



All-in-One Ball Joint: Case Study



[CCTY Bearing](#) is a bearing manufacturing company that engineers, produces and formulates high-quality bearing products.

“During a conference call with our customer’s project engineer, he said, ‘Most suppliers don’t ask the kind of questions you guys do. I like it.’”

*-Rich Pearlberg
Design Engineer*

Executive Summary

A prospective customer was having sourcing, quality, assembly and maintenance issues with some of the ball joint components used on the front suspension of rugged utility vehicles.

CCTY Bearing designed a solution that eliminated the ball joint issues, which also proved to be:

- Less expensive
- Cleaner and faster to assemble on the production line
- Easier to source by consolidating three part numbers
- More reliable than previous parts

The Challenge

The ball joint, retaining plate and rubber shroud required assembly and greasing during production along with continued maintenance by the end user.

CCTY was offered the opportunity to create a new design as long as it was backwards compatible. Meaning, CCTY's design had to fit all current and previous models that incorporated this ball joint.

The Solution

CCTY's engineers fabricated a solution that combined all of the components into one part. In addition to tackling the re-greasing issue by designing a maintenance-free ball joint assembly, the solution provided a:

- Positive seal that the previous rubber shroud could not support
- Corrected a taper issue on the stud, eliminating the need for an additional washer
- Eliminated the grease fitting and machining operations needed to provide a path of travel for the grease into the ball joint from the mating part

"As a bearing manufacturer with a state-of-the-art facility, we provide the benefit of partnering with our client's engineers for unique solutions."

*John Sweetwood
Strategic Sales Manager*



The Results

The CCTY design passed all of the client's life and durability testing, eliminated the grease fitting and adjoining "how-to" maintenance instructions in the owner's manual. It also provided a maintenance-free, longer-life ball joint for the end user.

In the end, the CCTY solution proved to be:

- Less expensive
- Easier to source by consolidating three part numbers and vendors into one
- Backwards compatible and more reliable
- Cleaner and faster to assemble on the production line
- An enhanced design that eliminates routine maintenance requirements

The client is now saving time in production and enjoying a lower cost per unit.