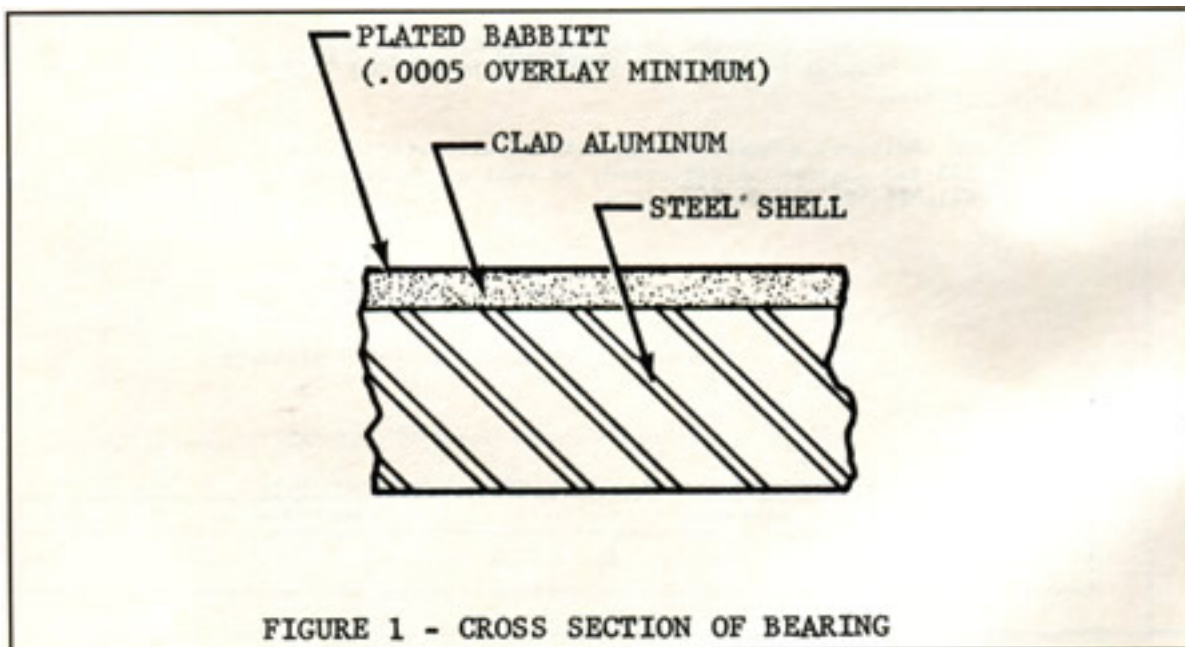
Normal Bearing Wear Patterns

In some cases, main and/or connecting rod bearings are being replaced due to a misunderstanding of normal bearing wear patterns.

The babbitt overlay on the bearing faces (See Fig. 1) can be as thin as .0005 and in normal short mileage this can be removed from limited areas. This can cause a difference in color or appearance in the bearing face which is sometimes mistaken for being defective bearings.

The bearings shown in Figure 2 have been operated for a short period of time, fitted within specified clearances and show initial wear patterns. This includes examples of minor scratches resulting from minute particles being circulated with the lubricant into the bearing clearance space. This type of wear is considered acceptable and has no detrimental effect on the function of the bearing. Extended operation will complete the wear pattern over the entire surface of the bearings.

When servicing crankshaft bearings, it is essential to use plastigage as outlined in the 1965 Shop Manuals to determine the actual clearance of the bearings. Also, it is important to understand and properly diagnose bearing wear patterns.



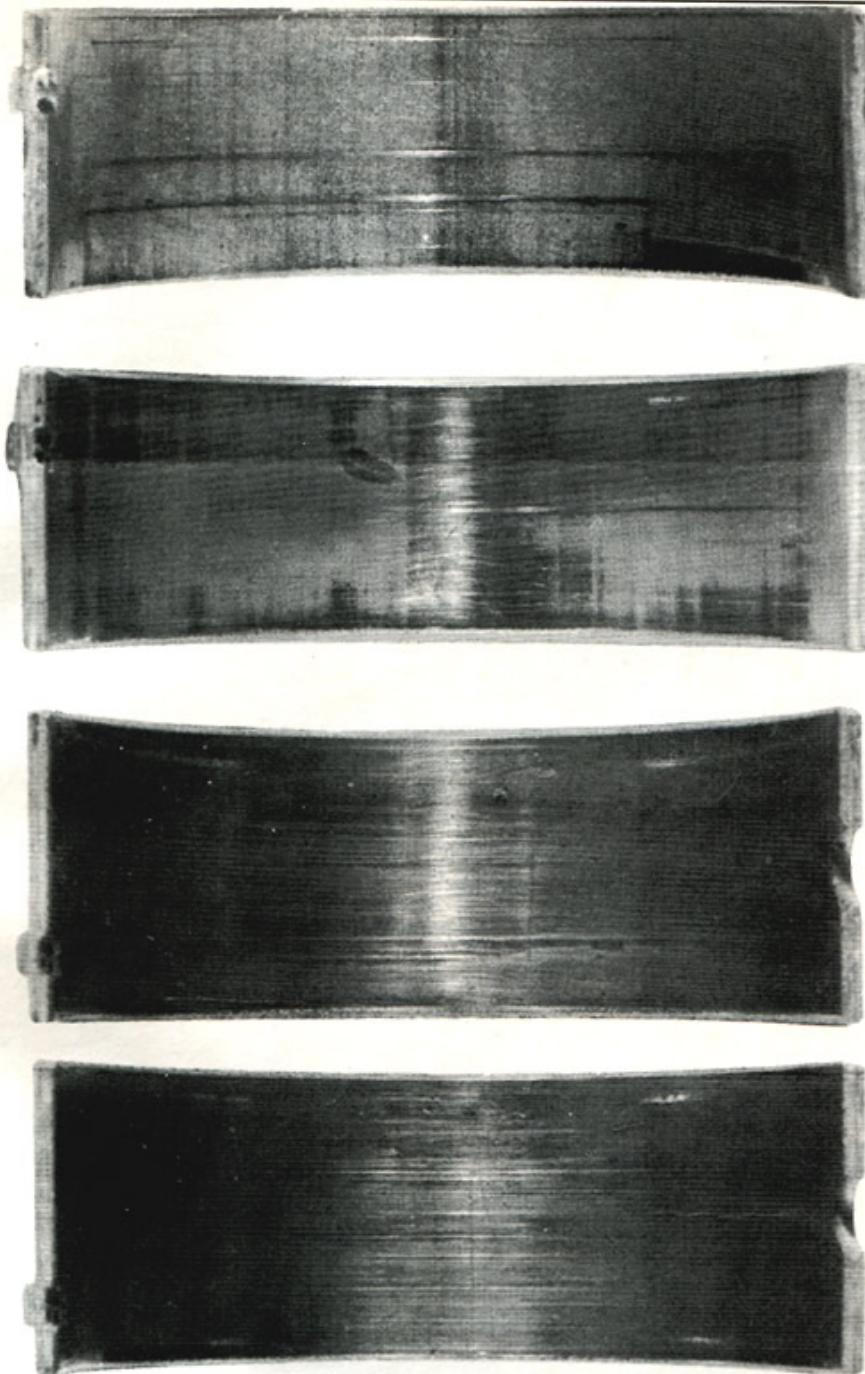


FIGURE 2 - BEARING WEAR PATTERNS

Front Main Bearing 283 and 327 Engines

A new front main bearing which is .003 thicker on the upper shell and .003 thinner on the lower shell is being used in production on the 283 and 327 cu. in. engine. This bearing is designed to better handle the extra load imposed on the front main bearing when optional equipment such as power steering is installed. This bearing is marked with red dye on the front edge (visible when crankshaft is installed) for identification purposes. This bearing will be serviced as shown in the following chart.

PART NUMBER	ENGINE	DESCRIPTION	LOCATION
3876116	283 and 327	Std. Bearing Unit	Front (Only)
3876117	283 and 327	.001US Bearing Unit	Front (Only)
3876118	283 and 327	.002US Bearing Unit	Front (Only)
3876069	283 and 327	.009US Bearing Unit	Front (Only)
3876119	283 and 327	.010US Bearing Unit	Front (Only)
3876120	283 and 327	.020US Bearing Unit	Front (Only)

If a front main bearing knock is encountered on a 283 or 327 cu. in. engine, it is recommended that the bearing insert be replaced with the new style insert of the proper size.

Selective Fitting Main and Rod Bearings

Selective fitting of both rod and main bearing inserts is necessary in production in order to obtain close tolerances. For this reason you may find one half of a standard insert with one half of a .001 undersize insert which will decrease the clearance .0005 from using a full standard bearing.

When a production crankshaft cannot be precision fitted by this method, it is then ground on main journals only to accept a .009 undersize bearing and a .010 undersize bearing is used for precision fitting in the same manner as previously described. Any engine fitted with .009 undersize main bearings will be identified by the following markings.

1. ".009" will be stamped on the counterweight forward of the center main journal.
2. A figure "9" will be stamped on the block at the left front oil pan rail.

All .009 undersize bearings are identified with the stamping ".009US" on the steel shell of the bearing and are released for service as shown on the following chart. All ".010US" bearings are currently released for service.

PART NUMBER	ENGINE	DESCRIPTION	LOCATION
3876072	153, 194 and 230	.009US Bearing Unit	All Main Journals Except Rear
3876073	153, 194 and 230	.009US Bearing Unit	Rear
3876069	283 and 327	.009US Bearing Unit	Front
3876070	283 and 327	.009US Bearing Unit	Front Intermediate - Center and Rear Intermediate
3876071	283 and 327	.009US Bearing Unit	Rear

With the careful use of plastigage, to insure against installing a standard or .001 undersize bearing on a .009 undersize journal, it is possible to selectively fit bearings for service replacement. However, it should be noted that the difference in bearing sizes should not exceed .001 when mixing bearing halves.

Grinding of main journals (only) to accept precision fitted .009US bearings is a standard manufacturing process. With the service parts release of .009US bearings, crankshaft replacement because of unavailability of parts is unnecessary and should be discontinued.

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