

Bearings

Bearings —the staple of industry. A surprisingly large number of them can be found all around us. ▶ PP.6–7 NSK Supporting Society

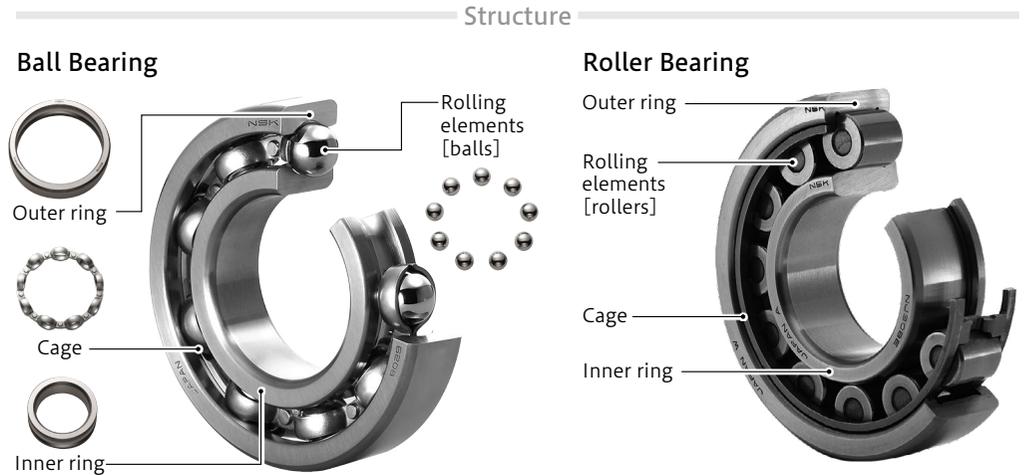
The term “bearing” incorporates the meaning of “to bear,” in the sense of “to support.”

With bearings:

Bearings work to reduce friction in the rotational motion of machines. The three main benefits of reducing friction are as follows.

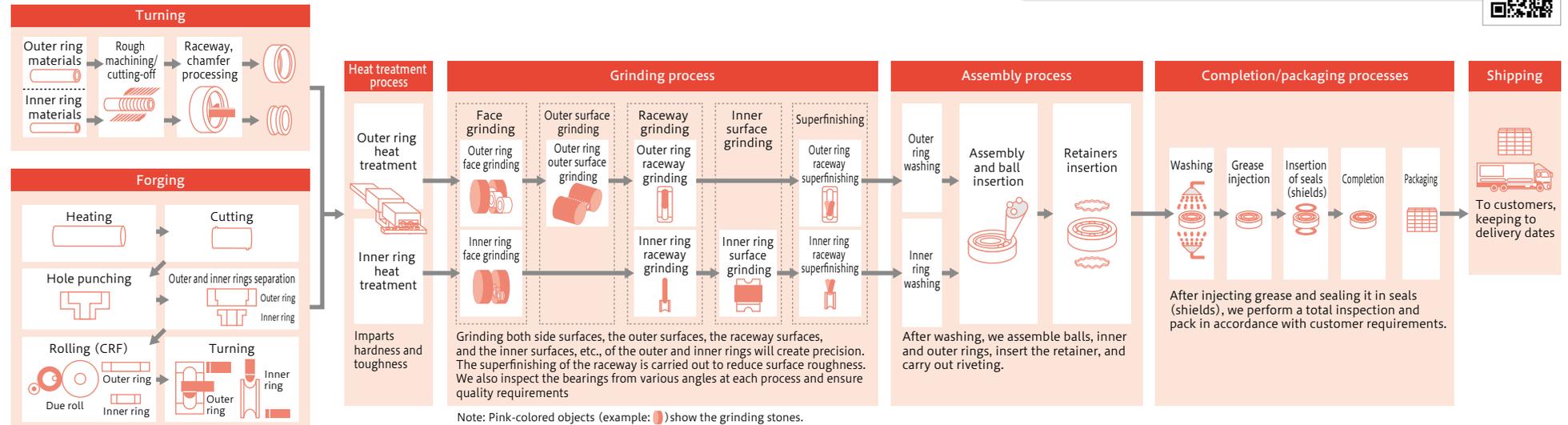
- 1.** Machine will run more efficiently
- 2.** Extend the operating life of machinery
- 3.** Preventing abrasion burn and avoiding mechanical breakdown

Bearings also contribute to lower energy consumption by reducing friction and allowing the efficient transmission of power. This is just one way in which bearings are environmentally friendly.



Bearings have a simple basic structure with four elements—an outer ring, an inner ring, rolling elements, and a cage.

Main manufacturing processes for bearings:



Process into a ring shape by turning or forging and turn the raceway and the inner surface of the rings (both outer and inner rings).

Scan here to view a video showing the movement of a ball bearing. ▶



Ball Screws

A ball screw is a component that combines the characteristics of a low-friction mechanism using balls based on the bearing principle with those of a screw mechanism. These items are widely used as components mainly in machine tools, various types of robots, FA, OA equipment, semiconductor-related equipment, industrial machinery, and medical-related equipment.

When the shaft turns, the ball in the nut rolls and the nut moves straight in the direction of the shaft. The ball in the nut is a rolling contact, so it can change the rotating force of a motor, etc., into a linear motion without wasting energy.

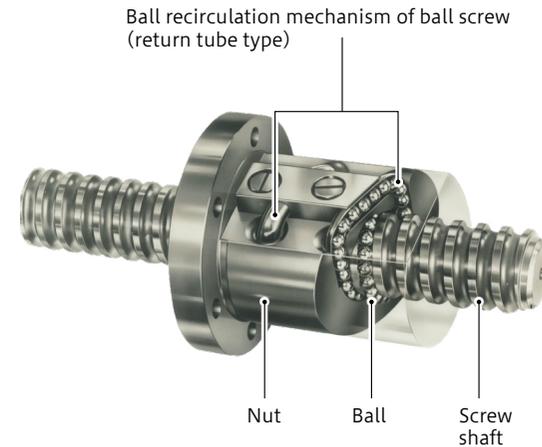
With ball screws:

A ball screw is a component that can convert rotational motion into linear motion. Ball screws have basically two major applications.

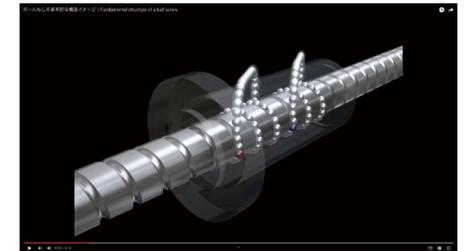
- 1. Precise positioning utilizing extremely accurate motion**
- 2. Transmission of force that can generate a large force by a small rotational force**

Precise positioning for use in machine tools and the machining machine parts.

Structure



Movement image



Scan here to view a video. ▶



Main manufacturing processes for ball screws:

