

SPECIAL APPLICATIONS

Introduction

Barden innovations in special bearings range from nearly standard bearings with slightly modified dimensions, to intricate assemblies which integrate the bearing function into a complete mechanism. Our engineers work closely with customers to develop unique bearing designs with specialised features to meet application requirements and solve functional problems.

In many cases the overall cost of a piece of equipment can be reduced by incorporating special or customised bearings particularly when mating components are integrated into the bearing such as mounting flanges, gear teeth, spring carriers and integral O-ring grooves. The performance and installation benefits to be gained from using bearings specifically designed for individual applications are as follows:

- Improved assembly reliability
- Enhanced rigidity or stability of the system
- Better location control through proper bearing orientation
- Reduction in handling operations and contamination
- Improved alignment of the rotating assembly
- Weight reduction
- Improved resistance to temperature extremes
- Reduction in tolerance stack-up

SPECIAL APPLICATIONS

Canning Industry



Barden's specialised bearings set the standard for performance and reliability in the high volume throughput canning industry.

A can of food is something most people take for granted, yet it must count as one of the most revolutionary inventions of the last two hundred years. After all, here was a way to preserve fresh or cooked food for years at a time, while maintaining its nutritious qualities, and without requiring chemical additives or processes such as smoking, pickling, or salting.

The history of canned food began in 1810, when a Frenchman, Nicolas Appert, found that by heating food in a sealed airtight container, it would keep for very long periods of time; we now know that this is because the heating process kills the bacteria that cause food to spoil.

The very earliest cans were "tinned iron canisters," which were very heavy and needed a hammer and chisel to open them! They were also made one at a time, by hand. Nowadays, can making and canning have changed beyond all recognition, and are high-speed, high-technology industries. Cans are manufactured at speeds of up to 1250 per minute, and printed and filled at similar speeds!

How are cans made?

Today, there are two basic ways of making cans. The common method for food cans is to use three separate pieces of tin plate, hence it is referred to as a "three piece can." One rectangular piece is rolled over into a

cylindrical shape, so that the two edges just overlap. The edges are then welded together at high speed by a special process, to form the cylindrical body of the can. The top and bottom ends of the can are made separately, and the base is next seamed onto one end to form an airtight seal. The empty cans plus lids are transported to the food canner, who then fills the can, fixes the lid on, and carries out the "cooking" process.

The second way to make cans is to use a "two-piece" method, where the body and base is formed from a single sheet of material, and the lid is the second piece subsequently seamed on as before.

What are cans made from?

The base material for modern cans is either tin plated mild steel or aluminum.

How are cans sealed?

The cans body and lid are sealed by a metal forming process known as seaming. This process is the reforming of the parts into a new shape under pressure.

What is the link with bearings?

As the can body is round, the phases of can forming, shaping and seaming, etc. all rely on rolling element bearings for continued accuracy and speed of process.

Barden Precision angular contact ball bearings can be found in machinery that services the high and low volume canning industries.

Bearing Characteristics

The canning industry represents a particularly hostile environment for the bearings. In addition to aggressive media and harsh cleaning processes, bearing lubricants must also comply with environmental (FDA) guidelines that require the use of thin organic-based oils conferring only boundary lubrication characteristics for the majority of the operation. By combining the material properties of advanced corrosion-resistant steels with those of ceramic balls, Barden bearings demonstrate enhanced performance and reliability in the demanding environment of today's high-speed canning industry.

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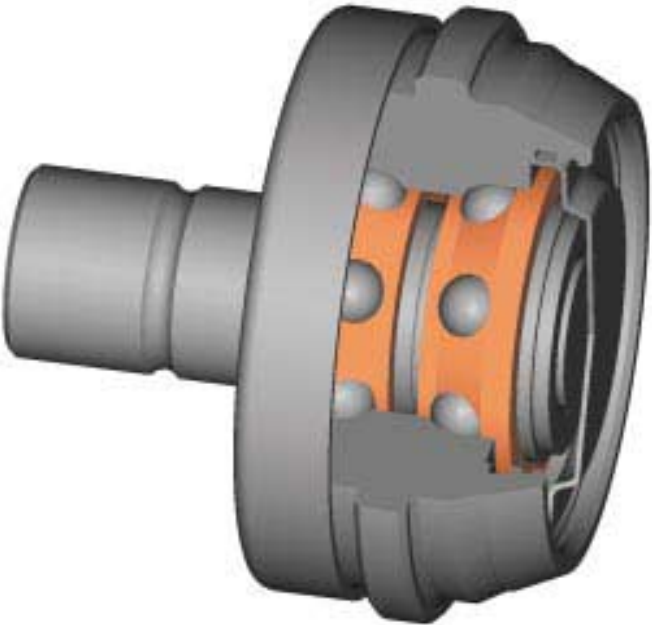
Canning Industry



SCB850



SCB896



Can Seaming Head Roller