

PARTS & SERVICE NEWS

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DATE	July 31, 2001

(C)

SUBJECT: REPAIR OF FRONT AND REAR DIFFERENTIAL GEARS

PURPOSE: To introduce modification procedures to repair broken front or rear differential gears.

APPLICATION: WA320-3MC Wheel Loader Serial Number A31001 to A31520

FAILURE CODE: 2B45Z9

DESCRIPTION:

1. Introduction

When either the front or rear differential gears on the WA320-3MC wheel loader breaks, replace both front and rear differential gears with the improved parts following the modification procedures outlined in this Parts & Service News.

2. List of Parts

Assembly part numbers are listed below:

Part Number	Description	Purpose of Part	Qty	Remarks
419-22-21020	Differential (F) Assembly	Replacement	1	Newly registered improved differential assembly.
419-23-21020	Differential (R) Assembly	Replacement	1	Newly registered improved differential assembly.
419-33-21420	Seal, Outer		4	Consumable parts to be replaced when making this modification. Outer seal for the brake piston.
385-11092821	Loctite 515		2	Consumable parts to be used when making this modification. Loctite 515: 50cc.
04020-01228	Pin, Dowel		8	Consumable parts to be replaced when making this modification.
419-22-20012 (419-22-20011)	Axle (F) Assembly (Axle (F) Assembly)	Reworked	1 (1)	Introducing a new front axle assembly.
419-23-20012 (419-23-20011)	Axle (R) Assembly (Axle (R) Assembly)	Reworked	1 (1)	Introducing a new rear axle assembly.

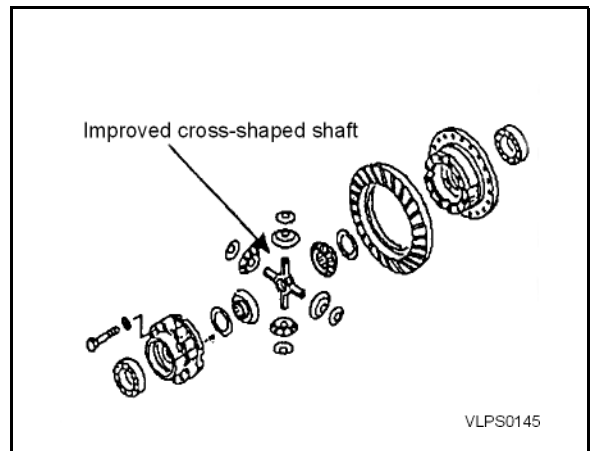
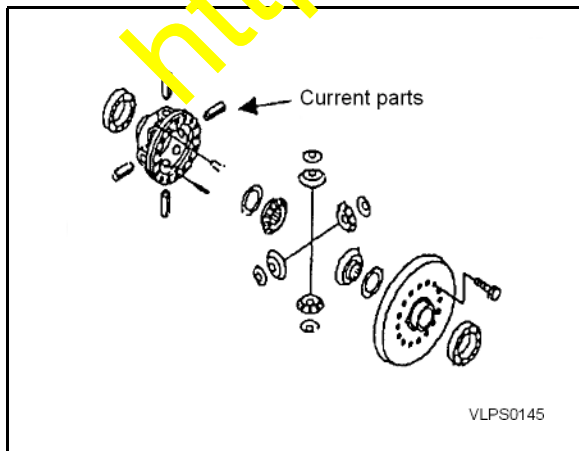
Modified component parts only are listed below:

Part Number	Description	Purpose of Part	Qty	Remarks
419-22-21800 (419-22-21601)	Pinion & Gear (Pinion & Gear)	Replacement	1 (1)	
419-22-21500 (419-22-21720)	Case Assembly (Carrier)	Replacement	1 (1)	
419-22-11412 (419-22-21940)	Shaft (Shaft)	Replacement	1 (4)	
(418-22-11440)	Pin	Not Used	(4)	Used for other applications.
419-22-11651 (419-22-21751)	Washer (Washer)	Replacement	4 (4)	
01010-31240 (01010-31650)	Bolt (Bolt)	Replacement	20 (16)	For installation of the bevel gear.
01643-31232	Washer	Additional	20	For installation of the bevel gear.
419-22-21860 (419-22-21660)	Carrier (Carrier)	Replacement	2 (2)	
419-22-11850 (419-22-12850)	Bearing (Bearing)	Replacement	2 (2)	Used for other applications.

Note: Keep the current parts in stock as they are used for ordinary repairs of other machines.

3. Contents of the Modification.

The current cantilever-pin type shafts for the differential pinions have been changed into a cross-shaped shaft to increase the rigidity and to enhance the durability of the component gears.



4. Modification Procedures

4-1. Disassembly and Reassembly

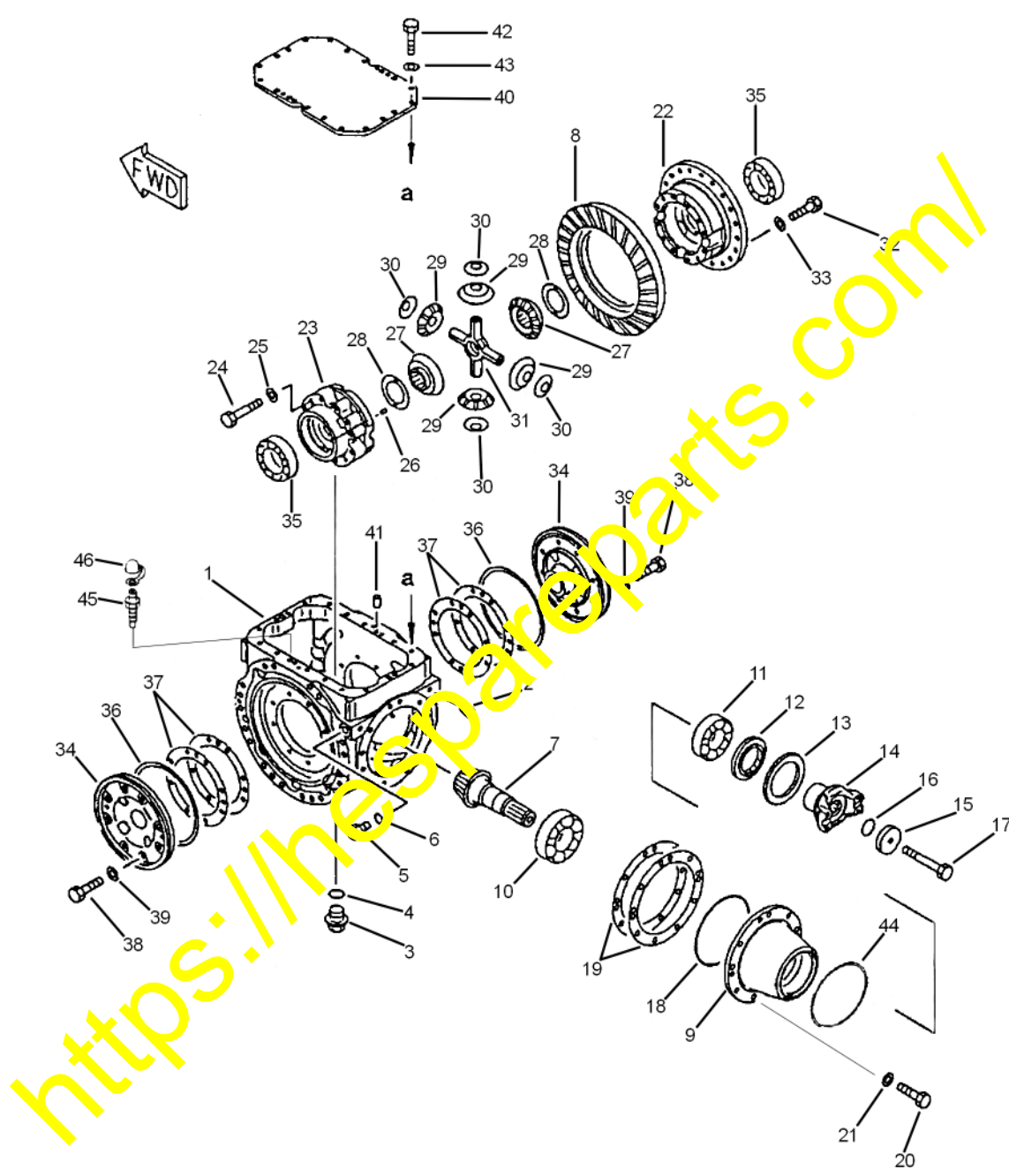
Make the disassembly work and reassembly work for this modification referring to the Section "Disassembly and Assembly of Differential" in the Shop Manual. Refer to the Shop Manual when reassembling.

- 4-2. The improved front and rear differential assemblies (newly established parts assemblies) and their components are shown on the following pages. Meanwhile, when ordering for the improved differential assemblies as independent spare parts, order the following consumable parts also.

419-33-21420	Seal, Outer	Qty 2
385-11092821	Loctite 515 (50cc)	Qty 1
04020-01228	Pin, Dowel	Qty 4

(Quantities shown are necessary for a differential assembly.)

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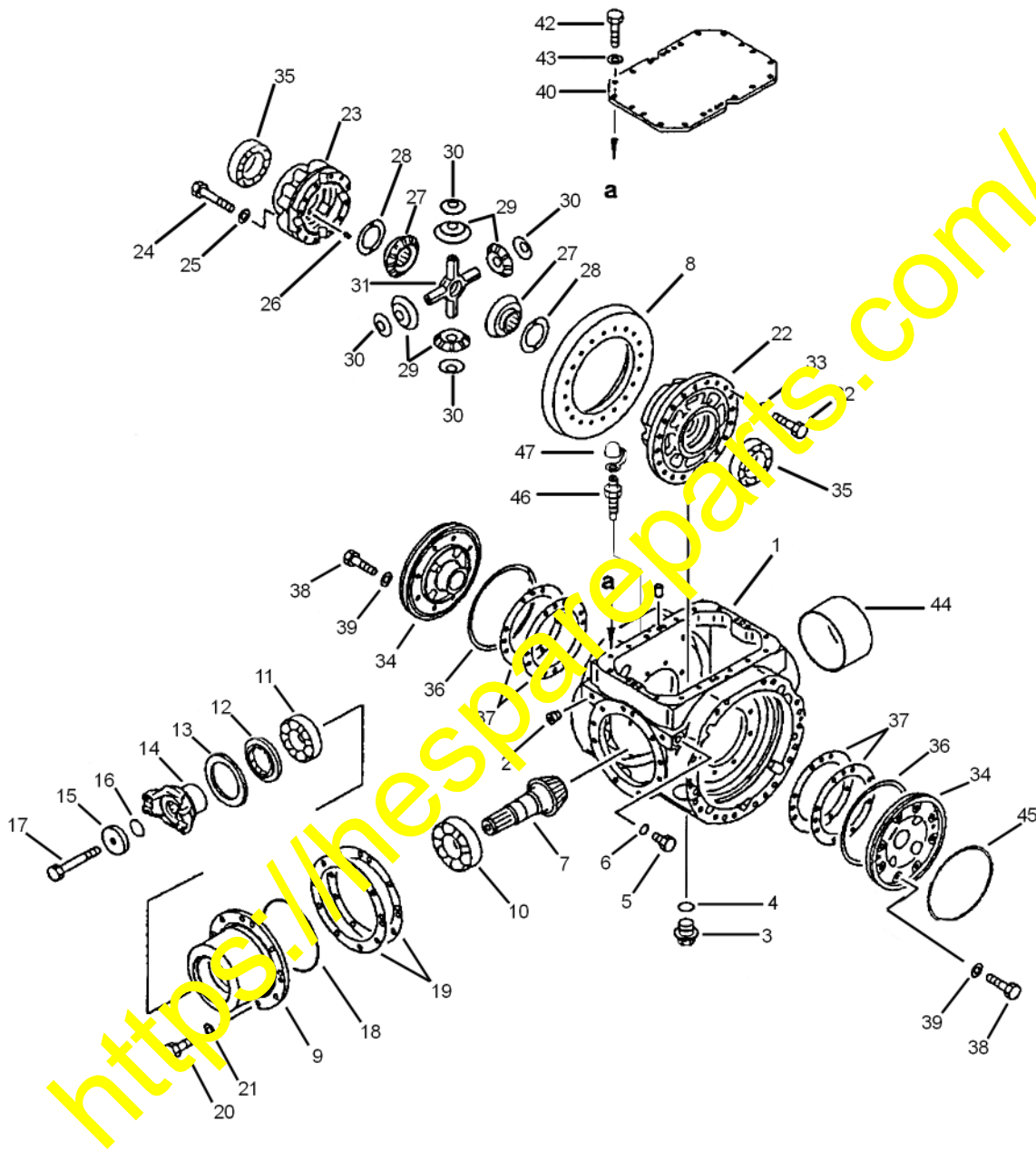
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Front Differential Assembly for the WA320-3MC

Front Axle Standard Differential

Item	Part Number	Description	Qty
	419-22-21020	Differential Assembly, Front	1
1	419-22-23610	.Housing	1
2	07043-70211	.Plug	2
3	07044-13620	.Plug, Drain	1
4	07002-13634	.O-Ring	1
5	07040-12012	.Plug (For Shipping)	2
6	07002-12034	.O-Ring (For Shipping)	2
	419-22-21800	.Pinion Assembly, Gear	1
7	NSS	..Pinion	1
8	NSS	..Gear, Bevel	1
9	419-22-21631	.Cage	1
10	419-22-11810	.Bearing	1
11	419-22-11820	.Bearing	1
12	418-22-21330	.Seal, Oil	1
13	418-22-21310	.Protector	1
14	419-22-21230	.Coupling	1
15	423-22-11240	.Holder	1
16	07000-13042	.O-Ring	1
17	01010-61615	.Bolt	1
18	07000-15180	.O-Ring	1
19	419-22-11361	.Shim, 0.05MM	3
	419-22-11371	.Shim, 0.2MM	2
	419-22-11381	.Shim, 0.3MM	2
	419-22-11391	.Shim, 0.8MM	1
20	01010-61440	.Bolt	10
21	01643-31445	.Washer	10
	419-22-21500	.Case Assembly	1
22	NSS	..Case	1

23	NSS	..Case	1
24	01010-61295	..Bolt	12
25	01643-31232	..Washer	12
26	175-21-12180	..Pin	4
27	419-22-11432	.Gear, Side	2
28	419-22-11631	.Washer	2
29	419-22-11421	.Pinion	4
30	419-22-11651	.Washer	4
31	419-22-11412	.Shaft	1
32	01010-61240	.Bolt	20
33	01643-31232	.Washer	20
34	419-22-21860	.Carrier	2
35	419-22-11850	.Bearing	2
36	418-33-21430	.Ring	2
37	419-22-21760	.Shim, 0.50MM	6
	419-22-21770	.Shim, 0.2MM	3
	419-22-21780	.Shim, 0.3MM	3
	419-22-21790	.Shim, 0.8MM	2
38	01010-61240	.Bolt	16
39	01643-31232	.Washer	16
40	419-22-21620	.Cover	1
41	04020-01228	.Pin, Dowel	2
42	01010-61240	.Bolt	20
43	01643-31232	.Washer	20
44	419-33-21710	.Seal	2
45	419-33-11460	.Bleeder	2
46	566-32-11620	.Cap	2



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Rear Differential Assembly for the WA320-3MC

Rear Axle Standard Differential

Item	Part Number	Description	Qty
	419-23-21020	Differential Assembly, Rear	1
1	419-23-23610	.Housing	1
2	07043-70211	.Plug	2
3	07044-13620	.Plug	1
4	07002-13634	.O-Ring	1
5	07040-12012	.Plug (For Shipping)	2
6	07002-12034	.O-Ring (For Shipping)	2
	419-22-21800	.Pinion Assembly	1
7	NSS	..Pinion	1
8	NSS	..Gear, Bevel	1
9	419-23-21631	.Cage, Bearing	1
10	419-22-11810	.Bearing	1
11	419-22-11820	.Bearing	1
12	418-22-21330	.Seal, Oil	1
13	418-22-21310	.Protector	1
14	419-22-21230	.Coupling	1
15	423-22-11240	.Holder	1
16	07000-13042	.O-Ring	1
17	01010-61615	.Bolt	1
18	07000-15180	.O-Ring	1
19	419-22-11361	.Shim, 0.05MM	3
	419-22-11371	.Shim, 0.2MM	2
	419-22-11381	.Shim, 0.3MM	2
	419-22-11391	.Shim, 0.8MM	1
20	01010-61440	.Bolt	10
21	01643-31445	.Washer	10
	419-22-21500	.Case Assembly	1
22	NSS	..Case	1

23	NSS	..Case	1
24	01010-61295	..Bolt	12
25	01643-31232	..Washer	12
26	175-21-12180	..Pin	4
27	419-22-11432	.Gear	2
28	419-22-11631	.Washer	2
29	419-22-11421	.Pinion	4
30	419-22-11651	.Washer	4
31	419-22-11412	.Shaft	1
32	01010-61240	.Bolt	20
33	01643-31232	.Washer	20
34	419-22-21860	.Carrier	2
35	419-22-11850	.Bearing	2
36	418-33-21430	.Ring	2
37	419-22-21760	.Shim, 0.05MM	6
	419-22-21770	.Shim, 0.2MM	3
	419-22-21780	.Shim, 0.3MM	3
	419-22-21790	.Shim, 0.8MM	2
38	01010-61240	.Bolt	16
39	01643-31232	.Washer	16
40	419-22-23620	.Cover	1
41	04020-01228	.Pin, Dowel	2
42	01010-61240	.Bolt	20
43	01643-31232	.Washer	20
44	423-23-23170	.Sleeve	1
45	419-33-21710	.Seal	2
46	419-33-11460	.Bleeder	2
47	566-32-11620	.Cap	2