

# TOYO TIRE TALK

No.04-009 (TTT-166)

Technical Service Department Japan.

Technical tips and information that may allow you to better serve your customers.



We would appreciate your input, please contact us.

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18th November, 2004

## Subject : Tyre Damage During Mounting

Have any of the damage examples shown been sighted ? Complaints about such damages may have been received from customers. These are typical of damages which can occur during the tyre mounting process.

In this TTT we will introduce three examples of typical fitting damage, along with the causes of the damage.

### Case 1 : Bead Base Damage



There is a cut on the bead base, which can reach the ply cord in extreme cases.



#### Possible Cause :

Injury by the mounting/demounting head of the fitting machine.



The mount/demount head injures the bead base.

#### Prevention :

1) Ensure the head set is in the correct location.

2) Inspect for any bruise or deformation at the rim flange.

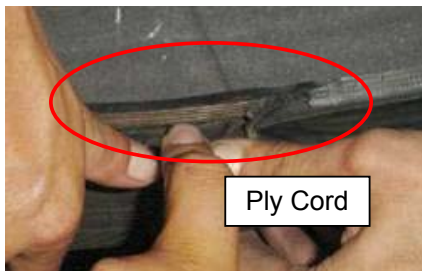
3) Lubricate properly.

4) Take extra care when installing LT tires with their wider bead base.



**Case 2 : Bead Toe Damage**

There is a circumferential cut on the inside of the tyre along the bead toe. The ply cord may be damaged if the cut is deep enough.

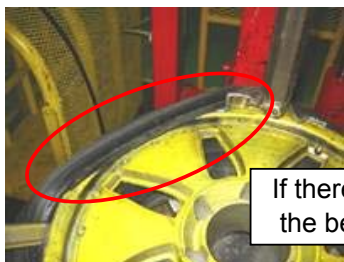


**Possible Cause :**

Use of a damaged or deformed rim.

**Prevention :**

- 1) Confirm that the rim flange is not damaged or deformed.
- 2) Ensure the correct lubrication type and quantity is used.

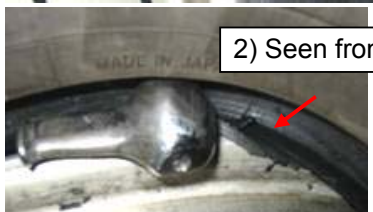


If there is a bruise or deformation in the flange, the bead toe may be injured during mounting.

The bead toe is damaged easily during tyre demounting.



1) Seen from above.



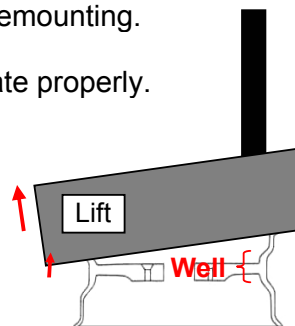
2) Seen from below.

Lower bead toe is torn by the flange of the wheel during

**Prevention :**

- 1) Lift the lower bead of the tyre during demounting.
- 2) Lubricate properly.

Lift lower bead to upper wheel well.



**Note :**

In Cases 1 and 2 (above), it is possible that bead burst will occur if the carcass ply is damaged.

If the ply in the bead area is damaged, a sidewall bulge occurs when inflated or after a period of use.



The rim line will become deformed.



**Case 3 : Broken Bead Wire**



Bead wire is broken.



Bead wire is kinked.

**Possible Cause :**

Careless mounting procedures can cause the bead wire to break.

**Prevention :**

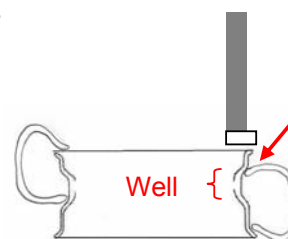
- 1) Ensure correct wheel type, and reverse rotation if required.
- 2) Lubricate properly.
- 3) Bead should be dropped into the wheel well.



There is a possibility of breaking the bead if the turntable continues to rotate under these conditions.



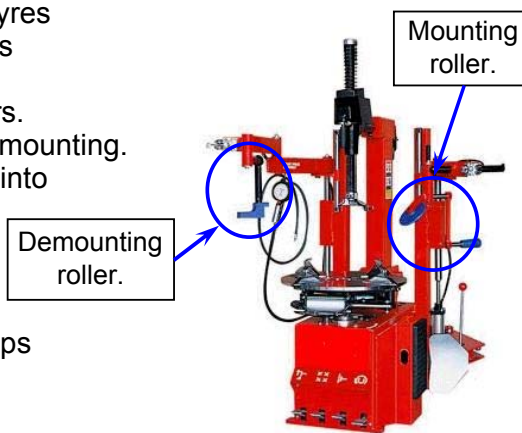
Upper bead does not drop sufficiently into the wheel well.



During mounting, the upper bead should drop into the wheel well.

**The following are recommended :**

- Using the latest tire changer.
- It is difficult to mount UHP tyres and large LT tyres for SUVs and Pickups. The latest tyre changers have functions to help these operations.
- Changers with Demounting/Mounting rollers.
  - Demounting roller helps to lift the tyre during mounting.
  - Mounting roller helps to drop the upper bead into the well during mounting.



We hope that this information is of use and helps to reduce the instance of tyre bead damage.