

# PARTS & SERVICE NEWS

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This Parts & Service News supersedes the previous issue No. AT98108 dated Jun 26, 1998 which should be discarded.

**SUBJECT:** T/M IMPROVED DURABILITY PARTS ON HD785-3

**PURPOSE:** To introduce improved-durability parts for the transmission of HD785-3 dump trucks

**APPLICATION:** HD785-3 Dump Trucks, Serial Nos. 2001 thru 2574  
HD785-3 Dump Trucks, Serial Nos. 3001 thru 3030

**FAILURE CODE:** 15M036

## DESCRIPTION:

### 1. Introduction

This Service News introduces improved 3rd clutch and R-train planetary gears with enhanced durability for use with the transmission of HD785-3 dump trucks.

( We have improved the durability of the 3rd clutch and the R-train planetary gears on the HD785-5. When your customers carrying the HD785-3 dump trucks want to make the same reinforcement as with the HD785-5, implement this modification following the procedures outlined in this literature. )

### 2. List of parts

No.	Part No.	Part Name	Q'ty	Remarks
1	561-15-52811 (561-15-42811)	Disc (Disc)	3 (3)	
2	561-15-52971 (561-15-52981)	Plate (Plate)	1 (1)	Piston side (10.2t)
3	561-15-51165 (561-15-51170)	Plate (Plate)	1 (1)	End plate
4	561-15-52931 (561-15-52930)	Plate (Plate)	2 (2)	Disc plate
5	561-15-51154 (561-15-51153)	Housing (Housing)	1 (1)	
6	198-15-26510	Plug	1	
8	561-15-52242 (561-15-52241)	Gear (Gear)	1 (1)	Sun gear
9	561-15-52470 (561-15-42431)	Gear (Gear)	4 (4)	1st planetary gear
10	561-15-52480 (561-15-42460)	Gear (Gear)	4 (4)	2nd planetary gear
* 13	561-15-05480	Kit	1	Kit part numbers of No. 1 - 6
* 14	561-15-05490	Kit	1	Kit part numbers of No. 8 - 10

3. Introduction of the improved 3rd clutch with enhanced durability

Below is a list of parts to be replaced when installing these improved parts with enhanced durability which were originally prepared for the HD785-5, to the HD785-3.

Contents of the reinforcement are:

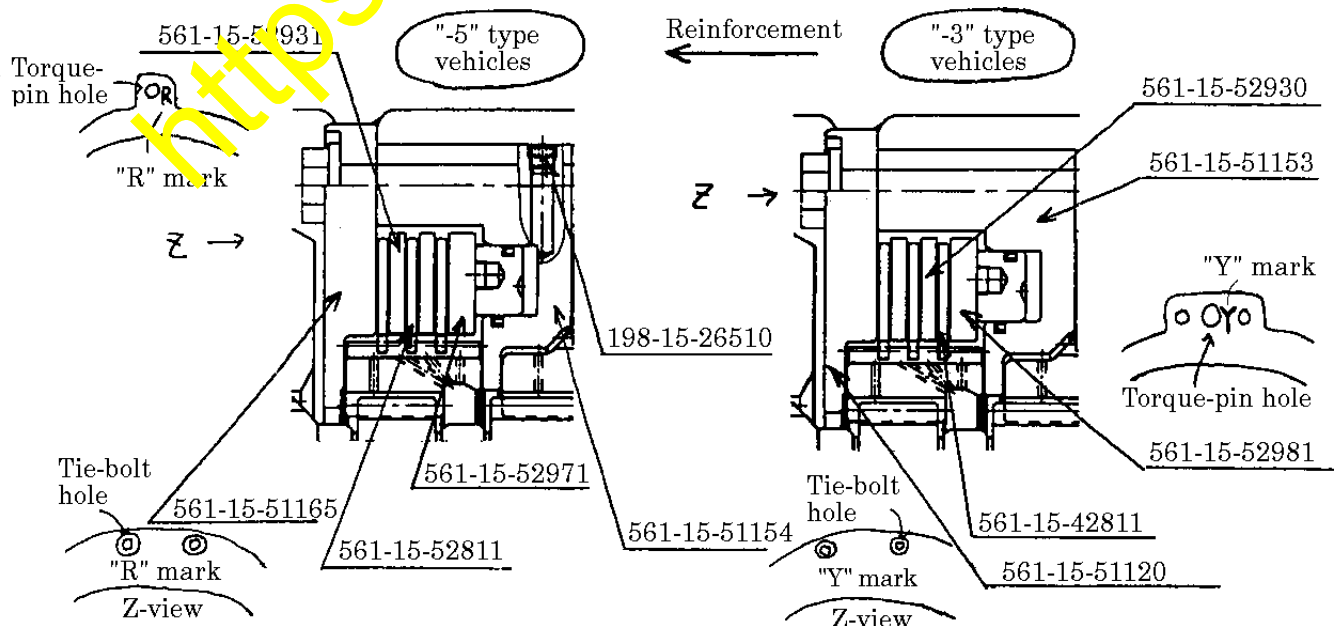
- (1) A new disc material (molded heat resistant resin) with higher heat-resistance capacity has been employed for the clutch discs. (The wear life is about 1.3 times that of the current part.)  
 Moreover, when determining to reuse or not at times of overhauling, although conventional rubber material discs were always replaced totally regardless of the extent of wear because of occurrence of the thermo-hardening deterioration, this new material is free from thermo-hardening. As to whether to reuse these new discs or not, can be determined purely by the extent of wear of these discs. They should be replaced only when the parts are found worn beyond the prescribed wear limit.
- (2) To prevent occurrence of hydraulic chattering with the 3rd clutch, a bleed off means (constant leakage hole) has been supplemented to the 3rd clutch circuit.

Improvement



Comparing vehicle models			HD785-5			HD785-3 (the third improvement)		
Contents of the modification	Part names	Difference between "-5" and "-3" type vehicles	Part numbers	Q'ty/vehicle	Identification marking	Part numbers	Q'ty/vehicle	Identification marking
Fellow parts for the high-load discs	Disc	Part number	561-15-52811	3	Waffle grooving	561-15-42811	3	Radial spiral grooving
		Material	G525			Payflex		
	Plate (Piston)	Part number	561-15-52971	1		561-15-52981	1	A 'Y' mark is being provided beside the torque-pin hole
		Surface coarseness	1.6S			5S		
		Thickness	10.2			10.2		
	Plate (End)	Part number	561-15-51165	1	An 'R' mark is being provided below the tie-bolt hole.	561-15-51120	1	A 'Y' mark is being provided below the tie-bolt hole.
		Surface coarseness	1.6S			5S		
	Plate	Part number	561-15-52930	2	An 'R' mark is being provided beside the torque-pin hole.	561-15-52930	2	
Surface coarseness		1.6S			5S			
Necessary parts for prevention of hydraulic chattering of the 3rd clutch	Housing	Part number	561-15-51154	1		561-15-51153	1	
		PT threading as the bleed-off means	Provided.			Not provided.		
	Plug	Part number	198-15-26510	1		---	---	
		Plug as the bleed off means	Provided.			Not provided.		

Notes) Always replace all the parts listed above at the same time.



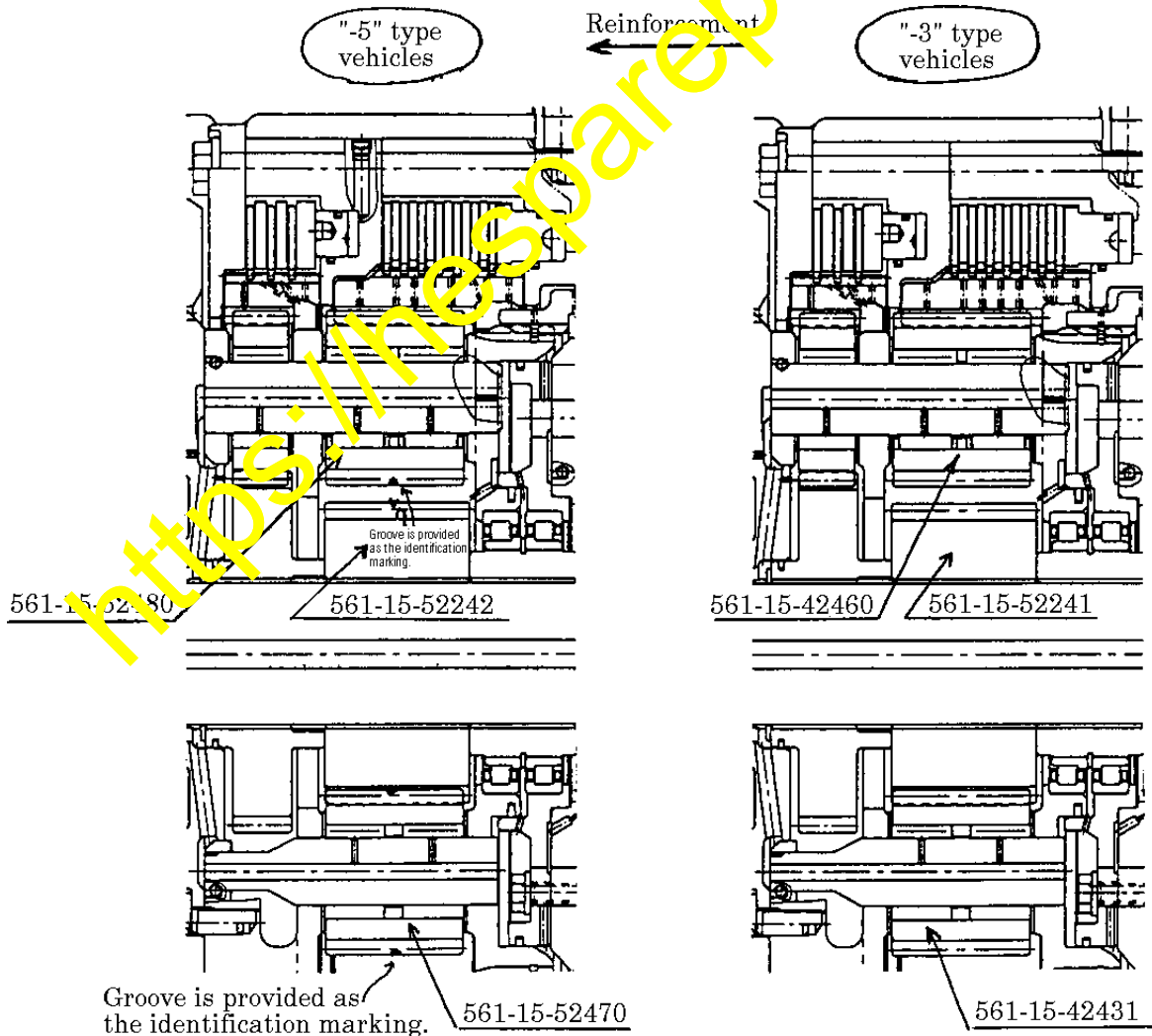
4. Introduction of the improved R-train planetary gears with enhanced durability  
 With the HD785-5, bending life of the R-train planetary gears have been improved to about 1.3 times as long as those of the current parts by supplementation of hard shot peening. Indicted below is a list of necessary parts when installing this improved part with enhanced durability originally prepared for the HD785-5 to the HD785-3.

Improvement

Comparing vehicle models			HD785-5			HD785-3 (the third improvement)		
Contents of the modification	Part names	Difference between "-5" and "-3" type vehicles	Part numbers	Q'ty/ vehicle	Identification marking	Part numbers	Q'ty/ vehicle	Identification marking
R-train gears supplemented with the hard shot peening treatment	Gear (Sun)	Part number	561-15-52242	1	A groove of 0.1 – 0.3 is being provided in the center of the addendum.	561-15-52241	1	KHP
		Heat treatment	KHP+HSP					
	Gear (No. 1 Pinion)	Part number	561-15-52470	4	A groove of 0.1 – 0.3 is being provided in the center of the addendum.	561-15-42431	4	KHP
		Heat treatment	KHP+HSP					
	Gear (No. 2 Pinion)	Part number	561-15-52480	4	A groove of 0.1 – 0.3 is being provided in the center of the addendum.	561-15-42460	4	KHP
		Heat treatment	KHP+HSP ※					

※ HSP: Hard Shot Peening

Notes) Always replace all the parts listed above at the same time.



**5. Replacement procedures**

Replace the subject parts consulting the Shop Manual.

Referring to the comparison list of modification history for the 3rd clutch on page 5 of this literature, when the transmission of the modifying vehicle is found to be of the second improvement or before, supplement the modifications after that to the present modification according to this literature. (Refer to page 5 to find out the relevant Service News numbers.)

Also, other improved-durability parts than the 3rd clutch are being introduced by the Service News's listed below and we suggest you to refer to them at needs.

Service News numbers	Original Plant News numbers	Subjects
AT97305	HD-ZEN-SA-B97-02	Improved wear resistance and durability T/C stator bushing
AT97169	TM-ZEN-SA-B97-04	Improved durability 3rd clutch needle bearing
W920008	HD785-SA-A92-001	Introduction of the internal defect checking methods for the torque converter and the transmission and important checkpoints when over-hauling, plus countermeasures when defects and failures have been found.

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Comparison list of modification history for the 3rd clutch of the transmission on the HD785-5 vs. HD785-3

Comparing vehicle models		HD785-5			HD785-3							
			The third improvement	The second improvement	The first improvement	Original state						
Heavy article registration No.				94-C33 (Awazu Plant)	91-C1 (Awazu Plant)							
English News No.	English	AT98108A	A960032	A940143	W920008 (A910168A)							
	(Japanese)	HD785-M-98-1 ▲	HD785-M-96-1	HD785-M-94-2	HD785-T-92-3							
Plant News No.		HD785-SA-B98-01 ▲	HD785-SA-B95-002	HD785-SA-B94-02	HD785-SA-A92-001							
Serial numbers of the applicable T/M units		1001 -	1649 -	* 1510- 1648	* 1243 - 1509		1001 - 1242					
Serial numbers of the applicable vehicles		#4001 -	#2408 - #2410 #2417 -	#2311 - #2407 #2411 - #2416								
Stating time of implementing the modification to the production lots		June '97 and after	Jan. '96 and after	July '91 and after	Sept. '91 and after		Oct. '88 and after					
Contents of the modification for improvement of durability	① Bringing up the rigidity of the end plate	○	○	○	○							
	② Improving the partition and surface coarseness of the piston	○	○	○								
	③ Cutting margin: 0.87 → 0.50	○	○									
	④ High-load discs	○										
	⑤ Chattering preventive means	○										
	⑥ Supplementation of hard shot peening to the R-train gears	○										
Applicable sections	Modification sequence	Part name	Part numbers	Q'ty/vehicle	Part numbers	Q'ty/vehicle	Part numbers	Q'ty/vehicle	Part numbers	Q'ty/vehicle	Part numbers	Q'ty/vehicle
3rd clutch with improved durability	①, ②, ③	Piston	→ ※	1	561-15-52593 ▼	1	561-15-52592	1	561-15-52591	1	561-15-52590	1
	②, ③, ④	Plate (Piston)	561-15-52971 ※	1	561-15-52981 ▼	1	561-15-52980	1	—	—	—	—
	①, ②, ④	Plate (End)	561-15-51165 ※	→	→ ▼	→	561-15-51120	1	561-15-51164	1	561-15-51163	1
	①	Bolt	→ ※	→	→ ▼	→	→	→	561-15-51290	20	561-15-41290	20
	③	Valve seat	→ ※	→	561-15-55135 ▼	1	→	→	→	→	561-15-55134	1
	③	Orifice	—	—	561-15-59620	→	▶ Exclusive spare part necessary when reworking with the valve seat 561-15-55134 for reuse					
	④	Disc	561-15-52811 ※	→	→ ▼	→	→	→	→	→	561-15-42811	3
	④	Plate	561-15-52931 ※	→	→ ▼	→	→	→	→	→	561-15-52930	2
	⑤	Housing	561-15-51154 ※	1	→ ▼	→	→	→	→	→	561-15-51153	1
	⑤	Plug	98-15-26510 ※	1	—	—	—	—	—	—	—	—
R-train gears with improved bending life	⑥	Gear (Cup)	561-15-52242 ☆	→	→	→	→	→	→	→	561-15-52241	1
	⑥	Gear (No.1 Pinion)	561-15-52470 ☆	→	→	→	→	→	→	→	561-15-42431	4
	⑥	Gear (No.2 Pinion)	561-15-52480 ☆	→	→	→	→	→	→	→	561-15-42460	4
* Kit for 3rd clutch durability improvement	① - ⑤	KIT	561-15-05480 Assembly of ※ mark parts	1	561-15-05470 Assembly of ▼ mark parts	1						
* Kit for R row gear bending service life improvement	⑥	KIT	561-15-05490 Assembly of ☆ mark parts	1								