

# INSTALLATION MANUAL

REF NO.	BT00018A
DATE	Sep. 9, 2003
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This INSTALLATION MANUAL supersedes the previous issue No. BT00018 dated May 8, 2000 which should be discarded.

**SUBJECT:** INTRODUCTION OF ADJUSTABLE STEERING TIE ROD ON HD325/405-6

**PURPOSE:** To introduce new adjustable steering tie rods for use on HD325-6 and HD405-6 dump trucks.

**APPLICATION:** HD325-6 Dump Trucks, Serial Nos. 5001 and up  
HD405-6 Dump Trucks, Serial Nos. 1001 and up

**FAILURE CODE:** 4A13B1

## DESCRIPTION:

### 1-1. Introduction

This Service News will introduce optional and adjustable steering tie rods for use on the HD325-6 and HD405-6 dump trucks to comply with the demands of the customers for adjusting wheel alignment. When locally installing these tie rods, do so following the procedures outlined in this document.

### 1-2. Revised places:

1 places ▲	Sep. 9, 2003	The error in writing of the adjustment dimension was corrected.
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## 2. List of parts

No.	Part No.	Part Name	Q'ty	Remarks
1	566-40-6A900 (566-40-41360)	Rod ass'y (Rod ass'y)	2 (2)	
Component parts and their quantities to suffice for constituting the rod assemblies for one vehicle are listed below.				
1-1	566-40-6A910	Rod	2	
1-2	569-40-11230	Rod, head	2	Right-hand thread
1-3	569-40-11240	Rod, head	2	Left-hand thread
1-4	07137-04006	Bushing	4	
1-5	07000-13040	O-ring	8	
1-6	04065-09030	Ring, snap	8	
1-7	01010-81680	Bolt	8	
1-8	01580-11613	Nut	8	
1-9	01643-31645	Washer	8	

### 3. Installation procedures

The numbers indicated behind part names in description and the numbers affixed to part numbers in drawings correspond to the item numbers shown in the list of necessary parts.

#### 3-1 Parts which need to be removed (Refer to Fig. 1.)

- Parts marked "○" are being reused after removal. Therefore, clean and preserve them.
- Parts marked "□" are not being reused after removal.
- Those parts which are not provided with marking need not be removed.

(The schematic diagram indicated below shows the LH side front wheel. Remove the parts similarly from the RH side front wheel section.)

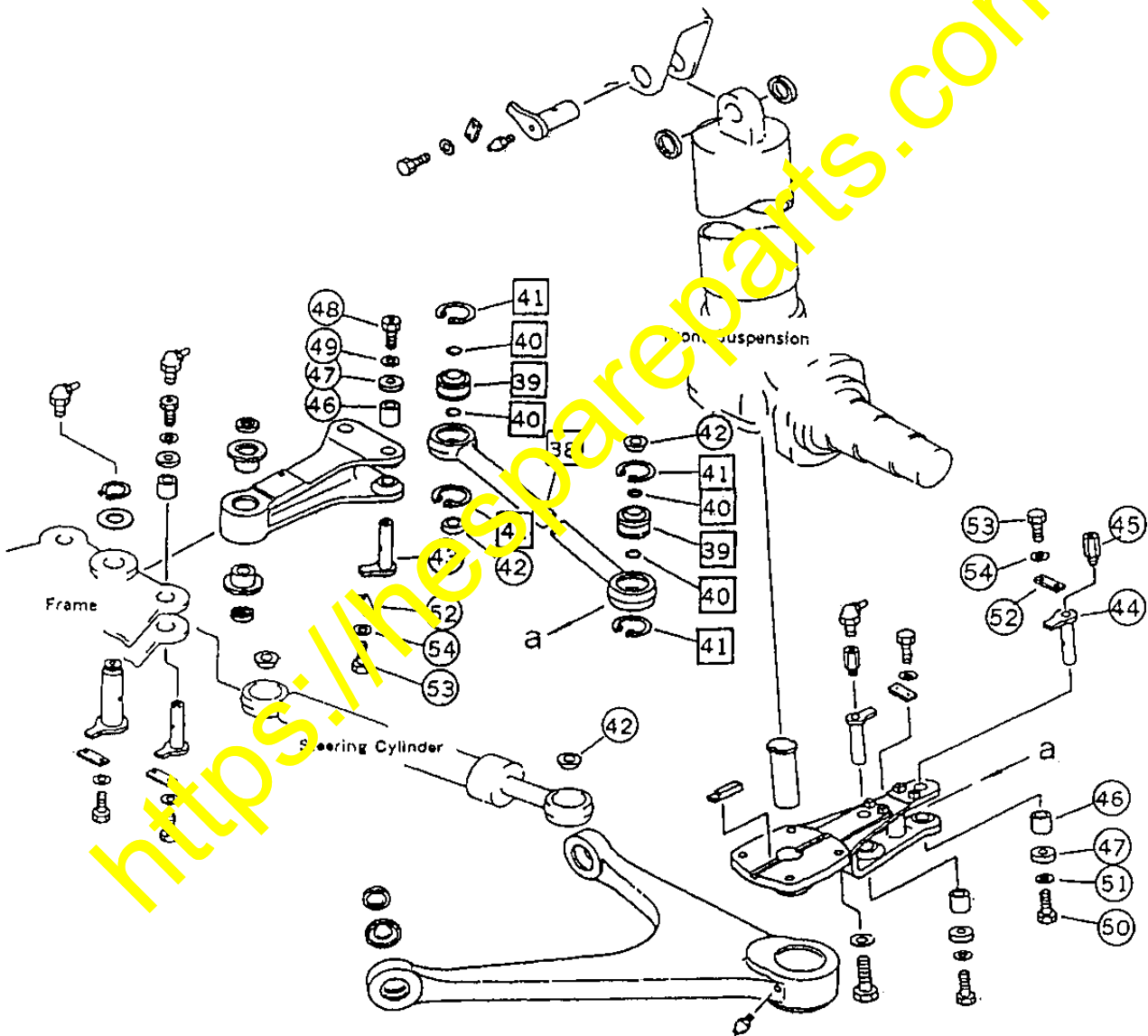


Fig. 1 Parts which need to be removed

## 3-2. Sub-assembly of the parts (Refer to Fig. 2.)

- 1) Assemble the tie rod assembly 1 (566-40-6A900) according to Fig. 2.  
Inserting the new O-rings 1-5 (07000-13040) to the new bushings 1-4 (07137-04006), insert the bushings into the LH and RH rod heads 1-2 (569-40-11230) and 1-3 (569-40-11240) before fastening them using the new snap rings 1-6 (04065-09030).
- 2) Setting the sub-assembled LH and RH rod heads 1-2 and 1-3 to the newly prepared rod 1-1 (566-40-6A910), temporarily tighten them by use of the bolts 1-7 (01010-81680), washers 1-9 (01643-31645) and nuts 1-8 (01580-11613).  
Adjust the projection of the rod heads at both ends of the rod equally to a length of 117.5 mm to adjust the length of the tie rod to  $1,145 \pm 1$  mm.

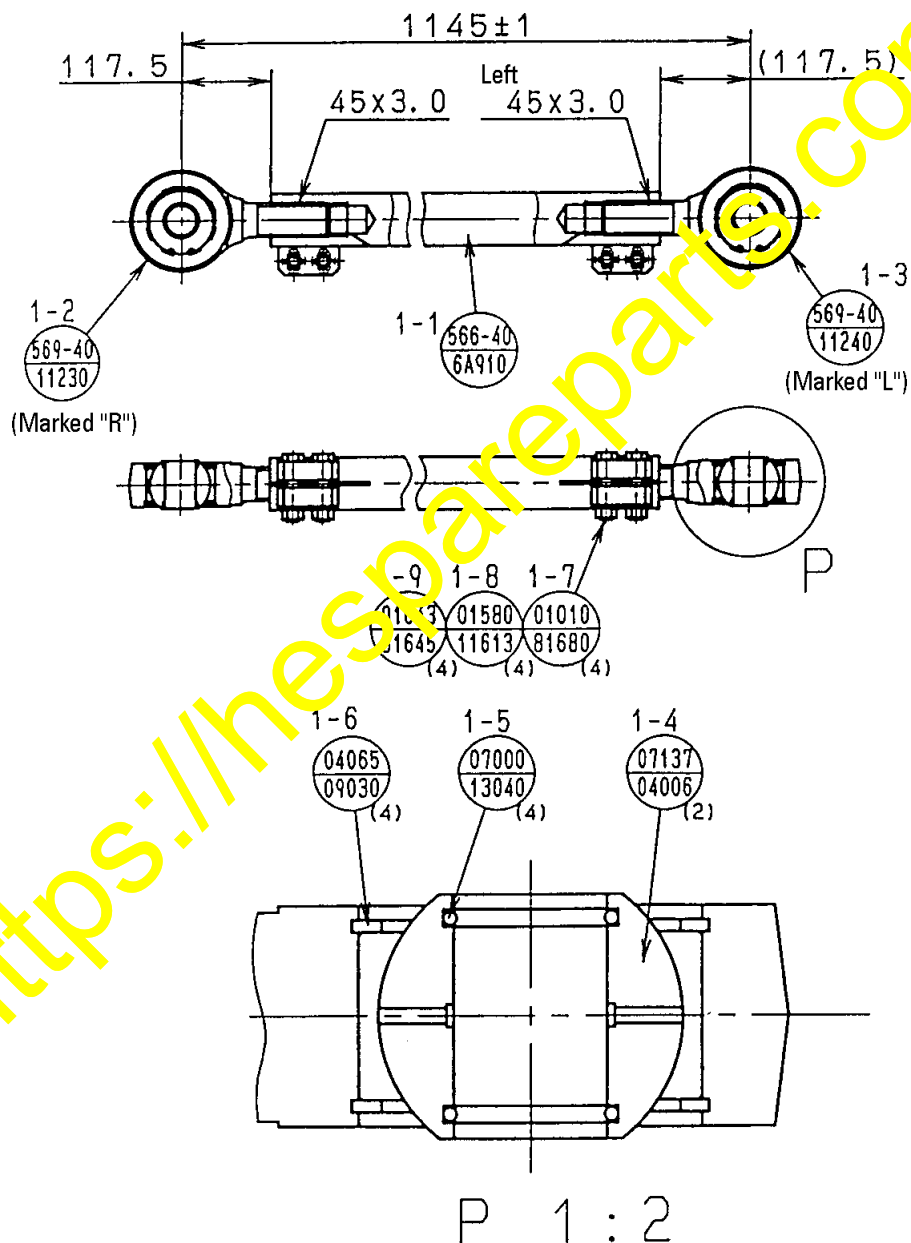


Fig. 2 Sub-assembly of the tie rod assembly

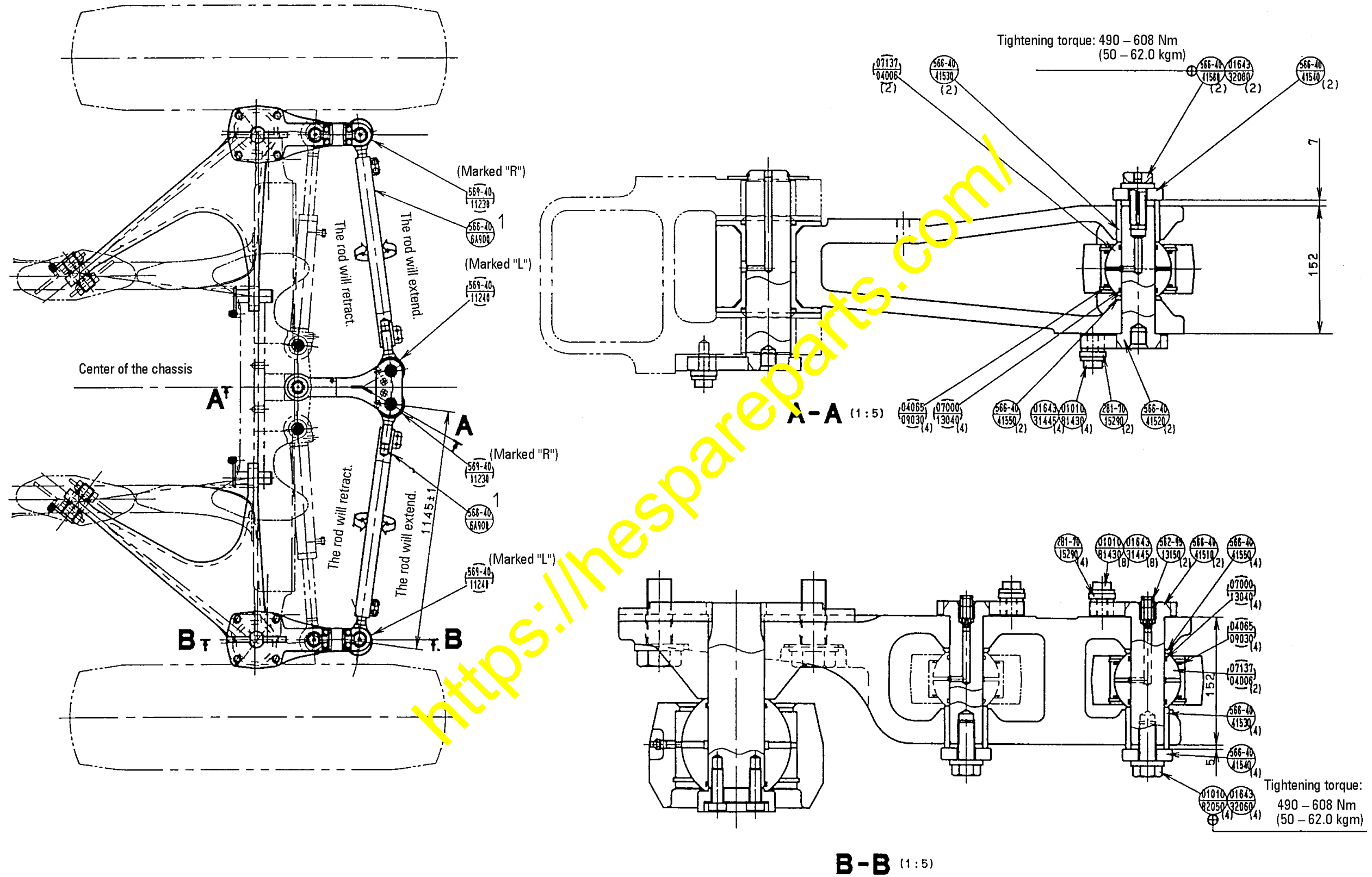


Fig. 3 Installing the tie rod assembly

## 3-3 Installation to the chassis

- 1) Install the tie rod assembly (566-40-6A900) to the chassis referring to Fig. 3.
- 2) The positioning (direction) of the tie rod assembly should be according to Fig. 3.


## 3-4 Adjustment of the wheel alignment

- 1) Inspect the front suspension cylinder length while the vehicle is unladen and when the length has been found to be out of the specification, adjust it to the specification referring to the Section "Adjustment of Suspension Cylinder Length" in the Shop Manual.

Dimension "a" =  $233 \pm 10$  mm

- 2) Park the vehicle on a level surface steering the tires to the straight forward traveling position.
- 3) Put marks on the forward part at hub height of the tires and also to the points on the ground plumbing from the marks on respective tires, to measure the tread "A" before moving the vehicle straight forward without turning the steering wheel until the tires turn by 180 degrees.

Since the marks on the tires are now located at the back of the tires, mark the points plumbing from these marks on the ground to measure the tread "B". (Refer to Fig. 4.)

-  13 So that the difference between the treads measured in front and rear ("B" - "A") may range from 3 to  $\pm 10$  mm, adjust the LH and RH tie rods 1 by turning them by the same angle, after loosening the nuts 1-8 for the LH and RH tie rods.

- 4) The rod length adjusting directions are according to the arrowed directions indicated in Fig. 3.

(By each turn of the rod section by  $90^\circ$ , ("B" - "A") will increase or decrease by about 5 mm.)

- 5) After finishing adjustment of the rod, tighten the two bolts 1-7 (01010-81680) and the two nuts 1-8 (01580-11613) alternately little by little to secure the tie rod.

The tightening torque range should be: 245 - 309 Nm {25 - 31.5 kgm}.

- ★ After this adjustment has been finished, the lengths of the LH and RH tie rods should always be the same.

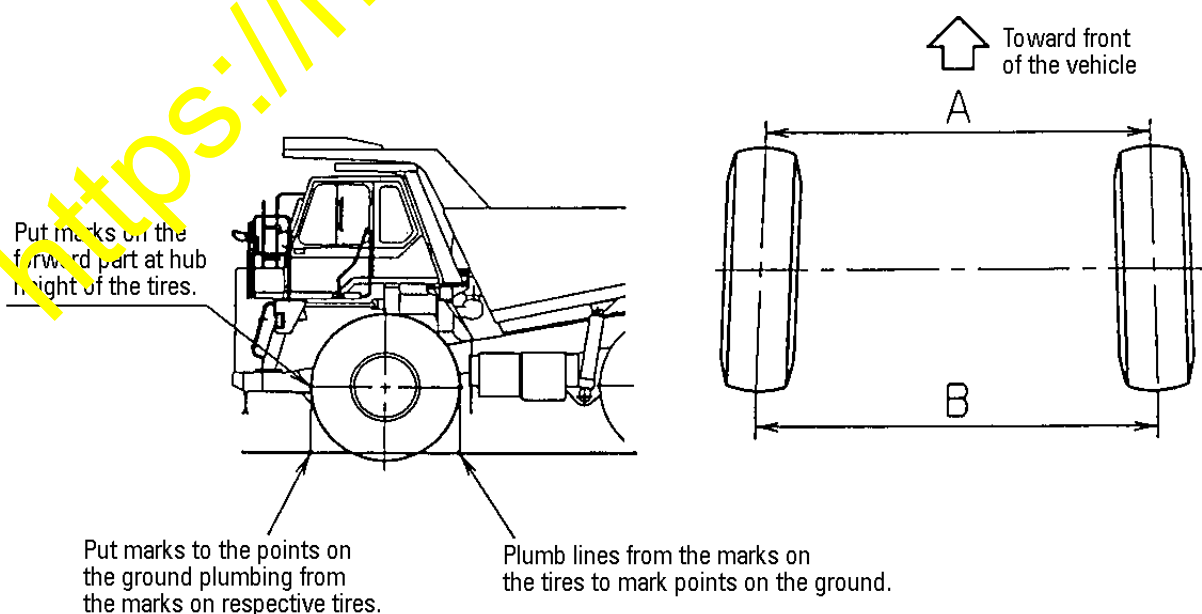
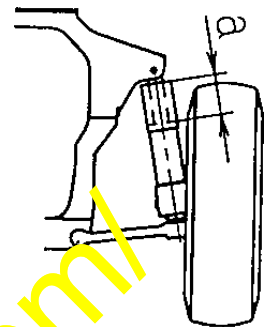


Fig. 4 Adjustment of the wheel alignment