

Take Measures to Properly Lubricate Bushings

By Gregory S. Neuenfeldt

One of the areas of starter motor lubrication that deserves a closer look is bushings—particularly the commutator end and drive end. One of the



common issues is bushings losing oil during handling/storage unless measures are taken to add or maintain oil in the bushing. Other concerns are premature wear which can ultimately lead to excessive noise or starter performance issues.

It is true that various bushings typically contain some type of oil as supplied from the bushing manufacturer. This type of bushing is usually referred to as “oil impregnated” or some other terminology by the manufacturer. The theory is that the oil stored in the pores of the bushing will provide lubrication during operation of the starter. In speaking with many of you, I have been informed that the bushings tend to “dry out” or lose their oil unless stored in a plastic bag with additional oil. This loss of oil should be a concern. If the oil comes out of the bushing when stored in a box, then what keeps it from losing oil rapidly in the starter?

Another style of bushing would be those that have recesses or “pockets” at the wear surface that are filled with a dry lubricant such as graphite. Graphite is a good dry lubricant, but typically does not work well as the sole lubricant. Another dry lubricant that works well is molybdenum disulfide, but this material is sometimes cost prohibitive compared to graphite for bushing recess filler.

Whether your bushings are oil impregnated or utilize dry lubricant, I would strongly recommend that you consider using a grease to reduce friction and prevent wear. Grease will tend to act as a sponge and retain oil in the needed area for additional lubrication. In the case of starter lubrication I am very impressed with the performance of PAO (polyalphaolefin) or “synthetic” greases for lubrication of friction points such as bushings, gearsets and spiral splines.

One of the questions I often receive regarding bushing lubrication is: “Are PAO synthetics compatible with the oil in the impregnated bushings and/or the dry lubricant used on other bushings?” The answer to both is “yes,” so you can feel comfortable supplementing the bushing lubrication with synthetic grease. The type of oil typically used in bushing lubrication is a mineral oil, which is readily compatible with PAO synthetics. PAO synthetics also work well in conjunction with graphite or molybdenum disulfide.

If you are looking for cost-effective synthetic grease for use on starter motor friction points, you may want to consider using Dow Corning® Molykote G-1021 Synthetic Automotive Grease. If you have particular starters that exhibit excessive bushing wear, you may want to use Dow Corning® Molykote G-4700 Extreme Pressure Synthetic Grease on those bushings. This is PAO synthetic grease that contains a small amount of molybdenum disulfide for extra wear protection.

Please continue to e-mail me with any questions you may have: greg.neuenfeldt@dowcorning.com.

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