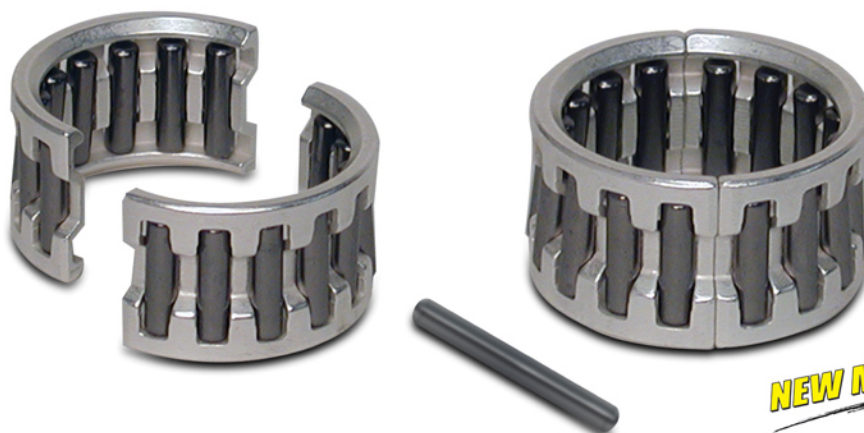




NEEDLE & CAGED BEARINGS

No. 16200
OEM: 31-17514A1
31-17514A2



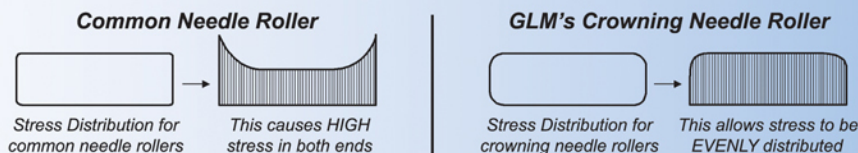
NEW METAL CAGE!

They Look the Same but are NOT the Same!

The OEM Bearing 31-17514A2 is plastic and can fail at high-demand, high-horsepower situations. GLM manufactures the same bearing but with a metal cage designed to perform in those situations. GLM's metal caged bearing out performs the OEM plastic bearing. Our needle rollers are mainly supplied by needle roller specialist or OEM manufacturers. The rollers are made of Bearing Steel (SAG 52100) and have been subjected to heat treatment and precision grinding. The hardness is HV700-860 (HRC 60-66). Both ends of our rollers used in marine engines are shaped with a special profile, known as "crowning".

What is Crowning?

Crowning is also known as "controlled contour", or coded as "ZB2". The crowning is to shape both ends, in a .040"-.080" area, to have a parabolic curvature (as the figure below, however it is difficult to see this curvature with the naked eye). The purpose of crowning is to avoid high stress concentration at the end areas of rollers and to ensure even contact stress between rollers and the race. Because the crowning lessens the rollers' maximum stress, it can increase bearing life significantly.



How About the Cages?

Because the cage is constantly subject to friction between rollers and the race, the hardness of each corresponding contact area must be assigned appropriately to achieve optimal bearing life. As a general rule, the roller and surface of the inner and outer races should have higher hardness, HV 700~860 (HRC 60~66), to ensure wear resistance. The hardness of the cage should be slightly less than the rollers. Also, the cage material should be tough enough to avoid cage fracture during high-load, high-speed operation.

To ensure the high-quality heat treatment of the cages, GLM cages use Swiss made, automatic carbonitriding furnace. The strict quality inspection also applied to every production lot to make sure the surface hardness, case depth, and toughness are consistent with the top quality standards.

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