

**SERVICE INSTRUCTION**

To:	Classification no:	I-07-940SV
	Issued on:	25. Mar, 2008

Subject: Replacement of 3rd wheel hub bearing for Boom Dolly configuration

1. Background:
Refer to recent reports on 5 axle crane from our markets, it is observed that in the hub bearing for 3rd axle had a possibility of break down during the traveling with boom dolly configuration. This may result in falling off of the wheel hub in a worst case situation.

Therefore we would like to ask you to do these improvements in accordance with the "Modification-Instruction".

2. Applicable Model/Serial Number:
ATF110G-5, ATF160G-5, ATF220G-5

3. Work procedure:
Refer to the attached "Modification-Instruction".

4. Parts :
To be supplied.

5. Validity :
End of July, 2008
*Your urgent cooperation will be very highly appreciated.

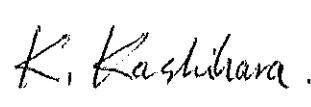
6. Expenditure:
Please make a claim application using a WARRANTY CLAIM APPLICATION FORM.
The following cost shall be borne by TADANO.

Man-hour: 5.0 H with 2 engineers /unit

Completion Report should be attached with Warranty Claim Application.

7. Attached Documents

Modification-Instruction	Total	1 page
Wheel hub exchange(72.3822.3 and 82.0119.3)	Total	18 pages
Completion Report	Total	1 pages



K. Kashiwara
General Manager
Quality Assurance Dept.



Modification Instruction

- 5 axle carrier / with Dolly
3rd axle bearing exchange

Mod.-Instr. no.: 1-06-0195-3

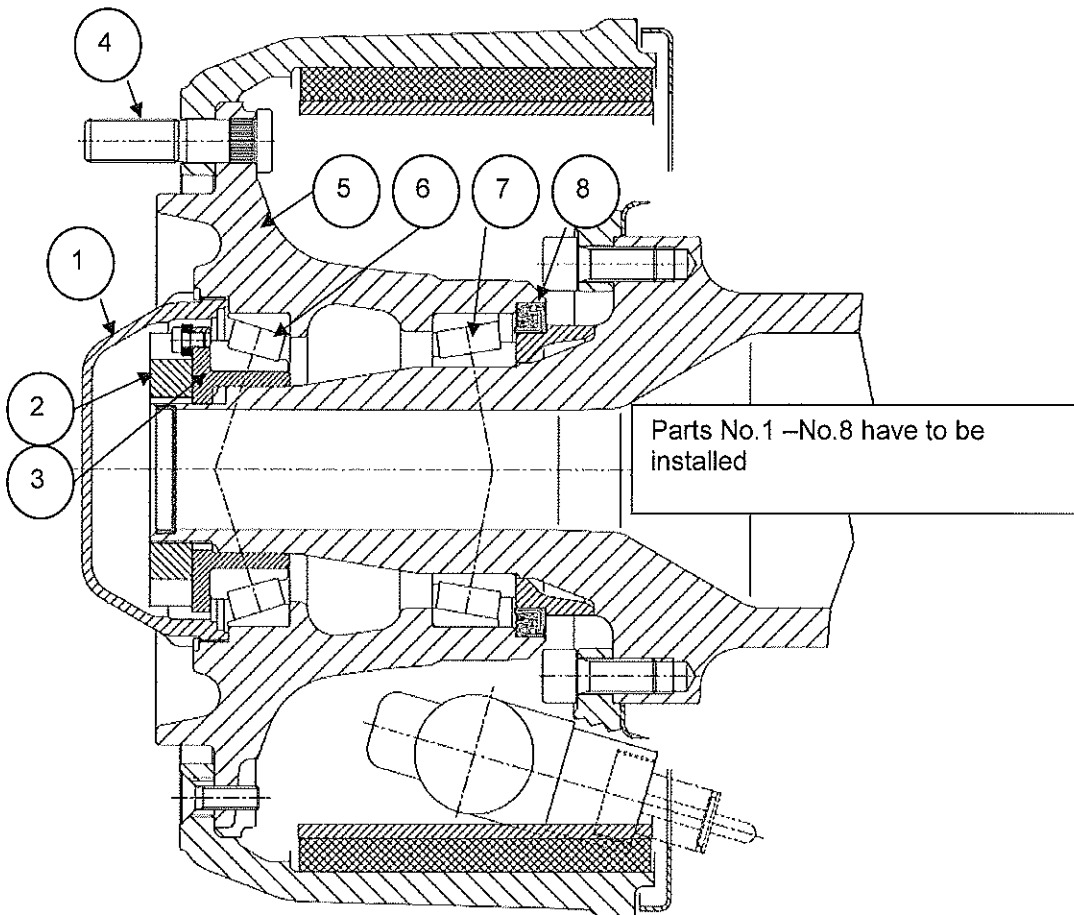
Page 1 from 1

Course : Lack of the strength of 3rd axle wheel hub on boom dolly configuration.

Countermeasure: Change the wheel hub bearing to bigger size.

Modification manual: see attached

"Wheel hub exchange FAUN rigid non driven axles 72.3822.3 and 82.0119.3"



Wheel hub exchange Faun rigid non driven axles 72.3822.3 and 82.0119.3

Caution: Danger of crush injury!

Therefore:

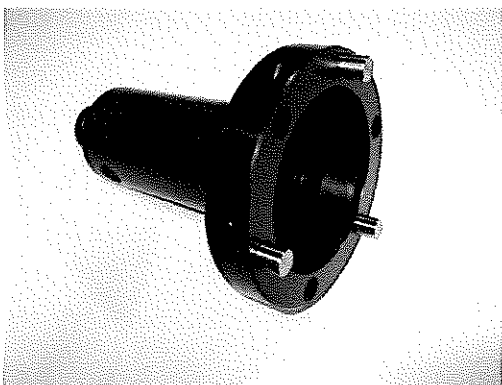
- don't align parts with your hands!
- use only suitable and undamaged lifting materials!
- use only suitable lifting jack and supports!

Enclosure:

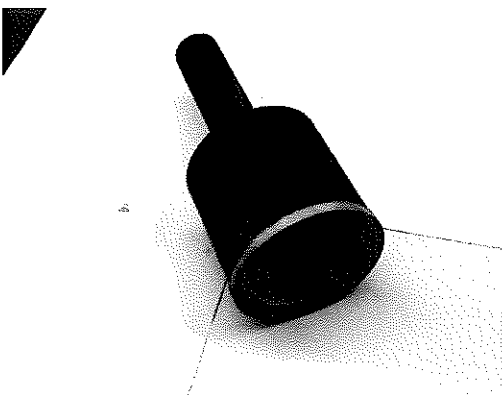
- Assembly instruction for cassette seal ring Kessler service manual page 5.6.1 / 5.6.2
- Adjustment of wheel bearings Kessler service manual page 5.7.1
- Hints for brake drum removal Kessler service manual page 7.2.8
- Section drawing of the hub assembly Kessler service manual page 5.4



Hub nut wrench 031.209.0-3
(for the old hub nut)



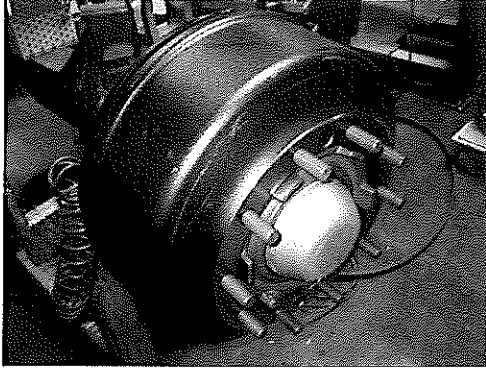
Hub nut wrench 031.105.1-2
(for the new hub nut)



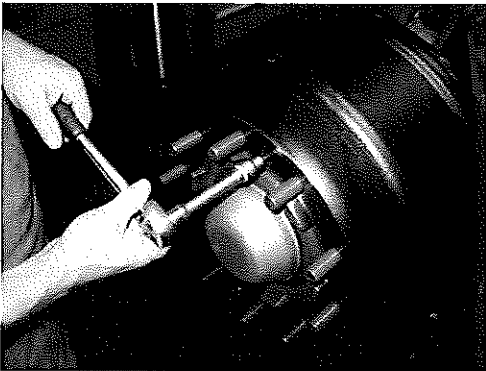
Drive bushing 031.127.0-3



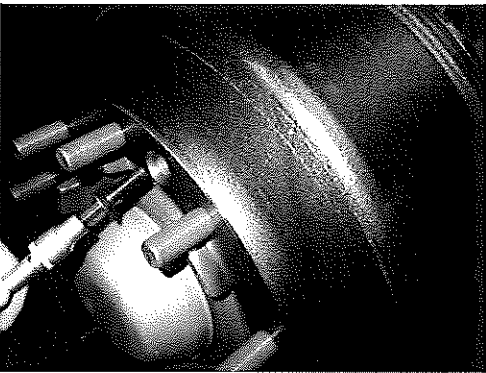
Hub cover socket 031.202.0-3



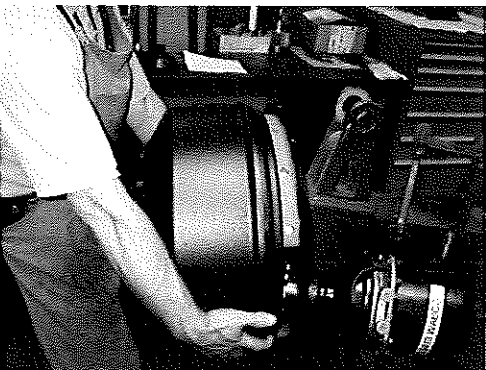
Lift up the axle and remove the wheel.



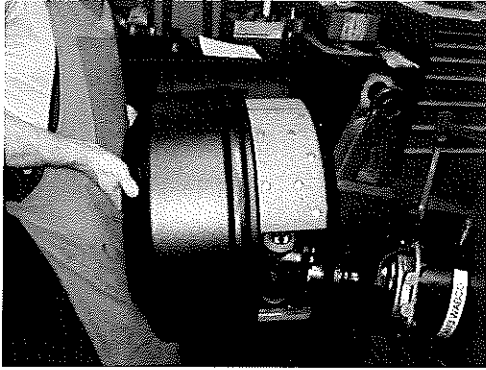
Loosen the brake drum retaining screws.



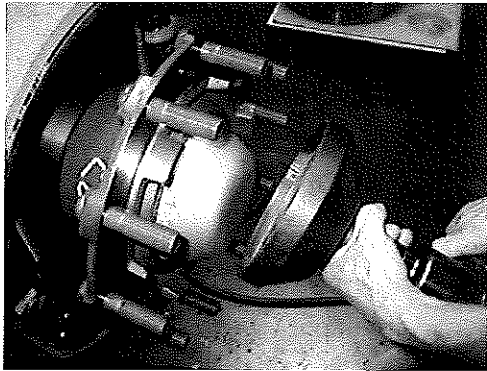
Remove the brake drum screws.



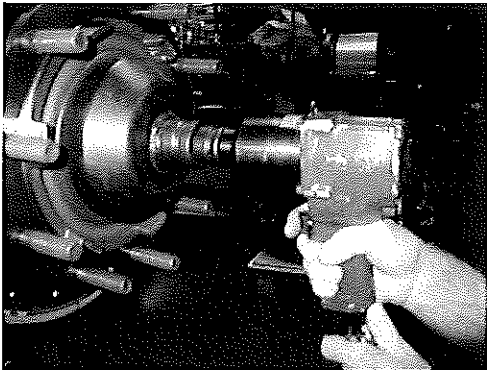
Remove the brake drum, if necessary relieve the brake adjuster to allow brake drum removing, see also Kessler service manual page 7.2.8 (attached).



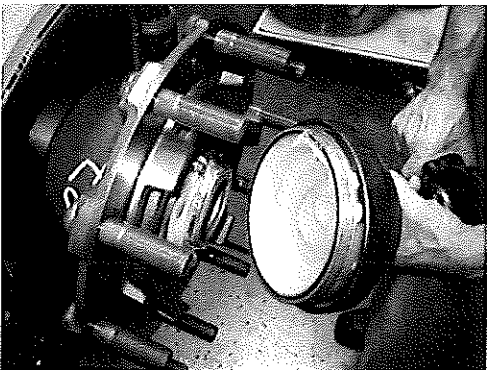
Remove the brake drum.



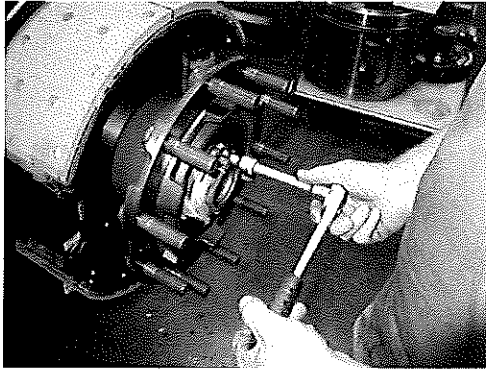
Loosen the hub cover.



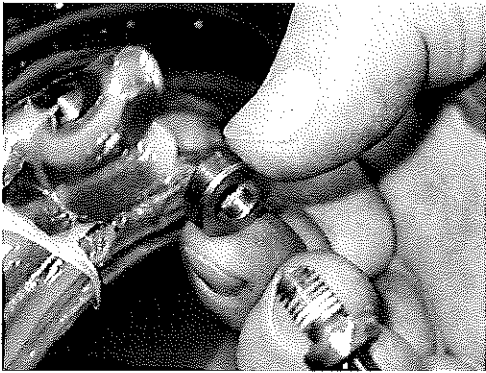
Loosen the hub cover.
caution: Loctite secured!



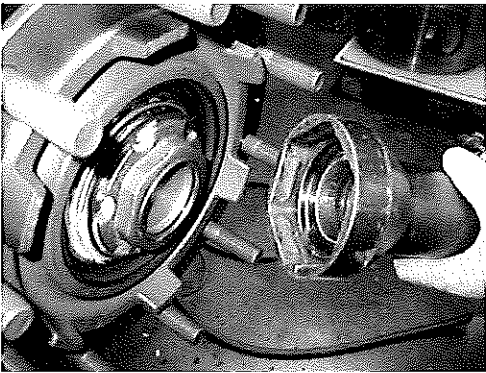
Remove the hub cover.



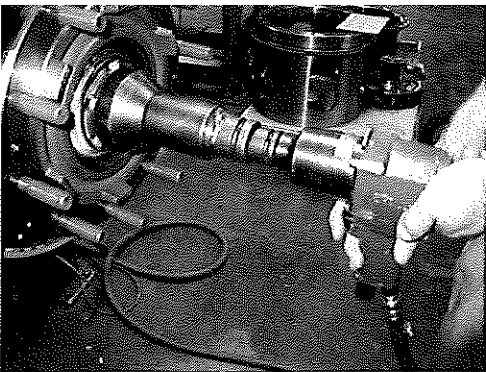
Loosen the hub nut safety screw.
caution: Loctite secured!



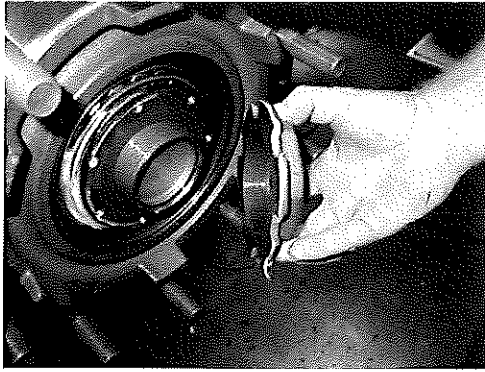
Remove the hub nut retaining screw.



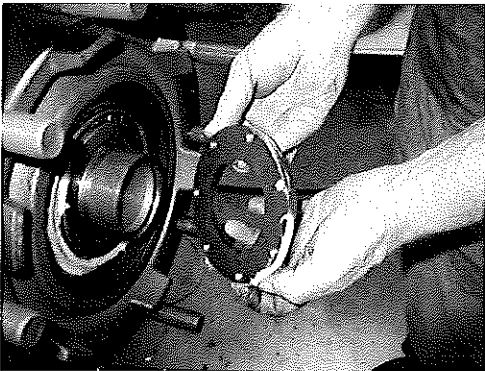
Loosen the hub nut.



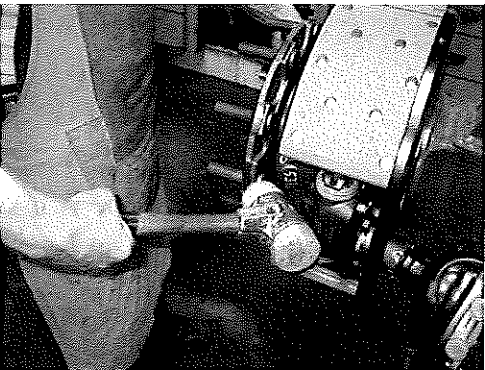
Loosen the hub nut.



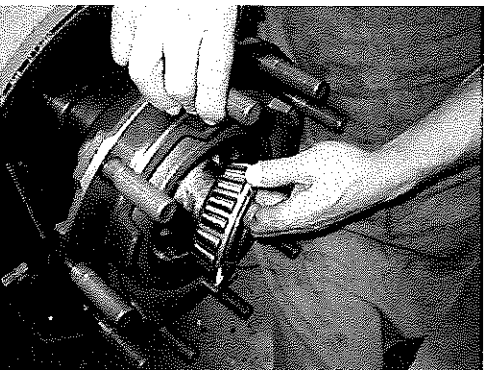
Remove the hub nut.



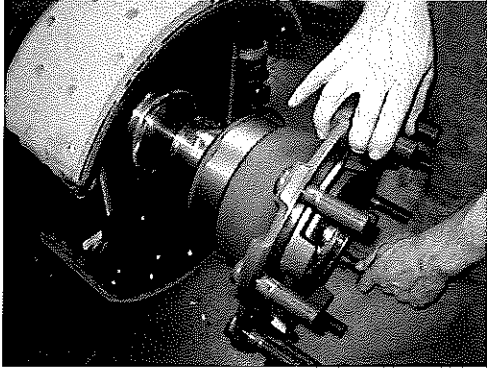
Remove the thrust washer.



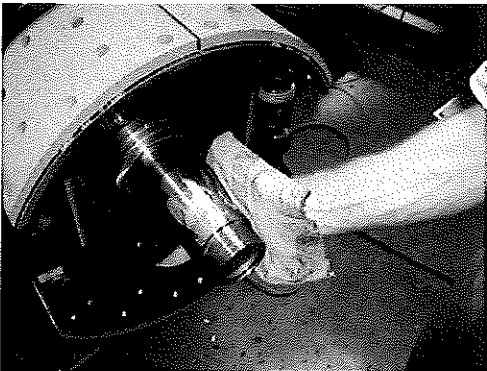
Remove the wheel hub resp. taper roller bearing with a plastic hammer.



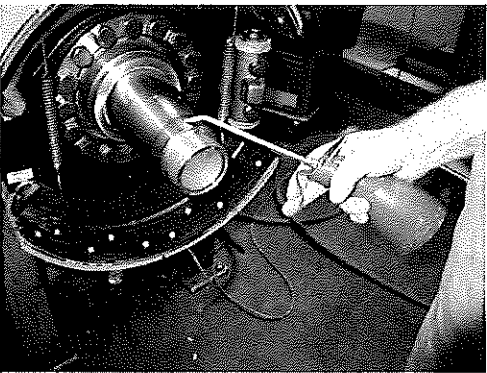
Remove taper roller bearing.



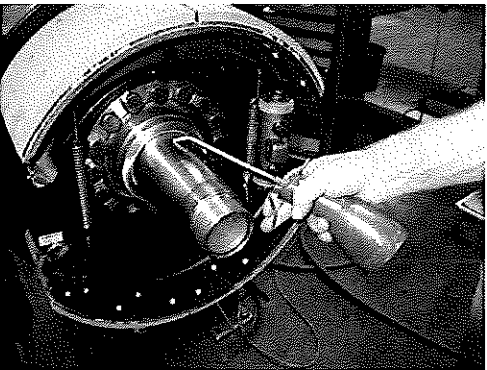
Remove the wheel hub.



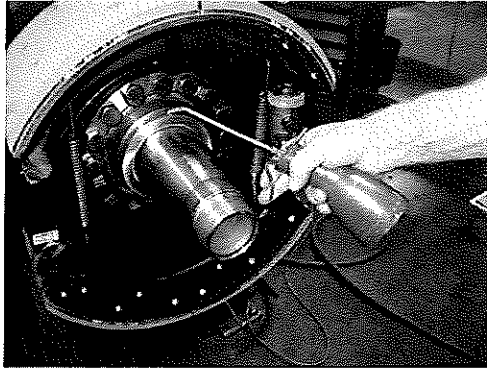
Clean the parts.



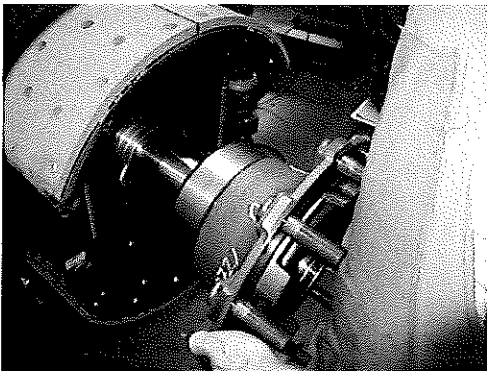
Apply a thin film of oil on the taper roller bearing seat of the axle spindle.



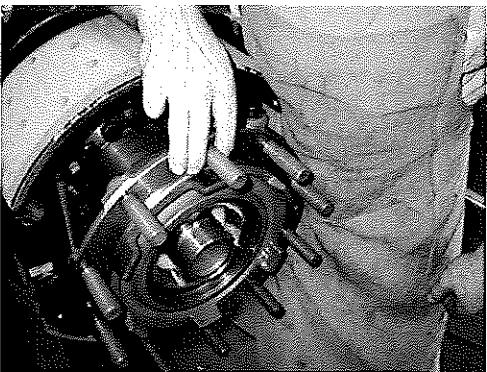
Apply a thin film of oil on the taper roller bearing seat of the axle spindle.



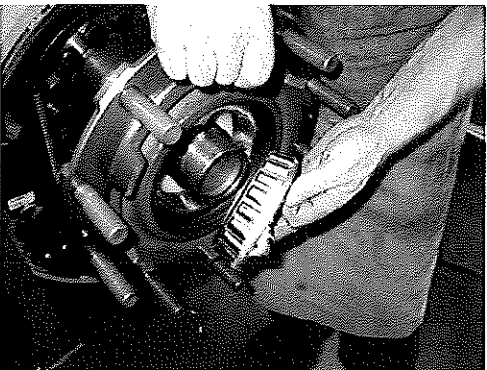
Apply a thin film of oil on the cassette seal ring inner diameter and on the cassette seal ring seat of the axle spindle.



Install the new wheel hub.



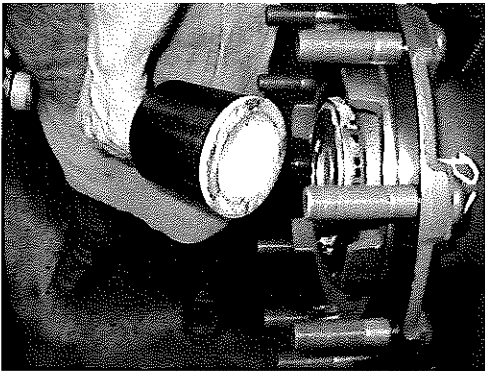
Push the wheel hub onto the spindle in a linear direction, **caution**: cassette seal ring, do not tilt or pull the wheel hub back, see also Kessler service manual page 5.6.1 (attached).



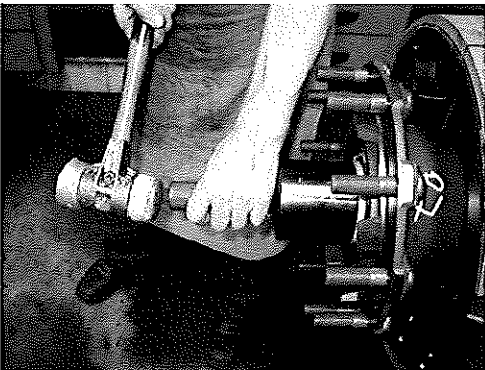
Install the **greased** taper roller bearing.



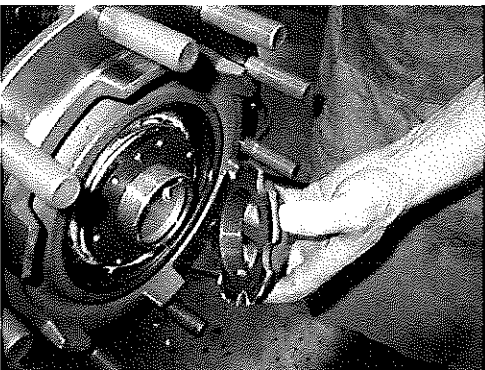
Install the new thrust washer.
Note: the position of the alignment tab.



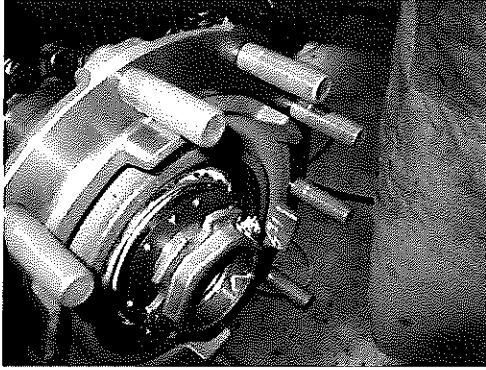
Seat up the taper roller bearing, using the drive bushing.



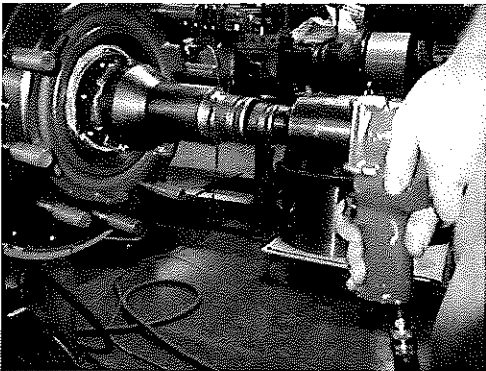
Seat up the taper roller bearing, using the drive bushing.



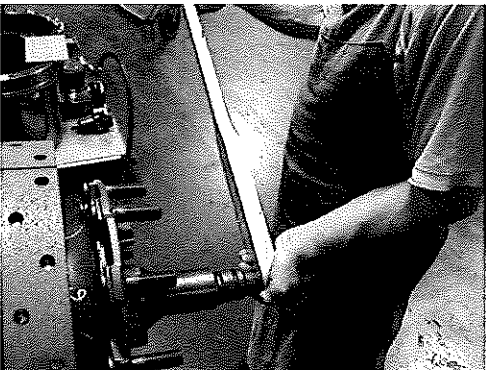
Install the hub nut.



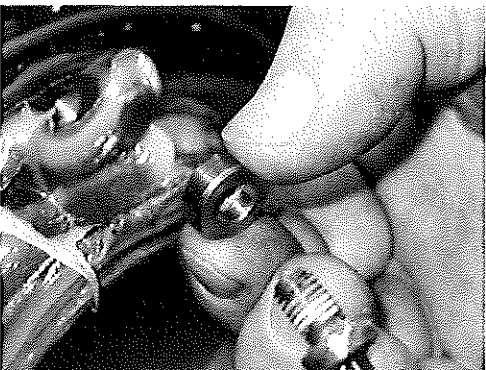
Tighten the hub nut and adjust the wheel bearing, see also Kessler service manual page 5.7.1 (attached).



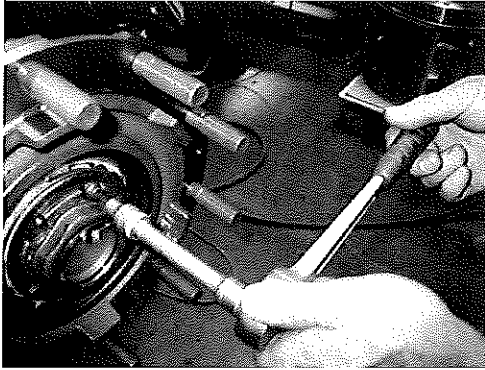
Tighten the hub nut and adjust the wheel bearing, see also Kessler service manual page 5.7.1 (attached).



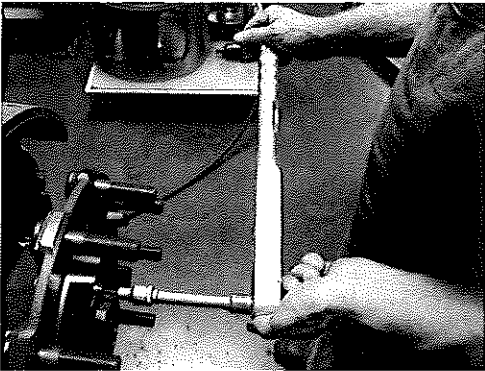
Adjust the wheel bearing, see also Kessler service manual page 5.7.1 (attached).
Final torque = 400 Nm



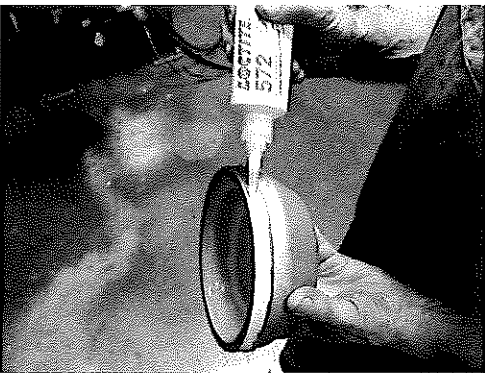
Install the new hub nut safety screw, with Loctite 270 applied.
Ensure the bolt hole threads are free of the grease residue.



Tighten the hub nut safety screw.



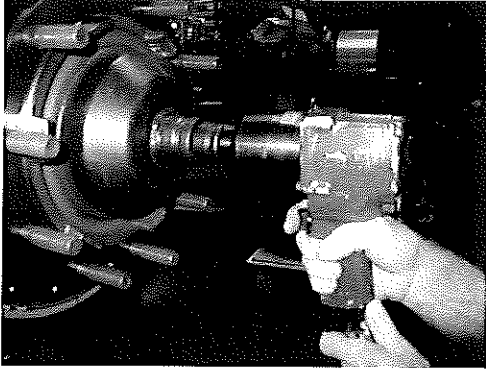
Tightening torque = 25 Nm (18 lb.ft)



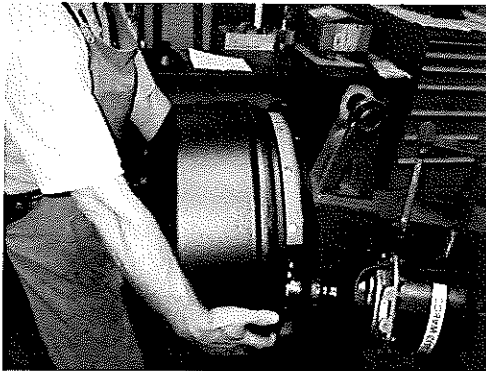
Install the new hub cover with Loctite 572 on the thread.



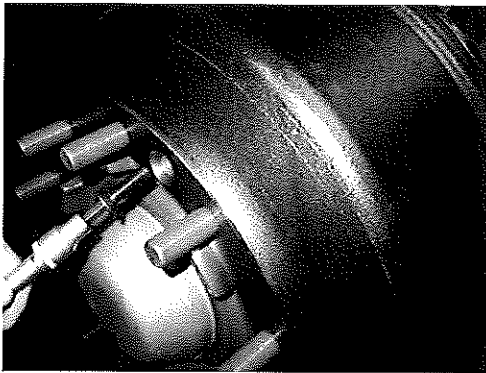
Install the hub cover with Loctite 572 applied, screw in until the hub cover has bottomed out, (e.g. can be screwed in no more).



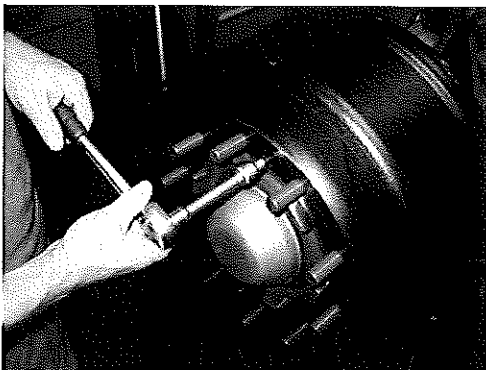
Tighten the hub cover.
Max. tightening torque = 100 Nm (74 lb.ft)



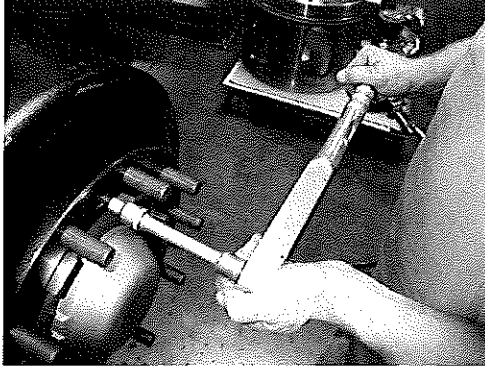
Install the brake drum.



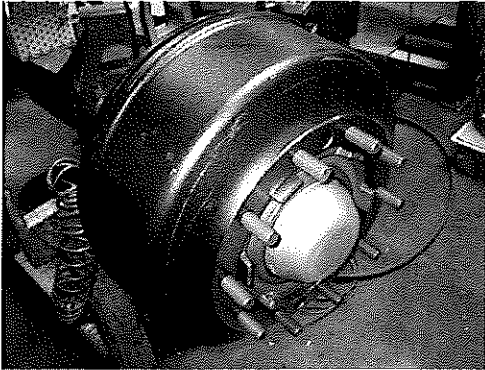
Install the brake drum screws.



Tighten the brake drum screws.

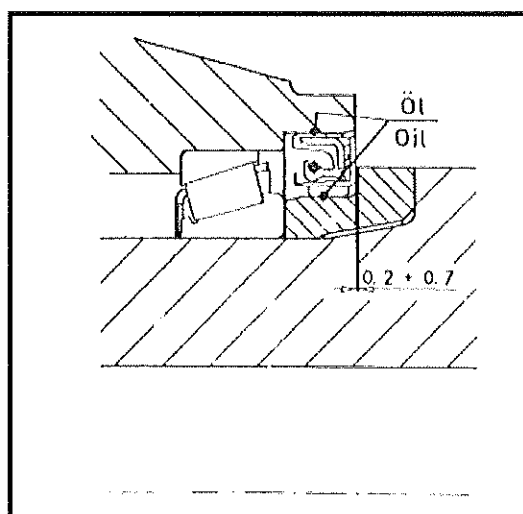
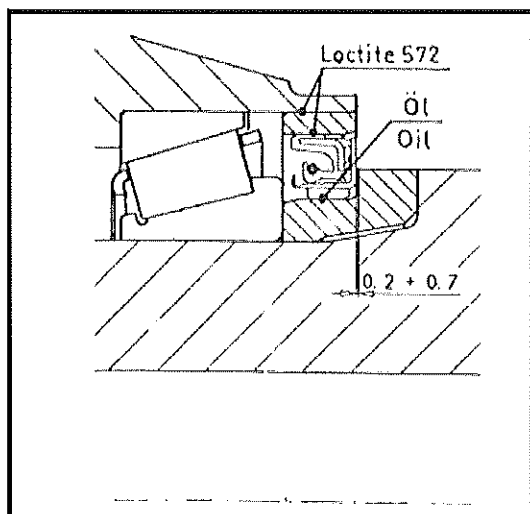


Tightening torque for the screws = 85 Nm (63 lb.ft)



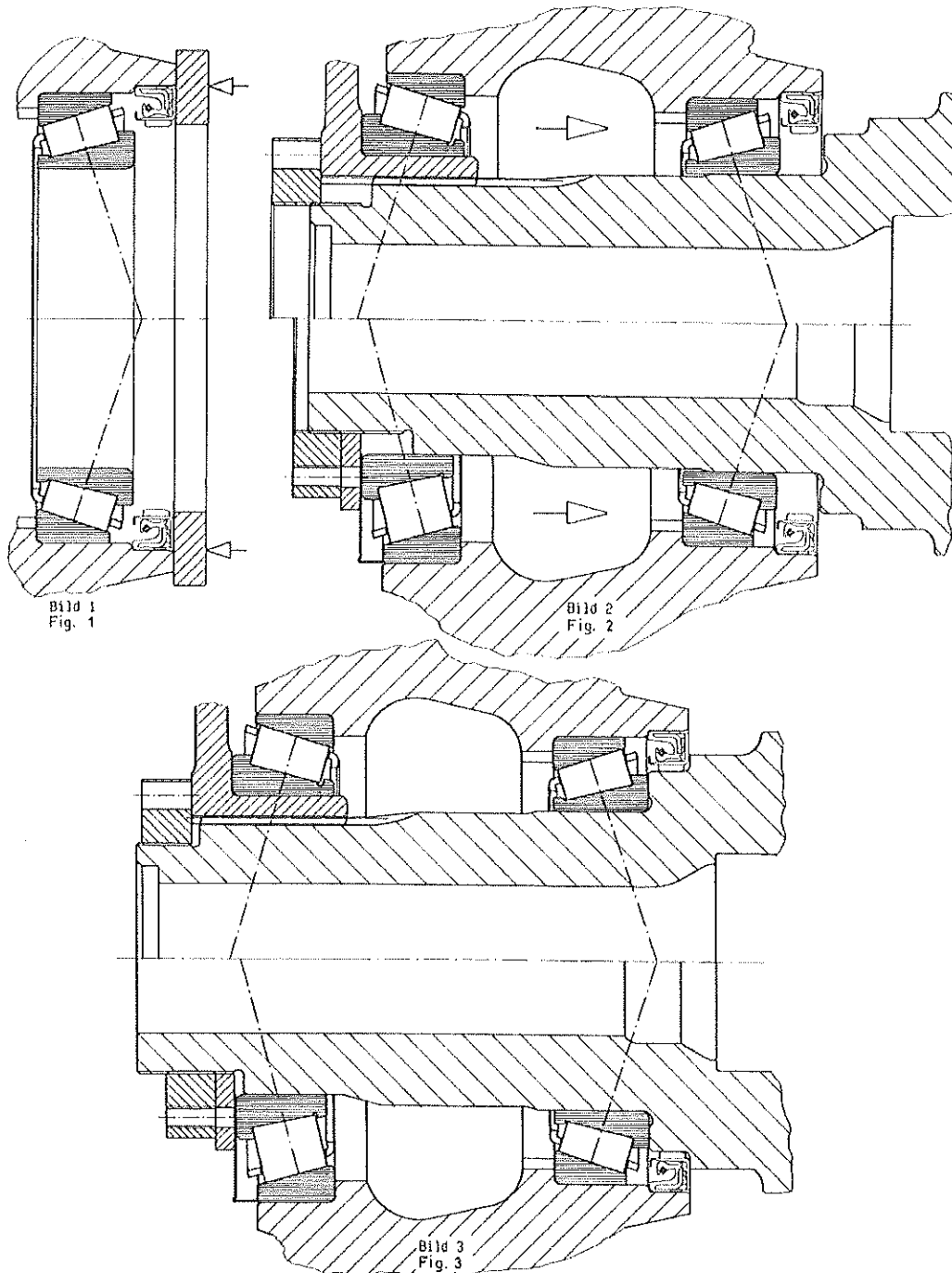
Attach the wheel.
Final tightening torque = 650 Nm (479 lb.ft)

1. Visual control of the cassette seal ring and the seal ring seats.
2. Apply Loctite 572 resp. oil on the seal ring seat in the wheel hub resp. on the steering knuckle resp. axle spindle (according version).
Assembly of seal ring with section rubber cage without Loctite resp. oil.
3. Press in the cassette seal ring flush to the end face of the wheel hub, do not cant it (fig. 1). Take the air gap of $0,2 + 0,7$ mm into consideration at assembly of the seal ring (measure).
4. Push the wheel hub with inner taper roller bearing onto the steering knuckle resp. axle spindle.
The cassette seal ring must not slide on.
5. Install outer taper roller bearing, ring gear carrier resp. Nilos - plate and nose disc, put on the wheel safety nut (fig. 2).
6. Push the cassette seal ring through tightening of the wheel safety nut onto the steering knuckle resp. axle spindle (fig. 3), the wheel hub weight must not brace on the seal ring, do not cant.
7. At draw - together, canting or at disassembly of the wheel hub, the seal lip can slide over the flanging shoulder of the cassette seal ring or damage it; in this case the cassette seal ring has to be changed.



Assembly instruction for cassette seal ring

Section
5
5.6.2



Adjustment of wheel bearings

Tightening torque of the wheel safety nut

Series	Nm
71, 72, 81, 82	400

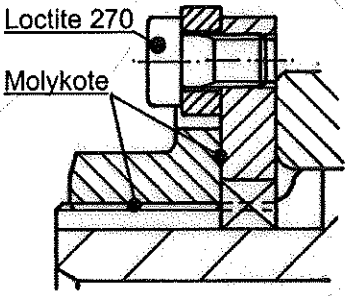
Adjusting of wheel bearings

The temperature of the axle parts should be between 0 and + 20° C at the bearing adjustment .

Screw on the wheel safety nut (Loctite- resp. Molykote- using see page 5.7.2) and adjust and secure as following described :

Screw on the wheel safety nut and tighten it with a 1,5 to 2 times higher tightening torque than the finish tightening torque . During the tightening , turn the wheel hub a few times and knock it with a plastic hammer . Untighten the wheel safety nut (about 180° back rotation) , then tighten the wheel safety nut to the tightening torque according to the table . At this tightening turn the wheel hub also a few times , if there is no possibility for securing , the wheel safety nut has to be turned back to next securing possibility .

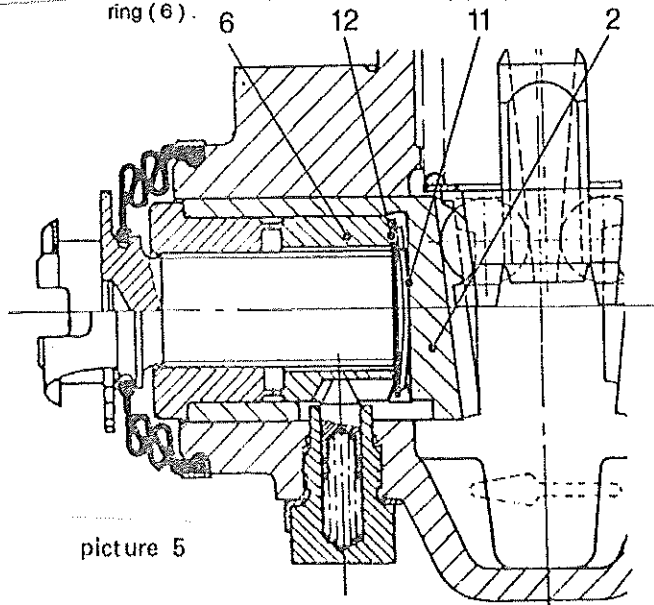
Wheel safety nut

Designation	Version	Security / Remarks
Shaft nut with cheese head screw and bushing		Cheese head screw & Loctite 270

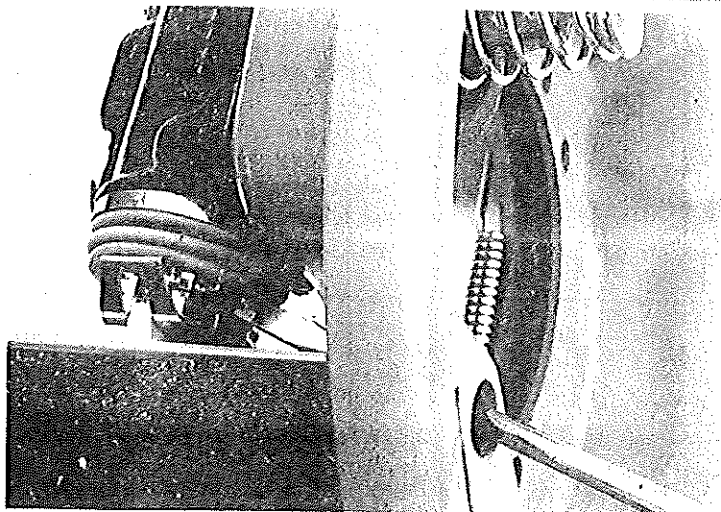
- The automatic adjuster is maintenance - free .
 - The complete assembly must be replaced if individual parts are found to be defective (repair set of adjustment) . Install a new spring part (11) and a new disk (12) (picture 5) .
- At version with installed corrugated washer (11) change it to version with spring (11 corrugated wire) .

Attention :

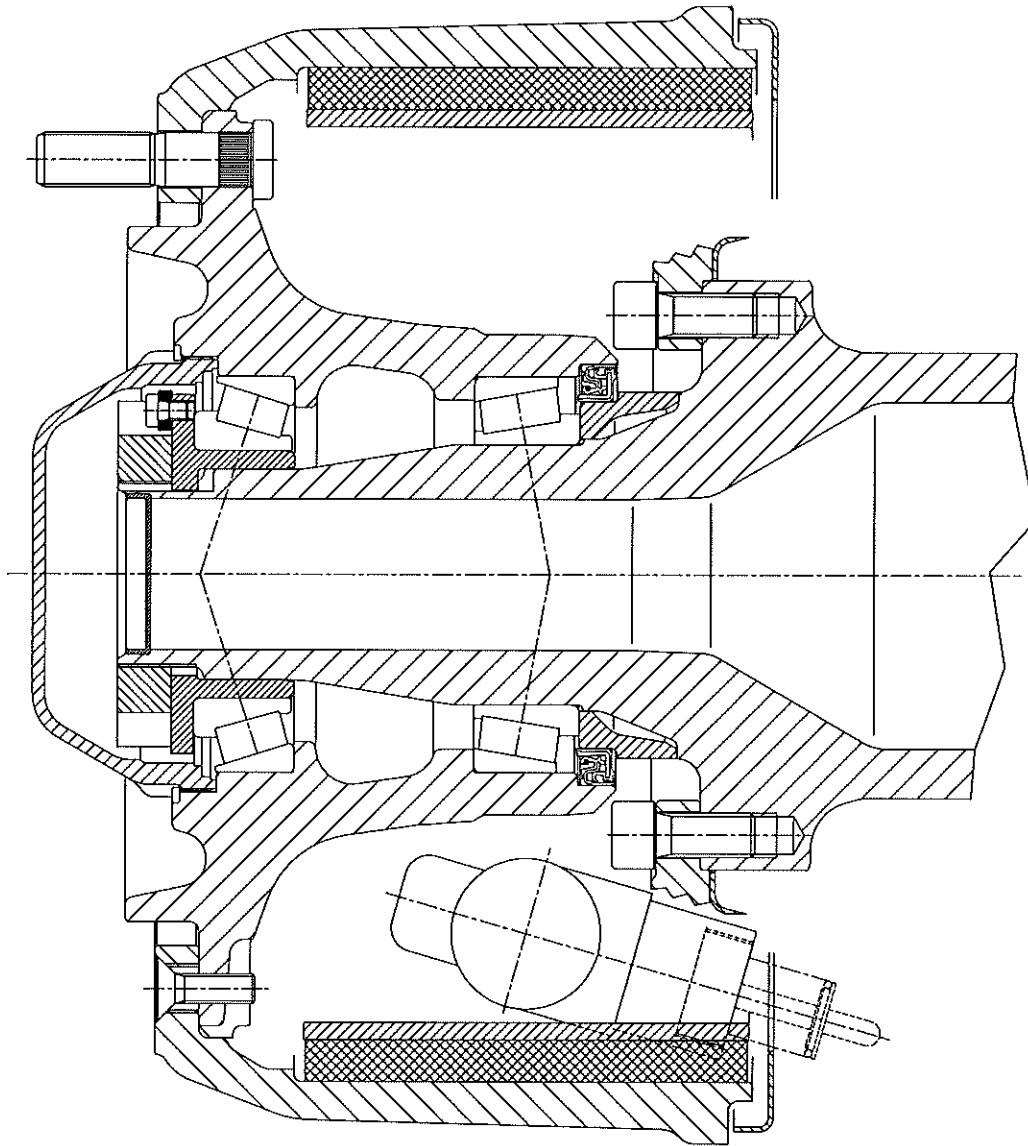
- Bulging (konvexe form) at the slot of the spring (11) has to be mounted in direction of the piston - ground and vis a vis to the elongated hole of the piston (2) .
- Install the disk (13) between spring (11) and ring (6) .



- In case of excessive wear of the brake drum, turning (counterclockwise) of the adjuster screw (10) will decrease the diameter of the brake, facilitating drum removal.



picture 6



To TADANO LTD.

I-07-940SV

Completion Report

1. Model

Model Name : _____

Serial number : _____

Customer's name : _____

• Mileage

_____ km/mile

• Operating hours

Upper: _____ Hr

Lower: _____ Hr

2. Completion date(DD/MM/YYYY) _____

Company name of carried out: _____

Person Name of carried out: _____

Remarks;