

High-Heat Stabilizer Link Uses Rod End with PTFE Liner



[CCTY Bearing Company](#)

manufactures high-quality bearings and assemblies, as well as unique solutions for OEM partners.

Executive Summary

When it comes to ATV and off-road vehicles, bumps in the road are expected – and even sought out. However, their toll on the suspension system needs to be kept in check. Traditionally, a stabilizer link is added to maintain a smoother ride for the on or off road riding experience.

CCTY Bearing Company learned that the temperature within this particular system would be between 350 and 400 degrees, which would affect life and performance of the plastic resin in the rod end. CCTY Bearing Company's engineers replaced the nylon plastic resin insert with a self-lubricated PTFE-backed bushing which provided long-lasting performance in a high temperature application.

The Challenge

A stabilizer link design required a rod end assembly that could perform in a heat-intense environment. Finding a solution for an affect design, which is near a heavy heat source generated by the engine and exhaust system, can prove to be a challenge.

When riders downshift for more torque, the transmission/motor will move fore and aft as well as side to side severely without a stabilizer link. Typically, a standard, resin-based rod end is used to stabilize the rocking and pivot activity between the frame/transmission/motor and can perform in environments as high as 300 ° F. However, as this movement is the result of an engine and transmission working as a unified unit, the high heat melts the plastic.

In addition, nylon resin in this application is susceptible to increased squeaks from environmental debris.



The Solution

The difficulty in finding a rod end that can withstand the heat within the confined area was solved with a BK1 bushing – a self-lubricated PTFE lined bearing that can perform well in high heat areas, in this instance between 350 to 400 °F. The benefit is three-fold:

- No need to grease the bushing as it is self-lubricating
- The BK-1 metal backed bearing can withstand high heat and continue performing at optimal levels
- Reduced noise due to a self-lubricating material

“Since our conversation with the OEM started in the design phase, we were able to adjust the rod end prior to production. Questions we raised avoided a potentially costly warranty issue.

*Dave Olson
Strategic Sales Manager*

The Results

The OEM retained the exhaust and engine design without modifications as the BK1 was able to perform in its current design.

As a result, the OEM has had success with the BK-1 bearing in the rod end assembly for more than two years.

The CCTY Bearing Company solution proved to be a:

- Solution-focused option that eliminated potential stabilizer failures.
- Maintenance-free product
- Warranty secure feature

Plus, the tie rod and rod end are delivered as a bearing assembly, saving the OEM production time and cost.