# BEARINGS ENGINE

*Providing continuous lubrication for moving parts in an internal combustion engine can be a real problem. By nature of its design, the internal combustion engine uses combustion in a confined chamber to drive reciprocating pistons which in turn use leverage to rotate a crankshaft at some relative torque/horsepower value. However, because of this reciprocating motion lubricating oils can be squeezed out and cause direct contact between the moving parts and an increase in friction which then leads to wear, more friction, and subsequent failure.*

*It is not possible to completely eliminate friction between surfaces in motion. The same factors that cause friction contribute to wear between moving solids. This wear and increased friction is initiated by localized bonding due to adhesion between the two surfaces. In adhesive wear, bonding between contacting surfaces eventually results in fracturing of material from one of both of the surfaces. If the bond of one surface is stronger than the bond of the other surface, transfer of material may occur. If surface features are fractured, wear debris is formed which then becomes the separating media and results in more wear from abrasion.*

*Other than racing engines the majority of bearing wear occurs during initial startup. Turning a crank that has no oil pressure due to setting overnight and then adding the force of that piston's combustion to the steel reciprocating motion causes premature bearing wear. Racing engines also have an additional problem with increased cylinder pressure and therefore creating a greater load trying to squeeze the oil out between the bearing and crank.*

*Those of you that have the ability to fine tune an engine that starts at the mere touch of the key, as I used to pride myself on, may not be doing your engine a favor. I used to be dissatisfied with Electronic Fuel Injection cars, that seemed to need to crank for a longer than necessary time before starting, versus faster starting carbureted engines. After giving it some careful thought the engine actually will live longer by not starting immediately therefore giving the engine time to create some oil pressure before combustion as the EFI engines do.*

*We sell bearings with a dry film lubricant applied to help protect the engine during marginal lubrication periods. Dry film lubricants are solid, naturally lubricating materials permanently bonded to the load bearing surface. Their purpose is to help maintain separation and clearance between two parts in motion and to assist the oil in maintaining its hydrodynamic wedge. The cost is about the price of the bearing itself and certainly worth the additional cost for greatly increasing the life of your engine bearings and crank.*

***TECH TIP: I personally use dry film lubricant coated Michigan 77 bearings and Lucas Oil assembly lube in all engines I build.***

**LUCAS OIL**

**LUC-4** Lucas oil assembly lube eliminates dry starts. Use on bearings, cams, lifters and valve train to help prevent galling and scuffing. Compatible with all oils. Comes in 4 oz size.

**LUC-8** Same as LUC-4 except comes in 8 oz size for those who build several engines.

**MIC-SH-1354-S** Michigan 77 cam bearings. 260 thru 455 engines. Full round STD only

**MIC-SH-1354-S-C** Same as MIC-SH-1354-S except dry film lubricant coated for longer life. A must for serious performance.


**MIC-SH-1354-S**

**MIC-MS-805-P** Michigan 77 Main Bearings 260-307-330-350-403 Olds, Std-010-020-030.

**MIC-MS-805-P-C** Same as MIC-MS-805-P except dry film lubricant coated for longer life. A must for serious performance.

**MIC-MS-805-P-D** Same as MIC-MS-805-P except the oil holes are pre-drilled and chamfered to 17/64" for better oiling.

**MIC-MS-805-P-C-D** Same as MIC-MS-805-P-C except the oil holes are pre-drilled and chamfered to 17/64" for better oiling.

# BEARINGS ENGINE

**MIC-MS-804-P** Michigan 77 Main Bearings 400-425-455-350 Diesel Olds, Std-001-010-020-030.

**MIC-MS-804-P**

**MIC-MS-804-P-C** Same as MIC-MS-804-P except dry film lubricant coated for longer life. A must for serious performance.

**MIC-MS-804-P-D** Same as MIC-MS-804-P except the oil holes are pre-drilled and chamfered to 17/64" for better oiling.

**MIC-MS-804-P-C-D** Same as MIC-MS-804-P-C except the oil holes are pre-drilled and chamfered to 17/64" for better oiling.

***TECH TIP: Oldsmobile V8 engines (1965 thru 1990) need oiling improvements for any type of performance applications. Tip 1: One of the items that need to be addressed is the drilling of the oil feed hole in the main bearing half that is inserted into the block. The oil feed hole should be enlarged to 17/64" and then deburred. Next using a felt tip pen number the back of the bearing according to the position they will be used in. Then insert the bearing halves into the block in the position they will be used. With a felt tip pen mark any areas of the block protruding into the bearing oil feed hole that will restrict the flow of the oil to the bearing. Then remove the bearing and with a die grinder remove the material marked with the felt tip pen. This along with cross drilling (big block only) the crank and using one of our 7 quart oil pan set ups will assure adequate oil to the main bearings and then rod bearings. We sell main bearings already drilled for this application. Tip2: Another area to improve is to restrict the oil to the cam bearings which are over oiled from the factory. Cam bearing oil restrictors (#DMR-5104) will do this without danger of starving the cam bearings for oil as does redrilling the cam bearing with a smaller oil feed hole. Tip 3: If a mechanical camshaft (flat or roller tappet) is being used you will need to use (#DMR-5100-L) valve lifter bore restrictors. Mechanical lifters do not have the internal oil restriction that hydraulic lifters do thus causing a loss of oil pressure and excessive oil under the valve covers.***

**BLOCK PROTRUDING INTO DRILLED BEARING**

**DRILLED VS. NOT DRILLED**

**MIC-CB-745-H** Michigan 77 HP rod bearings for use with DMR-5465 stroker crank. For use with 2.000" rod journals. +.001-Std-001-010-020.

**MIC-CB-745-H-C** Same as MIC-CB-745-H except dry film lubricant coated for longer life. A must for serious performance.

**MIC-CB-663-H** Michigan 77 HP rod bearings for use with DMR-5466 stroker crank. For use with 2.100" rod journals. +.001-Std-001-010-020.

**MIC-CB-663-H-C** Same as MIC-CB-663-H except dry film lubricant coated for longer life. A must for serious performance.

**MIC-CB-743-H** Michigan 77 HP rod bearings for use with DMR-5466 stroker crank. For use with 2.200" rod journals. +.001-Std-001-010-020.

**MIC-CB-743-H-C** Same as MIC-CB-743-H except dry film lubricant coated for longer life. A must for serious performance.

**MIC-CB-684-P** Michigan 77 Rod Bearings 260-307-330-350-403-350 Diesel Olds, Std-001-010-020-030

**MIC-CB-684-P-C** Same as MIC-CB-684-P except dry film lubricant coated for longer life. A must for serious performance.

**MIC-CB-542-P** Michigan 77 Rod Bearings 400-425-455 Olds, Std-001-010-020-030-040.

**MIC-CB-542-P-C** Same as MIC-CB-542-P except dry film lubricant coated for longer life. A must for serious performance.

# BEARINGS ENGINE

**DMR-5022** Stick shift pilot bearing adapter. A new solution to an old problem. Convert a GM automatic transmission crankshaft to a manual shift crank without taking the crank out of the block. Knurled for a sure fit with self alignment for a perfect fit and smooth running and shifting. Requires modest shortening of input shaft with common tools. Also for engines that are using a midplate resulting in the transmission being moved rearward and not engaging the stock pilot bearing far enough. Fits Oldsmobile 260-455, Buick 350-455, Cadillac 400-500, Pontiac 326-455, and Chevrolet 305-502.

**DMR-5022** **DMR-5023**

**DMR-5023** Stick shift pilot bearing. Use in stick shift cars. Knurled for sure fit with self alignment for a perfect fit and smooth running and shifting. Fits Oldsmobile 260-455, Buick 350-455, Cadillac 400-500, Pontiac 326-455, and Chevrolet 305-502 and allows GM transmissions with Ford engines.

**TECH TIP:** To properly install either DMR-5022 or DMR-5023 coat the knurled edges with red Loctite before driving the bearing into the crank.

## Oldsmobile V8 Block Identification

| ID | Engine | Casting # | Lifter Angle | Lifter Dia | Cyl Bore | Year | |
|---|---|---|---|---|---|---|---|
| 2A | 260 | 554965 | 39 | 0.842 | 3.500 | 75-76 | |
| 5 | 260 | 550355 | 39 | 0.842 | 3.500 | 75-76 | |
| 2B | 260 | 557751 | 39 | 0.842 | 3.500 | 77-82 | |
| 2B | 260 | 557791 | 39 | 0.842 | 3.500 | 78-80 | |
| 2B | 260 | 557795 | 39 | 0.842 | 3.500 | 78-80 | |
| 5A | 307 | 3161 | 39 | 0.842 | 3.800 | 80-84 | |
| 6A | 307 | 4790-5-0 | 39 | 0.921 | 3.800 | 85-86 | Roller Cam |
| 7A | 307 | 6509 | 39 | 0.921 | 3.800 | 87-90 | Roller Cam |
| A | 330 | 381917 | 45 | 0.842 | 3.9385 | 64-67 | |
| 3 | 330 | 394417 | 39 | 0.842 | 3.9385 | 64-67 | |
| 1 | 330 | 381917 | 45 | 0.842 | 3.9385 | 66-67 | |
| 2 | 350 | 395558 | 39 | 0.842 | 4.057 | 68-76 | |
| 3B | 350 | 557752 | 39 | 0.842 | 4.057 | 77-80 | Windowed |
| 3A | 350 | 554964 | 39 | 0.842 | 4.057 | 77-80 | |
| 3B | 350 | 557838 | 39 | 0.842 | 4.057 | 78-80 | |
| 350-D | 350 | 560382 | 39 | 0.842 | 4.057 | 78-80 | |
| 350-D | 350 | 558306(-D3) | 39 | 0.842 | 4.057 | 78-80 | |
| 350-D | 350 | 554964(-3A) | 39 | 0.842 | 4.057 | 78-80 | |
| 350-D | 350 | 4468-D3 | 39 | 0.842 | 4.057 | 78-80 | |
| 350-DX | 350 | 7582-D3 | 39 | 0.921 | 4.057 | 80-85 | Roller Cam |
| B | 400 | 389298 | 45 | 0.842 | 4.000 | 65 | |
| E | 400 | 390925 | 39 | 0.921 | 4.000 | 66-67 | |
| G | 400 | 396026 | 39 | 0.842 | 3.870 | 68-69 | |
| 4 | 400 | 393605 | 39 | 0.842 | 3.870 | 68-69 | |
| 4A | 403 | 554990 | 39 | 0.842 | 4.351 | 77-79 | |
| 4A | 403 | 557265 | 39 | 0.842 | 4.351 | 77-78 | Windowed |
| 4B | 403 | 557893 | 39 | 0.842 | 4.351 | 78-79 | Windowed |
| A | 425 | 386525 | 45 | 0.842 | 4.125 | 65 | |
| D | 425 | 389244 | 45 | 0.842 | 4.125 | 66-67 | |
| D | 425 | 389244 | 39 | 0.921 | 4.125 | 66 | .375 drill spot |
| D | 425 | 389244 | 39 | 0.842 | 4.125 | 67-67 | .203 drill spot |
| F | 455 | 396021 | 39 | 0.842 | 4.125 | 68-71 | |
| FA | 455 | 396021 | 39 | 0.842 | 4.125 | 72-76 | |
| L | 455 | 231788 | 39 | 0.842 | 4.125 | 75-76 | |