



# Repair of Bearings with Roller Retention Cages – Bearing Reconditioning

## Introduction

There are many methods of cage roller retention. One of them is called staked roller retention. This type of roller retention uses tangs, formed by a special cutting tool, to retain the roller in the cage pocket.

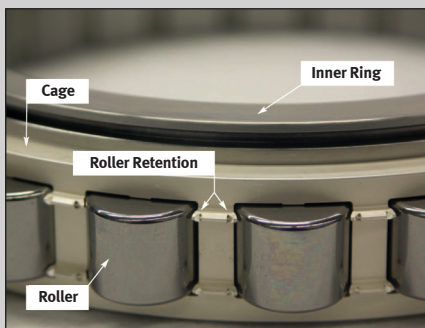


Figure 1: Cage with roller retentions.

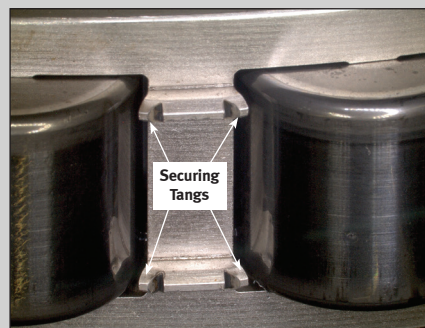


Figure 2: Roller retention (higher magnification).

### Bearing Repair Procedure

There are two repair procedures:

- 1) Disassemble the bearing, inspect / rework the raceways, scrap the old cage and re-assemble the bearing using a new OEM cage.
- 2) Disassemble the bearing by bending the tangs to remove the rollers from the cage pockets, allowing inspection / rework of the raceways. Reassemble using the same cage, bending the tangs back to their original position to retain the rollers.

By using this method, the bending of the tangs will overstress the material at the bend area causing micro cracks. This could result in the tangs breaking off during the re-assembly of the bearing or during the engine operation, due to cage stressing and vibration.

### FAG Investigation on Bending Tangs

FAG Aerospace has conducted a series of tests on roller retention, by bending multiple tangs several times back and forth. Most of the tangs broke off after bending the second time, *Figure 3*.

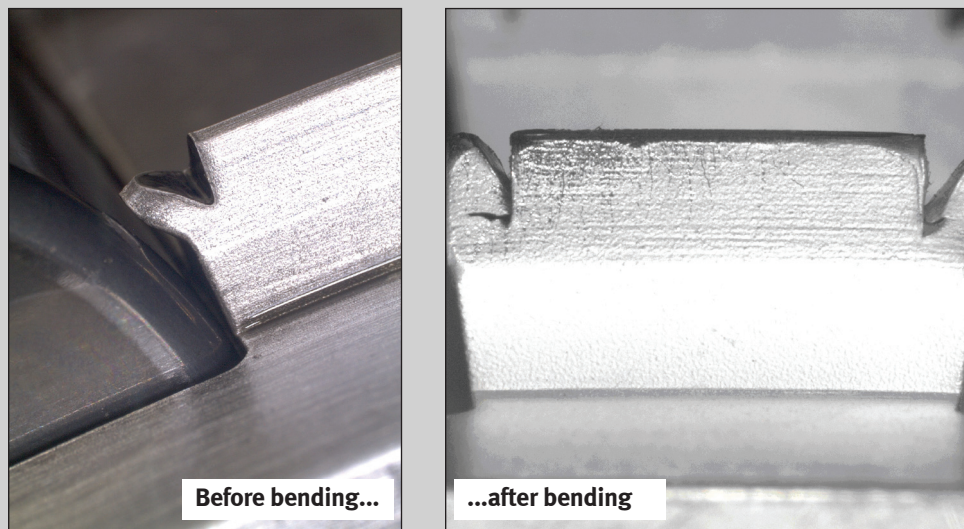


Figure 3: Bend test.

### Conclusion

Due to the increased risk of premature operational bearing failure, FAG strongly recommends that the practice of bending tangs is not used. **FAG Repair Service will always replace this type of cage.**

Every care has been taken to ensure the information in this publication is correct but no liability can be accepted for any errors of omissions. We reserve the right to make technical changes.

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### Mainshaft Bearing Concerned

- CF6 (#2R,#4R,#5R,#6R),
- CF34 (#2R,#4R,#5R,#6R,#7R),
- CFM56 (#4R,#3R), V2500 (#4R),
- JT9D (#4R),
- PW2000 (#2R,#4R),
- PW4000 (#3R).

For further information and contacts:

[www.fag.com/bearingrepair](http://www.fag.com/bearingrepair) [www.bardenbearings.com](http://www.bardenbearings.com)

