

# PARTS & SERVICE NEWS

REF NO.	AT03071
DATE	Apr. 21, 2003

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**SUBJECT:** IMPROVEMENT OF GREASING FOR HITCH DRIVE SHAFT BEARING (OUTPUT SIDE) ON HM400-1 AND HM350-1

**PURPOSE:** To introduce improvement procedures to prevent damage to the hitch drive shaft bearing by externally greasing the output side of HM400-1 and HM350-1

**APPLICATION:** HM400-1 Articulated Dump Trucks, Serial Nos. 1001 and up  
HM350-1 Articulated Dump Trucks, Serial Nos. 1001 and up } Refer to page 2.

**FAILURE CODE:** 2013FF

**DESCRIPTION:**

1. Introduction

On HM400-1 and HM350-1 (Articulated dump truck), grease in the hitch drive shaft bearing (the output side) may flow out to cause defective lubrication, resulting in damage to the bearing.

To prevent it, improve the greasing structure to the external greasing structure following the procedures given in this Service News.

This modification should, as a rule, be made together at the time when the modification introduced by the Service News with reference number AT03044, COUNTERMEASURE OF FRAME CRACK RELATION ON HM350-1, HM400-1 (OUTLINE OF FC) is made.

2. Table of the applicable vehicles to this modification

HM400-1: Table of Serial No. of the applicable vehicles  
(Total 62 vehicles)

HM350-1: Table of Serial No. of the applicable vehicles (Total 37 vehicles)

No.	Country	Model	Serial No.	Destination	Customer's name
1	U.S.A.	HM400-1	1001	U.S.A.	
2	(47 vehicles)	HM400-1	1002	U.S.A.	
3		HM400-1	1003	U.S.A.	
4		HM400-1	1007	U.S.A.	Longhorn Excavating
5		HM400-1	1008	U.S.A., MD	Central Contracting
6		HM400-1	1010	U.S.A., TX	Longhorn Excavating
7		HM400-1	1014	U.S.A., TX	Longhorn Excavating
8		HM400-1	1015	U.S.A., TX	Longhorn Excavating
9		HM400-1	1016	U.S.A., OK	Martin Marietta
10		HM400-1	1017	U.S.A., OH	Sidwell Materials
11		HM400-1	1018	U.S.A., OH	Sidwell Materials
12		HM400-1	1019	U.S.A., OH	Sidwell Materials
13		HM400-1	1020	U.S.A., AK	City of Fort Smith
14		HM400-1	1021	U.S.A., FL	URS Corporation
15		HM400-1	1022	U.S.A., FL	URS Corporation
16		HM400-1	1023	U.S.A., MD	Central Contracting
17		HM400-1	1028	U.S.A., FL	URS Corporation
18		HM400-1	1029	U.S.A., FL	URS Corporation
19		HM400-1	1030	U.S.A., TX	Longhorn Excavating
20		HM400-1	1031	U.S.A., TX	Longhorn Excavating
21		HM400-1	1033	U.S.A., TX	Longhorn Excavating
22		HM400-1	1034	U.S.A., FL	McDonald Construction
23		HM400-1	1035	U.S.A., FL	McDonald Construction
24		HM400-1	1036	U.S.A., OH	Sidwell Materials
25		HM400-1	1037	U.S.A., FL	McDonald Construction
26		HM400-1	1038	U.S.A., OH	Sidwell Materials
27		HM400-1	1039	U.S.A., OH	Sidwell Materials
28		HM400-1	1040	U.S.A., TX	Lattimore Materials
29		HM400-1	1041	U.S.A., OH	Sidwell Materials
30		HM400-1	1042	U.S.A.	
31	HM400-1	1043	U.S.A.		
32	HM400-1	1044	U.S.A.		
33	HM400-1	1046	U.S.A.		
34	HM400-1	1048	U.S.A.		
35	HM400-1	1049	U.S.A.		
36	HM400-1	1053	U.S.A.		
37	HM400-1	1054	U.S.A.		
38	HM400-1	1055	U.S.A.		
39	HM400-1	1056	U.S.A.		
40	HM400-1	1057	U.S.A.		
41	HM400-1	1058	U.S.A.		
42	HM400-1	1059	U.S.A.		
43	HM400-1	1060	U.S.A.		
44	HM400-1	1061	U.S.A.		
45	HM400-1	1062	U.S.A.		
46	HM400-1	1063	U.S.A.		
47	HM400-1	1064	U.S.A.		
48	Indonesia	HM400-1	1026	Indonesia	
49	Australia	HM400-1	1071	Australia	
50	(6 vehicles)	HM400-1	1072	Australia	
51		HM400-1	1073	Australia	
52		HM400-1	1074	Australia	
53		HM400-1	1075	Australia	
54		HM400-1	1076	Australia	
55		Rep. of South Africa (4 vehicles)	HM400-1	1024	Rep. of South Africa
56	HM400-1		1025	Rep. of South Africa	
57	HM400-1		1047	Rep. of South Africa	
58	HM400-1		1079	Rep. of South Africa	
59	Belgium (4 vehicles)	HM400-1	1065	Belgium	
60		HM400-1	1067	Belgium	
61		HM400-1	1069	Belgium	
62		HM400-1	1070	Belgium	

No.	Country	Model	Serial No.	Destination	Customer's name
1	U.S.A.	HM350-1	1001	U.S.A., OK	United General
2	(34 vehicles)	HM350-1	1002	U.S.A., FL	URS Corporation
3		HM350-1	1003	U.S.A., OH	Beaver Excavating
4		HM350-1	1005	U.S.A., OH	Beaver Excavating
5		HM350-1	1007	U.S.A., MS	Eutaw Construction
6		HM350-1	1008	U.S.A., MS	Eutaw Construction
7		HM350-1	1010	U.S.A., MS	Eutaw Construction
8		HM350-1	1012	U.S.A., MS	Eutaw Construction
9		HM350-1	1013	U.S.A., MS	Eutaw Construction
10		HM350-1	1014	U.S.A., OK	United General
11		HM350-1	1015	U.S.A.	
12		HM350-1	1016	U.S.A.	
13		HM350-1	1017	U.S.A., OK	United General
14		HM350-1	1018	U.S.A.	
15		HM350-1	1019	U.S.A.	
16		HM350-1	1020	U.S.A.	
17		HM350-1	1021	U.S.A.	
18		HM350-1	1022	U.S.A.	
19		HM350-1	1023	U.S.A.	
20		HM350-1	1024	U.S.A.	
21		HM350-1	1025	U.S.A.	
22		HM350-1	1026	U.S.A.	
23		HM350-1	1027	U.S.A.	
24		HM350-1	1028	U.S.A.	
25		HM350-1	1029	U.S.A.	
26		HM350-1	1030	U.S.A.	
27		HM350-1	1031	U.S.A.	
28		HM350-1	1032	U.S.A.	
29		HM350-1	1033	U.S.A.	
30		HM350-1	1034	U.S.A.	
31		HM350-1	1035	U.S.A.	
32		HM350-1	1036	U.S.A.	
33		HM350-1	1037	U.S.A.	
34		HM350-1	1038	U.S.A.	
35		Belgium	HM350-1	1039	Belgium
36	(2 vehicles)	HM350-1	1040	Belgium	
37	Russia	HM350-1	1042	C.I.S.	

## 3. List of parts

Common to HM400-1 and HM350-1

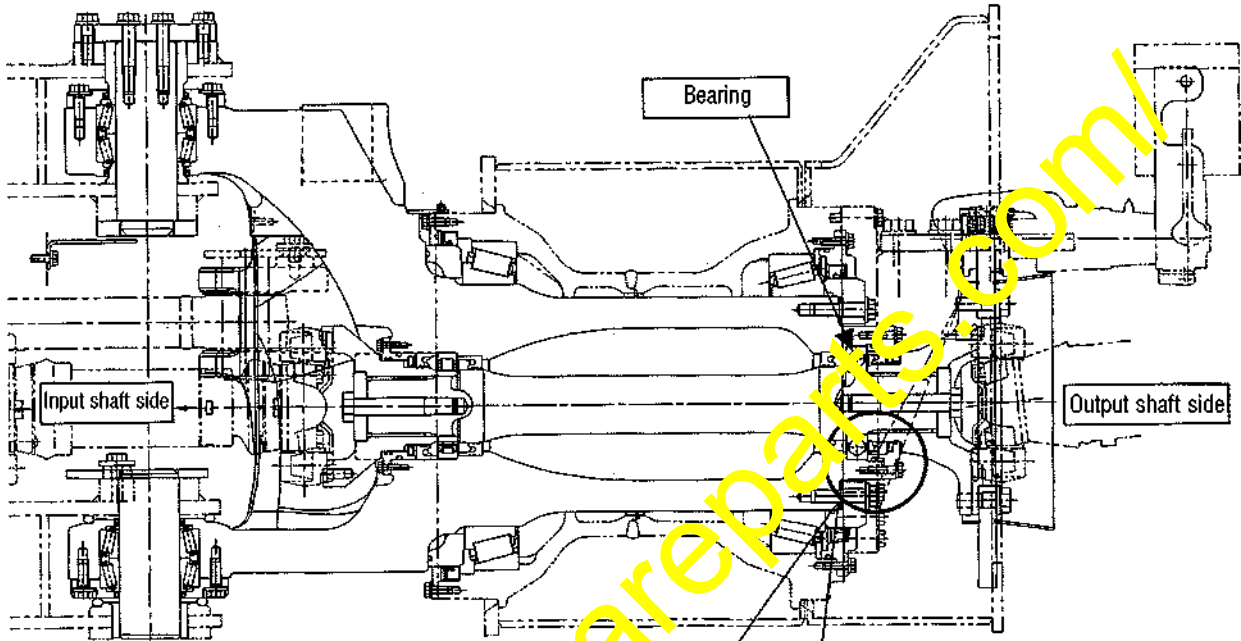
Part No.	Part Name	Purpose of part	Q'ty	Remarks
56C-46-13843 (56C-46-13842)	Ring (Ring)	} Replacement	1 (1)	
56C-46-13562 (56C-46-13561)	Retainer (Retainer)		1 (1)	
07000-15155 (07000-15155)	O-ring (O-ring)		1 (1)	
56C-46-13810 (56C-46-13810)	Seal (Seal)		1 (1)	
566-52-12210	Nipple	} Addition	1	
07020-00675	Fitting		1	
56B-93-12112 (56B-93-12111)	Oil chart (Oil chart)	} Replacement	1 (1)	English
56B-93-14112 (56B-93-14111)	Oil chart (Oil chart)		1 (1)	German
56B-93-15111 (56B-93-15110)	Oil chart (Oil chart)		1 (1)	French
56B-93-19111 (56B-93-19110)	Oil chart (Oil chart)		1 (1)	Spanish
56B-93-18111 (56B-93-18110)	Oil chart (Oil chart)		1 (1)	Indonesian
56C-93-17111 (56C-93-17110)	Oil chart (Oil chart)		1 (1)	Russian
56B-93-12280	Plate		} Addition	DM2
56B-93-14280	Plate	DM2		German
56B-93-15280	Plate	DM2		French
56B-93-19280	Plate	DM2		Spanish
56B-93-18280	Plate	DM2		Indonesian
56C-93-17280	Plate	DM2		Russian

4. Description of improvement

Grease filled in the hitch drive shaft output side bearing of a new vehicle flows out during operation to cause defective lubrication. To prevent early damage to the bearing, the greasing structure was improved to such a structure that it can be externally greased periodically. (Refer to Fig. 1 and 2.)

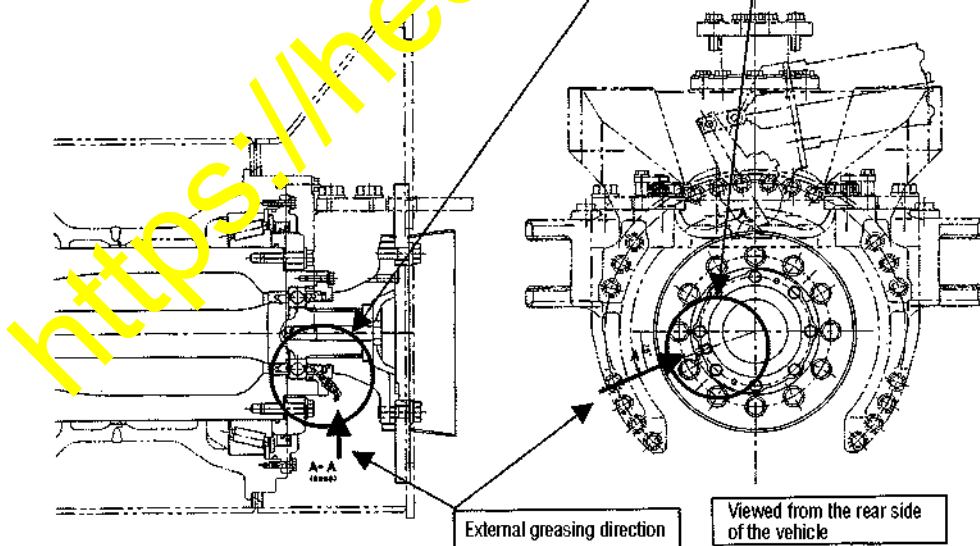
Current structure (Grease filled at assembly)

<Fig. 1>



Improved structure (External greasing method)

<Fig. 2>

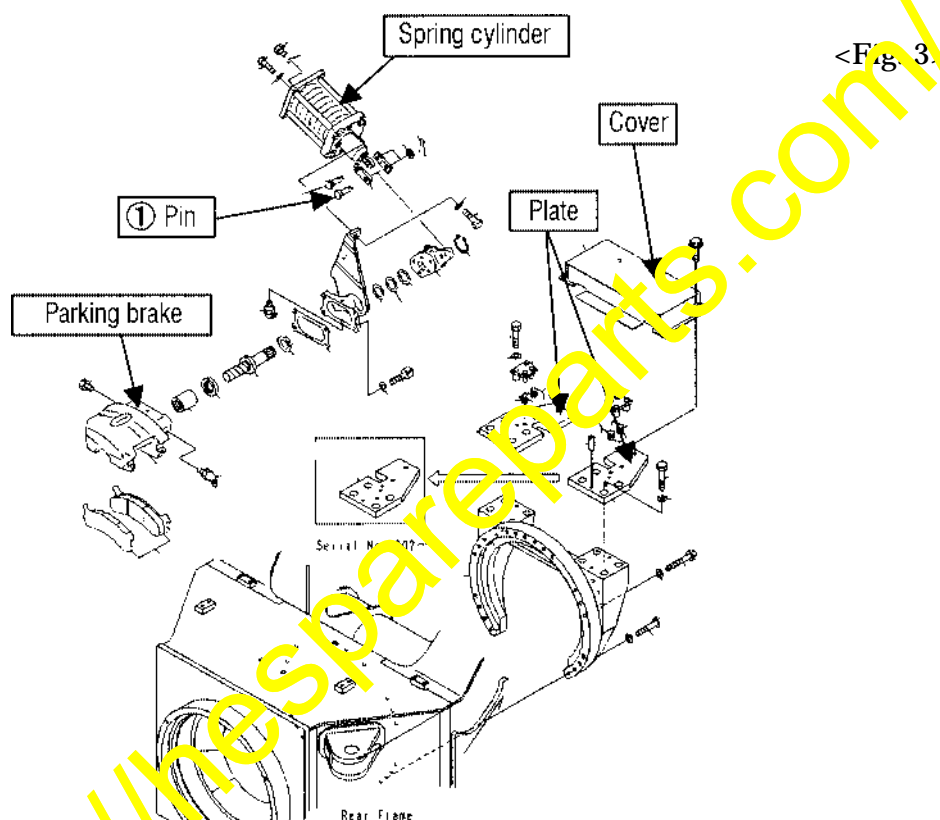


5. Greasing interval and amount

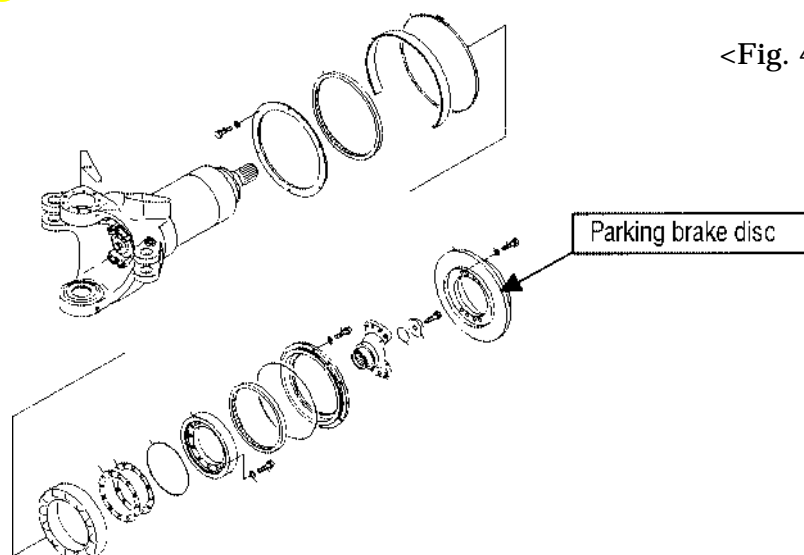
Greasing interval:	Every 250 hours
Approx. amount:	200 cc
Grease type:	G2-LI

## 6. Disassembly procedure

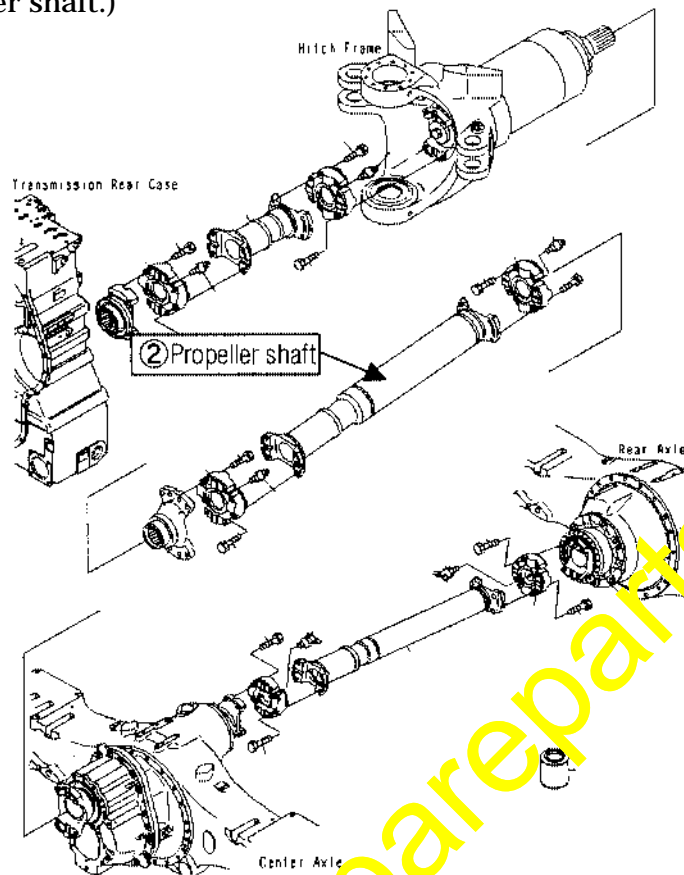
- 6-1. Park the vehicle on a flat place and apply chocks to each tire.
- 6-2. Raise the dump body and, for safety, insert the body stopper pins. (Both of the LH and RH pins)
- 6-3. Wash the surroundings of the hitch, parking brake and propeller shaft.
- 6-4. Start the engine and release the parking brake.
- 6-5. Remove the mounting pin ① for the spring cylinder which is shown in Fig. 3 to disconnect the link.
- 6-6. Turn ON the parking switch and stop the engine.
- 6-7. Remove the cover, plates and parking brake. (Refer to Fig. 3.)



- 6-8. Remove the parking brake disc. (Refer to Fig. 4.)  
(In a state of hanging on the propeller shaft.)

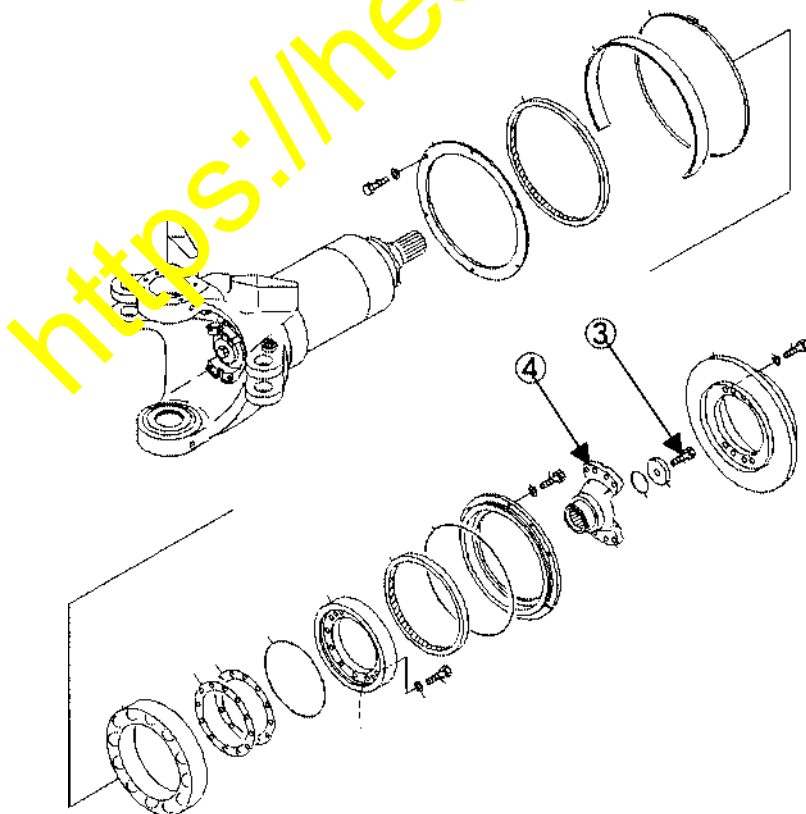


- 6-9. Remove the propeller shaft ② connecting the hitch and the center axle. (Refer to Fig. 5.)  
(Remove the propeller shaft in a state that the parking brake disc plate is hanging on the propeller shaft.)



<Fig. 5>

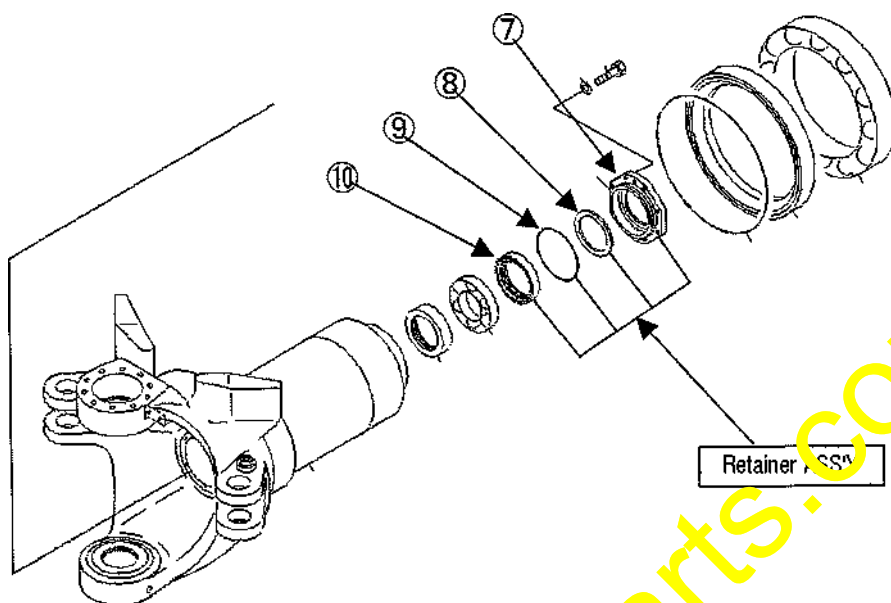
- 6-10. Remove the end bolt ③ of the coupling mounting shaft on the center axle side of the hitch frame and, after that, remove the coupling ④. (Refer to Fig. 6.)



<Fig. 6>

6-11. Remove the output shaft side retainer ass'y (⑤: retainer, ⑥: seal, ⑦: O-ring and ⑧: ring). (Refer to Fig. 7.)

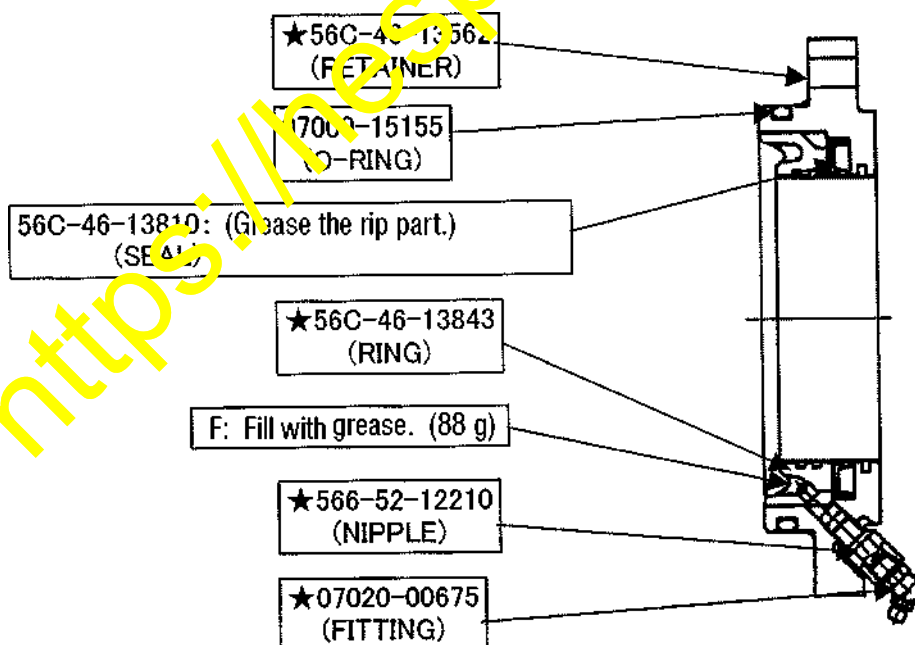
<Fig. 7>



7. Assembly procedure

7-1 Sub-assemble the retainer at the output shaft side. (Refer to Fig. 8)  
Parts with a black star mark are improved parts.

<Fig. 8>

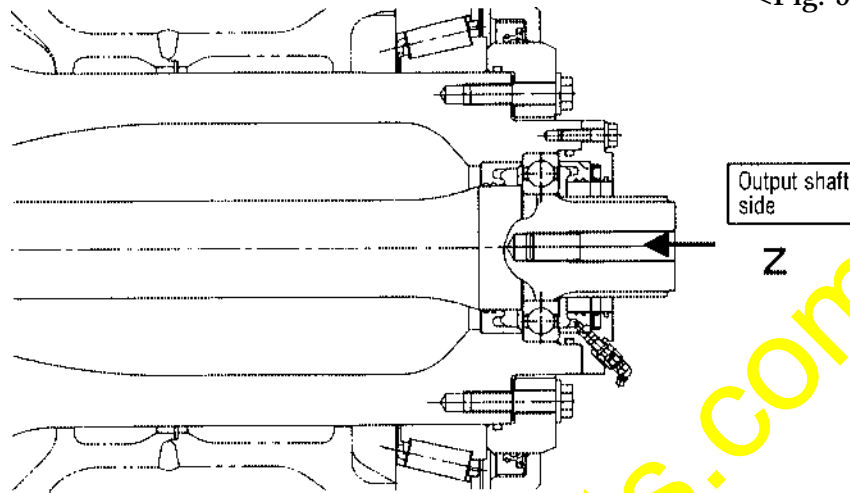


Note: The using grease type should be G2-LI.

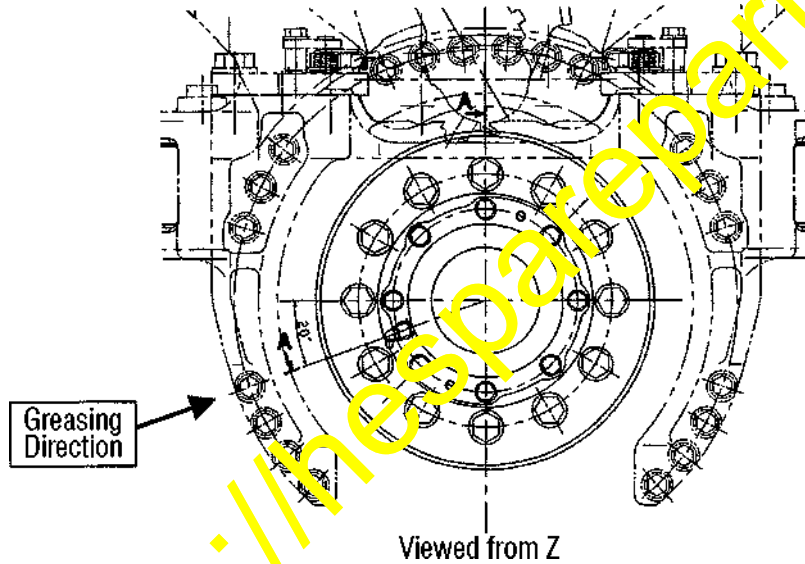
7-2. Install the retainer ass'y. (Refer to Fig. 9.)

When installing the retainer ass'y, be careful so that the greasing fitting may be directed as shown in Fig. 10.

<Fig. 9>

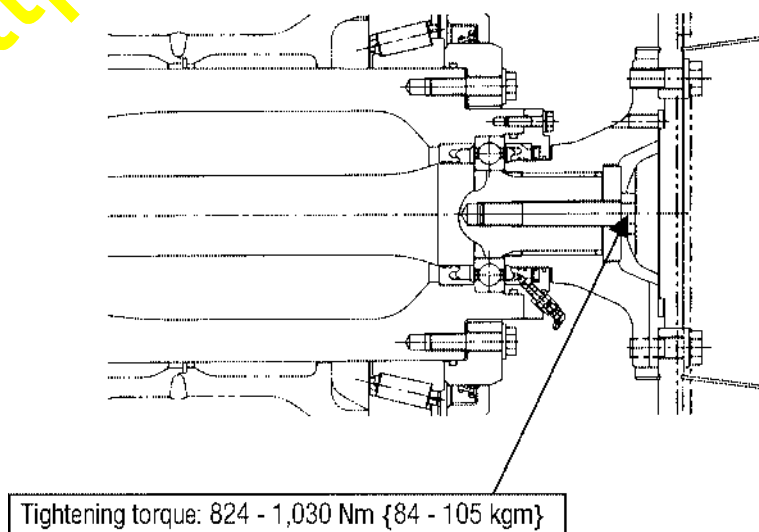


<Fig. 10>



7-3. Install the coupling. (Refer to Fig. 11.)

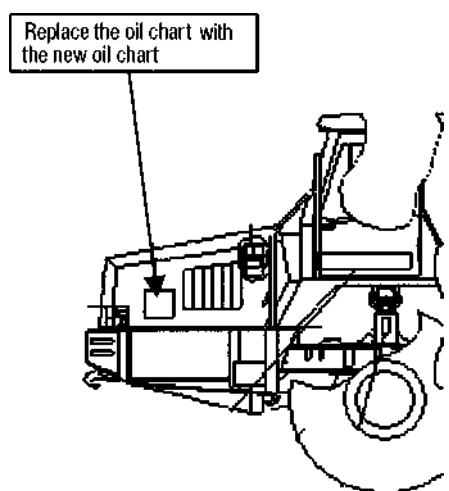
<Fig. 11>





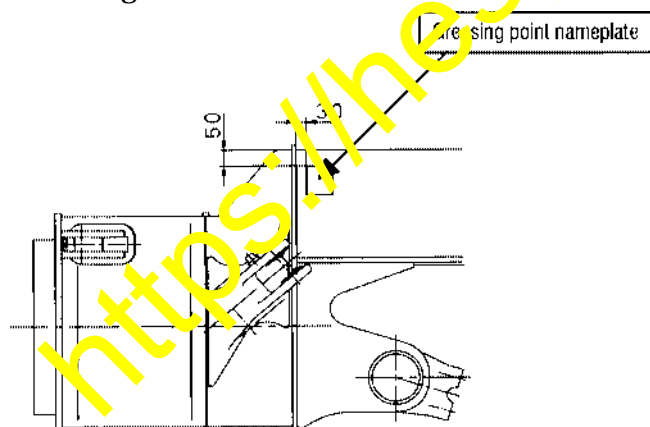
- 7-4. Install the parking brake which has been removed as per the instructions given in the above Section 6-7.
- 7-5. Install the propeller shaft connecting the hitch and the center axle.  
Refer to the Shop Manual regarding the installation procedure of the propeller shaft.
- 7-6. Start the engine, remove the body stopper pins, lower the body and stop the engine.
- 7-7. Attach the oil chart and the hitch greasing point nameplate. (Refer to Fig. 12 and 13.)

&lt;Fig. 12&gt;



	Current Part No.	New Part No.
English	56B-93-12111	56B-93-12112
German	56B-93-14111	56B-93-14112
French	56B-93-15110	56B-93-15111
Spanish	56B-93-19110	56B-93-19111
Indonesian	56B-93-18110	56B-93-18111
Russian	56C-93-17110	56C-93-17111

&lt;Fig. 13&gt;



	Current Part No.
English	56B-93-12280
German	56B-93-14280
French	56B-93-15280
Spanish	56B-93-19280
Indonesian	56B-93-18280
Russian	56C-93-17280