

# PARTS & SERVICE NEWS

REF NO.	AT03083
DATE	May. 19, 2003

Page 1 of 6

**SUBJECT:** REPAIR PROCEDURE OF TRANSMISSION WAVE SPRING WITH STRENGTHENED ONE ON HM300-1

**PURPOSE:** To introduce modification procedures to repair the transmission on HM300-1 by using the improved one of high fatigue strength when its wave spring for disengaging the clutch is damaged due to overstress.

**APPLICATION:** HM300-1 Articulated Dump Trucks, Serial Nos. 1001 thru 1022  
HM300TN-1 Articulated Dump Trucks,

**FAILURE CODE:** 15L9FM

**DESCRIPTION:**

1. Introduction

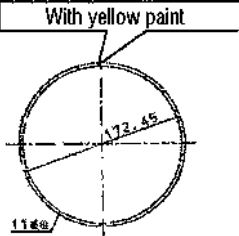
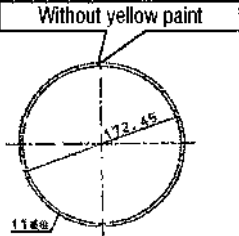
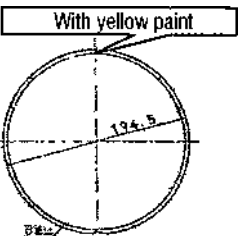
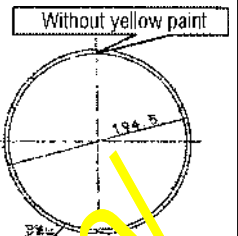
The wave spring for disengaging the clutch of the transmission on HM300-1 may damage when stress rises due to irregular sizes of parts. An improved wave spring of high fatigue strength has been developed and repair the transmission according to the procedures when the wave spring is damaged.

2. List of parts

Part No.	Part Name	Purpose of part	Q'ty	Remarks
56D-13-10001 (56D-13-10000)	Transmission ass'y (Transmission ass'y)	Rework	1 (1)	
714-07-12781 (714-07-12780)	Wave SPG. (Wave SPG.)	Replacement	9 (9)	For the second clutch
56D-15-12710 (419-15-12133)	Wave SPG. (Wave SPG.)		50 (50)	For the FL, R, FH, 1st and 3rd clutches
714-23-19431 (714-23-19430)	Bearing (Bearing)		8 (8)	Needle bearing, FL, R, FH, 1st and 3rd
714-52-12349 (05043-00312)	Bearing (Bearing)		2 (2)	Transmission input shaft bearing
714-53-11370 (06031-00215)	Bearing (Bearing)		1 (1)	Torque converter input bearing
(When replacing the nameplate, replace the following part as well.)				
09608-05080	Plate		1	When the nameplate is replaced

3. Details of Change (For changes in the parts catalog, see Pages 3 thru 6 of the attachment.)

(1) Wave Spring

Clutch	FL, R, FH, 1st, 3rd		2nd	
	New	Old	New	Old
Wave Spring Part No.	56D-15-12710	419-15-12133	714-07-12781	714-07-12780
Appearance	With yellow paint 	Without yellow paint 	With yellow paint 	Without yellow paint 
Fine grain peening	With peening	Without peening	With peening	Without peening
Life ratio	15 or more	1	15 or more	1
	See Location A in Fig 1.		See Location B in Fig 1.	

(2) Bearing

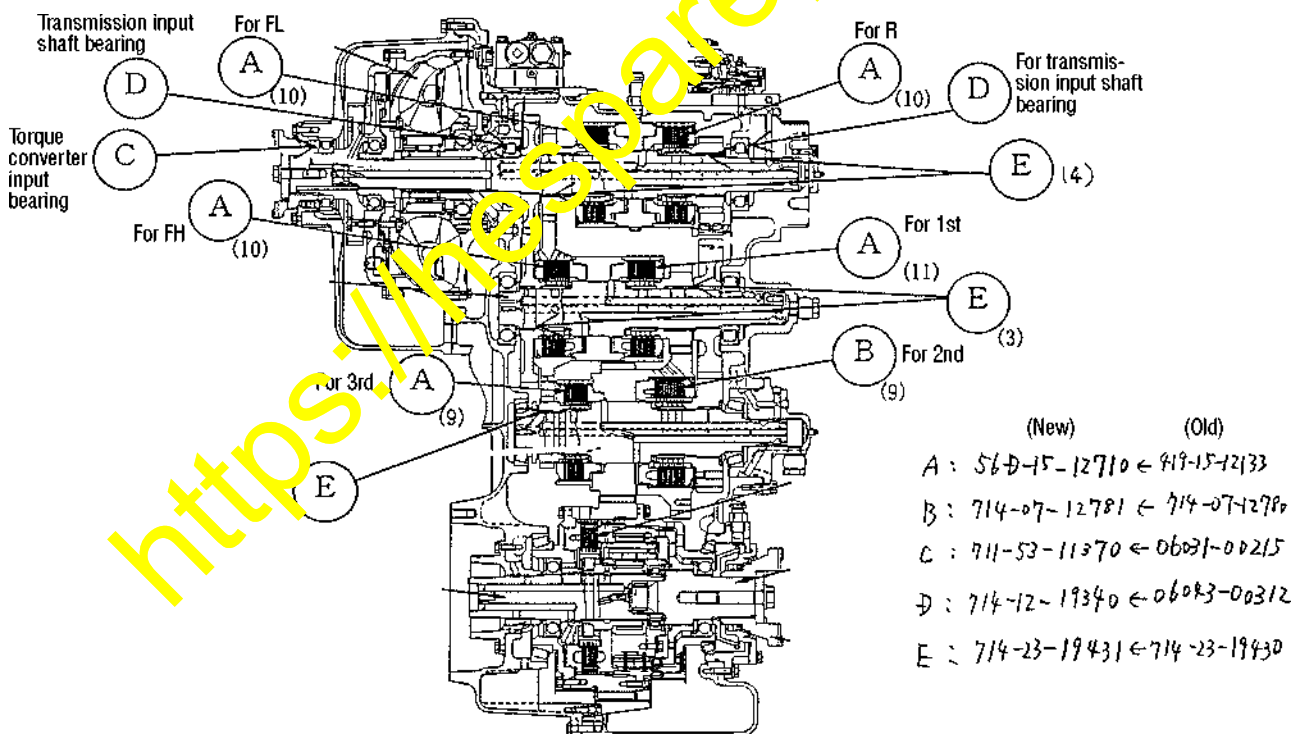
(2)-1. Change the press cage to the machined cage.

Torque converter input bearing : See Location C in Fig 1.

Transmission input shaft support bearing : See Location D in Fig 1.

(2)-2. Change the needle bearing to the one of high roller crowning.

See Location E in Fig 1.



4. Repair Procedures

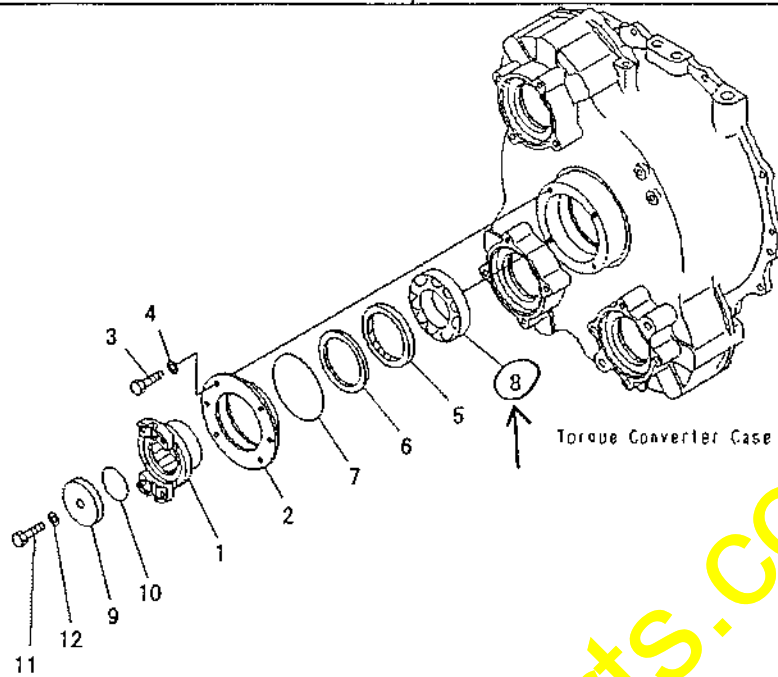
Repair the transmission using the improved wave springs according to "Disassembly and Assembly" in the Shop Manual.

5. Nameplate

After the repair, apply any of the following methods to place the mark:

- 1) Mark "T" on the nameplate as it is.
- 2) Replace the nameplate with a new one and mark "56D-13-10001" on it.

HM300-1 S/N 1001-UP



Ref. F3300-64A0

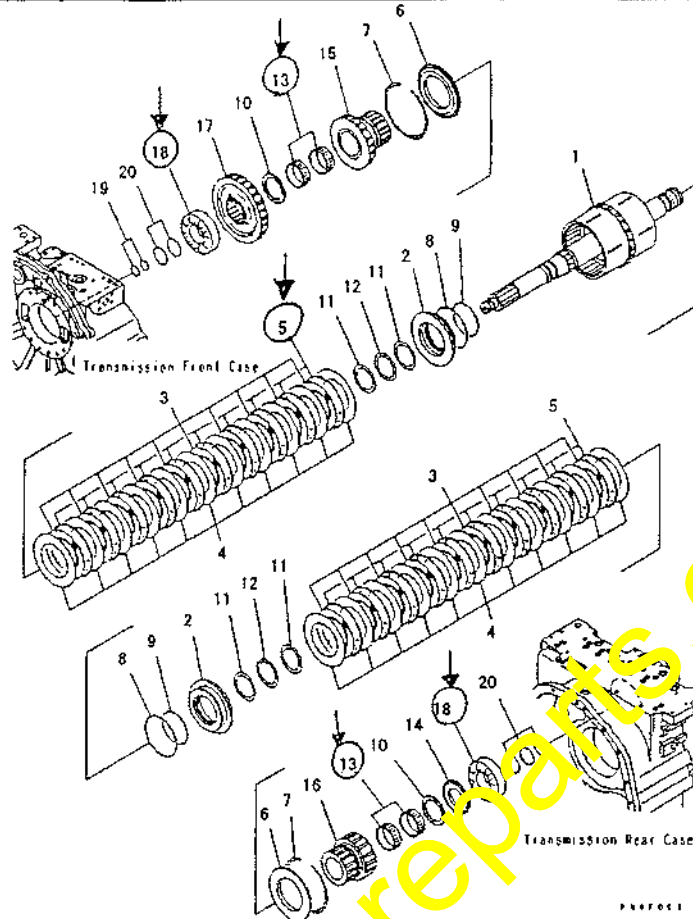
PWCF070

Page 150170

HM300-1 S/N 1001-up  
Transmission (Torque Converter Input)

Index	Part No.	Description	Q'ty.	Price	Serial No.
	(56D-13-10000)	Torqueflow transmission assembly The component parts of this assembly include those from Fig. F3300-51A0 to Fig. F3300-64A0.	1	9280000	SN: 1001 - 0
1	567-13-39870	• Coupling	1	0	SN: 1001 -
2	56D-13-11370	• Retainer	1	0	SN: 1001 -
3	01010-81025	• Bolt	4	85	SN: 1001 -
4	01643-31032	• Washer	4	15	SN: 1001 -
5	07012-50095	• Seal	1	8180	SN: 1001 -
6	425-15-28710	• Seal, dust	1	2680	SN: 1001 -
7	07000-72130	• O-ring (K1)	1	1920	SN: 1001 -
8	06031-00215	• Bearing → 711-53-11370	1	9560	SN: 1001 -
9	426-15-12160	• Holder	1	3660	SN: 1001 -
10	07000-75065	• O-ring (K1)	1	930	SN: 1001 -
11	01050-61670	• Bolt	1	470	SN: 1001 -
12	01643-31645	• Washer	1	105	SN: 1001 -

HM300-1 S/N 1001-UP



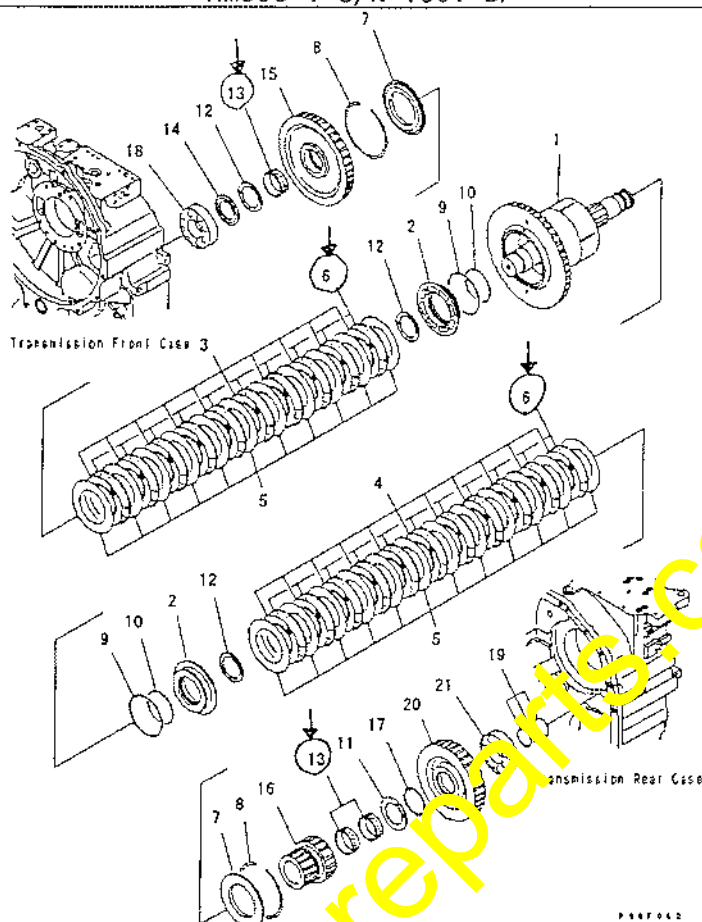
Ref. F3300-53A0

HM300-1 S/N 1001-up  
Transmission (forward low and reverse)

Page 150060

Index	Part No.	Description	Q'ty.	Price	Serial No.
	(56D-13-10000)	Torqflow transmission assembly The component parts of this assembly include those from Fig. F3300-51A0 to Fig. F3300-64A0.	1	9280000	SN: 1001 - 0
1	56D-15-12010	• Clutch assembly, input	1	0	SN: 1001 -
	56D-15-12110	•• Shaft and cylinder assembly, input	1	0	SN: 1001 -
	☆	••• Shaft, input	1	0	SN: 1001 -
	☆	••• Ball	3	50	SN: 1001 -
	☆	••• Housing, input	1	0	SN: 1001 -
2	56D-15-12050	•• Piston	2	0	SN: 1001 -
3	714-12-12711	•• Disc	20	1430	SN: 1001 -
4	714-16-19730	•• Plate, separate	22	660	SN: 1001 -
5	419-15-12133	•• Spring, wave → 56D-15-12710	20	1050	SN: 1001 -
6	714-12-12610	•• Plate, end	2	3860	SN: 1001 -
7	419-15-12140	•• Ring, snap	2	2520	SN: 1001 -
8	714-13-19210	•• Ring, seal	2	1430	SN: 1001 -
9	714-08-19210	•• Ring, seal (K1)	2	550	SN: 1001 -
10	714-08-19570	•• Washer, thrust	2	2360	SN: 1001 -
11	419-15-12680	•• Washer	4	1620	SN: 1001 -
12	419-15-12670	•• Bearing	2	1580	SN: 1001 -
13	714-23-19430	•• Bearing, needle → 714-23-19431	4	4690	SN: 1001 -
14	714-19-12720	•• Spacer	1	0	SN: 1001 -
15	56D-15-12410	•• Gear, forward low	1	0	SN: 1001 -
16	56D-15-12421	•• Gear, reverse	1	0	SN: 1001 -
17	56D-15-12530	•• Gear, input	1	0	SN: 1001 -
18	06043-00312	•• Bearing → 714-12-19340	2	9190	SN: 1001 -
19	714-21-19810	• Ring, seal	2	560	SN: 1001 -
20	56D-15-19240	• Ring, seal (K1)	5	2500	SN: 1001 -

## HM300-1 S/N 1001-UP



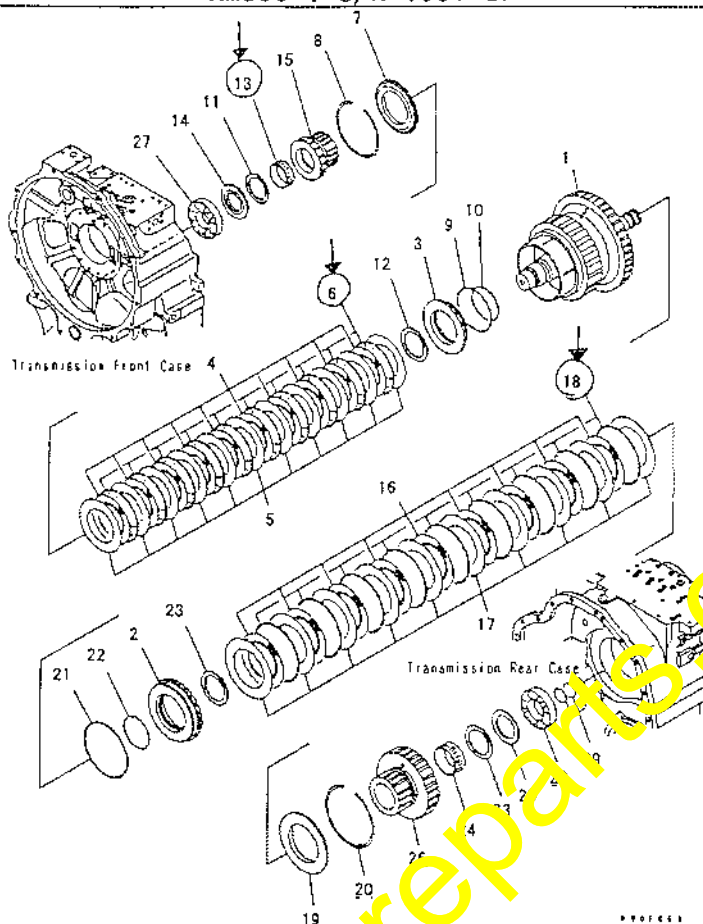
Ref. F3300-54A0

HM300-1 S/N 1001-up  
Transmission (Forward high and 1st)

Page 150070

Index	Part No.	Description	Q'ty.	Price	Serial No.
	(56D-13-10000)	Torqflow transmission assembly The component parts of this assembly include those from Fig. F3300-51A0 to Fig. F3300-64A0.	1	9280000	SN: 1001 - 0
1	56D-15-12020	• Clutch assembly, upper	1	0	SN: 1001 -
	56D-15-12120	• Shaft and cylinder assembly, upper	1	0	SN: 1001 -
	☆	••• Shaft, upper	1	0	SN: 1001 -
	☆	••• Ball	2	50	SN: 1001 -
	☆	••• Housing, upper	1	0	SN: 1001 -
2	56D-15-12360	•• Piston	2	0	SN: 1001 -
3	714-12-19711	•• Disc	10	1430	SN: 1001 -
4	714-07-29710	•• Disc	11	1030	SN: 1001 -
5	714-16-19730	•• Plate, separate	23	660	SN: 1001 -
6	419-15-12133	•• Spring, wave → 56D-15-12710	21	1050	SN: 1001 -
7	714-12-12610	•• Plate, end	2	3860	SN: 1001 -
8	419-15-12140	•• Ring, snap	2	2520	SN: 1001 -
9	714-16-19230	•• Ring, seal (K1)	2	190	SN: 1001 -
10	714-07-19320	•• Ring, seal (K1)	2	1210	SN: 1001 -
11	56D-15-19510	•• Washer, thrust	1	0	SN: 1001 -
12	714-08-19570	•• Washer, thrust	3	2360	SN: 1001 -
13	714-23-19430	•• Bearing, needle → 714-23-19431	3	4690	SN: 1001 -
14	714-11-12720	•• Spacer	1	1290	SN: 1001 -
15	56D-15-12431	•• Gear, forward high	1	0	SN: 1001 -
16	56D-15-12441	•• Gear, 1st	1	0	SN: 1001 -
17	569-15-49530	•• Ring	1	1360	SN: 1001 -
18	06040-06312	•• Bearing	1	4770	SN: 1001 -
19	45D-15-19240	• Ring, seal (K1)	3	2500	SN: 1001 -
20	56D-15-12541	• Gear, upper	1	0	SN: 1001 -
21	714-12-19340	• Bearing, roller	1	29800	SN: 1001 -

HM300-1 S/N 1001-UP



Ref. F3300-55A0

HM300-1 S/N 1001-up  
Transmission (2nd and 3rd)

Page 150080

Index	Part No.	Description	Q'ty.	Price	Serial No.
	(56D-13-10000)	Torqflow transmission assembly The component parts of this assembly include those from Fig. F3300-51A0 to Fig. F3300-64A0.	1	9280000	SN: 1001 - 0
1	56D-15-12030	• Clutch assembly, lower	1	0	SN: 1001 -
	56D-15-12130	• Shaft and cylinder assembly, lower	1	0	SN: 1001 -
	☆	• Shaft, lower	1	0	SN: 1001 -
	☆	• Ball	2	50	SN: 1001 -
	☆	• Housing, lower	1	0	SN: 1001 -
2	56D-15-12670	• Piston	1	0	SN: 1001 -
3	56D-15-12680	• Piston	1	0	SN: 1001 -
4	714-12-19711	• Disc	9	1430	SN: 1001 -
5	714-16-19770	• Plate, separate	10	660	SN: 1001 -
6	419-15-12133	• Spring, wave → 56D-15-12710	9	1050	SN: 1001 -
7	714-12-12310	• Plate, end	1	3860	SN: 1001 -
8	419-15-12140	• Ring, snap	1	2520	SN: 1001 -
9	714-07-19220	• Ring, seal (K1)	1	2090	SN: 1001 -
10	714-16-19210	• Ring, seal	1	1350	SN: 1001 -
11	714-08-19570	• Washer, thrust	1	2360	SN: 1001 -
12	714-07-12220	• Washer, thrust	1	3460	SN: 1001 -
13	714-23-19430	• Bearing, needle → 714-23-19431	1	4690	SN: 1001 -
14	714-19-12720	• Spacer	1	0	SN: 1001 -
15	56D-15-12461	• Gear, 3rd	1	0	SN: 1001 -
16	714-07-12670	• Disc	9	2390	SN: 1001 -
17	714-07-12680	• Plate, separate	10	940	SN: 1001 -
18	714-07-12780	• Spring, wave → 714-07-12781	9	1010	SN: 1001 -
19	714-07-12711	• Plate, end	1	20900	SN: 1001 -
20	714-07-12720	• Ring, snap	1	2430	SN: 1001 -
21	56B-15-19210	• Seal, ring	1	0	SN: 1001 -
22	714-16-19210	• Ring, seal (K1)	1	1350	SN: 1001 -
23	714-07-12220	• Washer, thrust	2	3460	SN: 1001 -
24	56B-15-19420	• Bearing, needle	1	10900	SN: 1001 -
25	56B-15-12930	• Spacer	1	0	SN: 1001 -
26	56D-15-12451	• Gear, 2nd	1	0	SN: 1001 -
27	06002-30311	• Bearing	1	9590	SN: 1001 -
28	06002-32214	• Bearing	1	6580	SN: 1001 -