

PARTS & SERVICE NEWS

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SUBJECT: REPAIR PROCEDURE OF FRONT AXLE TUBE CRACK ON WA1200-3

PURPOSE: To introduce modification procedure to prevent occurrence of cracks in the tubes for the front axle ass'y on WA1200-3 wheel loaders, which have already been sold and are in operation, to implement at times of overhauling.
(The necessary front axle tube parts will be shipped from Komatsu factory.)

APPLICATION: WA1200-3 Wheel Loaders, Serial Nos. 50001 thru 50007, 50009 and 50011

FAILURE CODE: 2A11HA

DESCRIPTION:

1. Introduction

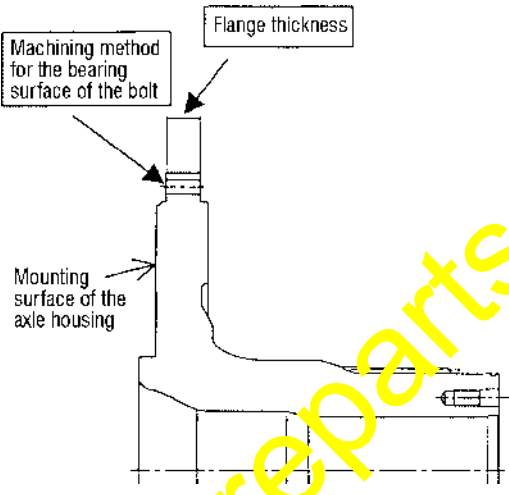
Replace the tubes for the front axle ass'y on the WA1200-3 wheel loaders, which have already been sold and are in operation, with the improved tubes at an opportunity at overhauling which a customer request following the modification procedure being outlined in this Service News. (The tubes for the LH and RH front axles)

2. List of parts

Part No.	Part Name	Purpose of part	Q'ty	Remarks
42C-22-10003 (42C-22-10002)	Axle (F) Ass'y (Axle (F) Ass'y)	} Reworked	1 (1)	} Additional working procedure is as per this Service News.
42C-22-14003 (42C-22-14002)	Final Ass'y (Final Ass'y)		1 (1)	
42C-22-15002 (42C-22-15001)	Final Ass'y (Final Ass'y)		1 (1)	
42C-22-13240 (42C-22-13231)	Tube (Tube)	} Replacement	2 (2)	} Improved parts
01011-62405 (01010-62470)	Bolt (Bolt)		68 (68)	

3. Details of the modification

The material of the tube has been changed from cast steel to forged parts to increase the durability.

		Before the modification	After the modification	Remarks
Part No. of the tube		42C-22-13231	42C-22-13240	
Material		Cast steel part	Forged parts	
Identification method	Flange thickness	31 mm	61 mm	It is possible to identify the new and current parts even in the state of axle ass'y.
	Machining method for the bearing surface of the bolt	Counterboring	Continuous cutting	
Tube shape				
Part No. of the bolt		01010-62470	01011-62405	Changed to fit to the flange thickness.

↑ The bolt length is being extend since the flange will become thicker. Therefore, be sure to replace the bolts at the same time when making this modification. (34 bolts per one side)

4. Modification procedure

- ① The object of this modification is the front axle only.
- ② The modification procedure is the same for both the LH wheel and the RH wheel.
- ③ After finishing this modification, be sure to discard the removed current parts.

For details, refer to the Section “Disassembly and assembly of front axle ass’y” on page 30-028-1 and to the Section “Disassembly and assembly of final & brake ass’y” on pages 30-099-1 thru 30-099-4 in the Chapter “Disassembly and assembly” in the Shop Manual.

Numbers given in the descriptions below correspond to the item numbers given in the drawings on page 5 or page 6, or in the Shop Manual, and the pages of the Shop Manual for the WA1200-3 wheel loaders.

Regarding other sections than the above, refer to the Shop Manual.

(1) Disassembly — Be sure to de-pressurize the braking oil pressure before starting the disassembly work.

- ① Park the machine on a horizontal place, set the safety bars to the frame and apply chocks to each tire.
- ② Jack up the machine body and insert blocks underneath the front frame.

- ③ Remove the LH and RH fenders and LH and RH headlamps.
- ④ Temporarily hoist the LH and RH tire wheels, remove the hub nuts and hoist the tires to remove them.
Tire wheel: 9,150 kg
- ⑤ Drain oil from the inside of the axle.
- ⑥ Remove the brake cooling pipes (2 pipes each on the LH and RH sides), the brake activating oil pipes (1 pipe each on the LH and RH sides) and the return pipes (30-088-1 (10) and (11)).
- ⑦ Remove the final cover ass'y (30-099-1 (3)).
- ⑧ Remove the sun gear (30-099-1 (7)).
- ⑨ Remove the shaft ass'y (30-099-1 (17)).
- ⑩ Using the stud bolt (30-099-1 (45)), tire mounting washer and nut, fasten the 4 sections around the periphery of the carrier ass'y (30-099-1 (8)).
- ⑪ With the final and brake ass'y in hoisted state, loosen the 36 pieces of mounting bolts to remove the ass'y.
- ⑫ Place the final and brake ass'y directing the mounting surface to the axle housing downward.
- ⑬ Remove the carrier ass'y (30-099-1 (8)).
- ⑭ Remove the ring gear (30-099-1 (16)).
- ⑮ Remove the carrier ass'y (30-099-1 (22)).
- ⑯ Loosen the bolt to remove the retainer (30-099-1 (34)) and the shim (30-099-1 (35)).
- ⑰ Remove the hub ring gear ass'y (30-099-1 (36)).
At this time, be careful so that the seal (30-099-1 (39)) does not fall down.
- ⑱ Remove the wheel hub ass'y (30-099-1 (46)).
At this time, be careful so that the seal (30-099-1 (49)) does not fall down.
- ⑲ Remove the cylinder and the piston ass'y.
- ⑳ Remove the gear (30-099-1 (71)).
- ㉑ Remove the plate (30-099-1 (68)) and the disc (30-099-1 (69)) alternately.
- ㉒ Remove the gear ass'y (30-099-1 (75)).
- ㉓ Remove the inner race of the taper roller bearing (30-099-1 (50)).
- ㉔ Remove the retainer (30-099-1 (72)) and remove three washers (30-099-1 (73)).

(2) Assembly

- ① Place the improved tube (42C-22-13240) directing the mounting surface to the axle housing downward.
- ② Install three washers (30-099-1 (73)) using the pin (175-21-12180).
At this time, hammer the pin until the pin head sinks 0.4 mm to 1.3 mm deep from the surface of the washer.
- ③ Install the gear ass'y (30-099-1 (75)) to the tube using the bolts (01011-62405) and washer newly prepared for this modification.
- ④ Install the retainer (30-099-1 (72)) to the tube.
- ⑤ Install the inner race of the taper roller bearing (30-099-1 (50)) to the tube.

<Pre-pressure adjustment for the wheel bearing> — Adjustment procedure in case the hydraulic jig as per 30-099-3 is not available.

- 1) Install the wheel hub ass'y (30-099-1 (46)) and the hub ring gear ass'y (30-099-1 (36)).
At this time, apply axle oil to the bearing surface.
- 2) Measure the thickness of the retainer (30-099-1 (34)) at 2 points and calculate the average value "T".
- 3) Tighten the retainer using three bolts after applying EO10 on their thread surfaces at a tightening torque of 12 ± 0.5 kgm.

- 4) After turning the wheel hub ass'y, re-tighten the bolt at the tightening torque of 12 ± 0.5 kgm. Repeat this for about 10 times, until torque down disappears.
- 5) Measure the distance between the surface of the retainer and the end face of the tube at 2 points using a depth micrometer and calculate the average value "D".
- 6) Select the shims so that the total shim thickness may become $(D-T) + 0.1/0$.

- ⑥ Remove the hub ring gear ass'y (30-099-1 (36)) and remove the wheel hub ass'y (30-099-1 (46)).
- ⑦ Place the gear (30-099-1 (71)) on the washer (30-099-1 (73)).
- ⑧ Install 10 sheets of plates (30-099-1 (68)) and 9 sheets of discs (30-099-1 (69)) alternately.

At this time, install the 9 sheets of plates so that the center of the tooth cutout may match the center of the tooth cutout of the wear indicator mounting section. Also, install the last 1 sheet of the plate so that the tooth comes to the wear indicator mounting section.

- ⑨ Install the cylinder and piston ass'y using the bolt and washer.
- ⑩ In the state where the seals (30-099-1 (49) and (54)) being installed, measure the level difference between the seal and the retainer at 4 points around the periphery and adjust the level difference within 1 mm.
- ⑪ Install the wheel hub ass'y (30-099-1 (46)).
- ⑫ In the state where the seals (30-099-1 (39) and (47)) being installed, measure the level difference between the seal and the retainer at 4 points around the periphery and adjust the level difference within 1mm.
- ⑬ Install the hub ring gear ass'y (30-099-1 (36)).
- ⑭ Fasten the shims (30-099-1 (35)) selected as above and the retainer (30-099-1 (34)) by tightening the bolt.
- ⑮ Install the carrier ass'y (30-099-1 (22)).
- ⑯ Install the ring gear (30-099-1 (16)), using the plate (30-099-1 (15)), bolt and washer.
- ⑰ Install the carrier ass'y (30-099-1 (3)) using four bolts.
At this time, using the stud bolt (30-099-1 (45)), tire mounting washer and nut, fasten the 4 sections around the periphery of the carrier ass'y.
- ⑱ Hoisting the final and brake ass'y, install it to the axle housing using 36 pieces of mounting bolts.
- ⑲ Install the shaft ass'y (30-099-1 (17)).
- ⑳ Install the sun gear (30-099-1 (7)).
- ㉑ Install the final cover ass'y (30-099-1 (3)) using the bolt and washer.
- ㉒ Install the brake cooling pipes (2 pipes each on the LH and RH sides), the brake activating oil pipes (1 pipe each on the LH and RH sides) and the return pipes (30-099-1 (10) and (11)).

- ㉓ Refill specified quantity of oil into the axle.
- ㉔ Install the LH and RH tires using the hub nuts and washers.

Tire wheel: 9,150 kg

Tightening torque: 1,470 – 1,810 Nm {150 – 185 kgm}

- ㉕ Install the LH and RH fenders and LH and RH headlamps.
- ㉖ Jack up the machine body and remove the blocks from underneath the front frame.
- ㉗ Refill EO10 into the brake oil tank.
- ㉘ Using the bleeder, bleed air from the brake activating circuit.

Front axle ass'y

