

# PARTS & SERVICE NEWS

REF NO.	AT00241A
DATE	Apr. 10, 2001

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This PARTS & SERVICE NEWS supersedes the previous issue No. AT00241 dated Oct. 30, 2000 which should be discarded.

**SUBJECT:** REPAIR OF TRANSFER OUTPUT BEARING ON WA1200-3

**PURPOSE:** To introduce modification procedures to replace the transfer output shaft bearing on WA1200-3 wheel loaders

**APPLICATION:** WA1200-3 Wheel loaders, Serial Nos. 50001 thru  $\triangle$ 50006  
~~50007~~  
 (T/M Ass'y Nos. 1001 thru 1010)

$\triangle$  (The machine #50007 (T/M #1009) has already been modified before shipment from the factory.)

**FAILURE CODE:** 163538

## DESCRIPTION:

### 1-1. Introduction

With the WA1200-3 wheel loaders, when the transfer output shaft bearing is harmed while it is being installed, abnormal wear will occur with the bearing while the machine is being used to, possibly, make the machine unworkable to travel, finally.

As we have prepared a transfer output shaft bearing of an increased reliability to replace the aforesaid bearing which is liable to be harmed, replace the transfer output shaft bearing following the procedures introduced in this Service News.

### 1-2. Revised places:

11 places $\triangle$	Apr. 10, 2001	Supplemented strainer change and added descriptions to the modification procedures.
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2. List of parts

When making this modification by replacing the component parts (1/2)

Part No.	Part Name	Purpose of part	Q'ty	Remarks
42C-15-11003 (42C-15-11002)	T/M ass'y (T/M ass'y)	} Reworked	1 (1)	Part number for old assembly is not available.
42C-32-11101	P/B ass'y		1	
42C-32-18331 (42C-32-18330)	Housing (Housing)	} Replacement	1 (1)	
42C-32-18341 (42C-32-18340)	Piston (Piston)		1 (1)	
42C-32-13831 (42C-32-13830)	Spacer (Spacer)		1 (1)	
42C-32-19310 (283-15-23910)	Bearing (Bearing)		1 (1)	
04071-00250	Ring	Additional		Supplemented part

Listed below are the consumable parts which need to be replaced while making this modification.

42C-13-17240	Disc	} Replacement	8	} Consumable part in the parking brake ass'y
42C-32-12680	Plate		9	
42C-32-18720	Spring		8	
426-32-28730	Pin		2	
426-15-19220	Seal		1	
175-15-59240	Seal		1	} Consumable part for the coupling section
42C-15-13331	Seal		1	
07012-50110	Seal		1	
07000-75495	O-ring		2	} Consumable part for the sleeve for the hydraulic circuit
562-15-19970	O-ring		1	
07000-72018	O-ring		2	} Consumable part for the transmission housing drain pipe
07000-73028	O-ring		1	
07000-72105	O-ring		1	} Consumable part for the brake releasing bolt hole
07000-72090	O-ring		1	
07043-A0415	Plug			2

 Page added

## 2. List of parts

When making the modification by replacing the component parts (2/2)
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Part No.	Part Name	Purpose of part	Q'ty	Remarks
14X-49-12310	Magnet A.	} Replacement	4	Replacing parts T/F housing section
07000-72130	O-ring		4	Consumable parts Strainer cover section

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When making this modification by replacing the parking brake assembly in the assembly form (1/2)

Part No.	Part Name	Purpose of part	Q'ty	Remarks
42C-15-11003 (42C-15-11002)	T/M ass'y (T/M ass'y)	} Reworked	1 (1)	Part number for old assembly is not available.
42C-32-11101	P/B ass'y		1	
562-15-19970 (562-15-19970)	O-ring (O-ring)	} Replacement	1 (1)	Consumable part for the coupling section
07000-72018 (07000-72018)	O-ring (O-ring)		2 (2)	} Consumable part for the sleeve for the hydraulic circuit
07000-73028 (07000-73028)	O-ring (O-ring)		1 (1)	
07000-72105 (07000-72105)	O-ring (O-ring)		1 (1)	} Consumable part for the transmission housing drain pipe
07000-72090 (07000-72090)	O-ring (O-ring)	1 (1)		
07043-A0415 (07043-A0415)	Plug (Plug)		2 (2)	Consumable part for releasing P/B
$\Delta$ 14X-49-12310	Magnet A.		4	Replacing parts Transfer case section
$\Delta$ 07000-72130	O-ring		4	Consumable parts Strainer cover section

Listed below are the component parts of the current parking brake ass'y.  
(They are being listed here to clarify the range of replacing parts.)

(42C-32-18330)	(Housing)	} Replacement	(1)	} Modified part
(42C-32-18340)	(Piston)		(1)	
(42C-32-18350)	(Spacer)		(1)	
(283-15-23910)	(Bearing)		(1)	
(42C-32-18320)	(Drum)		(1)	
(42C-32-18690)	(Drum)		(1)	
(42C-32-19110)	(Spring)		(14)	
(714-19-17830)	(Spring)		(14)	
(42C-32-17250)	(Plate)		(1)	
(42C-13-17270)	(Ring)	(2)		

To be continued to the next page

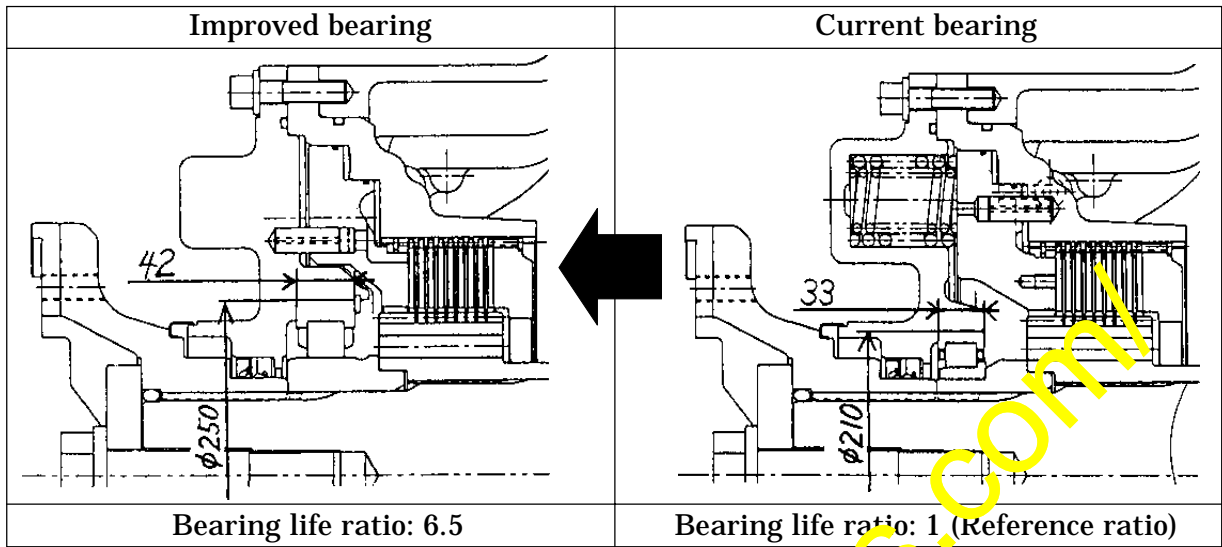
When making this modification by replacing the parking brake assembly in the assembly form (2/2)

Part No.	Part Name	Purpose of part	Q'ty	Remarks
(426-32-28730)	(Pin)	} Replacement	(2)	
(01252-61665)	(Bolt)		(4)	
(01643-31645)	(Washer)		(4)	
(42C-13-17240)	(Disc)		(8)	
(42C-32-12680)	(Plate)		(9)	
(42C-32-18720)	(Spring)		(8)	
(426-15-19220)	(Seal)		(1)	
(175-15-59240)	(Seal)		(1)	
(07000-75495)	(O-ring)		(2)	
(42C-15-13330)	(Seal)		(1)	
(07012-50140)	(Seal)		(1)	
(07043-A0415)	(Plug)		(2)	

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3. Contents of improvement with the reliability of the bearing

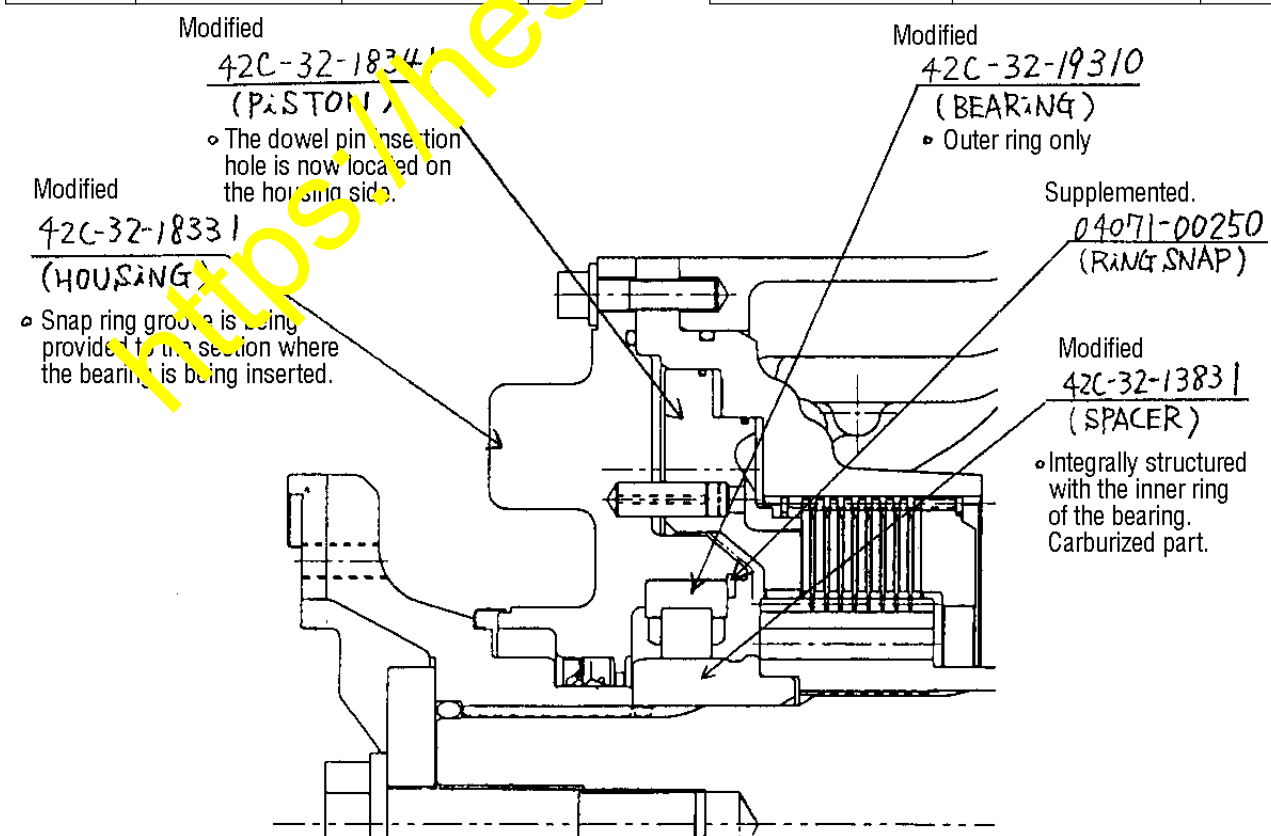
We have increased the capacity of the bearing to prolong the bearing life to 6.5 times as much as that of the current bearing.



Details of the modified parts are as follows:  
List of modified parts

Improved parts			
	Part numbers	Part names	Q'ty
Modified	42C-32-19310	Bearing	1
	(Stamping Outer ring NU228G1)		
Modified	42C-32-18331	Housing	1
Modified	42C-32-18341	Piston	1
Modified	42C-32-13831	Spacer	1
Supplemented	04071-00250	Ring snap	1

Current parts			
	Part numbers	Part names	Q'ty
	283-15-23910	Bearing	1
	(Stamping Outer ring 1028, Inner ring: NJ1028-1C4)		
	42C-32-18330	Housing	1
	42C-32-18340	Piston	1
	42C-32-13830	Spacer	1



## 4. Modification procedures


## &lt;IMPORTANT&gt;

**When assembling the parking brake ass'y, be sure to follow the procedures outlined in this Service News. Otherwise, means if the parking brake assembly is assembled under wrong procedures, the rolling surfaces of the bearing may be damaged leading to breakage of the bearing in a short period of time.**

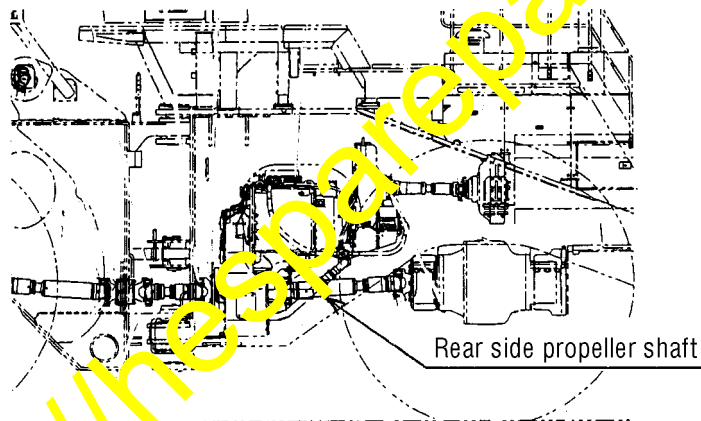
This modification can be implemented in either of the two methods

- When making this modification by replacing the component parts, follow the procedures outlined on pages 7 thru 20.
- When making this modification by replacing the parking brake assembly in the assembly form, follow the procedures outlined on pages 21 and 22.

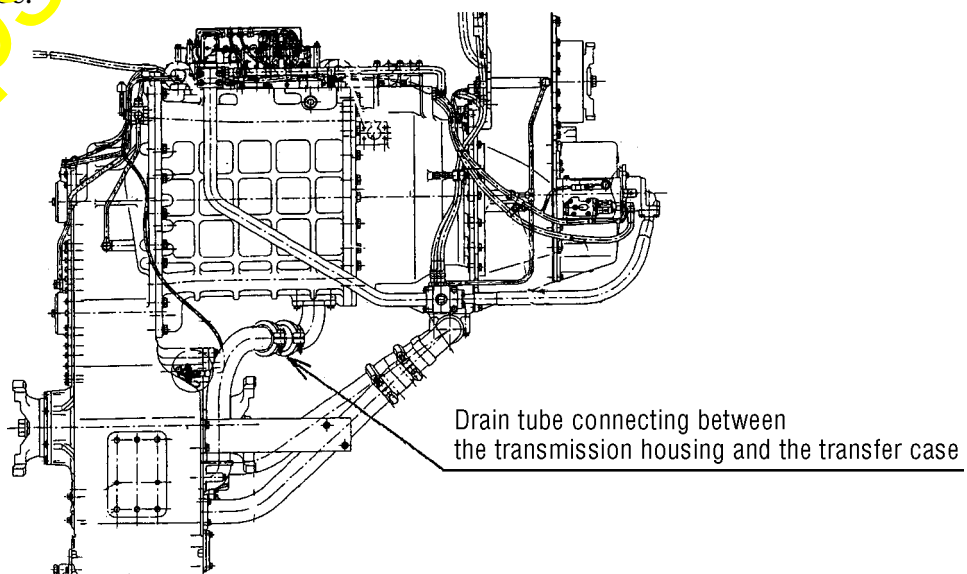
**When making this modification by replacing the component parts**

 Before removing the parking brake ass'y, make the following preparations in advance.

- (1) Drain transmission oil totally.
- (2) Remove the rear side propeller shaft.

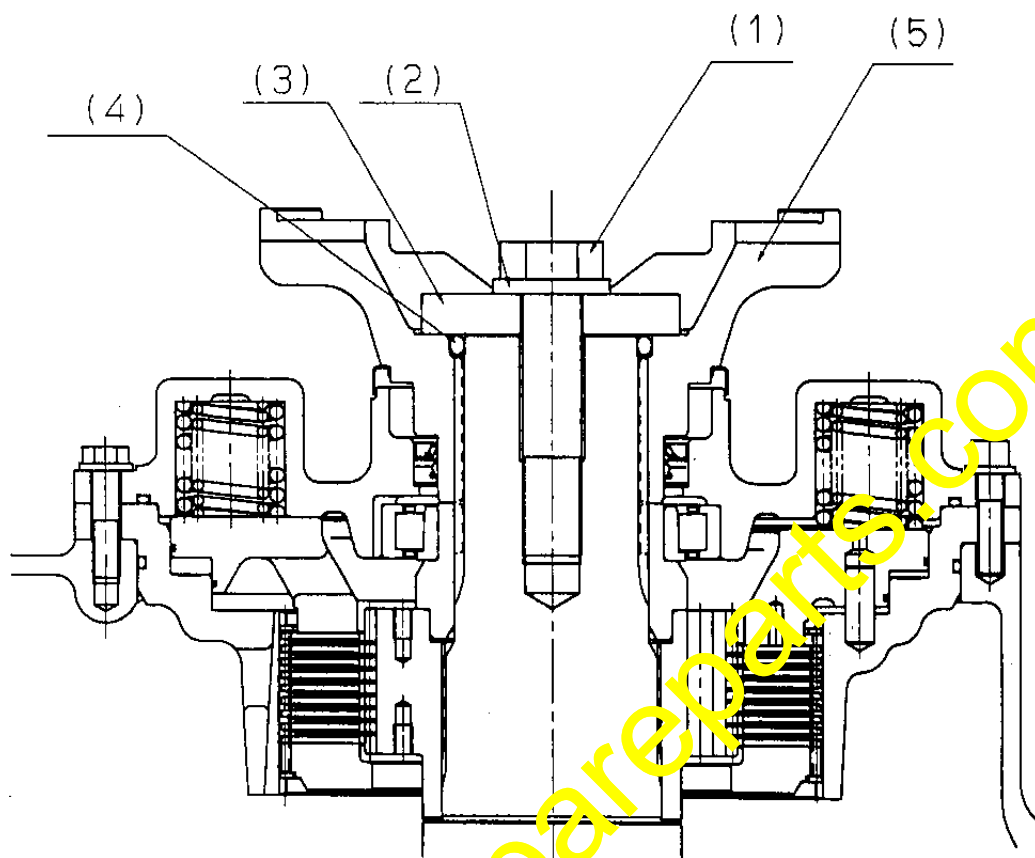


- (3) Disconnect the drain tube connecting between the transmission housing and the transfer case.



Removing the parking brake ass'y (Procedures 1 thru 5)

1. Loosen the rear side coupling mounting bolt (1) and remove the washer (2), holder (3) and the O-ring (4) before removing the coupling (5).



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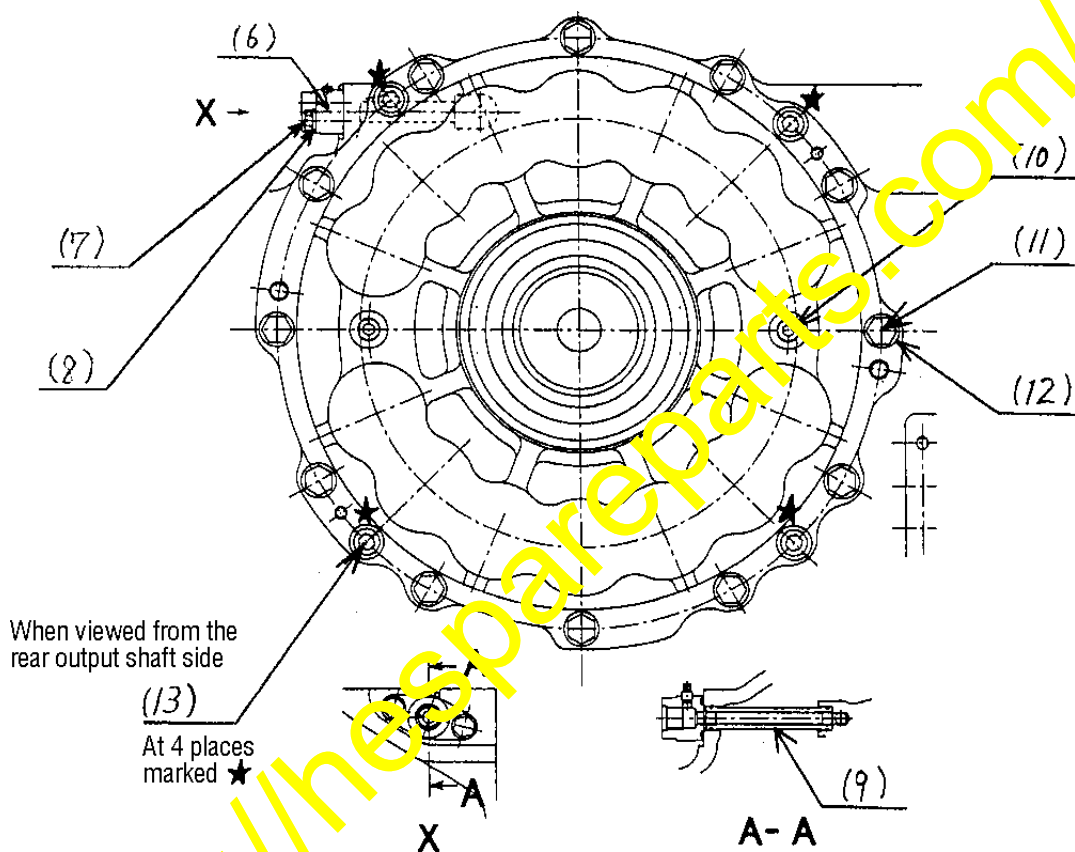


4. Modification procedures (continuation from the preceding page)
  2. Loosen the mounting bolt (7) for the flange (6) to remove the washer (8) and the flange (6) before pulling out the sleeve (9) for the parking brake circuit.
  3. Remove the two plugs (10).

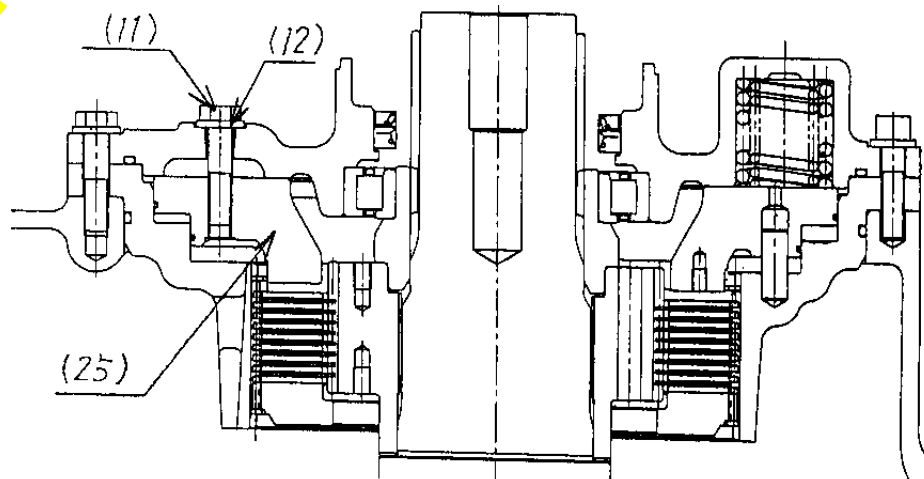
Remove two sets of parking brake mounting bolt (11) and washer (12).


\* The two sets of parking brake mounting bolt (11) and washer (12) to be removed can be any two among the 12 sets of parking brake mounting bolt and washer being used here.

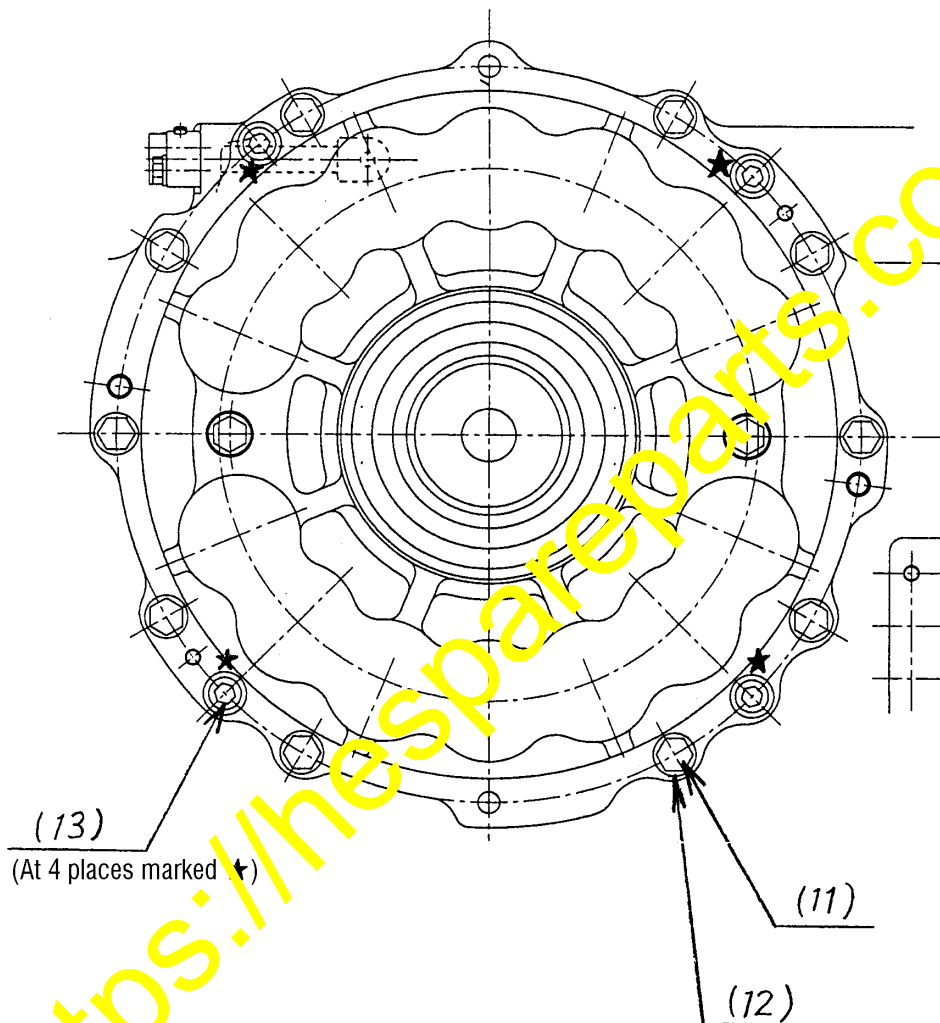
(Do not loosen the four hexagon socket head service bolts (13).)



4. Using the 2 sets of bolt (11) and washer (12), pull up the piston (25).
  - When screwing-in the bolts, do so little by little alternately.



4. Modification procedures (continuation from the preceding page)
5. Loosen the remaining ten parking brake mounting bolts (11) to remove them together with washers (12) before removing the parking brake ass'y.  
 Refer to the next page regarding the hoisting method when removing the parking brake ass'y.  
(Do not loosen the four hexagon socket head service bolts (13).)



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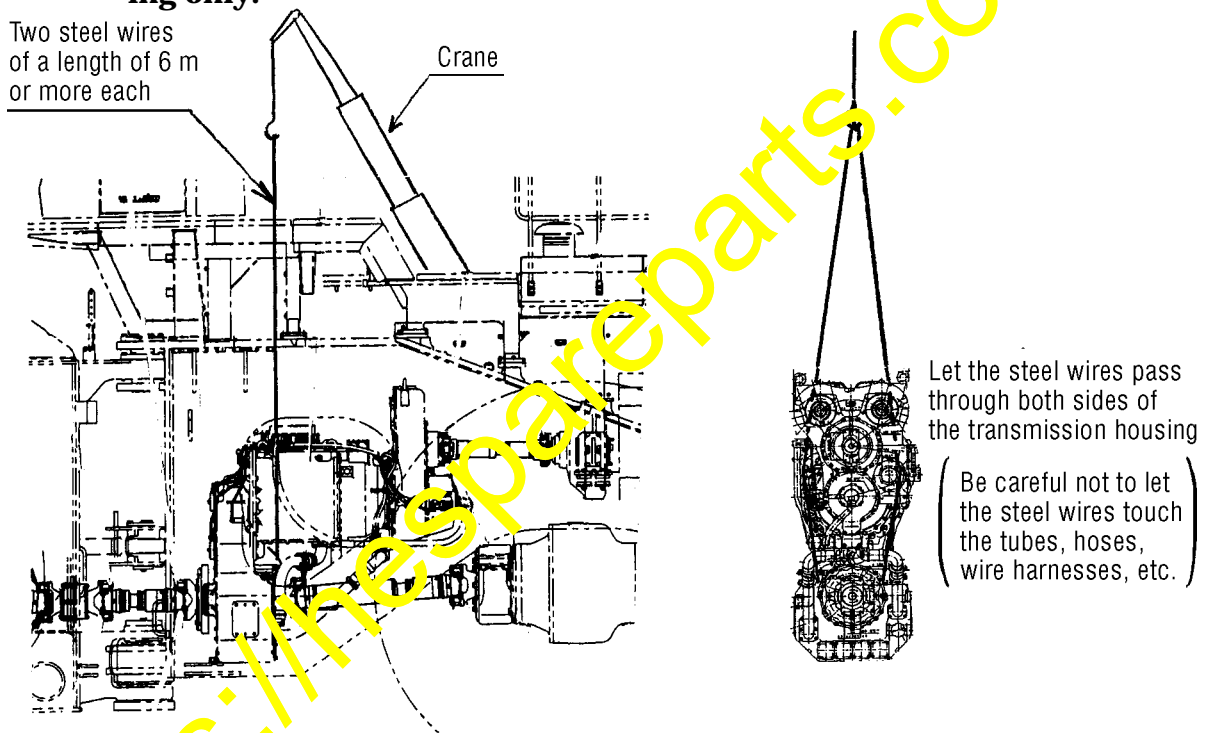
**Hoisting method when removing the parking brake ass'y**

When hoisting the parking brake ass'y to remove it from the transfer case, follow the procedures described below.

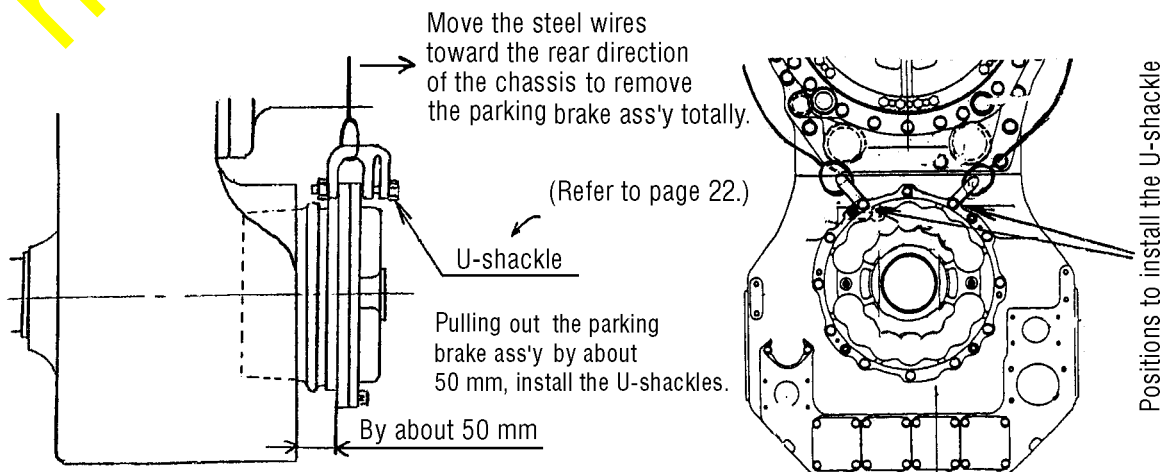
- Open the cover located behind the operator's cabin and hang down two steel wires (of a length of 6 m or more each) from the hoisting hook of the crane. Letting the steel wires pass through both sides of the transmission housing, lower them until their tip ends reach the location of the parking brake ass'y.

**(Note) If the steel wires touch the tubes, hoses, wire harnesses, etc. while passing them through both sides of the transmission housing, these parts may be damaged.**

**Therefore, be careful not to let the steel wires touch the tubes, hoses, wire harnesses, etc. and ensure that they touch the transmission housing only.**



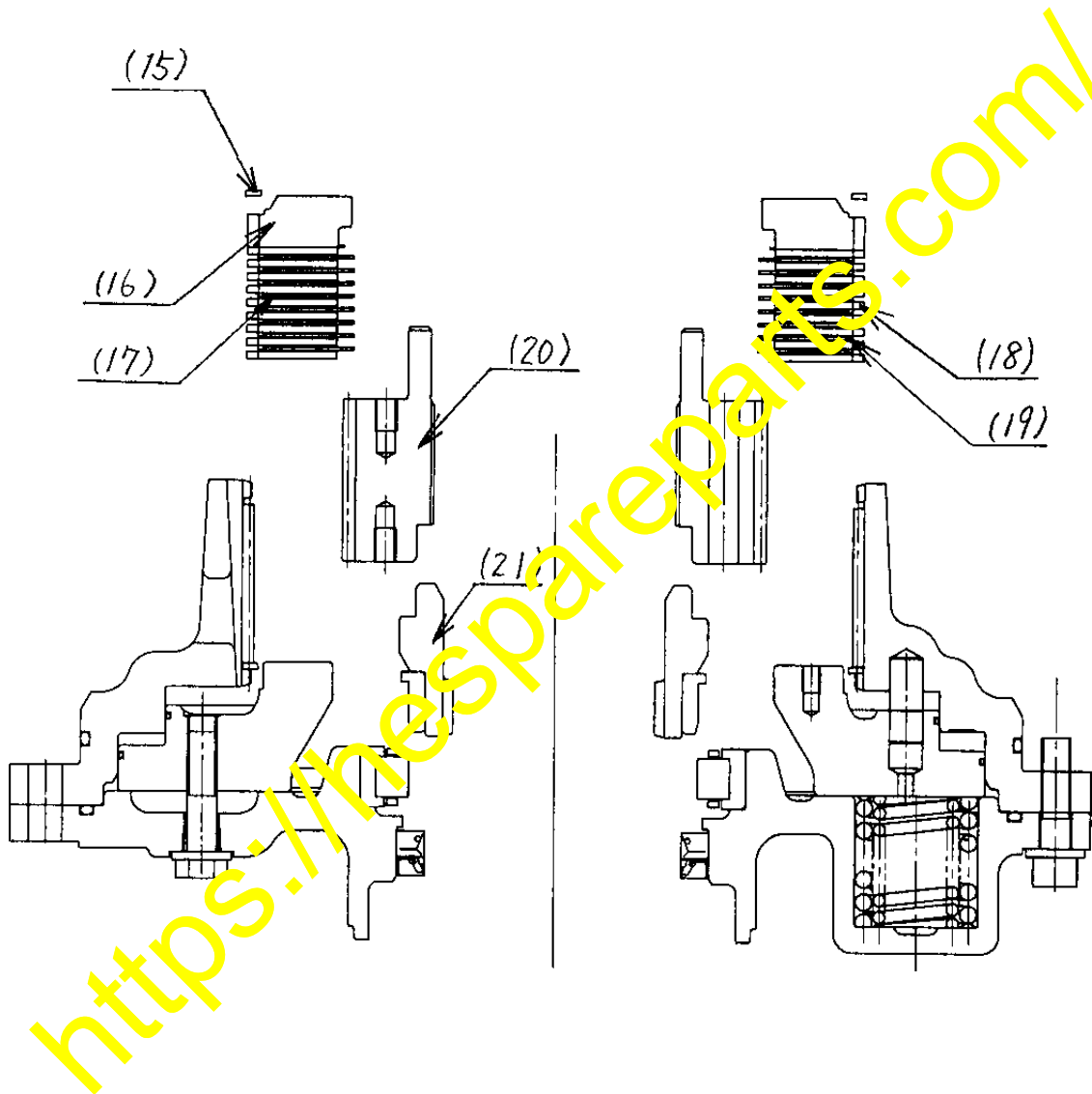
- Pulling out the parking brake ass'y from the transfer case by about 50 mm, install the U-shackles hooked to the steel wires to the parking brake ass'y. After that, move the steel wires toward the rear direction of the chassis to remove the parking brake ass'y totally.



4. Modification procedures (continuation from the preceding page)

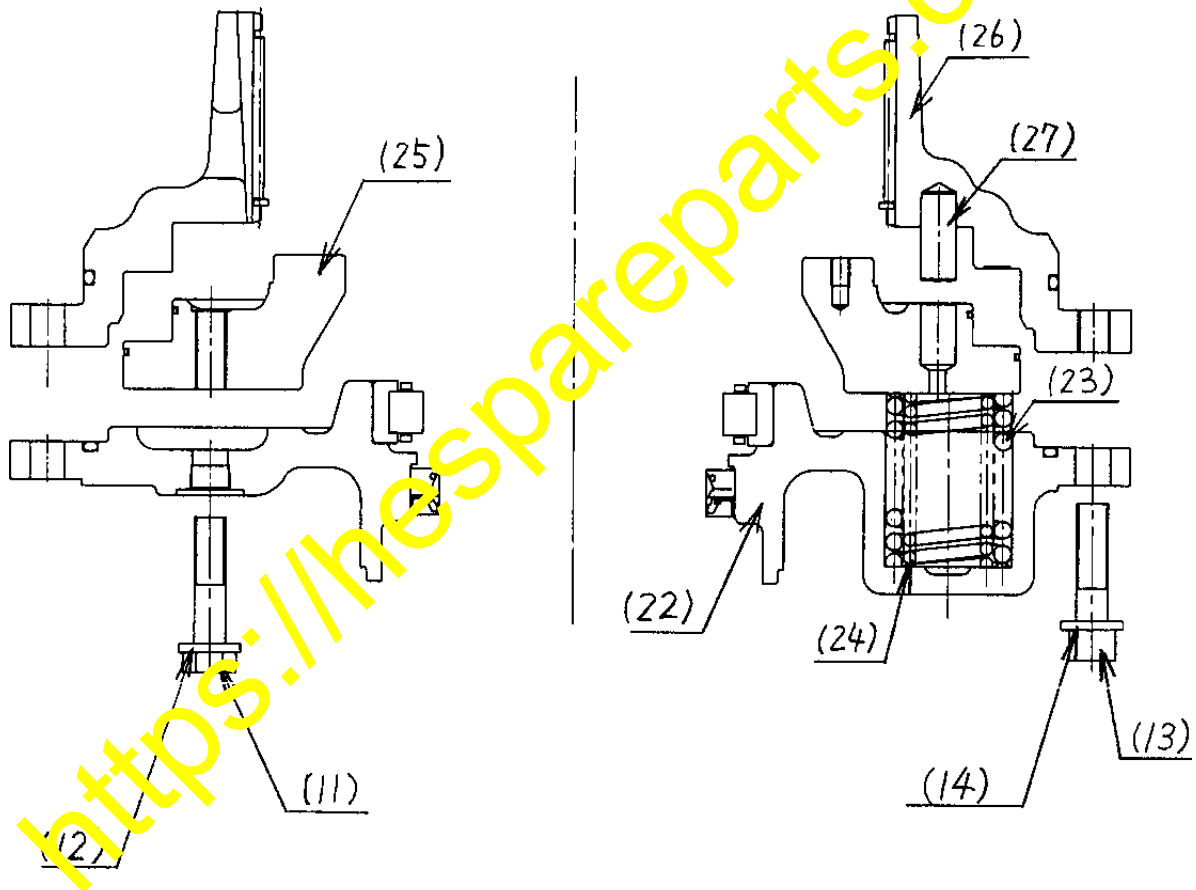
Disassembling the parking brake ass'y (Procedures 6 thru 9)

6. Remove the snap ring (15) before removing the end plate (16), discs (17), plates (18), wave springs (19), drum (20) and spacer (21).



## 4. Modification procedures (continuation from the preceding page)

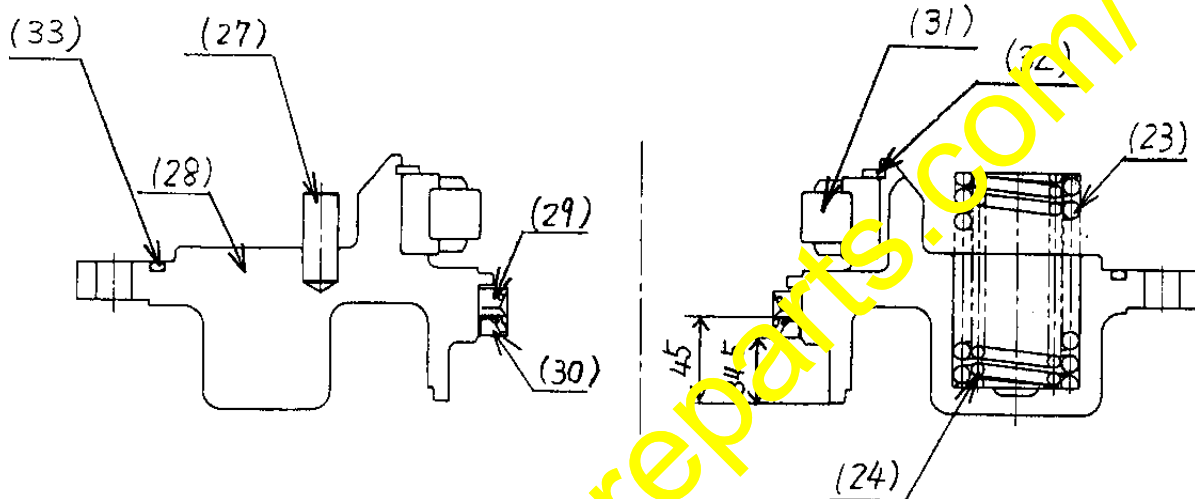
7. Remove two sets of parking brake mounting bolt (11) and washer (12).
  - When loosening the two mounting bolts, do so little by little alternately.
8. Remove the four service bolts (13) and washers (14) before removing the housing (22), springs (23) & (24) and piston (25).
  - When loosening the four service bolts, do so little by little alternately.
9. Pull out to remove the pin (27) from the drum (26).
  - The pin (27) should not be reused.



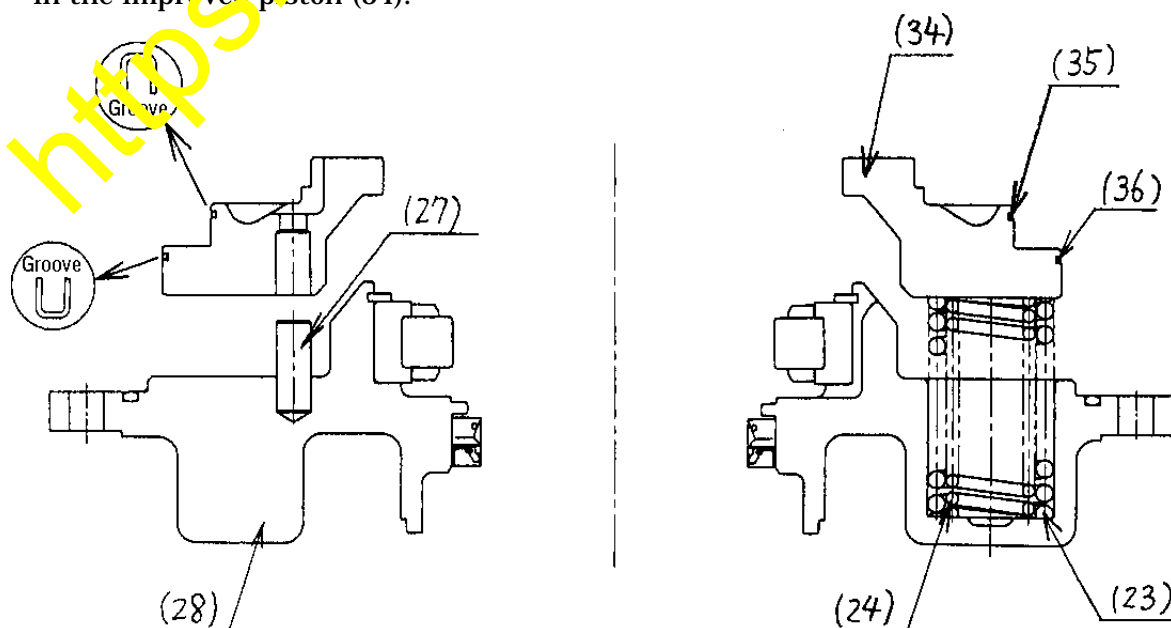
4. Modification procedures (continuation from the preceding page)

Reassembling the parking brake ass'y (Procedures 10 thru 16)

10. Press-fit new parts of the oil seal (29), dust seal (30) and pin (27) and the improved bearing (31) into the improved housing (28) before fastening them together using the newly supplemented snap ring (32).
  - Apply grease (G2-LI) over the lips of the oil seal and dust seal sufficiently.
11. Insert the springs (23) & (24) into the hole of the improved housing (28) before installing a new part of the O-ring (33).

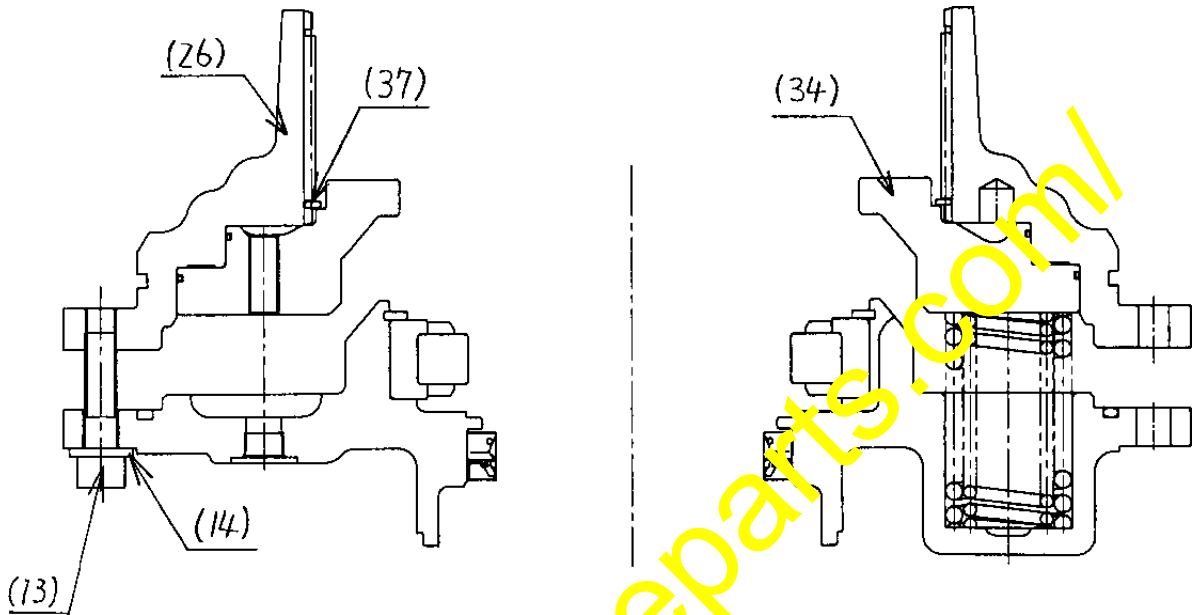


12. Installing the new parts of the seal rings (35) & (36) to the improved piston (34), place the piston over the springs (23) & (24) which have been inserted according to the above Procedure 11.
  - When installing the seal rings (35) & (36), direct their grooves as shown in the schematic diagram indicated below, at left.
  - Apply grease (G2-LI) over the seal ring.
  - When setting the improved piston (34), match the phase of the pin (27) which has been press-fit into the improved housing (28) and the phase of the pin hole provided in the improved piston (34).

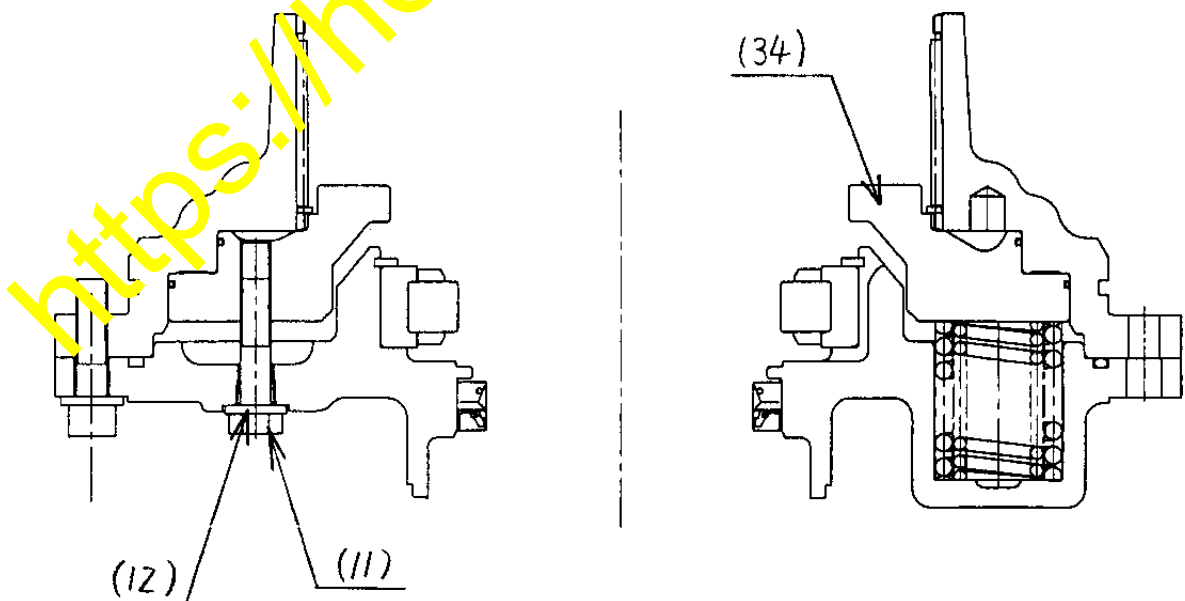


#### 4. Modification procedures (continuation from the preceding page)

13. After installing the snap ring (37) to the drum (26), place it over the improved piston (34) before fastening them up using the four sets of service bolt (13) and washer (14).
- When doing the above, tighten the four service bolts little by little evenly, paying attention not to twist the piston against the housing.

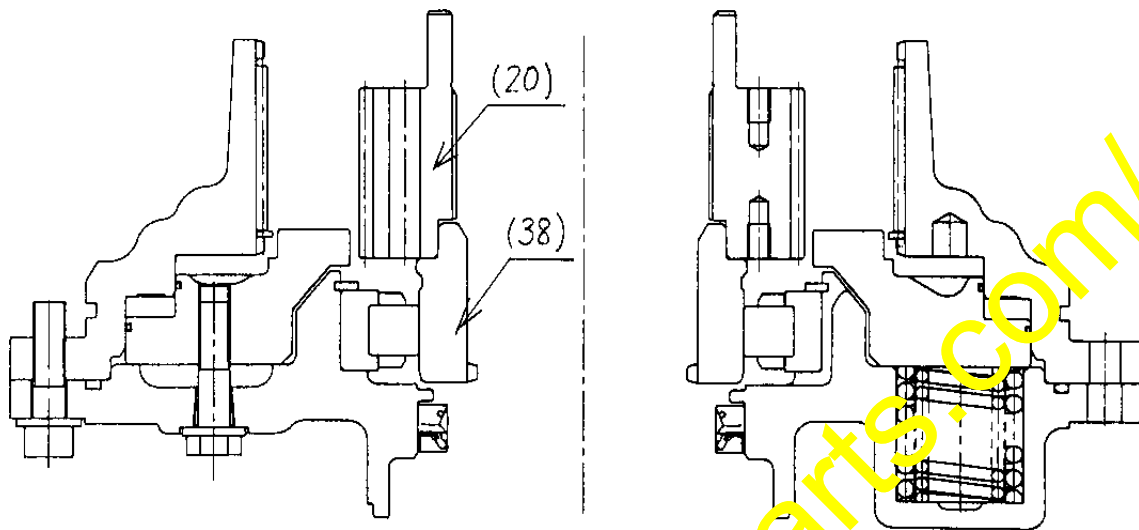


14. Using 2 sets of the parking brake mounting bolt (11) and washer (12), pull up the improved piston (34).
- When screwing-in the bolts, do so little by little alternately.

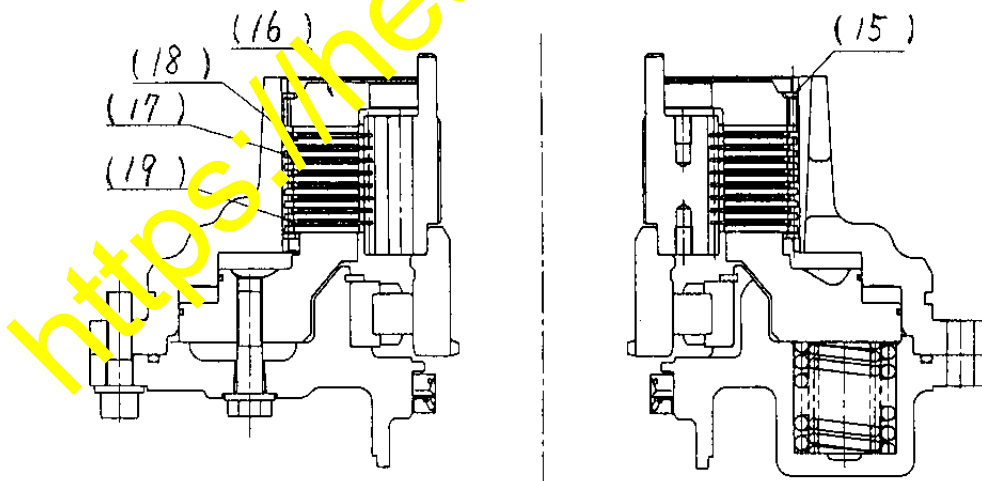


4. Modification procedures (continuation from the preceding page)

15. Paying attention not to harm the rolling surface, insert the improved spacer (38) before placing the drum (20).



16. Installing new parts of the plates (18), discs (17), wave spring (19) and end plate (16), fasten them altogether using the snapping ring (15).



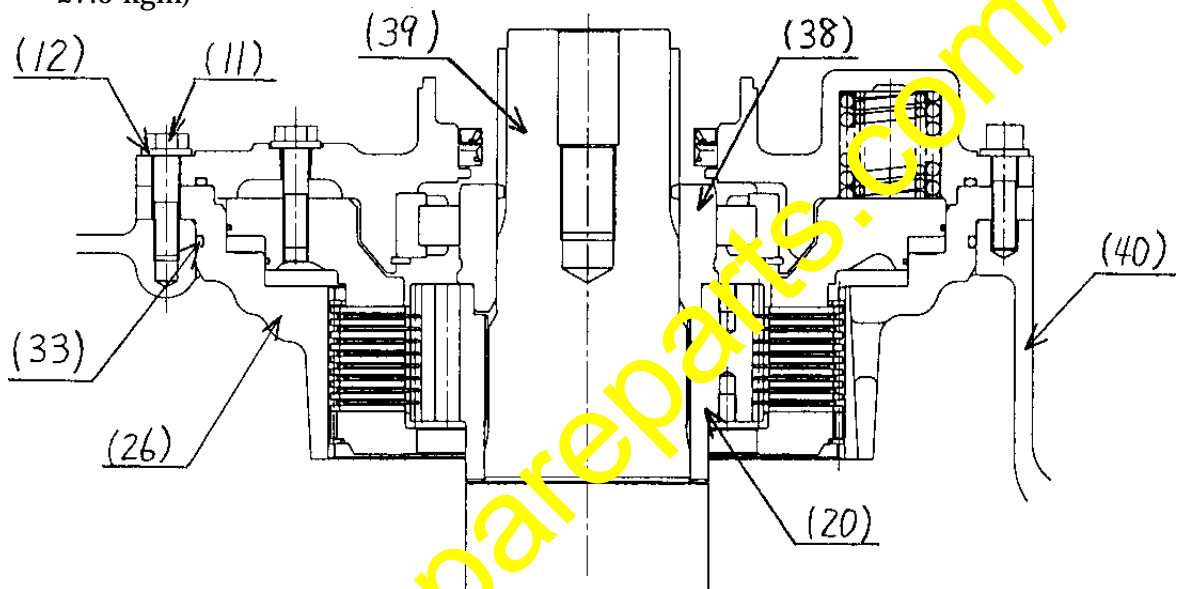



## 4. Modification procedures (continuation from the preceding page)

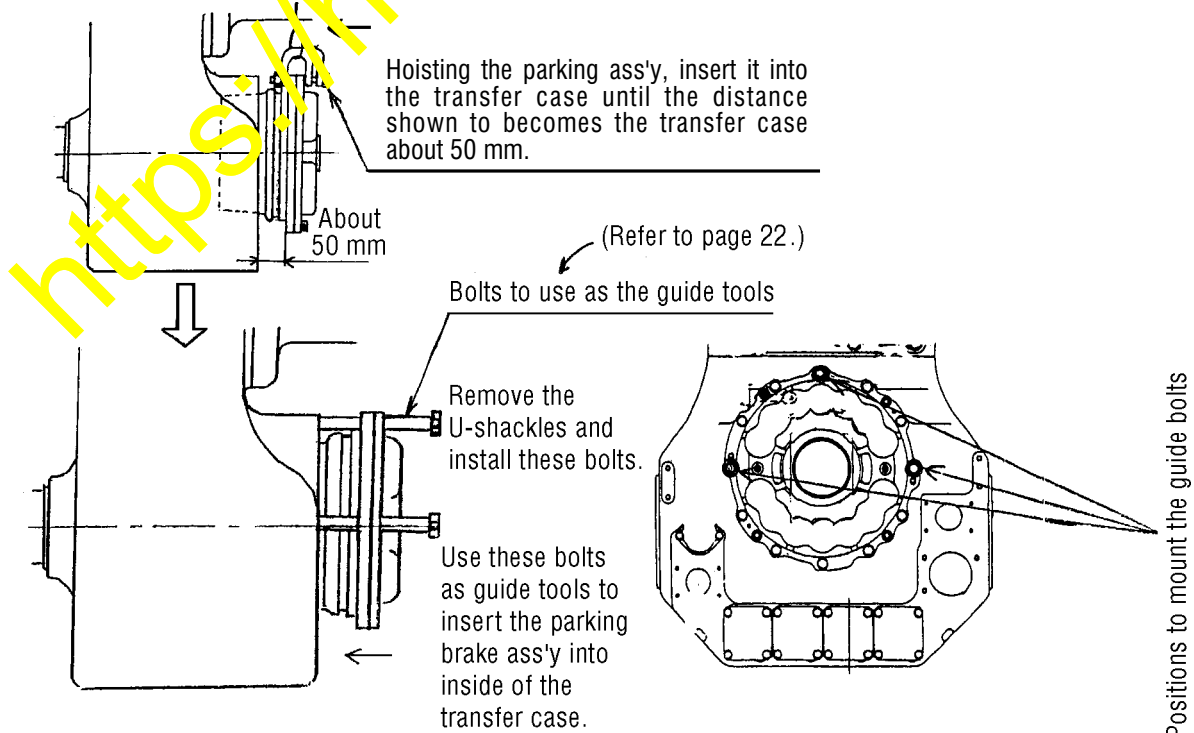
Reinstalling the parking brake ass'y (Procedures 17 thru 20)

17. After installing a new O-ring (33) to the drum (26), insert the parking brake ass'y into the transfer case (40) letting the splined holes of the drum (20) and of the improved spacer (38) engage with the splined section of the output shaft (39) successively before tightening the mounting bolts (11) installing washers (12).

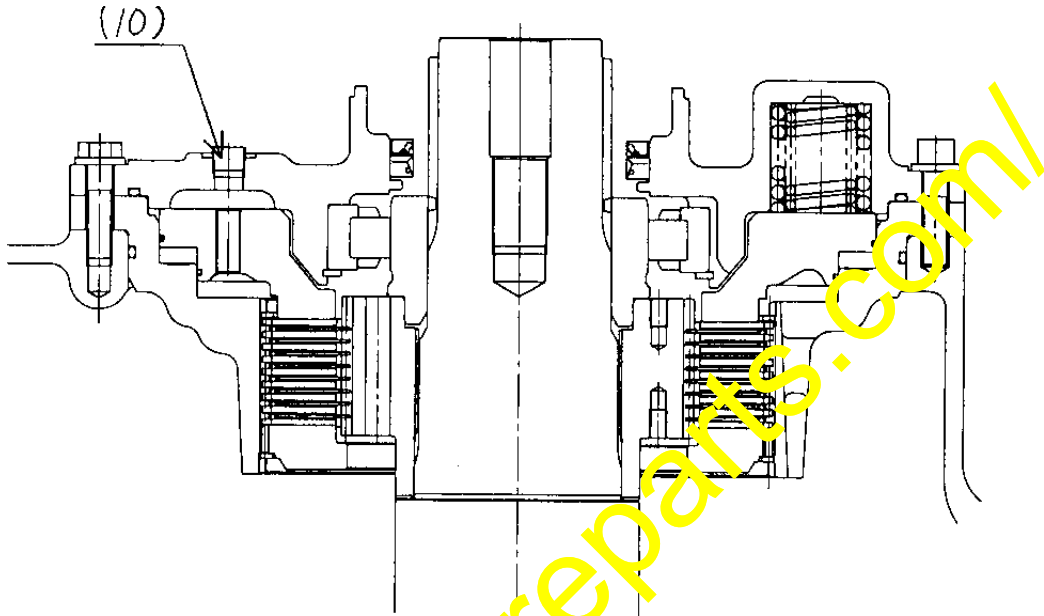
- Apply grease (G2-LI) over the O-ring.
- Apply liquid adhesive (LT-2) over the mounting bolts.
- The tightening torque range for the mounting bolts should be 205.9 – 239.7 Nm (21 – 27.5 kgm)



 (Note) When inserting the parking brake ass'y into inside of the transfer case, use bolts as guide tools to facilitate the insertion work.



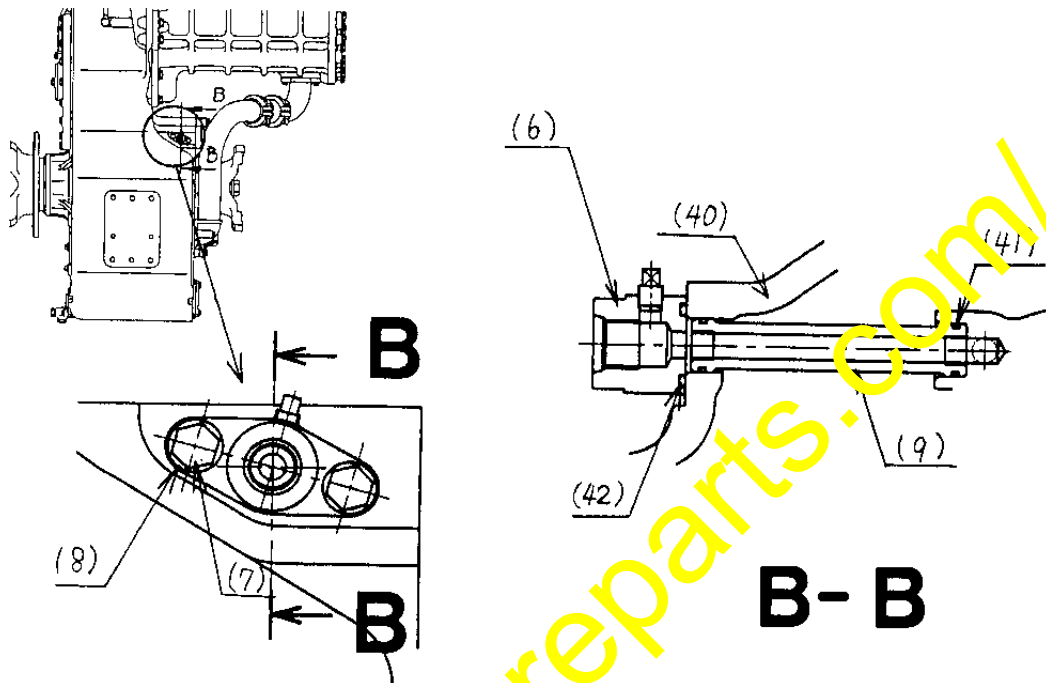
18. Remove the 2 sets of bolt (11) and washer (12) which have been installed according to the above Procedure 14 to install new parts of two plugs (10).
- When loosening the two bolts, do so little by little alternately.
  - Since the plugs are already provided with the sealing compound, tighten them as they are. If those plugs which are already provided with the sealing compound are not available, use 07043-00415 to tighten up after applying liquid gasket (LG-5).



## 4. Modification procedures (continuation from the preceding page)

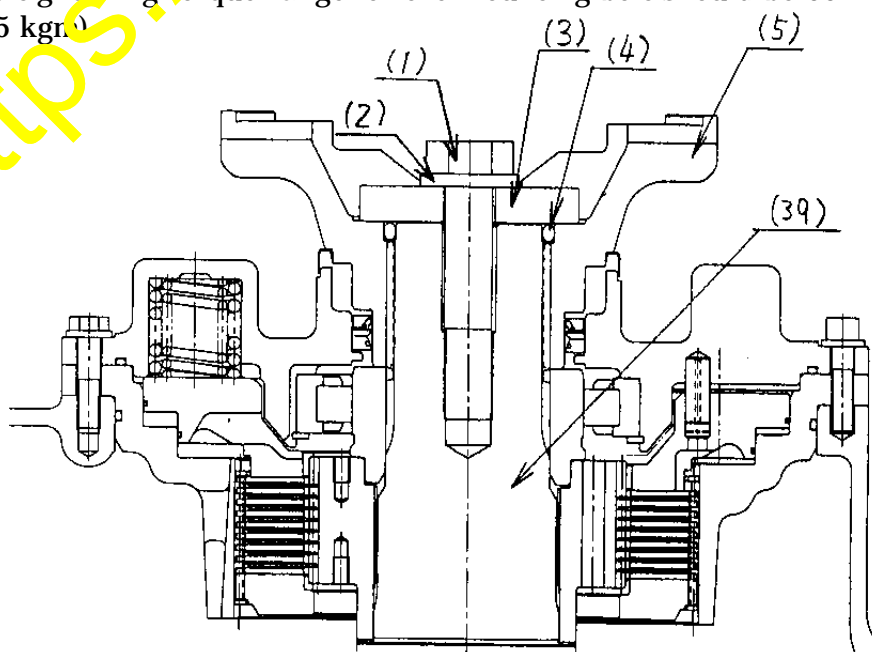
19. After installing a new O-ring (41) to sleeve (9), insert the sleeve to the transfer case (40) and fasten the flange (6) attached with a new O-ring (42) in advance, using the bolts (7) and washers (8).


- Apply grease (G2-LI) over the O-ring.



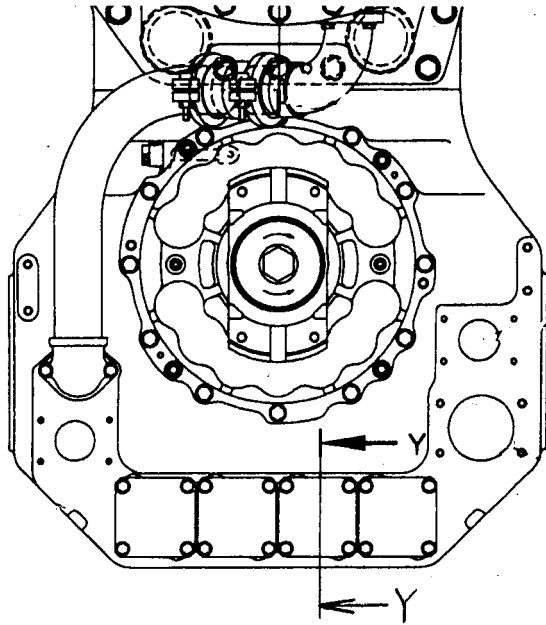
20. After installing coupling (5) to output shaft (39), set a new O-ring (4) before fastening the holder (3) using bolt (1) and washer (2).

- When installing the coupling (5) match the phase with the front side coupling.
- When inserting the coupling (5), to prevent the lips of the oil seal and dust seal from becoming turned up inside out, try to move the coupling back and forth to make sure the lips of the oil seal and dust seal are not turned up inside out.
- Apply grease (G2-LI) over the O-ring.
- Apply liquid adhesive (LT-2) over the mounting bolt (1).
- The tightening torque range for the mounting bolt should be 662 – 829 Nm (67.5 – 84.5 kgm).

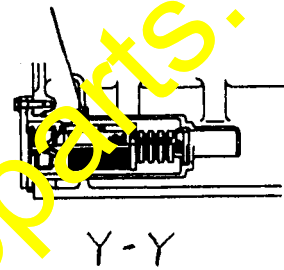


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After finishing the modification work for the parking brake ass'y, replace all the transmission strainers with new parts.



Strainer  
(Part No. 14X-49-12310  
Part name: Magnet ass'y)  
Remove all the four units with new parts.



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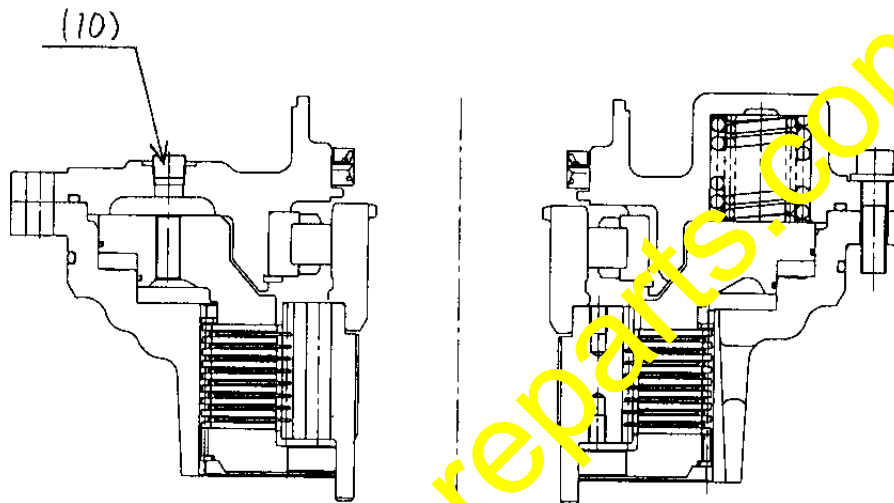
## 4. Modification procedures (continuation from the preceding page)

**When making this modification by replacing the parking brake ass'y in an assembly form**Removing the parking brake ass'y

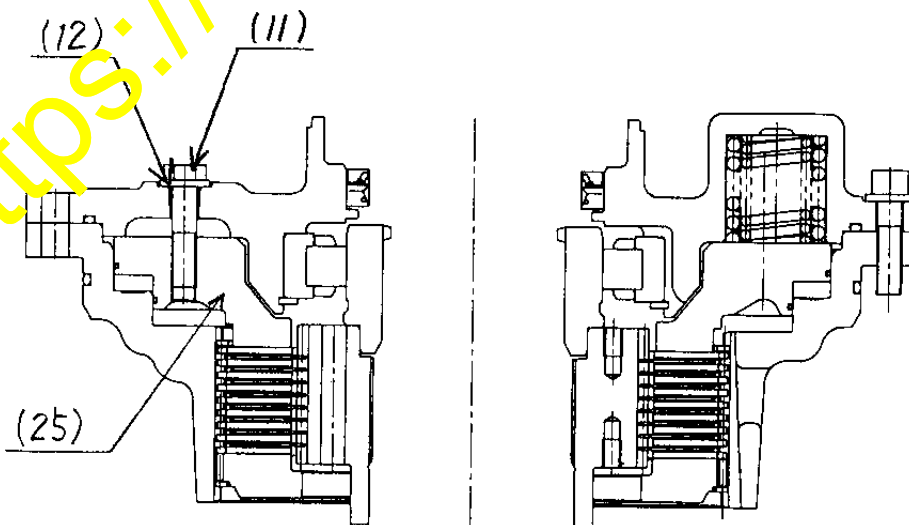
- Refer to the Procedures 1 thru 5 in the Section "When making this modification by replacing the component parts".

Installing the parking brake ass'y

1. Remove the two plugs (10) from the parking brake ass'y.



2. Using 2 sets of the parking brake mounting bolt (11) and washer (12), pull up the piston (25).
  - When screwing in the bolts, do so little by little alternately.



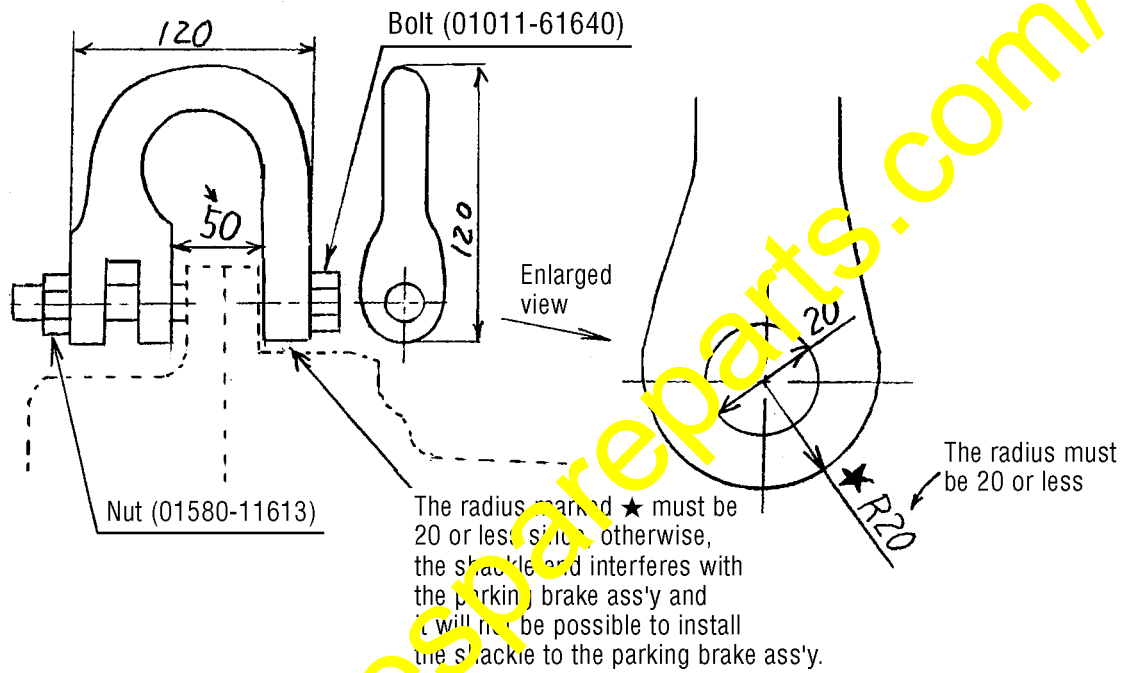
3. After finishing the above, refer to the procedures 17 thru 20 in the Section "When making this modification by replacing the component parts".

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Special tools to use for this modification work

The special tools necessary for this modification work as are being indicated below (refer to pages 11 and 17) have already been prepared by the Quality Assurance Dept. of the Awazu Plant and been sent to the destinations of the new parking brake assemblies. Nonetheless, if it becomes necessary to prepare them locally for some reason, prepare them referring to the following dimensional requisitions.

Special tool ① (U shackle) 2 units are necessary.



Special tool ② (Bolt) 3 units are necessary.

