



# Ball Bearings ... How they are made!

The Four Basic Components of a Bearing



## Seven Steps in Producing Ball Bearings

1. Machining
2. Heat Treatment
3. Grinding
4. Honing
5. Inspection
6. Cleaning
7. Assembly & Packaging

## About Inspection

Bearings (materials and processes) are continually evaluated through the entire manufacturing process. Both material and measuring equipment are checked for accuracy. Sampling of materials are adjusted according to complexity and stages in the manufacturing process. In the Final Stages of Inspection larger groups are sampled to ensure the accuracy and precision of the final product.

Note ... computer controlled systems allows for higher accuracy and quality of parts.



## 4 Stages of Heat Treatment

1. **Austenitizing** A process that changes the steel from ferrite to austenite.
2. **Quenching** A process that keeps Austenite from returning to its' softer former state.
3. **Chilling** A process that chills the material to below -100 degrees F. During this process the material is transformed. Martensite is the new crystal that is an iron carbon aggregate which is highly resistant to deformation.
4. **Tempering** A process that heats the material to a secondary temperature to relieve crystal stresses.



The final assembly and packaging of bearing are performed in a clean room. This is a room with tight environmental controls on temperature, cleanliness and humidity.