



A longtime customer of ours manufactures medical equipment to assist those with mobility challenges, utilizing our bearings in wheelchairs, walkers and other devices.

While developing a new orthopedic device – one that helps a person transition from a sitting to standing position – they quickly realized that the bearings would incur tremendous stress, as they would need to help support a person's full weight. After preliminary testing, they concluded that conventional catalog bearings would be inadequate, as they could not provide the life requirement and reliability needed in these new, lightweight devices.

They approached us for a solution, and we got to work. Our engineers met with their designers, familiarizing themselves with the proposed design and the performance expectations. They assessed the bearing movement and load projections, and while the bearing only rotated 90 degrees, it incurred tremendous stress.

After some initial trial-and-error, we decided that instead of using a standard single row bearing assembly with a ball separator inside, we would offer a double row – a single bearing with two rows of balls. Structurally, it provides additional load capacity while remaining in “relatively” the same envelope. It was ... *almost* perfect, but not quite.

While the additional load capacity helped, it wasn't enough. Our engineers returned to the drawing table and after additional consultation arrived at a truly innovative solution: a full complement bearing (a full complement bearing is one of which the interior circumference space is completely – or nearly – filled with balls).

The configuration seemed promising so we produced several prototypes, which the company tested in their shop. After verifying that the setup was viable and successful, we committed to full-scale production. Working jointly with their production team, our factory began manufacturing the revised assembly.

The design proved successful and today, several years later, the orthopedic devices are still in production, providing critical mobility support for the company's customers.

**Innovative thinking. Innovative solution.**

For AST, it's not just about steering a client to an existing product; rather, it's finding a solution that solves a unique challenge that is the distinguishing AST value proposition.

Taking a standard envelope dimension bearing and customizing it is often an option that provides our customers with the best solution. We can offer this when others cannot because our Applications Engineers routinely work with our partner manufacturers on special designs. And, as in many cases, we were able to leverage our relationships, and produce this out of the box assembly, in turn helping our customer realize their product goals.

To be clear, a full complement bearing isn't the right solution for load capacity in every case. In the typical moderate high to speed application, you cannot use a full complement bearing, as it produces a lot of torque and noise. But it was the right solution in this case.

It is the ability and willingness to assess a problem and consider solutions – no matter how seemingly theoretical – that distinguishes AST as an industry leader in ball bearing technology.

And with the leverage to partner with manufacturers who can produce customized designs – again, unusual in the industry – AST ensures that its customers will continually optimize the performance of its products.

Let our team of experts help with your specific needs. [Contact them here](#) or learn more about our expertise in the [medical industry](#).

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