

Technical Update 5

Offset SRE Bearings: What They Do And How to Install Them Properly

Ball Bearings Cause Dilemma

As heat increases in an alternator, the rotor expands at a different rate from the aluminum housing and moves laterally along the axis of the shaft. This does not cause problems when needle bearings are used on the SRE end. The rotor simply expands deeper into the SRE bearing.

A problem does arise, however, with the use of ball bearings at the SRE end. In this case, the outer race of the bearing must be prevented from spinning in the housing, but at the same time the rotor must have room to expand. To help solve this problem, engineers have tried several options over the years:

- Wave washers.** These have been used on Bosch alternators.

- Rubber O-rings.** Motorola alternators use these. Note: When installing rubber O-rings be sure they are clean and free of grease or oil. Use just a very small amount of water to ease installation.

- Teflon rings** on outer race. These work well, but once bearings with teflon rings are put into service and the teflon rings are seated, it is recommended that the bearing be replaced if the unit is disassembled because the teflon rings will not re-seat.

- Tolerance rings.** Metal tolerance rings are used on early Delco CS 130 alternators. Plastic tolerance rings are used on later CS 130 units as well as Bosch and Paris Rhone alternators.

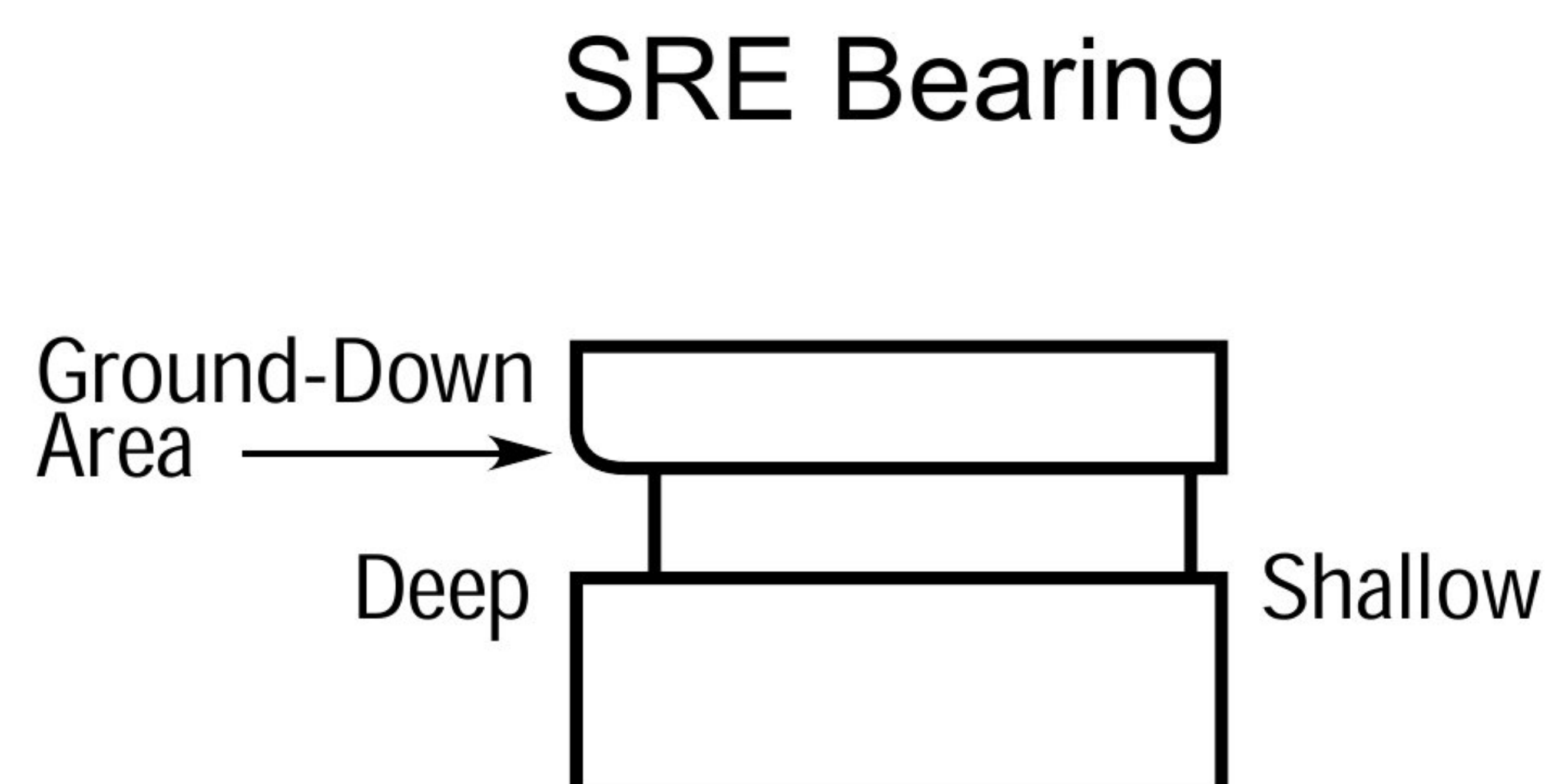
SRE Bearings with Offset Rings Are Newest Solution, But Cause Some Confusion

The newest solution to the problems inherent in SRE ball bearings are the bearings with offset rings being used on some import alternators. These use a metal "C" ring that fits in a groove around the diam-

eter of the outer bearing race to keep the outer race from spinning. However, this groove is not ground on-center. One side is deeper than the other.

In order for this bearing to be installed properly, the curved part of the "C" ring must be in the deepest part of the groove. The question is, how do you determine where the deepest part is?

An easy way to locate the deepest part of the groove is to look at the edge of the groove. Turn the bearing until you see an area just above the upper edge of the groove that is slightly ground down and/or discolored. This is where the deepest part of the groove is located.



The curved part of the "C" ring must fit in the deepest part of the groove in order for offset SRE bearings to be installed properly. Look for the ground-down area to determine the deep part.

