

PARTS & SERVICE NEWS

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SUBJECT: REPAIR OF OIL LEAKAGE OCCURRING THROUGH DIFFERENTIAL INPUT SHAFT SEAL ON WA1200-3

PURPOSE: To introduce modification procedures to prevent occurrence of oil leakage through the differential input shaft seals on WA1200-3 wheel loaders

APPLICATION: WA1200-3 Wheel Loaders, Serial Nos. 50001 thru 50005

FAILURE CODE: 2A3610

DESCRIPTION:

1. Introduction

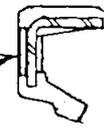
To prevent occurrence of oil leakage through the differential input shaft seals, replace the front and rear differential input shaft seals and couplings on the WA1200-3 wheel loaders with the improved parts following the modification procedures outlined in this Service News.

2. List of parts

Part No.	Part Name	Purpose of part	Q'ty	Remarks
42C-22-10003 (42C-22-10002)	Axle (F) A (Axle (F) A)	Rework	1 (1)	Rework these assemblies following the procedures according to this Service News
42C-22-11003 (42C-22-11002)	Diff (F) A (Diff (F) A)		1 (1)	
42C-23-10002 (42C-23-10001)	Axle (R) A (Axle (R) A)		1 (1)	
42C-23-11003 (42C-23-11002)	Diff (R) A (Diff (R) A)		1 (1)	
428-22-11781 (428-22-11780)	Seal (Seal)	Replacement	2 (2)	Improved parts
42C-22-11760 (428-22-11790)	Seal (Seal)		2 (2)	
42C-22-11233 (42C-22-11232)	Coupling (Coupling)		2 (2)	
562-15-19970	O-ring	Rework	2	Consumable part to replace when making this modification
427-22-00050	Shim kit		2	Adjustment kit

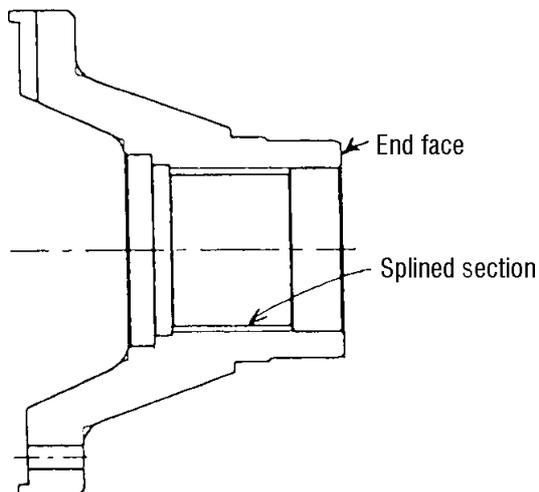
3. Contents of the modification

(1) The material of the seals has been changed to improve heat resistance of the part.

	Before the modification	After the modification
Part numbers of the oil seals	428-22-11780	428-22-11751
Identification markings	Embossed type number "AD4713J" 	Embossed type number "AD4713G" 
Part numbers of the dust seals	428-22-11790	428-22-11760
Identification markings	Embossed type number "AG4711F" 	Embossed type number "AG4711E" 
Rubber materials	Nitryl rubber	Acryl rubber

(2) Induction hardening treatment has been supplemented to the end face and to the splined section of the coupling in order to improve the wear resistance of the part.

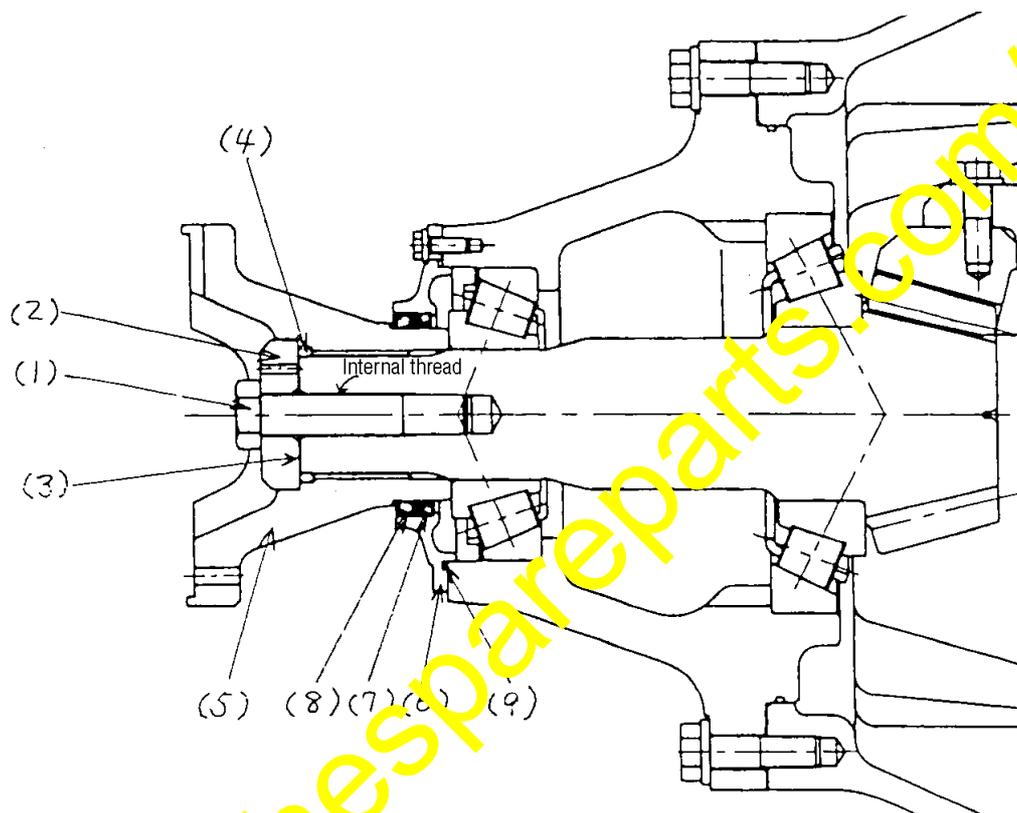
	Before the modification	After the modification
Part numbers of the coupling	42C-22-11232	42C-22-11233
Identification markings	Color of the splined section: Metallic color	Color of the splined section: Black



4. Modification procedures (common to front and rear differentials)

(1) Disassemblies

- ① Disconnect the propeller shaft.
 - ② Remove the bolt (1) to detach holder (2), shims (3) and O-ring (4).
 - ③ Remove the coupling (5).
- At this time, about 100 liters of oil will be drained out.
- ④ Remove the cage (6) to take out oil seal (7) and dust seal (8).



(2) Preparations for re-assembly

Remove residue LT-2 from the internal thread surfaces (36×1.5).
(Re-tap the thread once again when deemed necessary.)

(3) Adjusting the shim thickness

- ① Measure the dimension indicated at right (drawing value: 140 ± 0.2) using a micrometer in units of 0.05 mm and assume the dimension measured with the current coupling (the one removed from the machine) as "A" and the dimension measured with the improved coupling as "B".

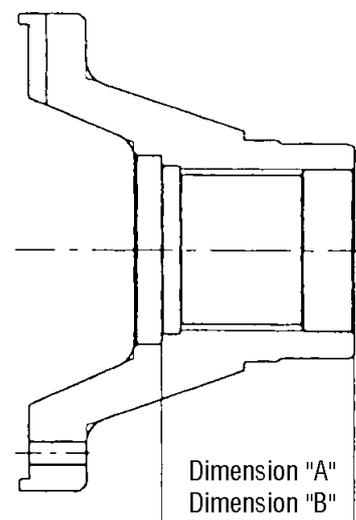
When measuring the above dimension on the current coupling, measure at the bore side of the end face where abrasion is not present.

- ② Calculating the shim adjustment value $B - A$
If the difference " $B - A$ " turns out to be a plus figure, add the shim. While, if the difference " $B - A$ " turns out to be a minus figure, reduce the existing shims.

(An example)

Assuming $A = 139.9$ and $B = 140.1$

$B - A = 140.1 - 139.9 = 0.2 \rightarrow$ Add 0.2-mm-thick shim(s).

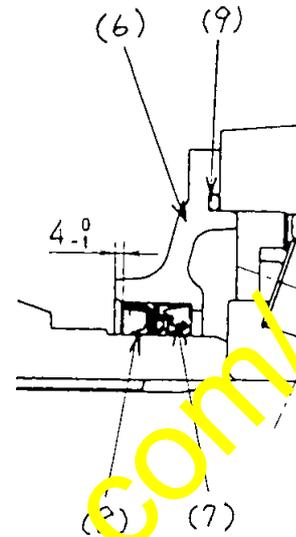


(4) Re-assembly

(1) Installing the seals

- ① Install the improved oil seal (7) with an adhesive (LG-1 or LG-5) applied around its outer peripheral surface to the cage (6).
- ② Install the improved dust seal (8) to the cage (6).
Press-fitting depth for the seal should be according to the instruction given in the schematic diagram indicated at right.
- ③ Apply grease (G2-LI) on the seal lip surfaces.
- ④ Install the cage (6) with the O-ring (9) to the differential assembly.

Tightening torque: 16 – 20 kgm



(2) Installing the coupling

- ① Install the improved coupling (5).
- ② Install the new O-ring (4).
- ③ Fasten the holder (2) with the thickness-adjusted shims (3) using the bolt (1).

Tightening torque: 250 – 310 kgm

Note: Be sure to apply Loctite LT-2.
Part number to use when ordering
Loctite LT-2: 09940-00030

(3) Connecting the propeller shaft

Connect the propeller shaft after thoroughly cleaning the mating surfaces of the joint.

Tightening torque: 35 – 43.5 kgm

(5) Refilling the oil

Refill axle oil upto the specified level on the level plug.

Select the oil type referring to the section explaining "Selection of fuel types and lubricating oil and grease types depending on the atmospheric temperature levels" in the Operation and Maintenance Manual.