

ITP 329

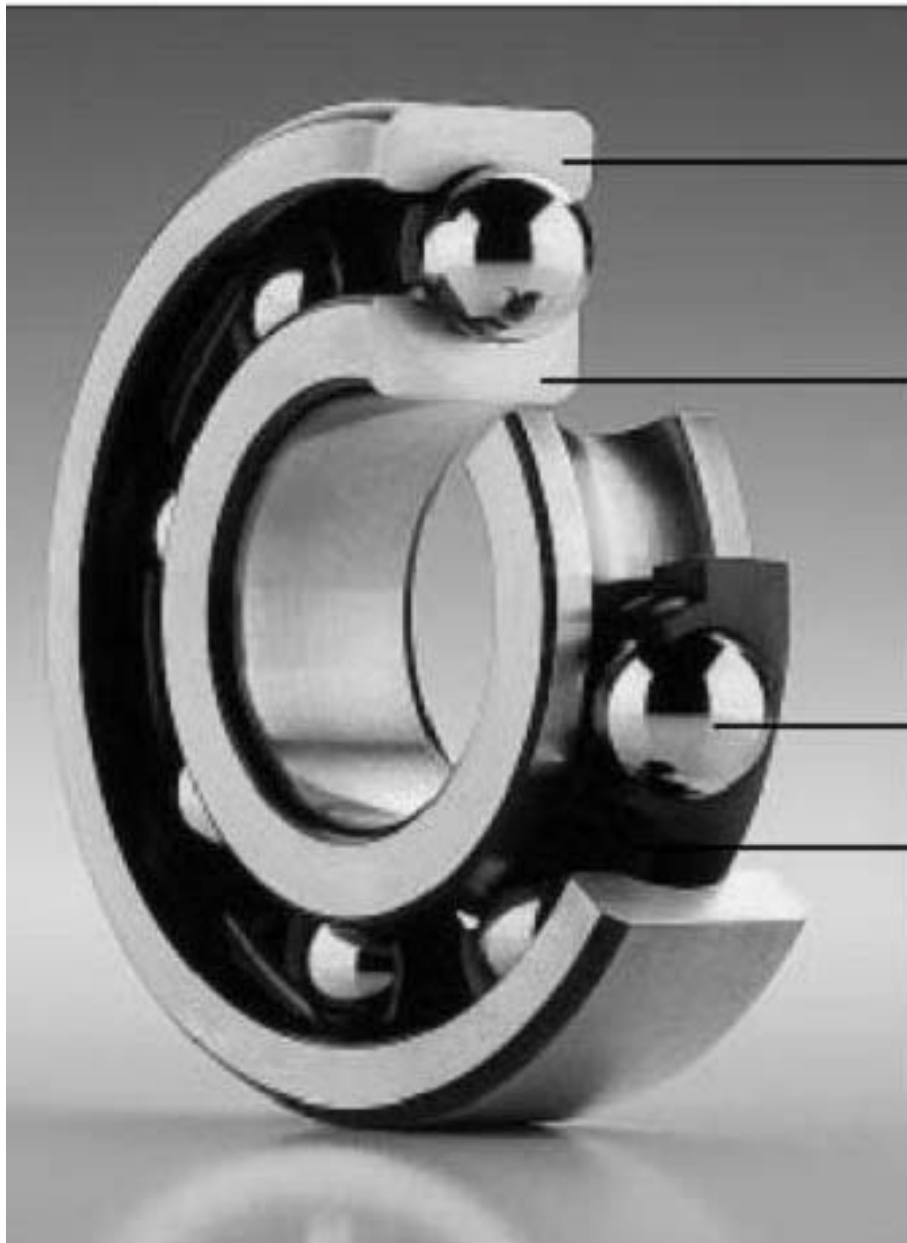
Pump Service & Maintenance

2017

NTN Bearing Service Recommendations



Parts of a Ball bearing



Outer Race

Inner Race

Rolling Element
"Balls"

Separator

1. Bearing Advantages/Drawbacks

Advantages:

1. Exceptional power conservation
2. Outstanding lubricant efficiency
3. Clean
4. Low cost operation
5. Ensure high machine accuracy
6. Standardized (Common worldwide)
7. Preloadable
8. Can be lubricated with grease

Drawbacks:

1. Rusts easily
2. Sensitive to dirt
3. Requires careful handling

2. Bearing Mounting Precautions

The key point in handling a bearing is to keep the bearing clean.

Penetration of dirt or other contaminants is a major cause of early failure.

Observe the following precautions:

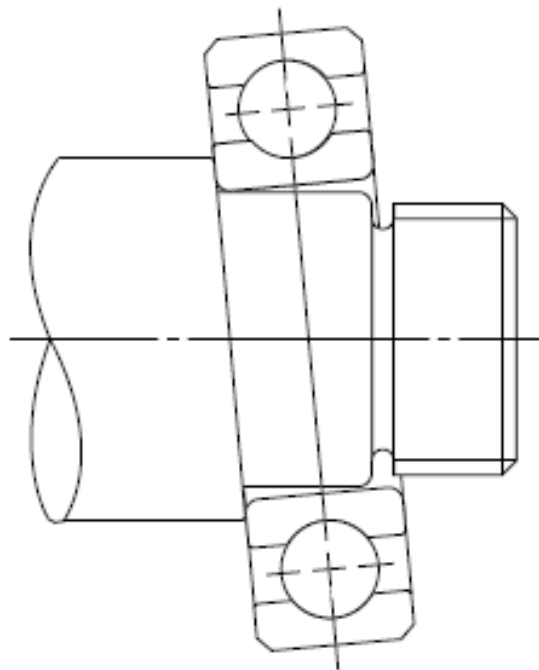
1. Mount bearings using clean tools in clean work places.
2. Use tools made of wood or light metal to install the bearing. Avoid a tool which will result in chipping of surfaces.
3. Open the bearing packaging just prior to use.
4. Clean hands before handling the bearing.
5. Most bearings may be mounted without removing the rust preventive grease from the bearing.
6. Do not bump or drop bearings. If the geometric precision is damaged, unsatisfactory operation will result.

3. Inspection Before Mounting

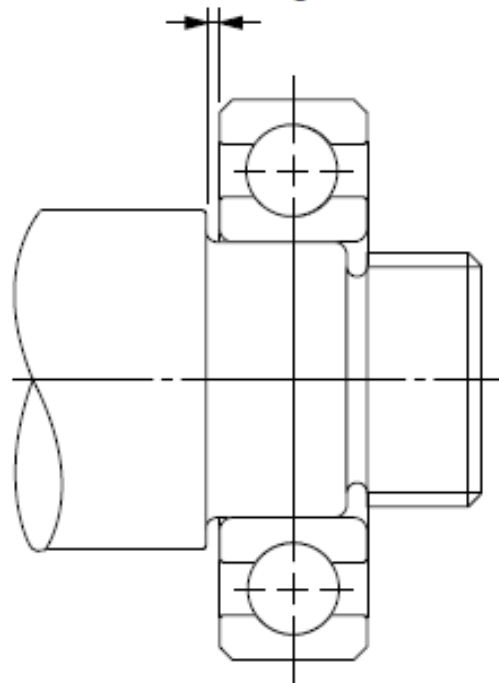
Inspect the shaft and the bearing housing to make sure that they have been finished to the dimensions specified in the drawing.

Check also that the corners and right angle of the shaft and bearing housing fit the side of the bearing.

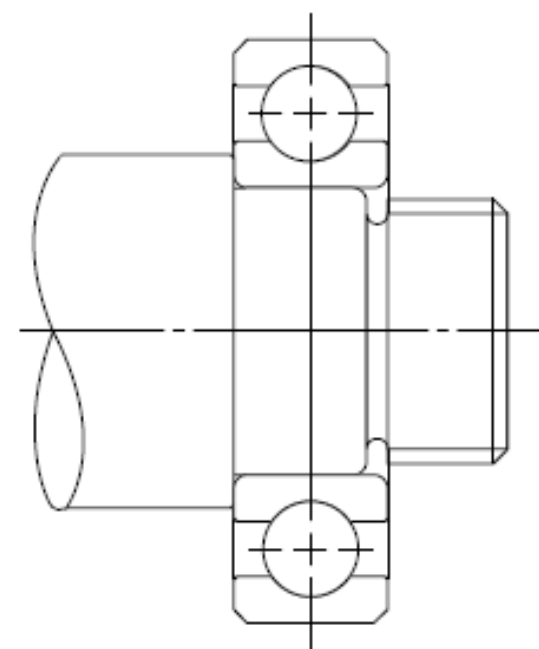
Wrong



Wrong



Correct



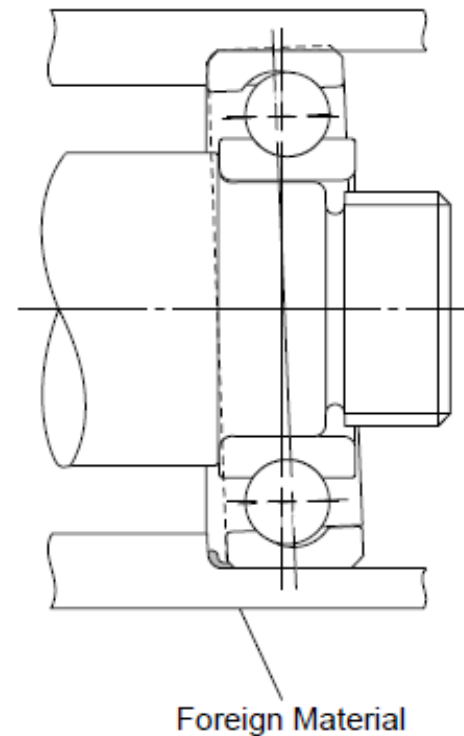
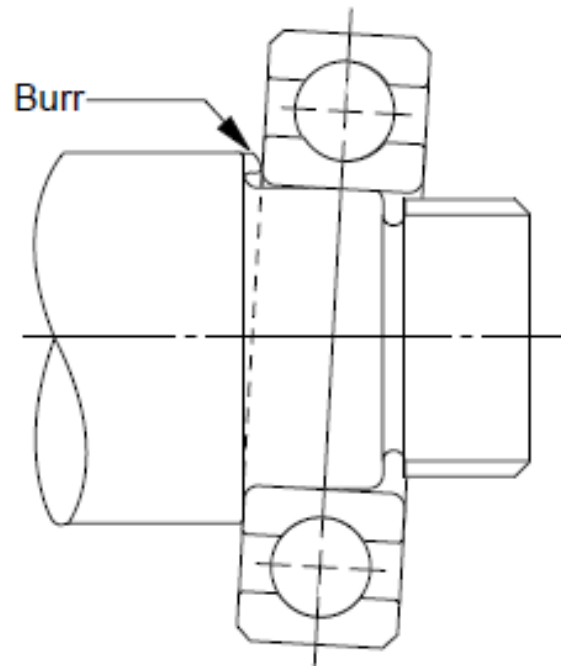
4. Preparations for Mounting

Make sure the fitting surfaces of the shaft and the bearing housing are free from scratches, burrs, dirt, and that no molding sand remains in the housing.

Remove scratches and burrs no matter how small

they are, using oilstone or fine sandpaper.

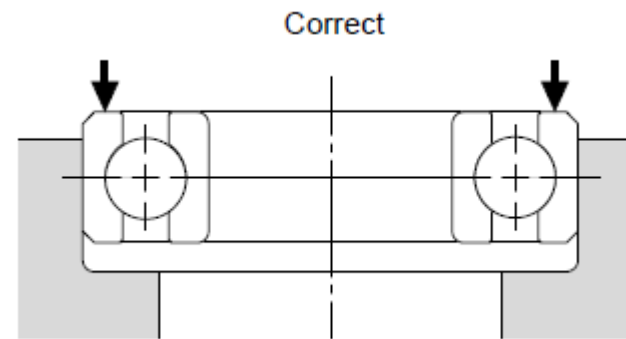
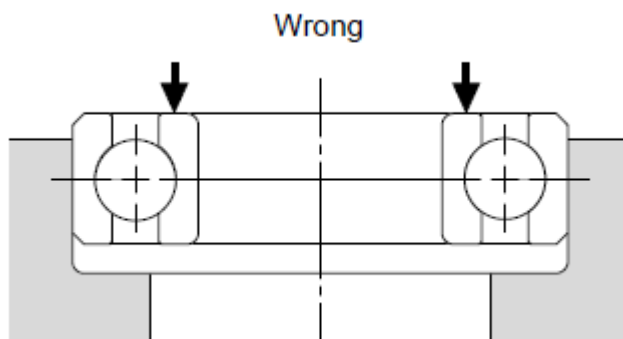
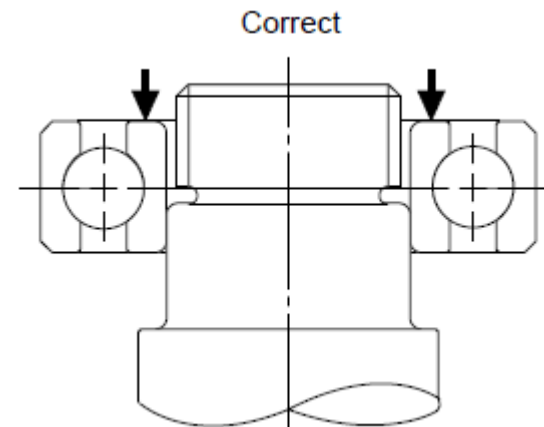
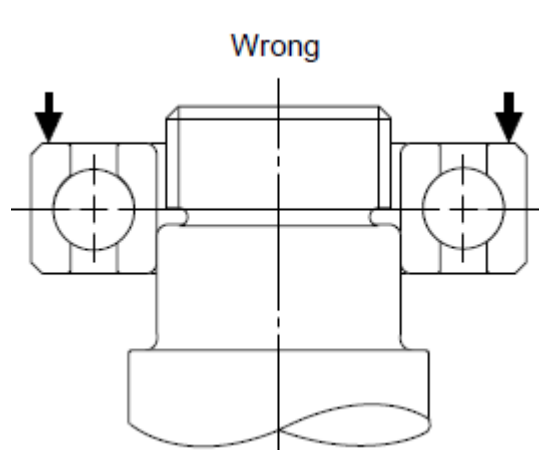
Coat the area where the shaft and bearing housing meet with mineral oil to facilitate mounting of the bearing and prevent the area of contact from being scratched.



5. Bearing Mounting-Pressing Surfaces

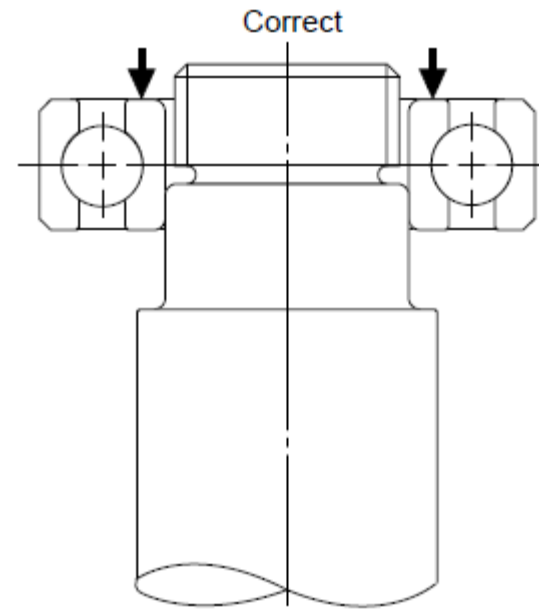
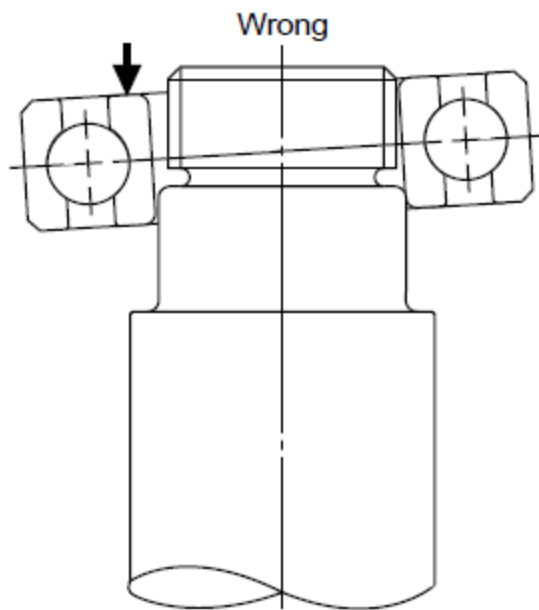
Press the inner ring to mount the bearing on the shaft. Likewise, press the outer ring to mount it in the housing. DO NOT press the outer ring to mount the bearing on the shaft, nor the inner ring

to mount in the housing; the raceways may be scratched and noise or early failure will result.



6. Bearing Mounting-Press Method

Apply even force to the bearing at a right angle. Avoid driving on only one side as this can damage the bearing. NEVER apply force to the bearing retainer or seal.

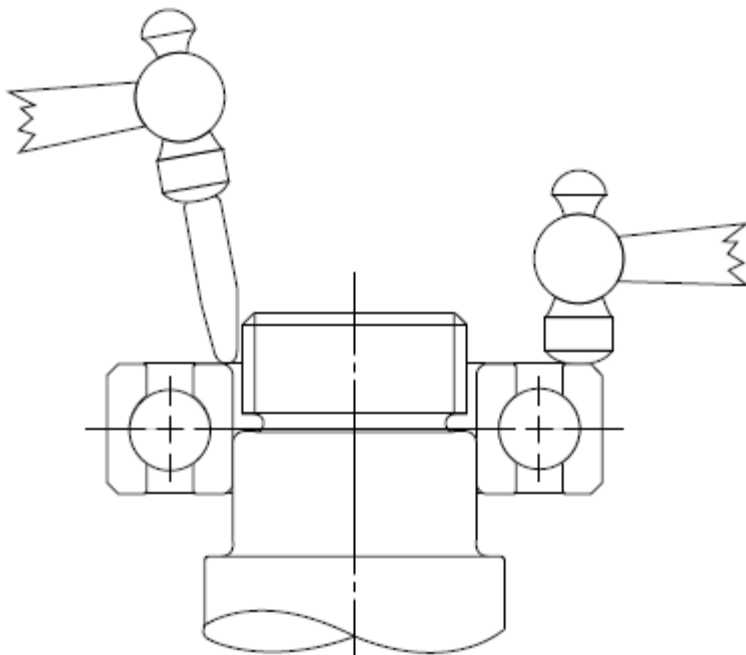


7. Mounting with Hammer and Mounting Device

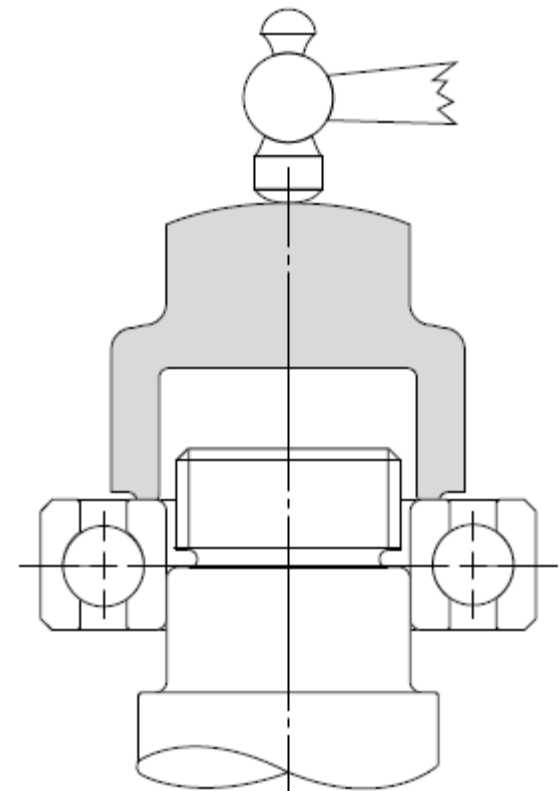
The bearing is frequently mounted with a hammer and mounting device. Do not strike the bearing directly; this can damage the bearing. Hit the

mounting device with a hammer, as illustrated below. Tap the mounting device lightly, using many strokes.

Wrong



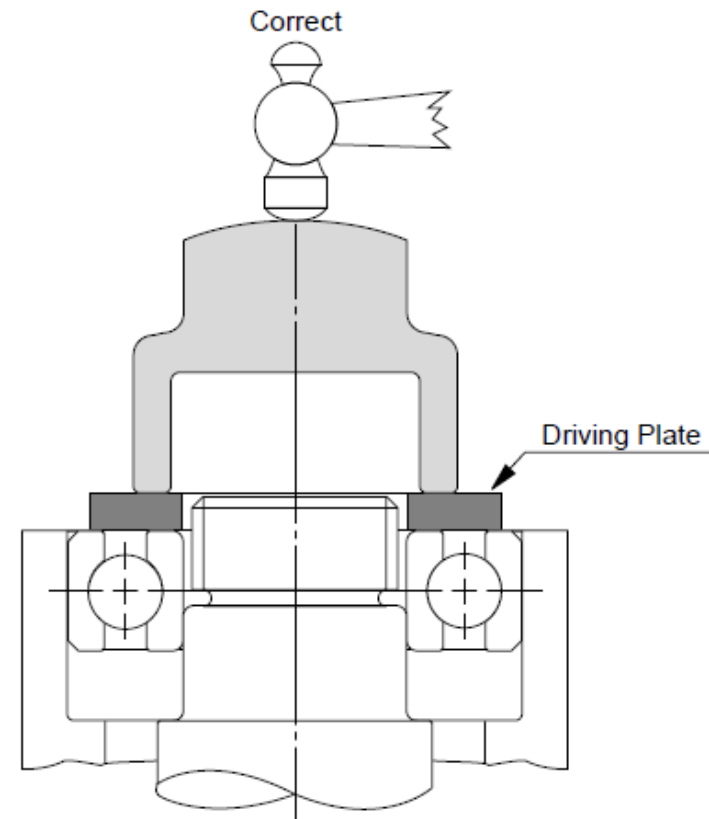
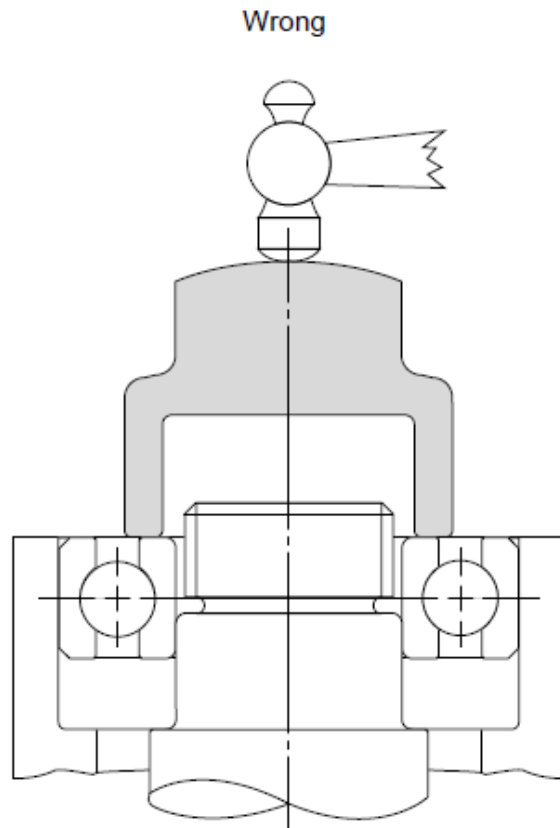
Correct



8. Mounting Inner and Outer Rings Together

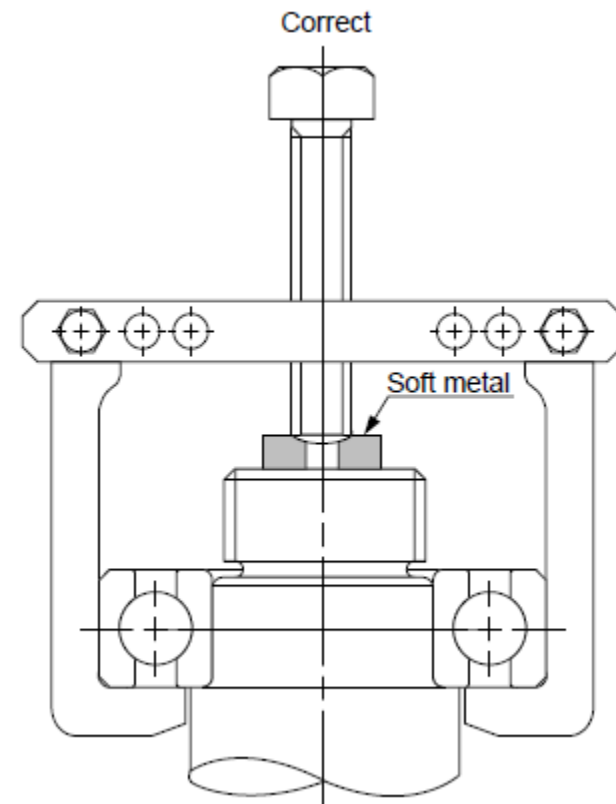
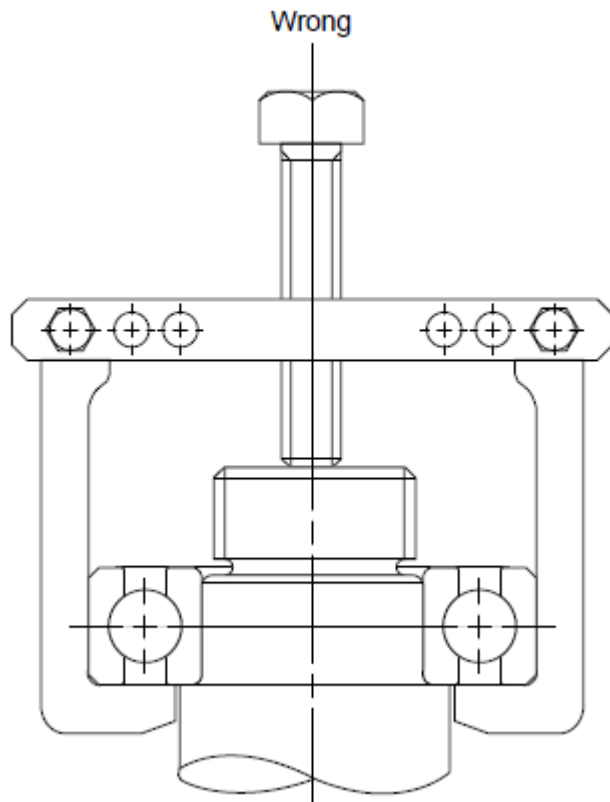
If both the inner and outer rings must be mounted in an interference fit because of machine construction, then use a driving plate as illustrated below.

The driving force must be applied uniformly to the inner and the outer rings. If force is applied only to the inner ring, then damage to the bearing can result.



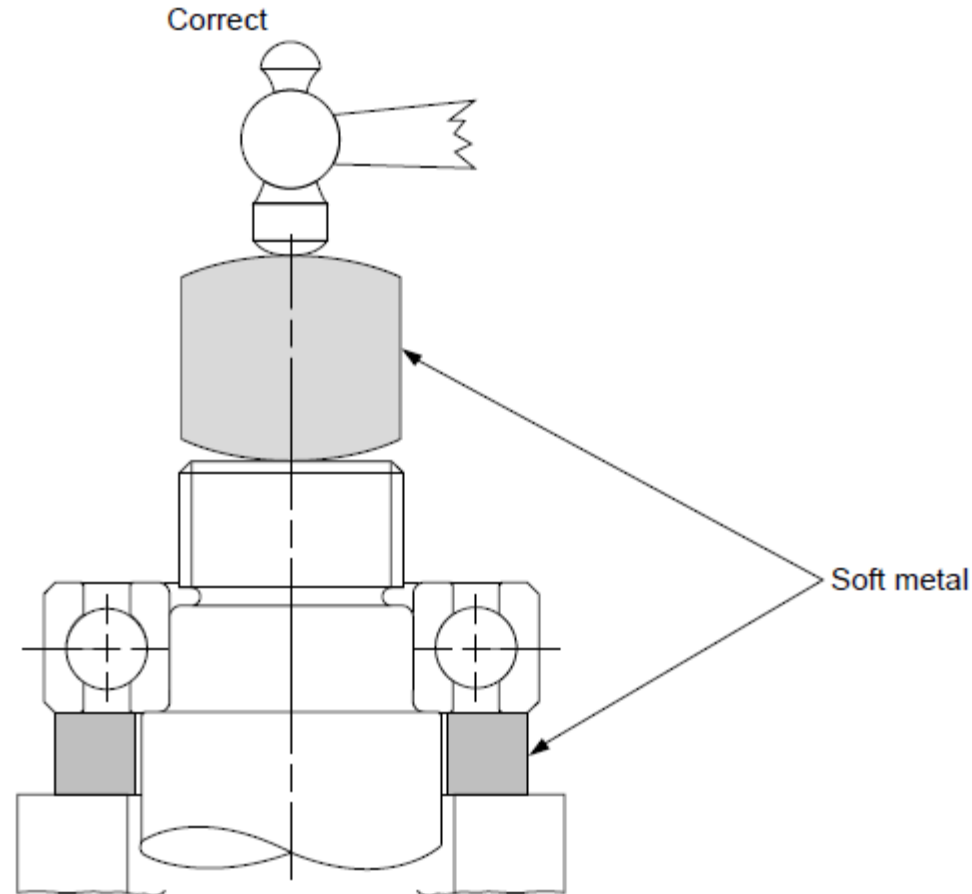
16. Removal Using Bearing Puller and Soft Metal Device

When removing the bearing with a bearing puller, use a piece of soft metal to protect the shaft from being scratched.



17. Removal with Hammer and Soft Metal Protector

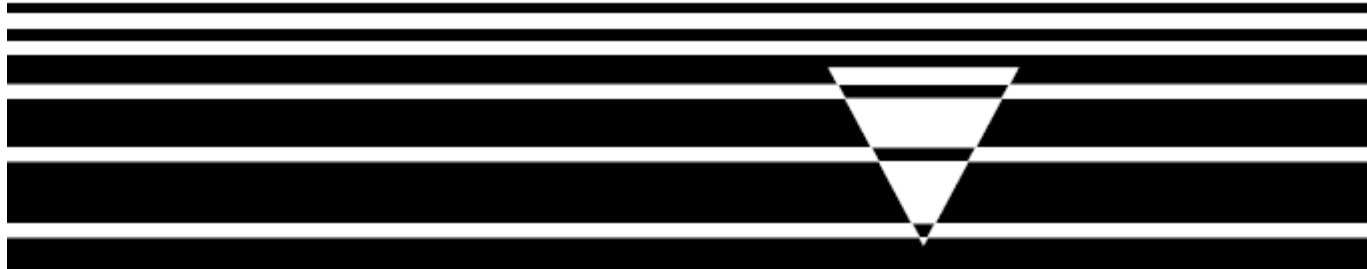
When removing the bearing with a hammer, use a soft metal protector, as illustrated below, to protect the shaft from being damaged.



For New Technology Network

NTN®

**PROPER PRACTICE FOR THE CLEANING,
MOUNTING, AND REMOVAL OF BEARINGS**



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CAT.NO. **3017/E**

Care and Maintenance of Bearings

Comments?
Questions?
Observations?