



Bearing Storage Manual

Comprehensive and reliable

Bearing storage

The conditions in which bearings are stored can have adverse effects on operational performance. Inventory control also exerts an important role on bearing performance, particularly sealed bearings. Premature damage to bearings is mainly caused by contaminants, corrosive agents and inadequate handling, but this can be avoided by following the correct storage conditions. Provided below we present a brief guide on how bearings should be protected.



When in doubt, always consult the bearing manufacturer!

Packaging

Avoid removing bearings from their packaging until it's time for them to be mounted.



- keep bearings stored in their original packaging until it's time for them to be mounted in order to avoid the adverse effects of corrosion and contaminants.
- if the packaging is open, the bearings should be repackaged using polyethylene film.
- always wear gloves when handling bearings.



Bearings that are not stored in their original packaging need to be well protected against corrosion and contaminants.

Storage location and conditions

Long storage periods can be obtained for bearings by maintaining them in their original packaging, closed and intact. Their storage time also depends on the environmental conditions of the location.



- the storage area should be cool, dry, moderately ventilated and having a minimum amount of dust possible.
- temperature should be uniform for long storage periods, **and temperature variation should be less than 8°C.**
- the location should also be vibration-free since this can cause damage to raceways.
- there shouldn't be any windows or airflows.
- if there are windows, direct sunlight on the bearings should be avoided, particularly in the case of sealed bearings; **in this case, maintain shelves away from windows.**
- avoid bearings from falling over and suffering damage.



Important:

- solvents, fuels, lubricants, chemical products, acids, disinfectants, etc. should not be stored in the same place as bearings.



Ideal temperature and relative humidity

- temperature **between 20°C and 25°C**
- relative humidity **between 60% and 75%**

We recommend using dehumidifiers so relative humidity does not exceed recommended values.

Storing bearings on shelves

- bearings should, preferably, be stored **horizontally** to avoid damage that could be caused from the bearing falling over.
- **open** bearings or with **one shield** (metallic) or **one seal**: store **horizontally**.
- in the case of bearings with **two shields** (metallic) or **two seals**: store **vertically**.

Maximum piling



- the maximum piling of boxes depends on their respective resistance.
- boxes should not be piled very high under the risk of falling over and damaging the lower boxes.
- follow **bearing manufacturer recommendations**.

Large-size bearings

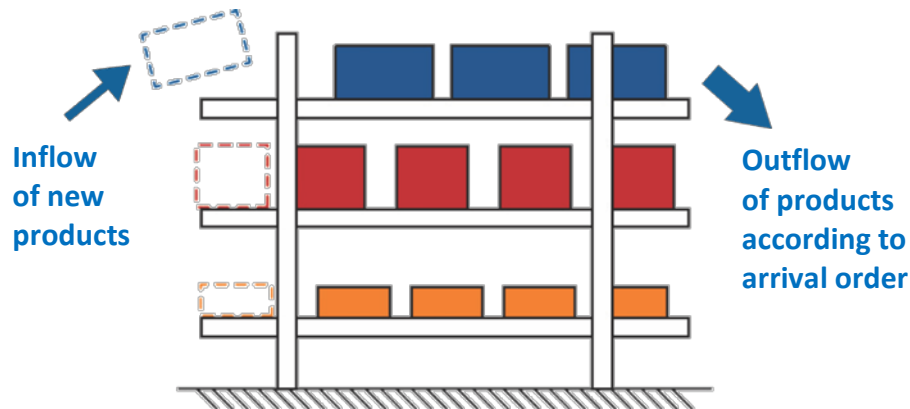
Special caution should be taken when storing large-size bearings.

- large-size bearings should be **stored horizontally** and, preferably, supported along the entire extension of the lateral faces of internal and external rings.

If stored vertically, the weight of bearing rings and rolling elements may cause permanent deformation to the bearing because the ring walls are relatively thin.

Inventory control

- For inventory control purposes, we recommend using a first in, first out (FIFO) inventory policy.



Periodic check

- At least once a year you should sample bearings that are more than 5 years old to check conditions of the preservative oil used to protect them. This can be done when performing inventory counts.



Storage time for bearings

Certain types of bearings have limited storage life.

Open bearings are coated with a rust inhibitor agent prior to being packaged.

With shielded (metallic) or sealed bearings, it is possible for the grease used to fill them to deteriorate and lose their lubrication properties if stored for a long period of time.



The maximum storage period for capped bearings is determined by the type of lubricant inside them. Grease deteriorates over time due to aging, condensation and separation of base oil and thickening agent.

- with **open bearings**, the protective oil provides protection against corrosion for roughly **5 years**, as long as storage conditions are appropriate.
- under **optimal conditions** (60% relative humidity and 20°C maximum temperature), bearings can be stored for up to **10 years**.
- the maximum storage period for **double shielded bearings** (metallic) is **2 years**.
- for **double sealed bearings**, the maximum storage period is **3 years**.

Bearings mounted on standby machines

Machines that are on standby should be operated frequently in order to redistribute the grease in bearings and change the position of rolling elements in raceways.


Protecting bearings after their validity date

After bearings reach their validity date, the following steps are recommended:



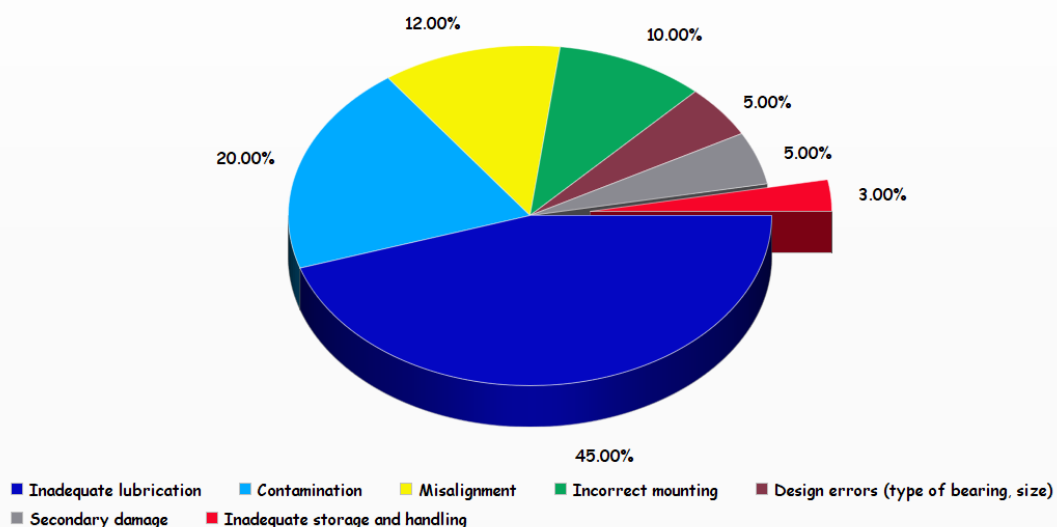
- remove bearings from their original packaging without damaging them.
- clean bearings with an appropriate solvent.
- dry bearings carefully.
- visually inspect bearings to detect eventual signs of corrosion. If their conditions are satisfactory, protect them again with an anti-corrosive protective oil and place them back in their original packaging.

Observations:

- With small bearings, it's impractical to remove their shields, clean, re-grease and put their shields back on, especially because the shields could become damaged and allow for the ingress of contaminants.
- Many manufacturers offer inventory inspection services to clean, relubricate, repackage and even **rework bearings**, when necessary. 
- We recommend **contacting the bearing manufacturer**, especially in the case of **large-size bearings** and also in the case of bearings with **long supply terms**.

Bearing failure causes

Bearings are machine elements that need to be stored and handled with necessary care in order to ensure their maximum performance.





Bearing Data Corporation